DNV·GL

Certificate No:
TAD00000GM

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Valve

with type designation(s)
Plug Valves

Issued to
SPM Flow Control, Inc. DBA Weir Oil & Gas – Pressure Pumping
Fort Worth TX, United States

is found to comply with
DNVGL-OS-E101 – Drilling plant, Edition July 2015
DNVGL-SI-0166 – Verification for compliance with Norwegian shelf regulations, Edition July 2015

Application :

See Page 2.
This Type Approval Certificate is 10 pages long and replaces D-5513, issued on 2014-06-02.
Note: Plug Valves with a bore over 50mm/2in are not for use in Well Control Equipment Applications.

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

Issued at **Houston** on **2016-10-25**
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

Plug Valves with sizes:

- 1x2”SP150WU
- 1x2”SP150WU LT
- 1x2”SP150WU LT-H2S
- 2” SP150LW – H¬2S
- 2”SP150WU
- 2”SP150WU LT-H2S
- 2”SP150 Safety Iron
- 3”SP100WU
- 3”SP150WU
- 3”SP150WU-H2S
- 3”SP150 Safety Iron
- 3”SP200WU
- 3”SP200 Safety Iron
- 4”SP100WU
- 4”SP150WU
- 4”SP150 Safety Iron

Application/Limitation

Plug Valve	Assy No.	Serv	Temp. Range °C	Max. WP (psi)
1" X 2" SP 150 SI	2A27975	Std.	-30 - 110	15,000
1" x 2” SP150 Safety Iron- Viton	2A36562	Std	-30 - 176	15,000
1x2 SP150 Safety Iron Plug Valve	2A36263	Std	-30 - 110	15,000
1x2 SP150 Safety Iron Plug Valve	2A36264HBV	Std	-30 - 176	15,000
1” x 2” SP150 WU	1A11705	Std.	0 - 110	15,000
1” x 2” SP150 WU	1A11705A	Std.	0 - 110	15,000
1” x 2” SP150 WU	1A11705H	Std.	0 - 110	15,000
1" x 2" SP150 WU	1A14483HB	Std	-30 - 110	15,000
1" x 2" SP150 WU	1A14483A	Std	-30 - 110	15,000
1" x 2" SP150 WU	1A14483AV	Std	-30 - 176	15,000
1” x 2” SP150 WU	1A19748	Std.	-30 - 110	15,000
1” x 2” SP150 WU	1A19748A	Std.	-30 - 110	15,000
1” x 2” SP150 WU	1A19748H	Std.	-30 - 110	15,000
1” x 2” SP150 WU	1A20855	H_2S	-30 - 176	10,000
1” x 2” SP150 WU	1A20855A	H_2S	-30 - 176	10,000
1” x 2” SP150 WU	1A20855H	H_2S	-30 - 176	10,000
1" x 2" SP150 WU	1A25037	Std	-30 - 110	15,000
1" x 2" SP150 WU	1A25038	Std	-30 - 110	15,000
1" x 2" SP150 WU	1A25045	H_2S	-30 - 176	10,000
1” x 2” SP150 WU LT/VIT/SR	1A13280	Std.	-30 - 176	15,000
1” x 2” SP150 WU LT	1A14483	Std.	-30 - 110	15,000
1” x 2” SP150 WU LT	1A14483A	Std.	-30 - 110	15,000
1” x 2” SP150 WU LT	1A14483H	Std.	-30 - 110	15,000
1” x 2” SP150 WU-LT	1A19777	H_2S	-30 - 176	10,000
1” x 2” SP150 WU-LT	1A19777A	H_2S	-30 - 176	10,000
1” x 2” SP150 WU-LT	1A19777H	H_2S	-30 - 176	10,000
1" x 2" SP150 WU LT	1A25047	Std	-30 - 110	15,000
1" x 2" SP150 WU LT	1A25043	H_2S	-30 - 176	10,000
1x2 SP150WU/Viton	1A14483HBV	Std	-30 - 176	15,000
1" SP150 WU - Viton	1A14483V	Std	-30 - 176	15,000
1x2 SP150WU/Viton	1A25038	Std	-30 - 176	15,000
2” SP150LW	2A36869	H_2S	-30 - 176	10,000
2” SP150 LW	2A29633	Std	-30 - 110	15,000
2” SP150 SI	2A25690	Std	-30 - 110	15,000
2” SP150 SI	2A27970	Std	-30 - 110	15,000
2” SP150 SI	2A27973	Std	-30 - 110	15,000
2" SP150 Safety Iron	2A25728	Std	-30 - 110	15,000
2" SP150 Safety Iron	2A27972	Std	-30 - 110	15,000
2" SP150 Safety Iron- Viton	2A27974	Std	-30 - 176	15,000
2” SP150 WU	1A11687	Std.	0 - 110	15,000
2” SP150 WU	1A11687V	Std.	0 - 176	15,000
2” SP150 WU	1A11687A	Std.	0 - 110	15,000

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Plug Valve	Assy No.	Serv	Temp. Range °C	Max. WP (psi)
2″ SP150 WU	1A11687H	Std.	0 - 110	15,000
2″ SP150 WU	1A13279	Std.	-30 - 110	15,000
2″ SP150 WU	1A14487	Std.	-30 - 110	15,000
2″ SP150 WU	1A14487A	Std.	-30 - 110	15,000
2″ SP150 WU	1A14487H	Std.	-30 - 110	15,000
2″ SP150 WU	1A14487HB	Std.	-30 - 110	15,000
2″ SP150 WU	1A14487HVB	Std	-30 - 176	15,000
2″ SP150 WU	1A20211	Std.	-30 - 110	15,000
2″ SP150 WU	1A14492	H_2S	-30 - 176	10,000
2" SP150 WU	1A24017	Std	-30 - 110	15,000
2" SP150 WU	1A24214	H_2S	-30 - 176	10,000
2″ SP200 WU	1A14796	H_2S	-30 - 176	15,000
2″ SP200 WU	1A14802	Std.	-30 - 110	20,000
2″ SP200 WU	1A24199	Std	-30 - 110	15,000
2″ SP150 WU-LT	1A14492A	H_2S	-30 - 176	10,000
2″ SP150 WU-LT	1A14492H	H_2S	-30 - 176	10,000
2″ SP150 WU LT-H2S	1A14492HB	H_2S	-30 - 176	10,000
2" SP150 WU / LT-Viton	1A14487V	Std	-30 - 176	15,000
3″ SP150 WU	1A10004	Std.	0 - 110	15,000
3″ SP150 WU	1A10004A	Std.	0 - 110	15,000
3″ SP150 WU	1A10004H	Std.	0 - 110	15,000
3″ SP150 WU	1A13278	Std.	-30 - 110	15,000
3″ SP100 WU	1A13570	Std.	0 - 110	10,000
3″ SP100 WU	1A13570A	Std.	0 - 110	10,000
3″ SP100 WU	1A13570H	Std.	0 - 110	10,000
3″ SP100 WU	1A14174	Std.	-30 - 110	10,000
3″ SP150 WU	1A14496	Std.	-30 - 110	15,000
3″ SP150 WU	1A14496A	Std.	-30 - 110	15,000
3″ SP150 WU	1A14496H	Std.	-30 - 110	15,000
3″ SP100 WU	1A14498	Std.	-30 - 110	10,000
3″ SP100 WU	1A14498A	Std.	-30 - 110	10,000
3″ SP100 WU	1A14498H	Std.	-30 - 110	10,000
3" SP150 WU	1A18961	Std	0 - 110	15,000
3" SP150 WU	1A18962	Std	-30 - 110	15,000
3" SP100 WU	1A20927	Std	0 - 110	10,000
3" SP100 WU	1A20928	Std	-30 - 110	10,000
3" SP150 WU	1A20933	H_2S	-30 - 176	10,000
3″ SP150 WU	1A19585	H_2S	-30 - 176	10,000
3″ SP150 WU	1A19585A	H_2S	-30 - 176	10,000
3″ SP150 WU	1A19585H	H_2S	-30 – 176	10,000
3″ SP150 WU	2A36287	Std	-30 - 110	15,000
3″ SP150 WU	2A36268HV	Std	-30 - 176	15,000
3″ SP150 WU	2A26611	Std	-30 -110	15,000
3″ SP150 WU	2A26611V	Std	-30 -176	15,000
3″ SP150 WU	2A29316H	Std	-30 -110	15,000
3″ SP150 WU	2A29315	Std	-30 -110	15,000
3" SP200WU	2A25171	Std	-30 – 110	20,000
3" SP150 SI	2A25641	Std	-30 – 110	15,000
3" SP150 SI	2A27943	Std	-30 – 110	15,000
3" SP150 SI	2A27943V	Std	-30 – 176	15,000
3"SP200 SI	2A25181	Std	-30 – 110	20,000
4" SP100WU	2A25154	Std	-30 – 110	10,000
4"SP150WU	2A25168	Std	-30 – 110	15,000
4" SP150SI	2A25175	Std	-30 - 110	15,000
4″ SP150SI	2A28135	Std	-30 - 110	15,000
4″ SP150SI	2A28135HB	Std	-30 - 110	15,000

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Plug Valve	Assy No.	Serv	Temp. Range °C	Max. WP (psi)
4" SP150SI	2A28135HV	Std	-30 - 176	15,000
4" SP150SI	2A28135V	Std	-30 - 176	15,000
4" SP150SI	2A25174V	Std	-30 - 176	15,000

Type Approval documentation

1P14495	1P14495	A	Plug

2P25173	2P25173	A	Body
2A25174V	2A25174V	IR	4" SP150 Safety Iron Plug Valve less Actuator
	2A27943V	A	3 SP150 Safety Iron Plug Valve Assembly
2A28135HV	2A28135HV	IR	4" SP150 Safety Iron Plug Valve w/ Actuator
2A28135V	2A28135V	A	4" SP150 Safety Iron Plug Valve w/ Actuator
2A29315	1L18963	R6	3 SP150WU Plug Valve less Actuator
	1L18960	R9	3 SP150WU Plug Valve w/ Actuator
2P14494	2P14494	A	End Cap

2P24500	2P24500	A	Seal Segment
2P24504	2P24504	R2	End Plate 4” SP150 Plug Valve 15000 NSCWP

- G1 Retainer Segment Shoulder Shear Stress

Tests carried out

Prototype testing is not required for certificate renewal.

Marking of product

For traceability the following marking is to be carried out on each product:

1. Part Number
2. Serial Number
3. Manufacturer's name and trademark
4. Additional Marking at the manufacturer’s discretion

Additional Approved Manufacturing Location

Weir Engineering Services Co
Jebel Ali South Facility
Plot No. S51303
Jebel Ali Free zone
Dubai
United Arab Emirates

Periodical assessment

For retention of the Type Approval, DNV GL’s surveyor shall perform a survey every second year in accordance with DNV GL’s Class Programme DNVGL-CP-0338.

Other conditions/comments

- Procedures related to testing, welding, NDT, etc are to be reviewed/approved by DNV GL’s local surveyor.
- The data book is to include the service manual, and said manual shall include a section for dealing with leakage of the threaded bonnet.
- For well control valves low pressure testing to be performed at 200 psi for 3 minutes before high pressure tests. Bi-directional valves must be tested in both directions.
- Compliance with NACE MR-0175 is required for sour service equipment.
- If equipment is to be furnished in compliance with API 6A, 19th Edition (PSL 3), 100 % Magnetic Particle Inspection required for bonnet, stem, seat, gate and body for all accessible wetted surfaces and all accessible sealing surfaces.
- The non-metallic pressure controlling parts of this assembly must comply with the requirements of API Spec 16C when this assembly is used for choke and kill service.
- Charpy Impact Testing to be followed in accordance with DNV-OS-E101.
- DNV GL Project Reference PP151826-05

END OF CERTIFICATE