



Data Sheet 12.05 Issue B



Dry Barrel Fire Hydrant Fig. 601 & 602

General Description

The Rapidrop Fig 601/602 dry barrel post / flushing fire hydrant is designed to be a trouble free, easy to maintain hydrant. The Fig 601/602 fire hydrant is rated for a working pressure of 17 bar (250 psi) meets or exceeds the requirements of AWWA C502, Standard for Dry Barrel Fire Hydrants (where applicable) and is designed so that one person can perform all repairs and maintenance outlined in this manual.

Features

- Low torque patent design: minimal effort to reliably open and close.
- Gland nut - dustproof and waterproof design to prevent freezing of operating nut and water from entering the switch cover.
- Top oil cap – no need to remove valve cover to lubricate internal components.
- Oil reservoir - O-ring seal design, lubrication to threads and bearings surfaces each open and close cycle.
- Security flange – reduced traffic injury, enables maintenance without excavation or draining supply water.
- Corrosion resistant nuts and bolts.
- EPDM Rubber main seal.
- Tapered inlet nozzle, lower friction loss.
- Performance meets or exceeds the requirements of ANSI/ AWWA C502, UL246

Working Pressure

Maximum working pressure 17 bar (250 psi)

Connections

Inlet

- **Model 601**, Flange Inlet

6" ANSI 125/150 flange, conforms to ANSI B16.1

- **Model 602**, Mechanical Joint Inlet

6" Mechanical Joint, conforms to ANSI A21.11. For use with Ductile Iron, C900 PVC and Cast Iron pipes with end dimensions compliant with ANSI/AWWA C111. Supplied with the connecting gland, plain rubber gasket, nuts and bolts, unless otherwise specified. Inlet has two strapping lugs.

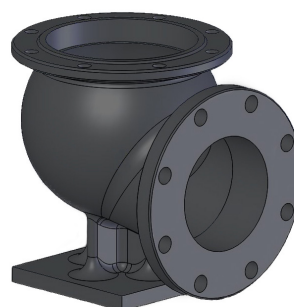
Outlet

Two hose nozzles, 2 1/2" - 7.5NH thread

Pump Nozzle

4 1/2" - 4NH thread

Threads in accordance with NFPA 1963



601 Flanged Inlet



602 Mechanical Joint Inlet

Dimensions

Trench Depth inch	Trench Depth mm	Hydrant Bury Depth* mm
36"	915	831
42"	1067	983
45"	1145	1061
48"	1220	1136
54"	1372	1288
60"	1524	1440
66"	1676	1529
72"	1829	1745

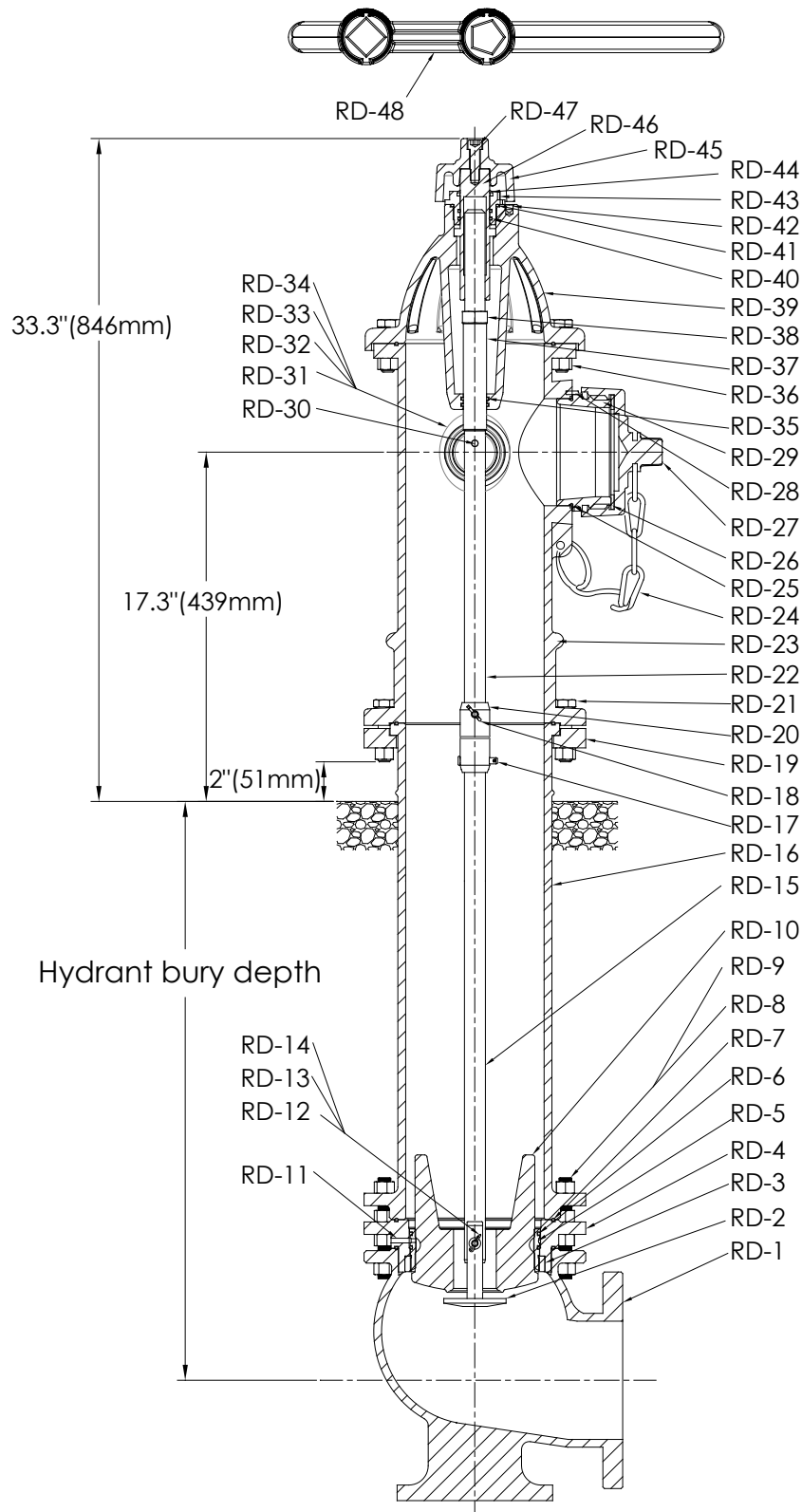
*Refer to the diagram on Page 2

Approvals

FM Approved

UL Listed

Dry Barrel Fire Hydrant Fig. 601 & 602





Data Sheet 12.05

Issue B



Dry Barrel Fire Hydrant

Fig. 601 & 602

Item	Description	Material	Material Standard
RD-1	Hydrant Body	Ductile Iron	ASTM A536 65-45-12
RD-2	Drain Stem	Stainless Steel	SS304
RD-3	Seal-ring	Bronze	ASTM B584
RD-4	Main Valve Flange	Ductile Iron	ASTM A536 65-45-12
RD-5	Hydrant seat	Bronze	ASTM B584
RD-6	O-ring	EPDM	ASTM D2000
RD-7	O-ring	EPDM	ASTM D2000
RD-8	Sud bolts	Steel	ASTM A307
RD-9	Nuts	Steel	ASTM A307
RD-10	Wedge	DI.+EPDM	
RD-11	Screwed Plug	Bronze	ASTM B584
RD-12	Pin Axes	Stainless Steel	SS304
RD-13	Pin	Stainless Steel	SS304
RD-14	Washer	Stainless Steel	SS304
RD-15	Lower Stem	Steel	ASTM A29M 1020 Plated
RD-16	Barrel	Ductile Iron	ASTM A536 65-45-12
RD-17	Pin Axes	Stainless Steel	SS304
RD-18	Pin	Stainless Steel	SS304
RD-19	Breakable Flange	Cast Iron	ASTM A126 CL.B
RD-20	Coupling	Ductile Iron	ASTM A536 65-45-12
RD-21	Bolts	Steel	ASTM A307
RD-22	Upper Stem	Steel	ASTM A29M 1020 Plated
RD-23	Drainpipe	Ductile Iron	ASTM A536 65-45-12
RD-24	Link	Steel	Plated
RD-25	O-ring	EPDM	ASTM D2000
RD-26	Sealed Gasket	EPDM	ASTM D2000
RD-27	Nozzle Cap	Ductile Iron	ASTM A536 65-45-12
RD-28	Pin	Stainless Steel	SS304
RD-29	Outlet	Bronze	ASTM B584
RD-30	Pin	Stainless Steel	SS304
RD-31	Sealed Gasket	EPDM	ASTM D2000
RD-32	Nozzle Cap	Ductile Iron	ASTM A536 65-45-12
RD-33	O-ring	EPDM	ASTM D2000

Dry Barrel Fire Hydrant

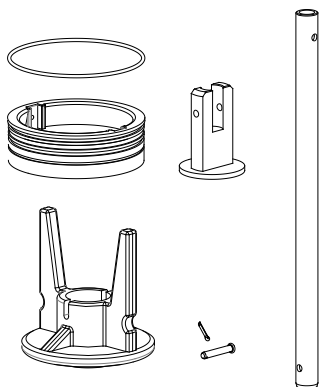
Fig. 601 & 602

Item	Description	Material	Material Standard
RD-34	Outlet	Bronze	ASTM B584
RD-35	O-ring	EPDM	ASTM D2000
RD-36	Nuts	Steel	ASTM A307
RD-37	Stem	Stainless Steel	SS304
RD-38	Stop Nut	Steel	ASTM A29M 1045
RD-39	Hydrant Bonnet	Ductile Iron	ASTM A536 65-45-12
RD-40	O-ring	EPDM	ASTM D2000
RD-41	O-ring	EPDM	ASTM D2000
RD-42	Oil cup		
RD-43	Bush	Bronze	ASTM B584
RD-44	Dustproof Ring	EPDM	ASTM D2000
RD-45	Operating Cap	Ductile Iron	ASTM A536 65-45-12
RD-46	Operating Nut	Bronze	ASTM B584
RD-47	Socket head bolt	Steel	ASTM A307
RD-48	Wrench	Ductile Iron	ASTM A536 65-45-12

Fire Hydrant Repair Kits

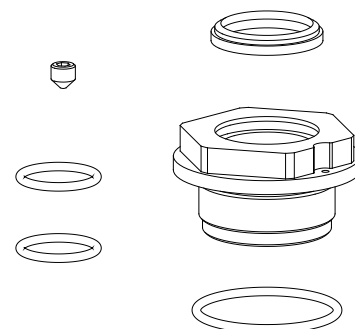
Main Valve Repair Kit Consists of:

- RD-2 Drain Stem
- RD-5 Hydrant seat
- RD-6 O-ring
- RD-10 Wedge
- RD-12 Pin Axes
- RD-13 Pin
- RD-14 Washer
- RD-15 Lower Stem



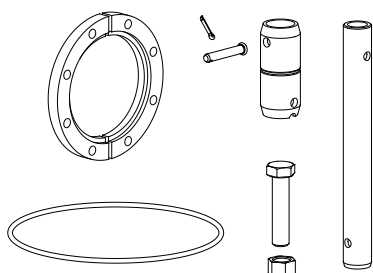
Bonnet Repair Kit Consists of:

- RD-35 O-ring
- RD-40 O-ring
- RD-41 O-ring
- RD-42 Oil cup
- RD-43 Bush
- RD-44 Dustproof Ring



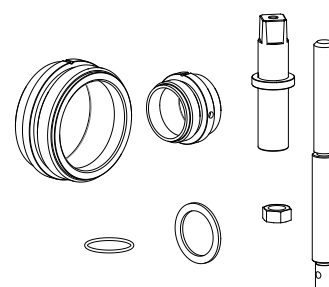
Safety Flange Repair Kit Consists of:

- RD-19 Breakable Flange
- RD-21 Bolts
- RD-22 Upper Stem
- RD-17 Pin Axes
- RD-18 Pin
- RD-20 Coupling



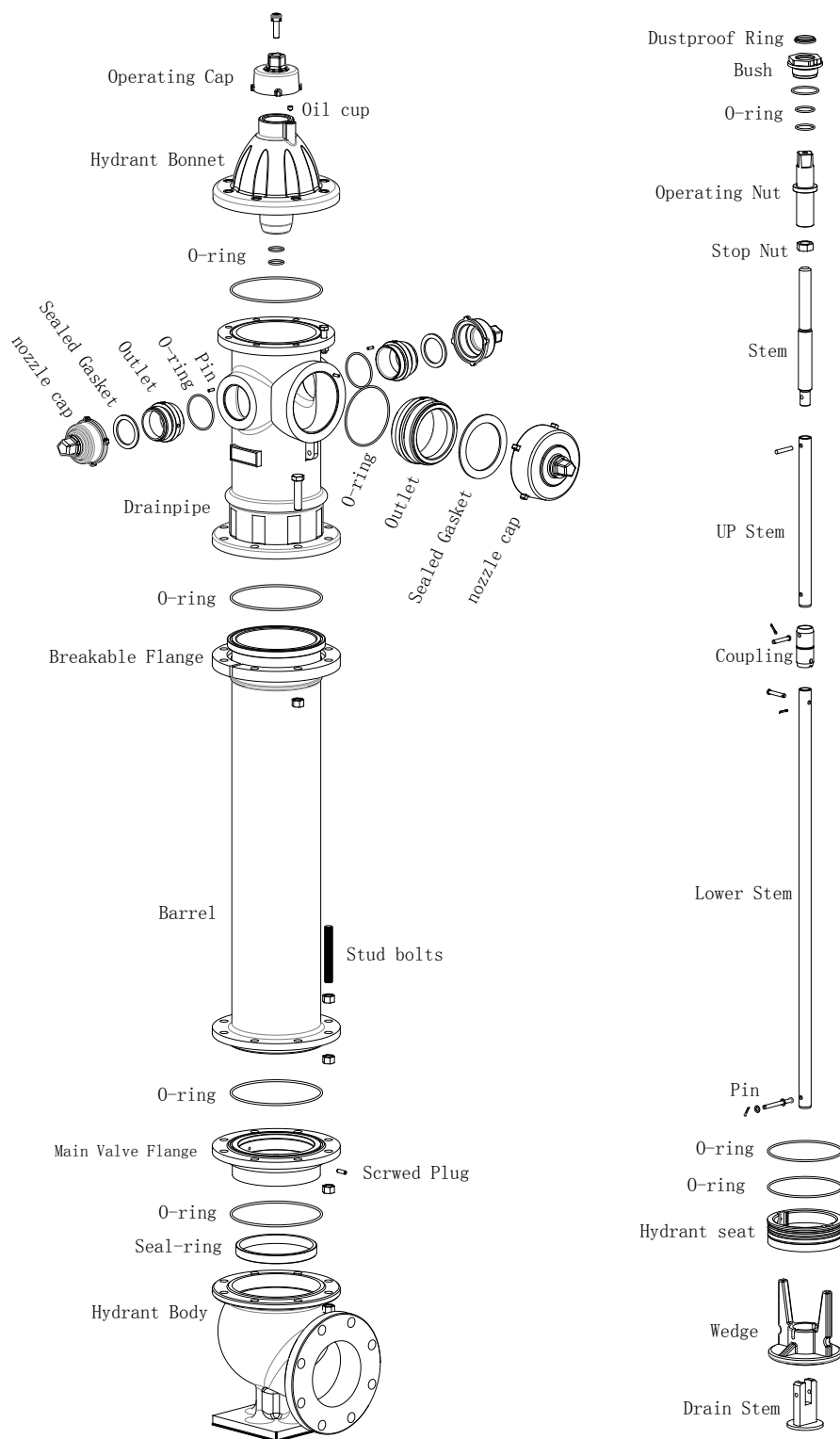
Bonnet Repair Kit Consists of:

- RD-29 Outlet
- RD-34 Outlet
- RD-37 Stem
- RD-38 Stop Nut
- RD-46 Hydrant Bonnet
- Including required O-rings



Dry Barrel Fire Hydrant Fig. 601 & 602

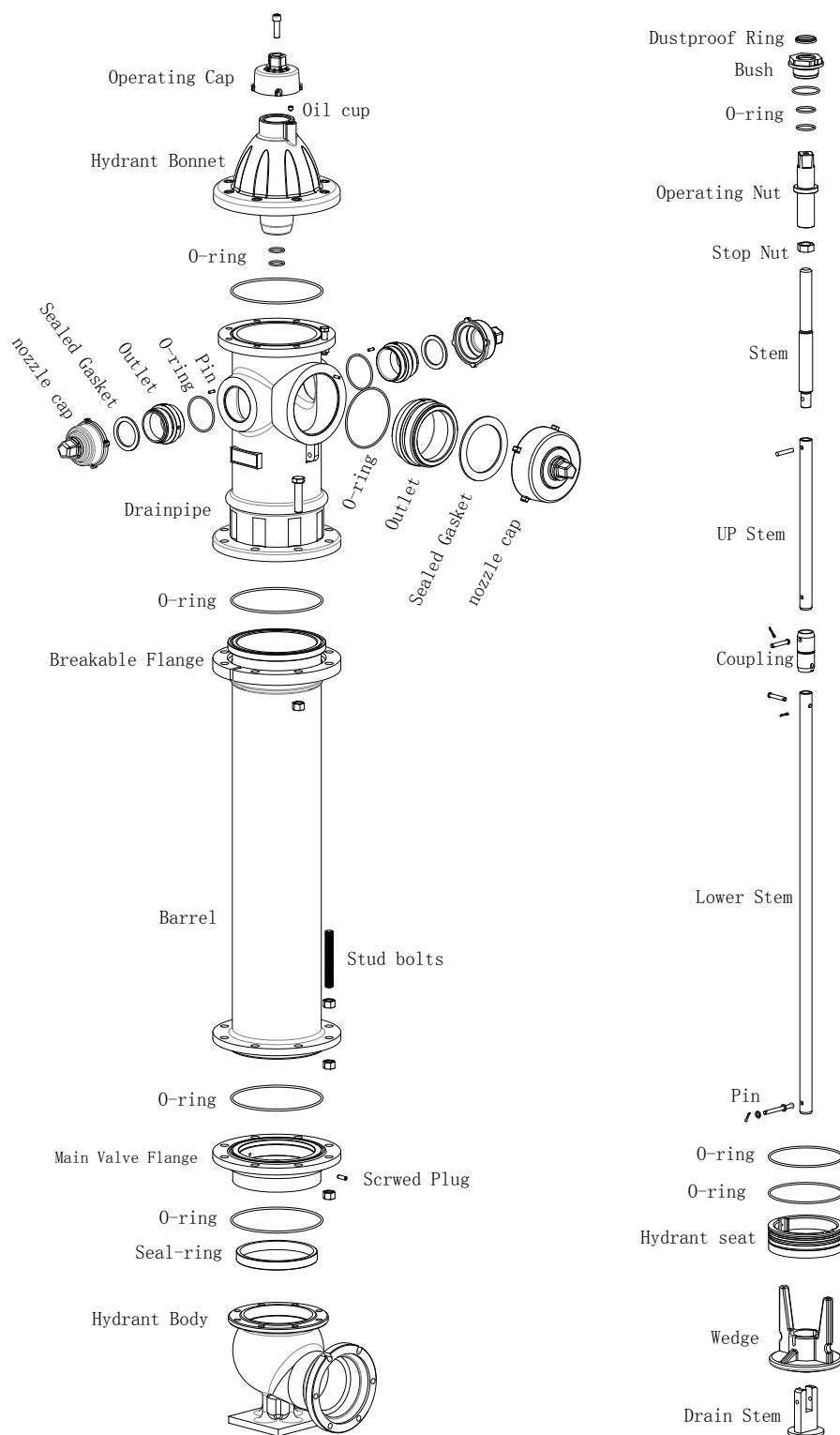
Rapidrop Model 601 Fire Hydrant



Dry Barrel Fire Hydrant

Fig. 601 & 602

Rapidrop Model 602 Fire Hydrant





Dry Barrel Fire Hydrant Fig. 601 & 602

Receiving and Storage

Inspect the hydrants upon receipt for damage in shipment. Note any damage on the packing list and have the driver sign it. Notify Rapidrop Global Limited. Unload all of the hydrants carefully to avoid damage. Verify that the hydrants have the correct direction to open, the correct nozzle configuration and threads, the correct operating nut size and shape, the correct depth of bury, and the correct inlet connection. Hydrants should remain clean and dry, and the main valve should be closed until installed to prevent weather related damage. For long term storage the hydrants should be stored indoors.

Installation

Correct installation of the Fig 601/602 dry barrel post / flushing fire hydrant is important for proper operation. The following steps are general installation guidelines. Local conditions may require variations.

1. Before installing a hydrant, check to make sure all bolts are tight and all nozzles are properly installed. Clean any dirt and debris from inside the hydrant base and from the supply piping.
2. Install the hydrant with the valve below the frost line and install adequate drainage, such as gravel. Bury depth line is cast on the lower body. Support all hydrants in upright positions. All hydrants shall be installed plumb. Include a separate gate valve or curb valve and restraining joints in the supply piping.

Pressure Test

Rapidrop recommended hydrant testing procedure.

Rapidrop recommends that AWWA M17, "Installation, Field Testing, and Maintenance of Fire Hydrants", chapters 4.3 and 4.4 be followed for field testing and placing the hydrant in service. The following is taken from AWWA M17 for the reader's convenience:

Pressure Test at Main Pressure

1. Ensure that all nozzles are properly installed.
2. Remove the highest outlet-nozzle cap and open the hydrant valve a few turns. Allow water to reach the bottom of the outlet nozzle.
3. Replace the outlet-nozzle cap and leave it loose to permit all air to escape.
4. After all air has escaped; tighten the outlet-nozzle cap.
5. Open the hydrant completely. (Opening the hydrant fully before all air has escaped will compress the air and cause a safety hazard.)
6. Check for leakage at flanges, outlet nozzles, and the packing or O-rings around the stem.
7. If leakage is noted, repair or replace the faulty components or the entire hydrant. (Note: only after hydrant has been closed and all pressure is bled off.)
8. Repeat the test until results are satisfactory.

Pressure Test at Pressure Above Main Pressure

1. Connect a pressure-test pump to one of the hydrant's outlet nozzles.
2. Open the hose nozzle cap. Open the hydrant valve a few turns. Allow the hydrant to fill until water is at the bottom of the outlet nozzle.
3. After all air has escaped; tighten the outlet-nozzle cap.
4. Open the hydrant completely.
5. Close the supply piping auxiliary valve.
6. Pump up to test pressure (usually 10 bar (150 psi)).
7. Check for leakage at flanges, outlet nozzles, and the packing or O-rings around the stem.

Draining Test

1. Remove one of the hose caps and fill the hydrant with water.
2. With the hydrant in the closed position, place the palm of one hand over the open hose nozzle. As the water drains from the hydrant it should create a noticeable vacuum indicating proper drainage.

Disassembly for Inspection

The Fig 601/602 dry barrel post / flushing fire hydrant is designed to be a trouble free, easy to maintain hydrant. The following steps are recommended to provide trouble free operation.

WARNING: For all of the following repair procedures, the hydrant must be isolated or the system depressurized and drained before removing the hydrant components. Failure to do so may cause pressure to be released resulting in severe injury or death.

Nozzle Inspection

1. After making sure the hydrant is not pressurized, remove a nozzle cap.
2. Inspect nozzle thread for damage and replace if necessary.



Data Sheet 12.05 Issue B



Dry Barrel Fire Hydrant Fig. 601 & 602

Operation

The Fig 601/602 dry barrel post / flushing fire hydrant is designed to be an easily operated, low torque, high flow fire hydrant. It will not require excessively high loads to operate. It is possible to damage the hydrant by forcing it beyond its normal operational limits. The celcon anti friction washer requires a minimum of torque to operate.

1. Check direction of opening as marked on the hydrant bonnet.

2. To OPEN, turn the operating nut, in the opening direction, indicated by an arrow on the bonnet until the main valve, hits the stop in the base of the hydrant. Do not force the hydrant in the opening direction beyond full 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.

3. To CLOSE, turn the operating nut until the main valve stops the flow. It is not necessary to close this style of hydrant with great force. Once the flow has stopped, loosen the operating nut in the opening direction, 1/2 to 1 turn to take the strain off the operating parts of the hydrant and to make it easier to open the hydrant.

Maintenance Procedures

The Fig 601/602 dry barrel post / flushing fire hydrant is designed to be a trouble free, easy to maintain hydrant. The following steps are recommended to provide trouble free operation.

Lubrication

Remove brass oil plug and check oil level. Refill with white mineral oil, CITGO Duoprime® Oil 90 or equivalent.

Servicing should be checked and performed at least once per year if required, or per local municipal requirements.

Traffic Repair

WARNING: For all of the following repair procedures, the hydrant must be isolated or the system depressurized and drained before removing the hydrant components. Failure to do so may cause pressure to be released resulting in severe injury or death.

The Fig 601/602 dry barrel post / flushing fire hydrant feature a safety breakable flange and breakable stem rod coupling. This allows the hydrant head assembly to be struck by a vehicle and "Break Away" reducing the impact to the water main. In the event the hydrant head assembly has been broken away, the following repairs will be necessary.

Visually inspect the upper body and nozzles for damage. If there are any doubts to the condition of the cast upper body then this should be replaced.

Replace breakable safety flange, stem rod coupling plus cotter and clevis pins.

Troubleshooting Guide

PROBLEM: Hydrant slams shut while closing.

Probable Cause: Play in stem rod assembly due to wear in stem rod couplings.

Corrective action: Inspect breakable coupling for wear and replace if necessary.

PROBLEM: Hydrant hard to operate.

Probable Cause: Operating nut not lubricated.

Corrective action: Check oil level and refill / replace with appropriate grade oil.

PROBLEM: Nozzle facing the wrong direction.

Corrective action: Loosen the break flange bolts and carefully rotate the upper body to the desired position. Tighten the break flange bolts to 60 Ft. Lbs.

PROBLEM: Hydrant opens but will not close.

Probable Cause: The breakable coupling has broken or become disconnected.

Corrective action: Inspect and replace the affected coupling.

PROBLEM: Hydrant will not drain.

Probable Cause: Drain holes may be plugged or blocked.

Corrective action: Force flush the drain hole. If the hydrant continues not to drain, the hydrant may have to be excavated to verify that the drains have not been blocked.

PROBLEM: Hydrant flow is low.

Probable Cause: Hydrant or supply valve is not fully open.

Corrective action: Verify that the hydrant is fully open. Also locate and verify that the isolation valve is fully open.

PROBLEM: Corroded or over painted operating nut, oil filler plug.

Corrective Action: Clean paint from operating nut or oil filler plug, lubricate, and remove oil filler plug with care. DO NOT apply heat to the bonnet or filler plug, this will cause damage to the o-rings within the bonnet.

Corrective Action: Overfilled oil reservoir occurs when oil reservoir is filled when hydrant is in open position. Fill oil reservoir only when hydrant is in the closed position and fill until it overflows out of the oil filler hole. Wipe excess clean.