

TYPE APPROVAL CERTIFICATE
No. MAC515408CS



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

<i>Description</i>	pipe couplings
<i>Type</i>	24° COMPRESSION FITTINGS AND TAPER FITTINGS CUTTING RING TYPE PIPE COUPLINGS
<i>Applicant</i>	PH INDUSTRIE-HYDRAULIK STEFANSBECKE 35-37 D-45549 SPROCKHOVEL GERMANY
<i>Manufacturer</i>	PH INDUSTRIE-HYDRAULIK
<i>Place of manufacture</i>	STEFANSBECKE 35-37 D-45549 SPROCKHOVEL GERMANY
<i>Reference standards</i>	Part C, Chapter 1, Section 10 of RINA Rules
<i>Reference documents</i>	RINA Type approval system

Issued in **Genoa** on **November 26, 2008**. This Certificate is valid until **November 25, 2013**

RINA

Francesco Sciacca



This Certificate consists of this page and 1 enclosure.

This Certificate cancels and replaces the previous N° MAC503203CS dated 9.02.2004.

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24° COMPRESSION FITTINGS AND TAPER FITTINGS

Reference documents

PH INDUSTRIE-HYDRAULIK catalogue dated April 2003, Ch 8 and 9.
 MPA NRW report No. 12000985 dated 28.03.2003 (certified translation from German to English)

Trade names, Materials and Components

24° Compression couplings according to DIN 2353 / DIN EN ISO 8434-1

GV - Straight couplings	WV - Equal elbows	WHV - Banjo elbows
GRV - Stud reducers	TV - Equal tees	THV - Banjo tees
TRV - Couplings	KV - Equal crosses	EVW - Swivel elbows
GE - Couplings**	GAI - Female stud couplings	EVT - Swivel branch tees
WE - Stud elbow	GRI - Male female stud adaptors**	EVL - Swivel barrel tees
TE - Stud branch tees	EVGE - Stud standpipe adaptors**	MV - Gauge couplings
LE - Stud barrel tees	GSV - Couplings (straight bulkhead)*	WSV - Bulkhead elbows*
MV - Gauge swivel couplings	KOR - Tube end reducers	Non return valves**
SR - Double bite cutting rings	VKA - Couplings plugs**	XROV - Blanking plugs
GM - Locknuts	VST - Socket head port plugs**	VSHü - Reinforcing rings
ÜWS - Internal couplings nuts	ÜWM - Nuts for cutting ring connections	

* Not accepted in division of class A and B

** Not accepted on piping systems where fire resistance is required if provided with rubber sealing

Taper fittings according to DIN EN ISO 8434-4

GV - DKOL / DKOS - Swivel unions	GVR - DKO - Straight reducer
EW - DKOL / DKOS - Adjustable elbows	ET - DKOL / DKOS - Adjustable stud branch tees
EL - DKOL / DKOS - Adjustable stud barrel tees	RED - DKOL / DKOS - Reducing couplings
EGE - DKOL / DKOS - Swivel connectors	MWE - DKOL / DKOS - Gauge swivel connectors.

Materials:

- 24° compression couplings and taper fittings: stainless steel 1.4571 (AISI 316 Ti)
- Sealing rings: FPM, PTFE, NBR.

Range of application

LIGHT SERIE (L)		HEAVY SERIE (S)	
Pipe O.D. [mm]	Nominal pressure [MPa]	Pipe O.D. [mm]	Nominal pressure [MPa]
6 - 18	31.5	6 - 14	63
22 - 42	16	16 - 30	40
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Pressure reductions are to be applied, according to Manufacturer's instructions, for conveyed medium having temperatures ≥ 50 °C.

Nominal Pressures, stated in the above table, represent the max. permissible operating pressure (including pressure peaks), in which the temperature limits and pressure reductions must be taken into account.

Temperature ranges depending also upon sealing materials:

Stainless steel:	-55 °C to 200 °C	FPM:	-20 °C to 200 °C
NBR:	-35 °C to 100 °C	PTFE:	-60 °C to 200 °C


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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.

24° Compression couplings according to DIN 2353 / DIN EN ISO 8434-1, where provided with rubber sealings, are not accepted for those services where fire resistant type is required.

Taper fittings according to DIN EN ISO 8434-4 are not accepted for those services where fire resistant type is required.

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 gasket material must be resistant to the fluid conveyed in the pipe and also to the surrounding fluid if the coupling is installed inside a tank.

Tests carried out

Type tests carried out at MPA NRW laboratory from 20.04.01 to 28.03.03.

Remark

This Certificate cancels and replaces the previous N° MAC503203CS dated 9.02.2004.

Genoa November 26, 2008

