

# MUELLER<sup>®</sup> GAS

## DH-5 Drilling Machine

For use on 1½" & 2"  
Line Stopper  
Fittings

### **⚠ WARNING:**

1. Read and follow instructions carefully. Proper training and periodic review regarding the use of this equipment is essential to prevent possible serious injury and/or property damage. The instructions contained herein were developed for using this equipment on fittings of Mueller manufacturer only, and may not be applicable for any other use.
2. DO NOT exceed the pressure ratings of any components or equipment. Exceeding the rated pressure may result in serious injury and/or property damage.
3. Safety goggles and other appropriate protective gear should be used. Failure to do so could result in serious injury.
4. Pressure test, check for and repair leaks in all fittings and components each time one is installed or any joint or connection is broken. Failure to find and repair a leak from any source in the fittings, by-pass lines or equipment could result in an explosion and subsequent serious injury and/or property damage.
5. MUELLER<sup>®</sup> Drilling Machines and Equipment have been carefully designed and engineered to work together as a unit. The use of equipment manufactured by someone other than Mueller Co. may cause excessive wear or a malfunction of the Mueller machines.

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**Mueller Co.**

**Reliable Connections<sup>™</sup>**

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All warranties, expressed or implied, for Mueller Drilling Machines are rendered null and void if the machines are used with shell cutters or equipment manufactured by someone other than Mueller Co.

# MUELLER® DH-5 Drilling Machines

## General Information

### Capacity and Use

The DH-5 Drilling Machine is hand, air or hydraulic power operated and used to install up to 4" Tees, Save-A-Valve Drilling Nipples, and Line Stopper Fittings.

For complete information on the uses of these machines and the equipment and attachments required for their use see the latest Mueller Gas Catalog at muellergas.com.

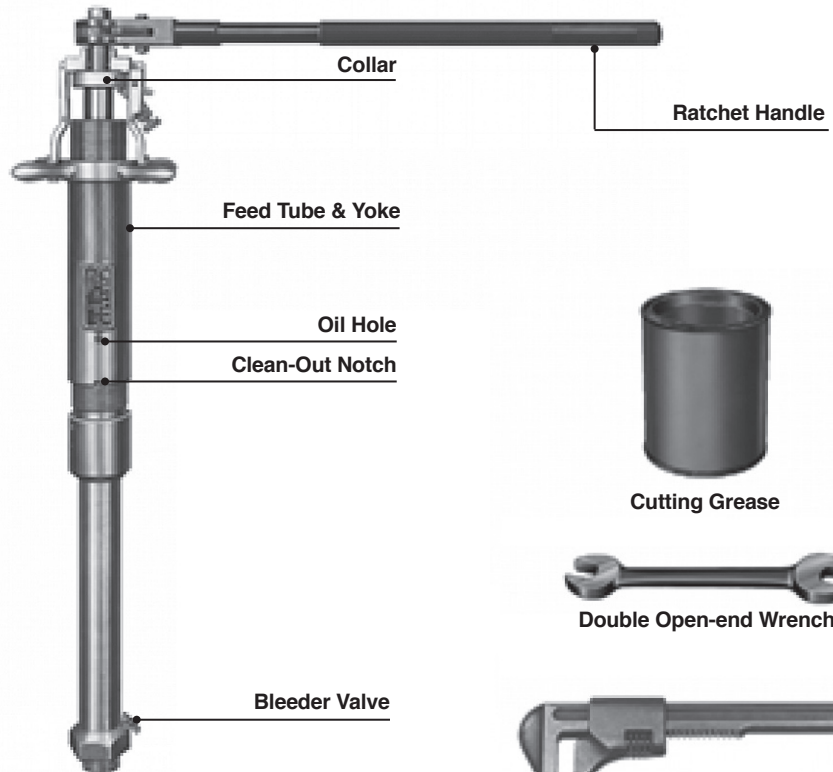
### Working Pressure and Temperature Rating

- 1200psig (8273 kPa) Maximum Working Pressure
- 100° F (38° C) Max. Temp. Rating

The working pressure or temperature rating is reduced accordingly if any attachment, valve, or fitting subjected to pressure or temperature during the drilling operation has a maximum working pressure or temperature rating less than that specified above.

### Equipment Furnished

- Wooden Storage Chest (680352)
- Reversible Ratchet Handle (85308)
- Body Gasket (33278)
- Adjustable Wrench (91664)
- Double open end Wrench (58196)
- Cutting Grease (88366)
- Operating Instruction Manual



### Machine Weight Chart

DESCRIPTION	DH-5
Machine & equipment shipped in wooden storage chest	107 lb (48.5 kg)
MACHINE ONLY	67 lb (30.4 kg)



### Length of Travel

DH-5 Drilling Machine has 14" (356 mm) Boring Bar Travel.

### Mueller No-Blo® Operations performed by the Mueller DH-5 Drilling and Stopping Machine:

ITEM	SIZE*						MUELLER NO-BLO OPERATION
Mueller NO-BLO Service Tees	3/4"	1"	1 1/4"	1 1/2"	2"	—	Drill main, insert or extract completion plug, make stop-off
Mueller NO-BLO Service Stop Tees	1/2"	3/4"	1"	1 1/4"	2"	—	Drill main, insert or extract stem and bushing, recondition body seat
Mueller NO-BLO Curb Stop Tees	1"	1 1/4"	2"	—	—	—	Drill main, insert or extract stem, recondition body seat
Mueller NO-BLO Steel Valves	1"	—	—	—	—	—	Insert or extract stem, recondition body seat
Mueller NO-BLO Service Line Stopper Fittings	1"	1 1/4"	1 1/2"	2"	2 1/4"	2 1/2"	Drill main, insert or extract completion plug, make stop-off
Mueller Low Pressure Line Stopper Fittings	3/4"	1"	1 1/4"	2"	3"	4"	Drill main, insert or extract completion plug, make stop-off
Mueller Save-A-Valve Drilling Nipples	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	Drill main, insert or extract completion plug

\*The size of Mueller NO-BLO Tees, as used in this table, refers to the size of the inlet. The size of Mueller Steel Valves, Service Line Stopper Fittings, Low Pressure Line Stopper Fittings and Save-A-Valve Drilling Nipples refers to the nominal size.

# MUELLER® DH-5 Drilling Machines

## Instructions for Installing and Stopping-Off 1½" and 2" Line Stopper Fittings

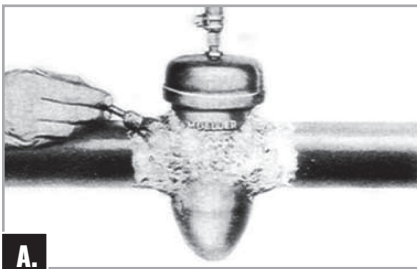
### Installation Instructions



H-17126

#### A—Attach Line Stopper Fitting

1. Thoroughly clean the pipe where the fitting is to be attached.
2. Remove completion cap and completion plug from the fitting and replace with test cap.
3. Place the two halves of the fitting around the pipe. Check to be sure they are in proper alignment.
4. Tack weld the four corners together with enough space between the two halves so that they can be rotated.
5. Weld both halves of fitting together but free of pipe. The fitting can be rotated so that the side welding is done horizontally on top of the pipe.
6. Locate the fitting in the desired location and weld each end permanently to the pipe.
7. Apply air pressure through the test cap and test for leaks using soapsuds or a leak detection fluid. (**Fig. A**)
8. Remove test cap.



A.

#### B—Drilling Operations

1. Attach Mueller® control valve to the fitting. Check to be sure control valve is fully open. Attach reducing bushing if required before attaching control valve.
2. Advance boring bar of drilling machine to permit attachment of drilling tools.
3. Attach proper machine adapter nipple to drilling machine making sure gasket is in condition and in place.
4. Attach boring bar extension to the boring bar. Attach proper shell cutter and pilot drill to cutter arbor, then attach to boring bar extension (**Fig. B**). Coat shell cutter and pilot drill with Mueller cutting grease.

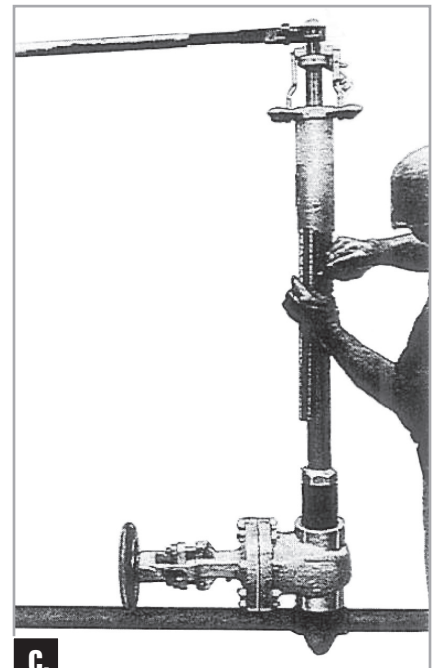


B.

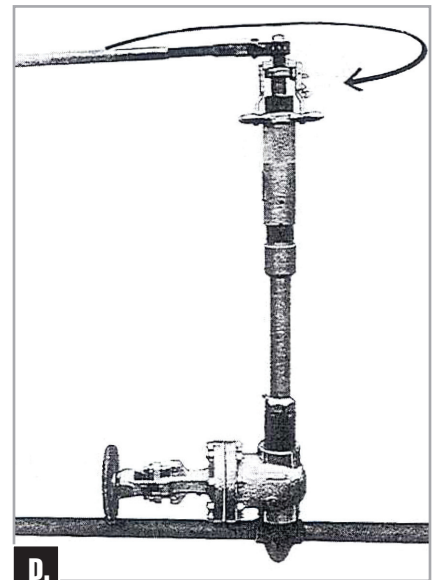
5. Retract boring bar to rearmost position and attach Drilling machine and machine adapter nipple to the control valve
6. Advance boring bar until the pilot drill contacts the pipe. Back the pilot drill off the pipe a small amount. Adjust feed tube and yoke so that the yoke is engaged with the top of the friction collar on boring bar. Raise pivot arm of locking mechanism on side of yoke so that it is positioned under friction collar and lock in place with operating screw.
7. Measure and mark the travel required to complete the cut. (Mark the point on the body of the drilling machine that the feed tube will reach when drilling is completed – **Fig. C**). Necessary travel to complete the cut from point of pilot drill contact on 1½" steel pipe is 3⅜" – For 2" steel pipe – 3⅔". These dimensions include ¼" overtravel.

8. Check to be sure bleeder valve at bottom of drilling machine is closed and begin drilling operation.

When hand operating the drilling machine, using **clockwise** rotation, begin with a light even feed, then a heavier feed and finish the cut with a light even feed (**Fig. D**). When power operating the drilling machine, attach H-604/H-704 power operator.



C.



D.

# MUELLER® DH-5 Drilling Machines

## Instructions for Installing and Stopping-Off 1½" and 2" Line Stopper Fittings

**NOTE:** We recommend the use of a gauge at the throttle of power operator to maintain pressure at 90psi at the air motor. For detailed drilling instructions see operating instructions for DH-5 Drilling Machine, Form 9675.

9. When pipe is completely cut through, turn operating screw on locking mechanism **counter-clockwise** to unlock pivot arm. Remove feed yoke from friction collar and retract boring bar to rearmost position. DO NOT reverse rotation of ratchet handle when retracting boring bar.

10. Close the control valve. Open bleeder valve at bottom of drilling machine to relieve pressure in the machine, then close.

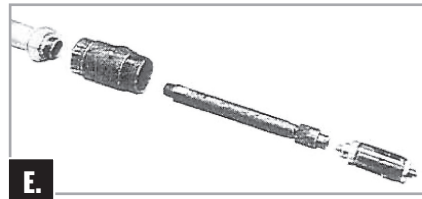
11. Remove drilling machine and machine adapter nipple as a unit.

12. Advance the boring bar and remove drilling tools, boring bar extension and machine adapter nipple.

### C-Stopping-Off Operation

1. Attach proper machine adapter to the drilling machine.

2. Advance boring bar and attach stopper inserting tool, and rubber stopper (bypass or solid) to the boring bar (**Fig. E**). Lubricate stopper with Mueller rubber stopper lubricant.



3. When using by-pass rubber stopper, mark the collar on the drilling machine so that it is in line with the by-pass on the rubber stopper.

4. Retract boring bar to rearmost position and attach the drilling machine and machine adapter to the control valve.

5. When using two drilling machines, fitting and equipment to stop-off and isolate a section of pipe and using

an integral by-pass line – follow these instructions:

a) Assemble a by-pass line between the by-pass connections on the machine adapters.

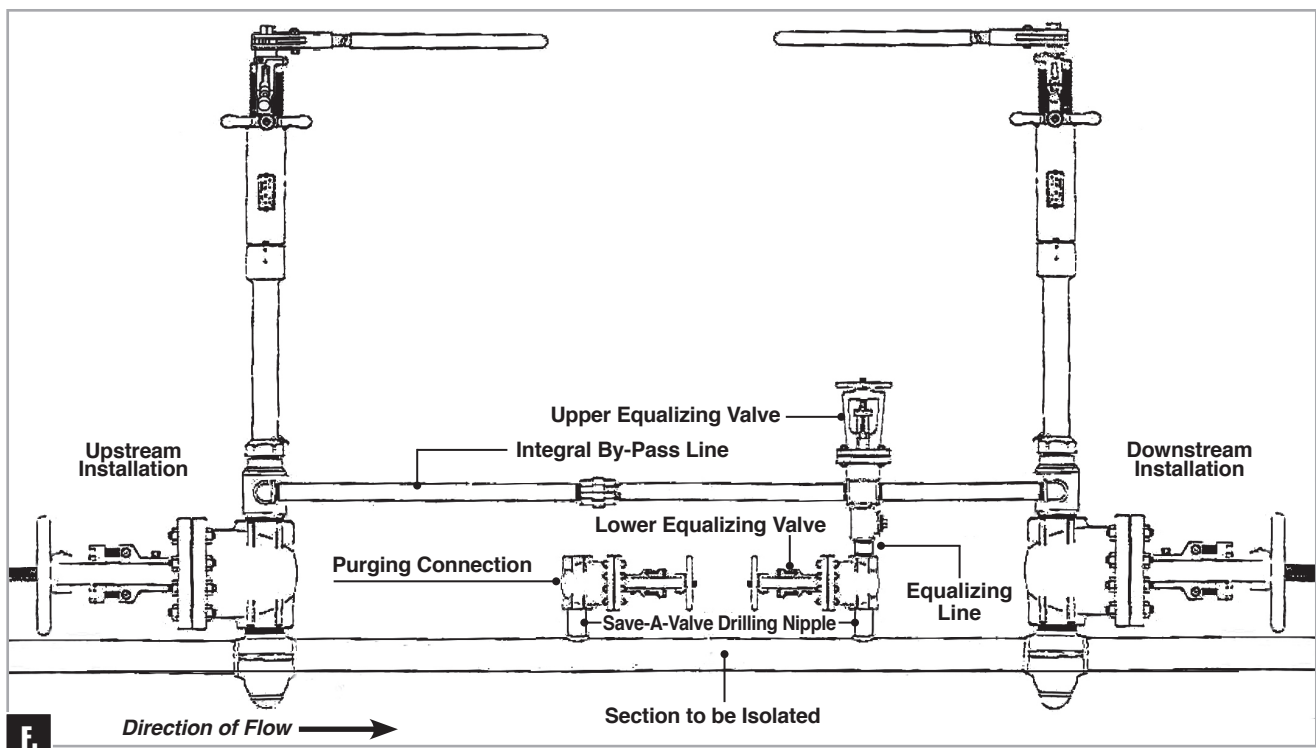
b) Install a Save-A-Valve drilling nipple on the section of pipe to be isolated near the upstream installation to be used as a purging connection.

c) Install a second Save-A-Valve drilling nipple on the section of pipe to be isolation near the downstream installation to be used to connect an equalizing line between the isolated section of pipe and the by-pass line (**Fig. F**).

d) To place by-pass line in operation, remove the plug from tee in equalizing line and open upstream control valve slightly.

e) Open upper valve in equalizing line until all air is purged from the by-pass line, then close the valve. Pressure will build up in the by-pass line is now in operation.

f) Open both upstream and down stream control valves fully. By-pass line is now in operation.





# MUELLER® DH-5 Drilling Machines

## Instructions for Installing and Stopping-Off 1½" and 2" Line Stopper Fittings

6. Insert the stopper into the fitting by advancing the boring bar of drilling machine until the rubber stopper contacts bottom of the fitting.

7. Turn the boring bar so that the mark on the collar is facing away from the isolated section of pipe, this positions the by-pass on the rubber stopper in the proper direction. (Engage feed tube and yoke over the friction collar on the boring bar.)

**⚠ CAUTION: DO NOT rotate ratchet during stopper expansion or contraction.**

8. To expand the stopper, turn feed tube and yoke **clockwise** a little at a time with a short pause after each turn. Continue to expand the stopper until the line is stopped off. Stopper tightness will be indicated by opening the control valve on the purging connection to blow down the isolated section when both stoppers have expanded.

**⚠ CAUTION: Unnecessary damage may be done to the stopper by too much compression. We recommend not compressing the 1½" and 2" stoppers more than 1". The amount the stoppers are compressed may be easily determined by measuring the downward travel of the boring bar.**

9. Proceed with the work to be done on the isolated section of pipe.

**NOTE: When cutting or welding near line stopper fittings containing rubber stoppers, it is recommended that the minimum distance between the face of the stopper and the welding or cutting operation be as follows:**

Size of Fitting	Minimum Distance
1½"	7"
2"	8"

Where it is not possible to maintain the minimum distance, other cooling means such as wet burlap or rags should be placed around the fitting to keep the temperature down.

10. When desired work is completed, replace plug in tee of equalizing line and open both control valves in equalizing line.

11. Open control valve on purging connection until all air is purged from isolated section of pipe then close catalog valve. Pressure will build up in the isolated section equalizing pressure necessary to contract rubber stoppers.

12. Contract the stoppers by rotating feed tube and yoke **counter-clockwise** a little at a time with a short pause after each turn.

13. Close both control valves in the equalizing line.

14. Remove feed tube and yoke from collar on boring bar and slowly retract to rearmost position.

**⚠ CAUTION: DO NOT rotate ratchet handle.**

15. Close upstream and downstream control valves.

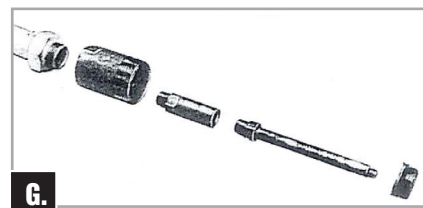
16. Remove plug from tee in equalizing line and open upper equalizing valve to blow down the by-pass line. When not using a by-pass line, open bleeder valve on drilling machine to relieve pressure.

17. Remove by-pass line, equalizing line and drilling machines and machine adapters.

### D-Plug Inserting Operation

1. Remove machine adapter, stopper inserting tool and rubber stopper from drilling machine.

2. Attach proper machine adapter to the drilling machine, and attach boring bar extension to the boring bar. Attach the plug inserting tool to completion plug then to the boring bar extension (**Fig. G**). Apply a heavy lubricant to completion plug threads.

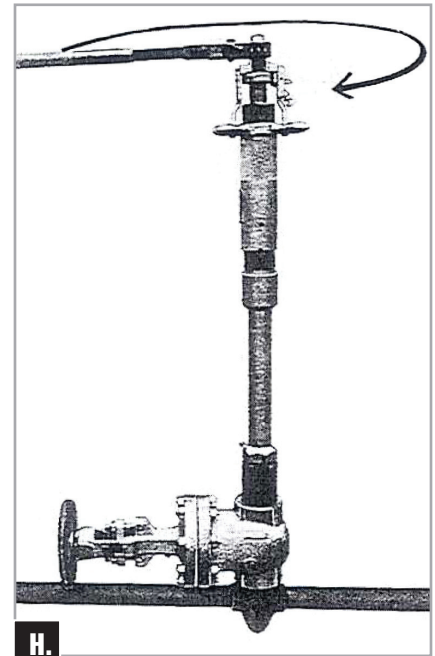


**G.**

3. Retract boring bar to rearmost position and attach drilling machine and machine adapter to the control valve. Check to be sure bleeder valve on drilling machine is closed.

4. Open control valve and lower completion plug into fitting.

5. Rotate ratchet handle **clockwise** until the plug is securely threaded into fitting (**Fig. H**).



**H.**

6. Open bleeder valve to relieve pressure in the drilling machine, also check tightness of completion plug in fitting.

7. Turn ratchet handle to **counter-clockwise** and strike handle a sharp blow **counter-clockwise** to release the inserting tool. Continue **counter-clockwise** rotation of the ratchet handle to remove the inserting tool from the completion plug.

8. Retract boring bar to rearmost position and remove drilling machine and machine adapter as a unit. Remove the control valve. Tighten completion plug with completion plug wrench.

9. Apply on-hardening pipe sealant to the fitting threads attach the completion cap – tighten securely.

# MUELLER® DH-5 Drilling Machines

## Instructions for Installing and Stopping-Off 1½" and 2" Bottom-Out Line Stopper Fittings

10. Test the entire fitting with soapsuds or a leak detection fluid.

11. Insert plug and attach completion caps to Save-A-Valve drilling nipples. (See *Mueller Gas Distribution Products Catalog* or attachments and equipment needed to perform this operation.)

### E–Plug Extracting Operation

1. The completion plug can be removed to re-use the fitting at a future date if necessary using the extracting tool and proper equipment.

2. Remove the completion cap from the fitting, and loosen completion

plug slightly using the completion plug wrench.

3. Attach extracting tool adapter to the extracting tool, then attach to the completion plug.

4. Open control valve fully and attach to the fitting. Attach reducing bushing if required before attaching control valve.

5. Attach machine adapter to the drilling machine and retract the boring bar to rearmost position.

6. Attach the drilling machine and machine adapter to the control valve. Check to be sure the bleeder valve is closed on the drilling machine.

7. Lower the boring bar and rotate **counter-clockwise** to attach to threads on extracting tool adapter.

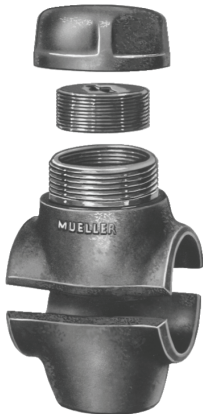
8. Continue **counter-clockwise** rotation of boring bar to remove the completion plug from the fitting

9. Retract boring bar to rearmost position, close control valve and relieve pressure in machine through the bleeder valve.

Remove the drilling machine and machine adapter as a unit.

Proceed with use of the fitting as described in steps under **C–Stopping-Off Operation** and **D–Plug Inserting Operation**.

## Installation Instructions for H-17160 and H-17161 Line Stopper Fittings



H-17160

### A–Attach Line Stopper Fitting

1. Thoroughly clean the pipe where the fitting is to be installed.

2. Remove completion cap and plug from fitting and replace with test cap.

3. Weld the fittings to the pipe.

4. Weld new piping to the bottom openings of fittings (**Fig. I** – page 7).

5. Test for leaks by applying air pressure and using soapsuds or a leak detection fluid. (Add glycerin to soap suds in freezing weather.) Remove test caps.

6. Weld Save-A-Valve drilling nipple to section of pipe to be isolated and test for leaks.

### B–Drilling Operation

1. Follow same instructions as under **B–Drilling Operation**, Page 3.

**NOTE: Drill out the pipe through the upstream fitting first. When the pilot drill first penetrates the bottom of the pipe, the bottom-out line is pressurized. Purge the air from the bottom-out line by opening downstream control valve and continue drilling operation.**

2. Using proper equipment and attachments for Save-A-Valve drilling nipple – drill out the pipe through the nipple. (See *Mueller Gas Distribution Products Catalog* for tool kits which contain attachments needed to perform this operation.) This will be used to blow down the isolated section of pipe.

### C–Stopping-Off Operation

1. Follow instructions 1 – 8 under **C–Stopping-Off Operation**, Page 4.

**NOTE: Omit instruction number 5 as it pertains to a by-pass line. When using H-17160 and H-17161 bottom out fittings, the new piping welded to the bottom openings of the fittings serves as a by-pass line.**

2. Cut out old section of pipe that has been isolated and weld caps to pipe stubs (**Fig. J** – page 7).

**NOTE: When cutting or welding near line stopper fittings containing rubber stoppers, it is recommended that the minimum distance between the face of the stopper and the welding or cutting operation be as follows:**

Size of Fitting	Minimum Distance
1½"	7"
2"	8"

Where it is not possible to maintain the minimum distance, other cooling means such as wet burlap or rags should be placed around the fitting to keep the temperature down.

3. When desired work is completed, rotate feed tube and yoke **counter-clockwise** a little at a time with a short pause after each turn, to contract the stoppers.

4. Remove feed tube and yoke from collar on boring bar and slowly retract to rearmost position.

**⚠ CAUTION: DO NOT rotate ratchet handle.**

# MUELLER® DH-5 Drilling Machines

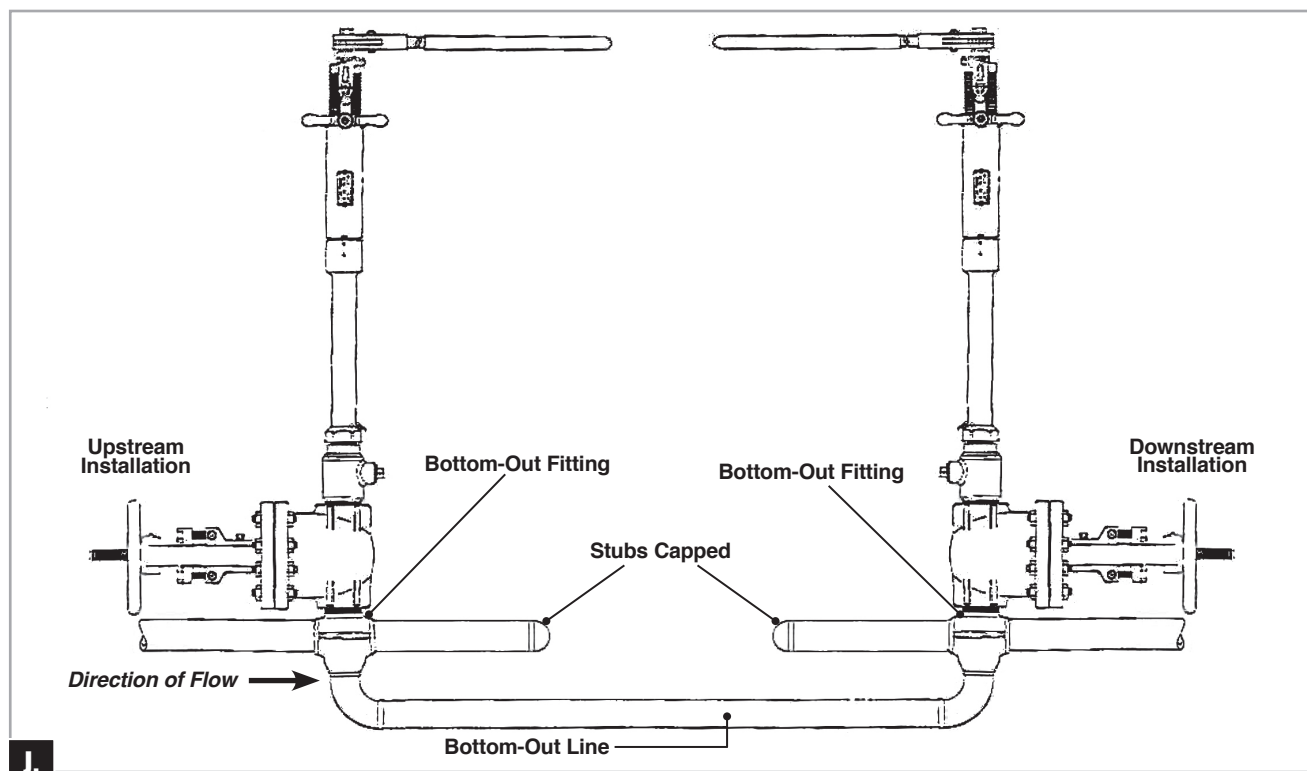
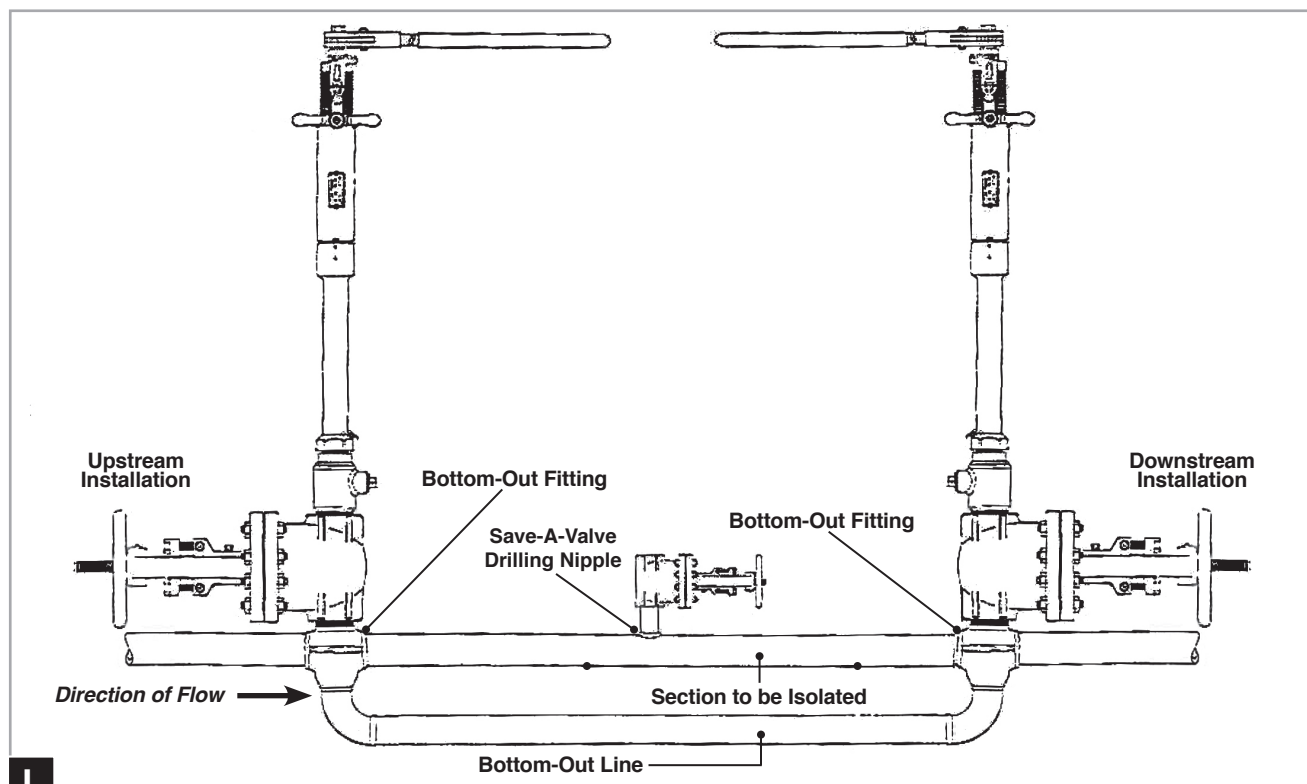
## Instructions for Installing and Stopping-Off 1½" and 2" Bottom-Out Line Stopper Fittings

5. Close upstream and downstream installation control valves.

6. Remove drilling machines and machine adapters as a unit.

### D—Plug Inserting Operation

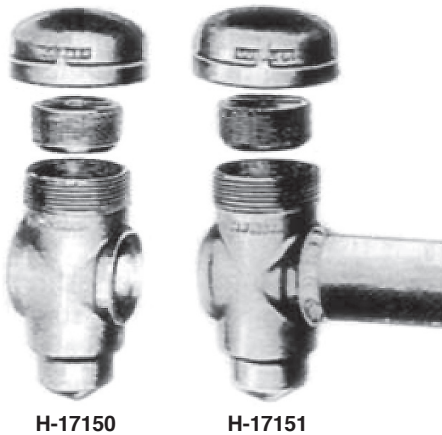
1. Follow same instructions as under **D—Plug Inserting Operation** on Page 5.



# MUELLER® DH-5 Drilling Machines

## Instructions for Stopping-Off 1½" and 2" Extension Stopper Fittings for Dead-End Extension

### Stopping-Off Instructions for H-17140, H-17141, H-17150 and H-17151 Extension Stopper Fittings



#### A—Extract Completion Plug

1. To extract the completion plug from these extension stopper fittings, follow the instructions as under **E—Plug Extracting Operation**, Page 6.

#### B—Stopping-Off Operation

1. Attach by-pass machine adapter to the drilling machine.
2. Advance the boring bar and attach stopper inserting tool, and by-pass rubber stopper to the boring bar of the drilling machine (**Fig. E**). Lubricate stopper with Mueller rubber stopper lubricant.
3. Mark the collar on the drilling machine so that it is in line with the by-pass on the rubber stopper.
4. Retract boring bar to rearmost position and attach the drilling machine and machine adapter to the control valve.
5. Attach a stop in the by-pass opening of the machine adapter and close.
6. Open the control valve.
7. Insert the stopper into the fitting by advancing the boring bar of the drilling machine until the rubber stopper contacts the bottom of the fitting.
8. Turn the boring bar so that the mark on the collar is facing away from the outlet end of the fitting, this positions the by-pass on the rubber stopper in the proper direction.

9. Engage feed tube and yoke over the top of the friction collar on the boring bar.

10. Expand the stopper by turning the feed tube and yoke **clockwise** a little at a time with a short pause after each turn.

**⚠ CAUTION: DO NOT rotate ratchet handle during stopper expansion or contraction.**

11. Continue to expand the stopper until the fitting is stopped-off.

**⚠ CAUTION: Unnecessary damage may be done to the stopper by too much compression. We recommend not compressing the 1½" and 2" stoppers more than 1."**  
The amount the stoppers are compressed may be easily determined by measuring the downward travel of the boring bar.

12. With the fitting stopped-off, cut off capped end of outlet of fitting and weld new pipe to the outlet. Run the new pipe to nearest available shut-off.

**NOTE: When cutting or welding near line stopper fittings containing rubber stoppers, it is recommended that the minimum distance between the face of the stopper and the welding or cutting operation be as follows:**

Size of Fitting	Minimum Distance
1½"	7"
2"	8"

Where it is not possible to maintain the minimum distance, other cooling means such as wet burlap or rags should be placed around the fitting to keep the temperature down.

13. Install a Save-A-Valve drilling nipple on the new pipe near the fitting and drill out. (See Mueller Gas Distribution Products Catalog for attachments and equipment needed to perform this operation.)

14. Construct an equalizing line between this nipple and the stop in the by-pass opening of the machine adapter.

15. Install a second Save-A-Valve drilling nipple on the new pipe, downstream near the nearest available shut-off and drill out. This nipple will be used as a purging connection.

16. To purge the air from the new line, open the equalizing line and open the control valve on the nipple installed downstream. When all air is purged close the downstream control valve.

17. With the air purged the pressure is also equalized on both sides of the rubber stopper.

18. Contract the rubber stopper by rotating the feed tube and yoke **counter-clockwise** a little at a time with a short pause after each turn.

**⚠ CAUTION: DO NOT rotate ratchet handle.**

19. Remove feed tube and yoke from collar on boring bar and slowly retract the boring bar to rearmost position.

20. Close the control valve.

21. Close the control valve on the Save-A-Valve drilling nipple used as an equalizing connection. Open the bleeder valve on the drilling machine to blow down the equalizing line.

22. Remove the equalizing line.

23. Remove drilling and machine adapter from the control valve as a unit.

#### C—Plug Inserting Operation

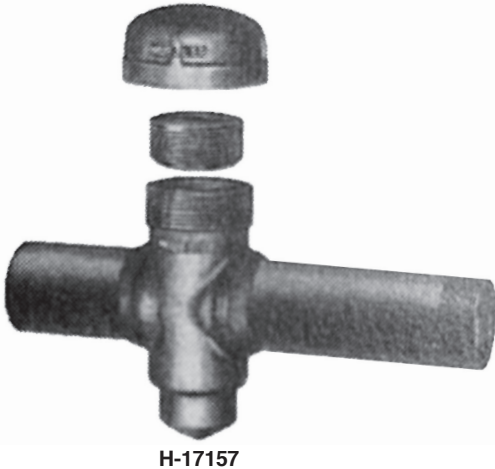
1. For plug inserting operation for these extension stopper fittings, follow instructions under **D—Plug Inserting Operation**, Page 5.



# MUELLER® DH-5 Drilling Machines

## Instructions for Installing and Stopping-Off 1½" and 2" Extension Stopper Fittings for Lateral Extension

### Installation Instructions for H-17120, H-17142, H-17143, H-17147, H-17152, H-17153, H-17157 and H-17158 Extension Stopper Fittings



H-17157

#### A—Attach Extension Stopper Fitting

1. Thoroughly clean the pipe where the fitting is to be installed.
2. Attach the fitting to the line at the point where the lateral connection is to be made.
  - a) When using a fitting with welding inlet, place it in desired position and weld to the pipe line
  - b) When using a fitting with threaded inlet, attach a service clamp to the line in the desired position, then attach fitting to the service clamp.
3. Remove completion cap and plug.

#### B—Attach Equipment To Stop-Off

1. Attach 3" control valve to the fitting. Check to be sure it is fully CLOSED. Attach reducing bushing if required before attaching the control valve.
2. Attach proper machine adapter to the drilling machine.
3. Advance boring bar and attach stopper inserting tool and rubber stopper (by-pass or solid) to the boring bar. Lubricate stopper with Mueller rubber stopper lubricant.
4. When using by-pass rubber stopper, mark the collar on the drilling machine so that it is in line with the by-pass on the rubber stopper.

5. Retract boring bar to rearmost position and attach drilling machine and machine adapter to the control valve.

6. Attach a stop or valve to the by-pass opening in machine adapter when using by-pass rubber stopper. Check to be sure this stop or control valve is closed.

7. Screw test cap onto outlet threads of fitting, apply air pressure and test for leaks using soapsuds or a leak detection fluid. (Add glycerin to soapsuds in freezing weather.) Remove test cap.

#### C—Drilling Operation

For detailed instructions, see operating instructions for D-5 or DH-5 Drilling Machines.

1. Attach proper machine adapter to the drilling machine.
2. Attach boring bar extension to boring bar and attach pilot drill and shell cutter to extension. Coat shell cutter and pilot drill with Mueller cutting grease.
3. Retract boring bar and attach drilling machine and machine adapter to outlet end of fitting.
4. Advance the boring bar until the pint of pilot drill contacts the pipe. Retract boring bar a small amount. Engage feed tube and yoke. Measure and mark the distance required to complete the cut. (Mark the point on the drilling machine body that the feed tube will reach when cut is complete.)
5. Drill out the pipe line and retract the boring bar to rearmost position.

#### D—Insert Stopper Into Fitting

1. Open control valve on fitting and advance rubber stopper until it contacts bottom of the fitting.
2. Hold boring bar in this position engaging feed tube and yoke.

3. Turn the collar on the boring bar so that the mark is facing away from the new lateral. This positions by-pass on stopper in proper direction.

4. Turn feed tube and yoke **clockwise** a little at a time with a short pause after each turn. Continue to expand stopper until fitting is stopped off.

**⚠ CAUTION: Unnecessary damage may be done to the stopper by too much compression. We recommend not compressing the 1½" and 2" stoppers more than 1". The amount the stoppers are compressed may be easily determined by measuring the downward travel of the boring bar.**

5. With fitting stopped-off, remove drilling machine used to drill out the pipe and machine adapter as a unit.

#### E—Attach Lateral Piping

1. When using threaded connections, attach lateral pipe to fitting outlet threads.
2. When using welding connections, cut off the threaded end of fitting and weld pipe to outlet end of fitting

**NOTE: When cutting or welding near line stopper fittings containing rubber stoppers, it is recommended that the minimum distance between the face of the stopper and the welding or cutting operation be as follows:**

Size of Fitting	Minimum Distance
1½"	7"
2"	8"

Where it is not possible to maintain the minimum distance, other cooling means such as wet burlap or rags should be placed around the fitting to keep the temperature down.

# MUELLER® DH-5 Drilling Machines

## Instructions for Installing and Stopping-Off 1½" and 2" Extension Stopper Fittings for Lateral Extension

3. When using a by-pass rubber stopper. Install a Save-A-Valve drilling nipple on the new lateral pipe and connect this nipple with the stop in the by-pass opening of the machine adapter to form an equalizing connection.

4. When using a solid rubber stopper or deferred completion stopper, install a Save-A-Valve drilling nipple on the pipe line which is the source of pressure. Install a second nipple on the new lateral pipe line and connect the two nipples together to form an equalizing line. (See Mueller Gas Distribution Products Catalog for equipment and attachments to install Save-A-Valve drilling nipples.)

### F—Place Lateral Pipe In Operation

1. Extend lateral pipe to nearest available shut-off in the line.
2. When using by-pass stopper, apply pressure to the lateral by

opening valve on Save-A-Valve drilling nipple and the stop on machine adapter. New lateral can be purged of air from another nipple installed on the lateral pipe, downstream, near the nearest available shut-off.

3. When using a solid rubber stopper or deferred completion stopper, apply pressure to the lateral by opening valve on nipple installed on the pipe line and open valve on nipple installed on the lateral. New lateral can be purged of air from another nipple installed on lateral pipe, downstream, near the nearest available shut-off.

### G—Extract Stopper

1. When pressure has been equalized on both sides of the stopper, the stopper can be contracted by turning feed tube and yoke **counter-clockwise** a little at a time with a short pause after each turn.

2. Remove feed tube and yoke from boring bar and retract boring bar to rearmost position.

3. Close the control valve.

4. When using by-pass rubber stopper, close the control valve on drilling nipple used as an equalizing line. Open bleeder valve on the drilling machine to blow down the equalizing line. Remove the equalizing line.

5. When using solid rubber stopper or deferred completion stopper, close valves on both drilling nipples and remove equalizing line.

6. Remove drilling machine and machine adapter as a unit.

### H—Plug Inserting Operation

1. Follow instructions as under **D—Plug Inserting Operation**, Page 5.

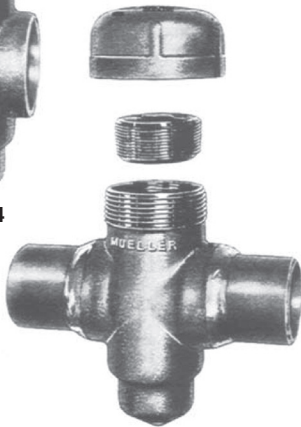
# MUELLER® DH-5 Drilling Machines

## Instructions for Installing 2" Extension Stopper Fittings for Dead-End Extension

### Installation Instructions for H-17154 and H-17159 Extension Stopper Fittings



H-17154



H-17159

1. When using H-17154 extension stopper fitting, slip fitting over capped dead-end of the pipe until the pipe shoulders against an integral stop within the fitting.

**NOTE: Cap weld must be ground flush with pipe O.D. to permit fitting to be slipped over the end of the pipe.**

- a) Weld fitting to pipe.
- b) Weld new piping to outlet of fitting
- c) Follow instructions for drilling as under **B—Drilling Operation**, Page 3.

2. When using H-17159 extension stopper fitting, remove completion cap and plug from the fitting and follow instructions for drilling as under **B—Drilling Operation**, Page 3.

3. To insert completion plug into both fittings, follow instructions as under **D—Plug Inserting Operation**, Page 5.



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