



NIPPON KAIJI KYOKAI

TYPE APPROVAL CERTIFICATE

Certificate No. TA19593M

This is to certify that the undernoted products have been approved in accordance with the requirements 12.3.3, Chapt.12, Part D of “Rules for the Survey and Construction of Steel Ships” and Chapt.9, Part 6 “Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use”.



This certificate is issued to

Manufacturer : **YOUNGNAM METAL CO., LTD., KOREA**
Name of Product : **Mechanical Joint (Slip-on joint)**
Model : **GRIP RING TYPE :** **GR-S (15A~350A)**
GR-L (15A~300A)
MULTI-FLEX TYPE : **MF-RS (15A~500A)**
MF-RL (15A~500A)
REPAIR CLAMP HINGE TYPE : **RCH-S (15A~500A)**
RCH-L (15A~500A)
REPAIR CLAMP ELBOW TYPE : **RCH-E (15A~150A)**
RCD-E (200A~500A)

Approval No. : **08FV102B**
Valid until : **1 May 2023**

This certificate is subject to the conditions specified in the attached sheet(s).

Issued at Tokyo on 23 December 2019.



T. Shimada
General Manager
Machinery Department

• **Particulars and conditions**

Design Temperature : -20 to 70 °C (NBR), -30 to 90 °C (EPDM)
-50 to 250 °C (SILICONE), -30 to 230 °C (VITON)

Material of Casing : SUS304 or SUS316

Design Pressure (bar):

Nominal Diameter	GR-S	GR-L	MF-RS MF-RL	RCH-S RCH-L	RCH-E	RCD-E	
15A	20	20	20	14	11	-	
20A					8		
25A							
32A							
40A				12			
50A	18	18	18		10		
65A							
80A	16	16	16	8	7		
100A							
125A							
150A	12	12	14	-	-		
200A	7	7	10				7
250A							
300A	5	5	8			6	
350A							
400A	-	-	5			4	
450A							
500A			4			3	
							3

• **Application**

The mechanical joints can be used for the following piping lines in accordance with 12.3.3, Chapter 12, Part D of the Rules:

1. Cargo oil lines and crude oil washing lines
2. Fuel oil, lubricating oil, hydraulic oil, and thermal oil lines outside machinery spaces of category A and accommodation spaces
3. Fire, water spray and foam lines
4. Bilge, ballast and cooling sea water lines
5. Sea water lines for tank cleaning and non-essential services
6. Cooling fresh water lines and condensate return lines
7. Fresh water lines for non-essential services

8. Vent lines for cargo oil (flash point 60 °C or less) tanks
9. Vent lines and sounding lines for oil (flash point above 60 °C) tanks outside machinery spaces of category A and accommodation spaces
10. Vent lines and sounding lines for water tanks and dry spaces
11. Inert gas main lines outside machinery spaces of category A and accommodation spaces
12. Inert gas water seal effluent lines, scrubber effluent lines and distribution lines
13. Sanitary drain lines
14. Deck drain(internal) lines above free board deck
15. Compressed air lines for non-essential services and brine lines

Not to be used for piping belonging Group I specified in the requirements of 12.1.3, Chapter 12, Part D of the Rules.

• **Type approval tests carried out**

GRIP RING TYPE (GR-S, GR-L):

Tightness test, Burst pressure test, Fire endurance test (ISO 19921/19922), Vacuum test, Pressure pulsation test, Repeated assembly test, Vibration test, Pull-out test

MULTI-FLEX TYPE (MF-RS, MF-RL):

Tightness test, Burst pressure test, Fire endurance test (ISO 19921/19922), Vacuum test

REPAIR CLAMP HINGE TYPE (RCH-S, RCH-L):

Tightness test, Burst pressure test, Vacuum test

REPAIR CLAMP ELBOW TYPE (RCH-E, RCD-E):

Tightness test, Burst pressure test, Vacuum test

• **Documents**

DWG No. YG-5001-1, YM-5002-1, YG-0002, YM-0001, YR-0003, YR-0004 (21 May 2019)

Test Report (18 October 2019)

• **Installation**

The installation of mechanical joints is to be 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.

• **Production test**

Hydraulic test for the pipe joints used for pipes in Group II are to be carried out in the presence of our surveyor.

• **Notice**

Any significant changes in design or construction of the above items may render this certificate invalid.

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