

DNV GL BUSINESS ASSURANCE (CHINA) CO., LTD.
VERIFICATION REPORT
 (Report No.: SHA/874178/1507-1183)

A. GENERAL			
From:	DNV GL-BA Shanghai	To:	Precedent Energy (Guanghan)
Contact:	Allen Zhang	Contact:	Jiandong Zhuang
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Fax:	02162788090	Fax:	08385195913
Email:	Allen.Zhang@dnvgl.com	Email:	Turre.tu@us-precedent.cn
Inspector Name (s)	Jian Wang	Copy To:	
Supplier	Precedent Energy (Guanghan) Services Ltd.	Purchaser	NA
Supplier Location	NO.9 Qingyuan road, Guanghan city, Sichuan Province. 618300, PRC	Purchaser Address	NA
Factory Name	Precedent Energy (Guanghan) Services Ltd.	Purchase order No	NA
Inspection Location	Chongqing Xintai Laboratory	Inspection Date	Jane 30 to July 8, 2015
Additional reference materials submitted for this inspection:			
☐ ITP	☒ Product Specs/Drawings	☐ Copy of PO	
☐ Packing List	☐ Other		

B. DESCRIPTION OF PRODUCTS	
Product Name	Manual Gate Valve
Product Specification	API 6A 20th Annex F
Size	3 1/16"-15000psi
Quantity	1set
Material Grade	EE
Temperature Classification	P.U
Drawing No.	PFLS078105

C. SCOPE OF INSPECTION
The design validation for PR2 valve



D. INSPECTION DATA SUMMARY

	ITEM	DATA	TESTING EQUIPMENT
1.	Seat tests	15000psi	Experimental system of PR2
2.	Force or torque measurement	Max Torque: 245N.M	Experimental system of PR2
3.	Dynamic test at room temperature	With pressure 15000psi open-and-close cycles 160 times	Experimental system of PR2
4.	Dynamic test at maximum rated temperature 121°C	With pressure 15000psi open-and-close cycles 20 times	Experimental system of PR2
5.	Gas body test at maximum rated temperature 121°C	15000psi	Experimental system of PR2
6.	Gas seat test at maximum rated temperature 121°C	15000psi	Experimental system of PR2
7.	Low-pressure seat test at maximum rated temperature	1500psi	Experimental system of PR2
8.	Dynamic test at minimum rated temperature -29°C	With pressure 15000psi open-and-close cycles 20 times	Experimental system of PR2
9.	Gas body test at minimum rated temperature -29°C	15000psi	Experimental system of PR2
10.	Gas seat test at minimum rated temperature -29°C	15000psi	Experimental system of PR2
11.	Low-pressure seat test at minimum rated temperature	1500psi	Experimental system of PR2
12.	Body pressure/temperature cycles	Detailed report:XT201507-10	Experimental system of PR2
13.	Body pressure holding test at room temperature	15000psi	Experimental system of PR2
14.	Gas seat test at room temperature	15000psi	Experimental system of PR2
15.	Body low-pressure holding test at room temperature	1500psi	Experimental system of PR2
16.	Low-pressure seat test at room temperature	1500psi	Experimental system of PR2
17.	Final force or torque measurement	Detailed report:XT201507-15	Experimental system of PR2
18.	Post-test examination	Detailed report:XT201502-16	Experimental system of PR2
NOTE: 1.Test performed with factory equipment OR in an external laboratory? 2. Factory equipment current calibration label available?			External laboratory Yes

E. OBSERVATION

Defective Description	Critical	Major	Minor
1. 0	0	0	0
Total Found:	0	0	0
Accept:	0	0	0
Result:	PASS		

F. CONCLUSION 结论

- The tests were satisfied with the API 6A 20th Annex F.
- All calibration certificates of test equipment were checked for current calibration date, and their condition was acceptable.
- The document review was acceptable.
- Detailed report:
 - Manufacture Material Certificates. Heat No.: 1309-01652、891349H、12103053881、14HT03041.
 - Verification test report: 201506-01~201506-03、201507-1~201507-16.
 - NDT report: UT: UT20141212-02PST、UT20141203-01PST、UT20141225-01PST、PX14-10027、UT20150113-02PST、PX14-10025/26/28;
MT: MT20150116-02PST~MT20150116-04PST;
PT: PT20150204-02PST、PT20141208-02PST、PT20150120-02PST、2014-12-002.

G. PHOTOGRAPHS

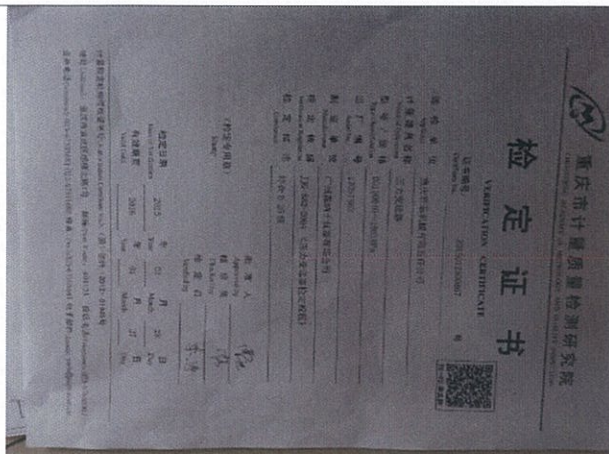


Photo 1) Calibration certificates

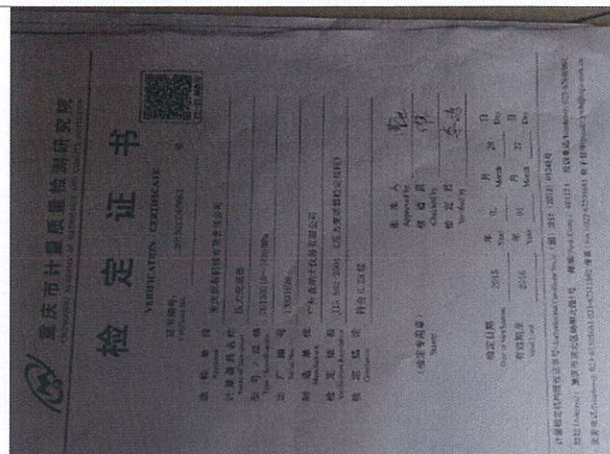


Photo 2) Calibration certificates

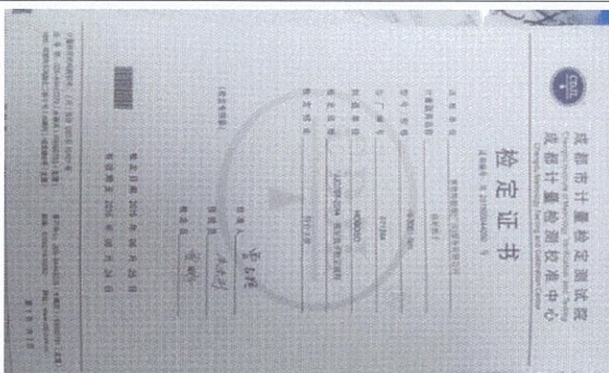


Photo 3) Calibration certificates

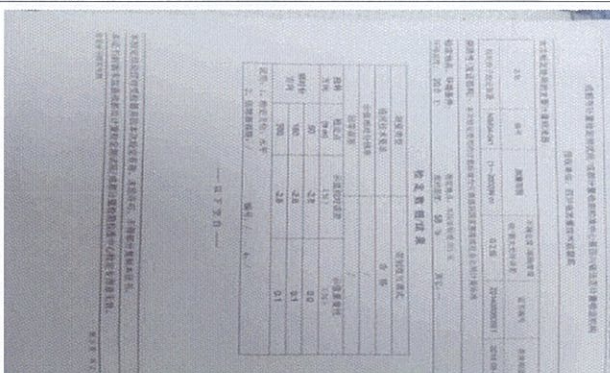


Photo 4) Calibration certificates

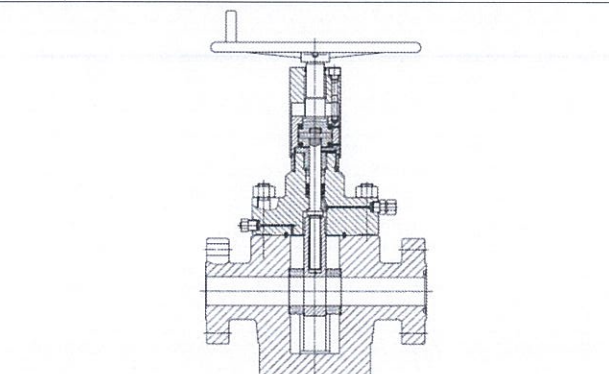


Photo 5) Product



Photo 6) Product



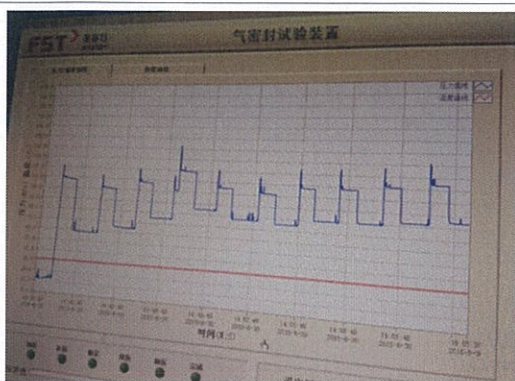


Photo 7) Dynamic test at room temperature

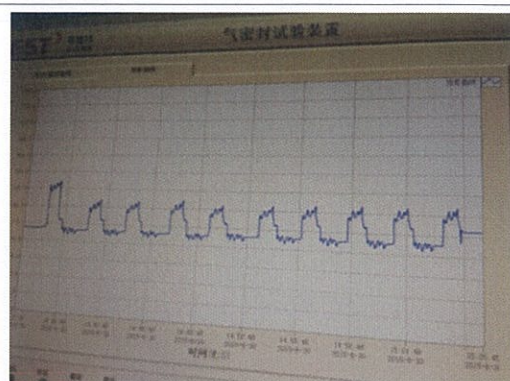


Photo 8) Dynamic test at room temperature

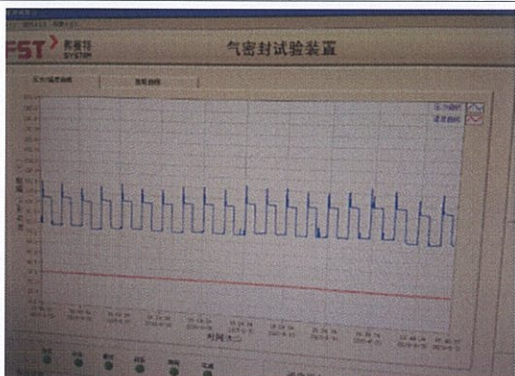


Photo 9) Dynamic test at room temperature

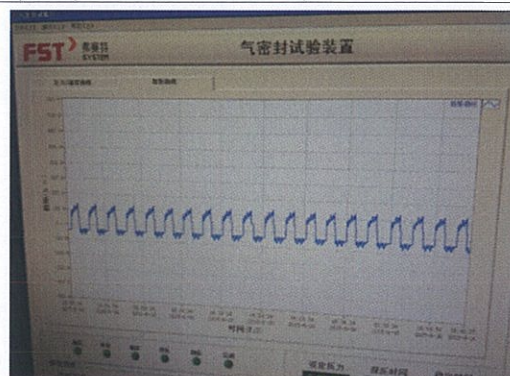


Photo 10) Dynamic test at room temperature

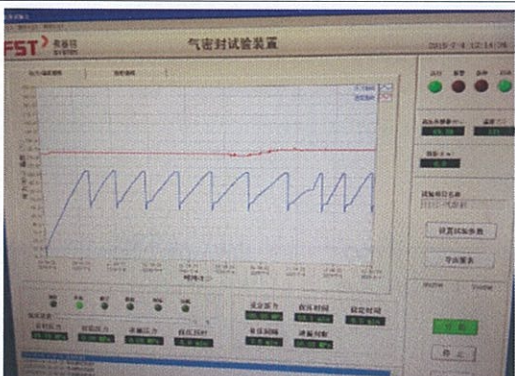


Photo 11) Dynamic test(121°C)

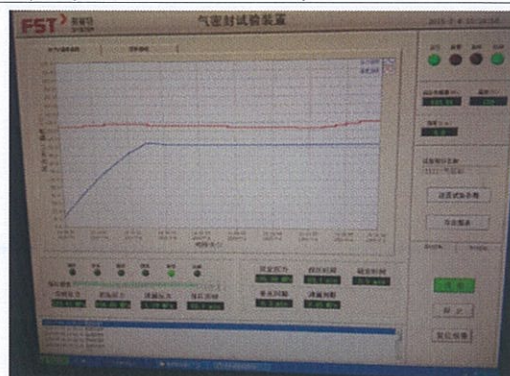


Photo 12) Gas body

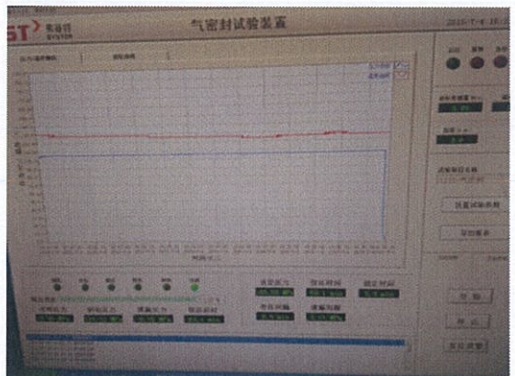


Photo 13) Seat test (121°C)

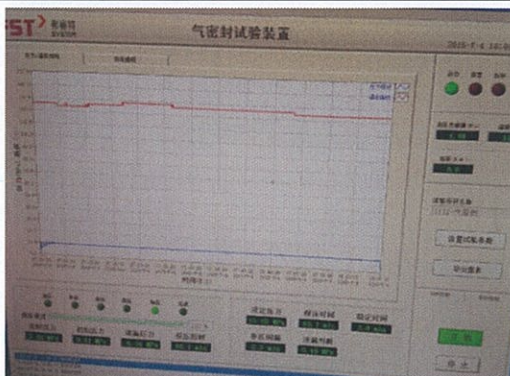


Photo 14) Low-pressure seat test (121°C)



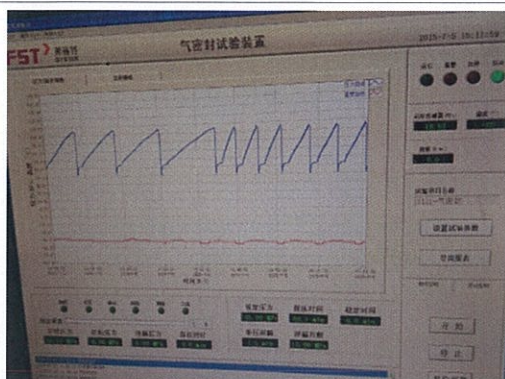


Photo 15) Dynamic test(-29°C)

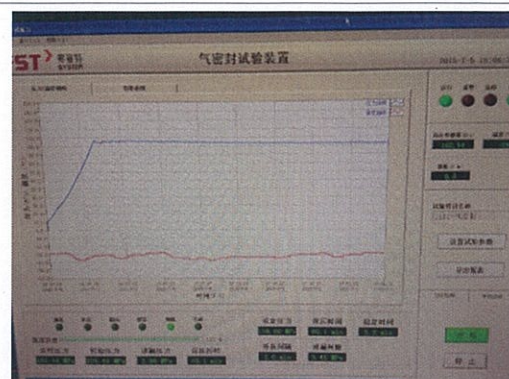


Photo 16) Gas body(-29°C)

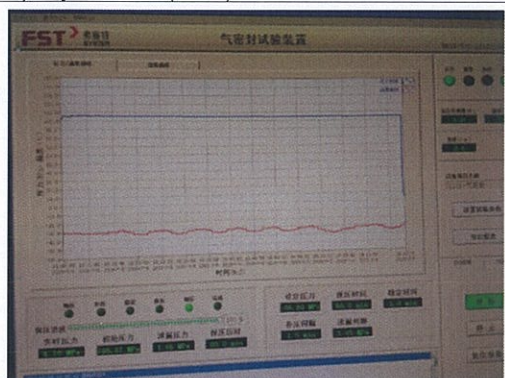


Photo 17) Gas body / seat test (-29°C)

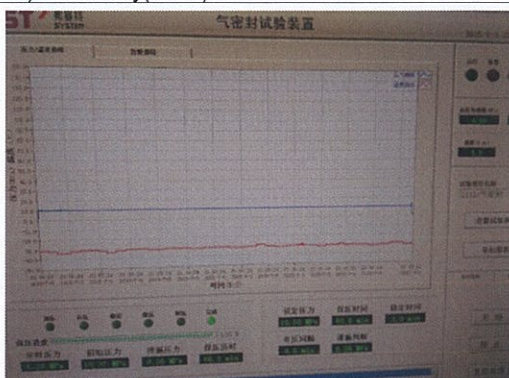


Photo 18) Low-pressure seat test (-29°C)

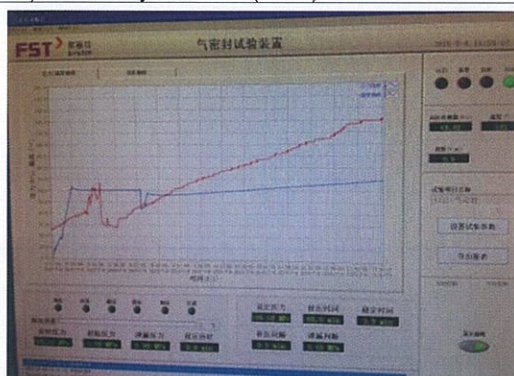


Photo 19) Body pressure/temperature cycles

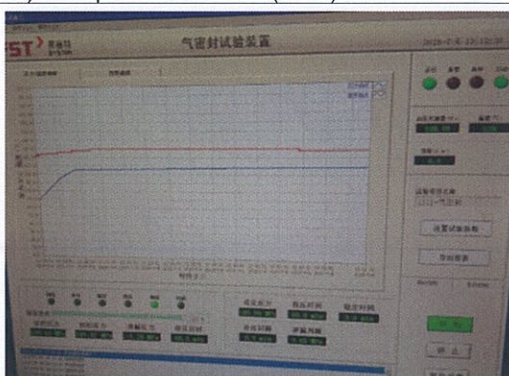


Photo 20) Body pressure/temperature cycles

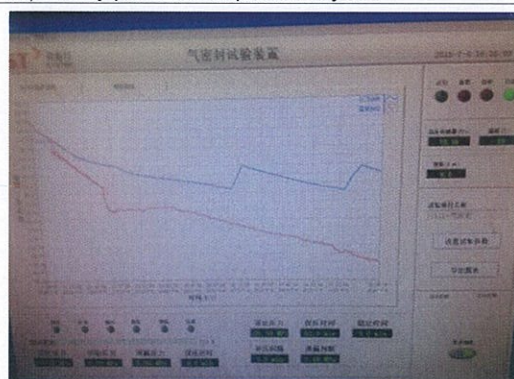


Photo 21) Body pressure/temperature cycles

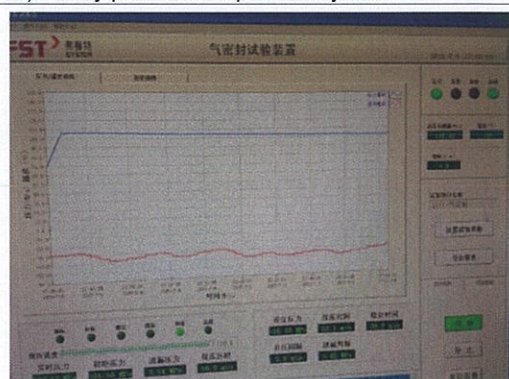


Photo 22) Body pressure/temperature cycles

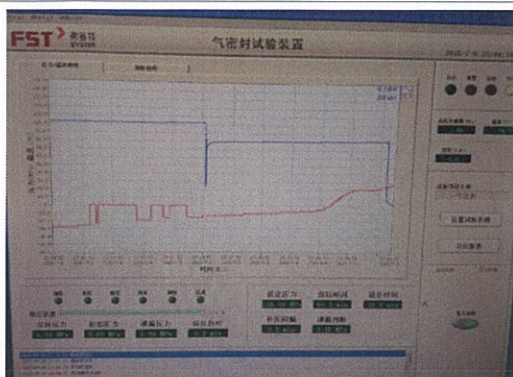


Photo 23) Body pressure/temperature cycles

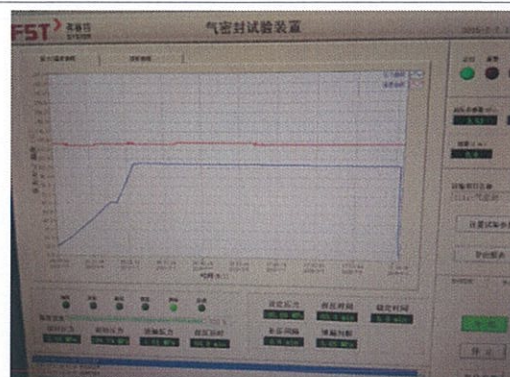


Photo 24) Body pressure/temperature cycles

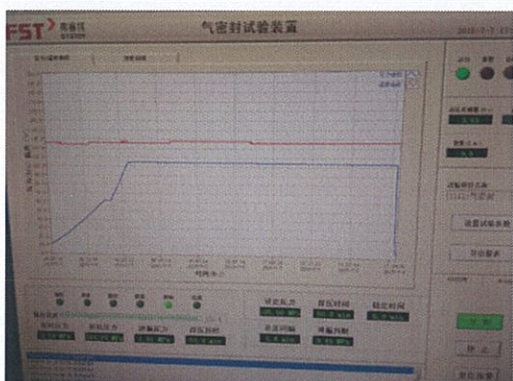


Photo 25) Body pressure/temperature cycles



Photo 26) Body pressure/temperature cycles

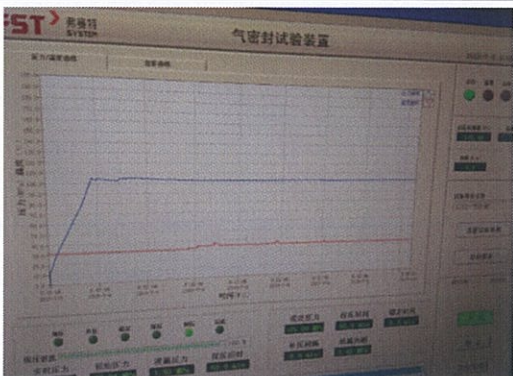


Photo 27) Body pressure holding test

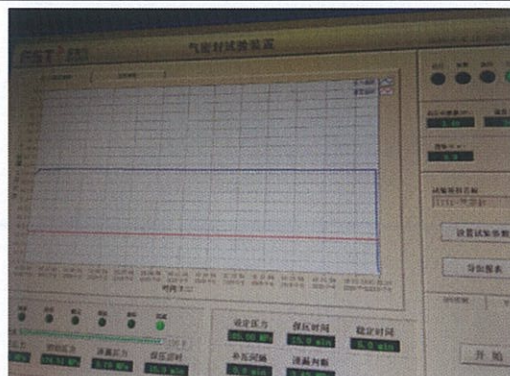


Photo 28) Gas seat test

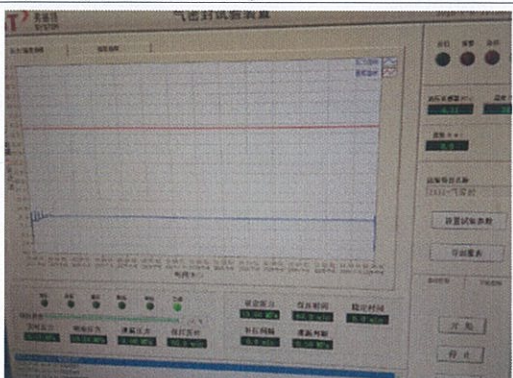


Photo 29) Body low-pressure holding test

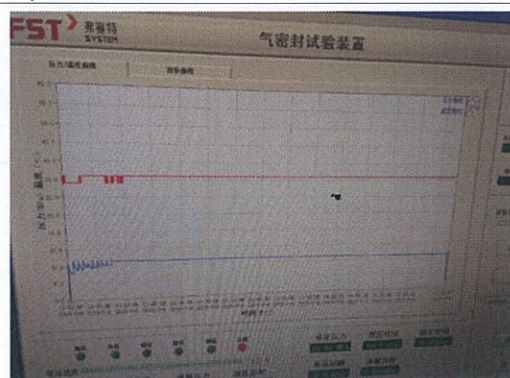


Photo 30) Low-pressure seat test

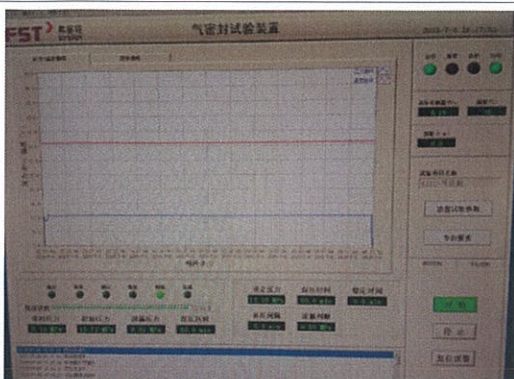


Photo 31) Low-pressure seat test

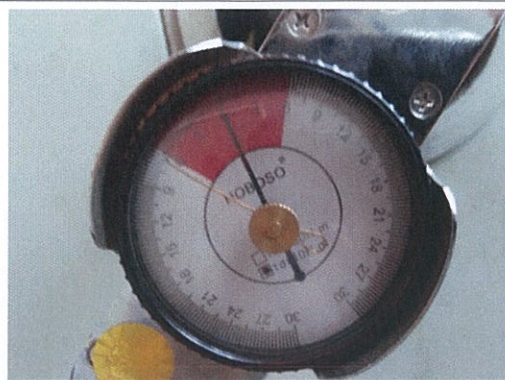


Photo 32) Final force or torque measurement

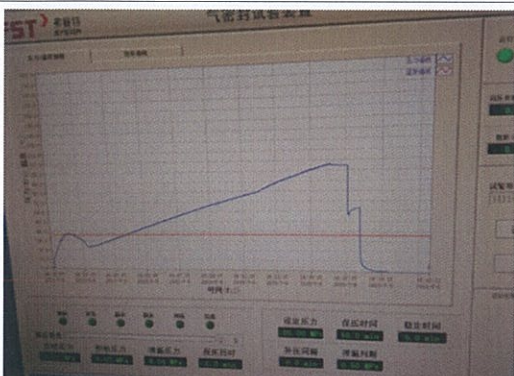


Photo 33) Final force or torque measurement



Photo 34) Post-test examination



Photo 35) Post-test examination



Photo 36) Post-test examination





Photo 37) Post-test examination



Photo 38) Post-test examination

DNV GL BUSINESS ASSURANCE (CHINA) CO., LTD.

Inspector signature: Wang Jian
Wang Jian

Approved by: Sean Lee
Sean Lee

Date: July 13, 2015

Date: July 16, 2015

