



*USER MANUAL*

**DRILLING MACHINE  
FOR UNDER PRESSURE MAINS  
MODEL MP-185-A**

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NOTES !

The modifications carried out against the previous revision of this publication are indicated with || on the right margin.

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**MP-185-A DRILLING MACHINE**



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## **SECTION 1: INTRODUCTION**

### 1.1 GENERAL

The **MP-185-A** drilling machine is specially designed to drill on mains, under pressure or pressureless, on any type of material: gray-iron casting, ductile casting, PVC, PE, PP, asbestos cement, polyester, clay, steel, etc. It is especially designed to be used on PE pipe outlet branch connections such as **CA** and **CA-C** types.

The machine is easily installed over PE pipe outlet branch connections of diameters 25, 32, 40, 50 and 63 mm, being anchored by means of two anchoring arms. It allows to carry out a drilling operation up to 46 mm diameter, using standard hole saws with pilot drill.

It can be operated manually by means of a ratchet wrench, although it is designed to be used through an electric swivel gear.

For drilling mains under pressure, the maximum allowed pressure is 16 bar (for water mains).

The machine is robust and easy to use allowing the use of hole saws of different sizes.

The set includes a machine's bridge, a dome fixing nut, chuckshaft (with pilot drill), two anchoring arms, one 2.5 mm Allen key, a ½" ratchet wrench, as well as a carrying case and *User Manual*.

In addition to the above listed components, a set of separated domes of sizes 25, 32, 40, 50 and 63 mm are available, including hole saws of diameters 17, 22, 27, 38 and 46 mm respectively.

The technical information provided in this *Manual* is purely informative, and subject to change without prior notification. ACUSTER, S.L. shall not be responsible for any claims derived from misuse of this publication or any errors and/or omissions that could be detected in it following its publication. This *Manual* should be considered as part of the machine.

### 1.2 GENERAL INFORMATION

The development, documentation, production, testing and shipping of the products described have been performed:

- in compliance with the applicable safety rules, and
- in accordance with the Acuster, S.L. quality assurance requirements.



**WARNING !**

Only qualified personnel are authorized to perform drilling work with the **MP-185-A** drilling machine. Qualified personnel must be familiar with all safety measures, potential hazards and maintenance rules described in this *Manual*.

The safe usage of the products described herein requires appropriate transport, storage, installation and use, careful treatment and compliance with the pre-established regular maintenance.

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### 1.3 "CE" DECLARATION OF CONFORMITY

ACUSTER, S.L.  
Juan de la Cierva, 1  
Polígono Industrial N° 1  
08960 Sant Just Desvern

we declare, under our sole responsibility that the **MP-185-A** drilling machine has been manufactured in compliance with the following specifications:

Directive	Related specification	Model
98/37/CE <i>Machine safety Directive</i>	EN-ISO 12100-1 EN-ISO 12100-2	MP-185-A

Sant Just Desvern, 7<sup>th</sup> January 2004

Ramon García Solé

1.4 GUARANTEE

**Guarantee declaration:**

All **MP-185-A** drilling machines are manufactured from high quality material and have been subjected to rigorous tests for resistance and working order as well as passing all the quality control tests required by the applicable normative (see "CE" Declaration of conformity).

Regardless of whether an incident might occur during the period of guarantee, we recommend a careful reading of the following general guarantee conditions.

**General conditions of Guarantee:**

1. ACUSTER S.L. guarantees that this product has no manufacturing defect at the time of its purchase and extends this guarantee for the period of TWO years.

2. If the product proves defective during this period, due to the materials or its assembly, it will be repaired free of charge, including the cost of materials and labour at Acuster, S.L.'s Technical Service.

3. The Guarantee is not valid in the following cases:

When the fault in the product is a result of:

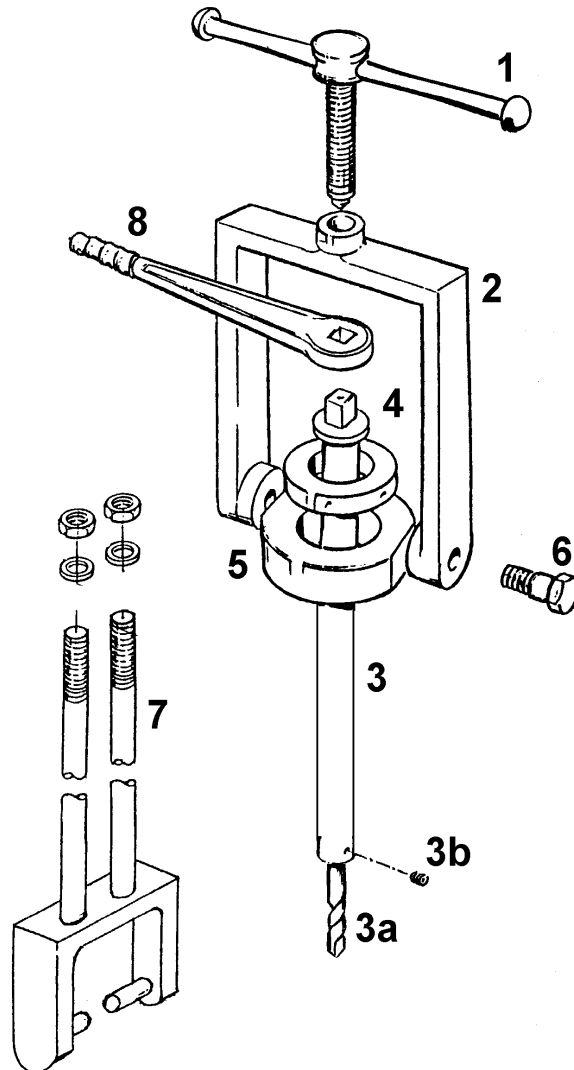
- Usual wear and tear due to usage.
- Abuse or incorrect use of the unit
- Repairs carried out without authority from Acuster, S.L..
- Accidents, natural disasters (including lightning, water action etc) as well as any cause beyond Acuster, S.L.'s control.

4. In all claims against this guarantee, information relating to the model, date of purchase, Serial number and any other additional information must at all times be stated.

## SECTION 2: MACHINE DESCRIPTION

### 2.1 COMPONENTS OF THE DRILLING MACHINE

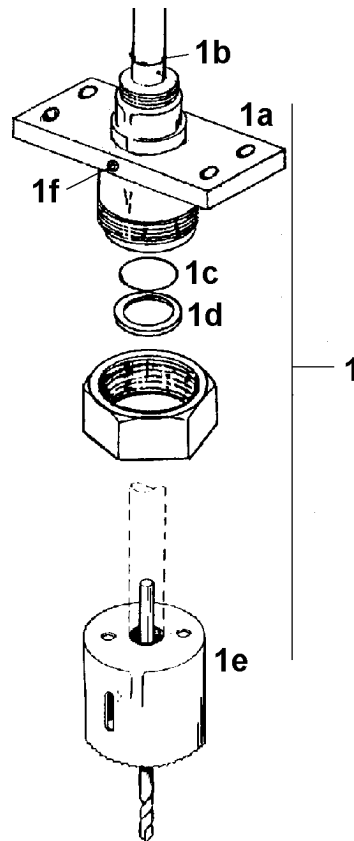
The **MP-185-A** drilling machine assembly is made of the following components:



- |     |                         |   |                           |
|-----|-------------------------|---|---------------------------|
| 1   | Feeding screw           | 5 | Guiding ring              |
| 2   | Machine bridge          | 6 | Guiding ring fixing screw |
| 3   | Chuckshaft              | 7 | Anchoring arm             |
| 3 a | Pilot drill of 6.25 mm  | 8 | ½" ratchet wrench         |
| 3 b | Pilot drill fixing stud |   | 2.5 mm Allen key          |
| 4   | Retaining ring          |   | Transport case            |

2.2 MACHINE ACCESSORIES

The **MP-185-A** drilling machine also features the following accessories:



**1** Domes of sizes 25, 32, 40, 50 and 63 mm

**1e** (\*) Hole saws of diameters 17, 22, 27, 38 and 46 mm (included with the domes)  
 Reducer of diameter 3/8"x1/4" (for 38 and 46 mm hole saws)

(\*): *In addition to the listed sizes, more sizes are available under request.  
 Special hole saws for plastic pipes (PE, PP, PVC) are available too.*



## SECTION 3: MODE OF OPERATION

### 3.1 DESCRIPTION OF DRILLING OPERATION

#### 3.1.1 **Drilling over CA type branch connections:**

To carry out the drilling operation proceed with the following procedure:

##### 1. **Branch connection installation:**

The installation of the **CA** branch connection is performed placing the saddle and sealing gasket on the pipe. Next, fasten the clamp between the saddle and mains (the hinge joints should remain above the saddle), equally tightening the two fastening bolts to ensure tightness.



For more information, refer to the Fitting Instructions included with the accessory.

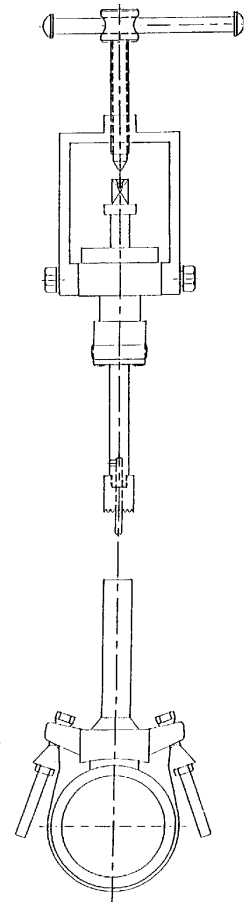
##### 2. **Assembly of the drilling machine:**

Install the **MP-185-A** drilling machine over the branch connection PE outlet once has been selected the correct dome and hole saw corresponding to the branch connection size (do not forget to fit the O-ring or gasket and the washer).

Fix the drilling machine to the saddle using the anchoring arms which is provided.

##### 3. **Drilling the mains:**

To carry out the drilling operation (under pressure or pressureless), lower the chuckshaft until the pilot drill makes contact with the pipe. Now begin drilling the mains by activating the chuckshaft using the ratchet wrench included in the equipment, if drilling is manual, or through a electrical swivel gear. The feed is achieved by making the feeding screw rotate.



#### **SWIVEL GEAR**

If an electrical actuation swivel gear (drilling machine) is optionally used, the following components shall be necessary to have:

- 1 (one) Special longer bridge
- 1 (one) Drilling machine elbow
- 1 (one) Shaft adapter 1/2"
- 1 (one) Drilling machine of low speed (42 mm neck diameter)



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#### **4. Disassembly of the machine and accessories:**

Once the mains has been drilled, move the chuckshaft fully up (to make it possible, tilt the machine's bridge). On this position, the hole saw will be located inside the machine's dome.

If the drilling operation is been carried out underpressure, squeeze the PE outlet using the **CA-EM 50** squeezer (install the squeezer approximately in the middle of the PE outlet)

Now disassemble the drilling machine and connect the desired fitting in the PE outlet.

#### **5. Connecting the branch connection:**

Connect the branch connection.

In case of being used the squeeze off system, it is recommended to recover the PE outlet using the rerounding tool corresponding to the installed size (25, 32, 40, 50 mm).

Retighten the brach connection fasteners.

### 3.1.2 Underpressure drilling over CA-C type branch connections:

To carry out the drilling operation proceed with the following procedure:

#### 1. Branch connection installation:

As previous step before the **CA-C** branch connection installation, insert the spatula through its saddle slot until the end travel (oil the spatula with Vaseline). Now install the branch connection placing the saddle and sealing gasket on the pipe. Next, fasten the clamp between the saddle and mains (the hinge joints should remain above the saddle), equally tightening the two fastening bolts to ensure tightness.



For more information, refer to the Fitting Instructions included with the accessory.

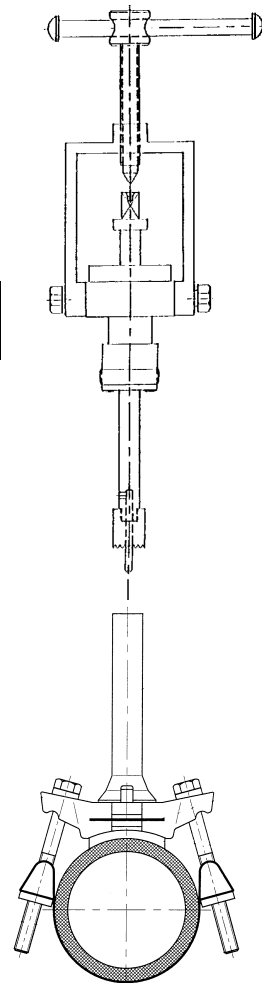
#### 2. Assembly of the drilling machine:

Once the PE outlet is been positioned in the desired direction, install the **MP-185-A** drilling machine over the branch connection PE outlet once has been selected the correct dome and hole saw corresponding to the branch connection size (do not forget to fit the O-ring or gasket and the washer).

Fix the drilling machine to the saddle using the anchoring arms which is provided.

#### 3. Drilling the mains:

To carry out the drilling operation, lower the chuckshaft until the pilot drill makes contact with the pipe. Now begin drilling the mains by activating the chuckshaft using the ratchet wrench included in the equipment, if drilling is manual, or through a electrical swivel gear. The feed is achieved by making the feeding screw rotate.



#### SWIVEL GEAR

If an electrical actuation swivel gear (drilling machine) is optionally used, the following components shall be necessary to have:

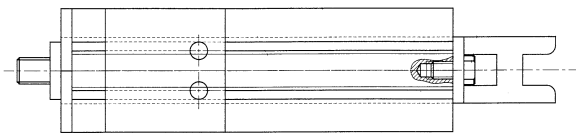
- 1 (one) Special longer bridge
- 1 (one) Drilling machine elbow
- 1 (one) Shaft adapter 1/2"
- 1 (one) Drilling machine of low speed (42 mm neck diameter)

**4. Disassembly of the machine and accessories:**

Once the mains has been drilled, move the chuckshaft fully up (to make it possible, tilt the machine's bridge). On this position, the hole saw will be located inside the machine's dome.

Now, move outwards the spatula to its middle position by means of the special tool to shut off the fluid.

Now disassemble the drilling machine and connect the desired fitting in the PE outlet.



*Special tool to pull out the spatula*

**5. Connecting the branch connection:**

Connect the branch connection. Using the special tool, totally extract the spatula from the saddle and retighten the brach connection fasteners.



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## **SECTION 4: MAINTENANCE**

### 4.1 GENERAL INFORMATION

As a general principle, we recommend maintaining the drilling machine (and all components and accessories) in perfect conditions of cleanliness and lubrication, ready for use, and stored in their original carrying case.

The preventive maintenance for the equipment is minimal; cleaning and lubricating the chuckshaft, the spindle threads and machine dome is sufficient. Monitor the cutting condition of the drill and hole saws before usage. It is recommended they be replaced in case of fault.

On a regular basis, and especially when the equipment is used over a prolonged period, we recommend it be sent to the ACUSTER, SL. After-Sales Service Department for a complete inspection (generally, with time and use, the O-rings and gaskets need to be changed).



## **SECTION 5: TECHNICAL CHARACTERISTICS**

Usage	:	Drilling of mains made of steel, gray cast iron, ductile casting, asbestos cement, clay, polyester, PVC, PE, PP, etc.
Acuster branch connections	:	<b>CA</b> and <b>CA-C</b> .
Maximum drilling capacity	:	Up to $\varnothing$ . 46 mm
Service pressure	:	16 bar for water mains
Operation	:	Manual by means of ratchet wrench Optionally by means of an electric actuator (composed by a longer machine bridge, one propeller and one shaft adapter of 1/2").
Total equipment weight	:	7 kg (with carrying case and without domes)
Outer dimensions	:	Length: 500 mm Width: 420 mm Height: 200 mm

