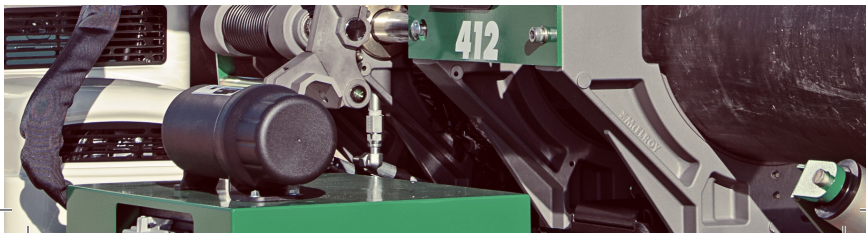




**MI MI** **McELROY**  
HDPE/MDPE **HYDRAULIC FUSION**



# QUICK **GUIDE**





# SAFETY ALERTS

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Do not operate this equipment until you have carefully read and understood all sections of the machine manual and all other equipment manuals that will be used with it. Please be sure you are familiar with the standard to which you will be fusing. Your safety and the safety of others depends upon care and judgment in the operation of this equipment. Follow all applicable federal, state, local and industry specific regulations. McElroy cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this manual and on the machine are therefore not all-inclusive. You must satisfy yourself that a procedure, tool, work method or operating technique is safe for you and others. You should also ensure that the machine will not be damaged or made unsafe by the method of operation or maintenance you choose.

## GENERAL SAFETY

Safety is important. Report anything unusual that you notice during set up or operation. LISTEN for thumps, bumps, rattles, squeals, air leaks, or unusual sounds. SMELL odors like burning insulation, hot metal, burning rubber, hot oil, or natural gas. FEEL any changes in the way the equipment operates. SEE problems with wiring and cables, hydraulic connections, or other equipment. REPORT anything you see, feel, smell, or hear that is different from what you expect, or that you think may be unsafe.

## WEAR SAFETY EQUIPMENT

Wear a hard hat, safety shoes, safety glasses and other applicable personal protective equipment. Remove jewelry and rings, do not wear loose-fitting clothing and tie back long hair that could catch on controls or moving machinery.



### CRUSH POINTS

Hydraulically operated equipment operates under high pressure and generates extremely high forces. Anything inadvertently caught in the machine will be crushed. Keep fingers, feet, arms, legs and head out of the machine while operated. Always ensure machine power is off before entering the machine for any reason.

**⚠ WARNING****UNITS WITH HYDRAULICS**

It is important to remember that a sudden hydraulic oil leak can cause serious injury, or even be fatal if the pressure or oil temperature is high enough. Escaping fluid under pressure can penetrate the skin causing serious injury. Keep hands and body away from pinholes that eject fluid under pressure. Use a piece of cardboard or paper to search for leaks. If any fluid is injected into the skin, it must be immediately removed by a doctor familiar with this type of injury. Unwanted movement of the machine could result in serious injury or damage to machine. Unwanted movement of the machine may take place if switches do not match machine state when the machine power is turned on.

- ⊗ **NOTICE:** Wear safety glasses, and keep clear when bleeding air from hydraulic system to avoid spraying oil into eyes or face.

**⚠ WARNING****FACER BLADES ARE SHARP & CAN CUT**

Never attempt to remove shavings while the facer is running, or is in the facing position between the jaws. Use care when operating the facer and when handling the unit.

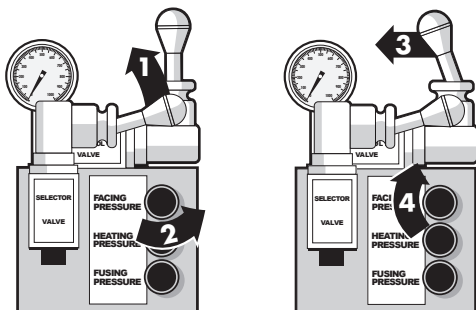
- ⊗ **NOTICE:** Turn machine off, disconnect machine power, and remove the facer blades before attempting any maintenance or adjustment. Never extend the facer blades beyond the inner or outer circumference of the facer.

**⚠ CAUTION****HEATER IS HOT & CAN BURN**

The heater can burn skin and clothing. Keep the heater in its insulated heater frame or stand when not in use and use care when heating the pipe.

- ⊗ **NOTICE:** Use only a clean, dry, lint-free, non-synthetic cloth to clean the heater butt plates.

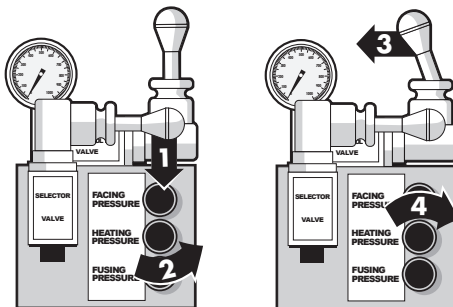
## SETTING THE FACING PRESSURE



- Shift the SELECTOR VALVE to the facing position. [1]
- Back the FACING PRESSURE REDUCING VALVE all the way out. [2]
- Turn the facer on. Then shift the DIRECTIONAL VALVE to the closed position. [3]
- Slowly increase the facing pressure by turning the FACING PRESSURE REDUCING VALVE clockwise until the carriage moves and the facer begins cutting ribbons. [4] **This is the FACING pressure.**

⊗ **NOTICE:** Too much pressure can cause damage to the facer.

## SETTING THE DRAG PRESSURE

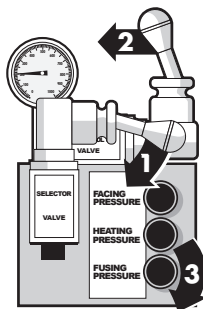


- With the pipes spaced approximately 2" apart, shift the SELECTOR VALVE to the heating position. [1]
- Back the HEATING PRESSURE REDUCING VALVE all the way out by turning the knob counter-clockwise until it stops. [2]
- Shift the DIRECTIONAL VALVE to the closed position. [3]
- If the carriage doesn't move, slowly increase the HEATING PRESSURE REDUCING VALVE until the carriage begins to move, [4] then back the pressure off until the carriage is barely moving.
- Before the pipe ends come together, look at the manifold gauge and note the pressure. **This is the DRAG pressure.**

 **IMPORTANT:** If the carriage moves with the HEATING PRESSURE REDUCING VALVE backed all the way out then you will use 30 PSI for drag.

## SETTING THE

# FUSING PRESSURE



Calculating the FUSING pressure is easily done using the **McElroy McCalc<sup>®</sup>** app. The app can be downloaded by scanning the QR code on this page, through any of the app stores listed above, or from our website at **[www.mcelroy.com/mccalc](http://www.mcelroy.com/mccalc)**.

Once the app is downloaded, follow the steps listed below.

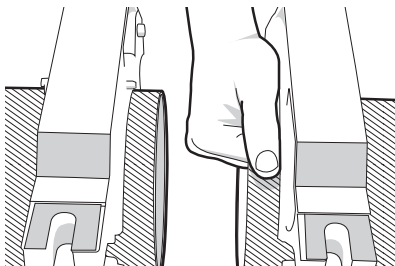
- Use the McElroy McCalc app to calculate the FUSING pressure.
- Shift the SELECTOR VALVE down into the FUSING position. [1]
- Close the carriage. [2]
- When the pipe ends have come together, adjust the FUSING PRESSURE REDUCING VALVE until the gauge shows the calculated FUSING pressure. [3]



# MACHINE OPERATION

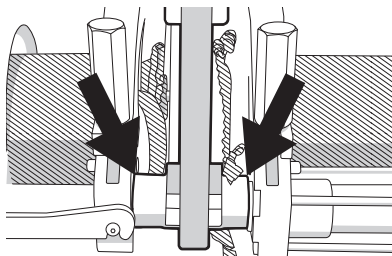


# 1 INSPECT, CLEAN & INSTALL PIPE



- INSPECT machine and pipe.
- Review HEAT SOAK time, BEAD SIZE, OPEN/CLOSE time, and COOLING time.
- CLEAN inserts and pipe.
- Install and clamp pipe. If pipe ends are fairly even, check ALIGNMENT.

# 2 PREPARE PIPE ENDS



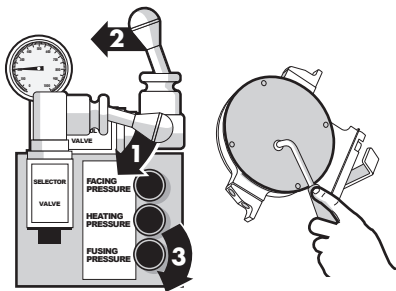
- FACE pipe ends until the facer stops bottom out.
  - CLEAN fusion area after facing.
  - At FACING pressure, check ALIGNMENT of the pipe ends and check for GAPS.
- \* Ensure all information has been correctly entered in the DataLogger®.

\* Denotes added steps when using a DataLogger



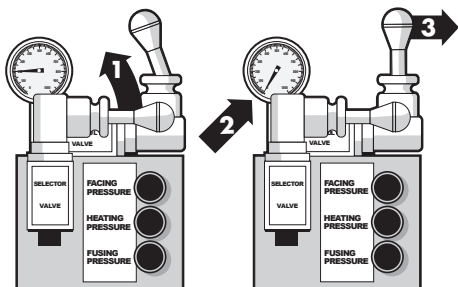
# 3 SET FUSION PARAMETERS

- Measure DRAG.
- Set FUSING pressure and ensure the pipe does not slip through the jaws at FUSING pressure. [1, 2, 3]
- Check the heater TEMPERATURE and CLEAN heater surfaces.
- Set the heater into the machine between pipe ends.
- \* Click "START" on the DataLogger to begin recording.



# 4 SHIFT SEQUENCE & HEAT SOAK

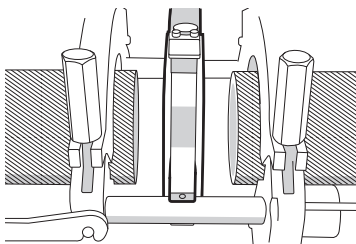
- Close the pipe against the heater under FUSING pressure.
- Conduct a BEAD-UP cycle.
- Shift the SELECTOR VALVE up from FUSING to HEATING position. [1]
- Watch the pressure gauge until pressure drops to the preset DRAG pressure or lower. [2] (continued on next page)



(Step 4 continued)

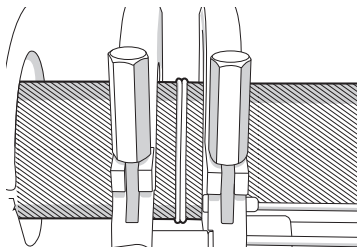
- Shift the DIRECTIONAL VALVE into NEUTRAL position. [3]
- Maintain contact of the pipe ends against the heater with NO FORCE for the entire HEAT SOAK time.

## 5 HEATER REMOVAL & PIPE INSPECTION



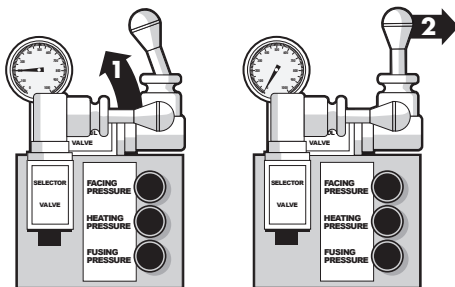
- Shift the SELECTOR VALVE down to FUSING position and open the carriage until the stripper bars engage the jaws (for large machines you will have to index the heater to the right to strip it off the pipe end).
- Remove the heater and INSPECT the pipe ends for condition of the melt.

# 6 FUSE & COOL



- Close the carriage at FUSING pressure to fuse the pipe.
- Maintain FUSING pressure for the entire COOLING time.

# 7 OPEN JAWS & INSPECT FUSION



- \* STOP the DataLogger.
- Shift the SELECTOR VALVE up from FUSING to HEATING position. [1]
- Shift the DIRECTIONAL VALVE into NEUTRAL position. [2]
- Loosen the jaws, open the carriage, and INSPECT the fusion.
- \* Review the DataLogger joint report.



P.O. Box 580550 Tulsa, OK 74158-0550 U.S.A.  
918-836-8611 [www.mcelroy.com](http://www.mcelroy.com)

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