MUELLER

OPERATING INSTRUCTIONS MANUAL

A-403 Super Centurion® Fire Hydrant

- A-403 (250 psi)
- A-403HP (350 psi)

TABLE OF CONTENTS

⚠ **WARNING:** Before working on, or disassembling the Hydrant (including removing any bolts(s) holding the Hydrant together), shut off gate valve to isolate Hydrant from main water source. Loosen (do not remove) one nozzle cap two turns and check for water under pressure inside Hydrant - bleed off any pressure, then remove nozzle cap completely. Open Hydrant main valve completely. A continuous flow of water, no matter how slight, indicates Hydrant is not properly isolated from the main water supply, and that problem must be corrected before any Hydrant disassembly can proceed. Disassembly of Hydrant with pressurized water acting against the main valve could result in unexpected ejection of Hydrant parts, debris or high-pressure water stream, which could cause serious bodily injury.

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BACKGROUND

Since its introduction in 1975, there have been 4 models of the Centurion Hydrant; **Centurion, Super Centurion 200, Super Centurion 250 and A-403 Series**.

Centurion
The Mueller Centurion Fire Hydrant was produced between 1975 and 1986.

Super Centurion 200
The Mueller Super Centurion 200 Fire Hydrant was introduced in 1987 and replaced the Centurion Fire Hydrant. It continued in production until 1997 when the Super Centurion 250 Fire Hydrant was introduced. Some models of the Super Centurion 200 Fire Hydrant stayed in production until 2019. The Super Centurion 200 Fire Hydrant replaced the Centurion Weather Cap with a Weather Seal on the Hold-Down Nut. In 2011, the flat gasket used at the Ground Line connection was replaced by an O-ring seal.

Super Centurion 250
The Mueller Super Centurion 250 Fire Hydrant was introduced in 1997 and is still in production today. The Super Centurion 250 Fire Hydrant is pressure rated for 250 psi. Key features include an O-ring seal at Bonnet and Ground Line connection, a Reversible Main Valve and a Stainless Steel Stem Coupling.

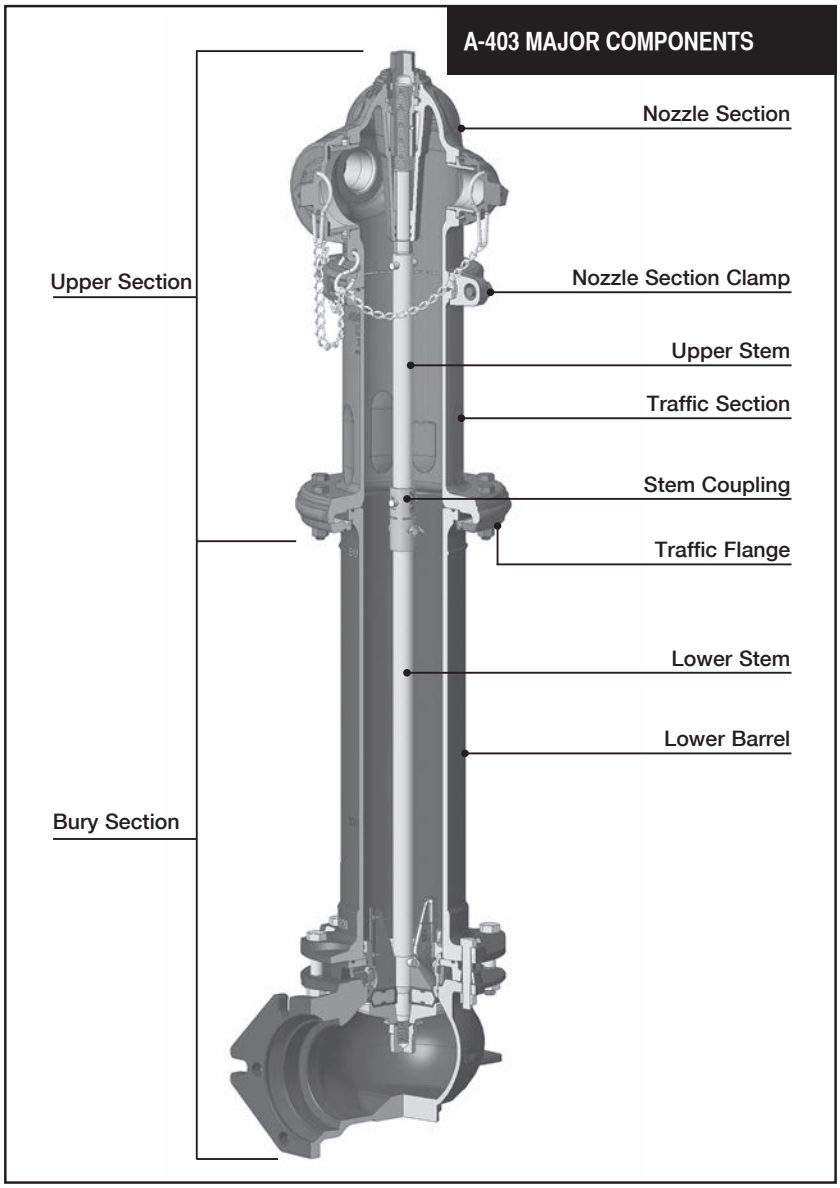
FORWARD

This manual will apply to A-403 Series hydrants. The Stainless Steel Stem Coupling used on the A-403 Series Centurion is compatible with the Super Centurion 250, Super Centurion 200 Fire Hydrant and Centurion Fire Hydrants. They share the same shoe, stems, valve assemblies, Operating Nut, Hold Down Nut, Nozzles and O-rings.

The Centurion and Super Centurion 200 Fire Hydrant use 2 bolts to attach the Drain Ring Housing to the Lower Barrel. The Super Centurion 250 Fire Hydrant eliminated the bolts and uses 2 of the Barrel-to-Shoe bolts to hold the Drain Ring Housing in place.

Super Centurion
In 2019 the Centurion line was consolidated. All Centurion hydrants still in production were upgraded to 350 psi operating pressure (250 psi with Storz nozzles, 5” Pumper, AquaGrip shoe or High Security shoe). Other significant changes included improved coatings on stems and drain ring housings, addition of bury depth tags and a reusable clip replaced the stem coupling cotter pin.

A-403 Series Centurion
Introduced in 2018, the A-403 Series Centurion builds on the Super Centurion hydrant. Designed with ergonomics in mind, the A-403 Series can be repaired by one person but utilizes the same repair components as the Super Centurion.



EQUIPMENT & TOOLS NEEDED – PPE: Hard hat, safety shoes, safety vest, safety glasses, work gloves.
Tools: Backhoe, lifting straps.

HANDLING

- DO NOT drop the Hydrant when unloading, because serious damage could result.
- When handling Hydrants, always lift with a sling.
- DO NOT drag Hydrants or roll over nozzles.
- DO NOT use cap chains for lifting.
- Avoid stress loads on the ground line flange.
- Store Hydrants on blocks with the Hydrant inlet facing downward. Make sure the main valve is closed tight and the nozzle caps are in place.
- When stocking Hydrants, separate with adequate timber blocking.

After unloading the Hydrant, cycle to full-open and close positions to check for possible internal damage during shipment. When the main valve is open, check for damage and tightness.

INSPECTION

At the time of delivery, examine the entire shipment for shortages, breakage, external damage, etc. Note all problems on delivery ticket and have the driver acknowledge by signing all copies. Make sure Hydrant conforms to job or utility specifications.

Check carefully:

- Main valve size.
- Nozzles and threads.
- Depth of bury.
- Inlet size and type.
- Operating nut size and direction of opening.
- Make sure all nuts and bolts are tight.
- Cycle Hydrant to full-open and close positions.
- Main valve seat for damage and tightness.
- Fully close Hydrant main valve before installation.

STORAGE

In order to ensure the product is protected during storage, please follow these guidelines:

- Care should be taken to observe the positioning of the Hydrants on the skid before attempting to lift or move the palletized Hydrants.

  Mueller Co. ships Fire Hydrants on pallets designed specifically for our Hydrants. There are 3 Hydrants to a skid and there are generally 3 skids in a stack for a total of 9 Hydrants. The stack is banded together and banding is tight when loaded onto trucks at the Mueller Co. facility in Alabama. However, some loosening of the banding can occur as the skids are transported on trucks, trains, barges, ships, etc. Although the Hydrants are placed on the skid so the approximate center of gravity is in the middle of the skid, shifting is possible during shipping.
- While it is not necessary to store the Hydrants in a warehouse, they should be located away from moving vehicles. Not only does hitting the palletized Hydrant pose a safety risk, but damage to the Hydrant could occur.
- Store Hydrants on the pallets they were shipped on.
- Do not stack Hydrants too high where the stack could become unstable.
- It is recommended to cover the Hydrants to prevent damage to the finish of the Hydrant or the potential for contaminants such as sand to get inside of sealing surfaces.

EQUIPMENT & TOOLS NEEDED – PPE: Hard hat, safety shoes, safety vest, safety glasses, work gloves.
Tools: Backhoe, lifting straps.

INSTALLATION

1. Ensure that the Hydrant shoe and main lateral pipe are clean and free of foreign matter before connecting the joint.

2. Install an auxiliary valve (Hydrant shut-off) in the Hydrant lateral.

3. Support Hydrant shoe with firm foundation to prevent settling, using flat stone, cement block or whatever is specified.

4. Set Hydrant plumb.

5. Restrain Hydrant movement with appropriate thrust blocking or approved mechanical restraining method to prevent pipe joint separation.

6. Check drain holes in Hydrant shoe to make sure they are free from obstruction.

7. Provide drain area around Hydrant shoe at a level several inches from the drain holes, using clean, washed stones or coarse gravel. Material should not be smaller than the drain hole diameter or larger than egg-size. DO NOT use sand.

8. Cover drainage stone with 8-mil polyethylene sheet or similar water-proof material to prevent dirt from clogging the drainage area.

9. Backfill pipe only. Leave Hydrant shoe and auxiliary valve exposed to permit checking for leaks at joints during testing.

Testing

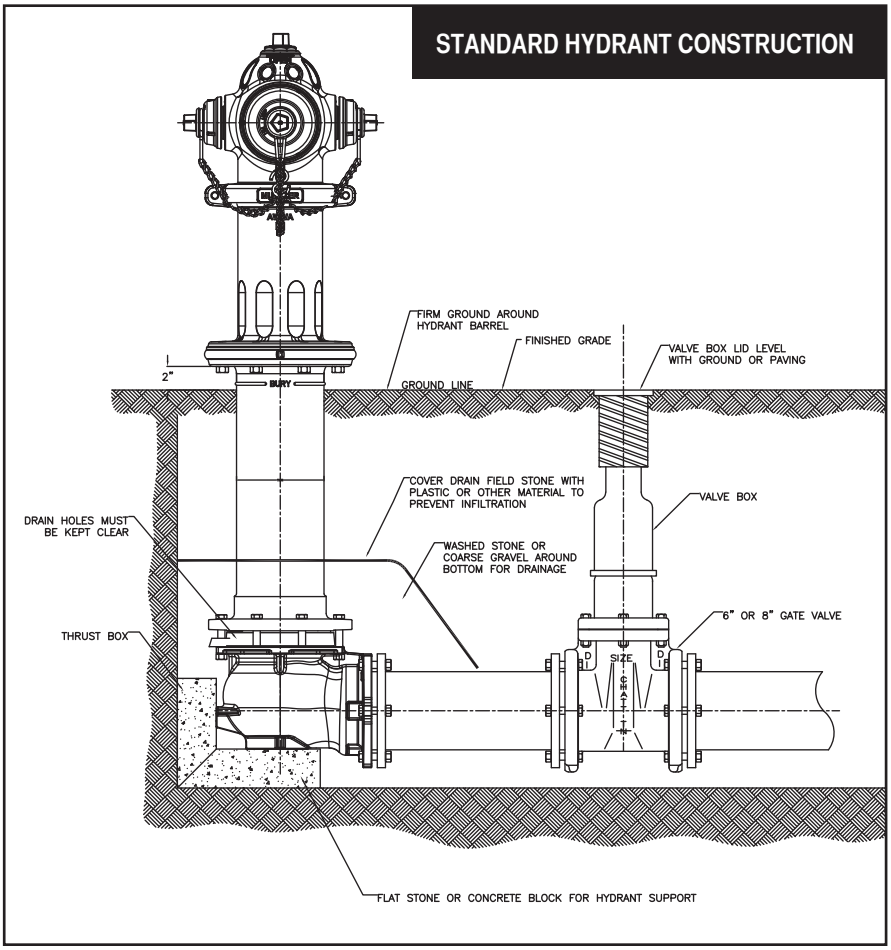
- Close the Hydrant main valve during hydrostatic pressure testing of the system.
- If testing of the Hydrant is required, close the auxiliary valve on the lateral, and pressure test the Hydrant and lateral through a nozzle opening with the main Hydrant valve fully open.
- Allowable leakage of five ounces per minute through the drain holes is permissible, according to AWWA C502 Standard.

Completion

- Backfill and tamp around Hydrant.
- When installing a traffic model Hydrant, make sure that final grade location is at ground line below the breakable traffic flange. If backfill material cannot be compacted sufficiently to support bury section and prevent shifting from vehicle impact, pour an appropriate concrete pad around the Hydrant.
- Finished surface must be at ground line.
- After final installation is complete, exercise and flush Hydrant to ensure proper operation.

NOTE: Mueller Co. recommends following AWWA M-17 "Manual for Installation, Field Testing and Maintenance of Fire Hydrants."

STANDARD HYDRANT CONSTRUCTION



EQUIPMENT & TOOLS NEEDED – PPE: Hard hat, safety shoes, safety vest, safety glasses, work gloves.
Tools: A-311 operating wrench and proper bolt/nut wrenches.

1. Turn Operating Nut slightly in the opening direction to relieve compression between the Nozzle Section and the Traffic Section. Loosen but do not remove Bolts (2) in the Nozzle Section Clamp.

2. Rotate Nozzle Section as desired.

3. Tighten Nozzle Section Clamp Bolts (2) to 70-130 ft-lbs. Tighten Operating Nut, turning in closing direction.

4. Loosen one Hose Nozzle Cap and turn Operating Nut in the open direction until water can be seen. Tighten hose cap and check Nozzle Section Clamp for leaks.

5. Turn Operating Nut in closing direction to make sure Main Valve is closed tightly, then turn in opening direction approximately 1/4 turn to relieve tension on operating mechanism.

A-403 SUPER CENTURION® FIRE HYDRANT

Adding an Extension

⚠ WARNING: Before removing any bolt(s) holding the Hydrant together, shut off gate valve to isolate Hydrant from main water source. Loosen (do not remove) one nozzle cap two turns and check for water under pressure inside Hydrant – bleed off any pressure, then remove nozzle cap completely. Open Hydrant main valve completely. A continuous flow of water, no matter how slight, indicates Hydrant is not properly isolated from the main water supply, and that problem must be corrected before any Hydrant disassembly can proceed. Disassembly of Hydrant with pressurized water acting against the main valve could result in unexpected ejection of Hydrant parts, debris or high-pressure water stream, which could cause serious bodily injury.

EQUIPMENT & TOOLS NEEDED – PPE: Hard hat, safety shoes, safety vest, safety glasses, work gloves.
Tools: Wrench, A-311 operating wrench, pliers.

1.

Remove Hold-Down Nut, Anti-Friction Washer and Operating Nut. Lubricate outside of Brass Sleeve and slide over threaded stem end to prevent O-ring damage.

2.

Remove Bolts (2) from Nozzle Section Clamp. Remove Clamp and Nozzle Section. Remove Brass Sleeve.

3.

Remove Bolts (8) at Traffic Flange. Remove Traffic Section.

4.

Remove Upper Stem and Stem Coupling by removing the lower stainless steel Reusable Clip and stainless steel Clevis Pin.

5.

Place Extension Stem and Extension Coupling on Upper Stem and retain it with stainless steel Clevis Pin and stainless steel Reusable Clip.

⚠ CAUTION: Always fill the oil reservoir with the Nozzle Section installed, the Hydrant in its normal upright position, and the main valve fully closed. If the Hydrant is filled with lubricant under any other circumstances, excess lubricate can overfill the Nozzle Section and create a pressure lock. This could result in damage to the seals or Nozzle Section or prevent proper Hydrant operation.

EQUIPMENT & TOOLS NEEDED – PPE: Hard hat, safety shoes, safety vest, safety glasses, work gloves.
Tools: Wrenches, A-311 operating wrench.

6. Check Lower Barrel O-ring; replace if necessary.

7. Attach Extension Barrel to Lower Barrel with solid Flange Halves (without groove) and Bolts (8), being sure O-ring is in place. Tighten Bolts to 85-120 ft-lbs.

8. Assemble Lower Stem and Stem Coupling onto Extension Stem and retain it with stainless steel Clevis Pin and stainless steel Reusable Clip.

9. Attach Traffic Section of the Upper Barrel with Traffic Flange Halves (with groove facing upward) and Bolts (8). Tighten Bolts (8) to 70-130 ft-lbs.

10. Check Traffic Section O-ring for damage; replace if necessary and position in Traffic Section groove. Attach Brass Sleeve to Upper Stem and lubricate outside to protect O-ring seals from thread damage.

11. Place Nozzle Section onto Traffic Section. Attach Nozzle Section Clamp and hand-tighten Bolts (2). Remove Brass Sleeve.

Adding an Extension

⚠ CAUTION: Always fill the oil reservoir with the Nozzle Section installed, the Hydrant in its normal upright position, and the main valve fully closed. If the Hydrant is filled with lubricant under any other circumstances, excess lubricate can overfill the Nozzle Section and create a pressure lock. This could result in damage to the seals or Nozzle Section or prevent proper Hydrant operation.

EQUIPMENT & TOOLS NEEDED – PPE: Hard hat, safety shoes, safety vest, safety glasses, work gloves.
Tools: Wrenches, A-311 operating wrench.

12. Reassemble Operating Nut, Anti-Friction Washer (On top side of the Operating Nut Collar), and Hold-Down Nut (snug-tighten).

13. Be sure O-ring seals are in good condition at thread shoulder on outside of Hold-Down Nut and on inside where contact is made with Operating Nut.

14. Remove Oil Filler Plug in side of Nozzle Section. Pour MUELLER Hydrant Lubricant into Oil Reservoir until it is level with Oil Filler Plug Hole. Replace Oil Filler Plug (see Lubrication section on page 8).

15. Tighten Nozzle Section Clamp Bolts (2) to 70-130 ft-lbs.

⚠ CAUTION: Always fill the oil reservoir with the Nozzle Section installed, the Hydrant in its normal upright position, and the main valve fully closed. If the Hydrant is filled with lubricant under any other circumstances, excess lubricate can overfill the Nozzle Section and create a pressure lock. This could result in damage to the seals or Nozzle Section or prevent proper Hydrant operation.

EQUIPMENT & TOOLS NEEDED – PPE: Hard hat, safety shoes, safety vest, safety glasses, work gloves. Tools: Wrenches, A-311 operating wrench.

16. Torque Hold-Down Nut to 200-300 ft-lbs after Nozzle Section Clamp Bolts (2) are tight.

17. Loosen one Hose Nozzle Cap and turn Operating Nut in the open direction until water can be seen. Tighten hose cap and check Nozzle Section Clamp for leaks.

18. Turn Operating Nut in closing direction to make sure Main Valve is closed tightly, then turn in opening direction approximately 1/4 turn to relieve tension on operating mechanism.

⚠ CAUTION: Always fill the oil reservoir with the Nozzle Section installed, the Hydrant in its normal upright position, and the main valve fully closed. If the Hydrant is filled with lubricant under any other circumstances, excess lubricate can overfill the Nozzle Section and create a pressure lock. This could result in damage to the seals or Nozzle Section or prevent proper Hydrant operation.

EQUIPMENT & TOOLS NEEDED – PPE: Safety shoes, safety vest, safety glasses, work gloves.
Tools: 1/4" hex-head wrench, A-51 lubricating oil, A-311 operating wrench, A-367 brass sleeve.

Open and remove Oil Filler Plug and check oil level. Oil should be level with Oil Filler Plug Hole.

If oil is low, use a small funnel to add MUELLER Hydrant Lubricant.

When oil is level with Oil Filler Plug Hole, insert and close Oil Filler Plug.

MAINTENANCE

1. To ensure their readiness for immediate use, it is recommended that Fire Hydrants be inspected and tested at six-month intervals.

2. Inspect visually for damaged or missing parts.

3. Remove Oil Filler Plug to check oil level. If oil level is low, fill as shown above. Loosen one Nozzle Cap slightly and tighten the others. Open Hydrant fully. Tighten loose Nozzle Cap when water starts to flow. Check all flange connections for leaks. Turn Operating Nut to fully CLOSED position.

4. If water or oil overflows from Oil Filler Hole, remove Nozzle Section and replace O-rings in both the Nozzle Section and the Hold-Down nut. Inspect and clean Stem and replace it if corroded or pitted. Check oil level. Replace Nozzle Section and test for leaks.

5. Use A-367 Brass Sleeve when re moving or replacing Nozzle Section to protect stem O-rings.

6. Remove one Nozzle Cap, stand on the side of Hydrant opposite the nozzle, open Hydrant fully, and flush Barrel and Hydrant Lateral. Turn Operating Nut to fully CLOSED position.

7. Remove all Nozzle Caps. Clean and lubricate threads.

8. Examine inside of Hydrant to make certain Drain Valves have completely drained water from Hydrant. If water fails to drain, it may be caused by one or more of the following conditions:

- Water Table in ground is higher than Drains.
- When Hydrant was installed, coarse gravel was not placed around Drains.
- Drains are clogged by some foreign material.
- Failure to leave Cap off of Hydrant to allow air to enter so Hydrant will drain.

The foregoing procedure introduces full line pressure to Drain Valves. It provides the best method for cleaning Drain Valves using water pressure.

⚠ IMPORTANT - Initial installation of Hydrant MUST BE MADE PROPERLY so Traffic Flange will function properly. Hydrant should be blocked at ground line and around Shoe using concrete or similar substance to prevent ground from giving way when Hydrant is struck (see page 9-10).

For additional information on Hydrant anchorage, blocking, and drainage, see AWWA Standard C600 and Manual M17.

⚠ WARNING: Before removing any bolt(s) holding the Hydrant together, shut off gate valve to isolate Hydrant from main water source. Loosen (do not remove) one nozzle cap two turns and check for water under pressure inside Hydrant – bleed off any pressure, then remove nozzle cap completely. Open Hydrant main valve completely. A continuous flow of water, no matter how slight, indicates Hydrant is not properly isolated from the main water supply, and that problem must be corrected before any Hydrant disassembly can proceed. Disassembly of Hydrant with pressurized water acting against the main valve could result in unexpected ejection of Hydrant parts, debris or high-pressure water stream, which could cause serious bodily injury.

EQUIPMENT & TOOLS NEEDED – PPE: Hard hat, safety shoes, safety vest, safety glasses, work gloves.
Tools: Wrench, A-311 operating wrench.

1.

Remove Hold-Down Nut, Anti-Friction Washer and Operating Nut. Lubricate outside of Brass Sleeve and slide over threaded stem end to prevent O-ring damage.

2.

Slide Upper Stem out of Traffic Section. Remove stainless steel Reusable Clip from stainless steel Clevis Pin on broken Stem Coupling. Remove Clevis Pin and Stem Coupling from Upper Stem. Assemble new Stem Coupling to Upper Stem with new stainless steel Clevis Pin and stainless steel Replacable Clip.

3.

Assemble Upper Stem and new Stem Coupling onto Lower Stem and retain it with the new stainless steel Clevis Pin and stainless steel reusable Replacable Clip furnished with Stem Coupling.

4.

Loosen and remove Nozzle Section Clamp Bolts (2) and remove Nozzle Section from Traffic Section.

5.

Remove Bolts (8) and seperate broken Traffic Flange from the Traffic Section of the Upper Barrel. Attach Traffic Section of the upper barrel with Traffic Flange Halves (with with groove facing upward) and Bolts (8); being sure Traffic Flange gasket is properly positioned. Tighten Bolts (8) to 70-130 ft-lbs.

6.

Check Nozzle Section O-ring for damage; replace if necessary and position in Traffic Section groove.

A-403 SUPER CENTURION® FIRE HYDRANT

Restoring Service after Traffic Knockover

⚠ **CAUTION: Always fill the oil reservoir with the Nozzle Section installed, the Hydrant in its normal upright position, and the main valve fully closed. If the Hydrant is filled with lubricant under any other circumstances, excess lubricate can overfill the Nozzle Section and create a pressure lock. This could result in damage to the seals or Nozzle Section or prevent proper Hydrant operation.**

EQUIPMENT & TOOLS NEEDED – PPE: Hard hat, safety shoes, safety vest, safety glasses, work gloves.
Tools: Wrenches, A-311 operating wrench.

7. Attach Brass Sleeve to Upper Stem and lubricate outside to protect O-ring seals from thread damage. Place Nozzle Section onto Traffic Section.

8. Attach Nozzle Section Clamp and hand-tighten Bolts (2). Remove Brass Sleeve.

9. Reassemble Operating Nut, Anti-Friction Washer (On top side of the Operating Nut Collar), and Hold-Down Nut (snug-tighten).

10. Be sure O-ring seals are in good condition at thread shoulder on outside of Hold-Down Nut and on inside where contact is made with Operating Nut.

11. Remove Oil Filler Plug in side of Nozzle Section. Pour MUELLER Hydrant Lubricant into Oil Reservoir until it is level with Oil Filler Plug Hole. Replace Oil Filler Plug (see Lubrication section on page 8).

⚠ CAUTION: Always fill the oil reservoir with the Nozzle Section installed, the Hydrant in its normal upright position, and the main valve fully closed. If the Hydrant is filled with lubricant under any other circumstances, excess lubricate can overfill the Nozzle Section and create a pressure lock. This could result in damage to the seals or Nozzle Section or prevent proper Hydrant operation.

EQUIPMENT & TOOLS NEEDED – PPE: Hard hat, safety shoes, safety vest, safety glasses, work gloves.
Tools: Wrenches, A-311 operating wrench.

12.

Tighten Nozzle Section Clamp Bolts (2) to 70-130 ft-lbs.

13.

Torque Hold-Down Nut to 200-300 ft-lbs after Nozzle Section Clamp Bolts (2) are tight.

14.

Loosen one Hose Nozzle Cap and turn Operating Nut in the open direction until water can be seen. Tighten hose cap and check Nozzle Section Clamp for leaks.

15.

Turn Operating Nut in closing direction to make sure Main Valve is closed tightly, then turn in opening direction approximately 1/4 turn to relieve tension on operating mechanism.

A-403 SUPER CENTURION® FIRE HYDRANT

Main Valve Replacement: Top of Traffic Section

⚠ WARNING: Before removing any bolt(s) holding the Hydrant together, shut off gate valve to isolate Hydrant from main water source. Loosen (do not remove) one nozzle cap two turns and check for water under pressure inside Hydrant – bleed off any pressure, then remove nozzle cap completely. Open Hydrant main valve completely. A continuous flow of water, no matter how slight, indicates Hydrant is not properly isolated from the main water supply, and that problem must be corrected before any Hydrant disassembly can proceed. Disassembly of Hydrant with pressurized water acting against the main valve could result in unexpected ejection of Hydrant parts, debris or high-pressure water stream, which could cause serious bodily injury.

EQUIPMENT & TOOLS NEEDED – PPE: Hard hat, safety shoes, safety vest, safety glasses, work gloves.
Tools: Wrench, A-367 brass sleeve, A-359 seat wrench, A-311 operating wrench.

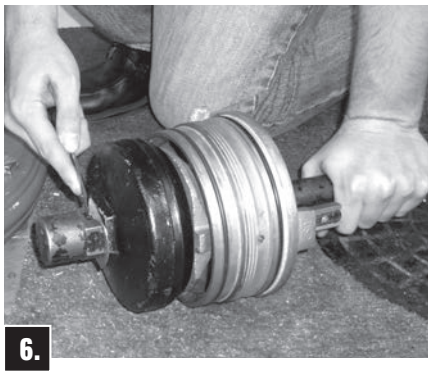
1. Remove Hold-Down Nut, Anti-Friction Washer and Operating Nut. Lubricate outside of Brass Sleeve and slide over threaded stem end to prevent O-ring damage.

2. Loosen and remove Nozzle Section Clamp Bolts (2) and remove Nozzle Section from Traffic Section.

3. Slide slotted end of Wrench over top of Stem and engage the slot with Pin in Upper Stem. Lower support arm onto top Flange of the Traffic Section and tighten Thumb Screw to hold the Main Valve in the closed position.

4. Thread Operating Nut onto stem and tighten against wrench to hold it securely. Pull up on A-359 to be sure the Main Valve is completely closed.

5. Remove Main Valve Assembly by turning Seat Wrench counter-clockwise and lift out Wrench, Lower Stem, Main Valve Assembly and Seat Ring from Hydrant Barrel as a unit.

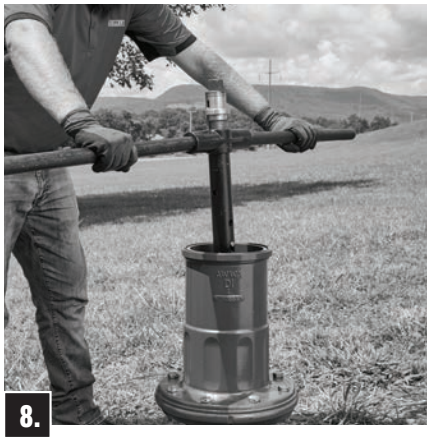


6. Straighten stainless steel Lock Washer. Unscrew Lower Valve Nut. Remove Lock Washer, Stem Seal, Lower Valve Plate, Main Valve and Seat Ring. Clean, inspect and replace any damaged parts. Replace Drain Ring Facings. Inspect and lubricate Top and Bottom Seat Ring O-rings (replace if necessary). Lubricate all threaded surfaces and reassemble. Tighten Lower Valve Nut to 90-115 ft-lbs. Bend edges of Lock Washer over one flat on the Lower Valve Plate and one flat on the Lower Valve Nut.

⚠ CAUTION: Always fill the oil reservoir with the Nozzle Section installed, the Hydrant in its normal upright position, and the main valve fully closed. If the Hydrant is filled with lubricant under any other circumstances, excess lubricate can overfill the Nozzle Section and create a pressure lock. This could result in damage to the seals or Nozzle Section or prevent proper Hydrant operation.

EQUIPMENT & TOOLS NEEDED – PPE: Hard hat, safety shoes, safety vest, safety glasses, work gloves.
Tools: Wrench, A-367 brass sleeve, A-359 seat wrench, A-311 operating wrench.

7. Lower Main Valve into the Hydrant Traffic Section. Carefully thread Main Valve Assembly clockwise into the base of the Hydrant. Hand tighten.



8. Tighten Main Valve to 100-190 ft-lbs and remove wrench.

9. Check Nozzle Section O-ring for damage; replace if necessary and position in Traffic Section groove.

10. Attach Brass Sleeve to Upper Stem and lubricate outside to protect O-ring seals from thread damage. Place Nozzle Section onto Traffic Section.

11. Attach Nozzle Section Clamp and hand-tighten Bolts (2). Remove Brass Sleeve.

12. Reassemble Operating Nut, Anti-Friction Washer (On top side of the Operating Nut Collar), and Hold-Down Nut (snug-tighten).

A-403 SUPER CENTURION® FIRE HYDRANT

Main Valve Replacement: Top of Traffic Section

⚠CAUTION: Always fill the oil reservoir with the Nozzle Section installed, the Hydrant in its normal upright position, and the main valve fully closed. If the Hydrant is filled with lubricant under any other circumstances, excess lubricate can overfill the Nozzle Section and create a pressure lock. This could result in damage to the seals or Nozzle Section or prevent proper Hydrant operation.

EQUIPMENT & TOOLS NEEDED – PPE: Hard hat, safety shoes, safety vest, safety glasses, work gloves.
Tools: Wrench, A-367 brass sleeve, A-359 seat wrench, A-311 operating wrench.

13. Be sure O-ring seals are in good condition at thread shoulder on outside of Hold-Down Nut and on inside where contact is made with Operating Nut.

14. Remove Oil Filler Plug in side of Nozzle Section. Pour MUELLER Hydrant Lubricant into Oil Reservoir until it is level with Oil Filler Plug Hole. Replace Oil Filler Plug (see Lubrication section on page 8).

15. Tighten Nozzle Section Clamp Bolts (2) to 70-130 ft-lbs.

16. Torque Hold-Down Nut to 200-300 ft-lbs after Nozzle Section Clamp Bolts (2) are tight.

17. Loosen one Hose Nozzle Cap and turn Operating Nut in the open direction until water can be seen. Tighten hose cap and check Nozzle Section Clamp for leaks.

18. Turn Operating Nut in closing direction to make sure Main Valve is closed tightly, then turn in opening direction approximately 1/4 turn to relieve tension on operating mechanism.

⚠ WARNING: Before removing any bolt(s) holding the Hydrant together, shut off gate valve to isolate Hydrant from main water source. Loosen (do not remove) one nozzle cap two turns and check for water under pressure inside Hydrant – bleed off any pressure, then remove nozzle cap completely. Open Hydrant main valve completely. A continuous flow of water, no matter how slight, indicates Hydrant is not properly isolated from the main water supply, and that problem must be corrected before any Hydrant disassembly can proceed. Disassembly of Hydrant with pressurized water acting against the main valve could result in unexpected ejection of Hydrant parts, debris or high-pressure water stream, which could cause serious bodily injury.

EQUIPMENT & TOOLS NEEDED – PPE: Hard hat, safety shoes, safety vest, safety glasses, work gloves.
Tools: Wrench, A-367 brass sleeve, A-359 seat wrench, A-311 operating wrench.

1.

Remove Hold-Down Nut, Anti-Friction Washer and Operating Nut. Lubricate outside of Brass Sleeve and slide over threaded stem end to prevent O-ring damage.


2.

Loosen and remove Nozzle Section Clamp Bolts (2) and remove Nozzle Section from Traffic Section.


3.

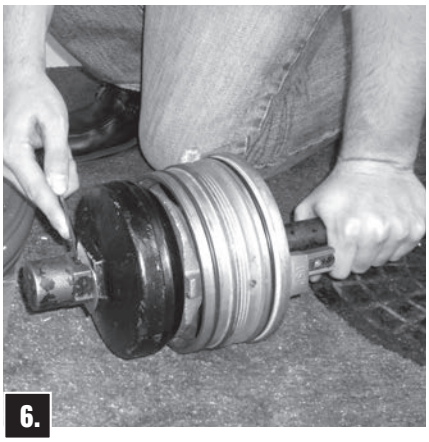
Remove Bolts (8) at Traffic Flange. Remove Traffic Section.


4.

Remove Upper Stem and Stem Coupling by removing the lower stainless steel Reusable Clip and stainless steel Clevis Pin.


5.

Slide slotted end of Wrench over Lower Stem. Align holes in Wrench and Stem and attach Wrench to Stem with Clevis Pin. Lower Support Arm onto the Flange of Lower Barrel and tighten Thumb Screw (to hold Main Valve in closed position). Remove Main Valve Assembly by turning Wrench counter-clockwise and lift out Wrench, Lower Stem, Main Valve Assembly and Seat Ring from Hydrant Barrel as a unit.


6.

Straighten stainless steel Lock Washer. Unscrew Lower Valve Nut. Remove Lock Washer, Stem Seal, Lower Valve Plate, Main Valve and Seat Ring. Clean, inspect and replace any damaged parts. Replace Drain Ring Facings. Inspect and lubricate Top and Bottom Seat Ring O-rings (replace if necessary). Lubricate all threaded surfaces and reassemble. Tighten Lower Valve Nut to 90-115 ft-lbs. Bend edges of Lock Washer over one flat on the Lower Valve Plate and one flat on the Lower Valve Nut.

A-403 SUPER CENTURION® FIRE HYDRANT

Main Valve Replacement: Lower Barrel Flange

⚠ WARNING: Before removing any bolt(s) holding the Hydrant together, shut off gate valve to isolate Hydrant from main water source. Loosen (do not remove) one nozzle cap two turns and check for water under pressure inside Hydrant – bleed off any pressure, then remove nozzle cap completely. Open Hydrant main valve completely. A continuous flow of water, no matter how slight, indicates Hydrant is not properly isolated from the main water supply, and that problem must be corrected before any Hydrant disassembly can proceed. Disassembly of Hydrant with pressurized water acting against the main valve could result in unexpected ejection of Hydrant parts, debris or high-pressure water stream, which could cause serious bodily injury.

EQUIPMENT & TOOLS NEEDED – PPE: Hard hat, safety shoes, safety vest, safety glasses, work gloves.
Tools: Wrench, A-367 brass sleeve, A-359 seat wrench, A-311 operating wrench.

7. Lower Main Valve into the Hydrant Lower Barrel. Lower Support Arm and tighten Thumb Screw. Carefully thread main valve assembly clockwise into the base of the Hydrant. Hand tighten.

8. Tighten Main Valve to 100-190 ft-lbs and remove wrench.

9. Reassemble upper Stem to Lower Stem.

10. Attach Traffic Section of the upper barrel with Traffic Flange Halves (with with groove facing upward) and Bolts (8); being sure Traffic Flange gasket is properly positioned. Tighten Bolts (8) to 70-130 ft-lbs.

11. Check Nozzle Section O-ring for damage; replace if necessary and position in Traffic Section groove.

12. Attach Brass Sleeve to Upper Stem and lubricate outside to protect O-ring seals from thread damage. Place Nozzle Section onto Traffic Section.

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Tools: Wrench, A-367 brass sleeve, A-359 seat wrench, A-311 operating wrench.

13.

Attach Nozzle Section Clamp and hand-tighten Bolts (2). Remove Brass Sleeve.

14

Reassemble Operating Nut, Anti-Friction Washer (On top side of the Operating Nut Collar), and Hold-Down Nut (snug-tighten).

15.

Be sure O-ring seals are in good condition at thread shoulder on outside of Hold-Down Nut and on inside where contact is made with Operating Nut.


16.

Remove Oil Filler Plug in side of Nozzle Section. Pour MUELLER Hydrant Lubricant into Oil Reservoir until it is level with Oil Filler Plug Hole. Replace Oil Filler Plug (see Lubrication section on page 8).

17.

Tighten Nozzle Section Clamp Bolts (2) to 70-130 ft-lbs.


18.

Torque Hold-Down Nut to 200-300 ft-lbs after Nozzle Section Clamp Bolts (2) are tight.

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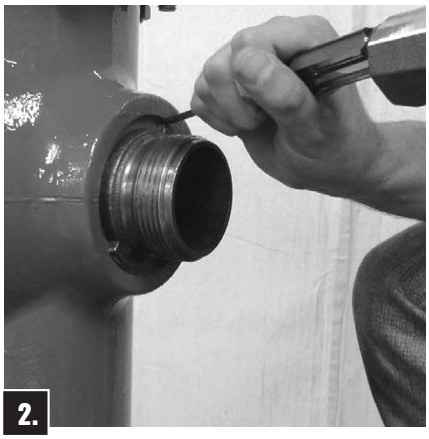
EQUIPMENT & TOOLS NEEDED – PPE: Hard hat, safety shoes, safety vest, safety glasses, work gloves.
Tools: Wrench, A-367 brass sleeve, A-359 seat wrench, A-311 operating wrench.

19. Loosen one Hose Nozzle Cap and turn Operating Nut in the open direction until water can be seen. Tighten hose cap and check Nozzle Section Clamp for leaks.

20. Turn Operating Nut in closing direction to make sure Main Valve is closed tightly, then turn in opening direction approximately 1/4 turn to relieve tension on operating mechanism.

EQUIPMENT & TOOLS NEEDED – PPE: Hard hat, safety shoes, safety vest, safety glasses, work gloves.
Tools: Wrench, A-316 nozzle wrench, brass hammer.

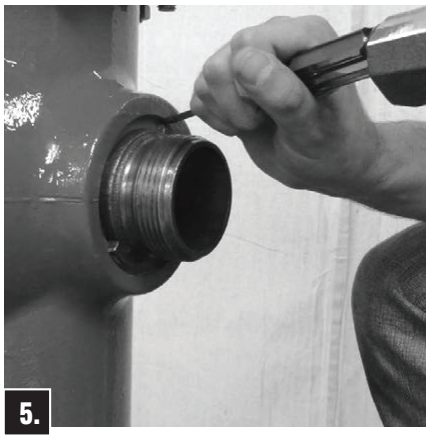
Remove Nozzle Cap.



Remove stainless steel Nozzle Lock by driving it out with a pointed tool and hammer.

Place Nozzle Wrench, A-316, on Nozzle with Wrench Forks facing toward Hydrant Barrel and locked onto Nozzle Drive Lugs.

Replace Nozzle Cap and tighten until Cap rests loosely against backside of Wrench. Remove Nozzle (nozzle threads out in a clockwise rotation). Additional leverage may be obtained by placing a length of 2" schedule 40 steel pipe over the handle of the Nozzle Wrench. Install Nozzle O-ring on the inlet side of the Nozzle. Thread new Nozzle into Upper Barrel, attach A-316 Nozzle Wrench as described in Step 3, and tighten Nozzle (nozzle threads in a clockwise rotation) to approximately 600 ft-lbs torque (100 lbs. pull on a 6' lever).



Remove Nozzle Cap and A-316 Nozzle Wrench. Place the Nozzle Lock (Part 143137), lengthwise in the slot formed by the Nozzle Drive Lugs and the Nozzle Section Bore. Drive the Nozzle Lock in place by striking the Nozzle Lock Installation Tool (Part 143132) several times with a heavy brass hammer.

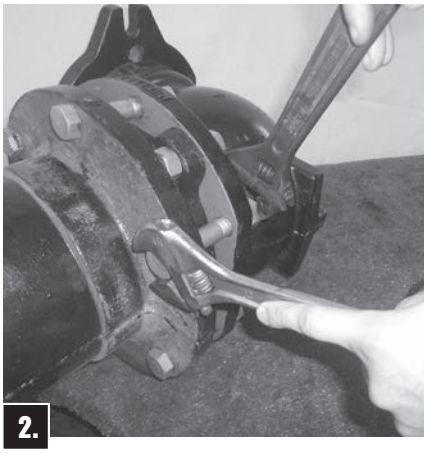
Replace and tighten Nozzle Cap.

A-403 SUPER CENTURION® FIRE HYDRANT

Changing the Shoe

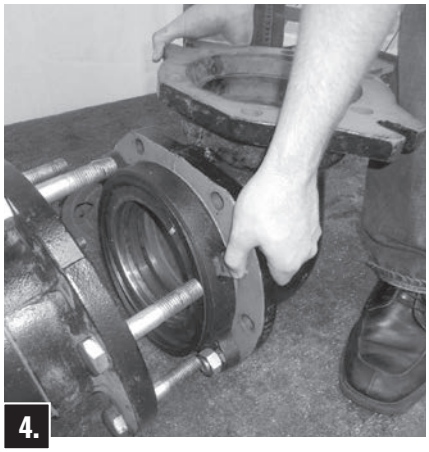
EQUIPMENT & TOOLS NEEDED – PPE: Hard hat, safety shoes, safety vest, safety glasses, work gloves.
Tools: Wrench, A-316 nozzle wrench.

1. Tighten Operating Nut to be sure Main Valve is in the fully closed position.

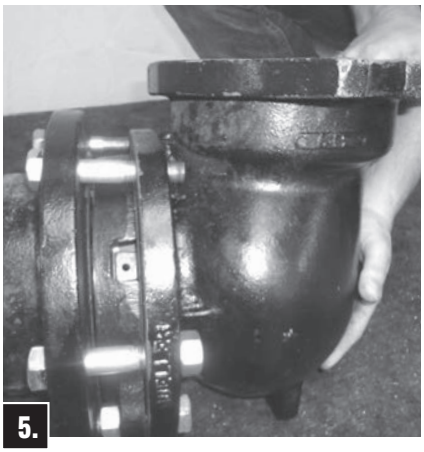


2. Remove all 6 Shoe Bolt Nuts.

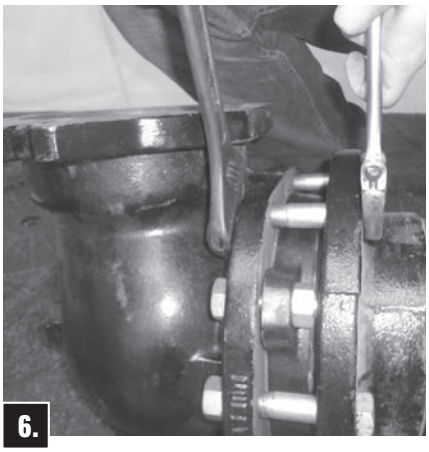
3. Slip off Hydrant Shoe.



4. Lubricate new Shoe and Bottom Seat Ring O-ring. Position Shoe to slip in place.



5. Slip new Shoe in place being careful not to damage Bottom Seat Ring O-ring.



6. Replace Shoe Bolts and Nuts and tighten to 100 ft-lbs.

Preparation and Instructions

Coating Repair/Repainting

Mueller Company coats Shoes, Lower Barrels, Traffic Sections, Nozzle Sections and Hose Cap castings (inside and outside) with a 2-part epoxy primer and top coated exposed portions of the hydrant – including the exterior of the Nozzle Section, Traffic Section and hose caps – with Polyurethane Enamel.

While precautions are taken to protect hydrants during transit, top coat repair is sometimes necessary due to damage from transportation and handling. Hydrants may also require re-coating after extended periods of exposure to prevailing environmental conditions. Re-coating and touch-up require the same process.

The process to repair or re-coat a hydrant is similar to that used for most other painted products, requiring surface preparation, application of an appropriate primer and care in applying the top coat.

The following procedure is recommended to touch up/repair hydrants coated with Amercoat 370 fast dry epoxy coating to assure a good finish.

1. Thoroughly clean the hydrant. Wash off any dirt or lose debris.

2. Remove surface rust by wire brushing, sandblasting, etc.

3. Roughen shinny surfaces with light sanding (to improve paint adhesion).

4. Primer coat bare metal. Spot prime with one of these recommended spray primers:

- **Preferred** – PPG Amercoat® 370 (2-part epoxy) or Amercoat® One (single component epoxy). These expoxies can be ordered directly from PPG (see order form available on Mueller Co. website muellercompany.com).
- **Optional** – Rust-Oleum® brand Clean Metal Primer, Professional Primer, Rusty Metal Primer, or Rust Reformer Primer.
- **Optional** – Krylon® brand Rust Tough® Rust Preventative enamel.

5. Apply top coat at above 50° F.

- Sherwin-Williams® Polane® SP Polyurethane Enamel – 2-part enamel designed to be sprayed. Requires Personal Protective Equipment (PPE).
- Sherwin-Williams® KEM® 400 Acrylic Enamel – single component that can be brushed. Also available in spray cans, 3 oz. paint pens and 6 oz. brush in cap bottles. Can be ordered directly from Sherwin-Williams® (see order form available on Mueller website muellercompany.com).

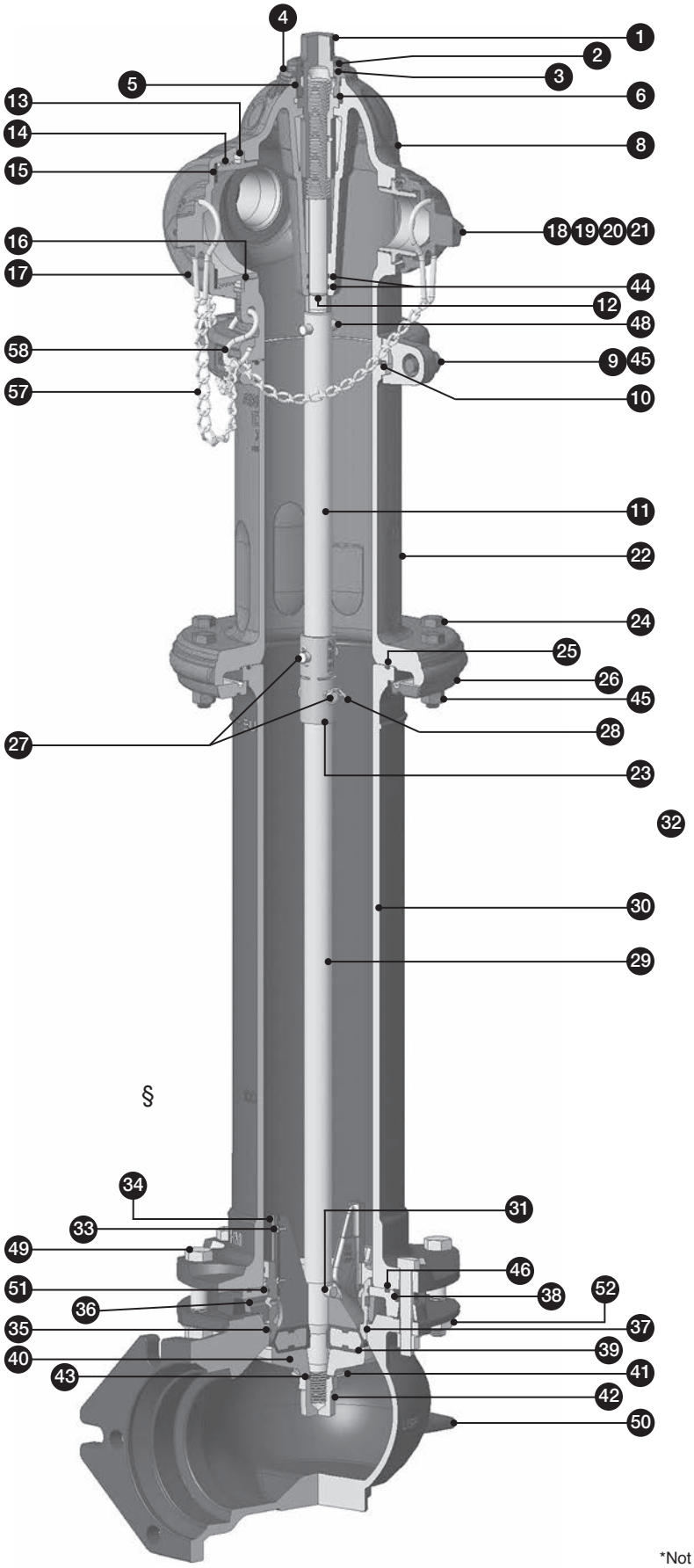
Ordering Touch-up Kit

Download a Coating Touch-up Kit form from the Mueller Co. website at www.muellercomapny.com, click on Resources>Downloads>Fire Hydrant–Sec 9. Under “Coatings & Data Sheets” click on either:

- Primer Touch-up Kit Order Form
- Top Coat Touch-up Kit Order Form

A-403 SUPER CENTURION® FIRE HYDRANT

Parts



*Not Shown

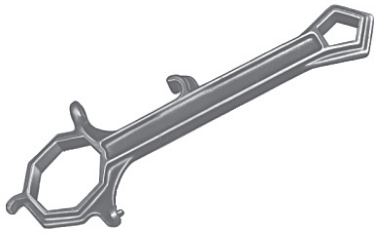
PARTS LIST

ID	DESCRIPTION
1	Operating Nut
2	Wiper Ring
3	Hold Down Nut Internal O-Ring
4	Hold Down Nut
5	Hold Down Nut External O-Ring
6	Anti-Friction Washer
7*	Oil Filler Plug
8	Nozzle Section
9	Hex Bolt 5/8"–11 x 2 3/4" LG
10	Nozzle Section Lower O-Ring
11	Upper Stem
12	Stem O-Ring
13	Nozzle Lock
14	Pumper Nozzle
15	Pumper Nozzle Cap Gasket
16	Pumper Nozzle O-Ring
17	Pumper Nozzle Cap
18	Hose Nozzle
19	Hose Nozzle Cap Gasket
20	Hose Nozzle O-Ring
21	Hose Nozzle Cap
22	Lower Section
23	Stem Traffic Coupling
24	Traffic Flange Bolt 5/8"–11 x 3" LG
25	Bottom Upper Barrel O-Ring
26	Traffic Flange
27	Cottor Pin
28	Clevis Pin
29	Lower Stem
30	Lower Barrel
31	Stem Pin
32	Drain Valve Facing
33	Drain Valve Facing Screw
34	Upper Valve Plate
35	Bottom Seat O-Ring
36	Drain Ring
37	Seat Ring
38	Drain Ring Housing
39	Main Valve
40	Lower Valve Plate
41	Lock Washer
42	Valve Nut
43	Valve Nut Seal
44	Stem O-Ring
45	Traffic Flange/Barrel Coup. Hex Nut 5/8"
46	Drain Ring Housing O-Ring
47	Upper Stem Sleeve
48	Upper Stem Pin
49	Shoe Hex Bolt 3/4"–10 x 4" LG
50	Shoe
51	Top Seat O-Ring
52	Shoe Hex Nut 3/4"
53*	Pipe Gland
54*	Mechanical Joint Gasket
55*	T-Head Bolt 3/4" x 3 1/2"
56*	Hex Nut 3/4"
57	Cap Chain
58	Chain Hook

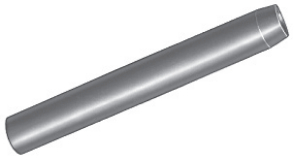
A-316 Nozzle Wrench

A-359 Seat Wrench

Tools



A-311 Operating Wrench



A-367 Brass Sleeve

Notes

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