

KOMATSU

Lubricants & coolant



Fluids

Diesel engine oil
Hydraulic oil
Axle oil
Powertrain oil
Super-coolant AF-NAC
Komatsu Oil/Fuel & Wear Analysis
(KOWA)

Superior protection











A full range of Genuine Komatsu lubricants

Komatsu Genuine lubricants are the only oils specifically formulated to meet the high Komatsu Engineering Standard (KES). Used as recommended, our “full range” premium quality lubricants help to reduce oil consumption. They also lower maintenance cost, improve reliability, productivity, efficiency and extend equipment life.

Komatsu Engineering Standard (KES)

The engineering department defines specific performance and durability parameters for Komatsu Genuine lubricants. Komatsu applies the “best of the best” philosophy to all products to always certify their highest level of quality to customers.



Type			Komatsu KES	SAE	Other main specifics		
	Engine oil	10W30-DH	KES 07.851.1	SAE 10W-30	Jaso DH-1	API CI-4	CES 20078
	Engine oil	15W40-DH	KES 07.851.1	SAE 15W-40	Jaso DH-1	API CI-4	CES 20078
	Engine oil	15W40-LA	KES 07-851.2	SAE 15W-40	ACEA E9	API CK-4	
	Engine oil	10W30-LA	KES 07.851.2	SAE 10W-30	ACEA E9	API CK-4	
	Hydraulic oil	HO46-HM	KES 07.841.1	SAE 10W	ISO VG46	DIN 51524 Part 2, class HLP	
	Hydraulic oil	HO56-HE	KES 07.841.1	SAE 5W-30	ISO VG56		
	Powertrain oil	TO10	KES 07.868.1	SAE 10W	API CD		
	Powertrain oil	TO30	KES 07.868.1	SAE 30W	API CD		
	Axle oil	AX080	KES 07.866	SAE 80W	ZF TE-ML-05F	API GL-4	
	Super coolant	AF - NAC	KES 07.892.1	JIS K 2234-1987		ASTM 3306	

Not all products / package are available for all markets, please contact your local Komatsu dealer

The KES concept

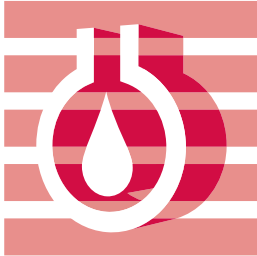
The table below illustrates how KES is applied to Komatsu Genuine diesel engine oil to not only meet all standards like API CD, JASO DH-1/DH-2, and also surpass them with added features.



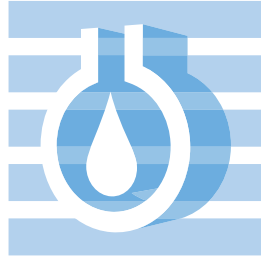
Performance	API CD	JASO DH-1/DH-2	Komatsu KES
Piston deposit	✓	✓	✓
Bearing corrosion	✓	✓	✓
Valve train wear		✓	✓
Soot dispersancy		✓	✓
Oxidation stability		✓	✓
Deposit control (Hot tube test)		✓	✓ (Severer)
Foaming		✓	✓
Volatility		✓	✓
Shear stability		✓	✓
Seal compatibility		✓	✓
Friction performance			✓
Filterability			✓
Rust protection			✓

3 × 5 liter	4 × 5 liter	20 liter	60 liter	209 liter	210 liter	1000 liter
✓		✓		✓		
✓		✓		✓		
✓		✓		✓		✓
✓		✓		✓		
✓		✓		✓		✓
		✓		✓		
✓		✓		✓		
✓		✓		✓		
		✓		✓		
	✓	✓	✓		✓	✓

Komatsu diesel engine oil & hydraulic oil



Komatsu diesel engine oil



Komatsu diesel engine oil for Tier 4 engines

Komatsu Genuine diesel engine oil

Designed for the latest generation of diesel engines (EU Stage III and EU Stage IV) and to meet all KES parameters (e.g. Hot Tube Test). The new Komatsu Low Ash (LA) engine oil is strictly recommended for this generation of engines with a Diesel Particulate Filter (DPF). It includes special additives that ensure excellent cleanliness for all engine components.

Features	Benefits	Effects of improper oil usage
<ul style="list-style-type: none"> • High TBN* 	<ul style="list-style-type: none"> • High TBN is critical to neutralise corrosive acids created during the combustion process 	<ul style="list-style-type: none"> • Corrosive bearing wear and excessive oil oxidation
<ul style="list-style-type: none"> • Oxidative stability 	<ul style="list-style-type: none"> • Excellent oxidative stability is needed to meet Komatsu's stringent Hot Tube test requirements 	<ul style="list-style-type: none"> • Excessive oil oxidation, leading to engine deposits and oil breakdown
<ul style="list-style-type: none"> • Anti-wear performance 	<ul style="list-style-type: none"> • Superior anti-wear performance protects engine surfaces 	<ul style="list-style-type: none"> • Excessive wear, leading to loss of engine performance
<ul style="list-style-type: none"> • Exceptional detergency 	<ul style="list-style-type: none"> • Exceptional detergency is needed to keep engine surfaces clean 	<ul style="list-style-type: none"> • Engine deposits and loss of performance

*TBN: Total Base Number. A measure of the reserve alkalinity or reserve acid neutralisation remaining in the oil.

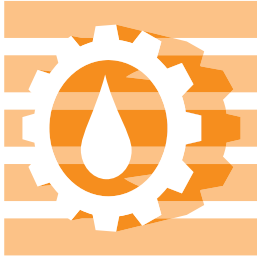


Komatsu Genuine hydraulic oil

Komatsu hydraulic oil protects the hydraulic system on Komatsu machines against wear in a wide range of climates. It prevents rust and corrosion and reduces foaming and has a long life due to its excellent thermal stability and oxidation resistance.

Features	Benefits	Effects of improper oil usage
<ul style="list-style-type: none"> • Anti-scuffing performance for hydraulic pumps, motors, and control valves 	<ul style="list-style-type: none"> • No scuffed cradle bearings or big servo pistons 	<ul style="list-style-type: none"> • Scuffing of bearings or servo pistons resulting in ultimate failure
<ul style="list-style-type: none"> • Anti-wear performance for hydraulic pumps, motors, and control valves 	<ul style="list-style-type: none"> • Wear control of hydraulic cylinder bores and piston shoes 	<ul style="list-style-type: none"> • Excessive wear resulting in loss of power
<ul style="list-style-type: none"> • Proper friction coefficient for smooth operation of wet brake in hydraulic motors 	<ul style="list-style-type: none"> • Proper operation of hydraulic motor brake, increased safety 	<ul style="list-style-type: none"> • Long stop distances resulting in increased chance for operator injury
<ul style="list-style-type: none"> • Lacquer prevention performance for pumps & motors 	<ul style="list-style-type: none"> • No lacquer build-up on hydraulic components 	<ul style="list-style-type: none"> • Sticking of hydraulic components resulting in jerky operation or hydraulic malfunction

Komatsu powertrain & axle oil



Komatsu Genuine powertrain oil

Komatsu's "TO series" powertrain oil delivers the performance required by the powertrain of construction machinery, even under severe operating conditions. The TO series oil provides superior anti-wear, heat resistance and friction retention characteristics to prolong the life of a powertrain system.

Features	Benefits	Effects of improper oil usage
<ul style="list-style-type: none"> • Anti-burning & friction stability 	<ul style="list-style-type: none"> • Prevents overheating and thermal cracking of transmission clutch, brake, disks and plates 	<ul style="list-style-type: none"> • Loss of transmission function and need for transmission overhaul
<ul style="list-style-type: none"> • Anti-wear & anti-pitting performance 	<ul style="list-style-type: none"> • Maximum protection for final drives, gears, and bearings 	<ul style="list-style-type: none"> • Excessive gear wear, gear tooth breakage, or bearing failure which can immobilise equipment
<ul style="list-style-type: none"> • Anti-corrosion & anti-rust performance 	<ul style="list-style-type: none"> • Maximum protection for steel and yellow metal (copper alloys) parts 	<ul style="list-style-type: none"> • Corrosion of critical components like bearings, gears, or hydraulic pump parts
<ul style="list-style-type: none"> • Seal compatibility 	<ul style="list-style-type: none"> • Reduced occurrence of leaks 	<ul style="list-style-type: none"> • Increased leakage and damage to seals ultimately resulting in complete fluid loss and catastrophic failure due to lack of lubrication

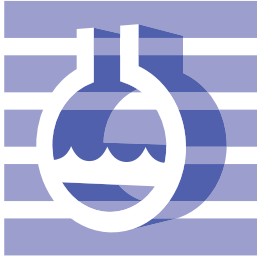


Komatsu Genuine axle oil (AXO 80)

Komatsu axle oil AXO 80 is developed for Komatsu axles with built-in brake and Limited Slip Differential (LSD). Its special additive and friction properties improve performance and axle component life.

Features	Benefits	Effects of improper oil usage
<ul style="list-style-type: none"> • High heat resistance and stability of frictional properties for wet brake system 	<ul style="list-style-type: none"> • Stable frictional properties insure noise free operation and no brake disk burning for the entire drain interval 	<ul style="list-style-type: none"> • Brake noise, brake disc failure and the need for replacement
<ul style="list-style-type: none"> • Anti-squawk performance for wet brakes in axle 	<ul style="list-style-type: none"> • Strong anti-squawk performance insures noise free operation 	<ul style="list-style-type: none"> • Brake noise and reduced brake disc life
<ul style="list-style-type: none"> • Anti-scutting performance for limited slip disk 	<ul style="list-style-type: none"> • No scuffing of wet brake disks for reliable operation and maximum life 	<ul style="list-style-type: none"> • Brake disc scuffing, reduced life and the need for replacement

Komatsu super-coolant AF-NAC



Komatsu Genuine AF-NAC super-coolant

Enhanced with special additives for heavy-duty construction machinery, Komatsu Genuine AF-NAC super coolant is a non-amine, non-nitrite, high performance coolant that meets the Komatsu Engineering Standard (KES). With high-quality ethylene glycol, it reliably prevents freezing over a long period.

Features of Komatsu's AF-NAC super-coolant

1) Sustained prevention of rust and corrosion

This Komatsu Genuine coolant contains highly heat-resistant, long-life additives that promote powerful resistance to corrosion and rust for the cooling system.

2) Prevents freezing in cooling system

Stable non-freezing performance that can withstand the winter season even in very cold areas.

3) Excellent cavitation prevention

With special additives blended in, this coolant suppresses cavitation damage to the cylinder liner or water pump that might otherwise cause engine trouble. In addition, it extends the life of all cooling system components.

4) Significant prevention of scale-forming

Special additives are used to prevent generation of water-clogging scales in the cooling system and reduce overheating of key components.



Komatsu Oil/Fuel & Wear Analysis (KOWA)

KOWA - a health check for your machine

The Komatsu Oil/Fuel & Wear Analysis (KOWA) program determines how your machine performs. Much like a blood sample tells you how your body is functioning, KOWA is a health check of your equipment. It helps to avoid engine failures, detect potential problems at a very early stage and prevent downtime and unplanned repairs. The test results are delivered by e-mail or on our secure and multi-lingual website at <https://komatsu.lubetrend.com>.

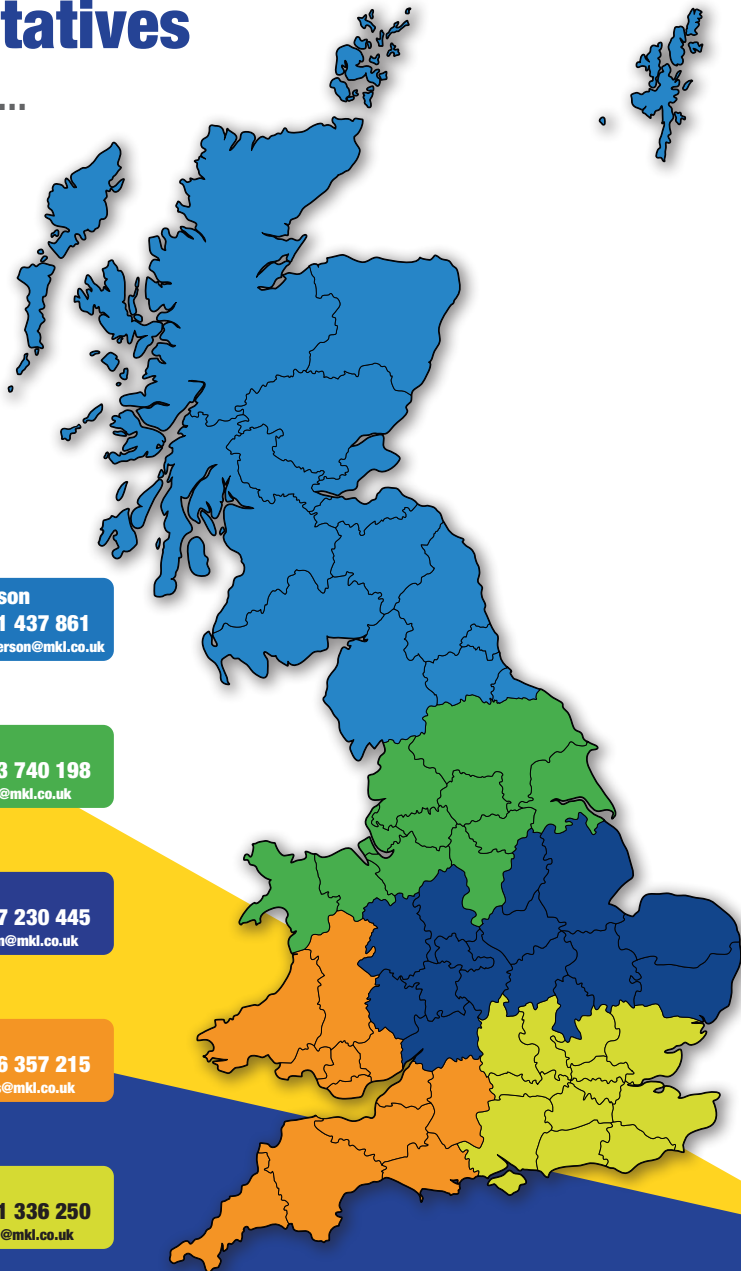


Oil	Type of analysis				Part number	No of sample	Tube	Pump
	Fuel	Coolant	AdBlue	Grease				
✓	✓	✓	✓	✓	KOWA-KIT-5	5	mt 5	No
✓	✓	✓	✓	✓	KOWA-KIT-6	6	mt 6	No
✓	✓	✓	✓	✓	KOWA-KIT-7	7	mt 7	No
✓	✓	✓	✓	✓	KOWA-KIT-8	8	mt 8	No
✓	✓	✓	✓	✓	KOWA-KIT-20	20	mt 20	No

Part number	No of sample	Tube	Pump
KOWA-PUMP	No	No	1
KOWA-TUBE-100MT	No	mt 100	No

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WE'RE HERE TO HELP...



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