DNV·GL

Certificate No:
TAD000003C

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Pipe Fitting

with type designation(s)
Swivel and Circulating Hose

Issued to
Weir Oil and Gas - Pressure Pumping
Fort Worth, TX, United States

is found to comply with
DNV-OS-E101 Drilling Plant October 2013
and DNV GL AS' understanding of the implementation and interpretation of:
PSA's "Regulations relating to design and outfitting of the facilities etc. in the petroleum activities" (THE FACILITIES REGULATIONS), Last amended 16 December 2014, Ch.VIII

Application :

Compliance with quality control requirements specified in API 6A PSL 3 is mandatory if product is intended for wellhead and christmas tree or well control systems.
Compliance with quality control requirements specified in API 16C is mandatory if product is intended for C&K applications.

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This Certificate is valid until **2018-06-30**.

Issued at **Houston** on **2015-08-17**
DNV GL local station: **Approval CMC – Houston** for **DNV GL**

Approval Engineer: **M. Kevin Mandeville Jr.**

Christian Nilsen
Head of Section

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.

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Product description

2”, 3” & 4” Cementing and Circulating Hoses and
2”, 3” & 4” Style 10, 20, 30, 50, 60, 80 & 100 Swivel Assemblies

Application/Limitation

Part No.	Description	Service	Max. Working Pressure (psi)	Temp. (°C) Min.	Max.
2A17135	Style 10 2” MxF Swivel	STD	15,000	-30	110
2A17139	Style 50 2” MxF Swivel	STD	15,000	-30	110
2A17170	Style 50 2” MxF Swivel	H2S	10,000	-30	176
2A17171	Style 10 2” MxF Swivel	H2S	10,000	-30	176
2A17205	Style 10 2” MxM Swivel	STD	15,000	-30	110
2A17208	Style 50 3” MxF Swivel	STD	15,000	-30	110
2A17212	Style 50 3” FxF Swivel	STD	15,000	-30	110
2A17213	Style 50 2” FxF Swivel	STD	15,000	-30	110
2A17214	Style 10 3” MxF Swivel	STD	15,000	-30	110
2A17215	Style 10 3” MxM Swivel	STD	15,000	-30	110
2A17229	2” Circulating Hose 9’6”	STD	15,000	-30	110
2A17230	2” Circulating Hose 9’0”	H2S	10,000	-30	176
2A17231	3” Circulating Hose 9’6”	STD	15,000	-30	110
2A17232	3” Circulating Hose 9’6”	H2S	10,000	-30	176
2A17261	2” Circulating Hose 8’0”	STD	15,000	-30	110
2A17262	2” Circulating Hose 8’0”	H2S	10,000	-30	176
2A17271	Style 20 2” FxM Swivel	STD	15,000	-30	110
2A17272	Style 100 2” FxM Swivel	STD	15,000	-30	110
2A17273	Style 100 3” FxM Swivel	STD	15,000	-30	110
2A17274	Style 100 2” MxM Swivel	STD	15,000	-30	110
2A17275	Style 100 3” MxM Swivel	STD	15,000	-30	110
2A17276	Style 10 3” MxF Swivel	H2S	10,000	-30	176
2A17277	Style 10 2” MxM Swivel	H2S	10,000	-30	176
2A17278	Style 10 3” MxM Swivel	H2S	10,000	-30	176
2A17279	Style 50 2” FxF Swivel	H2S	10,000	-30	176
2A17280	Style 50 3” FxF Swivel	H2S	10,000	-30	176
2A17281	Style 50 3” MxF Swivel	H2S	10,000	-30	176
2A17282	Style 20 2” FxM Swivel	H2S	10,000	-30	176
2A17283	Style 20 3” FxM Swivel	STD	15,000	-30	110
2A17284	Style 20 3” FxM Swivel	H2S	10,000	-30	176
2A17285	Style 100 2” FxM Swivel	H2S	10,000	-30	176
2A17286	Style 100 3” FxM Swivel	H2S	10,000	-30	176
2A17287	Style 100 2” MxM Swivel	H2S	10,000	-30	176
2A17288	Style 100 3’ MxM Swivel	H2S	10,000	-30	176
2A17289	Style 80 2” MxF Swivel	STD	15,000	-30	110
2A17290	Style 80 2” MxF Swivel	H2S	10,000	-30	176
2A17291	Style 80 3” MxF Swivel	STD	15,000	-30	110
2A17292	Style 80 3” MxF Swivel	H2S	10,000	-30	110
2A17293	Style 60 2” MxM Swivel	STD	15,000	-30	110
2A17294	Style 60 2” MxM Swivel	H2S	10,000	-30	176
2A17295	Style 60 3” MxM Swivel	STD	15,000	-30	110
2A17296	Style 60 3” MxM Swivel	H2S	10,000	-30	176
2A17297	Style 30 2” FxM Swivel	STD	15,000	-30	110
2A17298	Style 30 2” FxM Swivel	H2S	10,000	-30	176
2A17299	Style 30 3” FxM Swivel	STD	15,000	-30	110
2A17300	Style 30 3” FxM Swivel	H2S	10,000	-30	176
2A17320	Style 20 2” FxF Swivel	STD	15,000	-30	110
2A17327	Style 50 2” F x 3”M Swivel	STD	15,000	-30	110
2A17452	Style 50 2” F x Pacemaker Swivel	STD	15,000	-30	110

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Part No.	Description	Service	Max. Working Pressure (psi)	Temp. (°C) Min.	Max.
2A17460	Style 10 2” FxF Swivel	STD	15,000	-30	110
2A17567	Style 50 4" MxF HD Swivel	STD	15,000	-30	110
2A17628	Style 50 3" LR20MxF HD Swivel	STD	20,000	-30	110
2A17656	Style 10 3" MxF HD Swivel	STD	15,000	-30	110
2A17658	Style 50 3" MxF HD Swivel	STD	15,000	-30	110
2A17666	Style 10 3" MxM HD Swivel	STD	15,000	-30	110
2A17708	Style 10 4" LR15 15k SBI	STD	15,000	-30	110
2A17715	Style 10 4" LR10 MxF Swivel	STD	10,000	-30	110
2A17728	Style 10 2" LR15 15k Safety Iron	STD	15,000	-30	110
2A17730	Style 10 3" LR15 15k Safety Iron	STD	15,000	-30	110
2A17765	Style 10 4” MxF Swivel LR15	STD	15000	-30	110
2A17765V	Style 10 4” MxF Swivel LR15	STD	15000	-30	110
2A17893	2” 15K Safety Iron Swivel Style 10	STD	15000	-30	110
2A17894	4” 15K Safety Iron Swivel Style 10	STD	15000	-30	110
2A17894V	4” 15K Safety Iron Swivel Style 10	STD	15000	-30	110
2A17920	3” 1502 MxF Swivel Style 10	STD	15000	-30	110
2A17920V	3” 1502 MxF Swivel Style 10	STD	15000	-30	110
2A17922	3” 1502 MxF Swivel Style 50	STD	15000	-30	110
2A17922V	3” 1502 MxF Swivel Style 50	STD	15000	-30	110
2A17934	3” 1502 MxF Swivel Style 80	STD	15000	-30	110
2A17935	3” 1502 MxF Swivel Style 80	STD	15000	-30	176
2A17937	3” 1502 MxF Swivel Style 100	STD	15000	-30	110
2A17938	3” 1502 MxF Swivel Style 100	STD	15000	-30	176
2A17945	3” 15K Safety Iron Swivel Style 10	STD	15000	-30	110
2A17947	Style 30 3” MxF Swivel LR15	STD	15000	-30	110
2A17937	3”LR15 Swivel Assembly Style 100	STD	15000	-30	110
2A17979	3” 15K Safety Iron Swivel Style 100	STD	15000	-30	110
2A17982	3” LRG10 Swivel Assy Style 100 MxF	H_2S	10000	-30	176
2A17987	3” LR10 MxM Swivel Style 10	H_2S	10000	-30	176
2A28766	3” 1502 MxM Swivel Style 10	STD	15000	-30	110
2A28788V	3” 1502 MxM Swivel Style 10	STD	15000	-30	110
2A17893V	2” Safety Iron – 2” LR15 Style 10, Viton	STD	15000	-30	176
2A17135V	2” LR15 Style 10, MxF, Union Ends	STD	15000	-30	176
2A17494	2” LR15, Style 60, MxF Union Ends	STD	15000	-30	110
2P17985	3” LR15 Long Radius Elbow	H2S	10000	-30	176
2A17981	3” LRG10 Swivel Assembly	H2S	10000	-30	176

Type Approval documentation

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2” LR15 Swivel Assembly, Style 60, M x F W/ Union Ends, 15K
3” LR15 Long Radius Elbow
3” LR10 Swivel Assy. Style 50 MxF

Marking of product

Product marking shall:

- Be reviewed and approved by the DNV GL local surveyor
- Identify and differentiate each production unit
- Establish traceability to product design and fabrication documentation

Certificate Retention Survey

For retention of the Type Approval, DNV GL’s surveyor shall perform a survey every second year in accordance with Certification Notes No. 1.2, paragraph 4.3.

Other conditions/comments

- Equipment must be regularly inspected for minimum wall thickness in accordance with "SPM Product Safety Guide" and drawing 1S19644 (latest revision).
- Union components must be in compliance with DNV GL certificate D-5340 or successive documents.
- This equipment is not satisfactory for direct connection to the well bore or for choke and kill service.
- Reference DNV GL Project No. PP128078-08.
- Revision of D-6279, issued 2015-07-29, to remove reference to an additional manufacturing location.

END OF CERTIFICATE