

SUZUKI

U.S. SUZUKI MOTOR CORPORATION
3251 E. Imperial Way
Brea, California 92621

ALT50 AND LT50

NOTE: Metric fasteners are used throughout vehicle.

CONDENSED SERVICE DATA

MODELS	ALT50D, E LT50E, F, G, H	MODELS	ALT50D, E LT50E, F, G, H
General		Tune-Up (Cont.)	
Engine Make	Suzuki	Ignition:	
Engine Type	Two-Stroke; Air-Cooled	Type	Breakerless
Number of Cylinders	1	Timing	22°-26° BTDC @ 3000 rpm
Bore	41.0 mm (1.614 in.)	Carburetor:	
Stroke	37.8 mm (1.488 in.)	Make	Mikuni
Displacement	49 cc (3.0 cu. in.)	Model	VM12SC
Compression Ratio	5.9:1	Float Height	24.5-25.0 mm (0.96-0.98 in.)
Fuel Recommendation	Unleaded or Low-Lead	Jet Needle	3E3
Pump Octane Rating	85-95	Clip Position	3rd Groove From Top
Engine Lubrication	Oil Injection	Throttle Cutaway	3.0
Engine Oil		Pilot Jet (28-Fig. S1-4)	#15
Recommendation	See Text	Pilot Jet (29-Fig. S1-4)	0.38 mm (0.015 in.)
Transmission Oil		Needle Jet	E-6
Recommendation	SAE 20W-40	Main Jet	#57.5
Forward Speeds	1	Throttle Cable Free Play	0.5-1.0 mm (0.02-0.04 in.)
Reverse Speeds	N/A		
Tire Size:		Sizes-Clearances	
Front	145/70-6	Piston-to-Cylinder Wall	
Rear	145/70-6	Clearance	0.065-0.075 mm (0.0026-0.0030 in.)
Tire Pressure (cold):		Cylinder Bore Diameter	
Front	25-35 kPa (3.5-5.0 psi)	Measured 20 mm (0.8 in.)	
Rear	25-35 kPa (3.5-5.0 psi)	From Top	41.000-41.015 mm (1.6142-1.6148 in.)
Dry Weight:		Wear Limit	41.065 mm (1.6167 in.)
ALT50	41 kg (90 lbs.)	Cylinder Bore Distortion	
LT50	48 kg (106 lbs.)	(Max.)	0.05 mm (0.002 in.)
Tune-Up		Piston Diameter Measured	
Engine Idle Speed	1500-1600 rpm	23 mm (0.9 in.) From	
Spark Plug:		Bottom of Skirt	40.930-40.945 mm (1.6114-1.6120 in.)
Type—		Wear Limit	40.880 mm (1.6094 in.)
NGK	BP4H	Piston Pin Bore Diameter	
Nippon Denso	W14FP	in Piston	12.002-12.006 mm (0.4725-0.4727 in.)
Electrode Gap	0.6-0.8 mm (0.024-0.031 in.)		

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MODELS	ALT50D, E LT50E, F, G, H
Sizes-Clearances (Cont.)	
Wear Limit	12.030 mm (0.4736 in.)
Piston Pin Diameter	11.996-12.000 mm (0.4723-0.4724 in.)
Wear Limit	11.980 mm (0.4717 in.)
Piston Ring End Gap	0.10-0.25 mm (0.004-0.010 in.)
Wear Limit	0.75 mm (0.030 in.)
Piston Ring Side Clearance	0.020-0.060 mm (0.0008-0.0024 in.)
Connecting Rod Small End Bore Diameter	16.003-16.011 mm (0.6300-0.6304 in.)
Wear Limit	16.040 mm (0.6315 in.)
Connecting Rod Small End Side Shake (Max.)	3.0 mm (0.12 in.)
Crankshaft Runout at Main Bearing Journal (Max.)	0.05 mm (0.002 in.)
Cylinder Head Distortion (Max.)	0.05 mm (0.002 in.)
Capacities	
Fuel Tank	1.5 L (0.4 gal.)
Engine Oil Tank	500 mL (0.53 qt.)
Transmission Oil	See Text
Tightening Torques	
Clutch Shoe Nut	34.5-54.2 N·m (25.5-40.0 ft.-lbs.)
Cylinder Head Nut	6.8-10.8 N·m (60-96 in.-lbs.)
Flywheel Nut	39.3-59.0 N·m (29.0-43.5 ft.-lbs.)
Front Axle Nut:	
ALT50	35.2-50.8 N·m (26.0-37.5 ft.-lbs.)
LT50	48.8-78.6 N·m (36-58 ft.-lbs.)
Oil Pump Union Bolt	4.0-6.8 N·m (36-60 in.-lbs.)

MODELS	ALT50D, E LT50E, F, G, H
Tightening Torques (Cont.)	
Rear Axle Nut	56.9-78.6 N·m (42-58 ft.-lbs)
Spark Plug	24.4-29.1 N·m (18.0-21.5 ft.-lbs.)
Wheel Nut	17.6-27.1 N·m (13-20 ft.-lbs.)
Wheel Rim Nut	17.6-27.1 N·m (13-20 ft.-lbs.)
Standard Screws:	
Unmarked or Marked "4"	
4 mm	0.9-2.0 N·m (8.4-18.0 in.-lbs.)
5 mm	2.0-4.0 N·m (18-36 in.-lbs.)
6 mm	4.0-6.8 N·m (36-60 in.-lbs.)
8 mm	9.5-15.6 N·m (84-138 in.-lbs.)
10 mm	21.7-34.5 N·m (16.0-25.5 ft.-lbs.)
12 mm	34.5-54.2 N·m (25.5-40.0 ft.-lbs.)
14 mm	48.8-78.6 N·m (36-58 ft.-lbs.)
16 mm	78.6-127.4 N·m (58-94 ft.-lbs.)
18 mm	127.4-186.4 N·m (94.0-137.5 ft.-lbs.)
Marked "7"	
4 mm	1.3-2.7 N·m (12-24 in.-lbs.)
5 mm	2.7-6.1 N·m (24-54 in.-lbs.)
6 mm	8.1-11.5 N·m (72-102 in.-lbs.)
8 mm	17.6-27.1 N·m (13-20 ft.-lbs.)
10 mm	39.3-58.9 N·m (29.0-43.5 ft.-lbs.)
12 mm	68.4-98.3 N·m (50.5-72.5 ft.-lbs.)
14 mm	107.7-156.6 N·m (79.5-115.5 ft.-lbs.)
16 mm	166.7-245.4 N·m (123-181 ft.-lbs.)
18 mm	196.0-274.5 N·m (144.5-202.5 ft.-lbs.)

LUBRICATION

All Models

ENGINE. The engine is lubricated by an automatic oil metering system. Recommended oil is Suzuki CCI Super 2-Cycle Motor Lubricant or a good quality synthetic

based oil designed for use in two-stroke air-cooled engines. Ensure all dirt and debris is removed from around oil reservoir filler cap before adding oil.

TRANSMISSION. The transmission is lubricated by oil contained within the clutch cover and crankcase halves. Recommended oil is a good quality multigrade SAE 20W-

AIR CLEANER ELEMENT

All Models

The air cleaner element should be removed and cleaned every month or more often depending on operating conditions. To remove air cleaner, first remove the seat, body and air cleaner cap. Withdraw air cleaner element.

Thoroughly clean element in a suitable solvent. Compress element between hands to remove solvent. Saturate element in CCI Super 2-Cycle Motor Lubricant or equivalent oil. Compress element to remove excess oil. Reinstall element by reversing removal procedure.

FUEL SYSTEM

All Models

CARBURETOR. Models ALT50 and LT50 are equipped with a Mikuni VM12SC carburetor. Refer to CONDENSED SERVICE DATA for carburetor specifications.

Before performing carburetor adjustments, throttle cable should be carefully adjusted to provide 0.5-1.0 mm (0.02-0.04 in.) free play at idle position. Cable adjustment is accomplished by first removing seat and fuel tank. Loosen locknut (L—Fig. S1-2) and rotate adjuster (A) as required. Initial setting of idle mixture screw (21—Fig. S1-3) is 1½ turns out from a lightly seated position. Rotating idle mixture screw clockwise will lean the mixture while counterclockwise rotation richens the mixture. Final adjustment should be made with engine at normal operating temperature and running. Adjust idle speed screw (23) so engine idles at 1500-1600 rpm. Adjust idle mixture screw so engine idles smoothly and accelerates cleanly. If necessary, readjust idle speed screw to obtain 1500-1600 rpm idle speed. After adjust-

40 motor oil. Oil is poured through fill plug (F—Fig. S1-1) opening in clutch cover and should be maintained at level of oil level plug (L) opening. Transmission is drained by removing plug in underside of crankcase. Dry capacity of cases is 550 mL (0.58 qt.). Refilling transmission if cases have not been disassembled requires only 500 mL (0.53 qt.) of oil as approximately 50 mL (0.053 qt.) will be retained by case castings. The transmission fluid should be changed after the first month of operation and every six months thereafter.

DRIVE CHAIN. The final drive chain should be lubricated with a suitable chain lube or motor oil prior to every vehicle operating interval. Once a month the chain should be removed and washed in a suitable solvent then immersed in oil. Install and adjust drive chain as outlined in DRIVE CHAIN section.

THROTTLE AND BRAKE. The throttle and brake cables should be lubricated with motor oil upon initial operation of vehicle and every 6 months thereafter. The throttle lever and brake camshaft should be greased every 12 months. Do not excessively grease the brake camshaft as grease may contact brake linings reducing braking ability.

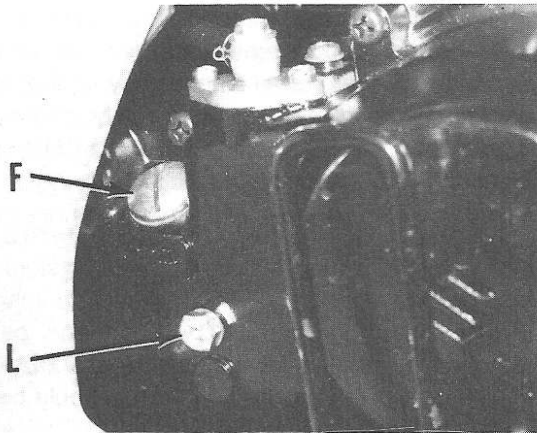


Fig. S1-1—Transmission is filled with oil through filler plug opening (F). Oil level should be maintained at level of plug opening (L).

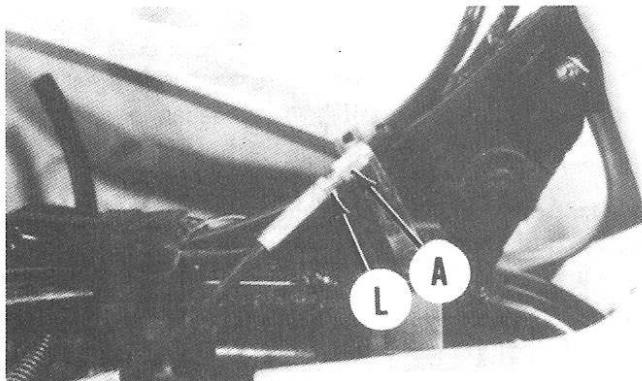


Fig. S1-2—Loosen locknut (L) and turn adjuster (A) as required to adjust throttle cable free play.

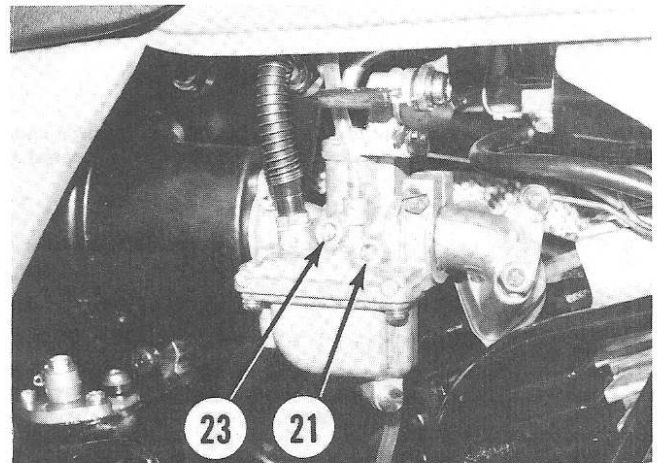


Fig. S1-3—View of idle mixture (21) and idle speed (23) adjusting screws. Refer to text for carburetor adjustment procedure.

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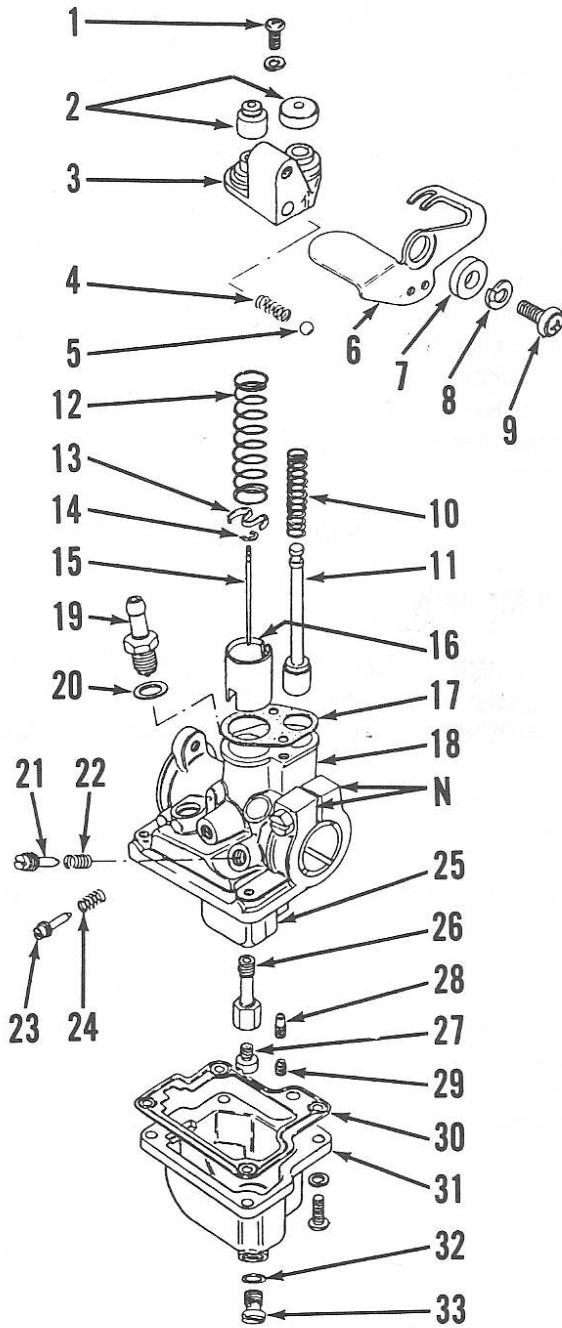


Fig. S1-4—Exploded view of Mikuni VM12SC carburetor used on both models. Carburetor identification number is located at (N).

- | | |
|---------------------|--------------------------------|
| 1. Screw | 18. Body |
| 2. Grommet | 19. Fuel fitting & inlet valve |
| 3. Cap | 20. Washer |
| 4. Spring | 21. Idle mixture screw |
| 5. Detent ball | 22. Spring |
| 6. Choke lever | 23. Idle speed screw |
| 7. Spacer | 24. Spring |
| 8. Lockwasher | 25. Float |
| 9. Screw | 26. Needle jet |
| 10. Spring | 27. Main jet |
| 11. Starter valve | 28. Pilot jet no. 1 |
| 12. Spring | 29. Pilot jet no. 2 |
| 13. Retainer | 30. Gasket |
| 14. Jet needle clip | 31. Float bowl |
| 15. Jet needle | 32. Washer |
| 16. Throttle slide | 33. Drain plug |
| 17. Gasket | |

ing carburetor, check throttle cable adjustment as previously described.

The carburetor should be removed, disassembled and cleaned annually. Disassembly of the removed carburetor is evident after inspection of unit and referral to exploded view in Fig. S1-4. Carefully inspect jet needle (15), inlet valve (19), idle mixture screw (21) and idle speed screw (23) for excessive wear and damage.

During reassembly, renew all gaskets and fiber washers. Clip (14) should be in third groove from top on jet needle (15). To check float level, remove float bowl (31) and invert carburetor. Distance (A—Fig. S1-5) between bottom of float and carburetor body with gasket removed should be 24.5-25.0 mm (0.96-1.00 in.). Adjust float level by bending float arm tang.

IGNITION AND ELECTRICAL

All Models

SPARK PLUG. Standard recommended spark plug is NGK BP4H or Nippon Denso W14FP. Spark plug electrode gap should be 0.6-0.8 mm (0.024-0.031 in.).

Spark plug should be removed and inspected after the first month of operation and every three months thereafter, or more often depending on vehicle operation. Spark plug should be renewed after every six months of operation, or more often if necessary. If after inspection, standard spark plug appears to be overheating, manufacturer recommends installing a NGK BP5HS or Nippon Denso W16FP spark plug.

IGNITION. Both models are equipped with a capacitor discharge, pointless electronic ignition system. The ignition system consists of the flywheel, a magneto coil located under flywheel, CD ignition and coil module attached to frame under fuel tank, a spark plug and two engine stop switches. Ignition timing should be 22°-26° BTDC and is not adjustable.

If ignition malfunction occurs, check condition of spark plug, all wires and connections before troubleshooting ignition circuit. Using Suzuki pocket tester number 09900-25002 or a suitable ohmmeter, refer to the follow-

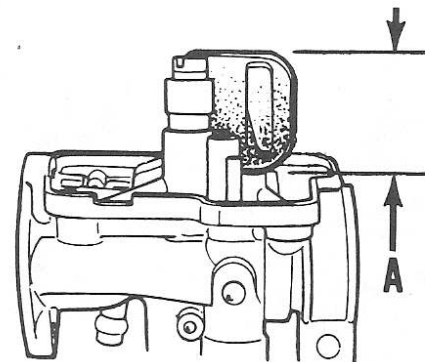


Fig. S1-5—Float level (A) should be 24.5-25.0 mm (0.96-1.00 in.). Bend float arm tang to adjust.

ing test specifications and procedures to aid troubleshooting.

To check condition of CD ignition module, first remove module from vehicle. Attach tester positive lead to spark plug high tension wire and negative lead to black/yellow wire terminal on module. Tester should read infinite resistance. Connect tester negative lead to module ground. Resistance between high tension wire and ground should be 15k ohms.

Connect tester positive lead to black/yellow wire terminal on module and negative lead to high tension wire. Resistance should be 25k ohms. Connect tester negative lead to module ground. Resistance between black/yellow wire terminal and ground should be 3.4 ohms.

Connect tester positive lead to module ground and negative lead to black/yellow wire terminal on module. Tester should read infinite resistance. Connect tester negative lead to high tension wire. Resistance should be 15k ohms.

Renew CD ignition module if module fails any test resistance reading.

To check condition of magneto coil, disconnect black/yellow wire to magneto coil at CD ignition module and attach either tester lead to wire. Attach remaining tester lead to ground. Magneto coil may be considered satisfactory if resistance reading is 120-160 ohms.

WIRING. If wiring requires repair, always use replacement wire of the same gage. Wires should be routed away from areas of extreme heat or sharp edges. Plastic tie straps should be used to retain wires in their original positions to prevent short circuiting. Refer to Fig. S1-6 for schematic wiring diagram.

CLUTCH

All Models

R&R AND OVERHAUL. The two-shoe centrifugal clutch is mounted on right end of crankshaft. Clutch should begin engagement at 2400-2800 rpm with complete lockup at 3300-3700 rpm. To remove clutch assembly for inspection or renewal of individual components, first remove clutch cover. Remove retaining nut (2—Fig. S1-7), thrust washer (3), small spring washer (4), large spring washer (5) and guide plate (6). Pull clutch shoe assembly (7) from crankshaft. Remove Woodruff key (8), thrust washer (9), clutch drum (10), spacer (11) and thrust washer (12).

Clean, inspect and renew any components that are damaged or worn excessively. Renew clutch shoe assembly if grooves in shoes are worn smooth or if total clutch spring length exceeds 28 mm (1.10 in.). Clutch drum should be renewed if signs of scoring, cracks or uneven wear are evident or if drum inside diameter exceeds 78.40 mm (3.087 in.). Renew seal (1) located in clutch cover.

When reinstalling clutch assembly, ensure spring washers (4 and 5) are installed with concave side towards guide plate (6). Tighten clutch nut (2) to 34.5-54.2 N·m (25.5-40.0 ft.-lbs.) torque. Seal (1) should be installed in cover with open side towards clutch assembly. Make sure oil passage in clutch cover is free of debris and clean before installing cover.

STARTER INTERLOCK

All Models

ADJUSTMENT. Both models are equipped with a starter interlock system that prevents manual starter

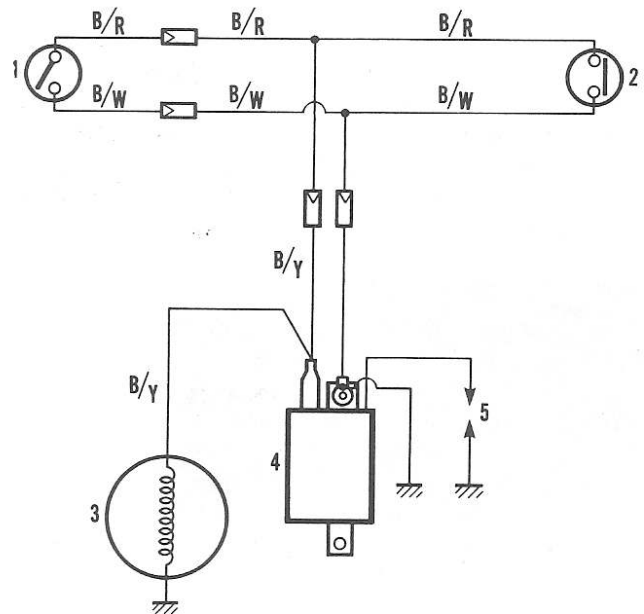


Fig. S1-6—Wiring schematic typical of both models.

- | | | |
|------------------------|------------------|-----------|
| 1. Stop switch (front) | 4. Ignition coil | R. Red |
| 2. Stop switch (rear) | 5. Spark plug | W. White |
| 3. Magneto | B. Black | Y. Yellow |

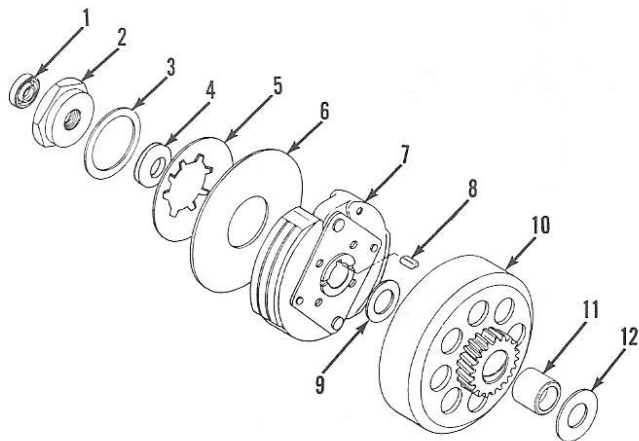


Fig. S1-7—Exploded view of centrifugal clutch used on both models.

- | | |
|------------------------|----------------------|
| 1. Seal | 7. Clutch shoe assy. |
| 2. Clutch nut | 8. Woodruff key |
| 3. Thrust washer | 9. Thrust washer |
| 4. Small spring washer | 10. Clutch drum |
| 5. Large spring washer | 11. Spacer |
| 6. Guide plate | 12. Thrust washer |

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engagement until parking brake is applied. To adjust, first check and adjust brakes as outlined in BRAKES section. Loosen locknut (L—Fig. S1-8) and turn interlock adjuster (A) inward to end of travel. Actuate parking brake, then slowly pull starter handle and check for starter engagement. If starter does not engage, back interlock adjuster out $\frac{1}{2}$ turn and recheck. Continue alternating starter engagement checks and turning adjuster out in $\frac{1}{2}$ turn increments until starter operates. After initial engagement is achieved, rotate interlock adjuster (A) out an additional $1\frac{1}{2}$ turns and secure with locknut (L). Recheck adjustment.

MANUAL STARTER

All Models

R&R AND OVERHAUL. Refer to Fig. S1-9 for exploded view of manual starter assembly. Starter may be removed as a complete unit by first loosening locknut (L—Fig. S1-8) and rotating starter interlock adjuster (A)

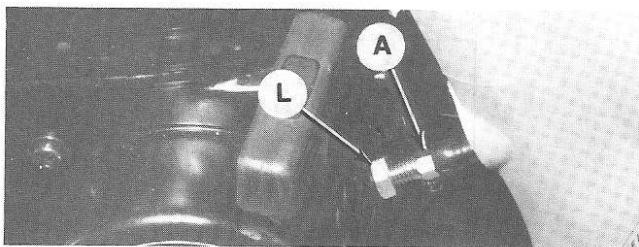


Fig. S1-8—Loosen locknut (L) and rotate adjuster (A) as outlined in text to adjust starter interlock.

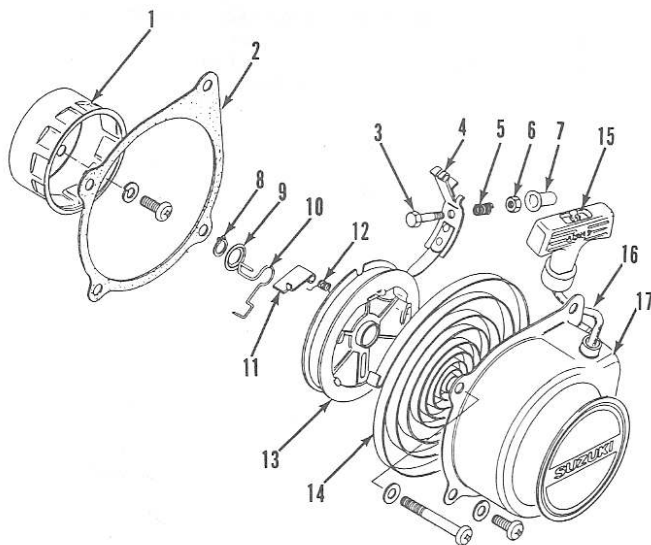


Fig. S1-9—Exploded view of manual starter assembly used on both models.

- | | | |
|--------------------|-------------------|---------------------|
| 1. Starter cup | 7. Cap | 13. Rope pulley |
| 2. Gasket | 8. Snap ring | 14. Rewind spring |
| 3. Cap screw | 9. Washer | 15. Rope handle |
| 4. Interlock lever | 10. Actuator | 16. Rope |
| 5. Spring | 11. Starter pawl | 17. Starter housing |
| 6. Nut | 12. Return spring | |

inward to end of travel. Remove four retaining screws and separate starter from engine. Detach interlock cable from interlock lever (4—Fig. S1-9). Rotate cable adjuster completely out and pull cable free from starter housing.

To disassemble starter, proceed as follows: Remove starter interlock components (3 through 7). If starter spring remains under tension, pull starter rope and hold rope pulley (13) with notch in pulley adjacent to rope outlet. Pull rope back through outlet so it engages notch in pulley and allow pulley to slowly unwind. Remove snap ring (8) and disassemble unit.

Rewind spring (14) is wound in clockwise direction in rope pulley (13). Rope is wound on rope pulley in clockwise rotation as viewed with pulley in housing. Reassemble starter assembly by reversing disassembly procedure making certain starter pawl (11) and return spring (12) are installed as shown in Fig. S1-10. To place tension on rewind spring, pass rope through rope outlet in housing and install rope handle. Pull rope out and hold rope pulley so notch on pulley is adjacent to rope outlet. Pull a loop of rope back through outlet between notch in pulley and housing. Turn rope pulley clockwise a few revolutions to place tension on spring. Do not place more tension on rewind spring than is necessary to draw rope handle up against housing. Reinstall interlock components (3 through 7—Fig. S1-9) and attach interlock cable to lever (4). Attach starter to engine and adjust starter interlock as outlined in STARTER INTERLOCK section.

FRONT AXLE ASSEMBLY

Model ALT50

R&R AND OVERHAUL. Refer to Fig. S1-11 for exploded view of front axle assembly used on ALT50 models. To remove front wheel, remove boot (1) and cotter pin (2). Unscrew axle nut (3) and withdraw axle (13). Remove short spacers (5). Remove wheel retaining nuts (12) and separate wheel hub (6) and wheel. Drive seals (7), bearings (8) and spacer (9) from hub if necessary.

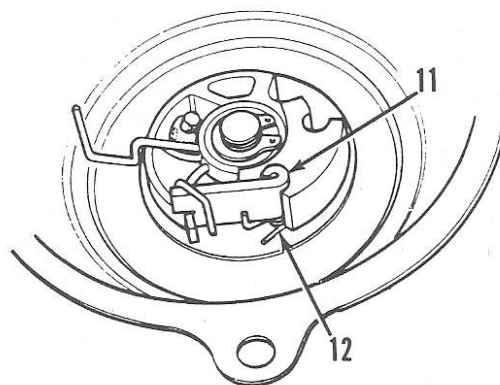


Fig. S1-10—Ensure starter pawl (11) and return spring (12) are installed as shown. Parts are also shown in Fig. S1-9.

STEERING

Model ALT50

ADJUSTMENT. The steering stem should be checked and adjusted after the first month of operation and every three months thereafter. To adjust, remove handlebars and steering stem head bracket (17—Fig. S1-11). Loosen locknut (18) and tighten stem nut (19) until snug, then loosen stem nut 1/8-1/4 turn. Secure stem nut (19) in position with locknut (18). Tighten stem head cap screw (14) to 39.4-59.0 N·m (29.0-43.5 ft.-lbs.) torque and

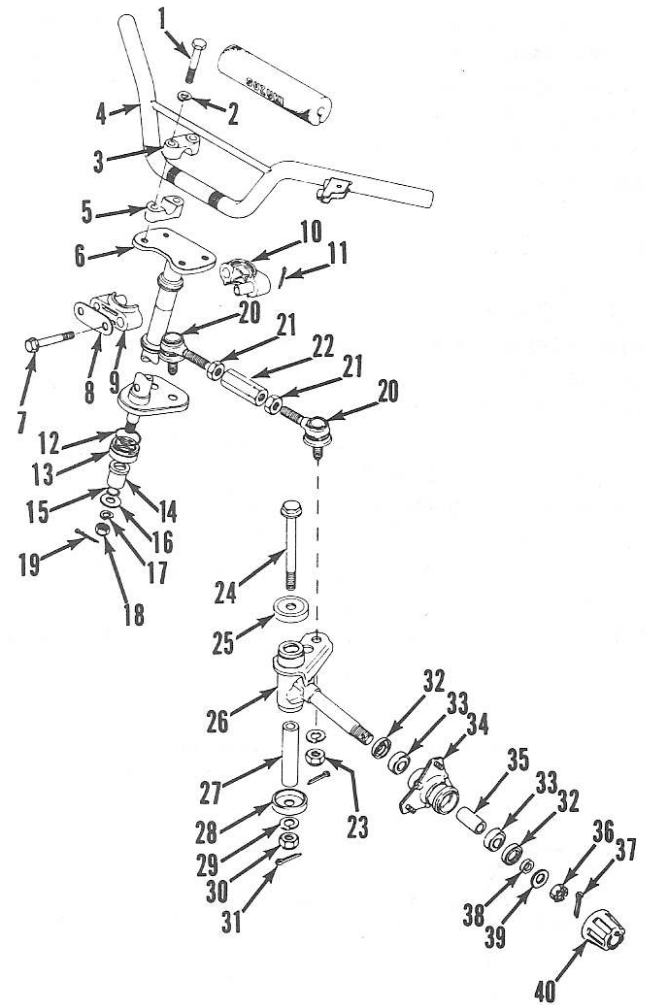


Fig. S1-12—Exploded view of steering and front axle assembly used on LT50 models.

- | | | |
|--------------------|-----------------------|--------------------|
| 1. Cap screw | 15. "O" ring | 28. Dust seal |
| 2. Lockwasher | 16. Washer | 29. Lockwasher |
| 3. Clamp | 17. Locknut | 30. Spindle nut |
| 4. Handlebar | 18. Lower nut | 31. Cotter pin |
| 5. Clamp | 19. Cotter pin | 32. Seal |
| 6. Steering shaft | 20. Tie rod end nut | 33. Bearing |
| 7. Cap screw | 21. Locknut | 34. Wheel hub |
| 8. Washer | 22. Adjuster | 35. Bearing spacer |
| 9. Shaft retainer | 23. Tie rod end nut | 36. Axle nut |
| 10. Shaft retainer | 24. Spindle cap screw | 37. Cotter pin |
| 11. Cotter pin | 25. Dust seal | 38. Spacer |
| 12. "O" ring | 26. Spindle | 39. Washer |
| 13. Axle | 27. Spacer | 40. Cap |
| 14. Bushing | | |

Inspect bearings and axle for wear. Bearings should be packed with a good quality wheel bearing grease. To reassemble, reverse disassembly procedure. Seals (7) are installed with open sides toward bearings (8). Apply grease to seal lips before inserting spacers (5). Tighten wheel retaining nuts (12) to 17.6-27.1 N·m (13-20 ft.-lbs.) torque and axle nut (3) to 35.2-50.8 N·m (26.0-37.5 ft.-lbs.) torque.

Model LT50

R&R AND OVERHAUL. Refer to Fig. S1-12 for exploded view of front axle assembly used on LT50 models. To remove either wheel hub (34), remove front wheel and axle nut (36). Pull wheel hub (34) off spindle (26). Do not lose spacer (38). Drive seals (32), bearings (33) and spacer (35) from hub (34) if necessary.

To reassemble, reverse disassembly procedure. Bearings should be packed with a good quality wheel bearing grease. Seals (32) are installed with open sides toward bearings (33). Tighten axle nut (36) to 48.8-78.6 N·m (36-58 ft.-lbs.) torque and wheel nuts to 17.6-27.1 N·m (13-20 ft.-lbs.) torque.

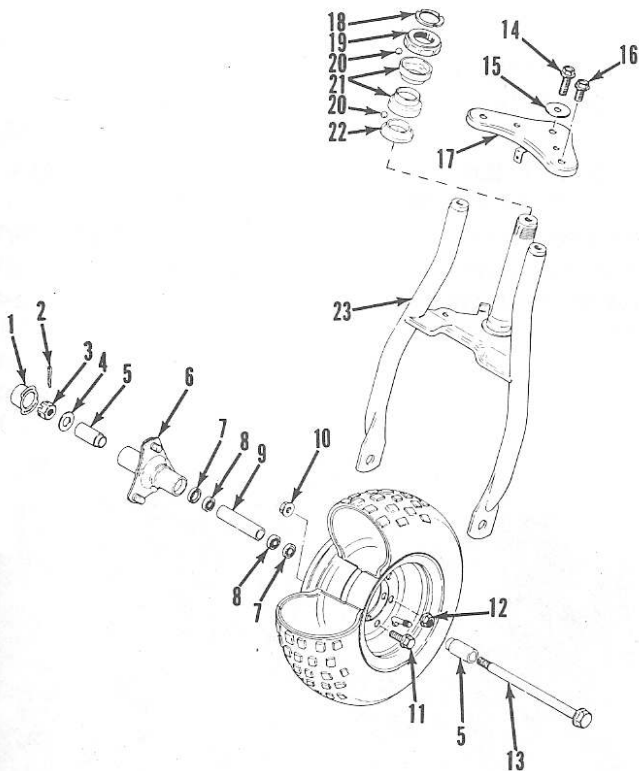


Fig. S1-11—Exploded view of steering and front axle assembly used on ALT50 models.

- | | | |
|---------------|--------------------|--------------------------------|
| 1. Boot | 9. Center spacer | 17. Stem head bracket |
| 2. Cotter pin | 10. Rim nut | 18. Locknut |
| 3. Axle nut | 11. Rim cap screw | 19. Stem nut |
| 4. Washer | 12. Wheel nut | 20. Bearing balls (50) |
| 5. Spacer | 13. Axle | 21. Inner race |
| 6. Wheel hub | 14. Stem cap screw | 22. Outer race |
| 7. Seal | 15. Washer | 23. Steering stem & fork assy. |
| 8. Bearing | 16. Fork cap screw | |

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fork cap screws (16) to 21.7-34.6 N·m (16.0-25.5 ft.-lbs.) torque.

R&R AND OVERHAUL. To remove steering stem head assembly, remove front wheel as outlined in FRONT AXLE section. Remove handlebars and stem head bracket (17—Fig. S1-11). Unscrew locknut (18) and stem nut (19) with a suitable tool and remove steering stem and fork assembly from frame being careful not to lose bearing balls (20).

Drive upper and lower bearing inner races (21) from head pipe using a suitable punch. Lower bearing outer race (22) can be removed by carefully driving a suitable wedge between bearing and bearing seat. Inspect and renew any questionable components. Bearing inner races (21) should be installed using tool 09941-34511 or equivalent. Use a good quality grease to lubricate and retain bearing balls (20) in position during installation. The upper and lower stem bearings each contain 25 loose bearing balls. Adjust steering stem as previously described.

Model LT50

ADJUSTMENT. The toe-in should be checked and adjusted after the first month of operation and every three months thereafter. Prior to toe-in adjustment, inspect steering assembly for damaged or excessively worn components. If service to steering assembly is required, refer to R&R AND OVERHAUL section.

To check toe-in, inflate tires to recommended pressure of 25-35 kPa (3.5-5.5 psi). Position vehicle on a flat smooth surface and set handlebars straight forward. Using a suitable tape measure, measure the distance between right and left tire center lines on back side of

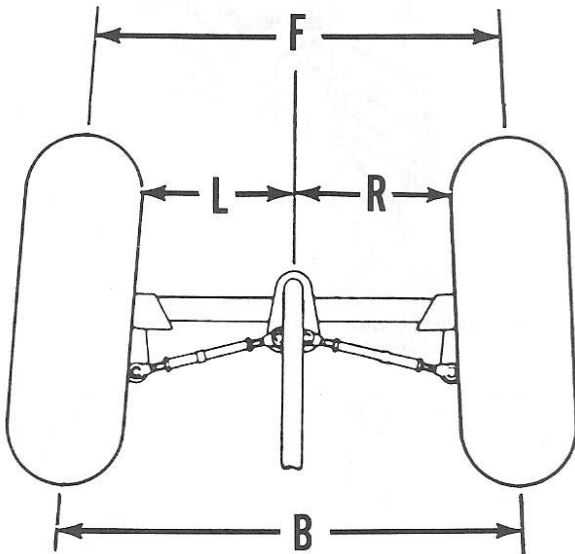


Fig. S1-13—During toe-in adjustment on LT50 models, measure distance between front side (F) and back side (B) of tire centerlines while maintaining equal distances between front left (L) and right (R) tire to vehicle centerlines. Refer to text.

tires (B—Fig. S1-13) and record measurement. Locate the same tire centerline points on front side of tires (F) and record measurement. The front measurement should be 2.5-5.5 mm (0.10-0.22 in.) less than rear measurement; note that the distance from a projected vehicle center line to left (L) and right (R) tire centerlines should also be equal.

To adjust, loosen tie rod locknuts (21—Fig. S1-12) on both left and right tie rods. Tie rod end locknuts (21) color-coded yellow have left-hand threads. Rotate adjusters (22) in equal increments to maintain equal vehicle centerline to left and right tire center line distances. Tighten tie rod locknuts to 21.7-34.5 N·m (16.0-25.5 ft.-lbs.) torque.

R&R AND OVERHAUL. Removal and disassembly of steering components is evident after inspection of unit and referral to exploded view in Fig. S1-12. During reassembly, renew all cotter pins. Lubricate all friction points with a good quality grease. Tighten steering shaft clamp cap screws (7) to 17.6-27.1 N·m (13-20 ft.-lbs.), steering shaft lower nut (18) to 21.7-34.6 N·m (16.0-25.5 ft.-lbs.) and tie rod end retaining nuts (23) and spindle nuts (30) to 39.3-58.9 N·m (29.0-43.5 ft.-lbs.) torque.

BRAKES

All Models

ADJUSTMENT. Models ALT50 and LT50 are equipped with a two-shoe internal expanding drum brake mounted on rear axle and actuated by left handlebar lever. The brake adjustment should be checked after the first month of operation and every three months thereafter.

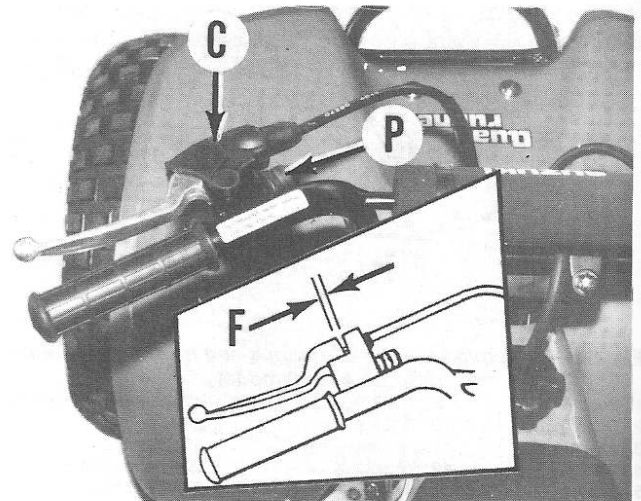


Fig. S1-14—Brake lever free play measured at (F) should be 5 mm (0.2 in.). Refer to Fig. S1-11 for adjustment location.

To check brake adjustment, remove protective cover (C—Fig. S1-14) from lever and measure brake lever free travel. Lever should have 5 mm (0.2 in.) of free travel between lever base and bracket as measured at (F) in inset. To adjust, rotate adjusting nut (A—Fig. S1-15) at rear brake as required.

To check parking brake operation, pull brake lever and engage brake lock button (P—Fig. S1-14). Try to detect any brake slippage by pushing back and forth on vehicle. Readjust brakes as required.

R&R AND OVERHAUL. To remove rear brake shoes for inspection or renewal, first suitably support rear of vehicle and remove right rear tire and wheel. Remove wheel hub retaining nut and withdraw wheel hub (1—Fig. S1-16) from axle (13). Slide spacer (2), brake drum cover (3) and brake drum (4) off axle. Carefully remove brake shoes (5) from backing plate (8).

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 90.7 mm (3.57 in.).

Reinstall brake shoes by reversing removal procedure while noting the following: Lightly coat brake camshaft with grease. Tighten wheel hub retaining nut to 56.9-78.6 N·m (42-58 ft.-lbs.) and wheel retaining nuts to 17.6-27.1 N·m (13-20 ft.-lbs.)

DRIVE CHAIN AND SPROCKETS

All Models

ADJUSTMENT. The drive chain should be inspected and adjusted every month. Improper maintenance and neglect can cause early failure of both drive chain and sprockets. Drive chain free play should be 15-25 mm (0.5-1.0 in.) measured midway between sprockets. To adjust, loosen rear axle bearing housing retaining cap screws (17—Fig. S1-17) and rotate chain adjusting nuts (17) in equal increments as required.

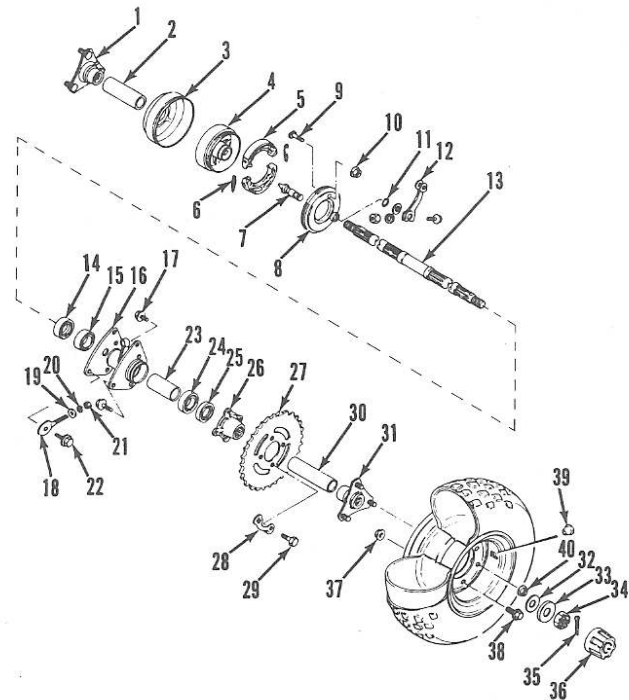


Fig. S1-16—Exploded view of rear axle, brake and related components used on both models.

- | | | |
|----------------------|---------------------|-------------------|
| 1. Right hub | 15. Bearing | 28. Lock plate |
| 2. Axle spacer | 16. Bearing housing | 29. Cap screw |
| 3. Cover | 17. Cap screw | 30. Spacer |
| 4. Brake drum | 18. Chain tensioner | 31. Left hub |
| 5. Brake shoe | 19. Washer | 32. Spacer |
| 6. Spring | 20. Lockwasher | 33. Washer |
| 7. Brake cam | 21. Tensioner nut | 34. Hub nut |
| 8. Backing plate | 22. Cap screw | 35. Cotter pin |
| 9. Brake shoe anchor | 23. Bearing spacer | 36. Cap |
| 10. Anchor nut | 24. Bearing | 37. Rim nut |
| 11. "O" ring | 25. Seal | 38. Rim cap screw |
| 12. Brake cam lever | 26. Sprocket mount | 39. Stem seal |
| 13. Axle | 27. Rear sprocket | 40. Wheel nut |

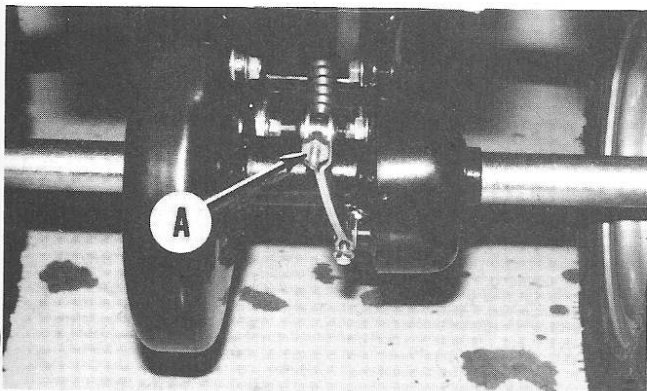


Fig. S1-15—Brake adjustment is accomplished by rotating adjuster (A) at rear of vehicle.

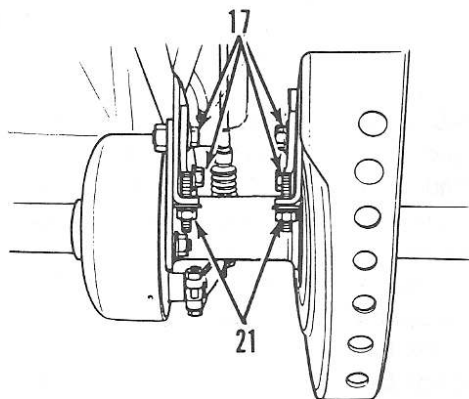


Fig. S1-17—To adjust final drive chain, loosen bearing housing retaining cap screws (17) and rotate adjusting nuts (21).

Standard chain is either a Daido D.I.D. 420 or a Takasago RK420M which has 64 links. Standard engine sprocket has 11 teeth while standard rear sprocket has 37 teeth.

Reinstall by reversing removal procedure while noting the following: Tighten rear sprocket retaining cap screws to 17.6-27.1 N·m (13-20 ft.-lbs.) torque and secure with tabs on lock plates. Tighten axle nut to 56.9-78.6 N·m (42-58 ft.-lbs.) and wheel retaining nuts to 17.6-27.1 N·m (13-20 ft.-lbs.) torque. When installing drive chain, ensure master link retaining clip is installed with closed end of clip toward normal direction of chain movement (split end toward rear with master link located on top side of sprockets). Adjust chain as previously described in ADJUSTMENT paragraphs.