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Operating Instructions SCHICK - Milling Machine HZ 70

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1. Range of Applications

The HZ 70 milling machine is intended for use in dental laboratories. It includes a milling arm which is easily moved in three dimensions and has been designed according to current ergonomic aspects. This eliminates user-fatigue, even over long periods of time.

This milling machine can be used for the materials usually employed in dental laboratories, such as waxes, plasters, acrylics, metal etc.

2. General Information

2.1 Ascertain that your mains supply coincides with the data on the rating plate.

2.2 HZ 70 milling machines are **not suitable for the following applications:**
- in areas where there is a risk of explosion.

2.3 Ensure that all regulatory requirements are observed during use (always wear protective glasses).

2.4 **Under no circumstances should the milling machine be cleaned with compressed air.**

2.5 To retain the precision of the chuck and prolong its service life, it must always be fitted with a rotary instrument or the rod supplied with the unit (even when not in use).

Caution: 

- When using rotary instruments, do not exceed the maximum speeds laid down by their manufacturer.
- repairs and other technical procedures must only be carried out by SCHICK or other suitable qualified personnel, authorized by SCHICK.
- SCHICK do not guarantee the HZ 70 milling machine should it not have been used in accordance with the operating instructions.

3. Setting up / Operating the unit / exchanging the rotary instruments

3.1 Ascertain that your mains supply coincides with the data on the rating plate.

3.2 Plug the unit into a mains socket.

3.3 Operating the unit

- switch the main supply on (1)
- place the model table (7a) on the magnetic platform (7)
- move the "magnet" switch (2) to "ON" - to lock the model table into position
- move switch (3) to set the milling spindle to clockwise or anti-clockwise rotation
- the "motor"-switch (4) is used to select either the milling spindle or the additional handpiece connected to socket (5).

Setting M2 = milling spindel

Setting M1 = additional micromotor

- set the desired speed (progressively) with the slide controller (6)

3.4 Vertical adjustment of the jointed arm

- unlock the clamping lever (14) and lower the vertical adjustment ring (14a)
- grip the jointed arm, unlock the clamping lever (15) and position the arm as required. Lock the clamping lever (15).
- press the vertical adjustment ring (14a) onto the arm so that the pin locks into place. Lock the clamping lever (14).

" All clamping levers used on this unit can be placed in any position by pulling on the lever, moving it to the desired position and then releasing it. The clamping lever locks into place automatically. "

3.5 Securing the jointed arm in position

- the jointed arm can be locked into place as required by locking or unlocking the clamping levers (9) and (10).

3.6 Returning the jointed arm to a pre-determined position

- should the jointed arm be locked in a certain position (such as for drilling) and the vertical travel of the vertical rig not be sufficient for exchanging the rotary instrument, the vertical adjustment ring (14a) and pin can be pushed onto the arm and locked into place. The clamping lever (15) is then unlocked and the entire jointed arm raised. Once the rotary instrument has been exchanged, the jointed arm is lowered onto the adjustment ring, the arm being guided into its original position by the pin. The clamping lever (15) should then be locked again.

3.7 Working with the vertical rig

- the knurled nut (13) should be unlocked for drilling - the operating lever (11) can then be used to move the rig vertically. The maximum vertical distance of the rig is 25mm. Micrometer adjustment is possible by using the depth-stop spindle (19) Should the knurled nut (13) be locked whilst the rig is being moved vertically, the milling spindle will be locked at this level.
- the jointed arm can be moved both horizontally and vertically if clamping levers (9) and (10) are unlocked.
- the knurled sleeve (12) is used to adjust the return spring of the spindle

3.8 Tightening the milling spindle of the motor/ exchanging the rotary instrument

! The motor must be switched off before exchanging the rotary instrument !

- turn the chuck lever (8) as far as possible to the right ("open") and insert the instrument.
- turn the chuck lever (8) as far as possible to the left ("close") to tighten the instrument into place.
- turning the chuck lever (8) approximately half way to the right ("open") prevents the milling spindle rotating yet grips the instrument securely. This position is intended for gripping a trimming instrument.

3.9 Surveying spindle

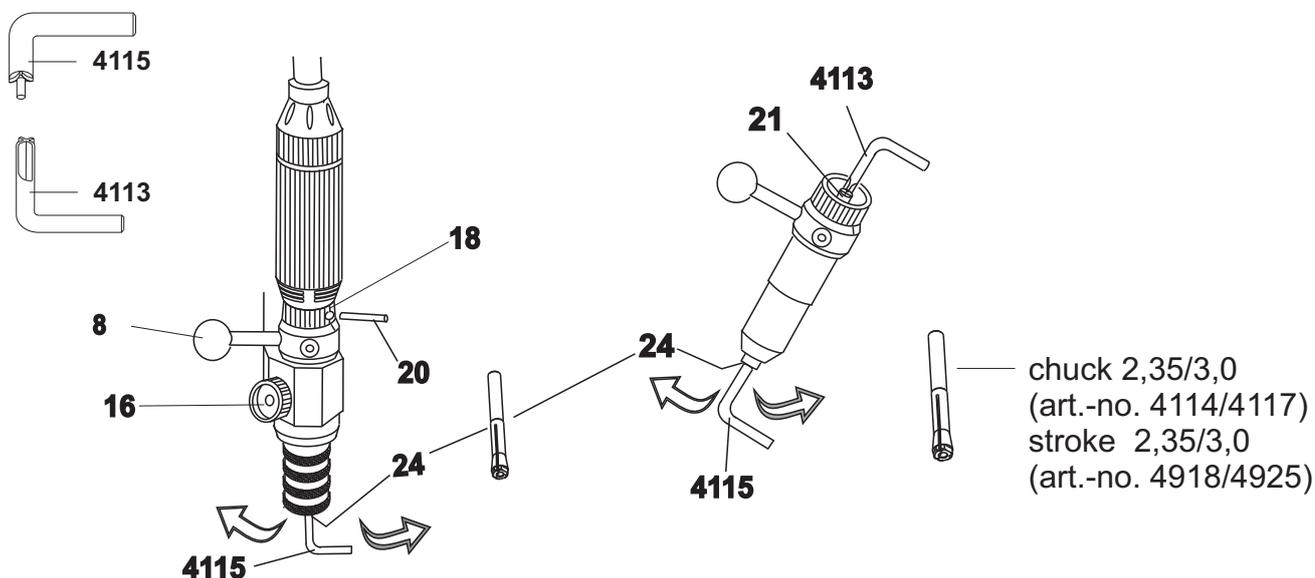
The surveying spindle (17a) -delivered as accessory- can be put into milling spindle holder in the sam way. If not used the suveying spindle is placed in the boring (17) at the rear side of the arm.

4. Replacing the chuck

- Unscrew the knurled knob (16)
- Withdraw the milling spindle
- Turn the chuck lever (8) as far as possible to the right ("open")
- Unscrew the union nut (18) completely (if necessary, use a 2,35 mm diameter (20) tungsten carbide cutter shank) and pull the milling spindle off the motor.
- Use a **No. 4115** chuck wrench to jerk the chuck (24) anti-clockwise and unscrew it completely. If necessary, hold the tongue (21) (on the motor) with a **No. 4113** wrench.

Please note: In the chuck is a stroke for short shafts, this could be removed or replaced as required.

- Grease the chuck (24) lightly and insert it into the shaft. Use the wrenches as described previously to screw the chuck in clockwise. Screw it in as far as possible and then **tighen it slightly**.
- Prior to inserting the chuck, clean it and the shaft thoroughly as,otherwise the concentricity may be adversely affected.
- Press the milling spindle onto the motor and tighten the union nut (18).
- Insert the milling spindle into ist holder and tighten the knurled screw (16)



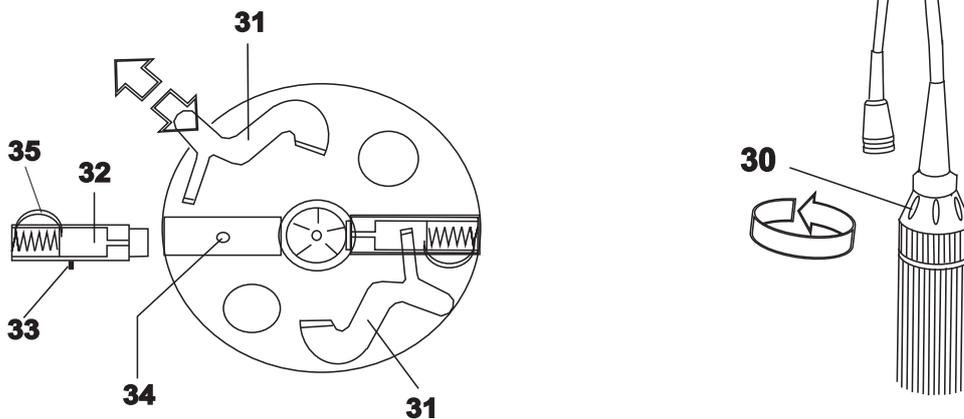
5. Maintenance and Care

Caution: Do not use compressed air to clean the milling spindle ! 

The chuck should be cleaned and re-greased once in a while, depending on how dirty it is (refer to section 4).

Replacing the Carbon Brushes

- Unscrew the cover (30) from the motor and pull it back
- Pull on the cord to remove the insert
- Use your fingers to rotate the retaining springs (31) as far as possible in the direction of the arrow
- Remove the old carbon brushes
- Insert the new brushes, ensuring that the lugs (33) on the carbon brushes fit into the apertures (34). Do not bend the lugs. The strands (35) of the brushes must remain exposed.
- Use your fingers to rotate the retaining springs (31) as far as possible over the brushes.
- Replace the insert with the cord (can only be fitted in one position)
- Screw the cover (30) back into place, ensuring that the cord does not become twisted



6. Possible faults

Should the milling spindle be overloaded or jammed, for safety reasons the unit switches itself off. To continue operating the unit, switch it "OFF" and "ON" again (switch 1).

Should the unit overheat, the excess-current cut-out on the back of the controller is activated. Once the unit has resumed its normal working temperature, the pin can be pressed in and the unit will run again at the previously set speed. Should the pin pop out repeatedly whilst the unit is in operation, the unit is defective.

Should the power decrease of the motor run jerkily, check the carbon brushes. If necessary, replace them.

7. Technical Data

Width:	250 mm
Depth:	260 mm
Height: max.	555 mm
min.	455 mm
Weight:	14,5 kg
Speed:	500 - 30.000 min ¹
Voltage:	200 ... 240
Amperage:	1,0 A
Wattage:	80 W
Hz:	50 ... 60 HZ

Manufacturer:

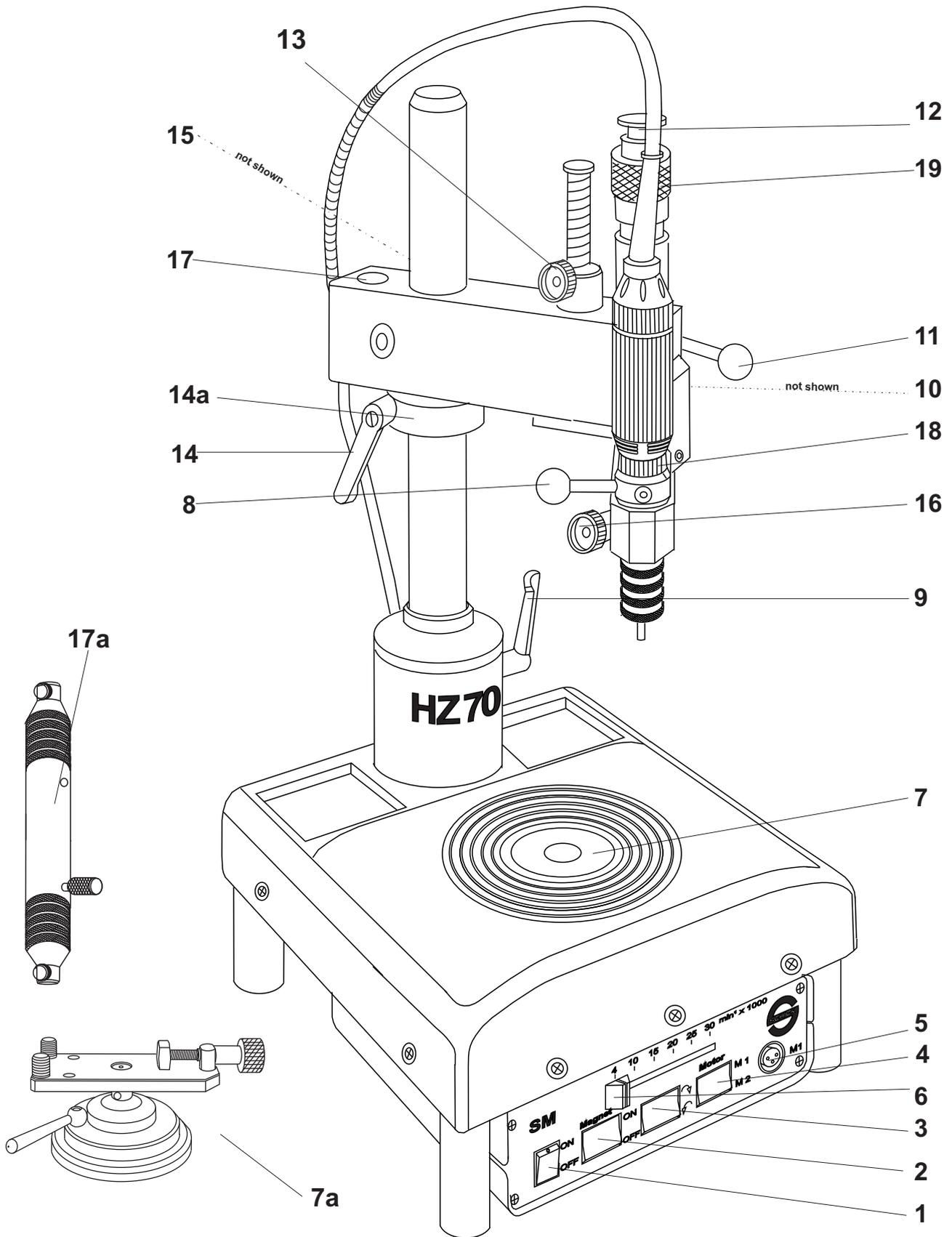


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8. SCHICK - Milling machine HZ 70



9. Declaration of Conformity

We, **GEORG SCHICK DENTAL GmbH**
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88433 Schemmerhofen

declare herewith, that the product

Milling machine HZ 70 2300

is in conformity with the following provisions of Directive:

92/59/EWG	(allgemeine Produktsicherheit)
89/392/EWG	(Maschinenrichtlinie)
73/23/EWG	(Niederspannungsrichtlinie)
89/336/EWG	(EMV-Richtlinie)

According to following standards:

EN 60204/1	(Elektrische Ausrüstung von Maschinen)
EN 55014	(Funkentstörung)
EN 55011	(Störaussendung)
EN 50082	(Teil 1 - Störfestigkeit)
EN 292	(Sicherheit von Maschinen)
DIN/VDE 0875/1	(Sicherheit von Maschinen)

Schemmerhofen, January 1997



W. Schick
Director



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