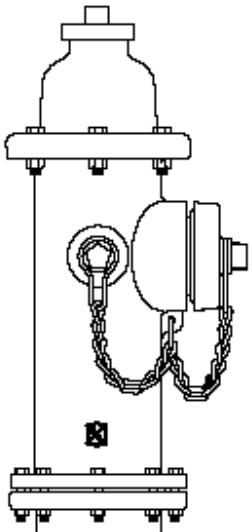
GENERAL
M&H VALVE 906 PATRIOT HYDRANT CHECK VALVE (6”)



Threats to water supply can come from either accidental or deliberate acts. The Patriot Security Device is just one of the features that M&H Valve offers as a deterrent to contamination.

The Patriot Hydrant Check Valve Model 906 is a self-contained, maintenance free unit with a simple design that carries N&H Valve’s Product Warranty and can be utilized on any 6” MJ connection which provides the flexibility and cost effectiveness end users and distributors look for.

The Patriot is installed upstream of the hydrant and therefore it does not affect the functionality or maintenance of the hydrant. In fact the hydrant can be replaced without the additional cost of replacing the Patriot Hydrant Check Valve.

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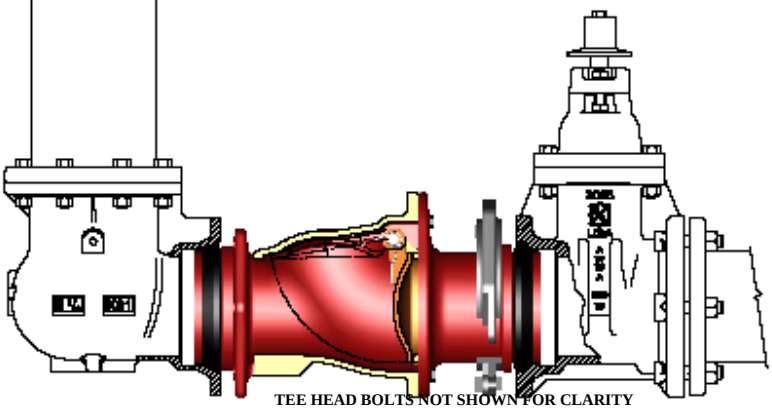
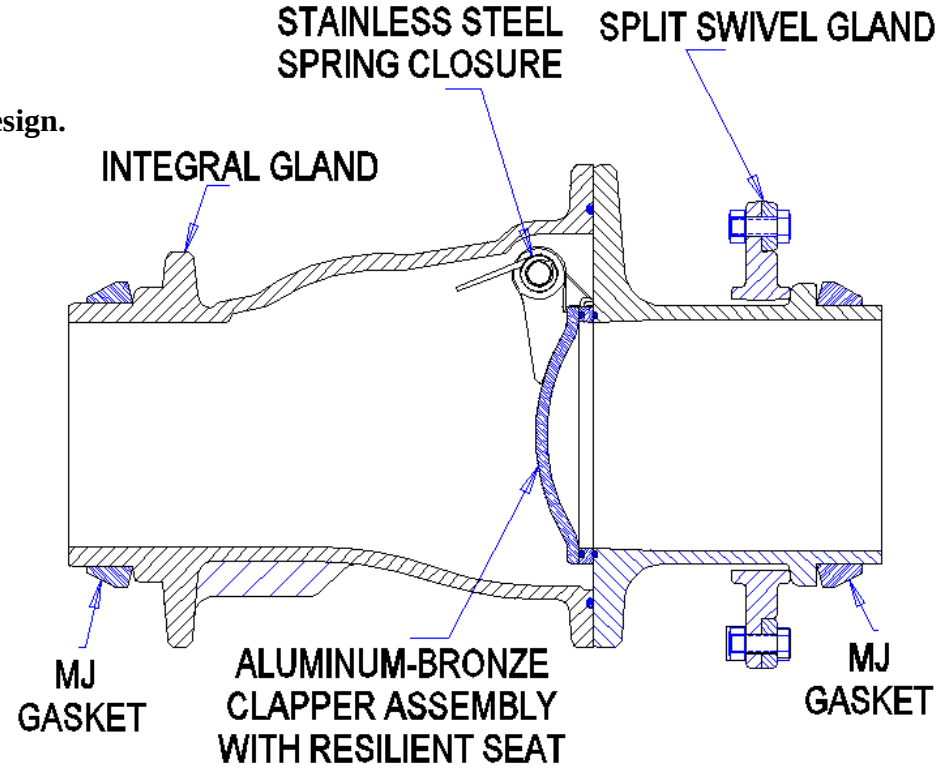


TEE HEAD BOLTS NOT SHOWN FOR CLARITY

FEATURES

M&H VALVE 906 PATRIOT HYDRANT CHECK VALVE (6”)

1. **The Patriot Hydrant Check Valve is a separate unit from the hydrant and can be utilized on any 6” MJ connection.**
2. **Since the Patriot Model 906 is a separate unit, availability and cost effectiveness is enhanced when a hydrant needs replacing.**
3. **Inlet and body are Ductile Iron to ASTM A536 Grade 70-50-5**
4. **Resilient seated using an Aluminum Bronze Clapper Assembly against an EPDM rubber seat.**
5. **Epoxy coated interior / exterior to AWWA C550 Standard.**
6. **Stainless Steel Spring hastens positive closure for a water-tight seal.**
7. **Does not cause water hammer and will not slam.**
8. **Full 6” unrestricted waterway.**
9. **No need for additional restraints.**
10. **Outlet end has integral gland.**
11. **Simple Design.**
12. **Maintenance Free Design.**
13. **Patent Pending.**



SUGGESTED SPECIFICATIONS

M&H VALVE 906 PATRIOT HYDRANT CHECK VALVE (6”)

1. **The Patriot Fire Hydrant Check Valve shall be manufactured to all of the testing and performance standards of AWWA C508 and AWWA C550. The Check Valve shall be designed for 250 PSI working pressure and tested to 500 PSI hydrostatic pressure.**

2. **The Check Valve shall be a stand-alone unit able to be positively restrained to any 6” mechanical joint fire hydrant shoe.**

3. **The Check Valve shall be ductile iron ASTM Standard A536 Grade 70-50-5, with NSF approved fusion bonded epoxy coating (interior/exterior).**

4. **The Check Valve shall be lead free, with no exposed lead bearing surfaces.**

5. **The Check Valve shall have an unobstructed waterway. No reduction of port or redirection of flow will be allowed.**

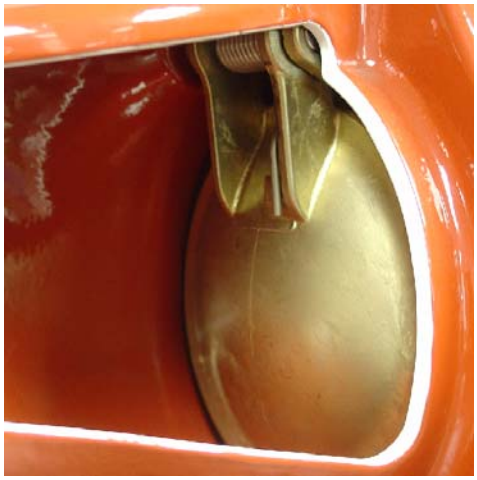
6. **The seat shall be restrained via a double dove tail O-ring retaining groove design to ensure a positive seal.**

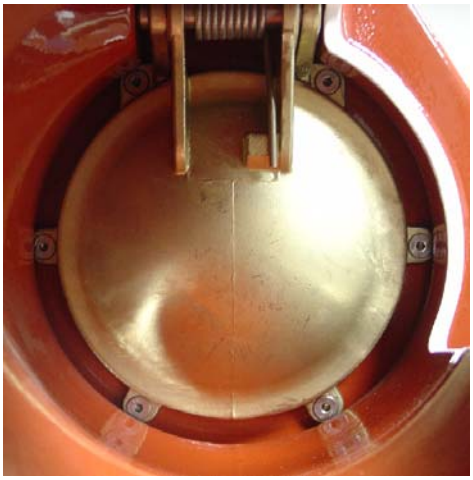
7. **The Check Valve shall incorporate integral positive restraint connections that maintain a restrained connection between the fire hydrant and the gate valve.**

8. **The Check Valve shall incorporate a stainless spring that hastens positive closure and prevents water hammer.**

9. **All fasteners shall be 304 stainless steel and all interior rubber components shall be EPDM rubber.**

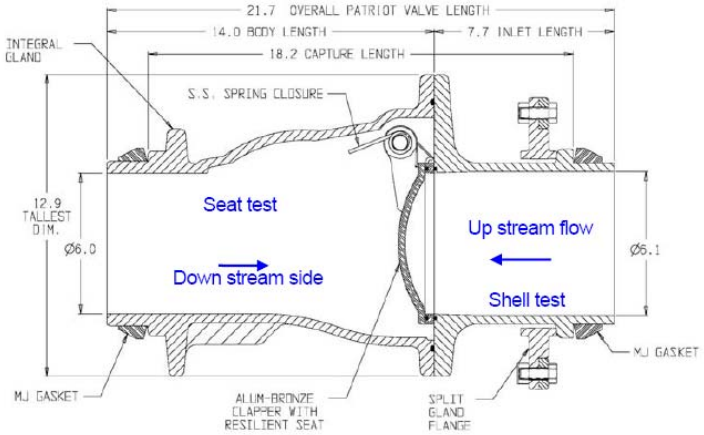
10. **The Check Valve shall be produced with no less than 80% post-consumer recycled content while being cast, manufactured, assembled and tested in the United States of America.**





PATRIOT CHECK VALVE TESTING PROCEDURES

M&H VALVE 906 PATRIOT HYDRANT CHECK VALVE (6”)



1. The inlet, clapper, seat ring, seat, hinge pin and spring are assembled.
2. The zero leakage test fixture is attached to the inlet seat assembly.
3. The test fixture is filled with water just high enough to cover the clapper/seat portion.
4. The operator verifies that the valve shows no leakage from the down stream side. (This is a visual test and the duration is at a minimum of 15-30 seconds or until satisfied that no leak is detected.) NOTE: (If any leakage is detected, the assembly is thoroughly checked and/or reassembled and the above steps are performed until the valve passes. ALL valves MUST pass this test before continuing).
5. The zero leakage fixture is removed from the inlet portion.
6. The valve body is attached to the inlet portion.
7. The test plug is removed from the valve body (this port used bleeding trapped air prior to high pressure testing).
8. The completely assembled valve is placed into the main test machine.
9. The valve is filled completely with water.
10. The test plug is secured into the body.
11. A second seat test is performed at the rated pressure (250 psi) against the seat (from the down stream). NO leakage is acceptable.
12. A third seat test is performed at two (2) times the rated pressure (500 psi) against the seat (from the down stream). NO leakage is acceptable.
13. The shell test is performed at two (2) times the rated pressure (500 psi) from the upstream direction for a minimum of one (1) minute. NO leakage is allowed.
14. Valves are removed from the test machine and all water is evacuated and the valve is prepared for packing.

NOTE:

1. Although there is no specific standard for the Patriot Hydrant Check Valve, M&H performs testing over and above ALL agency specifications (AWWA C508, FM-1210 and UL-312).
2. All tests MUST pass. If any parts of these tests fail, the valve is checked and/or adjusted and the procedure is repeated until ALL testing requirements are achieved.

Written by: Dan Burczynski, Engineering Manager, January 22, 2010

January 2010 / M&H 906 PATRIOT HYDRANT CHECK VALVE

FLOW DATA

M&H VALVE 906 PATRIOT HYDRANT CHECK VALVE (6”)

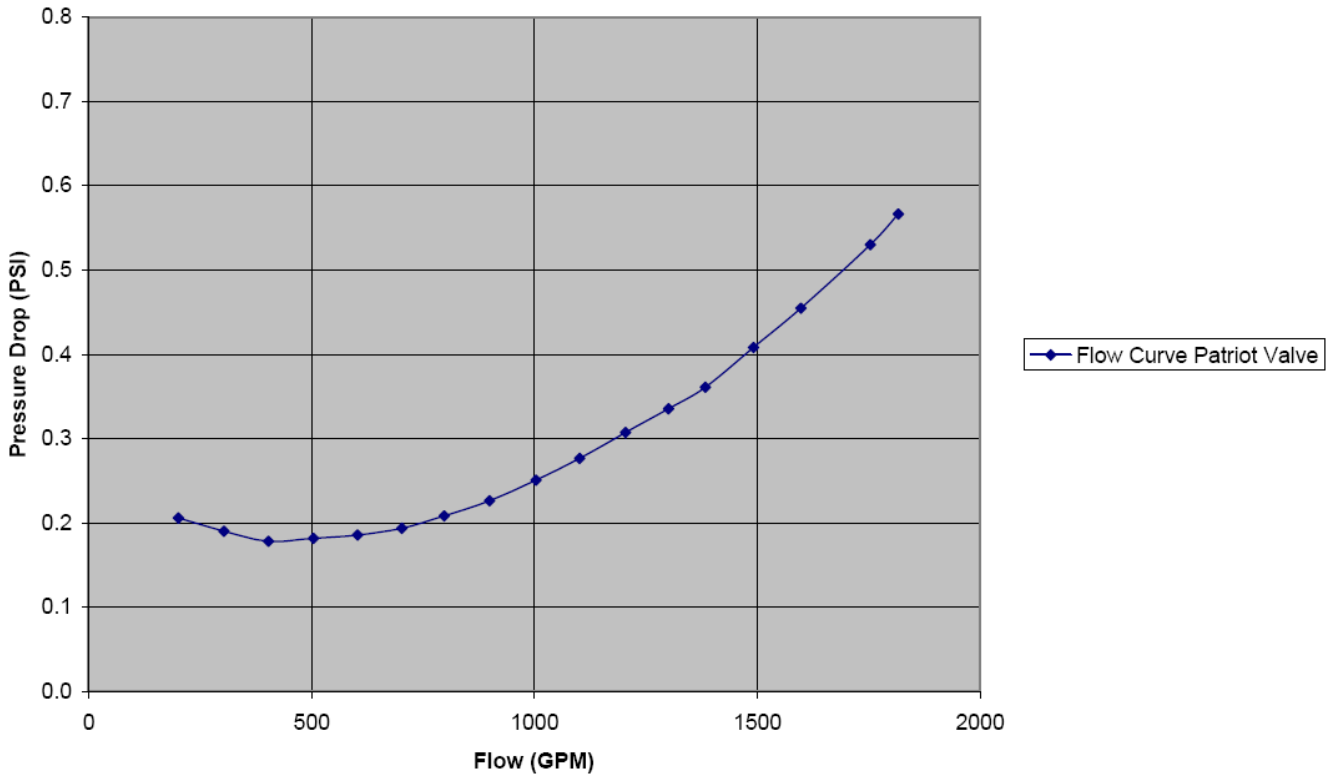
TABLE 1. TEST SUMMARY

5 1/4” Kennedy Hydrant	#1 Hydrant (no valve)	#2 Hydrant (with valve)	#3 Valve Only	
Pumper Nozzle (1000 gpm)[1]	2.75	2.66	0.25	Net psi loss
Pumper Nozzle (1500 gpm)[2]	6.19	5.99	0.41	Net psi loss
Single Hose (250 gpm)[3]	0.54	0.78	0.20	Net psi loss
Two Hoses (500 gpm)[4]	1.08	1.13	0.18	Net psi loss

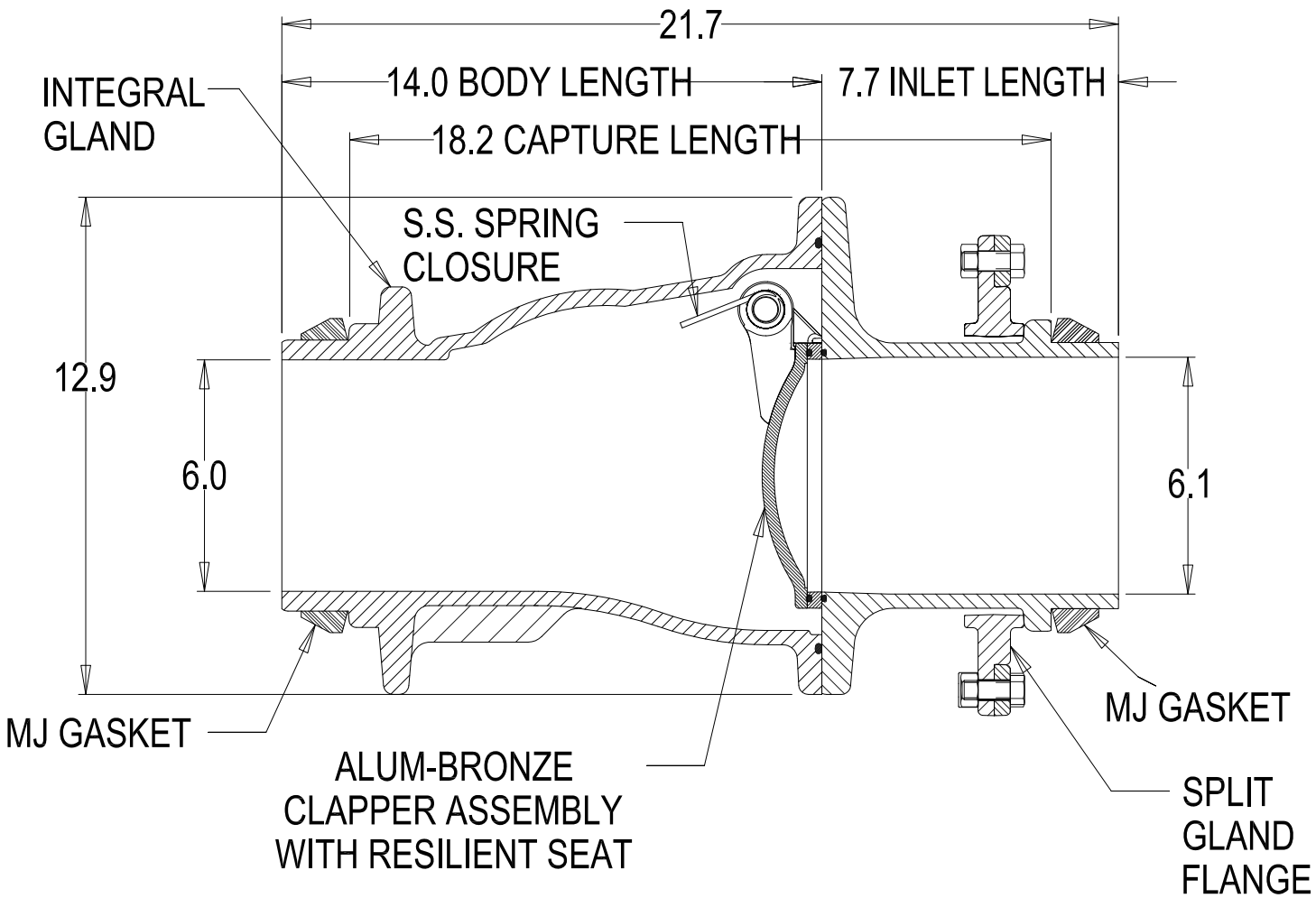
[1] AWWA C502-05 maximum permissible loss of 5 psi at 1000 gpm
[2] City of Houston maximum permissible loss of 8 psi at 1500 gpm
[3] AWWA C502-05 maximum permissible loss of 1 psi at 250 gpm
[4] AWWA C502-05 maximum permissible loss of 2 psi at 500 gpm
[5] City of Houston maximum permissible upstream pressure at 1500 gpm
[6] Static inlet pressure measured at centerline of inlet
Note: Testing was done at Utah Water Research Laboratory of Utah State University. High head pumps were used for these tests.

PATRIOT HYDRANT CHECK VALVE FLOW TEST 2009---Flow Curve Chart 4

(Data from Utah State University Hydraulics Lab---Test Report 681)



PATRIOT HYDRANT CHECK VALVE



M&H VALVE COMPANY ANNISTON,ALABAMA A DIVISION OF MCWANE INC.	DWN: TRIJ DATE: 1/1/11 DWG. NO. PATRIOT 1	6" PATRIOT HYDRANT CHECK VALVE