

Type Approval Certificate Extension

This is to certify that Certificate No. 97/20042 (E5) for the undernoted products is extended and renumbered as shown.

This certificate is issued to:

PRODUCER Rasmussen GmbH
Edisonstraße 4
63477 Maintal
Germany

PLACE OF PRODUCTION Gewerbepark Gerbershausen
Rasmussenstraße 1-17
37318 Gerbershausen
Germany

DESCRIPTION Locking Slip-on joint coupling for metal pipes consisting of a stainless steel housing, either st./st. or plastic insert, two-lip sealing of either EPDM or NBR, st./st. conical protection ring and inlay and heavy duty locking trunnions/hollow trunnions. Fire resistant cover on request.

TYPE

Denomination 1*)	Denomination 2*)
NORMACONNECT G1; +FP*	GRIP; +FP
NORMACONNECT G2; +FP	GRIP; +FP
NORMACONNECT GL1; +FP	GRIP E; +FP
NORMACONNECT GL2; +FP	GRIP E; +FP

1+2*) Denomination 1 and 2 describe the same coupling type. Denomination 1 is used with the name "NORMA" while denomination 2 with the name "+GF+/NORMA"

* + FP - fire protected version acc.:

0578 3070 001,...002,...003; 0578 4070 001,...002,...003;
0579 3070 001,...002,...003; 0579 4070 001,...002,...003

Certificate No. 97 / 20042 (E6)

Issue Date 08 May 2006

Expiry Date 07 May 2011

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Olaf Schmidt
Hamburg Plan Approval Centre
Lloyd's Register EMEA

Lloyd's Register EMEA
71 Fenchurch Street, London EC3M 4BS

APPLICATION

Marine, offshore and industrial pipe installations. The usage of these joints as the main means of pipe connection is not permitted.

The **restrictions** for these pipe couplings are:

1. to compensate axial and lateral deformations
2. Class I piping, CO₂-, Starting- and Control Air System
3. Inside machinery spaces of category A or accommodation spaces for:
 - main lines of Inert gas systems,
 - pipe systems for flammable liquids (Flashpoint >60°C) including corresponding vent end sounding pipes, except for cargo oil lines in pump rooms and open decks,
 - bilge pipes.
4. Steam systems, except for pipes on weather decks of oil and chemical tanker. See also Other Conditions !
5. Scuppers and discharge (overboard), Deck drains, except for pipes above freeboard deck
6. Generally: pipelines in cargo holds, tanks and other spaces which are not easily accessible
7. Fire main , water spray and sprinkler systems or similar which are not always filled with water

RATINGS

Types	: G1 and G2 (GRIP) (GRIP)	+FP version
Sizes o. D.:	: 26,9 to 219,1 mm	38,0 to 219,1mm
Nom. Pressure:	: PN 16 bar	

Types	: GL1 and GL2 (GRIP E) (GRIP E)	+FP version
Sizes o. D.	: 26,9 to 168,3 mm; PN 16	38,0 to 406,4mm
Sizes o. D.	: 180,0 to 219,1 mm; PN 10	
O.D. - MAWP	: 273,0 mm - 5,5 bar : 323,9 mm - 3,0 bar : 355,6 mm - 2,7 bar : 406,4 mm - 2,5 bar	

Temperature Range	: -30 °C to +125 °C (EPDM) for sizes 26,9 mm to 168,3 mm -20 °C to +80 °C (NBR/EPDM)
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RATINGS cont.

Material combination	W2		W4		W5	
	DIN	AISI	DIN	AISI	DIN	AISI
housing	1.4301	304	1.4301	304	1.4571	316 Ti
bolts	1.7220/ 1.4404	4140H/ 316 L	1.4404	316 L	1.4404	316 L
bars, solid	1.0737	12L14	1.4301	304	1.4401	316
grip ring	1.4310	301	1.4310	301	1.4310	301
steel band inlay *	1.4571	316 Ti	1.4571	316 Ti	1.4571	316 Ti
bars, hollow	--	--	1.4571	316 Ti	1.4571	316 Ti
bars, hollow (formed)	~1.0580	~ 1024	1.4571	316 Ti	1.4571	316 Ti

*or plastic Grivory HTV-4x1 for all material combinations

SPECIFIED STANDARD DIN 86128
 Lloyd's Register Rules and Regulations for the
 Classification of Ships, July 2005
 IACS Req. 2001; P2.11
 ISO 19921

OTHER CONDITIONS Suitable provision for expansion is to be made where necessary in each range of pipes.
 For material combinations for the corresponding media the producer's recommendations and instructions to be sought.
 Marking of the products to show:
 Producer's name or trade mark, type designation, material combination, size, gasket material, torque and max. working pressure or pressure Class.
 The use of fire protected version FP is required for:

- flammable fluids incl. corresponding vent pipes
- inert gas systems
- inside machinery spaces of Category A for seawater, cooling water, ballast water and condensate systems
- fire main, water spray, foam and sprinkler systems

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"This Certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid certificate."

The attached Design Appraisal Document No. HMD 11246-03, Issue No. 2 dated 08.05.2006 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

All other details remain as the previous Certificate No. 97/20042 (E5) to which this extension should be attached.

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Marine Design Appraisal Document

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Date
08 May 2006
Quote this reference on all future communications
HMD 0610085/17381-06/BUE/TS/BHS

**THE LLOYD'S REGISTER'S TYPE APPROVAL SYSTEM, 2002
ISSUED TO: RASMUSSEN GMBH
FOR: PIPE COUPLINGS
TYPE: NORMACONNECT G1, G2, GL1 and GL2
+GF+/NORMA GRIP and GRIP E**

TYPE APPROVAL CERTIFICATE NO.: 99/20042 (E6)

Please note that DAD Issue Number 1 is superseded hereby

The undernoted documents have been reviewed for compliance with the requirements of the Lloyd's Register's Type Approval System, 2002 and this Design Appraisal Document forms part of the Certificate.

APPROVAL DOCUMENTATION

Form LR6606	Approval Services- Request for Quotation	02.03.2006
-	Nomenclature	11.09.2003

TEST REPORTS

DTM 0620054	Visit Report	11.04.2006
60316	Fire Resistance Test Item Pipe Coupling GRIP-E/GL-1 RA 168,3mm,16bar; acc. ISO 19921	28.03.2006
60316	Fire Resistance Test Item Pipe Coupling GRIP-E/GL-2 RA 219,1mm,10bar; acc. ISO 19921	28.03.2006
60316	Fire Resistance Test Item Pipe Coupling GRIP-E/GL-1 RA 38,0mm,16bar; acc. ISO 19921	28.03.2006
-	Preliminary test reports list of Normaconnect Pipe Couplings, 2 pages	13.12.2005
-	Preliminary test reports list of Normaconnect Pipe Couplings	01.03.2006
-	NORMACONNECT-Pipe Coupling Test Reports, Assembly test, Fatigue Test, Vacuum Test, Hydrostatic Pressure Test, Burst Pressure Test acc. IACS P2.11.5.5; 47 pages	

FINAL ACCEPTANCE OF ACTUAL ITEM(S) DEPEND(S) ON SATISFACTORY SURVEY AND TESTING

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Date
08 May 2006

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HMD 0610085/17381-06/BUE/TS/BHS

DRAWINGS

- Set of Drawings

Supplementary Type Approval Terms and Conditions

Type Approval certifies that a representative sample of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein. It does not mean or imply approval for any other use, nor approval of any product(s) designed or manufactured otherwise than in strict conformity with the said representative sample.

Type Approval is based on the understanding that the manufacturer's recommendations and instructions and any relevant requirements of the Rules and Regulations are complied with.

Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations.

Lloyd's Register EMEA reserves the right to cancel or withdraw this Type Approval Certificate in accordance with the LR Type Approval System Procedure.



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