



Project:

Client: STARLINE S.p.A.
S. Paolo d'Argon (Bergamo)

Office: Milan

Clients Order Number:

Date: 29 June 2007

Order Status: Complete

Inspection Dates

First: 06 June 2007

Final: 13 June 2007

This certificate is issued to STARLINE S.p.A. S. Paolo d'Argon Bergamo. The undersigned Surveyor to this Society did attend the work of Messrs Starline S.p.A. for the purpose of witnessing the FIRE TEST in accordance with EN ISO 10497:2004 and ANSI/API 607 Fifth Edition, June 2005 carried out on the following valve selected at random from current production.

DN 50 (NPS 2") CLASS 600 Lbs-STARLINE FORGED STEEL BALL VALVE, THREE PIECES BOLTED CONSTRUCTION TYPE " CRYO STAR" FLOATING BALL-FIGURE N. LT 156-TGG ACCORDING TO DWG. FT 501/07E MATERIAL F316/f316

The test conducted on the valve previously subject to hydraulic and air test was as follow:

-The valve, in closed position, filled with water under pressure, was put in a box and exposed to flames with an environmental temperature in the region of the valve of 750 Deg. C to 1000 Deg. C for a period of 30 minutes minimum and established the leakage through the valve and to atmosphere during this period. The temperature was checked by means of calorimeter cubes and flame environment thermocouples and recorded every 30 seconds, while leakage were determined using containers collecting the water leaked during burn period. After cool-down to 100 Deg. C the valve was hydrostatically tested to the low test pressure (aplicable only for PN100-CLASS 600 and lower), subsequently operated and tested at the appropriate high test pressure in the fully open position, to assess the pressure containing capability of the valve shell and seats.

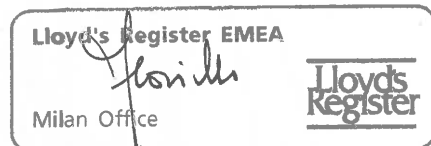
All the following values were determined and recorded together with temperature times and pressure as shown on manufacturer's fire test sheet record No. FT 501/07B and fire test chart record FT 501/07C detailing the following points:

5.1 Through-seat leakage (high test pressure) during burn period	Satisfactory
5.2 External leakage (high test pressure) during burn / cool down periods	Satisfactory
5.3 Through-set leakage (low test pressure) after cool down	Satisfactory
5.4 Operability under high pressure from closed to open position	Satisfactory
5.5 External leakage in fully open position at high pressure	Satisfactory

The valve was subject to visual examination with satisfactory results and subsequently disassembled in order to verify that valve compnents comply with the drawing and part list supplied by the manufacturer, while seat rings were found completely destroyed. The manufacturer's documentation No. FT 501/07A erewith attached was satisfactorily checked and signed.

The above is considered in accordance with the above mentioned specifications requirements and therefore the valve has satisfactorily passed the fire test.

gf



Giuseppe FLORIELLO
Surveyor to Lloyd's Register EMEA

A member of the Lloyd's Register Group

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BALL VALVE TESTED : "FLOATING CRYO STAR" No. 5

Material : F316 / F316 Size : 2" Class : 600 Lbs Our Fig.n° : 156-TGG

VALVE CONSTRUCTION

Forged Steel Ball Valves Two Pieces Bolted Construction (Type "CRYO STAR" No. 5)

Floating Ball, Anti - Blow - Out Proof Stem Design, Antistatic Design.

Designed in Conformity to Last Edition of :

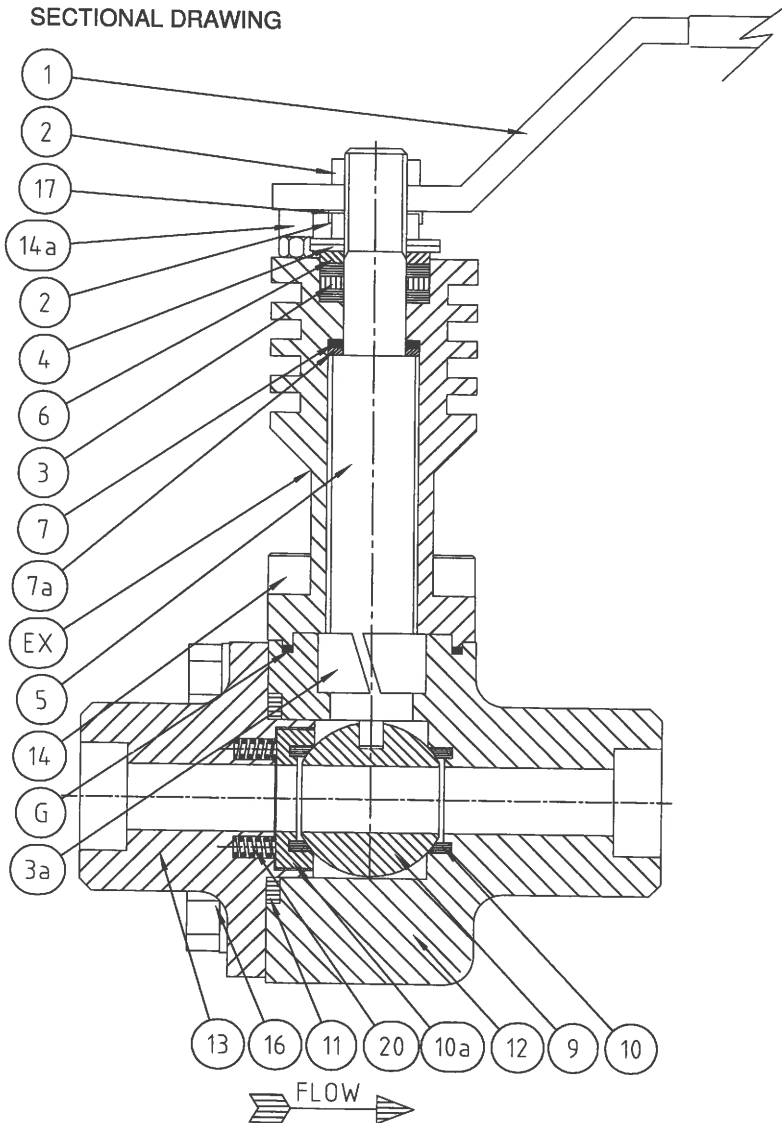
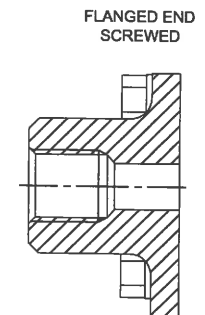
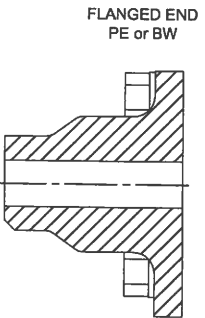
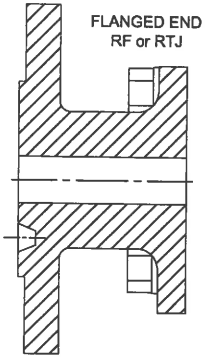
- BS 5351 (EN-ISO-17292) - ASME / ANSI B16.34 - API 6D -

FIRE TEST REPORT n° : FT-501/07-A

Date : 06/06/07

Issued in : S. PAOLO D'ARGON - BG - ITALY

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PART No.	UNIT Q.ty	PART NAME	MATERIAL
NP	1	Name Plated	Stainless Steel
x G	1	Extention Gasket	Graphite
EX	1	Extention	S.S. 316
1	1	Handle	Stainless Steel + Plastic
2	2	Handle Nut	Stainless Steel
x 3	3	Packing Ring	Graphite
x 3a	1	Sliper	PTFE + 25% C. Graphite
4	2	Spring Washer	Stainless Steel Treated
5	1	Stem	S.S. 316
6	1	Gland Packing	S.S. 316
x 7	1	Thrust Washer	PTFE + 25% C. Graphite
7a	1	Thrust Washer Ring	Stainless Steel
9	1	Ball	S.S. 316
x 10	2	Seat	PTFE
10a	1	Seat Ring	S.S. 316
x 11	2	Body Gasket	Graphite
12	1	Body	S.S. 316
13	2	End Connection	S.S. 316
14	4	Extention Screw	Stainless Steel
14a	1	Stop Pin	Stainless Steel
16	6	Bolts	ASTM A193 B8
17	1	Stop Washer	Stainless Steel
20	6	Seat Spring	Inconel x 750

* Suggested Material After Two Years

Rev.	Date	Reason for revision	Made By	Chk'd By	Appr. By
0	06/06/07	First Issue			

Ball Valves Type : CRYOSTAR (N°4) FLOATING VALVE
 Port Design : FULL BORE
 Class of Valve : 600 Lbs
 End Connections : SOCKET WELD



Starline Fig. n°: 156-TGG

Drawing n°: FT-501/07-E