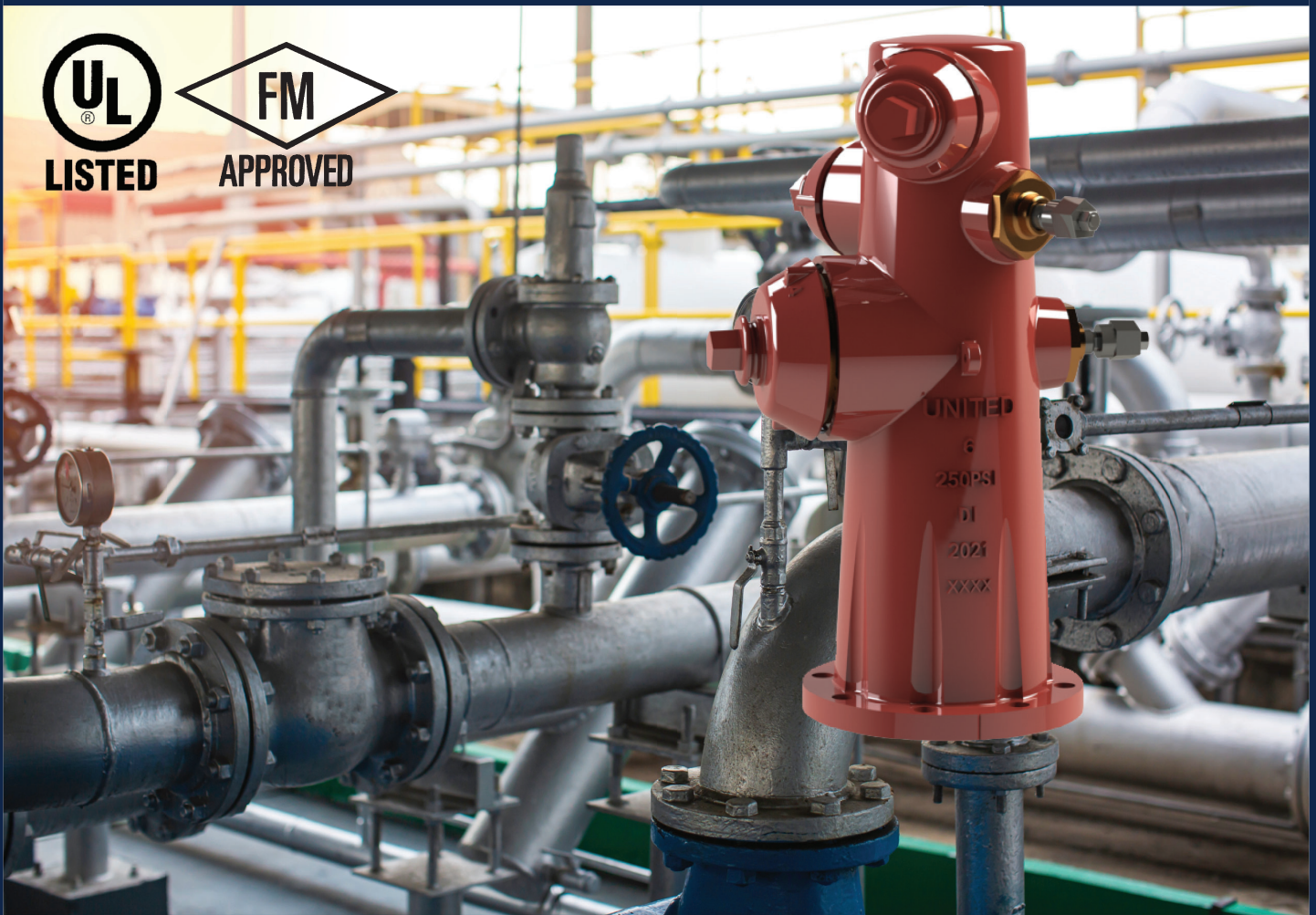


Installation and Maintenance Manual

Model F08 & F08-M Wet Barrel Fire Hydrant

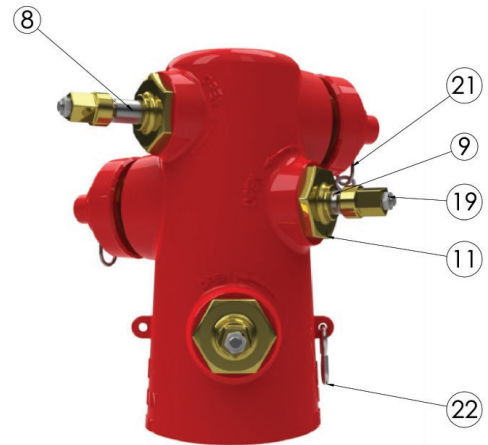
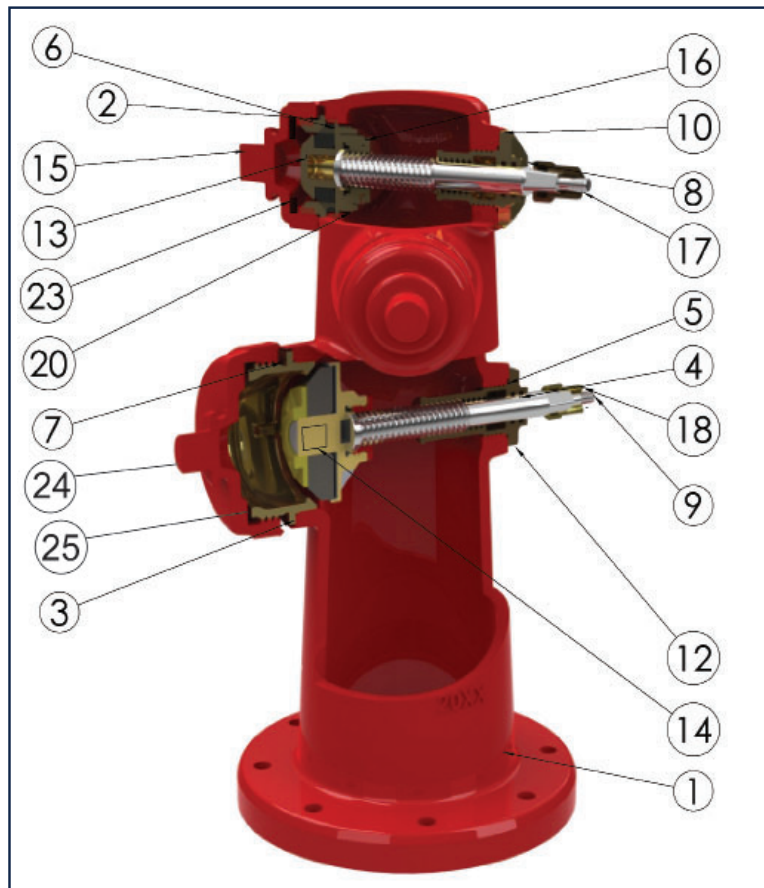
AWWA C-503
250 PSI Operating Pressure
500 PSI Test Pressure
Available with Monitor Attachment



FIREFLO - MODEL F08

INSPECTION, INSTALLATION & MAINTENANCE MANUAL

Item No.s/Description



Item No.	Description	Material	Specification	Qty. Req'd
1	Hydrant Body	Ductile Iron	ASTM A536 grade 65-45-12	1
2	Hose Nozzle Insert, 2-1/2"	Bronze	ASTM C84400	2
3	Pumper Nozzle Insert	Bronze	ASTM C84400	1
4	O-ring, stem insert rubber	Rubber	EPDM	6
5	O-ring, insert rubber	Rubber	EPDM	3
6	O-ring, hose nozzle rubber	Rubber	EPDM	2
7	O-ring, pumper nozzle rubber	Rubber	EPDM	1
8	Stem, short	Stainless Steel	ASTM CF8	1
9	Stem, long	Stainless Steel	ASTM CF8	2
10	Stem insert, short hose	Bronze	ASTM C84400	1
11	Stem insert, medium hose	Bronze	ASTM C84400	1
12	Stem insert, long pumper	Bronze	ASTM C84400	1
13	Disc assembly, hose	Bronze	ASTM C84400	2
14	Disc assembly, pumper	Bronze	ASTM C84400	1
15	Hose cap, 2-1/2"	Cast Iron	ASTM A-126 Class B	2
16	Stem lock nut	Bronze	ASTM C84400	3
17	Op nut, 1-1/2" pentagon	Stainless Steel	ASTM CF8	2
18	Op nut, 1-1/2" pentagon	Stainless Steel	ASTM CF8	1
19	Op nut retaining nut	Stainless Steel	ASTM CF8	3
20	Set screw, stem locknut	Stainless Steel	ASTM A2-70	3
21	Wire rope	Stainless Steel	AISI 304	3
22	Hook	Stainless Steel	AISI 304	3
23	Hose cap gasket	Rubber	EPDM	2
24	Pumper cap	Cast Iron	ASTM A-126 Class B	1
25	Pumper cap gasket	Rubber	EPDM	1

Inspection, Installation, and Testing:

Inspection:

Prior to installation hydrants must be inspected at the time of delivery to ensure there is no damage related to shipping and handling. Upon delivery verify compliance with required specifications to include:

- Correct model hydrant
- Correct operating nut size and shape on stem & cap
- Correct size outlet nozzles
- Correct inlet flange bolt pattern

The hydrant will arrive with each valve in the closed position. Each valve stem should be cycled from closed to full open and back to closed to ensure no damage occurred during shipment. If the stem is difficult to operate, repairs are needed. All external bolts and nuts should be tight.

Each hydrant is shipped with an inlet flange cover in place. If this cover is damaged or has been removed, visually inspect the inside of the hydrant from the inlet flange to ensure no foreign material or debris has entered the hydrant. Recover the inlet flange until time of installation.

All inspected hydrants that will not be immediately installed should have valves closed, nozzle caps secured, and inlet covered.

Installation:

Installation:

Proper installation and selection of the hydrant location will ensure many years of service with minimal routine maintenance required.

A primary consideration to prevent damage to the hydrant while in service is locating the hydrant to avoid impact by vehicles and roadway equipment. Where a code or Municipal specification for curb set-back is not present, the recommended curb set-back (AWWA M17) is 2 ft. minimum from the face of the curb to the nearest point on the hydrant. In rural areas where no curb is present, use a larger set-back, ensuring the hydrant is accessible to fire fighting equipment. When installing a United break check traffic valve, a concrete thrust collar with minimal dimensions of 2 ft. diameter and 6 inches thick must be installed at the ground bury line to absorb the potential shock of a traffic impact. Poor load-bearing soil conditions may warrant a larger thrust collar. The inlet main should be supported by firm footings to ensure settling or sinking of the hydrant does not occur.

Connect the hydrant to a water main intended to provide adequate fire hydrant flow volume. Refer to AWWA C600, Standard for Installation of Ductile-Iron water mains and their appurtenances, and local fire codes or fire authority requirements. Always ensure an isolation valve is located between the hydrant and the main to permit the water supply to be cut-off for maintenance.

Install the hydrant as plumb (vertical) as possible, allowing adequate clearance at the ground bury line to access flange bolts. The pumper outlet nozzle should face the curb without obstructions by light poles, signs, benches or other obstacles that may prevent direct access to the pumper nozzle from the street. Additionally, there should be no obstructions that prevent quick access and operation of nozzle caps and stems.

Following installation, the hydrant should be flushed to remove any foreign material and disinfectant chemicals (if any). When closing the valves of newly installed hydrants watch for debris or objects that may become wedged in the valve opening.

Following installation of the hydrant, ensure all caps are tight enough to prevent removal by hand and the auxiliary valve is in the full open position. Initiate a record of the hydrant to include the following essential information; location of hydrant, location of auxiliary valve, date of installation, type & model hydrant, size of nozzle outlet & op nuts and, if available, flow data.

Testing:

Pressure Testing at Main Line Pressure:

The following procedure is for pressure testing a hydrant for leaks at line pressure following maintenance repairs or the installation of a new hydrant.

1. With the auxiliary valve closed, remove the top nozzle cap and slightly open the top valve.
2. Slowly open the auxiliary valve and allow any air in the system to escape from the top nozzle valve opening.
3. After all the air has escaped from the hydrant system (evidenced by water coming out of the top nozzle outlet), close the top outlet valve and completely open the auxiliary valve. CAUTION: trapped air in a water system can become compressed and present a safety hazard, use caution.
4. With all caps removed, and the hydrant pressurized to line pressure, visually inspect for leaks at the flange joint, outlet nozzles, valve disc's, and stem inserts around the stem (Note: before leaving the factory, all hydrants are pressure tested at 500 psi).
5. If leaks are observed, repair or replace faulty component and re-test to ensure hydrant is leak free.

Pressure Testing at Pressures Above Main Line Pressure:

The following procedure is for pressure testing a hydrant above line pressure. This test may be performed to verify that hydrant is leak free at rated working pressure (i.e., 250 psi).

1. With all nozzle caps removed, connect a water pressure test pump to a lower outlet nozzle.
2. Ensure there is no trapped air in the hydrant by slightly opening top valve. Close valve after all air has escaped and only water comes out of top nozzle outlet.
3. Close the auxiliary valve to isolate hydrant and open the hydrant outlet valve connected to the test pump.
4. Following the pump manufacture's directions, pump up to the required test pressure. CAUTION: trapped air in a water system can become compressed and present a safety hazard, use caution.
5. With all caps removed, and the hydrant pressurized, visually inspect for leaks at the flange joint, outlet nozzles, valve disc's, and stem inserts around the stem (Note: before leaving the factory, all hydrants are pressure tested at 500 psi).
6. If leaks are observed, repair or replace faulty component and re-test to ensure hydrant is leak free.
7. Close outlet valve at test pump and open auxiliary valve to return hydrant to service.

Routine Maintenance:

To ensure the hydrant is in proper working condition when needed, a routine inspection and maintenance program should be implemented and followed. Hydrants should be inspected and exercised at least annually. A record should be kept on the performance of routine maintenance, findings during inspection, and recommended actions. Flow measurements should be periodically recorded for each hydrant, refer to AWWA M17 for flow measurement procedures. The inspection and maintenance crew should carry spare parts such as chains and caps to perform simple repairs. Local fire code and fire authority guidelines should be followed at all times. The following guidelines should be carried out by authorized and trained personnel.

1. With caps removed, visually inspect hydrant inlet flange joint, outlet nozzles, valve seats, and stem inserts for leaks. If leaks are present, attempt to correct the leak by tightening the component. If leak is not resolved, mark hydrant for follow-up repairs.
2. Inspect cap chains and cap rings for binding. Cap rings should rotate freely.
3. Inspect outlet nozzle threads for damage or foreign material buildup. If needed, clean threads and recoat with a non-toxic anti-seize. If needed clean cap threads and ensure cap vent hole is open.
4. Note any paint condition that may require follow-up coating. For iron hydrants there should be no bare metal exposed.
5. Close auxiliary valve to isolate hydrant.
6. With hydrant isolated from line pressure, fully open and close each valve two times, or until valve stem moves freely. The valve stem and mating components are made of corrosion resistant material. Some hard water conditions will cause deposits to accumulate. Exercising the stem will clear the deposit.
7. Visually inspect the valve disc from the outlet nozzle opening. The disc material should not be indented by the seat more than 1/8". If damage to the disc, or excessive indentation, is observed, mark hydrant for follow-up repairs.
8. Close all hydrant valves leaving the top outlet valve slightly open to allow air to vent when water is restored to the hydrant.
9. Slowly open the auxiliary valve.
10. When all air has evacuated the hydrant (evidenced by water coming out of the outlet nozzle), close the hydrant outlet valve.
11. Attach a short length of hose to allow water to run onto the street, or attach a diffuser nozzle. Operate hydrant valve through one full cycle. Repeat for each outlet nozzle. Use caution to avoid soil erosion.
12. Close each valve and tighten each nozzle cap so that the caps may not be removed by hand.
13. Ensure the auxiliary valve is fully opened.
14. Record inspection and required follow-up actions (if needed).
15. Return hydrant to service.

Installation of United Model 8850 Dual Door Break Check Valve:

In the event of a hydrant break due to vehicle collision, three factors determine how much water is lost when a hydrant is sheared: response time, system pressure and infrastructure. The equipment installed on site is the first line of defense for water conservation. When accidents happen, the United Double Door Type Break check valve not only instantly suppresses the flow of water to reduce losses by 95 percent or more, it also provides protection against personal injury and costly damage to both surrounding property. And below ground water infrastructure.

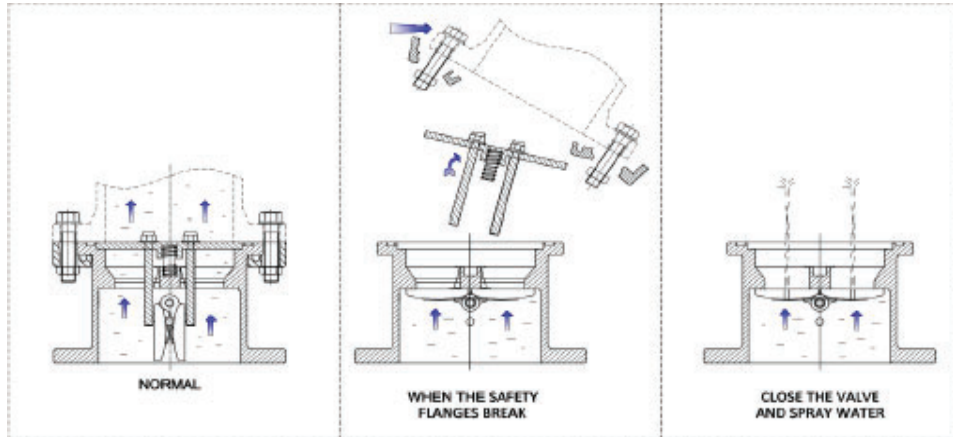


Figure 1.

WARNING:

Before proceeding to install or repair the check valve, 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.

Inspection:

Prior to installation, the check valve must be inspected at the time of delivery to ensure there is no damage related to shipping and handling. Upon delivery also verify that the retaining tape is not broken and that the retaining plate is not detached from the valve body. (See Figure 2.)

Cable Tie



Figure 2.

Installation:

1. Separate the breakaway safety flange if necessary.
2. Connect the double door break check valve to the hydrant with the safety flange and bolts.

NOTE: Do not forget to install the sealing ring.

3. Cut and pull out the retaining tape from the inlet of the check valve.
4. Check that the valve discs are still open and the installation is complete.

Repair:

1. Remove the mounting fasteners (8), the old Upper O-ring (3), broken Break Flange (4).
2. Loosen mounting Bolts (9), remove the Break Check Valve.
3. Place the new Spring (2) and Retaining Plate (1) into the top of the assembly and secure it with four Cable Ties. (See Fig. 2.)
4. Place the new Upper O-ring (3) in the groove of the Flange Section (5). Ensure that the O-ring remains in its proper location.
5. Carefully mount the Wet Hydrant Assembly (7) on the Flange Section (5) with the two halves of the Break Flange (4). Install the Bolts (8), (with a new Washer beneath the head of each bolt).

Note: Maximum torque on the nuts must not exceed 60 Ft. Lbs.

6. Cut and remove the four Cable Ties from below the Break Check Valve.
7. Place Gasket on Pipe Flange (10) and carefully mount the assembly on it. Install the fasteners (9).
8. Re-pressurize the hydrant slowly, bleeding off any trapped air, to prevent air pressure from blowing out the new gasket or water hammer from breaking the new Break Flange or damaging the water system.

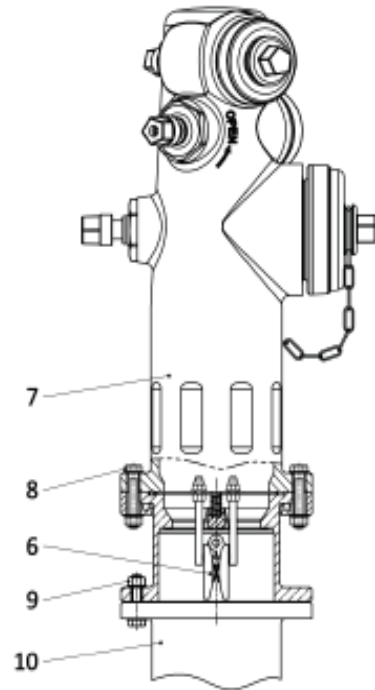


Figure 3.

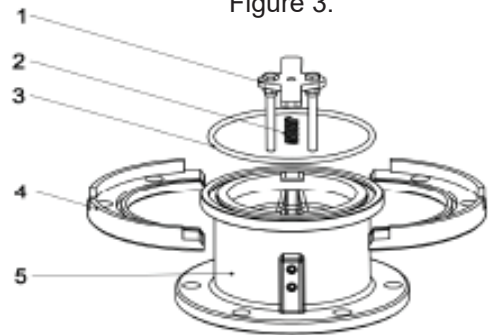


Figure 4.



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