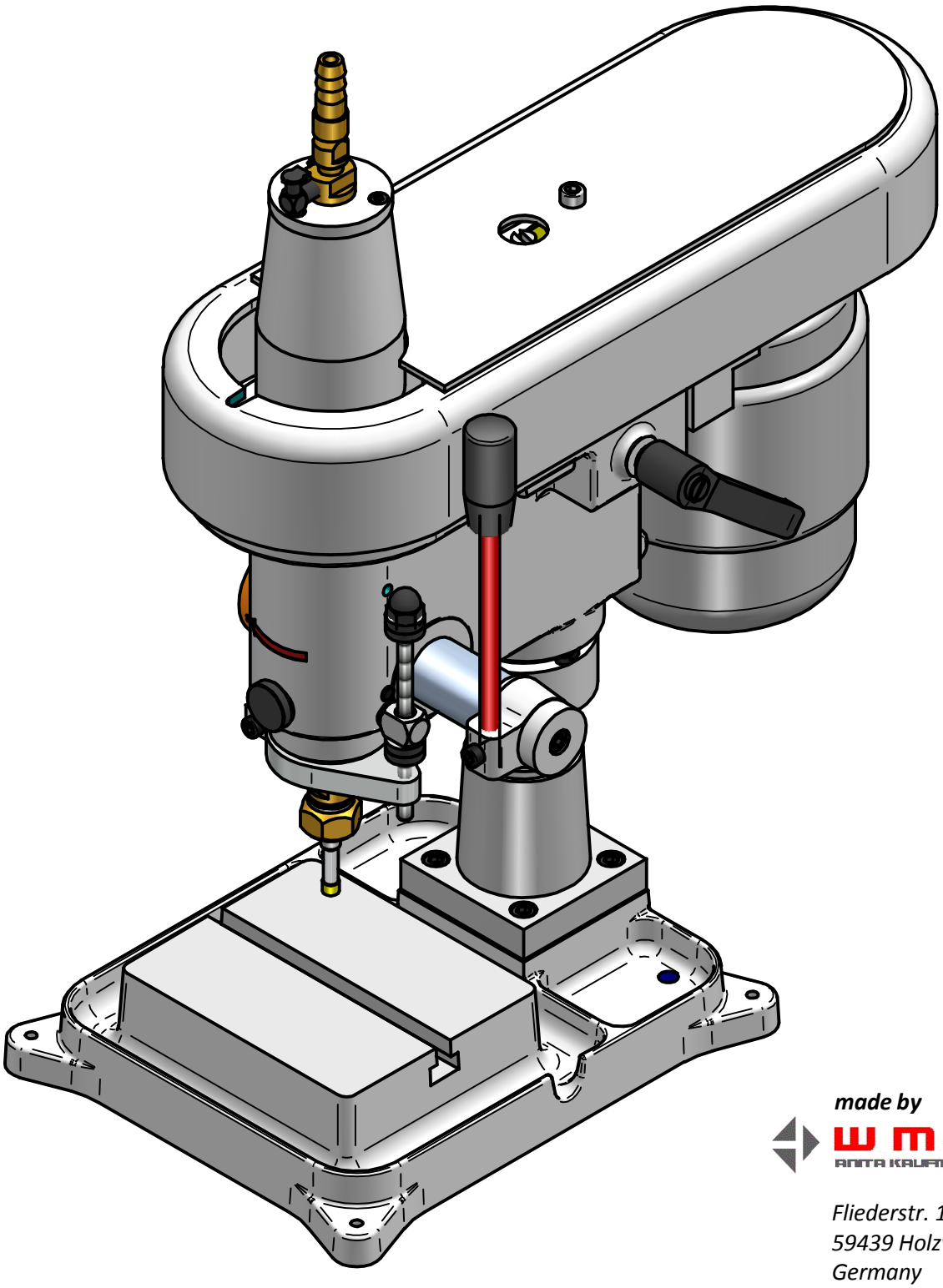
Tibo - NB 4



made by

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1 Application

This machine is suitable for drilling precious and semi-precious stones, glass, porcelain, hard metal, stones and other hard materials by means of diamond hollow drills from 0,75 mm to 16,0 mm diameter.

2 Safety guidelines

Pay attention that you don’t touch the spindle or drill if turning.
Do not remove the belt housing if the machine is working.
All electrical work has to be done by skilled employees. If you change the belt for the purpose of changing the rpm, please isolate the power supply from the machine.
For security reasons you must put on safety goggles and if necessary a protective dust mask.
The national safety regulations must be adhered to.

3 Technical data

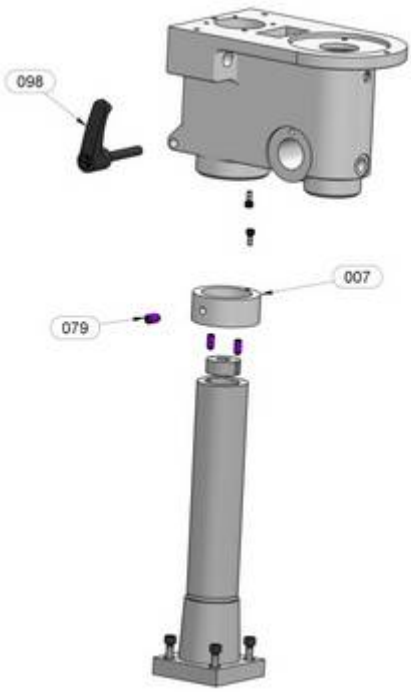
Drilling capacity:	up to Ø 16 mm
Drilling depth:	max. 35 mm
Working range spindle / column base:	85 mm
Adjustable distance spindle / table:	55 - 140 mm
Working table:	120 mm x 140 mm
Spindle speed:	4000 and 6000 U/min
Swingable headstock:	360°
Collet:	Ø 4 mm resp. Ø 6 mm
Motor:	230/400 Volt, 0,25 kW, 2840 rpm
Weight:	29 kg

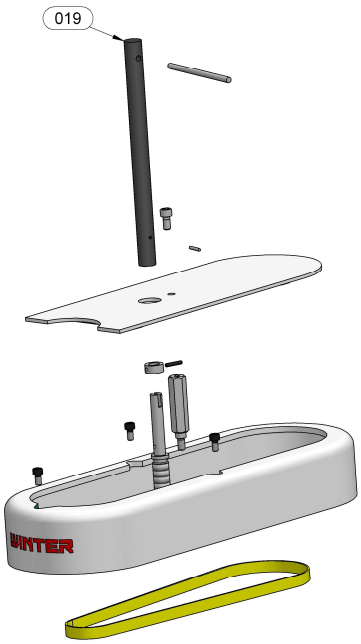
4 Operation information

Before starting to drill, put the cooling water supply into service.
The pressure must be about 3 bar. Do not run the machine without water supply it could damage the seals.
Use only little bore pressure! Lift the drill in short intervals to the blow, so that eventual core rests can be ejected and the drill chips are continuously carried off by the water.

5 Construction characteristics

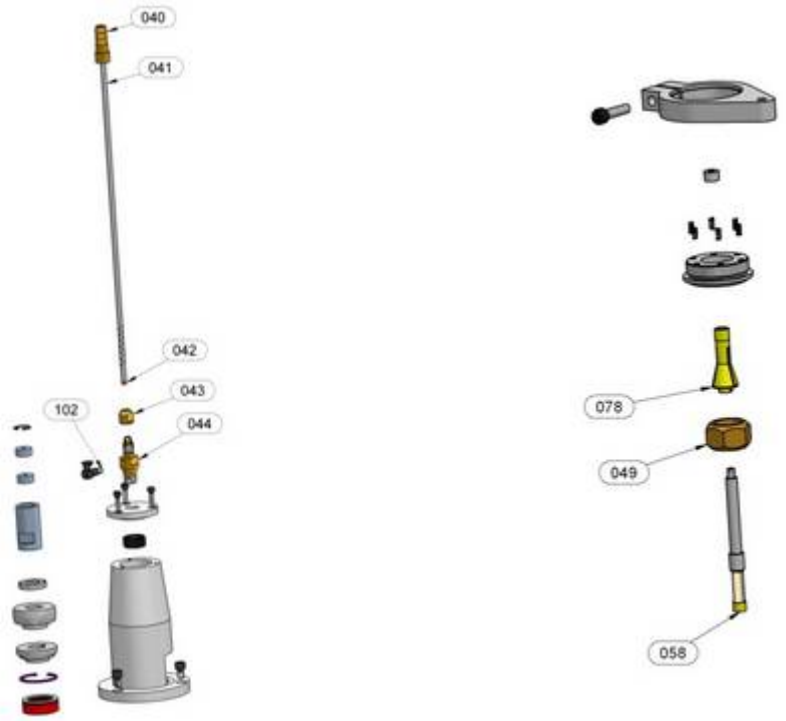
The cooling water necessary when drilling with diamond hollow drills is conducted into the drill by way of the hollow spindle running into the ball bearings.
The pick up of the cylindrical 4 mm or 6 mm thick drill shaft is effectuated by a threaded pipe connection M 4 x 0,5 and a collet 4 mm or 6 mm.
The particular advantages are the mechanical elevation adjustment and the drilling depth adjustment. The feed can be made sensible by hand.
The head of the drilling machine is height adjustable. Therefore you have to loosen the clamp of the column Pos. 098 and adjust the height by means of lever Pos. 019. The horizontal position of the drilling head can be adjusted by the ring Pos. 007. Therefore you have to loosen and tighten the screw Pos. 079.





6 Inserting the ejector

When putting the ejector into service, Pos. 041, Pos. 040, Pos. 042 has to be put into the locking sleeve, Pos. 044 and tighten (soft!) by means of the adjusting nut Pos. 043. Before you have to put a drill into the collet Pos. 078, and slide down the ejector until it has reached the drill. Connect the coolant hose without power, note the ejector should not be bent or damaged.

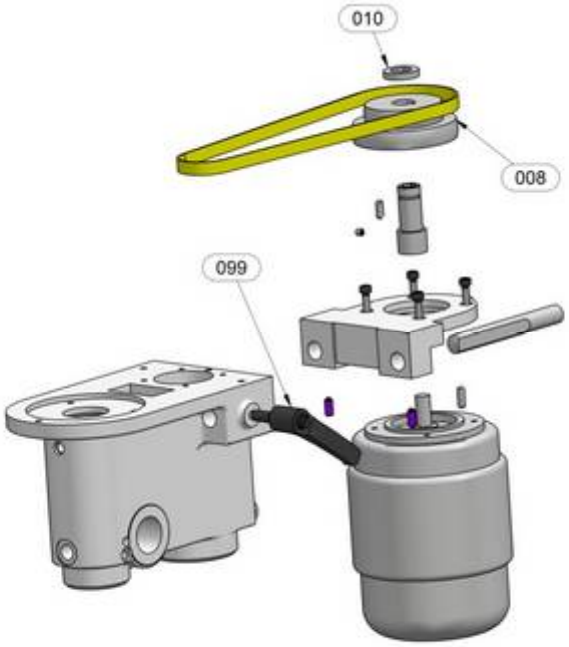


7 How to change the drill

For changing the drill you have to loosen the collet Pos. 078 and unscrew the drill. Then you have to loosen the adjustment nut Pos. 043, lift the ejector Pos. 041 a little bit. When you set in the new drill into the collet you first have to screw in the drill (M4 x 0,5) and then tighten the collet. Lastly you have to slide down the ejector until it has reached the drill then tighten (soft!) the adjustment nut.

8 Changing the spindle speed

First you have to loosen the screw Pos. 099, in order to loosen belt tension.
Then you have to unscrew the ring Pos. 010 (attention: **left hand thread**) by means of the face spanner (delivered tool). Now the driver pulley Pos. 008 can be taken off by hand, turned and set in again. The ring Pos. 010 has to be screwed down again.
At last the belt tension has to be adjusted and the screw Pos. 099 tightened.



9 Sharpening the drills

Interrupted or insufficient water cooling damages the drill.
Drills which became blunt should be sharpened with a WMK - Stone:

for drills in Nh-construction	Stone Nr. 2
for drills in BZ-construction	Stone Nr. 4

10 Dimensions of drilling depth

Ø 0,75 mm to Ø1,2 mm	7 mm
from Ø 1,3 to Ø 1,7 mm	11 mm
from Ø 1,8 to Ø 1,9 mm	12 mm
from Ø 2,0 to Ø 2,2 mm	14 mm
from Ø 2,3 to Ø 2,5 mm	15 mm
from Ø 2,6 to Ø 2,8 mm	17 mm
from Ø 2,9 to Ø 3,1 mm	20 mm
from Ø 3,2 to Ø 16,0 mm	22 mm

11 Maintenance

If the drilling machine is be used often, the oil box Pos. 102 is to be filled daily (with motor oil W 20/20 or similar).
Also the spindle sleeve has to be greased daily. The bearings of the spindle have to be greased by a grease pistol once a month.

12 Guarantee

WMK ensure a manufacturer's guarantee of 1 year on all newly purchased machines, valid from the date on which the customer bought the machine.
The guarantee only covers deficiencies which can be traced back to material and / or manufacturing defects and failure to live up to the promised performance chracteristics. Any claims made under the guarantee should be accompanied by the original sales receipt with the date of sale.
Claims may only be made under the guarantee if the machine has been used as intended by the manufacturer and in accordance with instructions.
The guarantee does not, in particular, cover operational wear, improper application, partially or completely dismantled machines, damage due to excessive machine stress or the use of defect or inappropriately used application tools.