Features & Specifications
2019 RM-Z250

RM-Z250L9

YU1: Champion Yellow No.2

Key New Advancements to the 2019 RM-Z250

- **Increased Engine Performance**
  - New cylinder head increases output and throttle response
  - New dual fuel injector system increases high rpm power
  - Evolved traction management system helps the bike hook up
  - Updated Suzuki Holeshot Assist Control (S-HAC) gets you out front
- **Greater Cornering Performance**
  - New frame and swingarm balances lightness with strength
  - Engine placement and mounting aid chassis' nimble handling
  - Coil spring KYB fork provides superb performance and easy tuning
  - New KYB rear shock and linkage deliver remarkable control
  - Race-ready, High-grip Dunlop MX33 Tires
- **Improved Braking Performance**
  - Larger front brake increases stopping power and feel
  - New, compact rear master cylinder is designed to prevent mud from collecting on it and from catching on the rider's boots
- **Functional Styling**
  - Aggressive new styling from the championship caliber RM-Z450
  - Narrow cockpit lets rider move with ease for maximum racing performance
- **Rider-friendly Tuning**
  - Fuel couplers are included for quick and easy EFI tuning

SUZUKI ARMY

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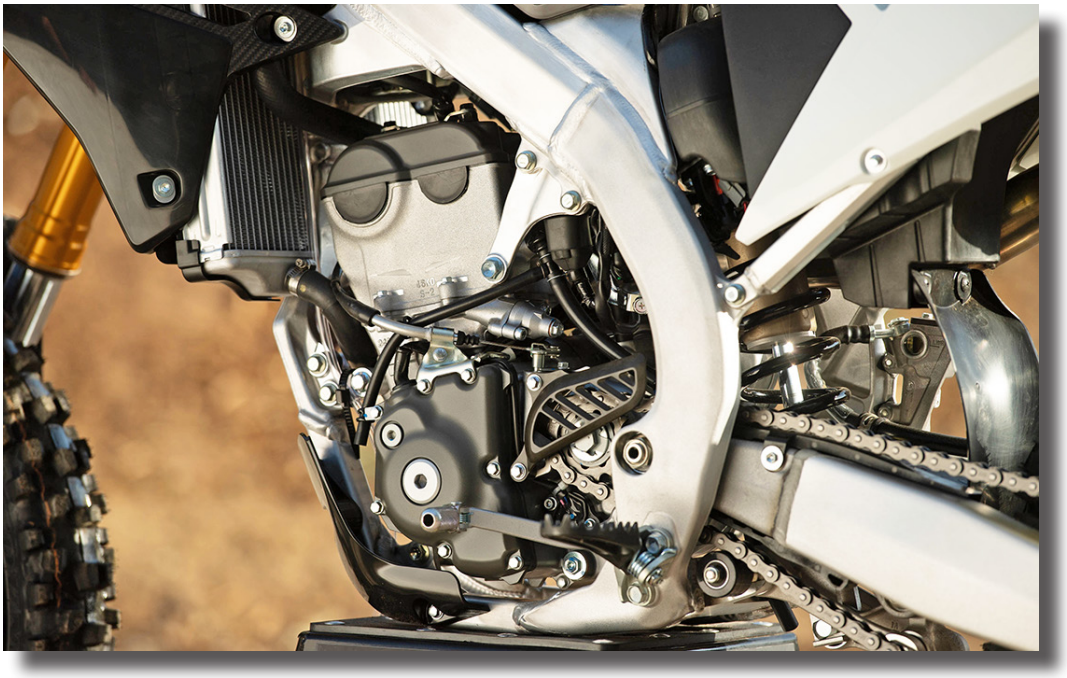
Overview

Redesigned for 2019 and ready for battle, the RM-Z250 marries the sleek, race-ready appearance of the RM-Z450 with an upgraded engine and list of chassis changes to achieve superior performance. Using Suzuki's "RUN, TURN and STOP" philosophy, factory engineers have made the 2019 RM-Z250 an even more formidable competitor.

The RM-Z250 has always set the standard as the best-handling 250 on the track. Now, the 2019 edition has more power, thanks to a host of changes that include a new cylinder head and dual injector EFI, to boost performance through the entire rev range. The frame and swingarm are new, as is the KYB-supplied suspension that includes a new coil spring fork. Strong brakes and ergonomically shaped bodywork that help keep the rider in control as the RM-Z250 carves up the racetrack.

Back in the pits, tuning the new EFI system for maximum performance is easy, thanks to Suzuki's proven fuel-coupler system. Suzuki's Winning Balance is again on display with the 2019 RM-Z250, as it again raises its own high standard for cornering performance.



Engine Features

- Fitted with a new cylinder head and other improvements for 2019, the fuel-injected, 249cc, liquid-cooled, four-stroke, four-valve, DOHC engine remains proven and reliable.
- The engine improvements result in greater power output with improved throttle response through the entire rev range.
- The cylinder head features a new intake port shape and finish that fine-tunes the fuel/air charge into the combustion chamber to increase engine output.
- A 30 percent larger air cleaner opening is combined with a more direct air cleaner outlet tube path into the throttle body for increased air flow.
- The updated fuel injection system has extra-smooth power delivery, high fuel efficiency, superb reliability, and easy tuning capability.
- The new throttle body eliminates complex control linkage so the rider feels a more direct connection to the engine.
- For the first time on a Suzuki MX model, twin fuel injectors are used. The fuel/air mix created by both injectors improves charging efficiency and increases high rpm power.
- The primary fuel injector is at the bottom of the throttle body and sprays fuel at the butterfly valve to improve fuel and air atomization. The secondary injector is positioned in the air cleaner inlet duct so the fuel and air have more time to mix and cool before entering the engine.

Engine Features (continued)

- To feed the new twin-injector system and mix the fuel and air charge to improve throttle response, the new, high-capacity fuel pump has 17 percent more output pressure.
- The new throttle body eliminates complex control linkage, so the rider feels a more direct connection to the engine.
- The intake camshaft profile is new, with more valve lift, increasing power at all engine speeds.
- The cam chain tension adjuster and guide have been redesigned to reduce friction and mechanical loss.
- The compact aluminum cylinder is finished with Suzuki Composite Electrochemical Material (SCEM) coating for durability, light weight, and efficient heat transfer.
- To increase reliability, the machining process at the piston pin holes is changed to reduce stress at the piston crown.
- Engine starting remains simple, due to a proven kick-starter and automatic decompression system that works precisely and efficiently (eliminating the need for a heavy and costly electric start system).
- The new, high-flow exhaust system has a longer head-pipe, tapered mid-section, and multi-layer silencer that has better flow through the entire rev range, with an emphasis on low-rpm performance.
- The new exhaust silencer is a four-layer design that enhances performance and maintains compliance with AMA sound regulations.
- New resin engine protectors help guard the coolant pump (on the right) and the stator cover (on the left) from debris and stones.

Advanced Electronics

- Suzuki's proven, easy-to-use Fuel Couplers are included to simplify EFI tuning

  For quick fuel adjustments to suit riding conditions, two couplers are provided. One is for a rich, and another for a lean fuel setting compared to the stock setting. Riders can change fuel settings in seconds by simply connecting either coupler to the wire harness.
- The 2019 RM-Z250 features an evolved and faster traction management system. The Electronic Control Module (ECM) continually measures throttle opening, engine speed and gear position and then adjusts the ignition timing and fuel injector duration to fine-tune the engine output to deliver the best traction for the riding conditions.

  The RM-Z250's traction management system is different from a street-bike traction control system as it does not measure rear tire spin. Because the needs of a motocrosser are different than a street bike, this system offers constant adjustment that maximizes traction at all times.
- The Suzuki Holeshot Assist Control (S-HAC) is a selectable launch system derived from the factory race bike to help riders' takeoff from the starting gate for an early lead.

  To aid riders at the moment of launch, there are three stages of power adjustment from the S-HAC system; 1) the moment of initial launch, 2) when crossing the starting gate, and 3) acceleration up to full-speed.
- There are three S-HAC modes riders can choose for the best option per their skill level and starting conditions. The launch settings for A-Mode and B-Mode are updated on the 2019 RM-Z250 to help the rider control engine speed during starts.

  A-Mode: For hard surfaces or slippery conditions at the starting gate. In this mode, S-HAC alters ignition timing at the moment of launch and the ride over the gate to reduce wheel slip to deliver a smooth take off. It also advances ignition timing during this sequence for stronger acceleration. After 6.0 seconds or when you reach fourth gear, the system shuts off and returns to normal ignition timing.

  Benefit of A-Mode: For novice riders, and/or hard and slippery traction conditions, use A-Mode for a more controlled launch.

  B-Mode: When conditions at the starting gate have better traction, and a more aggressive launch is desired. S-HAC will advance the ignition timing to allow increased throttle response and stronger acceleration off the line. The ignition timing alternation is in a similar sequence as A-Mode, but with increased overall timing. One of three conditions will return the ignition to normal operation (whichever happens first): After 6.0 seconds or when you reach fourth gear, the system shuts off and returns to normal ignition timing.

  Benefit of B-Mode: For skilled riders and/or good starting conditions, use B-Mode for a more aggressive launch.

  Base Mode: Standard power launch, no action required on the S-HAC switch.

Transmission & Drive Features

- The five-speed transmission is updated with a new second gear ratio and overall final ratio to match the engine's stronger output for better acceleration and top speed.
- True to Suzuki transmission standards, the gear shift operation is smooth and precise. Carefully designed parts like the precisely machined shift cam and corresponding gears create a transmission a racer can rely on.
- The multi-plate, wet-clutch uses a rack-and-pinion clutch release mechanism for precise feel of the engagement and disengagement points while riding.
- The new, lighter-weight chain guide is shaped to accurately route the drive chain smoothly.

Chassis Features

- The 2019 RM-Z250 features a new frame and swingarm design that continues Suzuki's reputation for creating the best handling motocross motorcycles.
- The new aluminum-alloy twin-spar frame combines cast and extruded sections to achieve superior front-and-rear weight distribution while balancing strength and weight.
- The new frame is 370 grams (0.8 pounds) lighter, but has a 10 percent increase in torsional rigidity.
- The position of the engine in the new frame is changed so the crankshaft sits higher in the chassis to further the bike's nimble handling characteristics.
- The design of the rear, upper engine mounts has been updated to a pair of mounts that are outboard of the cylinder head to increase rigidity and allow a direct intake path to the engine.
- The engine mount material is changed to aluminum from steel to reduce weight.
- The new swingarm is shaped using an innovative hydro-forming process that maintains strength but reduces weight by 0.6 pounds (270 grams).
- The new hydro-forming process enabled engineers to create tapered swingarm beams that increased rigidity while reducing heavier assembly welding.
- New hexagonal aluminum rails are used on the sub-frame for lighter weight, a slimmer appearance, and easier air filter access.
- The sub-frame rails are moved inward to slim the bodywork, but are also raised to provide additional space for the larger air cleaner.
- Not only is the new sub-frame narrow, but all of the body work is slim so the rider can move freely in the cockpit, especially during spirited riding.

Chassis Features (continued)

- The new, KYB-supplied shock absorber has a thin-wire spring, spring guide, cushion rubber guide, and lower link that weigh less and have better movement reaction. The new spring and link weigh a pound (447.5 grams) less than the prior parts.
- This KYB shock has new damping force circuits and a different rear lever ratio to improve the suspension's traction characteristics.
- The damping force adjusters have a wider tuning range so the settings can better match the conditions and the rider's style.
- A new, high-performance KYB coil spring front fork replaces the PSF2 Pneumatic Spring Fork previously used on the 2018 RM-Z250.
- Both fork legs have the same springs and damping force components, so front suspension tuning and maintenance is balanced and easy: a great benefit during frequent riding.
- This new fork uses a free-piston design that separates air and oil to optimize the damping characteristics. Other internal changes help control the damping cartridge's pressure and spring recoil, so the fork action remains supple and precise.
- The new Renthal aluminum tapered handlebar has a straighter bend (less pull-back) than prior models to help aid the rider during aggressive maneuvering.
- A new, lighter upper fork bracket is used to complement the new front suspension and handlebars.
- To improve stopping performance and feel, a new, larger 270mm, wave-style front brake rotor and a Nissin two-piston brake caliper are used.
- The brake pad material is also changed to improve performance, plus the new front brake lever is a push rod type that more effectively transmits the squeezing force that the rider applies to the master cylinder.
- A new design rear brake master cylinder hugs the frame beam to reduce dirt contamination and the chance of the rider's boot touching it during riding.
- The wheels feature black anodized D.I.D DirtStar rims with a new cross-section design that maintains strength while reducing un-sprung weight.
- To match the handling potential of the 2019 RM-Z250, the wheels are fitted with the race- developed Dunlop Geomax MX33 tires. Additionally, the rear tire is nearly a half-pound (160 kg) lighter than the tire used on the prior RM-Z250.
- Suzuki beak-inspired styling has sharp front fender and radiator shroud shapes that blend into the frame's side covers and an upswept tail, to promote the impression of speed while reducing weight and easing service.
- The functional styling and the motorcycle's trim chassis permits a variety of rider positions that facilitate control and comfort.
- In addition to the ergonomic improvements from the new bodywork, the rider's foots pegs are moved 0.12 inches (3.3 mm) forward and 0.2 inches (5.2 mm) upward, while the handlebar grip position is moved 0.3 inches (7.4 mm) forward and 0.15 inches (3.8 mm) downward, to create a high level of rider-control during competition.
- The new plastic fuel tank weighs a half-pound less than the prior model's aluminum tank. Fuel capacity is 1.6 US gallons.
- The seat base, inner fenders, and side covers were developed to reduce moisture and dirt from reaching the air cleaner. This helps prevent debris from contaminating the air filter.
- The new, slimmer seat has revised foam density to aid the rider's control of the motorcycle. The seat weighs a half-pound less than the prior model's and has a large gripper panel that runs nose-to-tail on the cover.
- The Suzuki Championship Yellow bodywork is enhanced with distinctive striping and modern logo graphics.

Additional Features

- A variety of Genuine Suzuki Accessories for RM-Z250 owners are available including a large selection of Suzuki logo apparel.
- Learn more about Suzuki's industry leading contingency, plus the RM ARMY and Amateur Support programs at **www.SuzukiCycles.com/Racing**.
- For more details, please visit **www.suzukicycles.com**.

Specifications RM-Z250L9 (1/2)

Dimensions and curb mass

Item	Specification	Remark
Overall length	2185 mm (86.02 in)	—
Overall width	835 mm (32.9 in)	—
Overall height	1255 mm (49.40 in)	—
Wheelbase	1485 mm (58.46 in)	—
Ground clearance	330 mm (13.0 in)	—
Seat height	955 mm (37.5 in)	—
Curb mass	106 kg (233 lbs)	—

Engine

Item	Specification	Remark
Type	Four-stroke, liquid-cooled, DOHC	—
Number of cylinders	1	—
Bore	77.0 mm (3.03 in)	—
Stroke	53.6 mm (2.11 in)	—
Displacement	249 cm^3 (15.195 cu. in)	—
Compression ratio	13.75 : 1	—
Fuel system	Fuel injection	—
Air cleaner	Polyurethane foam element	—
Starter system	Primary kick	—
Lubrication system	Semi dry sump	—
Idle speed	2200 ± 50 r/min	—

Drive train

Item		Specification	Remark
Clutch		Wet multi-plate type	—
Transmission		5-speed constant mesh	—
Gearshift pattern		1-down, 4-up	—
Primary reduction ratio		3.315 (63/19)	—
Gear ratios	Low	2.153 (28/13)	—
	2nd	1.705 (29/17)	—
	3rd	1.470 (25/17)	—
	4th	1.238 (26/21)	—
	Top	1.090 (24/22)	—
Final reduction ratio		3.846 (50/13)	—
Drive chain		DID 520DMA4K, 114 links	—

Chassis

Item	Specification	Remark
Front suspension	Inverted telescopic, coil spring, oil damped	—
Rear suspension	Link type, coil spring, oil damped	—
Front suspension stroke	310 mm (12.2 in)	—
Rear wheel travel	299 mm (11.8 in)	—
Steering angle	42° (right and left)	—
Caster	28° 42’	—
Trail	125 mm (4.92 in)	—
Front brake	Disc brake	—
Rear brake	Disc brake	—
Front tire size	80/100-21 51M, tube	—
Rear tire size	100/90-19 57M, tube	—

Specifications RM-Z250L9 (2/2)

Electrical

Item	Specification	Remark
Ignition type	Electronic ignition (CDI)	—
Spark plug	NGK CR8EIB-10	—
Generator	Single-phase A.C. generator	—

Capacities

Item		Specification	Remark
Fuel tank		6.3 L (1.66 US gal, 1.39 Imp gal)	—
Engine oil	Oil change	950 ml (1.00 US qt, 0.84 Imp qt)	—
	With filter change	1000 ml (1.06 US qt, 0.88 Imp qt)	—
Engine coolant		1100 ml (1.16 US qt, 0.97 Imp qt)	—

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Engine Electrical Devices

Item	Specification	Standard	Limit
IAP sensor power supply voltage		4.5 – 5.5 V	—
IAP sensor output voltage	Idle speed at 1 atm.	1.5 – 4.0 V	—
IAT sensor power supply voltage		4.5 – 5.5 V	—
IAT sensor resistance	40 °C (104 °F)	1041 – 1231 Ω	—
ECT sensor power supply voltage		4.5 – 5.5 V	—
ECT sensor resistance	40 °C (104 °F)	1041 – 1231 Ω	—
TP sensor power supply voltage		4.5 – 5.5 V	—
TP sensor output voltage	Closed	0.74 – 0.79 V	—
	Opened	3.80 – 4.20 V	
CKP sensor peak voltage	When cranking	2.8 V or more	—
CKP sensor resistance		80 – 120 Ω	—
TO sensor power supply voltage		4.5 – 5.5 V	—
TO sensor output voltage	Normal	0.4 – 1.4 V	—
	Leaning 65°	3.7 – 4.4 V	
TO sensor resistance		16500 – 22300 Ω	—
ECM power supply voltage		Battery voltage	—

Engine Mechanical

Item	Specification		Standard	Limit
Throttle body I.D. No.			46K0	—
Throttle body bore size			44 mm (1.7 in)	—
Throttle cable play			2.0 – 4.0 mm (0.079 – 0.16 in)	—
Engine idle speed	When engine warmed		2200 ± 50 r/min	—
Compression pressure	Automatic decompression actuated.		400 – 800 kPa (4.1 – 8.1 kgf/cm^2, 58.1 – 116 psi)	—
Cam height	Intake		35.18 – 35.23 mm (1.385 – 1.387 in)	34.88 mm (1.374 in)
	Exhaust		34.08 – 34.13 mm (1.342 – 1.343 in)	33.78 mm (1.330 in)
Camshaft journal oil clearance	Intake		0.023 – 0.066 mm (0.0009 – 0.0025 in)	0.150 mm (0.0059 in)
	Exhaust		0.023 – 0.066 mm (0.0009 – 0.0025 in)	0.150 mm (0.0059 in)
Camshaft journal holder I.D.	Intake		22.003 – 22.025 mm (0.8663 – 0.8671 in)	—
	Exhaust		22.003 – 22.025 mm (0.8663 – 0.8671 in)	
Camshaft journal O.D.	Intake		21.959 – 21.980 mm (0.8646 – 0.8653 in)	—
	Exhaust		21.959 – 21.980 mm (0.8646 – 0.8653 in)	
Cam chain pin	At punch mark		13th pin	—
Valve clearance	When engine cold	Intake	0.09 – 0.16 mm (0.0036 – 0.0062 in)	—
		Exhaust	0.17 – 0.24 mm (0.0067 – 0.0094 in)	
Valve diameter	Intake		31 mm (1.2 in)	—
	Exhaust		25 mm (0.98 in)	
Valve stem runout	Intake & Exhaust		—	0.05 mm (0.0019 in)

Item	Specification		Standard	Limit
Valve head radial runout	Intake & Exhaust		—	0.03 mm (0.0011 in)
Valve stem deflection	Intake & Exhaust		—	0.25 mm (0.0098 in)
Valve stem O.D.	Intake		4.475 – 4.490 mm (0.1762 – 0.1767 in)	—
	Exhaust		4.455 – 4.470 mm (0.1754 – 0.1759 in)	—
Valve seat width	Intake		0.9 – 1.1 mm (0.036 – 0.043 in)	—
	Exhaust		0.9 – 1.1 mm (0.036 – 0.043 in)	—
Valve guide I.D.	Intake		4.500 – 4.512 mm (0.1772 – 0.1776 in)	—
	Exhaust		4.500 – 4.512 mm (0.1772 – 0.1776 in)	—
Valve guide to valve stem clearance	Intake		0.010 – 0.037 mm (0.0004 – 0.0014 in)	—
	Exhaust		0.030 – 0.057 mm (0.0012 – 0.0022 in)	—
Valve spring free length	Intake		—	37.1 mm (1.46 in)
	Exhaust		—	37.4 mm (1.48 in)
Valve spring pre-load	When compressed to 33.55 mm (1.321 in)	Intake	142 – 157 N (14.5 – 16.0 kgf, 32.0 – 35.2 lbf)	—
		Exhaust	137 – 157 N (14.0 – 16.0 kgf, 30.8 – 35.2 lbf)	—
Cylinder head distortion			—	0.05 mm (0.0019 in)
Cylinder distortion			—	0.05 mm (0.0019 in)
Cylinder bore			77.000 – 77.015 mm (3.0315 – 3.0320 in)	No nicks or Scratches
Piston diameter	Measure at 8.5 mm (0.33 in) from the skirt end.		76.965 – 76.980 mm (3.0302 – 3.0307 in)	76.880 mm (3.0268 in)
Piston to cylinder clearance			0.030 – 0.040 mm (0.0012 – 0.0015 in)	0.120 mm (0.0047 in)
Piston ring to groove clearance	1st		—	0.180 mm (0.0070 in)
Piston ring groove width	1st		0.83 – 0.85 mm (0.0327 – 0.0334 in)	—
			1.30 – 1.32 mm (0.0512 – 0.0519 in)	—
	Oil		1.51 – 1.53 mm (0.0595 – 0.0602 in)	—
Piston ring thickness	1st		0.76 – 0.81 mm (0.030 – 0.031 in)	—
			1.08 – 1.10 mm (0.0426 – 0.0433 in)	—
Piston ring free end gap	1st		Approx. 5.9 mm (0.23 in)	4.7 mm (0.19 in)
Piston ring end gap	1st		0.08 – 0.20 mm (0.0032 – 0.0078 in)	0.50 mm (0.019 in)
Piston pin bore I.D.			16.002 – 16.008 mm (0.6300 – 0.6302 in)	16.030 mm (0.6311 in)
Piston pin O.D.			15.993 – 16.000 mm (0.6297 – 0.6299 in)	15.980 mm (0.6292 in)

Item	Specification	Standard	Limit
Conrod small end I.D.		16.008 – 16.034 mm (0.6303 – 0.6312 in)	16.040 mm (0.6314 in)
Conrod deflection		—	3.0 mm (0.11 in)
Conrod big end side clearance		0.20 – 0.65 mm (0.0079 – 0.0255 in)	1.0 mm (0.039 in)
Conrod big end width		17.75 – 17.80 mm (0.6989 – 0.7007 in)	—
Crank web to web width		55.9 – 56.1 mm (2.201 – 2.208 in)	—
Crankshaft runout		—	0.080 mm (0.0031 in)

Engine Lubrication System

Item	Specification	Standard	Limit
Oil pressure	At 50 °C (122 °F), 6000 r/min	25 kPa (0.3 kgf/cm^2, 3.63 psi)	—
Necessary amount of engine oil	Oil change	950 ml (1.00 US qt, 0.84 Imp qt)	—
	Oil and filter change	1000 ml (1.06 US qt, 0.88 Imp qt)	
	Engine overhaul	1100 ml (1.16 US qt, 0.97 Imp qt)	

Cooling System

Item	Specification	Standard	Limit
Engine coolant		Approx. 1100 ml (1.16 US qt, 0.97 Imp qt)	—
Radiator cap valve opening pressure		107.9 – 137.3 kPa (1.1 – 1.4 kgf/cm^2, 15.7 – 19.9 psi)	—

Fuel System

Item	Specification		Standard	Limit
Fuel injector power supply voltage	Primary		Battery voltage	—
	Secondary		Battery voltage	
Fuel injector resistance	Primary	20 °C (68 °F)	11.5 – 12.5 Ω	—
	Secondary	20 °C (68 °F)	11.5 – 12.5 Ω	
FP relay power supply voltage			Battery voltage	—
FP discharge amount	Per 10 seconds		78 ml (2.64 US oz, 2.75 Imp oz) or more	—
Fuel pressure			336 – 350 kPa (3.43 – 3.56 kgf/cm^2, 48.8 – 50.7 psi)	—

Ignition System

Item	Specification	Standard	Limit
Spark plug	Type	NGK CR8EIB-10	—
	Gap	0.9 – 1.0 mm (0.036 – 0.039 in)	
Spark performance	At 1 atm	8 mm (0.3 in) or more	—
Ignition coil primary peak voltage		170 V or more	—
Ignition coil resistance	Primary	0.17 – 0.70 Ω	—
	Secondary	9000 – 14000 Ω	

Charging System

Item	Specification		Standard	Limit
Regulated voltage	Charging output	At 5000 r/min	13.5 – 15.0 V	—
Generator coil resistance			1.2 – 1.8 Ω	—
Generator no-load voltage	When engine cold	At 5000 r/min	100 V (AC) or more	—

Front Suspension

Item	Specification		Standard	Limit
Front fork inner tube O.D.			48 mm (1.9 in)	—
Front fork inner tube runout			—	0.4 mm (0.01 in)
Front fork spring free length			497 mm (19.6 in)	487 mm (19.2 in)
Front fork oil quantity	Each leg	Outer tube	360 ml (12.17 US oz, 12.67 Imp oz)	—
		Cylinder assembly	197 ml (6.66 US oz, 6.93 Imp oz)	
Front fork damping force adjuster	Rebound side		13 clicks counterclockwise from stiffest position	—
	Compression side		11 clicks counterclockwise from stiffest position	

Rear Suspension

Item	Specification		Standard	Limit
Rear shock absorber spring free length			245 mm (9.65 in)	240 mm (9.45 in)
Rear shock absorber spring set length	When compressed to 3.0 mm (0.12 in) from spring free length		242 mm (9.53 in)	—
Spring set length adjustable range	At spring free length 245 mm (9.65 in)		229 – 243 mm (9.02 – 9.56 in)	—
Rear shock absorber oil capacity			422 ml (14.27 US oz, 14.85 Imp oz)	—
Rear shock absorber damping force adjuster	Rebound side	High speed	16 clicks counterclockwise from stiffest position	—
		Low speed	14 clicks counterclockwise from stiffest position	
	Compression side	High speed	14 clicks counterclockwise from stiffest position	
		Low speed	14 clicks counterclockwise from stiffest position	
Swingarm pivot shaft runout			—	0.3 mm (0.011 in)
Rear shock absorber gas pressure			1000 kPa (10.2 kgf/cm^2, 145 psi)	—

Wheels and Tires

Item	Specification		Standard	Limit
Wheel rim runout	Front	Axial & Radial	—	2.0 mm (0.08 in)
	Rear	Axial & Radial	—	2.0 mm (0.08 in)
Front wheel hub right end surface to rim distance			24 mm (0.94 in)	—
Rear wheel hub right end surface to rim distance			42 mm (1.7 in)	—
Wheel axle runout	Front & Rear		—	0.25 mm (0.010 in)
Tire size	Front		80/100-21 51M	—
	Rear		100/90-19 57M	
Tire type	Front		DUNLOP GEOMAX MX33F	—
	Rear		DUNLOP GEOMAX MX33	
Tire tread depth	Recommend depth	Front	—	4.0 mm (0.15 in)
		Rear	—	4.0 mm (0.15 in)
Cold inflation tire pressure	Front		70 – 110 kPa (0.7 – 1.1 kgf/cm^2, 10 – 16 psi)	—
	Rear		70 – 110 kPa (0.7 – 1.1 kgf/cm^2, 10 – 16 psi)	
Wheel rim size	Front		21 × 1.60	—
	Rear		19 × 1.85	

Drive Chain / Drive Train / Drive Shaft

Item	Specification	Standard	Limit
Drive chain	Type	DID 520DMA4K	—
	Links	114 links	—
Drive chain 20-pitch length		—	323.8 mm (12.74 in)
Drive chain slack	On side-stand	35 – 45 mm (1.4 – 1.7 in)	—

Brake Control System and Diagnosis

Item	Specification	Standard	Limit
Rear brake pedal height		0 – 10 mm (0 – 0.39 in)	—
Master cylinder bore / piston diameter	Front	Approx. 11 mm (0.43 in)	—
	Rear	Approx. 11 mm (0.43 in)	
Brake lever adjuster length		11 – 15 mm (0.44 – 0.59 in)	—

Front Brakes

Item	Specification	Standard	Limit
Front brake disc thickness		3.0 mm (0.12 in)	2.5 mm (0.099 in)
Front brake disc runout		—	0.30 mm (0.012 in)
Front brake caliper cylinder bore / piston diameter		Approx. 27 mm (1.1 in)	—

Rear Brakes

Item	Specification	Standard	Limit
Rear brake disc thickness		4.0 mm (0.16 in)	3.5 mm (0.14 in)
Rear brake disc runout		—	0.3 mm (0.012 in)
Rear brake caliper cylinder bore / piston diameter		Approx. 25.4 mm (1.00 in)	—

Manual Transmission

Item	Specification	Standard	Limit
Gearshift fork to groove clearance	No.1	0.1 – 0.3 mm (0.004 – 0.011 in)	0.5 mm (0.019 in)
	No.2	0.1 – 0.3 mm (0.004 – 0.011 in)	0.5 mm (0.019 in)
	No.3	0.1 – 0.3 mm (0.004 – 0.011 in)	0.5 mm (0.019 in)
Gearshift fork groove width	No.1	5.0 – 5.1 mm (0.197 – 0.200 in)	—
	No.2	5.0 – 5.1 mm (0.197 – 0.200 in)	
	No.3	5.0 – 5.1 mm (0.197 – 0.200 in)	
Gearshift fork thickness	No.1	4.8 – 4.9 mm (0.189 – 0.192 in)	—
	No.2	4.8 – 4.9 mm (0.189 – 0.192 in)	
	No.3	4.8 – 4.9 mm (0.189 – 0.192 in)	
Gearshift lever height		–0.8 – 13.2 mm (–0.031 – 0.519 in)	—
GP switch power supply voltage		4.5 – 5.5 V	—
GP switch voltage	1st	Approx. 1.80 V	—
	2nd	Approx. 2.26 V	
	3rd	Approx. 3.00 V	
	4th	Approx. 3.66 V	
	5th	Approx. 4.36 V	

Clutch

Item	Specification	Standard	Limit
Clutch cable play		2 – 3 mm (0.08 – 0.11 in)	—
Drive plate thickness		2.72 – 2.88 mm (0.107 – 0.113 in)	2.42 mm (0.0953 in)
Drive plate claw width		13.85 – 13.96 mm (0.5453 – 0.5496 in)	13.35 mm (0.5256 in)
Driven plate distortion	No.1	—	0.10 mm (0.004 in)
	No.2	—	0.10 mm (0.004 in)
Clutch spring free length		51.87 mm (2.042 in)	49.3 mm (1.94 in)

Tightening Torque List

Engine Electrical Devices

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
ECM bracket bolt	6.0	0.61	4.45
IAP sensor screw	3.5	0.36	2.60
IAT sensor screw	1.3	0.13	0.95
Seat rail upper bridge bolt	10	1.0	7.5
ECT sensor	12	1.2	9.0
Engine mounting upper bracket bolt	35	3.6	26.0
Engine mounting head bolt	55	5.6	40.5
TP sensor screw	2.0	0.20	1.50

Engine Mechanical

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Air cleaner mounting bolt	10	1.0	7.5
Seat rail upper bridge bolt	10	1.0	7.5
Throttle cable adjuster lock-nut	4.5	0.46	3.35
Throttle cable cover bolt	3.5	0.36	2.60
Engine mounting upper bracket bolt	35	3.6	26.0
Engine mounting head bolt	55	5.6	40.5
Choke plunger assembly	2.5	0.25	1.85
Intake pipe bolt	1.0 → 10	0.10 → 1.0	0.75 → 7.5
Cylinder head cover bolt	14	1.4	10.5
Camshaft housing bolt (L45)	10	1.0	7.5
Camshaft housing bolt (L40)	10	1.0	7.5
Cam chain tension adjuster bolt	10	1.0	7.5
Cam chain tension adjuster plug	5.5	0.56	4.05
Crankshaft hole plug	11	1.1	8.5
TDC plug	14	1.4	10.5
Cylinder head bolt (L124)	25 → 51	2.5 → 5.2	18.5 → 38.0
Cylinder head bolt (L25)	10	1.0	7.5
Cylinder bolt	10	1.0	7.5
Cam chain tensioner bolt	10	1.0	7.5
Cam chain guide retainer bolt	10	1.0	7.5
Hose connector union bolt	10	1.0	7.5
Oil gallery plug	10	1.0	7.5
Engine mounting front nut	66	6.7	49.0
Swingarm pivot nut	70	7.1	52.0
Engine mounting lower nut	66	6.7	49.0
Engine mounting front bracket bolt	35	3.6	26.0
Clutch cable bracket bolt	10	1.0	7.5
Crankcase bolt	11	1.1	8.5
Crankshaft bearing retainer screw	13	1.3	9.5

Engine Lubrication System

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Oil gallery plug	10	1.0	7.5
Engine oil check bolt	5.5	0.56	4.05
TDC plug	14	1.4	10.5
Engine oil drain plug	21	2.1	15.5
Engine oil drain plug No.2	12	1.2	9.0
Engine oil filter cap bolt	11	1.1	8.5
Engine oil strainer cap	21	2.1	15.5
Oil strainer No.2 bolt	5.5	0.56	4.05
Oil pump No.1 bolt	5.5	0.56	4.05
Oil pump idle gear shaft	23	2.3	17.0
Oil pump No.2 bolt	11	1.1	8.5

Engine Cooling System

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Engine coolant drain bolt	11	1.1	8.5
Radiator hose clamp screw	1.5	0.15	1.10
Radiator louver bolt	5.5	0.56	4.05
Water pump joint bolt	10	1.0	7.5
Water pump case bolt	11	1.1	8.5
Water pump impeller	8.0	0.82	5.90

Fuel System

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Fuel tank front bolt	10	1.0	7.5
Fuel pump bolt	10	1.0	7.5
Primary fuel delivery pipe screw	3.5	0.36	2.60
Secondary fuel delivery pipe bolt	9.5	0.97	7.00

Ignition System

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Spark plug	11	1.1	8.5
Spark plug cap retainer bolt	11	1.1	8.5
Ignition coil bolt	10	1.0	7.5
Coupler bracket bolt	10	1.0	7.5

Starting System

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Kick starter lever screw	10	1.0	7.5
Kick starter lever bolt	29	3.0	21.5
Kick starter guide bolt	10	1.0	7.5
Clutch cover bolt	11	1.1	8.5
Clutch outer cover bolt (L65)	10	1.0	7.5
Water pump case bolt	11	1.1	8.5

Charging System

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Generator stator bolt	5.5	0.56	4.05
CKP sensor bolt	5.5	0.56	4.05
Generator rotor nut	80	8.2	59.0
Generator cover bolt	11	1.1	8.5
Regulator/rectifier bolt	6.0	0.61	4.45
Engine mounting upper bracket bolt	35	3.6	26.0
Engine mounting head bolt	55	5.6	40.5

Exhaust System

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Exhaust pipe nut	23	2.3	17.0
Connector clamp bolt	17	1.7	12.5
Muffler support front bolt	21	2.1	15.5
Muffler support rear bolt	23	2.3	17.0
Exhaust pipe cover bolt	11	1.1	8.5
Rear muffler body bolt	10	1.0	7.5

Front Suspension

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Front fork lower clamp bolt	23	2.3	17.0
Front fork upper clamp bolt	23	2.3	17.0
Cylinder assembly	45	4.6	33.5
Base valve assembly	28	2.9	21.0
Adjuster lock-nut/adjuster	29	3.0	21.5
Adjuster	55	5.6	40.5

Rear Suspension

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Rear shock absorber spring adjuster lock-nut	30	3.1	22.5
Rear shock absorber lower nut	50	5.1	37.0
Rear shock absorber upper nut	50	5.1	37.0
Seat rail upper bolt	35	3.6	26.0
Seat rail lower bolt	35	3.6	26.0
Rear shock absorber adjuster assembly	23	2.3	17.0
Cushion lever nut	80	8.2	59.0
Cushion rod rear nut	80	8.2	59.0
Cushion rod front nut	80	8.2	59.0
Swingarm rear plate screw	4.5	0.46	3.35
Swingarm pivot nut	70	7.1	52.0
Rear brake master cylinder mounting bolt	10	1.0	7.5

Wheels and Tires

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Front axle nut	35	3.6	26.0
Front axle pinch bolt	21	2.1	15.5
Rear axle nut	100	10.2	74.0
Front wheel spoke nipple	5.5	0.56	4.05
Rear wheel spoke nipple	6.0	0.61	4.45
Front wheel bead stopper nut	14	1.4	10.5
Rear wheel bead stopper nut	17	1.7	12.5

Drive Chain / Drive Train / Drive Shaft

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Rear axle nut	100	10.2	74.0
Engine sprocket bolt	32	3.3	24.0
Rear sprocket nut	30	3.1	22.5
Crankcase bolt	11	1.1	8.5
Engine sprocket cover bolt	11	1.1	8.5

Brake Control System and Diagnosis

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Front brake lever adjuster lock-nut	5.0	0.51	3.70
Rear brake master cylinder rod lock-nut	6.0	0.61	4.45
Front brake air bleeder valve	6.0	0.61	4.45
Front reservoir cap screw	1.5	0.15	1.10
Rear brake air bleeder valve	6.0	0.61	4.45
Rear reservoir cap screw	1.5	0.15	1.10
Front brake lever pivot bolt	5.9	0.60	4.35
Front brake lever pivot bolt lock-nut	5.9	0.60	4.35
Front brake master cylinder holder bolt	10	1.0	7.5
Brake hose union bolt	23	2.3	17.0
Rear brake master cylinder mounting bolt	10	1.0	7.5
Brake pedal pivot bolt	29	3.0	21.5

Front Brakes

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Front brake pad mounting pin	17	1.7	12.5
Front brake pad mounting pin plug	2.5	0.25	1.85
Front brake caliper mounting bolt	26	2.7	19.5
Brake hose union bolt	23	2.3	17.0
Front brake caliper pin A	25	2.5	18.5
Front brake caliper pin B	28	2.9	21.0
Front brake air bleeder valve	6.0	0.61	4.45
Front brake disc bolt	11	1.1	8.5

Rear Brakes

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Rear brake pad mounting pin	17	1.7	12.5
Brake hose union bolt	23	2.3	17.0
Rear brake air bleeder valve	6.0	0.61	4.45
Rear brake caliper pin A	43	4.4	32.0
Rear brake caliper pin B	12	1.2	9.0
Rear brake disc bolt	26	2.7	19.5

Transmission

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Driveshaft bearing retainer screw	8.5	0.87	6.30
Countershaft bearing retainer screw	8.5	0.87	6.30
Gearshift cam bearing retainer screw	8.5	0.87	6.30
GP switch bolt	6.5	0.66	4.80
Gearshift arm stopper	23	2.3	17.0
Gearshift cam stopper bolt	10	1.0	7.5
Gearshift cam stopper plate bolt	24	2.4	18.0
Gearshift pawl lifter screw	8.5	0.87	6.30

Clutch

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Clutch cable adjuster lock-nut	2.1	0.21	1.55
Clutch cable bracket bolt	10	1.0	7.5
Clutch lever pivot bolt	4.0	0.41	2.95
Clutch lever pivot bolt lock-nut	4.0	0.41	2.95
Clutch release camshaft retainer bolt	10	1.0	7.5
Clutch sleeve hub nut	90	9.2	66.5
Clutch spring bolt	10	1.0	7.5
Clutch outer cover bolt (L25)	11	1.1	8.5
Clutch outer cover bolt (L65)	10	1.0	7.5
Primary drive gear nut	110	11.2	81.5

Steering / Handlebar

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Handle upper holder bolt	25	2.5	18.5
Throttle case screw	3.8	0.39	2.80
Clutch lever holder bolt	3.0	0.31	2.25
S-HAC switch screw	1.3	0.13	0.95
Engine stop switch screw	1.3	0.13	0.95
Steering stem head nut	100	10.2	74.0
Front fork upper clamp bolt	23	2.3	17.0
Handle lower holder nut	45	4.6	33.5
Steering stem nut	45 N·m (4.6 kgf-m, 33.5 lbf-ft) → turn counterclockwise 1/4 – 1/2		
Front brake hose guide bolt	3.0	0.31	2.25

Exterior Parts

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Seat bolt	10	1.0	7.5
Radiator cover bolt	10	1.0	7.5
Frame cover bolt	10	1.0	7.5
Rear fender front bolt	10	1.0	7.5

Body Structure

Fastening part	Tightening torque		
	N·m	kgf-m	lbf-ft
Footrest bracket bolt	50	5.1	37.0

Fuel / Oil / Fluid / Coolant Recommendation

BENK46K10308001

Fuel

NOTICE

Do not use leaded gasoline. If it is used, the engine and the emission control system will be damaged.

Use unleaded gasoline with an octane rating of 95 RON (90 AKI) or higher.
Unleaded gasoline containing up to 5% or 10% ethanol by volume may be used. Use the recommended gasoline according to a gasoline label.

Engine Oil

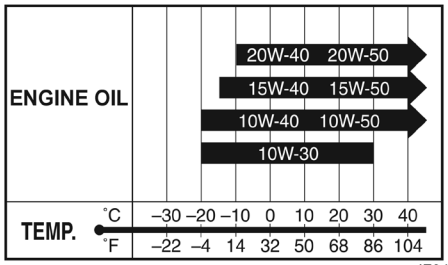
Use engine oils which meet the following requirements.

	Engine oil
API service classification	SG, SH, SJ, SL, SM or SN
JASO T903 standard	MA
Viscosity	SAE 10W-40

If SAE 10W-40 engine oils are not available, select oils of an appropriate viscosity grade according to the following chart.

NOTICE

When 10W-30 engine oil is used, use only SG, SH, SJ, SL API classification. If there are not used API classification engine oils, the engine will be damaged.



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Suzuki does not recommend the use of engine oils which have an “ENERGY CONSERVING” or “RESOURCE CONSERVING” indication in the API service symbol for any of its motorcycles / ATVs.

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Suzuki recommends the use of ECSTAR or SUZUKI PERFORMANCE 4 MOTOR OIL.

Brake Fluid

Specification and classification: DOT 4

⚠ WARNING

Since the brake system of this motorcycle is filled with a glycol-based brake fluid by the manufacturer, do not use or mix different types of fluid such as silicone-based and petroleum-based fluid for refilling the system, otherwise serious damage will result.
Do not use any brake fluid taken from old or used or unsealed containers.
Never reuse brake fluid left over from a previous servicing, which has been stored for a long period.

Engine Coolant

Suzuki recommends the use of SUZUKI LONG LIFE COOLANT or SUZUKI SUPER LONG LIFE COOLANT.

Coolant 99000–99032–12X (SUZUKI LONG LIFE COOLANT (GREEN))
Coolant 99000–99032–20X (SUZUKI SUPER LONG LIFE COOLANT (BLUE))

For SUZUKI LONG LIFE COOLANT

NOTICE

- **Use a high quality ethylene glycol base anti-freeze, mixed with distilled water. Do not mix an alcohol base anti-freeze and different brands of anti-freeze.**
- **Do not put in more than 60% anti-freeze or less than 50%. (Refer to Fig. 1 and 2.)**

The 50:50 mixture of distilled water and ethylene glycol anti-freeze will provide the optimum corrosion protection and excellent heat protection, and will protect the cooling system from freezing at temperatures above –31 °C (–24 °F).
If the vehicle is to be exposed to temperatures below –31 °C (–24 °F), this mixing ratio should be increased up to 55% or 60% according to the figure.

Anti-freeze Proportioning Chart

Anti-freeze density	Freezing point
50%	–31 °C (–24 °F)
55%	–40 °C (–40 °F)
60%	–55 °C (–67 °F)

Fig.1: Engine coolant density-freezing point curve

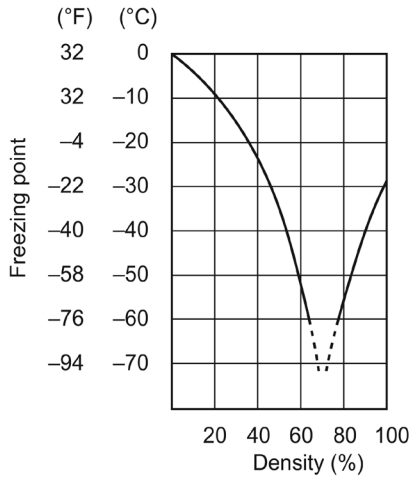

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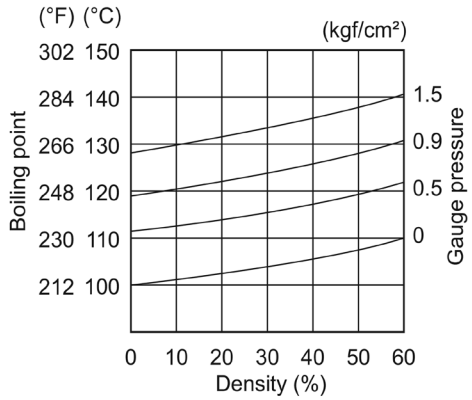
Fig.2: Engine coolant density-boiling point curve



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For SUZUKI SUPER LONG LIFE COOLANT

NOTICE

- **Ethanol or methanol base coolant or water alone should not be used in cooling system at any time as damage to cooling system could occur.**
- **Do not mix the distilled water, SUZUKI LONG LIFE COOLANT (coolant color: Green) or equivalent.**

SUZUKI SUPER LONG LIFE COOLANT will provide the optimum corrosion protection and excellent heat protection, and will protect the cooling system from freezing at temperatures above –36 °C (–33 °F).

Anti-freeze concentration table

Anti-freeze density	Freezing point
50%	–36 °C (–33 °F)

Water for mixing
Use distilled water only. Water other than distilled water can corrode and clog the aluminum radiator.
For engine coolant mixture information, refer to “Engine Coolant” (Page 0C-25).

NOTICE

Mixing of anti-freeze/engine coolant should be limited to 60%. Mixing beyond it would reduce its efficiency. If the anti-freeze/engine coolant mixing ratio is below 50%, rust inhabiting performance is greatly reduced. Be sure to mix it above 50% even though the atmospheric temperature does not go down to the freezing point.

Anti-freeze / Engine coolant
The engine coolant perform as a corrosion and rust inhibitor as well as anti-freeze. Therefore, the engine coolant should be used at all times even though the atmospheric temperature in your area does not go down to freezing point.
Suzuki recommends the use of SUZUKI COOLANT anti-freeze/engine coolant. If this is not available, use an equivalent which is compatible with an aluminum radiator.

Front Fork Oil
Use SUZUKI FORK OIL L-05.

Fork oil 99000–99044–L05 (SUZUKI FORK OIL L-05)

Rear Shock Absorber Oil
Use KYB SUSPENSION OIL KHV10-K2C.

Rear suspension oil (KYB SUSPENSION OIL KHV10-K2C)