



### INSPECTION REPORT

To:	XXXXXXXXXX	Attn:	XXXXXX
From:	Torika Inspection Service Co., Ltd	Report Date:	XXXXXX

Project No.:	: XXXXXXXXX
Vendor Name	: XXXXXXXXX
Factory Name	: XXXXXXXXX
Factory Address	: XXXXXXXXX
Order No. / PO No.	: XXXXXXXXX
Product description:	: valve
Inspection Date:	: XXXXXXXX

#### 01.0 Scope of Inspection:

(Brief description of details of inspections, tests etc. carried out/witnessed)

Equipment description:		
I.T.P. line number	Inspection Activity	Results
XXXXXX	Visual inspection / witness point	<input type="checkbox"/> Accepted without deviation <input checked="" type="checkbox"/> Accepted with deviation <input type="checkbox"/> Reject
XXXXXX	Dimensional inspection / witness point	<input checked="" type="checkbox"/> Accepted without deviation <input type="checkbox"/> Accepted with deviation <input type="checkbox"/> Reject
XXXXXX	Hydro test / witness point	<input checked="" type="checkbox"/> Accepted without deviation <input type="checkbox"/> Accepted with deviation <input type="checkbox"/> Reject

#### 2.0 Reason for visit

The purpose of this visit is to carry out the visual, dimension inspection and hydro test for 23 items of valve listed in PO XXXX according to purchaser order and specification.

#### 3.0 Documentation used

DOCUMENT NUMBER	REV. No.	TITLE	Approval Status
XXXXXXXXXX	X	ITP	By purchaser
XXXXXXXXXX	X	Drawings	By purchaser
MSS SP-55	X	Quality Standard for Steel Casting for Valve, Flanges and Fittings and Other Piping Components- visual Method for Evaluation of Surface Irregularities;	By purchaser
API 598	X	Valve Inspection and Testing	By purchaser

#### 4.0 Details of inspection performed

##### 4.1 Visual inspection:

According to inspection requirements sample at 10%, visual inspection was carried out item by item. Inspector checked the surface of the valve, found:

4.1.1 As per MSS SP-55 and relevant specifications, some defects and imperfections occurred on the castings, such as porosity, adhering sand and slag inclusions are not allowed. the valve has defect and imperfection was picked out



and repaired on site. For the slag inclusions, cleaning, welding and grinding were specified until they are accepted. For the adhering sand in the corner of the valve body, grinding were performed.

- 4.1.2 On the surface there are scale, it is caused during shot blasting they were not cleaned completely; as we know it will affect the adhesion of the paint; supplier arranged the worker to check and grind all of valves; after the supplier declared that all valves were finished reworking we checked again and found it was acceptable;
4.1.3 1 pieces of 8' 300LB gate valve item no 11 (CN25) and 2 pieces of 8' 300LB gate valve 40 (CN82, CN83) can't be opened completely; supplier promised to repair them, during next visit we will check them again;
4.1.4 1 piece of 4' 300LB gate valve item no 25 (CN45) the visual quality of welding seam between the seat to body is in poor condition, supplier disassembled and repaired it, after that this one was tested again, the result is acceptable;
4.1.5 For item 19 2' check valve 800LB there are burr and welding spray inside; supplier disassembled these 3 pieces valves to repair them and then tested them again;
4.1.6 For item 21 2' gate valve 800LB we found according to drawing one end should be NPT end while the actual one is both ends with SW end; also the disc can't be opened completely; supplier promised to do new ones to replace them, during next visit we will check them again;
4.1.7 Quantity was also checked according to the PO

Table with 4 columns: Item N°, Material Description, Qty Req'd, Qty Insp'd. Contains 35 rows of valve inspection data.

Remark: Visual Inspection Results: Satisfactory except point 4.1.3 and 4.1.6;

4.2 Dimensional inspection :

The inspector focused the dimensions indicated in the drawings. The length between flanges (face to face), thickness of the flange, bolts circle, nominal diameter and depth of the convex surface were all measured sampled at 10%.

Item 38 gate valve 2" (mm)

Table with 9 columns: Item No., NPS, L, D, D1, D2, b, t, Z-φd(mm). Contains 3 rows of dimensional data for item 38.



Item 4 check valve 6" (mm)

Item No.	NPS	L	D	D1	D2	b	t	Z-φd(mm)
Stand dimension	6'	444	320	269.9	215.9	35	2.0	12-φ22
CN07	152.0	445.0	320.0	270.0	216.0	35.7	2.1	12-22.0

Item 9 gate valve 4" (mm)

Item No.	NPS	L	D	D1	D2	b	t	Z-φd(mm)
Stand dimension	4'	229	230	190.5	157.2	22.3	2.0	8-19
CN14	102.0	230.0	229.0	190.5	157.1	24.0	2.0	8-19.0

Item 25 gate valve 4" (mm)

Item No.	NPS	L	D	D1	D2	b	t	Z-φd(mm)
Stand dimension	4'	305	255	200	157.2	30.2	2.0	8-22
CN45	101.8	305.6	254.5	200.3	157.2	31.0	2.3	8-22.0

Item 3 check valve 10" (mm)

Item No.	NPS	L	D	D1	D2	b	t	Z-φd(mm)
Stand dimension	10'	146	359	254	/	/	/	/
CN05	262	144.2	358.8	258				

Item 2 and 41 check valve 8" (mm)

Item No.	NPS	L	D	D1	D2	b	t	Z-φd(mm)
Stand dimension	8'	533	380	330.2	269.9	39.7	2.0	12-26
CN01	203.0	533.6	380.1	330.0	270.0	41.6	2.0	12-26.0
CN85	203.0	532.4	380.0	330.0	270.0	41.6	2.1	12-26.0

Item 23, 39, 6 and 34 gate valve 6" (mm)

Item No.	NPS	L	D	D1	D2	b	t	Z-φd(mm)
Stand dimension	6'	403	320	269.9	215.9	35	2.0	12-22
CN43	153.4	404.3	319.6	270.5	215.8	36.8	2.1	12-22.1
CN80	153.0	404.5	319.6	270.3	216.7	37.5	2.0	12-22.0
CN70	153.0	404.0	319.6	270.3	215.7	38.0	2.1	12-22.0
CN13	153.8	405.5	319.7	270.5	215.7	37.0	2.3	12-22.0

Item 40 and 11 gate valve 8" (mm)

Item No.	NPS	L	D	D1	D2	b	t	Z-φd(mm)
Stand dimension	8'	419	380	330.2	269.9	39.7	2.0	12-26
CN83	204.0	419.7	379.8	330.0	269.6	40.7	2.1	12-26
CN22	204.0	419.0	379.9	330.0	270.0	41.0	1.7	12-26.0

Results: According to ASME B16.5 and other relative standards the dimension inspection result is satisfactory



**Wall thickness examination**

As per the requirements of the standard ASME B16.34, API600, API594 and BS1868, the wall thickness examination is desired in this inspection activity. And according to inspection requirements sample at 10%, this inspection was carried out item by item, and the results are accepted.

The wall thickness of the castings was measured at different parts of the body. The following test results are for your reference

Item	Size inch	Point 1 (mm)	Piont 2 (mm)	Point 3 (mm)	Point 4 (mm)	Point 5 (mm)
CN76	2	10.7	10.5	11.0	9.7	9.7
CN07	6	16.5	17.8	16.6	16.5	17.7
CN14	4	13.9	11.5	13.2	11.8	14.1
CN45	4	13.1	13.8	12.7	13.2	13.0
CN01	8	18.2	19.6	17.5	17.5	18.0
CN85	8	20.5	19.9	19.4	22.2	20.6
CN43	6	16.2	16.4	16.0	17.3	17.4
CN83	8	19.4	20.9	20.7	19.2	18.2
CN80	6	17.5	16.8	18.2	16.0	16.3
CN17	10	21.4	24.9	23.8	22.9	23.3
CN417	10	22.3	24.2	26.9	27.2	23.5
CN22	8	23.0	18.1	20.8	18.6	19.9
CN70	6	18.2	20.4	19.8	17.9	19.3
CN13	6	18.7	18.1	18.4	20.2	20.9
CN25	10	23.6	23.2	26.4	26.1	24.0
CN75	10	22.8	19.1	21.0	20.6	19.2
CN05	10	20.3	20.7	19.8	20.8	19.3
CN73	10	20.3	21.7	20.9	22.6	24.5
CN62	12	21.8	22.8	27.0	26.1	23.3
CN30	2	13.4/ SW end	18.9/ body			
CN50	3/4	11.3/ SW end	13.6/ body			
CN53	3/4	11.6/ SW end	13.3/ body			
CN61	1	13.5/ SW end	15.5/ body			

Results: Satisfactory

**4.3 Hydraulic test:**

As per the requirements 10% of the valves were randomly selected for hydrostatic test, according to the specification of API 598 and drawings. The detailing test process is as the following:

Item No.	Size	Shell Test		Backseat & High-pressure closure		Low-pressure closure		Results
		medium	Mpa/Sec	medium	Mpa/Sec	medium	Mpa/Sec	
CN76	2	water	7.7/120	water	5.6/120	air	0.6/120	Pass
CN07	6	water	7.7/120	water	5.6/120	/	/	Pass
CN14	4	water	3.0/120	water	2.2/120	air	0.6/120	Pass
CN45	4	water	7.7/120	water	5.6/120	air	0.6/120	Pass
CN01	8	water	7.7/120	water	5.6/120	/	/	Pass
CN85	8	water	7.7/120	water	5.6/120	/	/	Pass
CN43	6	water	7.7/120	water	5.6/120	air	0.6/120	Pass
CN83	8	water	7.7/120	water	5.6/120	air	0.6/120	Pass
CN80	6	water	7.7/120	water	5.6/120	air	0.6/120	Pass
CN17	10	water	7.7/120	water	5.6/120	air	0.6/120	Pass
CN417	10	water	7.7/120	water	5.6/120	air	0.6/120	Pass
CN22	8	water	7.7/120	water	5.6/120	air	0.6/120	Fail
CN70	6	water	7.7/120	water	5.6/120	air	0.6/120	Pass



CN13	6	water	7.7/120	water	5.6/120	air	0.6/120	Pass
CN25	10	water	7.7/120	water	5.6/120	air	0.6/120	Pass
CN75	10	water	7.7/120	water	5.6/120	air	0.6/120	Pass
CN05	10	water	7.7/120	water	5.6/120	/	/	Pass
CN73	10	water	7.7/120	water	5.6/120	/	/	Pass
CN62	12	water	7.7/120	water	5.6/120	air	0.6/120	Pass
CN30	2	water	21.0/120	water	15.4/120	/	/	Pass
CN50	3/4	water	21.0/120	water	15.4/120	air	0.6/120	Pass
CN53	3/4	water	21.0/120	water	15.4/120	air	0.6/120	Pass
CN61	1	water	21.0/120	water	15.4/120	air	0.6/120	Pass

Note: item 11 8' 300LB gate valve CN 22 was found with leak during low pressure closure test from disc for there is one porosity on the disc; supplier repaired it and then all 5 pieces for this item were tested again by supplier, they were acceptable;

Results: Satisfactory

5.0. Result of Inspection

- Accepted without deviation
- Accepted with deviation (See Punch list)
- Rejected (See the deviation for Rejection)

6.0. Quality Records reviewed and attached:

1. MTC for the valves
2. Heat treatment report and record;
3. PWHT
4. The mill hydrostatic test records
5. Calibration Certificates
6. Punch list

7.0 Progress Status

After this inspection 3 items/6 pieces were held and supplier estimated to repair them within 15 days and the other ones were accepted, supplier will go to next step to clean and paint them;

8.0 Next Forecasted Inspection Date:

TBA

9.0 Attendees

- Mr. XXX supplier inspector
- Mr. XXX Vendor Inspector
- Mr. XXX TIS inspector on behalf of XXX

Any deviation & PUNCH attached : Yes <input checked="" type="checkbox"/> No, <input type="checkbox"/>	Punch No.: XXXX
IRN attached : Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	IRN No.:



**10. Photo Report**

	
	
	
<p>Gate valve</p>	<p>Life check valve</p>

TIS Sample Report

	
<p>Wafer swing check valve</p>	<p>Marking inspection;</p>
	
<p>Marking inspection;</p>	<p>Marking inspection;</p>
	
<p>Marking inspection;</p>	<p>porosity on body;</p>



	
Porosity on body.	Scale on body.
	
Poor welding quality inside;	spray inside and poor welding;
	
Wrong end for item 21	Valve can't be opened completely



	
<p>Valve can't be opened completely</p>	<p>Flexible Wedge;</p>
	
<p>Leakage from porosity on disc;</p>	<p>Repairing the valve by grinding;</p>
	
<p>Repairing the valve by grinding;</p>	<p>Repairing the valve;</p>

	
<p>Repairing the valve;</p>	<p>Dimension inspection;</p>
	
<p>Dimension inspection;</p>	<p>valve thickness inspection;</p>
	
<p>Pressure test;</p>	<p>Pressure test;</p>



Showing the seat closure tests.



Showing the shell test.



Showing the air closure test.



Checking leakage on backseat;



Checking leak during air closure test;



Checking leak during high seat closure tests.

Prepared by : xxxx

Signed: xxx

Date: xxxxx

Reviewed by : xxxxx