# AMERICAN Flow Control

## Fire Hydrants

**CECTI Training**
**Nov 2024**

**Joel Gallier**
**Sales Representative**
**CO/WY**

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THE RIGHT WAY

# Welcome

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## Joel Gallier

- Colorado Native
- Military Veteran
- Experience
  - Municipal/Utility
  - Manufacturer

# Welcome

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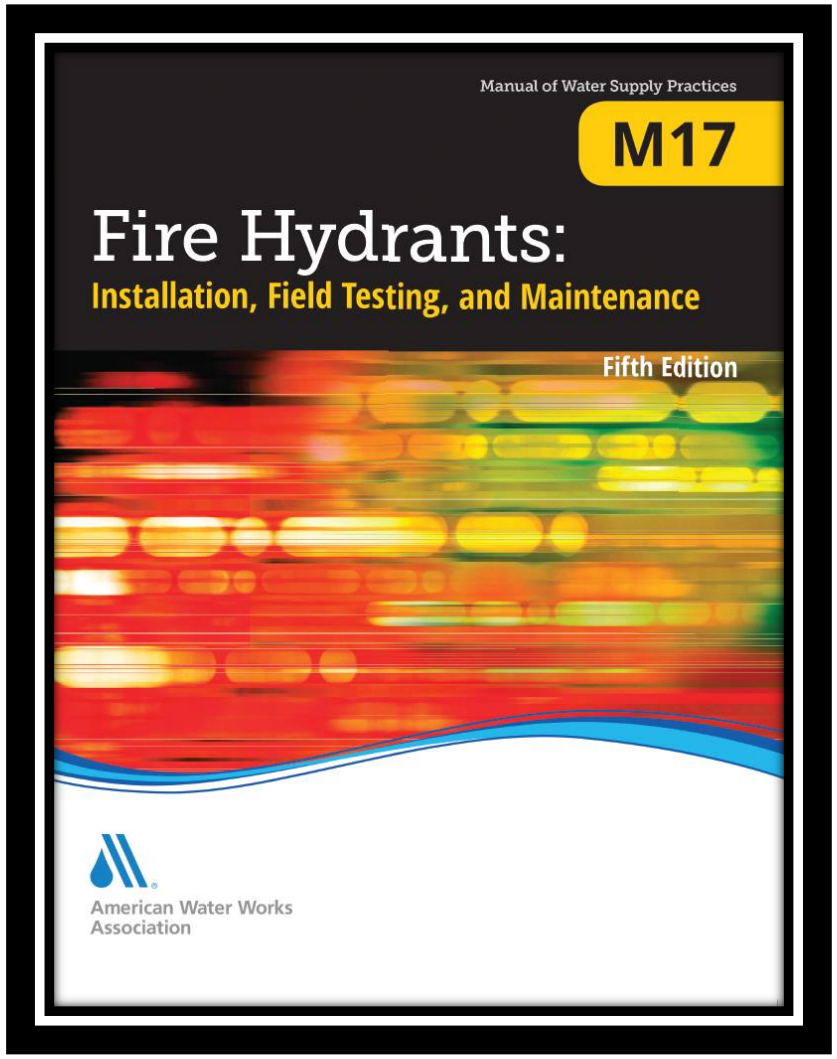
## Fire Hydrants -

- History
- Types
- Safety
- Operation
- Maintenance
- Disassembly & Reassembly

# Resources




- History
- Dry & Wet Barrel
- Inspection
- Installation
- Testing
- Maintenance
- Flow Testing
- Appendix – drawing & exploded parts details

# Why You Don't Park In Front Of A FH?

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# Why You Don't Park In Front Of A FH!

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# History

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# History – Early Times

Cauldron

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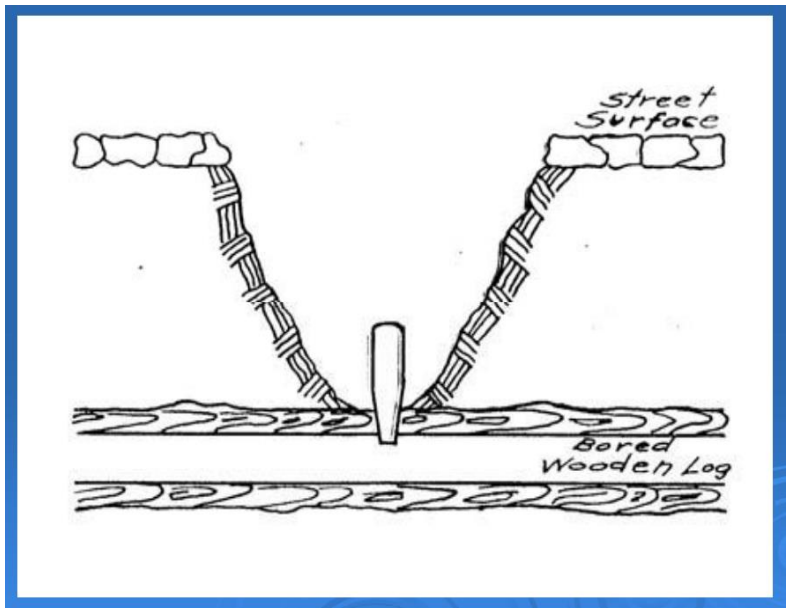
# History – Late 1700's




Fire Plug

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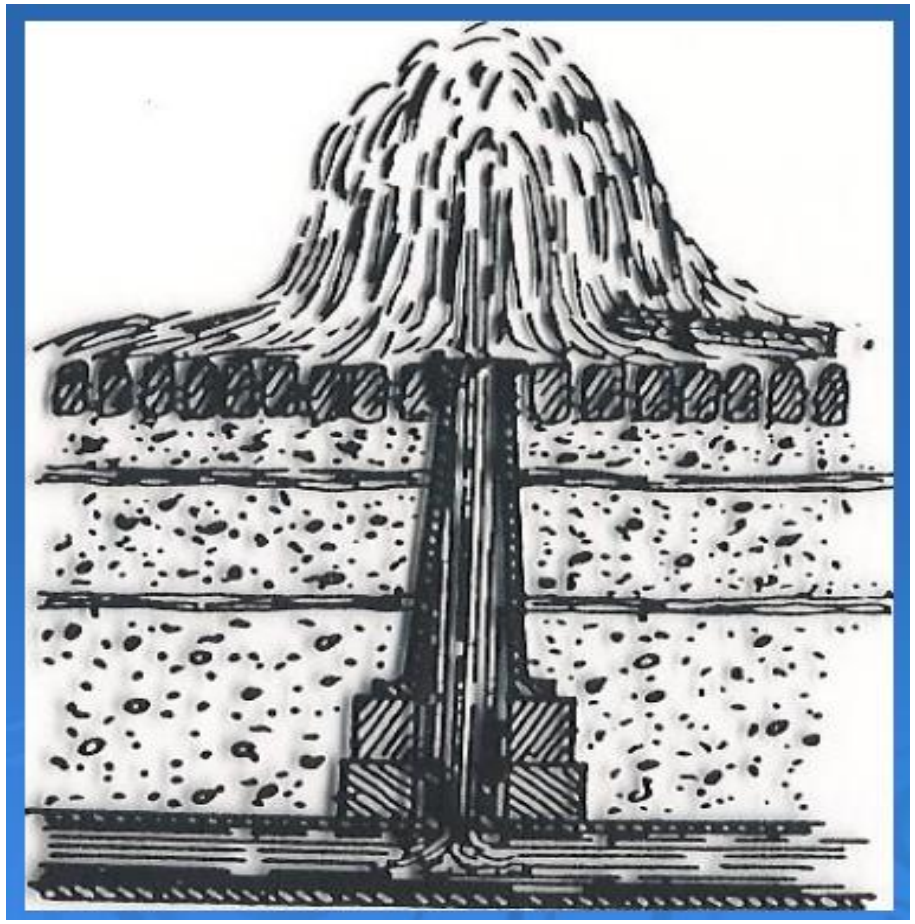
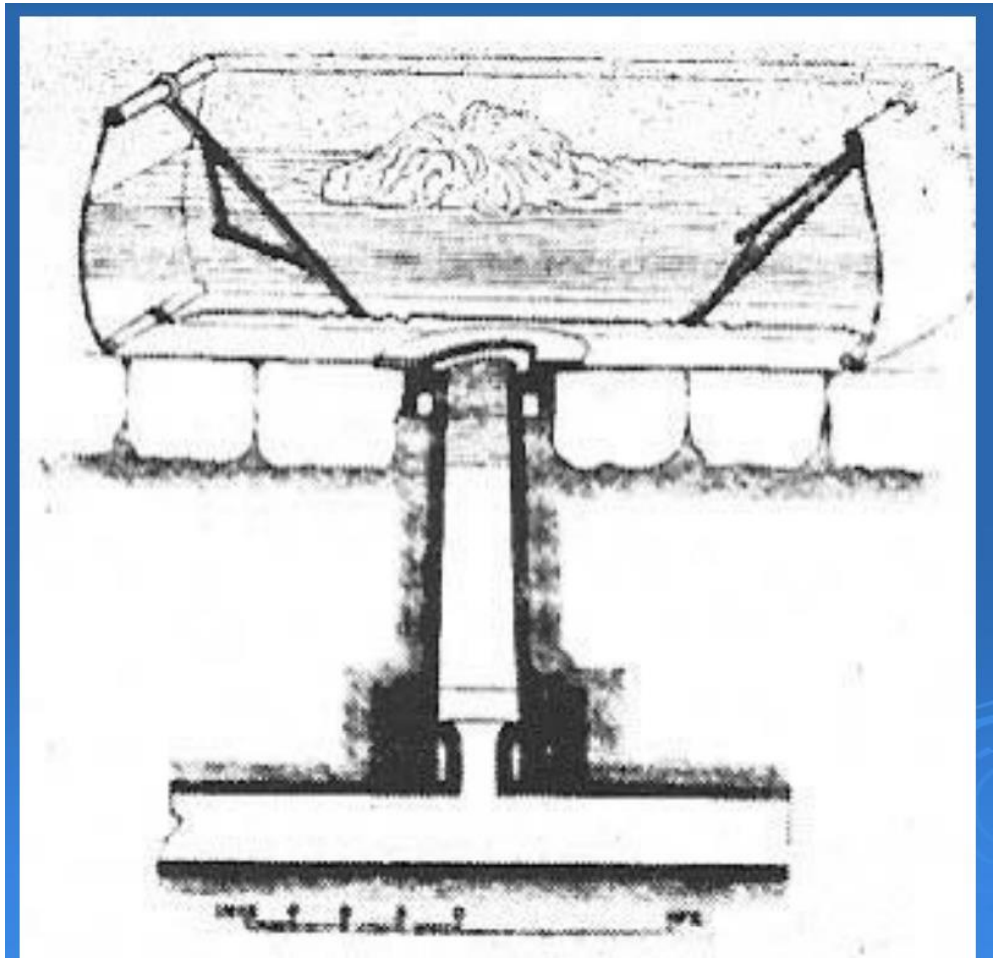
# History – Late 1700/Early 1800



Water Plug

## Water Trough



# History – 1800's


**Philadelphia hired Frederick Graff as Chief Engineer. He left his mark by building the city's first water works and, just as importantly, designing the world's first fire hydrant in 1801.**

# History - Current

# Types

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# Types – General

- Two main categories
  - AWWA-C502 for draining, dry barrel fire hydrants
  - AWWA-C503 for constantly pressurized, wet barrel fire hydrants

# Types – Dry Barrel (AWWA-C502)

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- Dominant fire hydrant through out the United States
- Designed for cold weather climates to prevent freezing
- Primary consisting of an upper operating/lubrication section, a lower main valve sealing section and drain system
- Newer hydrants are engineered & produced with a traffic break away design if struck by a vehicle with the main valve sealing off further water flow after damage

# Types – Dry Barrel (AWWA-C502)

# Types – Wet Barrel (AWWA-C503)

- Popular fire hydrants for warmer weather climates, i.e.; California, Florida, & Hawaii
- Consisting of independent operating valve/nozzle assemblies
- Continual system pressure to the main casting of the fire hydrant above ground.
- Not designed to seal off if the fire hydrant is struck by a vehicle.

# Types – Wet Barrel (AWWA-C503)


# Hollywood or Reality?

# Safety

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# Safety - General

This instruction is issued as a recommendation to the customer for the proper use of the AMERICAN Flow Control manufactured fire hydrants. AMERICAN recommends you follow the general Inspection and Installation guidelines outlined in AWWA Manual M17 for Installation, Field Testing, and Maintenance of Fire Hydrants and/or as recommended below. WARNING: Special care should be taken in the installation, inspection and repair of pressure containing devices such as valves and hydrants. FAILURE TO FOLLOW PROPER PRACTICE AND GUIDELINES CAN RESULT IN SERIOUS INJURY OR DEATH. High pressure and water hammer, due to rapid opening or closing of a hydrant or valve, can also cause major damage to the hydrant, valve, water main, fire hose, or other attached equipment.

# Safety - General

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## "10-Fingers and 10-Toes"

# Safety – Position of Work

Versus

# Safety – Position Of The Fire Hydrant

# Safety - PPE


Versus

# Safety – Tools

Versus

# Operation

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# Operation – General

## Operation

AMERICAN Flow Control recommends you follow the general Inspection and Installation guidelines outlined in AWWA Manual M17 for Installation, Field Testing, and Maintenance of Fire Hydrants and/or as recommended below. The thrust bearing hydrant requires a minimum of torque to operate. **WARNING: Special care should be taken in the installation, inspection and repair of pressure containing devices such as valves and hydrants. FAILURE TO FOLLOW PROPER PRACTICE AND GUIDELINES CAN RESULT IN SERIOUS INJURY OR DEATH. High pressure and water hammer, due to rapid opening or closing of a hydrant or valve, can also cause major damage to the hydrant, valve, water main, fire hose, or other attached equipment.** It is possible to damage the hydrant by forcing it beyond its limits of travel with excess torque; therefore:

1. Check direction of opening as marked on the nozzle section.
2. To open, turn the operating nut until the main valve is fully open and the travel stop nut limits further opening. **Do not force the hydrant in the opening direction beyond fully-open as indicated by sudden resistance to turning**. If water does not flow when the hydrant is open, it is probably due to a closed valve upstream from the hydrant. Always open the hydrant completely, never only partially. A hydrant that is partially open will allow pressurized flow through the drain valve, which may wash away the soil from the area surrounding the base, or the partially open main valve may trap small stones or other debris between the valve seal and seat.
3. To close, turn the operating nut until the valve stops the flow. **It is not necessary to close this style of hydrant with great force.** Once the flow has stopped, turn the operating nut in the opening direction about 1/4 turn to take the strain off the operating parts of the hydrant. If the hydrant does not shut off completely, do not attempt to force the hydrant to close. Debris and small stones may be trapped in the valve seat and may be preventing the hydrant from closing. Partially open and close the hydrant several times to help dislodge the debris. If this does not work, safely remove the hydrant operating rod assembly, remove the debris and repair as detailed in subsequent sections of this manual.
4. **WARNING: FAILURE TO RELIEVE PRESSURE CAN RESULT IN THE CAP BLOWING OFF, CAUSING INJURY OR DEATH.** Make sure the auxiliary gate valve in the lateral between the main and the hydrant is closed and that the hydrant is not charged with pressure when removing caps.

# Operation - General

- Frequency –
  - Manufacturer – Twice a year
  - AWWA – Once a year
  - Utilities – Sometimes/never
  - Where do you rank above?
- Fully open, fully closed
- Check for -
  - Ease/proper operation
  - Drain system functioning
  - Asset conditions overall

# Maintenance

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# Maintenance – Does This Look Familiar?

# Maintenance – General

## MAINTENANCE

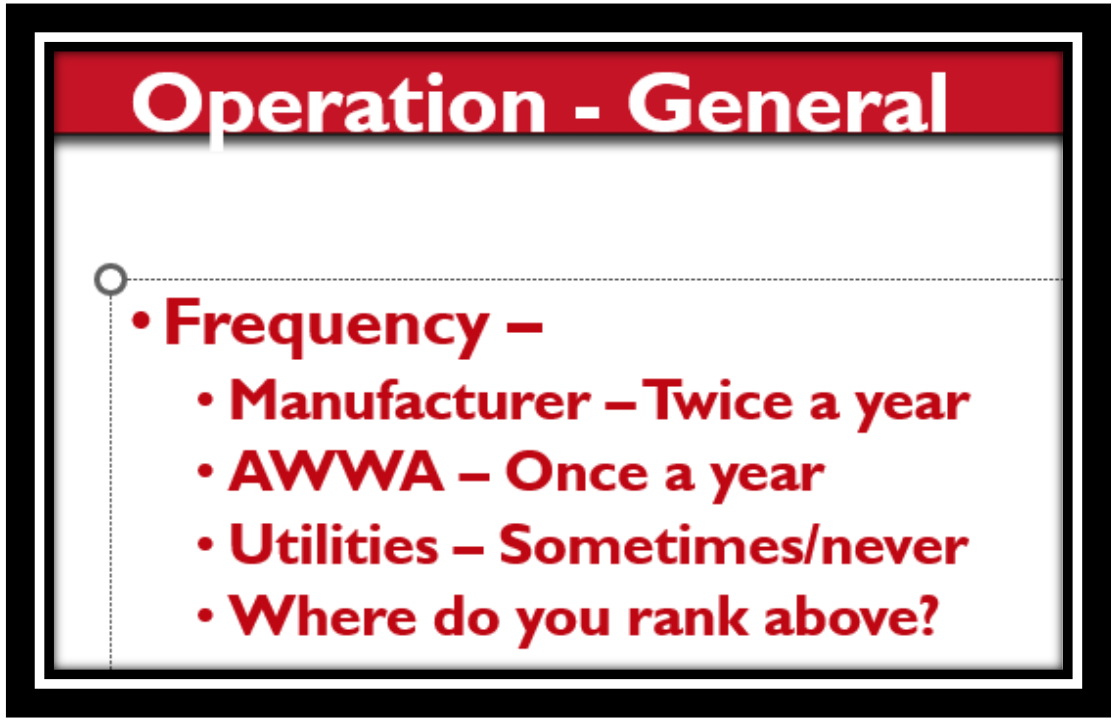
**AMERICAN Flow Control strongly recommends that you follow routine maintenance on fire hydrants as outlined in AWWA Manual *M17 for Installation, Field Testing, and Maintenance of Fire Hydrants.* The ease of operation and the frequency of repair depends on the condition of the water system and the maintenance given. Dirt, gravel and other foreign material in the hydrant may prevent it from closing or draining properly, which may result in damage to the hydrant main valve. Under most operating conditions, AMERICAN Flow Control recommends semi-annual lubrication and inspection of fire hydrants. Where grease is specified, use an AMERICAN Flow Control recommended food grade grease.**

1. Twice per year, open the hydrant completely and flush for several minutes. Open and close valve to make sure it works properly, and check for leaks.
2. Remove a cap and verify that the hydrant is draining properly. After the main valve is closed, the water in the hydrant should drain rapidly. If it does not, the drain ports may be clogged. To clear drain ports, install nozzle cap, and tighten until water tight, then open hydrant two or three turns for several minutes. This will leave drain port partially open and permit water pressure to wash out the obstruction. If this method is unsuccessful, remove the operating rod assembly and clean the drain mechanism. If neither of above methods permits water to drain, it indicates that the drainage area around the hydrant base should be rebuilt.
3. **Oil Reservoir Hydrants:**

   Remove oil level plug and check oil level. The oil level should be to the level of the plug. If it is necessary to add oil, remove the oil level plug on the back of the nozzle section and add oil.
4. **Non-Oil Reservoir Hydrants:**

   Remove screw from operating nut, and add approximately one tablespoon of oil through opening. Replace screw.
5. Remove all nozzle caps, clean rust or corrosion from threads of nozzles and caps, and replace cap gaskets if necessary. Apply a light coat of grease to nozzle threads before replacing cap.

# Maintenance - General




Operating → Identifying Deficiencies → Corrective Action "Maintenance"

# Disassembly

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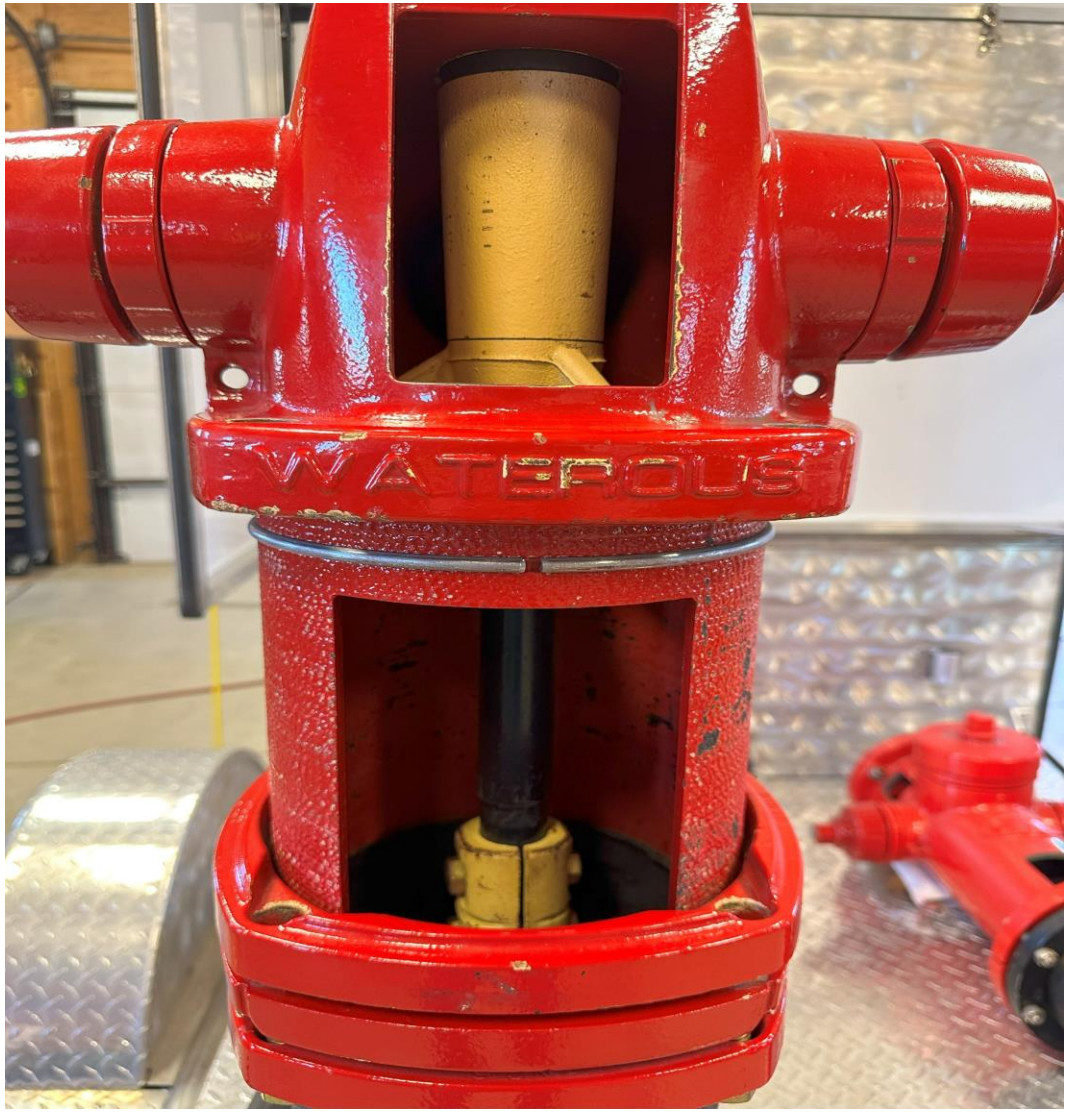
# Disassembly

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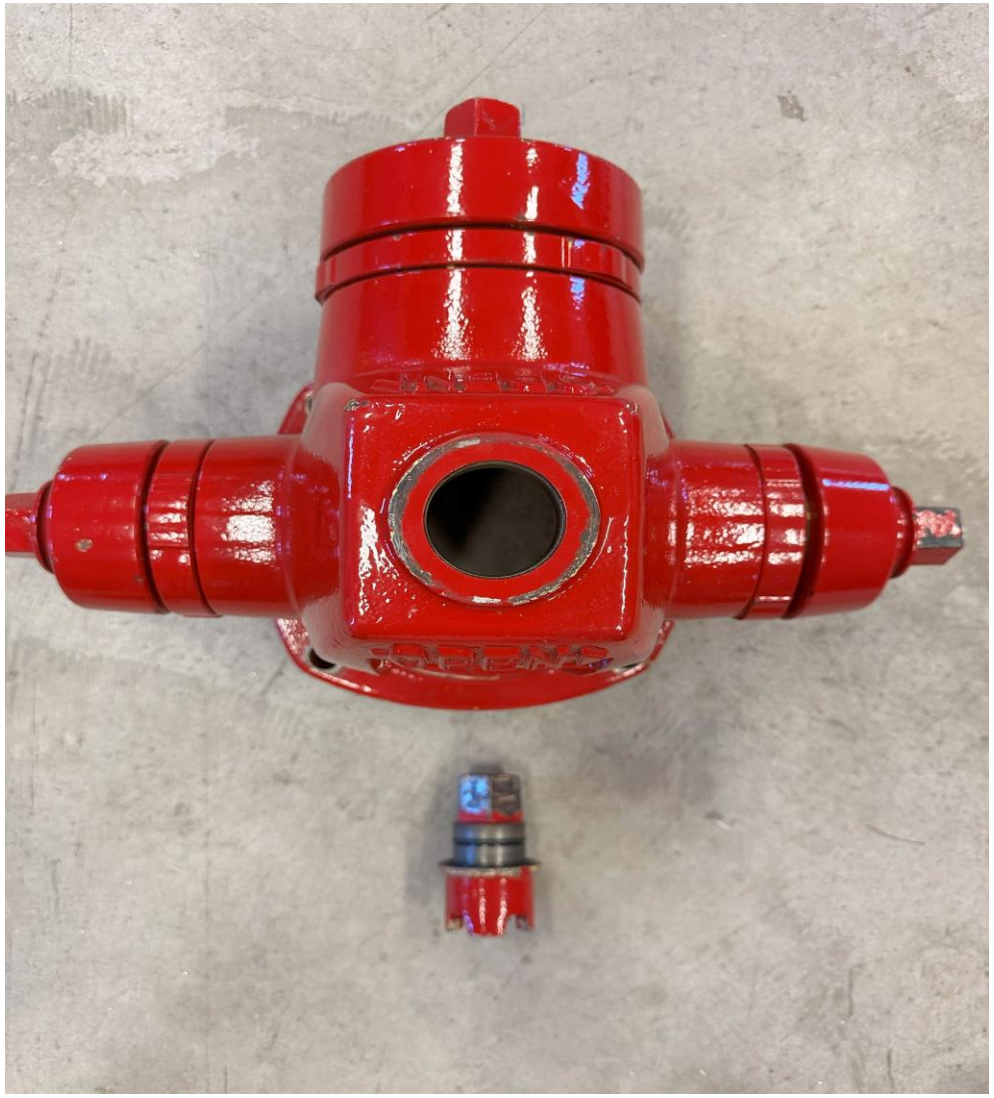

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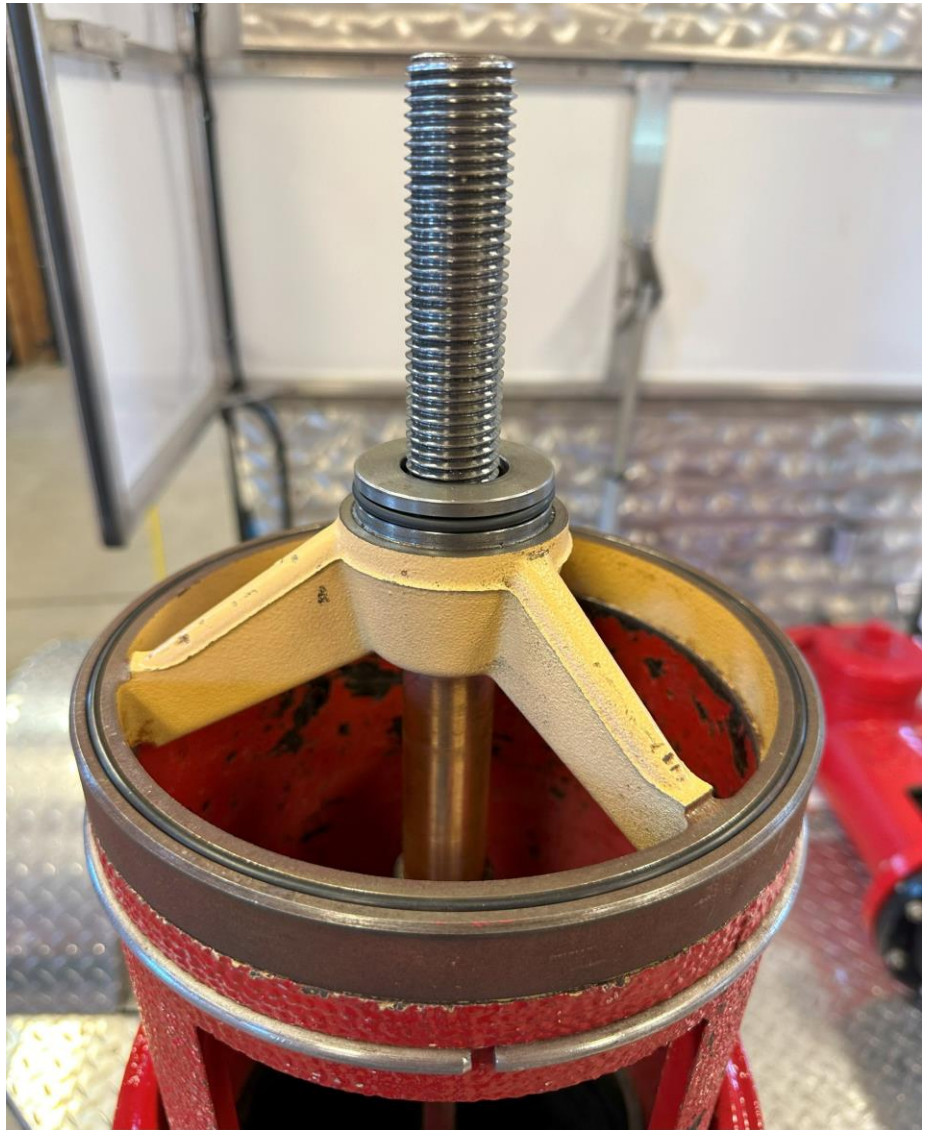

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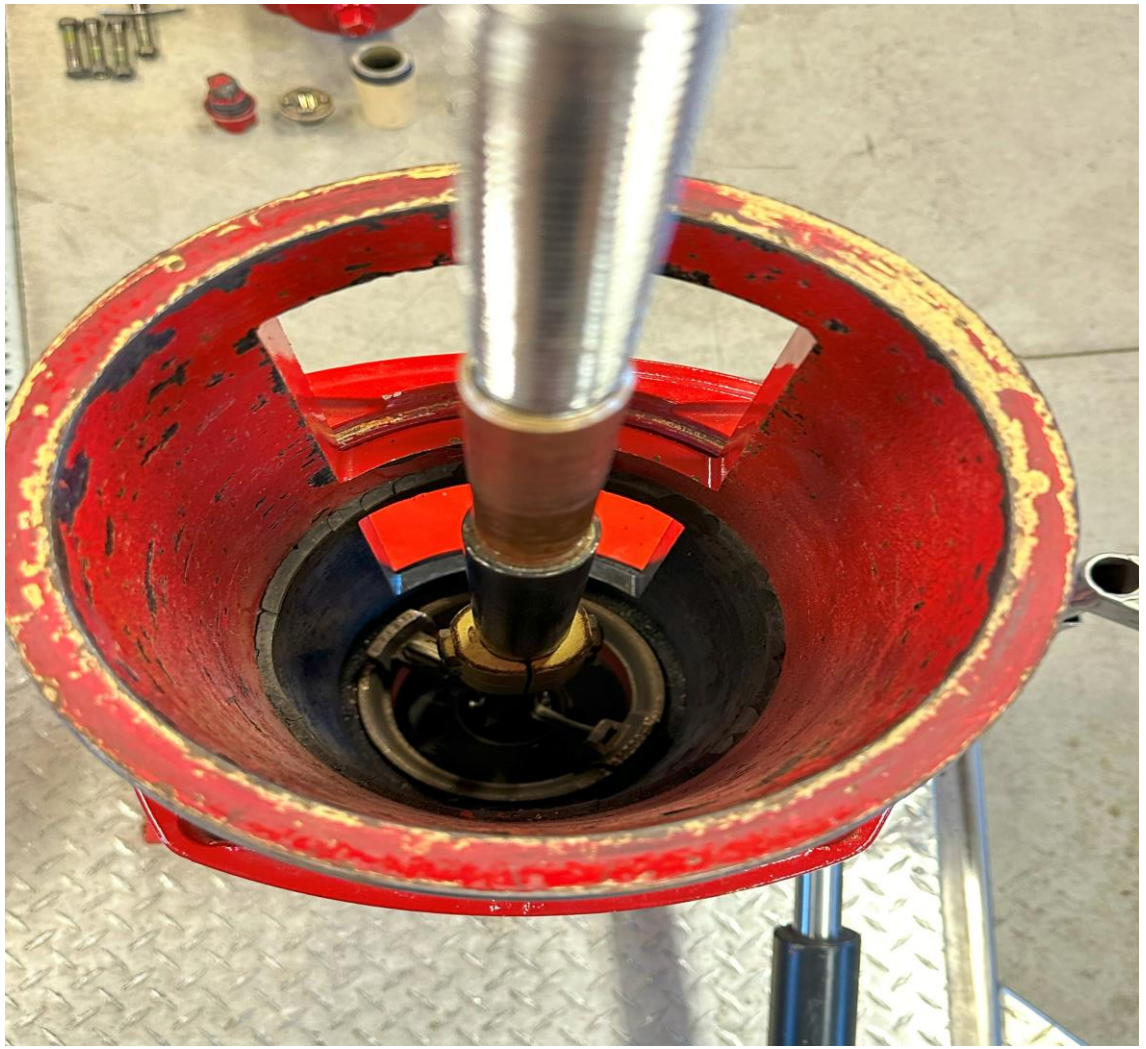

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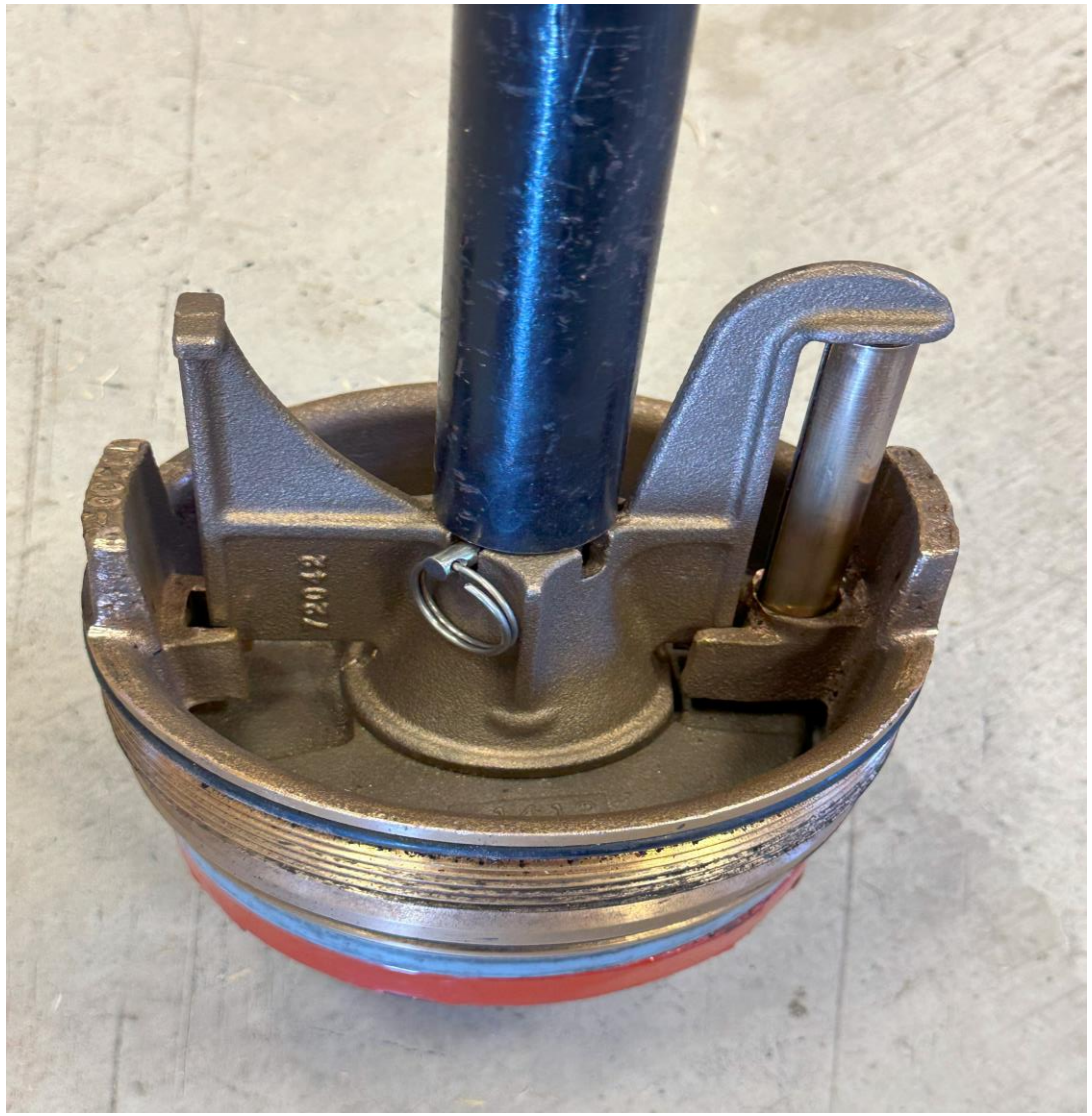

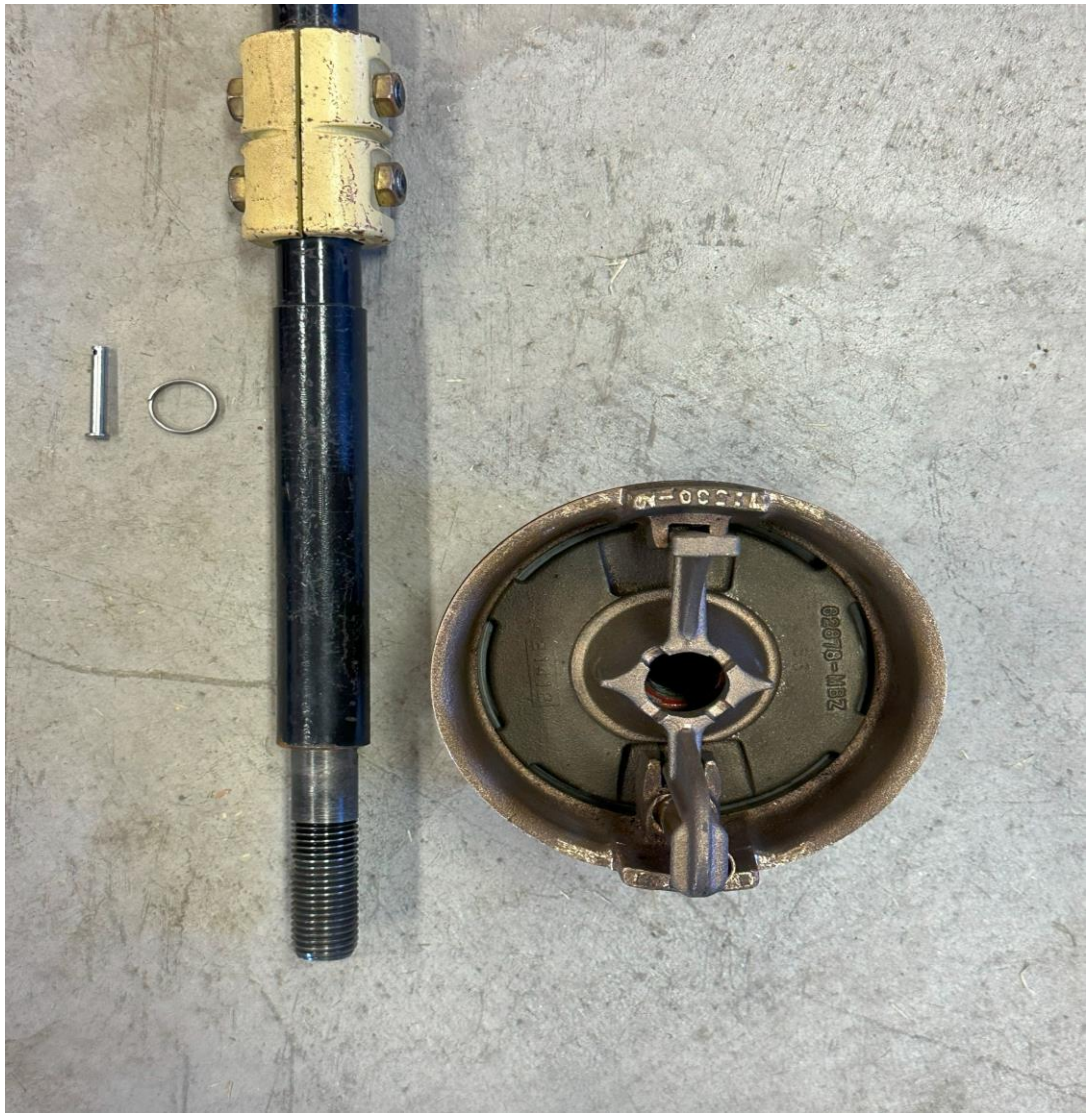

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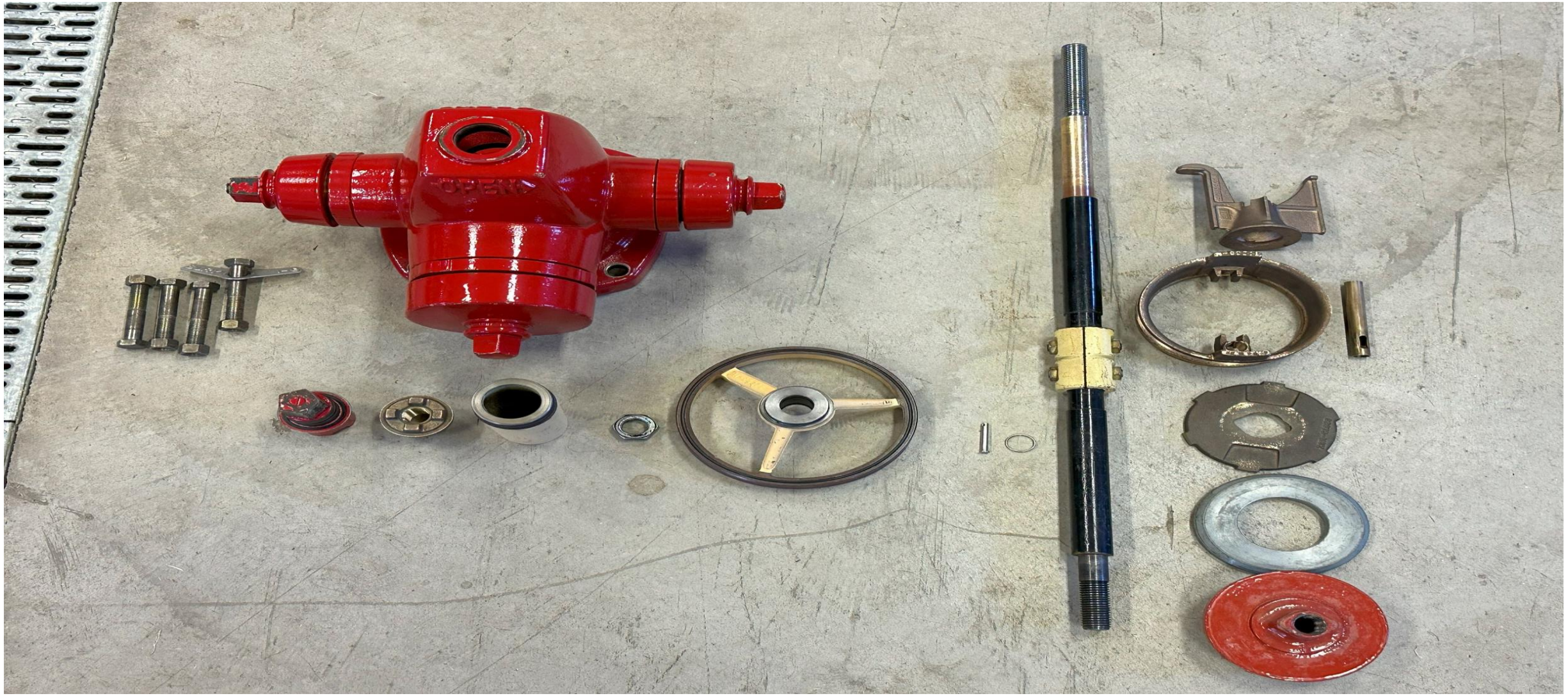
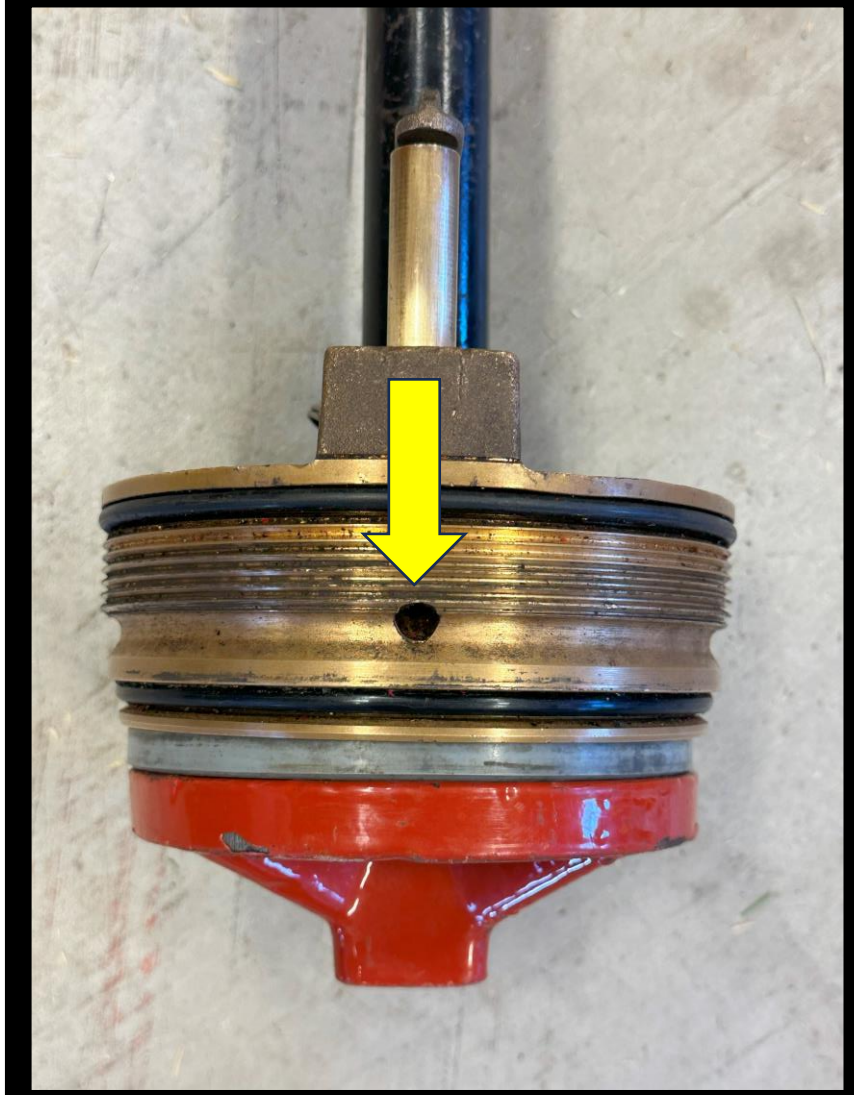
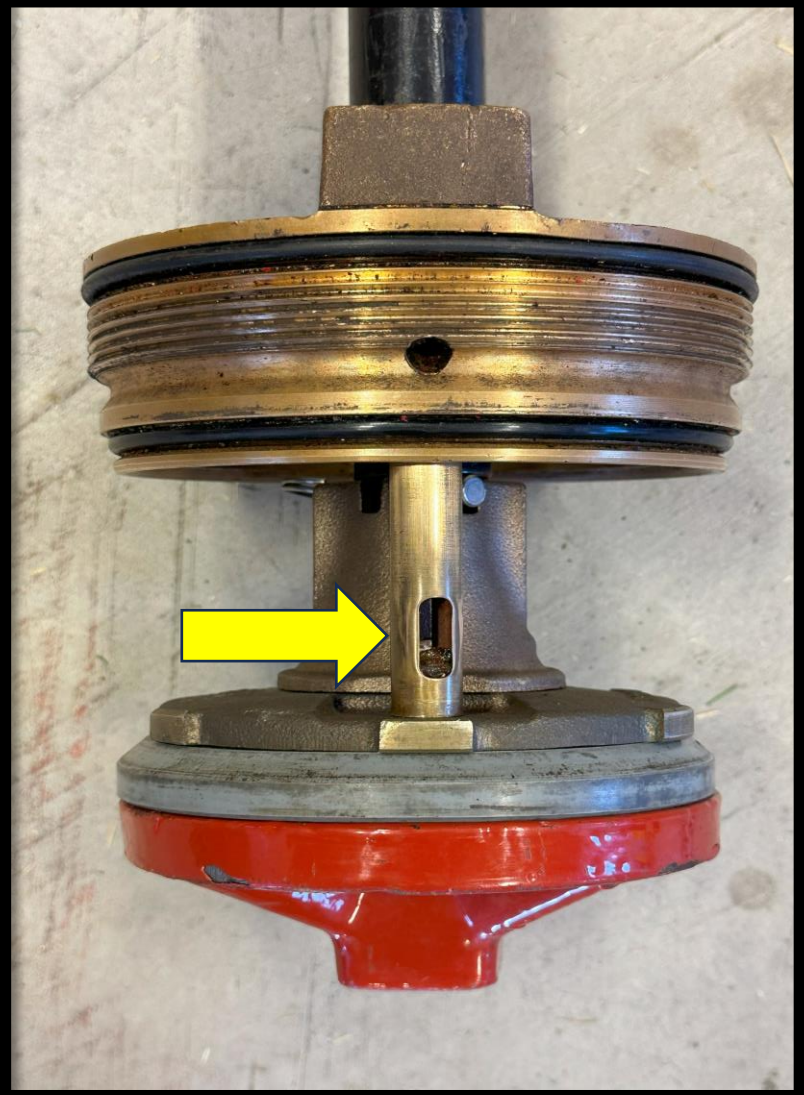
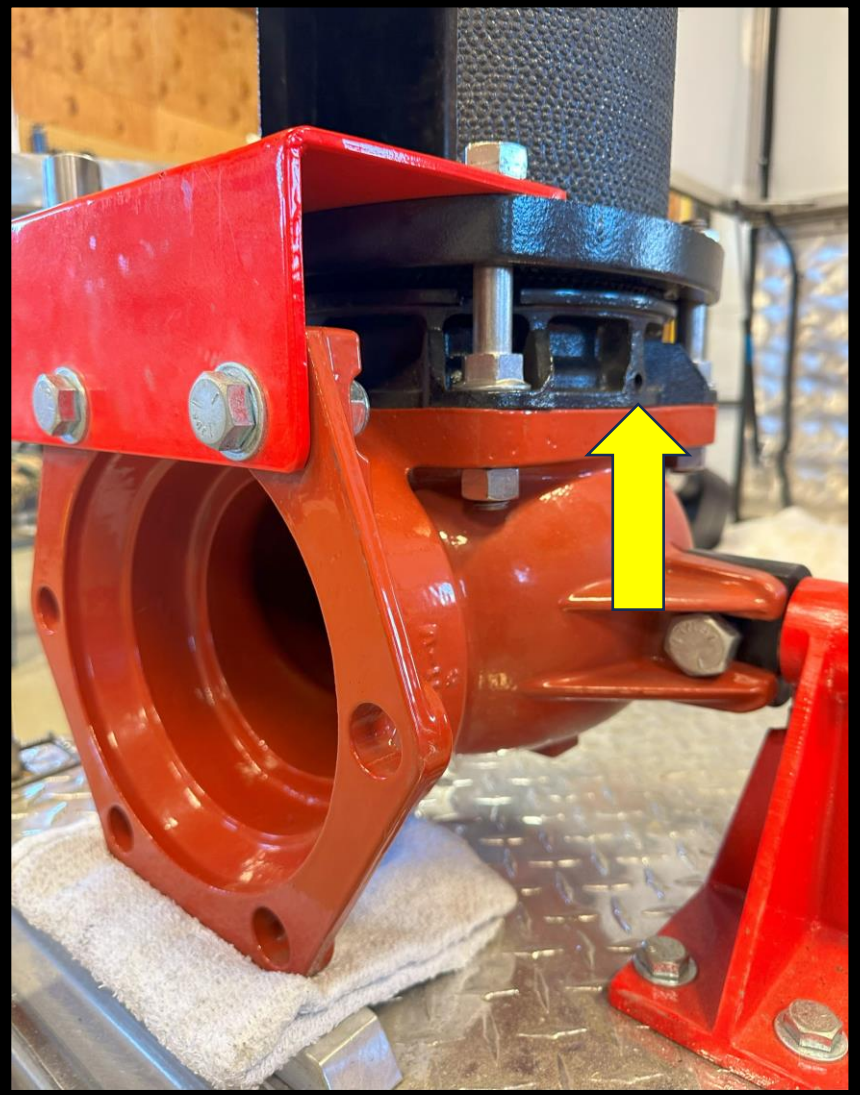


# Pacer: 3-Part Drain System







# Reassembly

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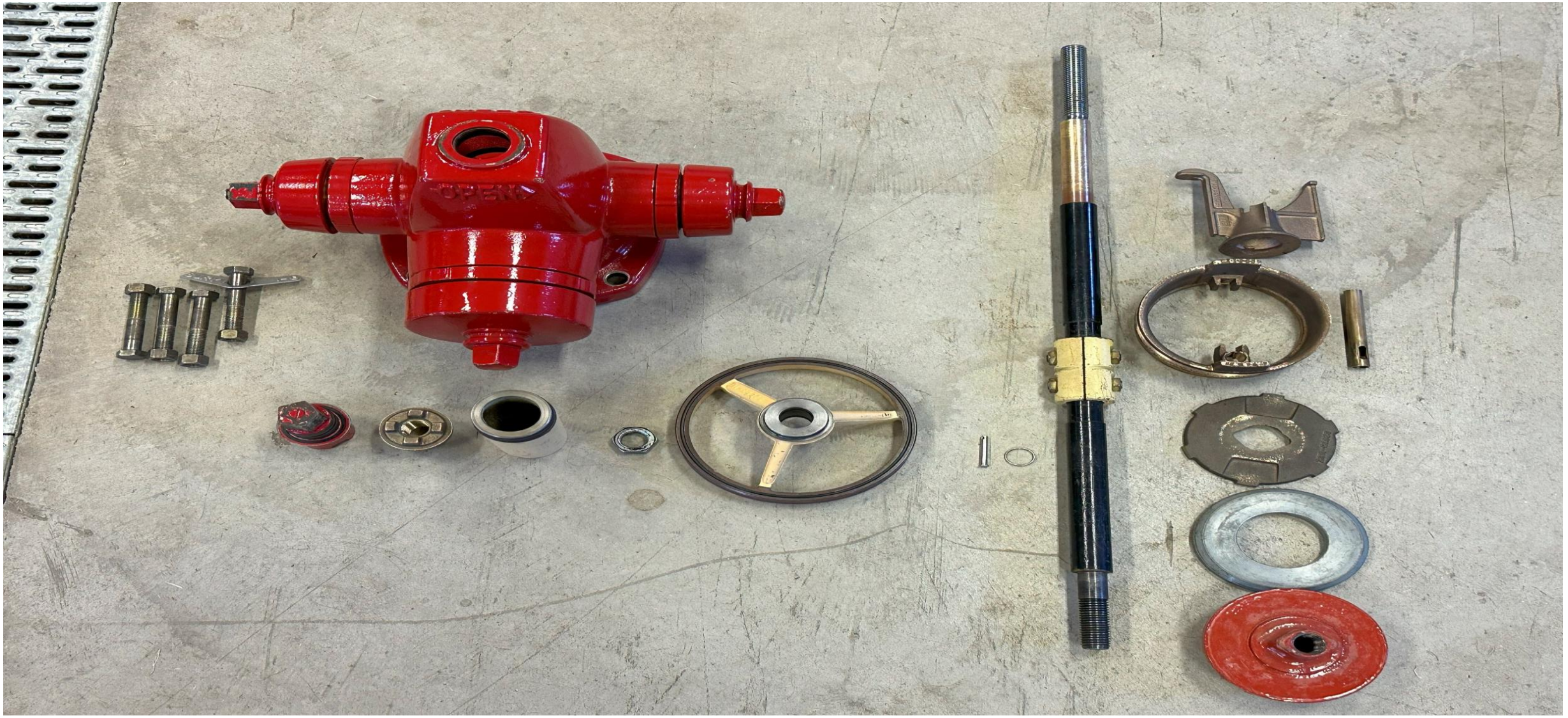
# Reassembly



# Reassembly

- Reverse operation of disassembly
- Inspect and replace all worn and defective parts
- Grease all applicable components, to include all seals and gaskets
- Do not forget to add food grade oil
- Operate, inspect and check for any further deficiencies

# Where is the Fire Hydrant?


MTN
NEWS
3
KRTV.com
/krtv3
@krtv

# Yard Trophies???

# AMERICAN Flow Control Website

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- https://american-usa.com

# Conclusion

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**Fire Hydrants -**

- History
- Types
- Safety
- Operation
- Maintenance
- Disassembly & Reassembly

# Thank you!

# Questions?

**Joel Gallier**
**Sales Representative**
**CO/WY**

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