Going even deeper.

BALINIT® DLC coating increases the performance and reliability of XMT Valve Systems for deep water oil & gas production.
**BALINIT® DLC is the key success factor for deep offshore oil & gas production.**

Subsea XMT valves and actuators are among the most important systems for a safe and reliable deep water oil & gas production, especially as water depths exceed 10,000 ft (3 km) with pressure over 100 MPa and temperatures close to 180°C. Although the use of advanced nickel alloys (Inconel 725 & 625) in combination with high density HVOF thermal spray WC coatings improved the anti-galling and sealing ability properties between valve seats and valve gates, the high friction problem remained unsolved. BALINIT® DLC is specifically designed for High Pressure High Temperature (HPHT) deep water conditions and provide unique frictional, wear and bearing load capacity properties. Thereby it is a key element for the reliable operation of XMT valves.

**Your advantages with BALINIT® coated XMT Valve Systems.**

- Reduction of coefficient of friction up to five times (COF: ~0.15 compared to steel)
- Reduction of friction torque in water, gas and at high temperature
- Excellent anti-galling and wear properties
- Superior seal performance
- Stability during exposure in High Pressure High temperature (HPHT) conditions

**Low friction and high abrasive wear resistance are proven.**

The abrasive wear resistance was measured by the ball crater method where a 20 mm ball rotates on the surface with continuous addition of diamond suspension. The friction is measured in a pin disk arrangement under dry condition against steel. Especially BALINIT® DLC and DLC STAR show a unique combination of low wear and low friction.

**We recommend: BALINIT® DLC for lowest wear and friction.**

<table>
<thead>
<tr>
<th>BALINIT® DLC and DLC STAR</th>
<th>Coating material</th>
<th>Micro-hardness (HV)</th>
<th>Typical thickness</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>DLC/CrN</td>
<td>&gt;2000</td>
<td>2-4 µm</td>
<td>Black</td>
<td></td>
</tr>
</tbody>
</table>

There's much more to talk about – please get in touch to discuss what we can do to improve your business.