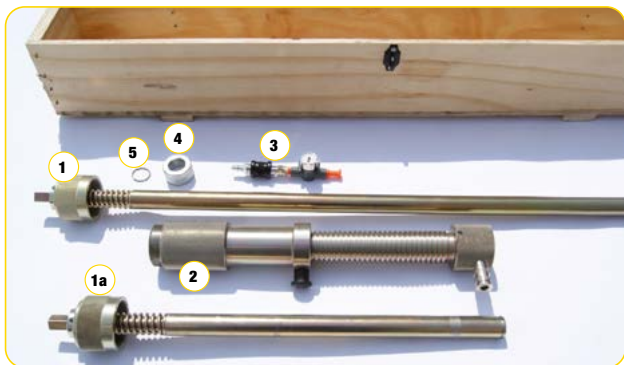


DRILLING EQUIPMENT (code 00FP) FOR USE ON BRANCH SADDLES FUSED ON POLYETHYLENE PIPELINES FOR PRESSURE AND NON-PRESSURE USE $\varnothing 90 \div 1000$ mm (3" - 40")

DRILLING MACHINE ASSEMBLY

- ① SHAFT
- ② BODY
- ⑥ ADAPTER
- ⑦ VENT VALVE
- ⑧ SAFETY LOCK
- ⑨ LOAD CELL FOR AXIAL LOADING
- ⑩ SQUARE END FOR CUTTER ROTATION
- ⑪ CUTTER
- ⑫ SAFETY RESTRAINT



MOUNTING KIT

The package includes:

- ① Long shaft for drilling under pressure and non-pressured lines.
- ①a Short shaft for non-pressured drilling.
- ② Body with threaded shaft, vent valve and safety lock.
- ③ Pressure gauge with valve for measuring and depressurizing.
- ④ Ring nut for holding the cutter.
- ⑤ Seeger ring.

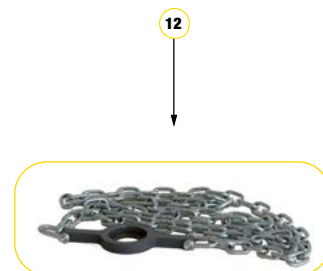
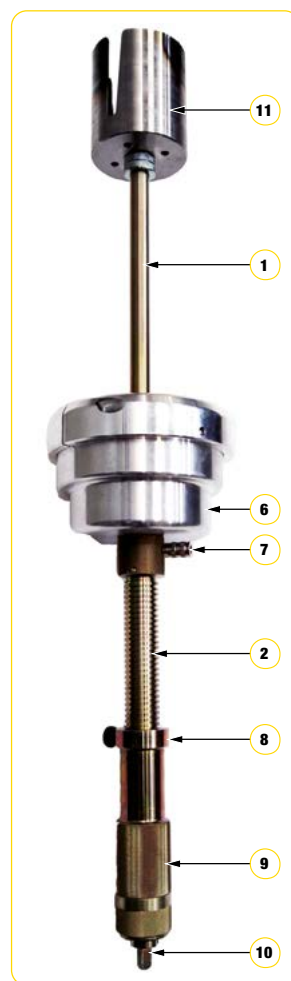
The sets of adapters and cutters for each pipe size are available individually or in a complete kit with the drilling machine.



Adapter - Code 00FAxxx
 $\varnothing 63 \div 160$ mm (2" - 6")



Cutter - Code 00FFxxx
 $\varnothing 63 \div 160$ mm (2" - 6")



RACCOMANDAZIONI PER LO SMALTIMENTO: IL POLIETILENE USATO PER LA PRODUZIONE DEI RACCORDI E' RICICLABILE: SMALTIRLO TRAMITE CENTRI AUTORIZZATI. NON DISPERDERE IL MATERIALE E L'IMBALLO IN L'AMBIENTE.
RECOMMENDATIONS FOR DISPOSAL: POLYETHYLENE USED TO PRODUCE THESE FITTINGS IS RECYCLABLE: DISPOSE THROUGH AUTHORISED CENTRES ONLY. DO NOT DISPERSE THE PRODUCT OR ITS PACKAGE IN THE ENVIRONMENT.

3. DRILLING MACHINE SET-UP

The drilling machine must be assembled in an area clear of dirt, soil, sharp objects.

Keep particular care for cleanliness and integrity of the shaft and the threaded part of the body.

The short shaft is only to be used for the drilling of non-pressurized pipelines.

3.1 DRILLING MACHINE SET-UP

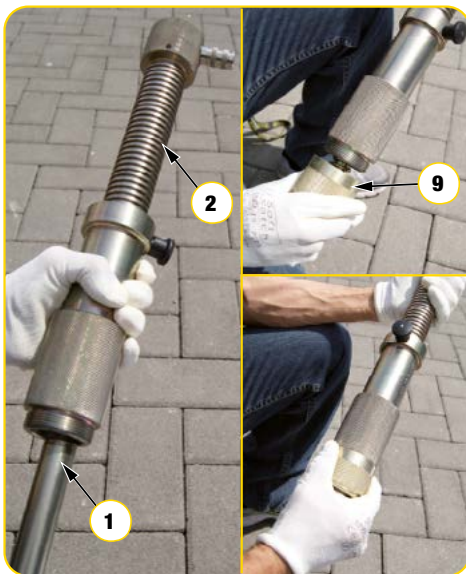
1. Separate the drilling body by unscrewing the two halves and slide on safety restraint.



2. Ensure that the seeger ring is removed from the end of the shaft.



3. Insert the drilling shaft into the body. Make sure both the shaft and body are free of debris and lightly greased. Thread the top end of the shaft completely onto the body.



4. Choose the correct size bell adapter for your application. Slide the adapter over the shaft and thread completely into the body.



5. Slide the ring nut onto the shaft and lock the retaining ring into the groove at the end of the shaft.



6. Choose the correct size cutter for your application. Insert the hexagonal key of the cutter into the end of the shaft.



7. Thread the ring nut onto the cutter and hand tighten. **DO NOT USE A WRENCH.** *The Tool is now ready for use.*



RECOMMENDATIONS FOR THEIR DISPOSAL:

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4. BRANCH SADDLE ASSEMBLY

4.1 SYSTEM UNDER PRESSURE

1. Install the appropriate branching saddle - code 12EICOL or 12EICOLTL - on the main pipe. Follow the instructions of the product and wait for the completion of the cooling time before attaching the tool.

2. Weld the PE ball valve on the outlet of the branching saddle by observing the distances below.

It is acceptable to butt fuse the ball valve directly to the branch saddle or use an electrofusion coupling, as long as the measurement criteria are met. Using an EF Coupling is the preferred method, because getting the cutter past the internal bead of the butt fusion requires slightly more effort.

Distance from the face of the main to the end of the valve.

- 8x6, 8x4, 8x2 applications – 24-25”
- 6x4, 6x2 applications - 25-26”
- Long Shaft (55”) applications max length from face of main to end of valve = 44”



3. If sharp, deburr the edge to avoid the risk of damaging the O-ring of the adapter during assembly.



4. It is a good idea to open and close the ball valve to make sure it is functioning properly. Leave the valve in the open position.

5. Measure and mark a spot on the spigot that is equal to the distance from the seat inside the bell adapter to the outside of the coupler.



6. Lightly grease the o-rings inside the bell adapter, remove the outer collar, insert the cutting blade into the ball-valve and press the bell adapter onto the spigot end until the valve bottoms out.



7. Align the pins on the bell adapter with the holes on the collar, tighten the bolts and nuts on the collar evenly until they lock out. Do not overtighten the bolts and nuts.



8. Fasten chain restraint around the main and secure tightly.



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4.2 UNPRESSURIZED SYSTEM

1. Install the appropriate branching saddle - code 12EICOL or 12EICOLTL - on the main pipe. Follow the instructions of the product and wait for the completion of the cooling time before attaching the tool.

2. When using the drilling machine with short shaft, the bell adapter must be fit directly on the spigot outlet of the branch saddle.

When using the long shaft, weld a piece of pipe to the outlet through an electrofusion coupler, by observing the distances below.

Distance from the face of the main to the end of the valve.

- 8x6, 8x4, 8x2 applications – 24-25”
- 6x4, 6x2 applications - 25-26”
- Long Shaft (55”) applications max length from face of main to end of valve = 44”



3. If sharp, deburr the edge to avoid the risk of damaging the O-ring of the adapter during assembly.

4. Measure and mark a spot on the spigot that is equal to the distance from the seat inside the bell adapter to the outside of the coupler.

5. Lightly grease the o-rings inside the bell adapter, remove the outer collar, insert the cutting blade into the pipe and press the bell adapter onto the spigot end until the valve bottoms out.

6. Align the pins on the bell adapter with the holes on the collar, tighten the bolts and nuts on the collar evenly until they lock out. Do not overtighten the bolts and nuts.

5. PRESSURE TEST OF SYSTEM

Once the collar is tightened, you can now pressure test the assembly through the gauge tree. It is recommended to soap test all connections, fittings, and welds. Once the system has passed the pressure test, it is safe to move onto the drilling process.

Max testing pressure is 160psi. Max operating pressure is 120psi.



The mechanical collar does not require a stiffener. The outer collar is restrained by the bell adapter and cannot crush or deform the PE.

6. DRILLING PROCESS

1. Once the system has passed the pressure test, open up the bleeder on the gauge tree to purge excess air. Close the bleed valve when the purge is complete.

2. Pull the safety lock plunger and rotate the upper part of the body clockwise to load the cutter. When turning this part of the tool, you are advancing/loading the cutter closer to the main.



3. When a gap appears between the operating nut and the upper part of the body, there is resistance on the blade. Based upon your set-up, this resistance could be the face of the main or friction from an internal butt fusion bead.



4. When the gap is 1” wide, insert the ratchet onto the operating nut and rotate clockwise. This will close the gap.



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5. Continue to rotate the upper body portion of the tool to maintain a 1" gap while rotating the ratchet wrench.



6. Repeat these steps until the cutter is through the main.



7. Once you are fully through the side wall of the main, the cutter will advance easily. Make sure you do not advance the cutter all the way through the center of the main to the opposite side.

In case of pressurized system, when you initially cut through the main, you will hear the gas enter the tool and you will see the pressure on the gauge jump up. You are not completely cut through the side of the main until the gap between the upper body and operating nut continually closes up while advancing the upper body.

7. REMOVING THE TOOL

1. Rotate the upper part of the body counter clockwise; it may be necessary to restrain the operating nut so it does not rotate at the same time: use the ratchet wrench to restrain the nut while you back out the cutter.



2. Back the upper body out until the locking plunger clicks into place.



3. Rotate the top end of the shaft counter clockwise to unscrew it.



In case of pressurized system: Under Pressure Warning! Once the top end of the shaft is completely unthreaded, it is normal for the pressure in the main to force the shaft fully out.

4. Keep a firm grip on the shaft to control the movement as the pressure pushes the cutter out. Keep your body parts clear in case there is a loss of grip.



5. With the shaft completely out, the cutter is now tucked inside the bell adapter. You can now close the ball-valve in case of pressurized system.

6. Bleed off the excess gas from the gauge tree assembly.



7. If the valve is closed properly, you can now remove the bell adapter from the valve spigot.



8. The coupon cut from the pipe is firmly kept inside the cutter.



9. Make sure to clean any grease or debris from the spigot end of the valve before performing an electrofusion or butt fusion.

8. STORING OF THE DRILLING MACHINE

1. *Re-insert the shaft and screw-in the top end tightly.*
2. *Check if the safety lock is inserted, otherwise turn the upper body until you hear the 'click' of the plunger.*
3. *Clean the shaft and the threaded body from dirt and soil, then lubricate.*
4. *Remove the cut piece of pipe and all the shavings from the cutter.*

NOTE: Store the drilling machine in an area clear from dirt, soil, sharp objects; keep particular care for cleanness and integrity of the shaft and the threaded part of the body.

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