

FIRE TEST QUALIFICATION CERTIFICATE



Score (Europe) Ltd



Customer	Valvtechnologies Inc.
Item	Nextech Trunnion Ball Valve
Size	4"
Class	300
Order No	26381
Unique No	237418-1
Serial No	09028768
Body Material	CF8M
Seat	316 SS / RAM 31
Manufactured by	Valvtechnologies Inc.
In accordance with job number	237418 COW
In accordance with drawing number	N520T-RF-FP-BS-4 Rev 2, Dated 13/11/09

The above valve was tested by Score (Europe) Ltd at their Specialised Valve Research and Test Centre, Cowdenbeath, Scotland and the results have been recorded as a PASS, having complied with the minimum performance requirements stated in specification

BS EN ISO 10497:2004, Second Edition August 2004 and ANSI/API Standard 607, Fifth Edition June 2005

Test date	12/11/09
Other sizes qualified	4", 5", 6", 8"
Other pressure ranges qualified	300, 400, 600 & PN 40, 63, 100

Tested by
S Fox / G Johnston

Witnessed by
W Campbell Lloyd's Register EMEA

This certificate must be read in conjunction with the full Score Test Report Number 237418-1



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FIRE TEST REPORT

IN ACCORDANCE WITH
BS EN ISO 10497:2004 Second Edition August 2004
&
ANSI/API Standard 607 Fifth Edition June 2005

CUSTOMER: Valvtechnologies Inc.

CONTACT: E. Ackling

P.O. NUMBER: 26381

VALVE: 4" NB ANSI 300, FB, Nextech Trunnion Ball Valve

Report Compiled By: **D. Wood**

Date: 12/11/09

Score Job Number: **237418 COW**

Report No: 237418-1



237418-1



26 NOV 2009

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Specialised Valve Fire and Cryogenic Test facility

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VALVE DETAILS AND TEST PREPARATION

On 12th November 2009 at Score (Europe) Limited, Cowdenbeath, Fife, Scotland, a Fire Test to BS EN ISO 10497:2004, Second Edition August 2004 and ANSI/API Standard 607, Fifth Edition June 2005 was carried out on behalf of Valvtechnologies Inc.

The valve was selected and supplied by the manufacturer Valvtechnologies Inc. and was gearbox driven

Details

Type:	Nextech Ball Valve	Score Report No:	237418-1
Manufacturer:	Valvtechnologies Inc.	Size:	4"
Full or Reduced Bore:	Full	Rating:	300
Serial No:	09028768	Drawing No:	N520T-RF-FP-BS-4 Rev 2, Dated 13/11/09
Model No:	N520T-RF-FP-BS-4		

Material:

Body/End Cap: **CF8M**
Seat Seal: **Grafoil/316SS Mesh**
Packing: **Grafoil/718 Mesh**
Seat: **316 SS / RAM 31**

Gearbox:

Manufacturer: **Exeeco (Rotork)**
Type : **IW4 (70:1)**
Serial No: **T2098301-001**
Handwheel: **16"**

Test Preparation

The valve was removed from transportation package and the above information correlated from the Manufacturer's nameplate/valve body. At the same time the Manufacturer's Test Certificate was checked to ensure the valve has passed their standard production pressure testing. Valve was hard stamped with Score Unique Number 237418-1. Valve mounted into test stand with calorimeter cubes and flame environment thermocouples in their appropriate locations as per the standard, these in turn being connected through a Chessell Temperature and Pressure Recorder with automatic data storage facilities. The inlet/outlet pipe work was connected to the valve. With the valve in the partially open position the system was checked for leaks by pressurising to 1.4 times the maximum permissible working pressure at 20°C.



237418-1



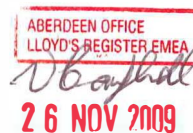


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TEST REPORT

<u>TIME</u>	<u>DESCRIPTION</u>	<u>ACTUAL LEAKAGE IN ML/MIN</u>
<u>08:54 – 09:24</u>	Through seat leakage at test pressure of 37.2 BARG during burn period of 30 min. - (measured Zero ml) Allowable 1600 ml/min.	Zero ml/min.
<u>09:26 – 09:35</u>	Cool down period took 9 minutes for skin temperature to reach 100°C.	
<u>08:54 – 09:35</u>	External leakage during the burn and cool down period - (measured Zero ml) Allowable 400 ml/min.	Zero ml/min.
<u>09:37 – 09:42</u>	Through seat leakage on low pressure test at 2 BARG for 5 mins (measured Zero ml) Allowable 160 ml/min.	Zero ml/min.
<u>09:48 – 09:53</u>	External leakage at 37.2 BARG in open position following operational test for 5 minutes (measured 100 ml) Allowable 100 ml/min	20 ml/min.

Test concluded at this point





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TEST RESULTS

Calorimeter cubes and flame environment thermocouples temperature checks.

Probe numbers 7 through 10 plus 12 (11 not used).

Burner ignited 08:54.

<u>No.7</u>	<u>No.8</u>	<u>No.9</u>	<u>No.10</u>	<u>No.11</u>	<u>No.12</u>
Stem	Bottom	Stem	Bottom	Not Used	Body
Flame	Flame	Calor.Cube	Calor.Cube		Skin
Temp.° C	Temp.° C	Temp.° C	Temp.° C		Temp.° C

For the duration of this test all temperatures recorded complied with BS EN ISO 10497:2004, Second Edition August 2004 and ANSI/API Standard 607, Fifth Edition June 2005

Test and temperatures witnessed by Lloyd's Register EMEA.





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TEST RESULTS

From the test results obtained, we confirm the valve tested has met the performance requirements stated in BS EN ISO 10497:2004, Second edition August 2004 and ANSI/API Standard 607 Fifth Edition June 2005 and the test is therefore recorded as a PASS.

Range qualified by this test:

Size: 4", 5", 6", 8"

Rating: CLASS
300, 400, 600 & PN 40, 63, 100

Test Witnessed by:

W Campbell

S Fox
G Johnston
D Duncan

E Ackling

Lloyd's Register EMEA

Score (Europe) Limited
Score (Europe) Limited
Score (Europe) Limited

Valvtechnologies Inc.



W. Bayfield
26 NOV 2009



Fire Test

Project: **VALVTECHNOLOGIES.**

Client: **Score Europe Ltd**

Office: **Aberdeen**

Clients Order Number: **98238**

Date: **26 November 2009**

Order Status: **Complete.**

Inspection Dates

First: **12 November 2009**

Final: **26 November 2009**

This certificate is issued to **Score (Europe) Limited, as at their request the undersigned Surveyor did attend their Works at Woodend, Cowdenbeath, Fife, for the purpose of witnessing a Fire Test on a Ball Valve stated to be manufactured by VALVTECHNOLOGIES Drawing Number N520T-RF-FP-B5-4 Rev 2 dated 13.11.09 Order No 26381.**

Details of the valve are as follows:-

Size: 4" NB ANSI 300 Full Port Nextech Stainless Steel Trunnion Style Metal Seated Zero Leakage Ball Valve.

Serial No 09028768.

Gearbox Driven: IW4 Ratio: 70:1. Exeeco (Rotork) Serial No. T2098301-001.

Class: 300.

Seat: 316SS / RAM 31.

Body/End Cap: CF8M.

Gaskets.Grafoil. Packing Grafoil / 718 Mesh. Seat Seal Grafoil / 316SS Mesh.

Valve stamped: Score Unique No.237418-1.

Temperature thermocouples were placed as follows:-

7. "Stem Flame" Temperature °C.
8. "Bottom Flame" Temperature °C.
9. "Stem Calorimeter Cube" Temperature °C.
10. "Bottom Calorimeter Cube" Temperature °C.
11. "Not used".
12. "Skin" Temperature. °C.

The Fire Test was carried out in accordance with BS EN ISO 10497:2004 Second Edition August 2004 and ANSI/API Standard 607 Fifth Edition June 2005. and Score Report Number 237418-1.

The valve was mounted into test stand with the Calorimeter Cubes and Flame Environment Thermocouples in their appropriate locations, which were connected to a Chessell Model 6180A temperature and pressure recorder, Serial Number GB-15998-1-1-0409-PL1 18 calibration of which was verified.

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All measuring and test equipment used was correctly calibrated.

Both the inlet and outlet pipework were connected to the valve, with the valve in the partially open position the system was filled with water and the air purged out. The system was checked for leaks by pressurising to 1.4 times maximum permissible working pressure and found tight.

During burn period the pressure was maintained at 37.2 Bar G by occasional manual adjustment.

On completion of the burn period of 30 minutes duration the valve was force cooled to 100°C.

Cool down took 9 minutes for skin temperature to reach 100°C.

The results of the Fire Test were then recorded as follows:-

Through Seat Leakage at test pressure of 37.2 Bar G during burn period over 30 minutes = 0 ml = 0 ml/min
(allowable 1600 ml/min).

External leakage (test pressure 37.2 Bar G during burn and cool down periods = 0 ml = 0 ml/min
(allowable 400 ml/min).

Through seat leakage at test pressure of 2 Bar G after cool down over 5 minutes measured 0 ml = 0 ml/min
(allowable 160 ml/min).

External leakage with valve pressurised to 37.2 Bar G in fully open position over 5 minutes = 100 ml = 20 ml/min
(allowable 100 ml/min).

The test was concluded at this point.

The valve was dis-assembled and examined to verify compliance with Drawing Number N520T-RF-FP-BS-4 Rev 2 dated 13.11.09 and found to comply.

In respect of the test results now stated, it is considered that the valve complies with the requirements of BS EN ISO 10497:2004 Second Edition August 2004 and ANSI/API Standard 607 Fifth Edition June 2005. See Score Report Number 237418-1 for full details.

WL Campbell.
Surveyor to Lloyd's Register EMEA



A member of the Lloyd's Register Group



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Addendum to Score Report Number 237418-1

The materials of construction covered by the ranges qualified for this valve design are:
A216 WCB and CF8M.

The satisfactory test on the mid range 4" NB ANSI 300, Nextech Trunnion Ball Valve in material CF8M, as reported on Score Report 237418-1 and Lloyds Register EMEA Report Number ABN 0904470, is deemed to qualify the full range of valves in the same CF8M material (Sizes: 2" and below, 2½", 3", 4", 6", 8" and above & Ratings: 300#, 400#, 600# & PN 40, 63, 100), based on the previous satisfactory testing of the full range of this design of valve in material A216 WCB, as per section 7.2.2 of BS EN ISO 10497:2004, Second edition August 2004 and ANSI/API Standard 607 Fifth Edition June 2005 and as reported in Score Report Numbers 194608-1a, 194608-2 and 228194-2 and Lloyds Register EMEA Report Numbers ABN 0804901/1, ABN 0804901/2 and ABN 0904462/2.

Name: D Wood (Score (Europe) Ltd.)



Name: W Campbell (Lloyd's Register EMEA)

ABERDEEN OFFICE
LLOYD'S REGISTER EMEA
W Campbell
- 2 DEC 2009

