

TEST CERTIFICATE

IBExU Institut für Sicherheitstechnik GmbH has carried out the following examination as a competent company in the field of explosion protection.

**Manufacturer
Address**

Wilhelmsen Ships Service AS
Strandvn 20, Lysaker
NO-1324 Lysaker I NORWAY

**Product
Product description**

Safety devices and quick-action couplings
Type series Super, E460-3, 85-10, Unitor Quick Coupling
These products and the various versions are specified in the annex and the test report listed.

**Product testing was carried
out experimentally according to**

EN 561:2002
EN ISO 5175-1:2018
EN ISO 9090:2020
EN ISO 9539:2014

**Supplementary in compliance with the BAM standard
operating procedures**

BAM-StAA-SE-16 from 2017-11-14
BAM-StAA-SE-18 from 2018-04-12
BAM-StAA-SE-19 from 2020-12-08

**Test report
Annexes**

IB2440037
This test certificate consists of this document and an annex.

Test result

The products were successfully retested orientating/random on the basis of the BAM type tests in accordance with the standards listed under product testing and documented in separate test report. The orientating/sampling monitoring of the products takes place in an annual cycle.

The products may be labeled as follows in conjunction with the number of the test certificate:

IBExU[®] geprüft und überwacht or IBExU[®] tested and under surveillance

TEST CERTIFICATE

Number of the certificate 2412 | Issue 01
Valid until 2027-11-30

Issued by IBExU Institut für Sicherheitstechnik GmbH
Fuchsmühlenweg 7
09599 Freiberg | Germany

30.01.2025



Date (checked and released) / Signature
Prüfaborleiter / Head of test laboratory

Note 1: Test certificates without a signature are not valid. Test certificates may only be reproduced in full and unchanged.

Note 2: This test certificate certifies the result of the test on the product submitted for testing. It is not applicable to other products.

Note 3: If this test certificate does not bear issue 00, it replaces the previous issue including any associated annexes.

TEST CERTIFICATE - ANNEX

Annex of test certificate

2412 | Issue 01

Description of product

Part 1: Safety devices with integrated flame arrester and multiple functions

Depending on the model, these are designed to protect tapping points on distribution lines and/or individual cylinder systems. The safety devices consist of a housing, a sintered flame arrester and a gas non-return valve. Depending on the model, a temperature-sensitive cut-off and pressure-sensitive cut-off valve are also installed.

Table 1

Type series	max. connectable inner tube / hose Ø in mm	article-No.:	max. operation pressure per gas type ¹⁾				
			p [MPa]				
Super			A	P	M	H	O
Unitor W-66 S	10	708554	0.2 ²⁾	0.5	0.5	0.5	
Unitor W-66 S		708550					1.0
Unitor S-55 AC	10	708537	0.15	0.5	0.5	0.3	
Unitor S-55 OX		708545					1.5

Type series	max. connectable inner tube / hose Ø in mm	article-No.:	max. operation pressure per gas type ¹⁾				
			p [MPa]				
E 460-3			A	P	M	H	O
E 460-3 AC	10	708350	0.15	0.5	0.5	0.4	
E 460-3 OX		708350					2.0

Type series	max. connectable inner tube / hose Ø in mm	article-No.:	max. operation pressure per gas type ¹⁾				
			p [MPa]				
85-10			A	P	M	H	O
85-10 AC	10	585372	0.15	0.5	0.5	0.4	-
85-10 OX		682427	-	-	-	-	2.5

¹⁾ Acetylene (A); Propane (P); Methane (M); Hydrogen (H); Oxygen/ air (O)

²⁾ Based on EN ISO 5175-1:2018

TEST CERTIFICATE - ANNEX

The safety devices listed in Table 1 fulfil the requirements of the operating conditions specified in EN ISO 5175-1:2018. The listed safety devices also fulfil the extensions of section 4.2 'Materials' of EN ISO 5175-1:2018, which are documented in the following BAM standard operating procedures:

- BAM-StAA-SE-16 "Test for resistance for non-metallic materials" (Resistance to solvents) dated 2017-11-14 and
- BAM-StAA-SE-18 "Test for resistance to ageing in oxygen for non-metallic materials" dated 2018-04-12.

Furthermore, the listed safety devices (in so far applicable) fulfil:

- BAM-StAA-SE-19 "Test of pressure-sensitive valve for quick opening" dated 2020-12-08.

Furthermore, the non-metallic materials used in the devices were successfully tested for use in gaseous oxygen, at the specified maximum operating pressures and the maximum oxygen temperature of 60 °C (test for reactivity with oxygen when exposed to oxygen pressure surges).

TEST CERTIFICATE - ANNEX

Part 2: Quick-action couplings

Quick-action couplings with automatic gas shut-off are used on equipment for welding, cutting and related processes to connect gas hoses to pressure regulators and torches. The quick-action coupling consists of a coupling pin and a coupling body. This quick-action coupling is equipped with an automatic gas lock. When disconnected, the gas lock prevents gas from escaping from the coupling body and is opened again by coupling.

Table 2

Type series	max. connectable inner tube / hose Ø in mm	article-No.:	max. operation pressure per gas type		
			p [MPa]		
Unitor Quick Coupling			Acetylene	Fuel gase	Oxygen
Unitor Quick Coupling	10	734007	0.15	2.0	
		734016			
		734004			
		734013			
		734025			
Unitor Quick Coupling		734001			2.0
		734010			
		734019			
		734022			
		734028			

The quick-action couplings listed in Table 2 fulfil the requirements of the operating conditions specified in EN 561:2002. The compliance with the requirements of paragraph 6.5 is extended within BAM Standard Operating Procedures:

- BAM-StAA-SE-16 "Test for resistance for non-metallic materials" (Resistance to solvents) dated 2017-11-14 and
- BAM-StAA-SE-18 "Test for resistance to ageing in oxygen for non-metallic materials" dated 2018-04-12.

Furthermore, the non-metallic materials used in the devices were successfully tested for use in gaseous oxygen, at the specified maximum operating pressures and the maximum oxygen temperature of 60 °C (test for reactivity with oxygen when exposed to oxygen pressure surges).

TEST CERTIFICATE - ANNEX

Specific conditions of Use

Marking and Documentation

The manufacturer is obliged:

- a) to label each safety device / quick-action coupling in accordance with the standards specified under product testing and
- b) to provide corresponding documentation.

Connection sizes

The types listed under "Product" may only be used with the cable / hose diameters specified in Tables 1 and 2.

Limitation of use

The operator is obliged:

- a) to observe and comply with the specifications in the operating instructions and labelling,
- b) to ensure that the operating temperatures are between -20 °C and +60 °C and
- c) to check the safety devices and quick-action couplings for soiling, damage and corrosion depending on the load and to replace them if necessary.

The safety devices / quick-action couplings may only be used if their materials are resistant to mechanical and/or chemical influences under respective operating conditions, that the function is not invalidated.