

## Operating and Maintenance Manual

# ECLIPSE #24

## Kupferle Water Solutions

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Disclaimer: While this document is complete, comprehensive, and accurate to the best of Kupferle's knowledge, this document is subject to change and is for general information purposes only.

PATENT PENDING

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## DESCRIPTION

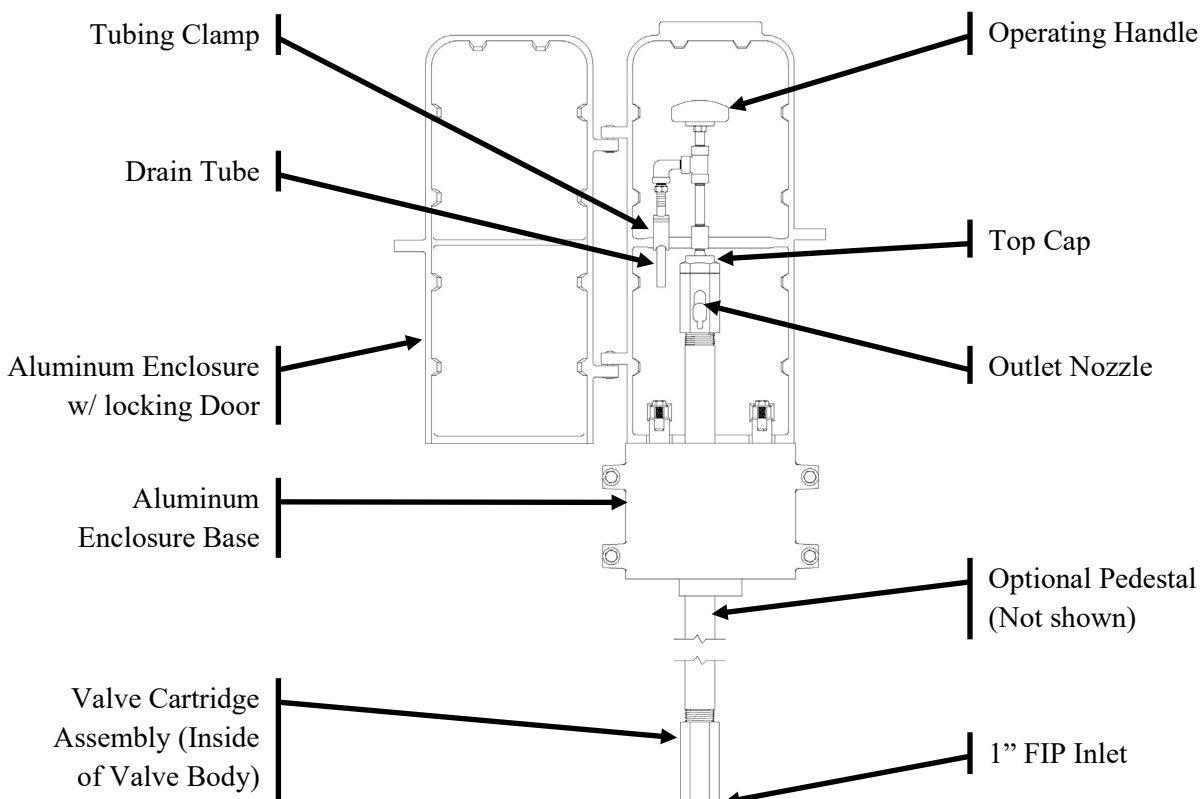
### General Description

The #24 is a permanently installed hydrant designed to provide an accessible, easy-to-operate, and reliable way to collect quality water samples. The sampling station has a 1" F.I.P. inlet with all mechanical working components being stainless steel. The station shall be rated for use up to 220 psi.

The #24 has several improvements over previous sampling stations. The operating screw is below ground. The drain/evacuation tube is inside the 1" pipe/barrel providing protection against damage during install and additional freeze prevention. The valve O-ring has a hard mechanical stop to prevent overtightening, preventing excessive mechanical wear or cutting of sealing surfaces. The sampling station's operating rod is secured at both the top and bottom to reduce vibration and achieving a smoother flow of water offering a better sample stream and increased flow.

All operating parts of the unit can be serviced or replaced without digging up or disturbing the supply line connection. The top of the sampling station hydrant is housed in a lockable powder coated aluminum enclosure.

### Layout



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# INSTALLATION

NOTE: All AWWA hydrant installation recommendations should be followed. These steps are simply a recommended order of operations with Kupferle recognizing that things like soil conditions, installer experience/skills/ingenuity, etc. can lead to deviations

1. The supply lines must be flushed free of any rock, gravel, or other debris before connecting the hydrant or installing any new or replacement parts.
2. Station to be connected to the supply line via the 1" FIP inlet connection with a shut off before the hydrant.
3. Position hydrant in hole. Adjust the height of the hydrant as needed so the appropriate amount of hydrant (housing or housing and pedestal depending on customers specifications) is above the ending grade. Brace the hydrant as necessary. Finish water supply line connection.
4. Backfill the trench and hole to grade. Compact backfilled earth.

NOTE: If a concrete pad is to be used or specified prepare area surrounding the hydrant as specified and pour concrete up to grade level.



NOTE: Kupferle recommends the installation of a corporation or curb stop prior to the sampling device for increased ease of serviceability and maintenance.

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# OPERATION

## Sampling Procedure

*NOTE: This procedure is intended to act as a foundation for a standardized collection procedure. Kupferle fully recognizes that water systems might have specific needs or nuances in procedures and the experience of “boots on the ground” operators should never be dismissed if a process can be improved.*

1. Open enclosure/housing.
2. Confirm nozzle cap is on and drain hose is closed via the drain clip.

NOTE: a missing nozzle cap can be indicative of an issue with the valve seal below ground.

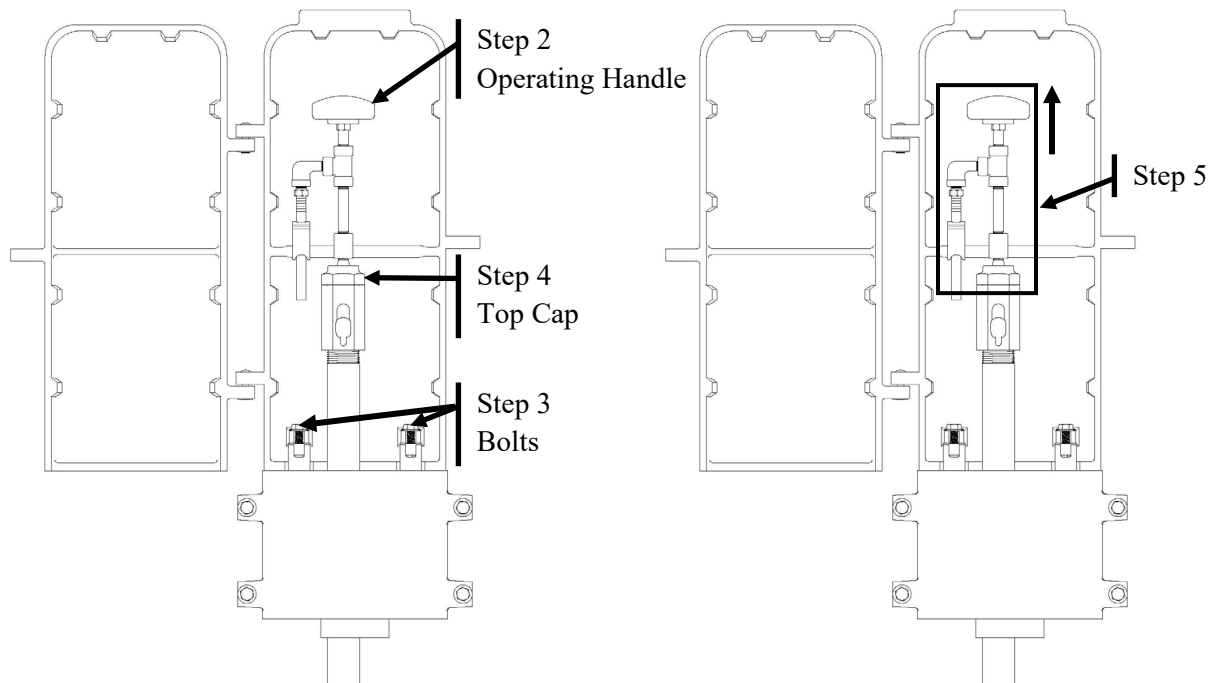
3. Remove nozzle cap.
4. Turn the operating handle counterclockwise to begin water flow (2 to 2-1/2 turns water should turn on with about 6 turns being fully open) and flush until fresh water from water main is obtained.
5. Turn operating handle clockwise to stop water flow and disinfect nozzle (flame or spray).
6. Restart water flow and reduce stream to about ¼” with no air gaps, collect sample (tilt bottle to reduce aeration) and stop water flow.
7. Open drain hose via the drain clip.
8. Attach pump or evacuation method to drain hose and pump station free of water.
9. Remove pump, close drain clip.
10. Return nozzle cap to main unthreaded nozzle.

NOTE: If using a chlorine-based spray to disinfect, rinse all areas exposed to spray thoroughly after sampling, this will reduce unwanted corrosion. Pump station dry year-round to reduce bacteria growth.

## MAINTENANCE

**NOTE:** The water supply must be turned off before maintenance should be performed, typically via the valve box leading to the hydrant.

### Removing and Replacing the Valve Assembly



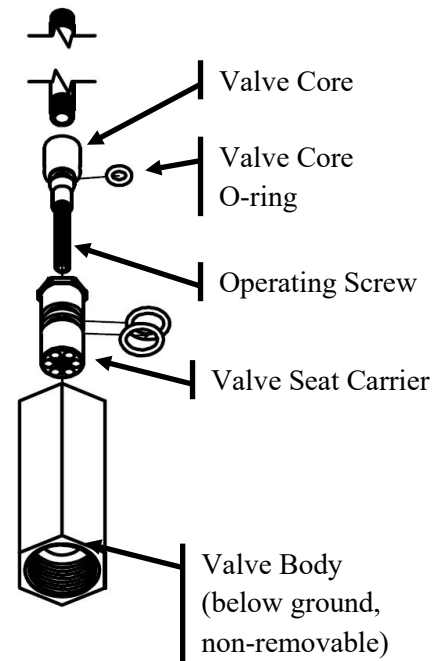
1. Shut off water supply leading to sampling station.
2. Open the main valve 4 full turns using the operating handle (turn counterclockwise).
3. If required, remove two bolts/nuts holding the top and bottom halves of the aluminum enclosure together (on inside of enclosure, using 1/2" socket and wrench). Take away top half of enclosure and set aside.
4. Remove the top cap using a 1" wrench (turning counterclockwise).
5. Pull straight up on the handle/top cap without turning to lift the removable valve assembly.
6. Perform maintenance inspection of all seals and o-rings.
7. Before returning the operating assembly, briefly turn on the water to flush out any sediment or debris that may be present.
8. Reassemble the station reversing steps 1-5.

NOTE: The valve cartridge is hex. When aligned correctly the hex will slide into scallops of the below ground valve allowing the top cap to be tightened easily. If the top cap can not thread down easily, simply pull the operating assembly up and rotate a ¼ of a turn. Repeat until the valve cartridge slides in properly.

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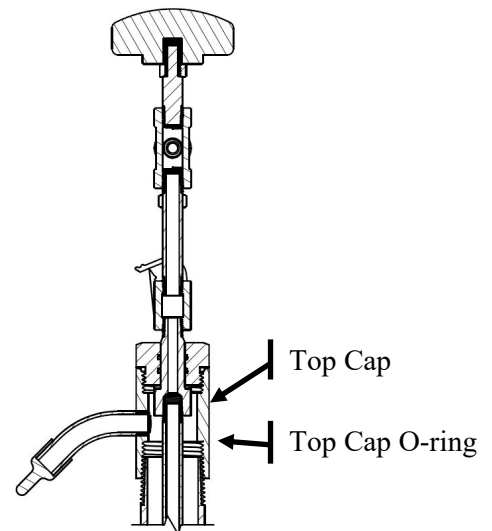
## Changing Valve O-ring

1. Remove the valve assembly. Refer to **Removing the Valve Assembly**.
2. Unscrew the valve seat carrier from the valve core.
3. Remove and replace Valve Core O-ring.
4. Screw valve seat carrier back onto the operating screw and valve core.
5. Reassemble the station.



## Changing Top Cap O-ring

1. Remove the valve assembly. Refer to **Removing the Valve Assembly**.
2. Slide existing Top Cap O-ring all the way down the drain tube/operating rod and over the valve assembly at the bottom.
3. Replace the Top Cap O-ring.
4. Reassemble the station.



## **TROUBLESHOOTING**

### **Sampling Station Will Not Shut Off**

The most common cause of a leaking sampling station is either a damaged seal or debris in the valve.

Examine seat rubber for any signs of wear or damage.

Replace part(s) as needed. See Maintenance -> **Changing Valve O-ring**

### **Leaking From Top Cap**

The most common cause of leaking from the top cap is a pinched or cut o-ring.

Examine sealing O-ring for signs of wear or damage.

Replace part(s) as needed. See Maintenance -> **Changing Top Cap O-ring**

### **Sampling Station Vibrates or Sample Stream Pulses**

While the station is designed to eliminate this, fluid dynamics and specific installations and pressures can still result in some abnormal conditions. Should this occur please contact Kupferle for additional assistance.

## **ORDERING REPLACEMENT PARTS**

Replacement parts may be ordered from any water works distributor. A list of distributors may be obtained by calling Kupferle Water Solutions at 800-231-3990 or by visiting Kupferle's website.

[www.hydrants.com](http://www.hydrants.com)

Parts lists are also available on Kupferle's website.



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# #24 CUT SHEET

OPTIONAL PEDESTAL  
(3' STANDARD)

PARTS LIST				NOTES
ITEM	QTY	PART NUMBER	DESCRIPTION	
1	1	1/8 X 2SSN	1/8" STAINLESS STEEL PIPE NIPPLE	
2	1	1/8SSC	1/8" STAINLESS STEEL COUPLING	
3	46,500 in	1/8SSP	1/8" STAINLESS STEEL PIPE	
4	1	1/8SST	1/8" S.S. TEE	
5	1	1/890SSL	1/8" S.S. STREET ELBOW	
6	45,250 in	1SSP	1" STAINLESS STEEL PIPE	
7	1	24S01	VALVE BODY	
8	1	24S02	VALVE SEAT CARRIER	
9	1	24S03	VALVE CORE	
10	1	24S04	HEADSTOCK	
11	1	24S05	TOP CAP	
12	1	24S06	CONNECTING NUT	
13	1	24S07	HANDLE PLUG	
14	2	24S08	VALVE SEAT CARRIER O-RING	
15	1	24S09	VALVE CORE O-RING	
16	1	24S10	TOP CAP O-RING	
17	1	24S11	OPERATING SCREW	
18	1	24S12	HOSE BARB	
19	1	24S13	TUBING CLAMP	
20	1	24S14	PLASTIC WASHER	
21	1	24S15	OUTLET NOZZLE	
22	3,500 in	24S16	DRAIN TUBE	
23	1	66S35	NOZZLE CAP	
24	1	66S42	HANDLE	
25	6	88-4	S.S. HEX BOLT FOR BOX ASSEMBLY	
26	7	88-5	S.S. HEX NUT FOR ENCLOSURE BOLTS	
27	2	88-6	RIVET FOR 88 COVER	C
28	1	88-11	PIPE THREAD O-RING PLUNGER	
29	10	88-14	S.S. FLAT WASHER FOR BOX ASSEMBLY	
30	1	88-A	"NEW STYLE" 88 COVER "A"	C,R
31	1	88-B	"NEW STILE" 88 COVER "B"	C,R
32	1	88-C1	"NEW STYLE" 88 BASE	C,R
33	1	88-C2	"NEW STYLE" 88 BASE	C,R
34	2	9419	S.S. FLAT WASHER FOR HINGE RIVET	
35	6	9465	S.S. LOCK WASHER FOR BOX ASSEMBLY	
36	1	24S17	SS CONSTANT SPRING CLAMP	

## OPTIONAL PARTS

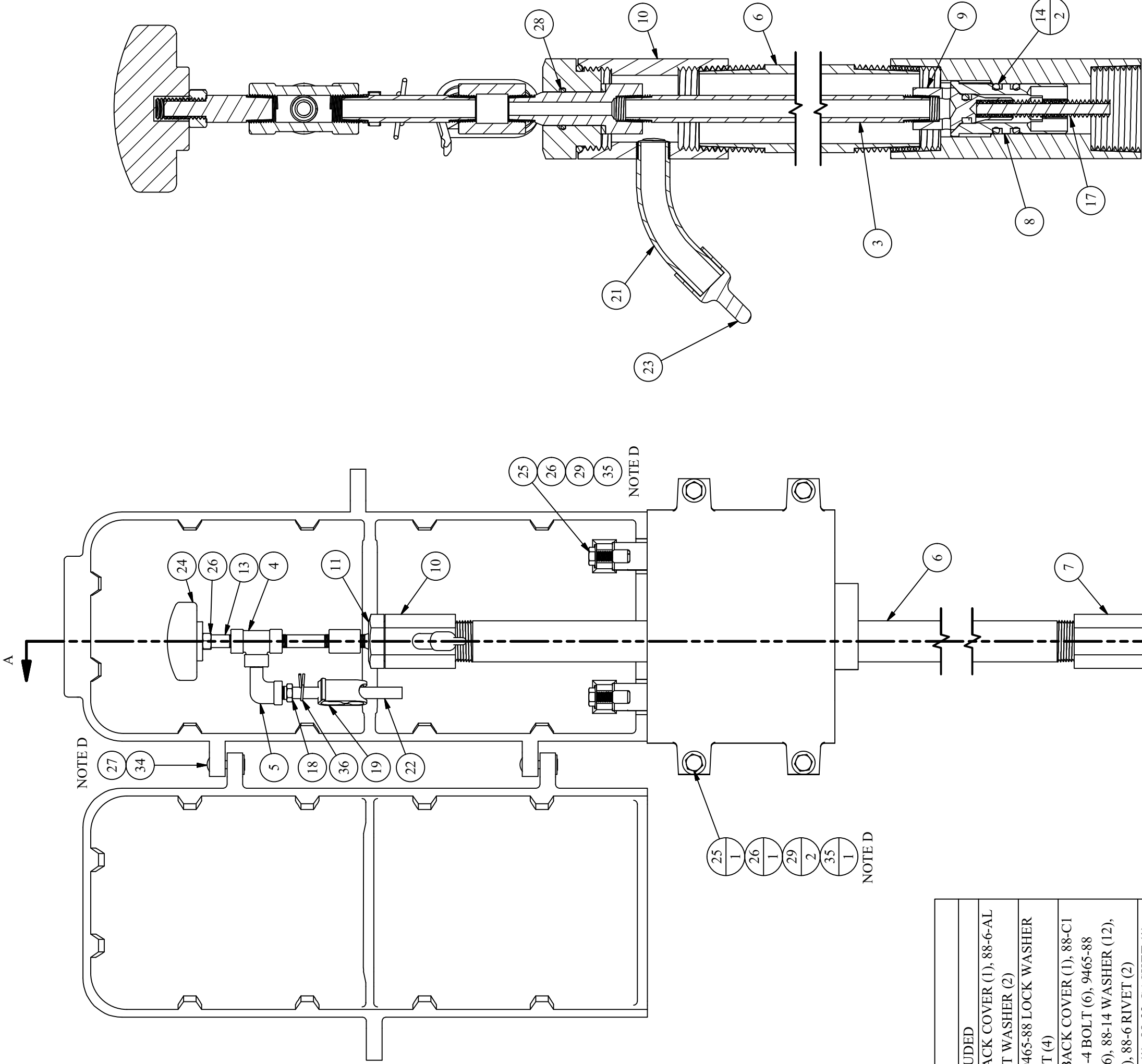
ITEM	QTY	PART NUMBER	DESCRIPTION	NOTES
36	2	678	FLANGE COUPLING	
37	34,000 in	4FBE	FUSION BONDED EPOXY PIPE	
38	2	88-22	GASKET FOR PEDESTAL	
39	4	88-23	PEDESTAL BOLT	

## REPAIR KITS

PART NUMBER	DESCRIPTION	PARTS INCLUDED
X881	ALUMINUM COVER COMPLETE	88-A FRONT COVER (1), 88-B BACK COVER (1), 88-6-AL RIVETS (2), 9419 FLAT WASHER (2)
X882	ALUMINUM BASE COMPLETE	88-C BASE (2), 88-4 BOLT (4), 9465-88 LOCK WASHER (4), 88-5 NUT (4)
X883	ALUMINUM COVER AND BASE COMPLETE	88-A FRONT COVER (1), 88-B BACK COVER (1), 88-C1 BASE (1),88-C2 BASE (1), 88-4 BOLT (6), 9465-88 LOCKWASHER (6), 88-5 NUT (6), 88-14 WASHER (12), 9419 FLAT WASHER (2), 88-6 RIVET (2)
X88-36P	3' PEDESTAL COMPLETE	678 COUPLING (2), 4FBE PIPE (1), 88-22 GASKET (1), 88-23 BOLT (4), 9400A-38 BOLT (4), 9458 WASHER (4), 345-N NUT (4)

NOTE	DESCRIPTION
A	NOT SHOWN
B	PIPE LENGTH DEPENDENT ON DEPTH OF BURY, SHOWN AS 3'
C	SOLD AS REPLACEMENT PART
D	BOLT ASSEMBLY USED ON ALL SIMILAR HOLES/BRACKETS
R	POWDER COATING OPTIONS AVAILABLE

**DISCLAIMER**  
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FOUNDRY COMPANY. IT IS NOT TO BE USED OR  
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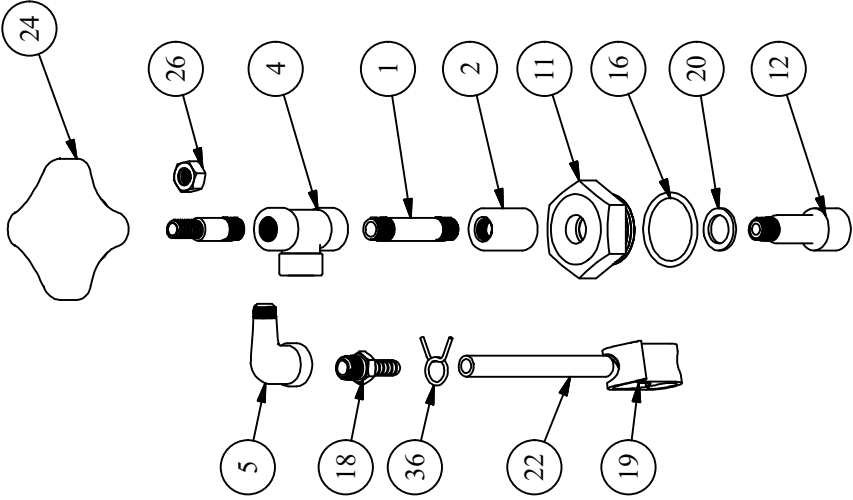


SECTION A-A  
SCALE 1 : 1.5

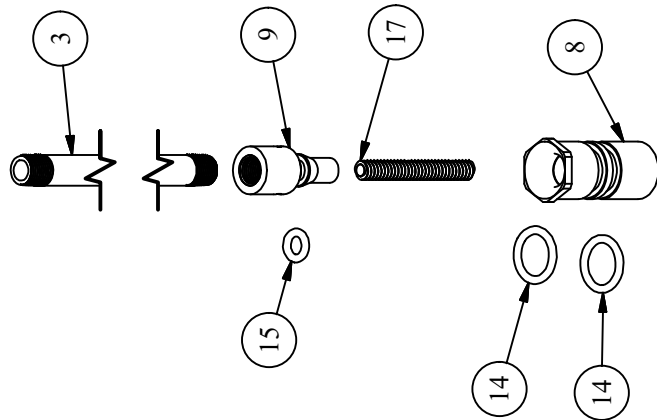
## LEGEND

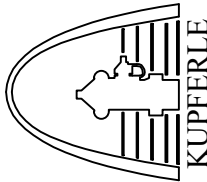
X → STANDARD TAG  
X/Y → TAG WITH Y QUANTITY

## TOP NUT ASSEMBLY



## VALVE CARTRIDGE ASSEMBLY



DRAWN KJW		9/25/2023		2511 NORTH 9TH ST. ST. LOUIS, MO 63102 1-800-231-3990	SHEET 1 OF 1	REV 1.1
CHECKED						
MODIFIED KJW		10/28/2025				
SIZE C	SCALE	5/16				
DWG NO		#24				