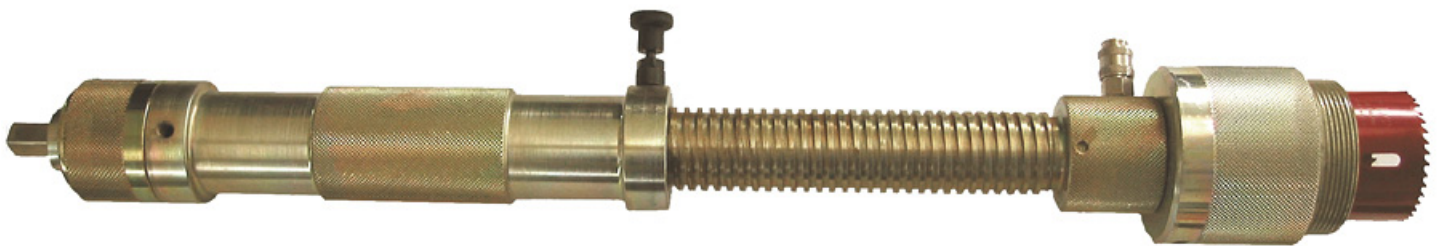




DRILLING MACHINE

ART.20 ART.22 ART.26 ART.35

OPERATING GUIDE AND MAINTENANCE MANUAL



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TECHNICAL FEATURES

Our drilling machines, made of steel with double zinc coating, are suitable for drilling holes on low and medium pressure gas and water networks, with excellent performance and maximum safety.

In terms of functionality and safety, the main features are:

- Working traverse variable according to the machine models (240 mm art.22), (210 mm art. 35), (160 mm art. 20, same features as art. 22).
- Vent fitting placed on the machine
- Safety limit switch
- O-ring and pressure seal
- Machine body and bearings protected by a lip-seal inserted in the bush.
- Unhooking of threaded bush to insert additional accessories (art. 20 and art. 22. See fig. 7 page 7)
- Additional accessories, such as a spindle to insert a safety plug
- Extensions for deeper drillings when the standard traverse is shorter than required and for collecting the hole saw cutter inside the fitting.

Further safety is guaranteed by the use of the combined drilling and plugging system we provide: the drilling machine is able to drill for plugging from 2" up to 6", without adding extensions.

The drilling machine is supplied in a metal tool box with hole saw cutters, available in the following diameters:

- Diameter ½" Drill ø12 mm.
- Diameter ¾" HOLE SAW CUTTER ø17 mm.
- Diameter 1" HOLE SAW CUTTER ø22 mm.
- Diameter 1¼" HOLE SAW CUTTER ø30 mm.
- Diameter 1½" HOLE SAW CUTTER ø37 mm.
- Diameter 2" HOLE SAW CUTTER ø48 mm.
- Diameter 2½" HOLE SAW CUTTER ø64 mm.
- Diameter 3" HOLE SAW CUTTER ø73 mm.
- Diameter 4" HOLE SAW CUTTER ø98 mm.
- Diameter 5" HOLE SAW CUTTER ø121 mm.
- Diameter 6" HOLE SAW CUTTER ø140 mm.



The box of the drilling machine also contains the following accessories, necessary to assemble it and to make it work:

- Hole saw and hole saw carrier connectors for ½" and 6" (according to the model)
- No. 1 hexagonal mandrel for AT or TAD hole saw cutters
(or) No. 2 mandrel for ¾" up to 3" hole saw cutters
- No. 2 150 e 200 mm extensions for art. 22
- No. 1 50 mm extension (only for art. 20)
- No. 1 drill
- No. 2 levers to assemble/disassemble extensions
- No. 1 piston to reduce pressure
- No. 1 screwdriver, only for the model with AT and TAD hole saw cutters
(with hexagonal shank)
- No. 1 3 mm hexagonal spanner (only for art.20)
- No. 1 4 mm hexagonal spanner (only for art. 22-26-35)
- No. 1 ratchet brace
- Pin wrench (1 or 2 according to the model)
- No. 1 Operating guide and maintenance manual.

HOLE SAW CUTTER DIAMETERS FOR INTERVENTIONS

- | | |
|------------------------------|---------------------------|
| - 2" HOLE SAW CUTTER ø48 mm | AV or AT type |
| - 2½" HOLE SAW CUTTER ø64 mm | AV or AT type |
| - 3" HOLE SAW CUTTER ø76 mm | AV or AT type |
| - 4" HOLE SAW CUTTER ø98 mm | TAD type (for deep holes) |
| - 5" HOLE SAW CUTTER ø121 mm | TAD type (for deep holes) |
| - 6" HOLE SAW CUTTER ø140 mm | TAD type (for deep holes) |

DIRECTIONS FOR USE

- 1 - Take the machine out of the tool box by grabbing it around the central knurled part; take out the hole saw cutter and the hole saw carrier connector you need. Install the carrier connector by screwing it up to the O-ring and then tighten it with the pin wrench. (fig. 1).

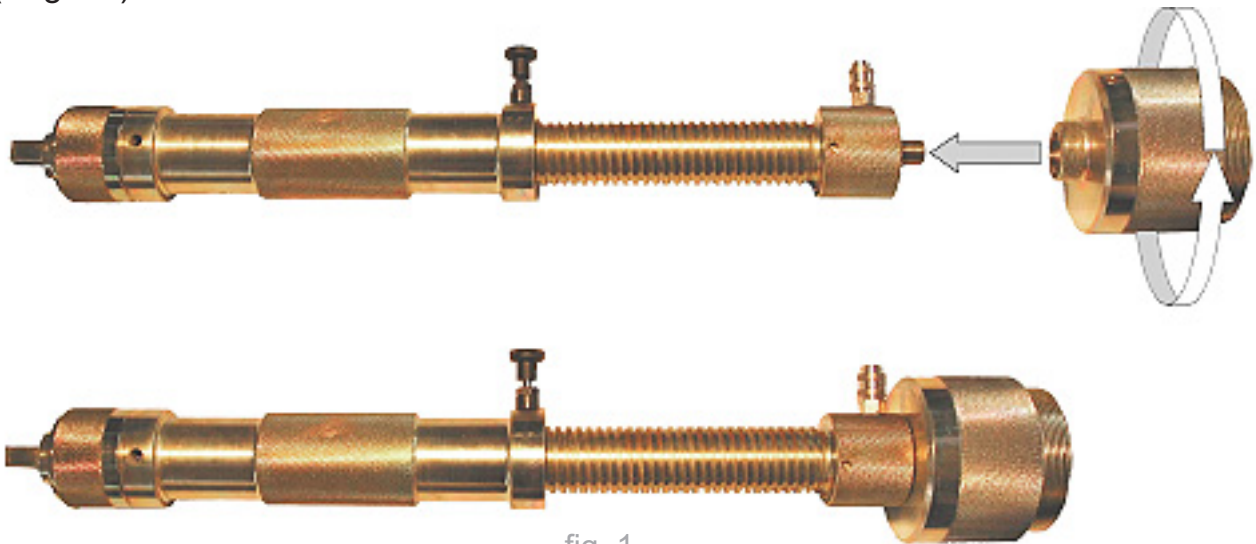


fig. 1

- 2 - Screw the machine until the spindle comes out and install the hexagonal mandrel (if you are using hole saw cutters with hexagonal shank) or the mandrel for AV hole saw cutters without hexagonal shank (fig. 2). Lock it by using the lever to assemble/disassemble and the ratchet brace at the same time

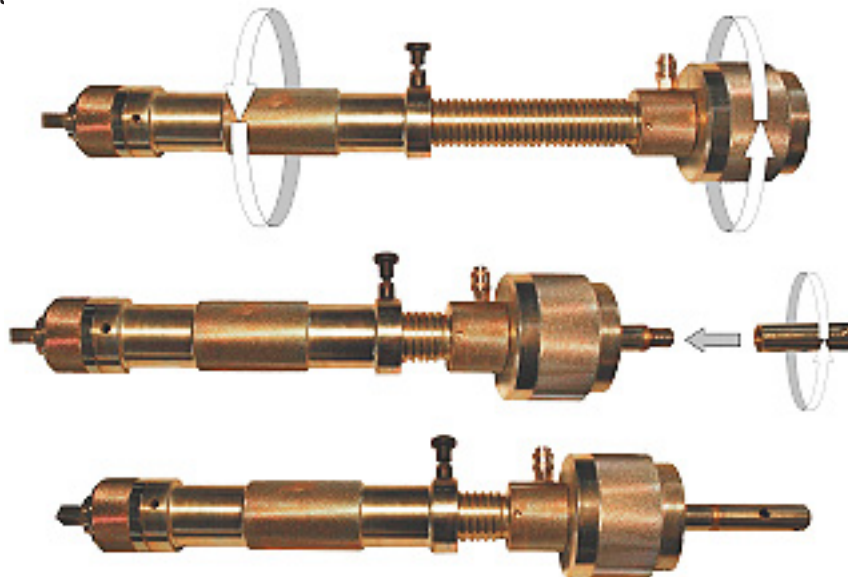


fig. 2

- 3 - Install the hole saw cutter and, using the hexagonal spanner, lock it by screwing the screw placed on the mandrel for hole saw cutters (detail in fig. 3). Remove the lid that covers the saw teeth and unscrew the machine anticlockwise so that the hole saw cutter is retracted inside the block (fig. 3).

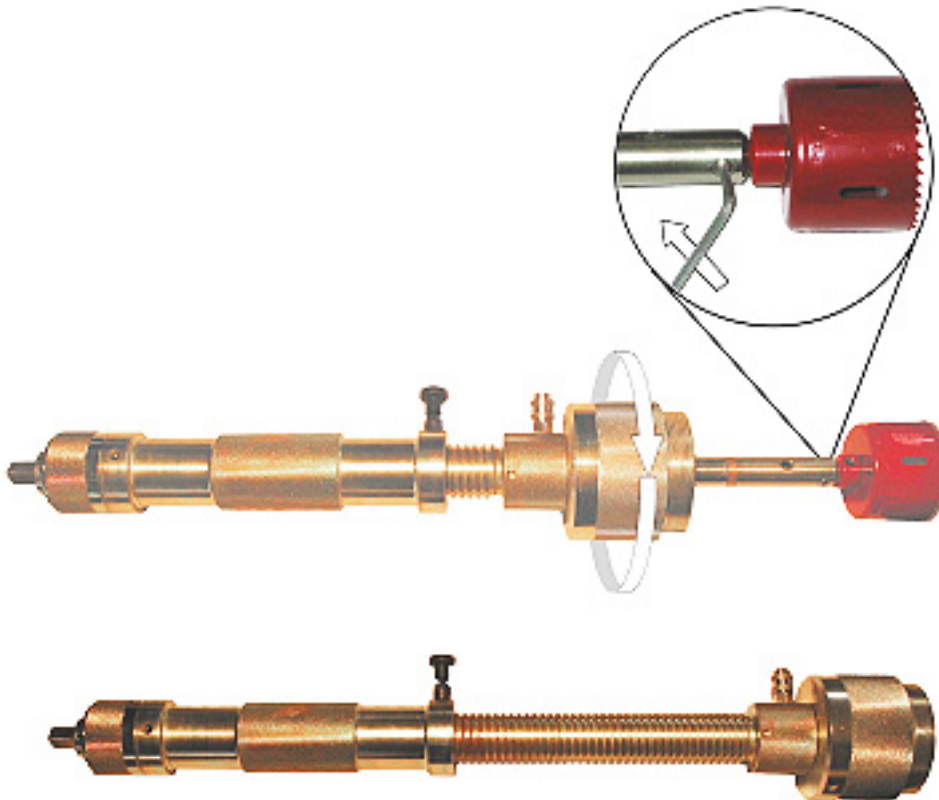


fig. 3

- 4 - Then screw the carrier connector onto the valve or the fitting already placed on the pipe. In order to increase tightness, that section of the fitting can be insulated with Teflon or hemp.
- 5 - Make sure the valve is open and start to screw the external bush on the internal one.
- 6 - Then drill the pilot hole using the ratchet brace. As soon as the internal wall of the pipe has been drilled, the gauge indicator placed on the vent fitting of the machine suddenly shows the increased level of the pressure inside the pipe. At this point, you have to decrease the manual feed to avoid breaking the drill.

- 7 - Once the pilot hole is made, keep screwing until the hole saw cutter touches the pipe. After you reach the optimum drilling pressure, operate the ratchet brace or the pneumatic motor until you have sawn the pipe surface. During the drilling operations, it is advisable to keep a regular feed to avoid breaking the tools.
- 8 - After drilling the hole, unscrew the machine so that to retract the hole saw cutter into its carrier connector. The safety lock prevents the external bush from coming out of its place and being dangerous for the operator. Close the valve placed on the pipe and relieve the pressure through the proper piston (fig. 4).

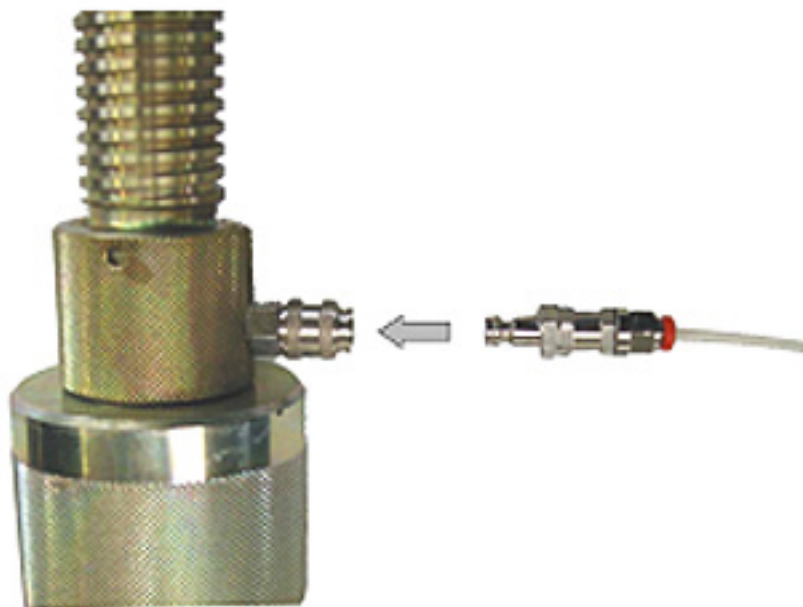


fig. 4

9 - After pulling the machine out of the valve, lay it on the ground and unscrew the hole saw carrier connector using the lever to assemble/disassemble, and the ratchet brace inserted upside down. To begin unscrewing, hammer a sharp stroke on the lever placed in the proper hole of the extension, while you hold the machine firmly (fig.5). Disassemble the mandrel, the carrier connector and the hole saw cutter. Reposition

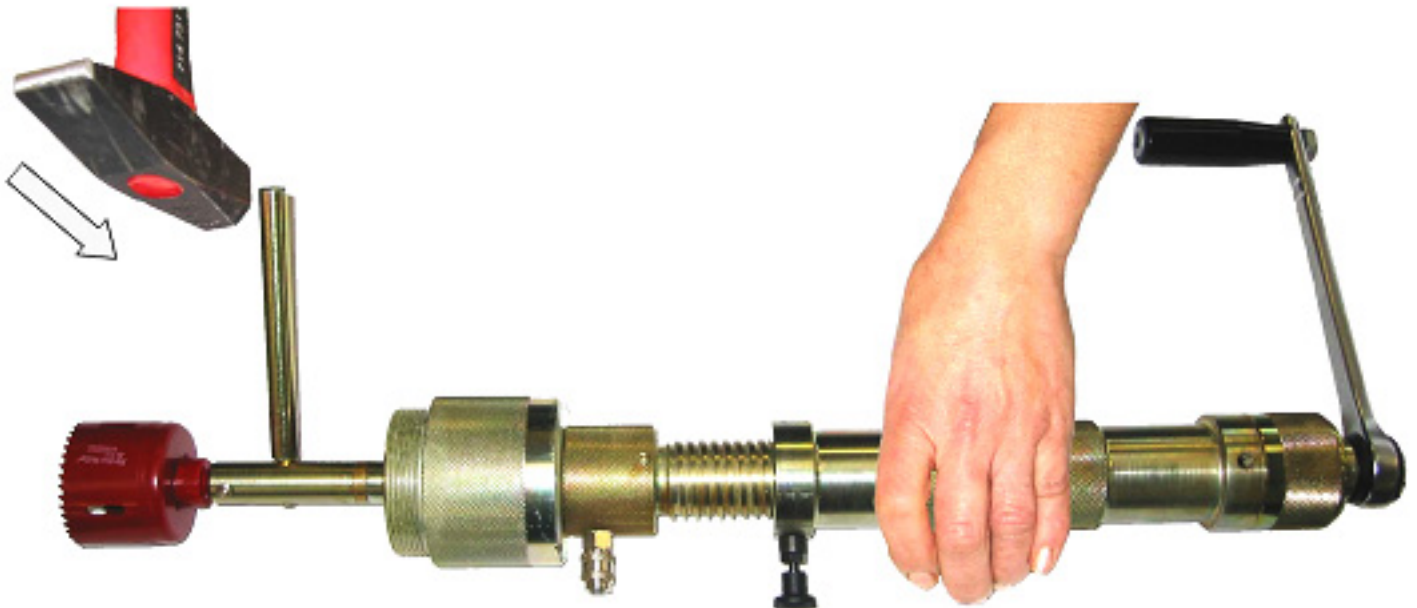


fig. 5

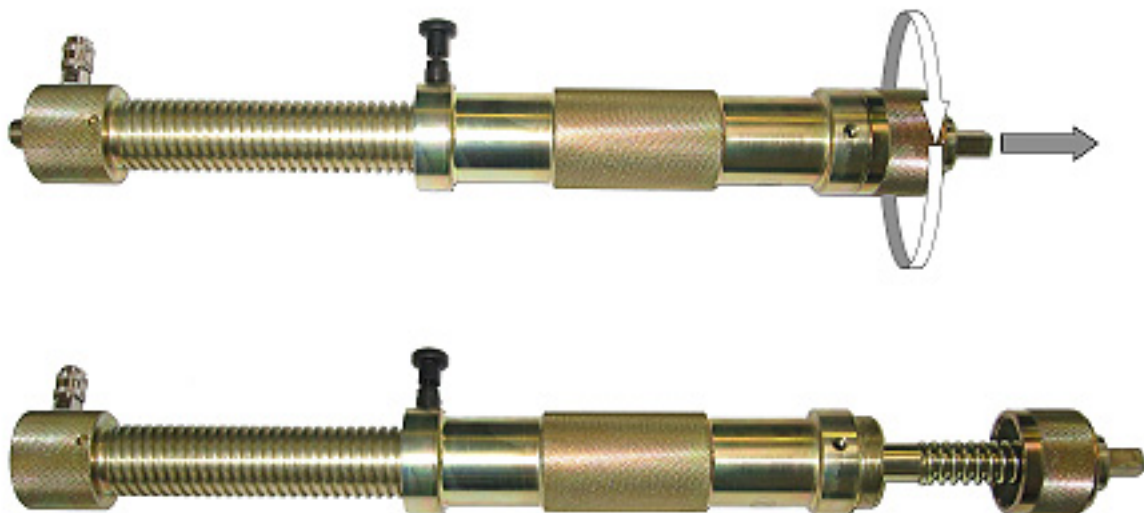


fig. 6



MAINTENANCE

- 1 - Before putting all the components of the machine back into the tool box, clean them with a dry cloth. Also, lubricate the central shaft with a silicone spray.
- 2 - More accurate maintenance is strongly recommended every 4-5 drilling operations, by disassembling the machine.
 - Pull out the central shaft
 - Carefully clean the inside of the machine
 - Grease the roller bearing placed in the hole saw carrier housing of the machine
 - Make sure the O-rings are in good conditions and oil them
- 3 - When, during a drilling operation, you notice the hole saw carrier shaft applies little cutting pressure and the upper part of the machine is lifted up of 1-1,5 cm, the internal spring that controls the drilling pressure must to be replaced in order to apply sufficient drilling pressure.
- 4 - In the event of leakages during a drilling operation, check the O-rings and replace them if necessary. Make sure the central shaft has not been buckled.

WARNINGS

- The technical-construction features and the protection devices of our drilling machine, together with a correct use, in accordance with the directions of this operating guide, ensure maximum safety.
- In addition, appropriate personal protection equipment must to be worn, especially protection clothing (shoes, gloves, etc...).
- Precautions are also required especially when lifting and handling the heaviest models;
- When the machine is used, appropriate personal protection and intervention equipment must be provided in order to prevent and/or limit any risks. In addition, the area of intervention must be isolated to prevent unauthorized people from causing dangerous situations, even though unintentionally.
- The manufacturer declines any LIABILITY for damages to people, animals or property deriving from improper use of the machine and failure to comply with the rules specified in this operating guide.



WARRANTY

Our machines are guaranteed for a period of 12 months from the date of purchase against manufacturing, assembling or material defects.

During the period of warranty, the firm reserves the right to replace, free of charge and on its own premises, only the parts recognised as defective by our technical service.

The guarantee does not cover components subject to normal wear, such as hole saw cutters, pilot drills and everything that is considered consumable materials.

This warranty will be void if:

- the machine is repaired with non-original, improper or modified parts
- the machine is altered or used in operations that are too burdensome or different from what the machine was designed for.