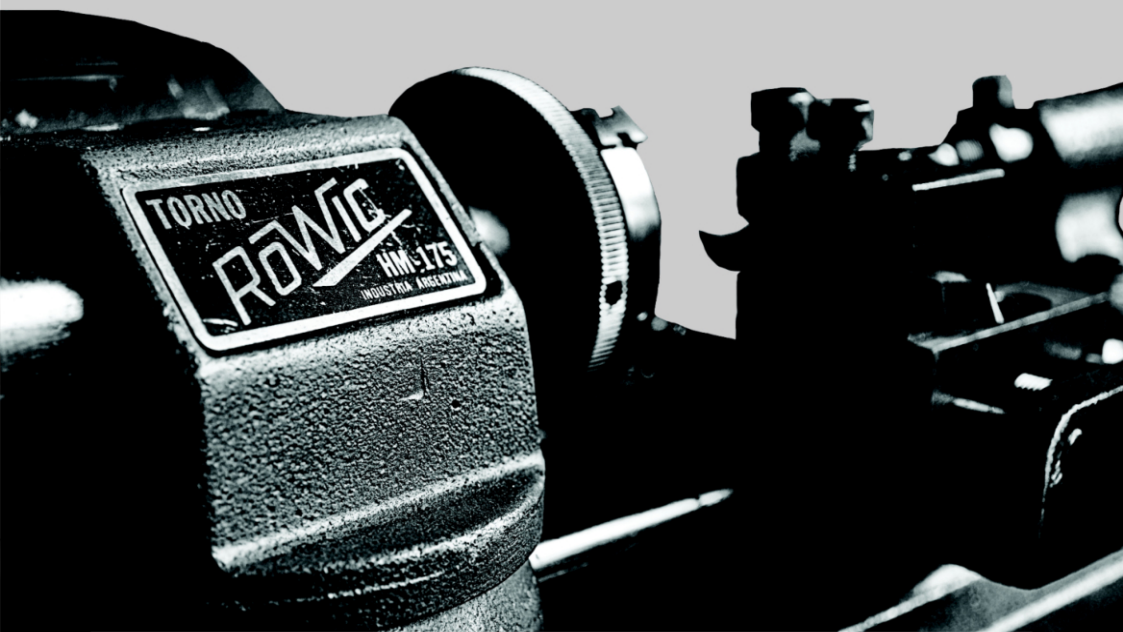


NEW MULTI-PURPOSE LATHE

ROWIC

HM 175
Industria Argentina





Here is the instruction manual that will allow the proud owner of marvellous Rowic machine to perform endless tasks and make useful pieces.

Only knowledge of the exact use of the machine, learning the right methods and descriptions in this manual will guarantee the best quality of results. For that reason, we especially recommend the study of these instructions that will allow an integrated progress, free from problems and will also keep the machine in continuous use.

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TECHNICAL SPECIFICATIONS

LATHE MODE

Distance between centres	175 mm
Height of centres above bed	36 mm
Maximum diameter to turn	Ø 54 mm
Number of spindle speeds	11
Speed range of spindle	365 to 6000 rpm
Universal motor type	1/6 HP
Motor speed off-load	12000 rpm
Motor speed under load	6000 rpm

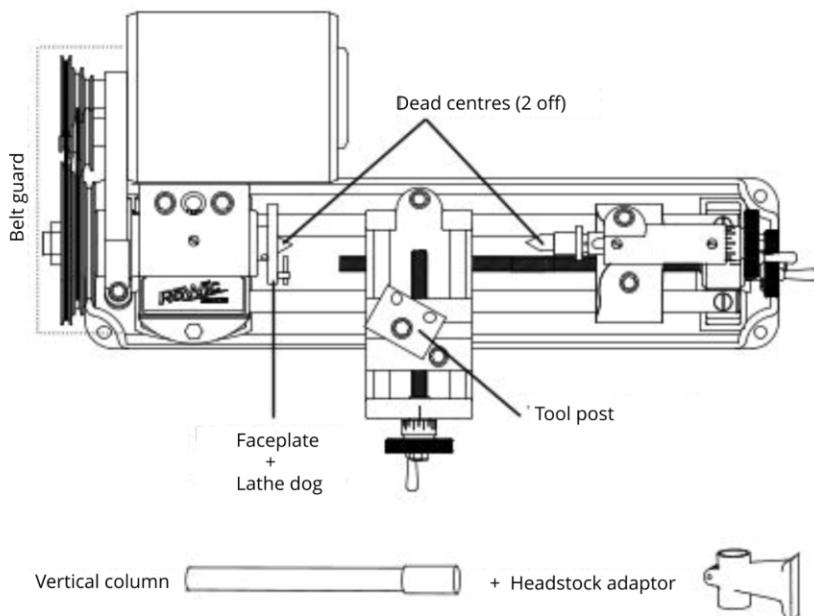
DRILLING MODE

Height	135 mm
Centre to column distance	65 mm
Maximum drill size	Ø 6 mm
Range of travel	20 mm

GRINDING MODE

Maximum diameter of grinding wheel	65 mm
Maximum width of grinding wheel	10 mm

ARRANGEMENT FOR MULTI-PURPOSE TURNING (BASE)



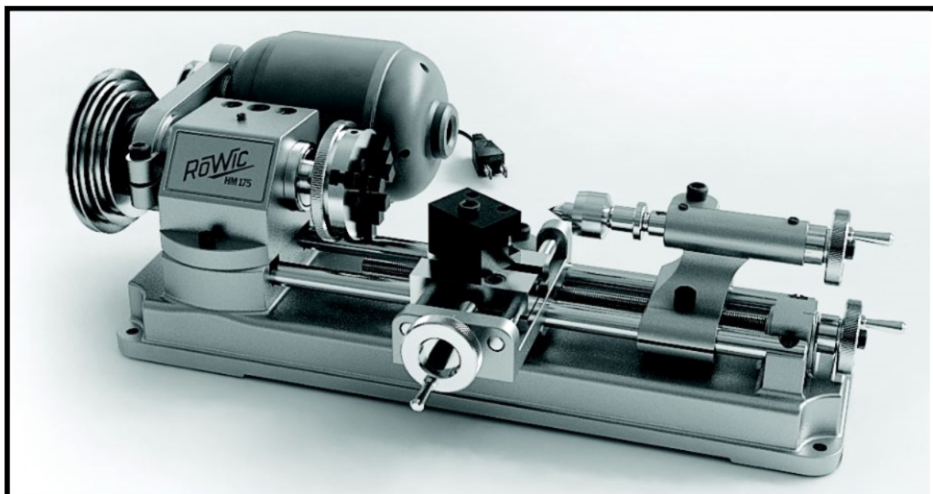
ROWIC MULTI-PURPOSE LATHE

The various applications of this tool are especially appropriate for use in diverse work locations as well as for amateur requirements.

BASIC EQUIPMENT

Lathe bed, guides (way bars), longitudinal carriage, transverse carriage, tool-post, dead centres (2 off), face plate, lathe dog, driving motor, 2 drive belts, adaptor and drill lever, vertical column, 1 Allen wrench and an instruction manual.

The use of the Rowic lathe can be extended with appropriate accessories for the type of work required.



INSTALLATION OF THE ROWIC LATHE

It is recommended that the lathe be fastened to a level base, the lathe bed secured by the four holes in the end. The recommended minimum dimensions of the base should be 30 x 58 cm.

Electric connections: plug directly into an outlet of 220 volts.

MAINTENANCE OF THE MACHINE

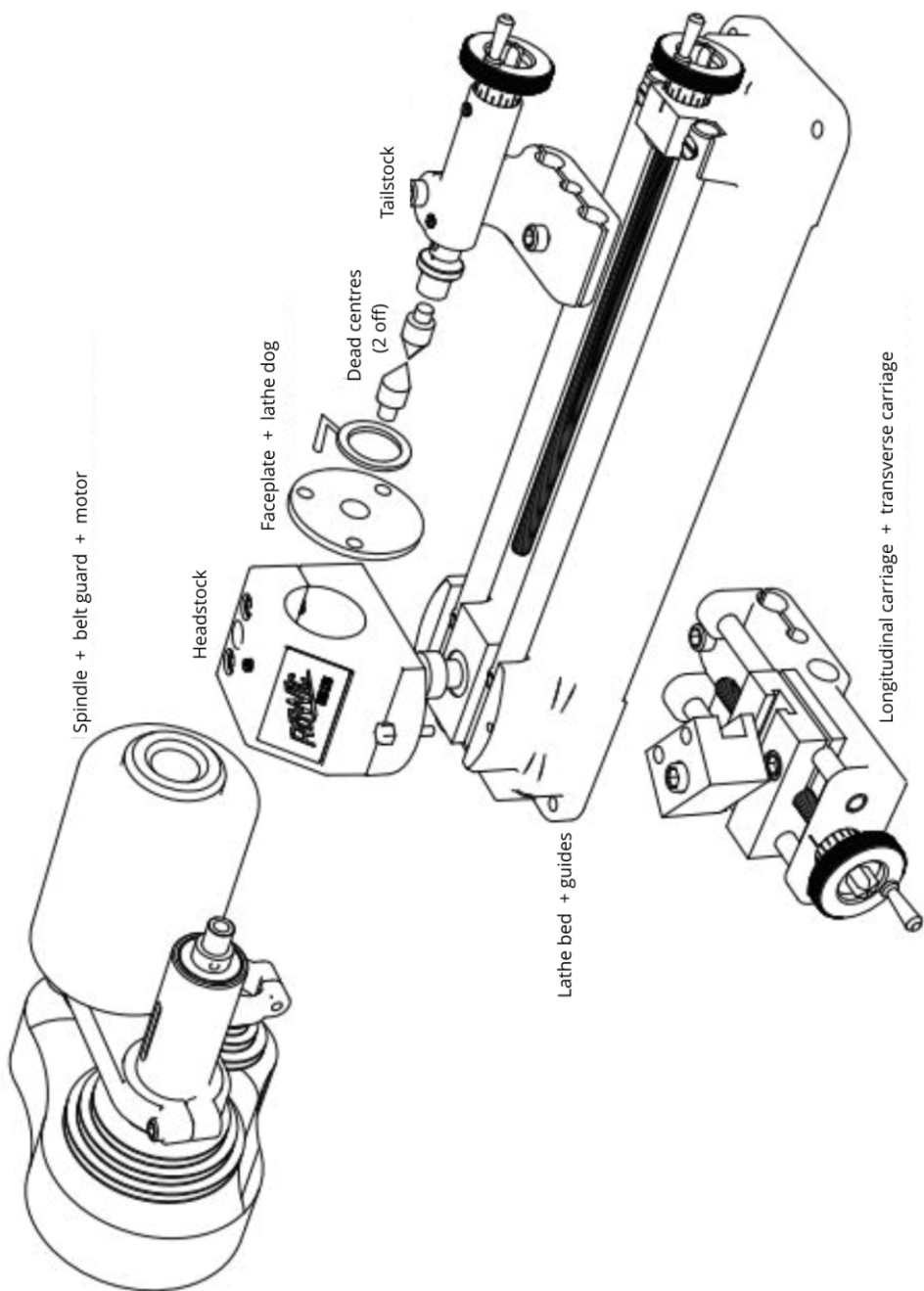
The Rowic Lathe is a precision machine requiring regular care: clean regularly the spindle, the screw threads and the guides of the carriages.

MAINTENANCE OF THE MOTOR

Important: cleaning the filter housing should be performed periodically to avoid the occurrence of high temperatures during operation. It is recommended to simply pass a dry brush over it to remove any adhering dust or swarf.

SAFETY WARNINGS

- 1) Connect the lathe only to grounded switches.
- 2) Use protective glasses.
- 3) Tie back hair and be careful of loose sleeves.
- 4) Avoid contact with moving parts when machine is in use.
- 5) Never hold the working part of the lathe when it is on.
- 6) Do not attempt to measure the workpiece while it is moving.
- 7) Be careful removing swarf and shavings. Always be aware of safety precautions.
- 8) Change the set-up of the machine only while it is not running.
- 9) Keep a clean workplace.



OPERATIONS ON THE LATHE

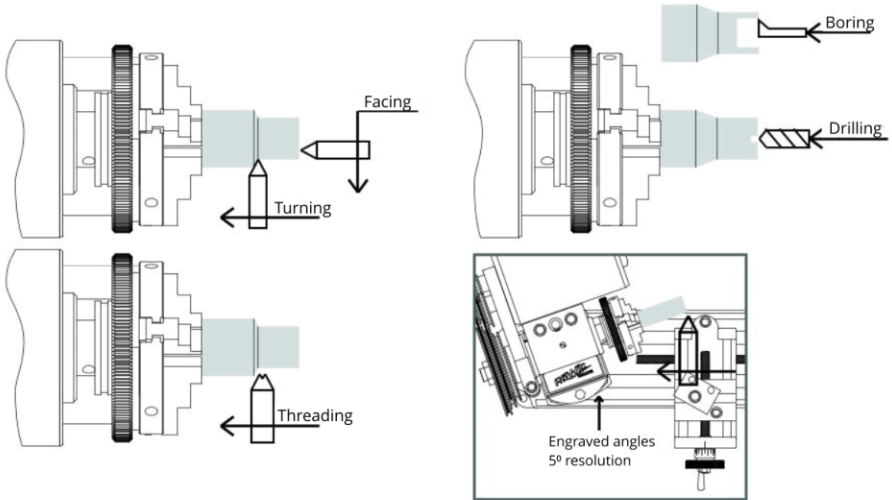
According to the type of work, the operations can be classified as follows:

- a) **Cylinder:** Consists of creating, by use of the appropriate tool, a smooth exterior of the workpiece to obtain a cylinder of the required measurement.
- b) **Facing:** It is understood by this, by machining the end of the piece one can obtain a finish perpendicular to the exterior diameter as desired.
- c) **Threads:** Threads can be made, internally or externally, with the appropriate tool, cores or bearings (taps or dies?).
- d) **Tapered:** If a tapered finish is required it can be obtained by turning the headstock with the

angular displacement necessary and proceeding as for the cylinder.

e) **Boring or drilling:** You can make an infinite spectrum of holes or piercings in various positions using the chuck, which can be mounted on the tailstock or the headstock. Also you can use the Rowic machine as a pillar drill.

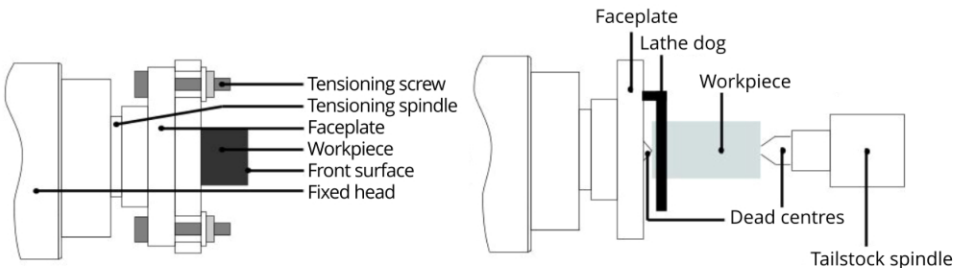
f) **Internal turning:** If you need internal grooves, smaller dimensions or diameters, using the boring tool you can easily achieve this.



SECURING THE WORKPIECE

May be carried out in the following ways:

- 1) Directly on the faceplate by means of 2 or 3 screws or clamps.
- 2) Between centres, arranging the workpiece between the headstock and tailstock in relation to the diameter.



- 3) Chuck, exclusively for pieces short in relation to diameter.

AUTO-CENTRING CHUCK WITH THREE REVERSIBLE JAWS

Use the chuck for a workpiece that requires the minimum tolerance. The jaws are reversible and adjustable so that you can arrange the perfect combination for solids and tubes.

To reverse the jaws turn in a clockwise direction until they are in descending numerical order: 3,2,1 (Fig 3.1)

To position the reversed jaws you must change the numerical sequence of jaws to the position following Fig 3.2.

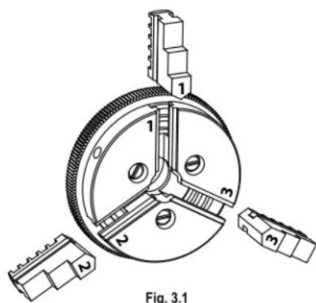


Fig. 3.1

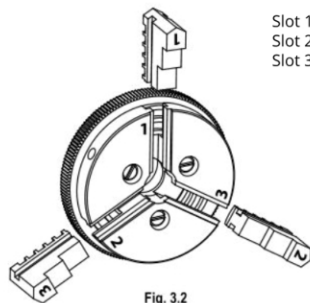


Fig. 3.2

Slot 1: Jaw 1
Slot 2: Jaw 3
Slot 3: Jaw 2

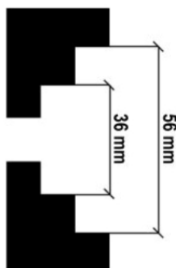
IMPORTANT: Exceeding these values could cause severe damage to both the Rowic and the user.

Minimum diameter of the workpiece: 1 mm.
Maximum diameter of the workpiece: 22 mm.

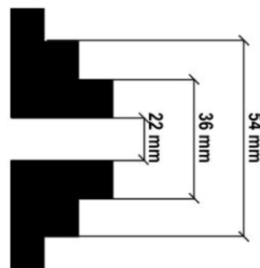
Minimum diameter of the workpiece: 14 mm.
Maximum diameter of the workpiece: 54 mm.

MAXIMUM DISTANCES

With position of jaws reversed



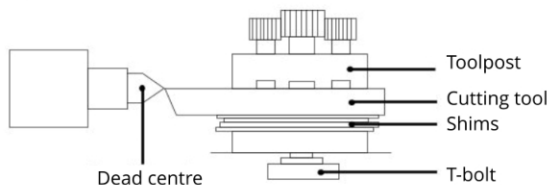
With position of jaws normal



POSITIONING THE CUTTING TOOLS

Previously sharpened, the cutting tool is inserted into the slot in the toolpost pressing firmly against the bottom and held with the two screws to effect this. This will control the height of the edge and centre relative to the rotating workpiece, placing the tailstock centrally to verify its alignment.

If necessary, you can supplement with thin shims, or grind a little more off the tool if the cutting edge remains under or over the centre. The bearing will be positioned perpendicularly to advance longitudinal adjustment of the transverse carriage by means of the corresponding handwheel.



CONSIDERATIONS PRIOR TO TURNING

Given that turning consists of doing things on different materials, such as metal – ferrous and non-ferrous – wood, plastic, etc., in each case we use different cutting speeds, to obtain the best use of the machine and the best end product.

The table below describes the best number of revolutions per minute for each material, together with the diameter of the piece.

MATERIAL	Diameter of the workpiece blank (mm)				
	1 - 8	9 - 15	16 - 25	26 - 32	+ de 32
Steel	1.100	850	685	365	365
Brass - duralumin	2.600	2.000	1.100	685	685
Aluminium	2.600	2.000	1.600	1.100	685
Synthetic material	2.600	2.000	1.600	1.100	685
Wood	2.600	2.600	2.000	1.600	1.100

To select the appropriate angular cutting speed, the belts must be arranged on the pulleys according to the specification in the table above. Although it will depend upon the workload on the motor, approximate speeds can be obtained by arranging the drive belts on the pulleys according to the table below.

For example:

Material being worked: Brass

Diameter: 18 mm

Cutting speed (as indicated in the table above): 1100 rpm.

Position of the drive belts: Box 8

R.P.M.	Spindle Intermediate Motor	R.P.M.	Spindle Motor
① 365		⑦ 850	
② 685		⑧ 1.100	
③ 850		⑨ 1.600	
④ 2.600		⑩ 2.000	
⑤ 3.750		⑪ 2.600	
⑥ 6.000			

When arranging the workpiece on the machine, you must be careful that the cutting tool does not clash with it. To prevent this pull the transverse carriage, as far back as possible away from it.

Placing the material in the working position, bring the cutting tool close by using the handwheels that control the position of the longitudinal and transverse carriages.

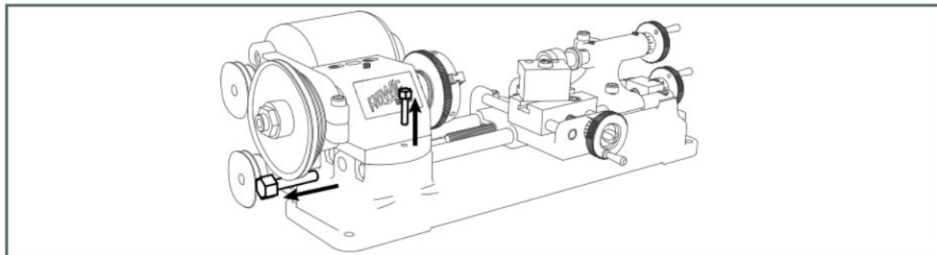
These handwheels are graduated, each division equivalent to an advance of 0.05mm and each complete turn equivalent to an advance of 1mm.

It is recommended to start turning with shallow cuts to evaluate the sharpness of the cutting tool for the desired job. Later you can vary the speed and depth to gain the best result.

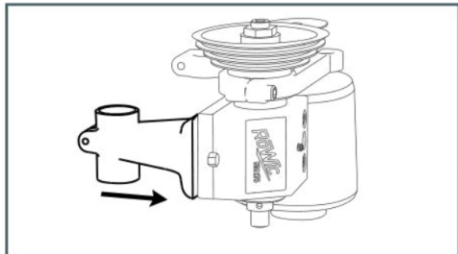
INSTRUCTIONS FOR CONVERTING THE ROWIC TO A PILLAR DRILL

- a) Column
- b) Headstock support
- c) Drill chuck

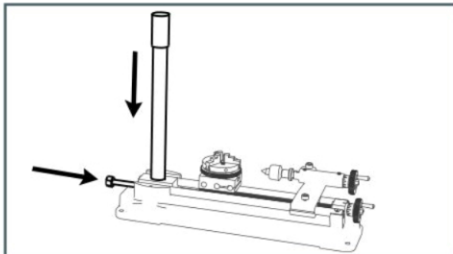
1) Loosen the screw holding the headstock to the base 2) Remove the pin locking the headstock to the lathe bed.



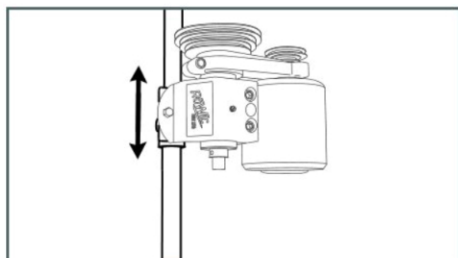
3) Separate the headstock from the lathe bed and insert in its place the adaptor for the drilling column.



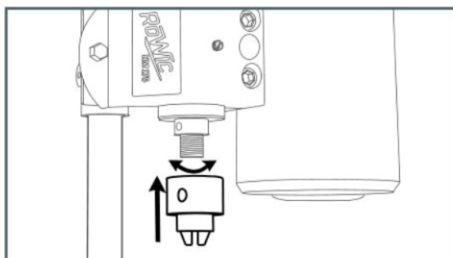
4) Insert the column into the hole in the lathe bed, fastening it with the screw



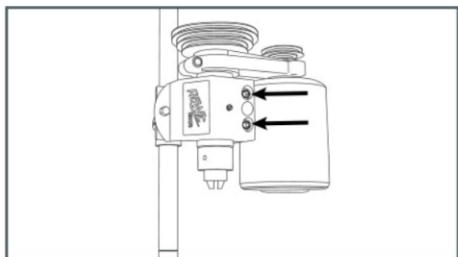
5) Insert the adaptor over the column depending on the height of the workpiece to be drilled.



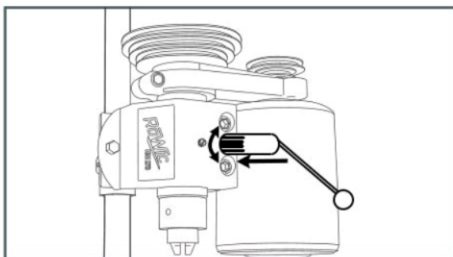
6) Mount the drill chuck, screwing it onto the spindle.



7) Slightly loosen the screws retaining the spindle in the headstock allowing a slight displacement of the spindle.



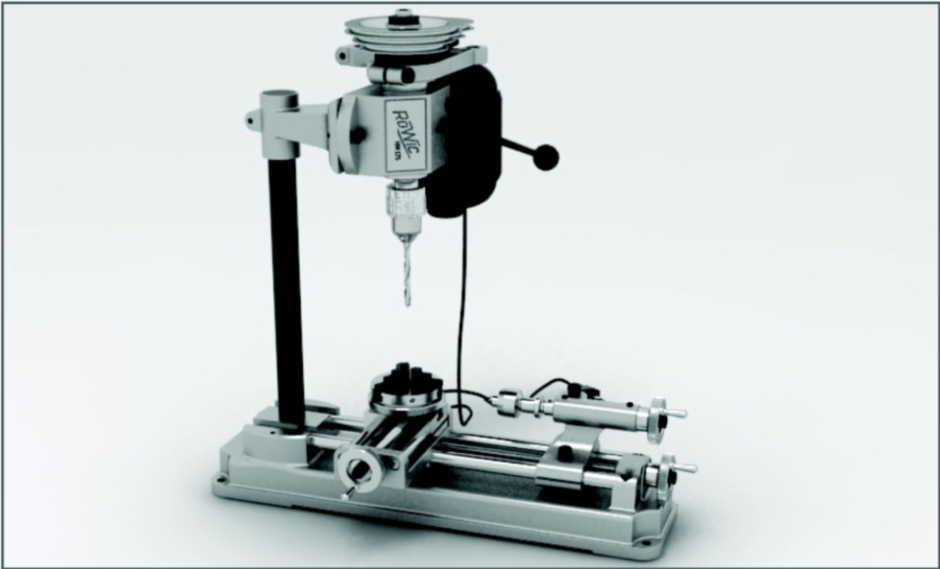
8) Insert the control lever into the respective hole of the headstock, taking care that the teeth of the lever engage with those of the spindle exactly.



The workpiece to be drilled can be held directly over the transverse carriage with clamps and screws. Also arranging in the same carriage a clamping vise will help give a rigid support. It is recommended that the following speeds be used

according to the material and diameter of the bit to be used. (High-speed steel for metal and carbon steel for wood).

DRILL Ø mm	Number of revolutions per minute				
	Steel	Brass	Aluminium	Plastic	Wood
Up to 3	1.600	3.750	3.750	3.750	6.000
from 3 to 4	1.400	2.600	2.600	3.750	3.750
from 4 to 5	850	1.100	1.100	2.600	2.600
from 5 to 6	365	850	850	1.100	2.600

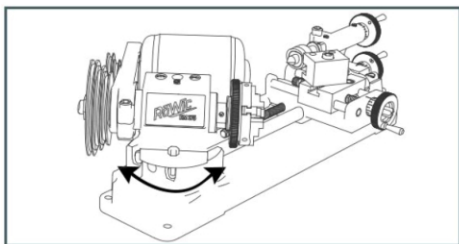


INSTRUCTIONS FOR CONVERTING THE ROWIC TO A BENCH GRINDER

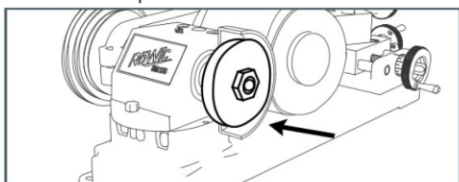
- a) Grinding wheel guard and arbor.
- b) Grinding wheels.

Firstly choose the grinding wheel according to the material to be worked. To this effect there are two options depending on the material used. For the tempered steel use the white aluminium oxide 99%. For other materials use grey stone.

- 1) Start with steps 1 and 2 of previous section – the pillar drill.
- 2) Rotate the headstock to 90°, making sure that the motor passes freely over the guide bars. If necessary raise while loosening the tension screw locking the headstock, and then tightening it in the desired position.



- 6) Screw the grinding wheel arbor onto the shaft of the headstock spindle.

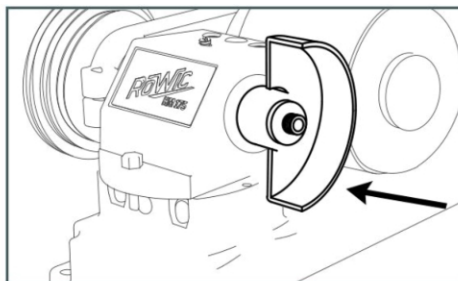


IMPORTANT: Use protective glasses.

Once chosen, the grinding wheel is mounted on the arbor making sure that the protective cardboard pad is in good condition and that contact with the hub is even, then tightening the screw firmly to avoid the grinding wheel spinning free.

To prepare the Rowic as a grinder proceed as follows:

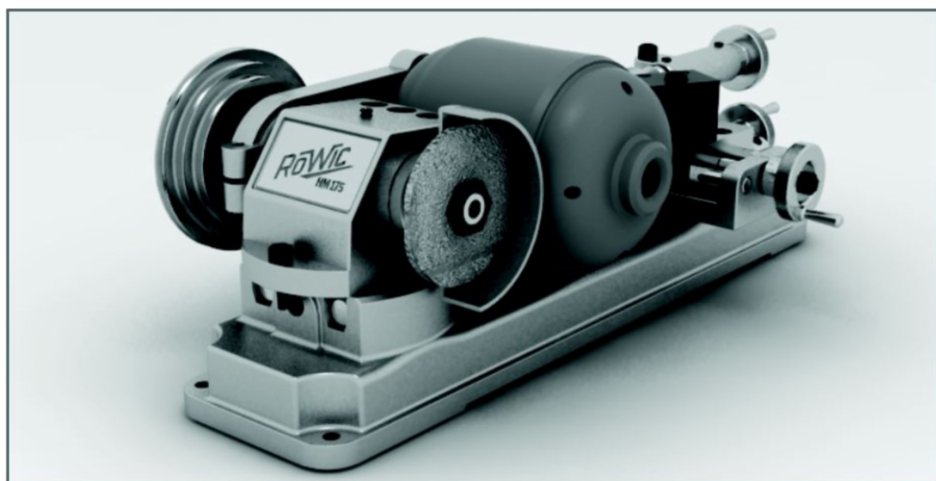
- 3) Re-adjust the screw holding the headstock to the lathe bed.
- 4) Arrange the spindle in the most forward position in relation to the headstock.
- 5) Insert the hub of the grinding wheel guard and hold in place with the corresponding screw.



For grinding wheels of 65 mm we recommend the following speeds:

For coarse sharpening or grinding: 2000 rpm.
For fine sharpening: 2600 rpm.

If the diameter of the grinding wheel is reduced you must increase the speed in the same proportion.

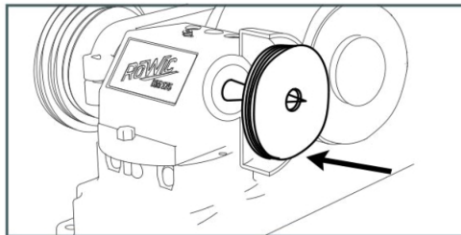
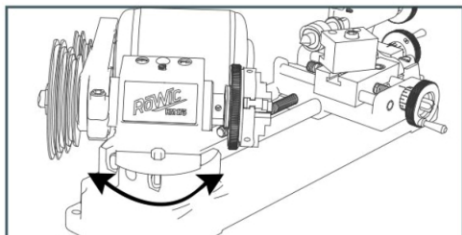


INSTRUCTIONS FOR CONVERTING THE ROWIC TO A POLISHING MACHINE

- a) Arbor for polishing cloth
- b) Polishing cloths (soft and hard)

With the machine set up as for grinding, remove the grinding wheel arbor and guard and replace with the polishing arbor. Onto this arbor you can

then fit the required polishing cloth.



INSTRUCTIONS FOR CONVERTING THE ROWIC TO A SURFACE GRINDER

- a) Grinding wheel.

You can grind planed surfaces by setting up the machine as a pillar drill, arranging on the spindle a suitable cup-shaped grinding wheel.

The workpiece is secured to the transverse carriage with screws, or even better with special clamps.

Advance by moving the longitudinal carriage using the corresponding handwheel, regulating the vertical position of the headstock to avoid too large a pass and to grind gently. Periodically refresh the grinding wheel with a diamond to keep the cut free from spraying.

ACCESSORIES FOR CONVERTING THE ROWIC LATHE TO A MULTI-PURPOSE LATHE

Auto-centring chuck with three reversible jaws

Live centre with double bearings

Drill chuck

Cross-slotted table with clamps

Headstock raising block

Jointer for wood

Clamping vice

Wood saw

Grinder kit: Grinding wheel guard + Grinding wheels + Arbor

Polisher kit: Polishing cloth arbor + Polishing cloths

Kit for wood:

CNC Kit: Stepper motors + Guides + Stains + Interface

Cutting tool

Interior insert slot + Insert

Exterior insert slot + Insert

GUARANTEE

Rowic minutely checks and verifies its tool before it is sent.

Thus Rowic offers

the following commercial warranty.

The warranty of Rowic tools is agreed to with the following conditions.

1. The warranty consists of free correction of the defects that can be shown to have appeared during the period of the warranty, when said defects have been caused by faults during fabrication.
2. The duration of the warranty is 6 months. The closing date is shown on the lower part of this document.
3. Exclusions:
 - Normal wear and tear.
 - Damage caused by not following the instruction, incorrect use of the machine, use of machine in unsuitable surroundings, using outside of normal range, and inadequate maintenance.
 - Defects in the machine caused by using parts or accessories not made by Rowic.
 - Machines that have been altered or added to.
 - Minor reductions in the desired quality of the machine that do not affect the value or use.
4. We will correct defects recognized by us and which correspond to the terms of the warranty, or replace the defective machine.
Once replaced the old machine will be our property.
5. The period of the warranty does not start anew with correction or replacement of machine.

WARRANTY PERIOD

Start date:

Expiry date:

Firm

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