ZERTIFIKAT ◆ CERTIFICATE ◆ 認証書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

CERTIFICATE

(Certificate of conformity with technical requirements in:)

API SPEC 6FA FIFTH EDITION, MAY 2020

Certificate No.: 335549

Ref. Test report No.: 335548

Name and address of manufacturer: **HUNAN CIS FLUID CONTROL EQUIPMENT CO.,LTD.**
No. 102, Changjiang Avenue, Yangshu Port Area, Yongji Township, Yueyang Area, China (Hunan) Pilot Free Trade Zone

We hereby certify that the fire test on below valves have been conducted at the laboratory designated by manufacturer and witnessed by TÜV inspector according to requirements of API SPEC 6FA FIFTH Edition, MAY 2020 manufacturer' s special requirements. The testing results of valves meet the requirements of API SPEC 6FA FIFTH Edition, MAY 2020.

1. Description of Test Valve :

Type of Test Valve	NPS8 Class600 Trunnion Ball Valve
Description of Valve	NPS8 Class600 Trunnion Ball Valve
Valve Size (NPS)	8
Pressure Rating (Class)	Class 600
Valve Body Material	ASTM A105

2. Qualified Range of Valves :

Type	Trunnion Ball Valve
Description of Valves	Trunnion Ball Valves
Qualified Sizes (NPS) *(according to API 6FA Table 4)*	8" and larger
Qualified Pressure Ratings (Class) *(according to API 6FA Table 6)*	Class 600; Class 900
Qualified Marking *(according to API 6FA Para.4.5)*	The Manufacturer shall make sure the valves are fabricated, qualified and marked as per API 6FA
Remark: the technical data of test valve see back of this certificate appendix 1.	

This certificate is issued according to API SPEC 6FA FIFTH EDITION, MAY 2020, based upon the result of testing report on above mentioned test valve. The additional valves qualification shall be limited on similar valves of same basic design as the test valve and same nonmetallic materials as the test valve in the seat-to-closure member seal, seat-to-body seal, stem seal, and body joint and seal according to API SPEC 6FA FIFTH EDITION, MAY 2020, Para.5.

Shanghai, Mar. 8, 2026
(Place, date)

Xie Zhenrong
TÜV SÜD Certification and Testing (China) Co., Ltd

No.151, Hengtong Road
200070 Shanghai P.R.China

Appendix 1:

Certificate No.: 335549

Ref. Test report No.: 335548

Name and address of manufacturer: **HUNAN CIS FLUID CONTROL EQUIPMENT CO.,LTD.**
No. 102, Changjiang Avenue, Yangshu Port Area, Yongji Township, Yueyang Area, China (Hunan) Pilot Free Trade Zone

Technical Data of Valve

1. Type of Test Valve: NPS8 Class600 Trunnion Ball Valve

2. Description of Test Valve: NPS8 Class600 Trunnion Ball Valve

3. Details of Valve:

Valves Size (NPS) / Material / Part Name	8”
Bonnet	A105
Body	A105
Ball	304
Seat	304
Seat inclined-edge Graphite Ring	Low-density Flexible Graphite
Gland	A105
Packing	Flexible Graphite
Bolt	Carbon Steel Grade 8.8
Nut	Carbon Steel Grade 8
Stem	17-4PH
Design Drawing No.:	Q-6$_B$47Y-CL600C NP8.00

Shanghai, Mar. 8, 2026
(Place, date)

Xie Zhenrong
TÜV SÜD Certification and Testing (China) Co., Ltd

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TÜV SÜD Certification and Testing (China) Co., Ltd
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Shanghai 200070 P.R.China

Test Report

(Fire test for valves according to API SPEC 6FA, FIFTH EDITION, MAY 2020)

Certificate No.:335549
Test Report No.:335548

Applicant / Manufacturer: **HUNAN CIS FLUID CONTROL EQUIPMENT CO.,LTD.**
No. 102, Changjiang Avenue, Yangshu Port Area, Yongji Township, Yueyang Area, China (Hunan) Pilot Free Trade Zone

Inspection body: TÜV SÜD Certification and Testing (China) Co., Ltd

Floor 3-13, No.151, Heng Tong Road, Shanghai, P. R. China

Lab of Test: Lishui Valve Lab Technical Co., Ltd.

Test Date: Mar.05.2026

Description of valves: Trunnion Ball Valve

Size:NPS8

Pressure Rating:Class600

Drawing No.:Q-6$_B$47Y-CL600C NP8.00

Test Witnessed By: Wang Zhongxiang / TÜV SÜD Inspector

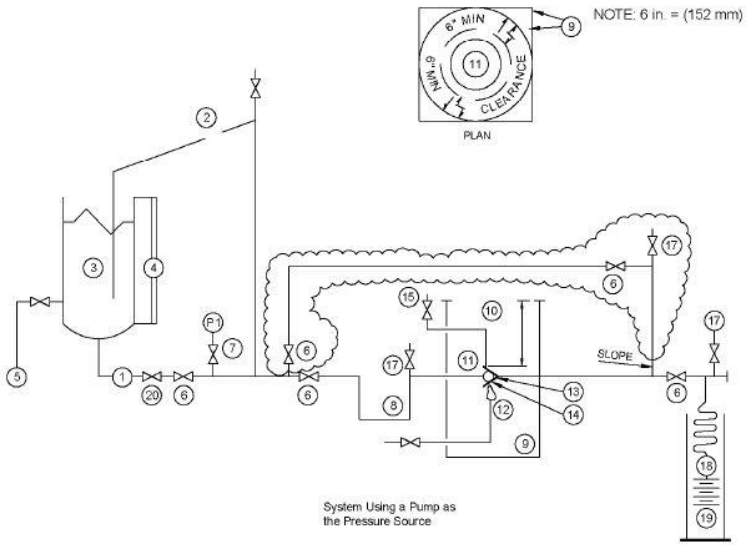
TÜV SÜD Certification and Testing (China) Co., Ltd
Shanghai Office
Floor 3-13, No.151, Heng Tong Road,
Shanghai 200070 P.R.China

Inspection and Tests

1. Conformity of Equipment

The test equipment was verified by TÜV SÜD inspector according to requirements of API SPEC 6FA FIFTH EDITION, MAY 2020, Para 4.3 and found satisfactory. The detail arrangement of the fire-test equipment is shown below:

Figure 1 Typical Fire-Test System Using a Pump as the Pressure Source



Legend

1.Pressure source
2.Pressure regulator and relief
3.Vessel for water
4.Calibrated sigh gauge
5.Water supply
6.Shutoff Valve
7.Pressure gauge
8.Piping arranged to provide vapor trap
9.Enclosure for test –horizontal clearance between any part of the valve and the closure shell shall be 6 in. (152mm) above
10.Minimum height of enclosure shall be 6 in.(152mm) above the top of the valve
11.Test valve mounted horizontally with stem in horizontal position
12.Fuel gas supply to burners
13.Calorimeter-1½ " in. cubes
14.Flame temperature thermcouples
15.Pressure gauge and relief valve connected to center cavity of valve
16.Shutoff valve
17. Vent valve
18. Condenser
19. Calibrated container.
20.Check valve
21.Bypass line (items within shaded area)

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2. Calibration of measurement and test instrument

The measurement and test instrument have been properly calibrated such as pressure gauge, therm-couples, etc.

3. Technical Data of Test Valve: Description of test valve

a) Description of test valve

Type of Test Valves	NPS8 Class600 Trunnion Ball Valve
Description of Valves	NPS8 Class600 Trunnion Ball Valve
Pressure Rating, Class	Class600
Valve Size, NPS	NPS8
Face to Face	ANSI B16.10
Designed Standard	API 6D

b) Details of technical data on test valve

Part Name	Materials
Bonnet	A105
Body	A105
Ball	304
Seat	304
Seat inclined-edge Graphite Ring	Low-density Flexible Graphite
Gland	A105
Packing	Flexible Graphite
Bolt	Carbon Steel Grade 8.8
Nut	Carbon Steel Grade 8
Stem	17-4PH
Design Drawing No.:	Q-6_B47Y-CL600C NP8.00

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4. Visual and dimensional Check on Valve Specimen:

The specimen valve was chosen at random by the manufacturer in its workshop and submitted to the laboratory. The visual and dimensional check was performed according to drawing No.Q-6B47Y-CL600C NP8.00 and results found satisfactory. The mark was verified on valve as following:

--	NPS8	CL600	A105
Manufacturer` Brand	Size	Class	Material

5. Document Review:

The chemical and mechanical test report of forging was reviewed and found satisfactory. Also the inspection report of shell test, seat test and pneumatic test was reviewed and found satisfactory.

6. Preparation before testing:

6.1 The thermocouples and calorimeters were installed properly according to Figure 1,2,3,4 in API 6FA. Two thermocouples (part 14) are installed to measure flame temperature, one is located under valve body, another is located under valve stem, both within 1". Two calorimeters (part 13) are positioned to the same place as the thermocouples do, and a third one is positioned nearby the bottom cover.

6.2 The test system including test valve (part 11) was cleaned through by water before testing. All air was purged from test valve and testing system by water.

6.3 The test system was pressurized to 7.5MPa (test pressure) after the test valve and system upstream of valve have been completely full of water and system downstream of the test valve have been completely empty of water. The system and test valve were carefully checked for leakage when the test pressure was held at 7.5MPa. No leakage was found on system and test valve.

7. Fire Test:

7.1. Fire test with high pressure

The fire test was conducted according to API 6FA Section 4.4. The flame temperature reached 761℃ within 2 minutes after ignition. The test pressure and temperature were maintained during the fire test. The temperature and pressure were recorded continuously by the operators. The system and test valve was cooled down to below 100℃ within 9 minutes by natural after 30 minutes fire test. The loss of water weight in vessel was measured by weighing scale and water in calibrated container (part 19) were read and recorded.

Test Report No.: 335548

Test result of fire test with high pressure

Item	API 6FA Required Value	Actual Value
Test Pressure (MPa)	7.50MPa	7.50~8.00 MPa
Test Temperature	761 - 980℃	794 - 848℃
Through-valve leakage according to API 6FA Para.4.4.2.2	≤ 400 ml / in. / min	262 ml / in. / min
Total weight of water through valve seat during cooling down period	0 ml	
Total time from fire test to cooling down	39 minutes	
External Leakage	≤ 100 ml / in. / min	52 ml / in. / min
Conclusion: the test result is satisfactory according to API 6FA.		

7.2. Fire test with low pressure

Decrease the test pressure to 0.72 MPa and maintain this pressure for 5 minutes, measure the through valve and external leakage for this period of 5 minutes.

Increase pressure on the test valve to the high test pressure 7.50 MPa and maintain this pressure for 5minutes, measure the through valve and external leakage for this period of 5 minutes.

The test result of the above both is shown as below:

Test result of low pressure test

Item	API 6FA Required Value	Actual Value
Test Pressure (MPa)	0.72 MPa	0.72 MPa
Test Duration	5 Minutes	
Through-valve leakage according to API 6FA Para.4.3	≤ 40 ml / in. / min	20 ml / in. / min
External Leakage	≤ 20 ml / in. / min	11 ml / in. / min
Item	API 6FA Required Value	Actual Value
Test Pressure (MPa)	7.50 MPa	7.50 MPa
Test Duration	5 Minutes	
Through-valve leakage according to API 6FA Para.4.3	≤ 40 ml / in. / min	26 ml / in. / min
External Leakage	≤ 20 ml / in. / min	13 ml / in. / min
Conclusion: the test result is satisfactory according to API 6FA.		

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8. Operational Test:

The test valve was cooled to below 100 ℃ with in 9 minutes after complete the fire test. The operational test was conducted according to API 6FA Para. 4.4.4. Open the test valve against the high test pressure differential. The test valve was moved to a partly open position close to the shutoff valve. Vent the piping and test valve body cavity to remove air or steam.

Then measured and recorded external leakage for a period of five minutes after valve was in the open position at high test pressure. The test result was recorded on below:

Test result of operational test

Item	API 6FA Required Value	Actual Value
Test Pressure (MPa)	7.50 MPa	7.50 MPa
Test Time	5 minutes	
External Leakage	≤ 200 ml / in. / min	56 ml / in. / min
Conclusion: the test result is satisfactory according to API 6FA.		

The undersigned, hereby declare that I have checked test valve and witnessed the fire test on the test valve according to API SPEC 6FA FIFTH EDITION, MAY 2020. The test result is satisfactory.

TÜV SÜD Certification and Testing (China) Co., Ltd

Wang Zhongx

Date:Mar.8.2026

Annexes:
1) Copy of Drawing No.:Q-6B47Y-CL600C NP8.00
2) Copy of Test Record No.: LSV2026FB18009-5