

ALPHA

PRODUCTION SOLUTIONS

GENERAL SPECIFICATION FOR MSV COMPACT MANIFOLD SKID (MSVM)

Each MSV Compact Manifold Skid has the provision for connecting up to seven flow lines from the wells in the field. The MSV Skid will facilitate testing one well at the time through a flow measurement system located on the skid or outside de skid, while gathering oil from the other six (6) wells into the bulk header. The MSV can be locally or remotely operated from a local shelter or a main station.

Each of the seven lines in the Manifold is connected to an inlet port in the Multiport Selector Valve (MSV) and is provided with a block valve, a check valve, process connection for a pressure gauge, process connection for a temperature gauge and the required connecting pipes and fitting. Two flow lines out the MSV, the test line and the production (bulk/general) line, each one is provided with a block valve, process connection for a pressure gauge and process connection for a temperature gauge. The test line gets in the test header and the production line gets in the production header. By the mean of the flanged end headers, two or more MSV skid can be tandem connected when more than 7 wells share a flow measurement facility. The MSV eight inlet is flange blinded. The required drains and vents are provided in the piping system.

All the system is assembled and properly supported in a welded steel frame for easy transportation and installation. Have lifting points to permit the entire package to be lifted by a crane and the required access ladders and platform for the easy and safe valves operation. Also include a sun shelter for the MSV actuator.

Construction

All pipes and fitting are SCH 40 o heavier.

Welded construction in all pipes 2" and larger, all welds performed with qualified WPS and PQR. One inch (1") and smaller nominal size pipes and connection are threaded construction.

Two boxes are provided for the customer connection of power and field instrumentation connections. Further internal distribution within the skid is included.

Testing and Certification

The butt welded joints will be spot or 100% radiograph inspected accordingly with customer requirements.

The entire assembled system is 1.5 hours hydrostatic tested at the 1.5 x design operation pressure accordingly with the system ASME Class.

In the FAT all the operational, electrical and instrumentation features are tested.

All the construction materials and supplies are certified with the required MTR accordingly with the approved drawings and/or specifications.

ALPHA

PRODUCTION SOLUTIONS

Typical Specification and Construction Materials

- **Multiport Selector Valve**

Configuration:

Seven (7) 3" / 4" or 6" inlet.

One (1) 6" / 8" / 16" Bulk outlet.

One (1) 3" / 4" / 6" test outlet.

One (1) 3" / 4" / 6" inlet to blind. To specify with the P.O. the required blind inlet position.

Service:

Multiphase Crude (Oil + Water + Gas)

Leakage class: Class IV to ANSI (internal), less than 0,01% of full rated valve capacity.

Zero (0%) external (shell) leakage.

Connecting Flanges:

Pressure Rating: ASME Class XX0#

Design Spec, End Flanges: ASME B16.5

Finish, Flange Facing: SMOOTH

Construction Materials

Body: Carbon Steel A 216 WCB.

Bonnet: Carbon Steel.

Flanges: A 105N

Internal Plug (Rotor): ASTM A216 WCB

Internal wetted parts: SS316L

Bolting: A 193B7/ 2H

Seal: PTFE (Teflon) Carbon Filled

O Rings: AFLAS

Tri Coat External Paint system

Service Requirement: NACE MR-01-75

Actuator:

Electric supply Voltage: 24 VDC – 1 / 3 Phase 60 Hz

Suitable for use in ZONE 2, Group IIA.

Temperature Class Service T3

Remote/Local Switch

Communication: Modbus RTU via RS 485

Housing: IP68

- **Block Valves**

Ball valve, floating, two piece construction. Carbon Steel A 216 WCB body. Trim SS 316. Flanged RF. Lever operated 6" and smaller. Other valve types or configuration upon request

ALPHA

PRODUCTION SOLUTIONS

- **Check Valves**

Swing check. Carbon Steel A 216 WCB body. Trim API No. 8. Flanged RF. Other valve types or configuration upon request

- **Piping and fittings**

Flanges A-105 WNRF Class 300# SCH 40.

Pipe: Carbon Steel A-53 Gr. B/ API 5L/ A 106 Gr B. SCH 40 Seamless.

Fittings: Carbon Steel A234 WPB seamless, butt welding.

Others: Forged Carbon Steel A105N 6000#, NPT.

Studs and nuts: A193 B7 Class 2A / A194 2H, Class 2B. Cadmium Plated

Gasket: Spiral wound. SS 316 graphite filled

Vent and drain valves: floating ball Carbon Steel A105 / Trim SS316, NPT 3000# WOG.

General dimensions

The following configurations and dimension are estimates for general information purposes. The actual sizes, configurations and dimension will be defined accordingly with the specific Customer and project.

Type	MSV size	Flow line size ND	Test Header ND	Bulk Header ND	Width @ headers flanges	Overall length
2	2" x 4"	2"	3"	6"	6' 6"	6' 6"
2	3" x 6"	3"	4"	8"	7' 10"	9' 10"
2	4" x 8"	4"	6"	10"	10'	12'
2	4" x 10"	4"	6"	12"	10'	12'
2	4" x 10"	6"	6"	12"	10' 5"	12'

