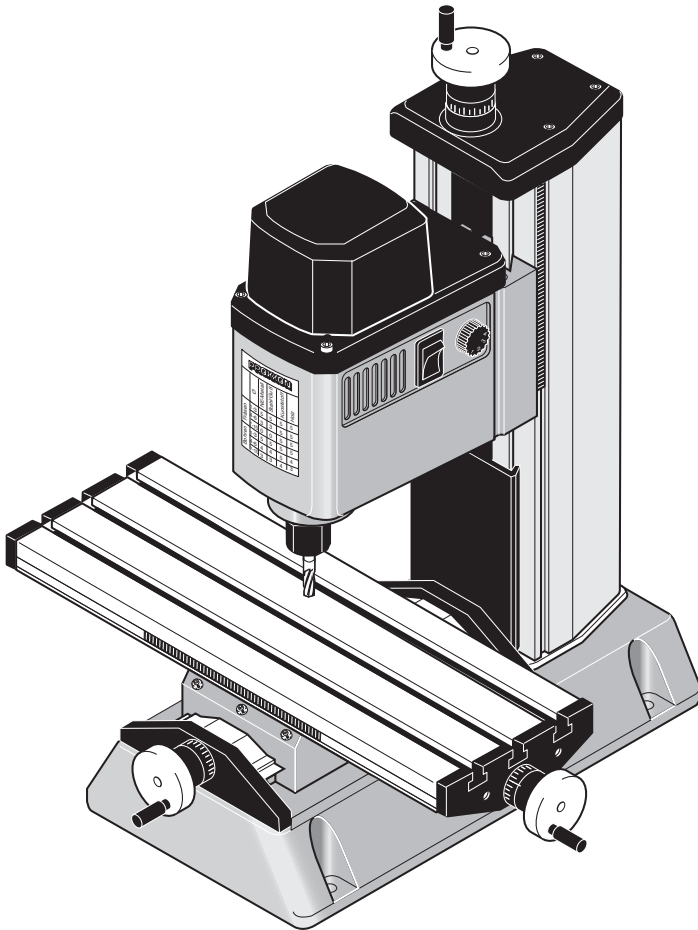


# PROXXON

**MF 70**



**Manual**

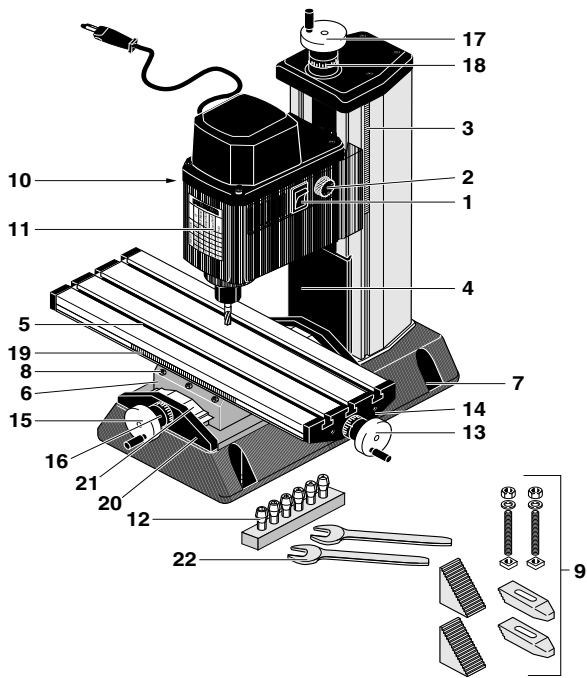


Fig. 1

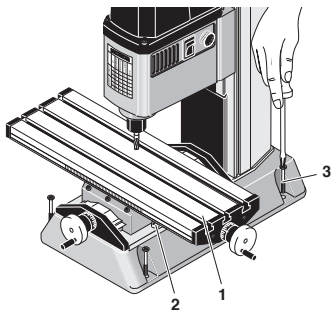


Fig. 2

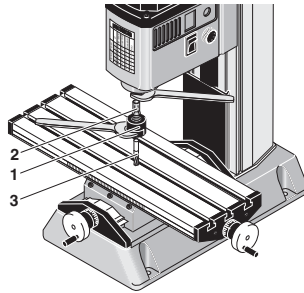


Fig. 3

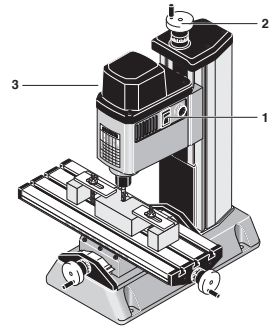


Fig. 4

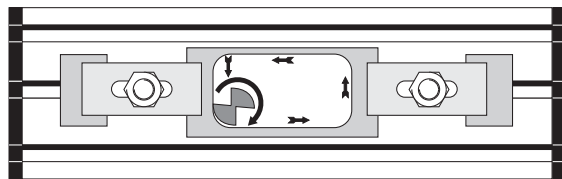


Fig. 5

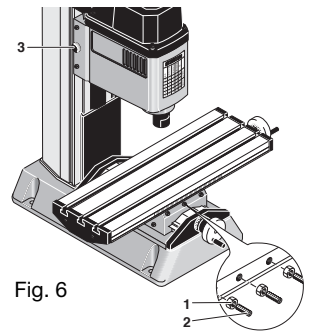


Fig. 6



# Translation of the Original Operating Instructions

## Micro Milling Machine MF 70

## Description of the machine

Dear Customer,

By purchasing your PROXXON Micro Milling Machine MF 70, you have chosen a good-quality, high-grade machine. The PROXXON MF 70 MICRO Milling Machine is equipped with the proven KT 70 microcoordinate table. This enables you to perform small, precise milling operations on metal, plastics or wood. In order to operate the milling machine and the accompanying accessories safely and correctly, please read the enclosed safety information and operating instructions prior to operation.

The PROXXON MF 70 MICRO Milling Machine is the ideal machine for all fine and precision milling work for metals (cast iron, steel, brass, aluminium), plastics or wood. With the high spindle speed of 5,000 to 20,000 rpm (enabling the use of the smallest milling cutter diameters) in conjunction with the high-precision KT 70 microcoordinate table, all pre-conditions for precise and clean operation are fulfilled.

### WARNING!

Read all safety warnings and instructions. Failure to follow all safety warnings and instructions listed below may result in electric shock, fire and/or serious injury. **KEEP ALL SAFETY WARNINGS AND INSTRUCTIONS FOR THE FUTURE !**



### Risk of injury!

Never work without dust protection mask and safety glasses. Some dusts have a hazardous effect! Materials containing asbestos may not be machined!



Only in dry rooms



Please do not dispose of this electrical machine in the household refuse!



The noise level can exceed 85 dB(A) during work. Wear ear protection!



### General view (Fig. 1):

1. On / Off switch
2. Speed control
3. Scale for Z direction
4. Spindle cover
5. KT 70 work table (210 mm x 70 mm)
6. Support
7. Hole for securing base
8. Adjusting screws
9. Clamps
10. Clamp screw
11. Table for spindle speeds
12. Collet chucks
13. Handwheel for X direction
14. Scale ring for X direction
15. Handwheel for Y direction
16. Scale ring for Y direction
17. Handwheel for Z direction
18. Scale ring for Z direction
19. Moving scale for X direction
20. Base plate
21. Cutting guard
22. Spanners

The basic equipment includes:

- Milling spindle with Z-pillar and stable base
- Collet chuck block with collet chucks
- (Ø 1.0; 1.5; 2.0, 2.4; 3.0 and 3.2 mm)
- KT 70 microcoordinate table, complete
- Clamp set with fastening materials
- Auxiliary tools
- Operating instructions and safety regulations

### Technical data

Voltage:	230 volts, 50/60 Hz
Power rating:	100 watt
Spindle speed	6,000 – 20,000 rpm
Vertical adjustment travel	83 mm
Lateral adjustment travel	134 mm
Longitudinal adjustment travel	46 mm
Table size	200 x 70mm
Scale rings	1 turn = 1 mm
	1 graduation line = 0.05 mm
Dimensions of T-grooves	12 x 6 x 5 mm
Spacing of T-grooves	25 mm
Size of base	130 x 225 mm
Overall height	340 mm
Weight	approx. 7 kg
Noise emission	≤ 70 dB(A)
Vibration	2.5 m/s <sup>2</sup>
General measuring uncertainty	K=3 dB

### Noise/vibration information

Please note that the sound and vibration measurements in particular have been performed with Proxxon bits and cutters. When using third-party brands we cannot guarantee compliance with the statements given here!

The information on vibration and noise emission has been determined in compliance with the prescribed standardised and normative measuring methods and can be used to compare electrical devices and tools with each other.

These values also allow a preliminary evaluation of the loads caused by vibration and noise emissions.

### Warning!

Depending on the operating conditions while operating the device, the actually occurring emissions could differ from the values specified above!

Please bear in mind that the vibration and noise emission can deviate from the values given in these instructions, depending on the conditions of use of the tool. Poorly maintained tools, inappropriate working methods, different work pieces, too high a feed or unsuitable work pieces or materials or unsuitable bits and cutters (here: saw blade) can significantly increase the vibration load and noise emission across the entire work period.

To more accurately estimate the actual vibration and noise load, also take the times into consideration where the device is switched off, or is running but is not actually in use. This can clearly reduce the vibration and noise load across the entire work period.

#### **Warning:**

- Ensure regular and proper maintenance of your tool
- Stop operation of the tool immediately if excessive vibration occurs!
- Unsuitable bits and cutters can cause excessive vibration and noises. Only use suitable bits and cutters!
- Take breaks if necessary when working with the device!

### **Assembly of the milling machine**

---

- Attach the compound-type table 1 (Fig. 2) to the base 2 with the 4 x M4 Allen screws supplied.
- The milling machine must now be fastened to a stable work surface with 4 screws 3.

### **Operation**

---

#### **Installation of the collet chucks**

##### ***Important***

Disconnect the mains plug before changing tools. Tightening the union nut without a suitable shank inserted, damages the collet chuck.

1. Block the spindle with a spanner and release union nut 1 (Fig. 3).
2. Insert the required collet chuck 2 using suitable inserting tool 3.
3. Block milling spindle and re-tighten union nut.

##### ***Note:***

All inserting tools must be tightened with as little protrusion as possible. Excessively protruding shanks vibrate and cause poor milling results.

#### **Setting the spindle speed**

The spindle speed can be adjusted continuously by means of the electronic control.

In general:

Large milling tool diameter = low speed

Small milling tool diameter = high speed

The correct spindle speeds are indicated on the table on the front of the milling machine.

### **Milling**

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##### ***Important***

Always wear protective goggles when milling. Always observe the enclosed safety regulations.

1. Fasten the work piece with the clamps supplied or in a vice.
2. Switch on milling machine at switch 1 (Fig. 4).
3. Adjust the required milling depth using handwheel 2.  
1 turn = 1 mm feed
4. Tighten clamp screw 3.
5. Work with a suitable feed and with a suitable milling depth. The feed must always be against the cutting direction of the milling tool (Fig. 5).
6. Release clamp screw 3 before readjusting the cutting depth (Fig. 4).

##### ***Note:***

The MF 70 MICRO Milling Machine is designed for precise, fine machining. Therefore, adopt suitable milling depth and feed rate. Otherwise, poor quality milling results are to be expected. Furthermore, thermal damage may be caused to the electric motor due to continuous overloading.

### **Adjustment of scale on compound-type table:**

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The scale rings on the handwheels are moveable and can thus be set to zero without traversing the table. In addition to the scale rings, the KT 70 micro-compound-type table is equipped with a moveable scale for adjustment in the X direction 19 (Fig. 1).

### **Adjustment of guide play**

---

##### ***Important***

Disconnect the mains plug before making any adjustments.

All 3 axes of the milling machine are equipped with an adjustable dovetail guide. If, after a time, a guide is found to have too much or too little play, the play can be reset via the adjusting screws (Fig. 6). In order to adjust the play in the X direction, first release the nut 1 (Fig. 6). Then set the play using the set screws 2. Lock by re-tightening the nut 1. Adjustment of play for the other two axes is performed analogously.

##### ***Note:***

Do not over-tighten the set screws as, otherwise, the guide may be damaged. Evenly tighten all the set screws.

### **Maintenance, cleaning and care**

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##### ***Attention:***

Disconnect the mains plug prior to every adjustment, maintenance measure or repair!

**Note:**

Every device is dirtied by dust when working. Cleaning is therefore essential. To ensure a long service life, however, the machine should be cleaned with a soft cloth or brush after each use.

Mild soap or other suitable cleaning agent may be used in this context. Solvents or cleaning agents containing alcohol (e.g. petrol, cleaning alcohols, etc.) should be avoided, since these can attack plastic casings.

The apertures required for cooling the motor must always be kept free of dust and dirt.

**Accessories**

For more detailed information on accessories, please request our device catalogue from the address specified on the last page in the warranty information.

**Please note in general:**

Proxxon bits and cutters have been designed to work with our machines, which makes them optimal for their use.

We will not assume any liability whatsoever for the safe and proper function of our devices when using third-party bits and cutters!

**Service note**

Please note: The mains power input may only be replaced by our Proxxon Service Department or a qualified specialist!

**Disposal**

Please do not dispose of the device in domestic waste! The device contains valuable substances that can be recycled. If you have any questions about this, please contact your local waste management enterprise or other corresponding municipal facilities.

**EC Declaration of Conformity**

Name and address: PROXXON S.A.  
6-10, Härebiërg  
L-6868 Wecker

Product designation: MF 70  
Article No.: 27110

In sole responsibility, we declare that this product conforms to the following directives and normative documents:

**EU EMC Directive**      **2014/30/EC**  
DIN EN 55014-1 / 09.2016  
DIN EN 55014-2 / 01.2016  
DIN EN 61000-3-2 / 03.2015  
DIN EN 61000-3-3 / 03.2014

**EU Machinery Directive**      **2006/42/EC**  
DIN EN 62841-1 / 07.2016

Date: 10.05.2017



Dipl.-Ing. Jörg Wagner

PROXXON S.A.  
Machine Safety Department

The CE document authorized agent is identical with the signatory.

## Spare parts list

ET-Nr.: / Part no.:	Designation	ET-Nr.: / Part no.:	Designation
27110 - 01	Work table	27110 - 65	Switch
27110 - 02	Support	27110 - 66	Rotary knob
27110 - 03	Base plate	27110 - 67	Shaft
27110 - 04	Cutting guard	27110 - 68	Lock nut
27110 - 05	Cutting guard base	27110 - 69	Set screw
27110 - 06	Upper cover	27110 - 70	Motor screw
27110 - 07	Lower cover	27110 - 71	Clamp screw
27110 - 08	Upper intermediate plate	27110 - 75	Screw for motor plate
27110 - 09	Lower intermediate plate	27110 - 76	Adjusting plate
27110 - 10	X spindle	27110 - 80	Cover
27110 - 11	Y spindle	27110 - 81	Strain relief
27110 - 12a	Spindle nut	27110 - 82	Screw for strain relief
27110 - 12b	Spindle nut	27110 - 84	Scale
27110 - 13	Handwheel	27110 - 85	Spring
27110 - 14	Handle	27110 - 86	Spring washer
27110 - 15	Scale ring	27110 - 88	Spanner 13 mm (not shown)
27110 - 16	Cap	27110 - 89	Spanner 10 mm (not shown)
27110 - 17	Upper adjusting plate	27110 - 91	Mains cable
27110 - 18	Lower adjusting plate	27110 - 92	Anti-kink-grommet
27110 - 19	Scale	27110 - 95	Motor plate
27110 - 20	Bushing	27110 - 96	Earth screw
27110 - 21	Rivet	27110 - 97	Packaging (not shown)
27110 - 22	Spring	27110 - 99	Manual and Safety instructions (not shown)
27110 - 30a	Nut	27110 - 100	Serrated washer
27110 - 30b	Nut	27110 - 101	Board
27110 - 31	Washer	27110 - 103	Ball bearing
27110 - 32	Pin	27110 - 105	O-ring
27110 - 33	Screw	27110 - 106	Main housing
27110 - 34	Short set screw	27110 - 107	Bushing
27110 - 35	Long set screw	27110 - 108	Shaft
27110 - 36	Nut	27110 - 109	Driver
27110 - 37	Screw	27110 - 110	Screw
27110 - 38	Screw	27110 - 111	Rubber ring
27110 - 39	Brass bushing	27110 - 112	Driver with fan
27110 - 40	Plastic bushing	27110 - 113	Motor (incl. Fan)
27110 - 41	Handwheel	27110 - 114	Adjusting washer
27110 - 42	Pin	Fig. 2 a Spø	Fastening set
27110 - 43	Scale ring	Fig. 2 b Spø	Claw set
27110 - 44	Washer	Fig. 2 c Bef	Fastening set
27110 - 45	Bushing		
27110 - 46	Cover		
27110 - 47	Screw		
27110 - 48	Stop nut		
27110 - 49	Z spindle		
27110 - 50	Z pillar		
27110 - 51	Upper spindle cover		
27110 - 52	Spindle nut		
27110 - 53	Lower spindle cover		
27110 - 54	Base		
27110 - 55	Screw		
27110 - 61	Collet chuck (accessories)		
27110 - 62	Collet nut		
27110 - 64	Speed Table		

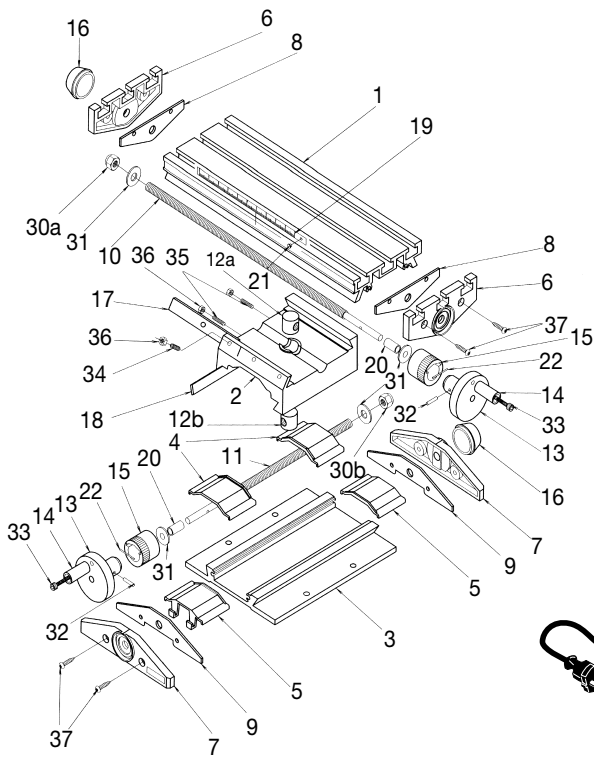


Fig. 1

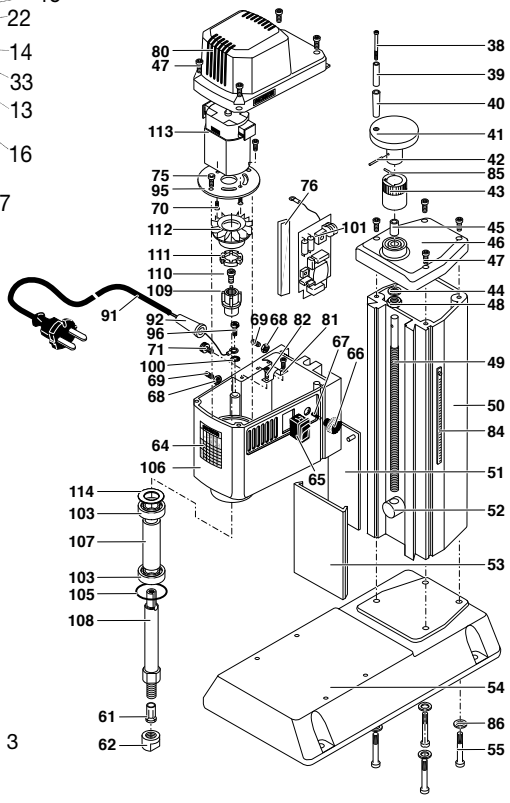


Fig. 3

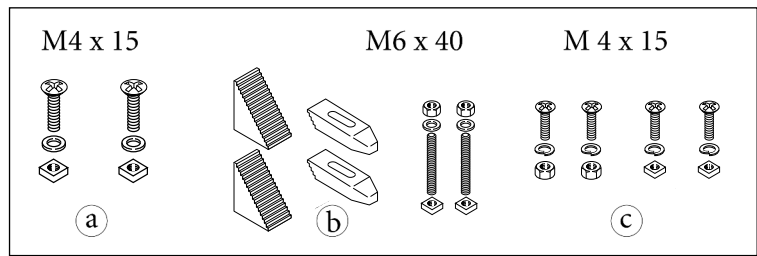


Fig. 2

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**GB** Service note

All PROXXON products are thoroughly inspected after production. Should a defect occur nevertheless, please contact the dealer from whom you purchased the product. Only the dealer is responsible for handling all legal warranty claims which refer exclusively to material and manufacturer error.

Improper use, such as capacity overload, damage due to outside influences and normal wear are excluded from the warranty.

You will find further notes regarding "Service and Spare Parts Management" at [www.proxxon.com](http://www.proxxon.com).