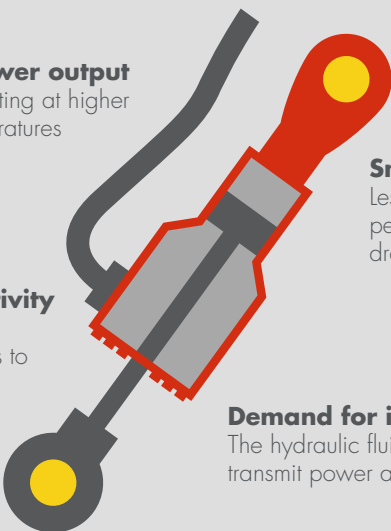
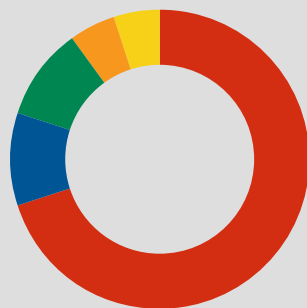







# IMPROVING RELIABILITY AND PRODUCTIVITY OF HYDRAULIC SYSTEMS<sup>1</sup> CAN HELP CUT TOTAL COST OF OWNERSHIP WITH SHELL TELLUS HYDRAULIC OILS



CHANGES TO EQUIPMENT TECHNOLOGY AND OPERATION PLACE INCREASING DEMANDS ON HYDRAULIC OILS	KEY CAUSES OF OPERATING DIFFICULTIES IN INDUSTRIAL HYDRAULIC SYSTEMS <sup>2</sup>
<p><b>Increased power output</b> Equipment operating at higher loads and temperatures</p> <p><b>Smaller sump sizes</b> Less lubricant to deliver performance throughout the drain interval</p> <p><b>Push for productivity</b> Customers want to minimise interruptions to equipment operation</p> <p><b>Demand for improved efficiency</b> The hydraulic fluid needs to help transmit power as effectively as possible</p> <p><b>Hydraulic oils have to perform in more demanding conditions</b></p> 	 <ul style="list-style-type: none"> <li>Improper hydraulic fluid condition</li> <li>Improper diagnosis of a problem, or lack of knowledge in making repairs</li> <li>Mechanical failures (bearing failures due to misalignment, seal failures due to dirt, etc.)</li> <li>Operating units beyond recommended limits of speed, pressure, or volume</li> <li>Miscellaneous causes</li> </ul>

THE CRITICAL ROLE OF HYDRAULIC OIL		
WEAR PROTECTION	LONGER EQUIPMENT LIFE	SYSTEM EFFICIENCY
Helps limit wear and corrosion, to guard against breakdown	Greater resistance to oxidation helps equipment operate under higher stresses for longer	Efficiently transmits power through the system

SHELL TELLUS S2 MX AND VX HYDRAULIC OILS CAN HELP DELIVER COST SAVINGS <sup>1</sup>		
INCREASED WEAR PROTECTION <sup>1</sup>	LONGER OIL LIFE <sup>1</sup>	MORE EFFICIENT SYSTEM OPERATION <sup>1</sup>
<ul style="list-style-type: none"> <li>Helps reduce wear rate even in harsh conditions<sup>3</sup></li> <li>Helps protect against copper corrosion<sup>4</sup>, rust<sup>5</sup> and scuffing<sup>6</sup></li> <li>Shell Tellus S2 MX is among the first to meet new Bosch Rexroth standard for wear protection in extreme conditions<sup>3</sup></li> </ul> 	<ul style="list-style-type: none"> <li>Over 5000 hours TOST life: 3x industry and OEM limits<sup>7</sup></li> <li>Double the oil life of Shell Tellus S2 M and V<sup>7</sup></li> <li>400 mins in Rotary Pressure Vessel Oxidation Test<sup>8</sup></li> </ul> 	<p><b>Thanks to:</b></p> <ul style="list-style-type: none"> <li>Excellent friction control<sup>9</sup></li> <li>Excellent filterability<sup>10</sup></li> <li>Consistent water separation<sup>11</sup></li> <li>Improved air release<sup>12</sup></li> <li>Excellent stick-slip control<sup>9</sup></li> </ul> 
<p><b>This can help:</b></p> <ul style="list-style-type: none"> <li>Reduce frequency of breakdown</li> <li>Improve reliability of operations</li> <li>Lower maintenance costs</li> </ul>	<p><b>This can help:</b></p> <ul style="list-style-type: none"> <li>Extend maintenance cycles</li> <li>Lower maintenance costs</li> <li>Reduce downtime</li> <li>Improve operational efficiency</li> </ul>	<p><b>This can help:</b></p> <ul style="list-style-type: none"> <li>Ensure equipment meets or exceeds its design capabilities</li> <li>Enhance productivity by extending maintenance cycles</li> </ul>

ALL HELPING IMPROVE RELIABILITY AND PRODUCTIVITY OF HYDRAULIC SYSTEMS, CONTRIBUTING TO REDUCED TOTAL COST OF OWNERSHIP

[www.shell.com/lubricants](http://www.shell.com/lubricants)

<sup>1</sup>Compared to Shell Tellus S2 M and S2 V. <sup>2</sup>Source: multiple surveys by industry bodies including additive companies, filter manufacturers, hydraulic equipment manufacturers. <sup>3</sup>Shell Tellus S2 MX is one of the first hydraulic fluids to appear on Bosch Rexroth Fluid Rating List RDE 90245 New Bosch Rexroth test increases stress factor by 13 times compared with Eaton 35VQ25 pump test. <sup>4</sup>Compared with ASTM D130- mix of 3h and 168-hour test limit, and rated at 1α. <sup>5</sup>Compared with ASTM D665B test limit. <sup>6</sup>FZG performance, up to FLS 12. <sup>7</sup>TOST (Turbine Oil Stability Test) life of over 5000 hours. ASTM D 943 test, twice the life of Tellus S2 M and S2 V, and three times that of typical industry and OEM limits. <sup>8</sup>ASTM D2272 RPVOT test. <sup>9</sup>ASTM D1894 stick slip test compared with Shell Tellus S2 M and S2 V. <sup>10</sup>Compared to ISO 13357-1 filterability test limit. <sup>11</sup>Compared to water separation ASTM D1401 limit. <sup>12</sup>Compared with IP 313 air release limit.

**FOR MORE INFORMATION, CONTACT US**

Amber Resources Technical Info (562) 264-4119  
AmberAdvantage@amberresources.com

We are So Cal's Premier Lubricant Solutions Provider  
[amberresources.com/shell](http://amberresources.com/shell)