metabo®

PROFESSIONAL POWER TOOL SOLUTIONS

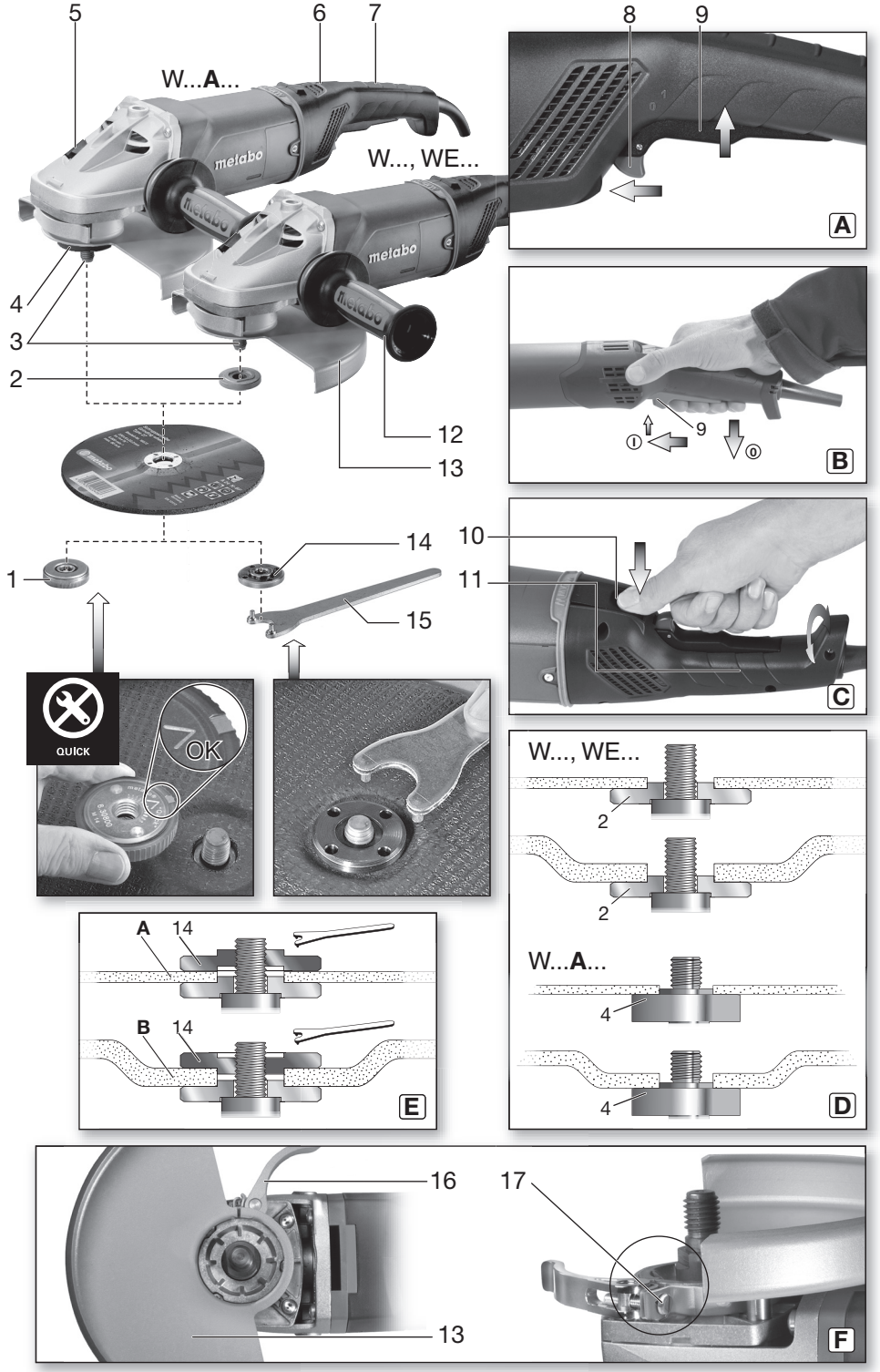
W 22-180 MVT
W 22-230 MVT
WE 22-180 MVT
WE 22-230 MVT
WE 22-230 MVT Quick

W 24-180 MVT
W 24-230 MVT
WE 24-180 MVT
WE 24-230 MVT
WE 24-230 MVT Quick
WEA 24-180 MVT Quick
WEA 24-230 MVT Quick
WEPB 24-230 MVT Quick
WEPBA 24-180 MVT Quick
WEPBA 24-230 MVT Quick

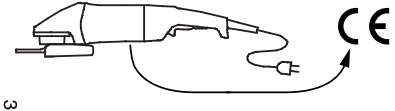
W 26-180 MVT
W 26-230 MVT
WE 26-230 MVT Quick
WEA 26-230 MVT Quick
WEPBA 26-230 MVT Quick

www.metabo.com

Made in Germany


5
6
7
W...A...
W..., WE...
4
3
2
12
13
1
14
15
QUICK
OK
8
9
A
9
B
10
11
C
W..., WE...
2
2
W...A...
4
4
D
A
14
B
14
E
16
13
17
F

		W 22-180 MVT *1) 06461.. WE 22-180 MVT *1) 06463..	W 22-230 MVT *1) 06462.. WE 22-230 MVT *1) 06464..	WE 22-230 MVT Quick *1) 06465..	W 24-180 MVT *1) 06466.. WE 24-180 MVT *1) 06468..	W 24-230 MVT *1) 06467.. WE 24-230 MVT *1) 06469..	WE 24-230 MVT Quick *1) 06470..	W 26-180 MVT *1) 06473..	W 26-230 MVT *1) 06474..	WE 26-230 MVT Quick *1) 06475..	WEA 24-180 MVT Quick *1) 06471..	WEA 24-230 MVT Quick *1) 06472..	WEA 26-230 MVT Quick *1) 06476..
Quick		-	-	Quick	-	-	Quick	-	-	Quick	Quick	Quick	Quick
D_{max}	mm (in)	180 (7)	230 (9)	230 (9)	180 (7)	230 (9)	230 (9)	180 (7)	230 (9)	230 (9)	180 (7)	230 (9)	230 (9)
t_{max1}; t_{max2}; t_{max3}; t_{max4}	mm (in)	14; 10; 8; 15 ($^{9}/_{16}$; $^{3}/_{8}$; $^{5}/_{16}$; $^{19}/_{32}$)									10; 8; 8; 15 ($^{3}/_{8}$; $^{5}/_{16}$; $^{5}/_{16}$; $^{19}/_{32}$)		
M / I	- / mm (in)	M 14 / 24 ($^{15}/_{16}$)									M 14 / 19 ($^{6}/_{8}$)		
n_0	min^{-1} (rpm)	8450	6600	6600	8450	6600	6600	8450	6600	6600	8450	6600	6600
P_1	W	2200	2200	2200	2400	2400 110 V: 2300	2400	2600	2600	2600	2400	2400	2600
P_2	W	1500	1500	1500	1600	1600	1600	1800	1800	1800	1600	1600	1800
m	kg (lbs)	5,7 (12.6)	5,8 (12.8)	5,8 (12.8)	5,7 (12.6)	5,8 (12.8)	5,8 (12.8)	6,2 (13.7)	6,3 (13.9)	6,3 (13.9)	5,8 (12.8)	5,9 (13.0)	6,4 (14.1)
$a_{h,SG}/K_{h,SG}$	m/s^2	6,1 / 1,5	6,2 / 1,5	6,2 / 1,5	6,1 / 1,5	6,2 / 1,5	6,2 / 1,5	5,8 / 1,5	6,4 / 1,5	6,4 / 1,5	3,8 / 1,5	4,5 / 1,5	3,9 / 1,5
$a_{h,DS}/K_{h,DS}$	m/s^2	< 2,5 / 1,5	< 2,5 / 1,5	< 2,5 / 1,5	< 2,5 / 1,5	< 2,5 / 1,5	< 2,5 / 1,5	< 2,5 / 1,5	< 2,5 / 1,5	< 2,5 / 1,5	< 2,5 / 1,5	< 2,5 / 1,5	< 2,5 / 1,5
L_{pA}/K_{pA}	dB(A)	94 / 3	94 / 3	94 / 3	94 / 3	94 / 3	94 / 3	94 / 3	94 / 3	94 / 3	94 / 3	94 / 3	94 / 3
L_{WA}/K_{WA}	dB(A)	105 / 3	105 / 3	105 / 3	105 / 3	105 / 3	105 / 3	105 / 3	105 / 3	105 / 3	105 / 3	105 / 3	105 / 3



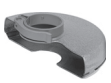
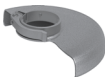
CE

*2) 2011/65/EU, 2006/42/EC, 2014/30/EU
*3) EN 60745-1:2009+A11:2010, EN 60745-2-3:2011+A2:2013+A11:2014+A12:2014+A13:2015, EN IEC 63000:2018

ppa. B. F.

2021-11-25, Bernd Fleischmann, Vice President Product Engineering & Quality
*4) Metabowerke GmbH - Metabo-Allee 1 - 72622 Nuertingen, Germany

		WEPBA 24-180 MVT Quick *1) 06480..	WEPBA 24-230 MVT Quick *1) 06481..	WEPBA 26-230 MVT Quick *1) 06482..	WEPB 24-230 MVT Quick *1) 06483..
Quick		Quick	Quick	Quick	Quick
D_{max}	mm (in)	180 (7)	230 (9)	230 (9)	230 (9)
t_{max1}; t_{max2}; t_{max3}; t_{max4}	mm (in)	10; 8; 8; 15 ($^{3}/_{8}$; $^{5}/_{16}$; $^{5}/_{16}$; $^{19}/_{32}$)			12; 8; 8; 15($^{15}/_{32}$; $^{5}/_{16}$; $^{5}/_{16}$; $^{19}/_{32}$)
M / I	- / mm (in)	M 14 / 24 ($^{15}/_{16}$)			
n_0	min^{-1} (rpm)	8450	6600	6600	6600
P_1	W	2400	2400	2600	2400
P_2	W	1600	1600	1800	1600
m	kg (lbs)	6,0 (13.3)	6,2 (13.6)	6,6 (14.6)	6,0 (13.2)
$a_{h,SG}/K_{h,SG}$	m/s^2	3,9 / 1,5	3,9/ 1,5	3,7 / 1,5	6,3 / 1,5
$a_{h,DS}/K_{h,DS}$	m/s^2	< 2,5 / 1,5	< 2,5 / 1,5	< 2,5 / 1,5	< 2,5 / 1,5
L_{pA}/K_{pA}	dB(A)	94 / 3	94 / 3	95 / 3	94 / 3
L_{WA}/K_{WA}	dB(A)	105 / 3	105 / 3	105 / 3	105 / 3

TYPE A	TYPE B	TYPE C	TYPE D	TYPE F
				
*1			*2	*3

		TYPE
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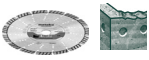
	1.2 	D
2	2.1 	A / C
	2.2 	A
	2.3 	A / F
	2.4 	A / C
3	3.1 	-
4	4.1 	A / B / C
	4.2 	-
5	5.1 	B / C
	5.2 	-

*1 $\varnothing_{max}$= 180 mm (7“) 630356000
$\varnothing_{max}$= 230 mm (9“) 630357000

*2 $\varnothing$= 110 mm 623140000

*3 $\varnothing_{max}$= 180 mm (7“) 631166000
$\varnothing_{max}$= 230 mm (9“) 631167000

Ⓞ  635000000

Ⓟ  (M 14) 630706000

Ⓠ  (M 14) 630800000

Original instructions

1. Declaration of Conformity

We, being solely responsible: Hereby declare that these angle grinders, identified by type and serial number *1), meet all relevant requirements of directives *2) and standards *3). Technical documents for *4) - see Page 3.

For UK only:

UK CA We as manufacturer and authorized person to compile the technical file, see *4) on page 3, hereby declare under sole responsibility that these angle grinders, identified by type and serial number *1) on page 3, fulfill all relevant provisions of following UK Regulations S.I. 2016/1091, S.I. 2008/1597, S.I. 2012/3032 and Designated Standards EN 60745-1:2009+A11:2010, EN 60745-2-3:2011+A2:2013+A11:2014+A12:2014+A13:2015, EN IEC 63000:2018.

2. Specified Use

Machines fitted with original Metabo accessories are suitable for grinding, sanding, abrasive cutting-off operations and wire brushing metal, concrete, stone and similar materials without the use of water.

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.

3. General Safety Instructions

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 – Read the operating instructions to reduce the risk of injury.

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 warnings and instructions for future reference.
Always include these documents when passing on your power tool.

4. Special Safety Instructions

4.1 Safety Warnings Common for Grinding, Sanding, Wire Brushing or Cutting-Off Operations:

a) **This power tool is intended to function as a grinder, sander, wire brush, hole cutter or cut-off tool. 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.

b) **Operations such as polishing are not to be performed with this power tool.** Operations for which the power tool was not designed may create a hazard and cause personal injury.

c) **Do not convert this power tool to operate in a way which is not specifically designed and specified by the tool manufacturer.** Such a conversion may result in a loss of control and cause serious personal injury.

d) **Do not use accessories which are not specifically designed and specified by the tool manufacturer.** Just because an accessory can be attached to your power tool, it does not assure safe operation.

e) **The rated speed of the accessory must be at least equal to the maximum speed marked on the power tool.** Accessories running faster than their rated speed can break and fly apart.

f) **The outside diameter and the thickness of your accessory must be within the capacity rating of your power tool.** Incorrectly sized accessories cannot be adequately guarded or controlled.

g) **The dimensions of the accessory mounting must fit the dimensions of the mounting hardware of the power tool.** Accessories that do not match the mounting hardware of the power tool will run out of balance, vibrate excessively and may cause loss of control.

h) **Do not use a damaged accessory. Before each use inspect the accessory such as abrasive wheels for chips and cracks, backing pad for cracks, tear or excess wear, wire brush for loose or cracked wires. If the power tool or accessory is dropped, inspect for damage or install an undamaged accessory. After inspecting and installing an accessory, position yourself and bystanders away from the plane of the rotating accessory and run the power tool at maximum no-load speed for one minute.** Damaged accessories will normally break apart during this test time.

i) **Wear personal protective equipment. Depending on application, use face shield, safety goggles or safety glasses. As appropriate, wear dust mask, hearing protectors, gloves and workshop apron capable of stopping small abrasive or workpiece fragments.** The eye protection must be capable of stopping flying debris generated by various operations. The dust mask or respirator must be capable of filtrating particles generated by your operation. Prolonged exposure to high-intensity noise may cause hearing loss.

j) **Keep bystanders a safe distance away from work area. Anyone entering the work area must wear personal protective equipment.** Fragments of the workpiece or of a broken accessory may fly

away and cause injury beyond immediate area of operation.

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

l) **Position the cord clear of the spinning accessory.** If you lose control, the cord may be cut or snagged and your hand or arm may be pulled into the spinning accessory.

m) **Never lay the power tool down until the accessory has come to a complete stop.** The spinning accessory may grab the surface and pull the power tool out of your control.

n) **Do not run the power tool while carrying it at your side.** Accidental contact with the spinning accessory could snag your clothing, pulling the accessory into your body.

o) **Regularly clean the power tool's air vents.** The motor's fan will draw the dust inside the housing and excessive accumulation of powdered metal may cause electrical hazards.

p) **Do not operate the power tool near flammable materials. S**parks could ignite these materials.

q) **Do not use accessories that require liquid coolants.** Using water or other liquid coolants may result in electrocution or shock.

4.2 Kickback and related warnings

Kickback is a sudden reaction to a pinched or snagged rotating wheel, backing pad. brush or any other accessory. Pinching or snagging causes rapid stalling of the rotating accessory, which in turn causes the uncontrolled power tool to be forced in the direction opposite of the accessory's rotation at the point of the binding.

For example, if an abrasive wheel is snagged or pinched by the workpiece, the edge of the wheel that is entering into the pinch point can dig into the surface of the material causing the wheel to climb out or kickback. The wheel may either jump toward or away from the operator, depending on direction of the wheel's movement at the point of pinching. Abrasive wheels may also break under these conditions.

Kickback is the result of power tool misuse and/or incorrect operating procedures or conditions and can be avoided by taking proper precautions as given below.

a**) Maintain a firm grip with both hands on the power tool and position your body and arms to allow you to resist kickback forces. Always use the auxiliary handle, if provided, for maximum control over kickback or torque reaction during start-up.** The operator can control torque reactions or kickback forces, if proper precautions are taken.

b) **Never place your hand near the rotating accessory.** Accessory may kickback over your hand.

c) **Do not position your body in the area where the power tool will move if kickback occurs.** Kickback will propel the tool in direction opposite to the wheel's movement at the point of snagging.

d) **Use special care when working corners, sharp edges etc. Avoid bouncing and snagging the accessory.** Corners, sharp edges or bouncing have a tendency to snag the rotating accessory and cause loss of control or kickback.

e) **Do not attach a saw chain woodcarving blade, segmented diamond wheel with a peripheral gap greater than 10 mm or toothed saw blade.** Such blades create frequent kickback and loss of control.

4.3 Safety warnings specific for grinding and cutting-off operations:

a) **Use only wheel types that are specified for your power tool and the specific guard designed for the selected wheel.** Wheels for which the power tool was not designed cannot be adequately guarded and are unsafe.

b) **The grinding surface of centre depressed wheels must be mounted below the plane of the guard lip.** An improperly mounted wheel that projects through the plane of the guard lip cannot be adequately protected.

c) **The guard must be securely attached to the power tool and positioned for maximum safety, so the least amount of wheel is exposed towards the operator.** The guard helps to protect the operator from broken wheel fragments, accidental contact with wheel and sparks that could ignite clothing.

d) **Wheels must be used only for specified applications. For example: do not grind with the side of cut-off wheel.** Abrasive cut-off wheels are intended for peripheral grinding, side forces applied to these wheels may cause them to shatter.

e) **Always use undamaged wheel flanges that are of correct size and shape for your selected wheel.** Proper wheel flanges support the wheel thus reducing the possibility of wheel breakage. Flanges for cut-off wheels may be different from grinding wheel flanges.

f) **Do not use worn down wheels from larger power tools.** Wheels intended for larger power tools are not suitable for the higher speed of a smaller tool and may burst.

g) **When using dual purpose wheels always use the correct guard for the application being performed.** Failure to use the correct guard may not provide the desired level of guarding, which could lead to serious injury.

4.4 Additional safety warnings specific for cutting-off operations:

a) **Do not "jam" the cut-off wheel or apply excessive pressure. Do not attempt to make an excessively deep cut.** Overstressing the wheel increases the loading and susceptibility to twisting or binding of the wheel in the cut and the possibility of kickback or wheel breakage.

b) **Do not position your body in line with and behind the rotating wheel.** When the wheel, at the point of operation, is moving away from your body, the possible kickback may propel the spinning wheel and the power tool directly at you.

c) **When the wheel is binding or when interrupting a cut for any reason, switch off the power tool and hold it motionless until the wheel comes to a complete stop. Never attempt to remove the cut-off wheel from the cut while the wheel is in motion otherwise kickback may occur.** Investigate and take corrective action to eliminate the cause of wheel binding.

d) **Do not restart the cutting operation in the workpiece. Let the wheel reach full speed and carefully re-enter the cut.** The wheel may bind, walk up or kickback if the power tool is restarted in the workpiece.

e) **Support panels or any oversized workpiece to minimize the risk of wheel pinching and kickback. Large workpieces tend to sag under their own weight.** Supports must be placed under the workpiece near the line of cut and near the edge of the workpiece on both sides of the wheel.

f) **Use extra caution when making a "pocket cut" into existing walls or other blind areas.** The protruding wheel may cut gas or water pipes, electrical wiring or objects that can cause kickback.

g) **Do not attempt to do curved cutting.** Overstressing the wheel increases the loading and susceptibility to twisting or binding of the wheel in the cut and the possibility of kickback or wheel breakage, which can lead to serious injury.

4.5 Safety warnings specific for sanding operations:

a) **Use proper sized sanding disc paper. Follow the manufacturer's recommendations, when selecting sanding paper.** Larger sanding paper extending too far beyond the sanding pad presents a laceration hazard and may cause snagging, tearing of the disc or kickback.

4.6 Safety warnings specific for wire brushing operations:

a) **Be aware that wire bristles are thrown by the brush even during ordinary operation. Do not overstress the wires by applying excessive load to the brush.** The wire bristles can easily penetrate light clothing and/or skin.

b) **If the use of a guard is specified for wire brushing, do not allow any interference of the wire wheel or brush with the guard.** Wire wheel or brush may expand in diameter due to work load and centrifugal forces.

4.7 Additional Safety Instructions:

WARNING – Always wear protective goggles.

Use elastic cushioning layers if they have been supplied with the grinding media and if required.

WARNING – Always wear protective goggles.

Wear ear protectors.

WARNING – Always operate the power tool with two hands.

Do not use the guard for cutting-off operations. When working with cut-off wheels, always use the parting safety guard for safety reasons.

Do not use any segmented diamond cut-off wheels with segment slits >10 mm. Only negative segment cutting angles are permitted.

Use bonded cut-off wheels only if these are reinforced.

Use elastic cushioning layers if they have been supplied with the sanding media and if required.

Observe the specifications of the tool or accessory manufacturer! Protect wheels from grease or impact!

Accessories must be stored and handled with care in accordance with the manufacturer's instructions.

Never use cut-off wheels for roughing work or deburring! Do not apply pressure to the side of the cut-off wheels.

The workpiece must lay flat and be secured against slipping, e.g. using clamps. Large workpieces must be sufficiently supported.

If accessories with threaded inserts are used, the end of the spindle may not touch the base of the hole on the grinding tool. Make sure that the thread in the accessory is long enough to accommodate the full length of the spindle. The thread in the accessory must match the thread on the spindle. See page 3 and chapter 14. Technical Specifications for more information on the spindle length and thread.

Use of a suitable fixed extractor system is recommended. Always install an RCD with a maximum trip current of 30 mA upstream. If the angle grinder is shut down via the GFCI, it must be checked and cleaned. See chapter 9. Cleaning.

Damaged, eccentric or vibrating tools must not be used.

Avoid damage to gas or water pipes, electrical cables and load-bearing walls (static).

Pull the plug out of the socket before making any adjustments, converting or servicing the machine.

A damaged or cracked additional handle must be replaced. Never operate a machine with a defective additional handle.

A damaged or cracked safety guard must be replaced. Never operate a machine with a defective safety guard.

Do not switch on the machine if tool parts or guard devices are missing or defective.

Machines with a soft start (indicated by "WE" in the model designation): An electronic error occurs if the machine accelerates to maximum speed very quickly when switched on. Other safety-related electronic functions are no longer available. Have the machine repaired immediately (see 12.).

Secure small workpieces. For example, clamp in a vice.

When using dual-purpose (combined grinding and cut-off wheels), only the following guard types must be used: type A, type C.
See chapter 11.

Using the correct guard:

Using an incorrect guard can lead to loss of control and serious injuries. Examples for incorrect use:
- when using a type A guard for lateral grinding, the guard may interfere with the workpiece causing poor control.
- when using a type B guard for cutting-off operations with bonded cut-off wheels, there is an increased risk of exposure to emitted sparks and particles, as well as exposure to wheel fragments in the event of a wheel burst.
- when using a type A, B, C guard for cutting-off operations or lateral grinding in concrete or masonry, there is an increased risk of exposure to dust and loss of control resulting in kickback.
- when using a type A, B, C guard with a wheel-type wire brush with a thickness greater than the maximum permitted thickness, the wires may catch on the guard leading to breaking of the wires.

Always use the matching guard for the accessory.
See chapter 11.

Reducing dust exposure:

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.

This also applies to dust from other materials, such as some timber types (like oak or beech dust), metals, asbestos. Other known diseases are e.g. allergic reactions, respiratory diseases. Do not let dust enter the body.

Observe the relevant guidelines and national regulations for your material, staff, application and place of application (e.g. occupational health and safety regulations, disposal).

Collect the particles generated at the source, avoid deposits in the surrounding area.

Use suitable accessories for special work. In this way, fewer particles enter the environment in an uncontrolled manner.

Use a suitable extraction unit.

Reduce dust exposure with the following measures:
- do not direct the escaping particles and the exhaust air stream towards yourself or nearby persons or towards dust deposits,
- use an extraction unit and/or an air purifier,
- ensure good ventilation of the workplace and keep it clean using a vacuum cleaner. Sweeping or blowing stirs up dust.
- Vacuum or wash protective clothing. Do not blow, beat or brush protective gear.

5. Overview

See page 2.

1 "Quick"clamping nut *
2 Support flange *
3 Spindle
4 W...**A**...: Autobalancer support flange (non-detachable) *
5 Spindle locking button
6 Electronic signal indicator *
7 Handle
8 Lock (to prevent the machine from being switched on unintentionally, or for continuous operation)*
9 Trigger (for switching on and off)
10 Button (to turn the main handle)
11 Main handle
12 Additional handle/Additional handle with vibration damping
13 Safety cover
14 Adjusting nut *
15 2-hole spanner *
16 Quick-release clamp (to adjust safety guard without the use of tools)
17 Screw (to adjust clamping force of quick-release clamp)

* depending on equipment/not in scope of delivery

6. Commissioning

Before plugging in, check that the rated mains voltage and mains frequency, as stated on the rating label, match with your power supply.

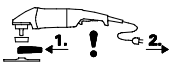
Always install an RCD with a max. trip current of 30 mA upstream.

Use only extension cables with a min. cross-section of 1.5 mm^2. Extension cables must correspond to the power consumption of the machine (cf Technical Specifications). If a cable roller is used, always roll up the cable completely.

6.1 Attaching the additional handle

Always work with the additional handle (12) attached! Manually screw in the additional handle securely in the left, centre or right threaded hole (depending on requirements).

6.2 Attach the safety guard

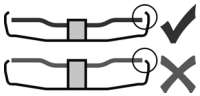


Prior to operation: Attach safety guard.

For safety reasons, only use the guard provided for the respective accessory! Using an incorrect guard can lead to loss of control and serious injuries. See also chapter 11. Accessories!

See illustration F on page 2.

- Open quick-release clamp (16). Mount the safety guard (13) in the position indicated.
- Turn the safety guard until the closed section is facing the operator.
- Close quick-release clamp.
- If necessary, increase clamping force of quick-release clamp by tightening the screw (17) (with opened quick-release clamp).



Use only accessories that are covered by at least 3.4 mm by the safety guard.

6.3 Pivotable main handle

Only work with the main handle (11) engaged.

See illustration C on page 2.

- Push in the button (10).
- The main handle (11) can now be turned 90° to both sides and can be engaged.
- Make sure that it is securely positioned: the main handle (11) must be engaged and it should not be possible to move it.

6.4 Power-supply connection

The mains sockets must be protected using time-delay fuses or circuit breakers.

Machines with "WE..." in the model designation: (with inbuilt automatic startup-current limitation(soft start).) The mains sockets can also be protected using fast-acting fuses or circuit breakers.

7. Attaching the grinding disc

Prior to any conversion work: Pull the mains plug from the socket. The machine must be switched off and the spindle at a standstill.

For reasons of safety, attach the parting guard before performing parting work (see chapter 11. Accessories).

7.1 Locking the spindle

Press in the spindle locking button (5) only when the spindle is stationary!

- Press in the spindle locking button (5) and turn the spindle (3) by hand until the spindle locking button engages.

7.2 Placing the grinding wheel in position

See illustration D on page 2.

Machines with the designation W 2..., WE 2...:

- Fit the support flange (2) on the spindle. The flange should not turn on the spindle when properly attached.
- Position the grinding wheel on the support flange (2) as shown in illustration D. The grinding disc must lay flat on the supporting flange.

Machines with the designation W...A 2...:

The Autobalancer support flange (4) is permanently fitted on the spindle. As is the case with most other angle grinders, a detachable support flange is not necessary.

The contact surfaces of the Autobalancer support flange (4), grinding wheel and the Quick-Stop adjusting nut (1) or other adjusting nut (14) must be clean. Clean if necessary.

- Place the grinding wheel on the Autobalancer support flange (4). The grinding wheel must lie flat on the Autobalancer supporting flange.

7.3 Securing/Releasing the "Quick" clamping nut (depending on features)

Securing the "Quick" clamping nut (1):

Do not use the "Quick" clamping nut if the accessory has a clamping shank thicker than 8 mm! In this case, use the clamping nut (14) with 2-hole spanner (15).

Only use the "Quick" clamping nut when undamaged and in perfect operating condition: the arrow must point to the notch on the outer ring (see illustration on page 2).

- Lock the spindle (see chapter 7.1).
- Fit the "Quick" clamping nut (1) on the spindle (3). See illustration on page 2.
- Tighten the "Quick"clamping nut by turning clockwise by hand.
- Turn the grinding wheel firmly clockwise to tighten the "Quick"clamping nut.

For machines with the designation W...B... an increased resistance is to be felt on the last 180°.

Releasing the clamping nut (1):

- Lock the spindle (see chapter 7.1).
- Turn the "Quick"clamping nut (1) anticlockwise to unscrew.

7.4 Securing/Releasing the clamping nut (depending on features)

Securing the clamping nut (14):

The 2 sides of the clamping nut are different. Screw the clamping nut onto the spindle as follows:

See illustration E on page 2.

- **A) For thin grinding discs:**
  The edge of the clamping nut (14) faces upwards so that the thin grinding disc can be attached securely.
  B) For thick grinding discs:
  The edge of the clamping (14) faces downwards

so that the 2-hole nut can be attached securely to the spindle.

- Locking the spindle. Turn the clamping nut (14) clockwise using the 2-hole spanner (15) to secure.

For machines with the designation W...B... an increased resistance is to be felt on the last 180°.

Releasing the clamping nut:

- Lock the spindle (see chapter 7.1). Turn the clamping nut (14) anticlockwise using the 2-hole spanner (15) to unscrew.

8. Use

8.1 Switching On and Off

Always guide the machine with both hands.

Switch on first, then guide the accessory towards the workpiece.

Avoid inadvertent starts: always switch the tool off when the plug is removed from the mains socket or if there has been a power cut.

In continuous operation, the machine continues running if it is forced out of your hands. Therefore, always hold the machine with both hands using the handles provided, stand securely and concentrate.

Avoid the machine swirling up or taking in dust and chips. After switching off the machine, only place it down when the motor has come to a standstill.

See illustration A on page 2.

Torque activation

Switching on: Slide the lock (8) in the direction of the arrow and press the trigger switch (9).
Switching off: Release the trigger switch (9).

Continuous operation (depending on features)

Switching on: Slide the lock (8) in the direction of the arrow, press the trigger switch (9) and keep it pressed. The machine is now switched on. Now slide the lock (8) in the direction of the arrow once more to lock the trigger switch (9) (continuous operation).
Switching off: Press the trigger switch (9) and release.

Machines with the designation W...B: Torque activation (with dead man's lever)

See illustration B on page 2.

Switching on: Slide the trigger switch (9) forwards and then push the trigger switch (9) upwards.
Switching off: Release the trigger switch (9).

8.2 Working Directions

Grinding:
Press down the machine evenly on the surface and move back and forth so that the surface of the workpiece does not become too hot.
Rough grinding: position the machine at an angle of 30° - 40° for the best working results.

Cutting-off operations:

Always work against the run of the disc (see illustration). Otherwise there is the danger of the machine kicking back from the cut out of control. Guide the machine evenly at a speed suitable for the material being processed. Do not tilt, apply excessive force or sway from side to side.

Sanding:
Press down the machine evenly on the surface and move back and forth so that the surface of the workpiece does not become too hot.

Wire brushing:
Press down the machine evenly.

9. Cleaning

Particles may become deposited inside the power tool during operation. This impairs the cooling of the power tool. Conductive build-up can impair the protective insulation of the power tool and create an electrical hazard.

The power tool should be cleaned regularly, often and thoroughly through all front and rear air vents using a vacuum cleaner or by blowing in dry air. Prior to this operation, separate the power tool from the power source and wear protective glasses and suitable dust mask. Ensure appropriate suction is available when blowing out vents.

Button (10) for adjusting the handle: Occasionally blow compressed air through the button (when pressed, in all 3 main handle positions). Prior to this operation, separate the power tool from the power source and wear protective glasses and dust mask.

10. Troubleshooting

Machine with "WE..." in the model designation:

- **Overload protection: The electronic signal display (6) lights up and the load speed decreases dramatically.** The motor temperature is too high! Run the machine in idling until it cools down and the electronic signal display switches off.
- **Overload protection: The electronic signal display (6) lights up and the load speed decreases slightly.** The machine is overloaded. Work with a reduced load until the electronic signal display goes out.
- **Electronic safety stop: The electronic signal display (6) lights up and the machine was SWITCHED OFF automatically.** If the slew rate of the current is too high (for example, if the machine suddenly seizes or kickback occurs), the machine switches off. Switch off the machine at the trigger switch (9). Switch it on again and continue to work as normal. Try to prevent the machine from seizing. See Section 4.2.
- **Restart protection: The electronic signal display (6) FLASHES and the machine does not start.** The restart protection is active. If the mains plug is inserted with the machine switched on, or if the power supply is restored following an interruption, the machine does not start up. Switch the machine off and on again.

- **When switched on, the machine accelerates to maximum speed very quickly,** i.e. automatic restriction of the starting current does not work (soft start). An electronic error exists. Other safety-related electronic functions are no longer available. Have the machine repaired immediately (see 12.).

W 22-180 MVT, W 22-230 MVT, W 24-180 MVT, W 24-230 MVT, W 26-180 MVT, W 26-230 MVT:
- Switching on the machine reduces the voltage briefly. Unfavourable mains power conditions may have a detrimental effect on other machines. Power impedances less than 0.2 ohm should not cause malfunctions.

11. Accessories

Use only genuine Metabo accessories.

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

Fit accessories securely. Secure the machine if it is operated in a bracket. Loss of control can cause personal injury.

See page 4.

Always use the suitable accessory and the prescribed guard for the matching guard for the application. **See page 5.** (Illustrations are examples).

Application:
1 = surface grinding
2 = cut-off grinding
3 = drilling of holes
4 = wire brushes
5 = grinding with sanding paper

Accessories:
1.1 = grinding wheel
1.2 = cup wheel (ceramic)
2.1 = cut-off wheel “metal”
2.2 = cut-off wheel “masonry/concrete”
2.3 = diamond cutting disc “masonry/concrete”
2.4 = dual-purpose diamond cutting discs (combined grinding and cutting disc)
3.1 = diamond drill bits
4.1 = wheel brush
4.2 = cup brush
5.1 = flap disc
5.2 = backing pad for sanding sheets

prescribed guard:
Type A = cutting guard
Type B = guard for grinding
Type C = guard for grinding and cutting-off operations (combination)
Type D = guard for cup wheel
Type F = extraction guard for cutting-off operations

Other accessories:
(see also www.metabo.com)

A Bench cut-off stand
B Adjusting nut (14)
C "Quick" clamping nut (1)

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

12. Repairs

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

A defective mains cable must be replaced only with a special, original mains cable from Metabo available from the Metabo service.

For machines with the designation W...B... the braking pad also needs to be replaced when replacing the carbon set.

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

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

13. Environmental Protection

The generated grinding dust may contain harmful substances. Dispose appropriately.

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

Only for EU countries: Never dispose of power tools in your household waste! In accordance with European Directive 2012/19/EU on waste electrical and electronic equipment and its implementation in national legal systems, used power tools must be collected separately and handed in for environmentally compatible recycling.

14. Technical Specifications

Explanatory notes on the specifications on page 3. Changes due to technological progress reserved.

D_{max} = max. diameter of the accessory
$t_{max,1}$ = max. permitted thickness of clamping shank on accessory when using clamping nut (14)
$t_{max,2}$ = max. permitted thickness of clamping shank on accessory when using "Quick" clamping nut (1)
$t_{max,3}$ = roughing disc/cutting disc: max. permitted thickness of accessory
$t_{max,4}$ = max. permitted thickness of wheel-type wire brushes
M = spindle thread
l = length of the grinding spindle
n_0 = no-load speed (maximum speed)
P_1 = rated input power
P_2 = power output
m = weight without mains cable

Measured values determined in conformity with EN 60745.

⧈ Machine in protection class II

~ AC Power

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

Emission values
These values make it possible to assess the emissions from the power tool and to compare

different power tools. Depending on the operating conditions, the condition of the power tool or the accessories, the actual load may be higher or lower. For assessment purposes, please allow for breaks and periods when the load is lower. Based on the adjusted estimates, arrange protective measures for the user e.g. organisational measures.

The grinding of thinner metal sheets and other workpieces with large surfaces that easily vibrate can lead to a significantly higher overall sound emission (up to 15 dB) than the sound emission values specified. The sound radiation of such workpieces should be prevented to the greatest extent possible by means of suitable measures, such as fitting heavy, flexible damping mats. The increased sound emission must also be taken into account when assessing the risk of noise exposure and selecting suitable hearing protection.

Vibration total value (vector sum of three directions) determined in accordance with EN 60745:

$a_{h, SG}$ = Vibration emission value (surface grinding)
$a_{h, DS}$ = Vibration emission value (disc sanding)
$K_{h,SG/DS}$ = Uncertainty (vibration)

Typical A-effective perceived sound levels:

L_{pA} = Sound-pressure level
L_{WA} = Acoustic power level
K_{pA}, K_{WA} = Uncertainty

Wear ear protectors!