

**SERVICING INFORMATION**

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# TROUBLESHOOTING

## ENGINE

Complaint	Symptom and possible causes	Remedy
Engine will not start, or it is hard to start.	<p><b>Compression too low</b></p> <ol style="list-style-type: none"> <li>Excessively worn cylinder or piston rings.</li> <li>Stiff piston ring in place.</li> <li>Gas leaks from the joint in crankcase, cylinder or cylinder head.</li> <li>Damaged reed valve.</li> <li>Spark plug too loose.</li> <li>Broken, cracked or other wise failed piston.</li> </ol> <p><b>Plug not sparking</b></p> <ol style="list-style-type: none"> <li>Fouled spark plug.</li> <li>Wet spark plug.</li> <li>Defective ignition coil.</li> <li>Open or short in high-tension cord.</li> <li>Defective pick-up coil, primary coil or CDI unit.</li> </ol> <p><b>No fuel reaching the carburetor</b></p> <ol style="list-style-type: none"> <li>Clogged fuel tank vent hose.</li> <li>Clogged or defective fuel cock.</li> <li>Defective carburetor needle valve.</li> <li>Clogged fuel pipe.</li> </ol>	<p>Replace. Repaire or replace. Repaire or replace.</p> <p>Replace. Tighten. Replace.</p> <p>Clean or replace. Clean and dry. Replace. Replace. Replace.</p> <p>Clean. Clean or replace. Replace. Clean.</p>
Engine stalls easily.	<ol style="list-style-type: none"> <li>Fouled spark plug.</li> <li>Defective pick-up coil, primary coil or CDI unit.</li> <li>Clogged fuel pipe.</li> <li>Clogged jets in carburetor.</li> <li>Improperly ser throttle valve stop screw/pilot air screw.</li> <li>Clogged exhaust pipe.</li> </ol>	<p>Clean or replace. Replace. Repalce. Clean. Adjust. Clean.</p>
Noisy engine.	<p><b>Noise appears to come from piston</b></p> <ol style="list-style-type: none"> <li>Piston or cylinder worn down.</li> <li>Combustion chamber fouled with carbon.</li> <li>Piston pin or piston pin bore worn.</li> <li>Piston ring or ring groove worn.</li> <li>Piston pin bearing worn.</li> <li>Piston pin bearing side washer worn.</li> </ol> <p><b>Noise seems to come from clutch</b></p> <ol style="list-style-type: none"> <li>Worn splines of countershaft or hub.</li> <li>Worn teeth of clutch plates.</li> <li>Distorted clutch plates, driven and drive.</li> <li>Clutch dampers weakened.</li> </ol> <p><b>Noise seems to come from crankshaft or balancer.</b></p> <ol style="list-style-type: none"> <li>Ratting bearings due to wear.</li> <li>Big-end bearing worn or burnt.</li> <li>Journal bearing worn or burnt.</li> <li>Thrust clearance too large.</li> </ol> <p><b>Noise seems to come from transmission</b></p> <ol style="list-style-type: none"> <li>Gears worn or rubbing.</li> <li>Badly worn splines.</li> <li>Primary gears worn or rubbing.</li> <li>Badly worn bearings.</li> </ol>	<p>Replace. Clean. Replace. Replace. Replace. Replace.</p> <p>Replace. Replace. Replace. Replace.</p> <p>Replace. Replace. Replace. Replace.</p> <p>Replace. Replace. Replace. Replace.</p>



Complaint	Symptom and possible causes	Remedy
<b>Slipping clutch</b>	<ol style="list-style-type: none"> <li>1. Clutch control out of adjustment, or loss of play.</li> <li>2. Weakened clutch springs.</li> <li>3. Worn or distorted pressure plate.</li> <li>4. Distorted clutch plates, driven and drive.</li> </ol>	Adjust. Replace. Replace. Replace.
<b>Dragging clutch</b>	<ol style="list-style-type: none"> <li>1. Clutch control out of adjustment or too much play.</li> <li>2. Some clutch springs weakened while others are not.</li> <li>3. Distorted pressure plate or clutch plates.</li> <li>4. Transmission oil too viscous.</li> </ol>	Adjust. Replace. Replace. Change.
<b>Transmission will not shift.</b>	<ol style="list-style-type: none"> <li>1. Broken gearshift cam.</li> <li>2. Distorted gearshift forks.</li> <li>3. Worn gearshift pawl.</li> <li>4. Worn or damaged clutch release mechanism.</li> </ol>	Replace. Replace. Replace. Replace.
<b>Transmission will not shift back.</b>	<ol style="list-style-type: none"> <li>1. Broken return spring on gearshift shaft.</li> <li>2. Gearshift shaft is rubbing or sticky.</li> </ol>	Replace. Repair or replace.
<b>Transmission jumps out of gear.</b>	<ol style="list-style-type: none"> <li>1. Worn shifting gears on driveshaft or countershaft.</li> <li>2. Distorted or worn gearshift forks.</li> <li>3. Weakened cam stopper spring on gearshift stopper.</li> <li>4. Worn gearshift pawl.</li> <li>5. Worn gearshift cam.</li> </ol>	Remedy. Replace. Replace. Replace. Replace.
<b>Engine idles poorly.</b>	<ol style="list-style-type: none"> <li>1. Spark plug gap too wide.</li> <li>2. Defective ignition coil.</li> <li>3. Defective pick-up coil, primary coil or CDI unit.</li> <li>4. Float-chamber fuel level out of adjustment in carburetor.</li> <li>5. Clogged jets.</li> <li>6. Improperly set throttle stop screw/pilot air screw.</li> <li>7. Unseated reed valve.</li> <li>8. Too heavy carbon deposit on piston, ring, piston head and exhaust pipe.</li> <li>9. Excessively worn cylinder or piston rings.</li> <li>10. Piston ring stuck in place.</li> </ol>	Adjust. Replace. Replace. Adjust.  Clean. Adjust. Replace. Clean.  Replace. Replace.
<b>Engine runs poorly in high speed range.</b>	<ol style="list-style-type: none"> <li>1. Excessively worn cylinder or piston rings.</li> <li>2. Piston ring stuck in place.</li> <li>3. Improperly spark plug gap.</li> <li>4. Clogged jets.</li> <li>5. Defective ignition coil.</li> <li>6. Defective pick-up coil, primary coil or CDI unit.</li> <li>7. Float-chamber fuel level too low.</li> <li>8. Clogged air cleaner element.</li> <li>9. Clogged fuel pipe, resulting in inadequate fuel supply to carburetor.</li> <li>10. Clogged the carburetor breather pipe.</li> </ol>	Replace. Replace. Adjust. Clean. Replace. Replace. Adjust. Clean. Clean.  Clean.
<b>Dirty or heavy exhaust smoke.</b>	<ol style="list-style-type: none"> <li>1. Incorrect mixing ratio of fuel and oil.</li> <li>2. Damage or worn crankshaft oil seal.</li> </ol>	Correct. Replace.
<b>Engine lacks power.</b>	<ol style="list-style-type: none"> <li>1. Worn piston rings or cylinder.</li> <li>2. Spark plug gaps incorrect.</li> <li>3. Clogged jets in carburetor.</li> <li>4. Float-chamber fuel level out of adjustment.</li> <li>5. Clogged air cleaner element.</li> <li>6. Sucking air from intake pipe.</li> </ol>	Replace. Adjust or replace. Clean. Adjust. Clean. Retighten or replace.

Complaint	Symptom and possible causes	Remedy
Engine lacks power.	7. Too much transmission oil in the engine. 8. Damaged or unseated reed valve. 9. Carbon deposit on combustion chamber/exhaust pipe.	Drain out excess oil. Replace. Clean.
Engine overheats.	1. Heavy carbon deposit on piston crown/exhaust port. 2. Fuel level too low in float chamber. 3. Sucking air from intake pipe. 4. Use incorrect engine oil. 5. Defective cooling system.	Clean. Adjust. Retighten or replace. Change. See radiator section.

## CARBURETOR

Complaint	Symptom and possible causes	Remedy
Trouble with starting.	1. Starter jet is clogged. 2. Starter pipe is clogged. 3. Air leaking from joint between starter body and carburetor. 4. Starter plunger is not fully closed. 5. Improperly set throttle stop screw/pilot air screw.	Clean. Clean. Check and retighten. Repair. Adjust.
Idling or low-speed trouble.	1. Pilot jet or pilot air jet is clogged or loose. 2. Incorrect float height. 3. Pilot outlet is clogged. 4. Starter plunger is not fully closed. 5. Air leaking from intake pipe.	Check and clean. Adjust. Check and clean. Check and adjust. Replace.
Medium or high-speed trouble.	1. Main jet or main air jet is clogged. 2. Needle jet is clogged. 3. Throttle valve is not operating properly. 4. Filter is clogged. 5. Air leaking from intake pipe.	Check and clean. Check and clean. Check throttle valve for operation. Check and clean. Replace.
Overflow and fuel level fluctuations.	1. Needle valve is worn or damaged. 2. Float is not working properly. 3. Foreign matter has adhered to needle valve. 4. Fuel level is too high or low. 5. Clogged carburetor air vent pipe.	Replace. Check and adjust. Clean. Adjust float height. Clean.

## RADIATOR

Symptom	Probable cause	Remedy
Engine overheats.	1. Not enough cooling water. 2. Radiator core is clogged with dirt or trashes. 3. Clogged water passage. 4. Air trapped in the cooling circuit. 5. Defective water pump. 6. Use incorrect cooling water.	Add. Clean. Clean. Bleed out air. Replace. Change.
Engine overcools.	1. Extremely cold weather.	Put on the radiator cover.



**ELECTRICAL**

Complaint	Symptom and possible causes	Remedy
No sparking or poor sparking.	<ol style="list-style-type: none"><li>1. Defective ignition coil.</li><li>2. Defective spark plug.</li><li>3. Defective pick-up coil, primary coil or CDI unit.</li><li>4. Defective high tension cord.</li></ol>	<p>Replace. Replace. Replace. Replace.</p>
Spark plug soon become fouled with carbon.	<ol style="list-style-type: none"><li>1. Mixture too rich.</li><li>2. Idling speed set too high.</li><li>3. Incorrect gasoline.</li><li>4. Dirty element in air cleaner.</li><li>5. Spark plug too cold.</li><li>6. Incorrect engine oil.</li><li>7. Worn piston rings.</li><li>8. Piston or cylinder worn.</li></ol>	<p>Adjust carburetor. Adjust carburetor. Change. Clean. Replace by hot type plug. Replace. Replace. Replace.</p>
Spark plug electrodes overheat or burn.	<ol style="list-style-type: none"><li>1. Spark plug too hot.</li><li>2. The engine overheats.</li><li>3. Spark plug loose.</li><li>4. Mixture too lean.</li><li>5. Incorrect fuel.</li><li>6. Not enough engine oil.</li></ol>	<p>Replace by cold type plug. Tune up. Retighten. Adjust carburetor. Replace. Check oil pump.</p>
Head light and/or Tail light is not lighted.	<ol style="list-style-type: none"><li>1. Bulbs is shorted.</li><li>2. Open or short in lead wire, or loose lead connection.</li><li>3. Shorted, grounded or open lighting coil.</li><li>4. Shorted or punctured regulator.</li></ol>	<p>Replace. Repair or replace or retighten. Replace. Replace.</p>

## CHASSIS

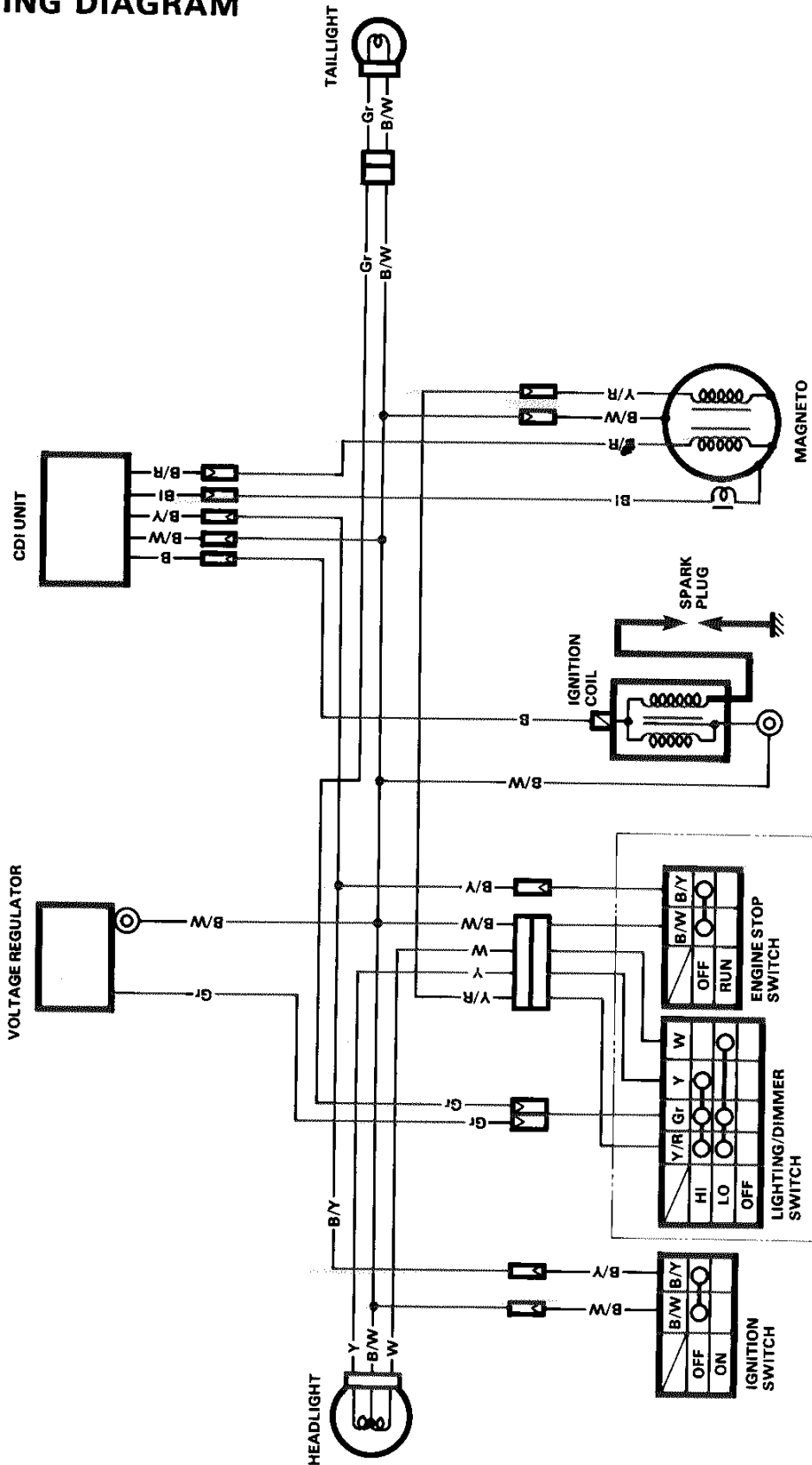
Complaint	Symptom and possible causes	Remedy
Handling feels too heavy or stiff.	<ol style="list-style-type: none"> <li>1. Disturbed front wheel alignment.</li> <li>2. Poorly lubricated.</li> <li>3. Not enough pressure in tires.</li> <li>4. Tie rod ends tending to seize.</li> <li>5. Linkage connections tending to seize.</li> </ol>	Adjust. Lubricate. Adjust. Replace. Repair or replace.
Steering oscillation.	<ol style="list-style-type: none"> <li>1. Wheel tires inflated unequally.</li> <li>2. Wobbly wheels.</li> <li>3. Loose nut on wheel hub.</li> <li>4. Damaged or worn wheel hub bearing.</li> <li>5. Worn or loose tie rod ends.</li> <li>6. Defective or incorrect tires.</li> <li>7. Damaged wishbone arm bearings.</li> <li>8. Loosen bolts and nuts on chassis.</li> </ol>	Adjust tire pressure. Replace. Retighten. Replace. Replace or retighten. Replace. Replace. Retighten.
Steering pulling to one side.	<ol style="list-style-type: none"> <li>1. Wheel tires inflated unequally.</li> <li>2. Disturbed front wheel alignment.</li> <li>3. Worn or broken wheel hub bearings.</li> <li>4. Distorted frame.</li> <li>5. Defective shock absorber.</li> </ol>	Adjust tire pressure. Adjust. Replace. Repair or replace. Replace.
Shocks coming to steering.	<ol style="list-style-type: none"> <li>1. Tire inflating pressure too high.</li> <li>2. Worn steering linkage connections.</li> <li>3. Loosen bolts on suspension system.</li> </ol>	Adjust. Replace. Retighten.
Rapid wear or uneven wear of tires.	<ol style="list-style-type: none"> <li>1. Worn or loosen wheel hub bearings.</li> <li>2. Disturbed front wheel alignment.</li> </ol>	Replace. Adjust.
Steering noise.	<ol style="list-style-type: none"> <li>1. Loose bolts and nuts.</li> <li>2. Broken or otherwise damaged wheel hub bearings.</li> <li>3. Poorly lubricated.</li> </ol>	Retighten. Replace. Lubricate.
Suspension too soft. (Front and Rear)	<ol style="list-style-type: none"> <li>1. Weakened spring.</li> <li>2. Oil leakage of shock absorber.</li> <li>3. Suspension adjuster improperly set.</li> </ol>	Replace. Replace. Adjust.
Suspension too stiff. (Front and Rear)	<ol style="list-style-type: none"> <li>1. Worn wishbone arm bearings.</li> <li>2. Suspension adjuster improperly set.</li> <li>3. Distorted shock absorber shaft.</li> <li>4. Worn swingarm related bearings.</li> </ol>	Replace. Adjust. Replace. Replace.
Noisy suspension.	<ol style="list-style-type: none"> <li>1. Loose bolts on suspension system.</li> <li>2. Worn wishbone arm bearings.</li> </ol>	Retighten. Replace.
Rear wheel oscillation.	<ol style="list-style-type: none"> <li>1. Worn or loose rear axle housing bearings.</li> <li>2. Defective or incorrect tires.</li> <li>3. Distorted wheel rim.</li> <li>4. Loose nuts on wheel hub.</li> <li>5. Loose nut on axle shaft.</li> <li>6. Rear shock and/or cushion lever bearing is worn.</li> </ol>	Replace. Replace. Replace. Retighten. Retighten. Replace.

## BRAKES

Complaint	Symptom and possible causes	Remedy
<b>Insufficient brake power.</b>	<ol style="list-style-type: none"> <li>1. Leakage of brake fluid from hydraulic system.</li> <li>2. Worn pads.</li> <li>3. Oil adhesion on engaging surface of pads.</li> <li>4. Worn disc.</li> <li>5. Air in hydraulic system.</li> </ol>	Repair or replace. Replace. Clean disc and pads. Replace. Bleed air.
<b>Brake squeaking.</b>	<ol style="list-style-type: none"> <li>1. Carbon adhesion on pad surface.</li> <li>2. Tilted pad.</li> <li>3. Damaged wheel bearing.</li> <li>4. Loose wheel axle.</li> <li>5. Worn pads.</li> <li>6. Foreign material in brake fluid.</li> <li>7. Clogged return port of master cylinder.</li> </ol>	Repair surface with sandpaper. Modify pad fitting. Replace. Tighten to specified torque. Replace. Replace brake fluid. Disassemble and clean master cylinder.
<b>Excessive brake lever stroke.</b>	<ol style="list-style-type: none"> <li>1. Air in hydraulic system.</li> <li>2. Insufficient brake fluid.</li> <li>3. Improper quality of brake fluid.</li> </ol>	Bleed air. Replenish fluid to specified level, bleed air. Replace with correct fluid.
<b>Leakage of brake fluid.</b>	<ol style="list-style-type: none"> <li>1. Insufficient tightening of connection joints.</li> <li>2. Cracked hose.</li> <li>3. Worn piston and/or cup.</li> </ol>	Tighten to specified torque. Replace. Replace piston and/or cup.



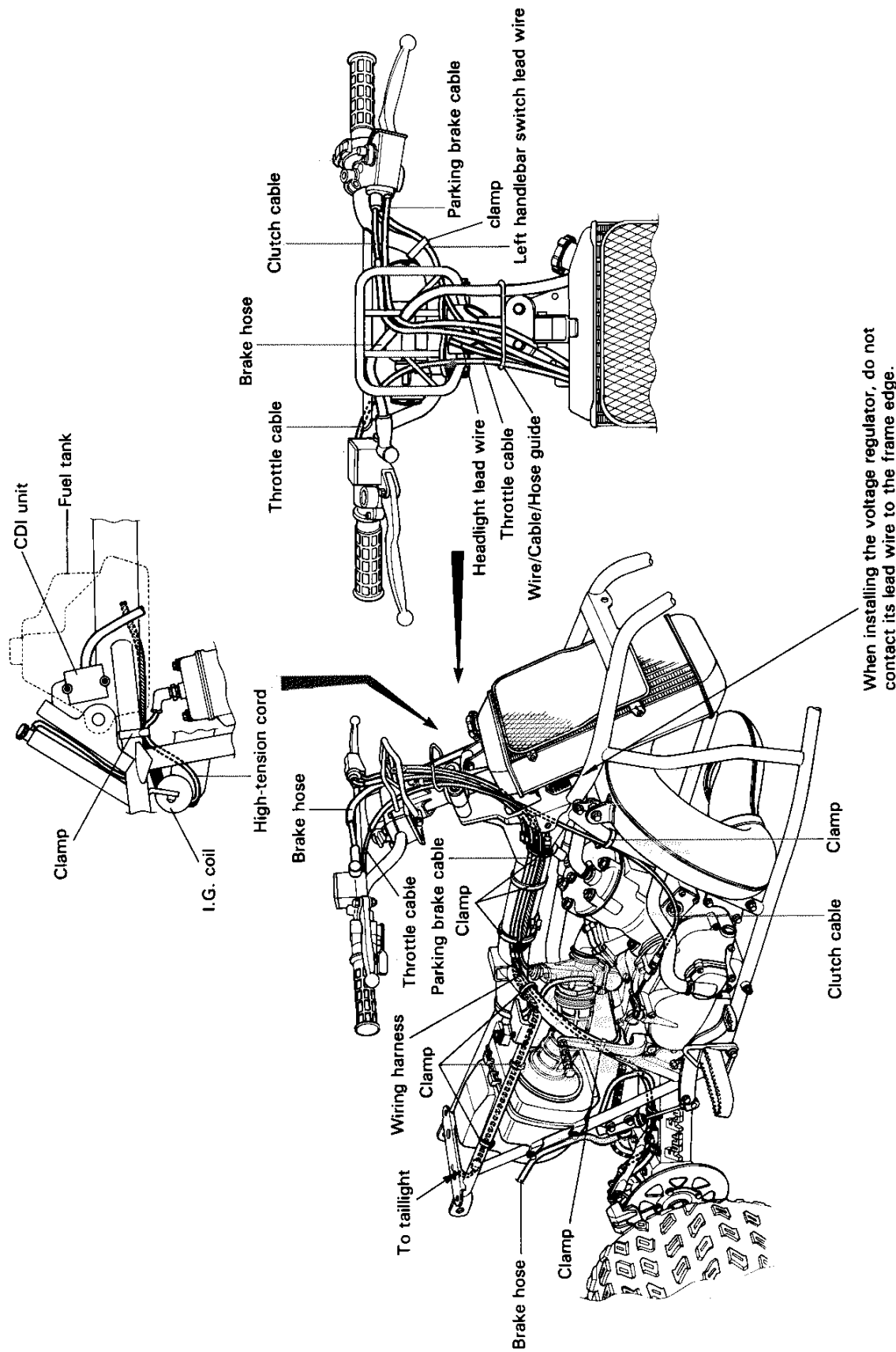
# WIRING DIAGRAM

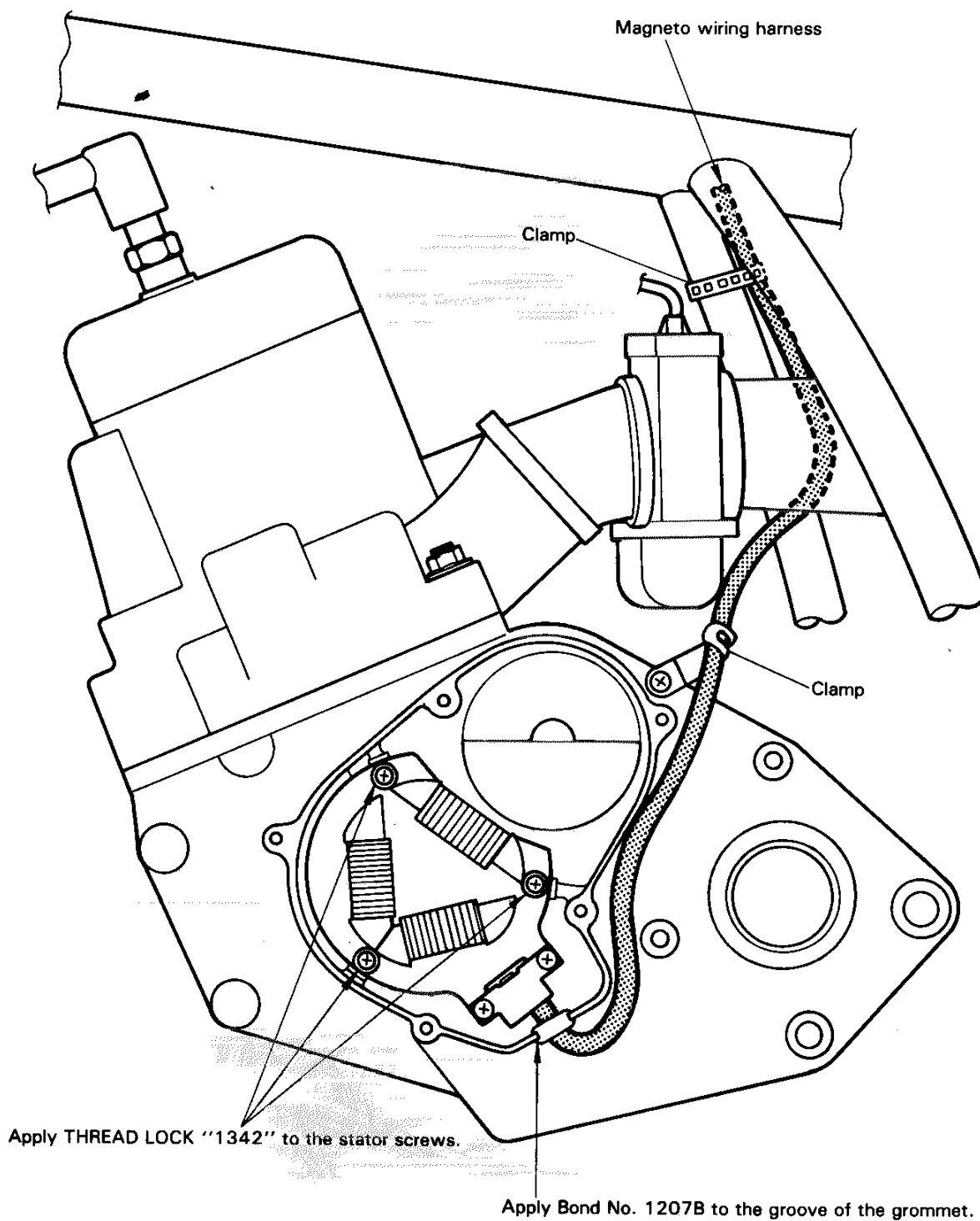


**WIRE COLOR**  
 B . . . . . Black  
 Bl . . . . . Blue  
 Gr . . . . . Gray  
 W . . . . . White  
 Y . . . . . Yellow  
 B/R . . . . . Black with Red tracer  
 B/W . . . . . Black with White tracer  
 B/Y . . . . . Black with Yellow tracer  
 Y/R . . . . . Yellow with Red tracer

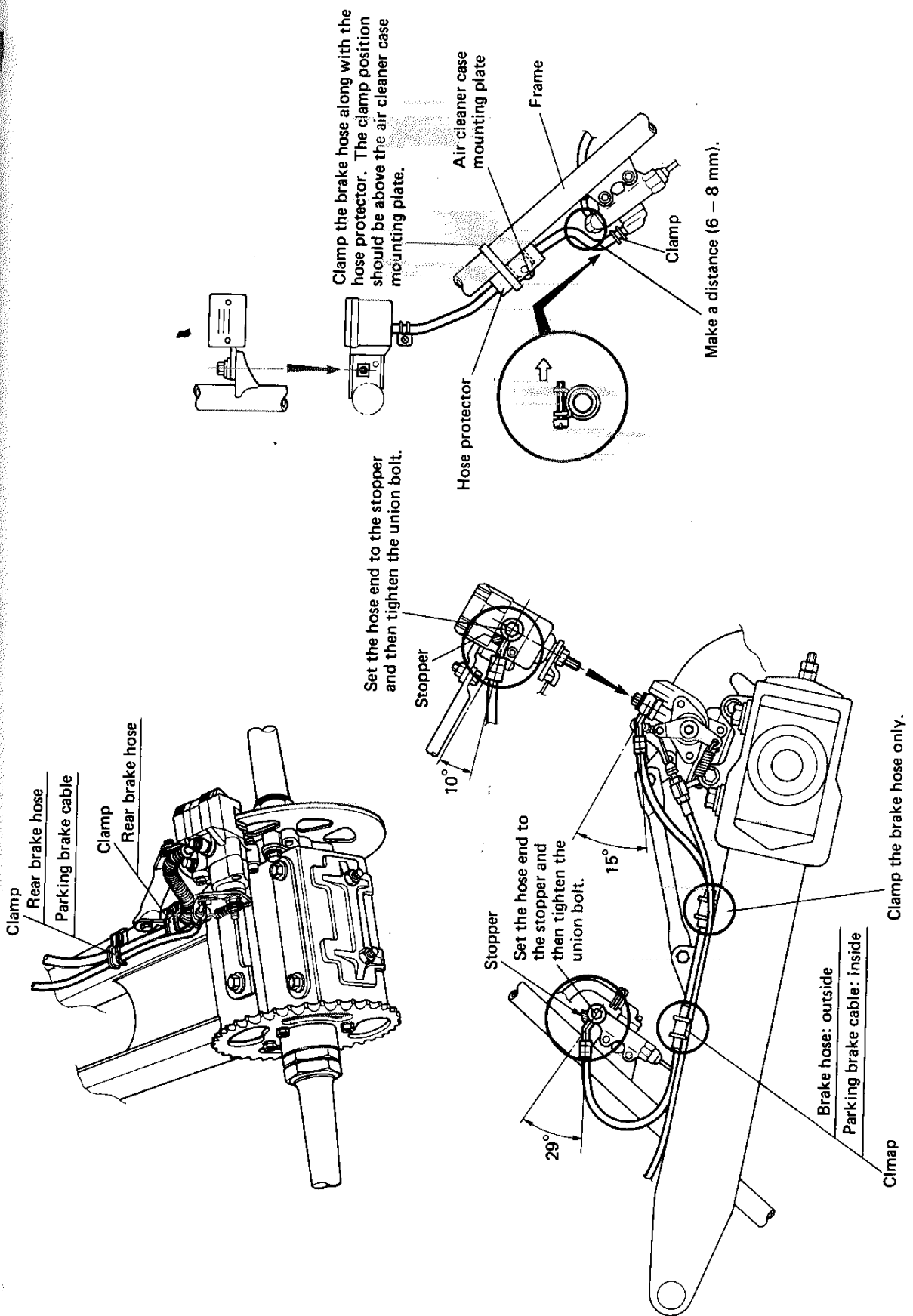


# WIRE, CABLE AND HOSE ROUTING

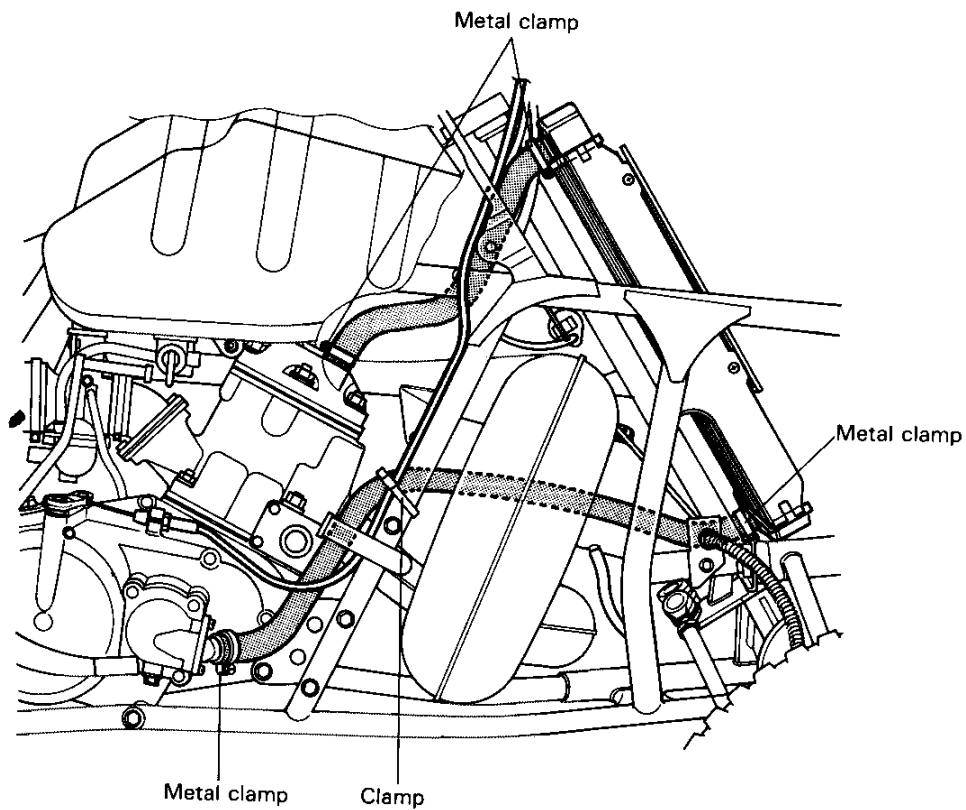




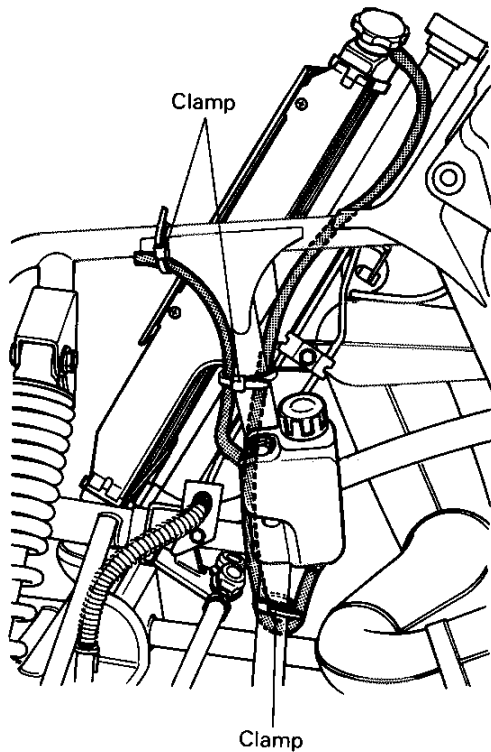




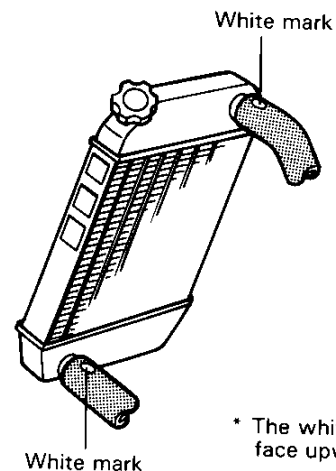
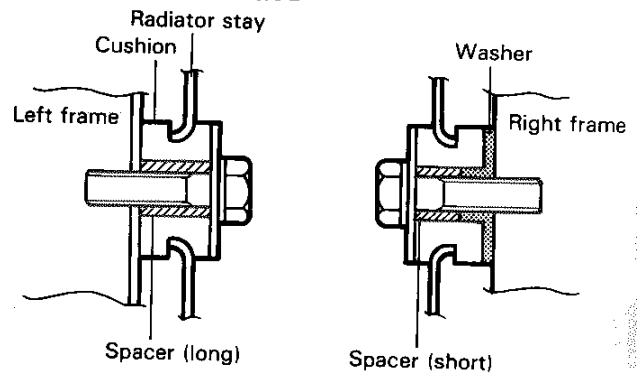
### RIGHT VIEW



### LEFT VIEW

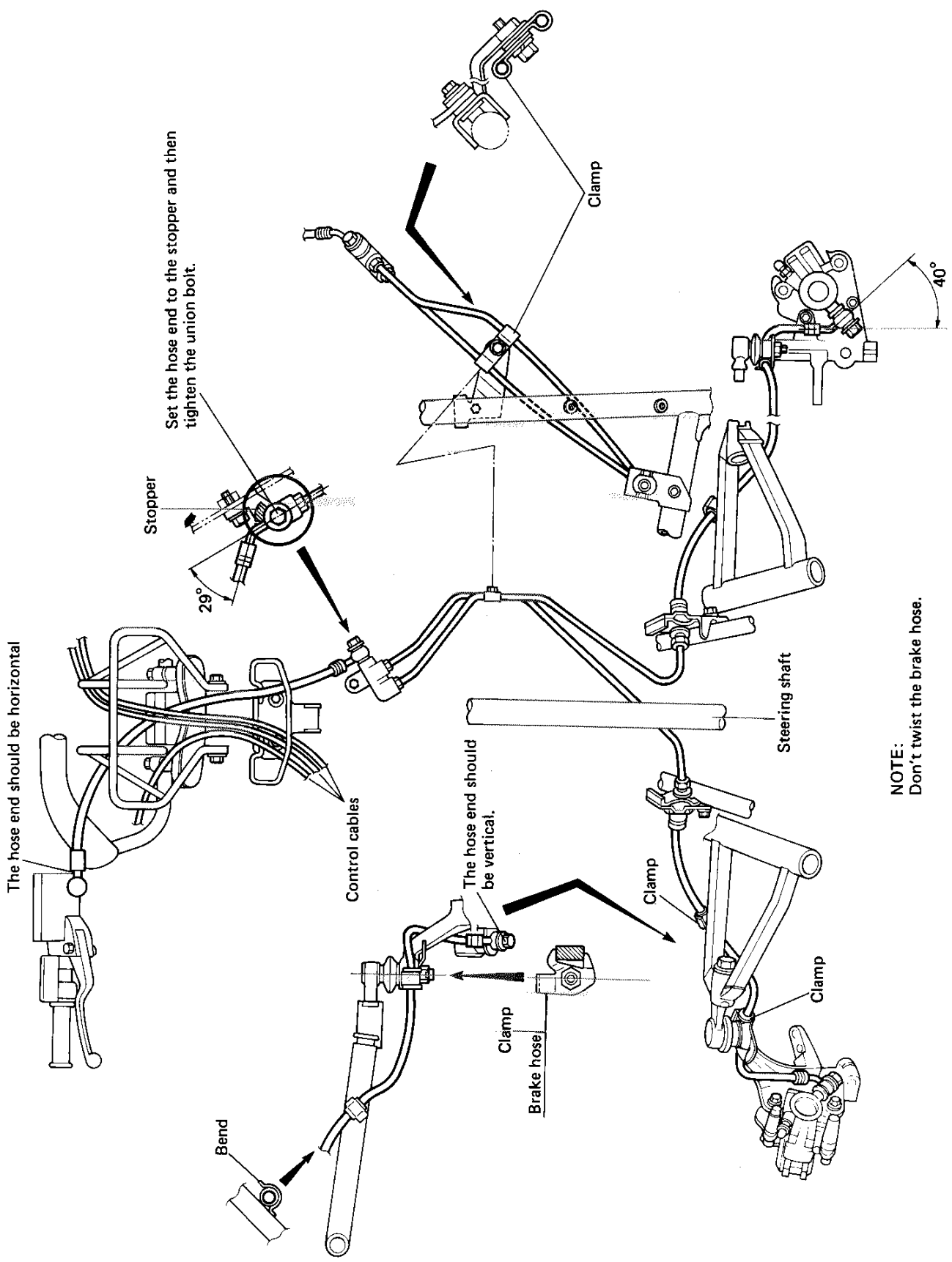


### RADIATOR MOUNTING

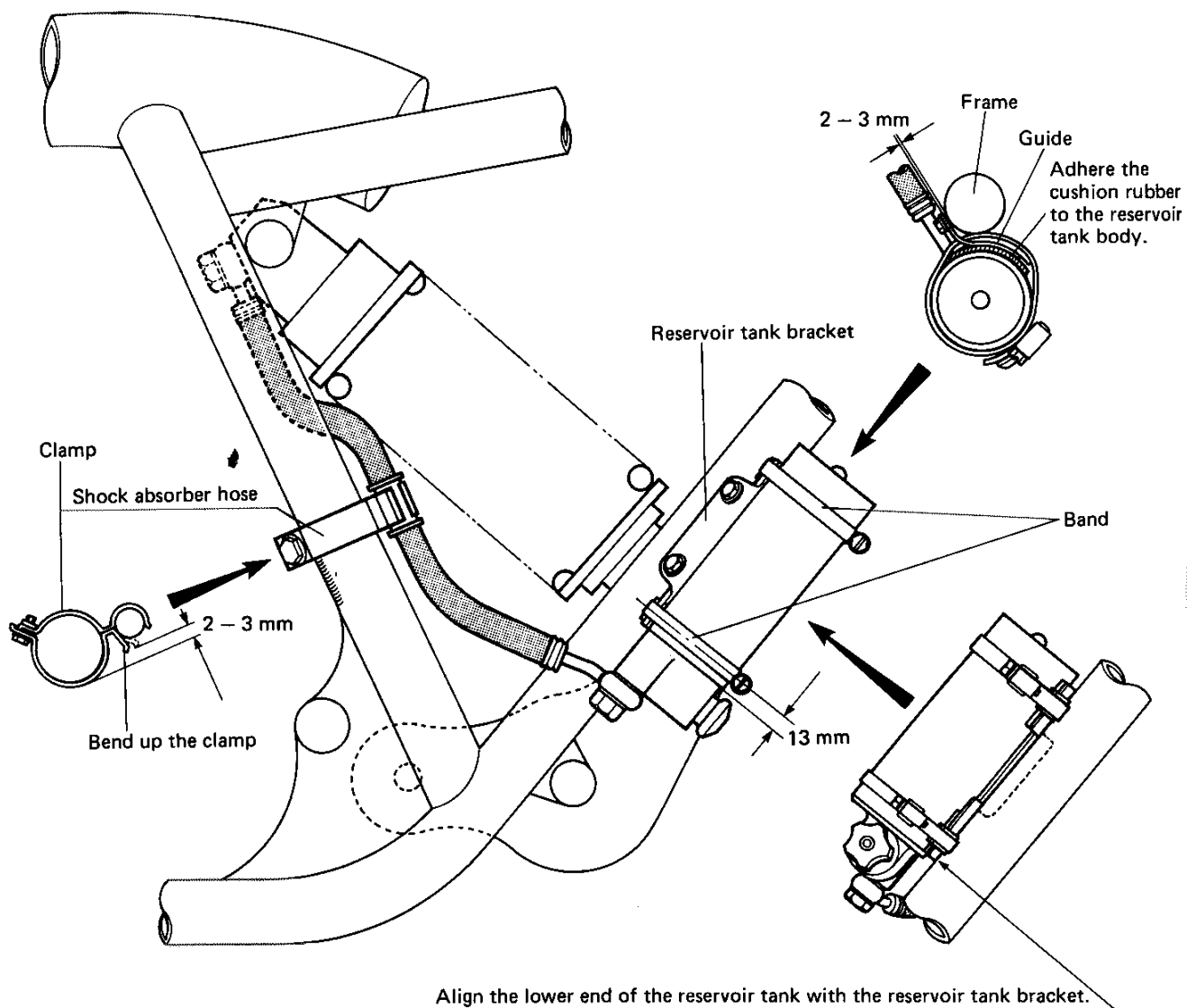


\* The white marks should face upward.





NOTE:  
Don't twist the brake hose.



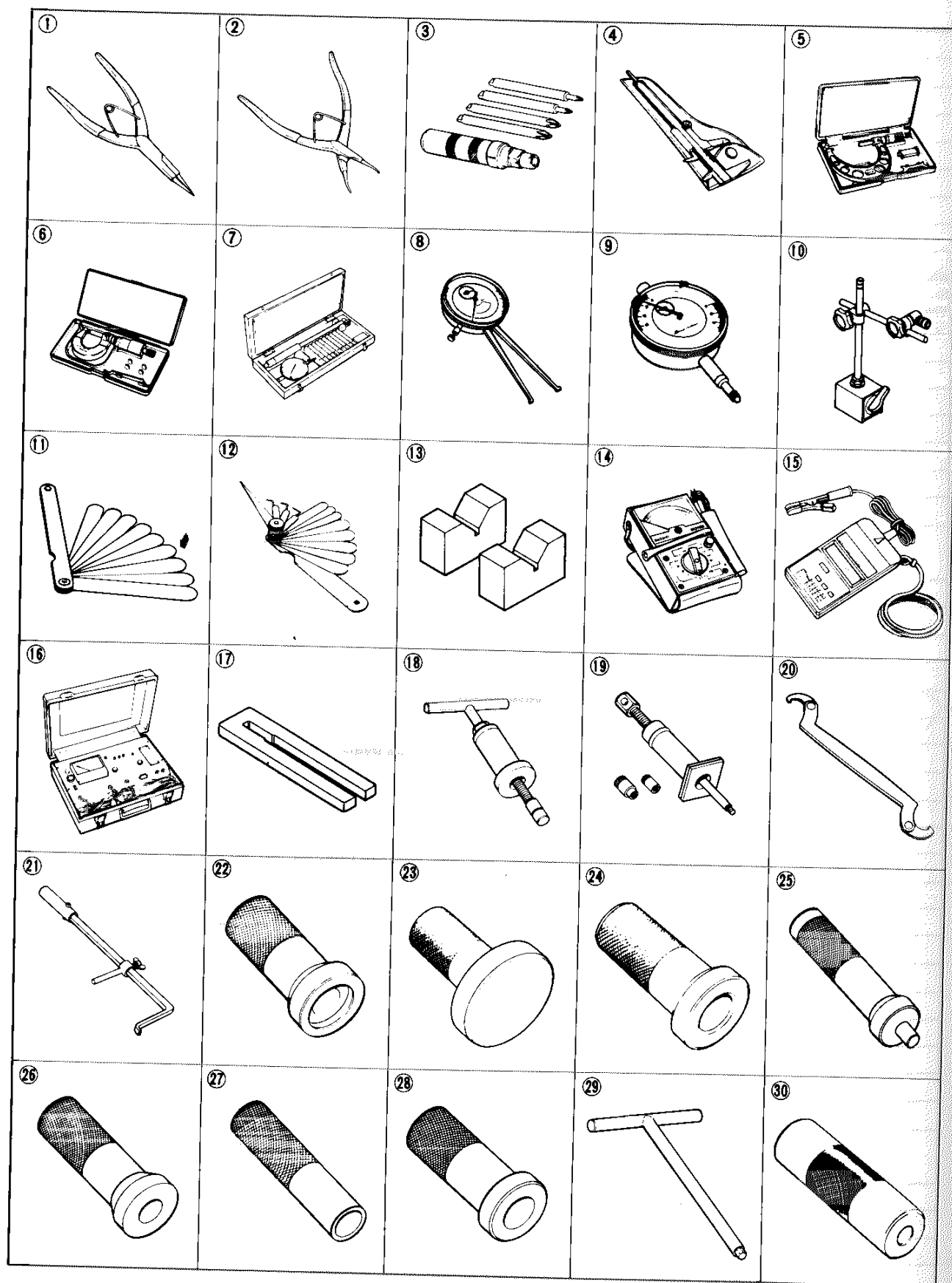
**NOTE:**

The shock absorber hose should not contact with another parts.

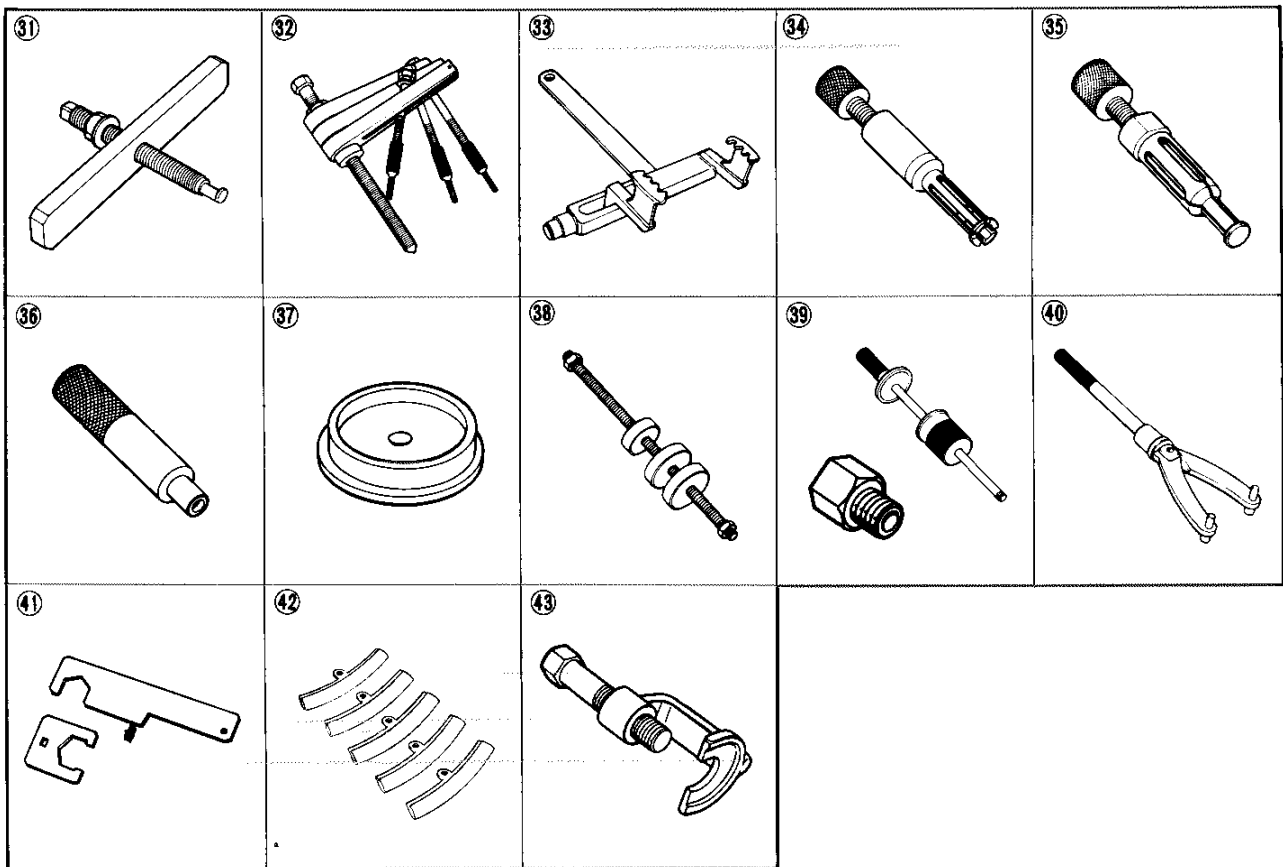


**SPECIAL TOOLS**

Item	Parr Number	Part Name
1	09900-06107	Snap ring pliers
2	09900-06108	Snap ring pliers
3	09900-09003	Impact driver set
4	09900-20102	Vernier calipers
5	09900-20203	Micrometer
6	09900-20205	Micrometer
7	09900-20508	Cylinder gauge set
8	09900-20605	Dial calipers (Not available in U.S. market)
9	09900-20606	Dial gauge
10	09900-20701	Magnetic stand (Not available in U.S. market)
11	09900-20803	Thickness gauge
12	09900-20804	Thickness gauge (Not available in U.S. market)
13	09900-21304	V-block (Not available in U.S. market)
14	09900-25002	Pocket tester
15	09900-26006	Tachometer (Not available in U.S. market)
16	09900-28106	Electro tester
17	09910-20115	Con-rod stopper
18	09910-32812	Crankshaft installer
	09911-11310	Attachment (Not available in U.S. market)
19	09910-34510	Piston pin puller
20	09910-60611	Universal clamp wrench
21	09913-50121	Oil seal remover
22	09913-70122	Bearing installer
23	09913-75510	Bearing installer (Not available in U.S. market)
24	09913-75810	Bearing remover (Not available in U.S. market)
25	09913-75820	Bearing remover (Not available in U.S. market)
26	09913-76010	Bearing remover (Not available in U.S. market)
27	09913-80112	Bearing installer
28	09913-85210	Bearing remover
29	09914-25811	6 mm "T" type hexagon wrench
30	09914-79610	Bearing remover
31	09917-50410	Bearing remover
32	09920-13120	Crankcase separating tool
33	09920-53710	Clutch sleeve hub holder
34	09923-73210	Bearing puller
35	09923-74510	Bearing puller
36	09924-74510	Oil seal installer handle
37	09924-74520	Oil seal installer
38	09924-84520	Bearing installer (Not available in U.S. market)
39	09930-30102	Sliding shaft
	09930-30161	Attachement C
40	09930-40113	Rotor holder
41	09940-92440	Rear axle nut holder/remover set
42	09941-94510	Rim protector
43	09942-72410	Steering knuckle arm remover







## TIGHTENING TORQUE

### ENGINE

ITEM		N-m	kg-m	lb-ft
Cylinder head nut		26 – 30	2.6 – 3.0	19.0 – 21.5
Cylinder base nut	10 mm	36 – 40	3.6 – 4.0	26.0 – 29.0
	6 mm	8 – 12	0.8 – 1.2	6.0 – 8.5
Spark plug		25 – 30	2.5 – 3.0	18.0 – 21.5
Mission oil drain plug		20 – 25	2.0 – 2.5	14.5 – 18.0
Magnetorotor nut		90 – 100	9.0 – 10.0	65.0 – 72.5
Clutch sleeve hub nut		40 – 60	4.0 – 6.0	29.0 – 43.5
Primary drive gear nut		100 – 130	10.0 – 13.0	72.5 – 94.0
Engine sprocket nut		80 – 100	8.0 – 10.0	58.0 – 72.5
Impeller bolt		8 – 12	0.8 – 1.2	6.0 – 8.5
Balancer driven gear nut		90 – 110	9.0 – 11.0	65.0 – 79.5
Gearshift cam mounting bolt		8 – 12	0.8 – 1.2	6.0 – 8.5
Engine mounting bracket bolt		28 – 34	2.8 – 3.4	20.0 – 24.5
Engine mounting bolt	Bolt length: 60, 155 mm	28 – 34	2.8 – 3.4	20.0 – 24.5
	Bolt length: 265 mm	37 – 45	3.7 – 4.5	27.0 – 32.5

### CHASSIS

ITEM	N-m	kg-m	lb-ft
Front hub nut	50 – 80	5.0 – 8.0	36.0 – 58.0
Front wheel set nut	20 – 31	2.0 – 3.1	14.5 – 22.5
Front shock absorber nut (Upper and Lower)	40 – 60	4.0 – 6.0	29.0 – 43.5
Handlebar clamp bolt	18 – 28	1.8 – 2.8	13.0 – 20.0
Tie-rod lock nut	35 – 55	3.5 – 5.5	25.5 – 40.0
Tie-rod end nut	22 – 35	2.2 – 3.5	16.0 – 25.5
Steering knuckle arm bolt	42.5 – 47.5	4.25 – 4.75	30.5 – 34.5
Wishbone arm end mounting bolt (Upper and Lower)	120 – 170	12.0 – 17.0	87.0 – 123.0
Upper wishbone arm end nut	35 – 50	3.5 – 5.0	25.5 – 36.0
Lower wishbone arm end pinch bolt	40 – 60	4.0 – 6.0	29.0 – 43.5
Steering shaft holder bolt	18 – 28	1.8 – 2.8	13.0 – 20.0
Steering shaft lower nut	38 – 60	3.8 – 6.0	27.5 – 43.5
Wishbone arm pivot bolt	50 – 70	5.0 – 7.0	36.0 – 50.5
Brake hose union bolt (Front and Rear)	20 – 25	2.0 – 2.5	14.5 – 18.0
Brake pipe flare nut	13 – 18	1.3 – 1.8	9.5 – 13.0
Caliper mounting bolt (Front and Rear)	15 – 25	1.5 – 2.5	11.0 – 18.0
Air bleeder valve	6 – 9	0.6 – 0.9	4.5 – 6.5

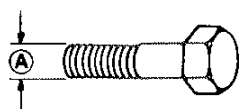


ITEM		N-m	kg-m	lb-ft
Front master cylinder mounting bolt		5 – 8	0.5 – 0.8	3.5 – 6.0
Rear master cylinder mounting bolt		10 – 16	1.0 – 1.6	7.0 – 11.5
Parking brake lever holder bolt		6 – 9	0.6 – 0.9	4.5 – 6.5
Rear caliper axle bolt	Front	20 – 25	2.0 – 2.5	14.5 – 18.0
	Rear	15 – 20	1.5 – 2.0	11.0 – 14.5
Brake pad mounting bolt		15 – 20	1.5 – 2.0	11.0 – 14.5
Rear axle lock nut	Right side	15 – 25	1.5 – 2.5	11.0 – 18.0
	Left side	160 – 200	16.0 – 20.0	115.5 – 144.5
Rear sprocket mounting bolt		40 – 60	4.0 – 6.0	29.0 – 43.5
Rear hub nut		85 – 115	8.5 – 11.5	61.5 – 83.0
Rear wheel set nut		45 – 65	4.5 – 6.5	32.5 – 47.0
Torque link bolt	Front	20 – 31	2.0 – 3.1	14.5 – 22.5
	Rear	44 – 66	4.4 – 6.6	32.0 – 47.5
Disc plate mounting bolt (Front and Rear)		15 – 25	1.5 – 2.5	11.0 – 18.0
Rear axle housing set bolt	Right side	70 – 85	7.0 – 8.5	50.5 – 61.5
	Left side	100 – 120	10.0 – 12.0	72.5 – 87.0
Rear shock absorber bolt (Upper and Lower)		40 – 60	4.0 – 6.0	29.5 – 43.5
Cushion lever pivot shaft nut		80 – 120	8.0 – 12.0	58.0 – 87.0
Cushion lever center shaft nut		80 – 120	8.0 – 12.0	58.0 – 87.0
Swingarm pivot nut		50 – 80	5.0 – 8.0	36.0 – 58.0

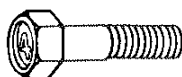
## TIGHTENING TORQUE CHART

For other bolts and nuts not listed above, refer to this chart:

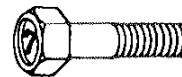
Bolt Diameter Ⓐ (mm)	Conventional or "4" marked bolt			"7" marked bolt		
	N-m	kg-m	lb-ft	N-m	kg-m	lb-ft
4	1.0 – 2.0	0.1 – 0.2	0.7 – 1.5	1.5 – 3.0	0.15 – 0.3	1.0 – 2.0
5	2.0 – 4.0	0.2 – 0.4	1.5 – 3.0	3.0 – 6.0	0.3 – 0.6	2.0 – 4.5
6	4.0 – 7.0	0.4 – 0.7	3.0 – 5.0	8.0 – 12.0	0.8 – 1.2	6.0 – 8.5
8	10.0 – 16.0	1.0 – 1.6	7.0 – 11.5	18.0 – 28.0	1.8 – 2.8	13.0 – 20.0
10	22.0 – 35.0	2.2 – 3.5	16.0 – 25.5	40.0 – 60.0	4.0 – 6.0	29.0 – 43.5
12	35.0 – 55.0	3.5 – 5.5	25.5 – 40.8	70.0 – 100.0	7.0 – 10.0	50.5 – 72.5
14	50.0 – 80.0	5.0 – 8.0	36.0 – 58.0	110.0 – 160.0	11.0 – 16.0	79.5 – 115.5
16	80.0 – 130.0	8.0 – 13.0	58.0 – 94.0	170.0 – 250.0	17.0 – 25.0	123.0 – 181.0
18	130.0 – 190.0	13.0 – 19.0	94.0 – 137.5	200.0 – 280.0	20.0 – 28.0	144.5 – 202.5



Conventional bolt



"4" marked bolt



"7" marked bolt

## SERVICE DATA

### CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD		LIMIT
Piston to cylinder clearance	0.070–0.080 ( 0.0028–0.0031 )		0.120 ( 0.0047 )
Cylinder bore	86.000–86.015 ( 3.3858–3.3864 ) Measure at 20mm(0.8 in) from the top surface		86.060 ( 3.3882 )
Piston diam.	85.925–85.940 ( 3.3829–3.3835 ) Measure at 33mm (1.3 in) from the skirt end		85.880 ( 3.3811 )
Cylinder distortion	—		0.05 ( 0.002 )
Cylinder head distortion	—		0.05 ( 0.002 )
Piston ring free end gap	1st & 2nd	R Approx. 6.6 ( 0.26 )	5.3 ( 0.21 )
Piston ring end gap	0.3–0.5 ( 0.01–0.02 )		0.85 ( 0.033 )
Piston ring to groove clearance	1st & 2nd	0.01–0.07 ( 0.0004–0.003 )	—
Piston pin bore	18.002–18.012 ( 0.7087–0.7091 )		18.030 ( 0.7098 )
Piston pin O.D.	17.994–18.000 ( 0.7084–0.7087 )		17.980 ( 0.7079 )

### CONROD + CRANKSHAFT

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	23.000–23.008 ( 0.9055–0.9058 )	23.040 ( 0.9071 )
Conrod deflection	—	3.0 ( 0.12 )
Crank web to web width	74.0 ± 0.1 ( 2.91 ± 0.004 )	—
Crankshaft runout	—	0.05 ( 0.002 )

### EXHAUST VALVE

Exhaust valve closing r/min	Approx. 4 000 r/min
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### CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch cable play	2–3 ( 0.08–0.12 )	—
Drive plate thickness	2.45–2.75 ( 0.096–0.108 )	2.15 ( 0.085 )
Drive plate claw width	15.8–16.0 ( 0.62–0.63 )	15.0 ( 0.59 )
Driven plate distortion	—	0.10 ( 0.004 )
Clutch spring free length	—	31.0 ( 1.22 )



## RADIATOR

ITEM	STANDARD	LIMIT
Radiator cap valve opening pressure	110 ± 15 kPa ( 1.1 ± 0.15 kg/cm <sup>2</sup> , 15.6 ± 2.1 psi )	—

## TRANSMISSION

Unit: mm (in) Except ratio

ITEM	STANDARD	LIMIT
Primary reduction ratio	2.142 ( 60/28 )	—
Final reduction ratio	4.000 ( 42/13 )	—
Gear ratios	Low	2.416 ( 29/12 )
	2nd	1.733 ( 26/15 )
	3rd	1.333 ( 24/18 )
	4th	1.050 ( 21/20 )
	Top	0.863 ( 19/22 )
Shift fork to groove clearance No.1, No.2 & No.3	0.10–0.30 ( 0.004–0.012 )	0.50 ( 0.020 )
Shift fork groove width No.1, No.2 & No.3	5.00–5.10 ( 0.197–0.201 )	—
Shift fork thickness No.1, No.2 & No.3	4.80–4.90 ( 0.189–0.193 )	—

## DRIVE CHAIN

Unit: mm (in)

ITEM	STANDARD	LIMIT
Drive chain	Type TAKASAGO:RK520SMO-Z10	—
	Links 98	—
	20-pitch length	319.4 ( 12.57 )
Drive chain slack	25–30 ( 1.0–1.2 )	—

## CARBURETOR

ITEM	SPECIFICATION
Carburetor type	MIKUNI TM38SS
Bore size	38 mm ( 1.5 in )
I.D. No.	43B00
Idle r/min.	1 400 ± 50 r/min
Float height	11.4 ± 1.0 mm ( 0.45 ± 0.04 in )
Main jet (M.J.)	#420 [SPARE MAIN JETS #380, #400 and #440]
Jet needle (J.N.)	6DH6-3rd
Needle jet (N.J.)	O-6
Cut-away (C.A.)	2.0
Valve seat (V.S.)	3.5 mm

ITEM		SPECIFICATION
Pilot jet	(P.J.)	#30
By-pass	(B.P.)	1.4 mm
Pilot outlet	(P.O.)	0.7 mm
Air screw	(A.S.)	1 1/2 turns back
Starter jet	(G.S.)	#250
Throttle cable play		0.5–1.0 mm ( 0.02–0.04 in )

**ELECTRICAL**

Unit: mm (in)

ITEM		SPECIFICATION		NOTE
Ignition timing		4° ± 1.5° B.T.D.C. at 1 000 r/min.		
		15° ± 0.5° B.T.D.C. at 5 500 r/min,		
Spark plug		Type	NGK: B8EGV	E03, 24
		Gap	0.55—0.65 ( 0.022—0.026 )	
		Type	NGK: BR8EV	E-28
		Gap	0.5—0.6 ( 0.020—0.024 )	
Spark performance		Over 8 (0.3) at 1 atm.		
Ignition coil resistance	E-03, 24	Primary	0—1 Ω	⊕ Terminal—Ground
		Secondary	3—5 kΩ	Plug cap— ⊕ Terminal
	E-28	Primary	0—1 Ω	⊕ Terminal—Ground
		Secondary	13—15 kΩ	Plug cap— ⊕ Terminal
Magnet coil resistance		Lighting	0.5—1.0 Ω	WIRE COLOR: Y/R—B/W
		Power source	315—475 Ω	WIRE COLOR: B/R—B/W
		Pick-up	175—265 Ω	WIRE COLOR: BI—B/W
Lighting coil output		Above 12 V at 3 000 r/min. Below 18 V at 8 000 r/min.		With lighting switch off
Regulated voltage		13—14 V at 5 000 r/min.		With lighting switch on

**WATTAGE**

Unit: W

ITEM		SPECIFICATION
Headlight	HI	60
	LO	55
Taillight		5



**BRAKE + WHEEL**

Unit: mm (in)

ITEM	STANDARD		LIMIT
Rear brake pedal height	5 ( 0.2 )		—
Brake disc thickness	Front	$3.5 \pm 0.2$ ( $0.14 \pm 0.008$ )	3.0 ( 0.12 )
	Rear	$4.5 \pm 0.2$ ( $0.18 \pm 0.008$ )	4.0 ( 0.16 )
Brake disc runout	—		0.30 ( 0.012 )
Master cylinder bore	Front	12.700–12.743 ( 0.5000–0.5017 )	—
	Rear	12.700–12.743 ( 0.5000–0.5017 )	—
Master cylinder piston diam.	Front	12.657–12.684 ( 0.4983–0.4994 )	—
	Rear	12.657–12.684 ( 0.4983–0.4994 )	—
Brake caliper cylinder bore	Front	30.230–30.280 ( 1.1902–1.1921 )	—
	Rear	33.960–34.010 ( 1.3370–1.3390 )	—
Brake caliper piston diam.	Front	30.167–30.200 ( 1.1877–1.1890 )	—
	Rear	33.923–33.928 ( 1.3355–1.3357 )	—
Wheel rim runout	Axial	—	1.0 ( 0.04 )
	Radial	—	1.0 ( 0.04 )
Wheel axle runout	Rear	—	8.0 ( 0.31 )
Tire size	Front	AT21 × 7-10 ☆ ☆	—
	Rear	AT20 × 11-10 ☆ ☆	—
Tire tread depth	Front	—	4.0 ( 0.16 )
	Rear	—	4.0 ( 0.16 )
Steering angle	Inside	$32^\circ \pm 3^\circ$	—
	Outside	$25^\circ \pm 3^\circ$	
Toe-in (with 75 kg, 165 lbs)	32–40 ( 1.3–1.6 )		—
Turning radius	2.8 m ( 9.2 ft )		—
Caster	10°00'		—
Trail	42 ( 1.65 )		—

**SUSPENSION**

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front wheel travel	230 ( 9.1 )	—	
Front shock absorber spring pre-set length	257 ( 10.1 )	—	
Front shock absorber damping force pre-set position	2nd/4th	—	
Rear wheel travel	230 ( 9.1 )	—	
Rear shock absorber spring pre-set length	256 ( 10.0 )	—	
Rear shock absorber damping force pre-set position, compression side	7th-13th/21st	—	
Rear shock absorber damping force pre-set position, extension side	10th-16th/26th	—	
Rear shock absorber reservoir tank gas pressure	1 000 kPa, ( 10 kg/cm <sup>2</sup> , 142 psi )	—	
Swingarm pivot shaft runout	—	0.3 ( 0.01 )	

**TIRE PRESSURE**

LOAD CAPACITY	COLD INFLATION TIRE PRESSURE	FRONT			REAR		
		kPa	kg/cm <sup>2</sup>	psi	kPa	kg/cm <sup>2</sup>	psi
Up to 80 kg (Up to 175 lbs)		30	0.3	4.4	25	0.25	3.6
From 80—120 kg (From 175—265 lbs)		35	0.35	5.1	35	0.35	5.1

**FUEL + OIL + COOLANT**

ITEM	SPECIFICATION	NOTE
Fuel type	Gasoline used should be graded 85-95 octane or higher. An unleaded or low-lead type gasoline is recommended.	E-24, 28
	Use only unleaded or low-lead type gasoline of at least 85-95 pump octane ( $\frac{R+M}{2}$ method) or 89 octane or higher rated by the Research Method.	E-03
Fuel tank including reserve capacity	13.0 L ( 3.43/2.86 US/lmp gal )	
reserve capacity	1.3 L ( 1.38/1.14 US/lmp qt )	
Engine oil type	CCI or CCI super	
Fuel and engine oil mixture ratio	20 : 1	
Transmission oil type	SAE 20W/40	
Transmission oil capacity	Change	1 000 ml ( 1.06/0.89 US/lmp qt )
	Overhaul	1 100 ml ( 1.16/0.97 US/lmp qt )
Rear shock absorber oil type	A.T.F. or Equivalent	



ITEM	SPECIFICATION	NOTE
Rear shock absorber oil capacity	245 ml ( 8.3/8.6 US/lmp oz )	
Coolant type	Use an anti-freeze/coolant compatible with aluminum radiator, mixed with distilled water only, at the ratio of 50 : 50.	
Coolant including reserve capacity	1 700 ml ( 1.80/1.50 US/lmp qt )	
Brake fluid type	SAE J1703, DOT3 or DOT4	E-24, 28
	DOT3 or DOT4	E-03

**EFFECTIVE ENGINE NO.: FROM 103220**  
**CYLINDER + PISTON + PISTON RING**

Unit: mm (in)

ITEM	STANDARD	LIMIT
Piston to cylinder clearance	0.080—0.090 ( 0.0031—0.0035 )	0.120 ( 0.0047 )
Cylinder bore	86.000—86.015 ( 3.3858—3.3864 ) Measure at 20mm(0.8in) from the top surface	86.050 ( 3.3878 )
Piston diam.	85.915—85.930 ( 3.3825—3.3831 ) Measure at 33 mm (1.3 in) from the skirt end	85.880 ( 3.3811 )

## NOTE:

E-03.....For U.S. model

E-24.....For AUSTRALIA model

E-28.....For CANADA model

**APPENDIX**

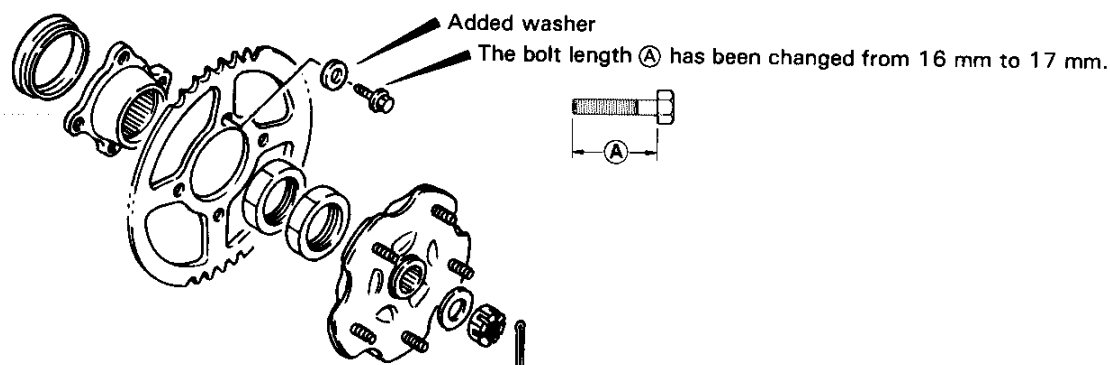
**CONTENTS**

<b>REAR SPROCKET MOUNTING BOLT .....</b>	<b>9- 1</b>
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## REAR SPROCKET MOUNTING BOLT

This bulletin is to inform you of the change of the rear sprocket mounting bolts for above model. The length of the rear sprocket mounting bolts has been increased by 1 mm and the washers have been added. In accordance with above change, the tightening torque has been changed as follows.



### PARTS SUPPLY DATA

PART NAME	EARLY (PART NO.)	LATE (PART NO.)
Rear sprocket mounting bolt	01537-10168	09103-10171
Washer		09164-10008

INTERCHANGEABILITY: EARLY — NO →  
← YES — LATE

PARTS AVAILABILITY : Only the LATE type parts are available.

### TIGHTENING TORQUE

EARLY	LATE
40—60 N·m ( 4.0—6.0 kg-m ) ( 29.0—43.5 lb-ft )	50—60 N·m ( 5.0—6.0 kg-m ) ( 36.0—43.5 lb-ft )

On and after the Engine No. M102-106656 or the Frame No. JSAAM11A3H2106619

**LT500RJ ('88-MODEL)**

**FOREWORD**

*This section describes up-to-date service procedures which differ from those of the LT500RH ('87-model).*

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# SPECIFICATIONS

## DIMENSIONS AND DRY MASS

Overall length	1 920 mm (75.6 in)
Overall width	1 205 mm (47.4 in)
Overall height	1 110 mm (43.7 in)
Wheelbase	*1 345 mm (53.0 in)
Front track	1 030 mm (40.6 in)
Rear track	900 mm (35.4 in)
Seat height	790 mm (31.1 in)
Ground clearance	110 mm (4.3 in)
Dry mass	178 kg (392 lbs)

## ENGINE

Type	Two-stroke, water cooled, SAEC
Number of cylinders	1
Bore	86.0 mm (3.386 in)
Stroke	86.0 mm (3.386 in)
Piston displacement	499 cm <sup>3</sup> (30.4 cu.in)
Corrected compression ratio	6.3 : 1
Carburetor	MIKUNI TM38SS, Single
Air cleaner	Polyurethane foam element
Starter system	Primary kick
Lubrication system	Fuel and oil premixture of 20 : 1

## TRANSMISSION

Clutch	Wet multi-plate type
Transmission	5-speed constant mesh
Gearshift pattern	1-down, 4 up
Primary reduction	2.142 (60/28)
Final reduction	*3.076 (40/13)
Gear ratios, Low	2.416 (29/12)
2nd	1.733 (26/15)
3rd	1.333 (24/18)
4th	*1.100 (22/20)
Top	*0.909 (20/22)
Drive chain	TAKASAGO RK520SMOZ10, *96 links

## CHASSIS

Front suspension	Double wishbone, spring pre-load fully adjustable, damping force 4-way adjustable	
Rear suspension	Full-floating suspension system, spring pre-load fully adjustable, compression damping force 21-way adjustable, rebound damping force 26-way adjustable	
Steering angle	Inside	32°
	Outside	25°
Caster	10° 00'	
Trail	42 mm (1.7 in)	
Turning radius	2.8 m (9.2 ft)	
Toe-in	*11 - 19 (0.4 - 0.7)	
Front brake	Disc	
Rear brake	Disc	
Front tire size	AT21 x 7 - 10 ☆ ☆	
Rear tire size	AT20 x 11 - 10 ☆ ☆	

## ELECTRICAL

Ignition type	SUZUKI "PEI"
Ignition timing	4° B.T.D.C. at 1 000 r/min and 15° B.T.D.C at 5 500 r/min
Spark plug	N.G.K.: B8EGV N.G.K.: BR8EV ... For Canada
Headlight	12V 60/55W
Taillight	12V 5W

## CAPACITIES

Fuel tank including reserve	13.0 L (3.4/2.9 US/Imp gal)
reserve	1.3 L (1.4/1.1 US/Imp qt)
Transmission oil	1 000 ml (1.06/0.88 US/Imp qt)
Coolant including reserve	1 700 ml (1.80/1.50 US/Imp qt)

(\*) Asterisk mark indicated the New "J" model specifications  
Specifications are subject to change without notice.

**SERVICE DATA****CYLINDER + PISTON + PISTON RING**

Unit: mm (in)

Unit: mm (in)

ITEM	STANDARD			LIMIT
Piston to cylinder clearance	0.080—0.090 ( 0.0031—0.0035 )			0.120 ( 0.0047 )
Cylinder bore	86.000—86.015 ( 3.3858—3.3864 ) Measure at 20 ( 0.8 ) from the top surface			86.050 ( 3.3878 )
Piston diam.	85.915—85.930 ( 3.3825—3.3831 ) Measure at 33 ( 1.3 ) from the skirt end			85.880 ( 3.3811 )
Cylinder distortion	—			0.05 ( 0.002 )
Cylinder head distortion	—			0.05 ( 0.002 )
Piston ring free end gap	1st & 2nd	R	Approx. 6.6 ( 0.26 )	5.3 ( 0.21 )
Piston ring end gap	0.3—0.5 ( 0.01—0.02 )			0.85 ( 0.033 )
Piston ring to groove clearance	1st & 2nd	0.01—0.07 ( 0.0004—0.0028 )		—
Piston pin bore	18.002—18.012 ( 0.7087—0.7091 )			18.030 ( 0.7098 )
Piston pin O.D.	17.994—18.000 ( 0.7084—0.7087 )			17.980 ( 0.7079 )

**CONROD + CRANKSHAFT**

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	23.003—23.011 ( 0.9056—0.9059 )	23.040 ( 0.9071 )
Crank web to web width	74.0 ± 0.1 ( 2.91 ± 0.004 )	—
Crankshaft runout	—	0.05 ( 0.002 )

**EXHAUST VALVE**

Exhaust valve closing r/min.	5 000—5 500 r/min
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**CLUTCH**

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch cable play	2—3 ( 0.08—0.12 )	—
Drive plate thickness	2.72—2.88 ( 0.107—0.113 )	2.45 ( 0.096 )
Drive plate claw width	15.8—16.0 ( 0.62—0.63 )	15.0 ( 0.59 )
Driven plate distortion	—	0.10 ( 0.004 )
Clutch spring free length	—	31.0 ( 1.22 )



**RADIATOR**

ITEM	STANDARD	LIMIT
Radiator cap valve opening pressure	110 ± 15 kPa ( 1.1 ± 0.15 kg/cm <sup>2</sup> , 15.6 ± 2.1 psi )	—

**TRANSMISSION**

Unit: mm (in) Except ratio

ITEM	STANDARD	LIMIT
Primary reduction ratio	2.142 ( 60/28 )	—
Final reduction ratio	* 3.076 ( 40/13 )	—
Gear ratios	Low	2.416 ( 29/12 )
	2nd	1.733 ( 26/15 )
	3rd	1.333 ( 24/18 )
	4th	* 1.100 ( 22/20 )
	Top	* 0.909 ( 20/22 )
Shift fork to groove clearance No.1, No.2 & No.3	0.10—0.30 ( 0.004—0.012 )	0.50 ( 0.020 )
Shift fork groove width No.1, No.2 & No.3	5.00—5.10 ( 0.197—0.201 )	—
Shift fork thickness No.1, No.2 & No.3	4.80—4.90 ( 0.189—0.193 )	—

**DRIVE CHAIN**

Unit: mm (in)

ITEM	STANDARD	LIMIT
Drive chain	Type TAKASAGO: RK520SMO-Z10	—
	Links * 96	—
	20-pitch length	319.4 ( 12.57 )
Drive chain slack	25—30 ( 1.0—1.2 )	—

**CARBURETOR**

ITEM	SPECIFICATION
Carburetor type	MIKUNI TM38SS
Bore size	38 mm
I.D. No.	* 43B10
Idle r/min.	1 400 ± 50 r/min
Float height	11.4 ± 1.0 mm ( 0.45 ± 0.04 in )
Main jet (M.J.)	* #350 [SPARE MAIN JETS #340 and #360]
Jet needle (J.N.)	* 6DK3-3rd
Needle jet (N.J.)	* R-2
Cut-away (C.A.)	* 4.0
Valve seat (V.S.)	3.5 mm
Pilot jet (P.J.)	* #22.5
By-pass (B.P.)	* 0.7 mm
Pilot outlet (P.O.)	0.7 mm

(\*) Asterisk mark indicated the New "J" model specifications.

ITEM	SPECIFICATION
Air screw (A.S.)	1 1/2 turns back
Starter jet (G.S.)	* #150
Throttle cable play	0.5–1.0 mm ( 0.02–0.04 in )

**ELECTRICAL**

Unit: mm (in)

ITEM		SPECIFICATION		NOTE
Ignition timing		4° ± 1.5° B.T.D.C. at 1 000 r/min. 15° ± 0.5° B.T.D.C. at 5 500 r/min.		
Spark plug		Type	NGK: B8EGV	The others
		Gap	0.55—0.65 ( 0.022—0.026 )	
		Type	NGK: BR8EV	Canada
		Gap	0.5—0.6 ( 0.020—0.024 )	
Spark performance		Over 8 (0.3) at 1 atm.		
Ignition coil resistance	The others	Primary	0—1 Ω	⊕ Terminal—Ground
		Secondary	3—5 kΩ	Plug cap— ⊕ Terminal
	Canada	Primary	0—1 Ω	⊕ Terminal—Ground
		Secondary	13—15 kΩ	Plug cap— ⊕ Terminal
Magneto coil resistance		Lighting	0.5—1.0 Ω	WIRE COLOR: Y/R—B/W
		Power source	315—475 Ω	WIRE COLOR: B/R—B/W
		Pick-up	175—265 Ω	WIRE COLOR: BI—B/W
Lighting coil output		Above 12 V at 3 000 r/min. Below 18 V at 8 000 r/min.		With lighting switch off
Regulated voltage		13—14 V at 5 000 r/min.		With lighting switch off

**WATTAGE**

Unit: W

ITEM	SPECIFICATION
Headlight	HI 60
	LO 55
Taillight	5

**BRAKE + WHEEL**

Unit: mm (in)

ITEM	STANDARD	LIMIT
Rear brake pedal height	5 ( 0.2 )	—
Brake disc thickness	Front 3.5 ± 0.2 ( 0.14 ± 0.008 )	3.0 ( 0.12 )
	Rear 4.5 ± 0.2 ( 0.18 ± 0.008 )	4.0 ( 0.16 )

(\*) Asterisk mark indicated the New "J" model specifications.



ITEM	STANDARD		LIMIT
Brake disc runout			0.30 ( 0.012 )
Master cylinder bore	Front	12.700–12.743 ( 0.5000–0.5017 )	
	Rear	12.700–12.743 ( 0.5000–0.5017 )	
Master cylinder piston diam.	Front	12.657–12.684 ( 0.4983–0.4994 )	
	Rear	12.657–12.684 ( 0.4983–0.4994 )	
Brake caliper cylinder bore	Front	30.230–30.280 ( 1.1902–1.1921 )	
	Rear	33.960–34.010 ( 1.3370–1.3390 )	
Brake caliper piston diam.	Front	30.167–30.200 ( 1.1877–1.1890 )	
	Rear	33.923–33.928 ( 1.3355–1.3357 )	
Wheel axle runout	Rear		8.0 ( 0.31 )
Tire size	Front	AT21 × 7-10 ☆ ☆	
	Rear	AT20 × 11-10 ☆ ☆	
Tire tread depth	Front		4.0 ( 0.16 )
	Rear		4.0 ( 0.16 )
Steering angle	Inside	32° ± 3°	
	Outside	25° ± 3°	
Toe-in (with 75 kg, 165 lbs)	*11–19 ( 0.4–0.7 )		
Turning radius	2.8 m ( 9.2 ft )		

**SUSPENSION**

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front wheel travel	230 ( 9.1 )		
Front shock absorber spring pre-set length	257 ( 10.1 )		
Front shock absorber damping force pre-set position	2nd/4th		
Rear wheel travel	230 ( 9.1 )		
Rear shock absorber spring pre-set length	256 ( 10.0 )		
Rear shock absorber damping force pre-set position, compression side	7th-13th/21st		
Rear shock absorber damping force pre-set position, extension side	10th-16th/26th		

(\*) Asterisk mark indicated the New "J" model specification.

ITEM	STANDARD	LIMIT	NOTE
Rear shock absorber reservoir tank gas pressure	1 000 kPa, ( 10 kg/cm <sup>2</sup> , 142 psi )	—	
Swingarm pivot shaft runout	—	0.3 ( 0.01 )	

**TIRE PRESSURE**

LOAD CAPACITY	COLD INFLATION TIRE PRESSURE	FRONT			REAR		
		kPa	kg/cm <sup>2</sup>	psi	kPa	kg/cm <sup>2</sup>	psi
Up to 80 kg ( Up to 175 lbs )		30	0.3	4.4	25	0.25	3.6
From 80—120 kg ( From 175—265 lbs )		35	0.35	5.1	35	0.35	5.1

**FUEL + OIL + COOLANT**

ITEM	SPECIFICATION		NOTE
Fuel type	Gasoline used should be graded 85-95 octane or higher. An unleaded or low-lead type gasoline is recommended.		The others
	Use only unleaded or low-lead type gasoline of at least 85-95 pump octane ( <sup>R+M</sup> / <sub>2</sub> method) or 89 octane or higher rated by the Research Method.		U.S.A. and Canada
Fuel tank including reserve capacity	13.0 L ( 3.4/2.9 US/Imp gal )		
reserve capacity	1.3 L ( 1.4/1.1 US/Imp qt )		
Engine oil type	CCI or CCI super		
Fuel and engine oil mixture ratio	20 : 1		
Transmission oil type	SAE 20W/40		
Transmission oil capacity	Change	1 000 ml ( 1.1/0.9 US/Imp qt )	
	Overhaul	1 100 ml ( 1.2/1.0 US/Imp qt )	
Rear shock absorber oil type	A.T.F. or Equivalent		
Rear shock absorber oil capacity	245 ml ( 8.3/8.6 US/Imp oz )		
Coolant type	Use an anti-freeze/coolant compatible with aluminum radiator, mixed with distilled water only, at the ratio of 50 : 50.		
Coolant including reserve capacity	1 700 ml ( 1.8/1.5 US/Imp qt )		
Brake fluid type	Front	DOT 3 or DOT 4	
	Rear	DOT 4	

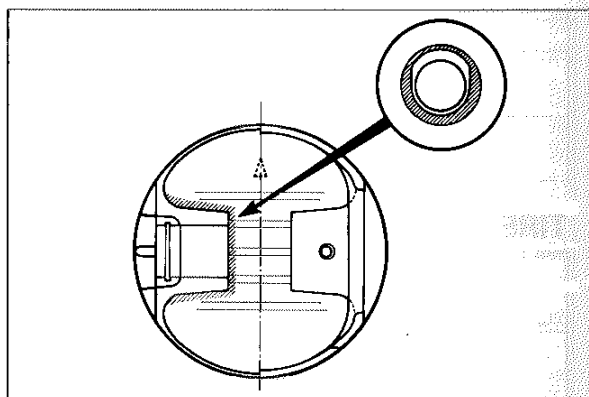


## CHANGES

The following changes have been made, beginning with the LT500RJ ('88-model).

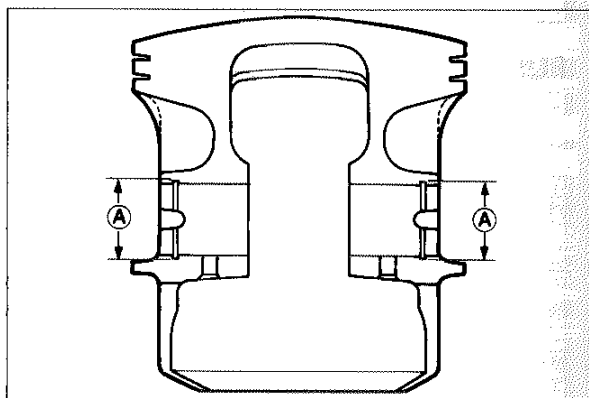
### PISTON

A special wear resistant molybdenum overlay has been applied to the part of piston inside surface as shown in the illustration.



The circlip groove diameter (A) of piston have been changed as shown below.

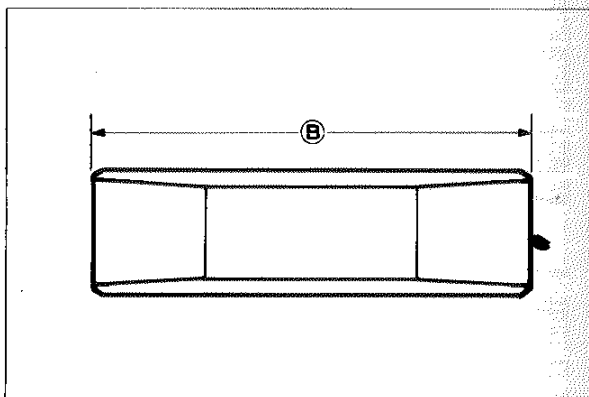
Item	LT500RH	LT500RJ
(A)	$\phi 19.9$ mm (0.78 in)	$\phi 19.5$ mm (0.77 in)



### PISTON PIN

The length (B) of piston pin has been changed as shown below.

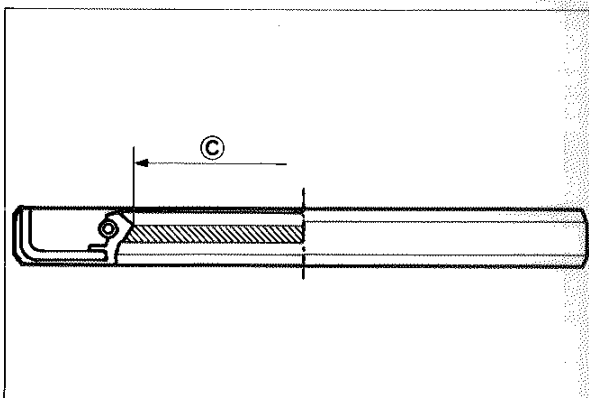
Item	LT500RH	LT500RJ
(B)	62 mm (2.4 in)	63 mm (2.5 in)



### OIL SEAL (BALANCER SHAFT, L)

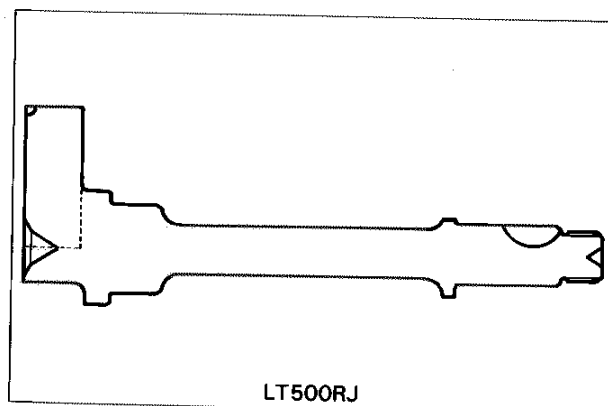
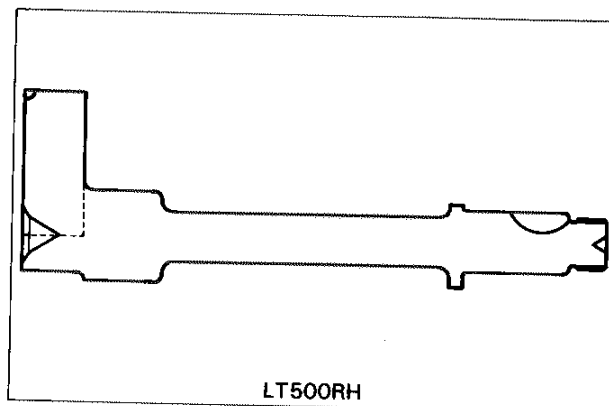
The I.D. (C) of oil seal has been changed as shown below.

Item	LT500RH	LT500RJ
(C)	$\phi 23.6$ mm (0.93 in)	$\phi 30.8$ mm (1.21 in)



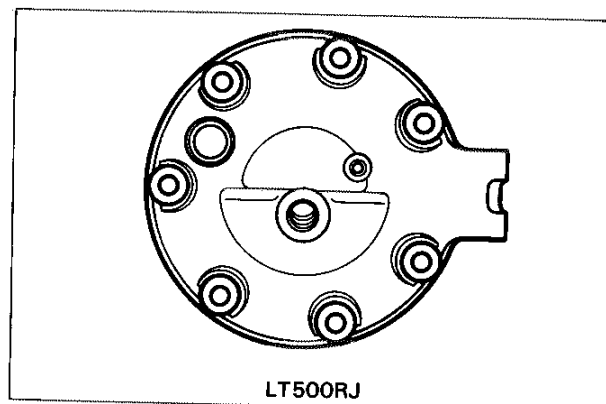
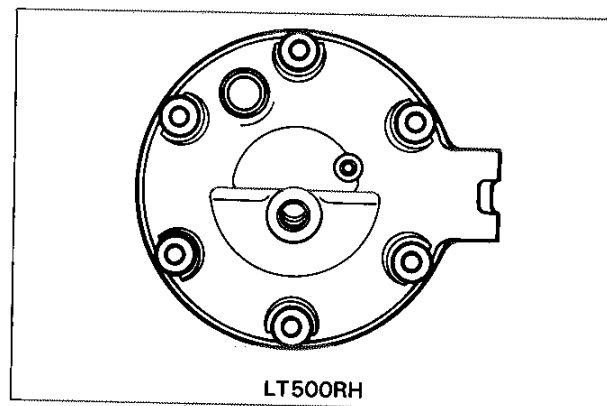
### BALANCER SHAFT

The shape of the crank balancer has been changed as shown in the illustration.



### CYLINDER HEAD COVER

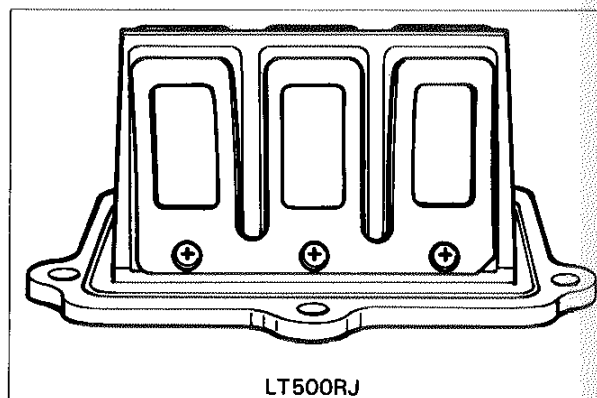
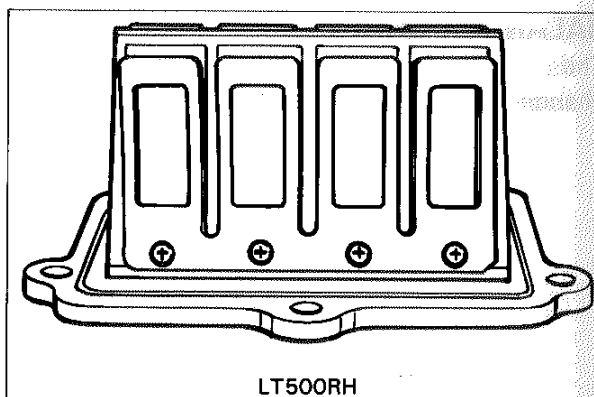
Cylinder head cover has been changes as shown in the illustration.





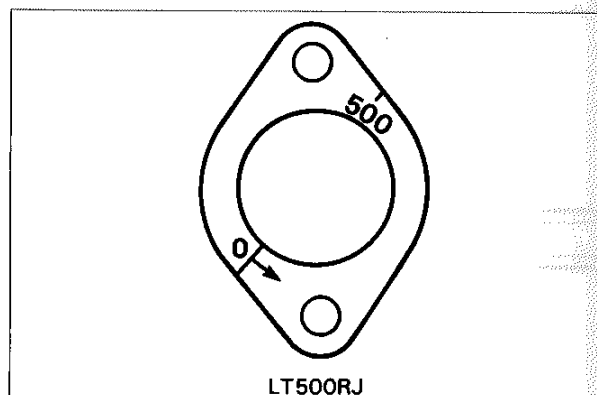
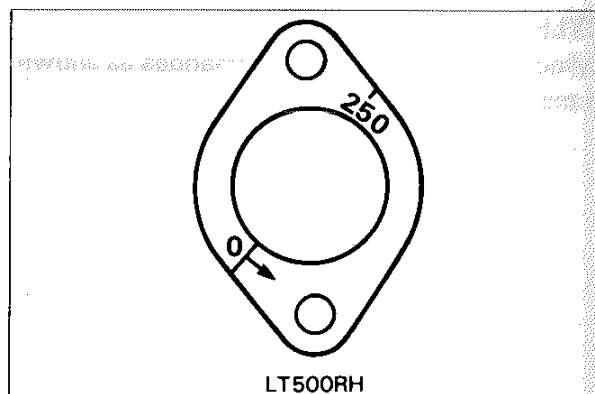
## REED VALVE

The reed valve has been changed from eight read valves type to six reed valves type as shown in the illustration.



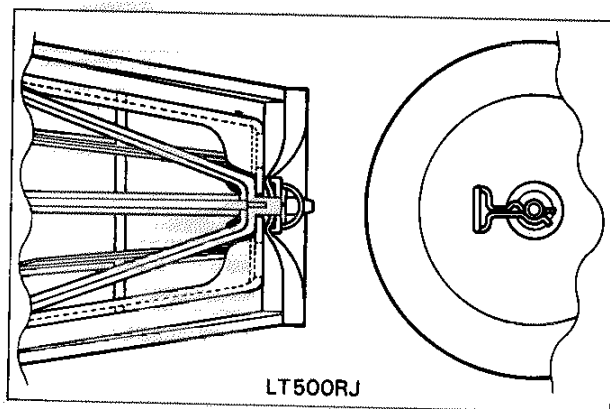
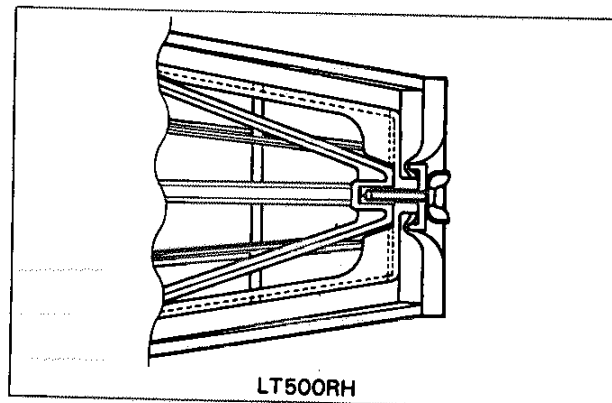
## EXHAUST VALVE RETAINER

The retainer stamped mark has been changed from "250" to "500" as shown in illustration.



## AIR CLEANER

The air cleaner element mounting method has been changed from screw type to clip type as shown in the illustration.



## CARBURETOR

ITEM	SPECIFICATION	
	LT500RH	LT500RJ
Carburetor type	TM38SS	←
Bore size	38 mm	←
I.D. No.	43B00	43B10
Idle r/min.	1 400 ± 50 r/min	←
Float height	11.4 ± 1.0 mm (0.45 ± 0.04 in)	←
Main jet (M.J.)	#420	#350
Jet needle (J.N.)	6DH6-3rd	6DK3-3rd
Needle jet (N.J.)	O-6	R-2
Cut-away (C.A.)	2.0	4.0
Pilot jet (P.J.)	#30	#22.5
By pass (B.P.)	1.4 mm (0.06 in)	0.7 mm (0.03 in)
Pilot outlet (P.O.)	0.7 mm (0.03 in)	←
Air screw (A.S.)	1-1/2 turns out	←
Valve seat (V.S.)	3.5 mm (0.14 in)	←
Starter jet (G.S.)	#250	#150
Throttle cable play	0.5 — 1.0 mm (0.02 — 0.04 in)	←
Spare main jet	#380, 400, 440	#340, 360



## ENGINE MOUNTING

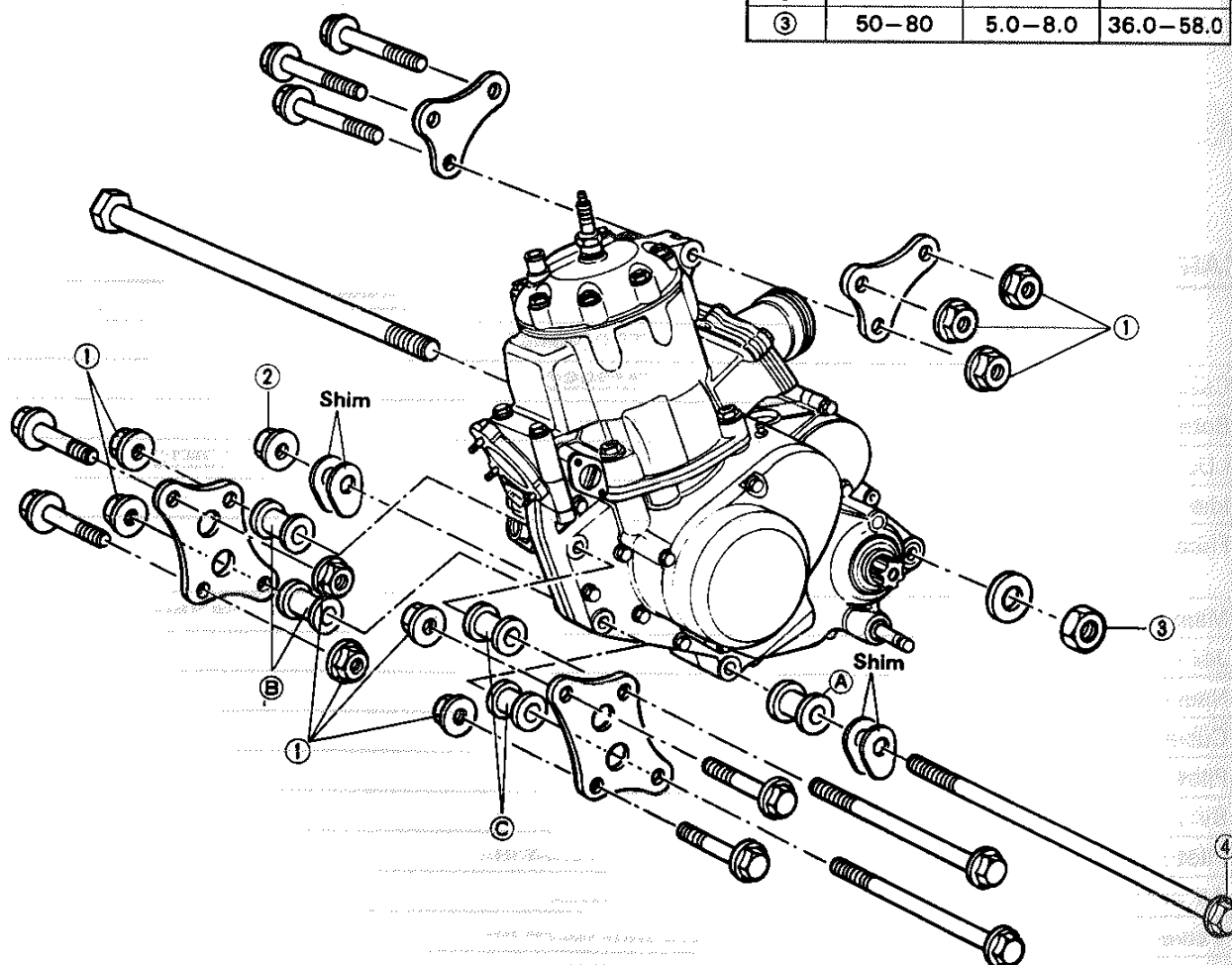
When mounting the engine, adjust the shim thickness as follows.

- Insert the engine mounting bolts and tighten the nuts ① and ③ to the specification.
- Check the clearance between the engine and frame at both the right and left side of engine mounting where the center bolt ④ passes. The clearance on the left side should be measured with the spacer inserted in place.
- If the clearance is found to exceed 0.3 mm, fill up the clearance using the shims shown below.

Part No.	Shim thickness
09181-08009	0.5 mm
09181-08008	0.3 mm

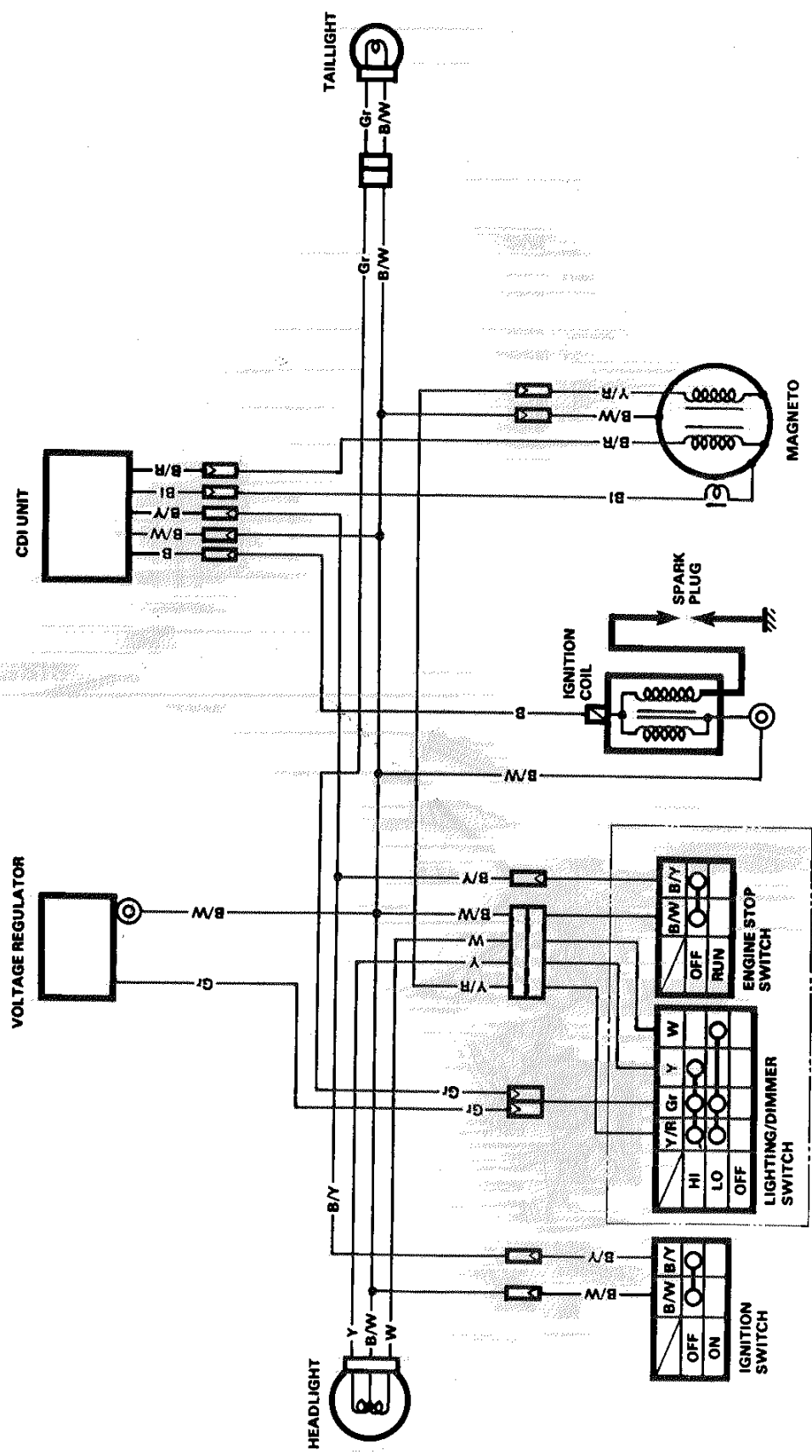
- Tighten the nut ② to the specification.

Item	N·m	kg-m	lb-ft
①	28-34	2.8-3.4	20.0-24.5
②	37-45	3.7-4.5	27.0-32.5
③	50-80	5.0-8.0	36.0-58.0



- Ⓐ: 32 mm (1.3 in)
- Ⓑ: 22 mm (0.9 in)
- Ⓒ: 26 mm (1.0 in)

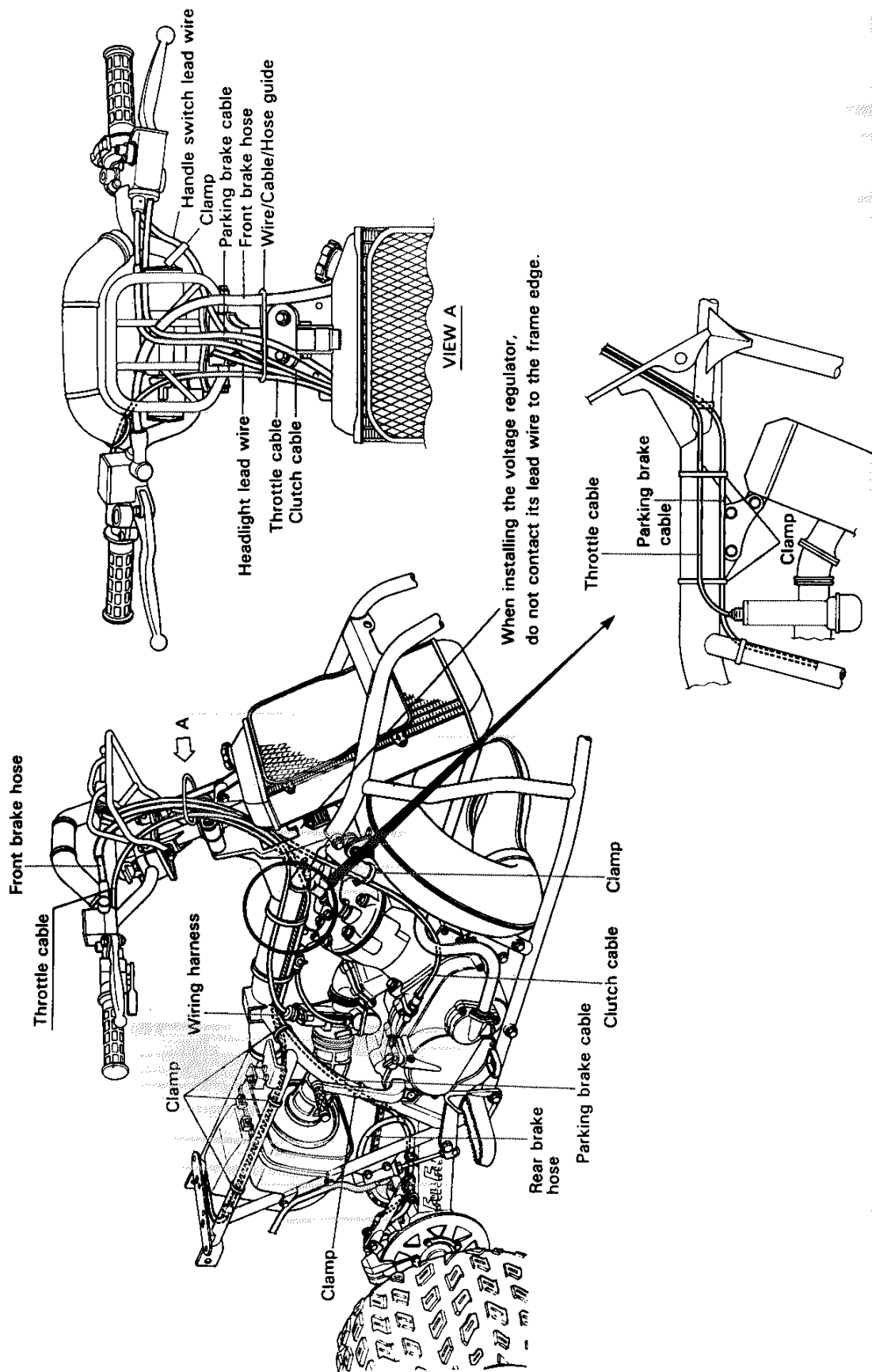
# WIRING DIAGRAM



- WIRE COLOR**
- B . . . . . Black
  - Bl . . . . . Blue
  - Gr . . . . . Gray
  - W . . . . . White
  - Y . . . . . Yellow
  - B/R . . . . . Black with Red tracer
  - B/W . . . . . Black with White tracer
  - B/Y . . . . . Black with Yellow tracer
  - Y/R . . . . . Yellow with Red tracer



## WIRE AND CABLE ROUTING



**TIGHTENING TORQUE****ENGINE**

ITEM		N-m	kg-m	lb-ft
Cylinder head nut		26 – 30	2.6 – 3.0	19.0 – 21.5
Cylinder base nut	10 mm	36 – 40	3.6 – 4.0	26.0 – 29.0
	6 mm	8 – 12	0.8 – 1.2	6.0 – 8.5
Spark plug		25 – 30	2.5 – 3.0	18.0 – 21.5
Mission oil drain plug		20 – 25	2.0 – 2.5	14.5 – 18.0
Magneto rotor nut		90 – 100	9.0 – 10.0	65.0 – 72.5
Clutch sleeve hub nut		40 – 60	4.0 – 6.0	29.0 – 43.5
Primary drive gear nut		100 – 130	10.0 – 13.0	72.5 – 94.0
Engine sprocket nut		80 – 100	8.0 – 10.0	58.0 – 72.5
Impeller bolt		8 – 12	0.8 – 1.2	6.0 – 8.5
Balancer driven gear nut		90 – 110	9.0 – 11.0	65.0 – 79.5
Gearshift cam mounting bolt		8 – 12	0.8 – 1.2	6.0 – 8.5
Engine mounting bracket bolt		28 – 34	2.8 – 3.4	20.0 – 24.5
Engine mounting bolt	Bolt length: 60*160 mm	28 – 34	2.8 – 3.4	20.0 – 24.5
	Bolt length: 265 mm	37 – 45	3.7 – 4.5	27.0 – 32.5

**CHASSIS**

ITEM	N-m	kg-m	lb-ft
Front hub nut	50 – 80	5.0 – 8.0	36.0 – 58.0
Front wheel set nut	20 – 31	2.0 – 3.1	14.5 – 22.5
Front shock absorber nut (Upper and Lower)	40 – 60	4.0 – 6.0	29.0 – 43.5
Handlebar clamp bolt	18 – 28	1.8 – 2.8	13.0 – 20.0
Tie-rod lock nut	35 – 55	3.5 – 5.5	25.5 – 40.0
Tie-rod end nut	*27 – 42	*2.7 – 4.2	*19.5 – 30.5
Steering knuckle arm bolt	42.5 – 47.5	4.25 – 4.75	30.5 – 34.5
Wishbone arm end mounting bolt (Upper and Lower)	120 – 170	12.0 – 17.0	87.0 – 123.0
Upper wishbone arm end nut	35 – 50	3.5 – 5.0	25.5 – 36.0
Lower wishbone arm end pinch bolt	40 – 60	4.0 – 6.0	29.0 – 43.5
Steering shaft holder bolt	18 – 28	1.8 – 2.8	13.0 – 20.0
Steering shaft lower nut	38 – 60	3.8 – 6.0	27.5 – 43.5
Wishbone arm pivot bolt	50 – 70	5.0 – 7.0	36.0 – 50.5
Brake hose union bolt (Front and Rear)	*15 – 20	*1.5 – 2.0	*11.0 – 14.0
Brake pipe flare nut	13 – 18	1.3 – 1.8	9.5 – 13.0
Caliper mounting bolt (Front and Rear)	15 – 25	1.5 – 2.5	11.0 – 18.0
Air bleeder valve	6 – 9	0.6 – 0.9	4.5 – 6.5
Footrest bolt	*80 – 100	*8.0 – 10.0	*58.0 – 72.5

\*Asterisk mark indicated the New "J" model specifications.



ITEM		N-m	kg-m	lb-ft
Front master cylinder mounting bolt		5 – 8	0.5 – 0.8	3.5 – 6.0
Rear master cylinder mounting bolt		10 – 16	1.0 – 1.6	7.0 – 11.5
Parking brake lever holder bolt		6 – 9	0.6 – 0.9	4.5 – 6.5
Rear caliper axle bolt	Front	20 – 25	2.0 – 2.5	14.5 – 18.0
	Rear	15 – 20	1.5 – 2.0	11.0 – 14.5
Brake pad mounting bolt		15 – 20	1.5 – 2.0	11.0 – 14.5
Rear brake disc flange nut		15 – 25	1.5 – 2.5	11.0 – 18.0
Rear axle lock nut		160 – 200	16.0 – 20.0	115.5 – 144.5
Rear sprocket mounting bolt		40 – 60	4.0 – 6.0	29.0 – 43.5
Rear hub nut		85 – 115	8.5 – 11.5	61.5 – 83.0
Rear wheel set nut		45 – 65	4.5 – 6.5	32.5 – 47.0
Torque link bolt	Front	*20 – 29	*2.0 – 2.9	*14.5 – 21.0
	Rear	44 – 66	4.4 – 6.6	32.0 – 47.5
Disc plate mounting bolt (Front and Rear)		15 – 25	1.5 – 2.5	11.0 – 18.0
Rear axle housing set nut	Right side	70 – 85	7.0 – 8.5	50.5 – 61.5
	Left side	100 – 120	10.0 – 12.0	72.5 – 87.0
Rear shock absorber bolt (Upper and Lower)		40 – 60	4.0 – 6.0	29.5 – 43.5
Cushion lever pivot shaft nut		80 – 120	8.0 – 12.0	58.0 – 87.0
Cushion lever center shaft nut		80 – 120	8.0 – 12.0	58.0 – 87.0
Swingarm pivot nut		50 – 80	5.0 – 8.0	36.0 – 58.0

(\*) Asterisk mark indicated the New "J" model specifications.

## TIGHTENING TORQUE CHART

For other bolts and nuts not listed above, refer to this chart:

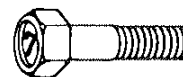
Bolt Diameter (A) (mm)	Conventional or "4" marked bolt			"7" marked bolt		
	N-m	kg-m	lb-ft	N-m	kg-m	lb-ft
4	1.0 – 2.0	0.1 – 0.2	0.7 – 1.5	1.5 – 3.0	0.15 – 0.3	1.0 – 2.0
5	2.0 – 4.0	0.2 – 0.4	1.5 – 3.0	3.0 – 6.0	0.3 – 0.6	2.0 – 4.5
6	4.0 – 7.0	0.4 – 0.7	3.0 – 5.0	8.0 – 12.0	0.8 – 1.2	6.0 – 8.5
8	10.0 – 16.0	1.0 – 1.6	7.0 – 11.5	18.0 – 28.0	1.8 – 2.8	13.0 – 20.0
10	22.0 – 35.0	2.2 – 3.5	16.0 – 25.5	40.0 – 60.0	4.0 – 6.0	29.0 – 43.5
12	35.0 – 55.0	3.5 – 5.5	25.5 – 40.8	70.0 – 100.0	7.0 – 10.0	50.5 – 72.5
14	50.0 – 80.0	5.0 – 8.0	36.0 – 58.0	110.0 – 160.0	11.0 – 16.0	79.5 – 115.5
16	80.0 – 130.0	8.0 – 13.0	58.0 – 94.0	170.0 – 250.0	17.0 – 25.0	123.0 – 181.0
18	130.0 – 190.0	13.0 – 19.0	94.0 – 137.5	200.0 – 280.0	20.0 – 28.0	144.5 – 202.5



Conventional bolt



"4" marked bolt



"7" marked bolt

**LT500RK ('89-MODEL)**

**CONTENTS**

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## SERVICE DATA

### CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD			LIMIT
Piston to cylinder clearance	0.080—0.090 (0.0031—0.0035)			0.120 (0.0047)
Cylinder bore	86.000—86.015 (3.3858—3.3864) Measure at 20 (0.8) from the top surface			86.050 (3.3878)
Piston diam.	85.915—85.930 (3.3825—3.3831) Measure at 33 (1.3) from the skirt end			85.880 (3.3811)
Cylinder distortion	—			0.05 (0.002)
Cylinder head distortion	—			0.05 (0.002)
Piston ring free end gap	1st & 2nd	R	Approx. 6.6 (0.26)	5.3 (0.21)
Piston ring end gap	0.3—0.5 (0.01—0.02)			0.85 (0.033)
Piston ring to groove clearance	1st & 2nd	0.01—0.07 (0.0004—0.0028)		—
Piston pin bore	18.002—18.012 (0.7087—0.7091)			18.030 (0.7098)
Piston pin O.D.	17.994—18.000 (0.7084—0.7087)			17.980 (0.7079)

### CONROD + CRANKSHAFT

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	23.003 – 23.011 (0.9056 – 0.9059)	23.040 (0.9071)
Crank web to web width	74.0 ± 0.1 (2.91 ± 0.004)	—
Crankshaft runout	—	0.05 (0.002)

### EXHAUST VALVE

Exhaust valve closing r/min.	5 000 – 5 500 r/min
------------------------------	---------------------

### CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch cable play	2 – 3 (0.08 – 0.12)	—
Drive plate thickness	2.72 – 2.88 (0.107 – 0.113)	2.45 (0.096)
Drive plate claw width	15.8 – 16.0 (0.62 – 0.63)	15.0 (0.59)
Driven plate distortion	—	0.10 (0.004)
Clutch spring free length	—	31.0 (1.22)

**RADIATOR**

ITEM	STANDARD	LIMIT
Radiator cap valve opening pressure	110 ± 15 kPa (1.1 ± 0.15 kg/cm <sup>2</sup> , 15.6 ± 2.1 psi)	—

**TRANSMISSION**

Unit: mm (in) Except ratio

ITEM	STANDARD	LIMIT
Primary reduction ratio	2.142 (60/28)	—
Final reduction ratio	3.076 (40/13)	—
Gear ratios	Low	2.416 (29/12)
	2nd	1.733 (26/15)
	3rd	1.333 (24/18)
	4th	1.100 (22/20)
	Top	0.909 (20/22)
Shift fork to groove clearance No.1, No.2 & No.3	0.10–0.30 (0.004–0.012)	0.50 (0.020)
Shift fork groove width No.1, No.2 & No.3	5.00–5.10 (0.197–0.201)	—
Shift fork thickness No.1, No.2 & No.3	4.80–4.90 (0.189–0.193)	—

**DRIVE CHAIN**

Unit: mm (in)

ITEM	STANDARD	LIMIT
Drive chain	Type TAKASAGO: RK520SMO-Z10	—
	Links 96	—
	20-pitch length	319.4 (12.57)
Drive chain slack	25–30 (1.0–1.2)	—

**CARBURETOR**

ITEM	SPECIFICATION
Carburetor type	MIKUNI TM38SS
Bore size	38 mm
I.D. No.	43B20
Idle r/min.	1 400 ± 50 r/min
Float height	11.4 ± 1.0 mm (0.45 ± 0.04 in)
Main jet (M.J.)	#350 (SPARE MAIN JETS #340 and #360)
Jet needle (J.N.)	6DK3-3rd
Needle jet (N.J.)	R-2
Cut-away (C.A.)	4.0
Valve seat (V.S.)	3.5 mm
Pilot jet (P.J.)	#22.5
By-pass (B.P.)	0.7 mm
Pilot outlet (P.O.)	0.7 mm
Air screw (A.S.)	1 ½ turns back
Starter jet (G.S.)	#150
Throttle cable play	0.5–1.0 mm (0.02–0.04 in)



## ELECTRICAL

Unit: mm (in)

Unit: mm

ITEM		STANDARD		NOTE
Ignition timing		4° B.T.D.C. at 1 000 r/min. and 12° B.T.D.C. at 9 000 r/min.		
Spark plug		Type	NGK: B8EGV	For U.K., U.S.A. and Australia
		Gap	0.55—0.65 (0.022—0.026)	
		Type	NGK: BR8EV	For Canada and others
		Gap	0.5—0.6 (0.020—0.024)	
Spark performance		Over 8 (0.3) at 1 atm.		
Ignition coil resistance	E-02,03,24	Primary	0—1 Ω	⊕ Terminal— Ground
		Secondary	3—5 kΩ	Plug cap— ⊕ Terminal
	E-01,28	Primary	0—1 Ω	⊕ Terminal— Ground
		Secondary	13—15 kΩ	Plug cap— ⊕ Terminal
Magneto coil resistance		Lighting	0.5—1.0 Ω	WIRE COLOR: Y/R—B/W
		Power source	315—475 Ω	WIRE COLOR: B/R—B/W
		Pick-up	175—265 Ω	WIRE COLOR: BI—B/W
Lighting coil output		Above 12V at 3 000 r/min. Below 18V at 8 000 r/min.		With lighting switch off
Regulated voltage		13—14 V at 5 000 r/min.		With lighting switch off

## WATTAGE

Unit: W

ITEM		SPECIFICATION
Headlight	HI	60
	LO	55
Taillight		5

**BRAKE + WHEEL**

ITEM	STANDARD		LIMIT
Rear brake pedal height	5 (0.2)		—
Brake disc thickness	Front	$3.5 \pm 0.2$ ( $0.14 \pm 0.008$ )	3.0 (0.12)
	Rear	$4.5 \pm 0.2$ ( $0.18 \pm 0.008$ )	4.0 (0.16)
Brake disc runout	—		0.30 (0.012)
Master cylinder bore	Front	12.700–12.743 (0.5000–0.5017)	—
	Rear	12.700–12.743 (0.5000–0.5017)	—
Master cylinder piston diam.	Front	12.657–12.684 (0.4983–0.4994)	—
	Rear	12.657–12.684 (0.4983–0.4994)	—
Brake caliper cylinder bore	Front	30.230–30.280 (1.1902–1.1921)	—
	Rear	33.960–34.010 (1.3370–1.3390)	—
Brake caliper piston diam.	Front	30.167–30.200 (1.1877–1.1890)	—
	Rear	33.923–33.928 (1.3355–1.3357)	—
Wheel axle runout	Rear	—	8.0 (0.31)
Tire size	Front	AT21 x 7-10 ☆☆	—
	Rear	AT20 x 11-10 ☆☆	—
Tire tread depth	Front	—	4.0 (0.16)
	Rear	—	4.0 (0.16)
Steering angle	Inside	$32^\circ \pm 3^\circ$	—
	Outside	$25^\circ \pm 3^\circ$	—
Toe-in (with 75 kg, 165 lbs)	11-19 (0.4–0.7)		—
Turning radius	2.8 m (9.2 ft)		—



## SUSPENSION

ITEM	STANDARD	LIMIT	NOTE
Front wheel travel	230 (9.1)	—	
Front shock absorber spring pre-set length	257 (10.1)	—	
Front shock absorber damping force pre-set position	2nd/4th	—	
Rear wheel travel	230 (9.1)	—	
Rear shock absorber spring pre-set length	258 (10.2)	—	
Rear shock absorber damping force pre-set position, com- pression side	7th-13th/21st	—	
Rear shock absorber damping force pre-set position, ex- tension side	10th-16th/26th	—	
Rear shock absorber reservoir tank gas pressure	1 000 kPa, (10 kg/cm <sup>2</sup> , 142 psi)	—	
Swingarm pivot shaft runout	—	0.3 (0.01)	

## TIRE PRESSURE

COLD INFLATION TIRE PRESSURE  LOAD CAPACITY		FRONT			REAR		
		kPa	kg/cm <sup>2</sup>	psi	kPa	kg/cm <sup>2</sup>	psi
Up to 80 kg (Up to 175 lbs)		30	0.3	4.4	25	0.25	3.6
From 80—120 kg (From 175—265 lbs)		35	0.35	5.1	35	0.35	5.1

**FUEL + OIL + COOLANT**

ITEM	SPECIFICATION		NOTE
Fuel type	<ul style="list-style-type: none"> <li>Use only unleaded or low-lead type gasoline of at least 85–95 pump octane (<math>\frac{R+M}{2}</math>) or 89 octane or higher rated by the research method.</li> <li>Gasoline containing MTBE (Methyl Tertiary Butyl Ether), less than 10% ethanol, or less than 5% methanol with appropriate cosolvents and corrosion inhibitor is permissible.</li> </ul>		For U.S.A.
	Use only unleaded or low-lead type gasoline of at least 85-95 pump octane ( $\frac{R+M}{2}$ method) or 89 octane or higher rated by the Research Method.		For Canada
	Gasoline used should be graded 85-95 octane or higher. An unleaded or low-lead type gasoline is recommended.		The others
Fuel tank including reserve capacity	13.0 L (3.4/2.9 US/lmp gal)		
reserve capacity	1.3 L (1.4/1.1 US/lmp qt)		
Engine oil type	CCI or CCI super		
Fuel and engine oil mixture ratio	20 : 1		
Transmission oil type	SAE 20W/40		
Transmission oil capacity	Change	1 000 ml (1.1/0.9 US/lmp qt)	
	Overhaul	1 100 ml (1.2/1.0 US/lmp qt)	
Rear shock absorber oil type	A.T.F. or Equivalent		
Rear shock absorber oil capacity	245 ml (8.3/8.6 US/lmp oz)		
Coolant type	Use an anti-freeze/coolant compatible with aluminum radiator, mixed with distilled water only, at the ratio of 50:50.		
Coolant including reserve capacity	1 700 ml (1.8/1.5 US/lmp qt)		
Brake fluid type	Front	DOT 3 or DOT 4	
	Rear	DOT 4	



# LT500RL ('90-MODEL)

## CONTENTS

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## SPECIFICATIONS

### DIMENSIONS AND DRY MASS

Overall length	1 920 mm (75.6 in)
Overall width	1 205 mm (47.4 in)
Overall height	1 110 mm (43.7 in)
Wheelbase	1 345 mm (53.0 in)
Front track	1 030 mm (40.6 in)
Rear track	900 mm (35.4 in)
Seat height	790 mm (31.1 in)
Ground clearance	110 mm (4.3 in)
Dry mass	178 kg (392 lbs)

### ENGINE

Type	Two-stroke, water-cooled, SAEC
Number of cylinders	1
Bore	86.0 mm (3.386 in)
Stroke	86.0 mm (3.386 in)
Piston displacement	499 cm <sup>3</sup> (30.4 cu.in)
Corrected compression ratio	6.3 : 1
Carburetor	MIKUNI TM38SS, Single
Air cleaner	Polyurethane foam element
Starter system	Primary kick
Lubrication system	Fuel and oil premixture of 20 : 1

### TRANSMISSION

Clutch	Wet multi-plate type
Transmission	5-speed constant mesh
Gearshift pattern	1-down, 4-up
Primary reduction	2.142 (60/28)
Final reduction	3.076 (40/13)
Gear ratios, Low	2.416 (29/12)
2nd	1.733 (26/15)
3rd	1.333 (24/18)
4th	1.100 (22/20)
Top	0.909 (20/22)
Drive chain	TAKASAGO: RK520SMO-Z10 96 links

### CHASSIS

Front suspension	Double wishbone, spring pre-load fully adjustable, damping force 4-way adjustable	
Rear suspension	Full-floating suspension system, spring pre-load fully adjustable, compression damping force 21-way adjustable, rebound damping force 26-way adjustable	
Steering angle	Inside	32°
	Outside	25°
Caster	10° 00'	
Trail	42 mm (1.7 in)	
Turning radius	2.8 m (9.2 ft)	
Toe-in	11 - 19 (0.4 - 0.7)	
Front brake	Disc	
Rear brake	Disc	
Front tire size	AT21 x 7 - 10 ☆ ☆	
Rear tire size	AT20 x 11 - 10 ☆ ☆	

### ELECTRICAL

Ignition type	SUZUKI "PEI" (CDI)
Ignition timing	4° B.T.D.C. at 1 000 r/min and 12° B.T.D.C. at 9 000 r/min
Spark plug	N.G.K.: B8EGV ...For E-02, 03, 24 N.G.K.: BR8EV ...For E-01, 28
Headlight	12V 60/55W
Tailight	12V 5W

### CAPACITIES

Fuel tank, including reserve	13.0 L (3.4/2.9 US/lmp gal)
reserve	1.3 L (1.4/1.1 US/lmp qt)
Transmission oil	1 000 ml (1.06/0.88 US/lmp qt)
Coolant including reserve	1 700 ml (1.80/1.50 US/lmp qt)

Specifications are subject to change without notice.



## SERVICE DATA

### CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD		LIMIT
Piston to cylinder clearance	0.080 – 0.090 (0.0031 – 0.0035)		0.120 (0.0047)
Cylinder bore	86.000 – 86.015 (3.3858 – 3.3864) Measure at 20 (0.8) from the top surface		86.050 (3.3878)
Piston diam.	85.915 – 85.930 (3.3825 – 3.3831) Measure at 33 (1.3) from the skirt end		85.880 (3.3811)
Cylinder distortion	—————		0.05 (0.002)
Cylinder head distortion	—————		0.05 (0.002)
Piston ring free end gap	1st & 2nd R	Approx. 6.6 (0.26)	5.3 (0.21)
Piston ring end gap	0.3 – 0.5 (0.01 – 0.02)		0.85 (0.033)
Piston ring to groove clearance	1st & 2nd	0.01 – 0.07 (0.0004 – 0.0028)	—————
Piston pin bore	18.002 – 18.012 (0.7087 – 0.7091)		18.030 (0.7098)
Piston pin O.D.	17.994 – 18.000 (0.7084 – 0.7087)		17.980 (0.7079)

### CONROD + CRANKSHAFT

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	23.003 – 23.011 (0.9056 – 0.9059)	23.040 (0.9071)
Crank web to web width	74.0 ± 0.1 (2.91 ± 0.004)	—————
Crankshaft-runout	—————	0.05 (0.002)

### EXHAUST VALVE

Exhaust valve closing r/min.	5 000 – 5 500 r/min
------------------------------	---------------------

### CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch cable play	2 – 3 (0.08 – 0.12)	—————
Drive plate thickness	2.72 – 2.88 (0.107 – 0.113)	2.45 (0.096)
Drive plate claw width	15.8 – 16.0 (0.62 – 0.63)	15.0 (0.59)
Driven plate distortion	—————	0.10 (0.004)
Clutch spring free length	—————	31.0 (1.22)

## RADIATOR

ITEM	STANDARD	LIMIT
Radiator cap valve opening pressure	110 ± 15 kPa (1.1 ± 0.15 kg/cm <sup>2</sup> , 15.6 ± 2.1 psi)	—

## TRANSMISSION

Unit: mm (in) Except ratio

ITEM	STANDARD	LIMIT
Primary reduction ratio	2.142 (60/28)	—
Final reduction ratio	3.076 (40/13)	—
Gear ratios	Low	2.416 (29/12)
	2nd	1.733 (26/15)
	3rd	1.333 (24/18)
	4th	1.100 (22/20)
	Top	0.909 (20/22)
Shift fork to groove clearance No. 1, No. 2 & No. 3	0.10–0.30 (0.004–0.012)	0.50 (0.020)
Shift fork groove width No. 1, No. 2 & No. 3	5.00–5.10 (0.197–0.201)	—
Shift fork thickness No. 1, No. 2 & No. 3	4.80–4.90 (0.189–0.193)	—

## DRIVE CHAIN

Unit: mm (in)

ITEM	STANDARD	LIMIT
Drive chain	Type TAKASAGO: RK520SMO-Z10	—
	Links 96	—
	20-pitch length	319.4 (12.57)
Drive chain slack	25–30 (1.0–1.2)	—

## CARBURETOR

ITEM	SPECIFICATION
Carburetor type	MIKUNI TM38SS
Bore size	38 mm
I.D. No.	43B20
Idle r/min.	1 400 ± 50 r/min
Float height	11.4 ± 1.0 mm (0.45 ± 0.04 in)
Main jet (M.J.)	#350 (SPARE MAIN JETS #340 and #360)
Jet needle (J.N.)	6DK3-3rd
Needle jet (N.J.)	R-2
Cut-away (C.A.)	4.0
Valve seat (V.S.)	3.5 mm
Pilot jet (P.J.)	#22.5
By-pass (B.P.)	0.7 mm
Pilot outlet (P.O.)	0.7 mm
Air screw (A.S.)	1 ½ turns back
Starter jet (G.S.)	#150
Throttle cable play	0.5–1.0 mm (0.02–0.04 in)



**ELECTRICAL**

Unit: mm (in)

Unit: mm

ITEM		STANDARD		NOTE
Ignition timing		4° B.T.D.C. at 1 000 r/min. and 12° B.T.D.C. at 9 000 r/min.		
Spark plug	Type	NGK: B8EGV		E-02,03,24
	Gap	0.55—0.65 (0.022—0.026)		
	Type	NGK: BR8EV		E-01,28
	Gap	0.5—0.6 (0.020—0.024)		
Spark performance		Over 8 (0.3) at 1 atm.		
Ignition coil resistance	E-02,03,24	Primary	0—1 Ω	⊕ Terminal— Ground
		Secondary	3—5 kΩ	Plug cap— ⊕ Terminal
	E-01,28	Primary	0—1 Ω	⊕ Terminal— Ground
		Secondary	13—15 kΩ	Plug cap— ⊕ Terminal
Magneto coil resistance	Lighting	0.5—1.0 Ω	WIRE COLOR: Y/R—B/W	
	Power source	315—475 Ω	WIRE COLOR: B/R—B/W	
	Pick-up	175—265 Ω	WIRE COLOR: Bl—B/W	
Lighting coil output		Above 12V at 3 000 r/min. Below 18V at 8 000 r/min.		With lighting switch off
Regulated voltage		13—14 V at 5 000 r/min.		With lighting switch off

**WATTAGE**

Unit: W

ITEM		SPECIFICATION
Headlight	HI	60
	LO	55
Taillight		5

## BRAKE + WHEEL

ITEM	STANDARD		LIMIT
Rear brake pedal height	5 (0.2)		—
Brake disc thickness	Front	$3.5 \pm 0.2$ ( $0.14 \pm 0.008$ )	3.0 (0.12)
	Rear	$4.5 \pm 0.2$ ( $0.18 \pm 0.008$ )	4.0 (0.16)
Brake disc runout	—		0.30 (0.012)
Master cylinder bore	Front	12.700 – 12.743 (0.5000 – 0.5017)	—
	Rear	12.700 – 12.743 (0.5000 – 0.5017)	—
Master cylinder piston diam.	Front	12.657 – 12.684 (0.4983 – 0.4994)	—
	Rear	12.657 – 12.684 (0.4983 – 0.4994)	—
Brake caliper cylinder bore	Front	30.230 – 30.280 (1.1902 – 1.1921)	—
	Rear	33.960 – 34.010 (1.3370 – 1.3390)	—
Brake caliper piston diam.	Front	30.167 – 30.200 (1.1877 – 1.1890)	—
	Rear	33.923 – 33.928 (1.3355 – 1.3357)	—
Wheel axle runout	Rear	—	8.0 (0.31)
Tire size	Front	AT21 x 7-10 ☆☆	—
	Rear	AT20 x 11-10 ☆☆	—
Tire tread depth	Front	—	4.0 (0.16)
	Rear	—	4.0 (0.16)
Steering angle	Inside	$32^\circ \pm 3^\circ$	—
	Outside	$25^\circ \pm 3^\circ$	
Toe-in (with 75 kg, 165 lbs)	11-19 (0.4 – 0.7)		—
Turning radius	2.8 m (9.2 ft)		—



**SUSPENSION**

ITEM	STANDARD	LIMIT	NOTE
Front wheel travel	230 (9.1)	—	
Front shock absorber spring pre-set length	257 (10.1)	—	
Front shock absorber damping force pre-set position	2nd/4th	—	
Rear wheel travel	230 (9.1)	—	
Rear shock absorber spring pre-set length	258 (10.2)	—	
Rear shock absorber damping force pre-set position, com- pression side	7th-13th/21st	—	
Rear shock absorber damping force pre-set position, ex- tension side	10th-16th/26th	—	
Rear shock absorber reservoir tank gas pressure	1 000 kPa, (10 kg/cm <sup>2</sup> , 142 psi)	—	
Swingarm pivot shaft runout	—	0.3 (0.01)	

**TIRE PRESSURE**

LOAD CAPACITY	COLD INFLATION TIRE PRESSURE	FRONT			REAR		
		kPa	kg/cm <sup>2</sup>	psi	kPa	kg/cm <sup>2</sup>	psi
Up to 80 kg (Up to 175 lbs)		30	0.3	4.4	25	0.25	3.6
From 80—120 kg (From 175—265 lbs)		35	0.35	5.1	35	0.35	5.1

## FUEL + OIL + COOLANT

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 85 pump octane ( $\frac{R+M}{2}$ ) or 91 octane or higher rated by the research method. Gasoline containing MTBE (Methyl Tertiary Butyl Ether), less than 10% ethanol, or less than 5% methanol with appropriate cosolvents and corrosion inhibitor is permissible.		E-03
	Use only unleaded or low-lead type gasoline of at least 85-95 pump octane ( $\frac{R+M}{2}$ method) or 89 octane or higher rated by the Research Method.		E-28
	Gasoline used should be graded 85-95 octane or higher. An unleaded or low-lead type gasoline is recommended.		The others
Fuel tank including reserve capacity	13.0 L (3.4/2.9 US/Imp gal)		
reserve capacity	1.3 L (1.4/1.1 US/Imp qt)		
Engine oil type	Use SUZUKI CCI SUPER 2-CYCLE MOTOR LUBRICANT or an equivalent high quality 2-cycle Racing Lubricant.		E-03
	<ul style="list-style-type: none"> <li>• SHELL SUPER M</li> <li>• CASTROL R30</li> <li>• CASTROL TTS (A545)</li> <li>• CASTROL A747</li> <li>• BELL-RAY MC-100</li> <li>• MOTUL CENTURY 300 2T</li> <li>• B.P. RACING</li> </ul>		The others
Fuel and engine oil mixture ratio	20 : 1		
Transmission oil type	SAE 20W/40		
Transmission oil capacity	Change	1 000 ml (1.1/0.9 US/Imp qt)	
	Overhaul	1 100 ml (1.2/1.0 US/Imp qt)	
Rear shock absorber oil type	A.T.F. or Equivalent		
Rear shock absorber oil capacity	245 ml (8.3/8.6 US/Imp oz)		
Coolant type	Use an anti-freeze/coolant compatible with aluminum radiator, mixed with distilled water only, at the ratio of 50:50.		
Coolant including reserve capacity	1 700 ml (1.8/1.5 US/Imp qt)		
Brake fluid type	Front	DOT 4	
	Rear	DOT 4	