metabo KHE, UHE, UHEV Series Combination Hammer Instruction Manual

Contents

Metabo

Metabo KHE, UHE, UHEV Series Combination Hammer

SPECIFICATION

			KHE 2660 Quick *1) 00663..	KHE 2860 Quick *1) 00878..	UHE 2660-2 Quick *1) 00697..	UHEV 2860-2 Quick *1) 00713..
	P_1	W	850	880	800	1100
	P_2	W	465	490	450	600
	n_1	/min rpm	0-1100	0-1150	0-1050 0-2500	0-900 0-2100
	n_2	/min rpm	830	870	790 1860	900 2100
	SDS-plus		✓	✓	✓	✓
	ø max.	mm (in)	26 ($1\,^{1}/_{32}$)	28 ($1\,^{3}/_{32}$)	26 ($1\,^{1}/_{32}$)	28 ($1\,^{3}/_{32}$)
	s max.	/min bpm	4300	4400	4200	4500
	W (EPTA (05/2009))	J	3,0	3,2	2,8	3,4
	S	J/s	215	235	200	255
	ø max.	mm (in)	68 ($2\,^{11}/_{16}$)	68 ($2\,^{11}/_{16}$)	68 ($2\,^{11}/_{16}$)	68 ($2\,^{11}/_{16}$)
	b	mm (in)	1,5 - 13 ($^{1}/_{16}$-$^{1}/_{2}$)	1,5 - 13 ($^{1}/_{16}$-$^{1}/_{2}$)	1,5 - 13 ($^{1}/_{16}$-$^{1}/_{2}$)	1,5 - 13 ($^{1}/_{16}$-$^{1}/_{2}$)
	ø max.	mm (in)	32 ($1\,^{1}/_{4}$)	32 ($1\,^{1}/_{4}$)	32 ($1\,^{1}/_{4}$) 28 ($1\,^{3}/_{32}$)	35 ($1\,^{3}/_{8}$) 30 ($1\,^{3}/_{16}$)
	ø max.	mm (in)	13 ($^{1}/_{2}$)	13 ($^{1}/_{2}$)	13 ($^{1}/_{2}$) 6 ($^{1}/_{4}$)	13 ($^{1}/_{2}$) 6 ($^{1}/_{4}$)
kg	m	kg (lbs)	3,1 (6.9)	3,1 (6.9)	3,1 (6.9)	3,3 (7.4)
	D	mm (in)	50 ($1\,^{31}/_{32}$)	50 ($1\,^{31}/_{32}$)	50 ($1\,^{31}/_{32}$)	50 ($1\,^{31}/_{32}$)
	$a_{h,HD}/K_{h,HD}$	m/s^2	12,9 / 2,4	12,9 / 2,4	12,9 / 2,4	13,5 / 1,5
	$a_{h,Cheq}/K_{h,Cheq}$	m/s^2	8,5 / 1,5	8,5 / 1,5	8,5 / 1,5	7,2 / 1,5
	$a_{h,D}/K_{h,D}$	m/s^2	3,3 / 1,5	3,3 / 1,5	3,3 / 1,5	4,3 / 1,5
	L_{pA}/K_{pA}	dB (A)	89 / 3	89 / 3	88 / 3	90 / 3
	L_{WA}/K_{WA}	dB (A)	99 / 3	99 / 3	99 / 3	99 / 3

Declaration of Conformity

We, being solely responsible, hereby declare that these drills, identified by type and serial number *1), meet all relevant requirements of directives *2) and standards *3). Technical documents for *4) – see page 3.

Specified Use

The drill is suitable for non-impact drilling into metal, wood, plastic, and similar materials. It is also suitable for thread tapping and screwdriving. The user bears sole responsibility for any damage caused by improper use. Generally accepted accident prevention regulations and the enclosed safety information must be observed.

General Safety Instructions

For your own protection and for the protection of your electrical 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.
WARNING Read all safety warnings and instructions. Failure to follow all safety warnings and instructions may result in electric shock, fire and/or serious injury. Keep all safety instructions and information for future reference. Pass on your electrical tool only together with these documents.

Special Safety Instructions

Use the additional handle supplied with the tool. Loss of control can cause personal injury. Hold the power tool by insulated gripping surfaces, 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. Pull the plug out of the plug socket before any adjustments or servicing are performed. Avoid inadvertent starts by always unlocking the switch when the plug is removed from the mains socket or in case of a power cut. 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). Smaller workpieces must be secured such that they are not carried along with the drill bit when drilling (e.g. by clamping in a vice or on a workbench with screw clamps). Keep hands away from the rotating tool! Remove chips and similar material only when the machine isnot in operation. Metabo S-automatic safety clutch. When the safety clutch responds, switch off the machine immediately! If the tool jams or catches, the power supply to the motor is restricted. Due to the strong force which can arise, always hold the machine with both hands using the handles provided, stand securely and concentrate. The Metabo S-automatic safety clutch must not be used for torque control. Caution must be exercised when driving screws into hard materials (driving screws with metric or imperial threads into steel)! The screw head may break, or a high reverse torque may build up on the handle.

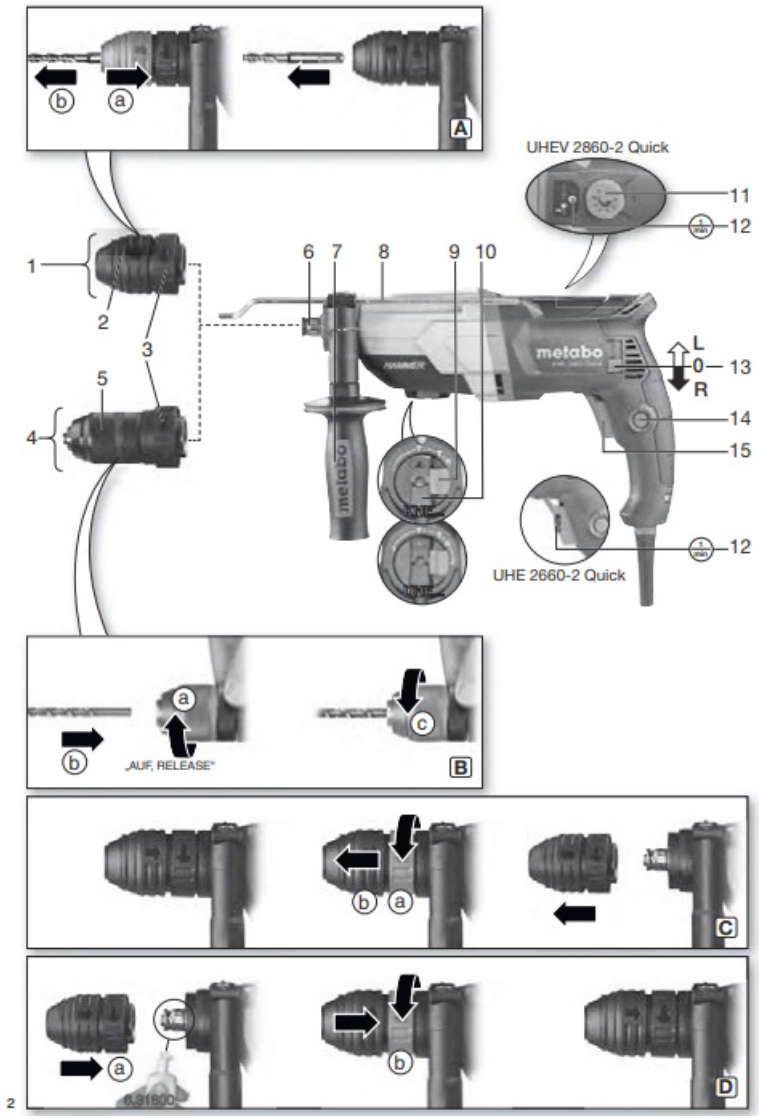
Reducing dust exposure:
Some of the dust created using this power tool may contain substances known to cause cancer, allergic reaction, respiratory disease, birth defects or other reproductive harm. Some examples of these substances are: lead (from lead-based paints), crystalline silica (from bricks cement, etc.), additives for wood treatment (chromate, wood preservative), some types of wood (like oak and beech dust), metals, asbestos. The risk from exposure to such substances will depend on how long the user or nearby persons are being exposed. Do not let particles enter the body. To reduce exposure to these substances: work in a well-ventilated area and wear protective equipment, such as dust masks that are specially designed to filter out microscopic particles. Observe the relevant guidelines for your material, staff, application and place of application (e.g. occupational health and safety regulations, disposal). Collect the generated particles at the source, avoid deposits in the surrounding area. Use only suitable accessories. 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 at yourself or nearby persons or on dust deposits.
- Use an extraction unit and/or air purifiers.
- 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.

Overview



1. SDS chuck
2. Tool lock
3. Chuck lock
4. Keyless chuck *
5. Sleeve keyless chuck *
6. Spindle
7. Additional handle
8. Depth stop
9. Lock
10. Switch button (for changing the operating mode)
11. Electronic signal indicator *
12. Speed preselection wheel *
13. Rotation selector switch
14. Lock button
15. Trigger switch

* depending on equipment/not in scope of delivery

Initial Operation

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 maximum trip current of 30 mA upstream. To ensure that the drill chuck is securely fitted: After initial drilling (clockwise), use a screwdriver to firmly tighten the safety screw inside the drill chuck (if applicable / model-specific). Caution left-handed thread! (see Section 8.7.)

Assembly of the additional handle (2)
For safety reasons, always use the additional handle supplied. Open the clamping ring by turning the additional handle (2) counter-clockwise. Push the additional handle onto the collar of the machine. Slide the additional handle far enough forward so that it can be turned. At the desired angle, pull it back and tighten it firmly.

Use

Setting direction of rotation, transport lock (switch-on lock)

Do not activate the rotation selector switch (8) unless the motor has completely stopped.

- R = Clockwise setting
- L = Counter-clockwise setting
- 0 = Central position: transport lock setting (switch-on lock)

The drill chuck must be firmly screwed onto the spindle and the safety screw inside the drill chuck (if applicable / model-specific) must be firmly tightened with a screwdriver. (Caution, left-handed thread !) If rotated counterclockwise (e.g. when screwing) it could otherwise become loose.

Selecting a gear
Select the desired gear by turning the thumbwheel (1). Change speed only when the machine is in the process of running down (briefly switch it on and off).

1. 1st gear (low speed, high torque) e.g. for screw-driving, drilling
2. 2nd gear (high speed) e.g. for drilling

Preselect speed
Use the setting wheel (5) to preselect the maximum speed. See page 4 for recommended drilling speeds.

Set “impulse” function
Put thumbwheel (6) on the symbol. = “impulse” function always switched on (for easy insertion and removal of jammed screws, even in case of damaged screw heads. To enable clean drilling without center punching in tiles, aluminum or other materials).

Switching on/off, changing speed
Switching on, speed: press the trigger (10). The speed can be changed by pressing in the trigger. The electronic soft start means that the machine accelerates continuously until the preselected speed is reached. Release the trigger to switch off.

Continuous activation: While pressing on the trigger (10), press in the locking button (9) and then release the trigger. To switch off, press and release the trigger (10) again. 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 in a safe position and concentrate.

Tool change with Plus (4) chuck
Opening the drill chuck:
Using one hand, hold the retaining ring securely and, using the other hand, turn the sleeve in the direction of the arrow -1. The ratchet sound which can possibly be heard after opening the drill chuck is functional and is switched off by a reverse rotation of the sleeve. If the chuck is very securely tightened: Unplug. Hold the chuck using an open-end spanner at the flats on its head, and turn the sleeve vigorously in the direction of the arrow -1.
Clamping the tool

- Insert the tool -2- as far as possible.
- Using one hand, hold the retainer ring securely.
- Turn sleeve in direction -3- until the noticeable mechanical resistance has been overcome.
- Caution! The tool is not yet fully tightened! Keep turning the sleeve (it must “click” when turning) until it cannot be turned any further – only now is the tool safely clamped.

With a soft tool shank, retightening may be required after a short period of operation.

Tool change with a geared chuck (3)
Opening the drill chuck: Open the geared chuck with chuck key -1.
Clamping the tool: Insert tool -2- as far as possible and, using the chuck key, evenly secure in all 3 bores -3.

Note for illus. C, D: Release by tapping lightly with a rubber hammer, as shown, and unscrew.
Note: If a bit clamping bush (order no. 6.31281) is attached, the screwdriver bit inserted in the hexagon socket of the spindle is held in place.

Cleaning, Maintenance

Cleaning the keyless chuck:
After prolonged use hold the chuck vertically, with the opening facing down, and fully open and close it several times. The dust collected falls from the opening. Regular use of cleaning spray on the jaws and jaw openings is recommended.

Troubleshooting

Electronic signal display (7) (BEV 1300-2)
Rapid flashing – restart protection
When power is restored after a power failure, the machine – which is still switched on – will not start by itself for safety reasons. Switch machine on and off again. Slow flashing – carbon brushes worn The carbon brushes are almost completely worn. If the brushes are completely worn, the machine switches off automatically. Have the brushes replaced by an authorised service centre. Permanently lit – overload If the machine is subject to continuous overloading for longer periods, the power input to the machine is limited. This prevents additional unauthorised heating of the motor. Run the machine in idling until it cools down and the electronic signal display switches off.

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. For a complete range of accessories, see **www.metabo.com** or the main catalog.

Repairs

Repairs to electrical tools must be carried out by qualified electricians ONLY! If you have Metabo electrical tools that require repairs, please contact your Metabo service centre. For addresses see **www.metabo.com**. You can download spare parts lists from **www.metabo.com**.

Environmental Protection

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 Guideline 2012/ 19/EU on used electronic and electric equipment and its implementation in national legal systems, used power tools must be collected separately and handed in for environmentally compatible recycling.

Technical Specifications

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

- P1 = Rated input
- P2 = Power output
- n0 = No-load speed
- n1 = On-load speed
- Tmax = maximum depth of cut
- T90° = max. depth of cut (90°)
- T45° = max. depth of cut (45°)
- A = adjustable angular cut angle
- Ø = saw blade diameter
- d = saw blade drill diameter
- a = max. base body thickness of the saw blade
- b = cutting width of the saw blade
- c= = thickness of riving knife
- m = weight

Measured values determined in conformity with EN 60745.
Machine in protection class II
~ **Alternating current**
The technical specifications quoted are subject to tolerances (in compliance with the relevant valid standards).
* Energy-rich, high-frequency interference can cause fluctuations in speed. The fluctuations disappear, however, as soon as the interference fades away.

Emission values
Using these values, you can estimate the emissions from this power tool and compare these with the values emitted by other power tools. The actual values may be higher or lower, depending on the particular application and the condition of the tool or power tool. In estimating the values, you should also include work breaks and periods of low use. Based on the estimated emission values, specify protective measures for the user – for example, any organizational steps that must be put in place. Vibration total value (vector sum of three directions) determined in accordance with EN 60745:

- ah, D = Vibration emission value (drilling into metal)
- Kh,D = Uncertainty (vibration)
- Typical A-effective perceived sound levels:

- LpA = Sound pressure level
- LWA = Acoustic power level
- KpA, KWA = Uncertainty

Wear ear protectors!

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CE *2) 2011/65/EU, 2006/42/EC, 2014/30/EU
*3) EN 62841-1:2015; EN 62841-2-5:2014; EN 50581:2012

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Documents / Resources

	metabo KHE, UHE, UHEV Series Combination Hammer [pdf] Instruction Manual KHE 2660 Quick, KHE 2860 Quick, UHE 2660-2 Quick, UHEV 2860-2 Quick, KHE UHE UHEV Series Combination Hammer, Combination Hammer, Hammer

References

- Metabo - Power Tools for professional users