



Valve Fugitive Emission Performance Verification Certificate - Prototype Test

Project: -

Office: Birmingham

Client: Concept2Engineering Ltd
Address: Hey Lane, Scammonden,
Huddersfield, HD3 3FW, UK

Date: 09 June 2023

Client's Order Number: C2E970

Order Status: Complete

Inspection Dates

First: 30 March 2023

Final: 06 April 2023

This certificate is issued to

CONCEPT 2 ENGINEERING LTD to certify that the undersigned did carry out inspection on the valve detailed below during fugitive emission performance tests at room temperature to +200°C. The testing was carried out on behalf of TOMOE VALVES LIMITED, in compliance with the requirements of test procedure No TP-528 Rev. 0 and BS EN ISO 15848-1: 2015+A1:2017 Prototype Testing (Vacuum Method) to qualify valves for endurance Class CO1:

Description:

Valve Size/Type Tested: 10" Lugged Butterfly Valve with Rotork AB1950N/PR4 Gearbox
Valve Stem Size: 50mm
Body Material: ASTM A216 WCB
Stem Seals: Braided Graphite
Fugitive Emission Tightness Class: Class AH
Pressure Class: Class 600
Test Pressure: 102.1 barg (RT) & 87.6 barg (+200°C)
Endurance Class: CO1 (Prototype Valves)
Temperature Range Tested: Room temperature to +200°C
Test Medium: 97% Helium
Valve GA Drawing: STD_10_LUG_600 Rev A
Test Procedure: TP-528 Rev. 0

Scope:

1. Review of test equipment calibration records
2. Verification of test fixture set-up
3. Witness of thermal/manual mechanical cycling (205) and taking of emission leakage test results.
4. Visual inspection of components following strip down
5. Review and endorsement of completed test report (TR-528 Rev 0)

Performance Class Achieved:

ISO FE AH – CO1 - SSA 1 - t200°C – CL600 – ISO 15848-1

Equipment Calibration:

Pressure Transducer: Ident. No: PTX41 (0-400 bar) – calibrated 14/11/2022, due 14/11/23, certificate P00497, calibrated internally by C2E (not accredited to ISO 17025) using Aditel ADT681 (0-10000psi) master gauge, serial No. 211H143B0020 calibrated by Chamois Metrology Limited (UKAS 0822), certificate 95901 refers.



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T Type Thermocouples Nos: TC2011-02T & 03T – calibrated 20/11/20, 1st use 08/04/22, due 08/04/23, certificates 20-11-020 & 021; TC2110-01T – calibrated 20/10/21, 1st use 18/11/22, due 18/11/23, certificate 22-10-013; TC2105-09T – calibrated 21/05/21, 1st use 11/04/22, due 11/04/23, certificate 21-05-009; calibrated internally by C2E against an Isotech Semi Standard Thermocouples (Type R) serial Nos 341704/4 & 341704/5, Calibrated by Isothermal Technology (UKAS 0175), certificates 19-11-68, 19-11-72, 21-01-07 & 21-01-53 refer.

Pfeiffer Mass Spectrometer (Qualy Test Dry HLT270): Serial No 20600050796 – calibrated 29/03/23, due 29/06/23, certificates MS-C2E-23-1 & MS-C2E-23-2, calibrated internally by C2E using Calibrated Reference Leak: Ident No. HTP-HT082153-1 (Sniff Method) & CT408-40112288 (Vacuum Method), calibrated by High Technology Products, certificates HT1120189 & HT1120243

Marking / Identification:
10" CL 600 - ASTM A216 WCB

Conclusion statement:
On the basis of the scope of inspection undertaken, this valve has been found to comply with the Test Procedure requirements & ISO 15848-1 for the above test parameters.

LRQA Verification Limited	
Name: M. J. Lucas	Signature: 
Date: 09 June 2023	
Ref No.: PRJ11100397882	
Office: Birmingham	A member of the LRQA Group Limited

M. J. Lucas
Surveyor to LRQA Verification Limited
A UKAS accredited inspection body No: 0003
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