KAWASAKI
KLT200 AND KLT250

NOTE: Metric fasteners are used throughout vehicle.

CONDENSED SERVICE DATA

MODELS	KLT200-A1, A2 KLT200-A3, A4 KLT200-A4A KLT200-B1 KLT200-C1, C2	KLT250-A1	KLT250-A2 KLT250-C1, C2 KLT250-C3 KLT250-P1
General			
Engine Make	Kawasaki	Kawasaki	Kawasaki
Engine Type	Four-Stroke; Air-Cooled	Four-Stroke; Air-Cooled	Four-Stroke; Air-Cooled
Number of Cylinders	1	1	1
Bore	66 mm (2.60 in.)	70.0 mm (2.76 in.)	70.5 mm (2.78 in.)
Stroke	58 mm (2.28 in.)	64.0 mm (2.52 in.)	64.0 mm (2.52 in.)
Displacement	198 cc (12.08 cu. in.)	246 cc (15.01 cu. in.)	249 cc (15.19 cu. in.)
Compression Ratio	9.0:1	8.9:1	9.3:1
Engine Lubrication	Wet Sump; Oil Pump	Wet Sump; Oil Pump	Wet Sump; Oil Pump
Transmission Lubrication	Common with Engine	Common with Engine	Common with Engine
Engine/Transmission Oil	SAE 10W-40	SAE 10W-40	SAE 10W-40
Differential Oil	See Text	....	See Text
Forward Speeds	5	5	5
Reverse Speeds	....	....	....
Tire Size:			
Front	22x11-8	22x11-8	22x11-8
Rear	22x11-8	25x12-9	25x12-9
Tire Pressure:			
Front & Rear	14 kPa (2.0 psi)	14 kPa (2.0 psi)	14 kPa (2.0 psi)
Dry Weight (Approx.)	144 kg (317 lbs.)	150 kg (330 lbs.)	160 kg (352 lbs.)
Tune-Up			
Engine Idle Speed	1300 rpm	1300 rpm	1300 rpm
Spark Plug:			
NGK	B7ES	B7ES	B8ES
Nippon Denso	W22ES-U	W22ES-U	W24ES-U
Electrode Gap	0.7-0.8 mm (0.028-0.031 in.)	0.7-0.8 mm (0.028-0.031 in.)	0.7-0.8 mm (0.028-0.031 in.)
Ignition:			
Type	Electronic*	Electronic	Electronic
Timing	10°BTDC	10°BTDC	10°BTDC
Carburetor:	See Text	See Text	See Text
Throttle Lever Free Play	2-3 mm (5/64-1/8 in.)	2-3 mm (5/64-1/8 in.)	2-3 mm (5/64-1/8 in.)

*Model KLT200-A1 is equipped with a breaker point ignition system. Breaker point gap should be 0.3-0.4 mm (0.011-0.015 in.).

MODELS	KLT200-A1, A2 KLT200-A3, A4 KLT200-A4A KLT200-B1 KLT200-C1, C2	KLT250-A1	KLT250-A2 KLT250-C1, C2 KLT250-C3 KLT250-P1
Sizes-Clearances			
Valve Clearance (cold):			
Intake	0.08-0.13 mm (0.003-0.005 in.)	0.08-0.13 mm (0.003-0.005 in.)	0.08-0.13 mm (0.003-0.005 in.)
Exhaust	0.17-0.22 mm (0.007-0.009 in.)	0.17-0.22 mm (0.007-0.009 in.)	0.17-0.22 mm (0.007-0.009 in.)
Valve Face & Seat Angle:			
Intake & Exhaust	45°	45°	45°
Valve Seat Width:			
Intake & Exhaust	0.5-1.0 mm (0.02-0.04 in.)	0.5-1.0 mm (0.02-0.04 in.)	0.5-1.0 mm (0.02-0.04 in.)
Valve Stem Diameter:			
Intake	6.965-6.980 mm (0.2742-0.2748 in.)	6.965-6.980 mm (0.2742-0.2748 in.)	6.965-6.980 mm (0.2742-0.2748 in.)
Wear Limit	6.90 mm (0.2716 in.)	6.90 mm (0.2716 in.)	6.90 mm (0.2716 in.)
Exhaust	6.950-6.970 mm (0.2736-0.2744 in.)	6.950-6.970 mm (0.2736-0.2744 in.)	6.950-6.970 mm (0.2736-0.2744 in.)
Wear Limit	6.90 mm (0.2716 in.)	6.90 mm (0.2716 in.)	6.90 mm (0.2716 in.)
Valve Guide Bore Diameter:			
Intake & Exhaust	7.000-7.015 mm (0.2756-0.2762 in.)	7.000-7.015 mm (0.2756-0.2762 in.)	7.000-7.015 mm (0.2756-0.2762 in.)
Wear Limit	7.08 mm (0.2787 in.)	7.08 mm (0.2787 in.)	7.08 mm (0.2787 in.)
Valve Spring Pressure:			
Inner	279.5-309.0 N @ 22.2 mm (62.8-69.4 lbs. @ 0.874 in.)	279.5-309.0 N @ 22.2 mm (62.8-69.4 lbs. @ 0.874 in.)	279.5-309.0 N @ 22.2 mm (62.8-69.4 lbs. @ 0.874 in.)
Minimum Pressure	267.7 N (60.9 lbs.)	267.7 N (60.9 lbs.)	267.7 N (60.9 lbs.)
Outer	521.7-576.6 N @ 25.7 mm (117.3-129.6 lbs. @ 1.01 in.)	521.7-576.6 N @ 25.7 mm (117.3-129.6 lbs. @ 1.01 in.)	521.7-576.6 N @ 25.7 mm (117.3-129.6 lbs. @ 1.01 in.)
Minimum Pressure	504 N (113.3 lbs.)	504 N (113.3 lbs.)	504 N (113.3 lbs.)
Rocker Arm Bore Diameter:			
Intake & Exhaust	13.000-13.018 mm (0.5118-0.5125 in.)	13.000-13.018 mm (0.5118-0.5125 in.)	13.000-13.018 mm (0.5118-0.5125 in.)
Wear Limit	13.05 mm (0.5137 in.)	13.05 mm (0.5137 in.)	13.05 mm (0.5137 in.)
Rocker Shaft Diameter:			
Intake & Exhaust	12.976-12.994 mm (0.5108-0.5115 in.)	12.976-12.994 mm (0.5108-0.5115 in.)	12.976-12.994 mm (0.5108-0.5115 in.)
Wear Limit	12.95 mm (0.5098 in.)	12.95 mm (0.5098 in.)	12.95 mm (0.5098 in.)
Camshaft Lobe Height:			
Intake & Exhaust	40.643-40.783 mm (1.6001-1.6056 in.)	40.643-40.783 mm (1.6001-1.6056 in.)	40.643-40.783 mm (1.6001-1.6056 in.)
Wear Limit	40.55 mm (1.5964 in.)	40.55 mm (1.5964 in.)	40.55 mm (1.5964 in.)

Sizes-Clearances (Cont.)

MODELS	KLT200-A1, A2 KLT200-A3, A4 KLT200-A4A KLT200-B1 KLT200-C1, C2	KLT250-A1	KLT250-A2 KLT250-C1, C2 KLT250-C3 KLT250-P1
Camshaft Journal Diameter:			
Right Journal	21.950-21.965 m (0.8642-0.8647 in.)	21.950-21.965 mm (0.8642-0.8647 in.)	21.950-21.965 mm (0.8642-0.8647 in.)
Wear Limit	21.92 mm (0.863 in.)	21.92 mm (0.863 in.)	21.92 mm (0.863 in.)
Left Journal	43.94-43.96 mm** (1.7299-1.7307 in.)**	43.94-43.96 mm (1.7299-1.7307 in.)	Ball Bearing
Wear Limit	43.90 mm (1.7283 in.)	43.90 mm (1.7283 in.)	....
Camshaft Bearing Bore Diameter:			
Right Bearing	22.000-22.021 mm (0.8661-0.8669 in.)	22.000-22.021 mm (0.8661-0.8669 in.)	22.000-22.021 mm (0.8661-0.8669 in.)
Wear Limit	22.06 mm (0.8685 in.)	22.06 mm (0.8685 in.)	22.06 mm (0.8685 in.)
Left Bearing	44.035-44.060 mm** (1.7336-1.7346 in.)**	44.035-44.060 mm (1.7336-1.7346 in.)	Ball Bearing
Wear Limit	44.10 mm (1.7362 in.)	44.10 mm (1.7362 in.)	....
Cylinder Head Distortion: Maximum	0.05 mm (0.002 in.)	0.05 mm (0.002 in.)	0.05 mm (0.002 in.)
Cylinder Bore Diameter	66.000-66.008 mm (2.5984-2.5987 in.)	69.988-70.000 mm (2.7554-2.7559 in.)	70.500-70.512 mm (2.7755.2.7760 in.)
Wear Limit	66.10 mm (2.6023 in.)	70.01 mm (2.7563 in.)	70.60 mm (2.7795 in.)
Cylinder Bore Distortion or Taper (Max.)	0.050 mm (0.002 in.)	0.010 mm (0.0004 in.)	0.010 mm (0.0004 in.)
Piston-to-Cylinder Wall Clearance	0.035-0.058 mm (0.0013-0.0022 in.)	0.031-0.058 mm (0.0012-0.0022 in.)	0.035-0.062 mm (0.0013-0.0024 in.)
Piston Diameter Measured 5 mm (0.2 in.) From Skirt Bottom And 90° to Pin	65.950-65.965 mm (2.5964-2.5970 in)	69.942-69.957 mm (2.7536-2.7542 in.)	70.450-70.465 mm (2.7736-2.7742 in.)
Wear Limit	65.80 mm (2.5905 in.)	69.80 mm (2.748 in.)	70.30 mm (2.7677 in.)
Piston Pin Bore Diameter	17.005-17.011 mm (0.6694-0.6697 in.)	17.005-17.011 mm (0.6694-0.6697 in.)	17.005-17.011 mm (0.6694-0.6697 in.)
Wear Limit	17.08 mm (0.6724 in.)	17.08 mm (0.6724 in.)	17.08 mm (0.6724 in.)
Piston Pin Diameter	16.995-17.000 mm (0.6691-0.6693 in.)	16.995-17.000 mm (0.6691-0.6693 in.)	16.995-17.000 mm (0.6691-0.6693 in.)
Wear Limit	16.96 mm (0.6677 in.)	16.96 mm (0.6677 in.)	16.96 mm (0.6677 in.)

**Left end of camshaft is supported by a ball bearing on KLT200-B1, KLT200-C1 and KLT200-C2 models.

MODELS	KLT200-A1, A2 KLT200-A3, A4 KLT200-A4A KLT200-B1 KLT200-C1, C2	KLT250-A1	KLT250-A2 KLT250-C1, C2 KLT250-C3 KLT250-P1
Sizes-Clearances (Cont.)			
Piston Ring End Gap:			
Top & Second	0.2-0.4 mm (0.007-0.015 in.)	0.30-0.50 mm (0.011-0.019 in.)	0.30-0.50 mm (0.011-0.019 in.)
Wear Limit	0.7 mm (0.027 in.)	0.80 mm (0.031 in.)	0.80 mm (0.031 in.)
Piston Ring-to-Groove Side Clearance:			
Top	0.04-0.08 mm (0.0015-0.0031 in.)	0.04-0.08 mm (0.0015-0.0031 in.)	0.04-0.08 mm (0.0015-0.0031 in.)
Wear Limit	0.18 mm (0.007 in.)	0.18 mm (0.007 in.)	0.18 mm (0.007 in.)
Second	0.03-0.07 mm (0.0011-0.0027 in.)	0.03-0.07 mm (0.0011-0.0027 in.)	0.03-0.07 mm (0.0011-0.0027 in.)
Wear Limit	0.17 mm (0.0067 in.)	0.17 mm (0.0067 in.)	0.17 mm (0.0067 in.)
Connecting Rod Small End Bore Diameter	17.003-17.014 mm (0.6694-0.6698 in.)	17.003-17.014 mm (0.6694-0.6698 in.)	17.003-17.014 mm (0.6694-0.6698 in.)
Wear Limit	17.05 mm (0.6712 in.)	17.05 mm (0.6712 in.)	17.05 mm (0.6712 in.)
Connecting Rod Big End Side Clearance (Max.)	0.60 mm (0.023 in.)	0.60 mm (0.023 in.)	0.60 mm (0.023 in.)
Connecting Rod Big End Radial Clearance (Max.)	0.07 mm (0.0027 in.)	0.07 mm (0.0027 in.)	0.07 mm (0.0027 in.)
Crankshaft Runout (Max.):			
Right Half	0.10 mm (0.004 in.)	0.10 mm (0.004 in.)	0.10 mm (0.004 in.)
Left Half	0.08 mm (0.003 in.)	0.08 mm (0.003 in.)	0.08 mm (0.003 in.)
Capacities			
Fuel Tank	12 L† (3.4 gal.)†	12 L (3.4 gal.)	12 L (3.4 gal.)
Engine/Transmission Sump	1.4 L (1.5 qt.)	1.4 L (1.5 qt.)	1.4 L (1.5 qt.)
Differential Case	See Text	See Text	See Text
Tightening Torques			
Axle Nut:			
Front	74 N·m (54 ft.-lbs.)	74 N·m (54 ft.-lbs.)	74 N·m (54 ft.-lbs.)
Rear	115 N·m†† (83 ft.-lbs.)††	115 N·m (83 ft.-lbs.)	115 N·m†† (83 ft.-lbs.)††

†Fuel tank capacity on KLT200-A1 models is 11 L (2.9 gal.).

††Rear axle nut should be tightened to 135 N·m (100 ft.-lbs.) on KLT200-C1, KLT200-C2, KLT250-C1, KLT250-C2, KLT250-C3 and KLT250-P1 models.

MODELS	KLT200-A1, A2 KLT200-A3, A4 KLT200-A4A KLT200-B1 KLT200-C1, C2	KLT250-A1	KLT250-A2 KLT250-C1, C2 KLT250-C3 KLT250-P1
Tightening Torques (Cont.)			
Camshaft Sprocket Bolt (two 6x11 mm)	15 N·m (11 ft.-lbs.)	15 N·m (11 ft.-lbs.)	....
Camshaft Sprocket Bolt (one 10x25 mm)	41 N·m (30 ft.-lbs.)	....	41 N·m (30 ft.-lbs.)
Crankshaft Nut (right end)	60 N·m (43 ft.-lbs.)	60 N·m (43 ft.-lbs.)	60 N·m (43 ft.-lbs.)
Cylinder Head Bolt	32 N·m (23 ft.-lbs.)	32 N·m (23 ft.-lbs.)	32 N·m (23 ft.-lbs.)
Flywheel Bolt	60 N·m (43 ft.-lbs.)	60 N·m (43 ft.-lbs.)	60 N·m (43 ft.-lbs.)
Front Drive Sprocket	80 N·m (58 ft.-lbs.)	80 N·m (58 ft.-lbs.)	80 N·m (58 ft.-lbs.)
Wheel Retaining Nuts: Front & Rear	42 N·m (30 ft.-lbs.)	42 N·m (30 ft.-lbs.)	42 N·m (30 ft.-lbs.)

Standard Coarse Thread Bolts & Nuts:

5 mm	3.5-4.7 N·m (2.5-3.5 ft.-lbs.)
6 mm	6.0-8.8 N·m (4.5-6.5 ft.-lbs.)
8 mm	15.6-21.7 N·m (11.5-16.0 ft.-lbs.)
10 mm	30-40 N·m (22-30 ft.-lbs.)
12 mm	53-73 N·m (39-54 ft.-lbs.)
14 mm	81.0-112.5 N·m (60-83 ft.-lbs.)

Standard Fine Thread Bolts & Nuts:

5 mm	3.5-4.7 N·m (2.5-3.5 ft.-lbs.)
6 mm	6.0-7.4 N·m (4.5-5.5 ft.-lbs.)
8 mm	13.5-18.3 N·m (10.0-13.5 ft.-lbs.)
10 mm	25.7-33.9 N·m (19-25 ft.-lbs.)
12 mm	44.7-61.0 N·m (33-45 ft.-lbs.)
14 mm	73-100 N·m (54-74 ft.-lbs.)

LUBRICATION

All Models

ENGINE AND TRANSMISSION. The engine is lubricated by a trochoid type pump located on right side of crankcase and driven by a gear on right end of crankshaft. The engine and transmission share a common sump. Recommended oil is a multigrade SAE 10W-40 motor oil with an API classification of SE.

Sump is filled through filler cap opening (F—Fig. K7-1). Oil level should be maintained between oil level lines (L) adjacent to sight glass (G). Sump is drained by removing plug in underside of crankcase. Crankcase capacity after an oil change is 1.1 L (1.16 qt.) while capacity after changing oil and oil filter is 1.4 L (1.5 qt.).

Manufacturer recommends changing oil and oil filter after the first 10 hours or 100 miles of operation. Thereafter, the oil should be changed after every 30 days or 300 miles of operation and the oil filter should be changed after every 90 days or 900 miles of operation. In conjunction with oil filter change, the oil pressure relief valve, located within the oil filter mounting pin, should be disassembled, cleaned and inspected. The sump screen, located in a compartment in right crankcase half, should also be removed and cleaned.

The oil filter and oil pressure relief valve are accessible after removing cover (C—Fig. K7-1). To disassemble oil pressure relief valve, drive out cross pin (1—Fig. K7-2)

and separate components. Renew the complete assembly it excessive wear or damage is evident. During reassembly, insert piston (3) with open end towards spring (2). Insert and compress spring (2) just beyond cross pin hole and install cross pin (1). Install the oil filter ensuring "O" ring seals are located on both sides of filter. Renew filter cover "O" ring seal if required and install cover.

Sump screen is accessible after removing right crankcase cover. Remove clutch cable bracket (2—Fig. K7-1), on models so equipped, and detach cable end from release lever (1). Drain oil from crankcase. Unbolt and carefully remove right crankcase cover. Withdraw sump screen from crankcase. Reinstall by reversing removal procedure while noting the following: Make sure alignment dowels and gasket are fitted to crankcase and install cover. Adjust clutch as outlined in CLUTCH section. Fill engine/transmission sump with the appropriate amount of oil and check for leaks.

DRIVE CHAIN. The final drive chain on all models should be lubricated with Kawasaki Foaming Chain Lube or equivalent lubricant after every 90 days or 900 miles of operation. Models KLT200-A1, KLT200-A2, KLT200-A3 and KLT250-A1 are equipped with a standard 520 size chain fitted with a removable master link. All remaining models are equipped with an endless, "O" ring-sealed drive chain. Incorrect chain lubrication oil may cause damage to "O" ring seals.

Drive chain should be removed and cleaned when excessive dirt is evident. Remove chain as outlined in FINAL DRIVE CHAIN AND SPROCKETS section. The chain should be thoroughly washed in kerosene and wiped dry. The use of any cleaning solution other than kerosene may result in "O" ring seal damage on models so equipped. Saturate chain in clean SAE 90 gear oil. Reinstall and adjust chain as described in FINAL DRIVE CHAIN AND SPROCKETS section.

DIFFERENTIAL UNIT. All models except KLT200-B1, KLT250-A1 and KLT250-A2 are equipped with a locking differential unit. Two types of differential units have been used with different lubricating and servicing requirements.

Models KLT200-A1, KLT200-A2, KLT200-A3, KLT200-A4, KLT200-A4A. The differential unit used on KLT200-A1, KLT200-A2, KLT200-A3, KLT200-A4 and KLT200-A4A models has the differential mode selector attached directly to the differential case. On models so equipped, the differential should be lubricated after every 30 days of operation. Recommended lubricant is a general multipurpose grease. Differential case capacity is 100 cc (3.4 oz.). Fill differential case through a grease fitting provided on differential case. Fitting is accessible through inspection opening. Fill differential case until grease is visible around axle shafts.

Models KLT200-C1, KLT200-C2, KLT250-C1, KLT250-C2, KLT250-C3, KLT250-P1. The differential unit used on KLT200-C1, KLT200-C2, KLT250-C1, KLT250-C2, and KLT250-P1 models has the differential mode selector attached to the left axle hub. On models

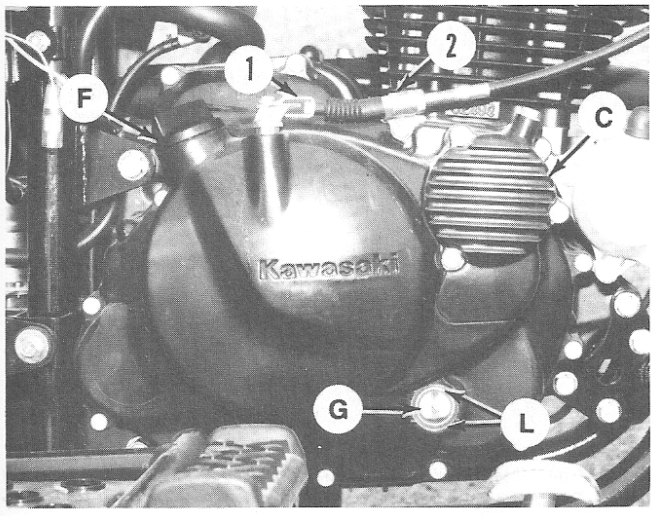


Fig. K7-1—Engine/transmission sump is filled through filler plug opening (F). Oil level should be maintained between lines (L) next to sight glass (G). The oil filter is located behind cover (C). On models so equipped, detach clutch cable end at (1) and cable housing at (2) during crankcase cover removal.

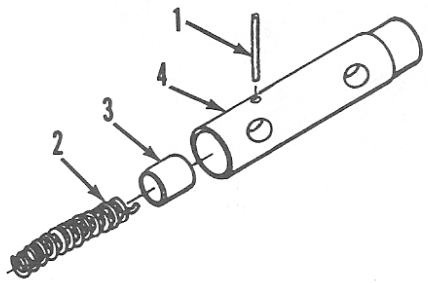


Fig. K7-2—Exploded view of oil pressure relief valve.

1. Cross pin
2. Spring
3. Piston
4. Filter mount sleeve

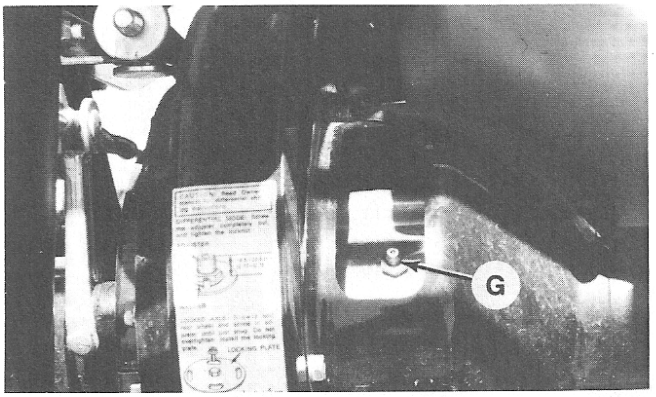
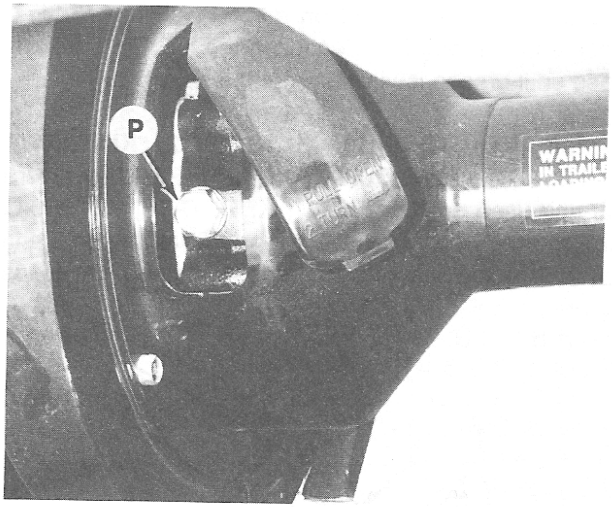


Fig. K7-3—Differential unit used on KLT200-A1, KLT200-A2, KLT200-A3, KLT200-A4 and KLT200-A4A models is lubricated through grease fitting (G).

so equipped, the differential oil level should be checked after the first 10 hours or 100 miles of operation and every 10 days or 100 miles of operation thereafter. Differential oil should be renewed annually. Recommended differential lubricant is a good quality SAE 90 hypoid gear oil. Differential case capacity is 60 cc (2 oz.).

Differential case is filled and drained through oil plug (P—Fig. K7-4) opening. Oil should be maintained at level of oil plug opening when opening is centered with axle and in a horizontal position. Do not confuse the oil plug with the two opposing pinion gear shaft fasteners. The hexagonal oil plug has a smooth head surface and is located directly between the pinion gear shaft fasteners. Oil level can be checked or fluid added through differential inspection opening. When renewing oil, unbolt and slide differential cover to the right and position oil plug down.



Fig,. K7-4—Differential case lubricant on KLT200-C1, KLT200-C2, KLT250-C1, KLT250-C2, KLT250-C3 and KLT250-P1 models is checked, drained and filled through plug opening (P). Refer to text.

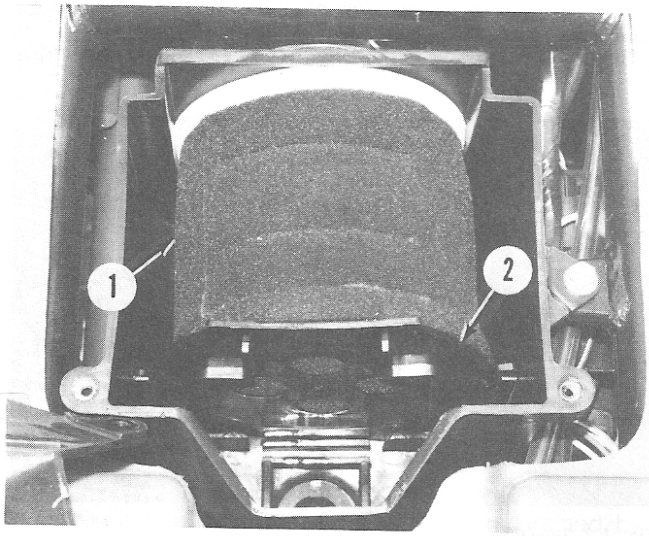


Fig. K7-5—View of air cleaner element typical of all 1982 and later models. Element used on KLT200-A1 and KLT200-A2 models is similar. Make sure retainer (2) is to the front of tabs in air cleaner case after installing element (1).

NOTE: Differential units used on some early production models were originally filled with grease. On models so equipped the differential should be disassembled and cleaned as outlined in DIFFERENTIAL ASSEMBLY section. Refill differential with SAE 90 gear oil as previously described after assembly.

CABLES, LEVERS AND LINKAGE. All cables, levers and linkage should be inspected and lubricated after every 30 days or 300 miles of operation.

AIR CLEANER ELEMENT

All Models

The air cleaner element should be removed and cleaned after the first 10 hours or 100 miles of operation and every 10 days or 100 miles of operation thereafter. To remove air cleaner element, first remove seat and air

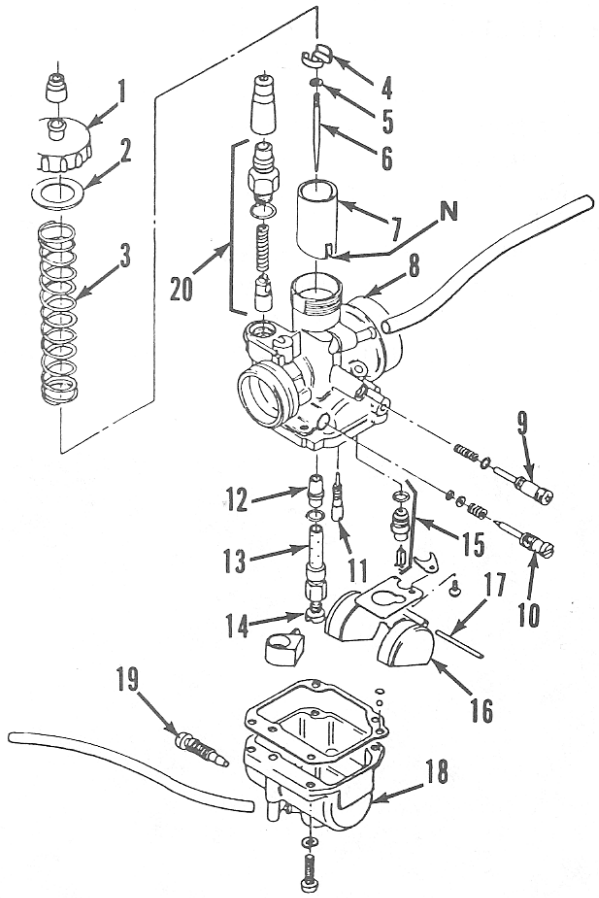


Fig. K7-6—Exploded view of Mikuni VM22SS carburetor used on KLT200-C2 models. Refer to Fig. K7-7 and Fig. K7-8 for carburetors used on all other models.

N. Notch	7. Throttle slide	14. Main jet
1. Cap	8. Body	15. Inlet valve
2. Gasket	9. Idle speed screw	16. Float
3. Spring	10. Idle mixture screw	17. Pin
4. Retainer	11. Pilot jet	18. Float bowl
5. Jet needle clip	12. Needle jet	19. Drain screw
6. Jet needle	13. Jet holder	20. Starter valve assy.

cleaner cover. Withdraw element (1—Fig. K7-5) and frame from case. Carefully separate foam element from frame.

Thoroughly clean element in a nonflammable solvent. Compress element between hands to remove solvent. Saturate element in clean SAE 30 motor oil and compress element to remove excess oil. Reinstall element by reversing removal procedure. On all models except KLT200-A1 and KLT200-A2 ensure element retainer (2) is correctly located in air cleaner case.

FUEL SYSTEM

All Models

CARBURETOR. Model KLT200-C2 is equipped with a Mikuni VM22SS carburetor while all other models are equipped with a Keihin PW26 carburetor. Two versions of the Keihin PW26 carburetor have been used. Refer to Fig. K7-6 for an exploded view of typical Mikuni carburetor. Refer to Fig. K7-7 for an exploded view of typical Keihin carburetor used on Models KLT200-A1, KLT200-A2 and KLT200-A3 (prior to frame number 522925) or to Fig. K7-8 for an exploded view of Keihin carburetor used on all remaining models.

Carburetor specifications for each model are as follows:

Models KLT200-A1; KLT200-A2; KLT200-A3 (prior to frame number 522925)

Make & Type	Keihin PW26
Identification No.	1326
Float Height	25 mm (31/32 in.)
Full Level	6 mm (15/64 in.)
Main Jet	#98
Pilot Jet	#35
Needle Jet	....
Jet Needle	NO4D
Clip Position	4th Groove From Top
Throttle Cut-Away	....
Idle Mixture Setting	1⅜ Turns

Model KLT200-A3 (frame number 522925 through 527011)

Make & Type	Keihin PW26
Identification No.	1492
Float Height	22.5 mm (⅞ in.)
Fuel Level	3.5 mm (9/64 in.)
Main Jet	#118
Pilot Jet	#42
Needle Jet	3.2 mm (0.126 in.)
Jet Needle	NO4E
Clip Position	3rd Groove From Top
Throttle Cut-Away	3.0
Idle Mixture Setting	1⅞ Turns

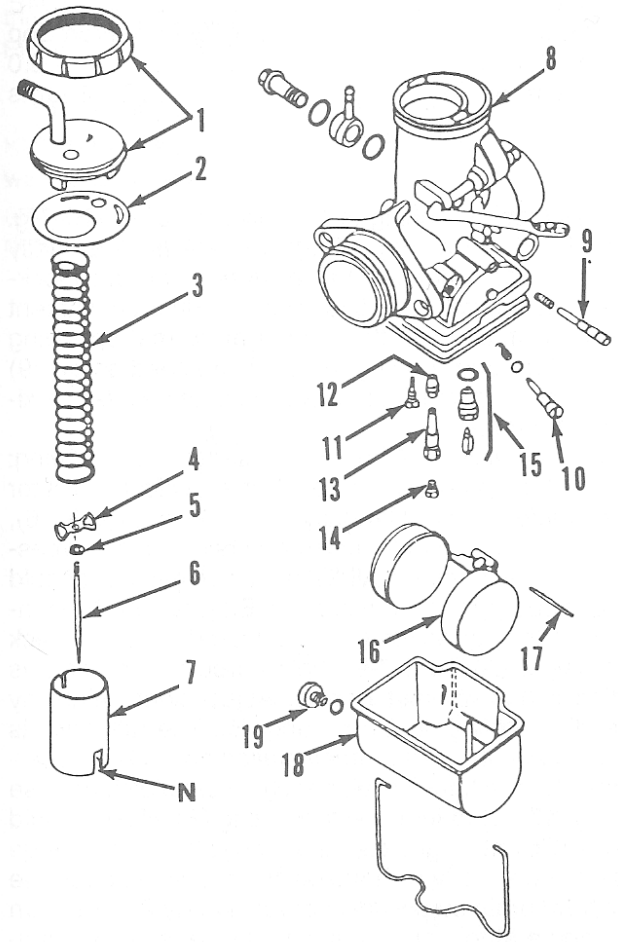


Fig. K7-7—Exploded view of Keihin PW26 carburetor used on KLT200-A1 and KLT200-A2 models and KLT200-A3 models prior to frame number 522925. Refer to Fig. K7-6 for parts identification.

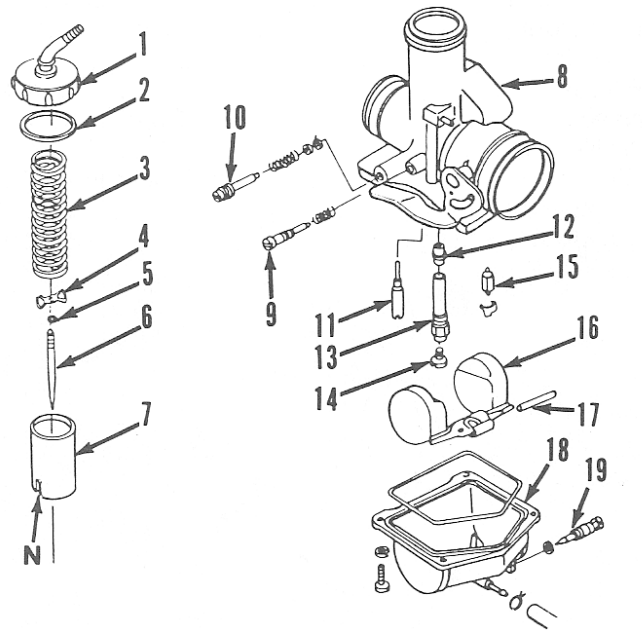


Fig. K7-8—Exploded view of Keihin PW26 carburetor used on all models except for models specified in Fig. K7-6 and Fig. K7-7. Refer to Fig. K7-6 for parts identification.

Model KLT200-A3 (Frame number 527012 through 527937)

Make & Type	Keihin PW26
Identification No.	1492
Float Height	22.5 mm (7/8 in.)
Fuel Level	3.5 mm (9/64 in.)
Main Jet	#110
Pilot Jet	#42
Needle Jet	3.2 mm (0.126 in.)
Jet Needle	NO4E
Clip Position	3rd Groove From Top
Throttle Cut-Away	3.0
Idle Mixture Setting	1 7/8 Turns

Models KLT200-A3 (frame number 527938 and up); KLT200-A4; KLT200-A4A

Make & Type	Keihin PW26
Identification No.	1594 or 1701
Float Height	20 mm (25/32 in.)
Fuel Level	1.5 mm (1/16 in.)
Main Jet	#110
Pilot Jet	#42
Needle Jet	3.2 mm (0.126 in.)
Jet Needle	NO4E
Clip Position	3rd Groove From Top
Throttle Cut-Away	3.0
Idle Mixture Setting	2 Turns

Models KLT200-B1; KLT200-C1

Make & Type	Keihin PW26
Identification No.	1811
Float Height	20 mm (25/32 in.)
Fuel Level	1.5 mm (1/16 in.)
Main Jet	#110
Pilot Jet	#42
Needle Jet	3.2 mm (0.126 in.)
Jet Needle	NO4E
Clip Position	3rd Groove From Top
Throttle Cut-Away	3.0
Idle Mixture Setting	2 Turns

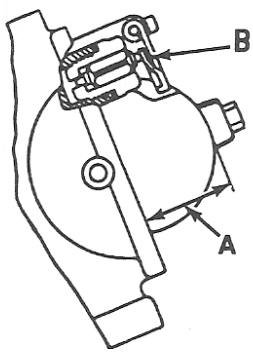


Fig. K7-9—Position carburetor so float rests lightly against fuel inlet needle and measure float height at (A). Gently bend float arm tang (B) to adjust.

Model KLT200-C2

Make & Type	Mikuni VM22SS
Identification No.	....
Float Height	25 mm (31/32 in.)
Fuel Level	5 mm (13/64 in.)
Main Jet	#102.5
Pilot Jet	#3.5
Needle Jet	0-2
Jet Needle	5M01
Clip Position	3rd Groove From Top
Throttle Cut-Away	3.0
Idle Mixture Setting	1 1/2 Turns

Models KLT250-A1; KLT250-A2; KLT250-C1; KLT250-C2; KLT250-C3; KLT250-P1

Make & Type	Keihin PW26
Identification No.	1595
Float Height	20 mm (25/32 in.)
Fuel Level	1.5 mm (1/16 in.)
Main Jet	#110
Pilot Jet	#42
Needle Jet	3.2 mm (0.126 in.)
Jet Needle	NO4E
Clip Position	3rd Groove From Top
Throttle Cut-Away	3.0
Idle Mixture Setting	2 1/4 Turns

On all models, setting of idle mixture screw (10–Fig. K7-6, Fig. K7-7 or Fig. K7-8) is made from a lightly seated position. Rotating idle mixture screw in a clockwise direction will lean idle mixture. Final adjustment should be made with the engine at normal operating temperature and running. Adjust idle speed screw (9) so slowest smooth idle speed is obtained (approximately 1300 rpm).

When servicing carburetor, observe the following: Refer to the appropriate carburetor specification list for service information. Carefully examine jet needle (6), inlet valve (15) and idle mixture screw (10) for excessive wear and damage. All "O" rings and gaskets should be renewed prior to reassembly. Ensure clip (5) is installed in the correct groove on jet needle (6). To check float height (A–Fig. K7-9), hold carburetor so float is resting lightly on inlet needle. Adjust float height by carefully bending float arm tang (B). The fuel level is checked with the carburetor installed and vehicle operational. to check fuel level, attach a suitable clear hose (H–Fig. K7-10) to fuel overflow fitting (F). Hose should be of sufficient length to extend above the bottom edge of carburetor body without kinking the hose. open the float bowl drain screw (19) approximately 2 turns. Run the engine at idle speed until fuel level in hose stabilizes then stop engine. Measure the distance from the bottom edge of carburetor body (float bowl contact surface) to fuel level in hose to determine fuel level as

shown at (L). Fuel level check will not be accurate if hose is raised or lowered after fuel level has stabilized. Refer to carburetor specifications list for fuel level specification. To adjust fuel level, carefully bend float arm tang.

Check choke operation. On Mikuni carburetors, remove starter valve assembly (20—Fig. K7-6) from carburetor and actuate choke control. Starter valve travel should be 7.0 mm (0.28 in.) and is not adjustable. If travel is not as specified, check choke cable and control lever for excessive wear and damage. Renew any questionable components.

On Keihin carburetors, actuate choke lever and ensure choke valve opens and closes completely. On Keihin carburetors with fast idle circuit throttle slide should move in bore without binding during choke operation. To check fast idle adjustment, fully close choke valve and rotate fast idle link (L—Fig. K7-11) counterclockwise away from fast idle cam (C). Clearance between cam and link pin (P) should be 2.0-2.5 mm (5/64-3/32 in.) and is adjusted by varying width of fast idle link slot (S).

On all models, make sure notch (N—Fig. K7-6, Fig. K7-7 or Fig. K7-8) in throttle slide (7) is aligned with idle speed screw (9) when inserting slide in bore. Check throttle lever free play as outlined in THROTTLE LEVER FREE PLAY section.

DIAPHRAGM FUEL PUMP. Models KLT200-A1, KLT200-A2, KLT200-A3 and KLT250-A1 are equipped with a diaphragm type fuel pump. Alternating pressure and vacuum pulsations inside intake manifold are directed to one side of fuel pump diaphragm via a hose.

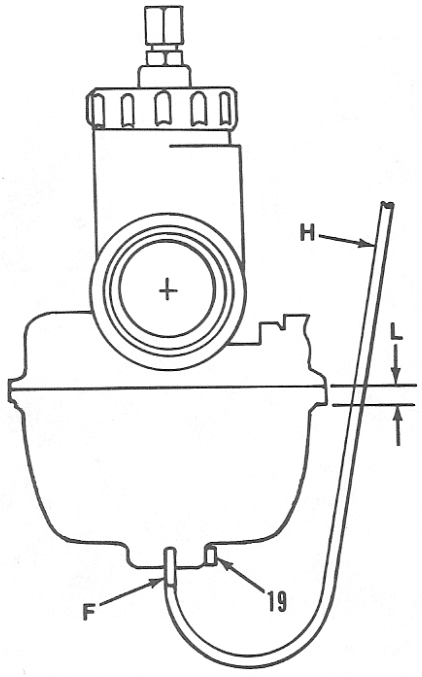


Fig. K7-10—The fuel level (L) is measured from the bottom edge of carburetor body. Refer to text.

During vacuum pulse, diaphragm draws fuel through inlet reed valve into fuel chamber. During pressure pulse, diaphragm reduces fuel chamber volume moving fuel through outlet check valve. With engine running at idle speed, fuel pump should produce 7-40 kPa (1-6 psi) and deliver 90-180 mL (3-6 oz.) of fuel in 30 seconds.

On KLT200-A1, KLT200-A2 and KLT200-A3 models the fuel pump is attached to a bracket above the battery adjacent to fuel tank. The pump is accessible after removing seat and rear fender. On KLT250-A1 models, the fuel pump is attached to the back of the battery box. The pump is accessible after removing seat, trunk, rear fender, air cleaner case, battery and battery box.

If fuel delivery to carburetor is interrupted, first eliminate other sources of difficulty such as insufficient fuel, clogged fuel strainers, cracked or split hoses or loose pump assembly screws before servicing fuel pump.

Be careful when disassembling fuel pump as pump components are easily damaged. Note the location of all components to aid in reassembly. Defective and questionable parts should be renewed. Diaphragm should be renewed if deterioration is evident. During reassembly, ensure inlet reed valves on the clear plastic valve sheet are inserted through the corresponding slits in the black reed valve gasket. Install outlet valve springs in valve cover and assemble remaining components.

ELECTRIC FUEL PUMP. Two types of electric fuel pumps have been used. Models KLT200-A4 and KLT200-A4A are equipped with a piston type electric fuel pump while KLT200-B1, KLT200-C1, KLT200-C2 and all versions of the Model KLT250 except Model KLT250-A1 are equipped with a diaphragm type electric fuel pump. Electric fuel pump operation on all models is controlled by ignition switch. Fuel pump is attached to frame adjacent to battery box and is accessible from underneath the vehicle. Although fuel pump components are not available individually the valve portion of pump may be carefully disassembled for cleaning. Note the location of all parts during disassembly to aid in reassembly.

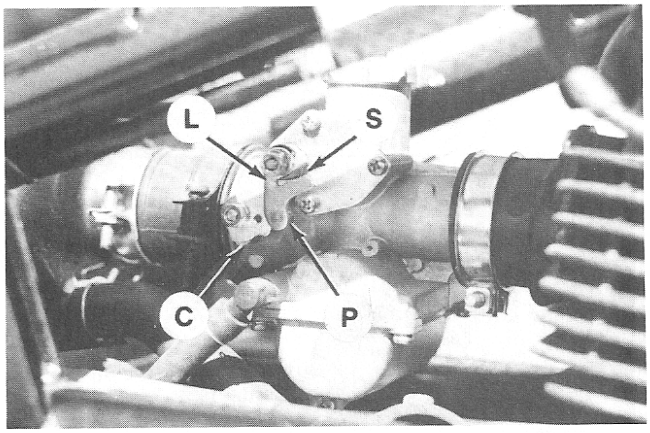


Fig. K7-11—On Keihin carburetors with fast idle circuit, adjust clearance between cam (C) and link pin (P) by increasing or decreasing slot (S) width in link (L) as outlined in text.

FUEL STRAINER. Model KLT250-A1 is equipped with a fuel strainer attached to inlet side of fuel control valve inside fuel tank. The fuel control valve and strainer should be removed and cleaned after the first 10 hours or 100 miles of operation and every 90 days or 900 miles of operation thereafter. The strainer is not renewable and the complete control valve assembly should be renewed if strainer deterioration or damage is evident.

FUEL FILTER. All models except Model KLT250-A1 are equipped with a fuel filter located in the fuel hose between the fuel tank and fuel pump. The fuel filter should be renewed after the first 10 hours or 100 miles of operation and every 90 days or 900 miles of operation thereafter. The fuel filter is accessible from underneath vehicle.

THROTTLE LEVER FREE PLAY. The throttle lever should have 2-3 mm (5/64-1/8 in.) of free play measured at throttle lever end as shown at (F—Fig. K7-12). Depending on model and year produced, throttle lever free play can be adjusted at throttle lever by turning adjuster (1) at throttle lever, adjuster (A—Fig. K7-13) at carburetor cap or adjuster incorporated into cable housing between lever and carburetor. Cover adjuster with rubber boot after adjustment.

IGNITION AND ELECTRICAL

All Models

SPARK PLUG. Standard spark plug is NGK B7ES or Nippon Denso W22ES-U on all versions of the Model KLT200 and on KLT250-A1 models or NGK B8ES or Nippon Denso W24ES-U on all remaining models.

On all models, spark plug electrode gap should be 0.7-0.8 mm (0.028-0.031 in.). Spark plug should be removed, cleaned and electrode gap set after the first 10 hours or 100 miles of operation and every 90 days or 900 miles of operation thereafter. Renew spark plug if damage and excessive electrode wear is evident.

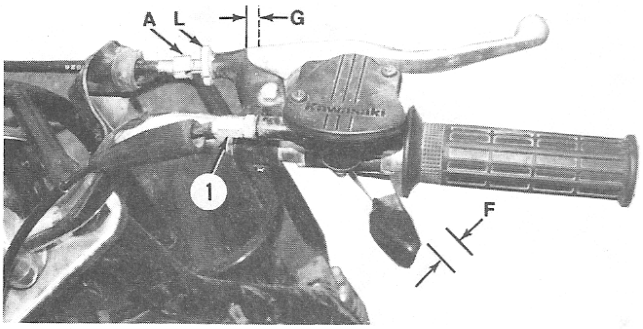


Fig. K7-12—Throttle lever should have 2-3 mm (5/64-1/8 in.) of free play measured at (F). On some models, free play can be adjusted at (1).

IGNITION. Model KLT200-A1 is equipped with a flywheel magneto ignition system with breaker points. All remaining models are equipped with a breakerless electronic ignition system.

Breaker Point Models. Ignition breaker points on KLT200-A1 models are located behind a cover at left end of camshaft. Breaker point gap should be 0.3-0.4 mm (0.011-0.015 in.).

Ignition should occur (breaker points just begin to open) as "F" (Fig. K7-14) on flywheel is aligned with stationary mark (M) as viewed through timing plug opening. Specified ignition timing is 10°BTDC at 1300 rpm. Ignition timing may be checked statically using a 12-volt test light or dynamically using a power timing light. Ignition timing is adjusted by loosening the two breaker point base plate retaining screws and repositioning base plate.

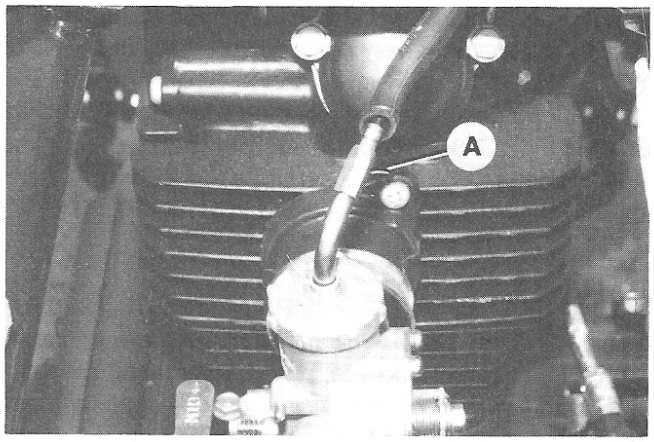


Fig. K7-13—Throttle lever free play can be adjusted by turning adjuster (A) at carburetor cap.

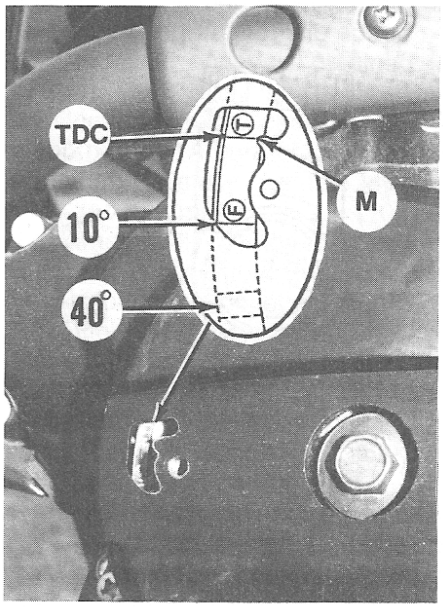


Fig. K7-14—Ignition at idle speed should occur when "F" mark (10° BTDC) on flywheel aligns with stationary mark (M). Piston is at TDC when "T" mark is aligned with stationary mark (M).

Breakerless Models. All models except Model KLT200-A1 are equipped with a breakerless capacitor discharge ignition system. The electronic ignition circuit consists of the battery, CDI module, pulse coil, flywheel, ignition coil, spark plug, engine stop switch and ignition switch. Ignition timing at idle speed should occur when "F" mark (Fig. K7-14) on flywheel is aligned with stationary mark (M) as viewed through timing plug opening. Specified ignition timing is 10°BTDC ("F" mark) at 1300 rpm and 40°BTDC (maximum advance) at 4000 rpm. Ignition timing is checked with a power timing light and is not adjustable. If ignition timing is not as specified, check condition of CDI module and pulse generator as described in the following test procedures.

If ignition malfunction occurs, check condition of battery, spark plug, all wires and connections before troubleshooting the ignition circuit. Using Kawasaki tester 57001-983 or a suitable ohmmeter, refer to the following test specifications and procedures to aid troubleshooting.

To check condition of CDI module, first remove module from vehicle. To remove CDI module, remove seat and front frame cover. Disconnect wire connector from CDI module and detach module from frame. Use tester or ohmmeter in conjunction with the test chart in Fig. K7-15. Renew CDI module if module fails to meet test specifications.

To check condition of pulse coil, remove seat and front frame cover. Separate green and red wires from pulse generator to CDI module at connector. Attach one lead to green wire and remaining tester lead to red wire from pulse coil. Pulse coil may be considered satisfactory if resistance reading is within 570-850 ohms.

To check condition of ignition coil, remove yellow/red wire and black wire from their respective terminals on coil and high tension wire from spark plug. Attach one tester lead to yellow/red wire terminal and remaining tester lead to black wire terminal on ignition coil. Primary coil resistance reading should be 2.1-3.2 ohms. Attach one tester lead to black wire terminal on ignition coil and remaining tester lead to high tension wire. Secondary coil resistance reading should be 10k-16k ohms. Renew ignition coil if coil fails to meet either test specification.

CHARGING CIRCUIT. All models are equipped with a charging circuit which consists of an alternator charge coil, a regulator/rectifier, battery and ignition switch. Standard battery has a 10 ampere hour, 12-volt rating on KLT-200-A1, KLT200-A2, KLT200-A3, KLT200-A4 and KLT200-A4A models and a 12 ampere hour, 12 volt rating on all remaining models. Under load the alternator should produce 14 volts, 10 amperes at 4000 rpm.

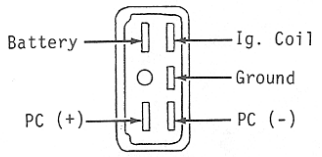
The battery should be checked and filled to maximum level with distilled water if required after the first 10 hours or 100 miles of operation and then after every 30 days or 300 miles of operation. During periods of vehicle storage, the battery should be charged once a month to reduce sulfation and prolong battery life. The battery should always be removed from vehicle before charging. Do not exceed maximum charging rate of 1.2 amperes.

The alternator charge coil may be statically tested using a suitable ohmmeter. There are two yellow wires from alternator charge coil to regulator/rectifier. Separate wires from alternator to regulator/rectifier at connector block and measure resistance between the wires. Resistance reading should be 0.4-0.5 ohm. Check for continuity between each of the alternator wires and ground. Tester should read infinite resistance at each wire.

Test procedures for checking condition of regulator/rectifier are not reliable as unit may test satisfactory but still be defective. The recommended procedure is to test all associated charging circuit components and eliminate them as the source of difficulty or install a known good regulator/rectifier and perform an operational test as outlined in the following paragraph.

An operational check of the complete charging circuit can be performed using a suitable voltmeter and ammeter. Attach voltmeter directly to battery terminals noting polarity. Separate white/red wire from battery to regulator/rectifier at connector. Attach ammeter negative lead to battery end of white/red wire and positive lead to regulator/rectifier end of white/red wire. Start and run engine until engine is at normal operating temperature. Set engine speed at 4000 rpm and observe voltmeter. With a fully charged battery, the charging circuit should produce approximately 14.5 volts. Set engine at idle speed and observe ammeter. Charging circuit should produce 0.5-1.5 amperes with headlight switched off and 2-6 amperes with headlight switched on.

ELECTRIC STARTER. All models are equipped with an electric starter. The starter may be removed and disassembled to clean, inspect and lubricate individual parts. The starter brushes should be renewed if worn to



+ Tester Lead	- Tester Lead: Battery	Ig. Coil	Ground	PC (+)	PC (-)
Battery		A	B	C	B
Ig. Coil	D		E	C	E
Ground	F	A		C	G
PC (+)	H	A	H		H
PC (-)	F	A	G	C	

Fig. K7-15—Use chart shown above and values listed below to test condition of CDI module.

A. Infinite resistance
B. 410-620 ohms
C. Infinite resistance-slight tester needle movement
D. 1.1k-1.6k ohms
E. 300-460 ohms
F. 460-680 ohms
G. Zero resistance
H. 16k-24k ohms

5.5 mm (0.22 in.) or less. On later models, starter brushes are available from the manufacturer in kit form with springs, brush plate and associated components. Starter armature and gear set are not available separately and the complete assembly should be renewed if defective.

To remove electric starter, first disconnect battery and drain oil from crankcase. Unbolt and remove left crankcase cover. Disconnect wire at terminal on starter. Unbolt and withdraw starter motor. Note the location of all components during disassembly to aid in reassembly.

During installation, guide starter into position while aligning starter shaft with starter sprocket splines. Remainder of installation is the reverse of removal procedure.

FASTENERS

All Models

The vehicle should receive an overall inspection after the first 10 hours or 100 miles of operation and every 10 days or 100 miles of operation thereafter. All cap screws, nuts and fasteners should be checked and tightened to proper torque specification specified in CONDENSED SERVICE DATA section or in the appropriate MAINTENANCE section.

VALVE SYSTEM

All Models

The valves are actuated via rocker arms by a single overhead camshaft. Camshaft is driven by a roller chain attached to the left end of the crankshaft. Valve clearance on all models should be adjusted after the first 10 hours or 100 miles of operation and then after every 90 days or 900 miles of operation. Valve clearance should be adjusted with engine cold.

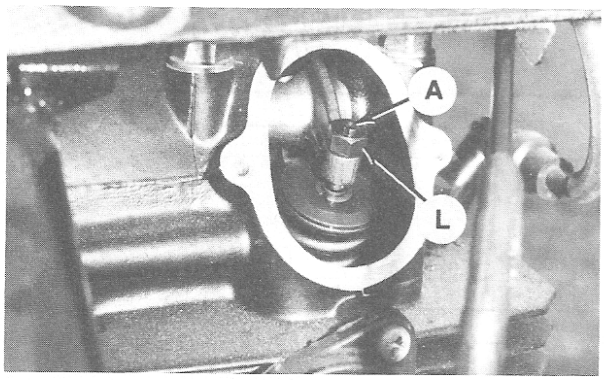


Fig. K7-16—Valve clearance on all models should be 0.08-0.13 mm (0.003-0.005 in.) for intake valve and 0.17-0.22 mm (0.007-0.009 in.) for exhaust valve. Loosen locknut (L) and turn adjuster screw (A) to adjust clearance.

To adjust valve clearance, remove seat, front frame cover, valve adjustment caps and timing cover. Attach a suitable tool to flywheel bolt and rotate crankshaft until "T" mark (Top Dead Center) on flywheel aligns with stationary mark (M—Fig. K7-14) with piston on compression stroke. To ensure piston is on compression stroke, rotate crankshaft ¼ turn past "T" mark while observing intake valve. If valve movement is indicated, rotate crankshaft one complete revolution and align "T" mark with stationary mark again.

Clearance between rocker arm adjusting screw (A—Fig. K7-16) and valve stem should be 0.08-0.13 mm (0.003-0.005 in.) for intake valve and 0.17-0.22 mm (0.007-0.009 in.) for exhaust valve. Measure clearance with a suitable feeler gage and adjust by loosening locknut (L) and turning adjusting screw (A). Be sure to recheck clearance after locknuts are tightened.

CLUTCH

All Models

All models are equipped with a multiple-disc type clutch manually actuated by left handlebar lever. The clutch should be adjusted after the first 10 hours or 100 miles of operation and then after every 10 days or 100 miles of operation.

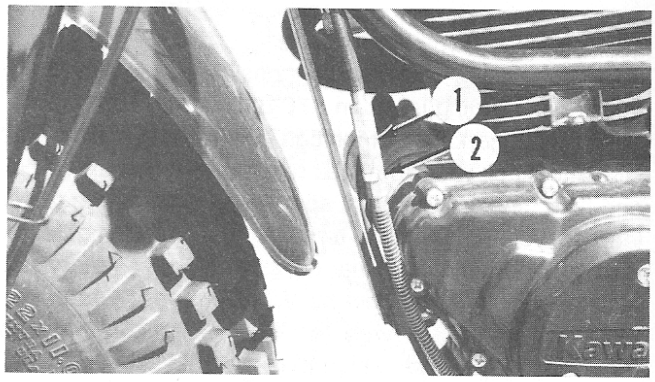


Fig. K7-17—On KLT200-A1, KLT200-A2, KLT200-A3, KLT200-A4 and KLT200-A4A models, clutch cable is slackened at adjuster (1) after loosening locknut (2). Refer to text for clutch adjustment procedure.

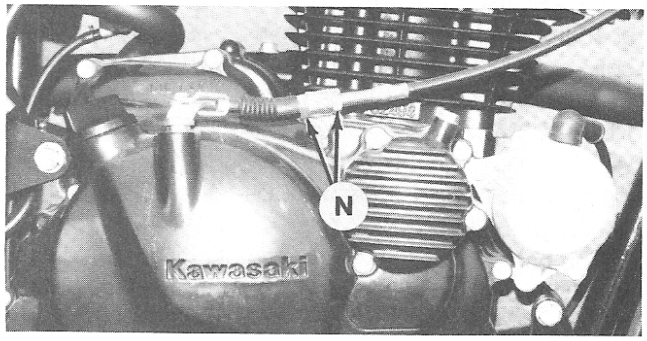


Fig. K7-18—Loosen adjusting nuts (N) on models so equipped, to slacken clutch cable during clutch adjustment.

To adjust the clutch, first loosen the adjuster (1—Fig. K7-17) on KLT200-A1, KLT200-A2, KLT200-A3, KLT200-A4 and KLT200-A4A models or the adjusting nuts (N—Fig. K7-18) on all other models until excessive slack is present. On all models, loosen knurled locknut (L—Fig. K7-19) at clutch lever and turn adjuster (A) so 5-6 mm (3/16-15/64 in.) of screw threads are exposed with locknut flush against lever bracket. Remove all cable slack with adjuster (1—Fig. K7-17) and secure with locknut (2) or with adjusting nuts (N—Fig. K7-18 and tighten nuts. Turn adjuster (A—Fig. K7-19) until clutch lever has 2-3 mm (5/64-⅛ in.) of free travel measured at gap between lever and base as shown at (F). Secure adjuster with locknut (L).

Properly operated, the clutch should disengage and engage freely. Difficulty in shifting, clutch grabbing or slipping may indicate disassembly and repair of clutch unit is required.

FRONT AXLE

All Models

R&R AND OVERHAUL. To remove front axle and wheel assembly, first suitably support front of vehicle under engine. Turn the front brake adjuster (A—Fig. K7-22) at brake lever completely in. Loosen front brake adjuster nut (N—Fig. K7-23) at brake shoe cam lever. Remove cotter pin securing front axle nut and unscrew nut. Pull axle out of fork or suspension arm depending on model and hub. Tilt the wheel, and lift out brake backing plate and shoe assembly from brake drum. Withdraw wheel and hub from front fork. Remove wheel retaining nuts and separate wheel and hub.

To remove bearings, move bearing spacer to one side so spacer end is visible. Apply a small amount of heat to portion of hub which contacts bearing to be removed (too much heat will distort brake drum). Drive against opposite end of bearing spacer with a suitable drift to force out the bearing. Repeat procedure for remaining bearing if required. Removed bearings should always be renewed.

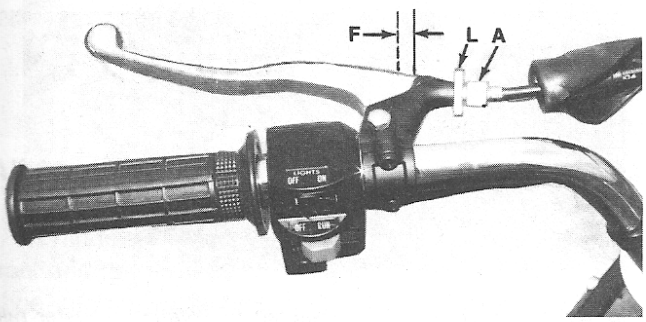


Fig. K7-19—Measure clutch lever free travel at (F) and make final adjustment with adjuster screw (A) after removing slack as outlined in text. Secure screw with locknut (L).

Inspect axle for damage and renew if axle runout exceeds 0.2 mm (0.008 in.). Pack new bearings with a good quality wheel bearing grease. Renew bearing spacer "O" rings if required. Install either bearing first. Position "O" rings on bearing spacer 6 mm (¼ in.) from each end and insert spacer. Install remaining bearing. Tighten wheel retaining nuts to 42 N·m (30 ft.-lbs.) torque. Apply a light coat of grease to seal in brake backing plate. Fit the bearing cap to right end of hub and move wheel into position. Install brake backing plate and shoe assembly while engaging tab on stopper bracket with slot in brake backing plate. Insert the axle from the left side through fork or suspension arm depending on model, then install axle spacers and hub. Tighten axle nut to 74 N·m (54 ft.-lbs.) torque. Adjust front brake as outlined in FRONT BRAKE ASSEMBLY section.

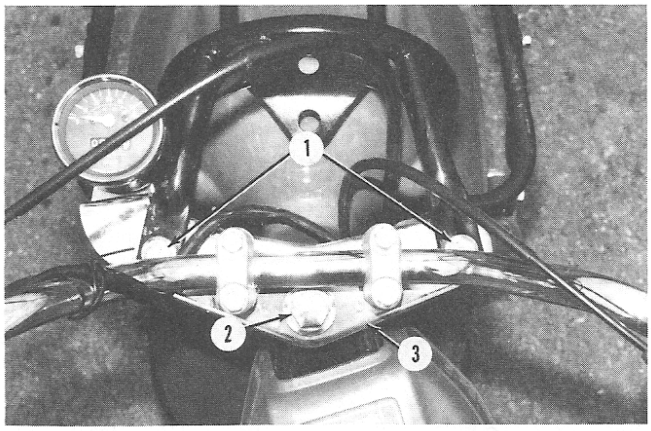


Fig. K7-20—Fork cap screws (1) and bracket nut (2) retain steering bracket (3).

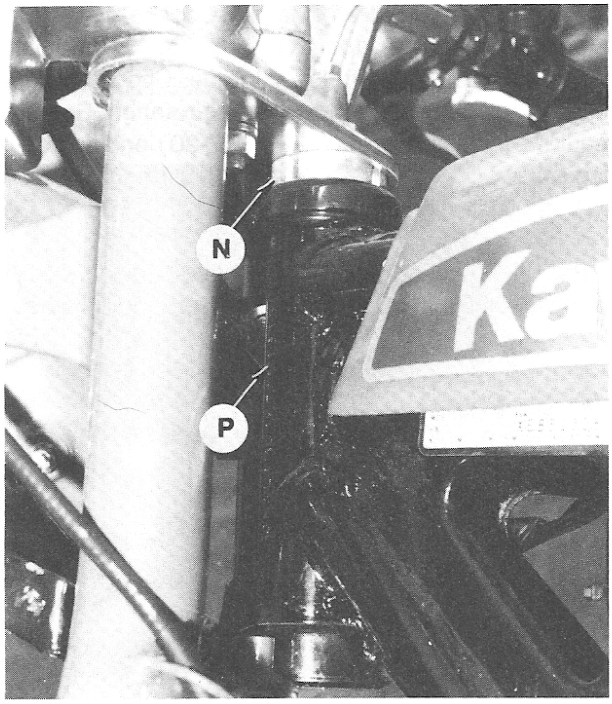


Fig. K7-21—Stem nut (N) controls steering bearing preload. Inner-bearing races seat in head pipe (P).

FRONT SUSPENSION

All Models So Equipped

All KLT200-C1, KLT200-C2, KLT250-A1, KLT250-A2, KLT250-C1, KLT250-C2, KLT250-C3 and KLT250-P1 models are equipped with a leading link front suspension system with oil dampened shock absorbers. The suspension components should be periodically inspected for excessive wear and damage. Removal and disassembly of suspension components is evident after inspection of unit. Suspension arm bushings are an interference fit in arm. Bushings and sleeves should be renewed when bushing to sleeve clearance exceeds 0.5 mm (0.02 in.). Do not lubricate suspension arm bushings as lubricant will retain dirt particles and promote rapid wear.

During reassembly, tighten suspension arm pivot nuts (1—Fig. K7-23) to 80 N·m (59 ft.-lbs.), shock absorber cap screws (2) to 30 N·m (22 ft.-lbs.) and bracket cap screw (3) to 30 N·m (22 ft.-lbs.).

STEERING

All Models

INSPECTION AND ADJUSTMENT. The steering should be inspected and adjusted after the first 10 hours or 100 miles of operation and every 90 days or 900 miles of operation and every 90 days or 900 miles of operation thereafter. To adjust steering, remove fork cap screws (1—Fig. K7-20) and bracket nut (2). Remove steering bracket (3) with handlebars and position out of way. Unless complete removal of handlebars is required, do not detach control cables or levers. Loosen steering stem nut (N—Fig. K7-21) approximately 2 turns then tighten nut to 20 N·m (14.5 ft.-lbs.) torque. Check for play in steering head and for binding during rotation. Readjust if required. Install bracket (3—Fig. K7-20) and tighten fork cap screws (1) to 30 N·m (22 ft.-lbs.) and bracket nut (2) to 55 N·m (39 ft.-lbs.) torque.

R&R AND OVERHAUL. To remove steering stem and fork assembly, first remove front wheel and axle assembly as outlined in FRONT AXLE section. If the fork and stem unit is damaged and is being removed for renewal or repair, remove suspension components as outlined in FRONT SUSPENSION section. Remove steering bracket as previously described in INSPECTION AND ADJUSTMENT section. Remove the front fender and headlight. Carefully pull wiring from headlight housing and remove housing and housing mounting brackets. Using a suitable pin spanner wrench, unscrew stem nut (N—Fig. K7-21). Remove dust cover and top outer bearing race. Lower steering stem and fork assembly from frame being careful not to lose bearing balls.

Drive upper and lower bearing inner races from head pipe (P) using a suitable drift. Lower bearing outer race can be removed from steering stem by carefully driving a suitable wedge between bearing race and bearing seat. Inspect and renew any questionable components. Bearing inner races should be installed using tools 57001-139 and 57001-293 or equivalent. If lower bearing outer race was removed from steering stem, renew dust seal before installing race. Use a good quality grease to lubricate and retain bearing balls in position during installation. Lower bearing contains 19 loose bearings balls that are 6.35 mm (¼ in.) in diameter. Upper bearing contains 23 loose bearing balls that are 4.76 mm (3/16 in.) in diameter. Reassemble by reversing disassembly procedure and adjust steering stem as outlined in INSPECTION AND ADJUSTMENT section.

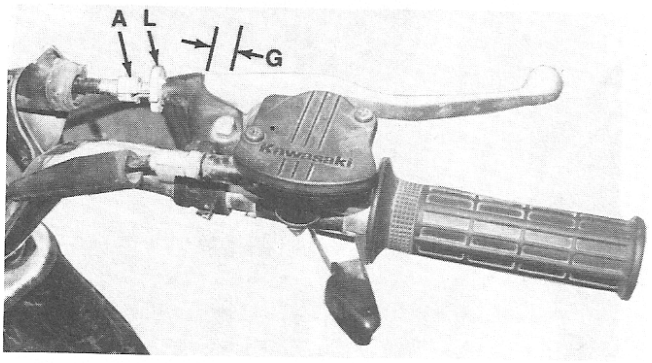


Fig. K7-22—Front brake lever free travel is measured at gap (G). Turn adjuster (A) for brake lever adjustment.

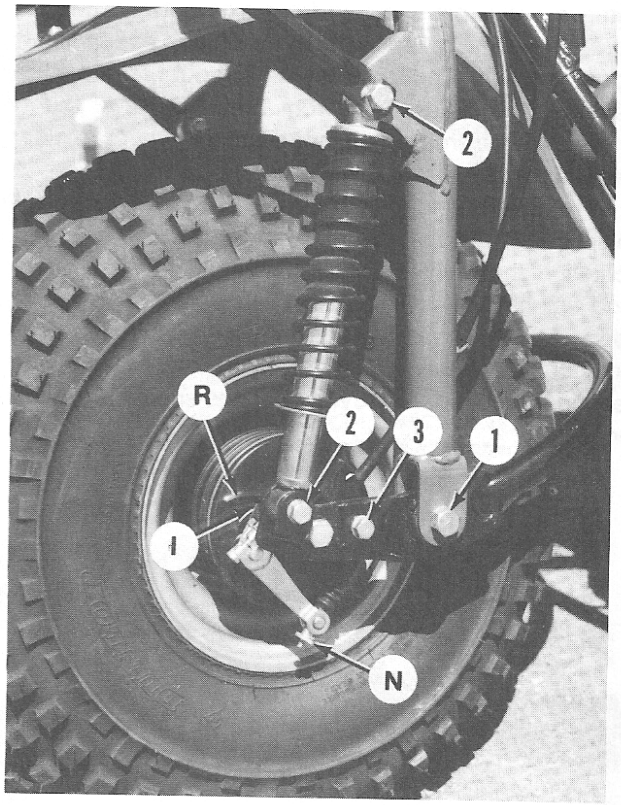


Fig. K7-23—Front brake is adjusted by rotating adjuster nut (N). Renew brake shoes if wear indicator (I) rotates beyond "USABLE RANGE" area (R). Refer to text for suspension fastener tightening torques on models so equipped.

FRONT BRAKE ASSEMBLY

All Models

All models are equipped with independently operated front and rear brakes. The front brake consists of a two-shoe internal expanding drum brake actuated by right handlebar lever via a cable. Information on rear brake is outlined in REAR BRAKE ASSEMBLY section.

INSPECTION AND ADJUSTMENT. The brake system should be inspected and adjusted after the first 10 hours or 100 miles of operation and then after every 10 days or 100 miles of operation. The front brake lever should have 4-5 mm (⅛-¼ in.) of free travel measured at gap between lever and base as shown at (G—Fig. K7-22). To adjust brake lever travel, turn adjuster (A) at lever completely in. Rotate adjuster (N—Fig. K7-23) at brake shoe cam lever until desired brake lever free travel is obtained. Minor brake lever adjustment can be accomplished by turning cable adjuster (A—Fig. K7-22) on lever assembly. Secure adjuster with knurled locknut (L) after adjustment.

A front brake shoe lining wear indicator (I—Fig. K7-23) is fitted to brake shoe cam to externally determine brake lining wear limit. To externally check brake lining wear, apply front brake and note position of indicator (I). If indicator is within "USABLE RANGE" area (R), brake shoe lining may be considered satisfactory.

R&R AND OVERHAUL. To remove front brake shoes and drum on all models, first remove front wheel and axle assembly as outlined in FRONT AXLE section. Disconnect the brake cable and speedometer cable from brake backing plate and withdraw the backing plate and shoe assembly from vehicle. Front brake shoes should be renewed if linings are worn to 1.5 mm (0.06 in.) or less. Brake drum should be renewed if inside diameter exceeds 110.75 mm (4.36 in.). Brake shoe springs should be renewed if spring free length exceeds 34 mm (1.34 in.).

During reassembly, lightly coat brake camshaft, anchor pin and spring ends with grease making sure grease does not contact brake shoe linings. Reinstall by reversing removal procedure. Adjust front brake as outlined in INSPECTION AND ADJUSTMENT section.

REAR BRAKE ASSEMBLY

All Models

All models are equipped with independently operated front and rear brakes. The rear brake consists of a two-shoe internal expanding drum brake mounted on rear axle and actuated by right brake pedal. Information on front brake is outlined in FRONT BRAKE ASSEMBLY section.

INSPECTION AND ADJUSTMENT. The brake system should be inspected and adjusted after the first 10 hours or 100 miles of operation and then after every 10 days or 100 miles of operation. Before adjusting rear brake pedal free travel, check brake pedal height. Brake pedal pad should be positioned 25 mm (1 in.) below right footpeg and is adjusted by loosening locknut (L—Fig. K7-24) and turning adjuster (A). Actuate rear brake pedal and measure free travel at end of pedal. Free travel should be 50 mm (2 in.) and is adjusted by rotating adjuster (N—Fig. K7-25) at rear brake.

R&R AND OVERHAUL. To remove rear brake shoes and drum, first remove the rear axle assembly as outlined in DRIVE CHAIN AND SPROCKETS section. Slide the left axle housing and brake backing plate assembly from axle. Unbolt and separate brake drum and rear sprocket from axle.

Rear brake shoes should be renewed if linings are worn to 2 mm (0.1 in.) or less. Brake drum should be renewed if inside diameter exceeds 140.75 mm (5.54 in.). Brake shoe springs should be renewed if spring free length exceeds 50 mm (2 in.).

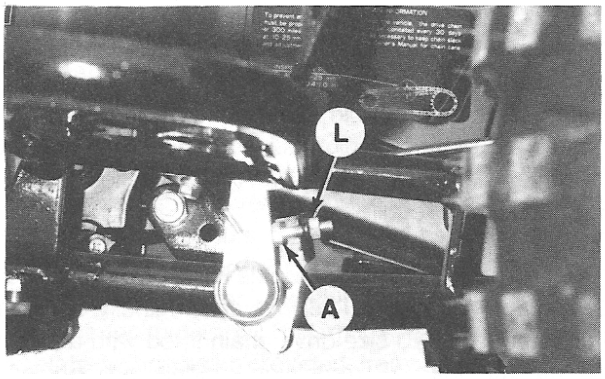


Fig. K7-24—Loosen locknut (L) and turn screw (A) to adjust brake pedal height.

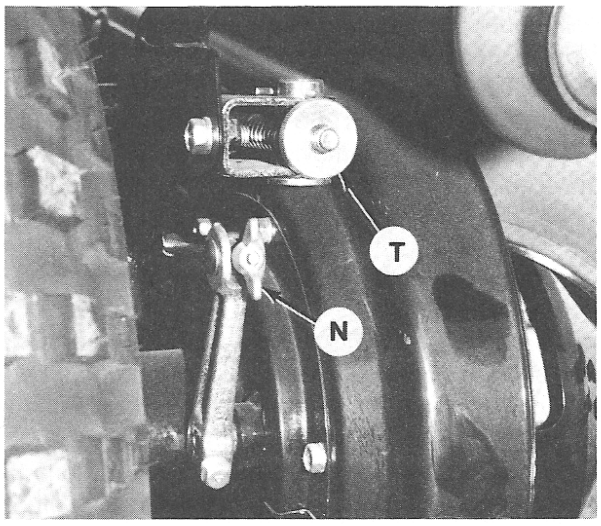


Fig. K7-25—Rear brake pedal free travel is adjusted by rotating nut (N) while drive chain tension is adjusted by rotating nut (T).

During reassembly, lightly grease brake camshaft, anchor pin and spring ends making sure grease does not contact brake shoe linings. Reinstall by reversing removal procedure. On KLT200-B1, KLT250-A1 and KLT250-A2 models, tighten brake drum and rear sprocket to axle cap screws to 24 N·m (18 ft.-lbs.) torque and secure nuts with tabs on lock plates. On all other models, tighten brake drum and rear sprocket to differential nuts to 60 N·m (43 ft.-lbs.) torque. Axle nuts should be tightened to 135 N·m (100 ft.-lbs.) on KLT200-C1, KLT200-C2, KLT250-C1, KLT250-C2, KLT250-C3 and KLT250-P1 models and to 115 N·m (83 ft.-lbs.) torque on all remaining models. On all models, adjust rear brake as outlined in INSPECTION AND ADJUSTMENT section.

DRIVE CHAIN AND SPROCKETS

All Models

INSPECTION AND ADJUSTMENT. The final drive chain should be inspected and adjusted after every 90 days or 900 miles of operation. Improper maintenance and neglect can cause early failure of both drive chain and sprockets. Drive chain free play should be 10-25 mm (0.4-1.0 in.) measured midway between sprockets. Drive chain condition and free play may be checked through inspection hole in chain cover. Chain tension is adjusted by rotating tension adjuster (T—Fig. K7-25) at rear of vehicle. Refer to LUBRICATION section for drive chain lubrication requirements.

R&R AND OVERHAUL. Models KLT200-A1, KLT200-A2, KLT200-A3 and KLT250-A1 are originally equipped with a standard 520 size drive chain fitted with a removable master link. All remaining models are originally equipped with an endless, "O" ring-sealed chain that requires simultaneous removal of drive sprockets to remove chain. To remove drive chain and both sprockets on all models, first suitably support rear of vehicle and remove both rear axle nuts.

On KLT200-C1, KLT200-C2, KLT250-C1, KLT250-C2, KLT250-C3 and KLT250-P1 models, the left axle nut is accessible after removing differential shifter. To remove differential shifter on models so equipped, remove plug (P—Fig. K7-28) in shift knob center. Unscrew shift rod nut and withdraw the rod collar. Remove shift knob (K) and boot (B). Extract shift rod adjustment washers being careful not to lose washers as they control differential lock engagement. Remove the four shift cam retaining screws (S) and shift cam (C). Remove the left axle nut.

Reassemble by reversing disassembly procedure while noting the following: On KLT200-B1, KLT250-A1 and KLT250-A2 models, tighten brake drum and rear sprocket to axle cap screws to 24 N·m (18 ft.-lbs.) torque and secure nuts with tabs on lock plates. On all other models, tighten brake drum and rear sprocket to differential nuts to 60 N·m (43 ft.-lbs.) torque. On all models, tighten left and right axle housing retaining cap screws to 30 N·m (22 ft.-lbs.) torque. Axle nuts should be tightened to 135 N·m (100 ft.-lbs.) on KLT200-C1, KLT200-C2, KLT250-C1, KLT250-C2, KLT250-C3 and KLT250-P1 models and to 115 N·m (83 ft.-lbs.) on all remaining models. On all models, front sprocket is installed with raised shoulder side towards engine. Tighten sprocket retaining nut to 80 N·m (58 ft.-lbs.) torque and secure with lock plate. On drive chains fitted with a master link, ensure link retaining clip is installed with closed end towards normal direction of travel (Fig. K7-26). Adjust chain tension as previously described in INSPECTION AND ADJUSTMENT section and rear brake as outlined in REAR BRAKE ASSEMBLY section. Check differential lock adjustment as outlined in DIFFERENTIAL LOCK section.

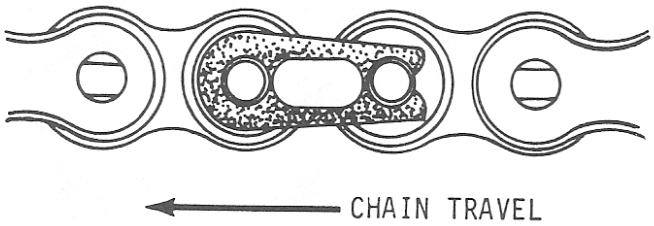


Fig. K7-26—Install drive chain master link clip, on models so equipped, with closed end of clip towards normal direction of chain travel.

DIFFERENTIAL LOCK

All models except KLT200-B1, KLT250-A1 and KLT250-A2 are equipped with locking differential unit. In

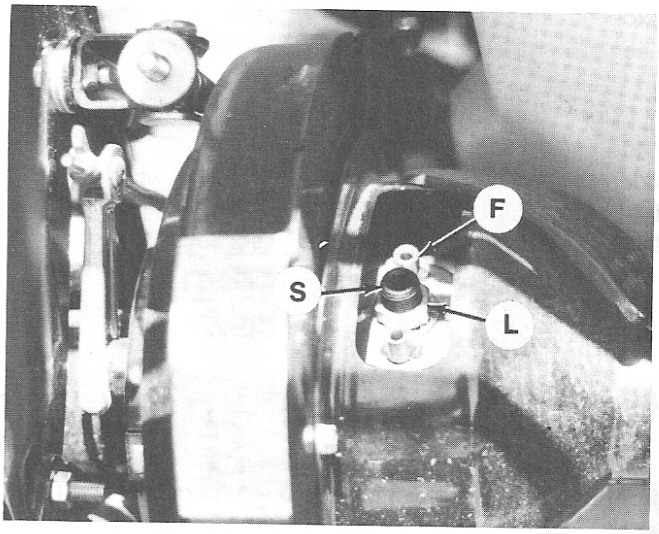


Fig. K7-27—On KLT200-A1, KLT200-A2, KLT200-A3, KLT200-A4 and KLT200-A4A models, loosen locknut (L) and turn shift shaft (S) to lock and unlock differential unit. In the locked position, attach lock plate to lock plate flange (F). Refer to text.

the unlocked position, left and right wheels are free to rotate at different speeds improving slow speed handling characteristics on hard terrain. In the locked position, left and right wheels rotate simultaneously providing maximum traction on adverse or soft terrain.

Two types of differential units have been used and can be identified by the location of the differential lock shifter. On KLT200-A1, KLT200-A2, KLT200-A3, KLT200-A4 and KLT200-A4A models, the differential lock shifter is attached directly to the differential case (Fig. K7-27). On KLT200-C1, KLT200-C2, KLT250-C1, KLT250-C2, KLT250-C3 and KLT250-P1 models, the differential lock shifter is attached to the left wheel hub (Fig. K7-28). Refer to the LUBRICATION section for the differential lubrication requirements.

R&R AND OVERHAUL. On all models, pull tire, wheel and hub assemblies from axle. Remove the rear rack, if equipped, rear fender, exhaust pipe, muffler and bottom chain case guard. Remove front and rear chain covers. Remove the two cap screws securing chain tension adjustment rod and nut to frame. Unbolt and remove tensioner lever support bracket. Scribe an alignment mark on tensioner lever and tensioner shaft to aid in reassembly. Remove tensioner lever pinch bolt and pull tensioner lever from tensioner shaft. Withdraw the adjustment rod and lever as an assembly. Remove rear brake adjuster nut (N—Fig. K7-25) and brake rod clevis pin. Withdraw the brake rod being careful not to lose spring, washer and pin. Remove the outer chain case to inner chain case brackets at rear axle. Carefully withdraw the outer chain case.

On models so equipped, separate drive chain at master link and remove the chain. On all models, bend back lock plate tab securing front sprocket retaining nut. Remove nut and pull front sprocket from transmission countershaft. Remove cap screws securing rear axle housings. Lift out rear axle assembly. On endless drive chain models, remove rear axle, drive chain and chain tensioner as an assembly. Disassemble and separate tensioner arm from drive chain.

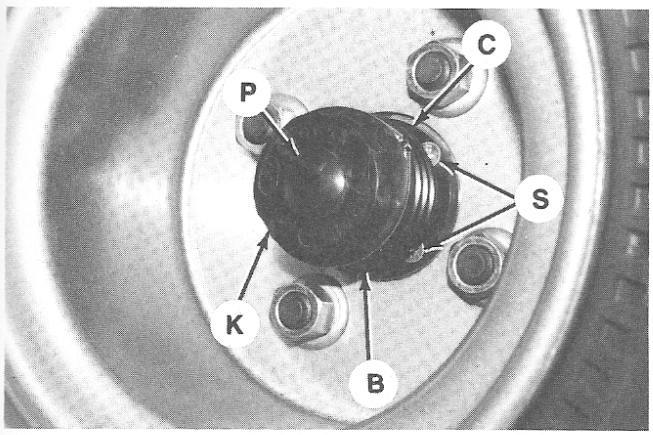


Fig. K7-28—Left axle nut is accessible on KLT200-C1, KLT200-C2, KLT250-C1, KLT250-C2, KLT250-C3 and KLT250-P1 models after removing differential shifter. Refer to text.

To remove rear sprocket on KLT200-B1, KLT250-A1 and KLT250-A2 models, pull left and right axle housings from axle. Bend back lock plate tabs, then unbolt and separate sprocket and brake drum from axle.

To remove rear sprocket on all remaining models, pull left axle housing from axle. Unscrew brake drum retaining nuts and slide drum and sprocket off axle.

Carefully examine front and rear sprockets for excessive wear. Worn sprockets will usually have a hooked profile. A good test is to place a new chain on a used sprocket and check fit. Wear on sprocket sides indicates misalignment. If sprockets require renewal due to wear, always renew drive chain. On models equipped with "O" ring-sealed drive chains, renew chain if "O" ring damage is evident. Inspect remaining associated components and renew any that are damaged or worn excessively.

Models KLT200-A1, KLT200-A2, KLT200-A3, KLT200-A4 And KLT200-A4A

The differential lock mechanism consists of an additional pinion gear attached to a shift shaft (S—Fig. K7-27) that extends through the differential case. The shaft threads through a collar retained by differential case halves. As the shift shaft is rotated clockwise into the differential, the extra pinion gear is forced against the left and right axle gears thus locking the differential unit. The differential lock is not adjustable.

When locking the differential, loosen the locknut (L) and turn the shift shaft (S) clockwise until internal resistance is felt. With the engine stopped, engage the transmission and push the vehicle back and forth. Retighten the shift shaft to ensure the gears have fully engaged. Tighten the shaft finger-tight only to prevent internal component damage. Prevent the shift shaft from turning and tighten the locknut to 40.6 N·m (30 ft.-lbs.) torque. A lock plate is originally provided from the manufacturer and should be installed over the shift shaft and fastened to the lock plate flange (F) with the two retaining cap screws.

When unlocking the differential, remove the lock plate and loosen the locknut. Rotate shift shaft counterclockwise to end of travel. Secure shift shaft and tighten locknut to 40.6 N·m (30 ft.-lbs.) torque. In the unlocked position the lock plate cannot be installed and should be stored with the two retaining cap screws for future use.

Models KLT200-C1, KLT200-C2, KLT250-C1, KLT250-C2, KLT250-C3 And KLT250-P1

The differential lock mechanism consists of a spring-loaded shift dog located between the axle shaft gears and actuated by a shift knob on left wheel hub (Fig. K7-28). The shift dog is splined to the end of left axle shaft and attached to a rod that passes through the left axle into the shift knob. Rotating the shift knob (K) counterclockwise to the unlocked position cams the knob outward pulling the shift dog away from right axle shaft gear. The shift cam (C), mounted on left wheel hub, is

indented to positively locate the knob in the unlocked position. Rotating shift knob clockwise to the locked position releases the spring located between the left axle gear and shift dog forcing the shift dog toward the right axle shaft gear. Lugs on the shift dog engage corresponding holes in right axle shaft gear to lock the left and right axles together.

Differential lock engagement is adjustable and controlled by increasing or decreasing the number of washers located between shift knob and cam. Differential lock is correctly adjusted when shift knob will just rotate from locked to unlocked position and not rotate beyond unlocked position. If shift knob rotates beyond unlocked position on shift cam, decrease the number of adjustment washers on shift rod, or if shift knob fails to fully seat in unlocked position, increase the number of washers until correct adjustment is obtained.

DIFFERENTIAL ASSEMBLY

Models KLT200-C1, KLT200-C2, KLT250-C1, KLT250-C2, KLT250-C3 And KLT250-P1

DISASSEMBLY AND REASSEMBLY. Differential units used on some early production KLT200-C1, KLT200-C2, KLT250-C1, KLT250-C2, KLT250-C3 and KLT250-P1 models may have been originally filled with grease instead of the recommended SAE 90 hypoid gear oil. On models so equipped, the differential should be disassembled and all grease removed before attempting to add or change the lubricant. The differential unit can be disassembled after removing the rear sprocket and brake drum as outlined in DRIVE CHAIN AND SPROCKETS section. Remove the four differential case retaining cap screws and separate the case. Withdraw the differential lock shift dog, shift rod and spring from the left axle. Pull the left and right axle gears from their respective shafts and pinion gears from pinion gear shafts. For cleaning purposes, further disassembly is not required.

Clean components in a suitable solvent and reassemble by reversing disassembly procedure. Differential case gaskets and gasket contact surfaces must be clean and dry to prevent leakage after assembly. Apply Loctite or equivalent to threads on differential case cap screws and tighten cap screws to 60 N·m (43 ft.-lbs.) torque. Install the rear axle assembly as outlined in DRIVE CHAIN AND SPROCKETS section and check differential lock adjustment as outlined in DIFFERENTIAL LOCK section. Refer to LUBRICATION section for differential lubrication requirements.