



**TYPE APPROVAL CERTIFICATE**  
**No. MAC245622CS**

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

<i>Description</i>	<b>MECHANICAL JOINTS FOR PIPES</b>
<i>Type</i>	<b>AG Thunder Lock</b>
<i>Applicant</i>	<b>ALFAGOMMA HYDRAULIC SPA VIA ENRICO MATTEI 6 64020 Castelnuovo Vomano (TE) ITALY</b>
<i>Manufacturer</i>	<b>ALFAGOMMA HYDRAULIC SPA</b>
<i>Place of manufacture</i>	<b>VIA ENRICO MATTEI 8 64020 Castelnuovo Vomano (TE) ITALY</b>
<i>Reference standards</i>	<b>Parte C, Cap. 1, Sez. 10 dei Regolamenti RINA</b>

*Issued in* **Trieste** *on* **October 6, 2022.** *This Certificate is valid until* **October 5, 2027**

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**RINA Services S.p.A.**  
**Giovanni Carratino**

This certificate consists of this page and 1 enclosure

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**AG Thunder Lock**

### Reference documentation:

Technical drawings approved with drawings Letter PPVT/2022/814/CRLVA dispatched on 4 Oct. 2022

Test Report filed with Letter PPVT/2022/814/CRLVA dispatched on 4 Oct. 2022

### Technical characteristic

Diameters and scantlings as per PPVT-39607

Temperature range: from -40°C to +200°C\*\*

#### Materials

*Tubes Materials:* E235, E275, E355, P265, ASTM A106, ASTM A333, AISI 304, AISI 304 L, AISI 316, AISI 316 L, AISI 316 Ti, AISI 321

*Fittings Materials:* 11SMnPb30, 11SMnPb37, 36SMnPb14, 44SMnPb28, C4C, AISI 304, AISI 304 L, AISI 316, AISI 316 L, AISI 316 Ti, AISI 321

*O-Rings Materials:*

ORFS	DIN	FLANGE PN6	FLANGE PN16	SWIVEL STRAIGHT COUPLING
GRAPHITE*	FKM*	GRAPHITE*	GRAPHITE*	GRAPHITE
FKM*	EPDM*	ASBESTOS FREE	ASBESTOS FREE	FKM*
NBR	NBR			NBR

### Fields of application

- Sea water
- Fresh water
- Hydraulic oil
- Thermal oil
- CO2 system and Fire extinguishing system (including FM-200 and Novec 1230)
- Condensate return
- Fuel Oil
- Compressed air
- Brine
- Steam

Application and fluid according to the Tables 16 of RINA Rules Pt C, Ch 1, Sec10 [2.4.5] and Tables 7 of UR P2.7.4.

### Remarks

For Installation, gasket and O-rings and their correlation with temperature range, refer to Alfagomme technical Documentation

The installation on board is to be carried out in accordance with Manufacturer's instructions and with requirements of f Pt C, Ch 1, Sec 10 of RINA Rules.

Each product to be installed on board ships and other units classed by RINA is subject to the satisfactory outcome of testing according to RINA Rules.

Validity of this Type Approval Certificate is subordinate to satisfactory outcome of periodical surveys as per RINA Rules for testing and certification of Marine Materials and Equipment.

**GENOVA February 1, 2022**

