



Inspection Certificate

Project: **Cryogenic & Ambient Temperature Cycling Leak Test for Gasket**

Client: **KUKIL INNTOT CO., LTD.**

Office: **Seoul, Korea**

Client's Order Number: **N/A**

Date: **19 April 2018**

Order Status: **Completed**

Inspection Dates

First: **27 March 2018**

Final: **16 April 2018**

This certificate is issued to **KUKIL INNTOT Co., Ltd. Ulsan, Korea** to certify that the undersigned surveyor did at their request attend their works on and between the above dates for the purpose of inspecting and testing the under mentioned item in accordance with the applicable code and standards and CPY specifications.

1. Test Specimen : Gasket

Manufacturer	Model	Specimen No.	Material	Class
KUKIL INNTOT CO., LTD.	Hiflex G-31	TCHPV-20180326-001	Metal Core SS316L With graphite layer	ANSI 600 CLASS – 6 INCH

2. Test Standard

- ① Cryogenic Leak Test : Refer to the BS6364(1984) Valves for cryogenic service Appendix A cryogenic test.
- ② Ambient Leak Test : Client Requested Method.
- ③ Cycle Test Times : Refer to the MESC SPEC 85/300(2016) para 3.3.5 High Temperature Operational Tightness Test

3. Test Location : Laboratory of Technical Center for High Performance Valves (Room No. : SM118, S14, DONG-A University)

4. Test Result

① Ambient Temperature Leak Test (Before Cryogenic Leak Test / 27.Mar.2018)

Test Fluid	Temperature (°C)	Duration (min:sec)	Test Pressure (bar)	Result
Helium Gas	6.5 / 7.0 / 7.1	10 : 16	52.4	Acceptable

② Cryogenic Leak Test (First Cryogenic Leak Test / 27.Mar.2018)

Test Fluid	Temperature (°C)	Duration (min:sec)	Test Pressure (bar)	Result
Helium Gas	-195.9	10 : 07	51.7	Acceptable

③ Ambient Temperature Leak Test (After First Cryogenic Test / 28.Mar.2018)

Test Fluid	Temperature (°C)	Duration (min:sec)	Test Pressure (bar)	Result
Helium Gas	7.1	10 : 03	51.5	Acceptable

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④ Cryogenic Leak Test (Second Cryogenic Test / 28.Mar.2018)

Test Fluid	Temperature (°C)	Duration (min:sec)	Test Pressure (bar)	Result
Helium Gas	-195.9	10 : 05	51.7	Acceptable

⑤ Ambient Temperature Leak Test (After Second Cryogenic Test / 29.Mar.2018)

Test Fluid	Temperature (°C)	Duration (min:sec)	Test Pressure (bar)	Result
Helium Gas	6.2	10 : 03	50.9	Acceptable

⑥ Cryogenic Leak Test (Third Cryogenic Test / 29.Mar.2018)

Test Fluid	Temperature (°C)	Duration (min:sec)	Test Pressure (bar)	Result
Helium Gas	-195.9	10 : 03	51.8	Acceptable

⑦ Ambient Temperature Leak Test (After Third Cryogenic Test / 30.Mar.2018)

Test Fluid	Temperature (°C)	Duration (min:sec)	Test Pressure (bar)	Result
Helium Gas	6.2	10 : 09	51.9	Acceptable

5. The following scope of inspection was performed with satisfactory results.

- Verify test specimen & test equipment
- Witness of Gasket Leak test (Ambient & Cryogenic Leak Test)
- Review of Test Report (TCHPV-18-04-117 : Dong-A University Technical Center for High Performance Valves)



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