



FROM EXTENDING GEARBOX LIFE TO DRIVING INDUSTRY

SHELL OMALA MAKES IT POSSIBLE

SHELL LUBRICANTS
TOGETHER ANYTHING IS POSSIBLE



Gearboxes keep the wheels of industry turning. You need to keep your industrial gearboxes working efficiently for longer to maximise value for your business whether they are in an airport baggage handling system drive, a mining grinding mill or a wind turbine.



Equipment manufacturers are designing and producing longer-life gearboxes that take advantage of advances in metallurgy, manufacturing methods, filtration media and lubrication technologies.

The Shell Omala range can help to extend gearbox life. The range has products for a wide range of applications, including for challenging operational environments that need long service intervals, and oils with higher specifications than international standards for the latest gearboxes technologies.

A RANGE OF INDUSTRIAL GEAR OILS TO MEET YOUR NEEDS

To meet the challenges of a wide range of gear types and applications, Shell has designed a portfolio of oils that enables you to choose a product to match your technical and operational needs.

<p>SHELL OMALA "G" RANGE Enclosed industrial spur and bevel gear applications from standard to demanding high-load and extended-duty applications</p>	<p>SHELL OMALA SPECIALITY RANGE Enclosed industrial spur and bevel gears for special applications where, for example, extra shock-load protection is needed or particulate contamination occurs</p>	<p>SHELL OMALA "W" RANGE Industrial worm-drive applications from standard to demanding high-load and extended-duty applications</p>
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↑ INCREASINGLY EFFICIENT PROTECTION	<p>ADVANCED TIERS 4 AND 5</p> <p>Shell Omala S4 GXV</p> <ul style="list-style-type: none"> Extra protection Extra long life Versatile, special applications 	<p>Shell Omala S5 Wind</p> <ul style="list-style-type: none"> Extra protection Extra long life Application specific 	<p>Shell Omala S4 WE</p> <ul style="list-style-type: none"> Extra protection and longer life Energy saving Worm drives
	<p>PREMIUM TIER 3</p> <p>Shell Omala S4 Wheel</p> <ul style="list-style-type: none"> Extra protection Geared wheel hubs 	<p>Shell Omala S3 GP</p> <ul style="list-style-type: none"> Load protection Molybdenum-free product Worn systems or where contamination is an issue 	
	<p>MAIN LINE TIER 2</p> <p>Shell Omala S2 GX</p> <ul style="list-style-type: none"> Heavy-duty gears 		
	<p>ENTRY TIER 1</p> <p>Shell Omala S1 W</p> <ul style="list-style-type: none"> Reliable protection Worm drives 		

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**BETTER PROTECTION,
LONGER OIL LIFE AND BETTER
SYSTEM EFFICIENCY**

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**IMPROVED PROTECTION,
LONGER OIL LIFE AND BETTER
SYSTEM EFFICIENCY**

APPLICATION ICON KEY

- Shock load
- Worm drive
- Long life
- High temperature
- Factory
- Enclosed gear
- Extreme load
- Mining
- Wind turbine



REAL-WORLD VALUE DELIVERY

Users of Shell Omala oils across a wide range of industries are benefiting from proven, robust and reliable lubrication that adds value to their operations. For instance:

- Huaneng Power in China was experiencing frequent reducer gearbox breakdowns that shut down its roller-grinding mills and thus reduced plant productivity.
- The mineral gear oil it was using could not withstand the high operating temperatures.
- Since switching to Shell Omala S4 WE, the company has
 - not experienced any oil-related shutdowns and has been able to operate the power plant at its maximum production
 - extended the oil-drain interval from one to more than three years, thus reducing the frequency of oil changes and the volume of oil consumed.
- Huaneng Power has reported total annual savings of US\$278,860² related to the switch to Shell Omala S4 WE.

DESIGNED TO EXTEND GEARBOX LIFE

According to a leading gearbox manufacturer, seal issues are the main limits on extending operating times before maintenance is required and about 40% of seal failures relate to oil compatibility problems. This has led some manufacturers to introduce seal compatibility specifications for gear oils that are much tougher than international standards. Shell Omala S4 GXV is designed to meet these latest seal requirements.

It also has a higher viscosity index, better low-temperature fluidity, a lower foaming tendency and enhanced filterability compared with Shell Omala S4 GX. Shell Omala S4 GXV retains the previous oil's excellent load-carrying performance, wear-protection, rust inhibition, copper corrosion protection and high oxidative and thermal stability. Consequently, this product can help to extend maintenance-free operations for lower costs and higher productivity.

Shell Omala S2 GX is formulated to have improved oxidation stability, water separability, demulsibility and micropitting performance to help your gearbox last longer¹ and to reduce your total cost of ownership.

DEDICATED PRODUCTS FOR SPECIAL APPLICATIONS

Shell has products to meet your specific needs, from marine to mining. We can help you to simplify operations and lessen the risk of product misapplication with versatile, high-performance gear oils such as Shell Omala S4 GXV. However, for some applications, the benefits of using specialist products outweigh the advantages of versatility. For example, wind-turbine gearboxes have particular demands and carry a high penalty for poor reliability, especially if they are in remote locations. This makes Shell Omala S5 Wind, which is formulated specifically for wind turbine gearboxes, the intelligent choice.

In addition, Shell Omala S4 WE is available for worm gear drives and Shell Omala S4 Wheel is for the wheel motor drives on heavy mining trucks.

WE CAN HELP YOU TO SIMPLIFY OPERATIONS AND LESSEN THE RISK OF PRODUCT MISAPPLICATION WITH VERSATILE, HIGH-PERFORMANCE GEAR OILS.

PRODUCT	BENEFITS AND APPLICATIONS	TECHNOLOGY	ISO VISCOSITY GRADES	SPECIFICATIONS AND APPROVALS (Full details of approvals for all products can be obtained from your Shell representative; approvals and claims will vary by viscosity grade.)
SHELL OMALA "G" RANGE FOR ENCLOSED INDUSTRIAL SPUR AND BEVEL GEARS				
Shell Omala S4 GXV	<ul style="list-style-type: none"> ■ Extra protection ■ Extra long life ■ Versatile, special applications 	Synthetic (advanced EP system)	68, 150, 220, 320, 460, 680, 1000	Approved by Siemens for Flender gearboxes and gear units Industry standards: ANSI/AGMA 9005-F16 (EP); ISO 12925-1 Type CKD; ISO 5157-3 (CLP); China National Standard GB 5903-2011 L-CKD; AIST (US Steel) 224
Shell Omala S2 GX	<ul style="list-style-type: none"> ■ Heavy-duty gears 	Conventional (EP)	68, 100, 150, 220, 320, 460, 680, 1000	Approved by Siemens for Flender, helical, bevel and planetary gear units (ISO 100 to 680); Fives Cincinatti; and many other equipment manufacturers Industry standards: AGMA EP 9005-F16; ISO 12925-1 Type CKD (ISO 68–460); ISO 12925 Type CKC (ISO 680 and 1000); DIN 51517-Part 3 CLP; AIST (Steel) 224 (ISO 68–460); China National Standard GB 5903-2011 CKD (ISO 68–460); China National Standard GB 5903-2011 CKC (ISO 680 and 1000)
SHELL OMALA SPECIALITY RANGE FOR SPECIAL ENCLOSED INDUSTRIAL SPUR AND BEVEL GEARS APPLICATIONS				
Shell Omala S5 Wind	<ul style="list-style-type: none"> ■ Extra protection ■ Extra long life ■ Application specific 	Synthetic (polyalphaolefin)	320	Meets or exceeds ISO 12925-1 Type CKD; ANSI/AGMA 9005-F16 (EP); ISO 81400-4; DIN 51517-3 (CLP); GB/T 33540.3-2017 Designed to meet or exceed the requirements of Siemens Wind Power, ZF Wind, Vestas and Gamesa. Approved by Dalian Huarui Heavy Industries, Tianjin TEEK Transmission, SANY Heavy Energy Machinery and Taiyuan Heavy Industry Meets or exceeds the component requirements of Winergy, NGC, Bosch-Rexroth, Elckhoff, Moventas, SKF, Timken, Schaeffler, Hydac, CC Jensen, Mintai, Freudenberg and others
Shell Omala S4 Wheel	<ul style="list-style-type: none"> ■ Extra protection ■ Wheel motors, mining haul trucks 	Synthetic (EP)	220, 320, 460, 680	Approved by or meets GE (approved GEK-30375H – ISO 320-680) and David Brown Industry standards: ANSI/AGMA 9005-F16 (EP); ISO 12925-1 CKD; DIN 51517-3 (CLP); AIST (US Steel) 224
Shell Omala S3 GP	<ul style="list-style-type: none"> ■ Extra load protection ■ Worn systems or where contamination is an issue 	Conventional (advanced EP system)	220, 320, 460, 1500	Approved by or meets David Brown and ArcelorMittal Industry standards: ANSI/AGMA 9005-F16 (EP); ISO 12925-1 CKC; DIN 51517-3 (CLP)
SHELL OMALA "W" RANGE FOR INDUSTRIAL WORM DRIVES				
Shell Omala S4 WE	<ul style="list-style-type: none"> ■ Extra protection and longer life ■ Energy saving ■ Worm drives 	Synthetic (polyalkylene glycol)	150, 220, 320, 460, 680	Approved by or meets Bonfiglioli, David Brown and many other equipment manufacturers Industry standards: ANSI/AGMA 9005-F16 (EP); ISO 12925-1 CKE
Shell Omala S1 W	<ul style="list-style-type: none"> ■ Reliable protection ■ Worm drives 	Conventional (compounded mineral oil)	460, 680	Industry standards: ANSI/AGMA 9005-F16 (EP) (CP)
SHELL MORLINA S4 B FOR WORM GEARS AND LIGHT-DUTY GEARS; SHELL SPIRAX RANGE OF AUTOMOTIVE GEAR, AXLE AND TRANSMISSION OILS FOR ON- AND OFF-HIGHWAY VEHICLES. CONTACT YOUR SHELL REPRESENTATIVE FOR DETAILS				



FULL PRODUCT AND SERVICE PORTFOLIO

Shell Lubricants is the number one global lubricants supplier.³ We constantly invest to develop better lubrication solutions, including advanced synthetic technologies such as

- **Shell Tellus S4 ME** synthetic hydraulic oil – for long life and energy saving
- **Shell Corena S4 R** air compressor oil – for up to 12,000 hours of protection.

In addition, we provide the Shell LubeAnalyst oil condition monitoring service, which is designed to help improve your business performance.

Whatever your needs or application, we can provide a full range of oils and greases, including synthetic, high-performance products and additional services. TOGETHER ANYTHING IS POSSIBLE.



For more information, please contact your Shell Lubricants representative.
www.shell.com/lubricants

³Shell Lubricants* refers to the various Shell companies engaged in the lubricants business.

¹Compared with the previous-generation Shell Omala S2 G and selected competitors

²Saving reported by one customer. Actual savings may vary, depending on the application, the current oil used, the maintenance procedures and the condition of the equipment.

³Source: Kline & Company, "Competitive Intelligence for the Global Lubricants Industry, 2008–2018"