



Design Appraisal Document

Lloyd's Register Quality Assurance, Inc.
MSIS- Inspection
1330 Enclave Parkway
Suite 200
Houston
Texas 77077 USA

Date
11 June 2018

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LLOYD'S REGISTER'S TYPE APPROVAL SYSTEM, 2014.
Issued to: LOKRING TECHNOLOGY LLC
for: TUBE AND PIPE FITTINGS

Type Approval Certificate No. 98/60070(E4)

The undernoted documents have been reviewed for compliance with the requirements of Lloyd's Register's Type Approval System, 2014 and this Design Appraisal Document is a supplement to the Certificate.

APPROVAL DOCUMENTATION

Application Check list
ISO 9001-2015 DNV –GL 241471-2017-AQ-USA-ANAB Expiry date May 31 2020
Lloyd's Register PQA Assessment Report HSN1810014
Fitting Application Guide 6090127R5
FS 40-T Series SS40 & SS-3000 stainless steel fittings
FS 40 for SS40 316L Stainless steel fittings
LP-105 Installation Procedure
FS3000 for MAS carbon steel fittings
Lokring ESP Design Guidelines 6090128R6

1 Feb 2018
31 May 2017
11 June 2018

042710
052610
091913
062411
April 2015

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

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Pressure Ratings

Lokring Fittings Ratings for Marine Applications

<u>LOKRING Fitting</u>	<u>NPS</u>	<u>Pipe Sch.</u>	<u>Pressure Rating IACS</u>
SS40-XXX-P04	1/4"	10	3781
		40	5300
		80	6000
SS40-XXX-P06	3/8"	10	3400
		40	4900
		80	5750
SS40-XXX-P08	1/2"	10	4030
		40	4760
		80	4760
SS40-XXX-P12	3/4"	10	3170
		40	4210
		80	4930
SS40-XXX-P16	1"	10	3340
		40	3680
		80	3990
SS40-XXX-P20	1 1/4"	10	2500
		40	2700
		80	2980
SS40-XXX-P24	1 1/2"	10	2260
		40	2440
		80	2440
SS40-XXX-P32	2"	10	1500
		40	2200
		80	2500
SS40-XXX-P48	3"	10	920
		40	1700
		80	1350

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<u>LOKRING Fitting</u>	<u>OD</u>	<u>Tube Wall</u>	<u>Pressure Rating IACS</u>
SS40-XXX-T04	1/4"	0.035	4794
		0.049	7050
		0.065	8507
SS40-XXX-T06	3/8"	0.035	3102
		0.049	4512
		0.065	5311
SS40-XXX-T08	1/2"	0.035	2444
		0.049	3478
		0.065	4014
SS40-XXX-T10	5/8"	0.035	1974
		0.049	2726
		0.065	3525
SS40-XXX-T12	3/4"	0.035	1598
		0.049	2256
		0.065	3102
SS-3000-XXX-T14	7/8"	0.065	2632
SS-3000-XXX-T16	1"	0.065	2256
SS-3000-XXX-T20	1 1/4"	0.065	1786
		0.083	2256
		0.095	2632
		0.109	3102
SS-3000-XXX-T24	1 1/2"	0.065	1504
		0.083	1880
		0.095	2162
		0.109	2538
		0.120	2820
SS40-XXX-T32	2"	0.065	1034
		0.083	1410
SS40-XXX-T40	2 1/2"	0.065	846
		0.083	1128

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	<u>NPS</u>	<u>Pipe Sch.</u>	<u>Pressure Rating IACS</u>
LOKRING Fitting			
MAS-3000-XXX-P04	NPS ¼	40	4890
		80	6610
MAS-3000-XXX-P06	NPS ⅜	40	4040
		80	5600
MAS-3000-XXX-P08	NPS ½	40	3890
		80	5250
		160	4810
MAS-3000-XXX-P12	NPS ¾	40	3230
		80	4400
		160	4240
MAS-3000-XXX-P16	NPS 1	40	3030
		80	3975
		160	3650
MAS-3000-XXX-P20	NPS 1¼	40	2480
		80	3350
MAS-3000-XXX-P24	NPS 1½	40	2200
		80	2930
MAS-3000-XXX-P32	NPS 2	40	1790
		80	2420
MAS-3000-XXX-P40	NPS 2 1/2	40	2300
		80	2550
MAS-3000-XXX-M76.1	M76.1	40	2300
		80	2550
MAS-3000-XXX-P48	NPS 3	10	990
		40	1700
		80	2260

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CN 200

<u>LOKRING Fitting</u>	<u>NPS</u>	<u>Wall</u>	<u>Pressure Rating IACS</u>
CN-200-XXX-P04	1/4 "	0.065	290
CN-200-XXX-P06	3/8 "	0.065	290
CN-200-XXX-P08	1/2 "	0.065	290
CN-200-XXX-P12	3/4 "	0.065	290
CN-200-XXX-P16	1 "	0.065	290
CN-200-XXX-P20	1 1/4 "	0.072	290
CN-200-XXX-P24	1 1/2 "	0.072	290
CN-200-XXX-P32	2 "	0.083	290

CN-700

<u>LOKRING Fitting</u>	<u>NPS</u>	<u>Wall</u>	<u>Pressure Rating IACS</u>
CN-700-XXX-P04	1/4 "	0.065	700
CN-700-XXX-P06	3/8 "	0.072	700
CN-700-XXX-P08	1/2 "	0.072	700
CN-700-XXX-P12	3/4 "	0.083	700
CN-700-XXX-P16	1 "	0.095	700
CN-700-XXX-P20	1 1/4 "	0.095	700
CN-700-XXX-P24	1 1/2 "	0.109	700
CN-700-XXX-P32	2 "	0.12	700

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MAS-3000-RCPL

<u>LOKRING Fitting</u>	<u>NPS</u>	<u>Pipe Sch.</u>	<u>Pressure Rating IACS</u>
MAS-3000-RCPL-P04	NPS ¼	40	4890
		80	6000
MAS-3000-RCPL-P06	NPS ¾	40	4040
		80	5600
MAS-3000-RCPL-P08	NPS ½	40	3890
		80	4760
MAS-3000-RCPL-P12	NPS ¾	40	3230
		80	3840
MAS-3000-RCPL-P16	NPS 1	40	3030
		80	3975
MAS-3000-RCPL-P20	NPS 1¼	40	2480
		80	2980
MAS-3000-RCPL-P24	NPS 1½	40	2200
		80	2440
MAS-3000-RCPL-P32	NPS 2	40	1790
		80	2420
MAS-3000-RCPL-P48	NPS 3	40	1700
		80	1350

CN-3300

<u>LOKRING Fitting</u>	<u>OD</u>	<u>Tube wall</u>	<u>Pressure Rating IACS</u>
CN-3300-XXX-T04	¼	0.035	3300

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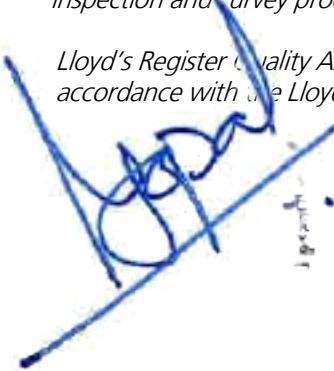
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Supplementary Type Approval Terms and Conditions

Type Approval certifies that a representative sample of the product(s) referred to herein 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 Quality Assurance, Inc. reserves the right to cancel or withdraw this Type Approval Certificate in accordance with the Lloyd's Register Type Approval System Procedure



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