

# Test Certificate

Certificate No.: 1611-089-229 A12

Page 1 of 1

We hereby certify that the item in the following was witnessed by our Inspector.

Client: LISHUI OUYI VALVE CO., LTD.

Address: #799-1 Jinniu Street, Bihu Industrial Zone Lishui, Zhejiang People's Republic of China

Place of test: Wenzhou City, Zhejiang Province, ChinaDate of test: July 14<sup>th</sup>, 2016Description: Ball Valve

Valve type	2" ANSI 600. RF. Trunnion Ball Valve
Drawing No.	OY20160624

Valve Materials:

Body	ASTM A105
Stem	ASTM A105+ENP
Gasket	SS304 + Graphite
Packing	Graphite

### Scope of Inspection and Testing:

- 1) Witness the FE test in accordance with ISO 15848-1, CO1, Class BH at Rt & 200 °C Thermal cycles.

### Result(s) of Inspection and Testing:

FE test was carried out in accordance with ISO 15848-1(2015), at the presence of DNV.GL inspector and all requirements of specification were met.

Note: Rt means Room temperature.

Place and date  
Shanghai, China, 2016-7-14,

Stamping

*Andy Chen*

Inspection Senior Engineer to DNV.GL  
(Suzhou Office Leader)



# Test Certificate

Certificate No.: 1611-089-229 A13

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We hereby certify that the item in the following was witnessed by our Inspector.

Client: LISHUI OUYI VALVE CO., LTD.

Address: #799-1 Jinniu Street, Bihu Industrial Zone Lishui, Zhejiang People's Republic of China

Place of test: Wenzhou City, Zhejiang Province, ChinaDate of test: July 14<sup>th</sup>, 2016Description: Ball Valve

Valve type	2" ANSI 1500. RF. Trunnion Ball Valve
Drawing No.	OY20160625

Valve Materials:

Body	ASTM A105
Stem	17-4PH
Gasket	SS304 + Graphite
Packing	Graphite

## Scope of Inspection and Testing:

- 1) Witness the FE test in accordance with ISO 15848-1, CO1, Class BH at Rt & 200 °c Thermal cycles.

## Result(s) of Inspection and Testing:

FE test was carried out in accordance with ISO 15848-1(2015), at the presence of DNV.GL inspector and all requirements of specification were met.

Note: Rt means Room temperature.

Place and date  
Shanghai, China, 2016-7-14,

*Andy Chen*

Inspection Senior Engineer to DNV.GL  
(Suzhou Office Leader)

Stamping



# Test Certificate

Certificate No.: 1611-089-229 A14

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We hereby certify that the item in the following was witnessed by our Inspector.

Client: LISHUI OUYI VALVE CO., LTD.

Address: #799-1 Jinniu Street, Bihu Industrial Zone Lishui, Zhejiang People's Republic of China

Place of test: Wenzhou City, Zhejiang Province, China

Date of test: July 14<sup>th</sup>, 2016

Description: Ball Valve

Valve type	8" ANSI 1500. RF. Trunnion Ball Valve
Drawing No.	OY20160626

Valve Materials:

Body	ASTM A105
Stem	ASTM A105+ENP
Gasket	SS304 + Graphite
Packing	Graphite

**Scope of Inspection and Testing:**

- 1) Witness the FE test in accordance with ISO 15848-1, CO1, Class BH at Rt & 200 °c Thermal cycles.

**Result(s) of Inspection and Testing:**

FE test was carried out in accordance with ISO 15848-1(2015), at the presence of DNV.GL inspector and all requirements of specification were met.

Note: Rt means Room temperature.

Place and date  
Shanghai, China, 2016-7-14,

Stamping

*Andy Chen*

Inspection Senior Engineer to DNV.GL  
(Suzhou Office Leader)



ANNEX TO VALVE FIRE TEST CERTIFICATE

Certificate No. : 1611-075-218 A15-3

Page 2 of 2

**Valve Inspection & Testing**

The fire-tested valve has passed all the requirements of production pressure test to API 607 sixth Edition, Sept. 2010 and ISO 10497 third Edition, Feb. 2010

**Associated Documentation:**

1. Test Pressure during burn and Cool down: 7.5 Mpa
2. Temperature recorded 2 minutes after beginning and the remaining time throughout duration of test, with individual records for each thermocouple:

Colorimeter No.	Location placed	Temperature record	Remark
Thermocouple 1#	Bottom of body	2 minutes after beginning: 815.5°C Balance duration time: 808°C-858°C	Satisfactory
Thermocouple 2#	Flank of body	2 minutes after beginning: 820.5°C Balance duration time: 810°C-860°C	Satisfactory
Calorimeter cube 1#	Stem	Above 650°C 14.5 minutes	Satisfactory
Calorimeter cube 2#	Bottom of body	Above 650°C 15 minutes	Satisfactory

3. Through-seat Leakage during Burn: 120 ml/min
4. External Leakage during Burn and cool down: 56 ml/min
5. Time required for valve to cool to 100 deg C: 5 min
6. Through-seat Leakage (low pressure test): 20 ml/min
7. Valve was operated to fully open position Yes
8. External leakage in open position 5 ml/min
9. Valve is bi-directional and passed in both directions: Yes

Results: The tested valve Complies with international standards as mentioned in this certificate.

Stamping

*Andy chen*

Inspection Senior Engineer to DNV.GL  
(Suzhou Office Leader)

Place /Date: 2016-6-22



ANNEX TO VALVE FIRE TEST CERTIFICATE

Certificate No. : 1611-075-218 A16-3

Page 2 of 2

**Valve Inspection & Testing**

The fire-tested valve has passed all the requirements of production pressure test to API 607 sixth Edition, Sept. 2010 and ISO 10497 third Edition, Feb. 2010

**Associated Documentation:**

1. Test Pressure during burn and Cool down: 18.6 Mpa
2. Temperature recorded 2 minutes after beginning and the remaining time throughout duration of test, with individual records for each thermocouple:

Colorimeter No.	Location placed	Temperature record	Remark
Thermocouple 1#	Bottom of body	2 minutes after beginning: 815.5°C Balance duration time: 808°C-858°C	Satisfactory
Thermocouple 2#	Flank of body	2 minutes after beginning: 820.5°C Balance duration time: 810°C-860°C	Satisfactory
Calorimeter cube 1#	Stem	Above 650°C 14.5 minutes	Satisfactory
Calorimeter cube 2#	Bottom of body	Above 650°C 15 minutes	Satisfactory

3. Through-seat Leakage during Burn: 110 ml/min
4. External Leakage during Burn and cool down: 60 ml/min
5. Time required for valve to cool to 100 deg C: 5 min
6. Through-seat Leakage (low pressure test): 20 ml/min
7. Valve was operated to fully open position Yes
8. External leakage in open position 15 ml/min
9. Valve is bi-directional and passed in both directions: Yes

Results: The tested valve Complies with international standards as mentioned in this certificate.

Stamping

*Andy Chen*

Inspection Senior Engineer to DNV.GL  
(Suzhou Office Leader)



Place /Date: 2016-6-22