

**Milwaukee**<sup>®</sup>

Nothing but **HEAVY DUTY**.<sup>®</sup>



## **C12 RT**

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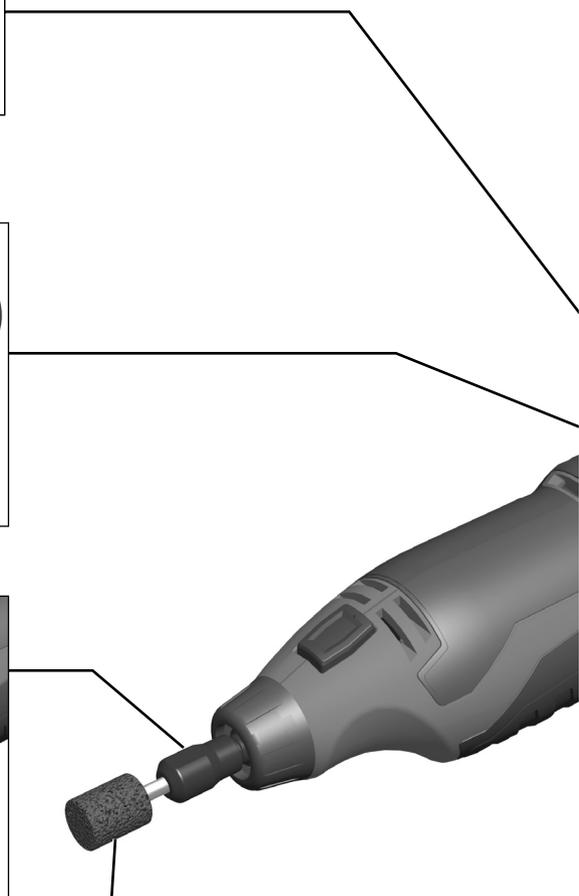
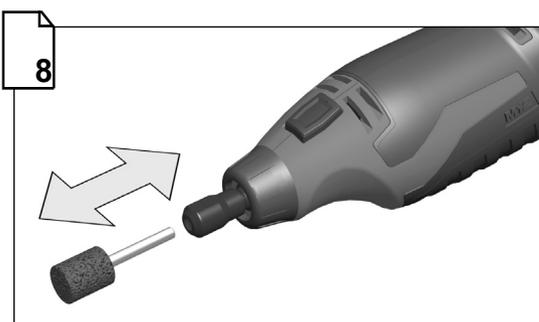
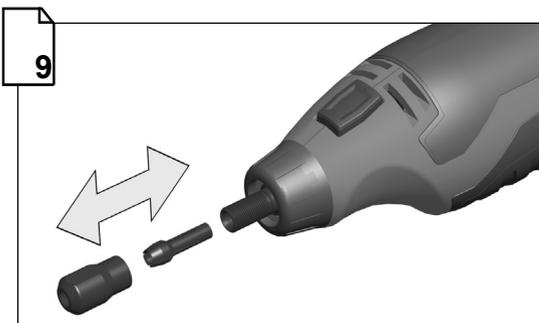
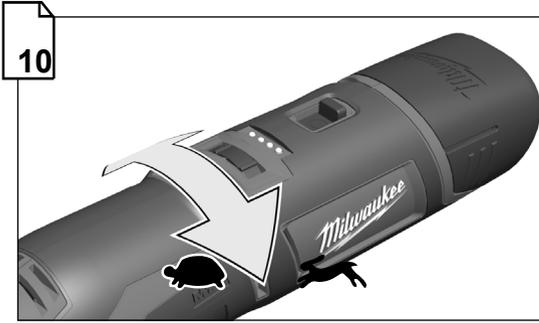
Original instructions



## **Important!**

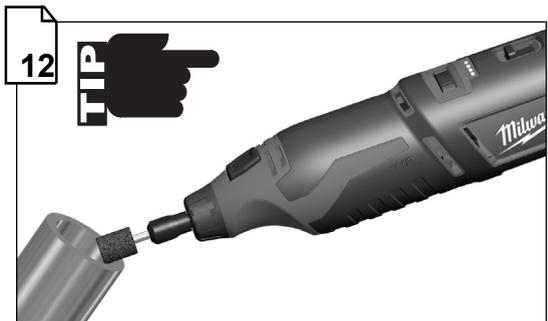
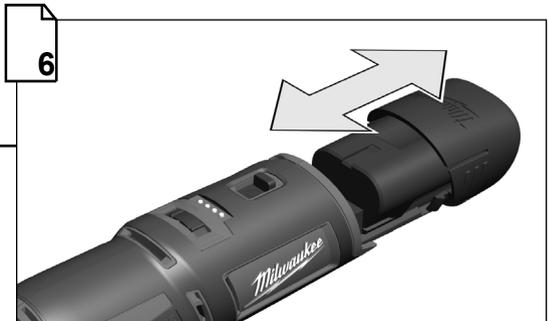
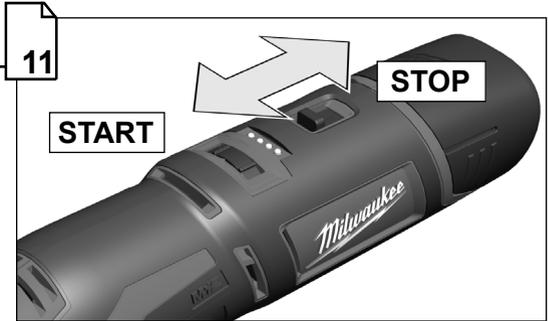
It is essential that you read the instructions in this manual before operating this machine.

Subject to technical modifications.



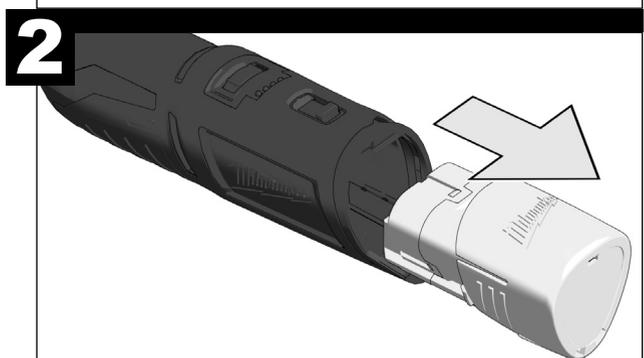
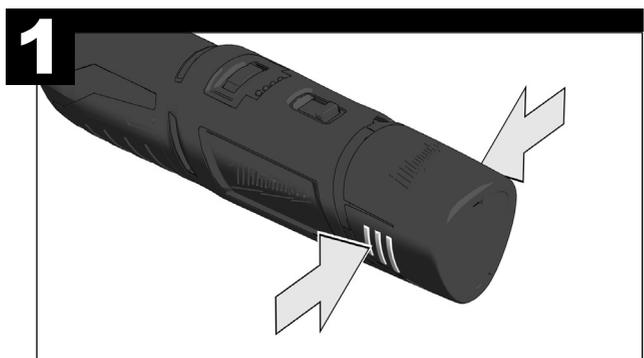
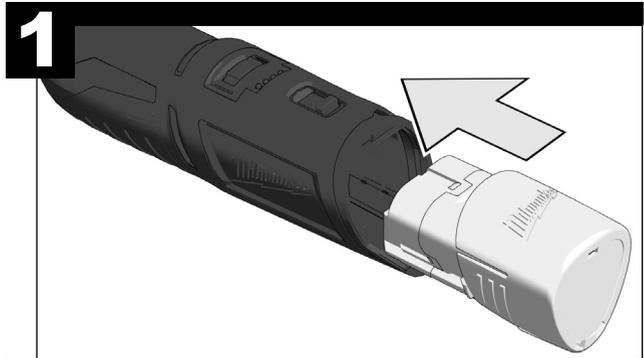


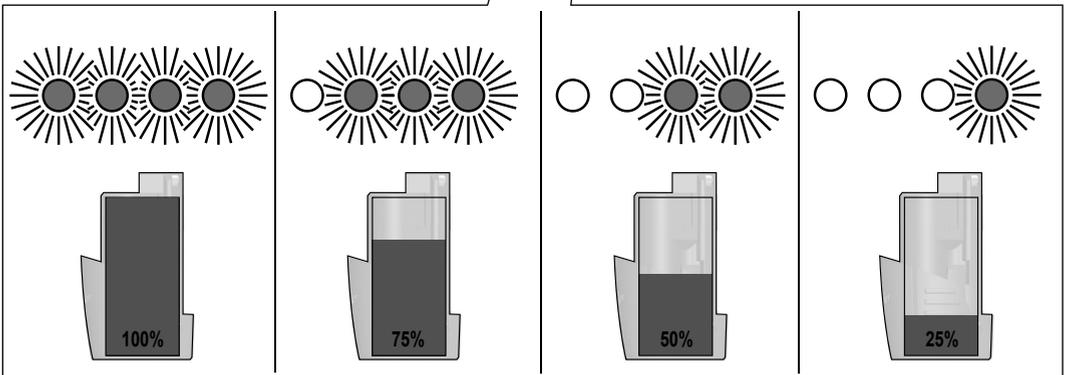
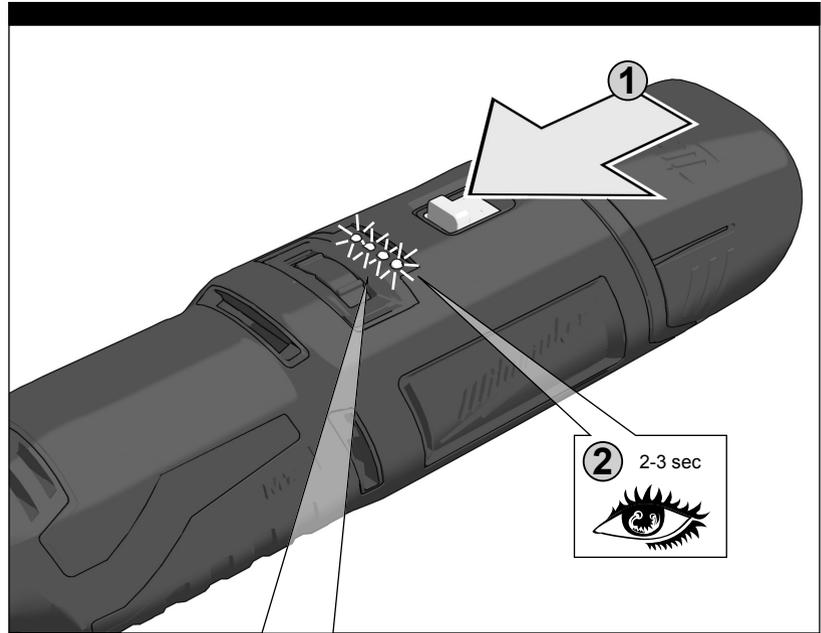
Remove the battery pack before starting any work on the machine.

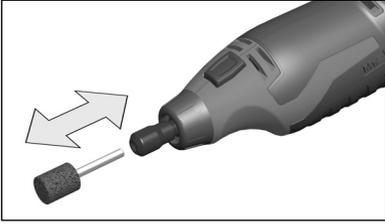




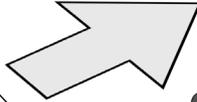
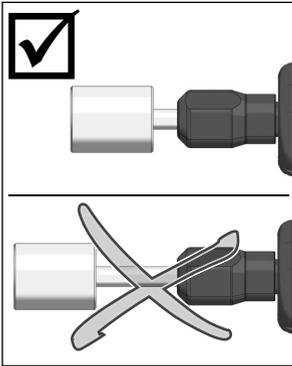
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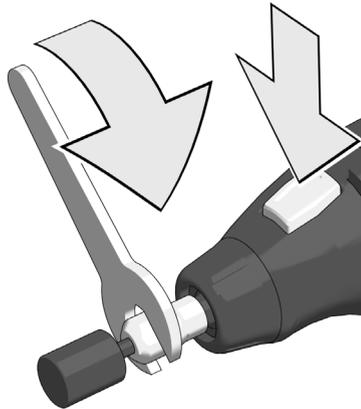


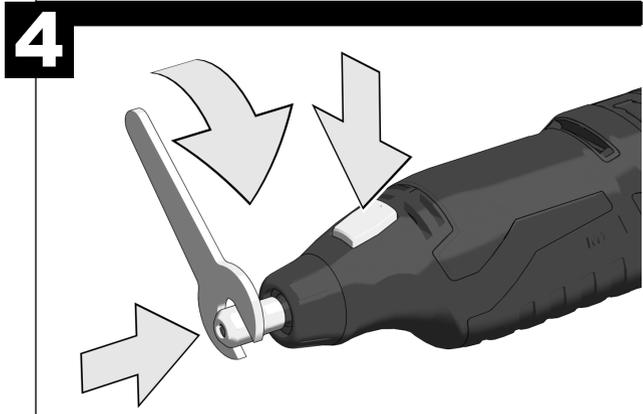
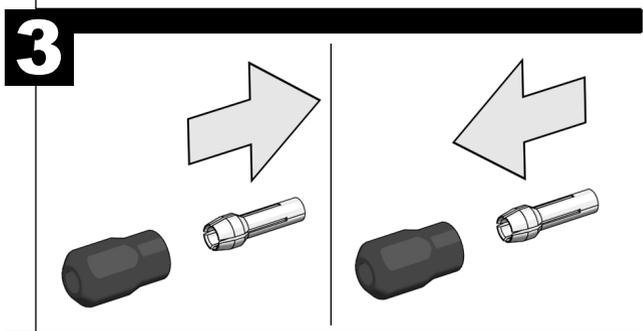
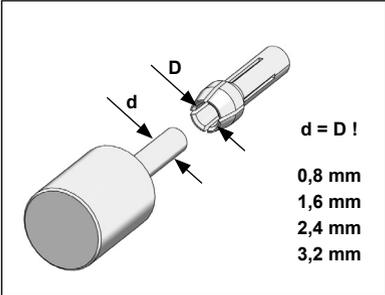
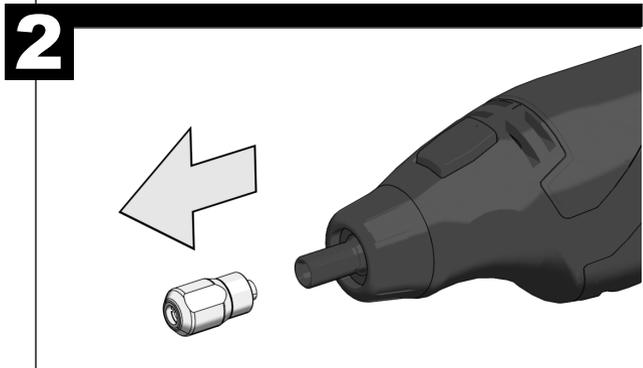
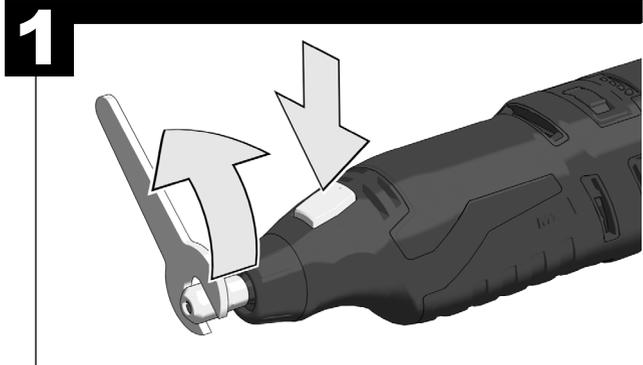
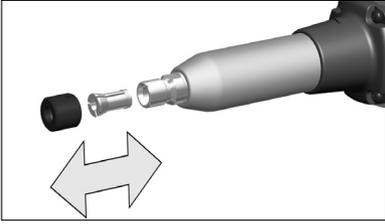


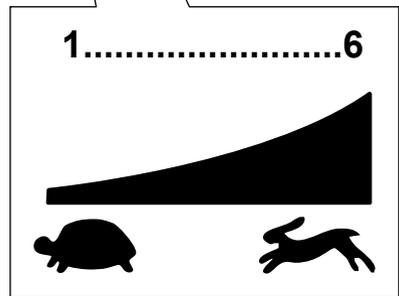
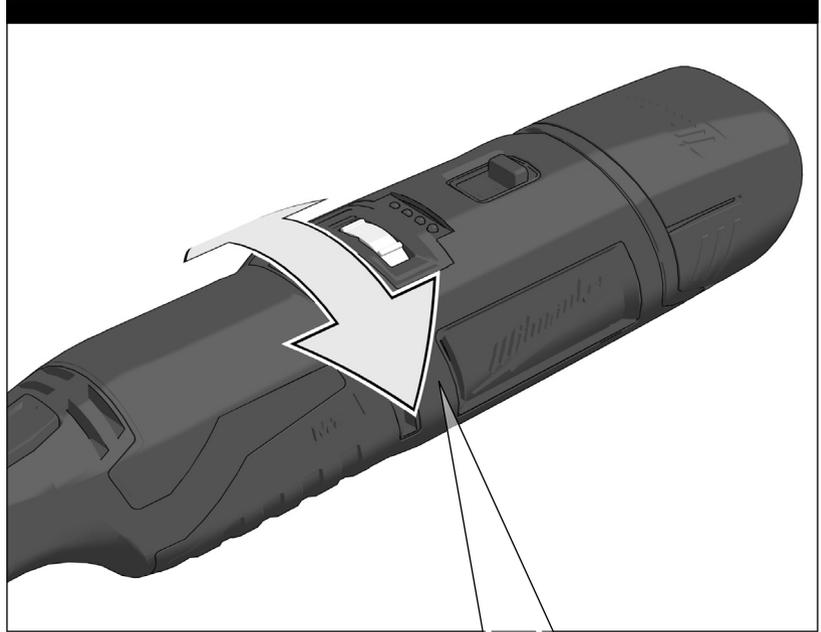
**1**



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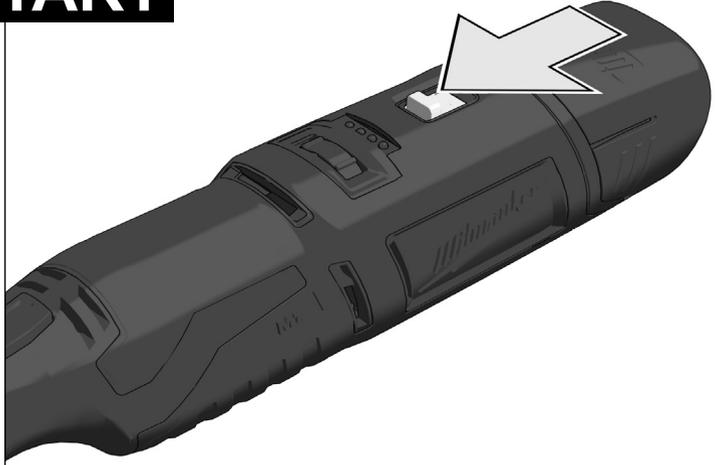




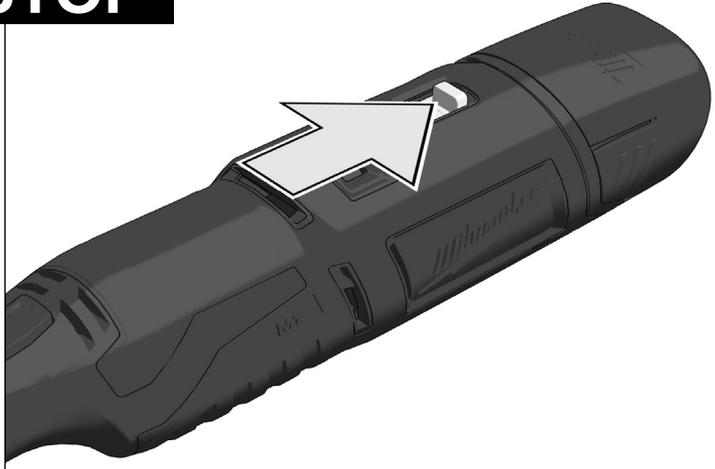


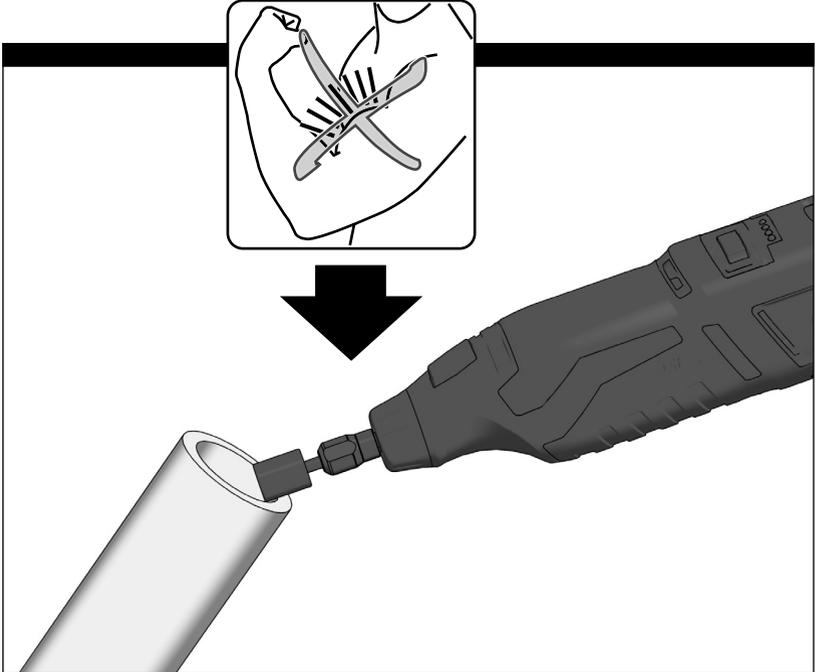
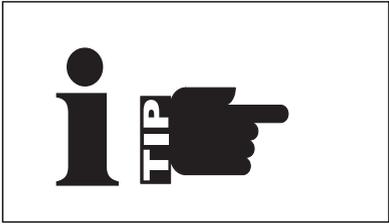


**START**



**STOP**





TECHNICAL DATA	Straight Grinder	C 12 RT
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Battery voltage.....	12 V	
Rated speed.....	5000-37000 min <sup>-1</sup>	
Collet diameter.....	0,8 / 1,6 / 2,4 / 3,2 mm	
Abrasive grinding body diam. max. ceramic or rubber bonded abrasive product.....	25 mm	
resinoid-bonded abrasive product.....	25 mm	
Weight according EPTA-Procedure 01/2003.....	0,62 kg	

**Noise/Vibration Information**

Measured values determined according to EN 60745.

Typically, the A-weighted noise levels of the tool are:

Sound pressure level (K = 3 dB(A)).....	73 dB (A)
Sound power level (K = 3 dB(A)).....	84 dB (A)

**Wear ear protection!**

Total vibration values (vector sum in the three axes) determined according to EN 60745:

vibration emission value a <sub>v</sub>	
Drilling into metal.....	2,4 m/s <sup>2</sup>
Uncertainty K =.....	1,5 m/s <sup>2</sup>
Sanding.....	2,6 m/s <sup>2</sup>
Uncertainty K =.....	1,5 m/s <sup>2</sup>
Grinding metal.....	3,1 m/s <sup>2</sup>
Uncertainty K =.....	1,5 m/s <sup>2</sup>
Grinding stone.....	1,8 m/s <sup>2</sup>
Uncertainty K =.....	1,5 m/s <sup>2</sup>
Cutting of metal.....	3,4 m/s <sup>2</sup>
Uncertainty K =.....	1,5 m/s <sup>2</sup>

**WARNING**

The vibration emission level given in this information sheet has been measured in accordance with a standardised test given in EN 60745 and may be used to compare one tool with another. It may be used for a preliminary assessment of exposure.

The declared vibration emission level represents the main applications of the tool. However if the tool is used for different applications, with different accessories or poorly maintained, the vibration emission may differ. This may significantly increase the exposure level over the total working period.

An estimation of the level of exposure to vibration should also take into account the times when the tool is switched off or when it is running but not actually doing the job. This may significantly reduce the exposure level over the total working period.

Identify additional safety measures to protect the operator from the effects of vibration such as: maintain the tool and the accessories, keep the hands warm, organisation of work patterns.

**⚠ WARNING! Read all safety warnings and all instructions, including those given in the accompanying brochure.** Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury. **Save all warnings and instructions for future reference.**

**SAFETY INSTRUCTIONS**

**Safety warnings that are common for grinding, sanding, wire brushing, polishing and abrasive cutting off operations:**

- a) **This power tool is intended to function as a grinder, sander, wire brush, polisher 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) **Do not use accessories which are not specifically designed and recommended by the tool manufacturer.** Just because the accessory can be attached to your power tool, it does not assure safe operation.
- c) **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.
- d) **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.
- e) **The arbour size of wheels, sanding drum or any other accessory must properly fit the spindle or collet 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.

**f) Mandrel mounted wheels, sanding drums, cutters or other accessories must be fully inserted into the collet or chuck. The “overhang” or the length of the mandrel from the wheel to the collet must be minimal.** If the mandrel is insufficiently held and/or the overhang of the wheel is too long, the mounted wheel may become loose and ejected at high velocity.

**g) 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 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.

**h) Wear personal protective equipment. Depending on application, use face shield, safety goggles or safety glasses. As appropriate, wear dust mask, hearing protectors, gloves and shop 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 filtering particles generated by your operation. Prolonged exposure to high intensity noise may cause hearing loss.

**i) Keep bystanders a safe distance away from work area. Anyone entering the work area must wear**

**personal protective equipment.** Fragments of workpiece or of a broken accessory may fly away and cause injury beyond immediate area of operation.

**j) Hold power tool by insulated gripping surfaces only, when performing an operation where the cutting tool may contact hidden wiring.** Contact with a "live" wire will also make exposed metal parts of the power tool "live" and could give the operator an electric shock.

**k) Always hold the tool firmly in your hands during the start-up.** The reaction torque of the motor, as it accelerates to full speed, can cause the tool to twist.

**l) Use clamps to support workpiece whenever practical. Never hold a small workpiece in one hand and the tool in the other hand while in use.** Clamping a small workpiece allows you to use both hands to control the tool. Round material such as dowel rods, pipes or tubing have a tendency to roll while being cut, and may cause the bit to bind or jump toward you.

**m) 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.

**n) 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.

**o) After changing the bits or making any adjustments, make sure the collet nut, chuck or any other adjustment devices are securely tightened.** Loose adjustment devices can unexpectedly shift, causing loss of control, loose rotating components will be violently thrown.

**p) 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.

**q) 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.

**r) Do not operate the power tool near flammable materials.** Sparks could ignite these materials.

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

### **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 kick out. 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 on the power tool and position your body and arm to allow you to resist kickback forces.** The operator can control kickback forces, if proper precautions are taken.

**b) 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.

**c) Do not attach a thin toothed saw blade.** Such blades create frequent kickback and loss of control.

**d) Always feed the bit into the material in the same direction as the cutting edge is exiting from the material**

**(which is the same direction as the chips are thrown).** Feeding the tool in the wrong direction causes the cutting edge of the bit to climb out of the work and pull the tool in the direction of this feed.

**e) When using steel saws, cut-off wheels, high-speed cutters or tungsten carbide cutters, always have the work securely clamped.** These wheels will grab if they become slightly canted in the groove, and can kickback. When a cut-off wheel grabs, the wheel itself usually breaks. When the steel saw, high-speed cutters or tungsten carbide cutter grab, it may jump from the groove and you could lose control of the tool.

### **Safety Warnings Specific for Grinding and Abrasive Cutting-Off Operations:**

**a) Use only wheel types that are recommended for your power tool and only for recommended applications. For example: do not grind with the side of a cut-off wheel.** Abrasive cut-off wheels are intended for peripheral grinding, side forces applied to these wheels may cause them to shatter.

**b) For threaded abrasive cones and plugs use only undamaged wheel mandrels with an unrelieved shoulder flange that are of correct size and length.** Proper mandrels will reduce the possibility of breakage.

**c) Do not "jam" a cut-off wheel or apply excessive pressure. Do not attempt to make an excessive depth of 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.

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

**e) When wheel is binding or when interrupting a cut for any reason, switch off the power tool and hold the power tool 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.

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

**g) 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.

**h) 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.

### **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) Allow brushes to run at operating speed for at least one minute before using them. During this time no one is to stand in front or in line with the brush.** Loose bristles or wires will be discharged during the run-in time.

**c) Direct the discharge of the spinning wire brush away from you.** Small particles and tiny wire fragments may be discharged at high velocity during the use of these brushes and may become imbedded in your skin.

### Additional Safety Warnings Specific for Abrasive Cutting-Off Operations:

- a) Do not "jam" the cut-off wheel or apply excessive pressure. Do not attempt to make an excessive depth of 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 wheel is binding or when interrupting a cut for any reason, switch off the power tool and hold the power tool 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 reenter 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.

### Safety Warnings Specific for Sanding Operations:

- a) Do not use excessively oversized sanding disc paper. Follow manufacturers recommendations, when selecting sanding paper.** Larger sanding paper extending beyond the sanding pad presents a laceration hazard and may cause snagging, tearing of the disc or kickback.

### Safety Warnings Specific for Polishing Operations:

- a) Do not allow any loose portion of the polishing bonnet or its attachment strings to spin freely.** Tuck away or trim any loose attachment strings. Loose and spinning attachment strings can entangle your fingers or snag on the workpiece.

### 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 recommended 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.

Always wear goggles when using the machine. It is recommended to wear gloves, sturdy non slipping shoes and apron.

After switching off, the machine will not be idle immediately. (After-running of the work spindle.) Allow the machine to come to a stop before putting down.

Never reach into the danger area of the plane when it is running.

Only use tools whose permitted speed is at least as high as the highest no-load speed of the machine.

Check grinding tools before use. The grinding tool must be properly mounted and turn freely. Perform a test run for at least 30 seconds without load. Do not use damaged, out of round or vibrating grinding tools.

When grinding metal, flying sparks are produced. Take care that no persons are endangered. Because of the danger of fire, no combustible materials should be located in the vicinity (spark flight zone). Do not use dust extraction.

Due care should be taken that no sparks or sanding dust flying from the workpiece come into contact with you.

The adjusting nut must be tightened before starting to work with the machine.

Always use and store the grinding disks according to the manufacturer's instructions.

The workpiece must be fixed if it is not heavy enough to be steady. Never lead the workpiece to the grinding disk with your hand.

Secure work. Use clamps or a vice to hold work. It's safer than using your hand and it frees both hands to operate tool.

Battery acid may leak from damaged batteries under extreme load or extreme temperatures. In case of contact with battery acid wash it off immediately with soap and water. In case of eye contact rinse thoroughly for at least 10 minutes and immediately seek medical attention.

Do not dispose of used battery packs in the household refuse or by burning them. Milwaukee Distributors offer to retrieve old batteries to protect our environment.

Do not store the battery pack together with metal objects (short circuit risk).

Use only System Milwaukee C12 chargers for charging System Milwaukee C12 battery packs. Do not use battery packs from other systems.

No metal parts must be allowed to enter the battery section of the charger (short circuit risk).

Never break open battery packs and chargers and store only in dry rooms. Keep dry at all times.

Remove the battery pack before starting any work on the machine.

Make sure that the grinding tool is installed in accordance with the manufacturer's instructions.

The size of the grinding tool must be suitable for the grinder.

For dusty operations, the machine's ventilation slits must be kept clear. If necessary, switch off the power to the machine and remove the dust. Use a non-metallic object for this, taking care not to damage any of the inner parts.

### SPECIFIED CONDITIONS OF USE

This Straight grinder may be used for grinding metal, plastic, or similar materials, especially in hard accessible corners and places.

Do not use this product in any other way as stated for normal use.

### EC-DECLARATION OF CONFORMITY

We declare under our sole responsibility that this product is in conformity with the following standards or standardized documents: EN 60745, EN 55014-1, EN 55014-2 in accordance with the regulations 2006/42/EC, 2004/108/EC



Winnenden, 2011-01-05

Rainer Kumpf  
Manager Product Development

Authorized to compile the technical file

## BATTERIES

New battery packs reach full loading capacity after 4 - 5 chargings and dischargings. Battery packs which have not been used for some time should be recharged before use.

Temperatures in excess of 50°C (122°F) reduce the performance of the battery pack. Avoid extended exposure to heat or sunshine (risk of overheating).

The contacts of chargers and battery packs must be kept clean.

For an optimum life-time, after use, the battery packs have to be fully charged.

## MAINTENANCE

The ventilation slots of the machine must be kept clear at all times.

Do not let any metal parts reach the airing slots - danger of short circuit!

Use only Milwaukee accessories and spare parts. Should components need to be exchanged which have not been described, please contact customer service or visit our website for a list of guarantee/service addresses.

If needed, an exploded view of the tool can also be ordered. Please state the Article No. as well as the machine type printed on the label and order the drawing at your local service agents or directly from:

customer service centre  
(Australia Toll Free Telephone Number 1300 645 928)  
(New Zealand Toll Free Telephone Number 0800 279 624)

or visit

[www.milwaukeetools.com.au](http://www.milwaukeetools.com.au)  
[www.milwaukeetools.co.nz](http://www.milwaukeetools.co.nz).

## SYMBOLS



Please read the instructions carefully before starting the machine.



Always wear goggles when using the machine.



Remove the battery pack before starting any work on the machine.



Do not dispose of electric tools together with household waste material! Refer to local authorities for an environmentally compatible recycling facility.







**Australia Head Office –**

Milwaukee Electric Tool Corporation (Australia)  
Techtronic Industries (Australia) Pty. Ltd.  
P.O. Box 121, Doncaster, Victoria, Australia, 3108

**New Zealand Office –**

Milwaukee Electric Tool Corporation (New Zealand)  
Techtronic Industries (New Zealand) Pty. Ltd.  
P.O. Box 12-806, Penrose, Auckland

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Milwaukee Electric Tool  
Max-Eyth-Straße 10  
D-71364 Winnenden  
Germany  
+49 (0) 7195-12-0

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Milwaukee Electric Tool Corporation



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