



INSPECTION REPORT

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

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

01.0 Scope of Inspection:

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

Equipment description:	Valve	
I.T.P. line number	Inspection Activity	Results
XXXXXX	Visual quality check	<input checked="" type="checkbox"/> Accepted without deviation <input type="checkbox"/> Accepted with deviation <input type="checkbox"/> Reject
XXXXXX	Dimension check	<input checked="" type="checkbox"/> Accepted without deviation <input type="checkbox"/> Accepted with deviation <input type="checkbox"/> Reject
XXXXXX	Nameplate check	<input checked="" type="checkbox"/> Accepted without deviation <input type="checkbox"/> Accepted with deviation <input type="checkbox"/> Reject
XXXXXX	Witness test	<input checked="" type="checkbox"/> Accepted without deviation <input type="checkbox"/> Accepted with deviation <input type="checkbox"/> Reject
XXXXXX	Document review	<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 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 Quantity check

4.1.1 Method of quantity check

→ [check the items one by one]

No.	Description	REQ. Q'ty	ACT. Q'ty	Valve No.
1	Vanne à boisseau sphérique DN 16" Passage intégral RTJ #600	2	2	16031253-1 16031254-1
2	Vannes à boisseau sphérique DN 16"x12" Passage réduit BW #600	2	2	16031251-1 16031252-1
3	Vanne à boisseau sphérique DN 10"x8" Passage réduit BW/RTJ #600	1	1	16031257-1
4	Vanne à boisseau sphérique DN 16"x12" Passage réduit BW/RTJ #600	2	2	16031255-1 16031256-1
5	Vanne à boisseau sphérique DN 4"x3" Passage réduit BW/RTJ #600	13	13	160312510-1~13
6	Vanne à boisseau sphérique manuelle DN 4"x3" Passage réduit RTJ # 600	5	5	160312511-1~5
7	Vanne à boisseau sphérique DN 8"x6" Passage réduit RTJ/RTJ # 600	1	1	16031258-1
8	Vanne à boisseau sphérique DN 8"x6" Passage réduit BW/RTJ # 600	2	2	16031259-1~2
9	Clapet de retenu anti retour DN 16" RTJ # 600	2	2	160312514-1~2
10	Clapet de retenu anti retour DN 28" RTJ # 600	1	1	160312513-1
11	Clapet de retenu anti retour DN 8" RTJ # 600	1	1	160312515-1
12	Clapet de retenu anti retour DN 4" RTJ # 600	1	1	160312516-1
13	Robinet à soupape disque parabolique DN 4" RTJ # 600	10	10	160312517-1~10
14	Vanne à boisseau sphérique DN 2"x 1 1/2" Passage réduit RTJ # 600	10	10	160312512-1~10

4.2 Visual quality check

4.2.1 Sample size: [100%]

During the inspection, visual quality inspection for all 53 valves was conducted, details as follows:

- Valves are newly fabricated;
- Main parts of ball valves are made of forgings, either flange connected or welded;
- Main parts of check and globe valves are made of castings, visual quality check as per MSS SP55, no crack, shrinkage, sand hole, porosity, etc.;
- Traceability for main parts is checked satisfactory, heat No. for body/bonnet/disc/cover is clearly indicated;
- Used bolt/nut is randomly verified complying to provided DWG;
- Flow direction for globe and check valve is available on the valve body;
- Weld appearance for ball valves (body/bonnet/extended pipe): no obvious defect such as crack, porosity, overlap, undercut and insufficient penetration, etc.;
- For DN 16" RTJ #600 passage intergral+motorisation GOV, DN 16" X12" BW #600 passage reduit+motorisation GOV and DN 10" X8" RTJ&BW #600 passage reduit+motorisation GOV, actual location & orientation of vent/drain valve and sealant injection valve is deviated from provided DWG AQ1505097, this deviation was later accepted by client.

Remark: the result is acceptable.

4.3 Nameplate check

4.3.1 Sample size: [100%]

Remark:

- The information in the name plate comply the request listed in the darwing;
- The result is acceptable.

4.4 Dimension check

4.4.1 Sample size: [10%, total 14pcs]

4.4.2 Reference document: [drawing provided by FZV, API6D, ASME B16.10 and ASME B16.5]

Unit: mm

- Item 1-1/2-1, Ball valve, DN 16" RTJ #600 GOV, Sampled valve No. 16031254-1

Dim.	L (±3)	D	P (±0.5)	R	C (±1.5)	O (+4)	T (+3)	n-d
Req.	994	385	469.9	508	603.2	685	76.2	20-41
Act.	994	385.5	470.0	508	603	684.5	77.5	20-41
Dim.	E	J	H	h				
Req.	90	95	25	7.92				
Act.	90	100	25	7.9				

Note: According to provided DWG, specified J=95mm based on one key assembled on the shaft end, while actually there are 2 opposite keys machined on the shaft end, measured dimension J=100mm, it's accepted by client later.

- Item 1-2/2-2, Ball valve, DN 16" X12" BW #600 GOV, Sampled valve No. 16031252-1

Dim.	L (±3)	L1	D	D1	A	B	SCH	E
Req.	991	500	303	385	406.4	387.4	9.52	80
Act.	993	500	303	384	406.8	386.8	10.0	80
Dim.	J	H1	H	α				
Req.	85	22	2500	37.5				
Act.	85	22	2491	37.5				

- Item 1-3, Ball valve, DN 10" X8" RTJ&BW #600 GOV, Sampled valve No. 16031255-1

Dim.	L (±2)	D	D1	P (±0.5)	R	C (±1.5)	O (+4)	T (+3)
Req.	788.5	201	252	323.85	356	431.8	510	63.5
Act.	788.5	200.5	250	323.8	356	432	510	65
Dim.	n-d	L1	A	E	J	H	Sch	h
Req.	16-35	500	273	50	53.5	14	9.27	7.92
Act.	16-35	500	274	50	53.5	14	11.0	8.0
Dim.	α							
Req.	37.5							
Act.	37.5							

- Item 1-4/2-3, Ball valve, DN 16" X12" RTJ&BW #600, Sampled valve No. 16031257-1

Dim.	L (±3)	D	D1	P (±0.5)	R	C (±1.5)	O (+4)	n-d
Req.	992.5	303	385	469.9	508	603.2	685	20-41
Act.	993.5	303.5	387	469.9	508	603.5	684.5	20-41
Dim.	E	T (+3)	A	L1	Sch	h	Sch	α
Req.	7.92	76.2	406.4	500	9.52	7.92	9.52	37.5
Act.	8.0	78	406.4	500	10.0	7.9	10.0	37.5

- Item 1-7/2-6/4-2, Ball valve, DN 4" X3" RTJ&BW #600, Sampled valve No. 160312510-10&12

Dim.	L (±2)	D	D1	P (±0.5)	R	C (±1.5)	O (+2)	T (+3)
Req.	433.5	74	100	149.23	175	215.9	275	38.1
Act.	434.5	74	100	149.2	175	216	275	40.0/40.3
Dim.	n-d	A	L1	Sch	h	α		
Req.	8-25.5	114.3	500	6.02	7.92	37.5		
Act.	8-25.5	114.3	500	6.4	7.9	37.5		

- Item 1-11/2-7/2-11/4-1, Ball valve, DN 4" X3" RTJ #600, Sampled valve No. 160312511-1

Dim.	L (±2)	D	D1	P (±0.5)	R	C (±1.5)	O (+2)	n-d
Req.	435	76	100	149.23	175	215.9	275	8-22.5
Act.	436	76	100	149.2	175	216	274.5	8-23
Dim.	T (+3)	h						
Req.	38.1	7.92						
Act.	39	7.9						

- Item 2-5, Ball valve, DN 4" X3" RTJ #600, Sampled valve No. 16031258-1

Dim.	L (±2)	D	D1	P (±0.5)	R	C (±1.5)	O (+4)	n-d
Req.	663	151	202	269.88	302	349.2	420	12-32
Act.	664	150	202	269.9	302	349	420	12-32.5
Dim.	T (+3)	E	J	H1	h			
Req.	55.6	47	50.5	14	7.92			
Act.	56	47	50.5	14	7.9			

- Item 3-1, Ball valve, DN 8" X6" RTJ #600, Sampled valve No. 16031259-1

Dim.	L (±2)	D	D1	P (±0.5)	R	C (±1.5)	O (+4)	T (+3)
Req.	661.5	150	201	269.88	302	349.2	420	55.6
Act.	663	150	201	270.0	302	348.5	420	57
Dim.	n-d	A	L1	Sch	h	α		
Req.	12-32	219.1	500	8.18	7.92	37.5		
Act.	12-32	220	500	9.0	8.0	37.5		

- Item 1-5/2-4, Check valve, DN 16" RTJ #600, Sampled valve No. 160312514-2

Dim.	L (±3)	D	P (±0.5)	R (±0.5)	C (±1.5)	O (+4)	T (+3)	n-d
Req.	994	375	469.9	508	603.2	685	76.2	20-41
Act.	995	390	470.0	508.5	603.5	684.5	77.4	20-41
Dim.	h							
Req.	7.92							
Act.	7.9							

Note: Valve bore diameter D is specified as 375mm, actual measured result is 390mm, it's accepted by client via email.

- Item 1-6, Check valve, DN 28" RTJ #600, Sampled valve No. 160312513-1

Dim.	L (±3)	D	P (±0.5)	R (±0.5)	C (±1.5)	O (+4)	T (+5)	n-d
Req.	1613	684	800.1	861	965.2	1075	111.2	28-54
Act.	1614	682.5	800.0	861	966	1074	114	28-54
Dim.	h							
Req.	7.92							
Act.	7.9							

➤ Item 3-2, Check valve, DN 8" RTJ #600, Sampled valve No. 160312515-1

Dim.	L (±2)	D	P (±0.5)	R (±0.5)	C (±1.5)	O (+4)	T (+3)	n-d
Req.	663	207	269.88	302	349.2	420	55.6	12-32
Act.	665	209	270.0	302	348.5	420	56.5	12-32
Dim.	h							
Req.	7.92							
Act.	7.9							

➤ Item 4-3, Check valve, DN 4" RTJ #600, Sampled valve No. 160312516-1

Dim.	L (±2)	D	P (±0.5)	R (±0.5)	C (±1.5)	O (+4)	T (+3)	n-d
Req.	435	104	149.23	175	215.9	275	38.1	8-25.5
Act.	436	105	149.2	175	216	275	40	8-25.5
Dim.	h							
Req.	7.92							
Act.	7.9							

➤ Item 1-8/2-12/2-8/1-12, Check valve, DN 4" RTJ #600, Sampled valve No. 160312517-1

Dim.	L (±2)	D	P (±0.5)	R (±0.5)	C (±1.5)	O (+2)	T (+3)	n-d
Req.	435	102	149.23	175	215.9	275	38.1	8-25.5
Act.	435	102	149.2	175	216	275	40	8-25.5
Dim.	h							
Req.	7.92							
Act.	7.9							

Remark: the result is acceptable.

4.5 Witness testing

[pressure test]

4.5.1 Sample size: [10%, total 14pcs, sampled valve No. refer to Dimension Check]

4.5.2 Reference document: [drawing provided by SRL, API 6D, API 598]

- Pressure test for below sampled valves was conducted under inspector's witness, including shell test, backseat test (apply to globe valve), high pressure closure test and low pressure closure test (not applicable to check valve);
- For ball and check valve, test per API 6D;
- For globe valve, test per API 598;
- Water is used for shell test, backseat test and high pressure closure test, air is used for low pressure closure test;
- Test temperature is ambient;
- All used pressure gauges for test were verified calibration valid;
- Details are as follows:

	Shell Test (MPa)			Backseat Test (MPa)			High Pressure Seat Test (MPa)			Low Pressure Seat Test (MPa)		
	P	Time	Result	P	Time	Result	P	Time	Result	P	Time	Result
1	15.4	15 min	OK	N/A	N/A	N/A	11.25	5 min	OK	0.6	5 min	OK
2	15.4	15 min	OK	N/A	N/A	N/A	11.25	5 min	OK	0.6	5 min	OK
3	15.4	5 min	OK	N/A	N/A	N/A	11.25	5 min	OK	0.6	5 min	OK
4	15.4	15 min	OK	N/A	N/A	N/A	11.25	5 min	OK	0.6	5 min	OK
5	15.4	2 min	OK	N/A	N/A	N/A	11.25	2 min	OK	0.6	2 min	OK
6	15.4	2 min	OK	N/A	N/A	N/A	11.25	2 min	OK	0.6	2 min	OK
7	15.4	5 min	OK	N/A	N/A	N/A	11.25	5 min	OK	0.6	5 min	OK
8	15.4	5 min	OK	N/A	N/A	N/A	11.25	5 min	OK	0.6	5 min	OK



9	14.4	15 min	OK	N/A	N/A	N/A	10.6	5 min	OK	N/A	N/A	N/A
10	14.4	30 min	OK	N/A	N/A	N/A	10.6	5 min	OK	N/A	N/A	N/A
11	14.4	5 min	OK	N/A	N/A	N/A	10.6	5 min	OK	N/A	N/A	N/A
12	14.4	2 min	OK	N/A	N/A	N/A	10.6	2 min	OK	N/A	N/A	N/A
13	14.4	60 Sec	OK	10.6	60 Sec	OK	10.6	60 Sec	OK	0.6	60 Sec	OK
14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

[operation test]

4.5.3 Sample size: [10%, total 14pcs]

The operation test was carried out as following steps:

- Firstly, close and open valve several times with work pressure, no abnormal findings;
- Secondly, close and open valve several times without pressure, no abnormal findings;

[torque test]

4.5.4 Sample size: [10%, total 14pcs]

4.5.5 Reference document: [drawing provided by SRL, API 6D]

- Torque test (break to open) for motorized ball valves was conducted at the shop under witness of inspector, the result will be recorded by Fangzheng and will be reported to client for reference separately.

Remark: The result is acceptable.

5.0. Result of Inspection

- ☒ Accepted without deviation
 ☐ Accepted with deviation (See Punch list)
 ☐ Reject (See the deviation for Rejection)

6.0. Quality Records reviewed and attached:

Type 3.1 certificate for valves, main parts including body, bonnet, ball, stem, seat, disc, pin, bolt and nut;
 MTC for raw materials of main valve parts including forgings and castings;
 Valve Pressure Test Certificate;
 Report of Radiographic Examination (for welds of body-pipe)
 Ultrasonic Test Report (for welds of body-bonnet)
 Liquid Penetration Test Report (for welds of body-bonnet)
 Liquid Penetration Test Report (for overlay of discs of check/globe valves)
 Dimension and Visual Inspection Report
 Fully Welded Ball Valve Operation Instruction
 All above documents were signed of and stamped.
Remark: the result is acceptable.

7.0 Progress Status

After the inspection the valves were ready to next step;

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 type="checkbox"/> No, <input checked="" type="checkbox"/>	Punch No.: NA
IRN attached : Yes <input type="checkbox"/> No, <input checked="" type="checkbox"/>	IRN No.: NA

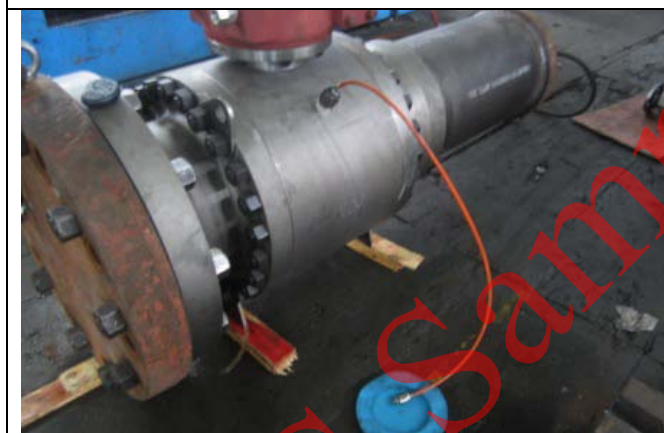
10. Photo Report



Valves ready for inspection



Valves ready for inspection



Low pressure seat test for ball valve



Pressure test for globe valve



Torque check



Pressure test for check valve

	
<p>Pressure test for ball valve</p>	<p>Typical marking on valve body</p>
	
<p>Typical weld appearance</p>	<p>Typical marking on valve body</p>
	
<p>Used bolt/nut (L7/7) complying to provided DWG</p>	<p>Extended API 5L pipe complying to provided DWG</p>

	
<p>Valve end (BW) is properly beveled</p>	<p>Dimensional inspection</p>
	
<p>Drain valve at the bottom, deviated from DWG, accepted by client (DN 16" RTJ #600 passage intergral+motorisation GOV)</p>	<p>All 3 sealant injection valves located on back side, deviated from DWG, accepted by client (DN 16" X12" BW #600 passage reduit+motorisation GOV)</p>
	<p>NA</p>
<p>2 opposite key slots on the shaft end, deviated from DWG, accepted by client (DN 16" RTJ #600 passage intergral+motorisation GOV)</p>	<p>NA</p>



Troika Inspection Service

Your Quality Solution Partner

Report No.: XXXX

Prepared by : xxxx Signed: xxx Date: xxxxx	Reviewed by : xxxxx
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TIS Sample Report