

BS 18 L BL
BS 18 L BL Q
SB 18 L BL

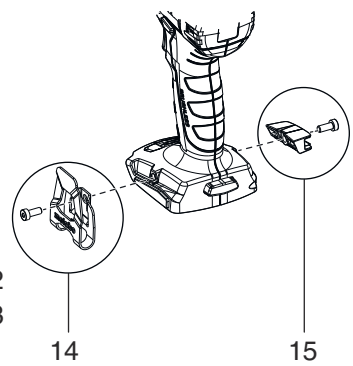
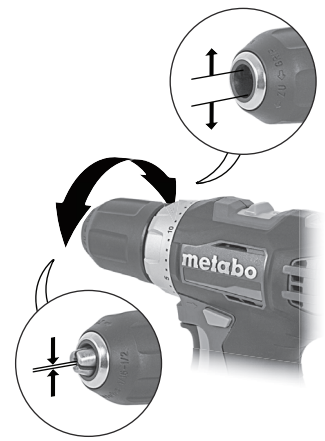
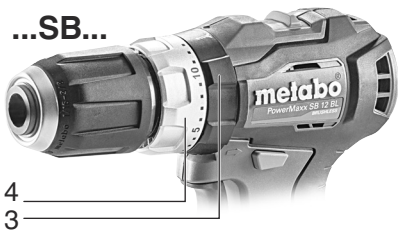
PowerMaxx BS 12 BL
PowerMaxx BS 12 BL Q
PowerMaxx SB 12 BL



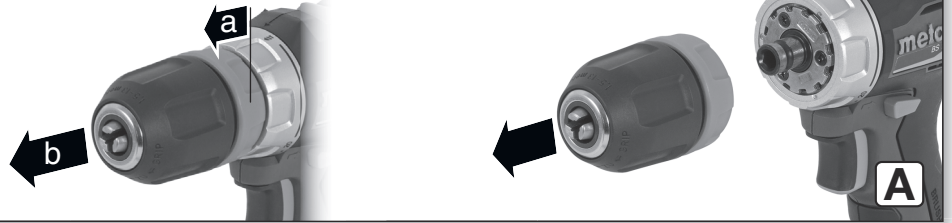
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...SB...



BS 18 L BL Q, PowerMaxx BS 12 BL Q



**BS 18 L BL, SB 18 L BL,
PowerMaxx BS 12 BL,
PowerMaxx SB 12 BL**



			BS 18 L BL	BS 18 L BL Q	SB 18 L BL	PowerMaxx BS 12 BL	PowerMaxx BS 12 BL Q	PowerMaxx SB 12 BL
Serial Number			02326..	02327..	02331..	01038..	01039..	01077..
U	V		18	18	18	12	12	12
n ₀	/min (rpm)	2	0 - 550			0 - 500		
		2	0 - 1850			0 - 1650		
M _A	in-lbs (Nm)	1	221 (25)			159 (18)		
M _B	in-lbs (Nm)	1	531 (60)			398 (45)		
M _C	in-lbs (Nm)	1 , 2	4.4 - 44.3 (0,5 - 5,0)					
D _{1 max}	in (mm)	1	1/2 (13)			3/8 (10)		
D _{2 max}	in (mm)	1	1 1/4 (32)			1 (25)		
D _{3 max}	in (mm)	2	-	3/8 (10)		-	3/8 (10)	
s	/min, bpm	2	-		26000	-		21000
m	lbs (kg)		2.6 (1,2)		2.9 (1,3)	2.2 (1,0)		2.4 (1,1)
G	-		1/2" - 20 UNF	-	1/2" - 20 UNF	1/2" - 20 UNF	-	1/2" - 20 UNF
a _{h, ID} /K _{h, ID}	m/s ²		-		17,3 / 1,5	-		18,1 / 1,5
a _{h, D} /K _{h, D}	m/s ²		2,3 / 1,5		3,1 / 1,5	2,0 / 1,5		2,8 / 1,5
a _{h, S} /K _{h, S}	m/s ²		< 2,5 / 1,5					
L _{pA} /K _{pA}	dB(A)		72 / 3		89 / 3	72 / 3		82 / 3
L _{WA} /K _{WA}	dB(A)		83 / 3		100 / 3	83 / 3		93 / 3

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(A)



18 V	2,0 Ah	6.25596	Li-Power
18 V	3,0 Ah	6.25594	Li-Power
18 V	4,0 Ah	6.25591	Li-Power
18 V	4,0 Ah	6.25367	LiHD
18 V	5,2 Ah	6.25592	Li-Power



12 V	2,0 Ah	6.25406	Li-Power
12 V	4,0 Ah	6.25349	LiHD

etc.

(C)



ASC ultra (12V),
SC 30,
etc.

(B)



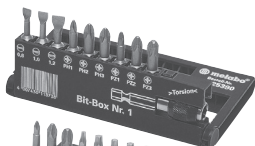
6.27261
(BS 18 L BL Q,
PowerMaxx BS 12 BL Q)

(D)

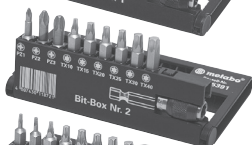


6.27241
(BS 18 L BL Q,
PowerMaxx BS 12 BL Q)

(E)



6.25390
 $\ominus 0,8 \times 5,5 \text{ mm}$ $\ominus 1,0 \times 5,5 \text{ mm}$ $\ominus 1,2 \times 6,5 \text{ mm}$
 PH1, PH2, PH3, PZ1, PZ2, PZ3



6.25391
 PZ1, PZ2, PZ3, TX10, TX15,
 TX20, TX25, TX30, TX40



6.25392
 TX8, TX9, TX10, TX15, TX20,
 TX25, TX27, TX30, TX40



6.25393
 2 x PZ1, 3 x PZ2, 1 x PZ3

Operating Instructions

1. Specified Conditions of Use

The drills and impact drills are suitable for drilling in metal, wood, plastic and similar materials, and also for screw driving and thread tapping.

The impact drills are also suited for drilling in masonry, brickwork and stone.

The user bears sole responsibility for any damage caused by inappropriate use.

Generally accepted accident prevention regulations and the enclosed safety information must be observed.

2. General Safety Information



For your own protection and for the protection of your power tool, pay attention to all parts of the text that are marked with this symbol!



WARNING – Reading the operating instructions will reduce the risk of injury.

Pass on your power tool only together with these documents.

General Power Tool Safety Warnings



WARNING – Read all safety warnings, instructions, illustrations and specifications provided with this power tool. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.

Save all safety warnings and information for future reference! The term "power tool" in the safety warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

2.1 Work area safety

- Keep work area clean and well lit.** Cluttered or dark areas invite accidents.
- Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks which may ignite the dust or fumes.
- Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

2.2 Electrical safety

- Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.** Unmodified plugs and matching outlets will reduce risk of electric shock.
- Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is earthed or grounded.

c) **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.

d) **Do not abuse the power tool. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock.

e) **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** Use of a cord suitable for outdoor use reduces the risk of electric shock.

f) **If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply.** Use of an RCD reduces the risk of electric shock.

2.3 Personal safety

a) **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating power tools may result in serious personal injury.

b) **Use personal protective equipment. Always wear eye protection.** Protective equipment such as a dust mask, non-skid safety shoes, hard hat or hearing protection used for appropriate conditions will reduce personal injuries.

c) **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.** Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.

d) **Remove any adjusting key or wrench before turning the power tool on.** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.

e) **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.

f) **Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts.** Loose clothes, jewellery or long hair can be caught in moving parts.

g) **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of dust collection can reduce dust-related hazards.

h) **Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety principles.** A careless action can cause severe injury within a fraction of a second.

2.4 Power tool use and care

a) **Do not force the power tool. Use the correct power tool for your application.** The correct

power tool will do the job better and safer at the rate for which it was designed.

b) Do not use the power tool if the switch does not turn it on and off. *Any power tool that cannot be controlled with the switch is dangerous and must be repaired.*

c) Disconnect the plug from the power source and/or remove the battery pack, if detachable, from the power tool before making any adjustments, changing accessories, or storing power tools. *Such preventive safety measures reduce the risk of starting the power tool accidentally.*

d) Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool. *Power tools are dangerous in the hands of untrained users.*

e) Maintain power tools and accessories with care. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. *Many accidents are caused by poorly maintained power tools.*

f) Keep cutting tools sharp and clean. *Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.*

g) Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed. *Use of the power tool for operations different from those intended could result in a hazardous situation.*

h) Keep handles and grasping surfaces dry, clean and free from oil and grease. *Slippery handles and grasping surfaces do not allow safe handling and control of the tool in unexpected situations.*

2.5 Battery tool use and care

a) Recharge only with the charger specified by the manufacturer. *A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.*

b) Use power tools only with specifically designated battery packs. *Use of any other battery packs may create a risk of injury and fire.*

c) When battery pack is not in use, keep it away from other metal objects, like paper clips, coins, keys, nails, screws or other small metal objects, that can make a connection from one terminal to another. *Shorting the battery terminals together may cause burns or a fire.*

d) Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help. *Liquid ejected from the battery may cause irritation or burns.*

e) Do not use a battery pack or tool that is damaged or modified. *Damaged or modified*

batteries may exhibit unpredictable behaviour resulting in fire, explosion or risk of injury.

f) Do not expose a battery pack or tool to fire or excessive temperature. *Exposure to fire or temperature above 130 °C (265 °F) may cause explosion.*

g) Follow all charging instructions and do not charge the battery pack or tool outside the temperature range specified in the instructions. *Charging improperly or at temperatures outside the specified range may damage the battery and increase the risk of fire.*

2.6 Service

a) Have your power tool serviced by a qualified repair person using only identical replacement parts. *This will ensure that the safety of the power tool is maintained.*

b) Never service damaged battery packs. *Service of battery packs should only be performed by the manufacturer or authorized service providers.*

3. Special Safety Instructions

Wear ear protectors when impact drilling (machines with the designation SB...). *Exposure to noise can cause hearing loss.*

Hold the power tool by insulated gripping surfaces, when performing an operation where the cutting accessory may contact hidden wiring. *Cutting accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.*

Safety instructions when using long drill bits:

a) Never operate at higher speed than the maximum speed rating of the drill bit. *At higher speeds, the bit is likely to bend if allowed to rotate freely without contacting the workpiece, resulting in personal injury.*

b) Always start drilling at low speed and with the bit tip in contact with the workpiece. *At higher speeds, the bit is likely to bend if allowed to rotate freely without contacting the workpiece, resulting in personal injury.*

c) Apply pressure only in direct line with the bit and do not apply excessive pressure. *Bits can bend causing breakage and loss of control, resulting in personal injury.*

Ensure that the spot where you wish to work is free of **power cables, gas lines or water pipes** (e.g. using a metal detector).



A slightly acidic, flammable fluid may leak from defective Li-ion battery packs!



If battery fluid leaks out and comes into contact with your skin, rinse immediately with plenty of water. If battery fluid leaks out and comes into contact with your eyes, wash them with clean water and seek medical attention immediately!



Protect battery packs from water and moisture!

Do not use faulty or deformed battery packs!



Do not expose battery packs to fire!

Do not open battery packs!

Do not touch or short circuit battery pack contacts!

If the machine is defective, remove the battery pack from the machine.

Remove the battery pack from the machine before any adjustment or maintenance is carried out.

Before fitting the battery pack, make sure that the machine is switched off.

Keep hands away from the rotating tool!

Remove chips and similar material only when the machine is at a standstill.

Secure the workpiece to prevent slipping or rotation (e.g. by securing with screw clamps).

LED light (9): do not observe the LED radiation directly with optical instruments.



CAUTION Do not stare at operating lamp.

Additional Warnings:

⚠ WARNING Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- Lead from lead-based paints,
- Crystalline silica from bricks and cement and other masonry products, and
- Arsenic and chromium from chemically treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

Transport of li-ion battery packs:

The shipping of li-ion battery pack is subject to laws related to the carriage of hazardous goods (UN 3480 and UN 3481). Inform yourself of the currently valid specifications when shipping li-ion battery packs. If necessary, consult your freight forwarder. Certified packaging is available from Metabo.

Only send the battery pack if the housing is intact and no fluid is leaking. Remove the battery pack from the machine for sending. Prevent the contacts from short-circuiting (e.g. by protecting them with adhesive tape).

SYMBOLS ON THE TOOL:

V volts

== direct current

n_0 rated speed

./min revolutions per minute

rpm revolutions per minute

4. Overview

See page 2.

- 1 Drill chuck / drill chuck sleeve*
- 2 Adjusting sleeve (torque control, maximum torque)*
- 3 Adjusting sleeve (screw driving, drilling, impact drilling)*
- 4 Adjusting sleeve (torque limitation)*
- 5 Slide-switch (1st/2nd gear)
- 6 Rotation selector switch (direction of rotation setting, transporting safety device)
- 7 Trigger switch
- 8 Handle
- 9 LED lights
- 10 Battery pack release button
- 11 Battery pack *
- 12 Capacity and signal indicator *
- 13 Capacity indicator button *
- 14 Belt hook *
- 15 Bit depot *

* equipment-specific

5. Use

5.1 The machine's multifunctional monitoring system

⚠ If the machine switches off automatically, the machine electronics have activated automatic protection mode. A warning signal sounds (continuous beeping). The beeping stops after a maximum of 30 seconds or when the trigger switch (7) is released.

⚠ In spite of this protective function, overloading is still possible with certain applications and can result in damage to the machine.

Causes and remedies:

1. **Battery pack almost flat** (the electronics prevent the battery pack from discharging totally and avoid irreparable damage).
If one LED (12) is flashing, the battery pack is almost flat. If necessary, press the button (13) and check the LED lamps (12) to see the charge level. If the battery pack is almost flat, it must be recharged.
2. Long continuous overloading of the machine will activate the **temperature cut-out**.
Leave the machine or battery pack to cool.

Note: The machine will cool more quickly if you operate it at idling speed.

3. If the **current is too high** (for example, if the machine seizes continuously for long periods), the machine switches off.
Switch off the machine at the trigger switch (7). Then continue working as normal. Try to prevent the machine from seizing.

5.2 Battery pack

Charge the battery pack before use.

Recharge the battery pack if performance diminishes.

Instructions on charging the battery pack can be found in the operating instructions of the Metabo charger.

In case of Li-Ion battery packs with capacity and signal display (12) (equipment-specific):


- Press the button (13), the LEDs indicate the charge level.
- The battery pack is almost flat and must be recharged if one LED is flashing.

Removing and inserting the battery pack

Removal: press the battery pack release button (10) and pull the battery pack (11) **forwards**.

Insertion: Slide the battery pack (11) in until it engages.

5.3 Setting the direction of rotation, engaging the transporting safety device (switch-on lock)

 Do not activate rotation selector switch (6) unless the motor has completely stopped!

Actuate the rotation selector switch (direction of rotation setting, transporting safety device) (6).

See page 2:


- R** = Clockwise setting
- L** = Anti-clockwise setting
- 0** = middle position: transportation safety device (Switch-on lock) set

5.4 Selecting gear stage


- 1 1. gear (low speed, particularly high torque, preferable for screwing)
- 2 2. gear (high speed, preferable for drilling)

5.5 Set torque limitation, screw driving, drilling, impact drill



Machines with the designation BS...:

- 1...20 = Set **torque** (with torque limitation) by turning the sleeve (2) - intermediate settings are also possible.
-  = Set **drilling** by turning the sleeve (2) (max. torque, without torque limitation)
To avoid overloading the motor, do not jam the spindle.

Machines with the designation SB...:

-  = Set **screwdriving** by turning the sleeve (3)
AND

set the **torque** (with torque limitation) by turning the sleeve (4) - intermediate settings are also possible.

-  = Set **drilling** by turning the sleeve (3) (max. torque, without torque limitation)
To avoid overloading the motor, do not jam the spindle.
-  = Set **impact drilling** by turning the sleeve (3) (max. torque, without torque limitation)
To avoid overloading the motor, do not jam the spindle.

5.6 Change accessory

Opening the drill chuck:

Turn the drill chuck sleeve (1) in clockwise direction.

Clamping the tool:

Open the drill chuck and insert the tool as far as possible. Turn the drill chuck sleeve (1) in anti-clockwise direction until the tool is clamped securely. With a soft tool shank, retightening may be required after a short drilling period.

5.7 On/Off switch, modifying the speed

Switching on, speed: press the trigger switch (7). Press in the trigger switch to increase the rotational speed.

Switching off: release the trigger switch (7).

5.8 Drill chuck with "Quick" change system (for BS 18 L BL Q, Powermaxx BS 12 BL Q)

Removal: See page 2, fig. A. Push the interlocking ring forward (a) and pull off the drill chuck (b).

Mounting: Push the interlock ring forward and move the chuck as far as the limit stop on the drill spindle.

5.9 Drill chuck (for BS 18 L BL, SB 18 L BL, Powermaxx BS 12 BL, Powermaxx SB 12 BL)

See page 2, fig. B.

Remove locking screw. Caution left-handed thread!

Clamp an Allen key in the chuck and strike lightly with a rubber hammer to loosen, then unscrew.

Employ the same procedure when attaching the chuck, except in reverse order.

6. Accessories

Use only original Metabo or CAS (Cordless Alliance System) battery packs and accessories.

See page 4.

Use only accessories that fulfil the requirements and specifications listed in these operating instructions.

- A Battery packs with different capacities. Buy battery packs only with voltage suitable for your power tool.
- B Angle screwdriver attachment.
- C Battery charger
- D Bit holder with Quick replacement system
- E Bit box

For a complete range of accessories, see www.metabo.com or the catalogue.

7. Repairs

 Repairs to electrical tools must ONLY be carried out by qualified electricians!

Contact your local Metabo representative if you have Metabo power tools requiring repairs. See www.metabo.com for addresses.

You can download a list of spare parts from www.metabo.com.

8. Environmental Protection

Observe the national regulations on environmentally compatible disposal and on the recycling of disused tools, packaging and accessories.

Battery packs may not be disposed of with regular waste. Return faulty or used battery packs to your Metabo dealer!

Do not allow battery packs to come into contact with water!

9. Technical Specifications

Explanatory notes on the specifications on page 3.

Subject to change in accordance with technical progress.

U = voltage
(for 12 V battery pack: max. voltage = 12 V, nom. voltage = 10.8 V)
n₀ = No-load speed

Tightening torque for screwing:
M_A = soft screwing application (wood)
M_B = hard screwing application (metal)
M_C = adjustable torque (with torque control)

Max. drill diameter:
D_{1 max} = in steel
D_{2 max} = in softwood
D_{3 max} = in masonry

s = max. impact rate
m = Weight (with the smallest battery pack)
G = Spindle thread

Permitted ambient temperature during operation:
-20 °C to 50 °C (limited performance with temperatures below 0 °C). Permitted ambient temperature for storage: 0 °C to 30 °C

The technical specifications quoted are subject to tolerances (in compliance with relevant valid standards).

Emission values

These values make it possible to assess the emissions from the power tool and to compare different power tools. The actual load may be higher or lower depending on operating conditions, the condition of the power tool or the accessories used. Please allow for breaks and periods when the load is lower for assessment purposes. Arrange


protective measures for the user, such as organisational measures based on the adjusted estimates.

Vibration total value (vector sum of three directions) determined in accordance with EN 62841:

a_{h, ID} = Vibration emission value (impact drilling in concrete)
a_{h, D} = Vibration emission value (Drilling in metal)
a_{h, S} = Vibration emission value (screwing without impact)
K_{h, ...} = Uncertainty (vibration)

Typical A-effective perceived sound levels:

L_{pa} = Sound-pressure level
L_{WA} = Acoustic power level
K_{pa}, K_{WA} = Uncertainty (noise level)
During operation the noise level can exceed 80 dB(A).

 **Wear ear protectors!**