APPLICATION FOR APPROVAL OF VALVES AND FITTINGS

Applicant HEROSE GmbH AAR No. E149503
Description of Device CRYOGENIC GLOBE VALVE, FIRE SAFE DN 10 (3/8") TO DN 150 (6")
Applicant No. _____ Device Ident. No. 01641 Date 2013-02-05

1. Manufacturer HEROSE GmbH
   Address ELLY-HEUSS-KNAPP-STR. 12 City BAD OLDESLOE State Germany Zip 23843
2. Test facility TÜV NORD SYSTEMS GmbH Address Große Bahnstraße 31, 22525 Hamburg
3. Test date 2007-3-16 4. Observer S. KORN

TEST PROCEDURE:

5. Weight or mass of device 3.11-119 lb. (1.4-54 kg)
6. Description of prototype testing: acc. to DIN EN 1626 and DINEN 12567 with 10497
7. Description of production testing: hydrostatic test 1.5 x PN* (see catalogue) and leak tightness test acc. to DIN EN 12266

8. Cycles	Min. Temp.	@ Pressure	Cycles	Max. Temp.	@ Pressure	Test Medium	Remarks
2000	-320 °F	725 psi		+248 °F	psi	Liquid	
	-196 °C	5000 kPa		+120 °C	kPa	nitrogen	
Cycles	Min. Temp.	@ Pressure	Cycles	Max. Temp.	@ Pressure	Test Medium	Remarks
	°F	psi		°F	psi		
	°C	kPa		°C	kPa		

9. Cycles	Min. Pressure	@ Temp.	Cycles	Max. Pressure	@ Temp.	Test Medium	Remarks
	psi	°F		psi	°F		
	kPa	°C		kPa	°C		
Cycles	Min. Pressure	@ Temp.	Cycles	Max. Pressure	@ Temp.	Test Medium	Remarks
	psi	°F		psi	° F		
	kPa	°C		kPa	°C		

10. Initial commodity (or commodity type) Cryogenic Liquified gas 11. Flow rate (if applicable) N/A gpm (_____ L/min)
LNG, ETHYLEN

Applicable drawings	Material	Drawing Number latest revision	Precedent	
			Drawing Number	Application/Certificate
12. Device application				
13. Device assembly	Stainless steel	01641-X-00XX		
14. Device details				

15. Quality control statement: According to PED 97/23/EC DIN ISO 9001:2008

REVISIONS: 1

CERTIFICATION: The above data is correct and conforms with AAR Specifications for Tank Cars, Appendix A. The devices tested conform with drawings listed above.

By MARC ZAUBITZER Title QUALITY MANAGEMENT

APPROVAL AAR Tank Car Committee

Date Approved SEP 30 2013 Kenneth B Dorsey
(Signature) on behalf of Tank Car Committee

Form AAR 4-5 Revised 12/1/2000

Subject to AAR Service Trial No. ST-460

* pressure nominal DN 10 - DN 80 → PN 50
DN 100 → PN 40
DN 150 → PN 25