

# Aerospace industrial solutions

## 2016

Solutions for Aerospace  
assembly and manufacturing.



*Atlas Copco*



An aerial photograph of an airport and city. In the foreground, a large white commercial airplane is flying towards the viewer. The airport features a runway, taxiway, and several smaller aircraft parked at gates. A large parking lot filled with cars is visible. In the background, there are green trees, a rocky mountain, and a blue body of water. A white airplane icon is positioned on the right side of the image, pointing towards the text box.

# AEROSPACE



*It has always fascinated man. Flight, the process of moving an object through the atmosphere – or beyond it. From the smallest of parts to the big picture. Being a part of making it happen is truly fantastic.*

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# ***CIVIL AEROSPACE***

*This exciting high-technology industry is the result of the human effort to fly. In science, engineering and business. Aerodynamic efficiency starts with innovation in productivity, energy efficiency, safety and ergonomics.*





# CIVIL AEROSPACE

## FINAL ASSEMBLY



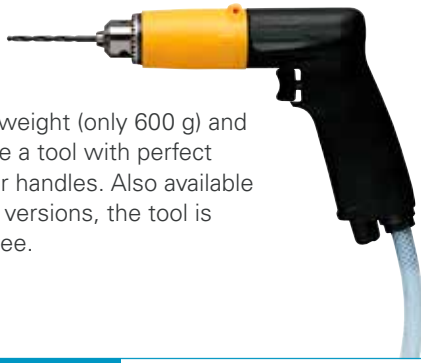
*Satisfaction lives in that moment where everything comes together. When accuracy, safety and quality has played its part and where the big picture is dependent on even the smallest of details.*



### OPTIMIZED BATTERY TOOL

Experience the freedom of a cordless tool. Our optimized battery tools are fast and light offering accessibility and mobility. Partnered with a power focus controller, you gain full traceability.

### PNEUMATIC HANDHELD DRILL LBB16



With small size, low weight (only 600 g) and high power, we provide a tool with perfect ergonomics and rubber handles. Also available in angular and straight versions, the tool is quiet and lubrication free.

### MODULAR DRILL - OFFSET HEAD

Atlas Copco's range of offset drill heads are optimal for aerospace production. It is a small sized tool, perfect for access to cramped and limited spaces. High quality drilled holes and durability is key.



### BATTERY PISTOL GRIP NUTRUNNER TENSOR STB

Cordless freedom, fast and light it offers accessibility and mobility. Partner it with a Power Focus controller for accurate torque monitoring and full joint traceability.



### VIBRATION DAMPED RIVETING HAMMER RRH

Minimize operators exposure to vibration while maintaining high tool performance. With Atlas Copco's RRH riveting hammer, vibration is highly damped to provide the best in class ergonomics. This means operators can work longer with a powerful tool.



### VIBRATION-DAMPED BUCKING BAR RBB

A perfect partner for the RRH riveting hammer. Vibration damped and flexible it can be fitted with several different small or interchangeable dolly configurations. Vibration level on the bucking bar side is high and a major part of vibration is damped in our bucking bars.



### CONTROLLER POWER FOCUS 4000 SERIES 120



Advanced control functions make process control and quality assurance easy. You gain an error-proofed assembly through intuitive monitoring and control of tightening operations. The Power Focus 4000 range controls tools from the Tensor DS, ST, STB, STR and ETX families.

### ELECTRIC NUTRUNNER TENSOR ETT STR

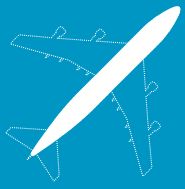


Combining a pistol grip and an angle tool into one unit with two triggers. Shorter operating times and maximum flexibility. Pre-assemble with upper pistol grip and full mount with lower handle. Soon to be launched in your region, for more information contact Atlas Copco

### OPERATOR PANEL P-SET SELECTOR



A highly effective operator interface that easily connects to any electric Atlas Copco tool, providing feedback for operator. With high flexibility, this will save time changing parameters and during work in stations.



# CIVIL AEROSPACE FUSELAGE



*Streamlined and sleek, the structural strength of the fuselage withstands pressure, bending and torsional loads. Timing may be imperative, but never surpassed by safety and quality.*



## PRECISION DRILLING

Our Advanced drilling units offer all the torque you need and a tool for every drilling task. Thick stacks, large diameter. Small holes, large ones. Hole making at its best. Precision drilling made easy.

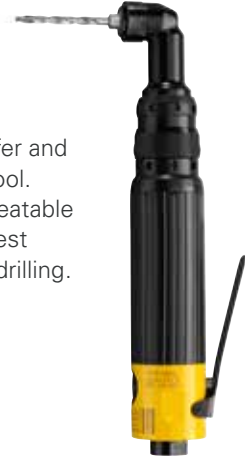


#### ADVANCED DRILLING UNIT PFD 1100



**Right angle or in-line** with twist-lock or concentric collet for small holes with countersink in one-shot or larger holes in all materials. This is the tool for all your jobs. Just make it how you want it.

#### HANDHELD ANGLE DRILL LBV 37



**Heavy duty drilling made** easier, safer and more efficient with this high quality tool. Advanced ergonomic design and unbeatable power to weight ratio will bring the best possible solution for tough handheld drilling.

#### BATTERY HANDHELD NUTRUNNER TENSOR SB



**With adjustable torque settings** the Tensor SB is an advanced, transducerized industrial battery nutrunner offering high quality tightening. Compact and lightweight with excellent ergonomics.

#### JOINT SIMULATOR BENCH BLM BENCH



**Maximum tool evaluation of** anything from battery tools to torque wrenches. Hydraulic brakes simulating the behavior of real joints. Machine capability is tested quickly and easily under real shop floor conditions without interfering with production.

#### PNEUMATIC HANDHELD DRILL LBB 37



**This powerful handheld drill** (1.1hp) has a lubrication-free motor and is built to provide consistent reliability and performance. With very good power to weight ratio it has a speed control trigger and a soft grip that makes it operator-friendly.

#### BATTERY PISTOL GRIP SCREWDRIVER BCP



**Fast, powerful and with** superior ergonomics this battery operated clutch tool means higher productivity for quality assembly operations. Visual and audio feedback and an ergonomic grip design for excellent balance. Also available in low speed models.

#### FRANGIBLE COLLAR ASSEMBLY TOOLS

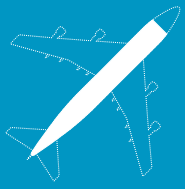


**The Frangible collar assembly** tools are a smart choice when working with aerospace fastener tightenings like frangible collars. Made from Atlas Copco's drive motor with a special front HEAD, they are perfect for cramped spaces and limited access areas.

#### MODULAR DRILL HEADS

**This flexible drilling solution** offers a wide variety of drill heads with an optimal combination for all your drilling needs. All of our angle head gears in the BHM-series have a freewheel for easy engage of the drill head into the motor unit.





# **CIVIL AEROSPACE** EQUIPMENT SYSTEMS



*Complex things work in the background. They lift us up, and then bring us safely back down. We take them for granted because they continuously work without flaw. That is the beauty of it all.*



## **SAFETY CRITICAL – HIGH TORQUE**

Smarter, lighter and faster. Combine high quality tightening with acceptable ergonomics and usability. The Tensor Revo is powerful and trustworthy, packed with smart features offering full traceability.

### QUALITY ASSURANCE TOOL ST WRENCH



**Build your ST Wrench** to match your applications and assure the quality in joints. The ST Wrench offers full traceability for the entire tightening operation, including torque control, angle control and yield control.

### HYDRAULIC BOLTING RAPID-TORC

**A reliable tool for** assembly in very cramped areas. Flexible and made of durable, resistant metal. And a hands-free operation means a safer operation.



### ELECTRIC NUTRUNNER TENSOR REVO



**The first and only** transducerized handheld nutrunner with 360° swivel capability. Combine high quality tightening with acceptable ergonomics and usability.

### TENSOR ES/POWER FOCUS 600 TIGHTENING SYSTEM



**Tensor ES with the Power Focus 600** controller gives you the high speed of pneumatic tools, with the accuracy and control of an electric tool. Improved quality critical assembly, increased productivity, better ergonomics and an overall sustainable process. Easy to use and configure.



### IN-LINE TUBE NUT NUTRUNNER LTO 38



**Accessing tube nuts in** deep narrow spaces requires a tool with special front parts. LTO 38 gives you a well balanced assembly tool for tube nut applications, providing great accuracy and durability.

### CONTROLLER FOR ELECTRICAL ASSEMBLY TOOLS POWER FOCUS 4000

**This solution for safety** critical assembly supports "zero-fault" process control by providing numerous tightening strategies, job work sequencing, full data traceability and networking capabilities. With plug-and-play functionality and the patented rapid back-up unit (RBU). Controls the Tensor DS, ST, STB, STR and ETX families.



### WHEEL ASSEMBLY SYSTEM

**Loosen and re-tighten the** aircraft wheels to the right torque. Atlas copco provides you with a 2-spindle-system for aircraft wheel tightening and loosening. Can also fit at your MRO-center.



### PISTOL GRIP NUTRUNNER LTP 61



**Highest possible torque and** speed in relation to the weight of the tool. Fast, accurate and highly operator friendly, the tools are reversible for maximum flexibility.

### PNEUMATIC PULSE TOOL ERGO PULSE



**Speed, reliability and accuracy** combined with operator comfort. Since there is no metal-to-metal impact in a pulse tool it provides a softer, more controlled pulse with less vibration and noise.



# CIVIL AEROSPACE

## WING



➤ *The desire to fly has always been there. With the combination of power, control and good pair of wings, two brothers gave mankind the ability to fly with both speed and maneuverability.*



### **ERGONOMIC RIVETERS**

Protect the hands of your operators. With our ergonomic riveters and our wide range of bucking bars – working together as a system. Provide your buckers and riveters with the ultimate in comfort and safety. The riveters can also come to good use in your MRO processes.

#### LBB 26



**The right size for** the right application. Our medium size pistol hand held drill solution is quiet and lubrication free with ergonomic design and rubber handles.

#### PNEUMATIC ANGLE NUTRUNNER LTV009



**Excellent for cramped areas**, this accurate tightening tool offers advanced ergonomic design for productivity and efficiency. A Small and light shut off tool, shutting off at torque via clutch. Also available in low speed models.

#### PISTOL GRIP BATTERY SCREWDRIVER BCP



**Fast, powerful and with** superior ergonomics this battery operated clutch tool means higher productivity for quality assembly operations. Visual and audio feedback and an ergonomic grip design for excellent balance. Also available in low speed models.

#### ATEX SOLUTION POWER FOCUS 4000



**This solution for safety** critical assembly and hazardous environments, supports "zero-fault" process control by providing numerous tightening strategies, job work sequencing, full data traceability and networking capabilities. With plug-and-play functionality and the patented rapid back-up unit (RBU). Controls the Tensor DS, ST, STB, STR and ETX families.

#### JOINT SIMULATOR BENCH BLM BENCH



**Maximum tool evaluation** of anything from battery tools to torque wrenches. Hydraulic brakes simulating the behavior of real joints. Machine capability is tested quickly and easily under real shop floor conditions without interfering with production.

#### VIBRATION DAMPED RIVETING HAMMER RRH



**Minimize operators exposure to** vibration while maintaining high tool performance. With Atlas Copco's RRH riveting hammer, vibration is highly damped to provide the best in class ergonomics. This means operators can work longer with a powerful tool.

#### FRANGIBLE COLLAR ASSEMBLY TOOLS



**Frangible Collar Assembly Tools** are a smart choice when working with aerospace fastener tightenings like frangible collars. Made from Atlas Copco's drive motor with a special front HEAD, they are perfect for cramped spaces and limited access areas.

#### MODULAR DRILLS WITH OFFSET HEADS

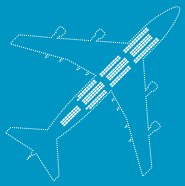


**Atlas Copco's range of** offset drill heads are optimal for aerospace production. It is a small sized tool, perfect for access to cramped and limited spaces. High quality drilled holes and durability is key.

#### BATTERY PISTOL GRIP NUTRUNNER TENSOR STB



**Cordless, fast and light** it offers accessibility and mobility. Partner it with a Power Focus controller for accurate torque monitoring and full joint traceability.



# **CIVIL AEROSPACE** *INTERIOR*



*Ergonomics and noise levels are key in interior. Anything that we spend countless hours doing, needs to speak of comfort. That is what makes a good companion on the journey*



## **TIGHTENING WITH FREEDOM**

Benefit from the performance and accessibility provided by the BCP line of screwdrivers. Cordless freedom with higher productivity and excellent ergonomics and balance. Light and fast make a good combination.

#### CORDLESS ANGLE NUTRUNNER BCV



**Fast, powerful and with** superior ergonomics this battery operated clutch tool means higher productivity for quality critical assembly operations. Visual and audio feedback and an ergonomic grip design for excellent balance. Available in low speed models.

#### HANDHELD BATTERY NUTRUNNER TENSOR SB



**With adjustable torque settings** the Tensor SB is an advanced, transducerized industrial battery nutrunner offering high quality tightening. Compact and lightweight with excellent ergonomics.

#### SLIP CLUTCH SCREWDRIVER TWIST 22



**These tools are suitable** where the torque level may temporarily rise during the rundown phase, for instance when using sheet metal screws, wood screws or self tapping screws. A slip clutch applies a pulsating force when the torque level is reached.

#### FILTER REGULATOR AND LUBRICATOR FRL STAND



**Each FRL-stand includes metal** casing, ball valve, air preparation unit, and the couplings, hose and nipples needed for correct and safe installation of the tool. Portable for quality on air.

#### SCREWDRIVER LUM12



**Simple, fast and reliable** this pneumatic screwdriver combines the best engineering for great durability and productivity. This pistol grip tool is equipped with a spring-loaded shut-off clutch.

#### PISTOL GRIP BATTERY SCREWDRIVER BCP



**Fast, powerful and with** superior ergonomics this battery operated clutch tool means higher productivity for quality assembly operations. Visual and audio feedback and an ergonomic grip design for excellent balance. Also available in low speed models.

#### MECHATRONIC WRENCH MWR-S, MWR-T, MWR-TA, FOCUS 60



**Atlas Copco's new generation** of mechatronic torque solution has taken the most productive wrench – the click wrench – and combined it with error proofing functionalities and traceability.

#### HOSE REELS HM

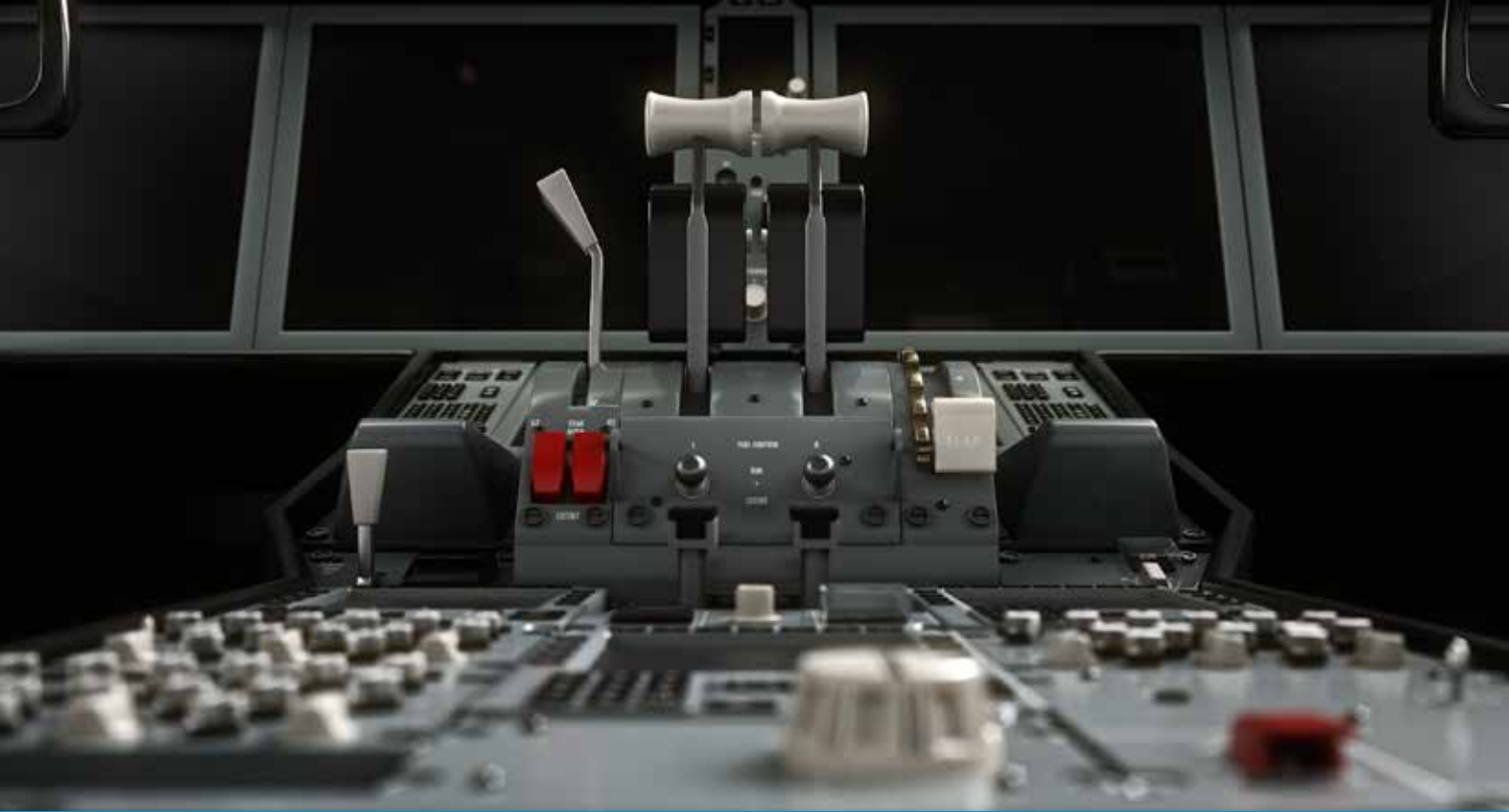


**Our hose reels are** selected to reach maximum productivity in the workplace. The wide range consists of many models, with hose sizes ranging from 8 mm to 25 mm and providing a length of 8m to 30 m.





# CIVIL AEROSPACE AVIONICS



*Perfection is an art. The right proportions in a harmonious arrangement of parts. It is the heart of the matter where safety, accuracy and patience is of essence. And the power of the outcome is amazing*



## **MICRO TORQUE**

An advanced and intelligent tightening solution, designed to perform consistently and precisely time after time. The Microtorque system offers reliable tools optimized for assembly of low torque applications.



### CLUTCH ELECTRIC SCREWDRIVERS EBL

The best in class clutch electric screwdriver for low torque applications, its brushless motor combined with the high accuracy, delivers the best tightening solution for any assembly process.



### MICROTORQUE HANDHELD SCREWDRIVERS



The most advanced and intelligent tightening solution for any low torque application. The handheld screwdrivers are extremely ergonomic, very compact and full of functionalities. Boost productivity and quality, resulting in high efficiency and cost reduction.

### ELECTRIC SCREWDRIVER TENSOR SL



A Low torque tool for small screw applications in the assembly of safety-critical applications. Compact screwdriver ergonomics with traceability and error-proofing capability.

### MICROTORQUE FIXTURED SCREWDRIVER

The most advanced and intelligent tightening solution for any low torque application. The handheld screwdrivers are extremely ergonomic, very compact and full of functionalities. Boost productivity and quality, resulting in high efficiency and cost reduction.



### CONTROLLER POWER FOCUS 600



Provides power to the Tensor ES tools. Powerful and reliable controller that speeds up your tightening operations. The perfect choice for quality critical assembly and a great entry level product to electric tightening.

### LOW TORQUE QUALITY ASSURANCE



Quality assurance with Atlas Copco's advanced Torque wrenches. Check the torque level in already tightened screws or bolt to ensure quality of tightening.

### ELECTRIC SCREWDRIVER TENSOR SL

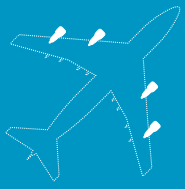


A Low torque tool for small screw applications in the assembly of safety-critical applications. Compact screwdriver ergonomics with traceability and error-proofing capability.

### SCREWDRIVER LUM12 SR



Simple, fast and reliable this pneumatic screwdriver combines the best engineering for great durability and productivity. This pistol grip tool is equipped with a spring-loaded shut-off clutch.



# CIVIL AEROSPACE ENGINE



*Empowering and impressive. Converting energy into useful mechanical motion, the engine is the one true innovation that moves things forward, upward. Safe, reliable and energy efficient*



## QUALITY ASSURANCE

With its modular design, your STWrench can meet your exact requirements. Mix and match components to suit all types of applications. Use it as a basic stand-alone system or integrate it with Atlas Copco hardware and software.

### ELECTRIC ANGLE NUTRUNNER TENSOR STR



The new generation high speed nutrunners with exceptional ergonomics in terms of balance, grip and low weight. Reduces tightening cycle times and increasing productivity. Soon to be launched in your region, for more information contact Atlas Copco

### ANGLE NUTRUNNER LTV39



A successful combination of two key performance factors – speed and accuracy. Consistently accurate, high-speed tightening is complemented by advanced ergonomic design, ensuring a high level of productivity. Easy to reverse and with low reaction force.

### MECHATRONIC WRENCH MWR-S, MWR-T, MWR-TA, FOCUS 60



Atlas Copco's new generation of mechatronic torque solution has taken the most productive wrench – the click wrench – and combined it with error proofing functionalities and traceability.

### CROWFOOT ANGLE NUTRUNNER TENSOR ETC



With exceptional ergonomics in terms of balance, grip and low weight, this angle nutrunner is perfect for operator comfort. With easier access to narrow spaces and outstanding spindle speeds.

### PROCESS MONITORING AND ANALYSIS SOFTWARE TOOLSNET

Boost productivity, improve quality and reduce service costs. ToolsNet offers a long line of benefits with its process monitoring and analysis software.



### CONTROLLER POWER FOCUS 4000 SERIES 120



Advanced control functions make process control and quality assurance easy. You gain an error-proofed assembly through intuitive monitoring and control of tightening operations. The Power Focus 4000 range controls tools from the Tensor DS, ST, STB, STR and ETX families.

### QUALITY ASSURANCE TOOL ST WRENCH



Build your ST Wrench to match your applications. The ST Wrench offers full traceability for the entire tightening operation, including torque control, angle control and yield control.

### SYNATEC

Comprehensive Software Solutions for smart Assembly Management and Error Proofing. Starting with station based worker guidance additional modules for quality improvement in the assembly stations such as operator identification, tightening process, part verification, pick to light and all kind of measurements can be added.





# **CIVIL AEROSPACE** **STABILIZER**



*We all need some direction. Vertical or horizontal tasks – regardless, being flexible and agile is what moves you forward. Set a goal and add balance and stability to get you there*



## **FRANGIBLE COLLAR ASSEMBLY**

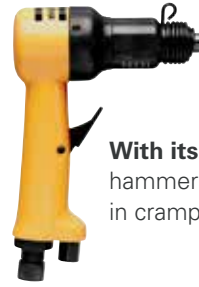
Drilling, grinding, riveting and bucking. Tasks that aren't made easier in cramped spaces. Our Frangible collar assembly tools offer a range of reliable quality tools. Compact and with great ergonomics.

#### ANGLE NUTRUNNER LTV19



**This small and lightweight** pneumatic angle screwdriver tightens screws up to 15 Nm. Perfect for cramped spaces. The spring-operated shut-off clutch ensures the final torque at the right level – time after time.

#### COMPACT RIVETING HAMMER RRN 11



**With its compact design** the RRN riveting hammer is designed to offer high accessibility in cramped spaces with the needed power.

#### VIBRATION DAMPED RIVETING HAMMER RRH

**Minimize operators exposure to** vibration while maintaining high tool performance. With Atlas Copco's RRH riveting hammer, vibration is highly damped to provide the best in class ergonomics. This means operators can work longer with a powerful tool.



#### SCREWDRIVER LUM 12



**Simple, fast and reliable** this pneumatic screwdriver combines the best engineering for great durability and productivity. This pistol grip tool is equipped with a spring-loaded shut-off clutch.

#### VIBRATION-DAMPED BUCKING BAR RBB

**A perfect partner for** the RRH riveting hammer. Vibration damped and flexible it can be fitted with several different small or interchangeable dolly configurations. Vibration level on the bucking bar side is high and a major part of vibration is damped in our bucking bars.



#### FRANGIBLE COLLAR ASSEMBLY TOOLS



**The Frangible collar assembly** tools are a smart choice when working with aerospace fastener tightenings like frangible collars. Made from Atlas Copco's drive motor with a special front HEAD, they are perfect for cramped spaces and limited access areas.

#### MODULAR DRILLING LBD

**This flexible drilling solution** offers a wide variety of drill heads with an optimal combination for all your drilling needs. All of our angle head gears in the BHM-series have a freewheel for easy engage of the drill head into the motor unit. Available in pistol and straight model. One motor can be used with different drill heads to meet your needs.





# GOVERNMENTAL

*This fascinating part of the business is all about stability, security and maintaining balance. On rocky roads, vicious seas, gale-forces and even in outer space. There is something quintessential about staying safe. Finding a constant.*

RES





# GOVERNMENTAL AIRCRAFT



➤ *Emergencies are never welcome. Crucial challenges and unreliable conditions – some jobs really just need to be done. Getting from point a to b, with swift, safe and effective assistance. Ruling out the element of surprise*



## **HIGH QUALITY TIGHTENING – WITH FULL FREEDOM**

This battery pistol grip nut runner offers accessibility and mobility thanks to its speed and low weight. For full joint traceability and accurate torque monitoring – partner it with a Power Focus controller.



#### ANGLE FLUSH SOCKET NUTRUNNER LTV29 FS



**LTV29 is perfect for** when standard angle heads are too high. Both LTV and Tensor ST angle nutrunners can be equipped with this flush socket type angle head, further reducing size/height and allowing access to applications with difficult access.

#### SUCTION KIT FOR MATERIAL REMOVAL TOOLS



**Protect your operators while** drilling grinding and sanding on composite materials. Use our suction kits on our tools for a beneficial improvement on your working environment.

#### POSITIVE FEED DRILL PFD1500



**With the capability to** drill through thick stacks and in large diameters. All the torque and trust you need for hole-making in final assembly.

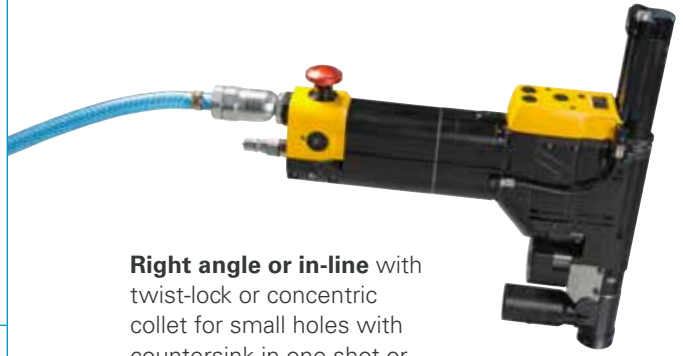
#### PISTOL GRIP NUTRUNNER TENSOR STB



**Cordless, fast and light** it offers accessibility and mobility. Partner it with a Power Focus controller for accurate torque monitoring and full joint traceability.



#### POSITIVE FEED DRILL PFD1100



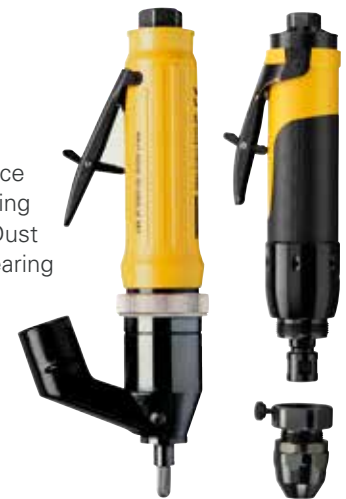
**Right angle or in-line** with twist-lock or concentric collet for small holes with countersink in one-shot or larger holes in all materials. This is the tool for all your jobs. Just make it how you want it.

#### PISTOL GRIP TAPPER LGB



**With advanced ergonomic handle** design and a lubrication-free motor this tool for precision tapping application is safer and more efficient. High productivity with automatic reversing function and double speed when you withdraw the machine. A quick change system and low noise level.

#### ROUTER LSK



**A high power router** for pattern fixture cutting of composite in the aerospace industry as well as trimming of composite materials. Dust extraction and support bearing integrated into one unit.

#### RANDOM ORBITAL SANDER LST

**Equipped with an advanced** double counter-weight system the tools in the LST-series have minimized vibrations with great ergonomics due to long trigger times. The housing allows both a straight and a cross-over grip. Also available in self suction version.





# GOVERNMENTAL HELICOPTER



➤ *Conquering complicated conditions and working untiring in areas where time and capacity is an issue. Compact and reliable – they persistently keep doing the job where others cannot reach or endure*



## **DRILLING IN CRAMPED SPACES**

Powerful, modular and reliable, designed to get the job done with excellent power to weight ratio and ergonomics. Atlas Copco's agile range of angle drills are perfect for access to limited spaces.

#### MODULAR DRILLS LBP16M



**Modularity, Reliability and flexibility** – A completely interchangeable motor unit with different heads. Low run out, excellent power to weight ratio and ergonomics

#### SCREWDRIVER LUM 22

**Simple, fast and reliable** this pneumatic screwdriver combines the best engineering for great durability and productivity. This straight tool with a push start, is equipped with a spring-operated shut-off clutch.



#### RIVETING SYSTEM RRH + BUCKING BARS



**Working together as a system**, the unavoidable vibrations are air damped for the lowest recoil available. The ultimate in comfort and safety is the unique combination of RRH riveting hammer and RBB bucking bar. Protect the hands of your riveter and buckler.

#### MICRO STOP DRILL LBS 26



**With a lubrication-free motor** and high accuracy, you get consistent reliability and performance. The ergonomic handle design makes the job easier, safer and more efficient – regardless if you are drilling, reaming or countersinking.

#### ANGLE NUTRUNNER LTV 009



**Excellent for cramped areas**, this accurate tightening tool offers advanced ergonomic design for productivity and efficiency. A small and light shut off tool, shutting off at torque via clutch. Also available in low speed models.

#### DIE GRINDER LSF 12

**Small and comfortable**, these die grinders are built with up to 360W air motor with a speed governor to ensure optimal process speed and increased productivity together with a well balanced Ericson collet. The safety lever has a feathering characteristics for better speed control.



#### DIE GRINDER LSF19



**Equipped with a powerful 500 W** air motor and speed governor for optimal process speed and a lubrication free motor (except the 46 000 rpm version), to avoid contamination of the material. Silencer for noise reduction and scatter dampening to avoid vibration related injuries for the operator. Safety lever with feathering characteristics for better speed control.

#### MECHATRONIC SYSTEM MWR-S, MWR-T, MWR-TA, FOCUS 60



**Atlas Copco's new generation** of mechatronic torque solution has taken the most productive torque wrench – the click wrench – and combined it with error proofing functionalities and traceability.



# GOVERNMENTAL SPACE



*Pushing all boundaries and staying in pole position – contributing with lightweight and stable solutions. Advanced technology and an innovative state of mind has made sure the sky is no longer the limit*



## **TOTAL ASSEMBLY PROCESS CONTROL**

Test your machines capability without interfering with production. The joint simulator bench offers maximum tool evaluation of anything from battery tools to torque wrenches. Quick and easy under real shop floor conditions.

#### CONTROLLER POWER FOCUS 600

**Provides power to the** Tensor ES tools. Powerful and reliable controller that speeds up your tightening operations. The perfect choice for quality critical assembly and a great entry level product to electric tightening.



#### QUALITY ASSURANCE TOOL ST WRENCH

**Build your ST Wrench** to match your applications and assure the quality in joints. The ST Wrench offers full traceability for the entire tightening operation, including torque control, angle control and yield control.



#### DATA ANALYZER STA 6000

**Better and faster quality** checks. Reduced weight and compact design makes the STa 6000 easy to carry along the line. Checking tools in the Tool Crib and on the line and checking tightened joints means quality guaranteed.



#### ANGLE DIE GRINDER LSV 12

**Small and comfortable and** built with up to 290W air motor, for maximum control in cramped spaces. Delivered with speed governor, to ensure optimal process speed and increased productivity, and a well balanced Erickson collet. To be used with carbide burs and mounted points. The angle head has a special leak free design, to prevent the tool from running dry on grease. The safety lever has a feathering characteristics for better speed control.



#### DIE GRINDER LSF19

**Equipped with a powerful 500 W** air motor and speed governor for optimal process speed and a lubrication free motor (except the 46 000 rpm version), to avoid contamination of the material. Silencer for noise reduction and scatter dampening to avoid vibration related injuries for the operator. Safety lever with feathering characteristics for better speed control.



#### BATTERY PISTOL GRIP NUTRUNNER TENSOR STB

**Cordless, fast and light** it offers accessibility and mobility. Partner it with a Power Focus controller for accurate torque monitoring and full joint traceability.



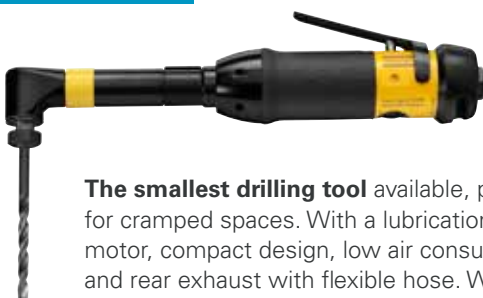
#### COMPACT RIVETING HAMMER RRN 11

**With its compact design** the RRN riveting hammer is designed to offer high accessibility in cramped spaces with the needed power.



#### HANDHELD DRILL LBV16

**The smallest drilling tool** available, perfect for cramped spaces. With a lubrication-free motor, compact design, low air consumption and rear exhaust with flexible hose. With the advanced ergonomic design and good power to weight ratio.



#### JOINT SIMULATOR BENCH BLM BENCH

**Maximum tool evaluation** of anything from battery tools to torque wrenches. Hydraulic brakes simulating the behaviour of real joints. Machine capability is tested quickly and easily under real shop floor conditions without interfering with production.





# ***BUSINESS JETS***

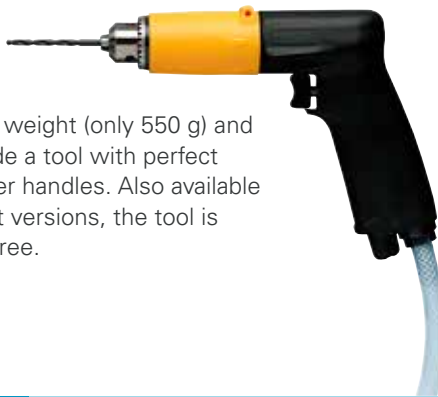
*Reliable and powerful and part of an impressive fleet. Convenient and easy to access, making a difference in profit as well as quality. Looking good is not everything, but it does help.*



## SIMPLE AND ERGONOMIC TIGHTENING

Our pneumatic tightening tools offer accuracy and advanced ergonomics for productivity and efficiency. Small and light, with a slim designed angle head making it perfect for cramped spaces.

### HANDHELD DRILL LBB16



With **small size, low** weight (only 550 g) and high power, we provide a tool with perfect ergonomics and rubber handles. Also available in angular and straight versions, the tool is quiet and lubrication free.

### STRAIGHT HANDHELD DRILL LBB16S



With **small size, low** weight (only 600 g) and high power, we provide a tool with perfect ergonomics and rubber handles. Also available in angular and straight versions, the tool is quiet and lubrication free.

### CIRCULAR CUTTER LCS



**Perfect when you need** a small circular saw, with plenty of power to cut up to 10 mm in depth. The compact size gives it superb accessibility.

### FRANGIBLE COLLAR ASSEMBLY TOOLS



**The Frangible collar assembly** tools are a smart choice when working with aerospace fastener tightenings like frangible collars. Made from Atlas Copco's drive motor with a special front HEAD, they are perfect for cramped spaces and limited access areas.

### HANDHELD DRILL LBV16



**The smallest drilling tool** available, perfect for cramped spaces. With a lubrication-free motor, compact design, low air consumption and rear exhaust with flexible hose. With the advanced ergonomic design and good power to weight ratio.

### SLIP CLUTCH SCREWDRIVER TWIST 22



**These tools are suitable** where the torque level may temporarily rise during the rundown phase, for instance when using sheet metal screws, wood screws or self tapping screws. A slip clutch applies a pulsating force when the torque level is reached.



# MRO

*Sustainability at large and a dedicated attention to detail. In a combination of technical innovation, control and pure hard work, productivity is maintained and longevity secured*





## DRILLING FOR EVERY NEED

For really tough applications you need a reliable drill that can be adjusted to your every need. Make heavy drilling easier with agile and flexible tools offering high power to weight ratio and excellent ergonomics.

### ANGLE DIE GRINDER LSV



**Durable angle die grinder** for the cramped spaces. The robust angle head also has a special cooling flange to ensure a long life time of the tool. A powerful 460W air motor with a speed governor for optimal process speed and a speed range from 8000-20 000. The safety lever has a feathering characteristics for better speed control. Lubrication free motor, to avoid contamination of the material.

### MECHATRONIC WRENCH MWR-S, MWR-T, MWR-TA, FOCUS 60



**Atlas Copco's new generation** of mechatronic torque solution has taken the most productive wrench – the click wrench – and combined it with error proofing functionalities and traceability.

### VIBRATION DAMPED RIVETING HAMMER RRH



**Minimize operators exposure to vibration** while maintaining high tool performance. With Atlas Copco's RRH riveting hammer, vibration is highly damped to provide the best in class ergonomics. This means operators can work longer with a powerful tool.

### HAND-HELD DRILL LBB36



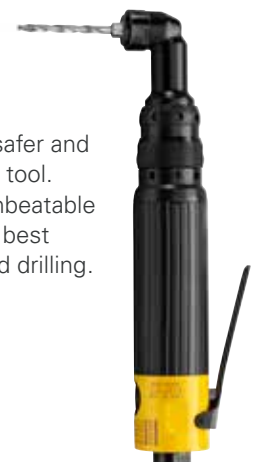
**For really tough applications** this drill is reliable and powerful. Perfect for heavy duty, the LBB36 is quiet with a lubrication free motor and an ergonomic rubber grip.

### SCREWDRIVER LUM 12 SR



**One of the smallest** and lightest pneumatic screwdrivers with a shut-off clutch. Designed to be comfortable to work with all day and to be durable in a tough production environment. Equipped with a spring-operated shut-off clutch. Simple, fast and reliable!

### ANGLE HAND-HELD DRILL LBV37



**Heavy duty drilling made easier, safer and more efficient** with this high quality tool. Advanced ergonomic design and unbeatable power to weight ratio will bring the best possible solution for tough handheld drilling.

# PRECISION CAST

*It all boils down to the essentials.  
Preserving the necessities, getting rid of  
the excessive. Tailoring to full potential  
and energy saving perfection. Achieving a  
state of completeness and flawlessness.*





## QUALITY SANDING WITH FULL ERGONOMICS

For removal that makes the world of a difference you need reliable tools with durability. For the rough jobs as well as the fine detailed ones. We have the tools that excel even in cramped spaces.

### DIE GRINDER LSF18/28/38

A durable partner to rely on in those really tough applications. Straight model, ergonomically designed for operator comfort and equipped with a speed governor for optimum process speed. Vibration dampened and have excellent ergonomics for those long trigger times.



### ANGLE DIE GRINDER LSV 12/19

Small and comfortable, these angle die grinders are built with up to 500 W for maximum control in cramped spaces. All models are delivered with speed governor and a well balanced Erickson collet. To be used with carbide burrs and mounted points.



### ENGRAVING PEN



This engraving pen has the capability to mark almost any surface and material, including glass, stone and metal. The tool is delivered with a 1.8 m long 3.2 mm PVC hose.

### DIE GRINDER LSF07



Perfect for high speed precision grinding and polishing. Accurate and equipped with 3 mm collet or 1/8 inch.

### AIR SAW C1050



With a geared mechanism, the C1050 has a constant feed to the blade – meaning no interruptions. With 10 500 strokes per minute and 5 mm stroke for precise cutting.

### BELTSANDER G2410



Cleaning welds or rust removal in cramped spaces demands a versatile tool. The multifaceted belt sander G2410 has exchangeable support arms, so you can change the dimension of the abrasive used. It has a quick belt arm direction settings with a 90 degrees swiveling arm and a quick lock to make the belt changes as fast as possible.

# **SPECIAL SOLUTION** **PRODUCT BY PARTNERSHIP**

## **SPECIAL DRILLING SOLUTIONS**

### **CONTROLLED-FEED HAND HELD DRILLS**

Perfect for when more precise drilling with a hand held drill is required, mainly to avoid delimitation on exit side when drilling in composite materials. The drill motor is equipped with a hydraulic brake to adjust and control the feed speed.



### **SEMI-AUTOMATIC CONTROLLED-FEED HAND DRILLS**

Minimize the operator dependency and get the constant feed drilling with this Semi-automatic hand held drill with a fixture. The drill motor is equipped with a hydraulic brake and a pneumatic cylinder.



### **ADU FOR CRAMPED AREA**

It is all about the accessibility and getting the job done when there is a problem for the regular advanced drilling units (ADU). The PFD16 has a small angle head and gears that will access limited and cramped areas.



### **C-CLAMP**

The C-clamp works perfect for fixture-free drilling. When back-plate support is required for drilling to get that high quality hole, this is what to rely on.



## ***SPECIAL ASSEMBLY SOLUTIONS***



### ***OFFSET ASSEMBLY TOOLS***

When accuracy of tightening is must, the best choice is this customized front part for special fasteners in aerospace. A combination of an Atlas Copco motor and durable front heads.



### ***TEMPORARY FASTENER***

Also known as the Speed-runner – A special tool for tightening or loosening the temporary fasteners. Run with Atlas Copco motors with special front heads. Battery or pneumatic – that's your call.



### ***INTERCHANGEABLE HI-LOK ASSEMBLY TOOLS***

Perfect for the MRO sector where different types of HI-LOK fasteners are working in each aircraft. This solution enables different HI-LOK front parts to work smoothly with the motor drive.



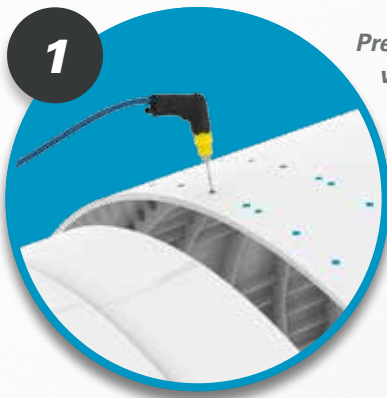
### ***HI-LOK ASSEMBLY TOOLS***

An ergonomic solution with a 20 degree front angle head and an Atlas Copco motor drive. Perfect for frangible collar fasteners where access is limited.



# AEROSPACE ASSEMBLY PROCESS

*With the big picture in mind, the details are given careful attention. Because when all is assembled, every little part and every step of the process counts.*



**1**

*Pre-drill and ream holes manually, with precision, to prepare for later steps in the assembly process.*



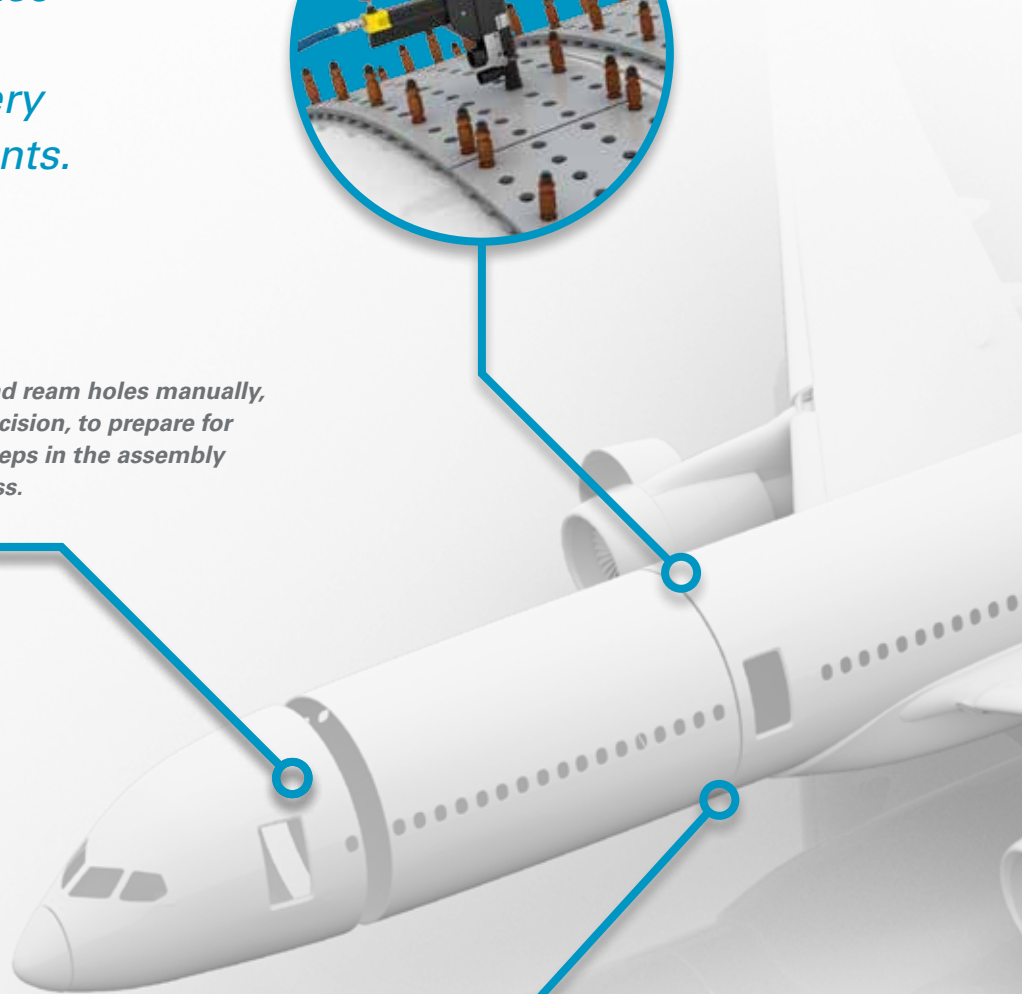
**3**

*Drill the final holes according to a specific pattern with a handheld tool, ADU or via automated drilling.*

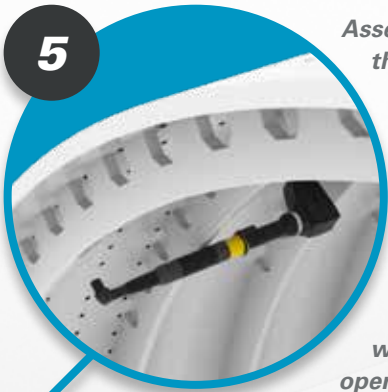


**2**

*Assemble temporary fasteners that either puts two parts together or fixtures a jig.*

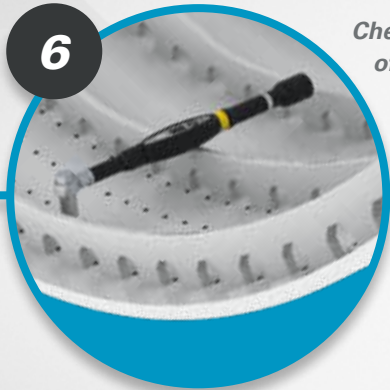


**5**



*Assemble the parts, putting the product together for example via solid rivet or blind rivet, frangible collar or screw/nut. Our tightening methods include manual and power tool as well as automated assembly with different levels of operating dependencies.*

**6**



*Check the quality of assembly.*

**4**



*Check the quality of the drilled hole with a bore gauge.*

# ATLAS COPCO SERVICE

*From a wide range of service products to tailor made solutions. Consistently high-quality service and support, locally. For us, service is a global commitment.*

**Today's changing environment** is constantly increasing the pressure on the performance of companies within the Aerospace Industry. Consequently, operational excellence at its lowest cost has never been as important as today. Atlas Copco has been a strategic partner for many aerospace companies for more than 60 years. We

have gathered experience in how to best support our customers with highest availability, accuracy and the longest life time of their equipment. Furthermore, we are enabling our customers to focus on their core business while knowing we support them to secure highest quality of their products at the highest level of cost efficiency.

## YOUR BENEFITS

- ◆ Fast and high quality repairs.
- ◆ A fixed repair, calibration and preventive maintenance budget.
- ◆ Identification of cost drivers related to tool failures.
- ◆ Optimized life time and performance of your tool.
- ◆ Overview of savings and efficiency improvements in you production through KPI reports.
- ◆ Safe and efficient installation of your new equipment and/or moving your old one.
- ◆ Safe and effective support when building new plants.
- ◆ Making sure your new equipment is up and running with highest quality, as fast as possible.
- ◆ Cost savings due to increased efficiency and quality of your production.
- ◆ Decreased warranty costs as a result of fewer call backs.
- ◆ Making sure your employees work in the most ergonomic and efficient way.

## OUR SERVICE PRODUCTS

|   |  |
|---|--|
|    | Fixed price repair, calibration and preventive maintenance on Atlas Copco tools, other companies' tools non tool equipment |
|   | Full coverage contract covering DCTools  |
|  | On-site contract – Tools Management Center   |
|  | EasyStart and installation packages  |
|  | Friction and Joint analysis  |
|  | Production Optimization  |
|  | Software management  |
|  | Training and consulting  |



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Regardless of which model you choose, you'll get a product with superior ergonomics and productivity.

- Quiet – Very low noise level.
- Comfortable grip – For high precision.
- Two-hand grip available – Gives even greater flexibility.
- Lubrication-free – For clean working environment and operator comfort.



| Model   | Free speed<br>r/min | Chuck cap<br>mm | Weight with<br>chuck |     | Air<br>consumption<br>at free speed |      | Hose size |     | Air<br>inlet<br>thread<br>BSP | Power |      | Stall<br>torque<br>Nm | With chuck<br>Ordering No. | Without chuck<br>Ordering No. <sup>c</sup> |
|---|---------------------|-----------------|----------------------|-----|-------------------------------------|------|-----------|-----|-------------------------------|-------|------|-----------------------|----------------------------|--|
|   |                     |                 | kg                   | lb  | l/s                                 | cfm  | mm        | in  |                               | W     | hp   |                       |                            |  |
| <b>Non-reversible drills with air supply through handle</b> |                     |                 |                      |     |                                     |      |           |     |                               |       |      |                       |                            |  |
| LBB16 EP-003 <sup>b</sup>                                   | 300                 | 10              | 0.7                  | 1.5 | 8.0                                 | 17.0 | 6.3       | 1/4 | 1/4                           | 290   | 0.4  | -                     | 8421 0108 01               | 8421 0108 02                               |
| LBB16 EP-005 <sup>b</sup>                                   | 500                 | 10              | 0.7                  | 1.5 | 8.0                                 | 17.0 | 6.3       | 1/4 | 1/4                           | 290   | 0.4  | 21.6                  | 8421 0108 06               | 8421 0108 07                               |
| LBB16 EP-010  | 1000                | 10              | 0.7                  | 1.5 | 8.0                                 | 17.0 | 6.3       | 1/4 | 1/4                           | 290   | 0.4  | 7.8                   | 8421 0108 10               | 8421 0108 11                               |
| LBB16 EP-024 <sup>a</sup>                                   | 2400                | 6.5             | 0.6                  | 1.2 | 8.0                                 | 17.0 | 6.3       | 1/4 | 1/4                           | 290   | 0.4  | 4.2                   | 8421 0108 20               | 8421 0108 21                               |
| LBB16 EP-033 <sup>a</sup>                                   | 3300                | 6.5             | 0.6                  | 1.2 | 8.0                                 | 17.0 | 6.3       | 1/4 | 1/4                           | 290   | 0.4  | 3.4                   | 8421 0108 30               | 8421 0108 31                               |
| LBB16 EP-045 <sup>a</sup>                                   | 4500                | 6.5             | 0.6                  | 1.2 | 8.0                                 | 17.0 | 6.3       | 1/4 | 1/4                           | 290   | 0.4  | 2.0                   | 8421 0108 40               | 8421 0108 41                               |
| LBB16 EP-060 <sup>a</sup>                                   | 6000                | 6.5             | 0.6                  | 1.2 | 8.0                                 | 17.0 | 6.3       | 1/4 | 1/4                           | 290   | 0.4  | 1.7                   | 8421 0108 50               | 8421 0108 51                               |
| LBB16 EP-200 <sup>a</sup>                                   | 20000               | 6.5             | 0.6                  | 1.2 | 8.0                                 | 17.0 | 6.3       | 1/4 | 1/4                           | 290   | 0.4  | 0.5                   | 8421 0108 60               | -  |
| LBB16 EPX-005 <sup>b</sup>                                  | 500                 | 13              | 0.7                  | 1.5 | 9.5                                 | 20.0 | 6.3       | 1/4 | 1/4                           | 340   | 0.45 | 25.2                  | 8421 0108 08               | 8421 0108 09                               |
| LBB16 EPX-010 <sup>b</sup>                                  | 1000                | 10              | 0.7                  | 1.5 | 9.5                                 | 20   | 6.3       | 1/4 | 1/4                           | 340   | 0.45 | 12.3                  | 8421 0108 12               | 8421 0108 03                               |
| LBB16 EPX-024 <sup>a</sup>                                  | 2400                | 6.5             | 0.6                  | 1.2 | 9.5                                 | 20.0 | 6.3       | 1/4 | 1/4                           | 340   | 0.45 | 4.9                   | 8421 0108 22               | 8421 0108 23                               |
| LBB16 EPX-033 <sup>a</sup>                                  | 3300                | 6.5             | 0.6                  | 1.2 | 9.5                                 | 20.0 | 6.3       | 1/4 | 1/4                           | 340   | 0.45 | 3.7                   | 8421 0108 32               | 8421 0108 33                               |
| LBB16 EPX-045 <sup>a</sup>                                  | 4500                | 6.5             | 0.6                  | 1.2 | 9.5                                 | 20.0 | 6.3       | 1/4 | 1/4                           | 340   | 0.45 | 3.0                   | 8421 0108 42               | 8421 0108 43                               |
| LBB16 EPX-060 <sup>a</sup>                                  | 6000                | 6.5             | 0.6                  | 1.2 | 9.5                                 | 20.0 | 6.3       | 1/4 | 1/4                           | 340   | 0.45 | 2.3                   | 8421 0108 52               | 8421 0108 53                               |
| LBB16 EPX-200 <sup>a</sup>                                  | 20000               | 6.5             | 0.6                  | 1.2 | 9.5                                 | 20   | 6.3       | 1/4 | 1/4                           | 340   | 0.45 | 0.6                   | 8421 0108 82               | 8421 0108 63                               |
| LBB26 EPX-003 <sup>b</sup>                                  | 300                 | 13              | 0.82                 | 1.8 | 14.5                                | 31.8 | 10.0      | 3/8 | 1/4                           | 500   | 0.7  | 53.5                  | 8421 0500 00               | 8421 0500 01                               |
| LBB26 EPX-005 <sup>b</sup>                                  | 500                 | 13              | 0.82                 | 1.8 | 14.5                                | 31.8 | 10.0      | 3/8 | 1/4                           | 500   | 0.7  | 31.6                  | 8421 0500 02               | 8421 0500 03                               |
| LBB26 EPX-007 <sup>b</sup>                                  | 700                 | 13              | 0.82                 | 1.8 | 14.5                                | 31.8 | 10.0      | 3/8 | 1/4                           | 500   | 0.7  | 24.6                  | 8421 0500 04               | 8421 0500 05                               |
| LBB26 EPX-013 <sup>ab</sup>                                 | 1300                | 10              | 0.79                 | 1.7 | 14.5                                | 31.8 | 10.0      | 3/8 | 1/4                           | 500   | 0.7  | 14.7                  | 8421 0500 06               | 8421 0500 07                               |
| LBB26 EPX-019 <sup>a</sup>                                  | 1900                | 10              | 0.79                 | 1.7 | 14.5                                | 31.8 | 10.0      | 3/8 | 1/4                           | 500   | 0.7  | 9.9                   | 8421 0500 24               | 8421 0500 25                               |
| LBB26 EPX-026 <sup>a</sup>                                  | 2600                | 8               | 0.79                 | 1.7 | 14.5                                | 31.8 | 10.0      | 3/8 | 1/4                           | 500   | 0.7  | 7.7                   | 8421 0500 08               | 8421 0500 09                               |
| LBB26 EPX-033 <sup>a</sup>                                  | 3300                | 8               | 0.69                 | 1.5 | 14.5                                | 31.8 | 10.0      | 3/8 | 1/4                           | 500   | 0.7  | 5.7                   | 8421 0500 10               | 8421 0500 11                               |
| LBB26 EPX-045 <sup>a</sup>                                  | 4500                | 8               | 0.69                 | 1.5 | 14.5                                | 31.8 | 10.0      | 3/8 | 1/4                           | 500   | 0.7  | 4.1                   | 8421 0500 12               | 8421 0500 13                               |
| LBB26 EPX-060 <sup>a</sup>                                  | 6000                | 8               | 0.69                 | 1.5 | 14.5                                | 31.8 | 10.0      | 3/8 | 1/4                           | 500   | 0.7  | 3.3                   | 8421 0500 14               | 8421 0500 15                               |
| LBB26 EPX-200 <sup>a</sup>                                  | 22000               | 6.5             | 0.69                 | 1.5 | 14.5                                | 31.8 | 10.0      | 3/8 | 1/4                           | 500   | 0.7  | 0.8                   | 8421 0500 28               | 8421 0500 29                               |
| LBB36 H005 <sup>b</sup>                                     | 500                 | -               | 1.2                  | 3.3 | 16.5                                | 34.9 | 10        | 3/8 | 3/8                           | 700   | 0.9  | 43.8                  | -                          | 8421 0408 03                               |
| LBB36 H007 <sup>b</sup>                                     | 700                 | 13              | 1.6                  | 3.5 | 16.5                                | 34.9 | 10        | 3/8 | 3/8                           | 700   | 0.9  | 37.2                  | 8421 0408 07               | 8421 0408 05                               |
| LBB36 H013 <sup>a</sup>                                     | 1300                | 10              | 1.5                  | 3.3 | 16.5                                | 34.9 | 10.0      | 3/8 | 3/8                           | 700   | 0.9  | 19.5                  | 8421 0408 15               | 8421 0408 13                               |
| LBB36 H026 <sup>a</sup>                                     | 2600                | 10              | 1.2                  | 2.5 | 16.5                                | 34.9 | 10.0      | 3/8 | 3/8                           | 700   | 0.9  | 10.3                  | 8421 0408 33               | 8421 0408 31                               |
| LBB36 H033 <sup>a</sup>                                     | 3300                | 10              | 1.2                  | 2.5 | 16.5                                | 34.9 | 10.0      | 3/8 | 3/8                           | 700   | 0.9  | 8.6                   | 8421 0408 41               | 8421 0408 39                               |
| LBB36 H060 <sup>a</sup>                                     | 6000                | 6.5             | 1.2                  | 2.5 | 16.5                                | 34.9 | 10.0      | 3/8 | 3/8                           | 700   | 0.9  | 5.0                   | 8421 0408 49               | 8421 0408 47                               |
| LBB36 H200 <sup>a</sup>                                     | 20000               | 6.5             | 1.0                  | 2.2 | 16.5                                | 34.9 | 10.0      | 3/8 | 3/8                           | 700   | 0.9  | 1.3                   | 8421 0408 55               | 8421 0408 53                               |
| LBB37 H006  | 600                 | 13              | 1.2                  | 2.5 | 20.5                                | 44.0 | 10.0      | 3/8 | 3/8                           | 820   | 1.1  | 48.0                  | 8421 0608 06               | 8421 0608 14                               |
| LBB37 H015  | 1500                | 10              | 1.5                  | 3.3 | 20.5                                | 44.0 | 10.0      | 3/8 | 3/8                           | 820   | 1.1  | 22.5                  | 8421 0608 05               | 8421 0608 15                               |
| LBB37 H037  | 3700                | 10              | 1.2                  | 2.5 | 20.5                                | 44.0 | 10.0      | 3/8 | 3/8                           | 820   | 1.1  | 9.2                   | 8421 0608 13               | 8421 0608 16                               |
| LBB37 H065  | 6500                | 6.5             | 1.2                  | 2.5 | 20.5                                | 44.0 | 10.0      | 3/8 | 3/8                           | 820   | 1.1  | 5.0                   | 8421 0608 11               | 8421 0608 17                               |
| LBB37 H230  | 23000               | 6.5             | 1.0                  | 2.2 | 20.5                                | 44.0 | 10.0      | 3/8 | 3/8                           | 820   | 1.1  | 1.3                   | 8421 0608 03               | 8421 0608 18                               |
| LBB45 H004 <sup>b</sup>                                     | 400                 | 16              | 4.3                  | 9.3 | 10.0                                | 21.0 | 10.0      | 3/8 | 1/4                           | 700   | 0.9  | -                     | 8421 0501 16               | -  |
| LBB45 H006 <sup>b</sup>                                     | 600                 | 16              | 4.3                  | 9.3 | 10.0                                | 21.0 | 10.0      | 3/8 | 1/4                           | 700   | 0.9  | -                     | 8421 0501 24               | 8421 0501 40                               |
| LBB45 H017 <sup>b</sup>                                     | 1700                | 16              | 4.2                  | 9.3 | 10.0                                | 21.0 | 10.0      | 3/8 | 1/4                           | 700   | 0.9  | -                     | 8421 0501 32               | -  |
| <b>ATEX certified models</b>                                |                     |                 |                      |     |                                     |      |           |     |                               |       |      |                       |                            |  |
| LBB26 EPX005-ATEX   | 500                 | 13              | 0.82                 | 1.8 | 14.5                                | 31.8 | 10        | 3/8 | 1/4                           | 500   | 0.7  | -                     | 8421 0500 22               | -  |
| LBB26 EPX007-ATEX   | 700                 | 13              | 0.82                 | 1.8 | 14.5                                | 31.8 | 10        | 3/8 | 1/4                           | 500   | 0.7  | -                     | 8421 0500 21               | -  |
| LBB26 EPX013-ATEX   | 1300                | 10              | 0.79                 | 1.7 | 14.5                                | 31.8 | 10        | 3/8 | 1/4                           | 500   | 0.7  | -                     | 8421 0500 20               | -  |
| LBB26 EPX026-ATEX   | 2600                | 8               | 0.79                 | 1.7 | 14.5                                | 31.8 | 10        | 3/8 | 1/4                           | 500   | 0.7  | -                     | 8421 0500 19               | -  |

<sup>a</sup> Including chuck guard.

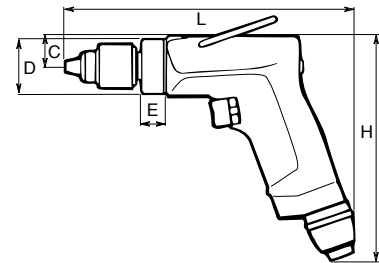
<sup>b</sup> Including support handle.

<sup>c</sup> Add "-U" to Model name

## Dimensions

### LBB EP/EPX/H

| Model            | L<br>mm | H<br>mm | C<br>mm | D<br>mm | E<br>mm |
|------------------|---------|---------|---------|---------|---------|
| LBB16 EP/EPX-200 | 177     | 131     | 16.5    | 31.4    | 13.8    |
| LBB16 EP/EPX-060 | 177     | 131     | 16.5    | 31.4    | 13.8    |
| LBB16 EP/EPX-045 | 177     | 131     | 16.5    | 31.4    | 13.8    |
| LBB16 EP/EPX-033 | 177     | 131     | 16.5    | 31.4    | 13.8    |
| LBB16 EP/EPX-024 | 177     | 131     | 16.5    | 31.4    | 13.8    |
| LBB16 EP/EPX-010 | 190     | 131     | 16.5    | 31.4    | 27.0    |
| LBB16 EP/EPX-005 | 190     | 131     | 16.5    | 31.4    | 27.0    |
| LBB16 EP-003     | 190     | 131     | 16.5    | 31.4    | 27.0    |
| LBB26 EPX-060    | 180     | 147     | 21      | 39      | -       |
| LBB26 EPX-045    | 180     | 147     | 21      | 39      | -       |
| LBB26 EPX-033    | 180     | 147     | 21      | 39      | -       |
| LBB26 EPX-026    | 180     | 147     | 21      | 39      | -       |
| LBB26 EPX-019    | 196     | 147     | 21      | 39      | -       |
| LBB26 EPX-013    | 196     | 147     | 21      | 39      | -       |
| LBB26 EPX-007    | 196     | 147     | 21      | 39      | -       |
| LBB26 EPX-005    | 196     | 147     | 21      | 39      | -       |
| LBB26 EPX-003    | 196     | 147     | 21      | 39      | -       |
| LBB36 H200       | 217     | 157     | 23      | 41.5    | 16.5    |
| LBB36 H060       | 217     | 157     | 23      | 41.5    | 16.5    |
| LBB36 H033       | 217     | 157     | 23      | 41.5    | 16.5    |
| LBB36 H026       | 217     | 157     | 23      | 41.5    | 16.5    |
| LBB36 H013       | 256     | 157     | 23      | 41.5    | 64.0    |
| LBB36 H007       | 256     | 157     | 23      | 41.5    | 64.0    |
| LBB36 H005       | 256     | 157     | 23      | 41.5    | 64.0    |
| LBB37 H230       | 217     | 157     | 23      | 41.5    | 16.5    |
| LBB37 H065       | 217     | 157     | 23      | 41.5    | 16.5    |
| LBB37 H037       | 217     | 157     | 23      | 41.5    | 16.5    |
| LBB37 H015       | 256     | 157     | 23      | 41.5    | 64.0    |
| LBB37 H006       | 256     | 157     | 23      | 41.5    | 64.0    |
| LBB45 H006       | 360     | 185     | 33      | 60      | 113     |
| LBB45 H017       | 360     | 185     | 33      | 60      | 113     |
| LBB45 H004       | 360     | 185     | 33      | 60      | 113     |



## Accessories Included

Chuck, chuck key, hose nipple.

LBB16 and -36/37 with suspension yoke and with chuck guard where possible.

LBB16 and -36/37 have a 3/8" -24 UNF spindle thread.

LBB36 H005 and LBB37 H006 have a 1/2" -20 UNF thread.

LBB45 has a JT3 taper mount.

## Optional Accessories

### KEY CHUCKS

| Mount     | Body diam<br>mm | Chuck cap.<br>mm | Ordering No.        |              |                    |
|-----------|-----------------|------------------|---------------------|--------------|--------------------|
|           |                 |                  | Chuck<br>(key incl) | Key only     | Key<br>designation |
| 1/2-20UNF | 43              | 2.0-13.0         | 4021 0289 01        | 4021 0465 00 | S2                 |
| 3/8-24UNF | 30              | 0.0- 6.5         | 4021 0283 00        | 4021 0293 00 | S1                 |
| 3/8-24UNF | 30              | 0.5- 8.0         | 4021 0495 00        | 4021 0293 00 | S1                 |
| 3/8-24UNF | 36              | 2.0-10.0         | 4021 0416 00        | 4021 0449 00 | S8                 |
| 3/8-24UNF | 46              | 2.0-13.0         | 4021 0289 00        | 4021 0465 00 | S2                 |
| JT3       | 59              | 3.0-16.0         | 4021 0423 00        | 4021 0301 00 | S3                 |



Key chuck

### QUICK CHUCKS

| Mount     | Chuck dia<br>mm | Chuck capacity<br>mm | Ordering No. |
|-----------|-----------------|----------------------|--------------|
| 3/8-24UNF | 34              | 0.0- 6.5             | 4021 0400 00 |
| 3/8-24UNF | 34              | 0.0- 8.0             | 4021 0401 00 |
| 3/8-24UNF | 36              | 0.0-10.0             | 4021 0402 00 |
| 3/8-24UNF | 36              | 2.0-13.0             | 4021 0403 00 |



Quick chuck

## Optional Accessories

### COLLET CHUCK AND COLLETS

| Designation | Capacity      |      | Ordering No. |
|-------------|---------------|------|--------------|
|             | mm            | in   |              |
| Collet      | 3             |      | 4150 0081 00 |
|             | 6             |      | 4150 0075 00 |
|             | 8             | 5/16 | 4150 0074 00 |
|             |               | 1/8  | 4150 0082 00 |
|             |               | 5/32 | 4150 0648 00 |
|             |               | 3/16 | 4150 0649 00 |
|             |               | 1/4  | 4150 0076 00 |
|             | Collet holder |      |              |
| Collet nut  |               |      | 4150 0760 00 |



Collet chuck and collets

### CHUCK GUARDS

| For model          | Max chuck dia mm | Ordering No. |
|--------------------|------------------|--------------|
| LBB16 <sup>a</sup> | 30               | 4110 1619 04 |
| LBB26              | 36               | 4110 1728 02 |
| LBB26              | 30               | 4110 1728 03 |
| LBB36 <sup>b</sup> | 36               | 4110 1415 00 |
| LBB37 <sup>b</sup> | 36               | 4110 1415 00 |



Chuck guard

<sup>a</sup> The guards do not fit 1000 r/min models, 500 r/min and 300 r/min models.

<sup>b</sup> The chuck guards do not fit the 500 r/min, 600 r/min or 700 r/min models.

### SUPPORT HANDLES

| For model | Ordering No. |
|-----------|--------------|
| LBB16     | 4110 1355 92 |
| LBB26     | 4110 1355 95 |
| LBB36/37  | 4110 1355 82 |
| LBB45     | 4110 1355 84 |



Support handle

### FLEX CONNECT

| For model | Ordering No. |
|-----------|--------------|
| LBB16     | 4110 1601 80 |

Key chuck



Flex connect

### SPOT SUCTION ATTACHMENT

| For model | Hose size in | Spot suction kit <sup>a</sup> Ordering No. | Hose kit Ordering No. |
|-----------|--------------|--|-----------------------|
| LBB16     | 1 1/4        | 4110 1715 80                               | 4112 1227 00          |
| LBB26     | 1 1/4        | 4110 1715 84                               | 4112 1227 00          |
| LBB36/37  | 1 1/4        | 4110 1716 80                               | 4112 1227 00          |

<sup>a</sup> Spare part, nose piece kit, Ordering No. 4110 1700 90.

Other standard sizes of front nozzle available.



Spot suction attachment

### OPTIONAL ACCESSORIES – LBB45

| Designation        | Ordering No. |
|--------------------|--------------|
| No. 2 Morse socket | 4130 1080 00 |

## Service Kits



|           |              |
|-----------|--------------|
| LBB16     | 4081 0271 90 |
| LBB26     | 4081 2028 90 |
| LGB/LBV34 | 4081 0035 90 |
| LBB36/37  | 4081 0194 90 |
| LBB45     | 4081 0139 90 |

Atlas Copco straight drills are primarily intended for vertical drilling operations and for drilling in cramped spaces.

- Quiet – Very low noise level.
- Very high power to weight ratio.
- Adjustable exhaust – The exhaust air is directed away from the operator.
- Lubrication-free – LBB16 drills are lubrication-free for clean working environment and operator comfort.



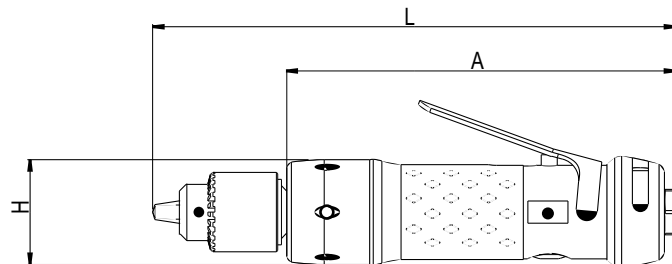
LBB16

| Model                           | Free speed <sup>a</sup><br>r/min | Chuck capacity<br>mm | Weight |     | Air consumption at free speed |     | Hose size |     | Air inlet thread<br>BSP | Power |      | With chuck<br>Ordering No. | Without chuck |              |
|---------------------------------|----------------------------------|----------------------|--------|-----|-------------------------------|-----|-----------|-----|-------------------------|-------|------|----------------------------|---------------|--------------|
|                                 |                                  |                      | kg     | lb  | l/s                           | cfm | mm        | in  |                         | W     | hp   |                            | Model         | Ordering No. |
| <b>Drills with rear exhaust</b> |                                  |                      |        |     |                               |     |           |     |                         |       |      |                            |               |              |
| LBB16 S260                      | 26000                            | 6.5                  | 0.55   | 1.1 | 8.0                           | 17  | 6.3       | 1/4 | 1/4                     | 350   | 0.47 | 8421 0210 00               | S260-U        | 8421 0210 10 |
| LBB16 S064                      | 6400                             | 6.5                  | 0.55   | 1.1 | 8.0                           | 17  | 6.3       | 1/4 | 1/4                     | 350   | 0.47 | 8421 0210 01               | S064-U        | 8421 0210 11 |
| LBB16 S045                      | 4500                             | 6.5                  | 0.55   | 1.1 | 8.0                           | 17  | 6.3       | 1/4 | 1/4                     | 350   | 0.47 | 8421 0210 02               | S045-U        | 8421 0210 12 |
| LBB16 S038                      | 3800                             | 6.5                  | 0.55   | 1.1 | 8.0                           | 17  | 6.3       | 1/4 | 1/4                     | 350   | 0.47 | 8421 0210 03               | S038-U        | 8421 0210 13 |
| LBB16 S029                      | 2900                             | 8                    | 0.60   | 1.2 | 8.0                           | 17  | 6.3       | 1/4 | 1/4                     | 350   | 0.47 | 8421 0210 04               | S029-U        | 8421 0210 14 |
| LBB16 S022                      | 2200                             | 10                   | 0.70   | 1.5 | 8.0                           | 17  | 6.3       | 1/4 | 1/4                     | 350   | 0.47 | 8421 0210 05               | S022-U        | 8421 0210 15 |
| LBB16 S012                      | 1200                             | 10                   | 0.70   | 1.5 | 8.0                           | 17  | 6.3       | 1/4 | 1/4                     | 350   | 0.47 | 8421 0210 06               | S012-U        | 8421 0210 16 |

<sup>a</sup> The free speed can be reduced to 50% of the maximum speed using the trim valve.

## Dimensions

| Model      | L   | H  | A   |
|------------|-----|----|-----|
| LBB16 S260 | 196 | 39 | 146 |
| LBB16 S064 | 196 | 39 | 146 |
| LBB16 S045 | 196 | 39 | 146 |
| LBB16 S038 | 196 | 39 | 146 |
| LBB16 S029 | 196 | 39 | 146 |
| LBB16 S022 | 219 | 39 | 159 |
| LBB16 S012 | 219 | 39 | 159 |



## Accessories Included

Chuck, chuck key  
Suspension yoke and chuck guard

## Optional Accessories

### SAFETY LEVER

| For model | Ordering No. |
|-----------|--------------|
| LBB16S    | 4110 1787 90 |



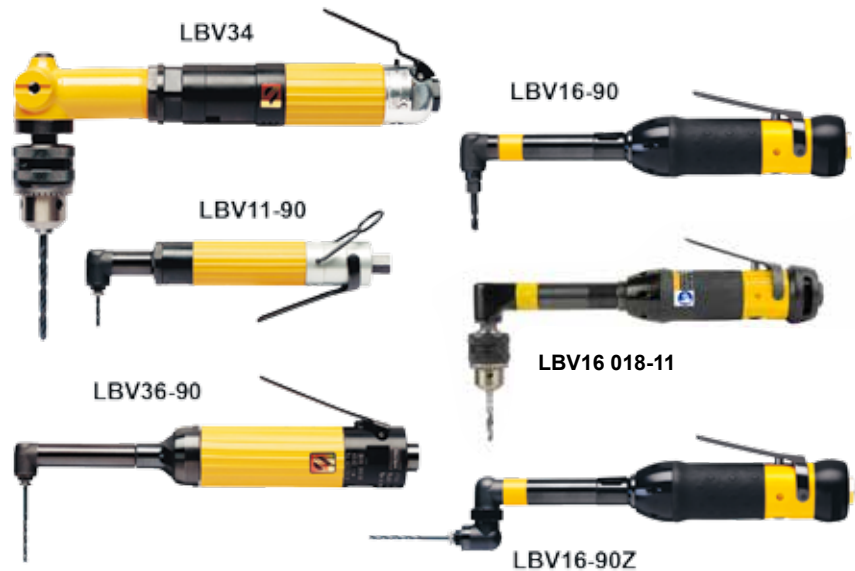
Safety lever

## Service Kits



LBB16 4081 0438 90

- Quiet – Very low noise level.
- Low air consumption – Good operating economy.
- Side exhaust – The air can be directed to suit the operator.
- Rear exhaust – The air is piped away through a pliant hose.
- Lubrication-free – For clean working environment and operator comfort.
- Collet chuck or threaded spindle.
- Multiple lever options.



| Model                                    | Free speed<br>r/min | Setting<br>range<br>rpm | Collet or<br>chuck<br>capacity<br>mm | Weight |     | Air consumption<br>at free speed |      | Hose<br>dimension |     | Air inlet<br>thread<br>BSP | Power |      | Ordering No. |
|--|---------------------|-------------------------|--------------------------------------|--------|-----|----------------------------------|------|-------------------|-----|----------------------------|-------|------|--------------|
|  |                     |                         |                                      | kg     | lb  | l/s                              | cfm  | mm                | in  |                            | W     | hp   |              |
| <b>30° angle head</b>                    |                     |                         |                                      |        |     |                                  |      |                   |     |                            |       |      |              |
| LBV11 S029-S30                           | 2900                | –                       | 5                                    | 0.5    | 1.1 | 4.0                              | 8.5  | 5.0               | 1/8 | 1/8                        | 110   | 0.16 | 8421 0108 70 |
| LBV16 032-30                             | 3200                | 1500-3200               | 5                                    | 0.5    | 1.1 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 05 |
| LBV16 032-S30                            | 3200                | 1500-3200               | 5                                    | 0.45   | 1.0 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 04 |
| LBV16 032-32                             | 3200                | 1500-3200               | °                                    | 0.5    | 1.1 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 07 |
| LBV16 032-S32                            | 3200                | 1500-3200               | °                                    | 0.45   | 1.0 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 06 |
| LBV16 045-30                             | 4500                | 3200-4500               | 5                                    | 0.5    | 1.1 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 71 |
| LBV36 S030-30°                           | 3000                | –                       | 5                                    | 1.0    | 2.2 | 17.0                             | 36.0 | 10.0              | 3/8 | 1/4                        | 510   | 0.73 | 8421 0414 70 |
| <b>45° angle head</b>                    |                     |                         |                                      |        |     |                                  |      |                   |     |                            |       |      |              |
| LBV16 032-45                             | 3200                | 1500-3200               | 5                                    | 0.5    | 1.1 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 59 |
| LBV16 032-46                             | 3200                | 1500-3200               | °                                    | 0.5    | 1.1 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 60 |
| <b>90° angle head</b>                    |                     |                         |                                      |        |     |                                  |      |                   |     |                            |       |      |              |
| LBV11 S029-S90                           | 2900                | –                       | 5                                    | 0.5    | 1.1 | 4.0                              | 8.5  | 5.0               | 1/8 | 1/8                        | 110   | 0.16 | 8421 0109 79 |
| LBV16 032-90                             | 3200                | 1500-3200               | 5                                    | 0.5    | 1.1 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 00 |
| LBV16 032-S90                            | 3200                | 1500-3200               | 5                                    | 0.45   | 1.0 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 01 |
| LBV16 032-92                             | 3200                | 1500-3200               | °                                    | 0.5    | 1.1 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 03 |
| LBV16 032-S92                            | 3200                | 1500-3200               | °                                    | 0.45   | 1.0 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 02 |
| LBV16 045-90                             | 4500                | 3200-4500               | 5                                    | 0.5    | 1.1 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 20 |
| LBV16 045-92                             | 4500                | 3200-4500               | °                                    | 0.5    | 1.1 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 21 |
| LBV16 055-90                             | 5500                | 4500-5500               | 5                                    | 0.5    | 1.1 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 23 |
| LBV16 055-S92                            | 5500                | 4500-5500               | °                                    | 0.45   | 1.0 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 58 |
| LBV36 S030-90°                           | 3000                | –                       | 5                                    | 1.0    | 2.2 | 17.0                             | 36.0 | 10.0              | 3/8 | 1/4                        | 510   | 0.73 | 8421 0414 60 |
| LBV36 S030-92°                           | 3000                | –                       | °                                    | 1.0    | 2.2 | 17.0                             | 36.0 | 10.0              | 3/8 | 1/4                        | 510   | 0.73 | 8421 0414 64 |
| LBV36 S045-90°                           | 4500                | –                       | 5                                    | 1.0    | 2.2 | 17.0                             | 36.0 | 10.0              | 3/8 | 1/4                        | 510   | 0.73 | 8421 0414 62 |
| <b>360° angle head</b>                   |                     |                         |                                      |        |     |                                  |      |                   |     |                            |       |      |              |
| LBV16 032-90Z                            | 3200                | 1500-3200               | 5                                    | 0.5    | 1.1 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 64 |
| LBV16 032-92Z                            | 3200                | 1500-3200               | °                                    | 0.5    | 1.1 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 68 |
| <b>90° angle head – large angle head</b> |                     |                         |                                      |        |     |                                  |      |                   |     |                            |       |      |              |
| LBV16 005-91                             | 500                 | 200-500                 | 6.6                                  | 0.6    | 1.2 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 11 |
| LBV16 005-93                             | 500                 | 200-500                 | °                                    | 0.6    | 1.2 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 12 |
| LBV16 010-91                             | 1000                | 500-1000                | 6.6                                  | 0.6    | 1.2 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 16 |
| LBV16 010-93                             | 1000                | 500-1000                | °                                    | 0.6    | 1.2 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 17 |
| LBV16 018-91                             | 1800                | 800-1800                | 6.6                                  | 0.55   | 1.2 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 18 |
| LBV16 018-93                             | 1800                | 800-1800                | °                                    | 0.55   | 1.2 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 19 |
| LBV16 032-91                             | 3200                | 1500-3200               | 6.6                                  | 0.55   | 1.2 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 09 |
| LBV16 032-93                             | 3200                | 1500-3200               | °                                    | 0.55   | 1.2 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 10 |
| LBV16 032-S93                            | 3200                | 1500-3200               | °                                    | 0.45   | 1.2 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 39 |
| LBV16 045-91                             | 4500                | 3200-4500               | 6.6                                  | 0.55   | 1.2 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 38 |
| LBV36 S030-91°                           | 3000                | –                       | 6.6                                  | 1.0    | 2.2 | 17.0                             | 36.0 | 10.0              | 3/8 | 1/4                        | 510   | 0.73 | 8421 0414 50 |
| LBV36 S060-91°                           | 6000                | –                       | 6.6                                  | 1.0    | 2.2 | 17.0                             | 36.0 | 10.0              | 3/8 | 1/4                        | 510   | 0.73 | 8421 0414 51 |
| LBV36 S030-93°                           | 3000                | –                       | °                                    | 1.0    | 2.2 | 17.0                             | 36.0 | 10.0              | 3/8 | 1/4                        | 510   | 0.73 | 8421 0414 52 |
| LBV36 S060-93°                           | 6000                | –                       | °                                    | 1.0    | 2.2 | 17.0                             | 36.0 | 10.0              | 3/8 | 1/4                        | 510   | 0.73 | 8421 0414 53 |
| <b>90° angle head – Key chuck models</b> |                     |                         |                                      |        |     |                                  |      |                   |     |                            |       |      |              |
| LBV16 018-11                             | 1800                | 800-1800                | 8.0 <sup>a</sup>                     | 0.8    | 1.7 | 8.7                              | 18.4 | 6.3               | 1/4 | 1/4                        | 300   | 0.4  | 8421 0110 22 |
| LBV34 S005 <sup>b</sup>                  | 500                 | –                       | 13 <sup>a</sup>                      | 2.1    | 4.6 | 7.5                              | 15.9 | 10.0              | 3/8 | 1/4                        | 400   | 0.6  | 8421 0309 04 |
| LBV34 S010 <sup>b</sup>                  | 1000                | –                       | 10 <sup>a</sup>                      | 2.0    | 4.4 | 7.5                              | 15.9 | 10.0              | 3/8 | 1/4                        | 400   | 0.6  | 8421 0309 12 |
| LBV34 S040 <sup>b</sup>                  | 4000                | –                       | 6.5 <sup>a</sup>                     | 1.5    | 3.3 | 7.5                              | 15.9 | 10.0              | 3/8 | 1/4                        | 400   | 0.6  | 8421 0309 46 |



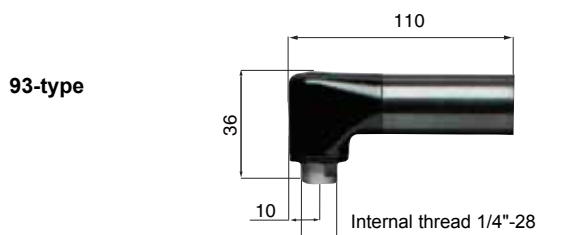
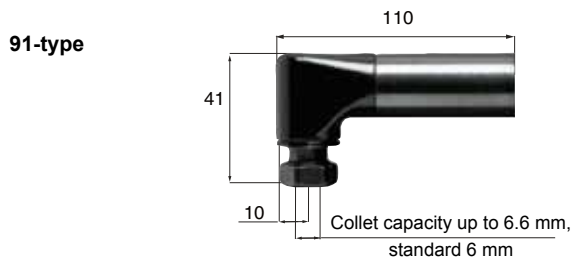
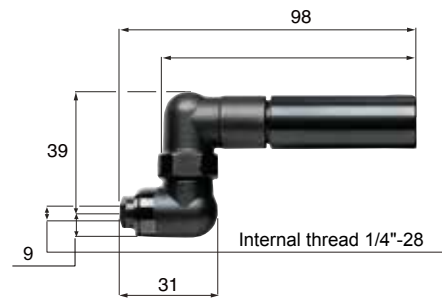
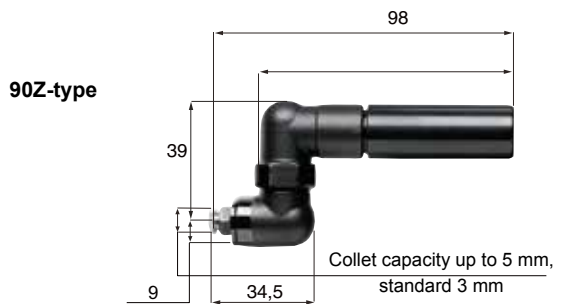
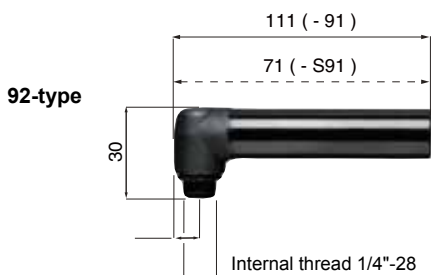
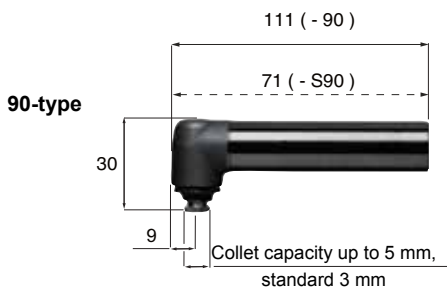
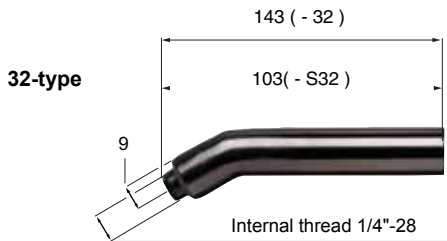
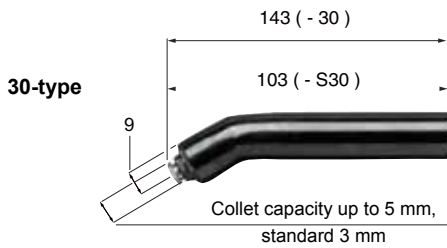


LBV37

| Model                              | Free speed<br>r/min | Setting<br>range<br>rpm | Collet or<br>chuck<br>capacity<br>mm | Weight |     | Air consumption<br>at free speed |     | Hose<br>dimension |     | Air inlet<br>thread<br>BSP | Power |     | Ordering No. |
|------------------------------------|---------------------|-------------------------|--------------------------------------|--------|-----|----------------------------------|-----|-------------------|-----|----------------------------|-------|-----|--------------|
|                                    |                     |                         |                                      | kg     | lb  | l/s                              | cfm | mm                | in  |                            | W     | hp  |              |
| <b>90° angle head – heavy-duty</b> |                     |                         |                                      |        |     |                                  |     |                   |     |                            |       |     |              |
| LBV37 030                          | 3000                | –                       | <sup>c</sup>                         | 1.1    | 2.4 | 22                               | 46  | 10.0              | 3/8 | 3/8                        | 820   | 1.1 | 8421 0414 54 |
| LBV37 HD030                        | 3000                | –                       | <sup>d</sup>                         | 1.1    | 2.4 | 22                               | 46  | 10.0              | 3/8 | 3/8                        | 820   | 1.1 | 8421 0414 56 |

<sup>a</sup> Spindle thread, male 3/8"-24 UNF. <sup>b</sup> Side exhaust. <sup>c</sup> Internal thread 1/4"-28. <sup>d</sup> Internal thread 5/16". <sup>e</sup> Short lever as standard.

## Dimensions

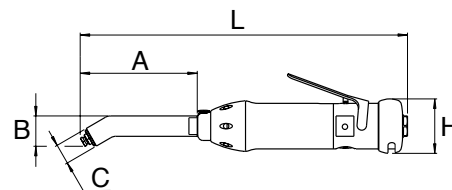


## Dimensions

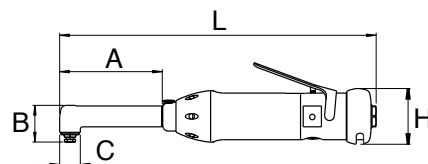
### DRILLING CAPACITY

| Model          | Angle head mm |     |    |     |    |
|----------------|---------------|-----|----|-----|----|
|                | A             | B   | C  | L   | H  |
| LBV11 S027-S30 | 59            | 25  | 18 | 224 | 30 |
| LBV11 S025-S90 | 44            | 30  | 18 | 204 | 30 |
| LBV16 032-S30  | 103           | 25  | 17 | 241 | 42 |
| LBV16 032-S30  | 143           | 25  | 17 | 281 | 42 |
| LBV16 032-S32  | 103           | 25  | 17 | 241 | 42 |
| LBV16 032-S32  | 143           | 25  | 17 | 281 | 42 |
| LBV16 032-90   | 111           | 30  | 17 | 248 | 42 |
| LBV16 032-S90  | 71            | 30  | 17 | 209 | 42 |
| LBV16 032-S92  | 71            | 30  | 17 | 209 | 42 |
| LBV16 032-S92  | 111           | 30  | 17 | 249 | 42 |
| LBV16 032-90Z  | 145           | 48  | 17 | 283 | 42 |
| LBV16 032-91   | 110           | 39  | 20 | 248 | 42 |
| LBV16 032-93   | 110           | 36  | 20 | 248 | 42 |
| LBV16 005-91   | 110           | 39  | 20 | 248 | 42 |
| LBV16 005-93   | 110           | 36  | 20 | 248 | 42 |
| LBV16 010-91   | 110           | 39  | 20 | 248 | 42 |
| LBV16 010-93   | 110           | 36  | 20 | 248 | 42 |
| LBV16 018-91   | 110           | 39  | 20 | 248 | 42 |
| LBV16 018-93   | 110           | 36  | 20 | 248 | 42 |
| LBV34 S040     | 92            | 97  | 20 | 255 | 43 |
| LBV34 S010     | 92            | 114 | 20 | 290 | 43 |
| LBV34 S005     | 92            | 120 | 20 | 290 | 43 |
| LBV36 S030-91  | 92            | 41  | 20 | 252 | 43 |
| LBV36 S060-91  | 92            | 41  | 20 | 252 | 43 |
| LBV36 S030-93  | 92            | 36  | 20 | 252 | 43 |
| LBV36 S060-93  | 92            | 36  | 20 | 252 | 43 |
| LBV36 S030-30  | 122           | 26  | 18 | 281 | 43 |
| LBV36 S045-30  | 122           | 26  | 18 | 281 | 43 |
| LBV36 S030-90  | 112           | 30  | 18 | 272 | 43 |
| LBV36 S045-90  | 112           | 30  | 18 | 272 | 43 |
| LBV36 S030-92  | 112           | 30  | 18 | 272 | 43 |
| LBV37 030      | 55            | 39  | 23 | 262 | 43 |
| LBV37 HD030    | 55            | 39  | 23 | 262 | 43 |

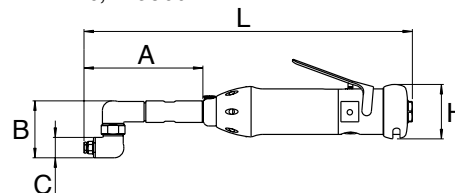
LBV11, -16, -3630°



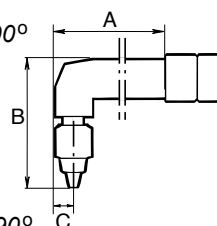
LBV11, -16, -3690°



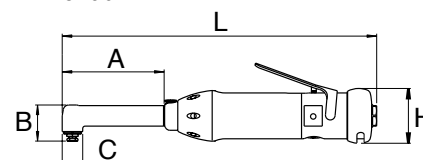
LBV16, -25360°



LBV3490°



LBV3790°



## Accessories Included

### KEY WRENCHES

- Collet or chuck with key
- 3 mm collet (5.0 collet capacity head)
- 6 mm collet (6.6 collet capacity head)

## Optional Accessories

### SAFETY LEVERS

| For model | Ordering No. |
|-----------|--------------|
| LBV16     | 4110 1787 90 |
| LBV36/37  | 4150 1594 97 |



Safety lever

## SHORT LEVERS

| For model | Ordering No. |
|-----------|--------------|
| LBV16     | 4210 2306 04 |

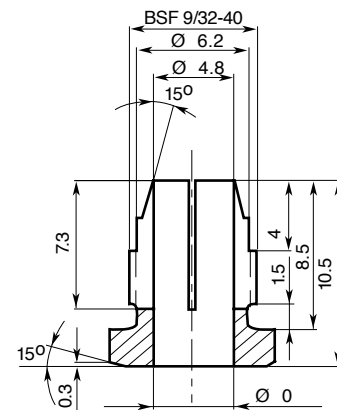


Short lever

## COLLETS FOR 5.0 MM CAPACITY HEAD LBV11, LBV16 – (-30, -90, -90Z) AND LBV36 (-30, -90)

| Capacity mm | Ordering No. | Capacity mm | Ordering No. | Capacity in | Ordering No. |
|-------------|--------------|-------------|--------------|-------------|--------------|
| 1.0         | 4110 0438 01 | 3.4         | 4110 0438 33 | 1/16        | 4110 0438 19 |
| 1.5         | 4110 0438 02 | 3.5         | 4110 0438 13 | 3/32        | 4110 0438 20 |
| 1.8         | 4110 0438 28 | 3.6         | 4110 0438 24 | 1/8         | 4110 0438 21 |
| 2.0         | 4110 0438 03 | 3.7         | 4110 0438 34 | 5/32        | 4110 0438 22 |
| 2.1         | 4110 0438 29 | 3.8         | 4110 0438 14 | 3/16        | 4110 0438 23 |
| 2.2         | 4110 0438 04 | 3.9         | 4110 0438 35 |             |              |
| 2.3         | 4110 0438 30 | 4.0         | 4110 0438 15 |             |              |
| 2.4         | 4110 0438 05 | 4.1         | 4110 0438 25 |             |              |
| 2.5         | 4110 0438 06 | 4.2         | 4110 0438 26 |             |              |
| 2.6         | 4110 0438 07 | 4.3         | 4110 0438 36 |             |              |
| 2.7         | 4110 0438 31 | 4.4         | 4110 0438 37 |             |              |
| 2.8         | 4110 0438 32 | 4.5         | 4110 0438 16 |             |              |
| 2.9         | 4110 0438 08 | 4.6         | 4110 0438 38 |             |              |
| 3.0         | 4110 0438 09 | 4.7         | 4110 0438 39 |             |              |
| 3.1         | 4110 0438 10 | 4.8         | 4110 0438 18 |             |              |
| 3.2         | 4110 0438 11 | 4.9         | 4110 0438 40 |             |              |
| 3.3         | 4110 0438 12 | 5.0         | 4110 0438 27 |             |              |

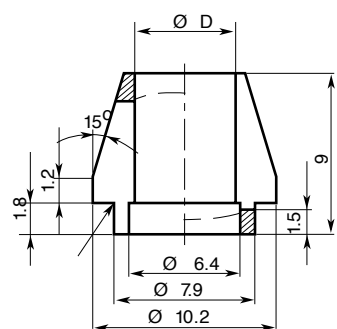
Collets for 5.0 mm (Thread BSF 9/32 -40)



## COLLETS FOR 6.6 MM CAPACITY HEAD LBV16 (-91) AND LBV36 (-91)

| Capacity mm | Ordering No. | Capacity mm | Ordering No. |
|-------------|--------------|-------------|--------------|
| 1.6         | 4110 1411 01 | 4.2         | 4110 1411 14 |
| 1.8         | 4110 1411 02 | 4.4         | 4110 1411 15 |
| 2.0         | 4110 1411 03 | 4.6         | 4110 1411 16 |
| 2.2         | 4110 1411 04 | 4.8         | 4110 1411 17 |
| 2.4         | 4110 1411 05 | 5.0         | 4110 1411 18 |
| 2.6         | 4110 1411 06 | 5.2         | 4110 1411 19 |
| 2.8         | 4110 1411 07 | 5.4         | 4110 1411 20 |
| 3.0         | 4110 1411 08 | 5.6         | 4110 1411 21 |
| 3.2         | 4110 1411 09 | 5.8         | 4110 1411 22 |
| 3.4         | 4110 1411 10 | 6.0         | 4110 1411 23 |
| 3.6         | 4110 1411 11 | 6.2         | 4110 1411 24 |
| 3.8         | 4110 1411 12 | 6.4         | 4110 1411 25 |
| 4.0         | 4110 1411 13 | 6.6         | 4110 1411 26 |

Collets for 6.6 mm



Collet nut 4110 1410 00, to be ordered separately.



## Service Kits

|                   |              |
|-------------------|--------------|
| LBV16             | 4081 0322 90 |
| LBV24             | 4081 0005 90 |
| LBV25             | 4081 0272 90 |
| LGB/LBV34         | 4081 0035 90 |
| LBV36 (30, 90/92) | 4081 0263 90 |
| LBV36 (91/93)     | 4081 0251 90 |
| LBV37             | 4081 0431 90 |

# Modular Drills

The LBD16M and LBP16M are designed with the operator in focus. A lightweight tool with a powerful air motor combined with interchangeable angle heads equals excellent flexibility in any handheld drilling operation. Swap to a new head in a matter of seconds with the easy-to-use quick change mechanism. With the LBD16M and LBP16M, you are always ready to take on any job in ever changing drilling applications.

- Quick change system – Easy-to-use and robust quick change design for high durability.
- Indexable head – The head can be positioned in any direction for maximum accessibility.
- High power lubrication free motor – No more oil aerosols, for a safer and cleaner working environment.



| Model                       | Free speed <sup>a</sup><br>rpm | Motor speed <sup>b</sup> | Weight |      | Air consumption |      | Hose size |     | Air inlet<br>thread<br>BSP | Power |      | Ordering No. |
|-----------------------------|--------------------------------|--------------------------|--------|------|-----------------|------|-----------|-----|----------------------------|-------|------|--------------|
|                             |                                |                          | kg     | lb   | l/s             | cfm  | mm        | in  |                            | W     | hp   |              |
| <b>Straight motor units</b> |                                |                          |        |      |                 |      |           |     |                            |       |      |              |
| LBD16M-005                  | 500                            | 600                      | 0.57   | 1.25 | 8.7             | 18.4 | 6.3       | 1/4 | 1/4                        | 300   | 0.4  | 8421 0122 05 |
| LBD16M-010                  | 1000                           | 1200                     | 0.57   | 1.25 | 8.7             | 18.4 | 6.3       | 1/4 | 1/4                        | 300   | 0.4  | 8421 0122 10 |
| LBD16M-018                  | 1800                           | 2100                     | 0.57   | 1.25 | 8.7             | 18.4 | 6.3       | 1/4 | 1/4                        | 300   | 0.4  | 8421 0122 18 |
| LBD16M-032                  | 3200                           | 3600                     | 0.45   | 1    | 8.7             | 18.4 | 6.3       | 1/4 | 1/4                        | 300   | 0.4  | 8421 0122 32 |
| LBD16M-045                  | 4500                           | 5100                     | 0.45   | 1    | 8.7             | 18.4 | 6.3       | 1/4 | 1/4                        | 300   | 0.4  | 8421 0122 45 |
| LBD16M-055                  | 5500                           | 6200                     | 0.45   | 1    | 8.7             | 18.4 | 6.3       | 1/4 | 1/4                        | 300   | 0.4  | 8421 0122 55 |
| <b>Pistol motor units</b>   |                                |                          |        |      |                 |      |           |     |                            |       |      |              |
| LBP16M-005                  | 500                            | 600                      | 0.6    | 1.3  | 9.5             | 20.0 | 6.3       | 1/4 | 1/4                        | 340   | 0.45 | 8421 0124 05 |
| LBP16M-010                  | 1000                           | 1100                     | 0.6    | 1.3  | 9.5             | 20.0 | 6.3       | 1/4 | 1/4                        | 340   | 0.45 | 8421 0124 10 |
| LBP16M-018                  | 1800                           | 2100                     | 0.5    | 1.1  | 9.5             | 20.0 | 6.3       | 1/4 | 1/4                        | 340   | 0.45 | 8421 0124 18 |
| LBP16M-033                  | 3300                           | 3700                     | 0.5    | 1.1  | 9.5             | 20.0 | 6.3       | 1/4 | 1/4                        | 340   | 0.45 | 8421 0124 33 |
| LBP16M-045                  | 4500                           | 5100                     | 0.5    | 1.1  | 9.5             | 20.0 | 6.3       | 1/4 | 1/4                        | 340   | 0.45 | 8421 0124 45 |
| LBP16M-060                  | 6000                           | 6800                     | 0.5    | 1.1  | 9.5             | 20.0 | 6.3       | 1/4 | 1/4                        | 340   | 0.45 | 8421 0124 60 |

<sup>a</sup> The free speed is given when used with a 90° angle head. <sup>b</sup> Multiply this value with the Speed ratio to get the free speed of each angle head.

## ANGLE HEADS

| Model   | Angle head | Weight |      | Collet cap. | Thread in | Speed ratio | Length |      | Ordering No. |
|---|------------|--------|------|-------------|-----------|-------------|--------|------|--------------|
|   |            | kg     | lb   |             |           |             | mm     | in   |              |
| <b>Angle heads with collet - Short</b>            |            |        |      |             |           |             |        |      |              |
| BHM90SC-5-0                                       | 90°        | 0.2    | 0.5  | 5.0         | –         | 14:16       | 65.5   | 2.58 | 8421 0123 02 |
| <b>Angle heads with collet - Standard</b>         |            |        |      |             |           |             |        |      |              |
| BHM90C-5-0  | 90°        | 0.17   | 0.36 | 5.0         | –         | 14:16       | 88.5   | 3.48 | 8421 0123 00 |
| BHM90C-6-6  | 90°        | 0.24   | 0.55 | 6.6         | –         | 14:16       | 89.6   | 3.53 | 8421 0123 05 |
| BHM90C-8-0  | 90°        | 0.24   | 0.55 | 8.0         | –         | 14:17       | 89.7   | 3.54 | 8421 0123 80 |
| BHM45C-5-0  | 45°        | 0.20   | 0.44 | 5.0         | –         | 14:15       | 117.3  | 4.62 | 8421 0123 10 |
| BHM30C-5-0  | 30°        | 0.20   | 0.44 | 5.0         | –         | 14:15       | 120.4  | 4.74 | 8421 0123 20 |
| BHM30C-6-6  | 30°        | 0.20   | 0.44 | 6.6         | –         | 14:15       | 127    | 5    | 8421 0123 15 |
| BHM90ZC-5-0                                       | 360°       | 0.21   | 0.47 | 5.0         | –         | 7:9         | 100.8  | 3.97 | 8421 0123 30 |
| BHM90XZC-5-0                                      | 360°       | 0.25   | 0.55 | 5.0         | –         | 7:9         | 141.5  | 5.57 | 8421 0123 33 |
| BHM90ZC-6-6                                       | 360°       | 0.21   | 0.47 | 6.6         | –         | 7:9         | 108    | 4.25 | 8421 0123 40 |
| <b>Angle heads with collet - Extended</b>         |            |        |      |             |           |             |        |      |              |
| BHM90EC-5-0                                       | 90°        | 0.26   | 0.58 | 5.0         | –         | 14:16       | 128.5  | 5.06 | 8421 0123 08 |
| BHM45EC-5-0                                       | 45°        | 0.29   | 0.64 | 5.0         | –         | 14:15       | 157.3  | 6.19 | 8421 0123 18 |
| BHM30EC-5-0                                       | 30°        | 0.29   | 0.64 | 5.0         | –         | 14:15       | 160.4  | 6.31 | 8421 0123 28 |
| BHM90EZC-5-0                                      | 360°       | 0.30   | 0.67 | 5.0         | –         | 7:9         | 140.8  | 5.54 | 8421 0123 38 |
| <b>Angle head with internal thread - Standard</b> |            |        |      |             |           |             |        |      |              |
| BHM90T-1-4  | 90°        | 0.17   | 0.36 | –           | 1/4"-28   | 14:16       | 88.5   | 3.48 | 8421 0123 01 |
| BHM90LT-1-4                                       | 90°        | 0.23   | 0.52 | –           | 1/4"-28   | 14:16       | 89.6   | 3.53 | 8421 0123 06 |
| BHM45T-1-4  | 45°        | 0.20   | 0.44 | –           | 1/4"-28   | 14:15       | 118.2  | 4.65 | 8421 0123 11 |
| BHM30T-1-4  | 30°        | 0.20   | 0.44 | –           | 1/4"-28   | 14:15       | 121.1  | 4.77 | 8421 0123 21 |
| BHM90ZT-1-4                                       | 360°       | 0.21   | 0.47 | –           | 1/4"-28   | 7:9         | 101    | 3.98 | 8421 0123 31 |
| <b>Angle head with internal thread - Extended</b> |            |        |      |             |           |             |        |      |              |
| BHM90ET-1-4                                       | 90°        | 0.26   | 0.58 | –           | 1/4"-28   | 14:16       | 128.5  | 5.06 | 8421 0123 09 |
| BHM45ET-1-4                                       | 45°        | 0.29   | 0.64 | –           | 1/4"-28   | 14:15       | 157.9  | 6.22 | 8421 0123 19 |
| BHM30ET-1-4                                       | 30°        | 0.29   | 0.64 | –           | 1/4"-28   | 14:15       | 161.1  | 6.34 | 8421 0123 29 |
| BHM90EZT-1-4                                      | 360°       | 0.30   | 0.67 | –           | 1/4"-28   | 7:9         | 141    | 5.55 | 8421 0123 39 |
| <b>Straight short angle head</b>                  |            |        |      |             |           |             |        |      |              |
| BHM0C-5-0   | 0°         | 0.14   | 0.31 | 5.0         | –         | 1:1         | 78     | 3.07 | 8421 0123 43 |
| BHM0T-1-4   | 0°         | 0.14   | 0.31 | –           | 1/4"-28   | 1:1         | 78     | 3.07 | 8421 0123 44 |
| <b>Angle head with key chuck</b>                  |            |        |      |             |           |             |        |      |              |
| BHM90CH-8-0                                       | 90°        | 0.35   | 0.77 | 8.0         | –         | 14:16       | 130.3  | 5.13 | 8421 0123 58 |

Angle heads



BHM90EC-5-0



BHM30ET-1-4



BHM 90ZC-5-0



BHM90C 8 0



BHM 30EC-5-0



BHM90EZC-5-0



BHM90C-6-6



BHM30-6-6



BHM90XZC-5-0



BHM 90CH-8-0



BMH 45C-5-0



BHM90ZC-6-6



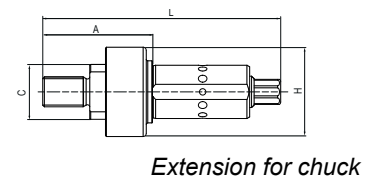
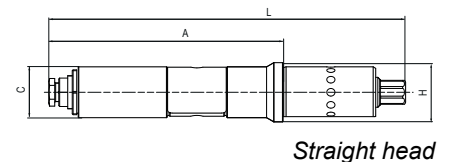
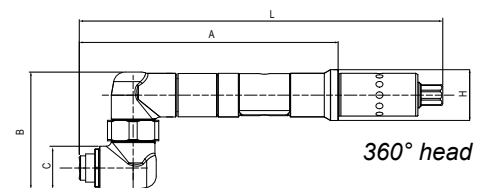
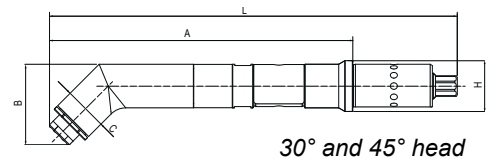
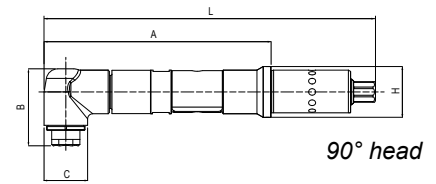
BHM 45EC-5-0



BHMOC-5-0

## Dimensions – Drill Heads

| Model                        | P/N          | Angle Head mm |      |      |       |      | L |
|------------------------------|--------------|---------------|------|------|-------|------|---|
|                              |              | A             | B    | C    | H     |      |   |
| <b>30° Heads</b>             |              |               |      |      |       |      |   |
| BHM30EC-5-0                  | 8421 0123 28 | 160.4         | 25.2 | 17   | 201   | 19.8 |   |
| BHM30T-1-4                   | 8421 0123 21 | 121.1         | 26.4 | 17   | 161.6 | 19.8 |   |
| BHM30C-5-0                   | 8421 0123 20 | 120.4         | 25   | 17   | 161   | 19.8 |   |
| BHM30ET-1-4                  | 8421 0123 29 | 161.1         | 26.4 | 17   | 201.8 | 19.8 |   |
| BHM30C-6-6                   | 8421 0123 15 | 127.3         | 32.3 | 17   | 168   | 19.8 |   |
| <b>45° Heads</b>             |              |               |      |      |       |      |   |
| BHM45EC-5-0                  | 8421 0123 18 | 157.3         | 30.5 | 17   | 198   | 19.8 |   |
| BHM45T-1-4                   | 8421 0123 11 | 118.2         | 31.4 | 17   | 159   | 19.8 |   |
| BHM45C-5-0                   | 8421 0123 10 | 117.3         | 30.5 | 17   | 158   | 19.8 |   |
| BHM45ET-1-4                  | 8421 0123 19 | 158.2         | 31.4 | 17   | 199   | 19.8 |   |
| <b>Straight Heads</b>        |              |               |      |      |       |      |   |
| BHM0C-5-0                    | 8421 0123 43 | 78            | -    | 17   | 119   | 19.8 |   |
| BHM0T-1-4                    | 8421 0123 44 | 78            | -    | 17   | 119   | 19.8 |   |
| <b>90° Heads</b>             |              |               |      |      |       |      |   |
| BHM90C-5-0                   | 8421 0123 00 | 88.5          | 29.8 | 17   | 129.2 | 19.8 |   |
| BHM90T-1-4                   | 8421 0123 01 | 88.5          | 30   | 17   | 129.2 | 19.8 |   |
| BHM90C-6-6                   | 8421 0123 05 | 90            | 39.3 | 20   | 130.3 | 20   |   |
| BHM90LT-1-4                  | 8421 0123 09 | 90            | 36   | 20   | 130.3 | 20   |   |
| BHM90EC-5-0                  | 8421 0123 08 | 128.5         | 29.8 | 147  | 169.2 | 19.8 |   |
| BHM90ET-1-4                  | 8421 0123 09 | 128.5         | 30   | 14   | 169.2 | 19.8 |   |
| BHM90C-8-0                   | 8421 0123 80 | 90            | 41.1 | 20   | 130.3 | 20   |   |
| <b>360° Heads</b>            |              |               |      |      |       |      |   |
| BHM90ZC-5-0                  | 8421 0123 30 | 100.8         | 45.9 | 17   | 141.5 | 19.8 |   |
| BHM90ZT-1-4                  | 8421 0123 31 | 101           | 45.9 | 17   | 141.5 | 19.8 |   |
| BHM90EZC-5-0                 | 8421 0123 38 | 140.8         | 45.9 | 17   | 181.5 | 19.8 |   |
| BHM90EZT-1-4                 | 8421 0123 39 | 141           | 45.9 | 17   | 181.5 | 19.8 |   |
| BHM90ZC-6-6                  | 8421 0123 40 | 107.3         | 45.9 | 17   | 148   | 19.8 |   |
| <b>Extension - for chuck</b> |              |               |      |      |       |      |   |
| Extension                    | 4110 1692 90 | 35            | -    | 17.5 | 76    | 28.5 |   |



## Accessories Included

Key wrenches,  
Collet or chuck with key  
3 mm collet (5.0 collet capacity head)  
6 mm collet (6.6 collet capacity head)  
8 mm collet (8.0 collet capacity head)

## Accessories Optional

| Chuck Extension for model | Ordering No. |
|---------------------------|--------------|
| LBD16M, LBP16M            | 4110 1692 90 |

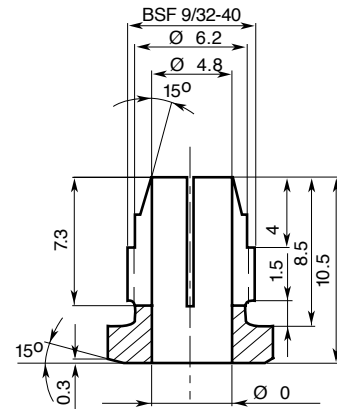
| Safety lever for model | Ordering No. |
|------------------------|--------------|
| LBD16M                 | 4110 1787 90 |

| Short lever for model | Ordering No. |
|-----------------------|--------------|
| LBD16M                | 4210 2306 04 |



## Collets for 5.0 mm capacity heads (BHMC-5-0)

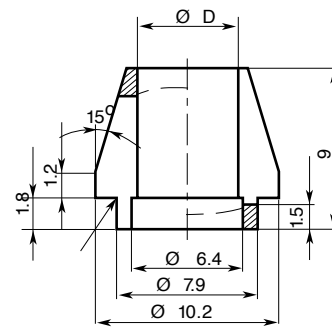
| Capacity mm | Ordering No. | Capacity mm | Ordering No. | Capacity mm | Ordering No. |
|-------------|--------------|-------------|--------------|-------------|--------------|
| 1.0         | 4110 0438 01 | 2.9         | 4110 0438 08 | 4.1         | 4110 0438 25 |
| 1.5         | 4110 0438 02 | 3.0         | 4110 0438 09 | 4.2         | 4110 0438 26 |
| 1.8         | 4110 0438 28 | 3.1         | 4110 0438 10 | 4.3         | 4110 0438 36 |
| 2.0         | 4110 0438 03 | 3.2         | 4110 0438 11 | 4.4         | 4110 0438 37 |
| 2.1         | 4110 0438 29 | 3.3         | 4110 0438 12 | 4.5         | 4110 0438 16 |
| 2.2         | 4110 0438 04 | 3.4         | 4110 0438 33 | 4.6         | 4110 0438 38 |
| 2.3         | 4110 0438 30 | 3.5         | 4110 0438 13 | 4.7         | 4110 0438 39 |
| 2.4         | 4110 0438 05 | 3.6         | 4110 0438 24 | 4.8         | 4110 0438 18 |
| 2.5         | 4110 0438 06 | 3.7         | 4110 0438 34 | 4.9         | 4110 0438 40 |
| 2.6         | 4110 0438 07 | 3.8         | 4110 0438 14 | 5.0         | 4110 0438 27 |
| 2.7         | 4110 0438 31 | 3.9         | 4110 0438 35 |             |              |
| 2.8         | 4110 0438 32 | 4.0         | 4110 0438 15 |             |              |
| Capacity in | Ordering No. | Capacity in | Ordering No. | Capacity in | Ordering No. |
| 1/16        | 4110 0438 19 | 1/8         | 4110 0438 21 | 3/16        | 4110 0438 23 |
| 3/32        | 4110 0438 20 | 5/32        | 4110 0438 22 |             |              |



Collets for 5.0 mm (Thread BSF 9/32 -40)

## Collets for 6.6 mm capacity heads (BHMC-6-6)

| Capacity mm | Ordering No. | Capacity mm | Ordering No. | Capacity mm | Ordering No. |
|-------------|--------------|-------------|--------------|-------------|--------------|
| 1.6         | 4110 1411 01 | 3.4         | 4110 1411 10 | 5.2         | 4110 1411 19 |
| 1.8         | 4110 1411 02 | 3.6         | 4110 1411 11 | 5.4         | 4110 1411 20 |
| 2.0         | 4110 1411 03 | 3.8         | 4110 1411 12 | 5.6         | 4110 1411 21 |
| 2.2         | 4110 1411 04 | 4.0         | 4110 1411 13 | 5.8         | 4110 1411 22 |
| 2.4         | 4110 1411 05 | 4.2         | 4110 1411 14 | 6.0         | 4110 1411 23 |
| 2.6         | 4110 1411 06 | 4.4         | 4110 1411 15 | 6.2         | 4110 1411 24 |
| 2.8         | 4110 1411 07 | 4.6         | 4110 1411 16 | 6.4         | 4110 1411 25 |
| 3.0         | 4110 1411 08 | 4.8         | 4110 1411 17 | 6.6         | 4110 1411 26 |
| 3.2         | 4110 1411 09 | 5.0         | 4110 1411 18 |             |              |

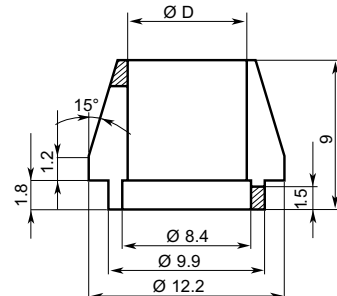


Collets for 6.6 mm

|         |              |
|---------|--------------|
| LBD16Mc | 4081 0322 90 |
| LBP16M  | 4081 0271 90 |

## Collet for 8.0 mm capacity head (BHM90C-8-0)

| Capacity mm | Ordering No. | Capacity mm | Ordering No. | Capacity mm | Ordering No. |
|-------------|--------------|-------------|--------------|-------------|--------------|
| 6.8         | 4110 1812 01 | 7.4         | 4110 1812 04 | 8.0         | 4110 1812 07 |
| 7.0         | 4110 1812 02 | 7.6         | 4110 1812 05 |             |              |
| 7.2         | 4110 1812 03 | 7.8         | 4110 1812 06 |             |              |



Collets for 8.0 mm



## Service Kits

|         |              |
|---------|--------------|
| LBD16Mc | 4081 0322 90 |
| LBP16M  | 4081 0271 90 |

The Atlas Copco LBS36 drill is equipped with an integrated micro stop. It is designed for the aerospace industry where the focus is on high-precision drilling, reaming and countersinking.

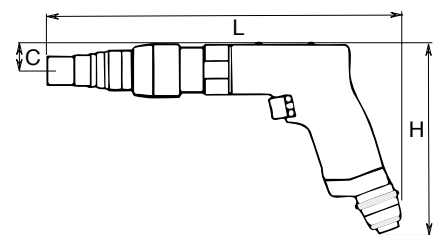
- Accurate – The integrated micro stop function makes the LBS36 unique for high-precision drilling of rivet holes and other fasteners. Minimized spindle run-out is achieved by eliminating standard drill chuck.
- Ergonomic handle design – The integrated micro stop function makes the tool shorter and lighter in weight.
- Flexible – Can be used for drilling, reaming, countersinking and, in certain applications, a combined operation using a form bit.
- Dust extraction – Equipped with a specially designed spot suction system for working in composite materials.
- Lubrication-free – For clean working environment and operator comfort.



| Model         | Free speed<br>r/min | Spindle thread<br>in/mm | Stroke |     | Setting range<br>± |     | Weight |     | Hose size |     | Air consumption |      | Air inlet thread<br>BSP | Ordering No. |
|---------------|---------------------|-------------------------|--------|-----|--------------------|-----|--------|-----|-----------|-----|-----------------|------|-------------------------|--------------|
|               |                     |                         | mm     | in  | mm                 | in  | kg     | lb  | mm        | in  | l/s             | cfm  |                         |              |
| LBS26 H033-40 | 3300                | 1/4"-28                 | 40     | 1.6 | 6                  | 1/4 | 0.9    | 2.0 | 10        | 3/8 | 14.5            | 31.8 | 3/8                     | 8421 0220 40 |
| LBS26 H013-40 | 1300                | 1/4"-28                 | 40     | 1.6 | 6                  | 1/4 | 1.2    | 2.6 | 10        | 3/8 | 14.5            | 31.8 | 3/8                     | 8421 0220 45 |
| LBS36 H033-40 | 3300                | 1/4"-28                 | 40     | 1.6 | 6                  | 1/4 | 1.2    | 2.6 | 10        | 3/8 | 16.5            | 34.9 | 3/8                     | 8421 0220 80 |
| LBS36 H013-40 | 1300                | 1/4"-28                 | 40     | 1.6 | 6                  | 1/4 | 1.5    | 3.3 | 10        | 3/8 | 16.5            | 34.9 | 3/8                     | 8421 0220 90 |

## Dimensions

| Model         | L<br>mm | H<br>mm | C<br>mm |
|---------------|---------|---------|---------|
| LBS26 H033-40 | 253     | 146     | 21      |
| LBS26 H013-40 | 285     | 146     | 21      |
| LBS36 H033-40 | 281     | 157     | 21      |
| LBS36 H013-40 | 314     | 157     | 21      |





## Accessories Included

- Hose nipple
- 2x2 mm Allen wrenches

## Optional Accessories

| Designation  |       | Attachment | Ordering No. |
|--|-------|------------|--------------|
| Plain base, dia 24 mm  | Fig 1 | M 20x1     | 4110 1521 00 |
| Plain base for nylon ring<br>(attached with thread M35x1)            | Fig 2 | M 20x1     | 4110 1522 00 |
| Separate nylon ring for above<br>base, outer dia 40 mm, thread M35x1 | Fig 3 | M 20x1     | 4110 1523 00 |
| Plain base, dia 14.5 mm  | Fig 4 | M 20x1     | 4110 1520 00 |
| Tripod, nylon supported  | Fig 5 | Dia 22 mm  | 4110 1524 00 |

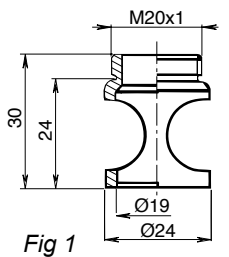


Fig 1

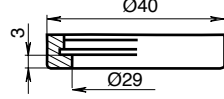


Fig 3

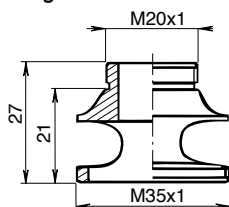


Fig 2

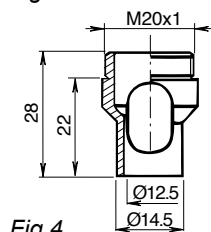


Fig 4

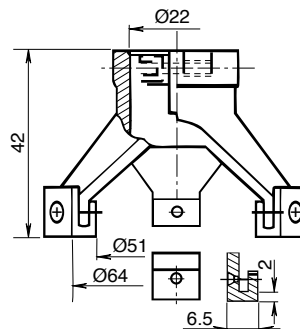


Fig 5



## Service Kits

- LBS26 4081 0507 90
- LBS36 4081 0005 90

Atlas Copco tappers are designed for tapping and thread-cleaning operations with thread taps. The tools are fitted with a tap chuck as standard.

- Comfortable and effective – The ergonomically designed handle gives a comfortable grip and maximum performance.
- Higher productivity – Double speed when you withdraw the machine.
- Low noise level – Rear-directed exhaust gives a lower noise level.
- Lubrication-free – For a clean working environment and operator comfort.
- Quick change system – Upgrade your old tool, or order a new one with this system. Various tap holders can be used to change a broken tap or to change to a different tap size.
- Lower cost – The efficient air motor, together with interchangeable components from our standard drills, cut your costs.



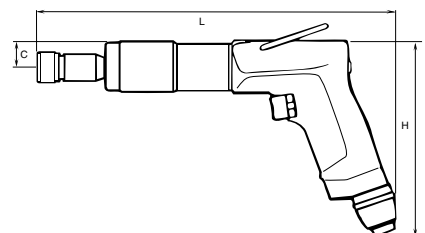
| Model   | Free speed       |                  | Tapping capacity<br>mm | Weight |     | Hose dimension |     | Air inlet thread<br>BSP | Air consumption |      | With chuck<br>Ordering No. |
|---|------------------|------------------|------------------------|--------|-----|----------------|-----|-------------------------|-----------------|------|----------------------------|
|   | Forward<br>r/min | Reverse<br>r/min |                        | kg     | lb  | mm             | in  |                         | l/s             | cfm  |                            |
| <b>Pistol-grip tappers with air supply through handle</b> |                  |                  |                        |        |     |                |     |                         |                 |      |                            |
| LGB34 H007  | 700              | 1400             | 10                     | 1.8    | 4.0 | 10.0           | 3/8 | 1/4                     | 7.5             | 15.9 | 8421 0311 66               |
| LGB34 H007Q <sup>a</sup>                                  | 700              | 1400             | 10                     | 1.8    | 4.0 | 10.0           | 3/8 | 1/4                     | 7.5             | 15.9 | 8421 0311 76               |
| LGB36 H007Q <sup>a</sup>                                  | 700              | 1400             | 12                     | 2.0    | 4.4 | 10.0           | 3/8 | 3/8                     | 16.5            | 34.9 | 8421 0411 00               |
| <b>Straight tappers</b>                                   |                  |                  |                        |        |     |                |     |                         |                 |      |                            |
| LGB34 S007  | 700              | 1400             | 10                     | 1.8    | 4.0 | 10.0           | 3/8 | 1/4                     | 7.5             | 15.9 | 8421 0311 72               |

<sup>a</sup> Quick change system.

Taper: Jacob 1

## Dimensions

| Model      | L<br>mm | H<br>mm | C<br>mm |
|------------|---------|---------|---------|
| LGB34 H007 | 300     | 156     | 20      |
| LGB34 S007 | 293     | 43      | 21      |
| LGB36 H007 | 335     | 157     | 20      |



## Accessories Included

**Non Quick change system**LGB34 complete with collet 6.4-10 mm 4021 0469 00

**Quick change system**Chuck plus one tap holder with collet for M6 shank Ø 6.3 mm.

## Optional Accessories

### COLLETS FOR NON QUICK CHANGE SYSTEM

| Model  | Capacity |             | Ordering No. |
|--------|----------|-------------|--------------|
|        | mm       | inch        |              |
| LGB 34 | 3.5-6.5  | 0.139-0.257 | 4021 0337 00 |
|        | 4.5-8.1  | 0.176-0.320 | 4021 0336 00 |
|        | 6.4-9.7  | 0.253-0.383 | 4021 0456 00 |

### COLLETS FOR QUICK CHANGE SYSTEM

| Collets for tap size mm | Shank dia |             | Ordering No. |
|-------------------------|-----------|-------------|--------------|
|                         | mm        | inch        |              |
| M2.2/M2.5               | 2.8       |             | 4021 0414 01 |
| M3                      | 3.15      | 1/8         | 4021 0414 02 |
| M3.5                    | 3.5       |             | 4021 0414 03 |
| M4                      | 4.0       |             | 4021 0414 04 |
| M4.5                    | 4.5       |             | 4021 0414 05 |
| M5                      | 5.0       | 3/16        | 4021 0414 06 |
| M5.5                    | 5.6       | 7/32        | 4021 0414 07 |
| M6                      | 6.4       | 1/4         | 4021 0414 08 |
| M6 (DIN)                | 6.0       |             | 4021 0414 13 |
| M7                      | 7.1       | 9/32        | 4021 0414 09 |
| M8/M11                  | 8.0       | 5/16 – 7/16 | 4021 0414 10 |
| M9/M12                  | 9.0       | 1/2         | 4021 0414 11 |
| M10                     | 10.0      | 3/8         | 4021 0414 12 |

### COMPLETING EXISTING EQUIPMENT WITH QUICK CHANGE SYSTEM

| Accessory          | Length mm | Ordering No. |
|--------------------|-----------|--------------|
| Quick change chuck | 47        | 4021 0406 90 |
| Tap holder         | 58        | 4021 0408 00 |



## Service Kits

LBS34 4081 0035 90  
LBS36 4081 0194 90

## Robust and versatile, the PFD-drills are your best choice for holemaking

### **PRODUCTIVITY**

With this platform you have all you need for hole preparation. Reduce cycle time and increase output with a powerful turbine motor. This robust tool is well suited for factory environment and the long service intervals maximizes uptime of your investments.

### **HOLE QUALITY**

Keep your workplace clean with Atlas Copco's ChipLet® feature which makes chips easy to evacuate. With ChipLet® during countersinking, you have a one-step process. Giving process improvements in terms of both productivity and quality.

### **ERGONOMICS**

My operators will really appreciate how all the controls on the tool are grouped in one and the same place. This reduces the risk of operator errors. The tool is also very well balanced which makes it easy to move around.

### **SAFE OPERATION**

The modular design means fewer back-up tools. You can also save on service as the platform is based on standard, reusable components.

### **SUPPORT**

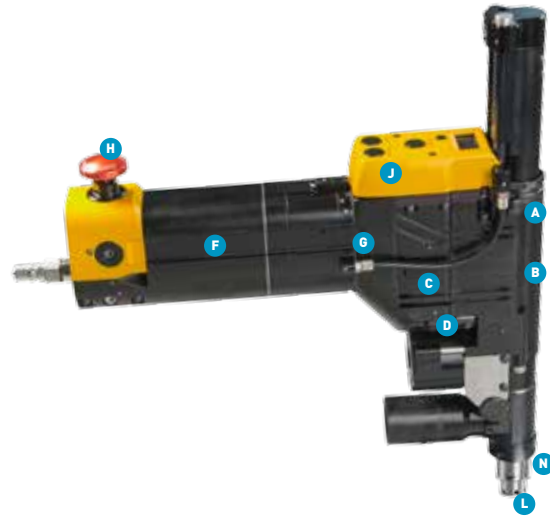
The modular approach means quick deliveries when needed, and makes it easy to re-work your existing products when urgent applications come up. With our technical documentation and support you will quickly put new tools to work on your assembly line.



**PFD 1500 FEATURES**



**PFD 1100 FEATURES**



- A** Optional ChipLet® module which effectively breaks chips while drilling for improved chip evacuation and hole quality.
- B** Angle head with superior durability with double needle bearings for both feed and drive gear.
- C** Overload clutch protects the angle head and drive train from overthrust.
- D** The replaceable feed cassette system enables quick and easy change of feed rate.
- E** Optional indexer which allows the tool to be locked in the jig also when free space is compromised.
- F** High torque, high power governed air motor maintains cutting speed while drilling.
- G** Easy-to-change split gearbox for quick adjustment of rpm.
- H** Emergency stop fully compliant with the European machinery directive for a high level of safety.
- J** Reliable and user-friendly tool controls with optional cycle counter.
- K** Rapid advance of spindle reduces cycle time and makes setup a quick and safe task.
- L** Best in class spindle power and thrust capabilities. A wide range of speeds and feeds.
- M** A large selection of tool noses with or without vacuum port makes the tool fit existing drill jigs.
- N** Concentric collet foot which allows clamp force for countersinking up to diameter 22 mm (7/8"). Debris protection and efficient vacuum exhaust of chips. Foot is modular and easily removed for drill bit change.

**PFD 1500**

| Item                | Ordering No. |
|---------------------|--------------|
| PFD1500RA-200-R     | 8440 1500 39 |
| Indexer-1-9-16      | 4141 0306 90 |
| PFD1500-IPR2        | 4141 0034 92 |
| Spindle-1500-12-9-6 | 4141 0004 91 |
| Guard-1500-12       | 4141 0323 91 |
| Nose-8IN-1-1-2      | 4141 0245 90 |

**Example:** Twistlock model with rapid advance and indexer. Spindle with 9/16"-18" interface, speed of 200 rpm and feed of 0.005 mm/r (0.02 IPR). Suitable for drilling of 19 mm holes (3/4") in Ti or Ti/CFRP stacks.

**PFD 1100**

| Item               | Ordering No. |
|--------------------|--------------|
| PFD1100RA-IFB110B  | 8440 1110 66 |
| Spindle-CC-1100-2  | 4141 0742 90 |
| Guard-1100-2in-p   | 4141 0826 92 |
| Guide-CC-R-1100-M6 | 4141 0743 91 |
| Bush-CC-1100-53    | 4141 0707 92 |
| Foot-CC-1100-MINI  | 4141 0764 90 |
| Mandrel-CC-25.4-A  | 4141 0806 28 |
| Collet-CC-1        | 4141 0813 28 |

**Example:** Concentric collet model with inboard lubricator, counter and ChipLet®. Spindle with M6 interface, speed of 2600 rpm and feed of 0.07 mm/r (0.003 IPR). Suitable for drill and countersink of Ø6.35 (1/4") holes in Al or Al/CFRP stacks.



## Specifications

| Feature              | PFD1100     |            | PFD1500     |            |
|----------------------|-------------|------------|-------------|------------|
|                      | Metric      | Imperial   | Metric      | Imperial   |
| Motor                | Turbine     | Turbine    | Vane        | Vane       |
| Drill and ream       | yes         | yes        | yes         | yes        |
| Countersinking       | yes         | yes        | no          | no         |
| Sound level          | 78 dB(A)    | 78 dB(A)   | 83 dB(A)    | 83 dB(A)   |
| Spindle power        | 1.7 kW      | 2.3 hp     | 1.5 kW      | 2.0 hp     |
| Max hole             | 15.9 mm     | 5/8"       | 32 mm       | 1 1/4"     |
| Max countersink      | 22 mm       | 7/8"       | N/A         | N/A        |
| Max speed            | 7300 rpm    | 7300 rpm   | 2360 rpm    | 2360 rpm   |
| Min speed            | 350 rpm     | 350 rpm    | 38 rpm      | 38 rpm     |
| Max thrust           | 2000 N      | 450 lbf    | 4000 N      | 900 lbf    |
| Max clamp force (cc) | 1800 N      | 400 lbf    | N/A         | N/A        |
| Max feed             | 0.17 mm/rev | 0.007 IPR  | 0.25 mm/rev | 0.010 IPR  |
| Tool weight (base)   | 3.0 kg      | 6.6 lb     | 5.5 kg      | 12.0 lb    |
| Max air consumption  | 30 l/s      | 60 cfm     | 35 l/s      | 70 cfm     |
| Air inlet            | 1/2" BSP    | 1/2" NPT   | 1/2" BSP    | 1/2" NPT   |
| Operating pressure   | 5.5–7.5 bar | 80–110 psi | 5.5–7.5 bar | 80–110 psi |
| Angle head radius    | 16.0 mm     | 5/8"       | 17.8 mm     | 0.7"       |
| Air hose             | 13 mm       | 1/2"       | 16 mm       | 5/8"       |



Collet



Mandrel



Counter sink stop nut

## Optional Equipment

| Item                      | PFD1100        | PFD1500             |
|---------------------------|----------------|---------------------|
| Chiplet®                  | yes            | yes                 |
| Rapid advance             | no             | yes (with J-Clutch) |
| Lubrication pump          | inboard, 30 ml | onboard, 55 ml      |
| Counter                   | yes            | yes                 |
| Indexer                   | yes            | yes                 |
| Tool handle               | no             | yes                 |
| Nose sizes                | 21k–23k        | 23k–25k             |
| Concentric collet         | yes            | no                  |
| Max collet outer diameter | 1 3/8"         | N/A                 |



Tool nose with vacuum port



Tool nose



Tool nose indexer

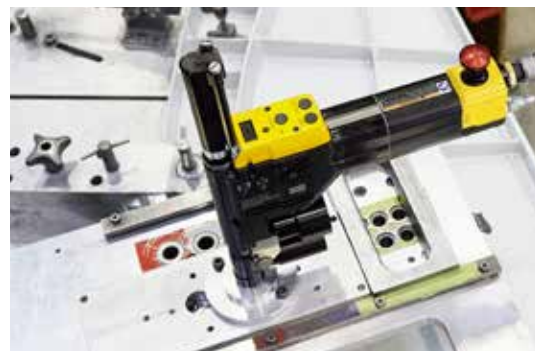


Concentric collet unit

## Air Installation

| Item                 | PFD1100<br>Light to Medium Duty Cycle | PFD1500 / PFD1100<br>Heavy Duty Cycle |
|----------------------|---------------------------------------|---------------------------------------|
| Swivel               | MultiFlex with 1/2                    | MultiFlex with 1/2                    |
| Coupling             | ErgoQIC 08 with H13                   | ErgoQIC 10 with H16                   |
| Air fitting          | ErgoNIP 08 with 1/2                   | ErgoNIP 10 with 1/2                   |
| Hose                 | PVC 13, 30 m coil                     | PVC 16, 30 m coil                     |
| Clamp                | clamp for PVC 13                      | clamp for PVC 13                      |
| Air preparation unit | MIDI Optimizer F/R A with 1/2         | Optimizer F/R A with 1/2              |
| Ball valve           | BAL-1A with 1/2                       | BAL-1A with 1/2                       |
| Connection           | Double with two 1/2                   | Double with two 1/2                   |

## Holemaking made easy



**WING ASSEMBLY** :The high clamp force of the concentric collet model allow use throughout the assembly line. Customization is easy due to the modular system which makes every tool very versatile.



**COMPONENT MANUFACTURING**: Small holes in thin stacks are no problem and can be drilled quickly at high speeds. The tool is compact enough to be fitted virtually anywhere.



**FINAL ASSEMBLY**: With the ChipLet® feature, drill shavings are efficiently broken into small, easily evacuated pieces. The tools are available in different ergonomic shapes to give the best possible working conditions for the operator.

For complete specification of PFD1100/1500 system, please consult your local Atlas Copco representative



# Introduction – Riveting Systems



## Selection Guide

| Hammer model <sup>a</sup> | Nominal Max. Rivet Diameter Capacity |             |       |             |          |             | Bucking bar model required <sup>b</sup> |       |
|---------------------------|--------------------------------------|-------------|-------|-------------|----------|-------------|---|-------|
|                           | Dural                                |             | Steel |             | Titanium |             |   |       |
|                           | mm                                   | in          | mm    | in          | mm       | in          |   |       |
| RRN11                     | 2-5                                  | 3/32 - 3/16 | 1-4   | 3/32 - 5/32 |          |             | RBB04                                   |       |
| RRH04                     | 2-5                                  | 3/32 - 3/16 | 1-4   | 3/21 - 5/32 |          |             | RBB04                                   | RBB10 |
| RRH06                     | 4-7                                  | 5/32 - 1/4  | 3-6   | 1/8 - 1/4   | 2-4      | 3/32 - 5/32 | RBB10                                   |       |
| RRH08                     | 5-8                                  | 3/16 - 5/16 | 4-7   | 5/32 - 1/4  | 3-6      | 1/8 - 1/4   | RBB10                                   |       |
| RRH10                     | 5-9                                  | 3/16 - 3/8  | 6-8   | 1/4 - 5/16  | 4-7      | 5/32 - 1/4  |   |       |
| RRH12                     | 8-11                                 | 5/16 - 7/16 | 7-10  | 1/4 - 3/8   | 6-9      | 1/4 - 3/8   |   |       |
| RRH14                     | 11-13                                | 7/16 - 1/2  | 9-12  | 3/8 - 15/32 | 8-11     | 5/16 - 7/16 |   |       |

<sup>a</sup> Hammer capacity depends on direct/indirect riveting as well as Panel density and stiffness.

<sup>b</sup> Bucking bar capacity is dependent on dolly weight.



# Riveting Hammers

# Vibration-damped

RRH is a unique series of riveting hammers incorporating completely revolutionary ergonomic advantages.

- **Versatile** – RRH can easily cope with rivets in diameters up to 13 mm.
- **Vibration-damped system** – The RRH vibration-damped riveting hammer, combined with the RBB vibration-damped bucking bar, offer an unbeatable system for riveting.
- **Adjustable power.**
- **Adjustable hand guard** – Support hand grip is vibration-damped.
- Now new models with trigger start for excellent handling. Pistol grip with rubber coating.



| Model                     | Airframe ref | Blows per minute | Rivet set shank |     | Piston dia |     | Stroke |     | Energy per blow |       | Weight |     | Air consumption |     | Hose size |     | Air inlet | Ordering No. |  |
|---------------------------|--------------|------------------|-----------------|-----|------------|-----|--------|-----|-----------------|-------|--------|-----|-----------------|-----|-----------|-----|-----------|--------------|--|
|                           |              |                  | mm              | in  | mm         | in  | mm     | in  | J               | ft lb | kg     | lb  | l/s             | cfm | mm        | in  | BSP       |              |  |
| <b>With push start</b>    |              |                  |                 |     |            |     |        |     |                 |       |        |     |                 |     |           |     |           |              |  |
| RRH04P-01                 | 2X           | 3960             | 10.0            | 0.4 | 15         | 0.6 | 40     | 1.6 | 2.0             | 1.5   | 1.0    | 2.2 | 3.7             | 6   | 6.3       | 1/4 | 1/4       | 8426 1111 07 |  |
| RRH04P-02                 | 2X           | 3960             | 10.2            | 0.4 | 15         | 0.6 | 40     | 1.6 | 2.0             | 1.5   | 1.0    | 2.2 | 3.7             | 6   | 6.3       | 1/4 | 1/4       | 8426 1111 15 |  |
| RRH04P-12                 | 2X           | 3960             | 10.2            | 0.4 | 15         | 0.6 | 40     | 1.6 | 2.0             | 1.5   | 1.0    | 2.2 | 3.7             | 6   | 6.3       | 1/4 | 1/4       | 8426 1111 25 |  |
| RRH06P                    | 3X           | 2160             | 10.2            | 0.4 | 15         | 0.6 | 102    | 4.0 | 6.0             | 4.4   | 1.3    | 2.9 | 9.0             | 19  | 10.0      | 3/8 | 1/4       | 8426 1111 04 |  |
| RRH08P                    | 4X           | 1440             | 10.2            | 0.4 | 15         | 0.6 | 137    | 5.4 | 8.0             | 5.9   | 1.4    | 3.0 | 10.0            | 21  | 10.0      | 3/8 | 1/4       | 8426 1111 09 |  |
| RRH10P                    | 5XB          | 1500             | 12.7            | 0.5 | 19         | 0.7 | 118    | 4.6 | 13.0            | 9.6   | 2.0    | 4.4 | 12.0            | 24  | 10.0      | 3/8 | 1/4       | 8426 1110 20 |  |
| RRH12P                    | 7XB          | 1200             | 12.7            | 0.5 | 19         | 0.7 | 153    | 6.0 | 16.0            | 11.8  | 2.1    | 4.6 | 13.0            | 28  | 10.0      | 3/8 | 1/4       | 8426 1110 47 |  |
| RRH14P                    | 9XB          | 1080             | 12.7            | 0.5 | 19         | 0.7 | 188    | 7.4 | 19.5            | 14.4  | 2.2    | 4.8 | 13.0            | 28  | 10.0      | 3/8 | 1/4       | 8426 1110 80 |  |
| <b>With trigger start</b> |              |                  |                 |     |            |     |        |     |                 |       |        |     |                 |     |           |     |           |              |  |
| RRH04P TS-12              | 2X           | 3960             | 10.2            | 0.4 | 15         | 0.6 | 40     | 1.6 | 2.0             | 1.5   | 1.0    | 2.2 | 3.7             | 6   | 6.3       | 1/4 | 1/4       | 8426 1111 27 |  |
| RRH06P TS                 | 3X           | 2160             | 10.2            | 0.4 | 15         | 0.6 | 102    | 4.0 | 6.0             | 4.4   | 1.3    | 2.9 | 9.0             | 19  | 10.0      | 3/8 | 1/4       | 8426 1111 66 |  |
| RRH08P TS                 | 4X           | 1440             | 10.2            | 0.4 | 15         | 0.6 | 137    | 5.4 | 8.0             | 5.9   | 1.4    | 3.0 | 10.0            | 21  | 10.0      | 3/8 | 1/4       | 8426 1111 68 |  |
| RRH10P TS                 | 5XB          | 1500             | 12.7            | 0.5 | 19         | 0.7 | 118    | 4.6 | 13.0            | 9.6   | 2.0    | 4.4 | 12.0            | 24  | 10.0      | 3/8 | 1/4       | 8426 1110 70 |  |
| RRH12P TS                 | 7XB          | 1200             | 12.7            | 0.5 | 19         | 0.7 | 153    | 6.0 | 16.0            | 11.8  | 2.1    | 4.6 | 13.0            | 28  | 10.0      | 3/8 | 1/4       | 8426 1110 72 |  |
| RRH14P TS                 | 9XB          | 1080             | 12.7            | 0.5 | 19         | 0.7 | 188    | 7.4 | 19.5            | 14.4  | 2.2    | 4.8 | 13.0            | 28  | 10.0      | 3/8 | 1/4       | 8426 1110 81 |  |
| RRH14P TS-ENG             | 7XB          | 1200             | 12.7            | 0.5 | 19         | 0.7 | 153    | 6.0 | 16.0            | 11.8  | 2.1    | 4.6 | 13.0            | 28  | 10.0      | 3/8 | 1/4       | 8426 1110 49 |  |
| RRH14P TS-ENG             | 9XB          | 1080             | 12.7            | 0.5 | 19         | 0.7 | 188    | 7.4 | 19.5            | 14.4  | 2.2    | 4.8 | 13.0            | 28  | 10.0      | 3/8 | 1/4       | 8426 1110 82 |  |

-10 mm short shank rivet set.

01 means 10 mm short shank rivet set.

-02 means 10.2 mm short shank rivet set.

-ENG: for Pin-driving application

# Conventional Type

For riveting in confined spaces we re-recommend our RRN11 riveting hammer.

- **RRN11** – is the smallest riveting hammer available on the market, with unique accessibility.
- **Adjustable** – The RRN11 has a built-in adjustment knob with which you can set the power for different rivet materials and sizes.
- **Controllable** – The trigger is easily operated and provides excellent control.



# Riveting Hammers

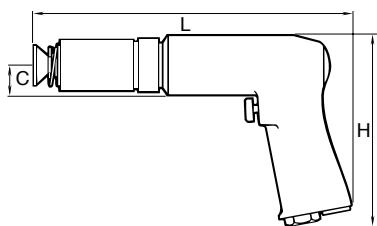
| Model     | Airframe ref | Blows per minute | Rivet set shank |     | Piston dia |     | Stroke |     | Energy per blow |       | Weight |     | Air consumption |     | Hose size |     | Air inlet | Ordering No. |
|-----------|--------------|------------------|-----------------|-----|------------|-----|--------|-----|-----------------|-------|--------|-----|-----------------|-----|-----------|-----|-----------|--------------|
|           |              |                  | mm              | in  | mm         | in  | mm     | in  | J               | ft lb | kg     | lb  | l/s             | cfm | mm        | in  | BSP       |              |
| RRN11P-01 | 2X           | 3960             | 10.0            | 0.4 | 15         | 0.6 | 40     | 1.6 | 2.0             | 1.5   | 1.2    | 2.6 | 3.4             | 7.2 | 6.3       | 1/4 | 1/8       | 8426 1101 05 |
| RRN11P-02 | 2X           | 3960             | 10.2            | 0.4 | 15         | 0.6 | 40     | 1.6 | 2.0             | 1.5   | 1.2    | 2.6 | 3.4             | 7.2 | 6.3       | 1/4 | 1/8       | 8426 1101 13 |

-01 means 10 mm short shank rivet set.

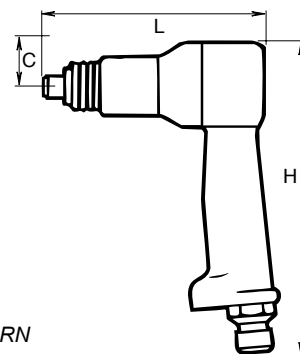
-02 means 10.2 mm short shank rivet set.

## Dimensions

| Model      | L<br>mm | H<br>mm | C<br>mm |
|------------|---------|---------|---------|
| <b>RRH</b> |         |         |         |
| RRH04-01   | 160     | 147     | 23      |
| RRH04-02   | 160     | 147     | 23      |
| RRH04-12   | 175     | 147     | 23      |
| RRH06      | 225     | 147     | 24      |
| RRH08P     | 244     | 147     | 24      |
| RRH10P     | 264     | 150     | 27      |
| RRH12P     | 299     | 150     | 27      |
| RRH14P     | 334     | 150     | 27      |
| <b>RRN</b> |         |         |         |
| RRN11P     | 100     | 170     | 23      |



RRH



RRN

## Accessories Included

### FOR RRH MODELS

Hose fitting  
Flush set  
Open spring retainer

### FOR RRN11P

Hose fitting and retainer  
Blank rivet set  
Retainers for blank and flush rivet set

## Optional Accessories

### RIVET SETS. RRH AND RRN

| Hammer type                   | Model | Shank<br>mm | Flush set | Ordering No. | Blank rivet set | Ordering No.                  |
|-------------------------------|-------|-------------|-----------|--------------|-----------------|-------------------------------|
| RRH04P-01<br>RRN11P-01        | (-01) | 10.0 spec   |           | 3085 0347 00 |                 | 3006 0983 00                  |
| RRH04P-02<br>RRN11P-02        | (-02) | 10.2 spec   |           | 3085 0352 00 |                 | 3085 0353 00                  |
| RRH04P-12<br>RRH06P<br>RRH08P | (-12) | 10.2 std    |           | 3085 0324 00 |                 | 3085 0022 00                  |
| RRH10P<br>RRH12P<br>RRH14P    |       | 12.7 std    |           | 3085 0323 00 |                 | 3085 0021 00                  |
| RRH04P-12<br>RRH06P<br>RRH08P |       | 10.2 std    |           |              |                 | 3085 0212 00<br>Mandrel blank |
| RRH04P-12<br>RRH06P<br>RRH08P |       | 10.2 std    |           |              |                 | 3085 0212 02                  |

An efficient riveting system consists of vibration-damped bucking bars together with vibration-damped riveting hammers.

- **Self-adjustable** – RBB04SP, RBB-10SP use a spring as damping element and consequently do not require an air supply.
- **Flexible** – The bucking bars can be fitted with several different interchangeable dolly configurations via a quick change retainer for maximum flexibility.
- **Cramped spaces** – Mini bucking bars RBB04SP are ideal for work in confined spaces. The large mass types -04, -05 will in most applications set the rivet faster than the smaller models.



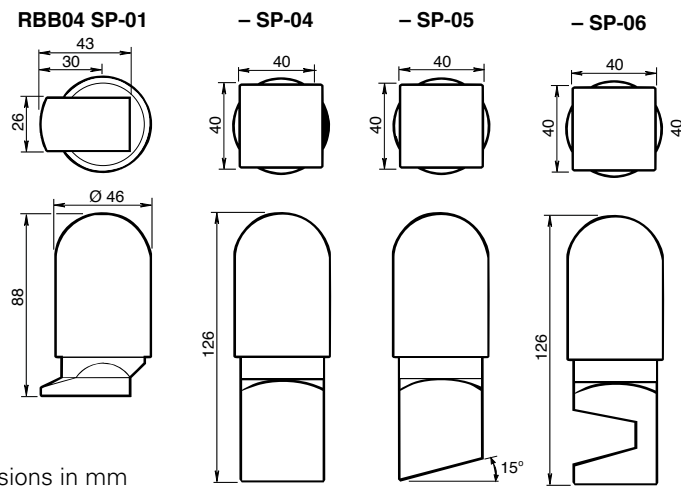
| Model                                  | Weight |     | Diameter |     | Air consumption |     | Ordering No. |
|--|--------|-----|----------|-----|-----------------|-----|--------------|
|  | kg     | lb  | mm       | in  | l/s             | cfm |              |
| <b>With standard dolly<sup>a</sup></b> |        |     |          |     |                 |     |              |
| RBB10SP                                | 1.1    | 2.4 | 48       | 2.0 | –               | –   | 8426 9101 74 |
| <b>Mini bucking bars</b>               |        |     |          |     |                 |     |              |
| RBB04SP-01                             | 0.8    | 1.8 | 46       | 1.8 | –               | –   | 8426 9101 10 |
| RBB04SP-04                             | 1.3    | 2.9 | 46       | 1.8 | –               | –   | 8426 9101 13 |
| RBB04SP-05                             | 1.4    | 3.1 | 46       | 1.8 | –               | –   | 8426 9101 14 |
| RBB04SP-06                             | 1.1    | 2.5 | 46       | 1.8 | –               | –   | 8426 9101 15 |

<sup>a</sup> Standard dolly assy (3085 0335 93).

## Optional Accessories

| Designation | Ordering No. |
|-------------|--------------|
| Rod 5 mm    | 3085 0365 03 |
| Rod 50 mm   | 3085 0365 04 |
| Rod 100 mm  | 3085 0365 05 |

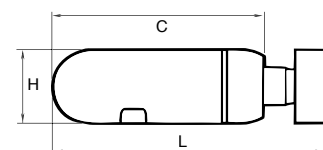
## Dimensions



Dimensions in mm

### DIMENSIONS RBB10/16

| Model | L mm | H mm | C mm |
|-------|------|------|------|
| RBB10 | 165  | 49   | 140  |



# Die Grinders

**LSF07** is a high speed model for precision grinding and polishing. LSF07 is delivered with a 3 mm collet and can be equipped with a 1/8" collet as optional. (Without speed governor)

**LSF12/LSV12** – Small and comfortable die grinder with up to 360 W for maximum control in cramped spaces. All models are delivered with speed governor and a well balanced 6 mm Erickson collet.

**LSF19/LSV19** – All models in the 19 series are equipped with a powerful 0.5 kW air motor and a speed governor. The angled models (LSV) have a patented solution that overcomes temperature and leakage problems commonly associated with angle head tools. The result is a leak free and self-cooled angle head. All models are lubrication free except for the high speed model LSF19 S460.

**LSF28/LSV28** – Powerful 0.85 kW air motor, with speed governor and scatter damping. Impressive power-to-weight ratio.



**LSF38** – One of the most powerful one hand die grinders on the market, up to 1.35 kW. The die grinders in the 38 series are lubrication free with scatter damping for maximum operator comfort and safety.

| Model                         | Max free speed<br>r/min | Rec. max dia of       |                       | Max output |      | Weight |     | Length mm | Air consumption at |      |            |      | Rec hose size |      | Air inlet thr. | Collet size | Ordering No. |
|-------------------------------|-------------------------|-----------------------|-----------------------|------------|------|--------|-----|-----------|--------------------|------|------------|------|---------------|------|----------------|-------------|--------------|
|                               |                         | TS <sup>c</sup><br>mm | MP <sup>d</sup><br>mm | KW         | hp   | kg     | lb  |           | max output         |      | free speed |      | mm            | in   |                |             |              |
|                               |                         |                       |                       |            |      |        |     |           | l/s                | cfm  | l/s        | cfm  |               |      |                |             |              |
| <b>Straight die grinders</b>  |                         |                       |                       |            |      |        |     |           |                    |      |            |      |               |      |                |             |              |
| LSF12 S400-1 <sup>a</sup>     | 40 000                  | 9                     | 16                    | 0.36       | 0.48 | 0.4    | 0.8 | 170       | 9.8                | 20.8 | 7.0        | 14.8 | 8             | 5/16 | 1/4            | 6 mm        | 8423 1124 04 |
| LSF12 S310-1 <sup>a</sup>     | 31 000                  | 12                    | 20                    | 0.32       | 0.43 | 0.4    | 0.8 | 170       | 9.2                | 19.5 | 4.2        | 8.9  | 8             | 5/16 | 1/4            | 6 mm        | 8423 1124 03 |
| LSF12 S250-1 <sup>a</sup>     | 25 000                  | 12                    | 20                    | 0.29       | 0.39 | 0.4    | 0.8 | 170       | 8.5                | 18.0 | 3.4        | 7.2  | 8             | 5/16 | 1/4            | 6 mm        | 8423 1124 02 |
| LSF12 S200-1 <sup>a</sup>     | 20 000                  | 12                    | 20                    | 0.24       | 0.32 | 0.4    | 0.8 | 170       | 8.1                | 17.2 | 2.6        | 5.5  | 8             | 5/16 | 1/4            | 6 mm        | 8423 1124 01 |
| LSF19 S460-1                  | 46 000                  | 9                     | 16                    | 0.51       | 0.68 | 0.5    | 1.1 | 193       | 11.4               | 24.0 | 15.0       | 31.5 | 10            | 3/8  | 1/4            | 6 mm        | 8423 1224 82 |
| LSF19 S460E-1                 | 46 000                  | 9                     | 16                    | 0.51       | 0.68 | 0.7    | 1.5 | 293       | 11.4               | 24.0 | 15.0       | 31.5 | 10            | 3/8  | 1/4            | 6 mm        | 8423 1224 87 |
| LSF19 S300-1                  | 30 000                  | 12                    | 20                    | 0.50       | 0.67 | 0.5    | 1.1 | 193       | 11.3               | 23.7 | 6.6        | 13.8 | 10            | 3/8  | 1/4            | 6 mm        | 8423 1224 81 |
| LSF19 S300-2                  | 30 000                  | 12                    | 20                    | 0.50       | 0.67 | 0.5    | 1.1 | 193       | 11.3               | 23.7 | 6.6        | 13.8 | 10            | 3/8  | 1/4            | 1/4 in      | 8423 1224 84 |
| LSF19 S300E-1                 | 30 000                  | 12                    | 20                    | 0.50       | 0.67 | 0.7    | 1.5 | 293       | 11.3               | 23.7 | 6.6        | 13.8 | 10            | 3/8  | 1/4            | 6 mm        | 8423 1224 86 |
| LSF19 S200-1                  | 20 000                  | 12                    | 20                    | 0.50       | 0.67 | 0.5    | 1.1 | 193       | 9.6                | 20.1 | 3.5        | 7.4  | 10            | 3/8  | 1/4            | 6 mm        | 8423 1224 80 |
| LSF19 S200-2                  | 20 000                  | 12                    | 20                    | 0.50       | 0.67 | 0.5    | 1.1 | 193       | 9.6                | 20.1 | 3.5        | 7.4  | 10            | 3/8  | 1/4            | 1/4 in      | 8423 1224 83 |
| LSF19 S200E-1                 | 20 000                  | 12                    | 20                    | 0.50       | 0.67 | 0.7    | 1.5 | 293       | 9.6                | 20.1 | 3.5        | 7.4  | 10            | 3/8  | 1/4            | 6 mm        | 8423 1224 85 |
| LSF28 S250 <sup>a</sup>       | 25 000                  | 12                    | 32                    | 0.86       | 1.15 | 0.8    | 1.7 | 213       | 18.5               | 39.2 | 11.0       | 23.3 | 10            | 3/8  | 3/8            | 6 mm        | 8423 1235 11 |
| LSF28 S250E <sup>a</sup>      | 25 000                  | 12                    | 32                    | 0.86       | 1.15 | 1.3    | 2.8 | 338       | 18.5               | 39.2 | 11.0       | 23.3 | 10            | 3/8  | 3/8            | 6 mm        | 8423 1235 60 |
| LSF28 S180                    | 18 000                  | 16                    | 40                    | 0.82       | 1.10 | 0.8    | 1.7 | 213       | 17.4               | 36.9 | 11.0       | 23.3 | 10            | 3/8  | 3/8            | 6 mm        | 8423 1235 04 |
| LSF28 S180E                   | 18 000                  | 16                    | 40                    | 0.82       | 1.10 | 1.3    | 2.8 | 338       | 17.4               | 36.9 | 7.0        | 14.8 | 10            | 3/8  | 3/8            | 6 mm        | 8423 1235 05 |
| LSF28 S150                    | 15 000                  | 16                    | 40                    | 0.70       | 0.94 | 0.8    | 1.7 | 213       | 15.0               | 31.8 | 5.5        | 11.7 | 10            | 3/8  | 3/8            | 6 mm        | 8423 1235 64 |
| LSF28 S150E                   | 15 000                  | 16                    | 40                    | 0.70       | 0.94 | 1.3    | 2.8 | 338       | 15.0               | 31.8 | 4.3        | 9.1  | 10            | 3/8  | 3/8            | 6 mm        | 8423 1235 61 |
| LSF28 S120                    | 12 000                  | 16                    | 40                    | 0.66       | 0.89 | 0.8    | 1.7 | 213       | 13.8               | 29.3 | 4.0        | 8.5  | 10            | 3/8  | 3/8            | 6 mm        | 8423 1235 67 |
| LSF38 S250E-01 <sup>a</sup>   | 25 000                  | 16                    | 40                    | 1.35       | 1.80 | 1.5    | 3.3 | 356       | 28.0               | 58.0 | 25.0       | 53.0 | 13            | 1/2  | 3/8            | 6 mm        | 8423 1231 17 |
| LSF38 S180E-01                | 18 000                  | 16                    | 40                    | 1.35       | 1.80 | 1.5    | 3.3 | 356       | 28.0               | 58.0 | 15.0       | 31.0 | 13            | 1/2  | 3/8            | 6 mm        | 8423 1231 16 |
| <b>Angle die grinders</b>     |                         |                       |                       |            |      |        |     |           |                    |      |            |      |               |      |                |             |              |
| LSV12 S200-1 <sup>a</sup>     | 20 000                  | 12                    | 20                    | 0.29       | 0.39 | 0.5    | 1.2 | 166       | 9.5                | 20.1 | 6.4        | 13.6 | 8             | 5/16 | 1/4            | 6 mm        | 8423 1124 06 |
| LSV12 S120-1 <sup>a</sup>     | 12 000                  | 12                    | 20                    | 0.24       | 0.33 | 0.5    | 1.2 | 166       | 8.3                | 17.6 | 3.0        | 6.4  | 8             | 5/16 | 1/4            | 6 mm        | 8423 1124 05 |
| LSV19 S200-1                  | 20 000                  | 12                    | 20                    | 0.46       | 0.62 | 0.6    | 1.3 | 185       | 11.3               | 23.9 | 7.5        | 15.9 | 10            | 3/8  | 1/4            | 6 mm        | 8423 0111 41 |
| LSV19 S120-1                  | 12 000                  | 12                    | 20                    | 0.46       | 0.62 | 0.6    | 1.3 | 185       | 11.3               | 23.9 | 7.5        | 15.9 | 10            | 3/8  | 1/4            | 6 mm        | 8423 0111 43 |
| LSV19 S080-1                  | 8 000                   | 12                    | 20                    | 0.37       | 0.50 | 0.6    | 1.3 | 185       | 11.3               | 23.9 | 6.5        | 13.8 | 10            | 3/8  | 1/4            | 6 mm        | 8423 0111 46 |
| LSV28 S150                    | 15 000                  | 16                    | 40                    | 0.68       | 0.91 | 1.2    | 2.5 | 250       | 17.0               | 36.0 | 8.3        | 17.6 | 10            | 3/8  | 3/8            | 6 mm        | 8423 0125 54 |
| <b>Grinders for polishing</b> |                         |                       |                       |            |      |        |     |           |                    |      |            |      |               |      |                |             |              |
| LSF28 ST030                   | 3 000                   | —                     | —                     | 0.67       | 0.90 | 1.2    | 2.6 | 257       | 18.0               | 38.2 | 8.6        | 18.2 | 10            | 3/8  | 3/8            | 6 mm        | 8423 1235 63 |
| LSF28 ST030E                  | 3 000                   | —                     | —                     | 0.67       | 0.90 | 1.8    | 3.9 | 383       | 18.0               | 38.2 | 8.6        | 18.2 | 10            | 3/8  | 3/8            | 6 mm        | 8423 1235 62 |
| LSF28 ST070 <sup>a</sup>      | 7 000                   | —                     | —                     | 0.76       | 1.02 | 1.2    | 2.6 | 257       | 18.9               | 40.1 | 12.4       | 23.6 | 10            | 3/8  | 3/8            | 6 mm        | 8423 1235 66 |
| LSF28 ST070E <sup>a</sup>     | 7 000                   | —                     | —                     | 0.76       | 1.02 | 1.8    | 3.9 | 383       | 18.9               | 40.1 | 12.4       | 23.6 | 10            | 3/8  | 3/8            | 6 mm        | 8423 1235 65 |

<sup>a</sup> Not lubrication-free. <sup>b</sup> 3 mm collet. <sup>c</sup> Tungsten Carbide Burrs. <sup>d</sup> Mounted Point. E=Extended version. R = Model is rigid, without scatter damping



LSF07

| Model                       | Max free speed<br>r/min | Rec. max dia of       |                       | Max output |      | Weight |     | Length<br>mm | Air consumption at |     |            |     | Rec hose size |      | Air inlet thr. | Collet size | Ordering No. |
|-----------------------------|-------------------------|-----------------------|-----------------------|------------|------|--------|-----|--------------|--------------------|-----|------------|-----|---------------|------|----------------|-------------|--------------|
|                             |                         | TS <sup>c</sup><br>mm | MP <sup>d</sup><br>mm | kW         | hp   | kg     | lb  |              | max output         |     | free speed |     | mm            | in   |                |             |              |
|                             |                         |                       |                       |            |      |        |     |              | l/s                | cfm | l/s        | cfm |               |      |                |             |              |
| <b>High speed pen model</b> |                         |                       |                       |            |      |        |     |              |                    |     |            |     |               |      |                |             |              |
| LSF07 S850 <sup>b</sup>     | 88 000                  | 4                     | 6                     | 0.10       | 0.10 | 0.4    | 0.9 | 173          | 2.2                | 4.9 | 2.3        | 4.6 | 4.5           | 3/16 | —              | 3 mm        | 8423 1222 03 |

**Accessories Included**

**LSF07**

Air hose, ErgoNIP 08,  
Collet 1/8 mm

**LSF/LSV12**

Spanner, Collet 6 mm,  
Air hose, air hose nipple  
and clamp, Exhaust hose

**LSF/LSV/19/28**

Spanner, Collet 1/4", Air hose,  
air hose nipple and clamp,  
Exhaust hose

**LSF38**

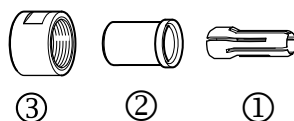
Air hose nipple, Collet 1/4"

**Optional Accessories**

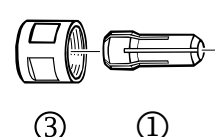
LSF07



LSF/LSV12, LSF/LSV19



LSF28/38



|                         | LSF07        | LSF/LSV12    | LSF/LSV19    | LSF28        | LSF38        | See illustration |
|-------------------------|--------------|--------------|--------------|--------------|--------------|------------------|
| <b>Optional collets</b> |              |              |              |              |              |                  |
| 3 mm                    | 4150 1800 00 | -            | -            | -            | -            | 1                |
| 1/8"                    | 4150 1822 00 | 4150 2226 46 | 4150 1710 00 | -            | -            | 1                |
| 1/4"                    | -            | 4150 2226 03 | 4112 1077 00 | 4150 1709 00 | 4150 1709 00 | 1                |
| 3/8"                    | -            | -            | -            | -            | 4150 1708 00 | 1                |
| Collar                  | -            | 4150 2226 02 | 4112 1078 00 | -            | -            | 2                |
| Collet nut              | -            | 4150 2226 04 | 4112 1076 00 | 4150 1706 00 | 4150 1706 00 | 3                |



**Service Kits**

07 series 4081 0243 90    12 series 4081 0472 90    19 series 4081 0486 90    28 series 4081 0315 90    38 series 4081 0308 90

- **LSV12 series sander** – For finer work where less power and more control are needed. Available with collet or threaded spindle.

Features: Speed governor, high quality gears and lever with feathering characteristics.

- **LSV28 series sander** – The 28 series comes in various speeds and in a wet sanding version. Wet sanders have central water supply (water feed through the angle head) for optimal water distribution on the work surface.

Features: Speed governor, sealed angle head, LF models have lubrication-free air motor.

- **LSV38 series sander** – Powerful one hand sander for medium rough to rough sanding.

Features: Speed governor, sealed angle head, lubrication-free air motor and lockable spindle.

- **LSV48 series sander** – Our most powerful angle vane sander with 1.9 kW for ultimate productivity.

Features: Speed governor, sealed angle head, lubrication-free air motor, auto-balancer and lockable spindle.



| Model                                | Max free speed<br>r/min | Rec. pad size<br>max dia<br>mm | Spindle thread and length | Max output |      | Weight |     | Length<br>mm | Height over spindle<br>mm | Air consumption at |            |      |      | Rec. hose size<br>mm in | Air inlet thread<br>BSP | Ordering No. |              |
|--------------------------------------|-------------------------|--------------------------------|---------------------------|------------|------|--------|-----|--------------|---------------------------|--------------------|------------|------|------|-------------------------|-------------------------|--------------|--------------|
|                                      |                         |                                |                           | kW         | hp   | kg     | lb  |              |                           | max output         | free speed | l/s  | cfm  |                         |                         |              | l/s          |
| <b>With collet</b>                   |                         |                                |                           |            |      |        |     |              |                           |                    |            |      |      |                         |                         |              |              |
| LSV12 S200-1                         | 20000                   | 50                             | — <sup>a</sup>            | 0.29       | 0.39 | 0.5    | 1.2 | 166          | 76                        | 9.5                | 20.1       | 6.4  | 13.6 | 8                       | 5/16                    | 1/4          | 8423 1124 06 |
| LSV12 S120-1                         | 12000                   | 75                             | — <sup>a</sup>            | 0.24       | 0.33 | 0.5    | 1.2 | 166          | 76                        | 8.3                | 17.6       | 3.0  | 6.4  | 8                       | 5/16                    | 1/4          | 8423 1124 05 |
| LSV19 S200-1                         | 20000                   | 50                             | — <sup>a</sup>            | 0.46       | 0.62 | 0.6    | 1.3 | 185          | 79                        | 11.3               | 23.9       | 7.5  | 15.9 | 10                      | 3/8                     | 1/4          | 8423 0111 41 |
| LSV19 S120-1                         | 12000                   | 75                             | — <sup>a</sup>            | 0.46       | 0.62 | 0.6    | 1.3 | 185          | 79                        | 11.3               | 23.9       | 7.5  | 15.9 | 10                      | 3/8                     | 1/4          | 8423 0111 43 |
| LSV19 S080-1                         | 8000                    | 75                             | — <sup>a</sup>            | 0.37       | 0.5  | 0.6    | 1.3 | 185          | 79                        | 11.3               | 23.9       | 6.5  | 13.8 | 10                      | 3/8                     | 1/4          | 8423 0111 46 |
| <b>With threaded spindle</b>         |                         |                                |                           |            |      |        |     |              |                           |                    |            |      |      |                         |                         |              |              |
| LSV12 S200                           | 20000                   | 50                             | UNC 1/4"x8                | 0.29       | 0.39 | 0.5    | 1.2 | 166          | 58                        | 8.3                | 17.6       | 3.0  | 6.4  | 8                       | 5/16                    | 1/4          | 8423 1124 08 |
| LSV12 S120                           | 12000                   | 75                             | UNC 1/4"x8                | 0.24       | 0.33 | 0.5    | 1.2 | 166          | 58                        | 8.3                | 17.6       | 3.0  | 6.4  | 8                       | 5/16                    | 1/4          | 8423 1124 07 |
| LSV19 S200                           | 20000                   | 50                             | UNC 1/4"x8                | 0.46       | 0.62 | 0.6    | 1.3 | 185          | 58                        | 11.3               | 23.9       | 7.5  | 15.9 | 10                      | 3/8                     | 1/4          | 8423 0111 42 |
| LSV19 S120                           | 12000                   | 75                             | UNC 1/4"x8                | 0.46       | 0.62 | 0.6    | 1.3 | 185          | 58                        | 11.3               | 23.9       | 7.5  | 15.9 | 10                      | 3/8                     | 1/4          | 8423 0111 44 |
| LSV19 S080                           | 8000                    | 75                             | UNC 1/4"x8                | 0.37       | 0.5  | 0.6    | 1.3 | 185          | 58                        | 11.3               | 23.9       | 6.5  | 13.8 | 10                      | 3/8                     | 1/4          | 8423 0111 45 |
| <b>Rotary sanders. Dry sanding</b>   |                         |                                |                           |            |      |        |     |              |                           |                    |            |      |      |                         |                         |              |              |
| LSV28 S060                           | 6000                    | 180                            | UNC 5/8"x32               | 0.73       | 0.98 | 1.5    | 3.2 | 265          | 87                        | 16.0               | 33.9       | 7.3  | 15.5 | 10                      | 3/8                     | 3/8          | 8423 0125 30 |
| LSV28 S060-M14                       | 6000                    | 180                            | M14x16                    | 0.73       | 0.98 | 1.5    | 3.2 | 265          | 87                        | 16.0               | 33.9       | 7.3  | 15.5 | 10                      | 3/8                     | 3/8          | 8423 0125 64 |
| LSV28 S040                           | 4000                    | 180                            | UNC 5/8"x32               | 0.62       | 0.83 | 1.5    | 3.2 | 265          | 87                        | 15.0               | 31.8       | 4.0  | 8.5  | 10                      | 3/8                     | 3/8          | 8423 0126 22 |
| LSV28 ST034                          | 3400                    | 180                            | UNC 5/8"x32               | 0.71       | 0.95 | 1.7    | 3.7 | 289          | 87                        | 18.0               | 38.2       | 7.7  | 16.3 | 10                      | 3/8                     | 3/8          | 8423 0135 80 |
| LSV28 S021                           | 2100                    | 180                            | UNC 5/8"x32               | 0.68       | 0.91 | 1.9    | 4.1 | 289          | 87                        | 16.0               | 33.9       | 5.6  | 11.9 | 10                      | 3/8                     | 3/8          | 8423 0125 19 |
| LSV28 S021-M14                       | 2100                    | 180                            | M14x16                    | 0.68       | 0.91 | 1.9    | 4.1 | 289          | 87                        | 16.0               | 33.9       | 5.6  | 11.9 | 10                      | 3/8                     | 3/8          | 8423 0125 72 |
| <b>Wet sanding</b>                   |                         |                                |                           |            |      |        |     |              |                           |                    |            |      |      |                         |                         |              |              |
| LSV28 S040-01-M14                    | 4000                    | 180                            | M14x16                    | 0.62       | 0.83 | 1.5    | 3.2 | 268          | 87                        | 15.0               | 31.8       | 5.0  | 10.6 | 10                      | 3/8                     | 3/8          | 8423 0125 12 |
| LSV28 ST008-01 LF                    | 800                     | 200                            | UNC 5/8"x32               | 0.68       | 0.91 | 2.0    | 4.3 | 307          | 87                        | 16.0               | 33.9       | 5.6  | 11.9 | 10                      | 3/8                     | 3/8          | 8423 0125 51 |
| <b>Lubrication-free. Dry sanding</b> |                         |                                |                           |            |      |        |     |              |                           |                    |            |      |      |                         |                         |              |              |
| LSV28 ST013-M14 LF                   | 1300                    | 180                            | M14x16                    | 0.68       | 0.91 | 1.7    | 3.7 | 289          | 87                        | 20.0               | 42.4       | 9.0  | 19.1 | 10                      | 3/8                     | 3/8          | 8423 0125 28 |
| LSV28 ST013 LF                       | 1300                    | 180                            | UNC 5/8"x32               | 0.68       | 0.91 | 1.7    | 3.7 | 289          | 87                        | 20.0               | 42.4       | 9.0  | 19.1 | 10                      | 3/8                     | 3/8          | 8423 0126 26 |
| LSV38 S085                           | 8500                    | 180                            | UNC 5/8"x22               | 1.30       | 1.70 | 1.5    | 3.3 | 221          | 96                        | 28.0               | 58.0       | 15.0 | 31.0 | 13                      | 1/2                     | 3/8          | 8423 0130 69 |
| LSV38 S085 D                         | 8500                    | 180                            | UNC 5/8"x28               | 1.30       | 1.70 | 2.3    | 5.0 | 221          | 96                        | 28.0               | 58.0       | 15.0 | 31.0 | 13                      | 1/2                     | 3/8          | 8423 0130 76 |
| LSV38 S085-M14                       | 8500                    | 180                            | M14x12                    | 1.30       | 1.70 | 1.5    | 3.3 | 221          | 96                        | 28.0               | 58.0       | 15.0 | 31.0 | 13                      | 1/2                     | 3/8          | 8423 0130 72 |
| LSV38 S066                           | 6600                    | 180                            | UNC 5/8"x22               | 1.20       | 1.60 | 1.5    | 3.3 | 221          | 96                        | 24.0               | 50.0       | 13.0 | 27.0 | 13                      | 1/2                     | 3/8          | 8423 0130 73 |
| LSV38 S066 D                         | 6600                    | 180                            | UNC 5/8"x28               | 1.20       | 1.60 | 2.3    | 5.0 | 221          | 96                        | 24.0               | 50.0       | 13.0 | 27.0 | 13                      | 1/2                     | 3/8          | 8423 0130 75 |
| LSV38 S066-M14                       | 6600                    | 180                            | M14x12                    | 1.20       | 1.60 | 1.5    | 3.3 | 221          | 96                        | 24.0               | 50.0       | 13.0 | 27.0 | 13                      | 1/2                     | 3/8          | 8423 0130 77 |

<sup>a</sup> Ø 6 mm collet.

-ST = Models with planetary gears.

-D = Spot suction kit included.

-SA = Autobalancer.

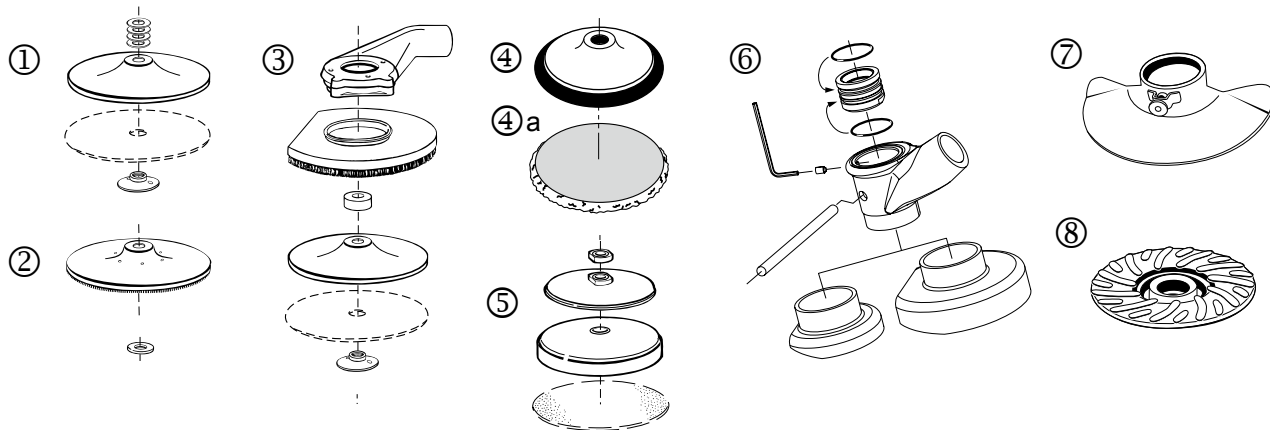
## Accessories Included

Air hose nipple  
Clamp

Exhaust hose (LSV19/28/38)  
Support handle (LSV28/38/48)

Wrenches  
Spot suction equipment (D-version)

## Optional Accessories



|  | LSV12                     | LSV19                      | LSV28                      | LSV38                     | See ill. |
|--|---------------------------|----------------------------|----------------------------|---------------------------|----------|
| <b>Backing set, standard type</b>            |                           |                            |                            |                           |          |
| Ø 125 mm - 5/8" - soft                       | -                         | -                          | 4170 0768 80               | 4170 0768 80              | 1        |
| Ø 180 mm - 5/8" - soft                       | -                         | -                          | 4170 0756 80               | 4170 0756 80              | 1        |
| Ø 180 mm - 5/8" - stiff                      | -                         | -                          | 4170 0757 80               | 4170 0757 80              | 1        |
| <b>Backing set with cooling ribs</b>         |                           |                            |                            |                           |          |
| Ø 125 mm - 5/8" and M14, medium              | -                         | -                          | 4150 1962 80               | 4150 1962 80              | 2        |
| Ø 180 mm - 5/8" and M14, stiff               | -                         | -                          | -                          | 4150 1962 83              | 2        |
| Ø 180 mm - 5/8" and M14, medium              | -                         | -                          | 4150 1962 81               | 4150 1962 81              | 2        |
| <b>Backing set, heavy duty type</b>          |                           |                            |                            |                           |          |
| Ø 120 mm - M14                               | -                         | -                          | -                          | 4175 0883 93              | 8        |
| Ø 162 mm - M14                               | -                         | -                          | -                          | 4175 0883 91              | 8        |
| Ø 120 mm - 5/8"                              | -                         | -                          | -                          | 4175 0883 92              | 8        |
| Ø 162 mm - 5/8"                              | -                         | -                          | -                          | 4175 0883 90              | 8        |
| <b>Backing set for polishing - velcro</b>    |                           |                            |                            |                           |          |
| Ø 150 mm - 5/8" (max 2500 rpm)               | -                         | -                          | 4112 6092 15               | -                         | 4        |
| Ø 150 mm - Lambs wool bonnet                 | -                         | -                          | 4112 6093 15               | -                         | 4a       |
| <b>Backing set for wet sanding</b>           |                           |                            |                            |                           |          |
| Ø 180 mm - 5/8" - foam rubber (max 2500 rpm) | -                         | -                          | 4170 0428 83               | -                         | 5        |
| <b>Spot suction kit for fiber disc</b>       |                           |                            |                            |                           |          |
| Ø 125 mm                                     | -                         | -                          | 3780 4007 80 <sup>a</sup>  | 3780 4008 85 <sup>d</sup> | 3        |
| Ø 180 mm                                     | -                         | -                          | 3780 4007 90 <sup>b/</sup> | 3780 4008 84 <sup>e</sup> | 3        |
|  |                           |                            | 3780 4031 60 <sup>c</sup>  |                           | 3        |
| Ø 50 - 75 mm                                 | 3780 4092 64 <sup>f</sup> | 3780 4092 62 <sup>f/</sup> | -                          | -                         | 6        |
|  |                           | 3780 4092 65 <sup>g</sup>  |                            |                           | 6        |
| Hand shield for 125-180 mm                   | -                         | -                          | -                          | 4150 1936 80              | 7        |
| Hand shield for 125-180 mm                   | -                         | -                          | -                          | 4150 1941 80              | 7        |

<sup>a</sup> = Suits LSV28 S060

<sup>c</sup> = Suits LSV28 S021

<sup>e</sup> = Can only be retrofitted on LSV38 D (8423 0800 03 and 8423 0800 04)

<sup>f</sup> = For model with collet

<sup>b</sup> = Suits LSV28 S040/060

<sup>d</sup> = Can only be retrofitted on LSV38 D (8423 0800 02 and 8423 0800 03)

<sup>g</sup> = For model with threaded spindle



## Service Kits

LSV19 4081 0486 90  
LSV28 4081 0317 90

LSV38 4081 0309 90

# Orbital and Random Orbital Sanders

Atlas Copco series of random orbital sanders combines all the important customer and application requirements in a very competitive range of products. Applications like sanding before painting and surface coating, polishing with wax and surface conditioner are all quickly done with the small and easily operated LST20-range of sanders.

All models are lubrication free and have silicone free components. The full range includes standard and dust extraction models, with three different orbit diameters to choose from.



| Model   | Max free speed<br>r/min | Pad size<br>mm | Orbit dia<br>mm | Max output |      | Weight |      | Height over spindle<br>mm | Length<br>mm     | Air consumption at free speed |     | Rec. hose size<br>mm | Air inlet thread<br>BSP | Ordering No. |
|---|-------------------------|----------------|-----------------|------------|------|--------|------|---------------------------|------------------|-------------------------------|-----|----------------------|-------------------------|--------------|
|   |                         |                |                 | kW         | hp   | kg     | lb   |                           |                  | l/s                           | cfm |                      |                         |              |
| <b>Random orbital – Standard</b>                      |                         |                |                 |            |      |        |      |                           |                  |                               |     |                      |                         |              |
| LST30 H090-11   | 9000                    | 110            | 8               | 0.3        | 0.4  | 1.2    | 2.6  | 120                       | 255              | 7.5                           | 16  | 8                    | 1/4                     | 8423 0361 64 |
| LST30 H090-15   | 9000                    | 150            | 8               | 0.3        | 0.4  | 1.2    | 2.6  | 120                       | 275              | 7.5                           | 16  | 8                    | 1/4                     | 8423 0361 72 |
| LST30 S090-15   | 9000                    | 150            | 8               | 0.3        | 0.4  | 1.1    | 2.4  | 120                       | 175              | 7.5                           | 16  | 8                    | 1/4                     | 8423 0361 98 |
| <b>Self suction<sup>a</sup></b>                       |                         |                |                 |            |      |        |      |                           |                  |                               |     |                      |                         |              |
| LST31 H090-15   | 9000                    | 150            | 8               | 0.3        | 0.4  | 1.4    | 3.0  | 120                       | 300              | 7.5                           | 16  | 8                    | 1/4                     | 8423 0363 19 |
| <b>Central suction<sup>b</sup></b>                    |                         |                |                 |            |      |        |      |                           |                  |                               |     |                      |                         |              |
| LST32 H090-15   | 9000                    | 150            | 8               | 0.3        | 0.4  | 1.4    | 3.0  | 120                       | 300              | 7.5                           | 16  | 8                    | 1/4                     | 8423 0362 55 |
| LST32 S090-15   | 9000                    | 150            | 8               | 0.3        | 0.4  | 1.3    | 2.9  | 120                       | 200              | 7.5                           | 16  | 8                    | 1/4                     | 8423 0362 71 |
| <b>Orbital – Standard</b>                             |                         |                |                 |            |      |        |      |                           |                  |                               |     |                      |                         |              |
| LSO30 S070-3  | 7000                    | 93x170         | 5               | 0.3        | 0.4  | 1.6    | 3.5  | 125                       | 185              | 7.5                           | 16  | 8                    | 1/4                     | 8423 0360 16 |
| LSO30 H070-3  | 7000                    | 93x170         | 5               | 0.3        | 0.4  | 1.7    | 3.7  | 125                       | 285              | 7.5                           | 16  | 8                    | 1/4                     | 8423 0360 24 |
| <b>Central suction<sup>c</sup></b>                    |                         |                |                 |            |      |        |      |                           |                  |                               |     |                      |                         |              |
| LSO32 H070-3  | 7000                    | 93x170         | 5               | 0.3        | 0.4  | 1.8    | 4.0  | 125                       | 310              | 7.5                           | 16  | 8                    | 1/4                     | 8423 0361 07 |
| <b>Standard model</b>                                 |                         |                |                 |            |      |        |      |                           |                  |                               |     |                      |                         |              |
| LST20 R350  | 12000                   | 90             | 5               | 0.2        | 0.27 | 0.85   | 1.85 | 95                        | 127              | 8                             | 17  | 8                    | 1/4                     | 8423 0361 65 |
| LST20 R550  | 12000                   | 125            | 5               | 0.2        | 0.27 | 0.85   | 1.85 | 83                        | 127              | 8                             | 17  | 8                    | 1/4                     | 8423 0361 69 |
| LST20 R650  | 12000                   | 150            | 5               | 0.2        | 0.27 | 0.85   | 1.85 | 83                        | 127              | 8                             | 17  | 8                    | 1/4                     | 8423 0361 73 |
| LST20 R525  | 12000                   | 125            | 2.4             | 0.2        | 0.27 | 0.85   | 1.85 | 83                        | 127              | 8                             | 17  | 8                    | 1/4                     | 8423 0361 81 |
| LST20 R625  | 12000                   | 150            | 2.4             | 0.2        | 0.27 | 0.85   | 1.85 | 83                        | 127              | 8                             | 17  | 8                    | 1/4                     | 8423 0361 84 |
| <b>Extraction model – self suction</b>                |                         |                |                 |            |      |        |      |                           |                  |                               |     |                      |                         |              |
| LST21 R550  | 12000                   | 125            | 5               | 0.2        | 0.27 | 0.85   | 1.85 | 83                        | 133 <sup>d</sup> | 8                             | 17  | 8                    | 1/4                     | 8423 0361 70 |
| LST21 R650  | 12000                   | 150            | 5               | 0.2        | 0.27 | 0.85   | 1.85 | 83                        | 133 <sup>d</sup> | 8                             | 17  | 8                    | 1/4                     | 8423 0361 74 |
| <b>Extraction model – central suction<sup>c</sup></b> |                         |                |                 |            |      |        |      |                           |                  |                               |     |                      |                         |              |
| LST22 R550  | 12000                   | 125            | 5               | 0.2        | 0.27 | 0.85   | 1.85 | 83                        | 133 <sup>d</sup> | 8                             | 17  | 8                    | 1/4                     | 8423 0361 71 |
| LST22 R650  | 12000                   | 150            | 5               | 0.2        | 0.27 | 0.85   | 1.85 | 83                        | 133 <sup>d</sup> | 8                             | 17  | 8                    | 1/4                     | 8423 0361 75 |

<sup>a</sup> Includes dust collecting bag.

<sup>b</sup> Required air flow 150 m<sup>3</sup>/h or 88 cfm.

<sup>c</sup> Required air flow 60 m<sup>3</sup>/h or 35 cfm.

<sup>d</sup> 186 mm (7.3") suction hose connector included.

H = With handle.

S = Without handle.

-9 Velcro pad, 9 holes.



## Accessories Included

### LSO

- Base pad
- Perforating plate
- Hose nipple for 8 mm hose

### LST20/21/22

- Velcro pad
- U-wrench for pad change
- Air hose nipple
- Dust hose and bag (LST21)
- Large and small grip cover

### LST30/31/32

- Velcro pad
- Bar for changing pad
- Hose nipple for 8 mm hose
- LST31 incl dust collection kit

## Optional Accessories

### LSO

| For LSO   | Ordering No. |
|---|--------------|
| Base pad, vinyl for F-type  | 4112 0787 01 |
| <b>Hose set</b><br>Dust hose, for LSO32, Ø 32 mm,<br>L=1.8 m including air hose | 3780 2724 34 |

### LST20/21/22, PAD FOR SELF STICK PAPER

|              | Ordering No. |              |              |
|--------------|--------------|--------------|--------------|
|              | Dia 89 mm    | Dia 125 mm   | Dia 150 mm   |
| For LST20    | 4112 1231 00 | 4112 1233 00 | 4112 1235 00 |
| For LST21/22 | -            | 4112 1232 00 | 4112 1234 00 |

### LST20/21/22, PAD FOR VELCRO BACK PAPER

|               | Ordering No. |              |              |
|---------------|--------------|--------------|--------------|
|               | Dia 89 mm    | Dia 125 mm   | Dia 150 mm   |
| For LST 20    | 4112 1218 00 | 4112 1216 00 | 4112 1214 00 |
| For LST 21/22 | -            | 4112 1217 00 | 4112 1215 00 |

### LST30/31/32

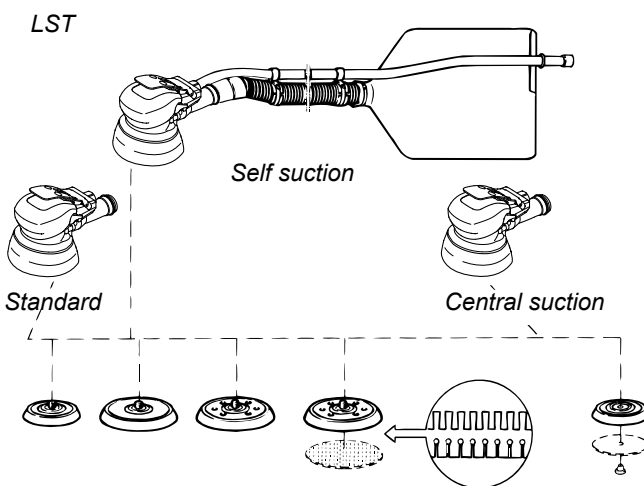
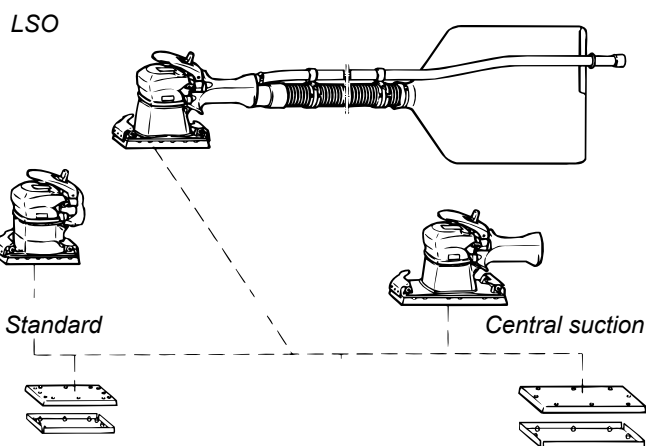
|  | Ordering No.              |
|--|---------------------------|
| Pad velcro, Ø 150 mm   | 4112 0795 02 <sup>a</sup> |
| Pad velcro, Ø 110 mm   | 4112 0792 02 <sup>b</sup> |
| Pad velcro, Ø 150 mm, 6 holes                                    | 4112 0796 01 <sup>c</sup> |
| <b>Hose set</b><br>Dust hose Ø 32 mm, L=1.8 m including air hose | 3780 2724 34 <sup>d</sup> |

<sup>a</sup>LST30-15   <sup>b</sup>LST30/32-11   <sup>c</sup>LST31/32-15   <sup>d</sup>LST32

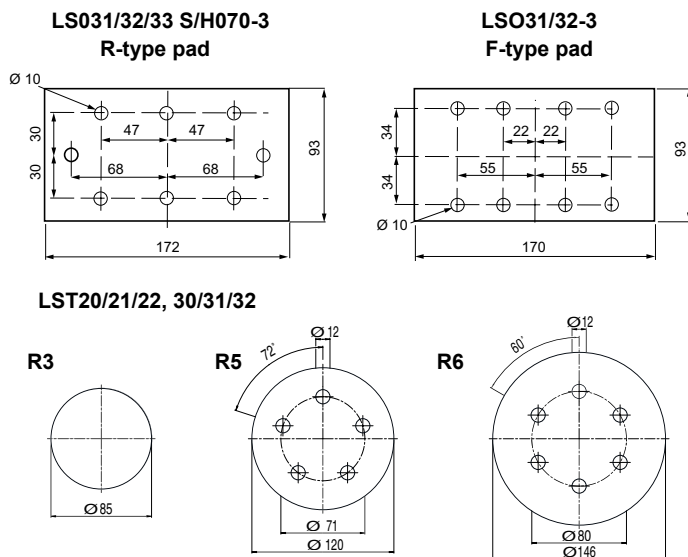


## Service Kits

|             |              |
|-------------|--------------|
| LST20/21/22 | 4112 1300 90 |
| LST30/31/32 | 4081 0131 90 |



## HOLE PATTERN DIMENSIONS FOR SANDING PAPER, DUST EXTRACTION MODELS





| Model          | Free speed<br>r/min | Collet<br>size | Weight |     | Power |      | Air consumption |     | Rec.<br>hose size |     | Hose<br>fitting<br>thread<br>BSP | Ordering No. |
|----------------|---------------------|----------------|--------|-----|-------|------|-----------------|-----|-------------------|-----|----------------------------------|--------------|
|                |                     |                | kg     | lb  | kW    | hp   | l/s             | cfm | mm                | in  |                                  |              |
| LSK37 S250-DS1 | 25000               | 6 mm           | 2.8    | 6.1 | 0.7   | 0.95 | 18              | 32  | 13                | 1/2 | 3/8                              | 8423 1234 41 |
| LSK37 S250-DS2 | 25000               | 1/4"           | 2.8    | 6.1 | 0.7   | 0.95 | 18              | 32  | 13                | 1/2 | 3/8                              | 8423 1234 42 |
| LSK38 S250 Do  | 25000               | 1/4"           | 1.1    | 2.2 | 1.3   | 1.8  | 28              | 58  | 13                | 1/2 | 3/8                              | 8423 0700 00 |
| LSK38 S180 Do  | 18000               | 1/4"           | 1.1    | 2.2 | 1.3   | 1.8  | 28              | 58  | 13                | 1/2 | 3/8                              | 8423 0700 01 |

Suction requirement: LSK37: 200 m³/h. **NOTE:** LSK38 delivered without router head.

Circular cutting operations in glass and carbon fiber as well as sheet metal and wood can successfully be performed with a circular cutter.

- **Effective** – LCS10 and LCS38 cut to a depth of 10 and 26 mm respectively.
- LCS38 is suitable for diamond coated blades only.
- **Dust extraction** – Cutting of composite materials generates dust containing particles that are hazardous to health. The dust must be deported in order to prevent the operator from inhaling it.

LCS38 is equipped with a cutter blade guard with integrated dust extraction hood for external vacuum source.



| Model                    | Free speed<br>r/min | Max output |     | Max cutting depth<br>mm | Max cutter blade dia<br>mm | Weight |     | Air consumption at free speed |     | Rec. hose size |     | Air inlet thread<br>BSP | Ordering No. |
|--------------------------|---------------------|------------|-----|-------------------------|----------------------------|--------|-----|-------------------------------|-----|----------------|-----|-------------------------|--------------|
|                          |                     | kW         | hp  |                         |                            | kg     | lb  | l/s                           | cfm | mm             | in  |                         |              |
| LCS10                    | 3000                | 0.3        | 0.4 | 10                      | 50                         | 1.4    | 3.1 | 7.6                           | 16  | 6.3            | 1/4 | 1/4                     | 8424 1161 38 |
| LCS38 S150D <sup>a</sup> | 15000               | 1.3        | 1.7 | 26                      | 100                        | 1.7    | 3.7 | 28.0                          | 58  | 13.0           | 1/2 | 3/8                     | 8424 1125 06 |

<sup>a</sup> Suction requirement: 200 m<sup>3</sup>/h.

## Accessories Included

### LCS38

Flanges for diamond blade  
Hose nipple for 13 mm air hose  
Exhaust hose

## Optional Accessories

### CUTTER BLADES

| Model | Application | Max thickness of material<br>mm | No. of teeth<br>mm | Dia<br>mm | Hole<br>mm | Ordering No.    |
|-------|-------------|---------------------------------|--------------------|-----------|------------|-----------------|
| LCS10 | Steel sheet | 1.0                             | 92                 | 50        | 10         | 4190 0394 00    |
|       | Steel sheet | 1.0                             | 62                 | 50        | 10         | 4190039500(std) |
|       | Aluminum    | 2.5                             | 34                 | 50        | 10         | 4190 0396 00    |
|       | Wood        | 10.0                            | 34                 | 50        | 10         | 4190 0396 00    |
| LCS38 | Glassfibre  | 18.0                            | 44/60 (Grain)      | 75        | 12         | 3780 5073 00    |
|       | Glassfibre  | 25.0                            | 44/60 (Grain)      | 100       | 12         | 3780 5074 00    |

| Model  | Ordering No. |
|--|--------------|
| Suction hose set for LCS38 (L= 150 mm, Dia 1 1/4") | 3780 2724 31 |

## Productivity Kits

| Model                        | Air inlet<br>BSP | Max<br>air flow | Hose, 5 m   | Coupling   | Lubrication | Ordering No. |
|------------------------------|------------------|-----------------|-------------|------------|-------------|--------------|
| MIDI Optimizer F/RD EQ10-T13 | 3/8              | 35 l/s          | Turbo 13 mm | ErgoQIC 10 | Yes         | 8202 0850 17 |
| MIDI Optimizer F/R EQ10-T13  | 1/2              | 35 l/s          | Turbo 13 mm | ErgoQIC 10 | No          | 8202 0850 04 |
| MIDI Optimizer F/RD EQ10-T13 | 1/2              | 35 l/s          | Turbo 13 mm | ErgoQIC 10 | Yes         | 8202 0850 13 |

# Engraving Pen



| Model | Max free speed<br>r/min | Length mm | Weight kg | Air<br>consumption<br>l/s | Rec hose size<br>mm | Air inlet BSP | Ordering No. |
|-------|-------------------------|-----------|-----------|---------------------------|---------------------|---------------|--------------|
| P2505 | 190                     | 175       | 0.12      | 0.6                       | 3.2                 | 1/8"          | 8425 0102 72 |

# Air Saw



### Cutting Capacity:

Mild Steel: 4 mm

High tensile strength steel: 1.2 - 1.6 mm

| Model | Stroke per<br>minute | Stroke<br>length mm | Blade shank<br>opening<br>mm | Length mm | Weight kg | Air cons. l/s | Rec hose<br>size mm | Air inlet<br>thread BSP | Ordering No.  |
|-------|----------------------|---------------------|------------------------------|-----------|-----------|---------------|---------------------|-------------------------|---------------|
| C1050 | 10500                | 5                   | 5                            | 148       | 0.52      | 2.2           | 6.3                 | 1/4"                    | 8424 1110 502 |

# Accessories

| Model   | Ordering No. |
|---|--------------|
| P2505 Needle and small parts kit                                      | 4081 0068 90 |
| C1050 saw blade 32 teeth (10 pcs) (Hard materials(Steel))             | 4112 3008 45 |
| C1050 saw blade 24 teeth (10 pcs) (Soft materials(aluminum, plastic)) | 4112 3008 46 |

Eliminate burr and unnecessary costs with the Atlas Copco G2410.

Cleaning welds or rust removal in cramped spaces demands a versatile belt sander. The multifaceted G2410 has exchangeable support arms, so you can change the dimension of the abrasive used.

The design of the arm attachment even non Atlas Copco arms to be fitted on the tool for increased flexibility.

To make this tool as ideal as possible for your applications, we offer arms and abrasives and felt belts in the range of 3-13mm x 305mm.



| Model | Max free speed r/min | Max outputW | Belt speed m/min | Belt dimension mm | Weight kg | Air consumption l/s | Rec hose size mm | Air inlet thread BSP | Ordering No. |
|-------|----------------------|-------------|------------------|-------------------|-----------|---------------------|------------------|----------------------|--------------|
| G2410 | 25 000               | 275         | 1400             | 13x305            | 0.9       | 10                  | 10               | 1/4"                 | 8423 0304 10 |

| Sanding belt kit                                | Grit size    |              |              |              |
|---|--------------|--------------|--------------|--------------|
|   | 40+          | 60+          | 80+          | 120+         |
| 3M sanding belt kit 20 pcs, 6x305mm (1/4"x12")  | 4170 1208 00 | 4170 1208 02 | 4170 1208 03 | 4170 1208 04 |
| 3M sanding belt kit 20 pcs, 13x305mm (1/2"x12") | 4170 1208 05 | 4170 1208 06 | 4170 1208 07 | 4170 1208 08 |

| Felt belt kit  | Coars        | Medium       | Very fine    |
|--|--------------|--------------|--------------|
| 3M Scotch-brite felt belt kit 10pcs, 13x305mm (1/2"x12") | 4170 1210 00 | 4170 1210 01 | 4170 1210 02 |

| Accessories   | Ordering No. |
|---|--------------|
| Contact arm sanding belts 13 x 305mm (1/2"x12")(std arm)  | 4112 3007 88 |
| Contact arm sanding belts 3 & 6 x 305mm (1/8" & 1/4"x12") | 4112 3007 78 |
| Contact arm felt belts 13 x 305mm (1/2"x12")              | 4112 3007 79 |
| Service kit motor   | 4081 0501 90 |
| Service kit general                                       | 4081 0502 90 |
| Service kit belt support                                  | 4081 0503 90 |





| Model   | Torque range soft joint |           | Free speed/r/min | Weight |     | Length mm | CS distance mm | Air consumption at free speed |     | Rec.hose size mm | Air inlet thread in | Ordering No. |
|---|-------------------------|-----------|------------------|--------|-----|-----------|----------------|-------------------------------|-----|------------------|---------------------|--------------|
|   | Nm                      | ft lb     |                  | kg     | lb  |           |                | l/s                           | cfm |                  |                     |              |
| <b>With trigger start</b>                           |                         |           |                  |        |     |           |                |                               |     |                  |                     |              |
| LUM22 HR3   | 0.6-3                   | 5.3-26.5  | 2200             | 0.85   | 1.9 | 186       | 18             | 7.5                           | 16  | 8                | 1/4                 | 8431 0269 00 |
| LUM22 HR4   | 0.6-4                   | 5.3-35.4  | 1650             | 0.85   | 1.9 | 186       | 18             | 7.5                           | 16  | 8                | 1/4                 | 8431 0269 02 |
| LUM22 HR6   | 1.5-6.5                 | 13.3-57.5 | 1150             | 0.85   | 1.9 | 186       | 18             | 7.5                           | 16  | 8                | 1/4                 | 8431 0269 01 |
| LUM22 HR10  | 3.5-10                  | 31-88.5   | 750              | 1      | 2.2 | 218       | 18             | 7.5                           | 16  | 10               | 1/4                 | 8431 0269 03 |
| LUM22 HR12  | 3.5-12.5                | 31-110.6  | 500              | 1      | 2.2 | 210       | 18             | 7.5                           | 16  | 10               | 1/4                 | 8431 0269 04 |
| LUM22 HR12-370                                      | 3.5-12.5                | 31-110.6  | 370              | 1      | 2.2 | 210       | 18             | 7.5                           | 16  | 10               | 1/4                 | 8431 0269 05 |
| LUM32 HR10  | 5-10                    | 44.2-88.5 | 750              | 0.72   | 1.6 | 183       | 18.5           | 7.5                           | 16  | 10               | 1/4                 | 8431 0269 90 |
| LUM32 HR15  | 7.5-15.5                | 66-137.2  | 450              | 0.72   | 1.6 | 183       | 18.5           | 7.5                           | 16  | 10               | 1/4                 | 8431 0269 91 |
| <b>With trigger and push start</b>                  |                         |           |                  |        |     |           |                |                               |     |                  |                     |              |
| LUM22 HR3-P   | 0.6-3                   | 5.3-26.5  | 2200             | 0.85   | 1.9 | 186       | 21             | 7.5                           | 16  | 8                | 1/4                 | 8431 0269 06 |
| LUM22 HR4-P   | 0.6-4                   | 5.3-35.4  | 1650             | 0.85   | 1.9 | 186       | 21             | 7.5                           | 16  | 8                | 1/4                 | 8431 0269 08 |
| LUM22 HR6-P   | 1.5-6.5                 | 13.3-57.5 | 1150             | 0.85   | 1.9 | 186       | 21             | 7.5                           | 16  | 8                | 1/4                 | 8431 0269 07 |
| LUM22 HR10-P  | 3.5-10                  | 31-88.5   | 750              | 1      | 2.2 | 218       | 21             | 7.5                           | 16  | 10               | 1/4                 | 8431 0269 09 |
| LUM22 HR12-P  | 3.5-12.5                | 31-110.6  | 500              | 1      | 2.2 | 210       | 21             | 7.5                           | 16  | 10               | 1/4                 | 8431 0269 10 |
| LUM22 HR12-370-P                                    | 3.5-12.5                | 31-110.6  | 370              | 1      | 2.2 | 210       | 21             | 7.5                           | 16  | 10               | 1/4                 | 8431 0269 11 |
| <b>Balanced grip models with trigger start</b>      |                         |           |                  |        |     |           |                |                               |     |                  |                     |              |
| LLUM12 HRX1   | 0.6-1.8                 | 5.3-15.9  | 2300             | 0.65   | 1.4 | 176       | 15             | 6                             | 13  | 6                | 1/8                 | 8431 0278 58 |
| LUM12 HRX2  | 0.6-2.5                 | 5.3-22.1  | 1650             | 0.65   | 1.4 | 176       | 16             | 6                             | 13  | 6                | 1/8                 | 8431 0278 56 |
| LUM12 HRX3  | 0.4-3.5                 | 5.3-31.9  | 1150             | 0.7    | 1.5 | 186       | 16             | 6                             | 13  | 6                | 1/8                 | 8431 0278 54 |
| LUM12 HRX5  | 0.4-5                   | 3.5-44.2  | 850              | 0.7    | 1.5 | 186       | 16             | 6                             | 13  | 6                | 1/8                 | 8431 0278 51 |
| LUM12 HRX5-350                                      | 0.4-5                   | 3.5-44.2  | 350              | 0.7    | 1.5 | 186       | 16             | 6                             | 13  | 6                | 1/8                 | 8431 0278 48 |
| LUM12 HRX8  | 1.5-8                   | 13.3-70.8 | 500              | 0.7    | 1.5 | 186       | 16             | 6                             | 13  | 6                | 1/8                 | 8431 0278 60 |
| LUM12 HRX8-50                                       | 1.5-8                   | 13.3-70.8 | 50               | 0.7    | 1.5 | 196       | 16             | 6                             | 13  | 6                | 1/8                 | 8431 0280 25 |
| LUM12 HRX8-110                                      | 1.5-8                   | 13.3-70.8 | 110              | 0.7    | 1.5 | 196       | 16             | 6                             | 13  | 6                | 1/8                 | 8431 0280 27 |
| LUM12 HRX8-250                                      | 1.5-8                   | 13.3-70.8 | 250              | 0.7    | 1.5 | 186       | 16             | 6                             | 13  | 6                | 1/8                 | 8431 0278 69 |
| LUM22 HRX2  | 1.2-2                   | 10.6-17.7 | 4500             | 0.9    | 2   | 187       | 18             | 9                             | 19  | 8                | 1/4                 | 8431 0269 29 |
| LUM22 HRX2-3200                                     | 1.1-2.6                 | 9.7-23    | 3200             | 0.9    | 2   | 187       | 18             | 9                             | 19  | 8                | 1/4                 | 8431 0278 85 |
| LUM22 HRX3  | 0.6-3                   | 5.3-26.5  | 2250             | 0.9    | 2   | 187       | 18             | 9                             | 19  | 8                | 1/4                 | 8431 0269 22 |
| LUM22 HRX3.5  | 0.6-3.5                 | 5.3-29.2  | 2250             | 0.9    | 2   | 187       | 18             | 9                             | 19  | 8                | 1/4                 | 8431 0269 99 |
| LUM22 HRX4  | 0.6-4                   | 5.3-35.4  | 1650             | 0.9    | 2   | 187       | 18             | 9                             | 19  | 8                | 1/4                 | 8431 0269 20 |
| LUM22 HRX6  | 1.5-6.5                 | 13.3-57.5 | 1100             | 0.95   | 2.1 | 197       | 18             | 9                             | 19  | 8                | 1/4                 | 8431 0269 21 |
| LUM22 HRX10   | 3.5-10                  | 31-88.5   | 800              | 1.1    | 2.4 | 219       | 18             | 9                             | 19  | 10               | 1/4                 | 8431 0269 23 |
| LUM22 HRX11-220                                     | 3.5-12.5                | 31-110.6  | 220              | 1.15   | 2.5 | 229       | 18             | 9                             | 19  | 10               | 1/4                 | 8431 0282 20 |
| LUM22 HRX12   | 3.5-12.5                | 31-110.6  | 500              | 1.1    | 2.4 | 211       | 18             | 9                             | 19  | 10               | 1/4                 | 8431 0269 24 |
| LUM22 HRX12-50                                      | 3.5-12.5                | 31-110.6  | 50               | 1.15   | 2.5 | 229       | 18             | 9                             | 19  | 10               | 1/4                 | 8431 0280 26 |
| LUM22 HRX12-120                                     | 3.5-12.5                | 31-110.6  | 120              | 1.15   | 2.5 | 229       | 18             | 9                             | 19  | 10               | 1/4                 | 8431 0280 28 |
| LUM22 HRX12-370                                     | 3.5-12.5                | 31-110.6  | 370              | 1.1    | 2.4 | 211       | 18             | 9                             | 19  | 10               | 1/4                 | 8431 0269 25 |
| LUM22 HRX26 a                                       | 3-26                    | 26.6-230  | 220              | 1.2    | 2.6 | 233       | 18             | 9                             | 19  | 10               | 1/4                 | 8431 0269 39 |
| <b>Multiple air inlet models with trigger start</b> |                         |           |                  |        |     |           |                |                               |     |                  |                     |              |
| LUM12 HRF2  | 0.6-2.5                 | 5.3-22.1  | 1650             | 0.65   | 1.4 | 190       | 16             | 6                             | 13  | 6                | 1/8                 | 8431 0269 31 |
| LUM12 HRF3  | 0.4-3.6                 | 3.5-31.9  | 1150             | 0.7    | 1.5 | 200       | 16             | 6                             | 13  | 6                | 1/8                 | 8431 0269 32 |
| LUM12 HRF5  | 0.4-5                   | 3.5-44.2  | 850              | 0.7    | 1.5 | 200       | 16             | 6                             | 13  | 6                | 1/8                 | 8431 0269 33 |
| LUM12 HRF8  | 1.5-8                   | 13.3-70.8 | 500              | 0.7    | 1.5 | 200       | 16             | 6                             | 13  | 6                | 1/8                 | 8431 0269 34 |

<sup>a</sup> 1/4" square drive.

All models: Are reversible and have quick change chuck.

All data at an air pressure of 6.3 bar.

For operator comfort a support handle is recommended for high torque, see Optional Accessories.



| Model                                     | Torque range soft joint |           | Free speed r/min | Weight |      | Length mm | CS Dist. | Air consumption at free speed |     | Rec hose size mm | Air inlet thr. | Ordering No. |
|---|-------------------------|-----------|------------------|--------|------|-----------|----------|-------------------------------|-----|------------------|----------------|--------------|
|   | Nm                      | in lb     |                  | kg     | lb   |           |          | l/s                           | cfm |                  |                |              |
| <b>With push start and button reverse</b> |                         |           |                  |        |      |           |          |                               |     |                  |                |              |
| LUM02 PR04-1200                           | 0.03-0.32               | 0.27-2.9  | 1 200            | 0.17   | 0.35 | 172       | 10       | 2.2                           | 4.7 | 6 <sup>a</sup>   | M5             | 8431 0146 04 |
| LUM02 PR04-1800                           | 0.03-0.32               | 0.27-2.9  | 1 800            | 0.17   | 0.35 | 172       | 10       | 2.2                           | 4.7 | 6 <sup>a</sup>   | M5             | 8431 0146 02 |
| LUM02 PR07-350                            | 0.025-0.6               | 0.23-5.4  | 350              | 0.17   | 0.35 | 172       | 10       | 2.2                           | 4.7 | 6 <sup>a</sup>   | M5             | 8431 0146 08 |
| LUM02 PR07-500                            | 0.025-0.6               | 0.23-5.4  | 500              | 0.17   | 0.35 | 172       | 10       | 2.2                           | 4.7 | 6 <sup>a</sup>   | M5             | 8431 0146 06 |
| LUM02 PR04-950-Q                          | 0.03-0.32               | 0.27-2.9  | 950              | 0.17   | 0.35 | 172       | 10       | 2.2                           | 4.7 | 6 <sup>a</sup>   | M5             | 8431 0146 15 |
| LUM02 PR04-1200-Q                         | 0.03-0.32               | 0.27-2.9  | 1 200            | 0.17   | 0.35 | 172       | 10       | 2.2                           | 4.7 | 6 <sup>a</sup>   | M5             | 8431 0146 14 |
| LUM02 PR04-1800-Q                         | 0.03-0.32               | 0.27-2.9  | 1 800            | 0.17   | 0.35 | 172       | 10       | 2.2                           | 4.7 | 6 <sup>a</sup>   | M5             | 8431 0146 12 |
| LUM02 PR07-350-Q                          | 0.025-0.6               | 0.23-5.4  | 350              | 0.17   | 0.35 | 172       | 10       | 2.2                           | 4.7 | 6 <sup>a</sup>   | M5             | 8431 0146 18 |
| LUM02 PR07-500-Q                          | 0.025-0.6               | 0.23-5.4  | 500              | 0.17   | 0.35 | 172       | 10       | 2.2                           | 4.7 | 6 <sup>a</sup>   | M5             | 8431 0146 16 |
| LUM02 PR07-600-Q                          | 0.025-0.6               | 0.23-5.4  | 500              | 0.17   | 0.35 | 172       | 10       | 2.2                           | 4.7 | 6 <sup>a</sup>   | M5             | 8431 0146 03 |
| LUM10 PR03                                | 0.1-1.5                 | 0.8-13    | 300              | 0.4    | 0.9  | 206       | 15       | 3                             | 6   | 6                | 1/8            | 8431 0146 05 |
| LUM10 PR05                                | 0.1-1.5                 | 0.8-13    | 460              | 0.4    | 0.9  | 206       | 15       | 3                             | 6   | 6                | 1/8            | 8431 0146 09 |
| LUM10 PR12                                | 0.1-1.1                 | 0.8-10    | 1 200            | 0.4    | 0.9  | 196       | 15       | 3                             | 6   | 6                | 1/8            | 8431 0146 17 |
| LUM10 PR21                                | 0.1-0.7                 | 0.8-6     | 2 000            | 0.4    | 0.9  | 196       | 15       | 3                             | 6   | 6                | 1/8            | 8431 0146 25 |
| LUM12 PR1                                 | 0.6-1.6                 | 5.3-14.2  | 1 900            | 0.55   | 1.2  | 195       | 17       | 4.5                           | 10  | 6                | 1/8            | 8431 0278 29 |
| LUM12 PR2                                 | 0.4-2.3                 | 3.5-20.4  | 1 450            | 0.55   | 1.2  | 195       | 17       | 4.5                           | 10  | 6                | 1/8            | 8431 0278 27 |
| LUM12 PR3                                 | 0.4-3.2                 | 3.5-28.3  | 1 000            | 0.55   | 1.2  | 195       | 17       | 4.5                           | 10  | 6                | 1/8            | 8431 0278 26 |
| LUM12 PR4                                 | 0.4-4.2                 | 3.5-37.2  | 750              | 0.55   | 1.2  | 195       | 17       | 4.5                           | 10  | 6                | 1/8            | 8431 0278 25 |
| LUM12 PR5                                 | 0.4-5                   | 3.5-44.2  | 450              | 0.55   | 1.2  | 195       | 20       | 4.5                           | 10  | 6                | 1/8            | 8431 0278 30 |
| LUM22 PR2-3500                            | 1.1-2.5                 | 9.7-22.1  | 3 500            | 0.75   | 1.7  | 211       | 20       | 7                             | 15  | 8                | 1/4            | 8431 0278 89 |
| LUM22 PR3                                 | 0.6-3.2                 | 5.3-28.3  | 2 100            | 0.75   | 1.7  | 211       | 20       | 7                             | 15  | 8                | 1/4            | 8431 0269 61 |
| LUM22 PR4                                 | 0.5-4.0                 | 4.4-35.4  | 1 600            | 0.75   | 1.7  | 211       | 20       | 7                             | 15  | 8                | 1/4            | 8431 0269 55 |
| LUM22 PR4-2300                            | 0.7-4.5                 | 5.9-38.2  | 2 300            | 0.75   | 1.7  | 211       | 20       | 7                             | 15  | 8                | 1/4            | 8431 0278 81 |
| LUM22 PR5-260                             | 0.4-5.0                 | 3.5-44.2  | 260              | 0.75   | 1.7  | 211       | 20       | 7                             | 15  | 8                | 1/4            | 8431 0269 62 |
| LUM22 PR5-350                             | 0.4-5.0                 | 3.5-44.2  | 350              | 0.75   | 1.7  | 211       | 20       | 7                             | 15  | 8                | 1/4            | 8431 0269 60 |
| LUM22 PR6                                 | 1.5-6.0                 | 13.3-53.1 | 1 000            | 0.75   | 1.7  | 211       | 20       | 7                             | 15  | 8                | 1/4            | 8431 0269 56 |
| LUM22 PR8-1100                            | 1.5-8.0                 | 13.3-70.8 | 1 100            | 0.9    | 2.0  | 224       | 20       | 7                             | 15  | 8                | 1/4            | 8431 0278 88 |
| LUM22 PR10                                | 3.5-10.0                | 31-88.5   | 700              | 0.95   | 2.1  | 232       | 22       | 7                             | 15  | 8                | 1/4            | 8431 0269 58 |
| LUM22 PR12                                | 3.5-12.5                | 31-110.6  | 450              | 0.9    | 2.0  | 224       | 22       | 7                             | 15  | 8                | 1/4            | 8431 0269 57 |
| LUM22 PR12-350                            | 3.5-12.5                | 31-110.6  | 350              | 0.95   | 2.1  | 224       | 22       | 7                             | 15  | 8                | 1/4            | 8431 0269 59 |
| LUM22 PR12-850                            | 3.5-12.0                | 31-106.2  | 850              | 1      | 2.2  | 246       | 22       | 8.5                           | 15  | 8                | 1/4            | 8431 0278 80 |
| <b>With lever start and reverse ring</b>  |                         |           |                  |        |      |           |          |                               |     |                  |                |              |
| LUM12 SR1                                 | 0.6-1.8                 | 5.3-15.9  | 2 200            | 0.6    | 1.3  | 217       | 17       | 6                             | 13  | 6                | 1/8            | 8431 0278 35 |
| LUM12 SR2                                 | 0.5-2.5                 | 4.4-22.1  | 1 700            | 0.6    | 1.3  | 217       | 17       | 6                             | 13  | 6                | 1/8            | 8431 0278 34 |
| LUM12 SR3                                 | 0.4-3.5                 | 3.5-31    | 1 200            | 0.6    | 1.3  | 217       | 17       | 6                             | 13  | 6                | 1/8            | 8431 0278 33 |
| LUM12 SR4                                 | 0.4-4.5                 | 3.5-39.8  | 850              | 0.6    | 1.3  | 217       | 17       | 6                             | 13  | 6                | 1/8            | 8431 0278 32 |
| LUM22 SR3                                 | 0.6-3.2                 | 5.3-28.3  | 1 950            | 0.8    | 1.8  | 239       | 20       | 7                             | 15  | 8                | 1/4            | 8431 0269 44 |
| LUM22 SR4                                 | 0.6-4                   | 5.3-35.4  | 1 500            | 0.8    | 1.8  | 239       | 20       | 7                             | 15  | 8                | 1/4            | 8431 0269 46 |
| LUM22 SR5-300                             | 0.4-5                   | 3.5-44.2  | 300              | 0.8    | 1.8  | 239       | 20       | 7                             | 15  | 8                | 1/4            | 8431 0269 51 |
| LUM22 SR6                                 | 1.5-6                   | 13.3-53.1 | 1 000            | 0.85   | 1.9  | 239       | 20       | 7                             | 15  | 8                | 1/4            | 8431 0269 47 |
| LUM22 SR10                                | 3.5-10                  | 31-88.5   | 700              | 1      | 2.2  | 260       | 22       | 7                             | 15  | 8                | 1/4            | 8431 0269 49 |
| LUM22 SR12                                | 3.5-12.5                | 31-110.6  | 430              | 0.95   | 2.1  | 252       | 22       | 7                             | 15  | 8                | 1/4            | 8431 0269 48 |
| LUM22 SR12-300                            | 3.5-12.5                | 31-110.6  | 300              | 1      | 2.2  | 252       | 22       | 7                             | 15  | 8                | 1/4            | 8431 0269 50 |

<sup>a</sup> All LUM02 have an air inlet thread M5. Nipple and coupling are included accessories.  
All LUM10/12/22 SR/PR: ESD approved All data at an air pressure of 6.3 bar.



LTV009

| Model                                     | Torque range<br>soft joint |           | Free<br>speed<br>r/min | Weight |     | Length<br>mm | Angle<br>head<br>height<br>mm | Angle<br>head<br>center<br>to side<br>mm | Air<br>consumption<br>at<br>free speed |     | Rec.<br>hose<br>size<br>mm | Air<br>inlet<br>thread<br>in | Ordering No. |
|---|----------------------------|-----------|------------------------|--------|-----|--------------|-------------------------------|--|--|-----|----------------------------|------------------------------|--------------|
|   | Nm                         | in lb     |                        | kg     | lb  |              |                               |  | l/s                                    | cfm |                            |                              |              |
| <b>1/4" female hexagon drive for bits</b> |                            |           |                        |        |     |              |                               |  |  |     |                            |                              |              |
| LTV009 R05-42                             | 0.4-5                      | 3.5-44.2  | 850                    | 0.7    | 1.5 | 266          | 25                            | 9  | 6                                      | 13  | 6                          | 1/8                          | 8431 0278 07 |
| LTV009 R07-42                             | 1.1-7                      | 9.7-61.9  | 500                    | 0.7    | 1.5 | 266          | 25                            | 9  | 6                                      | 13  | 6                          | 1/8                          | 8431 0278 10 |
| LTV009 R09-42                             | 1.3-9                      | 11.5-79.6 | 430                    | 0.7    | 1.5 | 266          | 28.5                          | 11                                       | 6                                      | 13  | 6                          | 1/8                          | 8431 0278 15 |
| LTV009 R11-42                             | 1.3-11                     | 11.5-97.3 | 320                    | 0.8    | 1.8 | 266          | 28.5                          | 11                                       | 6                                      | 13  | 6                          | 1/8                          | 8431 0278 21 |
| LTV009 R035-42                            | 0.4-3.5                    | 3.5-31    | 1100                   | 0.7    | 1.5 | 266          | 25                            | 9  | 6                                      | 13  | 6                          | 1/8                          | 8431 0278 04 |
| LTV19 R15-42                              | 6-15                       | 54-133    | 360                    | 1.1    | 2.4 | 309          | 36                            | 11                                       | 7                                      | 15  | 8                          | 1/4                          | 8431 0279 35 |
| <b>1/4" square drive for sockets</b>      |                            |           |                        |        |     |              |                               |  |  |     |                            |                              |              |
| LTV009 R05-6                              | 0.4-5                      | 3.5-44.2  | 850                    | 0.7    | 1.5 | 266          | 25                            | 9  | 6                                      | 13  | 6                          | 1/8                          | 8431 0278 08 |
| LTV009 R07-6                              | 1.1-7                      | 9.7-61.9  | 500                    | 0.7    | 1.5 | 266          | 25                            | 9  | 6                                      | 13  | 6                          | 1/8                          | 8431 0278 11 |
| LTV009 R07-6-230                          | 0.3-7                      | 2.6-61.9  | 230                    | 0.8    | 1.8 | 266          | 25                            | 9  | 6                                      | 13  | 6                          | 1/8                          | 8431 0279 18 |
| LTV009 R09-6                              | 1.3-9                      | 11.5-79.6 | 430                    | 0.7    | 1.5 | 266          | 28.5                          | 11                                       | 6                                      | 13  | 6                          | 1/8                          | 8431 0278 17 |
| LTV009 R11-6-200                          | 1.3-11                     | 11.5-97.3 | 200                    | 0.7    | 1.5 | 266          | 28.5                          | 11                                       | 6                                      | 13  | 6                          | 1/8                          | 8431 0278 24 |
| LTV009 R11-6-200-B                        | 1.3-11                     | 11.5-97.3 | 200                    | 0.8    | 1.8 | 266          | 27.6                          | 11                                       | 6                                      | 13  | 6                          | 1/8                          | 8431 0278 31 |
| LTV009 R11-6                              | 1.3-11                     | 11.5-97.3 | 320                    | 0.8    | 1.8 | 266          | 28.5                          | 11                                       | 6                                      | 13  | 6                          | 1/8                          | 8431 0278 22 |
| LTV009 R035-6                             | 0.4-3.5                    | 3.5-31    | 1100                   | 0.7    | 1.5 | 266          | 25                            | 9  | 6                                      | 13  | 6                          | 1/8                          | 8431 0278 05 |
| LTV19 R15-6                               | 6-15                       | 54-133    | 360                    | 1.1    | 2.4 | 309          | 31                            | 11                                       | 7                                      | 15  | 8                          | 1/4                          | 8431 0279 34 |
| <b>3/8" square drive for sockets</b>      |                            |           |                        |        |     |              |                               |  |  |     |                            |                              |              |
| LTV009 R03-10                             | 0.7-3                      | 6.2-26.5  | 1400                   | 0.7    | 1.5 | 266          | 25                            | 9  | 6                                      | 13  | 6                          | 1/8                          | 8431 0278 23 |
| LTV009 R09-10                             | 1.3-9                      | 11.5-79.6 | 430                    | 0.7    | 1.5 | 266          | 28.5                          | 11                                       | 6                                      | 13  | 6                          | 1/8                          | 8431 0278 13 |
| LTV009 R11-10                             | 1.3-11                     | 11.5-97.3 | 320                    | 0.8    | 1.8 | 266          | 28.5                          | 11                                       | 6                                      | 13  | 6                          | 1/8                          | 8431 0278 20 |
| LTV19 R15-10                              | 6-15                       | 54-133    | 360                    | 1.1    | 2.4 | 309          | 31                            | 11                                       | 7                                      | 15  | 8                          | 1/4                          | 8431 0279 36 |
| <b>1/4" quick change chuck</b>            |                            |           |                        |        |     |              |                               |  |  |     |                            |                              |              |
| LTV009 R05-Q                              | 0.4-5                      | 3.5-44.2  | 850                    | 0.7    | 1.5 | 266          | 25                            | 9  | 6                                      | 13  | 6                          | 1/8                          | 8431 0278 06 |
| LTV009 R07-Q                              | 1.1-7                      | 9.7-61.9  | 500                    | 0.7    | 1.5 | 266          | 25                            | 9  | 6                                      | 13  | 6                          | 1/8                          | 8431 0278 09 |
| LTV009 R09-Q                              | 1.3-9                      | 11.5-79.6 | 430                    | 0.7    | 1.5 | 266          | 28.5                          | 11                                       | 6                                      | 13  | 6                          | 1/8                          | 8431 0278 12 |
| LTV009 R11-Q                              | 1.3-11                     | 11.5-97.3 | 320                    | 0.8    | 1.8 | 266          | 28.5                          | 11                                       | 6                                      | 13  | 6                          | 1/8                          | 8431 0278 19 |
| LTV009 R025-Q                             | 0.6-2.5                    | 5.3-22.1  | 1650                   | 0.7    | 1.5 | 266          | 25                            | 9  | 6                                      | 13  | 6                          | 1/8                          | 8431 0278 00 |
| LTV009 R035-Q                             | 0.4-3.5                    | 3.5-31    | 1100                   | 0.7    | 1.5 | 266          | 25                            | 9  | 6                                      | 13  | 6                          | 1/8                          | 8431 0278 03 |
| LTV19 R15-Q                               | 6-15                       | 54-133    | 360                    | 1.1    | 2.4 | 309          | 45                            | 11                                       | 7                                      | 15  | 8                          | 1/4                          | 8431 0279 37 |
| <b>Flush socket</b>                       |                            |           |                        |        |     |              |                               |  |  |     |                            |                              |              |
| LTV009 R12-FS-10                          | 1.5-8                      | 13.3-70.8 | 340                    | 1.1    | 2.4 | 261          | 23.5                          | 13.5                                     | 6                                      | 13  | 6                          | 1/8                          | 8431 0632 11 |

All models: - Are reversible.  
 - All data at an air pressure of 6.3 bar.  
 - Are ESD approved

For more info about optional accessories please see Atlas Copco main catalog or contact Atlas Copco local sales representative.





| Model                               | Bolt size<br>mm | Square drive<br>in | Torque range <sup>a</sup> |         | Free speed<br>r/min | Weight |     | Length<br>mm | CS distance<br>mm | Air consumption under load |     | Rec. hose size<br>mm | Air inlet thread<br>BSP | Ordering No. |
|-------------------------------------|-----------------|--------------------|---------------------------|---------|---------------------|--------|-----|--------------|-------------------|----------------------------|-----|----------------------|-------------------------|--------------|
|                                     |                 |                    | Nm                        | ft lb   |                     | kg     | lb  |              |                   | l/s                        | cfm |                      |                         |              |
| <b>AutoTrim</b>                     |                 |                    |                           |         |                     |        |     |              |                   |                            |     |                      |                         |              |
| EP3PTX5 HR42-AT                     | M4-M5           | 1/4 b              | 2-5                       | 1.6-4   | 4500 c              | 0.8    | 1.8 | 154          | 21                | 4                          | 9   | 8                    | 1/4                     | 8431 0375 53 |
| EP4PTX9 HR10-AT                     | M5              | 3/8                | 4-9                       | 3-7     | 3300 c              | 0.9    | 2.0 | 164          | 22                | 4                          | 9   | 8                    | 1/4                     | 8431 0375 56 |
| EP4PTX9 HR42-AT                     | M5              | 1/4 b              | 4-9                       | 3-7     | 3300 c              | 0.9    | 2.0 | 164          | 22                | 4                          | 9   | 8                    | 1/4                     | 8431 0375 52 |
| EP5PTX17 HR42-AT                    | M6              | 1/4 b              | 7-17                      | 5-13    | 5400 c              | 0.9    | 2.0 | 164          | 22                | 7                          | 15  | 8                    | 1/4                     | 8431 0375 02 |
| EP5PTX19 HR10-AT                    | M6              | 3/8                | 8-19                      | 6-14    | 5400 c              | 0.9    | 2.0 | 164          | 22                | 7                          | 15  | 8                    | 1/4                     | 8431 0375 06 |
| EP6PTX28 HR42-AT                    | M6-M8           | 1/4 b              | 15-28                     | 11-18   | 8500 c              | 0.9    | 2.0 | 164          | 22                | 7                          | 15  | 8                    | 1/4                     | 8431 0375 12 |
| EP6PTX32 HR10-AT                    | M6-M8           | 3/8                | 16-32                     | 12-23   | 8500 c              | 0.9    | 2.0 | 164          | 22                | 7                          | 15  | 8                    | 1/4                     | 8431 0375 22 |
| EP7PTX55 HR10-AT                    | M8-M10          | 3/8                | 30-55                     | 22-40   | 6900 c              | 1.2    | 2.5 | 176          | 25                | 9                          | 19  | 10                   | 1/4                     | 8431 0375 32 |
| EP8PTX70 HR10-AT                    | M10             | 3/8                | 40-70                     | 29-51   | 6900 c              | 1.2    | 2.5 | 176          | 25                | 9                          | 19  | 10                   | 1/4                     | 8431 0375 62 |
| EP9PTX80 HR13-AT                    | M10             | 1/2                | 50-80                     | 37-59   | 5100 c              | 1.5    | 3.4 | 188          | 29                | 11                         | 23  | 10                   | 1/4                     | 8431 0375 42 |
| EP11PTX110 HR13-AT                  | M12             | 1/2                | 70-110                    | 51-81   | 5100 c              | 1.7    | 3.8 | 196          | 29                | 12                         | 25  | 10                   | 1/4                     | 8431 0376 52 |
| EP13PTX150 HR13-AT                  | M12-M14         | 1/2                | 85-150                    | 63-110  | 5300 c              | 2.3    | 5.0 | 197          | 33.5              | 15                         | 32  | 13                   | 3/8                     | 8431 0376 62 |
| EP15PTX250 HR20-AT                  | M12-M16         | 3/4                | 125-250                   | 92-184  | 4200 c              | 3.1    | 6.8 | 216          | 36.5              | 21                         | 45  | 13                   | 3/8                     | 8431 0376 72 |
| EP19PTX450 HR20-AT                  | M16-M20         | 3/4                | 225-450                   | 166-332 | 3300 c              | 4.2    | 9.2 | 221          | 44                | 23                         | 49  | 13                   | 3/8                     | 8431 0376 82 |
| <b>AutoTrim Low pressure models</b> |                 |                    |                           |         |                     |        |     |              |                   |                            |     |                      |                         |              |
| EP5PTX HR10-AT-L                    | M5              | 3/8                | 7-15                      | 5-11    | 5900 d              | 0.9    | 2.0 | 164          | 22                | 4                          | 9   | 8                    | 1/4                     | 8431 0379 06 |
| EP5PTX HR42-AT-L                    | M4-M5           | 1/4 b              | 6-13                      | 4-10    | 5900 d              | 0.8    | 1.8 | 154          | 21                | 4                          | 9   | 8                    | 1/4                     | 8431 0379 02 |
| EP6PTX HR10-AT-L                    | M6              | 3/8                | 13-25                     | 9-18    | 7900 d              | 0.9    | 2.0 | 164          | 22                | 7                          | 15  | 8                    | 1/4                     | 8431 0379 22 |
| EP6PTX HR42-AT-L                    | M5              | 1/4 b              | 11-22                     | 8-16    | 7900 d              | 0.9    | 2.0 | 164          | 22                | 4                          | 9   | 8                    | 1/4                     | 8431 0379 12 |
| EP7PTX HR10-AT-L                    | M6              | 3/8                | 23-35                     | 17-26   | 6200 d              | 0.9    | 2.0 | 164          | 22                | 7                          | 15  | 10                   | 1/4                     | 8431 0379 32 |
| EP8PTX HR10-AT-L                    | M6-M8           | 3/8                | 33-45                     | 24-33   | 6300 d              | 0.9    | 2.0 | 164          | 22                | 7                          | 15  | 10                   | 1/4                     | 8431 0379 62 |

<sup>a</sup> To be used as a guide only, final torque depends on type of joint, accessories used and air pressure.

<sup>b</sup> Female hexagon drive. Quick change chuck.

<sup>c</sup> In full speed mode.

<sup>d</sup> Measured at 5 bar air pressure.

# Angle Nutrunners

## LTV29-2 SERIES

- Designed for high speed and small dimensions.
- Slim lightweight design.
- Soft, comfortable grip.
- Easy to reverse.
- Low reaction force.



LTV29-2

## LTV39-2 SERIES

- The fastest nutrunners of this type.
- Powerful motor.
- Consistently high accuracy.
- Many operator-friendly features.



LTV39-2

## LTV FS FLUSH SOCKET TOOLS

- Minimum angle head size gives good access.
- High torque accuracy.
- Integrated sockets give reduced angle head height.

| Model               | Bolt size mm | Square drive in  | Torque range soft joint |       | Free speed r/min | Weight |     | Length mm | Angle head height mm | Angle head center to side mm | Air consumption at free speed |     | Rec. hose size mm | Air inlet thread in | Ordering No. |
|---------------------|--------------|------------------|-------------------------|-------|------------------|--------|-----|-----------|----------------------|------------------------------|-------------------------------|-----|-------------------|---------------------|--------------|
|                     |              |                  | Nm                      | ft lb |                  | kg     | lb  |           |                      |                              | l/s                           | cfm |                   |                     |              |
| <b>Reversible</b>   |              |                  |                         |       |                  |        |     |           |                      |                              |                               |     |                   |                     |              |
| LTV29-2 R12-6       | M6           | 1/4              | 6-12                    | 4.5-9 | 850              | 1.3    | 2.9 | 351       | 27                   | 11                           | 10                            | 21  | 10                | 1/4                 | 8431 0631 15 |
| LTV29-2 R12-10      | M6           | 3/8              | 6-12                    | 4.5-9 | 850              | 1.3    | 2.9 | 351       | 27                   | 11                           | 10                            | 21  | 10                | 1/4                 | 8431 0631 16 |
| LTV29-2 R12-Q       | M6           | 1/4 <sup>a</sup> | 6-12                    | 4.5-9 | 850              | 1.3    | 2.9 | 351       | 44                   | 11                           | 10                            | 21  | 10                | 1/4                 | 8431 0631 17 |
| LTV29-2 R12-42      | M6           | 1/4 <sup>b</sup> | 6-12                    | 4.5-9 | 850              | 1.3    | 2.9 | 351       | 34                   | 11                           | 10                            | 21  | 10                | 1/4                 | 8431 0631 18 |
| LTV29-2 R12-B6      | M6           | 1/4              | 6-12                    | 4.5-9 | 850              | 1.3    | 2.9 | 351       | 27                   | 11                           | 10                            | 21  | 10                | 1/4                 | 8431 0631 00 |
| LTV29-2 R12-B10     | M6           | 3/8              | 6-12                    | 4.5-9 | 850              | 1.3    | 2.9 | 351       | 27                   | 11                           | 10                            | 21  | 10                | 1/4                 | 8431 0631 01 |
| LTV29-2 R16-6       | M6           | 1/4              | 9-16                    | 7-12  | 850              | 1.3    | 2.9 | 351       | 27                   | 11                           | 10                            | 21  | 10                | 1/4                 | 8431 0631 22 |
| LTV29-2 R16-10      | M6           | 3/8              | 9-16                    | 7-12  | 850              | 1.3    | 2.9 | 351       | 27                   | 11                           | 10                            | 21  | 10                | 1/4                 | 8431 0631 21 |
| LTV29-2 R16-Q       | M6           | 1/4 <sup>a</sup> | 9-16                    | 7-12  | 850              | 1.3    | 2.9 | 351       | 44                   | 11                           | 10                            | 21  | 10                | 1/4                 | 8431 0631 24 |
| LTV29-2 R16-42      | M6           | 1/4 <sup>b</sup> | 9-16                    | 7-12  | 850              | 1.3    | 2.9 | 351       | 34                   | 11                           | 10                            | 21  | 10                | 1/4                 | 8431 0631 23 |
| LTV29-2 R16-B6      | M6           | 1/4              | 9-16                    | 7-12  | 850              | 1.3    | 2.9 | 351       | 27                   | 11                           | 10                            | 21  | 10                | 1/4                 | 8431 0631 02 |
| LTV29-2 R16-B10     | M6           | 3/8              | 9-16                    | 7-12  | 850              | 1.3    | 2.9 | 351       | 27                   | 11                           | 10                            | 21  | 10                | 1/4                 | 8431 0631 03 |
| LTV29-2 R24-10      | M8           | 3/8              | 12-24                   | 9-18  | 640              | 1.4    | 3.1 | 374       | 30                   | 14                           | 10                            | 21  | 10                | 1/4                 | 8431 0631 29 |
| LTV29-2 R24-B10     | M8           | 3/8              | 12-24                   | 9-18  | 640              | 1.4    | 3.1 | 374       | 30                   | 14                           | 10                            | 21  | 10                | 1/4                 | 8431 0631 04 |
| LTV29-2 R30-10      | M8           | 3/8              | 15-30                   | 11-22 | 500              | 1.4    | 3.1 | 374       | 30                   | 14                           | 10                            | 21  | 10                | 1/4                 | 8431 0631 37 |
| LTV29-2 R30-B10     | M8           | 3/8              | 15-30                   | 11-22 | 500              | 1.4    | 3.1 | 374       | 30                   | 14                           | 10                            | 21  | 10                | 1/4                 | 8431 0631 36 |
| LTV39-2 R16-10      | M6           | 3/8              | 7-16                    | 5-12  | 1200             | 1.5    | 3.3 | 375       | 27                   | 11                           | 16                            | 34  | 10                | 1/4                 | 8431 0633 09 |
| LTV39-2 R16-B10     | M6           | 3/8              | 7-16                    | 5-12  | 1200             | 1.5    | 3.3 | 375       | 27                   | 11                           | 16                            | 34  | 10                | 1/4                 | 8431 0631 05 |
| LTV39-2 R24-B10     | M8           | 3/8              | 12-24                   | 9-18  | 870              | 1.6    | 3.5 | 385       | 30                   | 14                           | 16                            | 34  | 10                | 1/4                 | 8431 0631 06 |
| LTV39-2 R30-10      | M8           | 3/8              | 15-30                   | 11-22 | 870              | 1.6    | 3.5 | 385       | 35                   | 14                           | 16                            | 34  | 10                | 1/4                 | 8431 0633 19 |
| LTV39-2 R30-B10     | M8           | 3/8              | 15-30                   | 11-22 | 870              | 1.6    | 3.5 | 385       | 35                   | 14                           | 16                            | 34  | 10                | 1/4                 | 8431 0631 07 |
| LTV39-2 R37-10      | M8           | 3/8              | 22-37                   | 16-27 | 708              | 1.7    | 3.7 | 405       | 35                   | 18                           | 16                            | 34  | 10                | 1/4                 | 8431 0633 24 |
| LTV39-2 R37-B10     | M8           | 3/8              | 22-37                   | 16-27 | 708              | 1.7    | 3.7 | 405       | 35                   | 18                           | 16                            | 34  | 10                | 1/4                 | 8431 0631 08 |
| LTV39-2 R48-10      | M8           | 3/8              | 24-48                   | 18-35 | 560              | 1.7    | 3.7 | 405       | 35                   | 18                           | 16                            | 34  | 10                | 1/4                 | 8431 0633 27 |
| LTV39-2 R48-13      | M8           | 1/2              | 24-48                   | 18-35 | 560              | 2.0    | 4.4 | 425       | 41                   | 20                           | 16                            | 34  | 10                | 1/4                 | 8431 0633 43 |
| LTV39-2 R48-B10     | M8           | 3/8              | 24-48                   | 18-35 | 560              | 1.7    | 3.7 | 405       | 35                   | 18                           | 16                            | 34  | 10                | 1/4                 | 8431 0631 09 |
| LTV39-2 R48-B13     | M8           | 1/2              | 24-48                   | 18-35 | 560              | 2.0    | 4.4 | 425       | 41                   | 20                           | 16                            | 34  | 10                | 1/4                 | 8431 0631 10 |
| LTV39-2 R56-10      | M10          | 3/8              | 28-56                   | 21-41 | 460              | 1.7    | 3.7 | 405       | 35                   | 18                           | 16                            | 34  | 10                | 1/4                 | 8431 0633 35 |
| LTV39-2 R56-13      | M10          | 1/2              | 28-56                   | 21-41 | 460              | 2.0    | 4.4 | 425       | 41                   | 20                           | 16                            | 34  | 10                | 1/4                 | 8431 0633 51 |
| LTV39-2 R56-B10     | M10          | 3/8              | 28-56                   | 21-41 | 460              | 1.7    | 3.7 | 405       | 35                   | 18                           | 16                            | 34  | 10                | 1/4                 | 8431 0631 11 |
| LTV39-2 R56-B13     | M10          | 1/2              | 28-56                   | 21-41 | 460              | 2.0    | 4.4 | 425       | 41                   | 20                           | 16                            | 34  | 10                | 1/4                 | 8431 0631 12 |
| LTV39-2 R70-13      | M10          | 1/2              | 35-70                   | 26-51 | 350              | 2.1    | 4.6 | 425       | 41                   | 20                           | 16                            | 34  | 10                | 1/4                 | 8431 0633 59 |
| LTV39-2 R70-B13     | M10          | 1/2              | 35-70                   | 26-51 | 350              | 2.1    | 4.6 | 425       | 41                   | 20                           | 16                            | 34  | 10                | 1/4                 | 8431 0631 13 |
| LTV39-2 R85-13      | M10-12       | 1/2              | 43-85                   | 32-63 | 305              | 2.5    | 5.5 | 500       | 52                   | 25                           | 16                            | 34  | 10                | 1/4                 | 8431 0633 67 |
| LTV39-2 R85-B13     | M10-12       | 1/2              | 43-85                   | 32-63 | 305              | 2.5    | 5.5 | 500       | 52                   | 25                           | 16                            | 34  | 10                | 1/4                 | 8431 0631 14 |
| LTV39-2 R120-13     | M12          | 1/2              | 60-120                  | 44-88 | 220              | 2.5    | 5.5 | 500       | 52                   | 25                           | 16                            | 34  | 10                | 1/4                 | 8431 0633 69 |
| <b>Flush socket</b> |              |                  |                         |       |                  |        |     |           |                      |                              |                               |     |                   |                     |              |
| LTV29-2 R24 FS      | M8           | –                | 12-24                   | 9-18  | 640              | 1.4    | 3.7 | 357       | 32                   | 15                           | 10                            | 21  | 10                | 1/4                 | 8431 0634 51 |
| LTV29-2 R30 FS      | M8           | –                | 15-30                   | 11-22 | 500              | 1.3    | 3.1 | 357       | 32                   | 15                           | 10                            | 21  | 10                | 1/4                 | 8431 0634 52 |
| LTV39-2 R37 FS      | M8           | –                | 22-37                   | 16-27 | 708              | 1.7    | 3.7 | 406       | 38                   | 19                           | 16                            | 34  | 10                | 1/4                 | 8431 0634 53 |
| LTV39-2 R48 FS      | M8           | –                | 24-48                   | 18-35 | 560              | 1.7    | 3.7 | 406       | 38                   | 19                           | 16                            | 34  | 10                | 1/4                 | 8431 0634 54 |
| LTV39-2 R56 FS      | M8           | –                | 28-56                   | 21-41 | 460              | 1.7    | 3.7 | 406       | 38                   | 19                           | 16                            | 34  | 10                | 1/4                 | 8431 0634 55 |
| LTV39-2 R70 FS      | M10          | –                | 35-70                   | 26-51 | 350              | 2.1    | 4.6 | 425       | 50                   | 20                           | 16                            | 34  | 10                | 1/4                 | 8431 0634 56 |
| LTV39-2 R85 FS      | M10-12       | –                | 43-85                   | 32-63 | 305              | 2.5    | 5.5 | 500       | 58                   | 26                           | 16                            | 34  | 10                | 1/4                 | 8431 0634 57 |
| LTV39-2 R120 FS     | M12          | –                | 60-120                  | 44-88 | 220              | 2.5    | 5.5 | 500       | 58                   | 26                           | 16                            | 34  | 10                | 1/4                 | 8431 0634 58 |

<sup>a</sup> Quick change chuck. <sup>b</sup> Female hex drive. B - Ball retainer

## LTV28 AND 38 SERIES

- Highest reliability when tightening M5-M12 screws.
- Small, durable gears.
- Precise clutch.
- Reliable motor.



## LTV48 SERIES

- Robust, reliable tools.
- Reversible for torques up to 200 Nm.
- Comfortable to operate due to low weight and smooth handles.
- Reaction bars and other accessories available.



## LTV FS FLUSH SOCKET TOOLS

- Minimum angle head size gives good access.
- High torque accuracy.
- Integrated sockets give reduced angle head height.



| Model               | Bolt size mm | Sq. drive in     | Torque range soft joint |        | Free speed r/min | Weight |     |           | Angle head height mm | Angle head center to side mm | Air cons. at free speed |     | Rec hose size mm | Air inlet thread | Ordering No. |
|---------------------|--------------|------------------|-------------------------|--------|------------------|--------|-----|-----------|----------------------|------------------------------|-------------------------|-----|------------------|------------------|--------------|
|                     |              |                  | Nm                      | ft lb  |                  | kg     | lb  | Length mm |                      |                              | l/s                     | cfm |                  |                  |              |
| <b>Reversible</b>   |              |                  |                         |        |                  |        |     |           |                      |                              |                         |     |                  |                  |              |
| LTV28 R07-6         | M5           | 1/4              | 2.5-7                   | 1.8-5  | 1100             | 1.3    | 2.9 | 334       | 28.5                 | 10                           | 8                       | 17  | 8                | 1/4              | 8431 0601 65 |
| LTV28 R07-42        | M5           | 1/4 <sup>a</sup> | 2.5-7                   | 1.8-5  | 1100             | 1.3    | 2.9 | 334       | 28.5                 | 10                           | 8                       | 17  | 8                | 1/4              | 8431 0601 73 |
| LTV28 R07-Q         | M6           | 1/4 <sup>b</sup> | 2.5-7                   | 1.8-5  | 1100             | 1.3    | 2.9 | 334       | 28.5                 | 10                           | 8                       | 17  | 8                | 1/4              | 8431 0601 68 |
| LTV28 R15-6         | M6           | 1/4              | 7-15                    | 5-11   | 560              | 1.4    | 3.1 | 349       | 28                   | 11                           | 10                      | 21  | 10               | 1/4              | 8431 0601 52 |
| LTV28 R15-10        | M6           | 3/8              | 7-15                    | 5-11   | 560              | 1.4    | 3.1 | 349       | 28                   | 11                           | 10                      | 21  | 10               | 1/4              | 8431 0601 55 |
| LTV28 R15-Q         | M6           | 1/4 <sup>b</sup> | 7-15                    | 5-11   | 560              | 1.4    | 3.1 | 349       | 28                   | 11                           | 10                      | 21  | 10               | 1/4              | 8431 0601 53 |
| LTV28 R20-10        | M6           | 3/8              | 10-19                   | 7-15   | 530              | 1.4    | 3.1 | 355       | 34.5                 | 13.5                         | 10                      | 21  | 10               | 1/4              | 8431 0601 50 |
| LTV28 R20-42        | M6           | 1/4 <sup>a</sup> | 10-20                   | 7-15   | 420              | 1.4    | 3.1 | 350       | 34                   | 13.5                         | 10                      | 21  | 10               | 1/4              | 8431 0601 48 |
| LTV28 R28-10        | M8           | 3/8              | 14-28                   | 10-21  | 340              | 1.4    | 3.1 | 350       | 29.5                 | 13.5                         | 10                      | 21  | 10               | 1/4              | 8431 0601 40 |
| LTV28 R28-42        | M8           | 3/8              | 14-28                   | 10-21  | 340              | 1.4    | 3.1 | 350       | 29.5                 | 13.5                         | 10                      | 21  | 10               | 1/4              | 8431 0601 44 |
| LTV28 RL28-10       | M8           | 3/8              | 14-28                   | 10-21  | 80               | 1.4    | 3.1 | 350       | 29.5                 | 13.5                         | 10                      | 21  | 10               | 1/4              | 8431 0601 33 |
| LTV38 R42-10        | M8           | 3/8              | 20-42                   | 15-31  | 400              | 2.0    | 4.4 | 436       | 34.5                 | 18                           | 16                      | 34  | 10               | 1/4              | 8431 0603 55 |
| LTV38 R42-13        | M8           | 1/2              | 20-42                   | 15-31  | 400              | 2.2    | 4.8 | 453       | 41                   | 20                           | 16                      | 34  | 10               | 1/4              | 8431 0603 69 |
| LTV38 R50-10        | M10          | 3/8              | 25-50                   | 18-36  | 330              | 2.0    | 4.4 | 436       | 34.5                 | 18                           | 16                      | 34  | 10               | 1/4              | 8431 0603 63 |
| LTV38 R50-13        | M10          | 1/2              | 25-50                   | 18-36  | 330              | 2.2    | 4.8 | 453       | 41                   | 20                           | 16                      | 34  | 10               | 1/4              | 8431 0603 71 |
| LTV38 R57-13        | M10          | 1/2              | 30-57                   | 22-41  | 280              | 2.2    | 4.8 | 453       | 41                   | 20                           | 16                      | 34  | 10               | 1/4              | 8431 0603 51 |
| LTV38 R70-13        | M10          | 1/2              | 34-70                   | 24-50  | 225              | 2.4    | 5.3 | 487       | 41                   | 20                           | 16                      | 34  | 10               | 1/4              | 8431 0603 46 |
| LTV38 R85-13        | M10-12       | 1/2              | 40-85                   | 29-61  | 190              | 2.8    | 6.1 | 530       | 52                   | 25                           | 16                      | 34  | 10               | 1/4              | 8431 0603 38 |
| LTV48 R120-L13      | M12          | 1/2              | 70-120                  | 51-88  | 215              | 3.5    | 7.6 | 590       | 52                   | 25                           | 28                      | 59  | 12.5             | 1/2              | 8431 0534 88 |
| LTV48 R150-L13      | M12          | 1/2              | 70-150                  | 51-111 | 170              | 3.5    | 7.6 | 590       | 52                   | 25                           | 28                      | 59  | 12.5             | 1/2              | 8431 0534 93 |
| LTV48 R200-L13      | M14          | 1/2              | 115-200                 | 85-148 | 100              | 3.8    | 8.3 | 610       | 52                   | 25                           | 28                      | 59  | 12.5             | 1/2              | 8431 0534 98 |
| <b>Flush socket</b> |              |                  |                         |        |                  |        |     |           |                      |                              |                         |     |                  |                  |              |
| LTV48 R150 FS       | M12          | –                | 70-150                  | 44-111 | 180              | 3.5    | 7.6 | 590       | 70                   | 25                           | 28                      | 59  | 12.7             | 1/2              | 8431 0610 17 |
| LTV48 R200 FS       | M14          | –                | 115-200                 | 85-148 | 100              | 3.8    | 8.3 | 610       | 70                   | 25                           | 28                      | 59  | 12.8             | 1/2              | 8431 0610 21 |

<sup>a</sup> Female hex drive.

<sup>b</sup> Quick change chuck.

# Introduction – Clutch Type

## Powerful, durable and highly operator friendly

*For quality critical applications where flexibility is essential, the BCP screwdriver and the BCV nutrunner are the ideal tool choices. Powerful and durable with superior ergonomics and operator feedback they offer higher productivity in assembly operations, independent of the industry.*

### **FREEDOM – TRULY FLEXIBLE ASSEMBLY**

- No product damage from cables or hoses
- No trip hazards from trailing cables
- No cable or hose management
- Speed setting functionality for the BCP
- Reversible battery pack

### **ERGONOMICS – A PLEASURE TO WORK WITH**

- Reduced operator fatigue and work related health problems
- Light, compact and well-balanced design
- Operator feedback

### **POWER – HIGH PERFORMANCE AND DURABILITY**

- Robust and industrial tool design
- Li-Ion battery technology for BCP: high power-to-weight.



### **BCV FEATURES**



### **BCP FEATURES**



- A** Unrivalled clutch design for excellent torque repeatability and low mean shift.
- B** LED front lights illuminates the work area.
- C** LED for OK/NOK and battery status Buzzer option.
- D** Ergonomic trigger designed to give a soft, smooth feel.

- E** Ergonomic handle designed to give excellent balance.
- F** Buzzer for audio feedback.
- G** Dual battery position for the highest level of operator comfort and accessibility.

- H** Brushless motor and magnetic hall sensors for high durability.
- J** Reverse button.
- K** Angle gear.

BCP screwdrivers offer true cordless freedom and superior ergonomics for the operator, thus contributing to outstanding performance.

- Ergonomic, lightweight pistol-grip design.
- 7 brushless models offering variable speed with a speed setting unit.
- Torque range: 0.8-12 Nm.
- Low speed models available.
- Choice of two 18 V Li-Ion batteries: 1.3 Ah Flat Pack or 2.6 Ah Big Pack.



BCP

| Model          | Square drive in | Torque range |         | Speed range r/min | Weight (excl. battery) |      | Length mm | Height mm | Ordering No. |
|----------------|-----------------|--------------|---------|-------------------|------------------------|------|-----------|-----------|--------------|
|                |                 | Nm           | ft lb   |                   | kg                     | lb   |           |           |              |
| BCP BL-2-I06   | 1/4             | 0.8-2.5      | 0.6-1.8 | 500-1550          | 0.86                   | 1.89 | 200       | 188       | 8431 1273 00 |
| BCP BL-6-I06   | 1/4             | 2.0-6.0      | 1.5-4.4 | 300-1000          | 0.86                   | 1.89 | 200       | 188       | 8431 1273 10 |
| BCP BL-8-I06   | 1/4             | 3.0-8.0      | 2.2-5.9 | 300-800           | 0.86                   | 1.89 | 200       | 188       | 8431 1273 20 |
| BCP BL-12-I06  | 1/4             | 5.0-12.0     | 3.7-8.8 | 250-600           | 0.86                   | 1.89 | 200       | 188       | 8431 1273 30 |
| BCP BL-2L-I06  | 1/4             | 0.8-2.5      | 0.6-1.8 | 150-440           | 0.86                   | 1.89 | 200       | 188       | 8431 1273 50 |
| BCP BL-6L-I06  | 1/4             | 1.5-6.0      | 1.1-4.4 | 150-440           | 0.86                   | 1.89 | 200       | 188       | 8431 1273 60 |
| BCP BL-12L-I06 | 1/4             | 3.0-12.0     | 2.2-8.8 | 150-440           | 0.86                   | 1.89 | 200       | 188       | 8431 1273 40 |

-L stands for low speed models.

**NOTE:** The tools are set at maximum speed at delivery.

All pistol grip models have 1/4" female hexagon drive for bits with quick change chuck.

BCV

Nutrunners – Clutch Type

BCV nutrunners are durable and reliable and offer flexible assembly. A lightweight and handy tool for maximum operator comfort.

- Robust yet ergonomic angle tool.
- Torque range 1.5-45 Nm.
- There are two Li-Ion batteries, 18 V and 36 V.



BCV

**Check with your local Atlas Copco Tools representative regarding availability in your market.**

| Model            | Square drive in | Torque range |            | Free speed r/min | Weight (excl. battery) |     | Power W | Battery V | Ordering No. |
|------------------|-----------------|--------------|------------|------------------|------------------------|-----|---------|-----------|--------------|
|                  |                 | Nm           | ft lb      |                  | kg                     | lb  |         |           |              |
| BCV BL-07L-06    | 1/4             | 1.5-7        | 1.1-5.16   | 120-360          | 1.15                   | 2.6 | 340     | 18        | 8431 1275 07 |
| BCV BL-07-I06-QC | Hex 1/4         | 1.5-7        | 1.1-5.16   | 400-880          | 1.15                   | 2.6 | 830     | 18        | 8431 1276 07 |
| BCV BL-15-06     | 1/4             | 5-15         | 3.68-11    | 200-480          | 1.15                   | 2.6 | 970     | 18        | 8431 1275 15 |
| BCV BL-15-10     | 3/8             | 5-15         | 3.68-11    | 200-480          | 1.15                   | 2.6 | 970     | 18        | 8431 1276 15 |
| BCV BL-30-10     | 3/8             | 10-30        | 7.37-22.12 | 100-300          | 1.55                   | 3.4 | 1720    | 36        | 8431 1275 30 |
| BCV BL-45-10     | 3/8             | 20-45        | 14.7-33.2  | 50-180           | 1.65                   | 3.6 | 1490    | 36        | 8431 1275 45 |

## Optional Accessories

### BATTERIES

| Model                      | Current<br>V | Electric<br>charge<br>Ah | Weight |      | Charge time<br>min | Ordering No. |
|----------------------------|--------------|--------------------------|--------|------|--------------------|--------------|
|                            |              |                          | kg     | lb   |                    |              |
| Li-Ion flat pack           | 18           | 2.1                      | 0.37   | 0.82 | 35                 | 4211 5526 82 |
| Li-Ion regular pack        | 18           | 4.2                      | 0.63   | 1.39 | 70                 | 4211 5526 83 |
| Li-Ion (BCV 30/45 Nm only) | 36           | 2.1                      | 0.60   | 1.32 | 70                 | 4211 5526 87 |



Battery  
for BCV only

### MULTICHARGER FOR BCV, BCP AND STB

| Model                               | Ordering No. |
|-------------------------------------|--------------|
| Multicharger 18V - 36V, all regions | 4211 5424 85 |



Battery  
Flat pack

### COVER PROTECTIONS

| Model                               | Ordering No. |
|-------------------------------------|--------------|
| Battery cover protection, Flat pack | 4211 5601 00 |
| Battery cover protection, Big pack  | 4211 5602 00 |
| BCV BL-30-10 protective cover       | 4211 5603 30 |
| BCV BL-45-10 protective cover       | 4211 5603 45 |
| BCV BL-07/15 protective cover       | 4211 5603 00 |
| Tool cover protection (BCP only)    | 4211 5415 00 |



Battery  
Big pack

### MISCELLANEOUS

| Model                               | Ordering No. |
|-------------------------------------|--------------|
| Speed setting unit V2 (BCV and BCP) | 4211 5462 81 |
| Battery analyzer                    | 4211 5424 90 |
| Support handle                      | 4211 5421 80 |
| Suspension bail                     | 4211 5600 00 |
| Modular tool holder                 | 4220 3584 85 |

### COLOUR RINGS

| Model  | Ordering No. |
|--------|--------------|
| Red    | 4211 5461 02 |
| Orange | 4211 5461 03 |
| Green  | 4211 5461 04 |
| Blue   | 4211 5461 05 |
| White  | 4211 5461 06 |
| Purple | 4211 5461 07 |
| Grey   | 4211 5461 08 |



Colour rings



Battery Multicharger 18V - 36V



Tool holder



Suspension bail



Battery cover  
Flat pack



Battery cover  
Big pack



Support handle



Speed setting unit



Tool cover

## Cordless freedom with full process control

Tensor STB battery powered nutrunners offer the same benefits in terms of process control as Tensor ST nutrunners, yet with the freedom of cordless tools. The tools have the capability to communicate with Bluetooth or W-LAN together with a Power Focus controller, for full process control.

### FLEXIBILITY – NO MORE CABLES

- No more cables and cable management
- No more damaged cables
- No product damage from cables
- No trip hazards from trailing cables

### PRODUCTIVITY – SAVE TIME

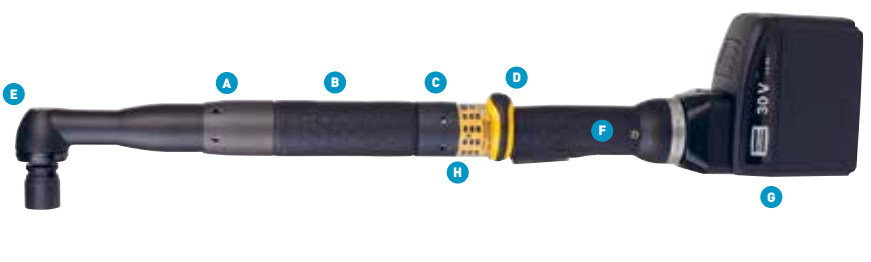
- Increased operator efficiency
- Easy to set up and replace
- Eliminate need for multiple operations
- Up to 100% faster than competing products

### ERGONOMICS

- Reduced operator fatigue and work related health problems
- Unhindered access
- Low weight – up to 20 % lighter than competing products
- Compact size



### STB FEATURES



- A** ST accessory bus.
- B** ST style motor configured for battery use.
- C** Configurable buzzer.
- D** Configurable button standard.
- E** Same ST angle head spiral gear package.
- F** Extremely compact electronics within the tool handle.
- G** Li-Ion battery package, 18V 2.6 Ah, 30V 2.6 Ah.
- H** Signal lights for operator feedback
  - Tightening status
  - Batch OK
  - Battery status
  - Communication status
  - Tool events

Tensor STB offers genuine ergonomic and flexibility advantages for the operator which, in turn, raises operator efficiency.

- Tensor STB-B has the Bluetooth communication.
- Low tool weight and high spindle speed reduce cycle time.
- Freedom of movement in all working positions.
- Lightweight components help reduce operator fatigue.
- Torque range ETV: 2-150 Nm.
- Torque range ETP: 2-12 Nm.
- Tensor STB-B is also available with ETO and ETC models.



| Model  | Square drive in | Torque range |         | Li-Io Battery | Speed r/min | Weight |     | Weight inc battery |      | Length mm | CS dist | Height mm | Ordering No. |
|--|-----------------|--------------|---------|---------------|-------------|--------|-----|--------------------|------|-----------|---------|-----------|--------------|
|  |                 | Nm           | ft lb   |               |             | kg     | lb  | kg                 | lb   |           |         |           |              |
| <b>Right-angle standard models</b>                         |                 |              |         |               |             |        |     |                    |      |           |         |           |              |
| ETV STB33-10-10-B  | 3/8             | 2-10         | 2-7.5   | 18 V          | 943         | 1.45   | 3.1 | 2.05               | 4.4  | 435.4     | 11      | 41        | 8433 3020 20 |
| ETV STB33-15-10-B  | 3/8             | 4-15         | 3-11    | 18 V          | 720         | 1.5    | 3.3 | 2.15               | 4.75 | 435.4     | 11      | 41        | 8433 3020 82 |
| ETV STB33-20-10-B  | 3/8             | 5-20         | 4-14.5  | 18 V          | 480         | 1.5    | 3.3 | 2.15               | 4.75 | 469.3     | 14      | 41.8      | 8433 3011 06 |
| ETV STB33-30-10-B  | 3/8             | 6-30         | 4.5-22  | 18 V          | 380         | 1.5    | 3.3 | 2.15               | 4.75 | 470.8     | 15.5    | 41.8      | 8433 3011 67 |
| ETV STB63-30-10-B  | 3/8             | 6-30         | 4.5-22  | 30 V          | 610         | 1.8    | 4   | 2.75               | 6.05 | 495.8     | 15.5    | 41.8      | 8433 3040 21 |
| ETV STB63-40-10-B  | 3/8             | 12-40        | 9-29    | 30 V          | 450         | 1.95   | 4.3 | 2.9                | 6.4  | 507.8     | 18      | 47.3      | 8433 3041 22 |
| ETV STB63-50-10-B  | 3/8             | 15-50        | 10-37   | 30 V          | 365         | 1.95   | 4.3 | 2.9                | 6.4  | 507.8     | 18      | 47.3      | 8433 3042 67 |
| ETV STB63-70-13-B  | 1/2             | 15-70        | 10-50.7 | 30 V          | 265         | 2.45   | 5.4 | 3.4                | 7.5  | 519.6     | 20      | 58        | 8433 3043 05 |
| ETV STB63-100-13-B   | 1/2             | 20-100       | 15-72.5 | 30 V          | 170         | 2.9    | 6.4 | 3.85               | 8.5  | 556.7     | 22.5    | 60.4      | 8433 3044 05 |
| ETV STB63-150-13-TM-B                                      | 1/2             | 30-150       | 22-109  | 30 V          | 72          | 3.4    | 7.5 | 4.35               | 9.6  | 522.9     | 23.5    | 98.1      | 8433 3045 05 |
| <b>Right-angle ball retainer models</b>                    |                 |              |         |               |             |        |     |                    |      |           |         |           |              |
| ETV STB33-10-B10-B   | 3/8             | 2-10         | 2-7.5   | 18 V          | 943         | 1.4    | 3.1 | 2                  | 4.4  | 435.4     | 11      | 41        | 8433 3020 30 |
| ETV STB33-15-B10-B   | 3/8             | 4-15         | 3-11    | 18 V          | 720         | 1.5    | 3.3 | 2.15               | 4.75 | 435.4     | 11      | 41        | 8433 3020 96 |
| ETV STB33-20-B10-B   | 3/8             | 5-20         | 4-14.5  | 18 V          | 480         | 1.5    | 3.3 | 2.15               | 4.75 | 469.3     | 14      | 41.8      | 8433 3011 16 |
| ETV STB33-30-B10-B   | 3/8             | 6-30         | 4.5-22  | 18 V          | 380         | 1.5    | 3.3 | 2.15               | 4.75 | 470.8     | 15.5    | 41.8      | 8433 3021 76 |
| ETV STB63-40-B10-B   | 3/8             | 12-40        | 9-29    | 30 V          | 450         | 1.95   | 4.3 | 2.9                | 6.4  | 507.8     | 18      | 47.3      | 8433 3041 39 |
| ETV STB63-50-B10-B   | 3/8             | 15-50        | 10-37   | 30 V          | 365         | 1.95   | 4.3 | 2.9                | 6.4  | 507.8     | 18      | 47.3      | 8433 3042 75 |
| ETV STB63-70-B13-B   | 1/2             | 15-70        | 10-50.7 | 30 V          | 265         | 2.45   | 5.4 | 3.4                | 7.5  | 519.6     | 20      | 58        | 8433 3043 15 |
| ETV STB63-100-B13-B  | 1/2             | 20-100       | 15-72.5 | 30 V          | 170         | 2.9    | 6.4 | 3.85               | 8.5  | 556.7     | 22.5    | 60.4      | 8433 3044 15 |
| <b>Pistol-grip standard models</b>                         |                 |              |         |               |             |        |     |                    |      |           |         |           |              |
| ETP STB33-06-10-B  | 3/8             | 2-6          | 2-4     | 18 V          | 1500        | 0.95   | 2.1 | 1.55               | 3.4  | 216       | —       | 208       | 8433 3120 25 |
| ETP STB33-12-10-B  | 3/8             | 4-12         | 3-9     | 18 V          | 750         | 0.95   | 2.1 | 1.55               | 3.4  | 216       | —       | 208       | 8433 3121 35 |
| <b>Pistol-grip standard models with Parameter Selector</b> |                 |              |         |               |             |        |     |                    |      |           |         |           |              |
| ETP STB33-06-10-SEB  | 3/8             | 2-6          | 2-4     | 18 V          | 1500        | 0.95   | 2.1 | 1.55               | 3.4  | 216       | —       | 208       | 8433 3121 61 |
| ETP STB33-12-10-SEB  | 3/8             | 4-12         | 3-9     | 18 V          | 750         | 0.95   | 2.1 | 1.55               | 3.4  | 216       | —       | 208       | 8433 3121 63 |
| ETP STB33-06-106-SEB                                       | 1-4             | 2-6          | 2-4     | 18 V          | 1500        | 0.95   | 2.1 | 1.55               | 3.4  | 216       | —       | 208       | 8433 3121 65 |
| <b>Pistol-grip female hex models</b>                       |                 |              |         |               |             |        |     |                    |      |           |         |           |              |
| ETP STB33-06-106-B   | 1/4             | 2-6          | 2-4     | 18 V          | 1500        | 0.95   | 2.1 | 1.55               | 3.4  | 216       | —       | 208       | 8433 3120 37 |
| ETP STB33-12-106-B   | 1/4             | 4-12         | 3-9     | 18 V          | 750         | 0.95   | 2.1 | 1.55               | 3.4  | 216       | —       | 208       | 8433 3121 48 |
| <b>Pistol-grip female hex models</b>                       |                 |              |         |               |             |        |     |                    |      |           |         |           |              |
| ETP STB33-12-106-SEW                                       | 1/4             | 4-12         | 3-9     | 18 V          | 750         | 0.95   | 2.1 | 1.55               | 3.4  | 216       | —       | 208       | 8433 3019 57 |

"-B" = Bluetooth



Tensor STB offers genuine ergonomic and flexibility advantages for the operator which, in turn, raises operator efficiency.

- Tensor STB-W has the Wi-Fi communication.
- Low tool weight and high spindle speed reduce cycle time.
- Freedom of movement in all working positions.
- Lightweight components help reduce operator fatigue.
- Torque range ETV: 2-100 Nm.
- Torque range ETP: 2-12 Nm.
- Supports 2.4 and 5.0 Ghz.



| Model  | Square drive in | Torque range |         | Li-Io Battery | Speed r/min | Weight |      | Weight inc battery |      | Length mm | CS dist | Height mm | Ordering No. |
|--|-----------------|--------------|---------|---------------|-------------|--------|------|--------------------|------|-----------|---------|-----------|--------------|
|  |                 | Nm           | ft lb   |               |             | kg     | lb   | kg                 | lb   |           |         |           |              |
| <b>Right-angle standard models</b>                             |                 |              |         |               |             |        |      |                    |      |           |         |           |              |
| ETV STB33-10-10-W  | 3/8             | 2-10         | 2-7.5   | 18 V          | 943         | 1.45   | 3.1  | 2.05               | 4.4  | 435.4     | 11      | 41        | 8433 3019 00 |
| ETV STB33-15-10-W  | 3/8             | 4-15         | 3-11    | 18 V          | 720         | 1.5    | 3.3  | 2.15               | 4.75 | 435.4     | 11      | 41        | 8433 3019 08 |
| ETV STB33-20-10-W  | 3/8             | 5-20         | 4-14.5  | 18 V          | 480         | 1.5    | 3.3  | 2.15               | 4.75 | 469.3     | 14      | 41.8      | 8433 3019 20 |
| ETV STB33-30-10-W  | 3/8             | 6-30         | 4.5-22  | 18 V          | 380         | 1.5    | 3.3  | 2.15               | 4.75 | 470.8     | 15.5    | 41.8      | 8433 3019 28 |
| ETV STB63-30-10-W  | 3/8             | 6-30         | 4.5-22  | 30 V          | 610         | 1.8    | 4    | 2.75               | 6.05 | 495.8     | 15.5    | 41.8      | 8433 3019 42 |
| ETV STB63-40-10-W  | 3/8             | 12-40        | 9-29    | 30 V          | 450         | 1.95   | 4.3  | 2.9                | 6.4  | 507.8     | 18      | 47.3      | 8433 3019 50 |
| ETV STB63-50-10-W  | 3/8             | 15-50        | 10-37   | 30 V          | 365         | 1.95   | 4.3  | 2.9                | 6.4  | 507.8     | 18      | 47.3      | 8433 3019 58 |
| ETV STB63-70-13-W  | 1/2             | 15-70        | 10-50.7 | 30 V          | 265         | 2.45   | 5.4  | 3.4                | 7.5  | 519.6     | 20      | 58        | 8433 3019 66 |
| ETV STB63-100-13-W   | 1/2             | 20-100       | 15-72.5 | 30 V          | 170         | 2.9    | 6.4  | 3.85               | 8.5  | 556.7     | 22.5    | 60.4      | 8433 3019 74 |
| <b>Right-angle ball retainer models</b>                        |                 |              |         |               |             |        |      |                    |      |           |         |           |              |
| ETV STB33-10-B10-W   | 3/8             | 2-10         | 2-7.5   | 18 V          | 943         | 1.4    | 3.1  | 2                  | 4.4  | 435.4     | 11      | 41        | 8433 3019 04 |
| ETV STB33-15-B10-W   | 3/8             | 4-15         | 3-11    | 18 V          | 720         | 1.5    | 3.3  | 2.15               | 4.75 | 435.4     | 11      | 41        | 8433 3019 16 |
| ETV STB33-20-B10-W   | 3/8             | 5-20         | 4-14.5  | 18 V          | 480         | 1.5    | 3.3  | 2.15               | 4.75 | 469.3     | 14      | 41.8      | 8433 3019 24 |
| ETV STB33-30-B10-W   | 3/8             | 6-30         | 4.5-22  | 18 V          | 380         | 1.5    | 3.3  | 2.15               | 4.75 | 470.8     | 15.5    | 41.8      | 8433 3019 32 |
| ETV STB63-40-B10-W   | 3/8             | 12-40        | 9-29    | 30 V          | 450         | 1.95   | 4.3  | 2.9                | 6.4  | 507.8     | 18      | 47.3      | 8433 3019 54 |
| ETV STB63-50-B10-W   | 3/8             | 15-50        | 10-37   | 30 V          | 365         | 1.95   | 4.3  | 2.9                | 6.4  | 507.8     | 18      | 47.3      | 8433 3019 62 |
| ETV STB63-70-B13-W   | 1/2             | 15-70        | 10-50.7 | 30 V          | 265         | 2.45   | 5.4  | 3.4                | 7.5  | 519.6     | 20      | 58        | 8433 3019 70 |
| ETV STB63-100-B13-W  | 1/2             | 20-100       | 15-72.5 | 30 V          | 170         | 2.9    | 6.4  | 3.85               | 8.5  | 556.7     | 22.5    | 60.4      | 8433 3019 78 |
| <b>Right-angle ball retainer models with Extended memory</b>   |                 |              |         |               |             |        |      |                    |      |           |         |           |              |
| ETV STB33-10-B10-W-XM  | 3/8             | 2-10         | 2-7.5   | 18 V          | 943         | 1.4    | 3.1  | 2                  | 4.4  | 435.4     | 11      | 41        | 8433 3021 11 |
| ETV STB33-30-B10-W-XM  | 3/8             | 4-15         | 3-11    | 18 V          | 720         | 1.5    | 3.3  | 2.15               | 4.75 | 435.4     | 11      | 41        | 8433 3021 33 |
| ETV STB63-30-B10-W-XM  | 3/8             | 6-30         | 4.5-22  | 30 V          | 610         | 1.8    | 4    | 2.75               | 6.05 | 495.8     | 15.5    | 41.8      | 8433 3021 31 |
| ETV STB63-40-B10-W-XM  | 3/8             | 12-40        | 9-29    | 30 V          | 450         | 1.95   | 4.3  | 2.9                | 6.4  | 507.8     | 18      | 47.3      | 8433 3021 41 |
| ETV STB63-50-B10-W-XM  | 3/8             | 15-50        | 10-37   | 30 V          | 365         | 1.95   | 4.3  | 2.9                | 6.4  | 507.8     | 18      | 47.3      | 8433 3021 51 |
| ETV STB63-70-B13-W-XM  | 1/2             | 15-70        | 10-50.7 | 30 V          | 265         | 2.45   | 5.4  | 3.4                | 7.5  | 519.6     | 20      | 58        | 8433 3021 71 |
| ETV STB63-100-B13-W-XM   | 1/2             | 20-100       | 15-72.5 | 30 V          | 170         | 2.9    | 6.4  | 3.85               | 8.5  | 556.7     | 22.5    | 60.4      | 8433 3021 91 |
| <b>Pistol-grip standard models</b>                             |                 |              |         |               |             |        |      |                    |      |           |         |           |              |
| ETP STB33-06-10-W  | 3/8             | 2-6          | 2-4     | 18 V          | 1500        | 0.95   | 2.1  | 1.55               | 3.4  | 216       | —       | 208       | 8433 3019 82 |
| ETP STB33-12-10-W  | 3/8             | 4-12         | 3-9     | 18 V          | 750         | 0.95   | 2.1  | 1.55               | 3.4  | 216       | —       | 208       | 8433 3019 90 |
| <b>Pistol-grip standard models and Parameter selector</b>      |                 |              |         |               |             |        |      |                    |      |           |         |           |              |
| ETP STB33-06-10-SEW  | 3/8             | 2-6          | 2-4     | 18 V          | 1500        | 0.95   | 2.1  | 1.55               | 3.4  | 216       | —       | 208       | 8433 3019 51 |
| ETP STB33-06-106-SEW   | 1/4             | 2-6          | 2-4     | 18 V          | 1500        | 0.95   | 2.1  | 1.55               | 3.4  | 216       | —       | 208       | 8433 3019 53 |
| ETP STB33-12-106-SEW   | 1/4             | 4-12         | 3-9     | 18 V          | 750         | 0.95   | 2.1  | 1.55               | 3.4  | 216       | —       | 208       | 8433 3019 57 |
| <b>Pistol-grip with Extended memory and Parameter selector</b> |                 |              |         |               |             |        |      |                    |      |           |         |           |              |
| ETP STB33-06-10-WXM-SEL  | 3/8             | 2-6          | 2-4     | 18 V          | 1500        | 0.95   | 2.1  | 1.55               | 3.4  | 216       | —       | 208       | 8433 3021 03 |
| ETP STB33-12-10-WXM-SEL  | 3/8             | 4-12         | 3-9     | 18 V          | 750         | 0.95   | 2.1  | 1.55               | 3.4  | 216       | —       | 208       | 8433 3021 13 |
| <b>Pistol-grip female hex models</b>                           |                 |              |         |               |             |        |      |                    |      |           |         |           |              |
| ETP STB33-06-106-W   | 1/4             | 2-6          | 2-4     | 18 V          | 1500        | 0.95   | 2.1  | 1.55               | 3.4  | 216       | —       | 208       | 8433 3019 86 |
| ETP STB33-12-106-W   | 1/4             | 4-12         | 3-9     | 18 V          | 750         | 0.95   | 2.1  | 1.55               | 3.4  | 216       | —       | 208       | 8433 3019 94 |
| <b>Pistol-grip female hex models with Parameter Selector</b>   |                 |              |         |               |             |        |      |                    |      |           |         |           |              |
| ETP STB33-06-106-SEW   | 1/4             | 2-6          | 2-4     | 18 V          | 1500        | 0.95   | 2.1  | 1.55               | 3.4  | 216       | —       | 208       | 8433 3019 53 |
| ETP STB33-12-106-SEW   | 1/4             | 4-12         | 3-9     | 18 V          | 750         | 0.95   | 2.1  | 1.55               | 3.4  | 216       | —       | 208       | 8433 3019 57 |
| <b>Pistol-grip barcode reader models</b>                       |                 |              |         |               |             |        |      |                    |      |           |         |           |              |
| ETP STB33-06-10-BCR-W  | 3/8             | 2-6          | 2-4     | 18 V          | 1500        | 1.1    | 2.45 | 1.7                | 3.75 | 216       | —       | 235       | 8433 3019 84 |
| ETP STB33-12-10-BCR-W  | 3/8             | 4-12         | 3-9     | 18 V          | 750         | 1.1    | 2.45 | 1.7                | 3.75 | 216       | —       | 235       | 8433 3019 92 |

"-W" = Wi-Fi, "- XM" = Extended memory "-SEL" = Parameter Selector.

## Optional Accessories

### CONTROLLER HARDWARE

| Model                           | Ordering No. |
|---------------------------------|--------------|
| <b>Power Focus 4000 W 10</b>    |              |
| PF 4000-G-HW                    | 8433 7100 00 |
| PF 4000-C-HW                    | 8433 7100 05 |
| <b>RC Focus W 10 Bluetooth*</b> |              |
| IRC FOCUS-B-G-HW                | 8433 6500 00 |
| IRC FOCUS-B-C-HW                | 8433 6500 02 |
| IRC FOCUS-B-G-DN-HW             | 8433 6500 04 |

\*) IRC Focus Communication kit is not needed. The IRC Focus is specially designed for the Tensor STB. The benefit is that the IRC Radio is integrated inside the IRC Focus. The IRC Focus has all the features of a Power Focus, with the exception that it cannot be used with cabled tools. IRC FOCUS it's only available for Bluetooth tools.

### TOOLSTALK PF

| No. of users              | Ordering No. |
|---------------------------|--------------|
| <b>Basic version W 10</b> |              |
| 1-user license            | 8092 1190 01 |
| 5-user license            | 8092 1190 05 |
| 10-user license           | 8092 1190 10 |
| Plant license             | 8092 1190 99 |

### CONTROLLER SOFTWARE

| Controller software | Ordering No. |
|---------------------|--------------|
| RBU-Bronze          | 8433 0010 10 |
| RBU-Silver          | 8433 0015 20 |
| RBU-Gold            | 8433 0020 20 |

### CHARGERS

| Chargers | Voltage   | Region | Ordering No. |
|----------|-----------|--------|--------------|
| 18 V     | 230V/50Hz | EU     | 4211 5428 80 |
| 18 V     | 230V/50Hz | UK     | 4211 5428 81 |
| 18 V     | 115V/60Hz | US/JPN | 4211 5428 84 |
| 18 V     | 230V/60V  | BRA    | 4211 5428 83 |
| 30 V     | 230V/50Hz | EU     | 4211 5424 80 |
| 30 V     | 230V/50Hz | UK     | 4211 5424 81 |
| 30 V     | 120V/60Hz | US/JPN | 4211 5424 84 |
| 30 V     | 230V/60V  | BRA    | 4211 5424 83 |

### BATTERY – LI-IO

| Voltage | Capacity | Weight kg | Ordering No. |
|---------|----------|-----------|--------------|
| 18 V    | 2.6 Ah   | 0.60      | 4211 5426 83 |
| 30 V    | 2.6 Ah   | 0.85      | 4211 5426 86 |

### MULTICHARGER

| Model                              | Ordering No. |
|------------------------------------|--------------|
| Multicharger 18 V-36V, all regions | 4211 5424 85 |

### ACCESSORIES FOR IRC AND POWER FOCUS 4000 CONTROLLER

|                         | Ordering No. |
|-------------------------|--------------|
| Operator panel advanced | 8433 0565 00 |
| Stacklight ESL04        | 8433 0570 13 |
| Selector 4              | 8433 0610 04 |

### TOOL ACCESSORIES

|  | Ordering No. |
|--|--------------|
| <b>ETV STB33 (10/15/20/30 Nm models)</b> |              |
| <b>ETV STB63 (30/40/50 Nm models)</b>    |              |
| Barcode scanner                          | 8433 0615 10 |
| Parameter set selector                   | 8433 0616 05 |
| <b>ETV STB63 (70/100 Nm models)</b>      |              |
| Barcode scanner                          | 8433 0615 20 |
| Parameter set selector                   | 8433 0616 15 |
| <b>ETP STB33 (06/12 Nm models)</b>       |              |
| Barcode scanner                          | 4220 3507 90 |
| Parameter set selector                   | 4220 3507 81 |

For more info about optional accessories please see Atlas Copco main catalog or contact Atlas Copco local sales representative.



Stacklight ESL-04



Operator panel advanced



Tool holder



Barcode scanner



Parameter set selector



Selector 4

Tensor SB is Atlas Copco's response to customers who demand a truly superior industrial battery nutrunner. This user-friendly tool is characterized by a combination of quality in every tightening, operator mobility and long-lasting durability. Together these advantages give Tensor SB a unique position on the market.

- Low tool weight and high spindle speed increases productivity.
- Durable metal housing.
- Freedom of working freely in any position.
- Torque range ETV: 2-100 Nm.
- Torque range ETP: 2-12 Nm.
- Connects through Bluetooth.



| Model             | Square drive in | Torque range |         | Battery    | Free speed r/min | Weight |      | Weight incl. battery |      | Length mm | CS distance | Height mm | Ordering No. |
|-------------------|-----------------|--------------|---------|------------|------------------|--------|------|----------------------|------|-----------|-------------|-----------|--------------|
|                   |                 | Nm           | ft lb   |            |                  | kg     | lb   | kg                   | lb   |           |             |           |              |
| <b>Angle</b>      |                 |              |         |            |                  |        |      |                      |      |           |             |           |              |
| ETV SB33-10-10-B  | 3/8             | 2-10         | 2-7.5   | Li-Io 18 V | 975              | 1.3    | 2.9  | 1.9                  | 4.2  | 455       | 14          | 42        | 8433 3031 20 |
| ETV SB33-15-10-B  | 3/8             | 4-15         | 3-11    | Li-Io 18 V | 720              | 1.3    | 2.9  | 1.9                  | 4.2  | 455       | 14          | 42        | 8433 3031 82 |
| ETV SB33-30-10-B  | 3/8             | 6-30         | 4.5-22  | Li-Io 18 V | 380              | 1.6    | 3.55 | 2.2                  | 4.85 | 471       | 15.5        | 42        | 8433 3031 66 |
| ETV SB63-40-10-B  | 3/8             | 12-40        | 9-29    | Li-Io 30 V | 450              | 1.85   | 4.1  | 2.8                  | 6.15 | 508       | 18          | 47.5      | 8433 3031 23 |
| ETV SB63-50-10-B  | 3/8             | 15-50        | 10-37   | Li-Io 30 V | 360              | 1.85   | 4.1  | 2.8                  | 6.15 | 508       | 18          | 47.5      | 8433 3031 67 |
| ETV SB63-70-13-B  | 1/2             | 15-70        | 10-50.7 | Li-Io 30 V | 265              | 2.9    | 6.4  | 3.85                 | 8.45 | 533       | 20          | 58        | 8433 3031 05 |
| ETV SB63-100-13-B | 1/2             | 20-100       | 15-72.5 | Li-Io 30 V | 170              | 3      | 6.6  | 3.95                 | 8.7  | 557       | 22.5        | 60.5      | 8433 3031 10 |
| <b>Pistol</b>     |                 |              |         |            |                  |        |      |                      |      |           |             |           |              |
| ETP SB33-12-I06-B | 1/4             | 4-12         | 3-9     | Li-Io 18 V | 750              | 0.95   | 2.1  | 1.6                  | 3.55 | 216       | —           | 208       | 8433 3031 49 |

## Optional Accessories

### CONTROLLER HARDWARE

| Model                            | Ordering No. |
|----------------------------------|--------------|
| <b>Power Focus 4000 W 10</b>     |              |
| PF 4000-G-HW                     | 8433 7100 00 |
| PF 4000-C-HW                     | 8433 7100 05 |
| <b>IRC Focus W 07 Bluetooth*</b> |              |
| IRC FOCUS-B-G-HW                 | 8433 6500 00 |
| IRC FOCUS-B-C-HW                 | 8433 6500 02 |

\*) IRC Focus Communication kit is not needed.

### CONTROLLER SOFTWARE

| Controller software | Ordering No. |
|---------------------|--------------|
| RBU SB              | 8433 0081 00 |

### TOOLSTALK POWER FOCUS

| No. of users              | Ordering No. |
|---------------------------|--------------|
| <b>Basic version W 10</b> |              |
| 1-user license            | 8092 1190 01 |

### COM KIT

|                                    | Ordering No. |
|------------------------------------|--------------|
| <b>Com kit</b> (minimum PF SW 7.5) |              |
| Com kit IRC-B (Bluetooth)          | 8433 3900 20 |

**NOTE:** Kit includes: Serial port adapter, I/O cable, 3 m serial cable and power cable.

### BATTERY – LI-IO

| Voltage | Capacity | Weight kg | Ordering No. |
|---------|----------|-----------|--------------|
| 18 V    | 4.2 Ah   | 0.60      | 4211 5526 83 |
| 30 V    | 2.6 Ah   | 0.85      | 4211 5586 88 |

### MULTICHARGER

| Model                               | Ordering No. |
|-------------------------------------|--------------|
| Multicharger 18V - 36V, all regions | 4211 5424 85 |



Battery Big pack



Battery multicharger 18V - 36V

# Handheld screwdrivers V2

# MicroTorque

MicroTorque handheld screwdrivers are designed to perform consistently and precisely, time after time.

- High accuracy current controlled tools.
- Torque and angle control and monitoring.
- Advanced seating control tightening strategy that eliminates floating screws.
- Ergonomic metallic handle.
- V2 Tools are not paired with the controller and are ordered separately.



**ETD M 08/20/27 ABL V2**



**ETD M 120/200/250 ABL V2**



**ETD M 50/80 ABL V2**

| Model  | Torque range |            | Speed<br>r/min | Length<br>mm | Overall<br>width<br>mm | Weight |      | Bit<br>drive | Ordering No. |
|--|--------------|------------|----------------|--------------|------------------------|--------|------|--------------|--------------|
|  | cNm          | in lb      |                |              |                        | kg     | lb   |              |              |
| <b>Hand-held current controlled, without push-to-start</b>   |              |            |                |              |                        |        |      |              |              |
| ETD M 08 ABL V2  | 2-8          | 0.18-0.7   | 1350           | 185          | 29                     | 0.30   | 0.66 | HM 4 mm      | 8432 0815 18 |
| ETD M 20 ABL V2  | 5-20         | 0.44-1.77  | 900            | 185          | 29                     | 0.30   | 0.66 | HM 4 mm      | 8432 0815 21 |
| ETD M 27 ABL V2  | 7.5-27       | 0.66-2.4   | 900            | 185          | 29                     | 0.30   | 0.66 | HM 4 mm      | 8432 0815 27 |
| <b>Hand-held current controlled, push-start configurable</b> |              |            |                |              |                        |        |      |              |              |
| ETD M 50 ABL V2  | 15-50        | 1.33-4.4   | 1000           | 238          | 36                     | 0.61   | 1.37 | HM 4 mm      | 8432 0815 50 |
| ETD M 80 ABL V2  | 20-80        | 1.77-7.1   | 1100           | 238          | 36                     | 0.61   | 1.37 | HM 4 mm      | 8432 0815 80 |
| ETD M 120 ABL V2   | 30-120       | 2.7-10.6   | 900            | 240          | 43                     | 0.65   | 1.43 | 1/4" Hex     | 8432 0815 82 |
| ETD M 200 ABL V2   | 50-200       | 4.42-17.7  | 700            | 240          | 43                     | 0.65   | 1.43 | 1/4" Hex     | 8432 0815 84 |
| ETD M 250 ABL V2   | 75-250       | 6.64-22.13 | 700            | 240          | 43                     | 0.65   | 1.43 | 1/4" Hex     | 8432 0815 86 |

**NOTE.** Ordering number for screwdriver only. Tool cable, controller and PSU need to be ordered separately.

# Fixtured screwdrivers V2

# MicroTorque

MicroTorque fixtured screwdrivers are designed to perform consistently and precisely, time after time.

- High accuracy current controlled tools.
- Torque and angle control and monitoring.

- Advanced seating control tightening strategy that eliminates floating screws.
- Very compact design.
- V2 Tools are not paired with the controller and are ordered separately.



**ETF S**

| Model                              | Torque range |           | Speed<br>r/min | Length<br>mm | Overall<br>width<br>mm | Weight |      | Bit<br>drive | Ordering No. |
|------------------------------------|--------------|-----------|----------------|--------------|------------------------|--------|------|--------------|--------------|
|                                    | cNm          | in lb     |                |              |                        | kg     | lb   |              |              |
| <b>Fixtured current controlled</b> |              |           |                |              |                        |        |      |              |              |
| ETF S 08 V2                        | 2-8          | 0.18-0.70 | 1500           | 125          | 65                     | 0.3    | 0.68 | HM 4 mm      | 8432 0832 84 |
| ETF S 25 V2                        | 5.5-25       | 0.49-2.2  | 1000           | 125          | 65                     | 0.3    | 0.68 | HM 4 mm      | 8432 0832 85 |

**NOTE.** Ordering number for screwdriver only. Tool cable, controller and PSU need to be ordered separately.

# MicroTorque

# MT Focus 400 controller

MT Focus 400 is an extremely compact and advanced controller designed to attend the most demanding assembly processes.

- 20 P-sets
- Multiple steps tightening
- Simple programming directly at the controller.
- Advanced programming via PC software, ToolsTalk MT.
- Batch count.
- Different display lights for operator feedback.
- Multiple I/Os for integration with assembly line, automation stations or error proofing accessories.
- ToolsTalk MT included, with Graph Analysis and Net functionality for detailed information.



**MTF 400A**

| Model    | Ordering No. |
|----------|--------------|
| MTF 400A | 8432 0850 00 |

**NOTE:** To be ordered together with V2 tools.

# MicroTorque

# Accessories

## TOOL CABLES FOR ETF S V2 AND ETD M ABL V2

| Model       | Ordering No. |
|-------------|--------------|
| Cable 2 m   | 8432 0835 02 |
| Cable 3.5 m | 8432 0835 03 |



Tool cable

## POWER SUPPLY UNIT, PSU

| Model                               | Battery / Power | Ordering No. |
|-------------------------------------|-----------------|--------------|
| ETF S08 V2 and ETD M08/20/27 ABL V2 | 24V / 72W       | 8432 0840 00 |
| ETF S25 V2                          | 36V / 72W       | 8432 0840 01 |
| ETD M50/80/100/120/200/250 ABL V2   | 36V / 180W      | 8432 0840 02 |



Power supply unit

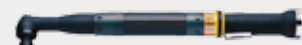
## ELECTRIC



ETD ST



ETD SR



ETV ST



ETV SR



ETP ST



ETP ST REVO



ETP STR

Power Focus 4000 Compact



RBU DS



DS

## BATTERY



ETV SB



ETV STB



ETP SB

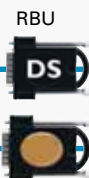


ETP STB



IRC

Power Focus 4000 Graph



RBU DS



DS

## ELECTRIC



ETD SL



ETV SL



ETF SL



ETP SL

Power Focus 4102 Graph Compact



## ELECTRIC



ETV ES



ETD ES

Power Focus 600



IAM



## ETV ST

- ETV ST right angle tools are ideal for hand-held and fixtured applications.
- Torque range from 1 to 4000 Nm.
- Tensor ST complements the S range by:
  - Extremely high productivity.
  - More ergonomic benefits.
  - Better operator feedback.
- The ETV ST ATEX tools are certified to be used in environments with hazardous gases and liquids.



| Model                         | Square drive<br>in | Torque range |          | Speed<br>r/min | Weight |     | Length<br>mm | CS distance<br>mm | Height<br>mm | Ordering No.  |
|-------------------------------|--------------------|--------------|----------|----------------|--------|-----|--------------|-------------------|--------------|---------------|
|                               |                    | Nm           | ft lb    |                | kg     | lb  |              |                   |              |               |
| <b>ETV ST31</b>               |                    |              |          |                |        |     |              |                   |              |               |
| ETV ST31-05-10                | 3/8                | 1-5          | 0.7-3.6  | 2390           | 1.0    | 2.2 | 381          | 11                | 39           | 8433 2011 21  |
| ETV ST31-10-10                | 3/8                | 3-12         | 2.2-8.8  | 1020           | 1.0    | 2.2 | 381          | 11                | 39           | 8433 2013 66  |
| ETV ST31-15-10                | 3/8                | 5-15         | 3.6-10   | 755            | 1.0    | 2.2 | 381          | 11                | 39           | 8433 2015 98  |
| ETV ST31-20-10                | 3/8                | 5-22         | 3.7-16.1 | 545            | 1.2    | 2.6 | 415          | 14                | 42           | 8433 2017 10  |
| <b>ETV ST31 Ball Retainer</b> |                    |              |          |                |        |     |              |                   |              |               |
| ETV ST31-10-B10               | 3/8                | 3-12         | 2.2-8.8  | 1020           | 1.0    | 2.2 | 381          | 11                | 39           | 8433 2014 12  |
| ETV ST31-15-B10               | 3/8                | 5-15         | 3.6-10   | 755            | 1.0    | 2.2 | 381          | 11                | 39           | 8433 2016 36  |
| ETV ST31-20-B10               | 3/8                | 5-22         | 3.7-16.1 | 545            | 1.2    | 2.6 | 415          | 14                | 42           | 8433 2018 23  |
| <b>ETV ST31 Female Hex</b>    |                    |              |          |                |        |     |              |                   |              |               |
| ETV ST31-05-106-QC            | -                  | 1-5          | 0.7-3.6  | 2390           | 1.0    | 2.2 | 381          | 11                | 39           | 8433 2011 95  |
| ETV ST31-10-106-QC            | -                  | 3-12         | 2.2-8.8  | 1020           | 1.0    | 2.2 | 381          | 11                | 39           | 8433 2014 21  |
| <b>ETV ST61</b>               |                    |              |          |                |        |     |              |                   |              |               |
| ETV ST61-28-10                | 3/8                | 6-29         | 4-21     | 1450           | 1.3    | 2.9 | 440          | 14                | 42           | 8433 2021 76  |
| ETV ST61-30-10                | 3/8                | 7-35         | 5-25     | 1090           | 1.3    | 2.9 | 440          | 15.5              | 42           | 8433 2023 92  |
| ETV ST61-40-10                | 3/8                | 8-40         | 6-29     | 1090           | 1.5    | 3.3 | 454          | 18                | 47           | 8433 2027 85  |
| ETV ST61-50-10                | 3/8                | 10-55        | 7-40     | 655            | 1.5    | 3.3 | 454          | 18                | 47           | 8433 2031 58  |
| ETV ST61-70-13                | 1/2                | 15-80        | 10-58    | 475            | 2.0    | 4.5 | 466          | 20                | 58           | 8433 2035 30  |
| ETV ST61-100-13               | 1/2                | 20-100       | 15-80    | 350            | 2.5    | 5.5 | 502          | 22.5              | 60           | 8433 2039 02  |
| ETV ST61-150-13               | 1/2                | 30-160       | 22-117   | 227            | 3.0    | 6.6 | 536          | 25.5              | 65           | 8433 2042 70  |
| ETV ST61-180-13               | 1/2                | 35-180       | 26-133   | 190            | 3.0    | 6.6 | 536          | 25.5              | 65           | 8433 2045 53  |
| ETV ST61-200-20               | 3/4                | 40-200       | 30-154   | 185            | 3.0    | 6.6 | 537          | 27                | 70           | 8433 2046 39  |
| <b>ETV ST61 ATEX</b>          |                    |              |          |                |        |     |              |                   |              |               |
| ETV ST61-28-10-ATEX           | 3/8                | 6-29         | 4-21     | 1450           | 1.3    | 2.9 | 440          | 14                | 42           | 8433 2023 76  |
| ETV ST61-30-10-ATEX           | 3/8                | 7-35         | 5-25     | 1090           | 1.3    | 2.9 | 440          | 15.5              | 42           | 8433 2026 92  |
| ETV ST61-40-10-ATEX           | 3/8                | 8-40         | 6-29     | 1090           | 1.5    | 3.3 | 454          | 18                | 47           | 8433 2030 85  |
| ETV ST61-50-10-ATEX           | 3/8                | 10-55        | 7-40     | 655            | 1.5    | 3.3 | 454          | 18                | 47           | 8433 2034 98  |
| ETV ST61-70-13-ATEX           | 1/2                | 15-80        | 10-58    | 475            | 2.0    | 4.5 | 466          | 20                | 58           | 8433 2037 90  |
| ETV ST61-100-13-ATEX          | 1/2                | 20-100       | 15-80    | 350            | 2.5    | 5.5 | 502          | 22.5              | 60           | 8433 2041 42  |
| ETV ST61-150-13-ATEX          | 1/2                | 30-160       | 22-117   | 230            | 3.0    | 6.6 | 536          | 25.5              | 65           | 8433 2045 20  |
| ETV ST61-200-20-ATEX          | 3/4                | 40-200       | 30-154   | 185            | 3.0    | 6.6 | 537          | 27                | 70           | 8433 2048 49  |
| <b>ETV ST61 Ball Retainer</b> |                    |              |          |                |        |     |              |                   |              |               |
| ETV ST61-28-B10               | 3/8                | 6-29         | 4-21     | 1450           | 1.3    | 2.9 | 440          | 14                | 42           | 8433 2022 32  |
| ETV ST61-30-B10               | 3/8                | 7-35         | 5-25     | 1090           | 1.3    | 2.9 | 440          | 15.5              | 42           | 8433 2025 09  |
| ETV ST61-40-B10               | 3/8                | 8-40         | 6-29     | 1090           | 1.5    | 3.3 | 454          | 18                | 47           | 8433 2029 13  |
| ETV ST61-50-B10               | 3/8                | 10-55        | 7-40     | 655            | 1.5    | 3.3 | 454          | 18                | 47           | 8433 2032 87  |
| ETV ST61-70-B13               | 1/2                | 15-80        | 10-58    | 475            | 2.0    | 4.5 | 466          | 20                | 60           | 8433 2036 93  |
| ETV ST61-100-B13              | 1/2                | 20-100       | 15-80    | 350            | 2.5    | 5.5 | 502          | 22.5              | 58           | 8433 2040 70  |
| ETV ST61-150-B13              | 1/2                | 30-160       | 22-117   | 230            | 3.0    | 6.6 | 536          | 25.5              | 65           | 8433 2043 62  |
| ETV ST61-180-B13              | 1/2                | 35-180       | 26-133   | 190            | 3.0    | 6.6 | 536          | 25.5              | 65           | 8433 2045 61  |
| <b>ETV ST61 Flush Socket</b>  |                    |              |          |                |        |     |              |                   |              |               |
| ETV ST61-30-FS                | -                  | 7-35         | 5-25     | 1090           | 1.3    | 2.9 | 440          | 16                | 32           | 8433 2025 50  |
| ETV ST61-40-FS                | -                  | 8-40         | 6-29     | 1090           | 1.5    | 3.3 | 454          | 18                | 39           | 8433 2029 50  |
| ETV ST61-50-FS                | -                  | 10-55        | 7-40     | 655            | 1.5    | 3.3 | 454          | 18                | 39           | 8433 2033 15  |
| ETV ST61-70-FS                | -                  | 15-80        | 10-58    | 475            | 2.0    | 4.5 | 466          | 20                | 50           | 8433 2037 36  |
| ETV ST61-100-FS               | -                  | 20-110       | 15-80    | 350            | 2.5    | 5.5 | 502          | 23                | 51           | 8433 2040 75  |
| ETV ST61-150-FS               | -                  | 30-160       | 22-117   | 220            | 3.0    | 6.6 | 539          | 26                | 58           | 8433 2044 14  |
| ETV ST61-180-FS               | 1/2                | 35-180       | 26-133   | 190            | 3.0    | 6.6 | 539          | 26                | 58           | 8433 2045 72  |
| ETV ST61-200-FS               | -                  | 40-200       | 30-154   | 185            | 3.0    | 6.6 | 541          | 27                | 58           | 8433 2047 21+ |

## ETP ST

- ETP ST is a pistol grip model for hand-held applications.
- Torque range from 1 to 20 Nm.
- Female hex drive for bits.
- Low weight and ergonomic grip.
- Easy to access, reverse button.
- Operator friendly, feedback signals with sound and lights.



ETP ST

| Model                                | Square drive<br>in | Torque range |          | Speed<br>r/min | Weight |     | Length<br>mm | Height<br>mm | Ordering No. |
|--------------------------------------|--------------------|--------------|----------|----------------|--------|-----|--------------|--------------|--------------|
|                                      |                    | Nm           | ft lb    |                | kg     | lb  |              |              |              |
| <b>ETP ST32</b>                      |                    |              |          |                |        |     |              |              |              |
| ETP ST32-05-10                       | 3/8                | 1-5          | 0.7-3.6  | 2820           | 0.75   | 1.7 | 197          | 179          | 8433 2211 03 |
| ETP ST32-05-106                      | 1/4                | 1-5          | 0.7-3.6  | 2820           | 0.75   | 1.7 | 197          | 179          | 8433 2212 19 |
| ETP ST32-10-10                       | 3/8                | 3-11         | 2.2-8.0  | 1210           | 0.8    | 1.8 | 197          | 179          | 8433 2213 48 |
| ETP ST32-10-106                      | 1/4                | 3-11         | 2.2-8.0  | 1210           | 0.8    | 1.8 | 197          | 179          | 8433 2214 63 |
| ETP ST32-20-10                       | 3/8                | 5-20         | 3.6-15.0 | 677            | 0.91   | 2   | 235          | 179          | 8433 2216 95 |
| ETP ST32-20-106                      | 1/4                | 5-20         | 3.6-15.0 | 677            | 0.91   | 2   | 235          | 179          | 8433 2217 11 |
| <b>ETP ST32 with Barcode Scanner</b> |                    |              |          |                |        |     |              |              |              |
| ETP ST32-05-10BCR                    | 3/8                | 1-5          | 0.7-3.6  | 2820           | 0.87   | 2   | 197          | 205          | 8433 2211 13 |
| ETP ST32-05-106BCR                   | 1/4                | 1-5          | 0.7-3.7  | 2820           | 0.87   | 2   | 197          | 205          | 8433 2212 29 |
| ETP ST32-10-10BCR                    | 3/8                | 3-11         | 2.2-8.0  | 1210           | 0.92   | 2.1 | 197          | 205          | 8433 2213 58 |
| ETP ST32-10-106BCR                   | 1/4                | 3-11         | 2.2-8.0  | 1210           | 0.92   | 2.1 | 197          | 205          | 8433 2214 73 |
| ETP ST32-20-10BCR                    | 3/8                | 5-20         | 3.6-15.0 | 677            | 1.03   | 2.3 | 237          | 205          | 8433 2217 05 |
| ETP ST32-20-106BCR                   | 1/4                | 5-20         | 3.6-15.0 | 677            | 1.03   | 2.3 | 237          | 205          | 8433 2217 26 |

## ST REVO

- Unique and patented 360° swivel with transducer.
- Ultra-compact size improves access.
- Reduced weight means less need for fixtures.
- Display on tool gives direct feedback of tightening result.
- Program selection is made directly on tool.
- Ideal for handheld application or fixtures with reduced space.
- Torque range from 60-4000 Nm.



ETP ST Rev0

| Model                 | Square drive<br>in | Torque range |          | Speed<br>r/min | Weight |      | Length<br>mm | CS distance<br>mm | Spline | Ordering No. |
|-----------------------|--------------------|--------------|----------|----------------|--------|------|--------------|-------------------|--------|--------------|
|                       |                    | Nm           | ft lb    |                | kg     | lb   |              |                   |        |              |
| <b>Model with fan</b> |                    |              |          |                |        |      |              |                   |        |              |
| ETP ST101-200-20-F    | 3/4                | 60-200       | 45-145   | 396            | 5.2    | 11.5 | 303          | 32.5              | 3      | 8433 2302 02 |
| ETP ST101-300-20-F    | 3/4                | 90-300       | 66-221   | 293            | 5.2    | 11.5 | 303          | 32.5              | 3      | 8433 2303 02 |
| ETP ST101-500-20-F    | 3/4                | 150-500      | 110-365  | 186            | 5.9    | 13   | 334          | 33.5              | 4      | 8433 2305 02 |
| ETP ST101-750-25-F    | 1                  | 220-750      | 160-550  | 132            | 6.2    | 13.7 | 353          | 33.5              | 5      | 8433 2307 52 |
| ETP ST101-1000-25-F   | 1                  | 300-1000     | 220-735  | 99             | 6.4    | 14.1 | 364          | 33.5              | 5      | 8433 2310 02 |
| ETP ST101-1500-25-F   | 1                  | 450-1500     | 332-1106 | 47             | 8.8    | 19.4 | 402          | 43.5              | 9      | 8433 2321 52 |
| ETP ST101-2000-38-F   | 1 1/2              | 600-2000     | 442-1475 | 38             | 11.5   | 25.4 | 454          | 48                | 7      | 8433 2322 02 |
| ETP ST101-3000-38-F   | 1 1/2              | 900-3000     | 664-2212 | 24             | 14.8   | 33   | 476          | 59                | 8      | 8433 2323 02 |
| ETP ST101-4000-38-F   | 1 1/2              | 1200-4000    | 885-2950 | 20             | 15     | 33   | 481          | 59                | 8      | 8433 2324 02 |

Reaction bar not included for ETP ST101. See accessory pages.



## TENSOR ES

| Model                                  | Ordering No. |
|--|--------------|
| <b>Round cables for ES21</b>           |              |
| 2 m                                    | 4220 4204 02 |
| 3 m                                    | 4220 4204 03 |
| 5 m                                    | 4220 4204 05 |
| 7 m                                    | 4220 4204 07 |
| 10 m                                   | 4220 4204 10 |
| 15 m                                   | 4220 4204 15 |
| <b>Flat cables for ES61</b>            |              |
| 3 m                                    | 4220 4339 03 |
| 5 m                                    | 4220 4339 05 |
| 7 m                                    | 4220 4339 07 |
| 10 m                                   | 4220 4339 10 |
| 15 m                                   | 4220 4339 15 |
| <b>Extension cables for all cables</b> |              |
| 3 m                                    | 4220 4393 03 |
| 5 m                                    | 4220 4393 05 |
| 10 m                                   | 4220 4393 10 |
| 15 m                                   | 4220 4393 15 |
| 25 m                                   | 4220 4393 25 |
| <b>Suspension yoke cable for ES21</b>  |              |
| Suspension yoke cable                  | 4210 1810 00 |

## TENSOR ST/SR/STR

| Model  | Ordering No. |
|--|--------------|
| <b>Tool cable</b>  |              |
| 2 m  | 4220 2636 02 |
| 3 m  | 4220 2636 03 |
| 5 m  | 4220 2636 05 |
| 7 m  | 4220 2636 07 |
| 10 m   | 4220 2636 10 |
| 15 m   | 4220 2636 15 |
| <b>Cables with 90 degrees connector</b>                  |              |
| 2 m  | 4220 3891 02 |
| 3 m  | 4220 3891 03 |
| 5 m  | 4220 3891 05 |
| 7 m  | 4220 3891 07 |
| 10 m   | 4220 3891 10 |
| 15 m   | 4220 3891 15 |
| <b>Spiral cable (length/stretched length)</b>            |              |
| 3 m / 4 m  | 4220 2757 03 |
| 7 m / 8 m  | 4220 2757 07 |
| 10 m / 12 m  | 4220 2757 10 |
| <b>Cable protection 2 m</b>                              | 4220 2977 90 |
| <b>Extension cable (round, heavy duty)</b>               |              |
| 5 m  | 4220 1007 05 |
| 10 m   | 4220 1007 10 |
| 15 m   | 4220 1007 15 |
| <b>Extension cables for fixtured applications (flat)</b> |              |
| 5 m  | 4220 1563 05 |
| 10 m   | 4220 1563 10 |
| 15 m   | 4220 1563 15 |



ST/SR/STR Cable protection



ST/SR/STR Cable with 90 degrees connector



ST/SR/STR Cable



ST/SR/STR Spiral cable

For more info about optional accessories please see Atlas Copco main catalog or contact Atlas Copco local sales representative.

# Tensor ES

## TENSOR ES

- Torque transducer with an accuracy of  $\pm 7.5\%$  over six sigma.
- Robust, sealed design with one single extruded aluminum body protecting internal components from dust and oil.
- New durable motor with higher speeds.
- Engineered in modules with component commonality.
- Clear LEDs visible through 360°.
- Hot swap.



ETV ES



ETD ES

| Model                       | Square drive<br>in | Torque range |           | Speed<br>r/min | Weight |     | Length<br>mm | CS distance<br>mm | Spline/<br>Mounting | Ordering No. |
|-----------------------------|--------------------|--------------|-----------|----------------|--------|-----|--------------|-------------------|---------------------|--------------|
|                             |                    | Nm           | ft lb     |                | kg     | lb  |              |                   |                     |              |
| <b>Angle models</b>         |                    |              |           |                |        |     |              |                   |                     |              |
| ETV ES21-04-06              | 1/4                | 1.6-4.5      | 1.2-3.3   | 1909           | 0.85   | 1.9 | 284          | 9.5               | –                   | 8436 0120 04 |
| ETV ES21-07-06              | 1/4                | 2.8-7        | 2.1-5.2   | 1147           | 0.85   | 1.9 | 284          | 9.5               | –                   | 8436 0120 07 |
| ETV ES21-12-06              | 1/4                | 4.8-12       | 3.5-8.9   | 718            | 0.95   | 2.1 | 304          | 11                | –                   | 8436 0120 12 |
| ETV ES61-25-10              | 3/8                | 10-25        | 7.4-18.4  | 1378           | 1.8    | 4.0 | 419          | 14                | –                   | 8436 0160 25 |
| ETV ES61-30-10              | 3/8                | 12-30        | 8.9-22.1  | 1160           | 1.8    | 4.0 | 421          | 15.5              | –                   | 8436 0160 30 |
| ETV ES61-40-10              | 3/8                | 16-40        | 11.8-29.5 | 1153           | 1.9    | 4.2 | 441          | 18                | –                   | 8436 0160 40 |
| ETV ES61-50-10              | 3/8                | 20-50        | 14.8-36.9 | 692            | 1.9    | 4.2 | 441          | 18                | –                   | 8436 0160 50 |
| ETV ES61-70-13              | 1/2                | 28-70        | 20.7-51.6 | 439            | 3.1    | 6.8 | 499          | 20                | –                   | 8436 0160 70 |
| ETV ES61-100-13             | 1/2                | 40-100       | 29.5-73.8 | 370            | 3.15   | 6.9 | 505          | 22.5              | –                   | 8436 0160 10 |
| <b>Angle, quick chuck</b>   |                    |              |           |                |        |     |              |                   |                     |              |
| ETV ES21-12-106-QC          | –                  | 4.8-12       | 3.5-8.9   | 718            | 0.95   | 2.1 | 304          | 11                | –                   | 8436 0121 12 |
| <b>Angle, ball retainer</b> |                    |              |           |                |        |     |              |                   |                     |              |
| ETV ES61-25-B10             | 3/8                | 10-25        | 7.4-18.4  | 1378           | 1.8    | 4.0 | 419          | 14                | –                   | 8436 0165 25 |
| ETV ES61-30-B10             | 3/8                | 12-30        | 8.9-22.1  | 1160           | 1.8    | 4.0 | 421          | 15.5              | –                   | 8436 0165 30 |
| ETV ES61-40-B10             | 3/8                | 16-40        | 11.8-29.5 | 1153           | 1.9    | 4.2 | 441          | 18                | –                   | 8436 0165 40 |
| ETV ES61-50-B10             | 3/8                | 20-50        | 14.8-36.9 | 692            | 1.9    | 4.2 | 441          | 18                | –                   | 8436 0165 50 |
| ETV ES61-70-B13             | 1/2                | 28-70        | 20.7-51.6 | 439            | 3.1    | 6.8 | 499          | 20                | –                   | 8436 0165 70 |
| ETV ES61-100-B13            | 1/2                | 40-100       | 29.5-73.8 | 370            | 3.15   | 6.9 | 505          | 22.5              | –                   | 8436 0165 10 |
| <b>Straight models</b>      |                    |              |           |                |        |     |              |                   |                     |              |
| ETD ES21-02-106-PS          | –                  | 0.8-2        | 0.6-1.5   | 4471           | 0.75   | 1.7 | 267          | 19.5              | –                   | 8436 0220 02 |
| ETD ES21-04-106-PS          | –                  | 1.6-4.5      | 1.2-3.3   | 1909           | 0.8    | 1.8 | 267          | 19.5              | –                   | 8436 0220 04 |
| ETD ES21-07-106-PS          | –                  | 2.8-7        | 2.1-5.2   | 1147           | 0.8    | 1.8 | 267          | 19.5              | –                   | 8436 0220 07 |
| ETD ES21-12-106-PS          | –                  | 4.8-12       | 3.5-8.9   | 745            | 0.8    | 1.8 | 267          | 19.5              | –                   | 8436 0220 12 |
| ETD ES61-18-10-T25          | 3/8                | 7.2-18       | 5.3-13.3  | 2129           | 1.85   | 4.1 | 456          | 23                | 2/2                 | 8436 0260 18 |
| ETD ES61-25-10-T25          | 3/8                | 10-25        | 7.4-18.4  | 1793           | 1.85   | 4.1 | 456          | 23                | 2/2                 | 8436 0260 25 |
| ETD ES61-30-10-T25          | 3/8                | 12-30        | 8.9-22.1  | 1077           | 1.85   | 4.1 | 456          | 23                | 2/2                 | 8436 0260 30 |
| ETD ES61-50-13-T25          | 1/2                | 20-50        | 14.8-36.9 | 679            | 3.05   | 6.7 | 521          | 29                | 3/5                 | 8436 0260 50 |

# Tensor SL

## ETD SL

- ETD SL is a very compact screwdriver with excellent power to weight ratio.
- Torque range from 0.3 to 10 Nm.
- Push-to-start function and front lights.
- Small center-to-side distance.
- Ergonomic design.
- Buzzer and additional blue LED for better operator support.



ETD SL



ETP SL



ETV SL



ETF SL

## ETV SL

- ETV SL is the most compact transducerised angle screwdriver in the Tensor range.
- Torque range from 0.8 to 20 Nm.
- High durability with spiral angle gears.
- Ergonomic design.
- Buzzer and additional blue LED for better operator support.

## ETP SL

- ETP SL is our first push-to-start pistol tool.
- Torque range from 0.3 to 10 Nm.
- Ergonomic, balanced pistol tool.
- Front lights for dark applications.
- Blue light and buzzer.

## ETF SL

- ETF SL is the smallest and lightest fixtured tool.
- Torque range from 0.3 to 10 Nm.
- Stroke with 25 mm suspension.
- Small center-to-side distance.

| Model   | Torque range |        | Speed<br>r/min | Weight |     | Length<br>mm | CS distance <sup>a</sup><br>mm | Stroke<br>mm | Ordering No. |
|---|--------------|--------|----------------|--------|-----|--------------|--------------------------------|--------------|--------------|
|   | Nm           | in lb  |                | kg     | lb  |              |                                |              |              |
| <b>Straight tools, push-to-start and front lights</b> |              |        |                |        |     |              |                                |              |              |
| ETD SL21-01-I06-PS                                    | 0.3-1.2      | 2.7-10 | 2950           | 0.7    | 1.6 | 246          | 18/19.5                        | —            | 8433 2102 92 |
| ETD SL21-04-I06-PS                                    | 0.8-4        | 7-35   | 1600           | 0.7    | 1.6 | 246          | 18/19.5                        | —            | 8433 2104 91 |
| ETD SL21-07-I06-PS                                    | 1.5-7.5      | 13-66  | 970            | 0.7    | 1.6 | 246          | 18/19.5                        | —            | 8433 2107 69 |
| ETD SL21-10-I06-PS                                    | 2.0-10       | 18-89  | 720            | 0.7    | 1.6 | 246          | 18/19.5                        | —            | 8433 2108 25 |
| <b>Right angle tools, lever start</b>                 |              |        |                |        |     |              |                                |              |              |
| ETV SL21-04-I06                                       | 0.8-4        | 7-35   | 1600           | 0.75   | 1.7 | 279          | 9                              | —            | 8433 2004 47 |
| ETV SL21-04-I06-QC                                    | 0.8-4        | 8-35   | 1600           | 0.75   | 1.7 | 279          | 9                              | —            | 8433 2004 73 |
| ETV SL21-04-I06                                       | 0.8-4        | 9-35   | 1600           | 0.75   | 1.7 | 279          | 9                              | —            | 8433 2004 91 |
| ETV SL21-07-I06                                       | 1.5-7.5      | 13-66  | 970            | 0.75   | 1.7 | 279          | 9                              | —            | 8433 2007 66 |
| ETV SL21-07-I06-QC                                    | 1.5-7.5      | 14-66  | 970            | 0.75   | 1.7 | 279          | 9                              | —            | 8433 2007 79 |
| ETV SL21-07-I06                                       | 1.5-7.5      | 15-66  | 970            | 0.75   | 1.7 | 279          | 9                              | —            | 8433 2007 94 |
| ETV SL21-12-I06                                       | 2.5-12       | 22-106 | 610            | 0.8    | 1.8 | 282          | 11                             | —            | 8433 2008 34 |
| ETV SL21-12-I06-QC                                    | 2.5-12       | 23-106 | 610            | 0.8    | 1.8 | 282          | 11                             | —            | 8433 2008 61 |
| ETV SL21-12-I06                                       | 2.5-12       | 24-106 | 610            | 0.8    | 1.8 | 282          | 11                             | —            | 8433 2008 77 |
| ETV SL21-20-10  | 4-20         | 36-180 | 465            | 0.95   | 2.1 | 285          | 14                             | —            | 8433 2009 55 |
| ETV SL21-20-B10                                       | 4-20         | 36-180 | 465            | 0.95   | 2.1 | 285          | 14                             | —            | 8433 2009 60 |
| <b>Pistol grip, push-to-start</b>                     |              |        |                |        |     |              |                                |              |              |
| ETP SL21-01-I06-PS                                    | 0.3-1.2      | 2.7-10 | 3000           | 0.85   | 1.9 | 246          | 20.5                           | —            | 8433 2201 16 |
| ETP SL21-04-PS  | 0.8-4        | 7-35   | 1600           | 0.85   | 1.9 | 246          | 20.5                           | —            | 8433 2204 66 |
| ETP SL21-07-PS  | 1.5-7.5      | 13-66  | 970            | 0.85   | 1.9 | 246          | 20.5                           | —            | 8433 2207 53 |
| ETP SL21-10-PS  | 2-10         | 18-89  | 720            | 0.85   | 1.9 | 246          | 20.5                           | —            | 8433 2208 28 |
| <b>Fixtured tools, lever start or remote start</b>    |              |        |                |        |     |              |                                |              |              |
| ETF SL21-01-I06-T25                                   | 0.3-1.2      | 2.7-10 | 3000           | 0.95   | 2.1 | 322          | 18                             | 25           | 8433 2404 13 |
| ETF SL21-04-I06-T25                                   | 0.8-4        | 7-35   | 1600           | 0.95   | 2.1 | 322          | 18                             | 25           | 8433 2404 19 |
| ETF SL21-07-I06-T25                                   | 1.5-7.5      | 13-66  | 970            | 0.95   | 2.1 | 322          | 18                             | 25           | 8433 2407 26 |
| ETF SL21-10-I06-T25                                   | 2-10         | 18-89  | 720            | 0.95   | 2.1 | 322          | 18                             | 25           | 8433 2408 13 |

<sup>a</sup> For ETV, CS distance over angle head.

## POWER FOCUS 600

The Power Focus 600 controller takes quality critical assembly to the next level. Setting up and using an electric system has never been easier. And, by switching from pneumatic tools, you can reduce your energy consumption by up to 85%. Unbelievable but true – we call it easy transformation!

### EASY

Set up and run a new system from the box in minutes. Computer software is no longer required. Intuitive interfaces enable real-time analysis and fast reaction if needed.

### EFFICIENT

Same controller hardware regardless of tool model. Powerful industrial design gives a reliable process to maximize uptime and speed up your tightening operations.

### ERGONOMIC

Both hardware and software is intuitive, giving clear operator feedback on the screen.



Power Focus 600

| Model                             | Ordering No. |
|-----------------------------------|--------------|
| <b>Drive unit</b>                 |              |
| Power Focus 600                   | 8436 2700 01 |
| Power Focus 600 with remote start | 8436 3700 01 |
| <b>IAM</b>                        |              |
| IAM Joint Control                 | 8436 0900 01 |
| IAM Station Control               | 8436 0900 05 |

## FUNCTIONALITY OVERVIEW

|   | IAM<br>Joint Control | IAM<br>Station Control |
|---|----------------------|------------------------|
| <b>Functionality</b>  |                      |                        |
| Number of Psets   | 1                    | 16                     |
| Batch sequence  | -                    | x                      |
| Lock on reject  | x                    | x                      |
| <b>Strategies and options</b>                               |                      |                        |
| Torque control  | x                    | x                      |
| Torque control and angle monitoring                         | x                    | x                      |
| Configurable limits for torque and angle                    | x                    | x                      |
| Rotate spindle forward/reverse                              | x                    | x                      |
| TurboTight  | -                    | x                      |
| Two Step  | x                    | x                      |
| Quick Step  | x                    | x                      |
| Three Step  | x                    | x                      |
| CW / CCW operation  | x                    | x                      |
| Complete re-hit detection                                   | x                    | x                      |
| Self tap  | x                    | x                      |
| <b>Process information and service</b>                      |                      |                        |
| Tightening data storage (Torque, Status OK/NOK, NOK reason) | 30                   | 1000                   |
| Torque-time trace   | x                    | x                      |
| Event log   | 1000                 | 1000                   |
| <b>Hardware and connectivity</b>                            |                      |                        |
| Web-browser client programming                              | x                    | x                      |
| Read and write programming via remote Ethernet              | -                    | x                      |
| Tightening data via local USB                               | x                    | x                      |
| Tightening data via remote Ethernet                         | -                    | x                      |
| Controller SW upgrade via local USB                         | x                    | x                      |
| Controller SW upgrade via remote Ethernet                   | -                    | x                      |
| 1D/2D Barcode reader for selection                          | -                    | x                      |
| Configurable I/O  | -                    | x                      |
| Stacklight  | -                    | x                      |
| Socket selector   | -                    | x                      |

## ADVANCED PROCESS CONTROL AND MONITORING FUNCTIONS

Power Focus is a modular range of controllers, with full flexibility, designed for applications ranging from single spindle hand-held operations to fixtured multiple nutrunning systems. Advanced process control and monitoring functions make it easy to view and collect data using the Internet infrastructure.

- Choose your controller – either Graph or Compact.
- Choose your RBU software key to run a tool.
- Choose from various ways to use the controller, as a stand-alone or in a network.
- Run many different kinds of tool, standard, FS, crowfoot or open tools.
- Realtime statistics analysis.
- Error-proofing solution.
- Advanced tightening control and/or monitoring method.
- Trace view.
- Logic configurator.
- Can handle different level of communication.

The Power Focus 4000 is available in two versions, Compact and Graph. The difference between them is the user interface, where the Graph features the color display and a full keyboard.

### COMPACT

This version offers full functionality at a lower cost, but requires a PC with the ToolsTalk PF software for process set-up.

### GRAPH

With the Graph hardware, you have full stand-alone programming possibilities. When networked, the Graph can function as a programming terminal for other Power Focus units.

### RBU CUTS DOWNTIME

Atlas Copco's patented Rapid Backup Unit (RBU) concept transfers functionality to a non-configured hardware unit, ensuring that hardware can easily be upgraded should functionality requirements change. The RBU also acts as back-up for programming and configuration. If a change of hardware is required, just fit the RBU to the new hardware, switch on the unit and you're ready. All programming and network configurations are transferred in seconds. The RBU cuts downtime to a minimum.

## POWER FOCUS 4000 FOR TENSOR DS, ST, SR, STR, STB AND ETX

| Model                        | Ordering No. |
|------------------------------|--------------|
| <b>Power Focus 4000 W 10</b> |              |
| PF 4000-G-HW                 | 8433 7100 00 |
| PF 4000-C-HW                 | 8433 7100 05 |
| PF 4000-G-PB-HW              | 8433 7142 00 |
| PF 4000-C-PB-HW              | 8433 7142 05 |
| PF 4000-G-PN-HW              | 8433 7148 00 |
| PF 4000-C-PN-HW              | 8433 7148 05 |
| PF 4000-G-EIP-HW             | 8433 7149 00 |
| PF 4000-C-EIP-HW             | 8433 7149 05 |

### CONTROLLER FUNCTIONALITY

| Hardware key | Ordering No. |
|--------------|--------------|
| RBU-Bronze   | 8433 0010 10 |
| RBU-Silver   | 8433 0015 20 |
| RBU-Gold     | 8433 0020 20 |
| RBU-DS       | 8433 0005 10 |
| RBU-X        | 8433 0080 20 |

## POWER FOCUS 4002 FOR TENSOR SL

| Model                        | Ordering No. |
|------------------------------|--------------|
| <b>Power Focus 4002 W 07</b> |              |
| PF 4002-G-HW                 | 8433 3100 00 |
| PF 4002-C-HW                 | 8433 3100 05 |
| PF 4002-G-PB-HW              | 8433 3142 00 |
| PF 4002-C-PB-HW              | 8433 3142 05 |
| PF 4002-G-PN-HW              | 8433 3148 00 |
| PF 4002-C-PN-HW              | 8433 3148 05 |

## IRC FOCUS FOR STWRENCH AND TENSOR STB

| Model                 | Ordering No. |
|-----------------------|--------------|
| <b>IRC Focus W 10</b> |              |
| IRC FOCUS-B-G-HW      | 8433 6500 00 |
| IRC FOCUS-B-C-HW      | 8433 6500 02 |
| IRC FOCUS-B-G-PB-HW   | 8433 6500 12 |
| IRC FOCUS-B-C-PB-HW   | 8433 6500 14 |
| IRC FOCUS-B-G-PN-HW   | 8433 6500 24 |
| IRC FOCUS-B-C-PN-HW   | 8433 6500 26 |



Compact



Graph



RBU

# STanalyser

# Analyser

| Model                       | Ordering No. |
|-----------------------------|--------------|
| STanalyser                  | 8059 0955 60 |
| STa battery                 | 8059 0955 61 |
| STa power supply            | 4612 0300 21 |
| Battery charger             | 8059 0930 88 |
| STa battery charger adapter | 8059 0955 75 |
| STa Docking Station         | 8059 0955 68 |
| STa RBU Tool Crib T         | 8059 0955 63 |
| STa RBU Tool Crib TA        | 8059 0955 64 |
| STa RBU Residual            | 8059 0955 66 |
| STa RBU Production          | 8059 0955 67 |
| STa RBU AA                  | 8059 0955 65 |
| STa RBU Tool Crib TA API    | 8059 0955 71 |
| STa RBU Residual API        | 8059 0955 72 |
| STa RBU Production API      | 8059 0955 74 |
| STa RBU AA API              | 8059 0955 73 |
| IRC-B Module                | 8059 0920 10 |
| IRC-W Module                | 8059 0920 15 |
| Bar Code Module             | 8059 0920 12 |
| ACTA RS232 cable 3 m        | 4222 0546 03 |
| ACTA RS232 cable 5 m        | 4222 0546 05 |



# SRTT-L

# Transducers

| Model             | Ordering No. |
|-------------------|--------------|
| SRTT-L main plate | 8059 0955 85 |

## SRTT-L TRANSDUCERS

| Model        | Rated capacity |       | Ordering No. |
|--------------|----------------|-------|--------------|
|              | Nm             | ft lb |              |
| SRTT-L 1 Nm  | 1              | 0.73  | 8059 0955 86 |
| SRTT-L 4 Nm  | 4              | 2.95  | 8059 0955 87 |
| SRTT-L 12 Nm | 12             | 8.85  | 8059 0955 88 |
| SRTT-L 30 Nm | 30             | 22.12 | 8059 0955 89 |

## TEST JOINT FOR SRTT-L

| Model               | Screw size | Rated capacity |       | Ordering No. |
|---------------------|------------|----------------|-------|--------------|
|                     |            | Nm             | ft lb |              |
| TJ SRTT-L M4 S -1   | M4         | 1              | 0.73  | 4145 0984 80 |
| TJ SRTT-L M4 H -1   | M4         | 1              | 0.73  | 4145 0984 83 |
| TJ SRTT-L M6 S -4   | M6         | 4              | 2.95  | 4145 0984 82 |
| TJ SRTT-L M6 H -4   | M6         | 4              | 2.95  | 4145 0984 85 |
| TJ SRTT-L M6 S -12  | M6         | 12             | 8.85  | 4145 0985 80 |
| TJ SRTT-L M6 H -12  | M6         | 12             | 8.85  | 4145 0985 82 |
| TJ SRTT-L M8 S -12  | M8         | 12             | 8.85  | 4145 0985 81 |
| TJ SRTT-L M8 H -12  | M8         | 12             | 8.85  | 4145 0985 83 |
| TJ SRTT-L M8 S -30  | M8         | 30             | 22.12 | 4145 0986 80 |
| TJ SRTT-L M8 H -30  | M8         | 30             | 22.12 | 4145 0986 82 |
| TJ SRTT-L M10 S -30 | M10        | 30             | 22.12 | 4145 0986 81 |
| TJ SRTT-L M10 H -30 | M10        | 30             | 22.12 | 4145 0986 83 |



## IRTT-B

IRTT-B is the new generation of Atlas Copco torque and torque/angle in-line rotary transducers incorporating significant improvements in durability and accuracy. They can also work with pulse tools thanks to their revolutionary and unique solution for the slip ring and brush block. Also new is the angle reading system that uses a patent solution which gives better resolution and longer life. The mechanics have also been completely reviewed to achieve a higher level of durability.

IRTT-B is equipped by a memory chip that is read by the Atlas Copco data analyser. In this way the Data analyser is automatically calibrated to the transducer sensitivity and avoid any possible set up errors.



IRTT-B

| Model                | Drive  |           | Rated capacity |       | Ordering No. | Model                      | Drive  |           | Rated capacity |       | Ordering No. |
|----------------------|--------|-----------|----------------|-------|--------------|----------------------------|--------|-----------|----------------|-------|--------------|
|                      | Hex in | Square in | Nm             | ft lb |              |                            | Hex in | Square in | Nm             | ft lb |              |
| <b>Torque models</b> |        |           |                |       |              | <b>Torque/angle models</b> |        |           |                |       |              |
| IRTT-B 5-106         | 1/4    |           | 5              | 4     | 8059 0942 05 | IRTT-B 1A-106              | 1/4    |           | 1              | 0.8   | 8059 0943 96 |
| IRTT-B 5-06          |        | 1/4       | 5              | 4     | 8059 0942 07 | IRTT-B-2A-106              | 1/4    |           | 2              | 1.5   | 8059 0943 01 |
| IRTT-B 20-106        | 1/4    |           | 20             | 15    | 8059 0942 10 | IRTT-B 5A-106              | 1/4    |           | 5              | 4     | 8059 0943 06 |
| IRTT-B 20-06         |        | 1/4       | 20             | 15    | 8059 0942 15 | IRTT-B 5A-06               |        | 1/4       | 5              | 4     | 8059 0943 08 |
| IRTT-B 25 -10        |        | 3/8       | 25             | 18    | 8059 0942 20 | IRTT-B 20A-106             | 1/4    |           | 20             | 15    | 8059 0943 11 |
| IRTT-B 75-10         |        | 3/8       | 75             | 55    | 8059 0942 25 | IRTT-B 20A-06              |        | 1/4       | 20             | 15    | 8059 0943 16 |
| IRTT-B 180-13        |        | 1/2       | 180            | 133   | 8059 0942 30 | IRTT-B 25A-10              |        | 3/8       | 25             | 18    | 8059 0943 21 |
| IRTT-B 500-20        |        | 3/4       | 500            | 369   | 8059 0942 35 | IRTT-B 75A-10              |        | 3/8       | 75             | 55    | 8059 0943 26 |
| IRTT-B 750-25        |        | 1         | 750            | 553   | 8059 0942 40 | IRTT-B 180A-13             |        | 1/2       | 180            | 133   | 8059 0943 31 |
| IRTT-B 1400-25       |        | 1         | 1400           | 1033  | 8059 0942 45 | IRTT-B 500A-20             |        | 3/4       | 500            | 369   | 8059 0943 36 |
| IRTT-B 3000-38       |        | 1 1/2     | 3000           | 2200  | 8059 0942 52 | IRTT-B 750A-25             |        | 1         | 750            | 553   | 8059 0943 41 |
| IRTT-B 5000-38       |        | 1 1/2     | 5000           | 3685  | 8059 0942 56 | IRTT-B 1400A-25            |        | 1         | 1400           | 1033  | 8059 0943 46 |
|                      |        |           |                |       |              | IRTT-B 3000A-38            |        | 1 1/2     | 3000           | 2200  | 8059 0943 52 |
|                      |        |           |                |       |              | IRTT-B 5000A-38            |        | 1 1/2     | 5000           | 3685  | 8059 0943 56 |
|                      |        |           |                |       |              | IRTT-B 10000A-38           |        | 1 1/2     | 10000          | 7370  | 8059 0943 60 |

NOTE: All IRTT are equipped with 19-pin connector.



SRTT-T



MRTT-C



MRTT-B

## SMARTHEADS AND CONTROLLER

Square connection smartHEAD have been added to the range of smartHEADs. The square connection smartHEADs allow customers to use any square end fitting, losing thought the poka yoke system offered by end fittings in this catalogue.

BI controller is the new controller with the battery inserted in the STwrench handle. New batteries are to be used only in this controller. Recharge these batteries using standard battery charger with BI battery charger adapter.



STwrench

## HOW TO ORDER YOUR STWRENCH

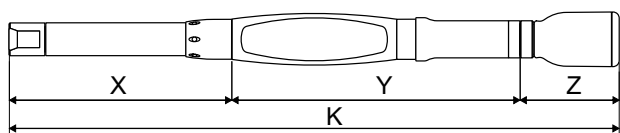
1. Take the STwrench Controller
2. Select your smartHEAD
3. Select your End fitting tool
4. Select your RBU
5. Select the Battery
6. Select if you want optional modules

| Model                                | Capacity |       | Drive<br>mm | Weight |      | Length<br>mm | Ordering No. |
|--------------------------------------|----------|-------|-------------|--------|------|--------------|--------------|
|                                      | Nm       | ft lb |             | kg     | lb   |              |              |
| <b>Controller</b>                    |          |       |             |        |      |              |              |
| STwrench Controller                  |          |       |             | 0.48   | 1.08 | 313          | 8059 0930 00 |
| STwrench Controller BI               |          |       |             | 0.46   | 1.01 | 333          | 8059 0930 01 |
| <b>smartHEAD only Torque</b>         |          |       |             |        |      |              |              |
| smartHEAD 30                         | 30       | 23    | 9x12        | 0.20   | 0.44 | 167.5        | 8059 0920 31 |
| smartHEAD 80                         | 80       | 59    | 9x12        | 0.22   | 0.48 | 167.5        | 8059 0920 43 |
| smartHEAD 150                        | 150      | 111   | 14x18       | 0.55   | 1.21 | 271.0        | 8059 0920 48 |
| smartHEAD 250                        | 250      | 185   | 14x18       | 0.78   | 1.72 | 417.0        | 8059 0920 54 |
| smartHEAD 400                        | 400      | 295   | 14x18       | 0.93   | 2.05 | 584.0        | 8059 0920 60 |
| smartHEAD 600                        | 600      | 443   | 21x26       | 1.70   | 3.75 | 1048.5       | 8059 0920 66 |
| smartHEAD 1000                       | 1000     | 737   | 28          | 1.90   | 4.19 | 1344         | 8059 0920 80 |
| <b>smartHEAD A Torque + Angle</b>    |          |       |             |        |      |              |              |
| smartHEAD A15                        | 15       | 11    | 9x12        | 0.19   | 0.42 | 147.5        | 8059 0930 24 |
| smartHEAD A30                        | 30       | 23    | 9x12        | 0.19   | 0.42 | 147.5        | 8059 0930 31 |
| smartHEAD A80                        | 80       | 59    | 9x12        | 0.20   | 0.44 | 147.5        | 8059 0930 43 |
| smartHEAD A150                       | 150      | 111   | 14x18       | 0.57   | 1.25 | 271.0        | 8059 0930 48 |
| smartHEAD A250                       | 250      | 185   | 14x18       | 0.80   | 1.76 | 417.0        | 8059 0930 54 |
| smartHEAD A400                       | 400      | 295   | 14x18       | 0.95   | 2.09 | 584.0        | 8059 0930 60 |
| smartHEAD A600                       | 600      | 443   | 21x26       | 1.72   | 3.79 | 1048.5       | 8059 0930 66 |
| smartHEAD A800                       | 800      | 443   | 21x26       | 1.70   | 3.75 | 1048.5       | 8059 0988 26 |
| smartHEAD A1000                      | 1000     | 737   | 28          | 1.90   | 4.19 | 1344         | 8059 0930 80 |
| <b>smartHEAD A Torque + Angle sq</b> |          |       |             |        |      |              |              |
| smartHEAD Asq15                      | 15       | 11    | 9x12        | 0.19   | 0.42 | 147.5        | 8059 0930 28 |
| smartHEAD Asq30                      | 30       | 23    | 9x12        | 0.19   | 0.42 | 147.5        | 8059 0930 32 |
| smartHEAD Asq80                      | 80       | 59    | 9x12        | 0.20   | 0.44 | 147.5        | 8059 0930 44 |
| smartHEAD Asq150                     | 150      | 111   | 14x18       | 0.55   | 1.21 | 271.0        | 8059 0930 50 |
| smartHEAD Asq250                     | 250      | 185   | 14x18       | 0.78   | 1.72 | 417.0        | 8059 0930 56 |
| smartHEAD Asq400                     | 400      | 295   | 14x18       | 0.93   | 2.05 | 584.0        | 8059 0930 62 |
| <b>RBU Rapid Backup unit</b>         |          |       |             |        |      |              |              |
| STwrench RBU Quality                 |          |       |             |        |      |              | 8059 0930 90 |
| STwrench RBU Production              |          |       |             |        |      |              | 8059 0930 91 |
| STwrench RBU Quality API             |          |       |             |        |      |              | 8059 0930 93 |
| STwrench RBU Production API          |          |       |             |        |      |              | 8059 0930 92 |
| <b>Battery</b>                       |          |       |             |        |      |              |              |
| STwrench battery                     |          |       |             |        |      |              | 8059 0930 86 |
| STwrench battery BI                  |          |       |             |        |      |              | 8059 0930 85 |
| STwrench battery HD                  |          |       |             |        |      |              | 8059 0930 83 |

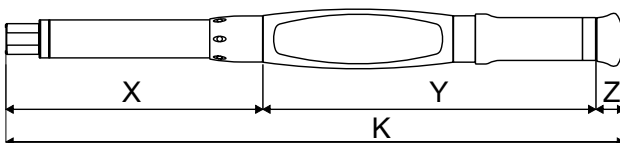
## SOFTWARE TT BLM W09

|                 | Ordering No. |
|-----------------|--------------|
| 1 user license  | 8059 0981 10 |
| 5 user license  | 8059 0981 11 |
| 10 user license | 8059 0981 12 |
| Plant license   | 8059 0981 13 |

## Dimensions



STwrench



STwrench BI

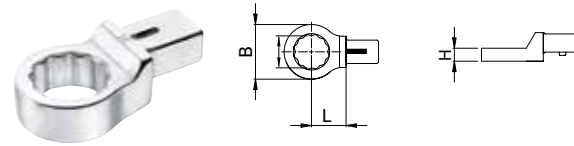
| Model               | Length  |         |         |         | Total weight |      |
|---------------------|---------|---------|---------|---------|--------------|------|
|                     | X<br>mm | Y<br>mm | Z<br>mm | K<br>mm | kg           | lb   |
| STwrench 15 Nm      | 139     | 280     | 96      | 515     | 1.00         | 2.20 |
| STwrench 30 Nm      | 139     | 280     | 96      | 515     | 1.03         | 2.27 |
| STwrench 80 Nm      | 139     | 280     | 96      | 515     | 1.06         | 2.34 |
| STwrench 150 Nm     | 262     | 280     | 96      | 638     | 1.28         | 2.82 |
| STwrench 250 Nm     | 408     | 280     | 96      | 784     | 1.51         | 2.33 |
| STwrench 400 Nm     | 575     | 280     | 96      | 951     | 1.71         | 2.77 |
| STwrench 600 Nm     | 1040    | 280     | 96      | 1416    | 2.87         | 6.33 |
| STwrench 800 Nm     | 1040    | 280     | 96      | 1416    | 2.87         | 6.33 |
| STwrench 1000 Nm    | 1270    | 280     | 96      | 1646    | 3.72         | 8.20 |
| STwrench BI 15 Nm   | 139     | 280     | 32      | 441     | 0.80         | 1.76 |
| STwrench BI 30 Nm   | 139     | 280     | 32      | 441     | 0.83         | 1.83 |
| STwrench BI 80 Nm   | 139     | 280     | 32      | 441     | 0.86         | 1.89 |
| STwrench BI 150 Nm  | 262     | 280     | 32      | 564     | 1.08         | 2.38 |
| STwrench BI 250 Nm  | 408     | 280     | 32      | 710     | 1.31         | 2.89 |
| STwrench BI 400 Nm  | 576     | 280     | 32      | 877     | 1.51         | 3.33 |
| STwrench BI 600 Nm  | 1040    | 280     | 32      | 1341    | 2.67         | 5.89 |
| STwrench BI 800 Nm  | 1040    | 280     | 32      | 1341    | 2.67         | 5.89 |
| STwrench BI 1000 Nm | 1270    | 280     | 32      | 1571    | 3.52         | 7.76 |

X. – smartHEAD, Y. – STwrench Controller, Z. – Battery, K. – Total length



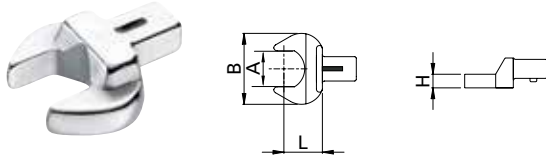
## END FITTING TOOLS FOR WRENCHES

The end fitting tools are the tool that can be attached in front of the wrench. There are two types of models, without and with TAG. TAG is a patented solution used by the STwrench to check the process. In the TAG the STwrench can write a number that can be used for socket recognition and the Torque/Angle calibration factor of the extension for automatic calibration. Both types are also compatible with LABwrench.

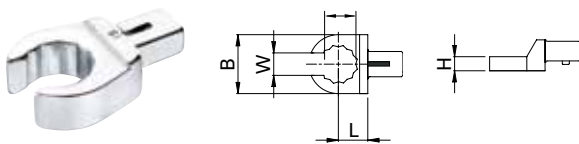


| Type            | Hex mm | B mm | H mm | L mm | g            | Ordering No. |
|-----------------|--------|------|------|------|--------------|--------------|
| Ring end 9 x 12 | 7      | 13   | 8    | 17.5 | 37           | 4620 0014 00 |
|                 | 8      | 14.2 | 8    | 17.5 | 40           | 4620 0015 00 |
|                 | 10     | 17.2 | 9    | 17.5 | 44           | 4620 0016 00 |
|                 | 11     | 18.5 | 9    | 17.5 | 41           | 4620 0017 00 |
|                 | 12     | 20   | 12   | 17.5 | 49           | 4620 0018 00 |
|                 | 13     | 21.5 | 12   | 17.5 | 56           | 4620 0019 00 |
|                 | 14     | 23   | 12   | 17.5 | 52           | 4620 0020 00 |
|                 | 15     | 24.2 | 12   | 17.5 | 52           | 4620 0021 00 |
|                 | 16     | 25.7 | 13   | 17.5 | 54           | 4620 0022 00 |
|                 | 17     | 27.2 | 13   | 17.5 | 59           | 4620 0023 00 |
|                 | 18     | 28.5 | 13   | 17.5 | 56           | 4620 0024 00 |
|                 | 19     | 30.3 | 13   | 17.5 | 65           | 4620 0025 00 |
| 21              | 33     | 15   | 17.5 | 71   | 4620 0026 00 |              |
| 22              | 34.5   | 15   | 17.5 | 74   | 4620 0027 00 |              |
| 14 x 18         | 13     | 21.5 | 11   | 25   | 127          | 4620 0063 00 |
|                 | 14     | 23   | 11   | 25   | 123          | 4620 0064 00 |
|                 | 15     | 24.2 | 11   | 25   | 128          | 4620 0065 00 |
|                 | 16     | 25.7 | 12   | 25   | 133          | 4620 0066 00 |
|                 | 17     | 27.2 | 12   | 25   | 135          | 4620 0067 00 |
|                 | 18     | 28.5 | 12   | 25   | 134          | 4620 0068 00 |
|                 | 19     | 30.5 | 12   | 25   | 138          | 4620 0069 00 |
|                 | 21     | 33   | 15   | 25   | 144          | 4620 0070 00 |
|                 | 22     | 34.5 | 15   | 25   | 145          | 4620 0071 00 |
|                 | 24     | 37.5 | 15   | 25   | 153          | 4620 0072 00 |
|                 | 27     | 41.5 | 17   | 25   | 162          | 4620 0073 00 |
|                 | 30     | 45   | 19   | 25   | 182          | 4620 0074 00 |
| 32              | 47.5   | 19   | 25   | 181  | 4620 0075 00 |              |
| 34              | 50.5   | 19   | 28   | 210  | 4620 0076 00 |              |
| 36              | 53     | 19   | 28   | 203  | 4620 0077 00 |              |
| 41              | 59     | 20   | 30   | 240  | 4620 0078 00 |              |

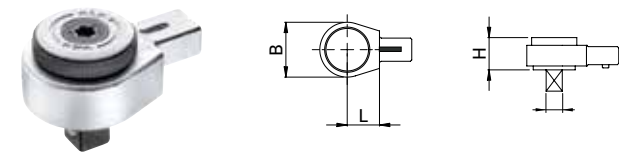
## STANDARD END FITTING TOOLS WITH TAG



| Type            | A mm    | B mm | H mm | L mm | g   | Ordering No. |              |
|-----------------|---------|------|------|------|-----|--------------|--------------|
| Open end 9 x 12 | 7       | 22   | 5    | 17.5 | 40  | 4620 0001 00 |              |
|                 | 8       | 22   | 5    | 17.5 | 39  | 4620 0002 00 |              |
|                 | 9       | 26   | 5.5  | 17.5 | 38  | 4620 0003 00 |              |
|                 | 10      | 26   | 5.5  | 17.5 | 42  | 4620 0004 00 |              |
|                 | 11      | 26   | 5.5  | 17.5 | 41  | 4620 0005 00 |              |
|                 | 12      | 30   | 7    | 17.5 | 43  | 4620 0006 00 |              |
|                 | 13      | 30   | 7    | 17.5 | 48  | 4620 0007 00 |              |
|                 | 14      | 35   | 8    | 17.5 | 52  | 4620 0008 00 |              |
|                 | 15      | 35   | 8    | 17.5 | 51  | 4620 0009 00 |              |
|                 | 16      | 38   | 8.5  | 17.5 | 58  | 4620 0010 00 |              |
|                 | 17      | 38   | 8.5  | 17.5 | 60  | 4620 0011 00 |              |
|                 | 18      | 42   | 9    | 20   | 71  | 4620 0012 00 |              |
|                 | 19      | 42   | 9    | 20   | 74  | 4620 0013 00 |              |
|                 | 14 x 18 | 13   | 30   | 7    | 25  | 128          | 4620 0049 00 |
|                 |         | 14   | 35   | 8    | 25  | 129          | 4620 0050 00 |
|                 |         | 15   | 35   | 8    | 25  | 132          | 4620 0051 00 |
|                 |         | 16   | 38   | 9    | 25  | 140          | 4620 0052 00 |
|                 |         | 17   | 38   | 9    | 25  | 136          | 4620 0053 00 |
|                 |         | 18   | 42   | 10   | 25  | 147          | 4620 0054 00 |
| 19              |         | 42   | 10   | 25   | 147 | 4620 0055 00 |              |
| 21              |         | 50   | 11   | 25   | 171 | 4620 0056 00 |              |
| 22              |         | 50   | 11   | 25   | 165 | 4620 0057 00 |              |
| 24              |         | 53   | 12   | 25   | 167 | 4620 0058 00 |              |
| 27              |         | 60   | 13   | 30   | 219 | 4620 0059 00 |              |
| 30              |         | 66   | 14   | 30   | 245 | 4620 0060 00 |              |
| 32              |         | 66   | 14   | 32.5 | 246 | 4620 0061 00 |              |
| 34              |         | 66   | 14   | 32.5 | 239 | 4620 0062 00 |              |



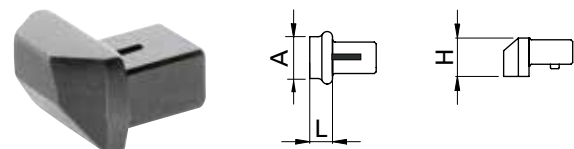
| Type              | Hex mm | B mm | H mm | W mm | L mm | g            | Ordering No. |
|-------------------|--------|------|------|------|------|--------------|--------------|
| Flared end 9 x 12 | 10     | 22   | 12   | 7.1  | 17.5 | 57           | 4620 0028 00 |
|                   | 11     | 22.5 | 12   | 8.6  | 17.5 | 55           | 4620 0029 00 |
|                   | 12     | 23.5 | 12   | 9    | 17.5 | 59           | 4620 0030 00 |
|                   | 13     | 25.2 | 12   | 10   | 17.5 | 55           | 4620 0031 00 |
|                   | 14     | 27   | 13   | 11   | 17.5 | 60           | 4620 0032 00 |
|                   | 16     | 30   | 13   | 13   | 17.5 | 65           | 4620 0033 00 |
|                   | 17     | 31.5 | 13   | 14   | 17.5 | 65           | 4620 0034 00 |
|                   | 18     | 33   | 15   | 14.8 | 17.5 | 74           | 4620 0035 00 |
|                   | 19     | 34.5 | 15   | 15.8 | 19   | 80           | 4620 0036 00 |
|                   | 21     | 37.5 | 15   | 16.2 | 19   | 88           | 4620 0037 00 |
|                   | 22     | 39   | 15   | 17   | 19   | 92           | 4620 0038 00 |
| 24                | 42     | 15   | 18   | 19   | 75   | 4620 0039 00 |              |



| Type                      | Hex in | B mm | H mm | L mm | g    | Ordering No. |
|---------------------------|--------|------|------|------|------|--------------|
| Reversible ratchet 9 x 12 | 1/4    | 22   | 14.5 | 17.5 | 62   | 4620 0043 00 |
|                           | 3/8    | 33   | 24   | 17.5 | 136  | 4620 0044 00 |
|                           | 1/2    | 33   | 28.3 | 17.5 | 147  | 4620 0045 00 |
| 14 x 18                   | 1/2    | 43   | 26.2 | 25   | 302  | 4620 0081 00 |
|                           | 3/4    | 50   | 30.7 | 25   | 467  | 4620 0082 00 |
| 21 x 26                   | 3/4    | 69   | 30   | 62.5 | 1350 | 4620 0086 00 |

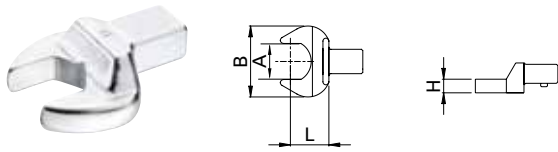
The TAG placed on the ratchet defines the Pset.

**NOTE:** Since several sockets could be used, it is recommended to hold the socket in such a way that it is not possible to remove it (e.g. using a pin).

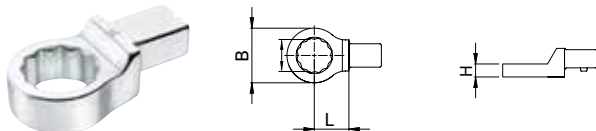


| Type                                   | A mm    | H mm    | L mm | g  | Ordering No. |
|--|---------|---------|------|----|--------------|
| Blank end 9 x12 for making up specials | 8 x 14  | 14.5    | 8    | 30 | 4620 0048 00 |
| Blank end 14 x18                       | 11 x 25 | 21.5    | 21   | 98 | 4620 0084 00 |
|  | 21 x26  | 13 x 30 | 30   | 13 | 220          |

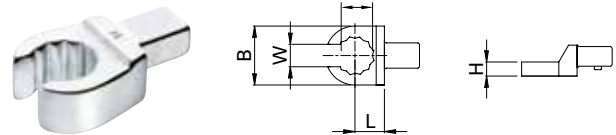
## STANDARD END FITTING TOOLS WITHOUT TAG



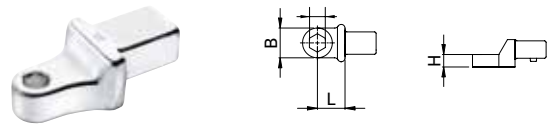
| Type            | A mm    | B mm | H mm | L mm | g   | Ordering No. |              |
|-----------------|---------|------|------|------|-----|--------------|--------------|
| Open end 9 x 12 | 7       | 22   | 5    | 17.5 | 40  | 8059 0975 00 |              |
|                 | 8       | 22   | 5    | 17.5 | 39  | 8059 0975 01 |              |
|                 | 9       | 26   | 5.5  | 17.5 | 38  | 8059 0975 02 |              |
|                 | 10      | 26   | 5.5  | 17.5 | 42  | 8059 0975 03 |              |
|                 | 11      | 26   | 5.5  | 17.5 | 41  | 8059 0975 04 |              |
|                 | 12      | 30   | 7    | 17.5 | 43  | 8059 0975 05 |              |
|                 | 13      | 30   | 7    | 17.5 | 48  | 8059 0975 06 |              |
|                 | 14      | 35   | 8    | 17.5 | 52  | 8059 0975 07 |              |
|                 | 15      | 35   | 8    | 17.5 | 51  | 8059 0975 08 |              |
|                 | 16      | 38   | 8.5  | 17.5 | 58  | 8059 0975 09 |              |
|                 | 17      | 38   | 8.5  | 17.5 | 60  | 8059 0975 10 |              |
|                 | 18      | 42   | 9    | 20   | 71  | 8059 0975 11 |              |
|                 | 19      | 42   | 9    | 20   | 74  | 8059 0975 12 |              |
|                 | 14 x 18 | 13   | 30   | 7    | 25  | 128          | 8059 0976 00 |
|                 |         | 14   | 35   | 8    | 25  | 129          | 8059 0976 01 |
|                 |         | 15   | 35   | 8    | 25  | 132          | 8059 0976 02 |
|                 |         | 16   | 38   | 9    | 25  | 140          | 8059 0976 03 |
|                 |         | 17   | 38   | 9    | 25  | 136          | 8059 0976 04 |
|                 |         | 18   | 42   | 10   | 25  | 147          | 8059 0976 05 |
| 19              |         | 42   | 10   | 25   | 147 | 8059 0976 06 |              |
| 21              |         | 50   | 11   | 25   | 171 | 8059 0976 07 |              |
| 22              |         | 50   | 11   | 25   | 165 | 8059 0976 08 |              |
| 24              |         | 53   | 12   | 25   | 167 | 8059 0976 09 |              |
| 27              |         | 60   | 13   | 30   | 219 | 8059 0976 10 |              |
| 30              |         | 66   | 14   | 30   | 245 | 8059 0976 11 |              |
| 32              |         | 66   | 14   | 32.5 | 246 | 8059 0976 12 |              |
| 34              |         | 66   | 14   | 32.5 | 239 | 8059 0976 13 |              |



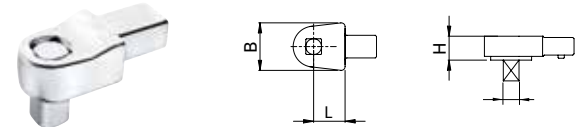
| Type            | Hex mm | B mm | H mm | L mm | g            | Ordering No. |
|-----------------|--------|------|------|------|--------------|--------------|
| Ring end 9 x 12 | 7      | 13   | 8    | 17.5 | 37           | 8059 0975 13 |
|                 | 8      | 14.2 | 8    | 17.5 | 40           | 8059 0975 14 |
|                 | 10     | 17.2 | 9    | 17.5 | 44           | 8059 0975 15 |
|                 | 11     | 18.5 | 9    | 17.5 | 41           | 8059 0975 16 |
|                 | 12     | 20   | 12   | 17.5 | 49           | 8059 0975 17 |
|                 | 13     | 21.5 | 12   | 17.5 | 56           | 8059 0975 18 |
|                 | 14     | 23   | 12   | 17.5 | 52           | 8059 0975 19 |
|                 | 15     | 24.2 | 12   | 17.5 | 52           | 8059 0975 20 |
|                 | 16     | 25.7 | 13   | 17.5 | 54           | 8059 0975 21 |
|                 | 17     | 27.2 | 13   | 17.5 | 59           | 8059 0975 22 |
|                 | 18     | 28.5 | 13   | 17.5 | 56           | 8059 0975 23 |
|                 | 19     | 30.3 | 13   | 17.5 | 65           | 8059 0975 24 |
|                 | 21     | 33   | 15   | 17.5 | 71           | 8059 0975 25 |
|                 | 22     | 34.5 | 15   | 17.5 | 74           | 8059 0975 26 |
| 14 x 18         | 13     | 21.5 | 11   | 25   | 127          | 8059 0976 14 |
|                 | 14     | 23   | 11   | 25   | 123          | 8059 0976 15 |
|                 | 15     | 24.2 | 11   | 25   | 128          | 8059 0976 16 |
|                 | 16     | 25.7 | 12   | 25   | 133          | 8059 0976 17 |
|                 | 17     | 27.2 | 12   | 25   | 135          | 8059 0976 18 |
|                 | 18     | 28.5 | 12   | 25   | 134          | 8059 0976 19 |
|                 | 19     | 30.5 | 12   | 25   | 138          | 8059 0976 20 |
|                 | 21     | 33   | 15   | 25   | 144          | 8059 0976 21 |
|                 | 22     | 34.5 | 15   | 25   | 145          | 8059 0976 22 |
|                 | 24     | 37.5 | 15   | 25   | 153          | 8059 0976 23 |
|                 | 27     | 41.5 | 17   | 25   | 162          | 8059 0976 24 |
|                 | 30     | 45   | 19   | 25   | 182          | 8059 0976 25 |
|                 | 32     | 47.5 | 19   | 25   | 181          | 8059 0976 26 |
|                 | 34     | 50.5 | 19   | 28   | 210          | 8059 0976 27 |
| 36              | 53     | 19   | 28   | 203  | 8059 0976 28 |              |
| 41              | 59     | 20   | 30   | 240  | 8059 0976 29 |              |



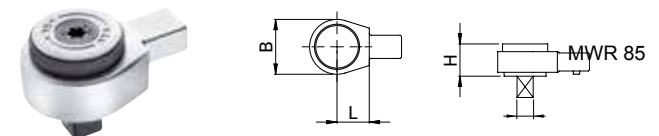
| Type              | Hex mm | B mm | H mm | W mm | L mm | g  | Ordering No. |
|-------------------|--------|------|------|------|------|----|--------------|
| Flared end 9 x 12 | 10     | 22   | 12   | 7.1  | 17.5 | 57 | 8059 0975 27 |
|                   | 11     | 22.5 | 12   | 8.6  | 17.5 | 55 | 8059 0975 28 |
|                   | 12     | 23.5 | 12   | 9    | 17.5 | 59 | 8059 0975 29 |
|                   | 13     | 25.2 | 12   | 10   | 17.5 | 55 | 8059 0975 30 |
|                   | 14     | 27   | 13   | 11   | 17.5 | 60 | 8059 0975 31 |
|                   | 16     | 30   | 13   | 13   | 17.5 | 65 | 8059 0975 32 |
|                   | 17     | 31.5 | 13   | 14   | 17.5 | 65 | 8059 0975 33 |
|                   | 18     | 33   | 15   | 14.8 | 17.5 | 74 | 8059 0975 34 |
|                   | 19     | 34.5 | 15   | 15.8 | 19   | 80 | 8059 0975 35 |
|                   | 21     | 37.5 | 15   | 16.2 | 19   | 88 | 8059 0975 36 |
|                   | 22     | 39   | 15   | 17   | 19   | 92 | 8059 0975 37 |
|                   | 24     | 42   | 15   | 18   | 19   | 75 | 8059 0975 38 |



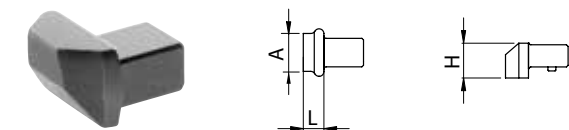
| Type               | Hex in | B mm | H mm | L mm | g   | Ordering No. |
|--------------------|--------|------|------|------|-----|--------------|
| Bits holder 9 x 12 | 1/4    | 14   | 10   | 17.5 | 50  | 8059 0975 45 |
|                    | 5/16   | 16   | 12.5 | 17.5 | 47  | 8059 0975 46 |
| 14 x 18            | 5/16   | 16   | 12.5 | 25   | 112 | 8059 0976 34 |



| Type                | Hex in  | B mm | H mm | L mm | g   | Ordering No. |
|---------------------|---------|------|------|------|-----|--------------|
| Fixed square 9 x 12 | 1/4     | 22   | 14   | 17.5 | 71  | 8059 0975 39 |
|                     | 3/8     | 22   | 14   | 17.5 | 76  | 8059 0975 40 |
|                     | 1/2     | 22   | 14   | 17.5 | 82  | 8059 0975 41 |
|                     | 14 x 18 | 1/2  | 30   | 18   | 25  | 203          |
| 3/4                 |         | 40   | 25   | 25   | 396 | 8059 0976 31 |



| Type                      | Hex in  | B mm | H mm | L mm | g    | Ordering No. |              |
|---------------------------|---------|------|------|------|------|--------------|--------------|
| Reversible ratchet 9 x 12 | 1/4     | 22   | 14.5 | 17.5 | 62   | 8059 0975 42 |              |
|                           | 3/8     | 33   | 24   | 17.5 | 136  | 8059 0975 43 |              |
|                           | 1/2     | 33   | 28.3 | 17.5 | 147  | 8059 0975 44 |              |
|                           | 14 x 18 | 1/2  | 43   | 26.2 | 25   | 302          | 8059 0976 32 |
|                           |         | 3/4  | 50   | 30.7 | 25   | 467          | 8059 0976 33 |
|                           | 21 x 26 | 3/4  | 69   | 30   | 62.5 | 1350         | 8059 0976 38 |



| Type              | A mm    | H mm | L mm | g mm | Ordering No. |
|-------------------|---------|------|------|------|--------------|
| Blank end 9 x 12  | 8 x 14  | 14.5 | 8    | 30   | 8059 0975 47 |
| Blank end 14 x 18 | 11 x 25 | 21.5 | 21   | 98   | 8059 0976 35 |
| Blank end 21 x 26 | 13 x 30 | 30   | 13   | 220  |              |

# Mechanical Wrench Series



## CWR – 'Click' wrench series

| Type    | Torque Nm | Range ft.lb | Length mm | Weight g | Ø mm  | Drive | Ordering No. |
|---------|-----------|-------------|-----------|----------|-------|-------|--------------|
| CWR-20  | 03-20     | 2.2-14.8    | 129       | 248      | 21    | 9x12  | 8439004100   |
| CWR-25  | 02-25     | 1.5-18.4    | 174       | 288      | 21    | 9x12  | 8439004101   |
| CWR-50  | 05-50     | 3.7-37      | 236       | 466      | 21    | 9x12  | 8439 004102  |
| CWR-85  | 15-85     | 11-62.7     | 305       | 576      | 21    | 9x12  | 8439004103   |
| CWR-120 | 50-120    | 37-88.5     | 349       | 666      | 24    | 9x12  | 8439004104   |
| CWR-200 | 50-200    | 37-148      | 419       | 916      | 30x26 | 14x18 | 8439004105   |
| CWR-300 | 60-300    | 44.2-221    | 685       | 1366     | 32x28 | 14x18 | 8439004106   |

## Reversible wrench type

|           |        |          |     |     |    |      |            |
|-----------|--------|----------|-----|-----|----|------|------------|
| CWR-20 R  | 03-20  | 2.2-14.8 | 129 | 248 | 21 | 9x12 | 8439004110 |
| CWR-25 R  | 02-25  | 1.5-18.4 | 174 | 288 | 21 | 9x12 | 8439004111 |
| CWR-50 R  | 05-50  | 3.7-37   | 236 | 466 | 21 | 9x12 | 8439004112 |
| CWR-85 R  | 15-85  | 11-62.7  | 305 | 576 | 21 | 9x12 | 8439004113 |
| CWR-120 R | 50-120 | 37-88.5  | 349 | 666 | 24 | 9x12 | 8439004114 |

## BWR – 'Breaking' wrench series

| Type     | Torque Nm | Range ft.lb | Length mm | Weight g | Ø mm  | Drive     | Ordering No. |
|----------|-----------|-------------|-----------|----------|-------|-----------|--------------|
| BWR-20   | 02-20     | 1.5-14.8    | 213       | 250      | 8x16  | BWR-20/35 | 8439004200   |
| BWR-35   | 05-35     | 3.7-25.8    | 288       | 550      | 8x16  | BWR-20/35 | 8439004201   |
| BWR-100  | 20-100    | 14.8-74     | 410       | 950      | 10x20 | BWR-100   | 8439004202   |
| BWR-240  | 80-240    | 59-177      | 677       | 2700     | 14x30 | BWR-240   | 8439004203   |
| BWR-440  | 140-440   | 103.0-324.5 | 857       | 4300     | 16x34 | BWR-440   | 8439004204   |
| BWR-750  | 300-750   | 221-553     | 961       | 6400     | 20x41 | BWR-750   | 8439004205   |
| BWR-1300 | 500-1300  | 369-959     | 1256      | 8140     | 21x45 | BWR-1300  | 8439004206   |
| BWR-2000 | 800-2000  | 590-1475    | 1982      | 13450    | 21x45 | BWR-2000  | 8439004207   |

## SWR - 'Slipping' wrench series

| Type    | Torque Nm | Range ft.lb | Length mm | Weight g | Drive | Ordering No. |
|---------|-----------|-------------|-----------|----------|-------|--------------|
| SWR-30  | 05-30     | 3.7-22      | 269       | 640      | 3/8"  | 8439004300   |
| SWR-60  | 15-60     | 11-44       | 354       | 1050     | 3/8"  | 8439004301   |
| SWR-110 | 40-110    | 29.5-96     | 453       | 1900     | 1/2"  | 8439004302   |

The mechanical wrenches in the new Atlas Copco Saltus product line form the basis for manual tightening. They enable you to find the optimal solution for your individual tightening situation regardless whether you are working in assembly lines, rework or repair and maintenance, and even when limited operating space is available.



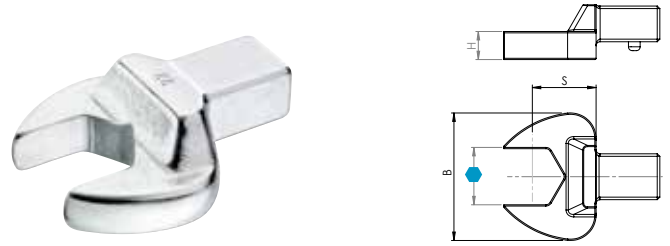
SWR – Slipping Wrench Series

CWR – Click Wrench Series



BWR – Breaking Wrench Series





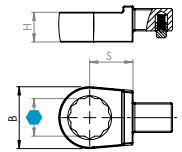
## OPEN END

| Open End 9x12 |      |      |      |     |        |              |
|---------------|------|------|------|-----|--------|--------------|
| ● mm          | B mm | H mm | S mm | g   | max Nm | Ordering No. |
| 7             | 22   | 5    | 17.5 | 40  | 7      | 4027 5011 00 |
| 8             | 22   | 5    | 17.5 | 39  | 10     | 4027 5011 01 |
| 9             | 26   | 5.5  | 17.5 | 38  | 14     | 4027 5011 02 |
| 10            | 26   | 5.5  | 17.5 | 42  | 20     | 4027 5011 03 |
| 11            | 26   | 5.5  | 17.5 | 41  | 25     | 4027 5011 04 |
| 12            | 30   | 7    | 17.5 | 43  | 32     | 4027 5011 05 |
| 13            | 30   | 7    | 17.5 | 48  | 40     | 4027 5011 06 |
| 14            | 35   | 8    | 17.5 | 52  | 50     | 4027 5011 07 |
| 15            | 35   | 8    | 17.5 | 51  | 60     | 4027 5011 08 |
| 16            | 38   | 8.5  | 17.5 | 58  | 70     | 4027 5011 09 |
| 17            | 38   | 8.5  | 17.5 | 60  | 80     | 4027 5011 10 |
| 18            | 42   | 9    | 20   | 71  | 100    | 4027 5011 11 |
| 19            | 42   | 9    | 20   | 74  | 115    | 4027 5011 12 |
| 20            | 42   | 9    | 20   | 76  | 115    | 4027 5011 13 |
| 21            | 46   | 11   | 22   | 95  | 115    | 4027 5011 14 |
| 22            | 46   | 11   | 22   | 95  | 115    | 4027 5011 15 |
| 24            | 48   | 11   | 25   | 106 | 130    | 4027 5011 16 |
| 27            | 58   | 13   | 30   | 235 | 150    | 4027 5011 17 |
| 32            | 64   | 15   | 40   | 267 | 190    | 4027 5011 18 |

| Open End 9x12 |      |      |      |    |        |              |
|---------------|------|------|------|----|--------|--------------|
| ● in          | B mm | H mm | S mm | g  | max Nm | Ordering No. |
| 1/4           | 22   | 5    | 17.5 | 37 | 7      | 4027 5010 00 |
| 5/16          | 22   | 5    | 17.5 | 36 | 10     | 4027 5010 01 |
| 3/8           | 26   | 5.5  | 17.5 | 38 | 20     | 4027 5010 02 |
| 7/16          | 26   | 5.5  | 17.5 | 38 | 25     | 4027 5010 03 |
| 1/2           | 30   | 7    | 17.5 | 47 | 32     | 4027 5010 04 |
| 9/16          | 34   | 8    | 17.5 | 50 | 50     | 4027 5010 05 |
| 5/8           | 38   | 8.5  | 17.5 | 56 | 70     | 4027 5010 06 |
| 11/16         | 38   | 8.5  | 17.5 | 57 | 80     | 4027 5010 07 |
| 3/4           | 42   | 9    | 20   | 71 | 115    | 4027 5010 08 |

| Open End 14x18 |      |      |      |     |        |              |
|----------------|------|------|------|-----|--------|--------------|
| ● mm           | B mm | H mm | S mm | g   | max Nm | Ordering No. |
| 13             | 30   | 7    | 25   | 128 | 40     | 4027 5011 21 |
| 14             | 35   | 8    | 25   | 129 | 50     | 4027 5011 22 |
| 15             | 35   | 8    | 25   | 132 | 60     | 4027 5011 23 |
| 16             | 38   | 9    | 25   | 140 | 70     | 4027 5011 24 |
| 17             | 38   | 9    | 25   | 136 | 80     | 4027 5011 25 |
| 18             | 42   | 10   | 25   | 147 | 90     | 4027 5011 26 |
| 19             | 42   | 10   | 25   | 145 | 95     | 4027 5011 27 |
| 20             | 42   | 10   | 25   | 155 | 100    | 4027 5011 28 |
| 21             | 50   | 11   | 25   | 171 | 30     | 4027 5011 29 |
| 22             | 50   | 11   | 25   | 165 | 150    | 4027 5011 30 |
| 24             | 53   | 12   | 25   | 167 | 180    | 4027 5011 31 |
| 27             | 60   | 13   | 30   | 219 | 220    | 4027 5011 32 |
| 28             | 60   | 13   | 30   | 222 | 250    | 4027 5011 33 |
| 29             | 60   | 13   | 30   | 222 | 270    | 4027 5011 34 |
| 30             | 66   | 14   | 30   | 245 | 300    | 4027 5011 35 |
| 32             | 66   | 14   | 32.5 | 246 | 300    | 4027 5011 36 |
| 34             | 66   | 14   | 32.5 | 239 | 300    | 4027 5011 37 |
| 36             | 66   | 14   | 32.5 | 275 | 300    | 4027 5011 38 |

| Open End 14x18 |      |      |      |     |        |              |
|----------------|------|------|------|-----|--------|--------------|
| ● in           | B mm | H mm | S mm | g   | max Nm | Ordering No. |
| 7/16           | 30   | 7    | 25   | 127 | 40     | 4027 5010 50 |
| 1/2            | 30   | 7    | 25   | 127 | 40     | 4027 5010 51 |
| 9/16           | 35   | 8    | 25   | 132 | 50     | 4027 5010 52 |
| 5/8            | 38   | 9    | 25   | 141 | 70     | 4027 5010 53 |
| 11/16          | 38   | 9    | 25   | 136 | 80     | 4027 5010 54 |
| 3/4            | 42   | 10   | 25   | 144 | 95     | 4027 5010 55 |
| 13/16          | 50   | 11   | 25   | 160 | 150    | 4027 5010 56 |
| 7/8            | 50   | 11   | 25   | 158 | 150    | 4027 5010 57 |
| 15/16          | 53   | 12   | 25   | 176 | 180    | 4027 5010 58 |
| 1              | 53   | 12   | 25   | 172 | 180    | 4027 5010 59 |
| 1.1/8          | 60   | 13   | 30   | 223 | 220    | 4027 5010 60 |



## BOX END

| Box End 9x12 |      |      |      |    |        |              |
|--------------|------|------|------|----|--------|--------------|
| ● mm         | B mm | H mm | S mm | g  | max Nm | Ordering No. |
| 7            | 13   | 8    | 17.5 | 38 | 25     | 4027 5011 50 |
| 8            | 13.5 | 8    | 17.5 | 37 | 35     | 4027 5011 51 |
| 9            | 16   | 8    | 17.5 | 35 | 40     | 4027 5011 52 |
| 10           | 18   | 9    | 17.5 | 40 | 55     | 4027 5011 53 |
| 11           | 18.5 | 9    | 17.5 | 44 | 70     | 4027 5011 54 |
| 12           | 20.5 | 11   | 17.5 | 41 | 85     | 4027 5011 55 |
| 13           | 21.5 | 11   | 17.5 | 49 | 100    | 4027 5011 56 |
| 14           | 25   | 12   | 17.5 | 55 | 115    | 4027 5011 57 |
| 15           | 25   | 12   | 17.5 | 52 | 120    | 4027 5011 58 |
| 16           | 26   | 12   | 17.5 | 54 | 120    | 4027 5011 59 |
| 17           | 27   | 13   | 17.5 | 59 | 120    | 4027 5011 60 |
| 18           | 28   | 13   | 17.5 | 56 | 120    | 4027 5011 61 |
| 19           | 30.5 | 13   | 17.5 | 65 | 120    | 4027 5011 62 |
| 21           | 33   | 15   | 17.5 | 71 | 120    | 4027 5011 63 |
| 22           | 34.5 | 15   | 17.5 | 74 | 120    | 4027 5011 64 |

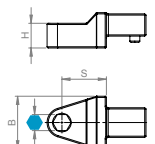
| Box End 9x12 |      |      |      |    |        |              |
|--------------|------|------|------|----|--------|--------------|
| ● in         | B mm | H mm | S mm | g  | max Nm | Ordering No. |
| 1/4          | 13.5 | 8    | 17.5 | 39 | 25     | 4027 5010 13 |
| 5/16         | 13.5 | 8    | 17.5 | 38 | 35     | 4027 5010 14 |
| 3/8          | 18   | 8    | 17.5 | 41 | 55     | 4027 5010 15 |
| 7/16         | 18   | 9    | 17.5 | 41 | 70     | 4027 5010 16 |
| 1/2          | 22   | 12   | 17.5 | 51 | 100    | 4027 5010 17 |
| 9/16         | 25   | 12   | 17.5 | 57 | 115    | 4027 5010 18 |
| 5/8          | 27   | 13   | 17.5 | 61 | 120    | 4027 5010 19 |
| 11/16        | 27   | 13   | 17.5 | 57 | 120    | 4027 5010 20 |
| 3/4          | 30   | 13   | 17.5 | 62 | 120    | 4027 5010 21 |
| 13/16        | 34   | 14.5 | 17.5 | 75 | 120    | 4027 5010 22 |
| 7/8          | 34   | 15   | 20   | 77 | 120    | 4027 5010 23 |

| Box End 14x18 |      |      |      |     |        |              |
|---------------|------|------|------|-----|--------|--------------|
| ● mm          | B mm | H mm | S mm | g   | max Nm | Ordering No. |
| 13            | 22.5 | 11   | 25   | 130 | 100    | 4027 5011 67 |
| 14            | 23   | 11   | 25   | 123 | 110    | 4027 5011 68 |
| 15            | 24   | 11   | 25   | 128 | 120    | 4027 5011 69 |
| 16            | 25.5 | 12   | 25   | 133 | 140    | 4027 5011 70 |
| 17            | 27   | 12   | 25   | 135 | 160    | 4027 5011 71 |
| 18            | 29   | 13   | 25   | 134 | 185    | 4027 5011 72 |
| 19            | 30.5 | 13   | 25   | 138 | 210    | 4027 5011 73 |
| 20            | 33   | 13   | 25   | 140 | 230    | 4027 5011 74 |
| 21            | 33   | 15   | 25   | 144 | 260    | 4027 5011 75 |
| 22            | 34.5 | 15   | 25   | 145 | 300    | 4027 5011 76 |
| 24            | 37.5 | 15   | 25   | 153 | 350    | 4027 5011 77 |
| 27            | 42.5 | 17   | 25   | 162 | 450    | 4027 5011 78 |
| 30            | 46   | 19   | 25   | 182 | 550    | 4027 5011 79 |
| 32            | 47.5 | 19   | 25   | 181 | 650    | 4027 5011 80 |
| 34            | 52   | 19   | 28   | 210 | 650    | 4027 5011 81 |
| 36            | 54   | 19   | 28   | 203 | 700    | 4027 5011 82 |
| 41            | 60   | 20   | 30   | 240 | 750    | 4027 5011 83 |

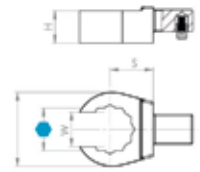
| Box End 14x18 |      |      |      |     |        |              |
|---------------|------|------|------|-----|--------|--------------|
| ● in          | B mm | H mm | S mm | g   | max Nm | Ordering No. |
| 1/2           | 30   | 11   | 25   | 134 | 100    | 4027 5010 70 |
| 9/16          | 30   | 11   | 25   | 133 | 110    | 4027 5010 71 |
| 5/8           | 30   | 12   | 25   | 135 | 140    | 4027 5010 72 |
| 11/16         | 30   | 12   | 25   | 136 | 160    | 4027 5010 73 |
| 3/4           | 31   | 12   | 25   | 145 | 210    | 4027 5010 74 |
| 13/16         | 34   | 15   | 25   | 159 | 260    | 4027 5010 75 |
| 7/8           | 35   | 15   | 25   | 156 | 300    | 4027 5010 76 |

## BITS HOLDER

| Bits Holder 9x12 |    |      |      |    |              |
|------------------|----|------|------|----|--------------|
| ● mm             | B  | H    | S    | g  | Ordering No. |
| 5/16"            | 14 | 10   | 17.5 | 45 | 4027 5012 10 |
| 1/4"             | 16 | 12.5 | 17.5 | 47 | 4027 5012 11 |



| Bits Holder 14x18 |    |      |    |     |              |
|-------------------|----|------|----|-----|--------------|
| ● mm              | B  | H    | S  | g   | Ordering No. |
| 5/16"             | 16 | 12.5 | 25 | 112 | 4027 5012 13 |



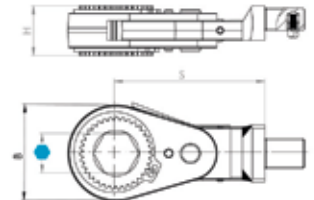
## FLARED END

| Flared End 9x12 |      |      |      |      |     |        |              |
|-----------------|------|------|------|------|-----|--------|--------------|
| ● mm            | B mm | H mm | S mm | W mm | g   | max Nm | Ordering No. |
| 10              | 21.5 | 11   | 17.5 | 7.1  | 57  | 20     | 4027 5011 90 |
| 11              | 22.5 | 11   | 17.5 | 8.6  | 55  | 25     | 4027 5011 91 |
| 12              | 24.5 | 12   | 17.5 | 9    | 59  | 32     | 4027 5011 92 |
| 13              | 26   | 13   | 17.5 | 10   | 55  | 40     | 4027 5011 93 |
| 14              | 27   | 13   | 17.5 | 11   | 60  | 50     | 4027 5011 94 |
| 15              | 27   | 13   | 17.5 | 12   | 60  | 50     | 4027 5011 95 |
| 16              | 30.5 | 13   | 17.5 | 13   | 65  | 80     | 4027 5011 96 |
| 17              | 31.5 | 13   | 17.5 | 14   | 64  | 82     | 4027 5011 97 |
| 18              | 33   | 15   | 17.5 | 15   | 74  | 100    | 4027 5011 98 |
| 19              | 34   | 15   | 17.5 | 16   | 80  | 115    | 4027 5011 99 |
| 21              | 38.5 | 15   | 20   | 17   | 88  | 120    | 4027 5012 00 |
| 22              | 39.5 | 15   | 20   | 17   | 92  | 120    | 4027 5012 01 |
| 24              | 40   | 15   | 20   | 18   | 75  | 120    | 4027 5012 02 |
| 27              | 45   | 17   | 25   | 20   | 120 | 140    | 4027 5012 03 |

| Flared End 9x12 |      |      |      |      |    |        |              |
|-----------------|------|------|------|------|----|--------|--------------|
| ● in            | B mm | H mm | S mm | W mm | g  | max Nm | Ordering No. |
| 3/8             | 18   | 8    | 17.5 | 7.1  | 39 | 20     | 4027 5010 30 |
| 7/16            | 21   | 12   | 17.5 | 8.6  | 50 | 25     | 4027 5010 31 |
| 1/2             | 26   | 13   | 17.5 | 10   | 61 | 32     | 4027 5010 32 |
| 9/16            | 27   | 13   | 17.5 | 11   | 58 | 50     | 4027 5010 33 |
| 5/8             | 30   | 13   | 17.5 | 14   | 62 | 80     | 4027 5010 34 |
| 11/16           | 30   | 13   | 17.5 | 14   | 58 | 82     | 4027 5010 35 |
| 3/4             | 34   | 15   | 17.5 | 15.8 | 71 | 115    | 4027 5010 36 |

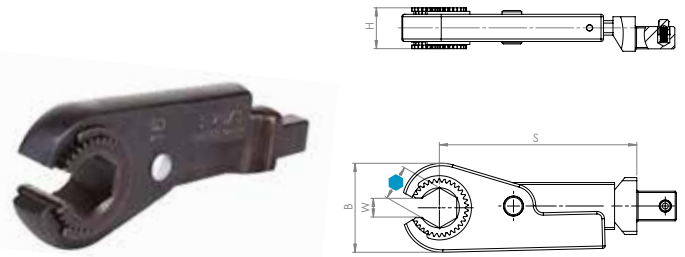
## HEXAGON RATCHET

| Hexagon Ratchet 9x12 |      |      |      |     |        |              |  |
|----------------------|------|------|------|-----|--------|--------------|--|
| ● mm                 | B mm | H mm | S mm | g   | max Nm | Ordering No. |  |
| 10                   | 28   | 13.5 | 51   | 95  | 25     | 4027 5012 30 |  |
| 11                   | 28   | 13.5 | 51   | 95  | 25     | 4027 5012 31 |  |
| 12                   | 28   | 13.5 | 51   | 95  | 25     | 4027 5012 32 |  |
| 13                   | 28   | 13.5 | 51   | 95  | 25     | 4027 5012 33 |  |
| 14                   | 32   | 16   | 56   | 140 | 35     | 4027 5012 34 |  |
| 15                   | 32   | 16   | 56   | 140 | 35     | 4027 5012 35 |  |
| 16                   | 39   | 20   | 61   | 205 | 70     | 4027 5012 36 |  |
| 17                   | 39   | 20   | 61   | 205 | 70     | 4027 5012 37 |  |
| 18                   | 39   | 20   | 61   | 205 | 70     | 4027 5012 38 |  |
| 19                   | 39   | 20   | 61   | 205 | 70     | 4027 5012 39 |  |
| 21                   | 45   | 23   | 61   | 290 | 85     | 4027 5012 40 |  |
| 22                   | 45   | 23   | 61   | 290 | 85     | 4027 5012 41 |  |
| 24                   | 45   | 23   | 61   | 290 | 85     | 4027 5012 42 |  |



## HEXAGON RATCHET

| Hexagon Ratchet 9x12 |      |      |      |      |     |        |              |
|----------------------|------|------|------|------|-----|--------|--------------|
| ● mm                 | B mm | H mm | S mm | W mm | g   | max Nm | Ordering No. |
| 8                    | 30   | 16.5 | 48   | 5.1  | 90  | 15     | 4027 5012 50 |
| 9                    | 30   | 16.5 | 48   | 6.3  | 90  | 15     | 4027 5012 51 |
| 10                   | 30   | 16.5 | 48   | 6.3  | 89  | 15     | 4027 5012 52 |
| 11                   | 30   | 16.5 | 48   | 6.3  | 89  | 15     | 4027 5012 53 |
| 12                   | 36   | 16.5 | 81   | 7.1  | 200 | 18     | 4027 5012 54 |
| 13                   | 36   | 16.5 | 81   | 7.6  | 200 | 18     | 4027 5012 55 |
| 14                   | 36   | 16.5 | 81   | 8    | 200 | 18     | 4027 5012 56 |
| 15                   | 44   | 20.5 | 83   | 9.1  | 280 | 45     | 4027 5012 57 |
| 16                   | 44   | 20.5 | 83   | 9.6  | 280 | 45     | 4027 5012 58 |
| 17                   | 44   | 20.5 | 83   | 10   | 280 | 45     | 4027 5012 59 |
| 18                   | 44   | 20.5 | 83   | 10.5 | 280 | 45     | 4027 5012 60 |
| 19                   | 44   | 20.5 | 83   | 10.5 | 280 | 45     | 4027 5012 61 |



| Hexagon Ratchet with reinforced bottom 9x12 |      |      |      |      |    |        |              |
|---|------|------|------|------|----|--------|--------------|
| ● mm  | B mm | H mm | S mm | W mm | g  | max Nm | Ordering No. |
| 10  | 30   | 16.5 | 48   | 6.3  | 91 | 15     | 4027 5012 63 |
| 11  | 30   | 16.5 | 48   | 6.3  | 91 | 15     | 4027 5012 64 |
| 12  | 30   | 16.5 | 48   | 7.1  | 91 | 15     | 4027 5012 65 |
| 13  | 30   | 20.5 | 48   | 7.6  | 91 | 15     | 4027 5012 66 |

## OPEN END

| Open End 9x12 |      |      |      |      |     |              |  |
|---------------|------|------|------|------|-----|--------------|--|
| ● mm          | B mm | H mm | S mm | W mm | g   | Ordering No. |  |
| 10            | 22.5 | 10   | 17.5 | 10   | 34  | 4027 5012 80 |  |
| 11            | 24.5 | 10   | 21   | 11   | 39  | 4027 5012 81 |  |
| 12            | 26.7 | 10   | 21   | 12   | 42  | 4027 5012 82 |  |
| 13            | 30   | 10   | 23   | 13   | 49  | 4027 5012 83 |  |
| 14            | 30.5 | 10   | 25.5 | 14   | 55  | 4027 5012 84 |  |
| 15            | 32   | 10   | 27   | 15   | 60  | 4027 5012 85 |  |
| 16            | 35   | 10   | 28   | 16   | 65  | 4027 5012 86 |  |
| 17            | 37   | 10   | 29   | 17   | 68  | 4027 5012 87 |  |
| 18            | 38   | 10   | 32.5 | 18   | 78  | 4027 5012 88 |  |
| 19            | 41   | 10   | 33   | 19   | 90  | 4027 5012 89 |  |
| 21            | 46.5 | 10   | 35   | 21   | 100 | 4027 5012 90 |  |
| 22            | 46.5 | 10   | 35   | 22   | 97  | 4027 5012 91 |  |
| 24            | 50   | 10   | 37.5 | 24   | 115 | 4027 5012 92 |  |
| 27            | 57   | 10   | 47.5 | 27   | 156 | 4027 5012 93 |  |
| 30            | 62   | 10   | 52.5 | 30   | 182 | 4027 5012 94 |  |
| 32            | 67   | 12   | 52.5 | 32   | 234 | 4027 5012 95 |  |



| Open End 14x18 |      |      |      |      |     |              |  |
|----------------|------|------|------|------|-----|--------------|--|
| ● mm           | B mm | H mm | S mm | W mm | g   | Ordering No. |  |
| 17             | 37   | 16   | 28   | 17   | 125 | 4027 5012 98 |  |
| 18             | 41   | 16   | 32   | 18   | 12  | 4027 5012 99 |  |
| 19             | 41   | 16   | 32.5 | 19   | 130 | 4027 5013 00 |  |
| 21             | 46.5 | 16   | 35   | 21   | 150 | 4027 5013 01 |  |
| 27             | 46.5 | 16   | 40   | 22   | 198 | 4027 5013 02 |  |
| 15             | 50   | 16   | 41   | 24   | 220 | 4027 5013 03 |  |
| 16             | 58   | 16   | 43.5 | 27   | 270 | 4027 5013 04 |  |
| 17             | 63   | 16   | 52   | 30   | 310 | 4027 5013 05 |  |
| 24             | 66   | 16   | 59   | 32   | 336 | 4027 5013 06 |  |
| 32             | 75   | 16   | 55   | 36   | 388 | 4027 5013 07 |  |

## SETTING KEY

|             | g   | Ordering No. |
|-------------|-----|--------------|
| Setting Key | 169 | 4027 5014 00 |



# End Fittings / Accessories for CWR

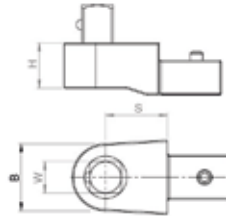
# CWR Wrenches

## BLANK END



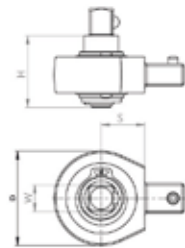
|                        | B mm | H mm | S mm | g  | Ordering No. |
|------------------------|------|------|------|----|--------------|
| <b>Blank End 9x12</b>  |      |      |      |    |              |
|                        | 23   | 14   | 9    | 30 | 4027 5012 20 |
| Assembled              | 23   | 14   | 9    | 30 | 4027 5012 21 |
| <b>Blank End 14x18</b> |      |      |      |    |              |
|                        | 30   | 21   | 13   | 98 | 4027 5012 23 |
| Assembled              | 30   | 21   | 13   | 98 | 4027 5012 24 |

## FIXED SQUARE



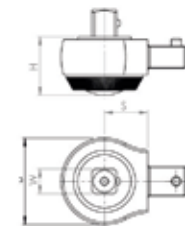
| in                        | B mm | H mm | S mm | g   | max Nm | Ordering No. |
|---------------------------|------|------|------|-----|--------|--------------|
| <b>Fixed Square 9x12</b>  |      |      |      |     |        |              |
| 1/4"                      | 20   | 14   | 17.5 | 76  | 40     | 4027 5013 20 |
| 3/8"                      | 20   | 14   | 17.5 | 82  | 80     | 4027 5013 21 |
| 1/2"                      | 20   | 14   | 17.5 | 71  | 100    | 4027 5013 22 |
| <b>Fixed Square 14x18</b> |      |      |      |     |        |              |
| 1/2"                      | 27   | 18   | 25   | 203 | 300    | 4027 5013 24 |
| 3/4"                      | 40   | 25   | 25   | 396 | 650    | 4027 5013 25 |

## RATCHET END



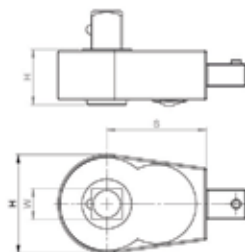
| in                       | B mm | H mm | S mm | g   | max Nm | Ordering No. |
|--------------------------|------|------|------|-----|--------|--------------|
| <b>Ratchet End 9x12</b>  |      |      |      |     |        |              |
| 3/8"                     | 38   | 29.5 | 17.5 | 140 | 80     | 4027 5013 30 |
| 1/2"                     | 38   | 29.5 | 17.5 | 180 | 100    | 4027 5013 31 |
| <b>Ratchet End 14x18</b> |      |      |      |     |        |              |
| 1/2"                     | 44   | 29.5 | 25   | 230 | 300    | 4027 5013 33 |

## REVERSIBLE RATCHET END



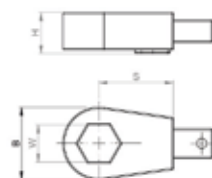
| in                                  | B mm | H mm | S mm | g   | max Nm | Ordering No. |
|-------------------------------------|------|------|------|-----|--------|--------------|
| <b>Reversible Ratchet End 14x18</b> |      |      |      |     |        |              |
| 1/4"                                | 27   | 27   | 17.5 | 68  | 50     | 4027 5013 40 |
| 3/8"                                | 36.5 | 25   | 17.5 | 140 | 100    | 4027 5013 41 |
| 1/2"                                | 33.5 | 37   | 17.5 | 150 | 120    | 4027 5013 42 |
| <b>Reversible Ratchet End 14x18</b> |      |      |      |     |        |              |
| 1/2"                                | 41   | 26   | 25   | 320 | 300    | 4027 5013 44 |
| 3/4"                                | 62   | 32   | 46   | 865 | 800    | 4027 5013 45 |

## REVERSIBLE RATCHET END



| in                                  | B mm | H mm | S mm | g    | max Nm | Ordering No. |
|-------------------------------------|------|------|------|------|--------|--------------|
| <b>Reversible Ratchet End 9x12</b>  |      |      |      |      |        |              |
| 1/4"                                | 25   | 13.5 | 21.5 | 77   | 49     | 4027 5013 60 |
| 3/8"                                | 33.5 | 17.5 | 30.5 | 160  | 100    | 4027 5013 61 |
| 1/2"                                | 41.5 | 20.5 | 37.5 | 291  | 120    | 4027 5013 62 |
| <b>Reversible Ratchet End 14x18</b> |      |      |      |      |        |              |
| 1/2"                                | 41.5 | 20.5 | 37.5 | 339  | 300    | 4027 5013 64 |
| 3/4"                                | 63.5 | 31   | 70   | 1155 | 650    | 4027 5013 65 |

## RATCHET REVERSIBLE, WITH HEXAGONAL OUTPUT



| in  | B mm | H mm | S mm | g   | max Nm | Ordering No. |
|---|------|------|------|-----|--------|--------------|
| <b>Ratchet Reversible, with Hexagonal Output 9x12</b> |      |      |      |     |        |              |
| 1/4"  | 22   | 14   | 17.5 | 60  | 40     | 4027 5013 80 |
| 5/16"   | 29   | 14.5 | 28   | 117 | 80     | 4027 5013 81 |

## BELKNAP ADAPTER

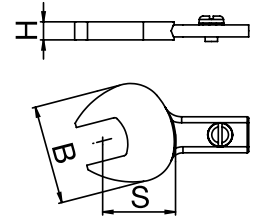


| 9x12 Drive |      |     |              | 14x18 Drive |      |     |              |
|------------|------|-----|--------------|-------------|------|-----|--------------|
| Type       | S mm | g   | Order No.    | Type        | S mm | g   | Order No.    |
| J-Shank    | 24   | 68  | 4027 5016 90 | J-Shank     | 24   | 105 | 4027 5017 00 |
| Y-Shank    | 29   | 71  | 4027 5016 91 | Y-Shank     | 29   | 104 | 4027 5017 01 |
| X-Shank    | 31   | 86  | 4027 5016 92 | X-Shank     | 31   | 121 | 4027 5017 02 |
| Z- Shank   | 56   | 314 | 4027 5016 93 | Z- Shank    | 56   | 349 | 4027 5017 03 |



# End Fittings BWR

## Open End



| BWR 20/35 |      |      |      |    |        |              |
|-----------|------|------|------|----|--------|--------------|
| ● mm      | B mm | H mm | S mm | g  | max Nm | Ordering No. |
| 7         | 24   | 5.5  | 17.5 | 23 | 13     | 4027 5000 00 |
| 8         | 24   | 5.5  | 17.5 | 25 | 13     | 4027 5000 01 |
| 9         | 24   | 5.5  | 17.5 | 25 | 13     | 4027 5000 02 |
| 10        | 30   | 6    | 24   | 31 | 20     | 4027 5000 03 |
| 11        | 30   | 6    | 24   | 31 | 24     | 4027 5000 04 |
| 12        | 33   | 6    | 25   | 31 | 29     | 4027 5000 05 |
| 13        | 33   | 6    | 25   | 34 | 40     | 4027 5000 06 |
| 14        | 33   | 6    | 25   | 34 | 45     | 4027 5000 07 |
| 15        | 35   | 6    | 28   | 34 | 45     | 4027 5000 08 |
| 16        | 35   | 7    | 28   | 50 | 50     | 4027 5000 09 |
| 17        | 38   | 7    | 30   | 60 | 60     | 4027 5000 10 |
| 18        | 38   | 7    | 31   | 60 | 65     | 4027 5000 11 |
| 19        | 38   | 7    | 31   | 60 | 70     | 4027 5000 12 |
| 21        | 43   | 7    | 35   | 61 | 95     | 4027 5000 13 |
| 22        | 43   | 7    | 35   | 61 | 95     | 4027 5000 14 |
| 24        | 46   | 10   | 35   | 61 | 95     | 4027 5000 15 |
| 27        | 46   | 10   | 40   | 61 | 95     | 4027 5000 16 |

| BWR 100 |      |      |      |     |        |              |
|---------|------|------|------|-----|--------|--------------|
| ● mm    | B mm | H mm | S mm | g   | max Nm | Ordering No. |
| 13      | 40   | 7.5  | 25   | 75  | 45     | 4027 5000 30 |
| 14      | 40   | 7.5  | 25   | 75  | 45     | 4027 5000 31 |
| 15      | 40   | 7.5  | 25   | 75  | 50     | 4027 5000 32 |
| 16      | 45   | 10   | 28   | 90  | 55     | 4027 5000 33 |
| 17      | 45   | 10   | 28   | 110 | 65     | 4027 5000 34 |
| 18      | 45   | 10   | 28   | 110 | 65     | 4027 5000 35 |
| 19      | 45   | 10   | 28   | 115 | 75     | 4027 5000 36 |
| 21      | 46   | 10   | 32   | 115 | 75     | 4027 5000 37 |
| 22      | 46   | 10   | 32   | 115 | 80     | 4027 5000 38 |
| 24      | 46   | 10   | 32   | 120 | 100    | 4027 5000 39 |
| 27      | 55   | 10   | 36   | 120 | 100    | 4027 5000 40 |

| BWR 240 |      |      |      |     |        |              |
|---------|------|------|------|-----|--------|--------------|
| ● mm    | B mm | H mm | S mm | g   | max Nm | Ordering No. |
| 16      | 53   | 10   | 34   | 210 | 85     | 4027 5000 60 |
| 17      | 53   | 10   | 44   | 210 | 85     | 4027 5000 61 |
| 18      | 53   | 10   | 44   | 210 | 85     | 4027 5000 62 |
| 19      | 53   | 10   | 44   | 210 | 85     | 4027 5000 63 |
| 21      | 60   | 10   | 46   | 210 | 85     | 4027 5000 64 |
| 22      | 60   | 13   | 48   | 290 | 170    | 4027 5000 65 |
| 24      | 61   | 13   | 41   | 350 | 175    | 4027 5000 66 |
| 27      | 64   | 15   | 50   | 360 | 180    | 4027 5000 67 |

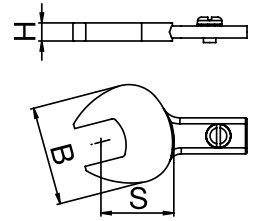
| BWR 20/35 |      |      |      |    |        |              |
|-----------|------|------|------|----|--------|--------------|
| ● in      | B mm | H mm | S mm | g  | max Nm | Ordering No. |
| 1/4       | 24   | 5.5  | 17.5 | 23 | 13     | 4027 5006 50 |
| 5/16      | 24   | 5.5  | 17.5 | 25 | 13     | 4027 5006 51 |
| 3/8       | 24   | 5.5  | 17.5 | 25 | 13     | 4027 5006 52 |
| 7/16      | 30   | 6    | 24   | 31 | 24     | 4027 5006 53 |
| 1/2       | 33   | 6    | 25   | 34 | 40     | 4027 5006 54 |
| 9/16      | 35   | 6    | 28   | 34 | 45     | 4027 5006 55 |
| 5/8       | 35   | 7    | 28   | 50 | 50     | 4027 5006 56 |
| 11/16     | 38   | 7    | 31   | 60 | 65     | 4027 5006 57 |
| 3/4       | 38   | 7    | 31   | 60 | 70     | 4027 5006 58 |

| BWR 100 |      |      |      |     |        |              |
|---------|------|------|------|-----|--------|--------------|
| ● in    | B mm | H mm | S mm | g   | max Nm | Ordering No. |
| 1/2     | 40   | 7.5  | 25   | 75  | 45     | 4027 5006 70 |
| 9/16    | 40   | 7.5  | 25   | 75  | 50     | 4027 5006 71 |
| 5/8     | 45   | 10   | 28   | 90  | 55     | 4027 5006 72 |
| 11/16   | 45   | 10   | 28   | 110 | 65     | 4027 5006 73 |
| 3/4     | 45   | 10   | 28   | 115 | 75     | 4027 5006 74 |
| 13/16   | 46   | 10   | 32   | 115 | 75     | 4027 5006 75 |
| 7/8     | 46   | 10   | 32   | 115 | 80     | 4027 5006 76 |
| 15/16   | 46   | 10   | 32   | 120 | 100    | 4027 5006 77 |
| 1       | 55   | 10   | 36   | 120 | 100    | 4027 5006 78 |
| 1 1/8   | 61   | 12   | 43   | 227 | 130    | 4027 5006 79 |

| BWR 240 |      |      |      |     |        |              |
|---------|------|------|------|-----|--------|--------------|
| ● in    | B mm | H mm | S mm | g   | max Nm | Ordering No. |
| 5/8     | 53   | 10   | 34   | 210 | 85     | 4027 5006 90 |
| 11/16   | 53   | 10   | 44   | 210 | 85     | 4027 5006 91 |
| 3/4     | 53   | 10   | 44   | 210 | 85     | 4027 5006 92 |
| 13/16   | 60   | 10   | 46   | 210 | 85     | 4027 5006 93 |
| 7/8     | 60   | 13   | 48   | 290 | 170    | 4027 5006 94 |
| 15/16   | 63   | 14   | 59   | 480 | 360    | 4027 5006 95 |
| 1       | 72   | 15   | 60   | 580 | 440    | 4027 5006 96 |
| 1 1/8   | 75   | 15   | 60   | 595 | 440    | 4027 5006 97 |

# End Fittings BWR

## Open End



| BWR 440 |      |      |      |     |        |              |
|---------|------|------|------|-----|--------|--------------|
| ● mm    | B mm | H mm | S mm | g   | max Nm | Ordering No. |
| 17      | 55   | 12   | 58   | 375 | 190    | 4027 5000 90 |
| 18      | 55   | 12   | 58   | 375 | 190    | 4027 5000 91 |
| 19      | 55   | 12   | 58   | 375 | 190    | 4027 5000 92 |
| 21      | 62   | 12   | 59   | 440 | 280    | 4027 5000 93 |
| 22      | 62   | 12   | 59   | 440 | 280    | 4027 5000 94 |
| 24      | 63   | 14   | 59   | 480 | 360    | 4027 5000 95 |
| 27      | 72   | 15   | 60   | 580 | 440    | 4027 5000 96 |
| 30      | 75   | 15   | 60   | 595 | 440    | 4027 5000 97 |
| 32      | 78   | 15   | 60   | 650 | 440    | 4027 5000 98 |
| 34      | 82   | 17   | 60   | 670 | 440    | 4027 5000 99 |
| 36      | 82   | 17   | 62   | 670 | 440    | 4027 5001 00 |
| 41      | 87   | 20   | 62   | 685 | 440    | 4027 5001 01 |

| BWR 750 |      |      |      |     |        |              |
|---------|------|------|------|-----|--------|--------------|
| ● mm    | B mm | H mm | S mm | g   | max Nm | Ordering No. |
| 21      | 62   | 12   | 58   | 600 | 300    | 4027 5001 20 |
| 22      | 62   | 12   | 58   | 600 | 300    | 4027 5001 21 |
| 24      | 70   | 14   | 58   | 620 | 320    | 4027 5001 22 |
| 27      | 75   | 15   | 58   | 700 | 360    | 4027 5001 23 |
| 30      | 80   | 15   | 58   | 820 | 420    | 4027 5001 24 |
| 32      | 82   | 17   | 58   | 850 | 490    | 4027 5001 25 |
| 34      | 86   | 17   | 62   | 860 | 570    | 4027 5001 26 |
| 36      | 86   | 17   | 62   | 860 | 570    | 4027 5001 27 |
| 41      | 92   | 20   | 64   | 950 | 620    | 4027 5001 28 |
| 46      | 97   | 22   | 66   | 980 | 630    | 4027 5001 29 |

| BWR 1300/2000 |      |      |      |      |        |              |
|---------------|------|------|------|------|--------|--------------|
| ● mm          | B mm | H mm | S mm | g    | max Nm | Ordering No. |
| 24            | 70   | 14   | 53   | 950  | 350    | 4027 5001 50 |
| 27            | 75   | 15   | 53   | 960  | 480    | 4027 5001 51 |
| 30            | 82   | 17   | 53   | 1050 | 600    | 4027 5001 52 |
| 32            | 82   | 17   | 61   | 1150 | 750    | 4027 5001 53 |
| 34            | 86   | 18   | 64   | 1200 | 890    | 4027 5001 54 |
| 36            | 86   | 18   | 65   | 1200 | 890    | 4027 5001 55 |
| 41            | 92   | 20   | 77   | 1650 | 1150   | 4027 5001 56 |
| 46            | 97   | 22   | 80   | 1800 | 1450   | 4027 5001 57 |
| 50            | 104  | 22   | 82   | 1900 | 1750   | 4027 5001 58 |
| 55            | 110  | 22   | 83   | 1985 | 1800   | 4027 5001 59 |
| 60            | 115  | 22   | 86   | 2000 | 1850   | 4027 5001 60 |
| 75            | 170  | 25   | 113  | 3500 | 2000   | 4027 5001 61 |

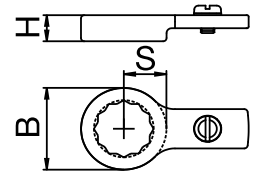
| BWR 440 |      |      |      |     |        |              |
|---------|------|------|------|-----|--------|--------------|
| ● in    | B mm | H mm | S mm | g   | max Nm | Ordering No. |
| 5/8     | 55   | 12   | 58   | 375 | 190    | 4027 5007 10 |
| 11/16   | 55   | 12   | 58   | 375 | 190    | 4027 5007 11 |
| 3/4     | 55   | 12   | 58   | 375 | 190    | 4027 5007 12 |
| 13/16   | 62   | 12   | 59   | 440 | 280    | 4027 5007 13 |
| 7/8     | 62   | 12   | 59   | 440 | 280    | 4027 5007 14 |
| 15/16   | 63   | 14   | 59   | 480 | 360    | 4027 5007 15 |
| 1       | 72   | 15   | 60   | 580 | 440    | 4027 5007 16 |
| 1 1/8   | 75   | 15   | 60   | 595 | 440    | 4027 5007 17 |

| BWR 750 |      |      |      |     |        |              |
|---------|------|------|------|-----|--------|--------------|
| ● in    | B mm | H mm | S mm | g   | max Nm | Ordering No. |
| 13/16   | 62   | 12   | 58   | 600 | 300    | 4027 5007 30 |
| 7/8     | 62   | 12   | 58   | 600 | 300    | 4027 5007 31 |
| 15/16   | 70   | 14   | 58   | 620 | 320    | 4027 5007 32 |
| 1       | 75   | 15   | 58   | 700 | 360    | 4027 5007 33 |
| 1 1/8   | 80   | 15   | 58   | 820 | 420    | 4027 5007 34 |

| BWR 1300/2000 |      |      |      |      |        |              |
|---------------|------|------|------|------|--------|--------------|
| ● in          | B mm | H mm | S mm | g    | max Nm | Ordering No. |
| 15/16         | 70   | 14   | 53   | 950  | 350    | 4027 5007 40 |
| 1             | 75   | 15   | 53   | 960  | 480    | 4027 5007 41 |
| 1 1/8         | 82   | 17   | 53   | 1050 | 600    | 4027 5007 42 |

# End Fittings BWR

## Box End



| BWR 20/35 |      |      |      |    |        |              |
|-----------|------|------|------|----|--------|--------------|
| ● mm      | B mm | H mm | S mm | g  | max Nm | Ordering No. |
| 7         | 16   | 6    | 8    | 20 | 25     | 4027 5001 80 |
| 8         | 16   | 6    | 8    | 20 | 25     | 4027 5001 81 |
| 9         | 18   | 6    | 9    | 20 | 32     | 4027 5001 82 |
| 10        | 19   | 7    | 9.5  | 22 | 38     | 4027 5001 83 |
| 11        | 20   | 7    | 10   | 25 | 50     | 4027 5001 84 |
| 12        | 21   | 7    | 10.5 | 25 | 60     | 4027 5001 85 |
| 13        | 22   | 8    | 11   | 28 | 75     | 4027 5001 86 |
| 14        | 23   | 8    | 11.5 | 30 | 85     | 4027 5001 87 |
| 15        | 25   | 8    | 12.5 | 32 | 85     | 4027 5001 88 |
| 16        | 27   | 8    | 13.5 | 35 | 85     | 4027 5001 89 |
| 17        | 27   | 8    | 13.5 | 35 | 85     | 4027 5001 90 |
| 18        | 29   | 8    | 14.5 | 36 | 85     | 4027 5001 91 |
| 19        | 29   | 8    | 14.5 | 36 | 85     | 4027 5001 92 |
| 21        | 34   | 10   | 16   | 40 | 85     | 4027 5001 93 |
| 22        | 34   | 10   | 17   | 40 | 85     | 4027 5001 94 |
| 24        | 37   | 10   | 18.5 | 40 | 85     | 4027 5001 95 |

| BWR 100 |      |      |      |    |        |              |
|---------|------|------|------|----|--------|--------------|
| ● mm    | B mm | H mm | S mm | g  | max Nm | Ordering No. |
| 13      | 23   | 10   | 11.5 | 55 | 75     | 4027 5002 10 |
| 14      | 25   | 10   | 12.5 | 58 | 85     | 4027 5002 11 |
| 15      | 26   | 10   | 13   | 60 | 100    | 4027 5002 12 |
| 16      | 28   | 12   | 14   | 62 | 100    | 4027 5002 13 |
| 17      | 28   | 12   | 14   | 65 | 100    | 4027 5002 14 |
| 18      | 30   | 12   | 15   | 68 | 100    | 4027 5002 15 |
| 19      | 30   | 12   | 15   | 70 | 100    | 4027 5002 16 |
| 21      | 32   | 12   | 16   | 70 | 100    | 4027 5002 17 |
| 22      | 34   | 12   | 17   | 72 | 100    | 4027 5002 18 |
| 24      | 37   | 14   | 18.5 | 90 | 100    | 4027 5002 19 |

| BWR 240 |      |      |      |     |        |              |
|---------|------|------|------|-----|--------|--------------|
| ● mm    | B mm | H mm | S mm | g   | max Nm | Ordering No. |
| 16      | 33   | 12   | 31   | 190 | 135    | 4027 5002 40 |
| 17      | 33   | 12   | 31   | 190 | 135    | 4027 5002 41 |
| 18      | 33   | 12   | 31   | 195 | 150    | 4027 5002 42 |
| 19      | 33   | 12   | 31   | 195 | 150    | 4027 5002 43 |
| 21      | 38   | 12   | 31   | 210 | 200    | 4027 5002 44 |
| 22      | 38   | 12   | 31   | 210 | 200    | 4027 5002 45 |
| 24      | 40   | 14   | 31   | 210 | 240    | 4027 5002 46 |
| 27      | 44   | 14   | 31   | 225 | 240    | 4027 5002 47 |

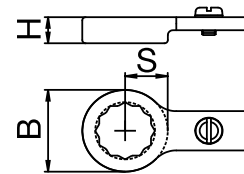
| BWR 20/35 |      |      |      |    |        |              |
|-----------|------|------|------|----|--------|--------------|
| ● in      | B mm | H mm | S mm | g  | max Nm | Ordering No. |
| 1/4       | 16   | 6    | 8    | 20 | 25     | 4027 5007 50 |
| 5/16      | 16   | 6    | 8    | 20 | 25     | 4027 5007 51 |
| 3/8       | 18   | 6    | 9    | 20 | 32     | 4027 5007 52 |
| 7/16      | 20   | 7    | 10   | 25 | 50     | 4027 5007 53 |
| 1/2       | 22   | 8    | 11   | 28 | 75     | 4027 5007 54 |
| 9/16      | 25   | 8    | 12.5 | 32 | 85     | 4027 5007 55 |
| 5/8       | 27   | 8    | 13.5 | 35 | 85     | 4027 5007 56 |
| 11/16     | 29   | 8    | 14.5 | 36 | 85     | 4027 5007 57 |
| 3/4       | 29   | 8    | 14.5 | 36 | 85     | 4027 5007 58 |

| BWR 100 |      |      |      |     |        |              |
|---------|------|------|------|-----|--------|--------------|
| ● in    | B mm | H mm | S mm | g   | max Nm | Ordering No. |
| 1/2     | 23   | 10   | 11.5 | 55  | 75     | 4027 5007 70 |
| 9/16    | 26   | 10   | 13   | 60  | 100    | 4027 5007 71 |
| 5/8     | 28   | 12   | 14   | 62  | 100    | 4027 5007 72 |
| 11/16   | 30   | 12   | 15   | 68  | 100    | 4027 5007 73 |
| 3/4     | 30   | 12   | 15   | 70  | 100    | 4027 5007 74 |
| 13/16   | 32   | 12   | 16   | 70  | 100    | 4027 5007 75 |
| 7/8     | 34   | 12   | 17   | 72  | 100    | 4027 5007 76 |
| 15/16   | 37   | 14   | 18.5 | 90  | 100    | 4027 5007 77 |
| 1       | 40   | 12   | 24.5 | 100 | 100    | 4027 5007 78 |

| BWR 240 |      |      |      |     |        |              |
|---------|------|------|------|-----|--------|--------------|
| ● in    | B mm | H mm | S mm | g   | max Nm | Ordering No. |
| 5/8     | 33   | 12   | 31   | 190 | 135    | 4027 5007 90 |
| 11/16   | 33   | 12   | 31   | 195 | 150    | 4027 5007 91 |
| 3/4     | 33   | 12   | 31   | 195 | 150    | 4027 5007 92 |
| 13/16   | 38   | 12   | 31   | 210 | 200    | 4027 5007 93 |
| 7/8     | 38   | 12   | 31   | 210 | 200    | 4027 5007 94 |
| 15/16   | 40   | 14   | 31   | 210 | 240    | 4027 5007 95 |
| 1       | 44   | 14   | 31   | 225 | 240    | 4027 5007 96 |

# End Fittings BWR

## Box End



| BWR 440 |      |      |      |     |        |              |
|---------|------|------|------|-----|--------|--------------|
| ● mm    | B mm | H mm | S mm | g   | max Nm | Ordering No. |
| 17      | 36   | 12   | 56   | 300 | 190    | 4027 5002 70 |
| 18      | 36   | 12   | 56   | 300 | 190    | 4027 5002 71 |
| 19      | 40   | 12   | 56   | 300 | 190    | 4027 5002 72 |
| 21      | 40   | 14   | 56   | 315 | 280    | 4027 5002 73 |
| 22      | 40   | 14   | 56   | 315 | 280    | 4027 5002 74 |
| 24      | 43   | 14   | 56   | 320 | 420    | 4027 5002 75 |
| 27      | 47   | 14   | 56   | 335 | 440    | 4027 5002 76 |
| 30      | 52   | 14   | 56   | 335 | 440    | 4027 5002 77 |
| 32      | 54   | 14   | 56   | 365 | 440    | 4027 5002 78 |
| 34      | 58   | 15   | 56   | 375 | 440    | 4027 5002 79 |
| 36      | 60   | 15   | 56   | 385 | 440    | 4027 5002 80 |
| 41      | 62   | 15   | 56   | 395 | 440    | 4027 5002 81 |
| 44      | 72   | 16   | 56   | 483 | 460    | 4027 5002 82 |

| BWR 750 |      |      |      |     |        |              |
|---------|------|------|------|-----|--------|--------------|
| ● mm    | B mm | H mm | S mm | g   | max Nm | Ordering No. |
| 21      | 40   | 14   | 58   | 450 | 320    | 4027 5003 00 |
| 22      | 40   | 14   | 58   | 470 | 320    | 4027 5003 01 |
| 24      | 43   | 14   | 58   | 500 | 480    | 4027 5003 02 |
| 27      | 47   | 16   | 58   | 520 | 480    | 4027 5003 03 |
| 30      | 54   | 16   | 58   | 535 | 700    | 4027 5003 04 |
| 32      | 56   | 16   | 58   | 565 | 750    | 4027 5003 05 |
| 34      | 60   | 19   | 58   | 575 | 750    | 4027 5003 06 |
| 36      | 60   | 19   | 58   | 575 | 750    | 4027 5003 07 |
| 38      | 60   | 19   | 58   | 565 | 750    | 4027 5003 08 |
| 41      | 65   | 19   | 58   | 585 | 750    | 4027 5003 09 |
| 46      | 69   | 19   | 58   | 600 | 750    | 4027 5003 10 |

| BWR 1300/2000 |      |      |      |      |        |              |
|---------------|------|------|------|------|--------|--------------|
| ● mm          | B mm | H mm | S mm | g    | max Nm | Ordering No. |
| 24            | 52   | 18   | 58   | 750  | 520    | 4027 5003 30 |
| 27            | 56   | 18   | 58   | 760  | 560    | 4027 5003 31 |
| 30            | 60   | 18   | 58   | 800  | 740    | 4027 5003 32 |
| 32            | 62   | 18   | 58   | 820  | 950    | 4027 5003 33 |
| 34            | 62   | 18   | 58   | 850  | 1200   | 4027 5003 34 |
| 36            | 70   | 18   | 58   | 850  | 1200   | 4027 5003 35 |
| 41            | 70   | 18   | 58   | 940  | 1800   | 4027 5003 36 |
| 46            | 78   | 20   | 58   | 1080 | 2000   | 4027 5003 37 |
| 50            | 85   | 22   | 58   | 1180 | 2000   | 4027 5003 38 |
| 55            | 90   | 22   | 58   | 1250 | 2000   | 4027 5003 39 |
| 60            | 95   | 22   | 58   | 1300 | 2000   | 4027 5003 40 |

| BWR 440 |      |      |      |     |        |              |  |
|---------|------|------|------|-----|--------|--------------|--|
| ● in    | B mm | H mm | S mm | g   | max Nm | Ordering No. |  |
| 5/8     | 36   | 12   | 56   | 300 | 190    | 4027 5008 10 |  |
| 11/16   | 36   | 12   | 56   | 300 | 190    | 4027 5008 11 |  |
| 3/4     | 40   | 12   | 56   | 300 | 190    | 4027 5008 12 |  |
| 13/16   | 40   | 14   | 56   | 315 | 280    | 4027 5008 13 |  |
| 7/8     | 40   | 14   | 56   | 315 | 280    | 4027 5008 14 |  |
| 15/16   | 43   | 14   | 56   | 320 | 420    | 4027 5008 15 |  |
| 1       | 47   | 14   | 56   | 335 | 440    | 4027 5008 16 |  |
| 1 1/8   | 75   | 15   | 60   | 595 | 440    | 4027 5007 17 |  |

| BWR 750 |      |      |      |     |        |              |  |
|---------|------|------|------|-----|--------|--------------|--|
| ● in    | B mm | H mm | S mm | g   | max Nm | Ordering No. |  |
| 13/16   | 40   | 14   | 58   | 450 | 320    | 4027 5008 30 |  |
| 7/8     | 40   | 14   | 58   | 470 | 320    | 4027 5008 31 |  |
| 15/16   | 43   | 14   | 58   | 500 | 480    | 4027 5008 32 |  |
| 1       | 47   | 16   | 58   | 520 | 480    | 4027 5008 33 |  |

| BWR 1300/2000 |      |      |      |     |        |              |  |
|---------------|------|------|------|-----|--------|--------------|--|
| ● in          | B mm | H mm | S mm | g   | max Nm | Ordering No. |  |
| 15/16         | 52   | 18   | 58   | 750 | 520    | 4027 5008 40 |  |
| 1             | 56   | 18   | 58   | 760 | 560    | 4027 5008 41 |  |

# End Fittings BWR

## Flared End

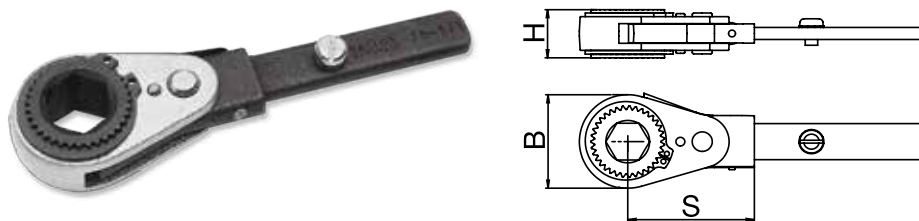


| BWR 20/35 |      |      |       |      |    |        |              |
|-----------|------|------|-------|------|----|--------|--------------|
| ● mm      | B mm | H mm | S mm  | W mm | g  | max Nm | Ordering No. |
| 8         | 18   | 6    | 9     | 6    | 20 | 16     | 4027 5003 60 |
| 10        | 21   | 7    | 10.5  | 7    | 25 | 16     | 4027 5003 61 |
| 11        | 21   | 7    | 10.5  | 8.5  | 25 | 20     | 4027 5003 62 |
| 12        | 25   | 9    | 12.5  | 9    | 32 | 25     | 4027 5003 63 |
| 13        | 25   | 8    | 12.5  | 10   | 32 | 25     | 4027 5003 64 |
| 14        | 25   | 8    | 12.5  | 11   | 32 | 25     | 4027 5003 65 |
| 15        | 29   | 8    | 14.5  | 11   | 35 | 25     | 4027 5003 66 |
| 17        | 31.5 | 10   | 15.75 | 14   | 35 | 50     | 4027 5003 67 |
| 19        | 34   | 10   | 17    | 15.8 | 40 | 50     | 4027 5003 68 |
| 21        | 34   | 10   | 17    | 17   | 42 | 50     | 4027 5003 69 |
| 22        | 34   | 10   | 17    | 17   | 45 | 50     | 4027 5003 70 |
| 24        | 38   | 14   | 20    | 18   | 60 | 60     | 4027 5003 71 |

| BWR 20/35 |      |      |      |      |    |        |              |
|-----------|------|------|------|------|----|--------|--------------|
| ● in      | B mm | H mm | S mm | W mm | g  | max Nm | Ordering No. |
| 3/8       | 21   | 7    | 12   | 8    | 25 | 16     | 4027 5008 50 |
| 7/16      | 21   | 7    | 12   | 8.5  | 25 | 20     | 4027 5008 51 |
| 1/2       | 25   | 8    | 14   | 10   | 32 | 25     | 4027 5008 52 |
| 9/16      | 29   | 8    | 14   | 11   | 35 | 25     | 4027 5008 53 |
| 5/8       | 31.5 | 10   | 16   | 14   | 35 | 50     | 4027 5008 54 |
| 11/16     | 34   | 10   | 17.5 | 15.8 | 40 | 50     | 4027 5008 55 |
| 3/4       | 34   | 10   | 18   | 17   | 40 | 50     | 4027 5008 56 |

| BWR 100 |      |      |      |      |    |        |              |
|---------|------|------|------|------|----|--------|--------------|
| ● in    | B mm | H mm | S mm | W mm | g  | max Nm | Ordering No. |
| 5/8     | 32   | 10   | 18.5 | 12   | 75 | 50     | 4027 5008 72 |
| 11/16   | 32   | 12   | 18.5 | 14   | 78 | 50     | 4027 5008 73 |
| 3/4     | 36   | 12   | 19.5 | 16   | 90 | 50     | 4027 5008 74 |

## Hexagon Ratchet

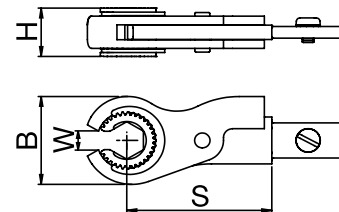


| BWR 20/35 |      |      |      |     |        |              |
|-----------|------|------|------|-----|--------|--------------|
| ● mm      | B mm | H mm | S mm | g   | max Nm | Ordering No. |
| 8         | 28   | 13.5 | 44   | 80  | 25     | 4027 5003 90 |
| 10        | 28   | 13.5 | 44   | 80  | 25     | 4027 5003 91 |
| 11        | 28   | 13.5 | 44   | 80  | 25     | 4027 5003 92 |
| 12        | 28   | 13.5 | 44   | 80  | 25     | 4027 5003 93 |
| 13        | 28   | 13.5 | 44   | 80  | 25     | 4027 5003 94 |
| 14        | 32   | 16   | 47   | 120 | 35     | 4027 5003 95 |
| 15        | 32   | 16   | 47   | 120 | 35     | 4027 5003 96 |
| 16        | 39   | 20   | 51   | 180 | 85     | 4027 5003 97 |
| 17        | 39   | 20   | 51   | 180 | 85     | 4027 5003 98 |
| 18        | 39   | 20   | 51   | 180 | 85     | 4027 5003 99 |
| 19        | 39   | 20   | 51   | 180 | 85     | 4027 5004 00 |
| 21        | 45   | 23   | 57   | 257 | 85     | 4027 5004 01 |
| 22        | 45   | 23   | 57   | 257 | 85     | 4027 5004 02 |

| BWR 100 |      |      |      |     |        |              |
|---------|------|------|------|-----|--------|--------------|
| ● mm    | B mm | H mm | S mm | g   | max Nm | Ordering No. |
| 15      | 39   | 20   | 51   | 200 | 70     | 4027 5004 20 |
| 16      | 39   | 20   | 51   | 200 | 70     | 4027 5004 21 |
| 17      | 39   | 20   | 51   | 200 | 70     | 4027 5004 22 |
| 18      | 39   | 20   | 51   | 200 | 100    | 4027 5004 23 |
| 19      | 39   | 20   | 51   | 200 | 100    | 4027 5004 24 |

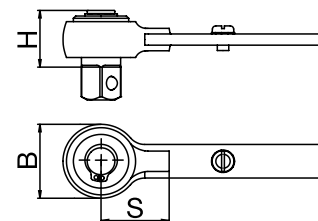
# End Fittings BWR

## Open Hexagon Ratchet



| BWR 20/35 |      |      |      |      |     |        |              |
|-----------|------|------|------|------|-----|--------|--------------|
| ● mm      | B mm | H mm | S mm | W mm | g   | max Nm | Ordering No. |
| 8         | 30   | 16.5 | 48   | 5.1  | 85  | 15     | 4027 5004 50 |
| 9         | 30   | 16.5 | 48   | 5.6  | 85  | 15     | 4027 5004 51 |
| 10        | 30   | 16.5 | 48   | 6.3  | 85  | 15     | 4027 5004 52 |
| 11        | 30   | 16.5 | 48   | 6.3  | 85  | 15     | 4027 5004 53 |
| 12        | 36   | 16.5 | 81   | 7.1  | 190 | 18     | 4027 5004 54 |
| 13        | 36   | 16.5 | 81   | 7.6  | 190 | 18     | 4027 5004 55 |
| 14        | 36   | 16.5 | 81   | 8    | 190 | 18     | 4027 5004 56 |
| 17        | 42   | 20.5 | 73.5 | 10   | 260 | 18     | 4027 5004 57 |

## Fixed Square End



| BWR 20/35 |      |      |      |     |        |              |  |
|-----------|------|------|------|-----|--------|--------------|--|
| ■ in x mm | B mm | H mm | S mm | g   | max Nm | Ordering No. |  |
| 1/4x30    | 24   | 30   | 21   | 65  | 25     | 4027 5004 80 |  |
| 1/4x70    | 24   | 70   | 21   | 115 | 25     | 4027 5004 81 |  |
| 3/8x30    | 24   | 30   | 21   | 65  | 85     | 4027 5004 82 |  |
| 3/8x70    | 27   | 70   | 21   | 120 | 85     | 4027 5004 83 |  |
| 1/2x35    | 24   | 35   | 21   | 75  | 85     | 4027 5004 84 |  |
| 1/2x70    | 24   | 70   | 21   | 145 | 85     | 4027 5004 85 |  |

| BWR 240   |      |      |      |     |        |              |  |
|-----------|------|------|------|-----|--------|--------------|--|
| ■ in x mm | B mm | H mm | S mm | g   | max Nm | Ordering No. |  |
| 1/2x40    | 34   | 40   | 31   | 300 | 240    | 4027 5004 98 |  |
| 1/2x70    | 34   | 70   | 31   | 330 | 240    | 4027 5004 99 |  |

| BWR 750   |      |      |      |     |        |              |  |
|-----------|------|------|------|-----|--------|--------------|--|
| ■ in x mm | B mm | H mm | S mm | g   | max Nm | Ordering No. |  |
| 3/4x70    | 48   | 70   | 58   | 775 | 750    | 4027 5005 11 |  |

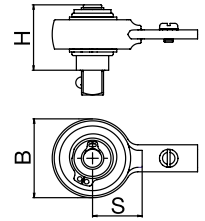
| BWR 100   |      |      |      |     |        |              |  |
|-----------|------|------|------|-----|--------|--------------|--|
| ■ in x mm | B mm | H mm | S mm | g   | max Nm | Ordering No. |  |
| 3/8x40    | 32   | 40   | 30   | 75  | 100    | 4027 5004 90 |  |
| 3/8x70    | 32   | 70   | 30   | 240 | 100    | 4027 5004 91 |  |
| 1/2x40    | 32   | 40   | 30   | 175 | 100    | 4027 5004 92 |  |
| 1/2x70    | 32   | 70   | 30   | 245 | 100    | 4027 5004 93 |  |

| BWR 440   |      |      |      |     |        |              |  |
|-----------|------|------|------|-----|--------|--------------|--|
| ■ in x mm | B mm | H mm | S mm | g   | max Nm | Ordering No. |  |
| 1/2x40    | 48   | 40   | 58   | 600 | 440    | 4027 5005 04 |  |
| 1/2x70    | 48   | 70   | 58   | 630 | 440    | 4027 5005 05 |  |
| 3/4x70    | 48   | 70   | 58   | 689 | 440    | 4027 5005 06 |  |

| BWR 1300/2000 |      |      |      |      |        |              |  |
|---------------|------|------|------|------|--------|--------------|--|
| ■ in x mm     | B mm | H mm | S mm | g    | max Nm | Ordering No. |  |
| 3/4x70        | 73   | 70   | 58   | 1400 | 1000   | 4027 5005 16 |  |
| 1x70          | 73   | 70   | 58   | 1700 | 2000   | 4027 5005 17 |  |

# End Fittings BWR

## Ratchet End



| BWR 20/35 |      |      |      |     |        |              |  |
|-----------|------|------|------|-----|--------|--------------|--|
| in x mm   | B mm | H mm | S mm | g   | max Nm | Ordering No. |  |
| 1/4x40    | 36   | 40   | 21   | 145 | 25     | 4027 5005 25 |  |
| 1/4x70    | 38   | 70   | 21   | 165 | 25     | 4027 5005 26 |  |
| 3/8x40    | 36   | 40   | 21   | 145 | 85     | 4027 5005 27 |  |
| 3/8x70    | 36   | 70   | 21   | 170 | 85     | 4027 5005 28 |  |
| 1/2x45    | 36   | 45   | 21   | 150 | 85     | 4027 5005 29 |  |
| 1/2x70    | 36   | 70   | 21   | 195 | 85     | 4027 5005 30 |  |

| BWR 240 |      |      |      |     |        |              |  |
|---------|------|------|------|-----|--------|--------------|--|
| in x mm | B mm | H mm | S mm | g   | max Nm | Ordering No. |  |
| 1/2x45  | 48   | 45   | 31   | 300 | 240    | 4027 5005 44 |  |
| 1/2x70  | 48   | 70   | 31   | 330 | 240    | 4027 5005 45 |  |

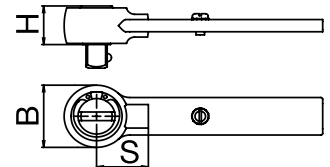
| BWR 750 |      |      |      |      |        |              |  |
|---------|------|------|------|------|--------|--------------|--|
| in x mm | B mm | H mm | S mm | g    | max Nm | Ordering No. |  |
| 3/4x70  | 72   | 70   | 58   | 1250 | 750    | 4027 5005 55 |  |

| BWR 100 |      |      |      |     |        |              |  |
|---------|------|------|------|-----|--------|--------------|--|
| in x mm | B mm | H mm | S mm | g   | max Nm | Ordering No. |  |
| 3/8x40  | 48   | 40   | 30   | 270 | 100    | 4027 5005 36 |  |
| 3/8x70  | 48   | 70   | 30   | 31  | 100    | 4027 5005 37 |  |
| 1/2x45  | 48   | 40   | 30   | 285 | 100    | 4027 5005 38 |  |
| 1/2x70  | 48   | 70   | 30   | 320 | 100    | 4027 5005 39 |  |

| BWR 440 |      |      |      |      |        |              |  |
|---------|------|------|------|------|--------|--------------|--|
| in x mm | B mm | H mm | S mm | g    | max Nm | Ordering No. |  |
| 3/4x70  | 72   | 70   | 58   | 1100 | 440    | 4027 5005 50 |  |

| BWR 1300/2000 |      |      |      |      |        |              |  |
|---------------|------|------|------|------|--------|--------------|--|
| in x mm       | B mm | H mm | S mm | g    | max Nm | Ordering No. |  |
| 3/4x70        | 85   | 70   | 58   | 1700 | 1000   | 4027 5005 60 |  |
| 1x80          | 85   | 80   | 58   | 2000 | 2000   | 4027 5005 61 |  |

## Reversible Ratchet End



| BWR 20/35 |      |      |      |     |        |              |  |
|-----------|------|------|------|-----|--------|--------------|--|
| in        | B mm | H mm | S mm | g   | max Nm | Ordering No. |  |
| 1/4       | 25   | 26   | 21   | 55  | 25     | 4027 5005 70 |  |
| 3/8       | 36   | 35   | 21   | 130 | 85     | 4027 5005 71 |  |
| 1/2       | 36   | 40   | 21   | 135 | 85     | 4027 5005 72 |  |

| BWR 240 |      |      |      |     |        |              |  |
|---------|------|------|------|-----|--------|--------------|--|
| in      | B mm | H mm | S mm | g   | max Nm | Ordering No. |  |
| 1/2     | 36   | 40   | 31   | 285 | 240    | 4027 5005 83 |  |

| BWR 750 |      |      |      |      |        |              |  |
|---------|------|------|------|------|--------|--------------|--|
| in      | B mm | H mm | S mm | g    | max Nm | Ordering No. |  |
| 3/4     | 68   | 70   | 58   | 1250 | 750    | 4027 5005 93 |  |

| BWR 100 |      |      |      |     |        |              |  |
|---------|------|------|------|-----|--------|--------------|--|
| in      | B mm | H mm | S mm | g   | max Nm | Ordering No. |  |
| 3/8     | 36   | 35   | 30   | 165 | 100    | 4027 5005 77 |  |
| 1/2     | 36   | 40   | 30   | 175 | 100    | 4027 5005 78 |  |

| BWR 440 |      |      |      |      |        |              |  |
|---------|------|------|------|------|--------|--------------|--|
| in      | B mm | H mm | S mm | g    | max Nm | Ordering No. |  |
| 3/4     | 68   | 56   | 58   | 1100 | 440    | 4027 5005 88 |  |

| BWR 1300/2000 |      |      |      |      |        |              |  |
|---------------|------|------|------|------|--------|--------------|--|
| in            | B mm | H mm | S mm | g    | max Nm | Ordering No. |  |
| 3/4           | 68   | 70   | 58   | 1500 | 1000   | 4027 5005 98 |  |
| 1             | 68   | 70   | 58   | 1500 | 1000   | 4027 5005 99 |  |

# BWR/SWR Accessories

## Belknap Adapter



| BWR 20/35 |      |    |              |
|-----------|------|----|--------------|
| Type      | S mm | g  | Ordering No. |
| J-Shank   | 24   | 68 | 4027 5009 50 |
| Y-Shank   | 29   | 65 | 4027 5009 60 |

| BWR 240 |      |     |              |
|---------|------|-----|--------------|
| Type    | S mm | g   | Ordering No. |
| Y-Shank | 29   | 193 | 4027 5009 62 |
| X-Shank | 31   | 211 | 4027 5009 71 |
| Z-Shank | 56   | 438 | 4027 5009 81 |

| BWR 750 |      |     |              |
|---------|------|-----|--------------|
| Type    | S mm | g   | Ordering No. |
| X-Shank | 31   | 455 | 4027 5009 73 |
| Z-Shank | 56   | 686 | 4027 5009 83 |

| BWR 100 |      |     |              |
|---------|------|-----|--------------|
| Type    | S mm | g   | Ordering No. |
| J-Shank | 24   | 85  | 4027 5009 51 |
| Y-Shank | 29   | 82  | 4027 5009 61 |
| X-Shank | 31   | 100 | 4027 5009 70 |
| Z-Shank | 56   | 327 | 4027 5009 80 |

| BWR 440 |      |     |              |
|---------|------|-----|--------------|
| Type    | S mm | g   | Ordering No. |
| Y-Shank | 29   | 279 | 4027 5009 63 |
| X-Shank | 31   | 297 | 4027 5009 72 |
| Z-Shank | 56   | 524 | 4027 5009 82 |

| BWR 1300 / 2000 |      |     |              |
|-----------------|------|-----|--------------|
| Type            | S mm | g   | Ordering No. |
| Z-Shank         | 56   | 924 | 4027 5009 84 |

## Setting Key BWR

|                                | g   | Ordering No. |
|--------------------------------|-----|--------------|
| Setting key BWR 20 up to 100   | 97  | 4027 5006 10 |
| Setting key BWR 240            | 164 | 4027 5006 11 |
| Setting key BWR 440            | 428 | 4027 5006 12 |
| Setting key BWR 750 up to 2000 | 603 | 4027 5006 13 |



## Setting Key SWR

|                         | g   | Ordering No. |
|-------------------------|-----|--------------|
| Setting key set SWR-30  | 94  | 4027 5030 00 |
| Setting key set SWR-60  | 171 | 4027 5030 01 |
| Setting key set SWR-110 | 429 | 4027 5030 02 |



You will find a wide range of sockets for use with SWR wrenches in the Atlas Copco PMI 9833 2018 01 "Sockets and Bits for Industrial Power Tools".



## JOINT SIMULATOR BENCH AD

The Joint Simulator Bench AD provides maximum tool evaluation flexibility. DC electric, clutch, impulse and battery tools as well as torque wrenches can be evaluated.

The hydraulic brakes simulate the behaviour of a real joint, reproducing the stiffness from hard to soft.

This allows the tool to be tested in accordance with VDI/VDE 2647. Machine capability (Cm, Cmk) can be tested quickly and easily under real shop floor conditions without the need to run tests on the product on the line that would interfere with production.

- Large LCD touch screen, intuitive and easy to use.
- Efficient hydraulic pump fills the pressure accumulator in just 15 seconds reducing battery drain.
- Connector panel manages all operator connections such as external in-line torque transducers, printers, Ethernet, USB and serial.



| Model                 | Hydraulic brakes, range |        | ISO rig | Spindle fixture holder | Dimensions L x W x H | Ordering No. |
|-----------------------|-------------------------|--------|---------|------------------------|----------------------|--------------|
|                       | Nm                      | lb ft  |         |                        |                      |              |
| <b>Mobile benches</b> |                         |        |         |                        |                      |              |
| JSB AD 250            | 10-250                  | 8-185  | –       | –                      | 1000 x 550 x 920     | 8059 0962 00 |
| JSB AD 250 ISO        | 10-250                  | 8-185  | yes     | –                      | 1150 x 550 x 920     | 8059 0962 30 |
| JSB AD 250 slim       | 10-250                  | 8-185  | –       | no                     | 900 x 400 x 935      | 8059 0962 10 |
| JSB AD 500 ISO        | 10-500                  | 8-370  | yes     | –                      | 1400 x 700 x 950     | 8059 0962 35 |
| JSB AD 1000 ISO       | 10-1000                 | 8-738  | yes     | –                      | 1400 x 700 x 950     | 8059 0962 40 |
| JSB AD 2000 ISO       | 10-2000                 | 8-1475 | yes     | –                      | 1400 x 700 x 950     | 8059 0962 50 |
| <b>Fix benches</b>    |                         |        |         |                        |                      |              |
| JSB AD HD 500         | 10-500                  | 8-370  | –       | yes                    | 2100 x 850 x 1000    | 8059 0963 00 |
| JSB AD HD 2000        | 10-2000                 | 8-1475 | –       | yes                    | 2300 x 900 x 1000    | 8059 0963 50 |
| JSB AD HD 3000        | 10-3000                 | 8-2213 | –       | yes                    | 2300 x 900 x 1000    | 8059 0963 60 |

## JOINT SIMULATOR BENCH 3840

JSB 3840 is an ergonomic solution, which provides in a single mobile unit, all necessary equipment needed for measuring, such as all transducers, adapters, cables, reaction bar, battery and an industrial PC. The alternative is to carry and connect/disconnect constantly all these equipment together, so the JSB 3840 represents a cost effective & ergonomic solution.

JSB 3840 includes:

- A 12" touch screen color display, and heavy duty industrial PC.
- Port: RS232 for printing certificates, USB for RBU automatic back-up function and Ethernet for server option.
- Slim frame of 40 cm wide, to easily move across narrow production lines.
- 16 hours of battery life & embedded battery charger, to be used in 2 shift.
- 1 set of accessories adapter, located in a lock drawer, to allow the tool connection
- 1 reaction bar & adapted accessories, to ensure a safety measurement for the operator.
- Torque Supervisor software, with up to 2000 tools Database, Easy SPC analysis, Cm/Cmk graphs and certificates plus excel export.



| Model    | Hydraulic brakes, range |             | Transducer SRTT+B |             | Dimensions L x W x H | Ordering No. |
|----------|-------------------------|-------------|-------------------|-------------|----------------------|--------------|
|          | Nm                      | lb ft       | Nm                | lb ft       |                      |              |
| JSB 3840 | 5-85                    | 3.69-62.69  | 25-250            | 18.44-184.4 | 1026 X 400 X 935     | 8059 0967 10 |
| JSB 3840 | 25-250                  | 18.44-184.4 | 50-500            | 36.88-368.8 | 1026 X 400 X 935     | 8059 0967 20 |

# Airline Accessories

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## Ensure that your tools achieve their full potential

*To ensure that you benefit from the full potential power from your tools, Atlas Copco has developed a full range of air line accessories for use with Atlas Copco tools and air motors. All accessories can be used for other applications and pneumatic equipment.*

**AIR PREPARATION UNITS**



**QUICK COUPLINGS**



**SWIVEL CONNECTORS**



**HOSE REELS**



**BALANCERS**



**AIR NET - QUALITY PIPING SOLUTION**



*For more info about Airline Accessories please see Atlas Copco main catalog or contact Atlas Copco local sales representative.*

## HOSES, PVC

| Model  | Hose inside dia |      | Hose outside dia<br>mm | Max working pressure <sup>a</sup><br>bar | Max rec. air flow <sup>b</sup><br>l/s | Weight per 30 m coil<br>kg | Ordering No. |
|--------|-----------------|------|------------------------|--|---------------------------------------|----------------------------|--------------|
|        | mm              | in   |                        |  |                                       |                            |              |
| PVC 03 | 3.2             | 1/8  | 7                      | 20                                       | 0.7                                   | 1.4                        | 9093 0037 21 |
| PVC 05 | 5               | 3/16 | 9                      | 10                                       | 2.1                                   | 1.9                        | 9093 0037 51 |
| PVC 06 | 6.3             | 1/4  | 11                     | 10                                       | 4                                     | 2.5                        | 9093 0037 81 |
| PVC 08 | 8               | 5/16 | 12                     | 10                                       | 7.5                                   | 2.9                        | 9093 0038 11 |
| PVC 10 | 10              | 3/8  | 14                     | 14                                       | 13                                    | 3.7                        | 9093 0038 41 |
| PVC 13 | 12.5            | 1/2  | 18                     | 13                                       | 21                                    | 5.9                        | 9093 0038 71 |
| PVC 16 | 16              | 5/8  | 22                     | 12                                       | 43                                    | 7.2                        | 9093 0039 01 |
| PVC 20 | 19              | 3/4  | 25                     | 10                                       | 75                                    | 8.3                        | 9093 0039 31 |
| PVC 25 | 25              | 1    | 32                     | 10                                       | 125                                   | 12.5                       | 9093 0039 61 |

<sup>a</sup> With a safety factor of 3 at 20°C (at the max temp of +60°C the working pressure should be reduced by 50%).

<sup>b</sup> The pressure drop will be 0.2 bar on a hose length of 5 m.



## CABLAIR HOSES

| Model      | Hose inside dia |     | Hose outside dia<br>mm | Max working pressure <sup>a</sup><br>bar | Max rec. air flow <sup>b</sup><br>l/s | Weight per 30 m coil<br>kg | Ordering No. |
|------------|-----------------|-----|------------------------|--|---------------------------------------|----------------------------|--------------|
|            | mm              | in  |                        |  |                                       |                            |              |
| CABLAIR 06 | 6               | 1/4 | 8.5                    | 14                                       | 4                                     | 1.2                        | 9093 0035 11 |
| CABLAIR 08 | 8               | 1/3 | 11                     | 14                                       | 7.5                                   | 1.7                        | 9093 0035 41 |
| CABLAIR 10 | 10              | 2/5 | 13                     | 12                                       | 13                                    | 2.1                        | 9093 0035 71 |
| CABLAIR 13 | 12.5            | 1/2 | 16                     | 11                                       | 21                                    | 3.0                        | 9093 0036 01 |
| CABLAIR 16 | 16              | 5/8 | 21                     | 8  | 43                                    | 5.4                        | 9093 0036 31 |
| CABLAIR 20 | 19              | 3/4 | 24                     | 8  | 75                                    | 5.8                        | 9093 0036 61 |
| CABLAIR 25 | 25              | 1   | 31.5                   | 7  | 125                                   | 10.4                       | 9093 0036 91 |

<sup>a</sup> With a safety factor of 3 at 20°C (at the max temp of +60°C the working pressure should be reduced by 50%).

<sup>b</sup> The pressure drop will be 0.2 bar on a hose length of 5 m.



## SPIRAL HOSES

| Model        | Hose inside dia<br>mm | Hose outside dia<br>mm | Max. rec. air flow <sup>a</sup><br>l/s | Working range<br>m | Length    |           |           | Max spiral dia<br>(D)<br>mm | Male threads<br>in<br>BSP | Ordering No. |
|--------------|-----------------------|------------------------|--|--------------------|-----------|-----------|-----------|-----------------------------|---------------------------|--------------|
|              |                       |                        |  |                    | (A)<br>mm | (B)<br>mm | (C)<br>mm |                             |                           |              |
| SPI 1SPSW-S  | 6.5                   | 10                     | 7                                      | 2                  | 500       | 165       | 150       | 55                          | 1/4                       | 8202 0508 71 |
| SPI 1SPSW-M  | 6.5                   | 10                     | 5                                      | 4                  | 500       | 330       | 150       | 55                          | 1/4                       | 8202 0508 73 |
| SPI 2SPSW-S  | 8                     | 12                     | 13                                     | 2                  | 500       | 130       | 150       | 70                          | 3/8                       | 8202 0508 75 |
| SPI 2SPSW-M  | 8                     | 12                     | 10                                     | 4                  | 500       | 270       | 150       | 70                          | 3/8                       | 8202 0508 77 |
| SPI 2SPSW-L  | 8                     | 12                     | 9                                      | 6                  | 500       | 435       | 150       | 70                          | 3/8                       | 8202 0508 79 |
| SPI 2SPSW-XL | 8                     | 12                     | 6                                      | 8                  | 500       | 600       | 150       | 70                          | 3/8                       | 8202 0508 81 |
| SPI 3SP-S    | 11                    | 16                     | 25                                     | 2                  | 500       | 185       | 150       | 98                          | 3/8                       | 8202 0508 82 |
| SPI 3SP-M    | 11                    | 16                     | 22                                     | 4                  | 500       | 250       | 150       | 98                          | 3/8                       | 8202 0508 84 |
| SPI 3SP-L    | 11                    | 16                     | 17                                     | 6                  | 500       | 390       | 150       | 98                          | 3/8                       | 8202 0508 86 |
| SPI 3SP-XL   | 11                    | 16                     | 13                                     | 8                  | 500       | 550       | 150       | 98                          | 3/8                       | 8202 0508 88 |
| SPI 4SP-XXL  | 13                    | 19                     | 21                                     | 10                 | 500       | 850       | 500       | 115                         | 3/8                       | 8202 0508 90 |



## SWIVEL CONNECTORS

| Model                           | Max rec. air flow <sup>a</sup> |     | Thread             |                   | Weight<br>g | Length<br>mm | Dia<br>mm | Ordering No. |
|---------------------------------|--------------------------------|-----|--------------------|-------------------|-------------|--------------|-----------|--------------|
|                                 | l/s                            | cfm | Inlet female<br>in | Outlet male<br>in |             |              |           |              |
| MultiFlex 1/8" BSP              | 12                             | 25  | 1/8                | 1/8               | 73          | 66.2         | 24        | 8202 1350 18 |
| MultiFlex 1/4" BSP              | 12                             | 25  | 1/4                | 1/4               | 73          | 66.2         | 24        | 8202 1350 20 |
| MultiFlex 3/8" BSP              | 32                             | 68  | 3/8                | 3/8               | 130         | 80.6         | 29.5      | 8202 1350 22 |
| MultiFlex 1/2" BSP              | 32                             | 68  | 1/2                | 1/2               | 125         | 80.6         | 29.5      | 8202 1350 24 |
| MultiFlex 1/8" BSP <sup>b</sup> | 12                             | 25  | 1/8                | 1/8               | 76          | 66.2         | 27        | 8202 1350 40 |
| MultiFlex 1/4" BSP <sup>b</sup> | 12                             | 25  | 1/4                | 1/4               | 76          | 66.2         | 27        | 8202 1350 41 |
| MultiFlex 1/2" BSP <sup>c</sup> | 54                             | 114 | 1/2                | 1/2               | 326         | 98.3         | 39        | 8202 1350 60 |

<sup>a</sup> The pressure drop will be 0.2 bar at an inlet pressure of 6 bar.

<sup>b</sup> With cover.  
<sup>c</sup> HIGH FLOW.



# Hose Reels



**HM FLEX L**



**HM LIGHT**



**HM OPEN XL**

| Model            | Hose length<br>mm | Hose type | Hose inside diameter |      | Connection inlet hose inside dia (cut of hose) mm | Connection distribution hose BSP | Economical air flow (at 0.2 bar pressure drop) l/s | Max air flow capacity (at 0.5 bar pressure drop) l/s | Weight kg | Ordering No. |
|------------------|-------------------|-----------|----------------------|------|---|----------------------------------|--|--|-----------|--------------|
|                  |                   |           | mm                   | in   |   |                                  |  |  |           |              |
| HM Light 8-8     | 8                 | PVC/PUR   | 8                    | 5/16 | 10  | 1/4                              | 4  | 7  | 3         | 8202 1183 30 |
| HM Light 8-12    | 12                | PVC/PUR   | 8                    | 5/16 | 10  | 1/4                              | 3  | 5  | 5         | 8202 1183 31 |
| HM Light 10-10   | 10                | PVC/PUR   | 10                   | 3/8  | 10  | 3/8                              | 6  | 10   | 5         | 8202 1183 32 |
| HM Open 10-15    | 15                | Rubber    | 10                   | 3/8  | 12.5  | 3/8                              | 5  | 9  | 11        | 8202 1183 33 |
| HM Open 10-20    | 20                | Rubber    | 10                   | 3/8  | 12.5  | 3/8                              | 5  | 7  | 14        | 8202 1183 34 |
| HM Open 12-10    | 10                | Rubber    | 12.5                 | 1/2  | 12.5  | 1/2                              | 13   | 22   | 12        | 8202 1183 35 |
| HM Open 12-15    | 10                | Rubber    | 12.5                 | 1/2  | 12.5  | 1/2                              | 11   | 17   | 13        | 8202 1183 36 |
| HM Open XL 12-20 | 20                | Rubber    | 12.5                 | 1/2  | 12.5  | 1/2                              | 8  | 14   | 27        | 8202 1183 37 |
| HM Open XL 12-30 | 30                | Rubber    | 12.5                 | 1/2  | 12.5  | 1/2                              | 8  | 12   | 28        | 8202 1183 38 |
| HM Open XL 19-15 | 15                | Rubber    | 19                   | 3/4  | 19  | 3/4                              | 27   | 44   | 28        | 8202 1183 39 |
| HM Open XL 25-10 | 10                | Rubber    | 25                   | 1    | 25  | 1                                | 60   | 95   | 30        | 8202 1183 40 |

| Model     | Hose length<br>mm | Hose type | Hose inside dia |     | Connection inlet BSP male | Connection distribution hose BSP male | Air flow l/s | Weight kg | Ordering No. |
|-----------|-------------------|-----------|-----------------|-----|---------------------------|---------------------------------------|--------------|-----------|--------------|
|           |                   |           | mm              | in  |                           |                                       |              |           |              |
| HM Flex L | 10                | Rubber    | 12,5            | 1/2 | 1/2                       | 1/2                                   | 22           | 16        | 8202 1181 56 |

Max working pressure 15 bar on all models.

Pivoting brackets for HM OPEN and HM OPEN XL models needs to be ordered separately



**HM OPEN**

## BLOW GUNS BG-SERIES

| Model        | Version                       | Working pressure bar | Air flow l/s | Weight |      | Air inlet thread BSP | Ordering No. |
|--------------|-------------------------------|----------------------|--------------|--------|------|----------------------|--------------|
|              |                               |                      |              | kg     | lb   |                      |              |
| BG 2603-HF   | Long tube, high flow          | 6.3                  | 7.5          | 0.13   | 0.29 | 1/4                  | 8202 1006 04 |
| BG 2604-SHF  | Short tube                    | 6.3                  | 4.3          | 0.12   | 0.26 | 1/4                  | 8202 1006 05 |
| BG 2605-STSS | Short tube, star tip          | 6.3                  | 6.6          | 0.12   | 0.26 | 1/4                  | 8202 1006 06 |
| BG 2606-ST   | Long tube, star tip, silencer | 6.3                  | 6.3          | 0.14   | 0.31 | 1/4                  | 8202 1006 07 |



# Vibration and Noise Emission Values

## Assembly tools

| Model                          | Vibration total value (3 axes value) according to ISO 28927-2 Valid from 2010 |                              | Sound pressure levels and sound power levels <sup>a</sup> according to ISO 15744 |                   | Model                               | Vibration total value (3 axes value) according to ISO 28927-2 Valid from 2010 |                              | Sound pressure levels and sound power levels <sup>a</sup> according to ISO 15744 |                   |
|--------------------------------|---|------------------------------|--|-------------------|-------------------------------------|---|------------------------------|--|-------------------|
|                                | Value 3-axes m/s <sup>2</sup>   | Uncertainty m/s <sup>2</sup> | Sound pressure dB(A)   | Sound power dB(A) |                                     | Value 3-axes m/s <sup>2</sup>   | Uncertainty m/s <sup>2</sup> | Sound pressure dB(A)   | Sound power dB(A) |
| <b>Pneumatic screwdrivers</b>  |   |                              |  |                   | <b>Impact Wrenches</b>              |   |                              |  |                   |
| <b>Pistol grip</b>             |   |                              |  |                   | <b>Pistol grip</b>                  |   |                              |  |                   |
| <b>Shut-off</b>                |   |                              |  |                   | <b>Non shut-off</b>                 |   |                              |  |                   |
| LUM22 HR                       | <2.5  | -                            | 78   | -                 | LMS08 HR                            | <2.5  | -                            | 85   | 96                |
| LUM32 HR                       | <2.5  | -                            | 77   | -                 | LMS18 HR                            | 5.3   | 1.5                          | 90   | 101               |
| LUM12 HRX                      | <2.5  | -                            | 74   | -                 | LMS28 HR                            | 5.2   | 1.3                          | 92   | 103               |
| LUM22 HRX                      | <2.5  | -                            | 78   | -                 | LMS38 HR                            | 3.5   | 1.5                          | 88   | 99                |
| LUM10 HRX                      | <2.5  | -                            | 72   | -                 | LMS48 HR                            | 5.0   | 1.4                          | 89   | 100               |
| LUM12 HRF                      | <2.5  | -                            | <70  | -                 | LMS58 HR                            | 5.5   | 1.6                          | 92   | 103               |
| <b>Straight</b>                |   |                              |  |                   | <b>Straight</b>                     |   |                              |  |                   |
| <b>Shut-off</b>                |   |                              |  |                   | <b>Non shut-off</b>                 |   |                              |  |                   |
| LUM02 PR                       | <2.5  | -                            | 71   | -                 | LMS08 SR                            | 5.6   | 2.4                          | 85   | 96                |
| LUM10 PR                       | <2.5  | -                            | <70  | -                 | LMS68 GIR/GOR                       | 8.1   | 2.8                          | 98   | 109               |
| LUM12 PR                       | <2.5  | -                            | 75   | -                 | LMS88 GIR/GOR                       | 4.8   | 2.0                          | 100  | 111               |
| LUM22 PR                       | <2.5  | -                            | 75   | -                 |                                     |   |                              |  |                   |
| LUM12 SR                       | <2.5  | -                            | 75   | -                 |                                     |   |                              |  |                   |
| LUM22 SR                       | <2.5  | -                            | 78   | -                 |                                     |   |                              |  |                   |
| <b>Angle</b>                   |   |                              |  |                   | <b>Hydraulic impulse nutrunners</b> |   |                              |  |                   |
| <b>Shut-off</b>                |   |                              |  |                   | <b>Pistol grip</b>                  |   |                              |  |                   |
| LTV009                         | <2.5  | -                            | 75   | -                 | <b>Shut-off</b>                     |   |                              |  |                   |
| LTV18                          | <2.5  | -                            | 71   | -                 | EP3PTX5 HR42                        |   |                              |  |                   |
| <b>Pistol grip</b>             |   |                              |  |                   | <2.5                                |   |                              |  |                   |
| <b>Direct drive</b>            |   |                              |  |                   | EP4PTX9 HR42                        |   |                              |  |                   |
| LUD12 HRX                      | <2.5  | -                            | 74   | -                 | EP4PTX9 HR10                        |   |                              |  |                   |
| LUD22 HR                       | <2.5  | -                            | 76   | -                 | EP5PTX17 HR42                       |   |                              |  |                   |
| LUF34 HRD                      | <2.5  | -                            | 79   | -                 | EP5PTX19 HR10                       |   |                              |  |                   |
| COMBI22                        | <2.5  | -                            | 76   | -                 | EP6PTX28 HR42                       |   |                              |  |                   |
| COMBI34                        | <2.5  | -                            | 79   | -                 | EP6PTX32 HR10                       |   |                              |  |                   |
| <b>Slip clutch<sup>b</sup></b> |   |                              |  |                   | EP7PTX55 HR10                       |   |                              |  |                   |
| <b>Pistol grip</b>             |   |                              |  |                   | EP8PTX70 HR10                       |   |                              |  |                   |
| TWIST12 HRF                    | <2.5  | -                            | 80   | -                 | EP9PTX80 HR13                       |   |                              |  |                   |
| TWIST12 HRX                    | <2.5  | -                            | 80   | -                 | EP11PTX120 HR13                     |   |                              |  |                   |
| TWIST22 HR                     | <2.5  | -                            | 86   | 97                | EP13PTX150 HR13                     |   |                              |  |                   |
| TWIST22 HRX                    | <2.5  | -                            | 86   | 97                | EP15PTX250 HR20                     |   |                              |  |                   |
| TWIST HRF                      | <2.5  | -                            | 80   | -                 | EP19PTX450 HR20                     |   |                              |  |                   |
| LUF34 HR                       | <2.5  | -                            | 81   | 92                | EP5PTS12 HR42                       |   |                              |  |                   |
| <b>Straight</b>                |   |                              |  |                   | EP5PTS14 HR10                       |   |                              |  |                   |
| TWIST12 SR3                    | <2.5  | -                            | 85   | 96                | EP6PTS20 HR42                       |   |                              |  |                   |
| TWIST12 SR4                    | <2.5  | -                            | 85   | 96                | EP6PTS22 HR10                       |   |                              |  |                   |
| TWIST22 PR                     | <2.5  | -                            | 86   | 97                | EP7PTS30 HR42                       |   |                              |  |                   |
| TWIST22 SR6                    | <2.5  | -                            | 86   | 97                | EP7PTS35 HR10                       |   |                              |  |                   |
| TWIST22 SR10                   | <2.5  | -                            | 86   | 97                | EP8PTS40 HR42                       |   |                              |  |                   |
| <b>Angle</b>                   |   |                              |  |                   | EP8PTS55 HR10                       |   |                              |  |                   |
| TWIST VR07                     | <2.5  | -                            | 81   | 92                | EP10PTS90 HR13                      |   |                              |  |                   |
| TWIST VR13                     | <2.5  | -                            | 82   | 93                | EP12PTS150 HR13                     |   |                              |  |                   |
|                                |   |                              |  |                   | EP14PTS250 HR20                     |   |                              |  |                   |
|                                |   |                              |  |                   | EP18PTS410 HR20                     |   |                              |  |                   |
|                                |   |                              |  |                   | EP7PTS35 HRF10                      |   |                              |  |                   |
|                                |   |                              |  |                   | EP8PTS55 HRF10                      |   |                              |  |                   |
|                                |   |                              |  |                   | EP10PTS90 HRF13                     |   |                              |  |                   |

<sup>a</sup> The uncertainty in the sound levels is 3 dB(A).

<sup>b</sup> 1-axis value measured with clutch slipping.

Continued....



# Vibration and Noise Emission Values

## Assembly tools

## Material removal tools

| Model  | Vibration total value (3 axes value) according to ISO 28927-2 Valid from 2010 |  | Sound pressure levels and sound power levels <sup>a</sup> according to ISO 15744 |                   | Model   | Vibration total value (3 axes value) according to ISO 28927-1 Valid from 2010 |                              | Sound pressure levels and sound power levels <sup>a</sup> according to ISO 15744 |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
|--|---|--|--|-------------------|---|---|------------------------------|--|-------------------|--|--|--|--|-------------------------------|------------------------------|----------------------|-------------------|------|---|-----|---|
|  | Value 3-axes m/s <sup>2</sup>   | Uncertainty m/s <sup>2</sup>   | Sound pressure dB(A)   | Sound power dB(A) |   | Value 3-axes m/s <sup>2</sup>   | Uncertainty m/s <sup>2</sup> | Sound pressure dB(A)   | Sound power dB(A) |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| <b>Battery screwdrivers/nutrunner</b>  |   |  |  |                   | <b>Grinders</b>   |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| BCP BL   | <2.5  | -  | <70  | -                 | <b>Turbine grinder</b>  |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| BCV  | <2.5  | -  | <70  | -                 | <b>Angle</b>  |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| <b>Tensor SB</b>   |   |  |  |                   | GTG25 F120-13   | 4.1   | 1.0                          | 78   | -                 |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETV SB   | <2.5  | -  | <70  | -                 | GTG25 F085-18   | 3.1   | 1.3                          | 78   | -                 |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETP SB   | <2.5  | -  | <70  | -                 | GTG40 F085-18   | 3.5   | 0.8                          | 84   | 95                |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| <b>Tensor STB</b>  |   |  |  |                   | GTG40 F066-23   | <2.5  | -                            | 84   | 95                |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETV STB  | <2.5  | -  | <70  | -                 | GTG40 S060-C15  | 3.4   | 0.8                          | 84   | 95                |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETP STB  | <2.5  | -  | <70  | -                 | <table border="1"> <thead> <tr> <th colspan="2">Vibration total value (3 axes value) according to ISO 28927-4 Valid from 2010</th> <th colspan="2">Sound pressure levels and sound power levels <sup>a</sup> according to ISO 15744</th> </tr> <tr> <th>Value 3-axes m/s<sup>2</sup></th> <th>Uncertainty m/s<sup>2</sup></th> <th>Sound pressure dB(A)</th> <th>Sound power dB(A)</th> </tr> </thead> <tbody> <tr> <td>&lt;2.5</td> <td>-</td> <td>&lt;70</td> <td>-</td> </tr> </tbody> </table>  |   |                              |  |                   | Vibration total value (3 axes value) according to ISO 28927-4 Valid from 2010  |  | Sound pressure levels and sound power levels <sup>a</sup> according to ISO 15744 |  | Value 3-axes m/s <sup>2</sup> | Uncertainty m/s <sup>2</sup> | Sound pressure dB(A) | Sound power dB(A) | <2.5 | - | <70 | - |
| Vibration total value (3 axes value) according to ISO 28927-4 Valid from 2010  |   | Sound pressure levels and sound power levels <sup>a</sup> according to ISO 15744 |  |                   |   |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| Value 3-axes m/s <sup>2</sup>  | Uncertainty m/s <sup>2</sup>  | Sound pressure dB(A)   | Sound power dB(A)  |                   |   |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| <2.5   | -   | <70  | -  |                   |   |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETC STB  | <2.5  | -  | <70  | -                 |   |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETO STB  | <2.5  | -  | <70  | -                 | <b>Model</b>  |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| <b>Electric screwdrivers</b>   |   |  |  |                   | <b>Turbine grinder</b>  |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| <b>EBL</b>   |   |  |  |                   | <b>Straight</b>   |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| EBL  | <2.5  | -  | <70  | -                 | GTR40 S085-15   | <2.5  | -                            | 85   | 96                |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| <b>Micro Torque</b>  |   |  |  |                   | GTR40 S072-13   | <2.5  | -                            | 85   | 96                |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETF MT   | b   | -  | <70  | -                 | GTR40 S060-15   | <2.5  | -                            | 85   | 96                |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETD M  | <2.5  | -  | <70  | -                 | GTR40 S060-20   | 3.3   | 0.8                          | 85   | 96                |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETF M  | b   | -  | <70  | -                 | <table border="1"> <thead> <tr> <th colspan="2">Vibration total value (3 axes value) according to ISO 28927-3 Valid from 2010</th> <th colspan="2">Sound pressure levels and sound power levels <sup>a</sup> according to ISO 15744</th> </tr> <tr> <th>Value 3-axes m/s<sup>2</sup></th> <th>Uncertainty m/s<sup>2</sup></th> <th>Sound pressure dB(A)</th> <th>Sound power dB(A)</th> </tr> </thead> <tbody> <tr> <td>&lt;2.5</td> <td>-</td> <td>&lt;70</td> <td>-</td> </tr> </tbody> </table>  |   |                              |  |                   | Vibration total value (3 axes value) according to ISO 28927-3 Valid from 2010  |  | Sound pressure levels and sound power levels <sup>a</sup> according to ISO 15744 |  | Value 3-axes m/s <sup>2</sup> | Uncertainty m/s <sup>2</sup> | Sound pressure dB(A) | Sound power dB(A) | <2.5 | - | <70 | - |
| Vibration total value (3 axes value) according to ISO 28927-3 Valid from 2010  |   | Sound pressure levels and sound power levels <sup>a</sup> according to ISO 15744 |  |                   |   |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| Value 3-axes m/s <sup>2</sup>  | Uncertainty m/s <sup>2</sup>  | Sound pressure dB(A)   | Sound power dB(A)  |                   |   |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| <2.5   | -   | <70  | -  |                   |   |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| <b>Tensor DL</b>   |   |  |  |                   | <b>Model</b>  |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETD DL   | <2.5  | -  | <70  | -                 | <b>Turbine sander</b>   |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETV DL   | <2.5  | -  | <70  | -                 | GTG25 S085  | 2.9   | 1.1                          | 78   | -                 |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETP DL   | <2.5  | -  | <70  | -                 | GTG25 S085-M14  | 2.9   | 1.1                          | 78   | -                 |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETF DL   | b   | -  | <70  | -                 | GTG40 S060  | <2.5  | -                            | 84   | 95                |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| <b>Tensor SL</b>   |   |  |  |                   | <table border="1"> <thead> <tr> <th colspan="2">Vibration total value (3 axes value) according to ISO 28927-12 Valid from 2010</th> <th colspan="2">Sound pressure levels and sound power levels <sup>a</sup> according to ISO 15744</th> </tr> <tr> <th>Value 3-axes m/s<sup>2</sup></th> <th>Uncertainty m/s<sup>2</sup></th> <th>Sound pressure dB(A)</th> <th>Sound power dB(A)</th> </tr> </thead> <tbody> <tr> <td>&lt;2.5</td> <td>-</td> <td>&lt;70</td> <td>-</td> </tr> </tbody> </table> |   |                              |  |                   | Vibration total value (3 axes value) according to ISO 28927-12 Valid from 2010 |  | Sound pressure levels and sound power levels <sup>a</sup> according to ISO 15744 |  | Value 3-axes m/s <sup>2</sup> | Uncertainty m/s <sup>2</sup> | Sound pressure dB(A) | Sound power dB(A) | <2.5 | - | <70 | - |
| Vibration total value (3 axes value) according to ISO 28927-12 Valid from 2010 |   | Sound pressure levels and sound power levels <sup>a</sup> according to ISO 15744 |  |                   |   |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| Value 3-axes m/s <sup>2</sup>  | Uncertainty m/s <sup>2</sup>  | Sound pressure dB(A)   | Sound power dB(A)  |                   |   |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| <2.5   | -   | <70  | -  |                   |   |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETD SL   | <2.5  | -  | <70  | -                 | <b>Model</b>  |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETV SL   | <2.5  | -  | <70  | -                 | <b>Grinders</b>   |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETP SL   | <2.5  | -  | <70  | -                 | <b>Die grinder</b>  |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETF SL   | b   | -  | <70  | -                 | <b>Straight</b>   |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| <b>Electric nutrunners</b>   |   |  |  |                   | LSF12 S200-1  | 3.1   | 1.9                          | 74   | -                 |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| <b>Tensor ES</b>   |   |  |  |                   | LSF12 S250-1  | 3.0   | 1.4                          | 78   | -                 |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETV ES   | <2.5  | -  | <70  | -                 | LSF12 S310-1  | 3.4   | 1.5                          | 77   | -                 |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETD ES   | <2.5  | -  | <70  | -                 | LSF12 S400-1  | 3.9   | 1.8                          | 77   | -                 |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| <b>Tensor DS</b>   |   |  |  |                   | LSF19 S200-1  | 3.4   | 0.9                          | <70  | -                 |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETV DS   | <2.5  | -  | <70  | -                 | LSF19 S200-2  | 3.4   | 0.9                          | <70  | -                 |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETD DS   | b   | -  | <70  | -                 | LSF19 S300-1  | <2.5  | -                            | 73   | -                 |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETP DS   | <2.5  | -  | <70  | -                 | LSF19 S300-2  | <2.5  | -                            | 73   | -                 |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETC DS   | <2.5  | -  | <70  | -                 | <table border="1"> <thead> <tr> <th colspan="2">Vibration total value (3 axes value) according to ISO 28927-1 Valid from 2010</th> <th colspan="2">Sound pressure levels and sound power levels <sup>a</sup> according to ISO 15744</th> </tr> <tr> <th>Value 3-axes m/s<sup>2</sup></th> <th>Uncertainty m/s<sup>2</sup></th> <th>Sound pressure dB(A)</th> <th>Sound power dB(A)</th> </tr> </thead> <tbody> <tr> <td>&lt;2.5</td> <td>-</td> <td>&lt;70</td> <td>-</td> </tr> </tbody> </table>  |   |                              |  |                   | Vibration total value (3 axes value) according to ISO 28927-1 Valid from 2010  |  | Sound pressure levels and sound power levels <sup>a</sup> according to ISO 15744 |  | Value 3-axes m/s <sup>2</sup> | Uncertainty m/s <sup>2</sup> | Sound pressure dB(A) | Sound power dB(A) | <2.5 | - | <70 | - |
| Vibration total value (3 axes value) according to ISO 28927-1 Valid from 2010  |   | Sound pressure levels and sound power levels <sup>a</sup> according to ISO 15744 |  |                   |   |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| Value 3-axes m/s <sup>2</sup>  | Uncertainty m/s <sup>2</sup>  | Sound pressure dB(A)   | Sound power dB(A)  |                   |   |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| <2.5   | -   | <70  | -  |                   |   |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETD DS   | <2.5  | -  | <70  | -                 | <b>Model</b>  |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETP DS   | <2.5  | -  | <70  | -                 | <b>Grinders</b>   |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETC DS   | <2.5  | -  | <70  | -                 | <b>Die grinder</b>  |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETO DS   | <2.5  | -  | <70  | -                 | <b>Straight</b>   |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| <b>Tensor ST</b>   |   |  |  |                   | LSF12 S200-1  | 3.1   | 1.9                          | 74   | -                 |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETV ST   | <2.5  | -  | <70  | -                 | LSF12 S250-1  | 3.0   | 1.4                          | 78   | -                 |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETD ST   | b   | -  | <70  | -                 | LSF12 S310-1  | 3.4   | 1.5                          | 77   | -                 |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETP ST   | <2.5  | -  | <70  | -                 | LSF12 S400-1  | 3.9   | 1.8                          | 77   | -                 |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETC ST   | <2.5  | -  | <70  | -                 | LSF19 S200-1  | 3.4   | 0.9                          | <70  | -                 |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETO ST   | <2.5  | -  | <70  | -                 | LSF19 S200-2  | 3.4   | 0.9                          | <70  | -                 |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| <b>Tensor SR/STR</b>   |   |  |  |                   | LSF19 S300-1  | <2.5  | -                            | 73   | -                 |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETV SR   | <2.5  | -  | <70  | -                 | LSF19 S300-2  | <2.5  | -                            | 73   | -                 |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETD SR   | <2.5  | -  | <70  | -                 | <table border="1"> <thead> <tr> <th colspan="2">Vibration total value (3 axes value) according to ISO 28927-1 Valid from 2010</th> <th colspan="2">Sound pressure levels and sound power levels <sup>a</sup> according to ISO 15744</th> </tr> <tr> <th>Value 3-axes m/s<sup>2</sup></th> <th>Uncertainty m/s<sup>2</sup></th> <th>Sound pressure dB(A)</th> <th>Sound power dB(A)</th> </tr> </thead> <tbody> <tr> <td>&lt;2.5</td> <td>-</td> <td>&lt;70</td> <td>-</td> </tr> </tbody> </table>  |   |                              |  |                   | Vibration total value (3 axes value) according to ISO 28927-1 Valid from 2010  |  | Sound pressure levels and sound power levels <sup>a</sup> according to ISO 15744 |  | Value 3-axes m/s <sup>2</sup> | Uncertainty m/s <sup>2</sup> | Sound pressure dB(A) | Sound power dB(A) | <2.5 | - | <70 | - |
| Vibration total value (3 axes value) according to ISO 28927-1 Valid from 2010  |   | Sound pressure levels and sound power levels <sup>a</sup> according to ISO 15744 |  |                   |   |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| Value 3-axes m/s <sup>2</sup>  | Uncertainty m/s <sup>2</sup>  | Sound pressure dB(A)   | Sound power dB(A)  |                   |   |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| <2.5   | -   | <70  | -  |                   |   |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |
| ETP STR  | <2.5  | -  | <70  | -                 | <b>Model</b>  |   |                              |  |                   |  |  |  |  |                               |                              |                      |                   |      |   |     |   |

<sup>a</sup> The uncertainty in the sound levels is 3 dB(A).

<sup>b</sup> Tools for fixtured applications have no vibration values.





# Vibration and Noise Emission Values

## Material removal tools

| Model                                     | Vibration total value (3 axes value) according to ISO 28927-3 Valid from 2010 |                              | Sound pressure levels and sound power levels <sup>a</sup> according to ISO 15744 |                   | Model                    | Vibration total value (3 axes value) according to ISO 20643 Valid from 2010 |   | Sound pressure levels and sound power levels <sup>a</sup> according to ISO 15744 |  |                          |  |
|---|---|------------------------------|--|-------------------|--------------------------|---|---|--|--|--------------------------|--|
|   | Value 3-axes m/s <sup>2</sup>   | Uncertainty m/s <sup>2</sup> | Sound pressure dB(A)   | Sound power dB(A) |                          | Value 3-axes m/s <sup>2</sup>   | Uncertainty m/s <sup>2</sup>  | Sound pressure dB(A)   | Sound power dB(A)  |                          |  |
| <b>Grinders</b>                           |   |                              |  |                   | <b>Grinders</b>          |   |   |  |  |                          |  |
| <b>Angle sanders</b>                      |   |                              |  |                   | <b>Router</b>            |   |   |  |  |                          |  |
| LSV12 S120                                | 3.2   | 2.0                          | 75   | -                 | LSK37 S250-DS1           | <2.5  | -   | 79   | -  |                          |  |
| LSV12 S200                                | 4.3   | 2.1                          | 78   | -                 | LSK37 S250-DS2           | <2.5  | -   | 79   | -  |                          |  |
| LSV19 S200                                | <2.5  | -                            | 75   | -                 | LSK38 S250 Do            | <2.5  | -   | 89   | 100  |                          |  |
| LSV19 S120                                | <2.5  | -                            | 75   | -                 | LSK38 S180 Do            | <2.5  | -   | 84   | 95   |                          |  |
| LSV19 S080                                | <2.5  | -                            | 73   | -                 |                          |   |   |  |  |                          |  |
| LSV28 S060                                | <2.5  | -                            | 77   | -                 |                          |   | <b>Vibration total value (3 axes value) according to ISO 28927-8 Valid from 2010</b>  |  | <b>Sound pressure levels and sound power levels<sup>a</sup> according to ISO 15744</b> |                          |  |
| LSV28 S060-M14                            | <2.5  | -                            | 77   | -                 |                          |   | <b>Value 3-axes m/s<sup>2</sup></b>   | <b>Uncertainty m/s<sup>2</sup></b>   | <b>Sound pressure dB(A)</b>  | <b>Sound power dB(A)</b> |  |
| LSV28 S040                                | <2.5  | -                            | 78   | -                 |                          |   |   |  |  |                          |  |
| LSV28 ST034                               | <2.5  | -                            | 86   | 97                |                          |   |   |  |  |                          |  |
| LSV28 S021                                | <2.5  | -                            | 74   | -                 |                          |   |   |  |  |                          |  |
| LSV28 S021-M14                            | <2.5  | -                            | 74   | -                 |                          |   |   |  |  |                          |  |
| LSV28 ST008-01 LF                         | <2.5  | -                            | 75   | -                 |                          |   |   |  |  |                          |  |
| LSV28 S040-01-M14                         | <2.5  | -                            | 78   | -                 |                          |   |   |  |  |                          |  |
| LSV28 ST013-M14-LF                        | <2.5  | -                            | 77   | -                 |                          |   |   |  |  |                          |  |
| LSV28 ST013-LF                            | <2.5  | -                            | 77   | -                 |                          |   |   |  |  |                          |  |
| LSV38 S085                                | <2.5  | -                            | 85   | 96                |                          |   |   |  |  |                          |  |
| LSV38 S085-M14                            | <2.5  | -                            | 85   | 96                |                          |   |   |  |  |                          |  |
| LSV38 S066                                | <2.5  | -                            | 82   | 93                |                          |   |   |  |  |                          |  |
| LSV38 S066-M14                            | <2.5  | -                            | 82   | 93                |                          |   |   |  |  |                          |  |
| LSV38 S066 D                              | <2.5  | -                            | 82   | 93                |                          |   |   |  |  |                          |  |
| LSV38 S085 D                              | <2.5  | -                            | 85   | 96                |                          |   |   |  |  |                          |  |
| LSV48 SA085                               | <2.5  | -                            | 89   | 100               |                          |   |   |  |  |                          |  |
| LSV48 SA085-M14                           | <2.5  | -                            | 89   | 100               |                          |   |   |  |  |                          |  |
| LSV48 SA066                               | <2.5  | -                            | 89   | 100               |                          |   |   |  |  |                          |  |
| LSV48 SA066-M14                           | <2.5  | -                            | 89   | 100               |                          |   |   |  |  |                          |  |
| LSV38 D120                                | <2.5  | -                            | 85   | 96                |                          |   |   |  |  |                          |  |
| LSV38 D085                                | <2.5  | -                            | 85   | 96                |                          |   |   |  |  |                          |  |
| LSV38 D066                                | <2.5  | -                            | 82   | 93                |                          |   |   |  |  |                          |  |
| <b>Vertical sanders</b>                   |   |                              |  |                   |                          |   |   |  |  |                          |  |
| LSS53 S060                                | <2.5  | -                            | 76   | -                 |                          |   |   |  |  |                          |  |
| <b>Orbital and random orbital sanders</b> |   |                              |  |                   |                          |   |   |  |  |                          |  |
| LST30 H090-11                             | 3.4   | 0.9                          | 82   | 93                |                          |   |   |  |  |                          |  |
| LST30 H090-15                             | 3.2   | 1.1                          | 82   | 93                |                          |   |   |  |  |                          |  |
| LST30 S090-15                             | 3.3   | 0.8                          | 82   | 93                |                          |   |   |  |  |                          |  |
| LST31 H090-15                             | 3.4   | 0.8                          | 84   | 95                |                          |   |   |  |  |                          |  |
| LST32 H090-15                             | 3.2   | 1.1                          | 82   | 93                |                          |   |   |  |  |                          |  |
| LST32 S090-15                             | 3.3   | 0.8                          | 82   | 93                |                          |   |   |  |  |                          |  |
| LSO30 S070-3                              | 11.0  | 1.7                          | 81   | 92                |                          |   |   |  |  |                          |  |
| LSO30 H070-3                              | 11.5  | 1.6                          | 81   | 92                |                          |   |   |  |  |                          |  |
| LSO31 S070-3                              | 11.0  | 1.7                          | 82   | 93                |                          |   |   |  |  |                          |  |
| LSO31 H070-3                              | 11.0  | 1.7                          | 82   | 93                |                          |   |   |  |  |                          |  |
| LSO32 H070-3                              | 7.8   | 1.3                          | 79   | -                 |                          |   |   |  |  |                          |  |
| LST20 R350                                | 3.8   | 1.7                          | 76   | -                 |                          |   |   |  |  |                          |  |
| LST20 R550                                | 4.2   | 0.9                          | 76   | -                 |                          |   |   |  |  |                          |  |
| LST20 R650                                | 3.8   | 0.9                          | 76   | -                 |                          |   |   |  |  |                          |  |
| LST20 R325                                | 5.6   | 2.1                          | 76   | -                 |                          |   |   |  |  |                          |  |
| LST20 R525                                | 4.2   | 0.9                          | 76   | -                 |                          |   |   |  |  |                          |  |
| LST20 R625                                | 3.8   | 0.9                          | 76   | -                 |                          |   |   |  |  |                          |  |
| LST21 R350                                | 3.8   | 1.7                          | 85   | 96                |                          |   |   |  |  |                          |  |
| LST21 R550                                | 3.8   | 1.9                          | 85   | 96                |                          |   |   |  |  |                          |  |
| LST21 R650                                | 3.8   | 0.9                          | 85   | 96                |                          |   |   |  |  |                          |  |
| LST21 R525                                | 3.2   | 1.4                          | 85   | 96                |                          |   |   |  |  |                          |  |
| LST21 R625                                | 4.6   | 2.9                          | 85   | 96                |                          |   |   |  |  |                          |  |
| LST22 R550                                | 3.8   | 1.9                          | 78   | -                 |                          |   |   |  |  |                          |  |
| LST22 R650                                | 3.8   | 0.9                          | 78   | -                 |                          |   |   |  |  |                          |  |
| LST22 R525                                | 3.2   | 1.4                          | 78   | -                 |                          |   |   |  |  |                          |  |
| LST22 R625                                | 3.2   | 1.4                          | 78   | -                 |                          |   |   |  |  |                          |  |
|   |   |                              |  |                   | <b>Circular cutters</b>  |   |   |  |  |                          |  |
|   |   |                              |  |                   | LCS10                    | 2.6   | 0.9   | 92   | 103  |                          |  |
|   |   |                              |  |                   | LCS38 S150-D             | <2.5  | -   | 86   | 97   |                          |  |
|   |   |                              |  |                   |                          |   | <b>Vibration total value (3 axes value) according to ISO 28927-10 Valid from 2010</b> |  | <b>Sound pressure levels and sound power levels<sup>a</sup> according to ISO 15744</b> |                          |  |
|   |   |                              |  |                   |                          |   | <b>Value 3-axes m/s<sup>2</sup></b>   | <b>Uncertainty m/s<sup>2</sup></b>   | <b>Sound pressure dB(A)</b>  | <b>Sound power dB(A)</b> |  |
|   |   |                              |  |                   |                          |   |   |  |  |                          |  |
|   |   |                              |  |                   | <b>Percussive</b>        |   |   |  |  |                          |  |
|   |   |                              |  |                   | <b>Chipping hammers</b>  |   |   |  |  |                          |  |
|   |   |                              |  |                   | <b>Vibration-damped</b>  |   |   |  |  |                          |  |
|   |   |                              |  |                   | RRF21                    | 3.5   | 0.8   | 95   | 106  |                          |  |
|   |   |                              |  |                   | RRF31                    | 5.0   | 1.6   | 94   | 105  |                          |  |
|   |   |                              |  |                   | RRD37                    | <2.5  | -   | 95   | 106  |                          |  |
|   |   |                              |  |                   | RRD57                    | <2.5  | -   | 96   | 107  |                          |  |
|   |   |                              |  |                   | <b>Conventional type</b> |   |   |  |  |                          |  |
|   |   |                              |  |                   | RRC22F                   | 6.1   | 1.7   | 99   | 110  |                          |  |
|   |   |                              |  |                   | RRC34B                   | 7.7   | 1.3   | 99   | 110  |                          |  |
|   |   |                              |  |                   | RRC65B                   | 12.0  | 1.6   | 103  | 114  |                          |  |
|   |   |                              |  |                   | RRC75B                   | 11.5  | 1.5   | 102  | 113  |                          |  |
|   |   |                              |  |                   | <b>Scalers</b>           |   |   |  |  |                          |  |
|   |   |                              |  |                   | RVM07                    | 5.0   | 1.9   | 74   | -  |                          |  |
|   |   |                              |  |                   | RRC13                    | 11.5  | 2.7   | 91   | 102  |                          |  |
|   |   |                              |  |                   | RRC13N                   | 8.1   | 1.8   | 91   | 102  |                          |  |

<sup>a</sup> The uncertainty in the sound levels is 3 dB(A).

<sup>a</sup> The uncertainty in the sound levels is 3 dB(A).

# Vibration and Noise Emission Values

## Material removal tools

| Model                    | Vibration total value (3 axes value) according to ISO 28927-10 Valid from 2010 |                              | Sound pressure levels and sound power levels <sup>a</sup> according to ISO 15744 |                   | Model                        | Vibration total value (3 axes value) according to ISO 28927-5 Valid from 2010 |                              | Sound pressure levels and sound power levels <sup>a</sup> according to ISO 15744 |                   |
|--------------------------|--|------------------------------|--|-------------------|------------------------------|---|------------------------------|--|-------------------|
|                          | Value 3-axes m/s <sup>2</sup>  | Uncertainty m/s <sup>2</sup> | Sound pressure dB(A)   | Sound power dB(A) |                              | Value 3-axes m/s <sup>2</sup>   | Uncertainty m/s <sup>2</sup> | Sound pressure dB(A)   | Sound power dB(A) |
| <b>Percussive</b>        |  |                              |  |                   | <b>Drills</b>                |   |                              |  |                   |
| <b>Riveting hammers</b>  |  |                              |  |                   | <b>Pistol grip</b>           |   |                              |  |                   |
| <b>Vibration damped</b>  |  |                              |  |                   | LBB16 EP                     |   |                              |  |                   |
| RRH04P                   | <2.5   | -                            | 93   | 104               | <2.5 - 80 -                  |   |                              |  |                   |
| RRH06P                   | 3.9  | 1.4                          | 91   | 102               | LBB16 EPX                    |   |                              |  |                   |
| RRH08P                   | 4.8  | 1.6                          | 92   | 103               | LBB26 EPX                    |   |                              |  |                   |
| RRH10P                   | 5.1  | 1.7                          | 91   | 102               | LBB36                        |   |                              |  |                   |
| RRH12P                   | 4.4  | 1.1                          | 93   | 104               | LBB37                        |   |                              |  |                   |
| RRH14P                   | 5.4  | 2.9                          | 93   | 104               | LBB45 H017                   |   |                              |  |                   |
| <b>Conventional type</b> |  |                              |  |                   | LBB45 H006                   |   |                              |  |                   |
| RRN11P                   | 4.0  | 1.6                          | 98   | 109               | LBB45 H004                   |   |                              |  |                   |
|                          |  |                              |  |                   | <b>Straight</b>              |   |                              |  |                   |
|                          |  |                              |  |                   | LBB16 S260                   |   |                              |  |                   |
|                          |  |                              |  |                   | LBB16 S064                   |   |                              |  |                   |
|                          |  |                              |  |                   | LBB16 S045                   |   |                              |  |                   |
|                          |  |                              |  |                   | LBB16 S038                   |   |                              |  |                   |
|                          |  |                              |  |                   | LBB16 S029                   |   |                              |  |                   |
|                          |  |                              |  |                   | LBB16 S022                   |   |                              |  |                   |
|                          |  |                              |  |                   | LBB16 S012                   |   |                              |  |                   |
|                          |  |                              |  |                   | <b>Angle</b>                 |   |                              |  |                   |
|                          |  |                              |  |                   | LBV16M 005                   |   |                              |  |                   |
|                          |  |                              |  |                   | LBV16M 010                   |   |                              |  |                   |
|                          |  |                              |  |                   | LBV16M 018                   |   |                              |  |                   |
|                          |  |                              |  |                   | LBV16M 032                   |   |                              |  |                   |
|                          |  |                              |  |                   | LBV16M 045                   |   |                              |  |                   |
|                          |  |                              |  |                   | LBV16M 055                   |   |                              |  |                   |
|                          |  |                              |  |                   | LBV11 30°                    |   |                              |  |                   |
|                          |  |                              |  |                   | LBV16 30°                    |   |                              |  |                   |
|                          |  |                              |  |                   | LBV36 30°                    |   |                              |  |                   |
|                          |  |                              |  |                   | LBV16 45°                    |   |                              |  |                   |
|                          |  |                              |  |                   | LBV11 90°                    |   |                              |  |                   |
|                          |  |                              |  |                   | LBV16 90°                    |   |                              |  |                   |
|                          |  |                              |  |                   | LBV36 90°                    |   |                              |  |                   |
|                          |  |                              |  |                   | LBV16 Z                      |   |                              |  |                   |
|                          |  |                              |  |                   | LBV16 90° Large              |   |                              |  |                   |
|                          |  |                              |  |                   | LBV36 90° Large              |   |                              |  |                   |
|                          |  |                              |  |                   | LBV37 90° Heavy duty         |   |                              |  |                   |
|                          |  |                              |  |                   | LBV16 018-11 Key chuck model |   |                              |  |                   |
|                          |  |                              |  |                   | LBV34 S Key chuck model      |   |                              |  |                   |
|                          |  |                              |  |                   | <b>Micro stop drills</b>     |   |                              |  |                   |
|                          |  |                              |  |                   | LBS36                        |   |                              |  |                   |
|                          |  |                              |  |                   | <b>Positive Feed drills</b>  |   |                              |  |                   |
|                          |  |                              |  |                   | PFD1500RA                    |   |                              |  |                   |

<sup>a</sup> The uncertainty in the sound levels is 3 dB(A).

<sup>b</sup> Tools for fixtured applications have no vibration values.



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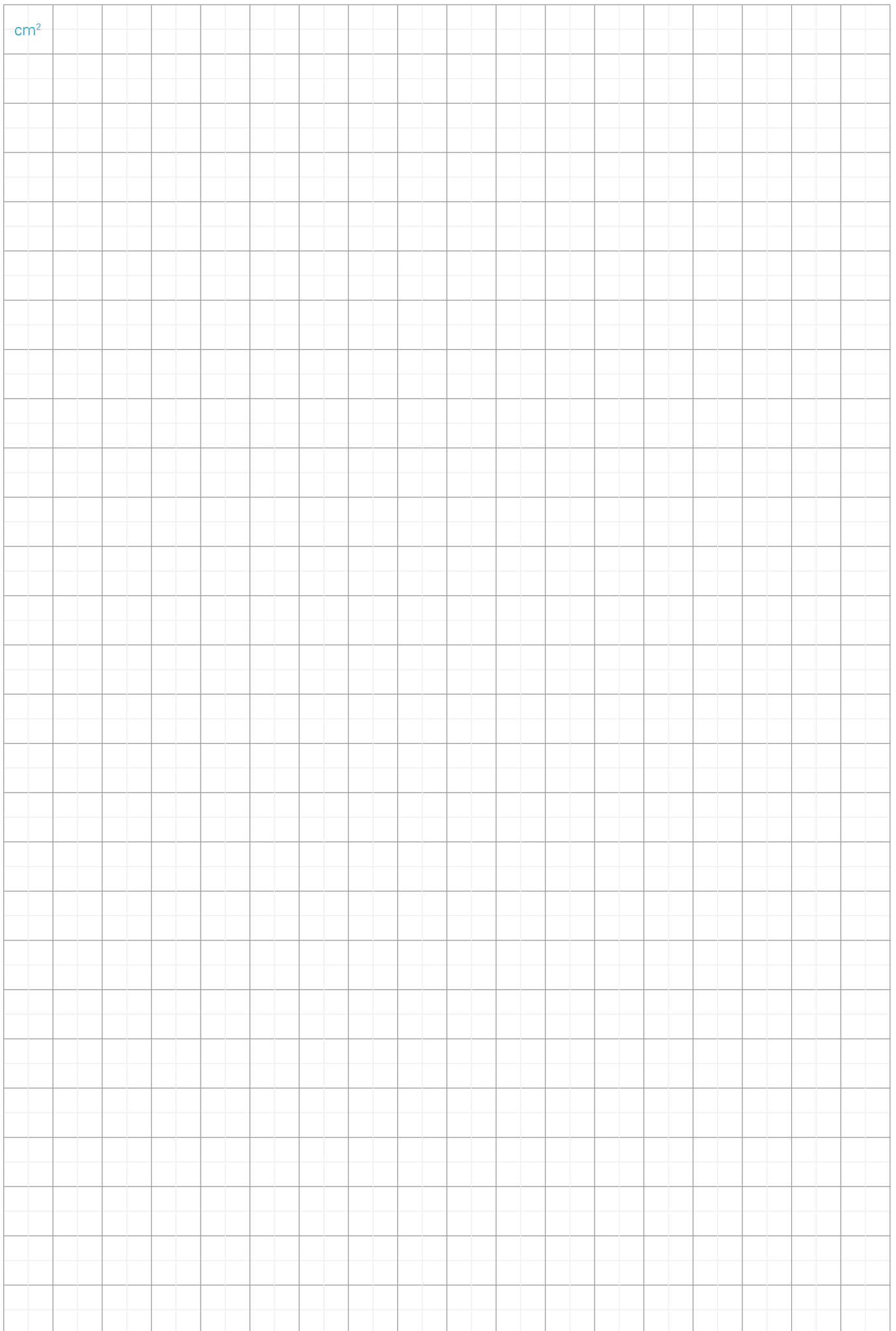
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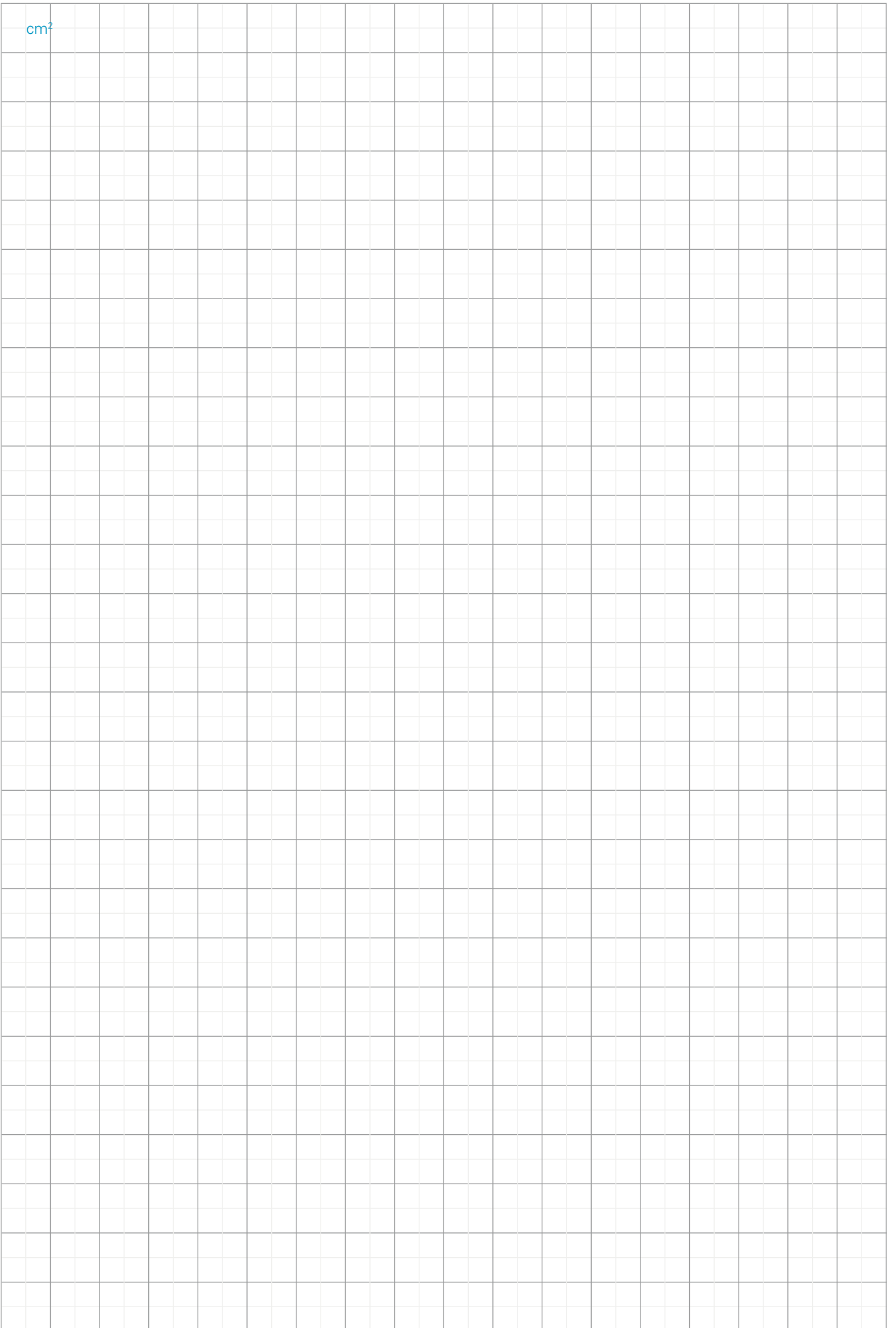
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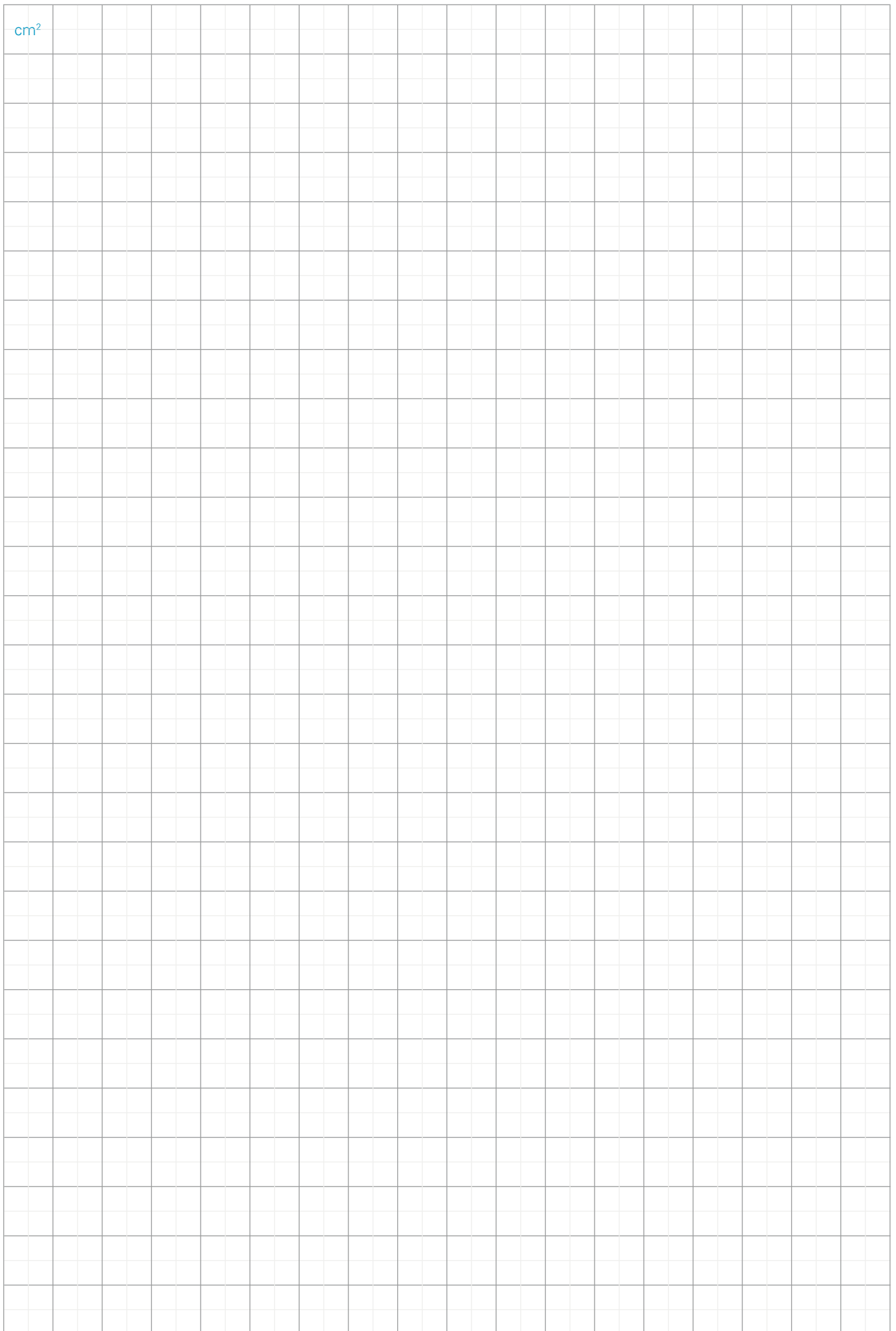
cm<sup>2</sup>



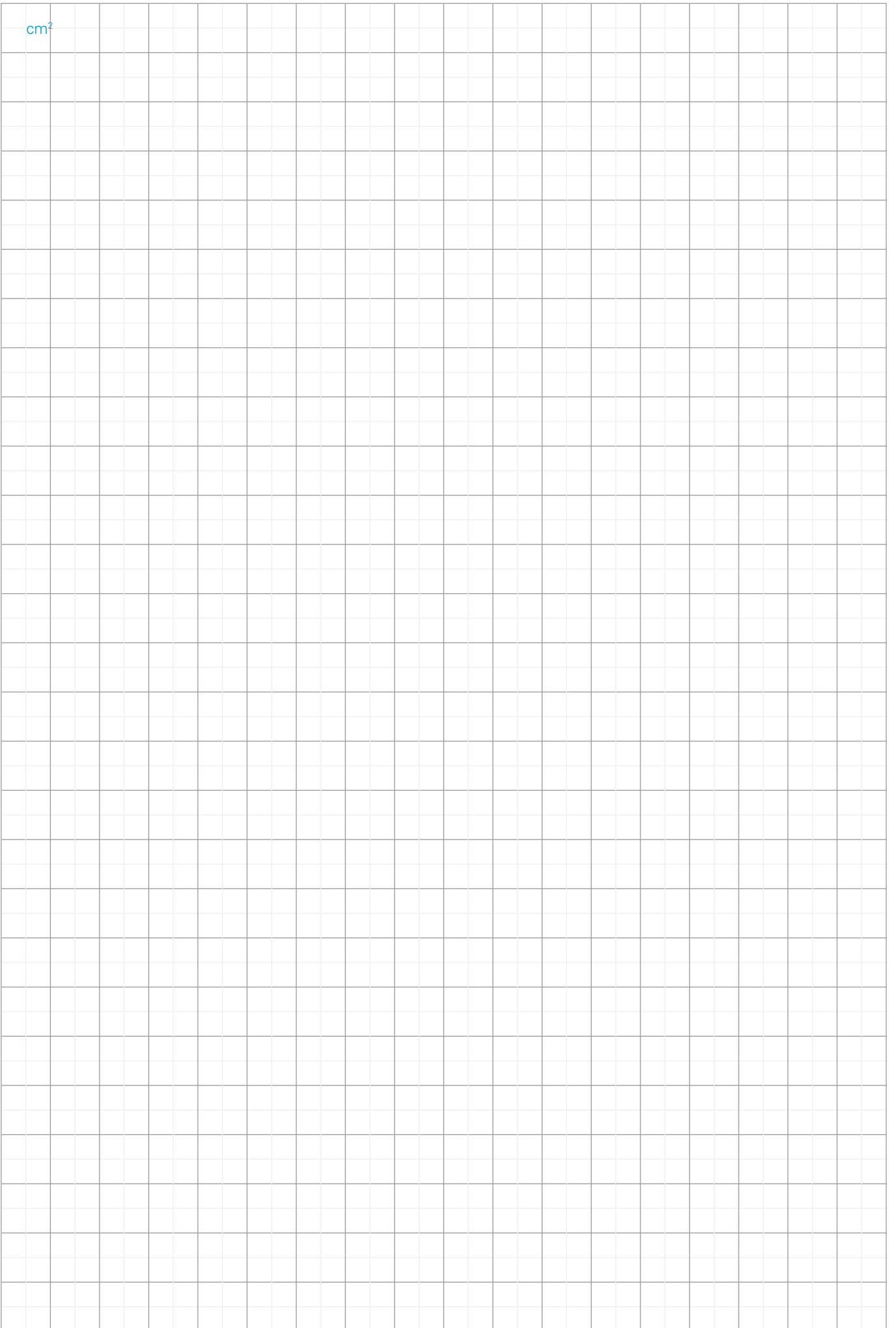
cm<sup>2</sup>



cm<sup>2</sup>



cm<sup>2</sup>



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