

# LEAK TEST SERVICES

HELIUM LEAK TEST Chambers, Heat Exchangers, Components, Valves, Roll Metallizers etc.

Ref : HLT/REYNOLD-VALVE/179

Date : 27 Feb 2014

## HELIUM LEAK TEST REPORT

- 1) Manufacturer : Reynold Valves Ltd
- 2) Client : Reliance Industries Limited
- 3) Purchase Order No : MMO/7477506 dated 12-09-2013
- 4) Item Description : 150mm DI PFA Line Ball Valve
- 5) Serial Number : S 3557
- 6) Instrument/Machine : Helium Leak Detector, Pfeiffer, Germany, Model 560
- 7) Calibrated Standard Leak :  $5.24 \times 10^{-7}$  mbar lit / sec, Serial No.117/08
- 8) Reference Document : ASME Sec V, Article 10 & EIL 6835-6-44-0005
- 9) Test Method : Sniffer Probe
- 10) Test Pressure :  $6 \text{ kg/cm}^2$
- 11) Test Medium : Helium
- 12) Test pressure Hold Duration : 6 minutes
- 13) Acceptable leak Rate :  $1 \times 10^{-4}$  mbar lit / sec

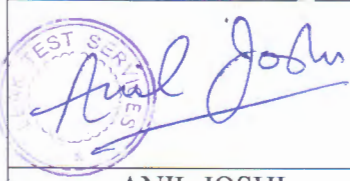
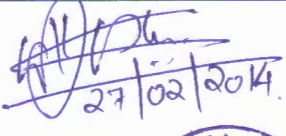
Note :-

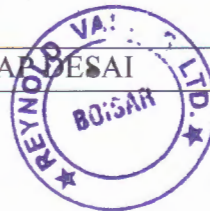
- Valve filled with Helium Gas at  $6 \text{ kg/cm}^2$
- Sniffer probe moved around Body Joint, Gland Seal of the Valve

Observations and result :-

	Background Reading mbar lit / sec	Maximum Observed Reading mbar lit / sec	Leak Rate mbar lit / sec
Body Seal	$3.6 \times 10^{-6}$	$9.6 \times 10^{-6}$	$6.0 \times 10^{-6}$
Gland Seal	$3.6 \times 10^{-6}$	$8.6 \times 10^{-6}$	$5.0 \times 10^{-6}$

RESULT : HELIUM LEAK TEST SATISFACTORY

Test performed by Leak Test Services	Witnessed by Reynold Valves Ltd	Reviewed by
 ANIL JOSHI	 27/02/2014 MILAP DESAI	



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Ref : HLT/REYNOLD-VALVE/180

Date : 27 Feb 2014

## HELIUM LEAK TEST REPORT

- 1) Manufacturer : Reynold Valves Ltd
- 2) Client : Reliance Industries Limited
- 3) Purchase Order No : MMO/7477506 dated 12-09-2013
- 4) Item Description : 200mm DI PFA Line Ball Valve
- 5) Serial Number : S 3559
- 6) Instrument/Machine : Helium Leak Detector, Pfeiffer, Germany, Model 560
- 7) Calibrated Standard Leak :  $5.24 \times 10^{-7}$  mbar lit / sec, Serial No.117/08
- 8) Reference Document : ASME Sec V, Article 10 & EIL 6835-6-44-0005
- 9) Test Method : Sniffer Probe
- 10) Test Pressure :  $6 \text{ kg/cm}^2$
- 11) Test Medium : Helium
- 12) Test pressure Hold Duration : 9 minutes
- 13) Acceptable leak Rate :  $1 \times 10^{-4}$  mbar lit / sec


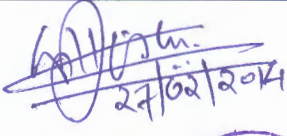
Note :-

- Valve filled with Helium Gas at  $6 \text{ kg/cm}^2$
- Sniffer probe moved around Body Joint, Gland Seal of the Valve

Observations and result :-

	Background Reading mbar lit / sec	Maximum Observed Reading mbar lit / sec	Leak Rate mbar lit / sec
Body Seal	$3.5 \times 10^{-6}$	$9.2 \times 10^{-6}$	$5.7 \times 10^{-6}$
Gland Seal	$3.5 \times 10^{-6}$	$9.6 \times 10^{-6}$	$6.1 \times 10^{-6}$

RESULT : HELIUM LEAK TEST SATISFACTORY

Test performed by Leak Test Services	Witnessed by Reynold Valves Ltd	Reviewed by
 ANIL JOSHI	 MILAP DESAI	



## Certificate of Calibration

Calibration Number 340070



Calibration Cert. No. 1530.01

Calibration Date: 11 Jun 2013  
 Calibration Due: 11 Jun 2015

**Prepared for**  
 Leak Test Services  
 Nupur Hall, Near Devi Chowk  
 Shastri Nagar, Dombivli (W) - 421 202  
 India

**Item Identification**  
 Item/Type: Leak Standard  
 Model Number: HSL-102  
 Serial Number: 117/08

**Calibration Data**

Calibration Gas: Helium

	Condition	Leak Rate (mbarL/sec into vacuum)	Uncertainty† (±% of Leak Rate)	Pressure (atm.)	Temperature (°C)
As Received:	Normal	5.24 x 10-8	8.0	1	24.5
As Returned:	Normal	5.24 x 10-8	8.0	1	24.5

Previous Cal Data: leak rate, 5.56 x 10-8 mbarL/sec; uncertainty, ±8.0%; pressure, 1 atm.; temperature, 23.4°C  
 †Expanded uncertainty, 95% confidence interval, coverage factor, k=2.

**Environmental Conditions/Effects**

The leak rate of this item increases/decreases at a factor of 4.0%/°C deviation from the calibration temperature(s) listed above. Relative humidity has negligible effect on the performance of this item. Barometric pressure has no effect on the performance of this item.

**Traceability and Conformance**

All calibration procedures, equipment maintenance, and training of technicians are in accordance to LACO Quality Manual QM-100, which meets the requirements of ISO/IEC 17025 and ANSI/NC SL Z540-1-1994. All reference standards used in this calibration (see table at right) are traceable to the National Institute of Standards and Technology (NIST). This calibration was performed according to procedure number LSP-102, a direct comparison method.

**Reference Standards**

Measurement Parameter	Serial Number	Expires
Leak Rate	9903091	Aug 24, 2013
Temperature	4G8217	Jun 19, 2013

**Leak Standard Stability**

The leak rate of this leak standard depletes at an estimated 1.4%/year. This and all leak standards are sensitive to moisture, oils, and particles; proper use and storage is important for preventing contamination and maintaining leak rate stability. This certificate does not guarantee this item to be in tolerance at the end of the calibration interval.

Calibration Technician: *Rick Asper*  
 Rick Asper

Quality Control: *Ron Brown*  
 Ron Brown

The calibration data reported above applies only to the item referenced in this certificate.  
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