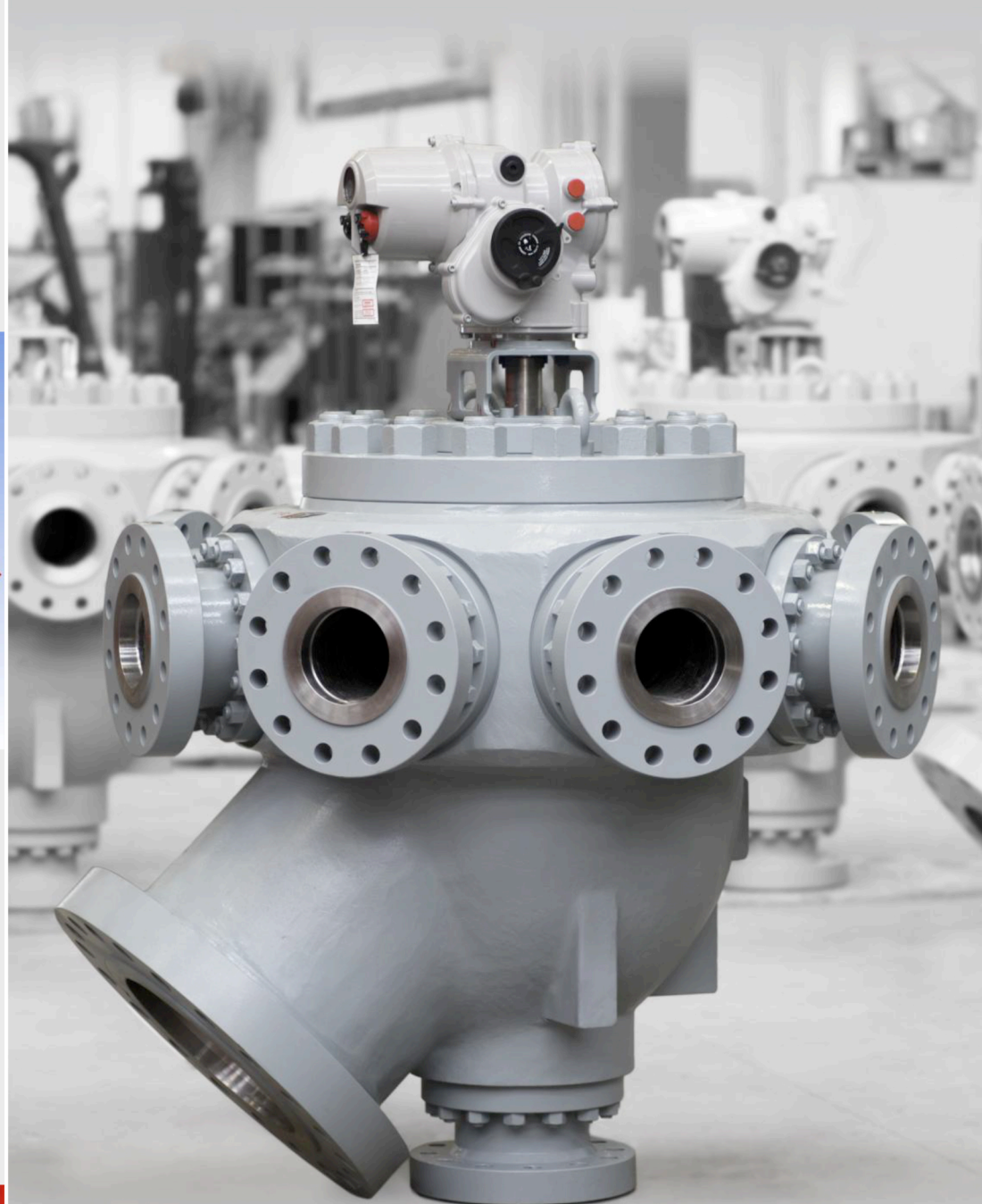


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DAFRAM S.p.A.

VALVOLE A SFERA - BALL VALVES



MULTIPOINT SELECTOR VALVES



LICENSE
6D-0265
6A-1175
6DSS-0029



Member of CISQ Federation



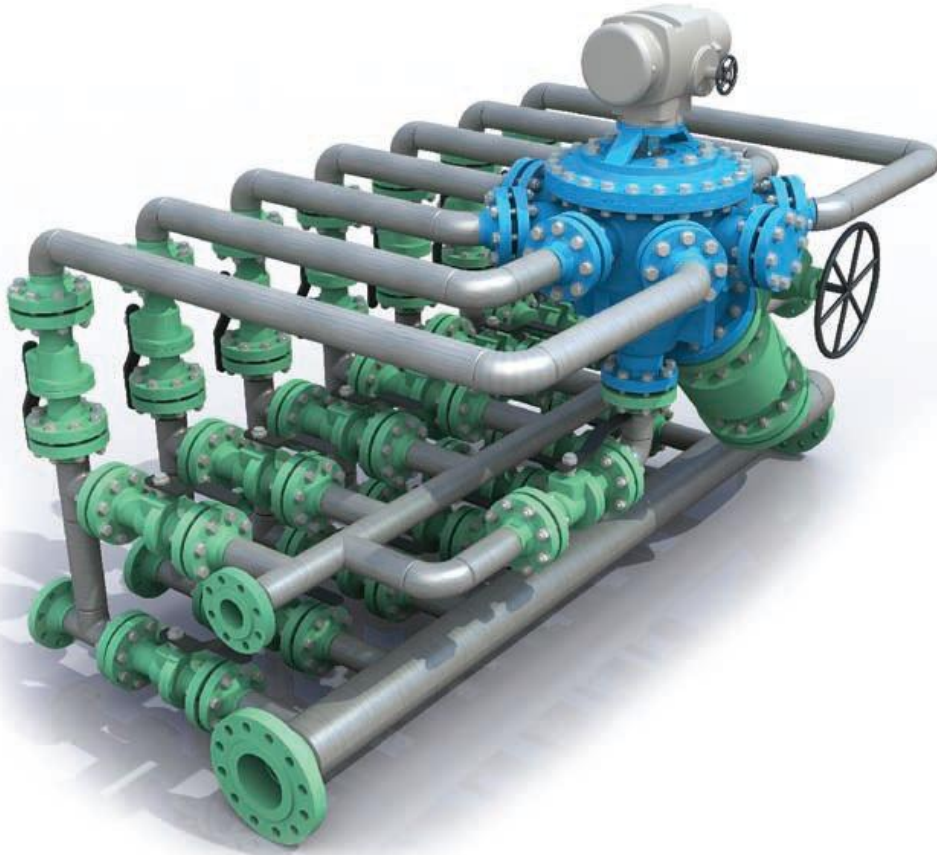
CERTIFIED MANAGEMENT SYSTEM
ISO 9001 - ISO 14001
ISO 45001

DAFRAM MULTIPORT SELECTOR VALVES

The compact solution for multiple wells test and measurement

DAFRAM S.p.A., founded in 1956, was the first company to manufacture floating ball valves in Italy. The long experience gathered during all these years of activity ensures that Dafram is one of the most famous and competitive valve companies in the world.

The standard multiport selector valve (MSV) consists in one solid body with eight inlets and two outlets. On request multiple selector valves can be produced with six, ten, twelve or sixteen inlets. The inlets may receive the flow of several lines from wells, whereas the last inlet is usually left free for valve tightness testing and to allow serial connection of multiple MSVs. One of the outlets is common for production, the other outlet is for test purposes. With this configuration seven or more wells are conveyed to the production header through a single body.



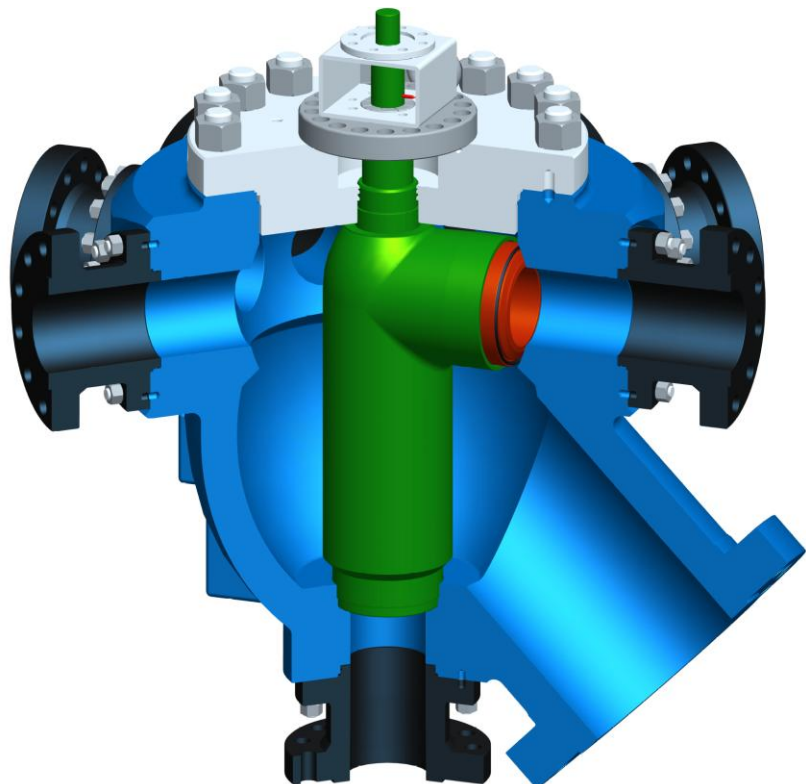
The multiport selector valve is installed into a compact manifold; all the connections of the inlets of the multiport selector valve, as well as of its two outlets (production and test), are flanged and mounted on an oilfield transporting skid. These inlets and outlets are supplied with the corresponding ball valves, check valves, pressure and temperature transmitters therefore, when the assembly is received in the field, it is ready for connection and subsequent operation. It does not need painting, welding, or field testing.

The multiport selector valve can be supplied with manual positioning system or with an intelligent actuator. In the first configuration a lever is operated and the exact position is locked by means of a mechanical device. Otherwise an electric actuator is designed to perform a remote control on the skid.

One of the main advantages of the multiport selector valve is to have a single operation point in order to control seven or more wells streams: e.g. conventional configurations of production manifolds for seven wells need up to seven operation points using three-way valves and up to fourteen operation points with traditional two-way valves.

MAIN ADVANTAGES

- **Reduced Installation Cost**
Due to the compact design of the MSV the skid will be smaller and lighter, leading to cost-effective solution. In addition, the one operation point needs less automation systems, making the skid more simple and reliable in the long term use.
- **Reduced Operation Cost**
The reduced number of sub-system and automation leads to lower operation, maintenance and ownership cost.
- **Modular, compact and self contained**
The multiport selector valve solution allows to install multiple skids by connecting many MSV in cluster style production to a single main production pipe and only one test line.
- **Multiphase meter test on-line**
The multiport selector valve skid configuration allows to install a multiphase flow meter in-situ in order to perform the well testing on the production allocation.
- **Lower environmental impact**
The smaller space required for the installation of a multiport selector valve system leads to the reduction of environmental impact and employed site space. In addition, no concrete foundations are required.

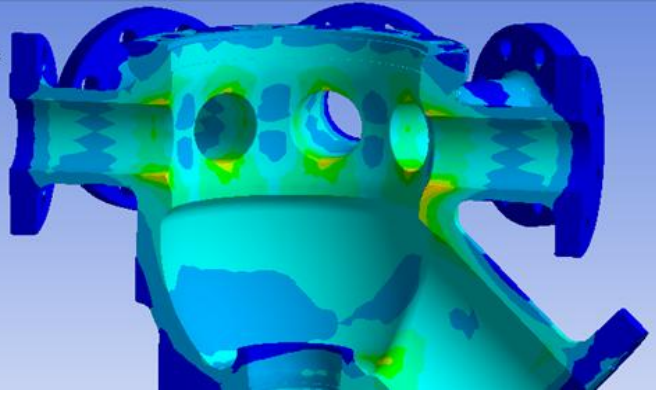


DAFRAM MULTIPORT SELECTOR VALVES

DESIGN

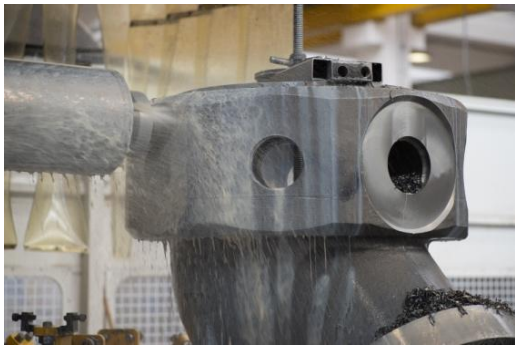
B: Static Structural
Equivalent Stress
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1
23/07/2012 18:29

157,95 Max
140,42
122,89
105,37
87,84
70,313
52,787
35,26
17,733
0,2068 Min



Multiport selector valves design is powered by FEM analysis in order to verify the most important parts before production.

Special static and dynamic seal design allows to obtain ultra low fugitive emission capabilities both from body and stem joints. On request a special internal jacket and selector can be provided in order to quickly replace worn parts without stopping the wells production for a long time.



PRODUCTION

As a consequence of continuous product development, DAFRAM's workshop has constantly being renewed. It utilizes the most advanced manufacturing technologies in valve components machining, drilling and testing.

Cast components can be designed to reduce weight and to optimize the material utilization.

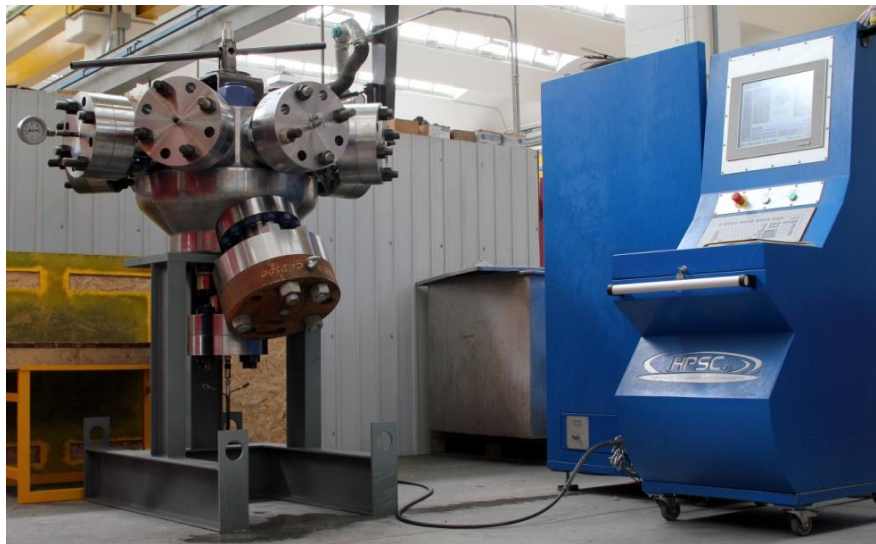
DAFRAM facilities are equipped with sophisticated welding machines to apply a protection overlay of valves internals, especially when H₂S aggressive flows are expected.

TESTING

In order to allow the best quality and customer's satisfaction DAFRAM's production is 100% tested, controlled and certified before leaving the plant.

A special seat design and the accurate machining lead DAFRAM's multiport selector valves to reach the smallest leakage rates: on request ISO 5208 rate A leakage rate can be provided both on soft and metal-seated valves.

When required special testing can be performed at the minimum and maximum design temperatures according to customized procedures.

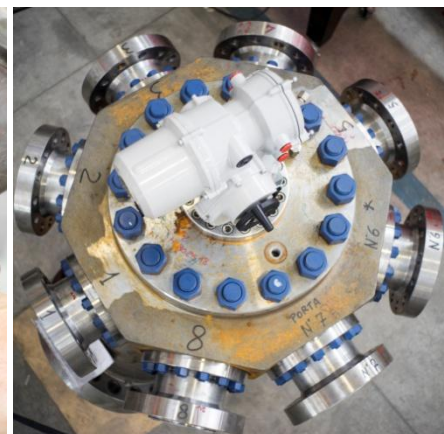
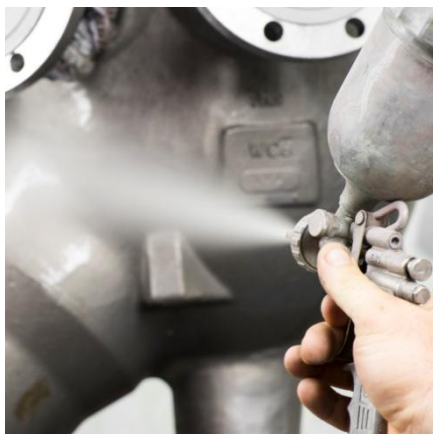


PAINTING

Sandblasting and painting activities are both performed by DAFRAM specialized personnel: painting cycles and finished product controls can be planned to customer's specifications.

ACTUATION

The intelligent actuator is the heart of a multiport selector valve. Selection, installation, registration and functional test can be performed by DAFRAM to have a complete control on product design.



DAFRAM

MULTI-PORT SELECTOR VALVES

Sizes And Pressure Range

ANSI classes from 150 to 2500

2"x4", 3"x6, 4"x8", 6"x16" or according to customers specification

Materials Of Construction

Multiport selector valves are machined from a wide range raw materials from bars, castings or forgings, either in carbon steel, stainless steel or exotic alloys to fit the process conditions.

Metal Seated Ball Valves For Abrasive Service

Depending on service conditions required, different surface treatments are available on selector and seating surface, such as: Tungsten Carbide Coating (TCC/WC) and Chromium Carbide Coating (CrC), while a special hardening process (DAFRADUR) has been specially developed for abrasive conditions.

Different materials are available to fit most applications.

International Standards

API 598 - Inspection & Testing

ASME B16.34 - Valves Flanged, Threaded And Welding End)

ASME B16.5 - Pipe Flanges And Flanged Fittings)

ASME Boiler And Pressure Vessel Code VIII & IX

ASME B31.8 - Gas Transmission And Distribution Piping Systems.

ASME B31.4 - Liquid Petroleum Transmission Piping Systems.

NORSOK U-001 - Subsea Production Systems

BS EN 10204 - Metallic Products Inspection Documents

EU Pressure Equipment Directive.

ISO 9001

NACE MR0175 / ISO 15156 - Sulphide Stress Cracking Resistant Materials For Offshore Applications

ISO 14001

ISO 45001



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