

SPECIFICATION FOR PROCUREMENT OF
HIGH PRESSURE INDUSTRIAL WATER (HPIW)
THIRTY (30) INCH WAFER CHECK VALVE
FOR SSC HPIW WATER PLANT B4400

11JFB-GM07
MARCH 2013
Revision 2

ISSUED CEF
APR 19 2013

PREPARED BY:


4/11/13

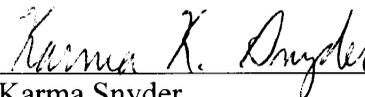
Doug Dike
Mechanical Engineer
Jacobs-FOSC

SUBMITTED BY:


4/12/13

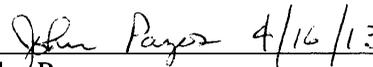
Michael T. Easley
Design Engineering Manager
O&M Test Group

APPROVED:



Karma Snyder
NASA

CONCURRENCE:


4/16/13

John Pazos
NASA

PREPARED BY:
Jacobs Technology
Stennis Space Center
Stennis Space Center, Mississippi 39529

Document History Log

Change/ Revision	Change Date	Originator/ Phone	Description
Basic	2/26/2013		
1	3/2013	Doug Dike/ ext. 8-2803	Completely revised and rewritten.
2	4/11/2013	Doug Dike ext. 8-2803	<p>Part 1.0 – Design Requirements Item f. – Flanges – Changed description to read “The check vave shall be flat face and shall mate with ASME B16.47 Class 300 flanges.”</p> <p>Part 2.0 – Non-Destructive Examination Changed NDE to read “Non-Destructive Examination (NDE) and NDT to read “Non-Destructive Testing (NDT)</p> <p>Part 2.2 – Shop Welds Deleted “If applicable” in first sentence</p> <p>Part 4.0 – Cleaning Changed definition.</p> <p>Part 6.2 – Welding Deleted “If applicable” in first sentence. Changed WPS/PQR to read “Welding Procedure Specification (WPS) / Procedure Qualification Record (PQR) in first sentence.</p>

**SPECIFICATION FOR 30 INCH
WAFER CHECK VALVE
11JFB-GM07**

1.0 DESIGN REQUIREMENTS

- a. Size/Type: 30" wafer check valve with full port and non-slam dual plates, Crane Duo Check Part Number 30" H30HMF or NASA-approved equal.
- b. Quantity: Ten (10) each
- c. Service: Water
- d. Design pressure/temperature: 300 psig at temperature range of 20 degrees F to plus 150 degrees F
- e. Material of construction: Body, cast iron per ASTM A126, Class 40. Dual plates, aluminum bronze per ASTM B148 (952). Trim, spring and trim, 316 stainless steel.
- f. Flanges: The check valve shall be flat face and shall mate with ASME B16.47 Class 300 flanges.
- g. Maximum allowable face to face dimension: 15.75 inches
- h. Seat: Buna-N (70 Durometer)
- i. Check valves shall have lifting lug(s) and no metric threads are allowed.

2.0 NON-DESTRUCTIVE EXAMINATION

Individuals performing any Non-Destructive Examination (NDE) shall be qualified for Non-Destructive Testing (NDT) Level II for each NDE process conducted in accordance with the ASNT CP-189. An NDE Specialist Level III shall interpret the results of any NDE examinations

2.1 CASTINGS

Pressure-containing castings shall be inspected by non-destructive examination. All castings shall be inspected by the following methods.

- a. Visual Examination (VT): Visually inspect 100% of the surfaces of all 10 castings. VT shall be performed as specified in MSS SP-55. The casting shall be free of the following: adhering sand, scale, cracks, and hot tears. Surfaces shall be repaired per standard shop procedures and a repair report shall be submitted to the Contracting Officer (CO).
- b. Radiographic Examination (RT): Casting shall be 100% inspected by RT. The following

apply to castings up to two (2) inches in thickness. The manufacturer shall advise the CO of any castings with thickness greater than two (2) inches. Procedures for RT examination shall be carried out in accordance with the ASTM E 94 and ASTM E 1030. Acceptance criteria: Radiographs shall be compared to reference radiographs in accordance with ASTM E 446. Acceptable severity levels of defects according to imperfection category shall be as follows:

Maximum Severity Level		
Imperfection Category	Casting Thickness <1 inch	Casting Thickness 1 inch to < 2 inch
A - Gas porosity	1	2
B - Sand and slag inclusion	2	3
C - Shrinkage (four types)	1	3
D - Cracks	0	0
E - Hot Tears	0	0
F - Inserts	0	0
G - Mottling	0	0

Rejected castings shall be replaced at no cost to the government.

2.2 SHOP WELDS

All welds shall meet the requirements of ASME Boiler and Pressure Vessel Code, Sections II, V, VIII Div. 1 and IX.

3.0 PAINTING

Check valves shall be primed and painted (2 coats) per the Manufacturer's standard shop practices.

4.0 CLEANING

Check valves shall be visually free of slag, water, rust, grit or other foreign solid particles and contain no visual sign of oil, grease or hydrocarbon.

5.0 TESTING

Testing shall be per AWWA C508, Section 5.2.

6.0 DOCUMENTATION

6.1 OUTLINE DRAWING AND MATERIAL CERTIFICATION

Twenty one (21) days ARO the Manufacturer shall submit an outline drawing that contains the face to face dimension, flange data, overall valve height, check valve weight, pressure rating of check valve, CV, check valve part number and code of construction.

6.2 WELDING

Twenty one (21) days ARO the Manufacturer shall submit its Welding Procedure Specification (WPS) / Procedure Qualification Record (PQR) for all welding processes used in the manufacturing of the valve. Welder certifications and NDE personnel ASNT certification shall also be submitted at this time.

6.3 ASSEMBLY DRAWING

Four weeks (4) before the check valves delivery the Manufacturer shall submit a cross section view of the check valve. The view shall contain parts call out and the material of the parts. Recommended spare parts shall be noted.

6.4 TESTING/INSPECTION/EXAMINATION PROCEDURES

Twenty one (21) days before any testing/inspection/examination is performed, the Manufacturer shall notify the Government. The Government at its option will provide a Government representative to witness any and/or all testing/examination. If the Government does not witness the radiographic inspection of the castings then the Manufacturer shall submit all radiographs to the CO for review and acceptance. The Government's NDE Level III representative shall have final acceptance of all testing/inspection/examination results.

6.5 OPERATIONS AND MAINTENANCE MANUAL

Two (2) weeks before delivery of the check valves, the Manufacturer shall submit three (3) copies of an Operations and Maintenance manual.

6.6 EXAMINATION/TEST REPORTS

Upon delivery of the check valves, the Manufacturer shall submit three (3) copies of all examination and test reports with the valve.

6.7 MATERIAL CERTIFICATIONS

The Manufacturer shall provide material certifications for all pressure retaining materials traceable to the check valve serial numbers. The Manufacturer shall submit certified mill test reports certifying that the casting materials meet the minimum chemical and material properties of material standards referenced herein. The chemical and material properties shall be obtained from test bars formed from the same heat as the casting.

6.8 PRODUCTION SCHEDULE

The Manufacturer shall submit to the CO a schedule of the production of the check valves. The schedule shall include procurement, major milestones and hold points. The schedule is to be updated and submitted to the CO on a monthly basis.

7.0 SHIPPING AND IDENTIFICATION

Each check valve shall be marked in accordance with MSS SP-25 and shall have the following information permanently attached to each check valve:

- Manufacturer's name
- Model number
- Serial number
- Nominal size
- Pressure rating
- Max Cv
- Proof Test Type/Pressure/Date
- Weight
- Flow direction arrow
- Valve's Code of Construction, if applicable.

8.0 MAINTENANCE

Design shall allow the check valves to be repaired to their initial operation and tightness. Manufacturer shall supply one (1) set of any special tooling required to disassembly and reassembly the valve for maintenance.

9.0 WARRANTY

Manufacturer shall provide a one year warranty.