



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. P-12085

This Certificate consists of 3 pages

This is to certify that the

Tube Fittings

with type designation(s)

INOXPRES, STEELPRES

Manufactured by

Raccorderie Metalliche S.p.A.

Campitello di Marcaria MN, Italy

is found to comply with

Det Norske Veritas' Rules for Classification of Ships

Offshore Standard DNV-OS-D101, Marine and Machinery Systems and Equipment

Det Norske Veritas' Standards for Certification 2.9 No. 5-792.20

Application

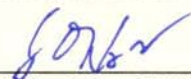
The tube fittings may be use in fire fighting and sprinkler systems, compressed air, sanitary, fresh water, steam (only Class II Piping) and condensate.

Type:	Temperature range:	Max. working press.:	Sizes:
INOXPRES	-55 to + 200 °C (dep. on sealing, see cert.)	10 bar	15, 18, 22, 28, 35, 42, 54, 76, 89 and 108 mm
STEELPRES	-20 to + 200 °C (dep. on sealing, see cert.)	10 bar	15, 18, 22, 28, 35, 42, 54, 76, 89 and 108 mm

Place and date

Høvik, 2005-09-13

for DET NORSKE VERITAS AS

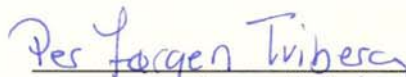

John Olav Nøkleby
Head of Section



Local Office
DNV Milan

This Certificate is valid until

2009-12-31


Per Jørgen Tviberg
Surveyor

Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Cert. No.: P-12085
File No.: 792.24

Product description

Carbon steel and stainless steel press fit tube fittings, with internal elastomer sealing rings.

Materials:

Carbon steel: E195NBK EN 10305-3

Stainless steel: UNI X5CrNiMo1712 [AISI316L] EN 10217-7

Application/Limitation

Where elastomers are used the temperature is not to exceed the following:

Type of Elastomer	Temperature range
EPDM	-20 to + 110 °C
NBR/H-NBR	-10 to + 70 °C
FPM – Viton	+30 to + 200 °C
Silicone	-55 to + 180 °C

For couplings at elevated temperatures, the maximum working pressure has to be reduced with the following factors:

Temp.	-55 °C	-20 °C	20 °C	50 °C	100 °C	150 °C	200 °C
Carbon Steel	-	1	1	1	1	0,89	0,81
Stainless Steel	1	1	1	0,95	0,85	0,77	0,71

Couplings made of carbon steel are not to be used at temperatures below -10°C unless the material is normalised.

The wall thickness and the material of the tubes are to be in accordance with the current Rules of Det Norske Veritas.

The approval is only valid when the couplings are assembled with tubing of correct temper and tolerances as recommended by the coupling manufacturer.

Type Approval documentation

Manufacturer's Technical Handbook

MPA NRW test report No 120002380 dated 2005-07-12

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Tests carried out

Leakage test, vibration test, burst pressure test, pull-out test and fire test

Marking of product

For traceability to this type approval, each valve is to be marked with:

- Manufacturer's name:
- Type designation
- Size
- Maximum design pressure or pressure class

Certificate retention survey

For retention of the Type Approval, a DNV Surveyor shall perform a survey - every second year and before the expiry date of this certificate to verify that the conditions for the type approval are complied with. The Surveyor shall witness burst testing of samples of couplings selected at random from stock or from the running production as a part of this survey.

END OF CERTIFICATE

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