Worldwide Oilfield Machine

Well Test Products

Invention, Unique Design & Extraordinary Craftsmanship

Subsea Intervention Systems
Custom Design & Manufacture
Wellheads & Christmas Trees
Magnum Gate Valves
Blow Out Preventers
Manifold Systems
Ball Valves
Well Test Products
Well Test Products

WOM has over the years gained considerable knowledge and experience in the design and manufacture of Well Test Products. These products include Solid Block Flowhead Systems, Modular Flowheads, Magnum Gate Valves, Surface Safety Valves, Wireline Cutting Gate Valves, Chokes, and Choke Manifolds.

SOLID BLOCK FLOWHEAD SYSTEMS
The WOM Flowhead is a solid block surface control head designed for use in well testing, perforating, and wireline operations.

MODULAR FLOWHEADS
The WOM Modular Flowhead is a light weight surface control head designed for use in testing, perforating, and wireline operations.

MAGNUM GATE VALVES
WOM’s Magnum Gate Valves are the industry’s most reliable bi-directional gate valves for well control during drilling, testing, and production operations. Magnum Gate Valves’ unique “Dual-Seal” system provide both upstream and downstream sealing, creating a pressure energized balanced between the slab gate and seat assemblies.

SURFACE SAFETY VALVES
The WOM Surface Safety Valve (SSV) is a hydraulically actuated, fail-safe close gate valve for use in well testing, perforating, and wireline operations.

WIRELINE CUTTING GATE VALVES
The WOM Wireline Cutting Gate Valve is a hydraulically actuated, solid block gate valve designed for use when performing wireline operations on offshore platforms.

CHOKES
WOM provides chokes (adjustable and positive) with pressure ratings ranging from 5,000 psi to 20,000 psi.

CHOKE MANIFOLDS
WOM specializes in the design and manufacture of manifold systems for use in well test operations with pressure ratings up to 20,000 psi.
Flowhead

Wellhead/Xmas Tree in service

Wireline Cutting Valve

Choke Manifold
SURFACE SAFETY VALVE
The WOM Surface Safety Valve (SSV) can be provided with either a manually operated hydraulic pump, or with the more commonly used, hydraulic control unit with Emergency Shut Down (ESD) system. The ESD system is designed to be connected to the platform’s air supply system which acts as a triggering mechanism for the SSV. In the event that rig air pressure is lost the ESD system will sound an alarm and release hydraulic “Open” line pressure on the SSV. The fail-safe close feature of the SSV will then close the valve. The SSV is skid mounted and enclosed in a protection frame in order to prevent damage while in use offshore. The SSV can be provided with a variety of connections including hammer lug unions, Graylock, API 16A hub, or API 6A flanges.

WIRELINE CUTTING VALVE
The WOM Wireline Cutting Valve is a fail-safe close gate valve specially designed for use offshore and is housed in a rotatable protection frame which is small enough to be lowered through the access hatch for connection to the production tree. The Wireline Cutting Valve is capable of cutting braided line or slick line up to 7/32” in. diameter and provides a single point cut helping to ensure a reliable seal after cutting. The Wireline Cutting Valve is provided with quick unions as standard connectors but can be provided with a variety of different connections including hammer lug unions, Graylock and API flanges.

CHOKES
WOM provides Positive and Adjustable Chokes with pressure ratings ranging from 5,000 to 20,000 psi, with inlet and outlet flanges from 2-1/16” to 5-1/8”.

CHOKE MANIFOLDS
All WOM manifold systems incorporate WOM Magnum Gate Valves and chokes which provide proven reliability. WOM offers a five valve rectangular pattern and a four valve diamond pattern for limited space on offshore rigs.

The five valve rectangular choke manifold features five Magnum Gate Valves, an adjustable choke, a positive choke, and a flow-through bypass line. This configuration is ideal for surface pressure control during drill stem testing. For use in confined surroundings, the four valve diamond manifold is available with four Magnum Gate Valves, and adjustable choke, and a positive choke. In addition to these standard systems, WOM custom designs and builds manifolds for virtually any application and to any client specification, including a Surface Safety Valve (SSV) at the flow line inlet.

<table>
<thead>
<tr>
<th>SSV</th>
<th>PRESSURE RATING (psi)</th>
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<tbody>
<tr>
<td>1-13/16”</td>
<td>10,000, 15,000 &amp; 20,000</td>
</tr>
<tr>
<td>2-1/16”</td>
<td>5,000, 10,000, 15,000 &amp; 20,000</td>
</tr>
<tr>
<td>2-9/16”</td>
<td>5,000, 10,000, 15,000 &amp; 20,000</td>
</tr>
<tr>
<td>3-1/16”</td>
<td>10,000, 15,000 &amp; 20,000</td>
</tr>
<tr>
<td>3-1/16”</td>
<td>5,000</td>
</tr>
<tr>
<td>4-1/16”</td>
<td>5,000, 10,000 &amp; 15,000</td>
</tr>
<tr>
<td>5-1/8”</td>
<td>5,000 &amp; 10,000</td>
</tr>
<tr>
<td>6” thru 7-1/16”</td>
<td>5,000 &amp; 10,000</td>
</tr>
</tbody>
</table>

Available SSV and Wireline Cutting Valve sizes and working pressures:
SOLID BLOCK FLOWHEAD SYSTEMS
The tool is composed of a solid block valve body, an upper swabbing valve, a kill line valve, and a hydraulically actuated flow line valve. Attached below the main valve block is a high axial thrust tubing swivel that allows rotation of the tool string during operations and while under pressure. The lower master valve is a WOM Magnum Gate Valve which provides a double shut-in barrier and isolates the tubing swivel.

Additionally, the WOM Flowhead has been designed with the choke and kill line outlets at a downward angle in order to satisfy minimum space requirements. These outlets can be provided with connections of your choice and elbows which allow the connected flowlines to hang downward rather than straight out to the sides as is common in other flowheads.

A specially designed removable crash frame is included which provides protection for the valves and actuators used in the main valve block.

The WOM Flowhead also incorporates proven metal-to-metal sealing technology throughout its design and all valves are single piece slab gate valves with hard faced surfaces to insure reliability during use in harsh environment operations.

MODULAR FLOWHEAD
The tool comprises an upper and lower section which are coupled together by a load bearing quick union for easy assembly and disassembly. The upper section of the Modular Flowhead consists of a handling sub with quick union coupler, an upper swab valve, and a remote safety valve. The upper swab valve is a manually operated solid block Magnum gate valve. The remote safety valve is a hydraulically actuated, fail-safe sleeve valve with hammer lug union outlets for the attachment of the choke and kill lines.

The lower section of the Modular Flowhead consists of a tubing swivel, a lower master valve, and a saver sub. The tubing swivel is provided for string rotation without the need for rotation of the Flowhead. The lower master valve is a manually operated, solid block Magnum gate valve.

WOM Flowheads can be supplied with any connection types and are manufactured, assembled, and tested as a complete field unit shipped ready for field use. WOM Flowheads can be provided with the following optional features and equipment:
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