

HeavyDutyDieselEngineOils

WOLF'S HEAD Maximum Duty-Plus Motor Oils - WOLF'S HEAD Extra Duty Motor Oils -
WOLF'S HEAD Super Duty Motor Oils
WOLF'S HEAD SDL Diesel Engine Oils -
XHD Turbo

(1/25/2012 edition)

WOLF'S HEAD Maximum Duty-Plus 15W-40 Motor Oil is a new high performance semi-synthetic diesel engine oil developed to offer the ultimate in diesel engine oil protection for your new and expensive equipment by offering a better and stronger armor against wear, improved performance and greater fuel economy. These oils are especially equipped to protect new 2007 and later EGR/Low-Emission Diesel Engines while maximizing the durability of Diesel Particulate Filters (DPF's). New additive systems and rigorous laboratory and field testing have proven that these new oils are up to the task of protecting your engine; helping your engine operate within the new emission and pollution requirements as well as meeting or exceeding the OEM requirements for every new engine being built by every engine manufacturer worldwide, including but not limited to: Caterpillar, Cummins, DaimlerChrysler (Mercedes Benz), Detroit Diesel, Volvo, Mack (*including the new and more stringent Mack EO-O Premium Plus 2007*), MAN, and Navistar. These new high performance oils are specifically engineered to meet the manufacturers' prerequisite for performance, TBN, and balanced low ash (1% maximum) requirements. They will deliver superior long lasting protection for both turbocharged and naturally aspirated diesel and gasoline engines whether in highway or off-highway equipment. They are formulated for extended service/extended drain when operated under typical operating conditions and are engineered to help promote fuel economy. These new oils meet or exceed the new API CJ-4/SN Service Classification and meet prior API specifications for CI-4 Plus, CI-4, CH-4, CG-4, CF-4, CF-2, CF and API SL, SJ, and SH. These oils are registered Mack EO-O Premium Plus '07, and meet prior specifications for EO-N Premium Plus, EO-M Plus, and EO-M. This oil is also registered to Detroit Diesel 93K218, 93K215, and 93K214; Cummins CES 20081,20078, 20077, 20076. This oil meets Allison C4 and C3 fluids and Caterpillar ECF-3, ECF-1, TO-2. This oil is also registered for the following European and Asian approval standards: Volvo VDS-4, VDS-3, VDS-2 and meets specifications for Global DHD-1; JASO DH-2 and DH-1. This oil is engineered to be robust enough to meet MB 228.5, 228.3, 228.1, 227.1; Man 3275; MTU Type I & II; ACEA E7-04, E5, E3, A3/B4, A3B3; and Renault RLD-3. This highly advanced diesel engine oil is recommended for use in MIL L 2104-G, MIL L 46152-E, and CID A-A-52306 applications.

WOLF'S HEAD Extra Duty Motor Oils provide excellent protection against wear, long life performance, soot reduction and fuel economy. WOLF'S HEAD Extra Duty Motor Oils are specifically designed to withstand the rigorous requirements of exhaust gas recirculation (EGR) engines. Special formulation and advanced additive chemistry provides long lasting protection for both turbocharged and naturally aspirated diesel and gasoline engines. These high performance oils are specifically engineered to meet the manufacturers' prerequisite for performance, TBN, and balanced low ash requirements. They are formulated for extended service/extended drain when operated under typical operating conditions and are engineered to help promote fuel economy. These new oils meet or exceed the APICI-4Plus/SL Service Classification as well as the CI-4/SL, CH-4, CG-4, CF-4, CF-2, CF and CD API Service Classifications; Global DHD-1; JASO DH-1, and are engineered to meet Caterpillar, Cummins, DaimlerChrysler (Mercedes Benz), Detroit Diesel, Mack (*including Mack EO-N Premium Plus 03*), MAN, Navistar and Volvo. WOLF'S HEAD Extra Duty Motor Oils are recommended for use in diesel engines wherever MIL L 2104-G and MIL L 46152-E are recommended; wherever Allison C-3 and C-4 fluids and Caterpillar

TO-2 are recommended or required; and are recommended for use wherever the following European approval standards are specified: ACEA E7-04, E5, E3, A3/B4, A3B3.

WOLF'S HEAD Super Duty Motor Oils are up to the task of protecting your engine; helping your engine operate within the new emission and pollution requirements as well as meeting or exceeding the OEM requirements for many engine manufacturers worldwide. The new high performance WOLF'S HEAD Super Duty Motor Oils are specifically engineered to meet the manufacturers' prerequisite for performance, TBN, and balanced low ash requirements. They will deliver superior long lasting protection for both turbocharged and naturally aspirated diesel and gasoline engines, including those engines that have exhaust gas recirculation (EGR) systems. They are formulated for extended service/extended drain when operated under typical operating conditions and are engineered to help promote fuel economy.

These new oils meet or exceed the CI-4/SL API Service Classifications as well as the CH-4, CG-4, CF-4, CF-2, CF and CD API Service Classifications; Global DHD-1; and JASO DH-1. WOLF'S HEAD Super Duty Motor Oils are recommended for use wherever MIL L 2104-G and MIL L 46152-E are recommended; wherever Allison C-3 and C-4 fluids and Caterpillar TO-2 are recommended or required; and are recommended for use wherever the following European approval standards are specified: ACEA E7-04, E5, E3, A3/B4, A3B3.

WOLF'S HEAD SDL Diesel Engine Oils are high quality detergent motor oils recommended for diesel and gasoline engines manufactured by American, European, Korean, Japanese and other engine manufacturers from around the world. These oils are manufactured to meet the requirements of API CH-4, CG-4, CF-4, CF-2, CF / SJ as well as European ACEA A3/B4, A3/B3, E5, E4, E3, E2 and E1. They are manufactured from select blends of high quality base oils and additives to promote long engine life, protect against rust, corrosion and harmful oxidation, and are designed to help reduce engine wear and oil consumption. SDL is very well suited for the low ash requirements of the 2-cycle Detroit Diesel Engines.

WOLF'S HEAD XHD Turbo Motor Oils are high quality detergent motor oils recommended for diesel and gasoline engines manufactured by American, European, Japanese, Korean and other engine manufacturers from around the world. These oils are manufactured to meet the requirements of API CF-4, CF-2, CF / SG, SF as well as ACEA A3/B4, A3/B3, E3, E2, and E1. They are manufactured from select blends of high quality base oils and additives to promote long engine life, protect against rust, corrosion and harmful oxidation, and are designed to help reduce engine wear and oil consumption.

Some performance levels are limited by viscosity grades. Please consult the WOLF'S HEAD Performance Application Chart, the WOLF'S HEAD Inspection Data Table for the appropriate WOLF'S HEAD product or contact your WOLF'S HEAD District Manager for more complete information and recommendations. Consult your WOLF'S HEAD District Manager for specific pack sizes and product availability.

TYPICAL INSPECTION DATA

	API Gravity	Flash Point	Viscosity cSt @100C	Viscosity cSt @40C	VI	Pour Point,	TBN (D-2896)
WOLF'S HEAD Maximum Duty-Plus							
15W-40 *	29.7	215	15.80	126.0	131	-30	10
WOLF'S HEAD Extra Duty Motor							
40	28.0	230	14.50	133.0	109	-18	13
50	27.5	240	18.50	192.0	108	-12	13
15W-40	29.6	215	15.50	115.0	130	-30	13
20W - 50	27.5	230	17.0	156	118	-25	13
WOLF'S HEAD Super Duty Motor							
10W-30	29.5	205	10.40	68.4	140	-36	10
15W-40	28.5	210	15.00	101.0	155	-30	10
20W-50	27.0	220	17.50	158.0	122	-24	10
10W	129.5	190	6.60	37.0	140	-33	10
30	28.5	220	11.20	88.0	105	-21	10
40	28.0	230	14.50	133.0	104	-18	10
50	27.5	240	18.50	192.0	103	-12	10
WOLF'S HEAD SDL Diesel Engine							
15W-40	29.0	210	14.00	100.0	130	-27	report
40	28.0	220	14.60	141.0	95	-12	report
50	27.5	230	17.90	189.0	95	-12	Report
XHD Turbo							
5W-30	30.5	190	10.20	60.0	157	-39	report
10W-30	29.5	200	10.50	69.0	140	-35	report
10W-40	30.0	200	13.50	97.0	145	-32	report
15W-40	29.0	210	14.00	100.0	135	-27	report
20W-50	28.9	220	18.00	165.0	125	-18	report
25W-50	29.6	230	18.00	165.0	125	-18	report
10	29.5	190	5.90	37.0	100	-15	report
30	28.5	210	11.80	103.0	100	-15	report
40	28.0	220	14.60	141.0	100	-12	report
50	27.5	230	17.90	189.0	100	-12	report

* Also meets 1% maximum ash requirements

PERFORMANCE APPLICATION CHART

SPECIFICATIONS	Maximum Duty-Plus	Extra Duty Multi-grades	Extra Duty Mono-	Super Duty Multi-	Super Duty Mono-	SDL Diesel	XHD Turbo
API: CJ-4 / SN	√	-	-	-	-	-	-
CI-4 Plus	√	√	-	-	-	-	-
CI-4, CH-4, CG-4	√	√	√	√	-	CH-4,CG-	-
CF-4	√	√	√	√	-	√	√
CF-2 [1] CF/CD	√	√	√	√	√	√	√
SL/SJ/SH [2]	√	√	√	√	√	SJ/SH	SG
Allison C-4, C-3	√	√	√	√	√	√	C-3
Mil-PRF-2104G(AA52306)	√	√	√	√	√	-	-
Mil-L-2104-B, Mil-L-46152	√	√	√	√	√	√	√
Caterpillar TO-2	√	√	√	√	√	-	-
ECF-3	√	-	-	-	-	-	-
ECF-1, SEBU 6250	√	√	√	√	-	-	-
Mack EO-O Premium Plus 07	√	-	-	-	-	-	-
EO-N Premium Plus 03	√	√	√	-	-	-	-
EO-N Premium Plus	√	√	√	√	-	-	-
EO-M, EO-M Plus	√	√	√	√	-	-	-
Cummins CES 20081	√	-	-	-	-	-	-
CES 20078, 76, 71	√	√	√	√	-	-	-
CES 20077, 72	√	√	√	√	-	-	-
JASO DH-2	√	-	-	-	-	-	-
DH-1	√	√	√	√	-	-	-
Global DHD-1	√	√	√	-	-	-	-
Navistar TSI-99-12	√	√	√	-	SAE 30	-	-
Detroit Diesel 93K218,	√	-	-	-	-	-	-
93K214	√	√	-	-	-	-	-
7SE270 [3]	√	√	√	√	√	-	-
Daimler Chrysler 228.5	√	√	-	-	-	-	-
DC(MB) 228.3, 228.2	√	√	√	√	-	-	-
DC(MB) 228.1, 228.0	-	-	-	-	√	mono	mono
ACEA ,A3/B4,A3/B3	√	√	√	√	√	A3/B4	A3/B
E7,6,5,4,3,2,1	√	√	√	√	√	E1,2	E1,2,3,4
Volvo VDS-4	√	-	-	-	-	-	-
VDS-3, 2	√	√	√	√	-	-	-
Renault RDL-3	√	√	-	-	-	-	-
Man 3275/3277	√	√	√	-	-	-	-
270/271	√	√	√	√	-	-	-
MTU Type II, Type III	√	√	√	-	-	-	-
MTU Type I	√	√	√	√	√	-	-

NOTES:

[1]= CF-2 primary recommendation for two-cycle engines; single grades.

[2]= Above Preferred Phosphorus level of API SL/SJ (10W-30).

[3]= Multi-grade oils recommended for four-cycle engines, single grade oils for two-cycle engines