

INTERNATIONAL

LUBRICANT

REFERENCE GUIDE

LE's high-performance lubricants, made of highly refined or synthetic base oils and proprietary additives, far exceed the performance of conventional lubricants in a wide variety of applications.



ASSET RELIABILITY SOLUTIONS™


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LE operates under an ISO 9001 Certified Quality System.

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Corporate Value Statement

Lubrication Engineers builds lasting relationships based on integrity by helping our customers develop lubrication reliability programs that significantly increase performance and reliability, which lowers their total cost of ownership.



Lubrication Reliability Program Checklist

Lubrication Engineers is the one source that you can rely on for all your lubrication reliability needs. By offering all of the products and services listed below, we make it easy for you to take care of your company's valuable assets while still growing the bottom line.

- ✓ Professional, onsite equipment reliability assessment
- ✓ Comprehensive lubricant line (industrial oils, engine oils and greases)
- ✓ Web-based oil analysis, with results reviewed by experts
- ✓ Storage systems, including stackable bulk units
- ✓ Visual identification, including tags, labels, color-coding and wall charts
- ✓ Handling and transfer equipment, including portable transfer containers, grease guns, wire rope lubricators, grease pumps and lube reels
- ✓ Single- and multi-point automatic grease lubricators and lubricating systems
- ✓ Contamination exclusion and removal tools, including oil sight glasses, desiccant breathers and filtration equipment
- ✓ Local, factory-trained specialists available 24/7



LE's manufacturing and technology center in Wichita, Kansas

LE Introduction

With our highly trained consultants, enhanced lubricants, and comprehensive line of reliability products and services to keep your lubricants clean and dry, Lubrication Engineers can create solutions for any of your lubrication needs. Our diverse worldwide customer base includes water & wastewater treatment, power generation, transportation, agriculture, cement, construction, food, manufacturing, drilling, mining, and more.

Highly Trained Sales Consultants & Technical Support

We deliver our message of enhanced lubricants and reliability through a network of highly trained consultants who are either certified or studying to be certified through STLE and/or ICML. Your local LE lubrication reliability consultant will work closely with you to learn about your specific equipment and lubrication needs.

Xpert™ Equipment Reliability Assessment

It starts with an onsite assessment of all equipment requiring lubrication. Your consultant will provide you with a detailed report recommending lubricants, application methods, usage amounts, and drain or lube intervals.

Recommendation, Implementation & Support

Your lubrication consultant – with expert technical support and troubleshooting from LE's corporate office – will help you initiate and maintain an effective

Lubrication Reliability Program that will provide the equipment protection and enhanced profits you are seeking.



Enhanced Lubricants

We manufacture our own high-performance lubricants, which are formulated with highly refined base oils and proprietary additives. They vastly outperform conventional oils and greases in a wide variety of applications. Chosen correctly, these technologically advanced lubricants will reduce friction and wear, enabling your equipment to operate longer and more efficiently.

Our advanced Technology Center continually develops and improves LE lubricants and additives to ensure that LE products remain the finest available.

Asset Reliability Solutions

To ensure the effectiveness of your program, your LE consultant can offer you a full line of lubrication reliability products and services. These include solutions for oil analysis, storage, handling & transfer, contamination exclusion (breathers), contamination removal (sight glasses & filters), and education & training. See pages ARS 2-19 of this guide.



Proprietary Additives

LE has developed four high-performance additives for exclusive use in our lubricants.

Almasol® solid wear-reducing additive is able to withstand extremely heavy loads, chemical attack and temperatures up to 1,900°F (1,038°C). It is attracted to metal surfaces, forming a microscopic layer but not building on itself or affecting clearances. Almasol minimizes metal-to-metal contact and the resulting friction, heat and wear.

Monolec® wear-reducing additive creates a single molecular lubricating film on metal surfaces, vastly increasing oil film strength without affecting clearances. An invaluable component in LE's engine oils, industrial oils and many of our other lubricants, Monolec allows opposing surfaces to slide by one another, greatly reducing friction, heat and wear.

Duolec® dual-acting additive imparts synergistic properties to lubricants, providing both wear-reducing and extreme pressure protection. The result of revolutionary technology designed specifically for use in LE gear lubricants, Duolec increases oil film strength and is temperature-activated to provide a protective layer that smooths metal surfaces and minimizes the effects of any contact, thereby reducing friction and preventing surface wear.

Quinplex® impact-resistant additive contributes to outstanding water resistance, tackiness and enhanced mechanical stability, and helps to form a barrier against corrosion.



Greases

Product	NLGI Grade	Base	Dropping Point °F (°C)	Operating Temp. °F (°C)	Timken OK Load, lb (kg)
Almatek® General Purpose Lubricant 1232	2	Lithium 12-Hydroxy	350 (177)	0 to 300 (-18 to 149)	
Almatek® General Purpose Lubricant 1233	2	Lithium 12-Hydroxy	350 (177)	0 to 300 (-18 to 149)	—
	1	Lithium 12-Hydroxy	350 (177)	0 to 300 (-18 to 149)	—
Almasol® High Temperature Lubricant 1250	2½	Inorganic	None	0 to 450 (-18 to 232)	
1251	1	Inorganic	None	-20 to 450 (-29 to 232)	
Almaplex® Industrial Lubricant 1274	1½	Aluminum Complex	450 (232)	-20 to 350 (-29 to 177)	45 (20.4)
1275	2	Aluminum Complex	450 (232)	-10 to 400 (-23 to 204)	45 (20.4)
Monolec® Extend EM Grease 1282	2	Polyurea	536 (280)	-10 to 400 (-23 to 204)	—
Almaplex® Ultra-Syn Lubricant 1295	000	Aluminum Complex	—	-40 to 450 (-40 to 232)	55 (25)
1297	0	Aluminum Complex	—	-40 to 450 (-40 to 232)	55 (25)
1298	1	Aluminum Complex	523 (273)	-40 to 450 (-40 to 232)	55 (25)
1299	2	Aluminum Complex	523 (273)	-40 to 450 (-40 to 232)	55 (25)
Almamoly™ HD Grease 1487	0	Cal. Sulf. Complex	600 (316)	-49 to 300 (-45 to 149)	60 (27.2)
1488	1	Cal. Sulf. Complex	600 (316)	-40 to 350 (-40 to 177)	60 (27.2)
Monocal® GP Grease 1498	1	Cal. Sulf. Complex	600 (316)	-15 to 400 (-26 to 204)	60 (27.2)
1499	2	Cal. Sulf. Complex	600 (316)	-15 to 400 (-26 to 204)	60 (27.2)
Almagard® Vari-Purpose Lubricant 3750	0	Lithium Complex	425 (218)	-20 to 350 (-29 to 177)	70 (31.8)
3751	1	Lithium Complex	500 (260)	0 to 350 (-18 to 177)	70 (31.8)
3752	2	Lithium Complex	540 (282)	20 to 400 (-7 to 204)	70 (31.8)
Monolec® Multiplex Lubricant 4622	2	Lithium Complex	510 (266)	-40 to 400 (-40 to 204)	60 (27.2)
Monolec® Industrial Lubricant 4700	00	Aluminum Complex	375 (191)	-40 to 300 (-40 to 149)	45 (20.4)
4701	1	Aluminum Complex	450 (232)	-30 to 300 (-34 to 149)	45 (20.4)
4702	0	Aluminum Complex	425 (218)	-20 to 300 (-29 to 149)	45 (20.4)
Pyroshield® Syn Kiln Grease 5190	½	Fumed Silica	600 (>316)	-	-
Syntemp® Synthetic Lubricant 9102 (Aerosol)	2*			-40 to 400 (-40 to 204)	50 (22.7)

* NLGI 2 when diluent evaporates.

See page L22 for **NLGI Grease Consistency Numbers**.

	Uses Specs Comments
	For plain and anti-friction bearings, chassis points, other grease-lubricated applications. Semitacky, resists wash-out, pound-out and shock loading. Contains Almasol.
	Versatile, tacky grease is specially formulated to give superior protection and long service life. Withstands shock loading, pound-out and water washout in friction and anti-friction bearings, chassis points and other grease-lubricated applications. Contains Almasol and Quinplex.
	Recommended for any applications requiring a high-temperature grease, such as kiln car bearings, oven conveyors, asphalt plants and soot blowers. Contains Almasol.
	EP lubricant for industrial or fleet use in severe conditions caused by moisture or high temperatures. Seals out dirt, water and prevents corrosive wear. Great for electric motors and central lubrication systems. Contains Almasol.
	Formulated with polyurea thickener and designed for use in electric motor bearings or where polyurea grease is recommended. Offers superior mechanical and structural stability for long service life. Features low bleed characteristics, excellent pumpability and great oxidation resistance. Contains Monolec.
	Engineered to provide optimum performance capabilities under extreme equipment operating conditions. Provides excellent performance in the presence of water. Exhibits low-temperature pumpability down to 30°F (-1°C), as well as superior high-temperature functionality. Contains Almasol and Quinplex.
	High-performance, calcium sulfonate-thickened grease contains Almasol® and 5 percent moly solid lubricant additives, making it suitable for use in severe conditions such as high temps, heavy loads and water. Provides long-lasting protection in heavy-duty mobile equipment.
	Versatile general purpose formula contains calcium sulfonate complex thickener and Monolec® additive – a premium combination suitable for severe conditions such as high temperatures, heavy loads and water (including salt water). Especially effective on bearings in a warm, moist environment.
	Multifunctional EP lubricant for extended service under extreme conditions in on- and off-road vehicles and in many plant applications. Very tacky, excellent water resistance, will not pound out. Rust- and corrosion-inhibited. Contains Almasol and Quinplex.
	Lithium complex EP grease meets NLGI GC-LB specification. For plain and anti-friction bearings. Excellent low-temperature pumpability. Good mechanical stability, high dropping point, corrosion resistance. Contains Monolec.
	Formulated for central lubrication systems. Has EP characteristics, water and high heat resistance, low separation or “bleed,” excellent mechanical stability. Easily pumpable. Contains Monolec.
	For use in tire bore (inside diameter), wear pads, stop blocks, leaf seals and thrust button in rotary kilns, horizontal calciners, dryers, and other equipment with wear surfaces that operate at high temperatures. Features high auto-ignition point and contains synthetic thickener with organic and solid metallic-forming components.
	Aerosol for use on small open gears, chains, cables, sprockets, slides and other applications. Clean and easy to apply. Very tacky and water-resistant. Resists high temperatures. Contains Monolec.

Industrial Oils

Product	Grade		Viscosity, cSt			Flash Point °F (°C)	Pour Point °F (°C)	Timken OK Load lb (kg)
	SAE	ISO	100°C	40°C	VI			
BAL-200® 200	—	—	650	19,800	180	419 (215)	37 (3)	—
Monolec® Paper Machine Lubricant								
6200	—	150	14.90	155.0	95	504 (262)	10 (-12)	—
6190	—	220	19.3	230	95	515 (268)	10 (-12)	—
6140	—	320	24.6	335	95	515 (268)	10 (-12)	—
Monolec® Centrifugal Compressor Oil								
6260	—	32	5.4	31.9	100	430 (222)	-33 (-36)	—
Monolec® Rock Drill Lubricant								
6301	—	32	5.7	32.3	95	410 (210)	-38 (-39)	55 (25)
6303	30	100	11.5	98	95	450 (232)	-17 (-27)	55 (25)
6305	50	220	19.3	220	95	450 (232)	0 (-18)	55 (25)
Monolec® Way Lubricant								
6312	—	68	9.5	72	109	453 (234)	-6 (-21)	—
6315	—	220	20.2	226	95	440 (227)	0 (-18)	—
Monolec® Vacuum Pump Sealing Oil								
6322	—	22	4.48	22.86	113	406 (208)	-11 (-24)	—
Monolec® Spindle Oil								
6330	—	2	1.0	2.3	—	213 (101)	-38 (-39)	—
Monolec® R & O Compressor / Turbine Oil								
6401	—	32	5.3	31.9	95	410 (210)	-22 (-30)	—
6402	—	46	6.7	45.2	95	420 (216)	-11 (-24)	—
6403	20	68	8.6	67.6	95	435 (224)	-11 (-24)	—
6404	30	100	11.4	98	95	460 (238)	5 (-15)	—
6405	40	150	15.0	150	95	475 (246)	10 (-12)	—
6406	50	220	19.7	226	95	470 (244)	10 (-12)	—
6407	60	320	25.1	326	95	475 (246)	10 (-12)	—
Thermic™ Heat Transfer Oil								
6734	—	—	2.97	15.5	—	380 (193)	-20 (-29)	—
Thermic™ Heat Transfer System Cleaner								
6739	—	—	57	31	—	446 (230)	-27 (-33)	—
H1 Machine Oil								
6751	40	150	15.9	150	110	424 (218)	-6 (-21)	—
LE Transformer Oil								
6760	—	—	2.4	9.6		306 (152)	-76 (-60)	—

	Uses Specs Comments
	Bearing assembly lubricant that provides lift for the parts and works for any rotor or bearing that requires maintenance. Ensures smooth and effortless rotation during assembly or maintenance.
	Minimizes deposits caused by steam heat. Excellent thermal and oxidation stability and rust and corrosion protection for long life. Excellent detergency prevents carbon deposit build-up and coking to minimize oil system plugging and premature bearing failures. Excellent wear protection. Contains Monolec.
	A high-quality compressor oil designed specifically for use in centrifugal air compressors. Formulated with select paraffinic base stocks synergistically blended with additives that offer excellent corrosion protection, superior thermal stability, good water separation, anti-foaming performance and oxidation oil requirements of Ingersoll-Rand Centac Centrifugal Compressors. Contains Monolec.
	For use with all pneumatic equipment. Protects against high speeds and shock loads. Secondary anti-wear EP additives prevent galling and welding. Contains Monolec.
	For machine ways and other sliding surfaces. Excellent lubricity and good adhesive properties. Very stable for long-term use. Approved for Cincinnati Milacron P-50 specification. Excellent for centralized lubrication systems. Contains Monolec.
	Designed to increase equipment life and improve performance of liquid ring vacuum pumps. Optimized for severe service conditions, it offers rust and corrosion protection, oxidation stability and water-separating characteristics. Contains Monolec.
	Designed for use in high-speed, precision machine tool spindle bearings. Offers rust and corrosion protection, oxidation stability and water-separating characteristics. Contains Monolec.
	Rust- and oxidation-inhibited oil for reciprocating and rotary compressors, steam turbo generators, smaller industrial turbines, gears, bearings and circulating systems. Separates readily from water and prevents corrosive wear. Extremely long-lasting and nonfoaming. Contains Monolec.
	Designed for enclosed heat transfer equipment sustaining operating temperatures up to 316°C (600°F). Formulated with highly refined, severely hydrogenated, paraffinic white oil that resists cracking, oxidation and thickening. For use in asphalt production equipment; die casting machinery; and plastic, paper and rubber manufacturing operations. NSF H1 certified for incidental food contact.
	One-step, nonhazardous cleaning agent for systems with fouling and other degradation issues. For use in asphalt production equipment; die casting machinery; and plastic, paper and rubber manufacturing operations.
	For use in Manzel Lubrication Systems of Angelus seamers. Ashless additive completely suspends water in oil. Superior anti-rust and excellent anti-wear properties. Resists foaming. NSF H1 certified for food processing equipment. Certified Halal.
	Highly oxidation-resistant electrical transformer oil for all types of electrical service. Designed for use as an insulating cooling medium for electrical cooler operation and longer life. Meets all specification of ASTM D3487 Type II. Suitable for use in all types of oil-filled electrical devices, including transformers, switches, circuit breakers and capacitors. Can also be used in submersible pumps with oil-filled electric motors requiring a dielectric oil.

Industrial Oils

continued

Product	Grade		Viscosity, cSt			Flash Point °F (°C)	Pour Point °F (°C)	Timken OK Load lb (kg)
	SAE	ISO	100°C	40°C	VI			
Multilec® Industrial Oil								
6801	—	32	5.5	32.4	95	410 (210)	-27 (-33)	—
6802	—	46	6.8	45.2	95	435 (224)	-33 (-36)	—
6803	20	68	8.6	64.7	95	425 (218)	-11 (-24)	—
6804	30	100	11.3	99	95	435 (224)	-17 (-27)	—
6805	40	150	14.8	150	95	435 (224)	-11 (-24)	—
6806	50	220	18.9	217	95	425 (218)	-11 (-24)	—
6807	60	320	25.0	335	95	420 (216)	-6 (-21)	—
Monolec® Syn Industrial Oil								
9032	—	32	6.1	32.3	140	475 (246)	-71 (-57)	—
9046	—	46	8.1	46.8	145	480 (248)	-60 (-51)	—
9068	—	68	10.8	68.0	148	470 (244)	-49 (-45)	—
9100	—	100	14.9	100.0	155	470 (244)	-44 (-42)	—
9150	—	150	20.6	152	157	470 (244)	-38 (-39)	—
9220	—	220	27.0	221	157	470 (244)	-27 (-33)	—
9320	—	320	36.5	321	160	470 (244)	-17 (-27)	—
9460	—	460	47.6	461	161	465 (240)	-11 (-24)	—
9680	—	680	78.5	680	199	475 (246)	-44 (-42)	—
Synolec® Lubricant								
9963	40		14.3	82.0	180	505 (262)	-29 (-34)	—

Hydraulic Oils

Product	Grade		Viscosity, cSt			Flash Point °F (°C)	Pour Point °F (°C)	Timken OK Load lb (kg)
	SAE	ISO	100°C	40°C	VI			
Equipower™ Hydraulic Oil								
4932	—	32	5.7	33.0	≥95	417 (214)	-22 (-30)	—
4933	—	46	7.0	47.1	≥95	426 (219)	-17 (-27)	—
4934	—	68	8.9	69.5	≥95	435 (224)	-11 (-24)	—
Equipower™ Ultra Hydraulic Oil								
6132	—	32	5.7	32.7	≥100	417 (214)	-38 (-39)	—
6146	—	46	7.1	46.8	≥100	426 (219)	-33 (-36)	—
6168	—	68	8.9	68.8	≥100	435 (224)	-22 (-30)	—
Equipower™ Ultra HVI Hydraulic Oil								
6522	—	22	7.5	22.0	350	302 (150)	<-76 (<-60)	—
6532	—	32	6.3	32.2	150	417 (214)	-44 (-42)	—
6546	—	46	8.1	46.3	150	426 (219)	-44 (-42)	—
Low Tox® Hydraulic Oil								
6603	—	68	8.9	68.0	≥100	446 (230)	0 (-18)	—

	Uses Specs Comments
	Multifunctional, heavy-duty, anti-wear oil for air compressors, hydraulics, bearings and R&O gear applications. Rust- and oxidation-inhibited. Great lubricity. Excellent water separation ability. Combats acid hydrolysis in rotary screw compressors. Contains Monolec.
	For use with reciprocating and rotary compressors, vacuum pumps, hydraulic systems, high-temperature non-EP gear drives, low-temperature fluid power drives. Reduces carbon deposits. Contains Monolec.
	Chains, conveyors, sealed bearings in high temperatures. Dissipates slowly, leaves no residue. Cleans oil deposits. Spray, drip or brush application. Rust- and oxidation-inhibited. Contains Monolec.
	Uses Specs Comments
	Offers rust protection, anti-wear properties, thermal stability and oxidation resistance. For hydraulic systems operating in highly contaminated environments or where high lubricant consumption is a concern. Nonfoaming in service.
	Long-lasting, nonfoaming oil designed to extend the life of hydraulic systems. Offers superior protection against water contamination, rust, corrosion and oxidation. Contains Monolec.
	High viscosity index formulation ensures smooth uninterrupted power flow over wide temperature range and increased energy efficiency. Offers superior protection against water contamination, rust, corrosion and oxidation. Long-lasting and nonfoaming in service. Contains Monolec.
	Low-toxicity hydraulic oil with advanced product technology. Performs equivalent to premium hydraulic fluids, yet has low toxicity for environmental concerns compared to standard commercial hydraulic oils and biodegradable hydraulic fluids.

Turbine Oils

Product	Grade		Viscosity, cSt			Flash Point °F (°C)	Pour Point °F (°C)	Timken OK Load lb (kg)
	SAE	ISO	100° C	40° C	VI			
All-Purpose Turbine Oil								
4941	—	32	5.4	31.7	95	435 (224)	-22 (-30)	—
4943	—	68	8.7	67.9	95	465 (240)	-11 (-24)	—
4945	—	150	14.61	151	95	525 (274)	0 (-18)	—
4946	—	220	19.1	225	95	535 (280)	5 (-15)	—
Low Tox® Turbine Oil								
6412	—	46	6.9	45.6	95	455 (235)	0 (-18)	—
6413	20	68	9.0	68.6	95	462 (239)	5 (-15)	—
6414	30	100	11.4	98	95	500 (260)	5 (-15)	—
Monolec® Turbine Oil								
6461	—	32	5.1	29.7	95	442 (228)	-22 (-30)	—
6462	—	46	6.8	46.1	95	455 (234)	-22 (-30)	—
6463	—	68	8.8	69.1	95	460 (238)	-11 (-24)	—
Endure™ Turbine Oil								
6481	—	32	5.46	31.97	105	449 (232)	-11 (-24)	—
6482	—	46	6.76	45.30	102	449 (232)	-11 (-24)	—

Gear Oils

For AGMA numbers, see the *Viscosity Equivalent Chart* on p. L23.

Product	Grade		Viscosity, cSt			Flash Point °F (°C)	Pour Point °F (°C)	Timken OK Load lb (kg)
	SAE	ISO	100° C	40° C	VI			
Almasol® Pure Mineral Gear Lubricant								
401	110	220	20.9	239	95	535 (280)	-0 (-18)	—
Almasol® Worm Gear Lubricant								
460	—	460	38.2	474	115	545 (285)	-6 (-21)	—
680	—	680	48.3	659	115	558 (292)	-6 (-21)	—
Monolec® Gear Lubricant								
703	80W-90		15.1	155	95	390 (198)	-17 (-27)	70 (31.8)
704	85W-140		28.3	404	95	400 (204)	5 (-15)	70 (31.8)
Duolec® Industrial Gear Oil								
1601	—	46	7.35	48.30	113	410 (210)	-30 (-22)	—
1602/1302*	—	68	9.25	71.40	105	410 (210)	-17 (-27)	—
1603	—	100	11.8	105.0	101	410 (210)	-11 (-24)	—
1604/1304*	—	150	15.8	157.5	103	410 (210)	-6 (-21)	75 (34)
1605	—	220	20.8	231.0	105	410 (210)	0 (-18)	75 (34)
1606	—	320	27.0	336.0	107	410 (210)	0 (-18)	75 (34)
1607	—	460	35.0	483.0	109	410 (210)	-5 (-15)	75 (34)
1608	—	680	46.4	714.0	112	410 (210)	10 (-12)	75 (34)
1609	—	1000	61.6	1,050	116	410 (210)	10 (-12)	75 (34)
1610	—	1500	84.0	1,575	122	410 (210)	16 (-9)	75 (34)
Duolec® PAG Gear Lubricant								
9705	—	220	41.9	227	242	537 (281)	-38 (-39)	75 (34.1)
9706	—	320	61.6	339	252	527 (275)	-44 (-42)	75 (34.1)
9707	—	460	83.0	477	262	527 (275)	-22 (-30)	75 (34.1)
Duolec® Syn Gear Lubricant								
9808	—	68	10.9	70	147	456 (236)	-43 (-42)	—
9815	—	150	20.6	156	153	444 (229)	-34 (-37)	70 (31.8)
9822	—	220	26.7	227	151	464 (240)	-35 (-37)	70 (31.8)
9832	—	320	35.4	324	154	466 (241)	-27 (-33)	70 (31.8)
9846	—	460	47.9	472	160	464 (240)	-20 (-29)	70 (31.8)
9868	—	680	67.4	717	165	471 (244)	-11 (-24)	70 (31.8)

	Uses Specs Comments
	Rust- and oxidation-inhibited turbine oil offers water-separating characteristics. For turbine systems operating in highly contaminated environment, or where high lubricant consumption is a concern. Nonfoaming in service.
	Exceeds performance of premium turbine oils. Low toxicity for environmental concerns, compared to standard commercial turbine oils and biodegradable turbine oils. Meets or exceeds OEM requirements for many generators, turbine and governors.
	High-quality turbine oil line formulated using select base oils coupled with synergistic mix of additives. Provides excellent performance in mainline steam, gas and hydroelectric turbine applications. Contains Monolec.
	Premium, high-performance turbine oil formulated using proprietary blend of highly refined base oils and advanced additive technology. Provides superior long-lasting oxidative and thermal stability while preventing varnish and sludge formation. Contains Monolec.

	Uses Specs Comments
	Provides highest level of wear reduction possible without EP additives. API GL-1. Contains rust and oxidation inhibitors, metal adhesive additives. Nonfoaming. Contains Almasol.
	Designed to protect worm gears and bronze parts. For use in all worm gearboxes that require a compounded worm gear lubricant. 460-AGMA 7C, 680-AGMA 8C. Contains Almasol.
	Multi-viscosity EP oil. Exceeds requirements for all types of differentials and transmissions in highway fleets and off-road equipment. For Rockwell, Eaton axles, heavily loaded industrial enclosed gearboxes. Nonfoaming. Rockwell approved. Contains Monolec.
	<p>High-performance line of industrial gear oils acceptable for use in any gear or bearing application that requires high thermal stability, EP lubricant. Fortified with a shear stable tackifier to provide adhesion to metal during use. Contains Duolec.</p> <p>*1302 & 1304 are undyed versions.</p>
	Synthetic Polyalkylene Glycol (PAG), base gear lubricant. Especially known for EP characteristics and ability to prevent micropitting. Formulated for corrosion resistance, wear protection and thermal stability. Excellent for worm gear lubrication. Contains Duolec. (formerly named Synpag)
	Engineered with 100% synthetic base fluid to give excellent low- and high-temperature performance. Will flow at exceptionally low temperatures to provide the highest degree of protection. Contains Duolec. (formerly named Synolec)

Gear Oils

continued

Product	Grade		Viscosity, cSt			Flash Point °F (°C)	Pour Point °F (°C)	Timken OK Load lb (kg)
	SAE	ISO	100°C	40°C	VI			
Monole® Syn Gear Oil 9919 9923	75W-90	—	15.0	100.0	157	429 (226)	-65 (-54)	90 (40.8)
	75W-140	—	26.0	190.0	171	428 (220)	-49 (-45)	90 (40.8)

Open Gear Greases

Product	NLGI Grade	Base	Dropping Point °F (°C)	Operating Temp. °F (°C)	Timken OK Load lb (kg)
Pyroshield® Syn Open Gear Grease 5180 5182 5100 (Aerosol)	2*	Bentonite Clay	Non-Melt	40 to 410 (4 to 210)*	90 (40.8)
	2	Bentonite Clay	Non-Melt	40 to 410 (4 to 210)	90 (40.8)
	2*	Bentonite Clay	Non-Melt	40 to 410 (4 to 210)*	90 (40.8)
Almasol® Syntemp® Lubricant 9901	2	Bentonite Clay	Non-Melt	30 to 450 (-1 to 232)	45 (20.4)

* in service **30-lb pail contains 60 ½-lb bags

Open Gear Oils

Product	Grade		Viscosity, cSt			Flash Point °F (°C)	Pour Point °F (°C)	Timken OK Load lb (kg)
	SAE	ISO	100°C	40°C	VI			
Pyroshield® Syn Hvy Open Gear Lubricant 9000	—	—	880	28,980	190	385 (196)	54 (12)	95 (43.2)
Pyroshield® Syn XHvy Open Gear Lubricant 9011	—	—	1,104*	36,070*	190*	235 (112)	32 (0)	95 (43.2)
Pyroshield® Syn Kiln Lubricant 9020	—	—	860**	24,900**	208	385 (196)	—	95 (43.2)


*without diluent **without solids

Food Grade Greases (H1)

Product	NLGI Grade	Base	Dropping Point °F (°C)	Operating Temp. °F (°C)
H1 Quinplex® Food Machinery Lubricant 4022 4023 4024 4025 (Aerosol +)	00	Aluminum Complex	—	-15 to 300 (-26 to 149)
	0	Aluminum Complex	417 (214)	-15 to 300 (-26 to 149)
	1	Aluminum Complex	450 (232)	0 to 350 (-18 to 177)
	2	Aluminum Complex	493 (256)	30 to 400 (-1 to 204)
H1 Quinplex® High Temperature Lubricant 4051	1½	Bentonite Clay	—	0 to 450 (-18 to 232)
H1 Quinqual™ Syn FG Grease 4070 4071 4072	0	Calcium Sulfonate Complex	>600 (>316)	-15 to 400 (-26 to 204)
	1	Calcium Sulfonate Complex	>600 (>316)	-15 to 400 (-26 to 204)
	2	Calcium Sulfonate Complex	>600 (>316)	-15 to 400 (-26 to 204)


	Uses Specs Comments
	Specially formulated heavy-duty synthetic gear oil for industrial and automobile applications. Made with 100% synthetic base fluid for excellent low- and high-temperature performance. Contains Monolec.
	Uses Specs Comments
	For operating in the most severe service. EP lubricant for year-round use on open gears, cams, cables, fifth wheels and other sliding mechanisms. Contains Almasol. 5100 is only available as an aerosol.
	High-temperature EP synthetic lubricant. Water-resistant, will not melt or separate. For open gears, sliding surfaces, low-speed plain bearings. Contains Almasol.
	Uses Specs Comments
	Extremely heavy synthetic lubricant for ball/grinding mill applications. EP, nonasphaltic. Ideal for automatic spray systems. Can be used in bath or idler immersion lube system. Contains Almasol.
	Exceptionally high viscosity, 100% synthetic base oil lubricant designed for open gears in heavy-duty service. Ideal for automatic lube spray systems for intermittent application. Contains Almasol.
	Heavy-duty synthetic fluid for large slow-moving, straight-cut open gears. Ideal for automatic lube spray systems for intermittent application. Contains fine particles of graphite and Almasol.
	Uses Specs Comments
	NSF H1 certified for food processing equipment. White, water-resistant, rust- and corrosion-inhibited, mechanically stable. Resists high temperatures, clings to metal. Certified Halal and Kosher Pareve. Contains Quinplex. 4025 available in containers and as an aerosol.
	NSF H1 certified for food processing equipment. Recommended for any applications requiring a high-temp grease, such as pellet mills, kilns, exhaust fans, oven conveyors, and plastic blow molding machines. Contains Quinplex.
	NSF H1 certified for food processing equipment. Synthetic grease featuring very high dropping point, exceptional inherent EP characteristics, superior mechanical stability, tackiness, water resistance, and low oil bleed. Certified Halal and Kosher Pareve. Contains Quinplex.

Food Grade Oils (H1)

Product	Grade		Viscosity, cSt			Flash Point °F (°C)	Pour Point °F (°C)
	SAE	ISO	100°C	40°C	VI		
H1 Quinplex® White Oil							
4010	10	46	5.7	43.2		370 (188)	-33 (-36)
4020	20	68	7.9	66.5		421 (216)	-22 (-30)
4030	30	100	10.8	100		441 (227)	-22 (-30)
4040	40	150	14.9	149		430 (221)	-22 (-30)
H1 Quinplex® Synthetic Food Grade Oil							
4032	—	32	6.1	32.1	138	450 (232)	-76 (-60)
4046	—	46	7.7	46.3	135	530 (276)	-65 (-54)
H1 Quinplex® Penetrating Oil & Lubricant							
4058	—	—	6.0	38.4		305 (152)	-33 (-36)
H1 Quinplex® Penetrating Oil & Lubricant 4059 (Aerosol) 	30	100	10.7	100		400 (204)	-17 (-27)
H1 Quinplex® White Gear Lubricant							
4090	90	220	19.3	217		393 (201)	5 (-15)
4140	140	460	29.7	459		391 (200)	5 (-15)
4250	250	680	44.7	659		428 (220)	10 (-12)
H1 Quinplex® Syn FG Gear Oil							
4150	—	150	20.27	161.3	146	>464 (>240)	-33 (-36)
4220	—	220	27.12	238.2	147	>464 (>240)	-27 (-33)
4320	—	320	36.12	341.1	152	>464 (>240)	-22 (-30)
4460	—	460	48.64	488.2	156	>464 (>240)	-22 (-30)
H1 White Utility Oil							
4201	—	—	3.6	18.0		320 (160)	-40 (-40)
4204	—	46	6.5	42.2		444 (229)	0 (-18)

Wire Rope Lubricants

For H1 Silicone Spray (804), see p. L20.
For Ovenworx™ H1 Syn Chain Lubricant (4061), see page L21

Product	NLGI Grade	Base	Dropping Point °F (°C)			Operating Temp. °F (°C)		Timken OK Load lb (kg)
Wirelife® Almasol® Coating Grease								
451	000	Calcium	180 (82)			-20 to 170 (-29 to 77)		—
452	00	Calcium	180 (82)			-20 to 170 (-29 to 77)		—
453	0	Calcium	180 (82)			-20 to 170 (-29 to 77)		—
Earthwise™ EAL Wire Rope Grease								
3353	0	Aluminum Complex	450 (232)			-20 to 400 (-29 to 204)		—
Product	Grade		Viscosity, cSt			Flash Point °F (°C)	Pour Point °F (°C)	Timken OK Load lb (kg)
	SAE	ISO	100°C	40°C	VI			
Wirelife® Monolec® Penetrating Lubricant 2001 (Aerosol +) 	—	—	14.1	191	—	205 (96)	0 (-18)	60 (27.2)
Wirelife® Almasol® Coating Lubricant 2002	—	—	—	—	—	140 (60)	49 (9)	—

	Uses Specs Comments
	NSF H1 certified for food processing equipment. Nonfoaming. For use where incidental food contact may occur or a clean, nonstaining lubricant is required: hydraulic systems, slides, guides, chains, valves, compressors. Certified Halal and Kosher Pareve. Contains Quinplex.
	NSF H1 certified for food processing equipment. Superior low-temperature performance, excellent load-carrying, anti-wear properties and seal compatibility. Certified Halal and Kosher Pareve. Contains Quinplex.
	Food grade penetrating oil quickly dissolves rust and frees frozen parts. Penetrates and leaves heavy film for lubrication and corrosion protection. NSF H1 certified for food processing equipment. Certified Halal and Kosher Pareve. Contains Quinplex.
	Food grade penetrating oil - available as an aerosol - quickly dissolves rust and frees frozen parts. Penetrates and leaves heavy film for additional lubrication and corrosion protection. NSF H1 certified for food processing equipment. Certified Halal and Kosher Pareve. Contains Quinplex.
	NSF H1 certified for food processing equipment. Excellent load-carrying, wear-reducing and nonfoaming properties. For use in gearboxes, including worm gears, where incidental food contact may occur or where a clean, nonstaining lubricant is desired. Certified Halal and Kosher Pareve. Contains Quinplex.
	NSF H1 certified gear oil for food processing equipment. Superior low- and high-temp performance, excellent load-carrying, anti-wear properties and seal compatibility. 100% synthetic base oil. Recommended for gearboxes and other critical applications in food and beverage manufacturing facilities. Certified Halal and Kosher Pareve. Contains Quinplex.
	Food and USP grade white mineral oil containing no additives. NSF H1 certified for lubrication where incidental food contact may occur. Suggested for rust prevention after washdown. For textile applications where a nonstaining oil is required. Certified Halal and Kosher Pareve.
	Uses Specs Comments
	Coats all moving chain and cable parts to ensure smooth operation and long life. Tacky, water-resistant, seals out moisture. Adheres to moving parts, will not sling off. Excellent for cables and chains, as well as small, slow-turning gearboxes requiring semifluid grease. Contains Almasol.
	Soft, semifluid coating grease designed to protect wire rope, moving chain and cable parts. Certified Environmentally Acceptable Lubricant (EAL) that meets the specifications required by the EPA's Vessel General Permit (VGP). Recommended for use on or near waterways. Contains Almasol and Quinplex.
	Uses Specs Comments
	Penetrating lubricant supplies superior load capacity and corrosion resistance. Solvent enhances penetration. When solvent evaporates, a thin film remains to protect and lubricate each strand. Excellent for wire rope and chains. Contains Monolec. Available in containers and as an aerosol.
	Coating lubricant provides self-healing film to reduce wear and fretting. Contains petroleum solvent. Contains Almasol.

Wirelife® Low Tox® Penetrating Lubricant 2011	—	—	18.0*	156.4*	—	284 (140)	0 (-18)	—
Wirelife® Almasol® Syn Coating Lubricant 2022	—	—	1,104*	36,070*	190*	235 (112)	32 (0)	95 (43.1)

* without diluent

Engine Oils

Product	Grade		Viscosity, cSt			Flash Point °F (°C)	Pour Point °F (°C)
	SAE	ISO	100°C	40°C	VI		
Monolec Ultra® Engine Oil 8130	10W-30	—	12.2	83.3	142	430 (221)	-33 (-36)
Monolec® GFS Engine Oil 8430 8440 8450	30	—	11.9	106.0	95	425 (218)	-17 (-27)
	40	—	16.1	165.0	95	450 (232)	-11 (-24)
	50	—	19.8	220.0	95	475(246)	0 (-18)
Monolec® Tetra-Syn™ Engine Oil 8521 8531	5W-20	—	8.9	47.9	168	419 (215)	-49 (-45)
	5W-30	—	9.7	54.7	164	419 (215)	-49 (-45)
Monolec® Engine Oil 8600 8630 8700 8730	15W-40	—	15.2	114.7	138	430 (221)	-24 (-31)
	10W-30	—	12.3	85.9	139	430 (221)	-33 (-36)
	15W-40		15.2	114.7	138	430 (221)	-24 (-31)
	10W-30		12.3	85.9	139	430 (221)	-33 (-36)
Monolec Ultra® Engine Oil 8800/8801**	15W-40	—	15.1	118.0	≥130	430 (221)	-24 (-31)
Monolec® Natural Gas Engine Oil 8845	15W-40	—	14.6	115	130	446 (230)	-17 (-27)
Monolec Ultra® Syn Heavy Duty Engine Oil 8854	5W-40	—	13.7	79.7	165	426 (219)	-40 (-40)
Ultra RDE Oil 8900	40	—	14.8	143.0	95	460 (238)	15 (-9)
Monolec® Natural Gas Engine Oil 8945	40	—	13.8	126.0	106	491 (255)	0 (-18)

**no dye

	Highly penetrating lubricant with excellent load-carrying capability. Designed for marine and other sensitive applications that require a low-toxicity wire rope and chain lubricant. Provides outstanding protection against rust, while having the lowest possible toxic effect on the environment.
	Exceptionally high-viscosity, 100% synthetic base oil lubricant designed for surface protection of wire ropes in heavy duty service in extreme environment. Contains Almasol.
	Uses Specs Comments
	For heavy-duty, long drain service in diesel engines. Effective cold cranking at low temperatures. Exceeds requirements for Mack, Detroit Diesel, Ford and General Motors. Contains Monolec.
	For heavy-duty service in diesel engines. Exceeds performance requirements for Mack, Caterpillar, Cummins, Detroit Diesel, Ford and General Motors.
	High-quality, high-performance, proprietary synthetic engine oil for gasoline engines. Exceeds the minimum standards set by American Petroleum Institute (API), providing the ultimate combination of performance, protection, endurance and efficiency. Contains Monolec. ** 8522 & 8532 are undyed versions.
	For diesel engines in mobile equipment and stationary generators. Offers dependable heavy-duty performance, wear protection and increased fuel efficiency. Recommended for 30,000-mile oil changeouts. Contains Monolec. 8600 & 8630 – CJ4. 8700 & 8730 – CK4.
	For heavy-duty, long-drain service in diesel engines. Improves fuel efficiency, reduces wear, provides all-season, all-weather performance. Exceeds performance requirements for Mack, Caterpillar, Cummins, Detroit Diesel, Volvo, and others. Contains Monolec. ** 8801 is an undyed version.
	Superior multigrade, low ash natural gas engine oil formulated for use in stationary and mobile natural gas engines. Contains Monolec.
	Broad-range multiviscosity synthetic oil for diesel engines pays for itself with outstanding year-round performance, wear protection, fuel efficiency and extended drains. Achieves flow quickly in cold weather and maintains viscosity at operating temperatures. Meets all major OEM approvals. Contains Monolec.
	For use with silver alloy bearings in railroad diesel engines. Improves fuel efficiency, reduces wear and provides the highest degree of engine protection. Exceeds manufacturer's requirements for EMD, GE, LMOA and Caterpillar for railroad diesel engines.
	Superior, straight-grade, low ash natural gas engine oil formulated with cutting edge technology that differentiates its performance from other natural gas engine lubricants. Contains Monolec.




Transmission Fluids

Product	Grade		Viscosity, cSt			Flash Point °F (°C)	Pour Point °F (°C)
	SAE	ISO	100°C	40°C	VI		
Synolec® Transmission Fluid 640	40	—	14.8	95.1	163	460 (238)	-44 (-42)
Dexron® VI Automatic Transmission Fluid 1136	—	—	6.0	29.0	145	420 (216)	-60 (-51)
Monolec® Syn Multi-Vehicle Automatic Transmission Fluid 1150	—	—	7.7	36.5	186	430 (221)	-54 (-48)
Monolec® Power Fluid 7500	—	—	9.8	61.3	130	433 (223)	-33 (-36)
Monolec® Drive Train Fluid 7511 7531 7551	10	—	6.14	38.78	103	440 (222)	-22 (-30)
	30	—	11.44	99.52	101	500 (260)	-22 (-30)
	50	—	19.05	222.74	96	505 (263)	10 (-12)

Fuel Supplements


Product	Uses Specs Comments
L-X® Heavy-Duty Chemical Supplement 2300	Fuel supplement for internal combustion engines. Cleans internal engine parts, prevents carbon and gum deposits on rings, plugs, injectors, pistons, valves, carburetor and PCV valves. Reduces friction and wear. Reduces fuel consumption.
Full Torque™ Diesel Fuel Improver 2421	Cetane-boosted, detergent-containing diesel fuel supplement that increases power, improves fuel economy, reduces emissions, and provides smoother performance.

Additional Products

Product	Uses Specs Comments
Heavy Duty Solvent Degreaser / Brake Cleaner 802 (Aerosol)	 Aerosol for removing heavy greases, oil adhesives, lubricants, tar, waxes, asphalt, resins and other heavy materials.
H1 Silicone Spray 804 (Aerosol)	 Silicone-based aerosol spray for use on machine parts and equipment in locations in which there is potential exposure of the lubricated part to food. For food plant and other industrial uses. Certified NSF H1 and Kosher-Pareve.
Monolex® Penetrating Oil & Lubricant 2059 (Aerosol +)	 Quickly dissolves rust, gum and varnish, freeing “frozen” parts. Leaves tough film. Rust and corrosion preventative. Contains Monolec. Available in containers and as an aerosol.
Greentastic® Industrial Cleaner 2110	Concentrated water-based liquid solution can be diluted with water or solvents. Powerful, environmentally friendly formula is phosphate- and phosphorus-free. NSF Registered A1 Cleaner.
Almasol® Smokeless Chain Lubricant 2705	Suitable for application to hot chains without interrupting production operations. Will not smoke at temperatures up to approximately 550°F (288°C). Contains Almasol.
Almasol® Oven Chain Lubricant 2710	Contains a blend of lubricating solids in a biodegradable carrier fluid that evaporates and leaves behind a protective, water-resistant solid film that lubricates without any accumulation of hard deposits. Reduces frictional drag over a broad temperature range. Apply below 175°F (79°C). Effectively lubricates up to 900°F (482°C). Contains Almasol.

	Uses Specs Comments
	Premium full synthetic lubricant designed for fuel efficiency and extended drain intervals while meeting OEM warranty requirements. Meets or exceeds specifications of several manual transmission OEMs, including Eaton transmissions such as Roadranger, Ultrashift Plus, Fuller Advantage, FR and RT Series transmissions.
	Synthetic-based fluid for use as automatic transmission fluid in automobiles with automatic and power shift transmissions, in power steering systems, and in hydraulic pumps. Formulated to provide smooth shifting, low shudder and long-life performance in automatic transmissions.
	Engineered to provide enhanced lubricant performance by using the most advanced additives on the market, blended into the highest quality synthetic base oils available. Contains Monolec.
	For combination gear-hydraulic systems, hydraulic transmissions, wet brakes and torque converters. Is nonfoaming and rejects water. Contains Monolec.
	Heavy-duty drive train fluid that protects off-road equipment, whether it is running intermittently or continuously. Can be used in final drives, wet brakes and various torque converters. Balances the need for lubricity with the frictional properties needed. Meets or exceeds performance requirements of Caterpillar, Allison and Komatsu. Contains Monolec.

Additional Products

Product	Uses Specs Comments
Almasol® High Temperature Oven Chain Lubricant 2799	Chain lubricant containing Almasol and other sub-micron lubricating solids in a special high-temperature synthetic carrier. Designed to maximize lubricant penetration into the pin and bushing area of the chain. Penetrates all moving parts and leaves a protective film. No residue at high temperatures. Apply up to 475°F (246°C) without interrupting production operation.
Ovenworx™ H1 Syn Chain Lubricant 4061 (ISO 220)	Fully synthetic formula features robust high-viscosity base fluid and contains no solid additives to fall out of the suspension, requires no pre-mixing. Seals out water-damaging moisture, preventing corrosion. Has broad temperature range and high flash point. NSF H1 certified for food processing equipment. Certified Halal and Kosher Pareve.
Almasol® Dry Film Lubricant 9200 (Aerosol)	 Aerosol for use where permanent lubrication with long wear life and low frictional properties are desired, and oil and grease cannot be used. Contains Almasol.
Easy Bar® with Almasol® 9210 (Standard – 10 x 2 x 5/8) 9211 (Thin – 10 x 2 x 3/8) 9212 (Skinny – 11.5 x 1 x 5/8) 9213 (Big – 12 x 2.5 x 5/8)	Solid lubricant bar that protects the inside tire bore of rotary kilns and dryers. The bar melts and creates a lubricating film that protects against costly steel-on-steel contact. Contains Almasol.
Easy Bar® Lubricator LEX-EASYBARTOOL	Easy Bar Lubricator Insertion Tool
Monolec® High Temperature Oven Chain Lubricant 9965 (ISO 220)	Specially formulated lubricant with excellent thermal stability and low volatility. Forms a soft carbonaceous residue that functions as a solid lubricant. Provides reduced wear, lower friction, resistance to moisture and corrosion, and reduced power consumption. Contains Monolec.

NLGI Grease Consistency Numbers

The National Lubricating Grease Institute has established a grease consistency category based on ASTM D 217 Worked Penetration characteristics. Worked Penetration is defined as the distance that an ASTM cone under a specified load, at 25°C (77°F), penetrates in 5 seconds the smooth surface of a grease sample that has been subjected to 60 strokes in a grease worker.

The greater the number defined in terms of the cone penetration, the softer the grease and the lower the NLGI number. Since the penetration scale is not continuous with the NLGI scale, i.e., there are lapses of 15 tenths of a millimeter between NLGI numbers, it is possible to design greases to fall between NLGI numbers. When this is done, unofficial half NLGI numbers are sometimes used.

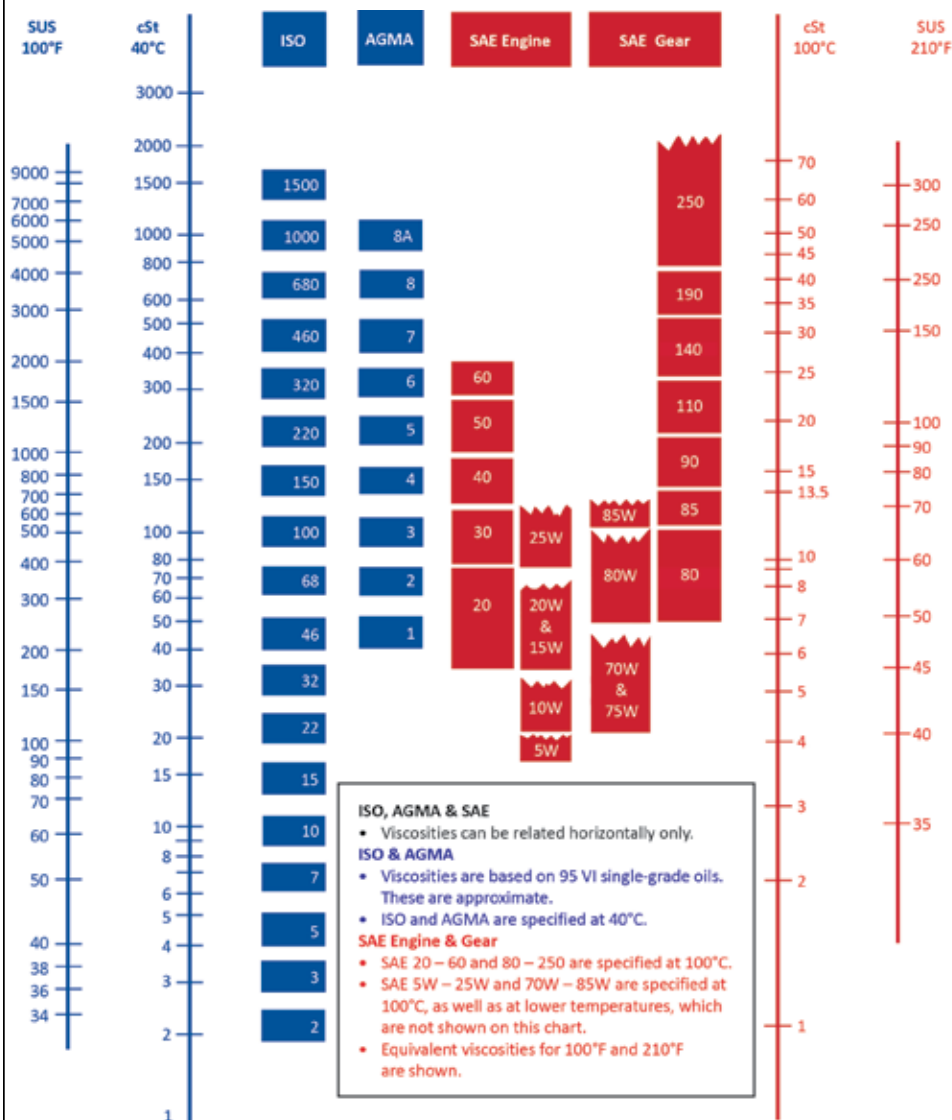
NLGI Consistency Number (Grade)	ASTM D 217 Worked (60 Strokes) Penetration at 25°C (77°F), Tenths of a millimeter
000	445 to 475
00	400 to 430
0	355 to 385
1	310 to 340
2	265 to 295
3	220 to 250
4	175 to 205
5	130 to 160
6	85 to 115

ASTM Cone Penetration Test



The ASTM Cone Penetration Test, which determines consistency, is the primary quality control test for lubricating greases. This test is performed on every grease processed at the LE manufacturing facility and is used to determine the NLGI grade.

Viscosity Equivalents



Full Service Reliability

Xtract Contamination Removal



Xtract Filtration



Xtract Oil Sight Glasses



Xclude Contamination Exclusion



Xclude Breathers

Xport Lubricant Application



Xport Clear Grease Guns

Xport Single Point Lubricators



Xpel Lubricant Tags & Labels

**LE Enhanced
Lubricants**

Xpert Services

*Xpert
Training*

*Xpert Equipment
Reliability
Assessment*

**Xamine
Oil Analysis**

**Xpel Lubricant Storage
& Identification**

*Xpel Lubricant
Bulk Storage*

*Xpel Oil Storage
Containers*



*Starting with
our enhanced
lubricants*



t ID
els

Reliability Introduction

LE is the total solutions provider for lubrication reliability. We will work closely with you to learn about your specific equipment and lubrication needs, and then help you create a world class lubrication reliability program that will provide equipment protection and enhanced profits.

We start with an onsite equipment assessment. A trained, local lubrication consultant will provide a detailed report recommending lubricants, application methods, usage amounts, and drain or lube intervals.

In addition to LE's premium line of lubricants, your consultant can offer you several other best practice products and services – available through LE and our reliability partners – to ensure the effectiveness of your program.



Protect your equipment from contamination

Your LE consultant will work closely with you to learn about your specific equipment and lubrication needs, and then help you create an effective lubrication reliability program that will provide equipment protection as well as enhanced profits. In addition to our lubricants, LE offers a full line of Asset Reliability Solutions to ensure your program's success.



ASSET RELIABILITY SOLUTIONS AT A GLANCE

	Equipment Reliability Assessment	Lubrication Benchmark Audit	Energy Savings Assessment	Training
	Engine Oil Analysis	Industrial Oil Analysis	Turbine Oil Analysis	Oil Sampling Hardware
	Lubricant Bulk Storage	Oil Storage Containers	Lubricant IDTags & Labels	
	Single Point Lubricators	Automatic Lubrication Systems	Wire Rope Lubrication System	Clear Grease Guns
	Breathers			
	Oil Sight Glasses	Filtration		

XPert® SERVICES

Xpert™ Audits, Assessments & Other Services

Wherever you are on your journey to Lubrication Excellence,
let our experience and expertise go to work for you

A lubrication reliability supplier should do more than take an order, deliver it and drive away. With Lubrication Engineers, you are not alone. We can recommend a lubrication reliability program designed for your operation. Whether your goals pertain to preventing contamination ingress, removing contaminants, enhancing your oil analysis program, increasing the safety and cleanliness of your lubricant storage area, or improving profitability through a combination of any or all the above, we will work with you to come up with the right program. We can also help you with implementation, including hardware installation, proper oil sampling methods, and training of best practice techniques for your personnel. After your program is in place, we will continue to provide support for your reliability efforts. To achieve the best results, we offer two primary services for organizations wanting to start or improve their lubrication reliability program: Xpert Lubrication Benchmark Audit and Xpert Equipment Reliability Assessment.



Lubrication Benchmark Audit

Think of it as a 1,000-foot view and scorecard. The audit is a tool that provides scores in these nine audit categories: Lubrication Best Practices; Asset & Lubricant Identification; Storage & Handling; Oil Analysis & Sampling; Contamination Control; Filtration; Training, Skill Development & Certifications; Software, CMMS & EAM; and Safety & Accessibility. It can be done at any time in your journey, whether you are just getting started or well on your way, and it can be repeated periodically to track progress and make adjustments.



Equipment Reliability Assessment

The assessment is a thorough, detailed investigation of every lubricated asset and component in the facility, along with specific improvements recommended for each. The output will be a valuable blueprint — a plan of action for implementing or improving your lubrication reliability program.

Get started today

Visit www.l Lubricants.com/reliability-solutions/audits-assessments-other-services/ or contact your local LE consultant to learn more.

Xpert® Energy Savings Assessment

We can help you shave electrical energy costs across the board. Our experts help you identify a few pieces of critical equipment and prepare for amperage testing. Using the resulting data, we estimate savings opportunities based on reductions that can be achieved by adopting our lubrication reliability recommendations.



XPERT® SERVICES

Xpert® Training

LE offers MLT I, OMA I & CLS classes to suit your needs

Raise the bar through training. Lubrication Engineers has partnered with some of the most knowledgeable instructors in the industry to offer convenient opportunities for lubrication training and certification. We have a variety of options to fit your schedule and budget.

Our current Xpert™ training classes include MLT I, OMA I and CLS, all of which can be conducted upon request via private training at your location. We also offer our MLT I class in a convenient online format multiple times per year.

Get started today

Visit www.LElubricants.com/education-training.html to find out more about our educational offerings, register for an upcoming class or to start a private training inquiry, or contact your local LE consultant for assistance.



Machinery Lubrication
Technician Level I



Certified Lubrication Specialist



Oil Monitoring Analyst Level I



Private Training



XAMINE® OIL ANALYSIS

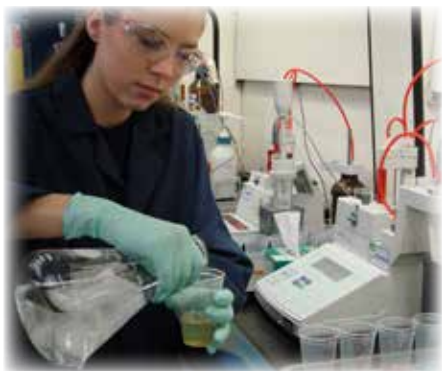
Xamine® Oil Analysis – Engine, Industrial & Turbine

Your lubrication reliability program is incomplete without ongoing oil analysis

A good oil analysis program is integral to any successful lubrication reliability program. With consistent, accurate monitoring of the condition of your oil – whether in an engine, gearbox, circulating system or mainline power generation turbine – an oil analysis program can help you improve your bottom line with less lubricant to purchase, fewer parts to keep in inventory, less used lubricant requiring disposal, less labor and less downtime.

Using one of LE's oil analysis programs enables you to be more efficient with your use of lubricants and reliability tools. LE's oil analysis monitors oil samples for mechanical, operational and environmental factors that can affect equipment and oil life.

Why choose LE for oil analysis? With LE, you can be confident you're testing with a company that knows lubricants and knows your equipment. LE has oil analysis solutions to service your specific business needs, including Xamine® Oil Analysis for engines or industrial equipment, and Xamine Turbine Oil Analysis for mainline turbines. After consultation, we can recommend the right program to suit your needs.



Get started today

LE offers you a choice of six different Xamine oil analysis test packages, as well as additional special tests to meet individual customer requirements.

Visit www.LElubricants.com/oil-analysis.html for more information about each. To set up your account and order kits and sampling equipment, contact your local LE consultant.

XPEL® LUBRICANT STORAGE

Xpel® Lubricant Bulk Storage

Make your lube room work for you

Almost every industrial operation has a lube room or some central area where lubricants are stored. Contamination issues often start there and are already a problem by the time the lubricants are introduced into the equipment. Knowing this, Lubrication Engineers helps many of its customers transform these areas into world class lubrication storage rooms that incorporate the latest in lubrication best practices. A lubricant storage and dispensing upgrade is a great continuous improvement project and has the potential for a tremendous positive impact on your organization.

Improving your lubricant storage room encompasses several activities and benefits, including:

- Consolidating lubricant inventory
- Reducing amount of space needed for storage
- Identifying and color-coding lubricants to enhance visual recognition and efficiency
- Reducing mistakes by operators
- Reducing or eliminating contamination before it creates problems
- Improving safety and decreasing waste by eliminating spills

Get started today

LE offers you a choice of poly or metal tanks, as well as drum & tote dispensing units to meet individual customer requirements.

Visit www.LElubricants.com/lubricant-storage.html for more information about each system or contact your local LE consultant.



Poly Tank Storage Solutions



Metal Tank Lubricant Storage Solutions

XPEL® LUBRICANT STORAGE

Xpel® Oil Storage Containers

Keep your machines running longer with clean, dry oil

Keep the contaminants out of the oil and help eliminate lube cross-contamination with Xpel® Lubricant Storage and Delivery containers. Your lubrication reliability efforts will take a leap forward once these reliability tools have been deployed in your operation.

- Keep lubricants clean and dry from the storage location to the application
- Create a visual color-coded system for operators, helping eliminate lube cross-contamination
- Make it easier to dispense lubricant
- Create and help methodology
- Help standardize processes and procedures
- Promote better housekeeping by keeping spills to a minimum

Available in ten color choices, five different lids and drum types, and multiple dispensing pumps, LE's Xpel® Lubricant Storage & Delivery Container line offers flexibility for any size operation.



Color choices

BEIGE	BLACK	BLUE	DARK GREEN	GRAY	MID GREEN	ORANGE	PURPLE	RED	YELLOW
BG	BK	BL	DG	GR	MG	OA	PR	RD	YW

Get started today

To see LE's entire line of Xpel Oil Storage & Delivery Containers, visit www.LElubricants.com/oil-storage-containers.html to learn more about Xpel Oil Storage & Delivery Containers, contact your local LE consultant.

XPEL® LUBRICANT STORAGE

Xpel® Container Kits at a Glance

LID TYPE		OUTLET OPENING DIAMETER	ADDITIONAL	1.5 L/US QUART	2 L/US QUART	3 L/US QUART	5 L/US QUART	10 L/US QUART	PUMP ACC.	EXT. HOSE
Xpel Stumpy Spout Kit		1"	Good for applications that require a high flow of lubricants	✓	✓	✓	✓	✓		✓
Xpel Stretch Spout Kit		1/2"	Good when precise pouring is needed, including hard-to-reach areas. Good for low viscosity oil (<ISO 220)	✓	✓	✓	✓	✓		
Xpel Mini Spout Kit		1/4"	Good for equipment where filler holes are small	✓	✓	✓	✓	✓		
Xpel Utility Lid Kit with Premium Pump			Discharge pump is serviceable and color-coded. Includes ports for breathers and quick connects. The down stroke discharge pump delivers 1 liter for approximately 12 strokes.			✓	✓	✓		
Xpel Utility Lid Kit with Standard Pump			Excellent for lubricating hard-to-reach fill points. The down stroke discharge pump delivers 1 liter for approximately 12 strokes.			✓	✓	✓		
Xpel Utility Lid Kit		2"	Multipurpose lid. Match this lid to an accessory pump			✓	✓	✓	✓	
Xpel Storage Lid Kit		none	For storage and prefilling. Enables easier no-spill, contamination-free transportation.	✓	✓	✓	✓	✓		



XPEL® LUBRICANT IDENTIFICATION

Xpel® Tags & Labels

Clearly communicate lubricant information, eliminate costly mistakes

- Create visual system for operators
- Help standardized processes and procedures
- Promote best practices, such as the 5s methodology*
- Reduce lubricant cross-contamination issues

When you have multiple lubricants in a factory with hundreds or even thousands of lubrication points, mistakes can and will happen. Introducing the wrong lubricant into an application causes unplanned downtime and costly repairs. Lubricant cross-contamination has been identified as one of the root causes affecting asset reliability.

Proper lubricant identification is one way to help solve the problem. This proactive approach creates a visual, color-coded “chain of custody” starting in the lubricant storage room, making its way to the individual lubricant points found on the equipment, reducing human error.

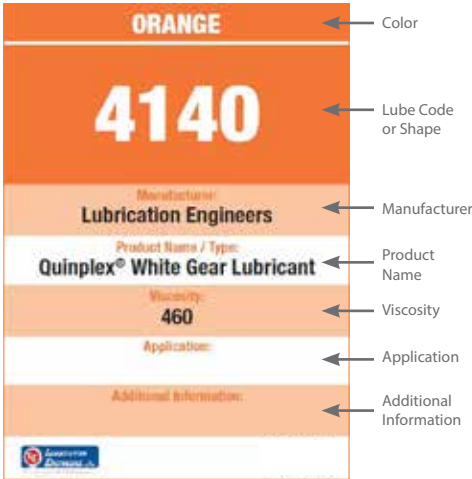
Lubrication Engineers can help you identify all lubrication points and then create a comprehensive approach for applying the correct lubricant identification to each point. With the correct color-coded, informational ID tags and labels, operators will be able to reliably perform their work – time after time – without accidentally introducing errors into the system.

*5s is a system to reduce waste and optimize productivity through maintaining an orderly workplace and using cues to achieve more consistent operational results.

Get started today

There’s no better time than the present to improve your lubrication reliability efforts. A color-coded systematic approach to lubricant identification can help eliminate operator errors and start your organization on a journey toward reducing costs, reducing downtime and enhancing profits. In addition to its Xpel® tags and labels for lubricant ID, LE offers customized, cost-effective Lubrication Reliability Programs that encompass lube rooms, filtration, oil transfer containers and much more.

To learn more about Xpel Tags and Labels, contact your local LE consultant.



XPORT® LUBRICANT APPLICATION

Xport® Single Point Lubricators

Ensure 24/7 precise lubricant application

Every 11 seconds an automatic single point lubricator is installed or exchanged worldwide. Anyone looking for safe, effective and long-term economical lubrication of their equipment should take advantage of automatic lubrication. LE's Xport® Single Point Lubricator line offers a variety of solutions for the specific requirements of any lubrication point.

Xport Single Point Lubricators are rugged, durable and easy to install. Filled with LE lubricants, they can deliver the right lubricant, in the right amount, to the right place, at the right time – 24/7. They help eliminate costly routine manual lubrication and literally pay for themselves by reducing labor costs, downtime, replacement parts, and lubricant and machine contamination issues – all while increasing the safety levels of your operation.

Benefits

- Available in several different models to suit the needs of different equipment and environments, including the option of Bluetooth technology on Ultra and Star Vario units
- Ensure critical applications receive lubricant 24/7
- Eliminate application of the wrong lubricant, avoiding costly cross-contamination issues
- Eliminate under- or over-application of lubricant
- Increase safety levels with installation in hard-to-access locations
- Hermetically seal lubrication points, keeping dust and moisture out of the equipment



Get started today

There's no better time than the present to improve your lubrication reliability efforts. LE offers a variety of Xport Single Point Lubricators filled with LE's premium greases and oils. Trained LE consultants can recommend the right lubricator and lubricant combination to meet your specific requirements, and they are available to provide onsite installation and support.

For more information about LE's Xport single point lubricators, visit www.LElubricants.com/single-point-lubricators.html or contact your local LE consultant.

XPORT® LUBRICANT APPLICATION

Xport® Single Point Lubricators at a Glance



Application Suitability

	Conveyors	Electric Motors	Pumps	Blowers/Fans
Classic & Futura	++	O	+	+
Flex	+	+	++	++
Nova	+	++	+	++
Star Vario & Star Control	++	++	++	++
Ultra	++	++	++	++

O Limited suitability + Suitable ++ Very suitable

XPORT® LUBRICANT APPLICATION

Xport® SPL Remote Mounting Kits

Safety, heat, water concerns are reasons for installing remote mount lube systems

For many lubrication points, it is beneficial to install remote mount lubrication systems where they are safe to access while machinery is operating. Remote mounting is recommended if lube point . . .

- Is accessible only by removing protective guards or safety cages
- Is difficult or unsafe to access while equipment is running
- Is in confined space or where fall protection is required (needing permit to access)
- Is subject to severe vibration or high temperatures that could damage lube system
- Is exposed to excessive water process materials or impact from solid material

LE offers kit options for remote mounting SPLs to beams, cages and rails, including standard and heavy duty versions for use with the Star units (see examples pictured below). The heavy duty brackets are specially designed for use in areas subject to regular washdown and water impact.

Each of the seven basic kit types listed below includes options for number of lube points and hose length. The beam kits also have options for different clamp sizes.

For use with Electrochemical SPLs (Classic, Futura, Flex, Nova)

- Standard Beam Mount Kit
- Standard Cage Mount Kit

For use with Electromechanical SPLs (Star Control, Star Vario)

- Star Standard Beam Mount Kit
- Star Heavy Duty Beam Mount Kit
- Star Standard Cage Mount Kit
- Star Heavy Duty Cage Mount Kit
- Star Standard Rail Mount Kit



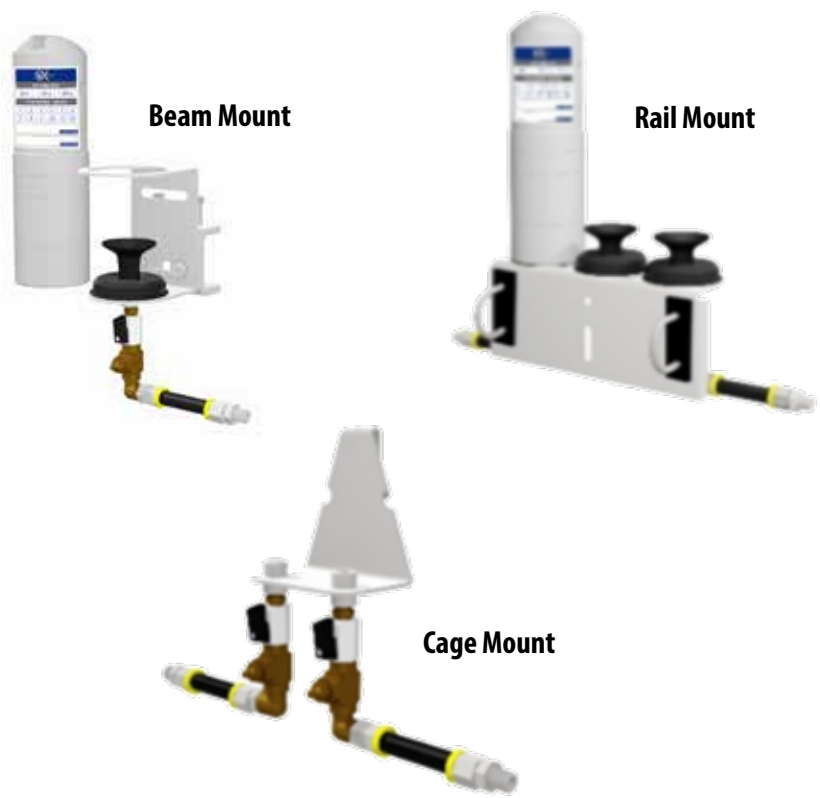
**Star Standard
Beam Mount Kit**









**Star Heavy Duty
Beam Mount Kit**

XPORT® LUBRICANT APPLICATION

Xport® SPL Remote Mounting Kits at a Glance



	Xport Electrochemical SPLs				Xport Electromechanical SPLs	
	Classic	Futura	Flex	Nova	Star Vario	Star Control
						
Beam Mount Kit	St	St	St	St	Star St / Star HD	Star St / Star HD
Cage Mount Kit	St	St	St	St	Star St / Star HD	Star St / Star HD
Rail Mount Kit					Star St	Star St

St = Standard / Star St = Star Standard / Star HD = Star Heavy Duty

XPORT® LUBRICANT APPLICATION

Xport® SPL Direct Mounting

Quick mounting options for safe, easy-to-reach lubrication points

Recommended for . . .

- Lube points with minimal vibration and shock loading
- Safe, easy-to-reach lubrication points



For direct mounting of
Electrochemical SPLs
(Classic, Futura, Flex, Nova)

Mounting accessories as needed for
direct mounting SPLs – including
reducer, extension, angle and support
flange – are available from LE.



For direct mounting of
Electromechanical SPLs
(Star Vario, Star Control)

XPORT® LUBRICANT APPLICATION

Xport® Automatic Lubrication Systems

Ensure fast, precise lubrication

With LE's line of centralized lubrication systems, you can eliminate the inefficient hit-or-miss method of manual lubrication and the high costs of time-consuming lubrication routes and PMs. A well-planned and executed centralized automatic lubrication system can save on the amount of lubricant used, eliminate downtime caused by improper lubrication, and can help increase the level of safety at your facility.

Centralized lubrication solutions

LE is a U.S. distributor for centralized lubrication systems from Bijur Delimon and Leding Lubricants (Redi-Mount and Interlube), making it easy for us to find the right system for your operation. After selection, LE will provide a quote and can help you plan and install your entire system onsite.

Dependable full-service support

From planning down to final assembly, the LE team can help you design, plan and execute your centralized lubrication system. Our versatile designs and the ability to tailor a system to your operation's specific needs help ensure efficient performance. Our expert installers can help ensure that the centralized lubrication system is integrated properly into your machinery and that the maintenance personnel at your facility are properly trained. The result is a reliable, long-lasting centralized lubrication system.



Get started today

Visit www.LElubricants.com/automatic-lubrication-systems.html or contact your local LE consultant for more information.

Xport® Grease Spray System

Recommended particularly for use with Pyroshield® Syn Kiln Grease (5190) when greasing the tires and wear bars of kilns, the Xport® Grease Spray System is a pneumatic pump that fits onto LE's pail or quarter drum. It allows quick and easy lubrication, despite the high temperatures and rotating equipment associated with kilns.



XPORT® LUBRICANT APPLICATION

Viper Wire Rope Lubricators

Extend wire rope life

The Viper MK 2 Wire Rope Lubricator range provides fast, effective cleaning and lubrication of wire ropes at speeds up to 2,000 m (2,187 yd) per hour. It improves lubrication by forcing the lubricant under pressure into the wire rope.

With built-in carry handles and shoulder strap, the Viper MK 2 range makes wire rope lubrication a one-person job. Ideal for use on all cranes, towing lines and mooring lines, the Viper MK 2 eliminates the health, safety and environmental risks associated with manual lubrication.

Benefits

- Fast, efficient, single-pass wire rope lubrication
- Better grease penetration displaces moisture from rope core
- Protects equipment & reduces downtime
- Reduces lubricant usage
- Safer for staff, with less leakage & mess

Three models

- **Viper Mini MK 3** – For wire ropes 6 to 44 mm in diameter
- **Viper Mid MK 2** – For wire ropes 6 to 67 mm in diameter
- **Viper Maxi MK 2** – For wire ropes 49 to 165 mm in diameter



Viper kit components

- High-strength, corrosion-resistant cast aluminum alloy collar with robust protective coating and stainless steel hardware
- High-pressure, high-volume grease pump
- Air regulator with gauge and isolation valve
- High-pressure lubricant delivery hose
- Retaining ratchet straps and shackles
- Robust marine grade aluminum storage case

Viper accessories

These are available in many sizes and configurations to meet specific requirements. See *Selection Guide* and your rep for assistance with ordering.

- Viper Seals & Scrapers
- Viper Rope Cleaner (VRC) – Removes contamination or old lubricant
- Viper Manual Rope Cleaner Solution (VMRCS) – Provides ultimate cleaning when used in conjunction with VRC

Double your Viper warranty by using Wirelife® lubricants

We also manufacture the best wire rope lubricants found in the market to provide you with an entire solution. We recommend that you use Wirelife® Almasol® Coating Grease (452-453) with the Viper Mk II Wire Rope Lubricator. Doing so will double your warranty on the Viper lubricator from one year to two years.

LE's global network of distributors ensures easy Viper availability to all markets.

XPORT® LUBRICANT APPLICATION

Xport® Clear Grease Guns

Clear up greasing mistakes with cost-effective solution

Traditional grease guns do not allow the maintenance operator to see what's inside. Place the wrong grease into an application or – even worse – mix two greases together that are not compatible, and you could cause catastrophic equipment failure costing time and money to correct. LE's Xport® Clear Grease Guns are a simple, cost-effective solution for eliminating cross-contamination. They are a great addition to existing reliability efforts, playing a role in elevating lubrication standards, increasing accountability and raising overall safety awareness.

Available in pistol grip, lever style and battery powered varieties, all are made for heavy industrial use. Whip hoses and steel extensions come standard with the pistol and lever style grease guns. An extra long whip hose comes standard with the battery style gun.

Benefits

- Allow 100% visual identification
- Eliminate grease cross-contamination
- Enhance existing reliability programs
- Rugged and durable
- Approved for use by all branches of the U.S. Military; NSNs are available

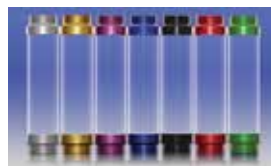
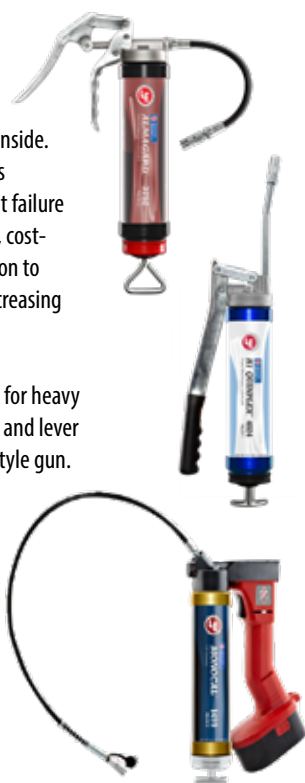
Clear Grease Tubes

Xport Clear Grease Tubes are capable of withstanding heavy use and high temperatures. They fit many standard grease guns, making upgrades of existing guns easy and cost-effective. Their durable, rust-resistant collars are constructed of durable aircraft aluminum and come in a variety of colors, perfect for when a secondary method of identification is required.

- Available for purchase separately and fit many common grease gun models
- High-impact, fracture-resistant polycarbonate
- Tube thread pattern: 2.280-16 UNS-non-standard
- Durable T6061 aircraft aluminum collars
- Variety of anodized collar colors (silver, gold, purple, blue, black, red, green)

Get started today

For more information about LE's Xport Clear Grease Guns, visit www.LElubricants.com/clear-grease-guns.html or contact your local LE consultant.



Xport® Lock-On Grease Coupler



- Optional Clear Grease Gun accessory
- Eases grease fitting coupling and uncoupling
- Smooth push mechanism locks coupler to grease fitting
- Carbon and stainless steel components

XCLUDE® CONTAMINATION EXCLUSION

Xclude® Breathers

Contamination exclusion starts with desiccant breathers

Lubricant contamination is one of the leading causes for machine failure, and contamination can begin before the lubricant enters the machine. Gearboxes, pumps and reservoirs have to “breathe” when the air expands and contracts, as well as when incoming fluid displaces air, or when air is drawn in when hydraulic components activate. Each time a unit breathes in, it brings with it all sorts of small debris and moisture, depending on the operating environment. Over time, the effects of this contamination can be damaging to the lubricant and to the equipment.

Water-contaminated oil can lead to additive stripping, and eventually the water can cause corrosion and rust. Small particulates no larger than three microns can cause unwanted machine abrasion. All of these problems accelerate wear and lead to costly repairs. The simple solution is the use of desiccant breathers, which can stop water and particulates from contaminating the lubricant in the first place. Desiccant breathers will extend the life of the oil and the equipment, decrease downtime, and potentially save hundreds of thousands of dollars.

Benefits

- Eliminate rust-forming condensation
- Prevent sludge deposits and water contamination
- Reduce wear and tear on equipment
- Provide longer oil and filter life

LE offers full line of desiccant breathers and accessories

- Xclude Standard Breathers
- Xclude Extended Series Breathers
- Xclude High Humidity Expansion Chamber Breathers
- Xclude High Humidity Check Valve Breathers
- Xclude Extreme Duty Breathers
- Xclude Rebuildable Steel Breathers
- Xclude Non-Desiccant (ND-2/ND-35) Breathers
- Xclude Adapters & Accessories



Get started today

For more information about LE's Xclude® Desiccant Breathers, visit www.LElubricants.com/desiccant-breathers.html or contact your local LE consultant.

XCLUDE® CONTAMINATION EXCLUSION

Xclude® Breathers at a Glance

PRODUCT	GEARBOXES	TRANSFORMERS	STORAGE TANKS	TOTES	HIGH HUMIDITY	LOW FLOW	HIGH FLOW	HYDRAULIC	MOBILE (OFF-ROAD & MARINE)
Xclude® Standard Breather		✓	✓	✓		✓		✓	
Xclude® Extended Series Breather	✓		✓		✓		✓	✓	
Xclude® High Humidity Expansion Chamber Breather	✓	✓	✓	✓	✓	✓			
Xclude® High Humidity Check Valve Breather	✓	✓	✓	✓	✓	✓			
Xclude® Extreme Duty Breather	✓				✓	✓	✓	✓	✓
Xclude® Rebuildable Steel Breather			✓				✓	✓	



XTRACT® CONTAMINATION REMOVAL

Xtract® Oil Sight Glasses

Oil sight glasses reveal lubricant condition

Xtract® sight glasses are easy to install and take the guesswork out of fluid lubrication management. The Xtract sight glass product line enables continuous visual monitoring of the clarity, color, sediment and water contamination levels of your lubricants. Some models even allow you to easily remove the water by draining it right out of the system. The variety of sight glass solutions available will help advance your lubrication reliability program to the next level.



Applications

- Pumps
- Gearboxes
- Storage tanks
- Fluid-lubricated machinery

LE offers full line of Xtract oil sight glasses and accessories

- Xtract Oil Sight Glass
- Xtract Horizontal Oil Sight Glass
- Xtract Large Volume Oil Sight Glass
- Xtract Oil Sight Glass Level Monitor
- Xtract 3-D BullsEye Sight Glass
- Xtract Oil Level Indicator Sight Glass

Get started today

For more information about LE's Xtract® Oil Sight Glasses, visit www.LElubricants.com/sight-glasses.html or contact your local LE consultant.



XTRACT® CONTAMINATION REMOVAL

Xtract® Sight Glasses at a Glance

PRODUCT	360° VIEW OF OIL CLARITY & COLOR	INSTALLS ON DRAIN PORT	DRAINS WATER	MONITORS OIL LEVEL
Xtract® 3-D BullsEye Sight Glass	 ✓	✓		✓
Xtract® Oil Sight Glass	 ✓	✓	✓	
Xtract® Oil Level Indicator	 ✓	✓		✓
Xtract® Oil Sight Glass & Level Monitor (dual port available for sampling oil)	 ✓	✓	✓	✓
Xtract® Large Volume Oil Sight Glass	 ✓	✓		

Applications: Pumps, gearboxes, storage tanks; any lubricated equipment with a drain port or OEM sight glass.



XTRACT® CONTAMINATION REMOVAL

Xtract® Filtration

Protect oil by removing contaminants

At LE, we understand the importance of fluid cleanliness and the role it plays in lubricant reliability. With LE's Xtract Filtration systems, you can maximize equipment reliability by removing contaminants from the lubricant before they have an opportunity to harm your equipment. ISO cleanliness targets are easily achievable with the right filtration system.

LE trained and certified consultants can help you with your filtration system needs with options including:

- Portable filtration
- Dedicated filtration
- Water removal
- Filters
- Adapters

Applications

- Decontaminating systems
- Flushing new or repaired systems
- Dispensing new oil
- Pre-filtering new oil
- Evacuating used oil
- Topping off reservoirs
- Collecting oil samples for analysis

Get started today

To learn more about Xtract® Filtration, contact your local LE consultant.



Xtract Standard Filter Cart



Spin-On Filter Full Flow Filter Depth Filter Bag Filter



Tote Adapter Drum Adapter Gearbox Adapter Hydraulic Adapter



Color-Coded Options
for Filter Cart Plate

INTERNATIONAL

RELIABILITY

REFERENCE GUIDE

To complement our lubricant offering, LE offers a full line of lubrication reliability products and services, including solutions for oil analysis, storage, handling & transfer, contamination exclusion, contamination removal, and education & training.



ASSET RELIABILITY SOLUTIONS™

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LE operates under an ISO 9001 Certified Quality System.