



TOOLS TO SHAPE THE WORLD

MANUAL ON USE AND MAINTENANCE



ADJUSTABLE MULTISPINDLE HEADS



MADE IN
ITALY





Dear Customer,

We thank you for having chosen MPA and we hope that it fully satisfies your expectations, guaranteeing a high quality production.

We kindly request you to read the instructions provided in this manual before starting to use the product, as they provide important information on how to use and service the product in absolute safety.

This manual also provides the technical features of the product, (also visible on the website: **www.m-p-a.it**).

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Yours faithfully

MPA srl



**EEC MACHINE DIRECTIVE
MANUFACTURER'S DECLARATION**

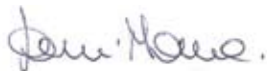
MPA srl
Via Pizzoli, 3 - Bargellino Cà Bianca
40012 Calderara di Reno (Bo) Italy

in the Person of the Legal Representative
declares that the adjustable multispindle heads

are compliant with the provisions of the
Machinery Directive 2006/42/EC

and forbids the start-up
before the machine in which the special series head
has to be fitted in is declared compliant with
Machinery Directive it self.

Signature of issuer
Marco Ceneri



General warranty conditions

Proper use and maintenance of the head will ensure that it stays in good working order. Any modification, tampering, or improper use relieves MPA from all liability for accidents or damage to persons or things occurring during the use the head.

MPA guarantees this product against material and manufacturing defects for a period of **12 months**, considering ordinary usage. The use of non-original spare parts or failure to follow the instructions provided in this manual will void the warranty. MPA guarantees exclusively the repair or replacement of parts found to be defective by its service centre. MPA remains at your complete disposal for any clarification and to provide any technical support necessary for achieving the best performance of the head.

MPA reserves the right to make any modifications to all parts that are believed to be necessary to improve the quality of the product without prior notice.

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1 GENERAL NOTES

1-1 Purpose of the document

The information in this manual has been provided to highlight the operations necessary for the end user to correctly use and service the MPA heads. Information concerning installation, adjustment and maintenance relating to the head you have purchased can be found in this document.

Special attention has been given to questions matters involving the safety and safeguard of the operators' security, together with the safeguard and respect of the work area.

Before using the multispindle head, read carefully this manual and, in case of doubts, contact the MPA After-sales technical service.

1-2 Symbols

In order to direct the readers' attention on particularly important points in this manual, the following graphs have been used:



DANGER

Indicates an operation that must be carried out scrupulously in that it may expose the operator to serious injuries.



IMPORTANT

Indicates an operation that may cause damages to the adjustable head, or simply recall the attention of the reader on certain particularly important operations.



ADJUSTMENT

Indicates adjusting operations. The operations marked with this symbol must be carried out by technically qualified staff and with adequate mechanical knowledge.

1-3 Main information

To obtain maximum product yield in time, we recommend complying with the following notes:

- Ensure to have correctly installed the multispindle head to the machine.
While choosing the connection to the tool machine, verify compatibility with the declared performances.

The MPA head can be fitted to a tool machine equipped with regulatory accident-prevention protections and in compliance with Machinery Directive 2006/42/EC.

- Absolutely avoid any improper use of the equipment and work with care and attention.
- Carry out regularly all routine maintenance interventions (see chap. 10).
- Use only original MPA spare parts (see chap. 11).

1-4 Standard references

The MPA head you have purchased is compliant with Machinery Directive 2006/42/EC (ex 98/37/EC).

1-5 Noise level

The MPA head complies with current Standards with regard to noise levels.

The manufacturer of the machine on which the head is fitted must provide the data concerning the noise levels in the relative manual.

1-6 Packaging

The multispindle head you have purchased is supplied packed in cardboard boxes and protected with shock-resistant protections.



IMPORTANT

Upon receipt, check that the supply corresponds to the order specifications and that no damages have occurred during the transport. In case of anomalies, do not use the head and contact the manufacturer immediately.

Packaging must be disposed of in compliance with the local waste disposal Standards.

1-7 Transport

During transport, keep in mind that you are handling a precision tool requiring adequate caution. When carrying out the operation, observe the safety Standards in force with regard to safety at work.



DANGER Do not disassemble, transport or re-assemble the head with tools fitted in the spindles, as the sharp cutting parts could cause injuries.

For models with a weight above 10 kg, use a suitable hoisting mean for the operation.

1-8 Storage

In case you don't use the head for a long time, it is a good rule to clean the head and to protect it against salty, damp or chemically aggressive environments.



IMPORTANT For inactivity periods of more than 6 months, before start-up, we recommend to replace the lubricant inside the head (see chap. 10).

1-9 Disposal

The MPA heads are manufactured using the following substance:

- aluminium;
- steel;
- cast iron;
- lubricants.



IMPORTANT The head must be disposed of per type of substance, in strict compliance with the legal regulations with regard to recycling and management of waste in force in the country where the head is used.

In particular, exhaust lubricants must not be thrown outdoors but must be handed over to specialised and authorised waste collection centres.



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2 IDENTIFICATION

2-1 Manufacturers' Data

MPA srl

Via Pizzoli, 3 Bargellino Cà-Bianca

40012 Calderara di Reno (Bo) Italy

VAT Number 00522081207

Tax Code 00739970374

☎ +39 (051) 727073 📠 +39 (051) 727730

✉ mpa@m-p-a.it 🌐 www.m-p-a.it

2-2 Head identification data

An aluminium identification nameplate is fitted on each MPA head indicating the main features of the product. **Fig. 1** illustrates example of identification nameplates displaying the data that should be written on it.

As each model of MPA head is different in shape and size, the position and the shape of the identification nameplate will vary depending on the model. It will could be of adhesive type or riveted on one of the external surfaces.

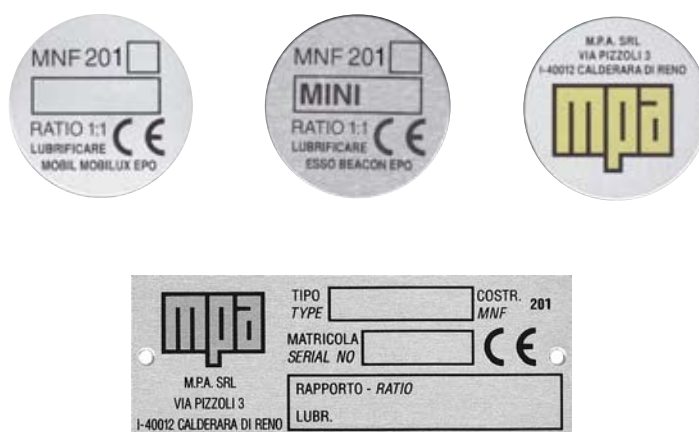


Fig. 1



IMPORTANT It is forbidden to remove or tamper with the identification nameplate.



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3 MAIN DESCRIPTION

The adjustable multispindle head you have purchased is composed as follows:

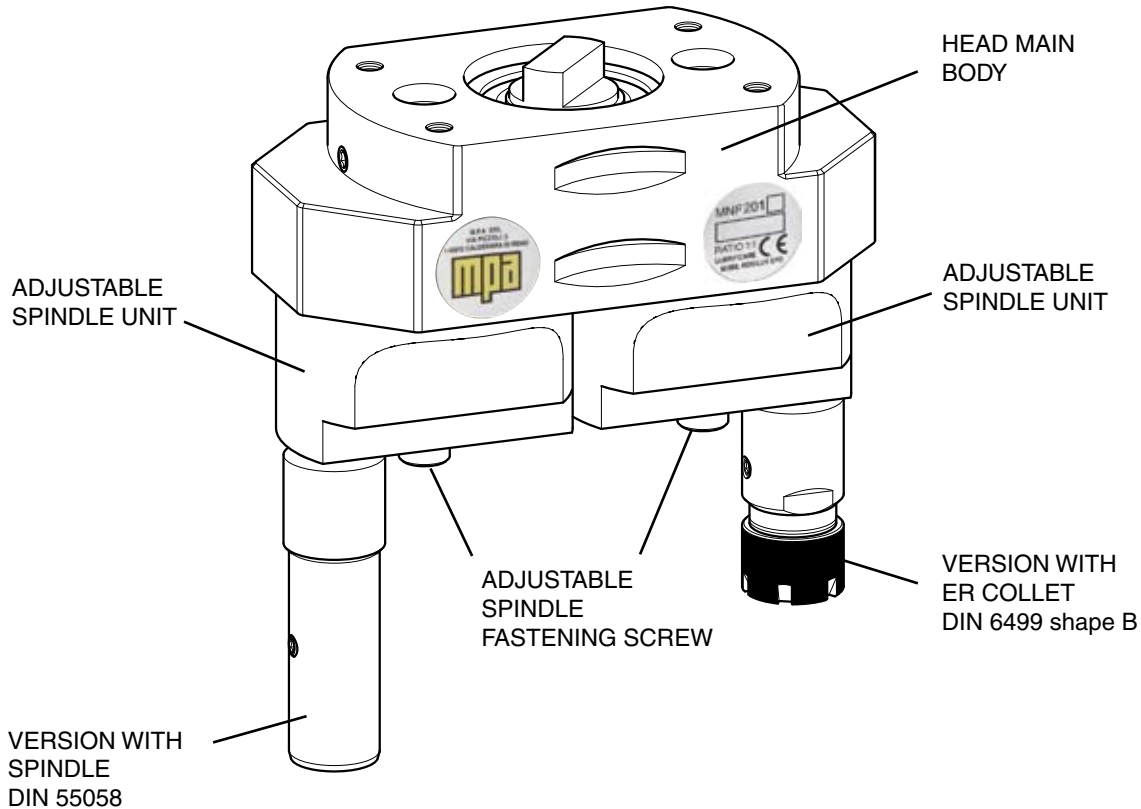


Fig. 2

3-1 Intended use

- The MPA heads have been designed and manufactured to drill, tap, chamfer and mill (for 900 series), metal, plastic and wood materials. Any other use is to be considered improper and relieves MPA from all liabilities.

3-2 Improper use

- The MPA heads are not suitable for tapping by means of interpolation.

Any different use to those indicated in **point 3-1** of this manual, is to be considered improper and, therefore, unauthorised, and relieves MPA from every liability for damages to persons or things.

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4 SAFETY RULES

- Before starting the tool machine, make sure that the head is correctly connected to the machine and, consequently, that there is no risk of it releasing and falling off.
- Wear always industrial safety gloves when handling. Be sure that no cutting tools are in the spindles. Don't power up the head while carrying out service. Disassemble the multispindle head, as the sharp parts may cut or injure the personnel.
- Don't touch the head when it is moving. Any adjustments and interventions must be carried out when the machine is inactive and in absolute safe conditions for the operator.
- The operating machine on which the MPA head is fitted, must be manufactured in compliance with current safety Standards. All operator safety guards must be correctly fitted and efficient and approved according to Machinery Directive 2006/42/EC (ex 98/37/EC). The design of these safety guards is under the sole responsibility of the Manufacturer of the machine on which the head is fitted; safety parameters must be checked exclusively by the factory manager where the head is used.
- Suitable clothing for workshop jobs must always be worn when using the MPA head. It is therefore forbidden to wear ties, necklaces and any other non-adhering clothes or accessories that may create a hazard.

The safety at work Standard in force must be complied with.

- During cleaning operations, especially when compressed air is being used, proceed with caution and wear safety goggles or other suitable means of protection.
- The maximum rotation speed or the maximum spindle torque must not be exceeded (see data published on the official website www.m-p-a.it). Keep always transmission and rotation direction ratio under control; the values are shown both on the nameplate and on the attached technical drawing.
- The use manual must always be kept handy where the head is being used. You also must comply with the precautions in this manual, the general and local Standards in force regarding accident prevention, and environmental protection.



DANGER

If tools involving consistent rotating cams are used, operate at rotation speeds such to prevent the centrifugal force created by the cams from compromising the integrity of the spindle.

MPA engineering department is always at your complete disposal for any advice on ideal operating conditions.

- The forward movement speed of the tool must be adjusted so that no excessive axial force is put on the tool, which could cause it to collapse with the consequent hazardous cast-off of chips of material.
- Check the conditions and state signs of wear on the tool.
- Any anomalies on the head may cause serious damages and reduce significantly the life-time and precision of the head. When in doubt, always contact MPA.
- The normal temperature of the head while it is working must not tendentiously exceed **60°C**. Only during the first 100 hours of use the temperature can increase its maximum value by about 25%.



5 TECHNICAL FEATURES

Sizes and technical features are available on the official website www.m-p-a.it.

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6 MACHINE CONNECTION

6-1 Heads suitable for installation to units and drilling/tapping machines

- The power transmission works by means of driver and joint, depending on the type of connection of the machine spindle.

Fig. 3 shows the different connection systems between the machine and the adjustable multispindle head.

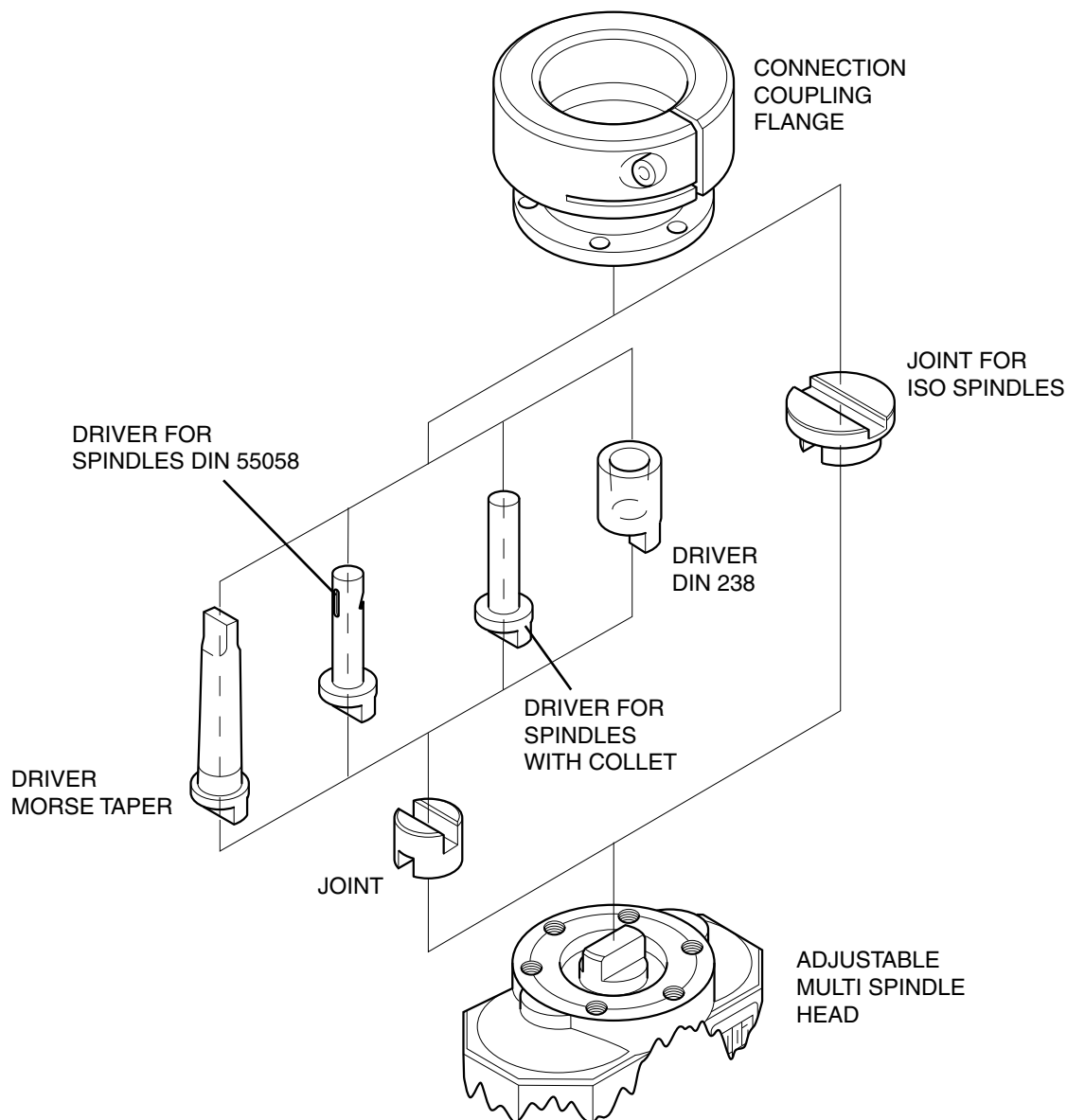


Fig. 3



6-2 Special applications

For other special connection, contact MPA Technical Department.

7 INSTALLATION

- While installing the head to the machine and, generally, each time that it's necessary to work on MPA head, make sure that the machine is inactive and that no possibility exists to power up the head, while you are carrying out service operation.
- Before starting to install the head, ensure that the weight and overall dimensions of the head, complete with its accessories, are compatible with the technical features of the machine on which it will be used.

The operation must be carried out in compliance with the security Standard in force.

Ensure that the machine on which the adjustable multispindle head will be installed is equipped with accident-prevention protections compliant with the Machinery Directive 2006/42/EC (ex 98/37/EC).

- The head is secured and connected to the tool machine by means of a dedicated flange **1** (Fig. 4).

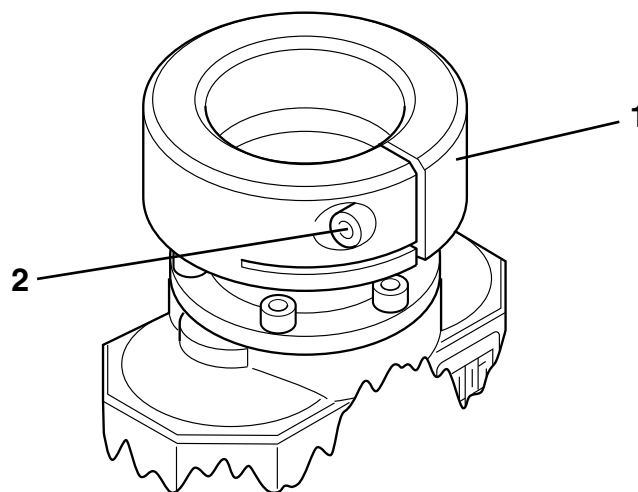


Fig. 4

- To take the head off the tool machine, loosen the screw **2** of the connecting flange (see Fig. 4). Carrying out this operation, make sure to support the weight of the head: no safety locking device has been fitted and it the head could fall off, with consequent material damage and personal injury.



DANGER Before starting the tool machine make sure that all screws securing the head to the machine are firmly tightened.

7-1 Balancing

During applications involving the use of heavier heads models, the return spring of the drill could not able to support the weight of the head and, therefore, the spindle will tend to lower itself.

In this case, it is necessary to execute a system to solve this problem.

In case of doubts, the MPA technical department is always at your disposal.

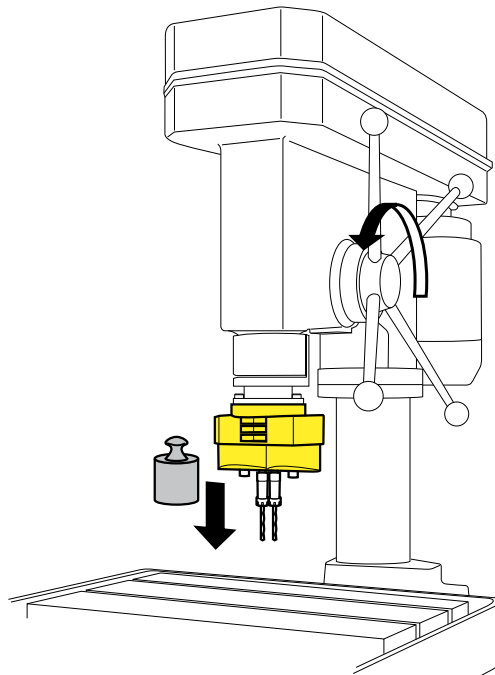


Fig. 5



DANGER In carrying out this operation, do not modify the structure or holes on the head.

MPA declines every liability for any damages to persons or things resulting from the above operation.

8 ADJUSTMENT



ADJUSTMENT To set the distance between spindles, loosen the screw **1** (**Fig. 6**) of each spindle unit and rotate them in the same direction, until the wanted distance is obtained.

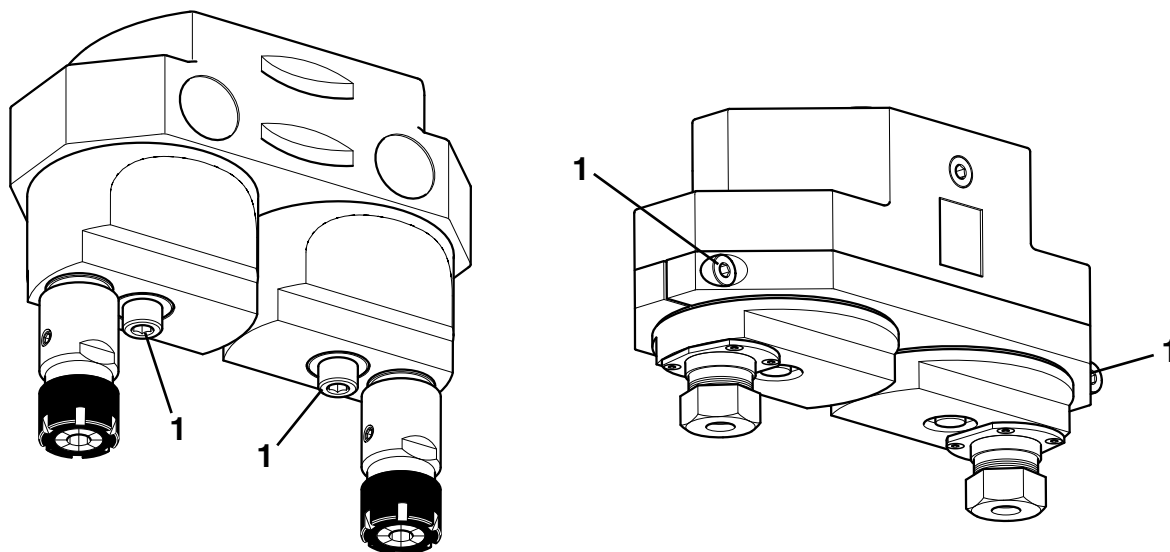


Fig. 6



IMPORTANT In order to balance the forces during working, the positioning of the spindles must be followed as shown in **Fig. 7**.

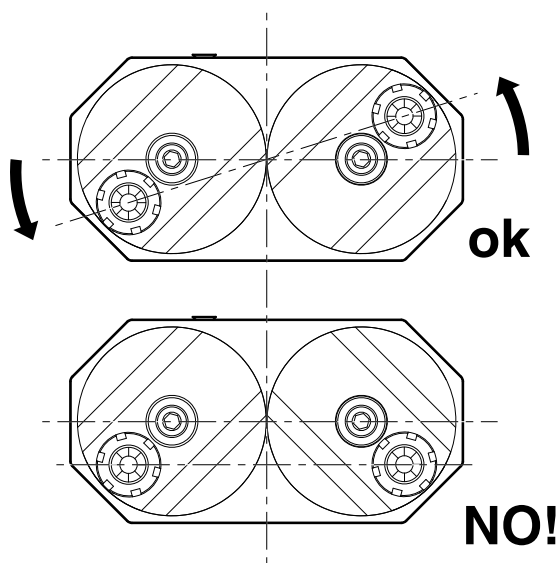


Fig. 7

At the end of this operation fasten the screw **1 (Fig. 6)** of each spindle unit using a torque wrench to reach the torque shown in **Table 1**.

Table 1

Head Model	Torque (Nm)
Series MINI (ER 8)	6
Series 800 (ER 11 - ER 16)	15
Series 820 (ER 20)	20
Series 100 (ER 25 - DIN 55058)	25
Series 900 (Milling)	25

9 ASSEMBLY TOOLS AND ADJUSTING

9-1 ER collet DIN 6499 shape B

If the head chosen has the spindles for ER collet DIN 6499 shape B, insert manually the collet inside the nut, being careful to hook the extractor correctly **1 (Fig. 8)**.

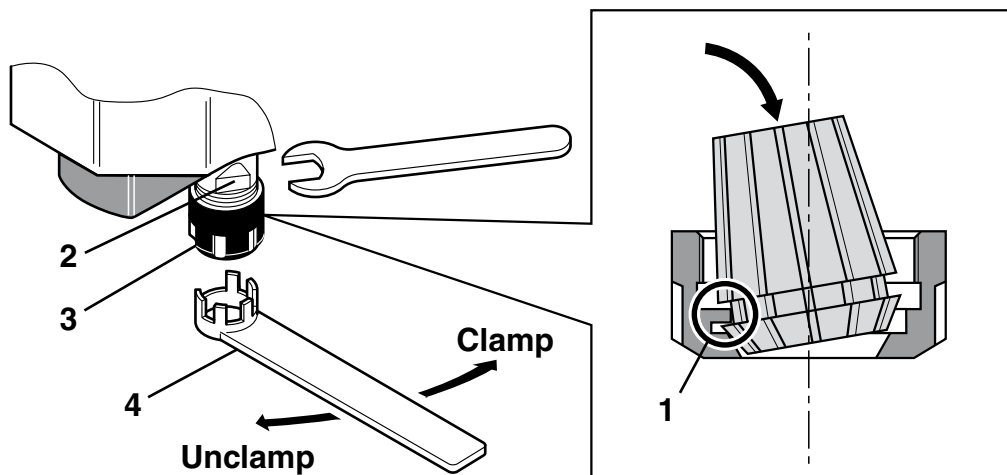


Fig. 8

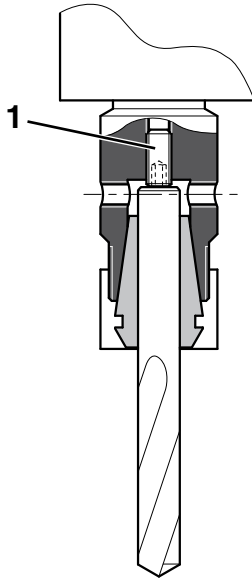
The tool must be clamped keeping the spindle still, using an open-wrench inserted in the spindle key flat **2 (Fig 8)** and clamping the nut **3** with a proper wrench **4 (Fig. 8)**.

The type of nut varies depending on the head type on which the spindle is assembled. **Table 2** shows the recommended values for the clamping torque in relation to the various types of nuts.

Table 2

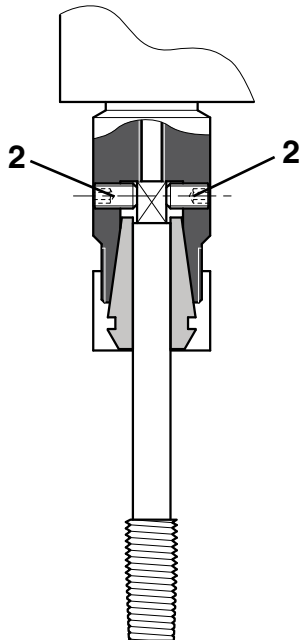
Nut type	Code	Torque (Nm)
ER 8-M	414510.008	5
ER 11-M	414513.011	16
ER 16-M	414519.016	24
ER 20-M	414524.020	28
ER 25-M	414530.025	32
ER 20-UM	414825.020	80
ER 25-UM	414832.025	104

9-2 Tools adjustment and clamping



ADJUSTMENT All adjustable heads with ER collet have the possibility, in regards to the drilling operations, to adjust axially the tool, using screw **1** (**Fig. 9**).

Fig. 9



ADJUSTMENT All adjustable heads with ER collet have screws **2** (**Fig. 10**) on the spindle that must be used to lock the square of the tap (**Fig. 10**).

Fig. 10

10 MAINTENANCE

10-1 Personnel in charge

OPERATOR: person trained for the normal use of the tool machine and authorised to perform any adjustments or simple maintenance jobs.

TECHNICIAN: qualified and authorised person who performs complex maintenance and repair jobs.

10-2 Scheduled maintenance



DANGER All maintenance jobs must be performed when the machine is inactive and in safe conditions for the operator. These operations must be performed by sufficiently trained and skilled mechanical technicians.

Personnel required: **Operator**

- **On a periodic basis:**

Visually check that there are no leaks of lubricant from the head. In case leaks are found contact the MPA engineering department.

Personnel required: **Operator**

- **Every 1000 hours of use:**

Every 1000 hours of use, or judging by experience, re-lubricate the head using the dedicated greasing valve **1** (**Fig. 11**) and/or feeding hole. The position of hole **1** may vary depending on the purchased head model.

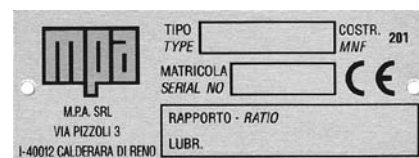
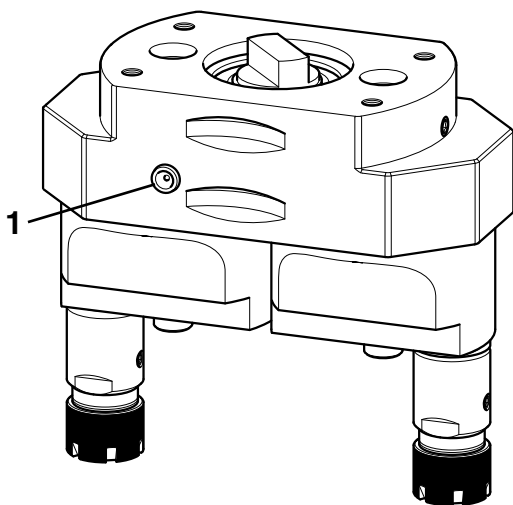


Fig. 11



IMPORTANT Never apply excess lubricant, as this will cause the hazardous over-heating of the same head when it is in use.
Only use the type of lubricant indicated on the nameplate.

Personnel required: **Technician**

- **About every 12 months:**

It is advisable to take the head off to visually inspect the Kinematic devices, to check the wear of the bearings and the seals, and to replace any worn components. Replace the old lubricant with fresh lubricant of the same type as indicated on the nameplate, filling the spaces to be lubricated by about 1/3 of their volume.

When this operation has been completed, check if the head works efficiently and make sure that there are no leaks of lubricant.



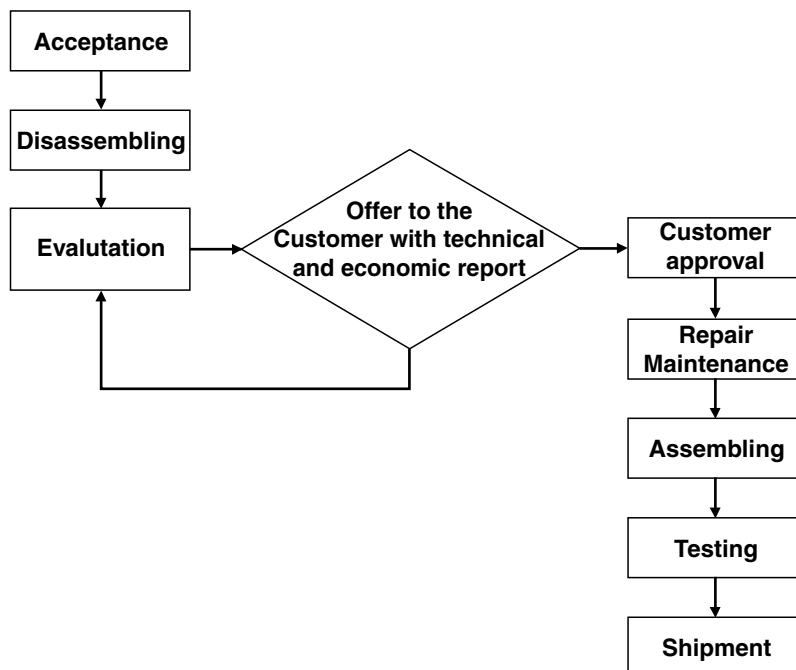
ADJUSTMENT For this intervention and/or any other not mentioned above, it is advisable to contact **MPA srl** directly.

11 AFTER-SALES SERVICE AND SPARE PARTS

11-1 Customers service

We can guarantee an immediate and highly-qualified assistance, making use of the large experience and know-how of personnel exclusively trained for maintenance and repair service.

Our operations provides:



11-2 Spare-parts service

MPA considers that the warranty of the head becomes void if non-original spare parts are fitted.

For this purpose, the technical data sheet of the purchased head, together with the list of its components, is enclosed with this use manual.

Indicate the following information when ordering spare parts:

- type and code of the purchased head (i.e. head type 116 code 111216.100)
- code, name and quantity of the spare part to be purchased (i.e. 111215.312, Spindle, no. 1).

MPA guarantees the supply of spare parts for its products without time restrictions.



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VIA PIZZOLI 3, BARGELLINO
40012 CALDERARA DI RENO, BOLOGNA - ITALY
TEL. 051 72 70 73 FAX 051 72 77 30

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- ✓ Live tools for CNC turret lathe
- ✓ Drilling and tapping accessories

