TYPE APPROVAL CERTIFICATE
No. **MAC390221XG/001**

This is to certify that the product identified below is in compliance with the regulations herewith specified.

Description	**Pipes couplings**
Type	**VSH XPress Stainless**
Applicant	**Aalberts Integrated Piping Systems B.V.** **Oude Amersfoortseweg 99** **1212 AA Hilversum** **NETHERLANDS**
Manufacturer	**Aalberts Integrated Piping Systems B.V.**
Place of manufacture	**Oude Amersfoortseweg 99** **1212 AA Hilversum** **NETHERLANDS**
Reference standards	**Part C, Chapter 1, Section 10 of RINA Rules**
Reference documents	**RINA Type approval system**

Issued in **HAMBURG** on **January 18, 2022**. *This Certificate is valid until* **January 17, 2027**

RINA Services S.p.A.
Giuseppe Russo

This certificate consists of this page and 1 enclosure

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VSH XPress Stainless

Reference documents

VSH XPress System Catalogue 5007134_2021_2.2

Assembly drawings and technical specification sheets of VSH XPress Stainless Fittings

IMA Test Reports no. C099/10.1 dated 15.11.2010 (Fire Resistance Test ISO 19921)

IHA Test Reports no. 002, 003 dated 20.10.2010 and no. 006 dated 27.10.2010 (IACS P2.11)

Materials/Components

Pipes:	thin-walled tubes of stainless steel no. 1.4301, 1.4401, 1.4521 (EN10088-2)
Fittings:	stainless steel no. 1.4404 (EN10088-2)
O-rings:	Black EPDM, Green Viton, Grey Viton

Technical characteristics

Maximum Working Pressure:	16 bar for pipe sizes from 15 up to 76.1 mm 12.5 bar for pipe size 88.9 mm 10 bar for pipe size 108 mm
Maximum Working Temperature:	-35°C to 200°C depending on O-Ring material and application as per VSH Technical Specification.

Pipes Dimensions according to the following table:

Pipe external diameter (mm)	Pipe thickness (mm)
15	1.0
18	1.0
22	1.2
28	1.5
35	1.5
42	1.5
54	1.5
76.1	2.0
88.9	2.0
108.0	2.0

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Fields of application

Application of the mechanical joints and their acceptable use for each service are indicated in Table 16, Part C, Chapter 1, Section 10 of RINA Rules. Services where fire resistant type is required are accepted.

Application of the mechanical joints depending upon the class of piping is indicated in Table 17 of above mentioned Rules. Furthermore press type compression couplings are not allowed on piping systems of I and II Class.

The mechanical joints are not to be used in those systems where pressure pulsation other than water hammer is expected.

Acceptance conditions

The acceptance of the a.m. products on board ships and other units classed with RINA is subject to the satisfactory outcome of testing as per RINA Rules.

The installation on board of mechanical joints is to be made in accordance with the Manufacturer's assembly instructions. Where special tools and gauges are required for installation of the joints, these are to be supplied by the Manufacturer.

The gasket (O-ring) material is to be suitable for the conveyed medium and working temperatures as per Manufacturer´s instructions.

This certificate annuls and replaces the previous ones Nos. MAC220916XG/001.

HAMBURG January 18, 2022



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