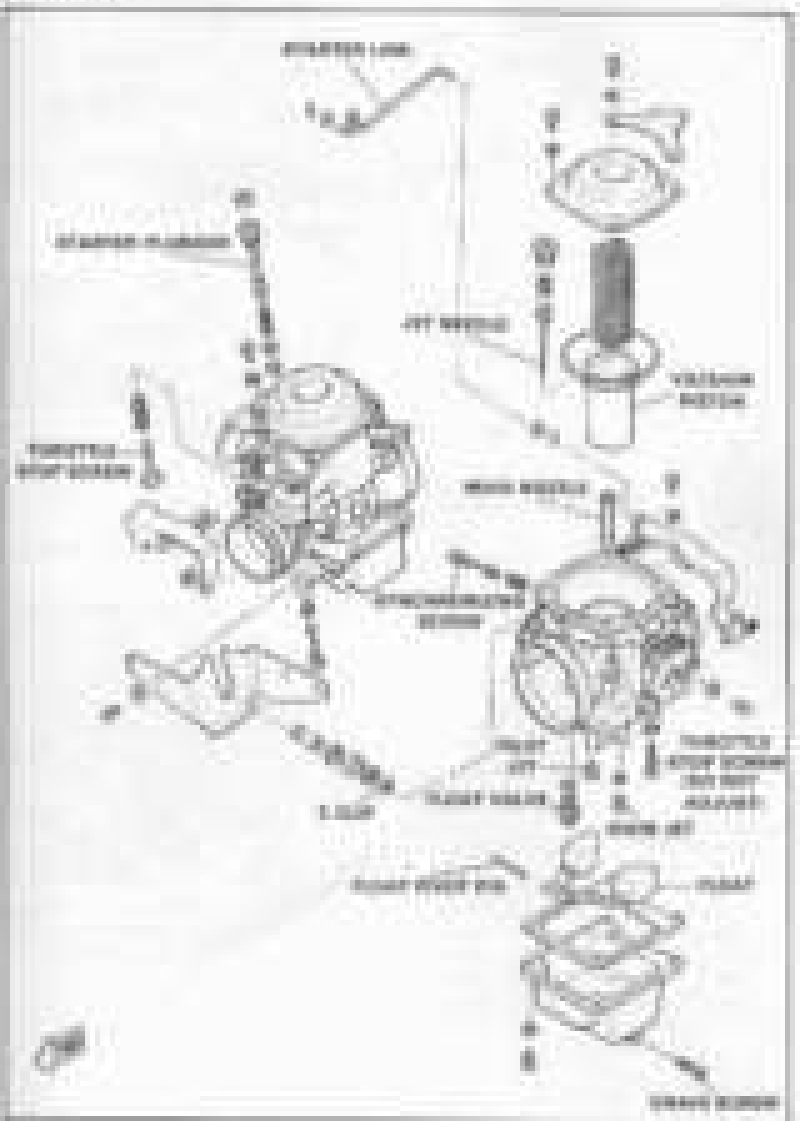
YAMAHA

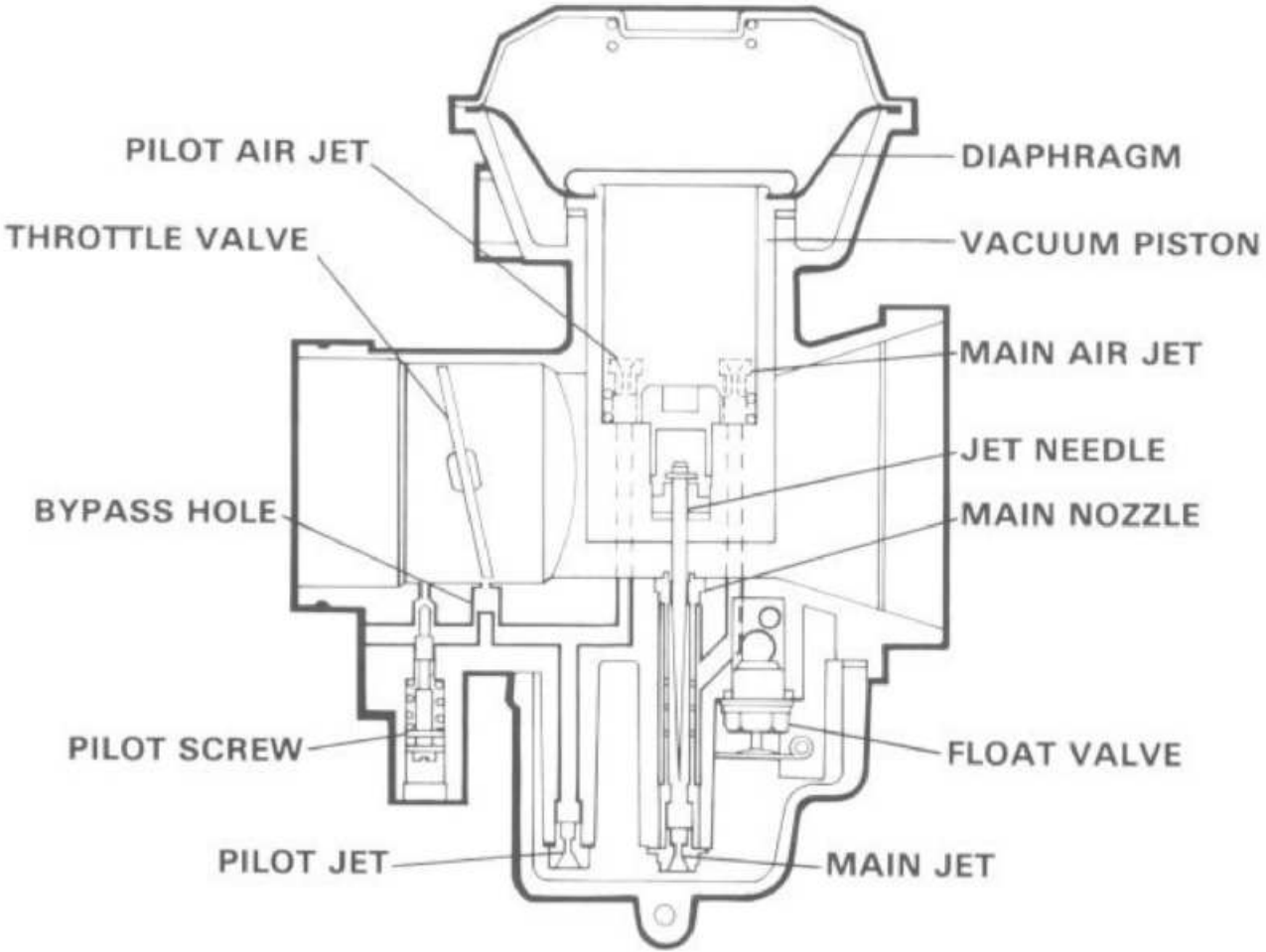
XV750/XV920
XV920R

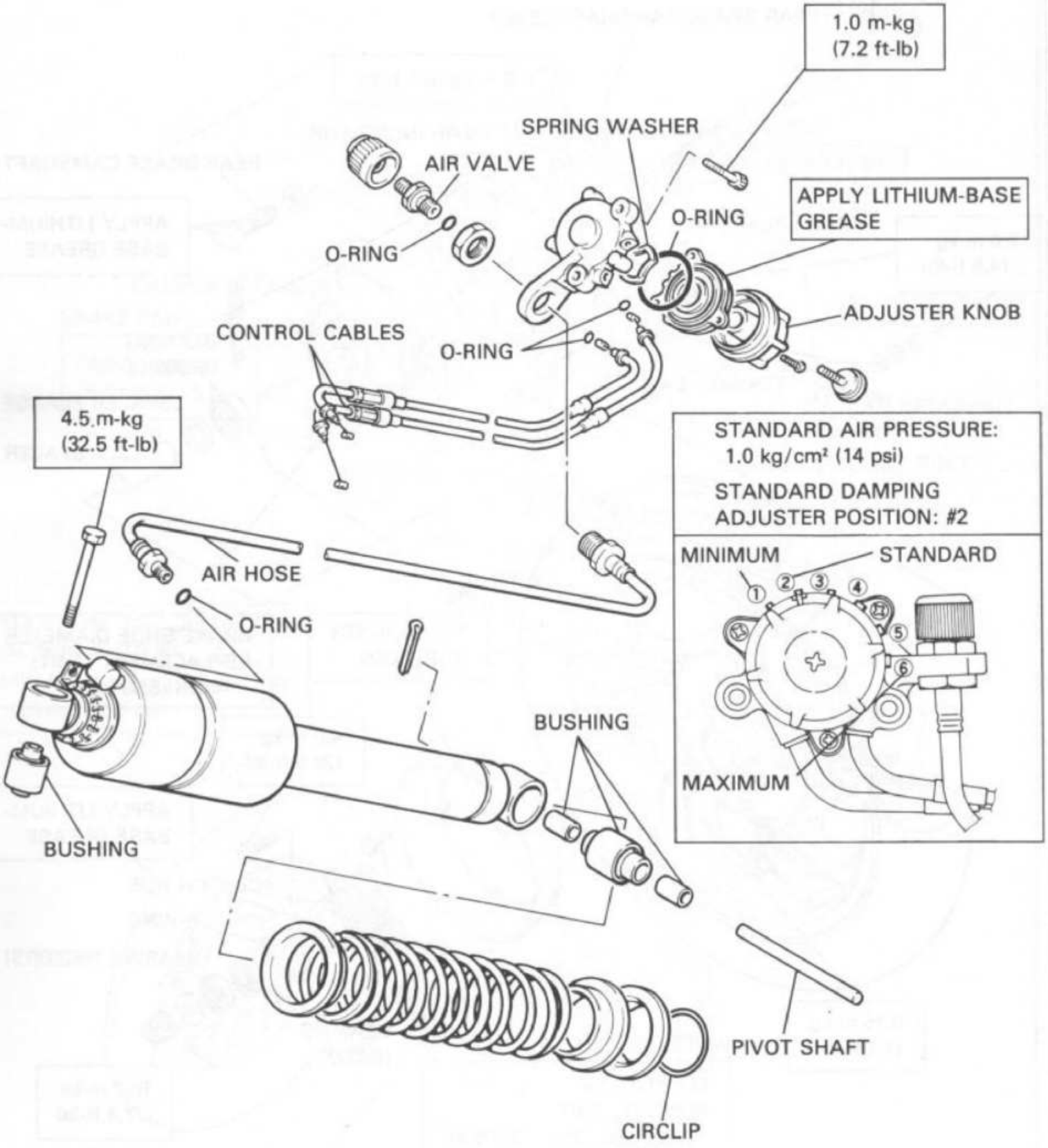
Service Manual


YAMAHA

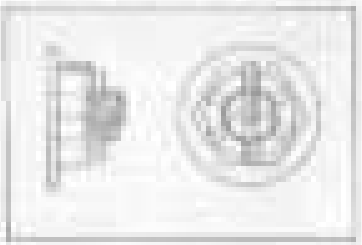


A. Section View




1.0 m-kg
(7.2 ft-lb)
SPRING WASHER
AIR VALVE
O-RING
O-RING
APPLY LITHIUM-BASE
GREASE
ADJUSTER KNOB
CONTROL CABLES
O-RING
4.5 m-kg
(32.5 ft-lb)
STANDARD AIR PRESSURE:
1.0 kg/cm² (14 psi)
STANDARD DAMPING
ADJUSTER POSITION: #2
MINIMUM
STANDARD
MAXIMUM
AIR HOSE
O-RING
BUSHING
BUSHING
PIVOT SHAFT
CIRCLIP
FWD

8. Allow unloading for such as tension the main lever until the rear wheel jump rest.
9. Insert the wheel pin (from the rear wheel axle nut) and twist the end of the cotter pin as shown in the illustration. (If the pin comes and the cotter pin hole do not match, tighten the nut slightly.)



Caution

Engine oil will flow out when the engine is tilted if the oil level is too high.

Be sure to check the oil level before starting the engine.

10. Remove the oil filler cap/dipstick and check the oil level.
11. If the level is low, add the recommended oil to the upper level.

Recommended oil:
If API grade is not available, use an oil with a similar API rating.

12. Install the oil filler cap/dipstick.

Caution

Do not run the engine for more than a few minutes without oil. Doing so may cause engine damage.

Before starting the engine, check the oil level.

13. Start the engine and let it run for a few minutes.
14. Stop the engine and check the oil level.

Caution

Do not run the engine at high speed immediately after starting it.

Let the engine warm up before operating it.

15. Remove the chain adjusting bolt/nut and push the rear wheel forward as far as it will go.
16. Check that the chain has the proper amount of slack.

Chain slack:
25 ~ 35 mm (1.0 ~ 1.4 in)

17. Tighten the chain adjusting bolt/nut.
18. Remove the chain adjusting bolt/nut, loosen the rear wheel axle nut and push the rear wheel forward.
19. Remove the cotter pin and loosen the rear wheel axle nut.
20. Remove the chain adjusting bolt/nut and push the rear wheel backward.
21. Tighten the rear wheel axle nut to the specified torque.

Rear wheel axle nut:
90 N·m (9.0 kgf·m, 65 lb·ft)

22. Check the chain slack again and adjust if necessary.
23. Tighten the chain adjusting bolt/nut.
24. Remove the chain adjusting bolt/nut, loosen the axle nut and remove the plate.
25. Remove the rear sprocket.
26. Remove the cap (plastic cover), cotter pin, castle nut, washer and chain puller.
27. Replace any bent or worn axle components. If they are severely damaged.
28. Check the rubber collars for cracks or damage, and measure the height of the cracked ribs. If the rib height is near the minimum height or has spread, replace the collars.

Minimum rib height: 4 mm (0.157 in)



29. Install the rubber collars onto the rear wheel.
30. Install the rear sprocket with the plate facing outward.
31. Tighten the rear sprocket nuts securely.

Caution

Do not use a worn or damaged chain.

Replace the chain and the sprockets as a set.

32. Install and grease the chain onto the rear sprocket.
33. Install the chain puller onto the chain.
34. Install the castle nut, washer and chain puller.
35. Tighten the castle nut and install a new cotter pin.

8. DRIVE CHAIN

Drive chain tension check

NOTE:

Before checking or adjusting the chain, make the rear wheel aligned (vertical) and check the chain tension. Do not check or adjust the chain tension with the rider on the motorcycle.

1. Place the motorcycle on the center stand.
2. Remove the cap from the chain tension adjusting hole in the chain case.
3. Check the chain tension through the inspection hole.
4. The chain tension is correct if the tab (A) is as shown. If the tab (A) is too high or too low, adjust the chain tension.



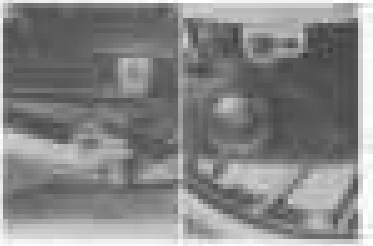
5. The chain tension should be checked at the specified intervals.

CAUTION:

Maintain the drive chain wear limit of (20.0 in).

Drive chain tension adjustment

1. Loosen the 2 bolts securing the axle nuts and the locking nut.



1. Loosen the rear brake adjuster.
2. Remove the cotter pin from the axle nut and discard it.
3. Loosen the axle nut.
4. Loosen the left and right chain adjusting bolts by an equal amount to obtain the proper chain tension.
5. Tighten the axle nut to the specified torque.

Drive chain tightening:
Axle nut: 90 – 120 N·m (9.0 – 12.0 kg-m, 65 – 87 ft-lb)



1. Axle nut
2. Adjuster
3. Rear brake
4. Left chain adjusting bolt
5. Locknut

NOTE:

There must be the same amount of play at the end of the swingarm on both sides. This ensures correct alignment of the rear wheel with the front wheel. Use the notches on the chain adjusting arm and the reference marks on the chain adjusting bolts to align the rear wheel correctly.

CAUTION:

Tighten the chain if deterioration, wear or other defects are found when inspecting the chain.

Recommended combinations of the front fork and the rear shock absorber:
Use the table as a guideline to match specific riding conditions and preferences.

Front fork	Rear shock absorber		Loading conditions			
Air pressure	Air pressure	Damping adjuster	Rider only	With passenger	With passenger + luggage	With maximum load (passenger, cargo and luggage)
0.0 – 0.5 kgf/cm² (0.0 – 7.1 psi)	0.0 – 0.5 kgf/cm² (0.0 – 7.1 psi)	1–3	○			
	0.5 – 0.9 kgf/cm² (7.1 – 12.8 psi)	1–4		○		
0.0 – 0.5 kgf/cm² (0.0 – 7.1 psi)	0.9 – 1.5 kgf/cm² (12.8 – 21.3 psi)	1–3			○	
0.0 – 0.5 kgf/cm² (0.0 – 7.1 psi)	1.5 kgf/cm² (21.3 psi)	1–3				○

3 WHEELS AND

Front wheel inspection

1) Remove the rear wheel and the front shock absorber. Grasp the swing arm and try to move it from side to side. If there is play, the bearings are contaminated with dirt.
2) Put swing arm in suspension as needed basis. Move the swing arm up and down. The swing arm should move smoothly, without hindrance, resulting in rough spots that could indicate damaged bearings.

Inspection and lubrication

1) Remove the bearing caps. Inspect the bearings for pitting or other damage. Make sure that the bearings can freely roll. If a bearing is damaged, it should be replaced.

NOTE:

When inspecting rear bearings, grease them heavily with lithium-base, molybdenum-added bearing grease.

2) (1) The inner seals of the bearing caps are damaged, remove the bearing cups.
3) Measure the length of the bearing (A), the thickness of each bearing cup (B), and (C) and the length of the swing arm bearing spacer (D). If the wear limits are



4) Calculate the swing arm side clearance by using the formula given below.
Side clearance = A – (B + C + D)
5) If the side clearance is not within specifications, adjust the clearance by installing a new thrust washer(s) of appropriate thickness. Replace the side clearance.

Swing arm side clearance
0.2 – 0.8 mm (0.008 – 0.031 in)

WORK

When check-ing and adjusting shock absorbers, there should be no weight on the rear end of the motorcycle.

1. Position the rear wheel rigid.
2. Lifting the rear wheel under the engine and check the rear suspension. If the rear suspension is to stressed, the suspension mechanism and the shock absorber, it becomes softer.

Tip Remedy:
Use a stronger rear spring.

Tip Remedy:
Reduce the pre-tension of the spring.



1 - Pre-tension

Standard rear suspension:
2 kg/mm² (112 psi)
Maximum rear suspension:
4.5 kg/mm² (251 psi)
Minimum rear suspension:
0.5 kg/mm² (7 psi)

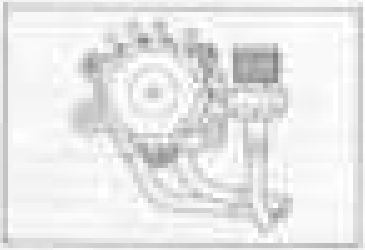
CAUTION

Never ride the motorcycle with the shock absorber pressure setting above the maximum or below the minimum recommended on your own. It will cause damage to the rear shock absorber and/or rear of motorcycle engine seems.

4. Install the air valve cap.

4. Cleaning
   a. Turn the damping adjuster in counter-clockwise direction into damping.
   b. If the damping adjuster is turned towards the "H", the damping becomes harder, if the adjuster is turned towards the "S" damping becomes softer.

Standard position: 4 to 5
"H" = Minimum damping
"S" = Maximum damping





1 - Damping adjuster 2 - Screwdriver

8) Carefully lower the sensor out of the sensor cylinder until unscrewed on. Secure by screw and the sensor.

Assembly

Note: the sensor with a lug. Use care to face the sensor does not cause stress as it is assembled from the cylinder.

1) Remove the control unit.

Cables assembly

All American cable should be attached to new brake. Each one, American cable should be connected until broken. Hold when required. Replace the remaining same wherever a socket is disconnected.

1. Brake screw and socket cap
2. Wood washing
3. Pedal unit
4. Cover unit
5. Sweeping ring



2) Install control circuit and as shown in fig.

Front fork nail can short absolute wear need.

Front fork:

1. Clean the front shoe by pulling the mounting pin on the connection.

Note:

When checking and adjusting the oil pressure when check kit is located on the front wheel the lower parts.

3) Remove the cover cap from the top of each fork.

4) Using one of seven shaft and mount the oil reservoir.
If not an present a necessary, the new present mounting on the seal is necessary a cleanness surface.

To prolong:
Clip pressure on pump
To decrease:
Release one or so pushing the seal pin.



1. Piston

Standard oil pressure:
0.4 kg/cm² (5.7 psi)
Pressure oil pressure:
2.9 kg/cm² (38 psi)
Minimum oil pressure: Zero

Caution

Never mount the maximum pressure or oil shall damage may occur.
The difference between both the left and right valve should be 0.1 kg/cm² (1.4 psi) or less.

5) Install the valve cap securely.

Rear shock absorber

Caution

Do not dent the oil chamber nor damage the oil hose. Be will lead to oil or rust.

1. Air pressure
2. Engage the two mount by moving the connection on the connection.



c. Tighten the axle nut, and stake the nut into the axle groove (see drawing).

Tightening torque:
Axle nut
[illegible]
Rear fender spacing bolts
[illegible]
Fender bar spacing bolt
[illegible]

CAUTION:

Always use a new cotter pin on the rear axle nut.

6. FRONT BRAKE

Caliper pad replacement

It is not necessary to disassemble the brake caliper each time how to replace the brake pads.

1. Remove the front fender and front cowl.
2. Remove the pad retaining screw.
3. Pull the caliper outside (as on the caliper body).
4. Install the new brake pads. Replace the retaining clamp if pad replacement is required.
   - Pad retaining screw
   - Washer
   - Pad spring
   - Pad

NOTE:

Replace the pads as a set. If either is found to be worn to the wear limit.



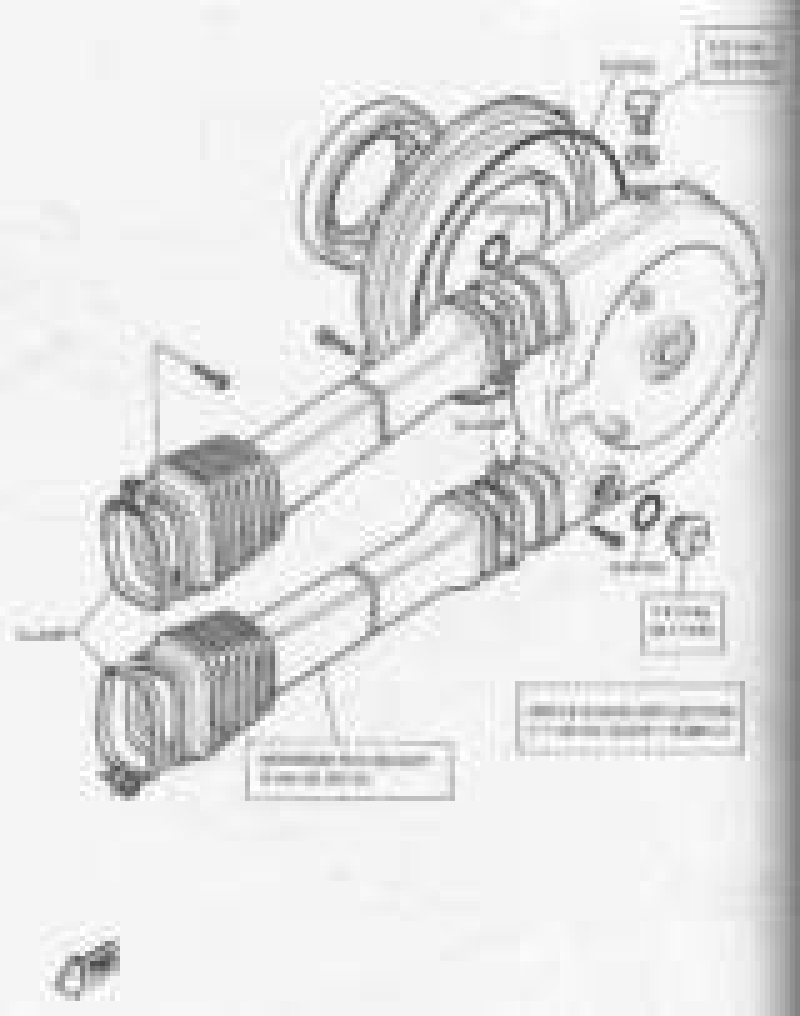
Caliper disassembly

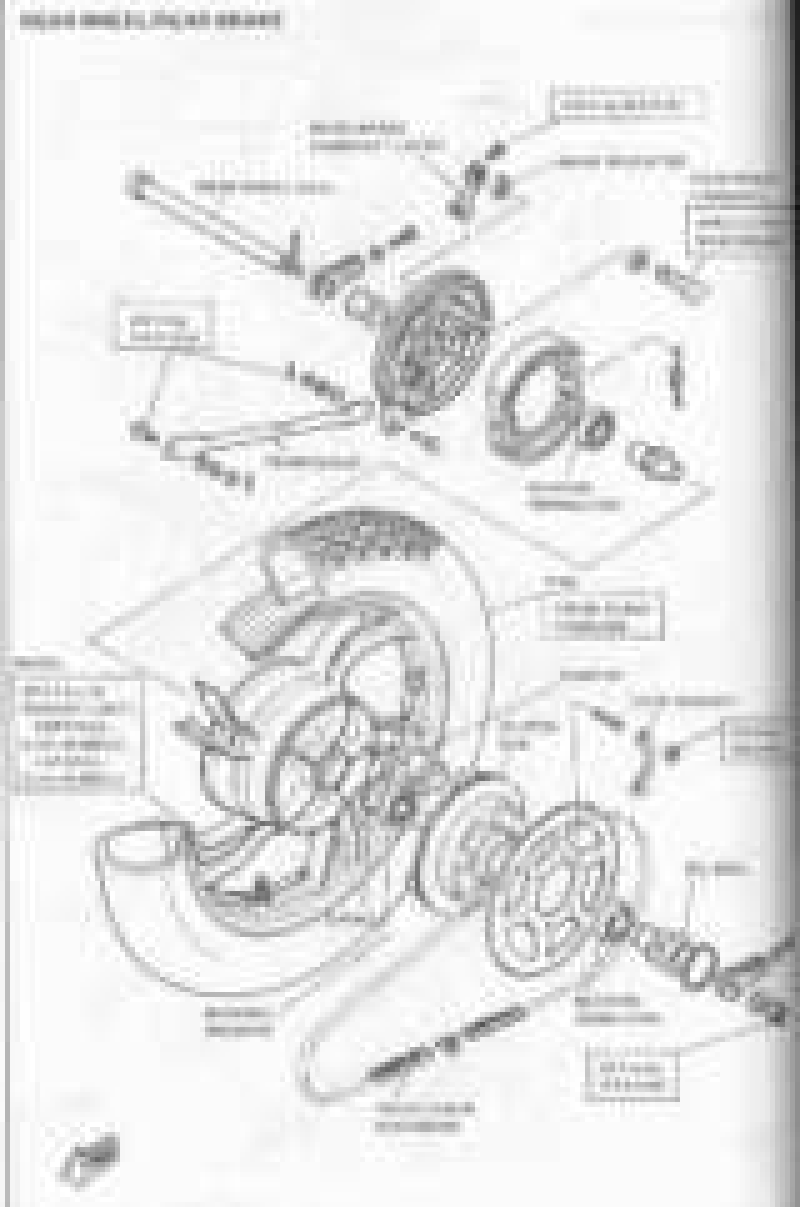


1. Brake caliper body
2. Brake pad
3. Brake disc
4. Bleed screw
5. Caliper bolt
6. Pad retaining screw
7. Pad

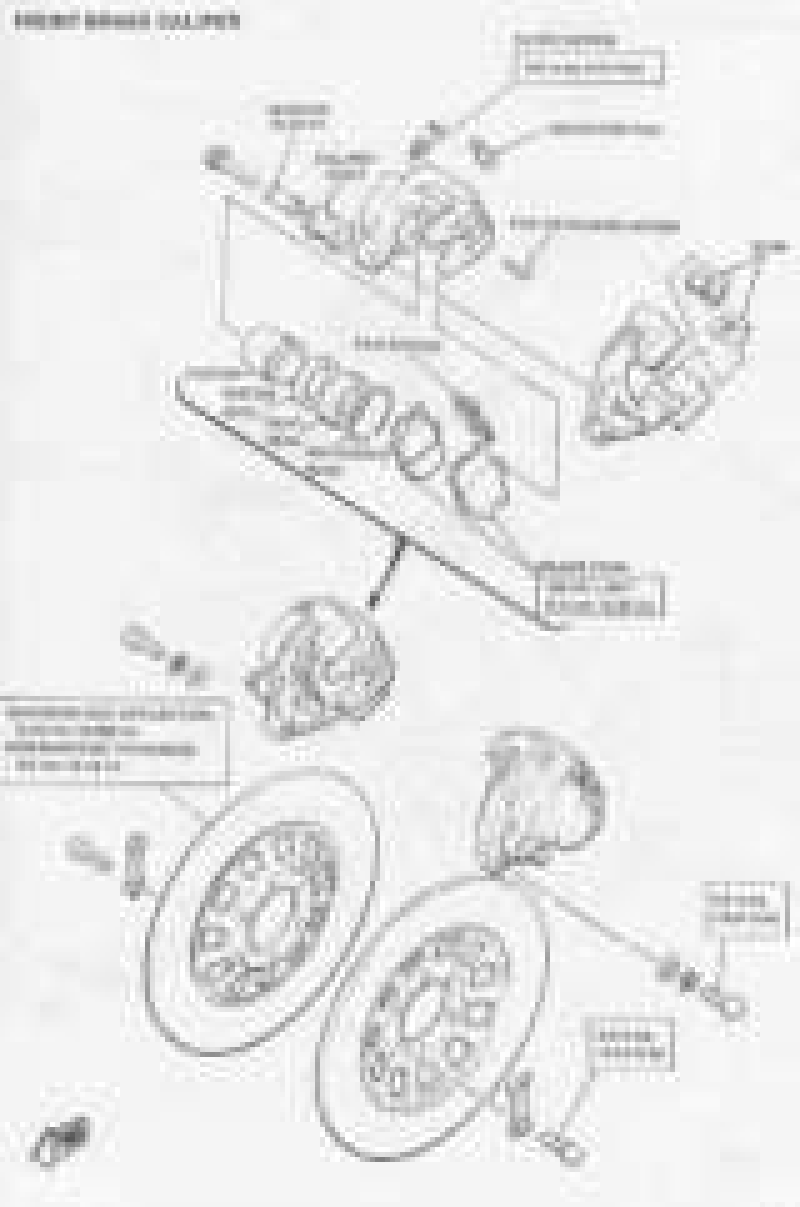
8. Pad spring
9. Washer
10. Retaining clip
11. Bracket
12. Caliper bolt
13. Washer

1. Remove the caliper brake hose (drive hose) to the caliper retaining to avoid brake contamination.
2. Align the upper two and rear the caliper and clamp the end from and caliper body.
3. Remove the caliper support bolts and the pad securing screw as described in the caliper replacement procedure.
4. Remove the caliper assembly from the caliper frame.
5. Remove the retaining clip and the dust seal.

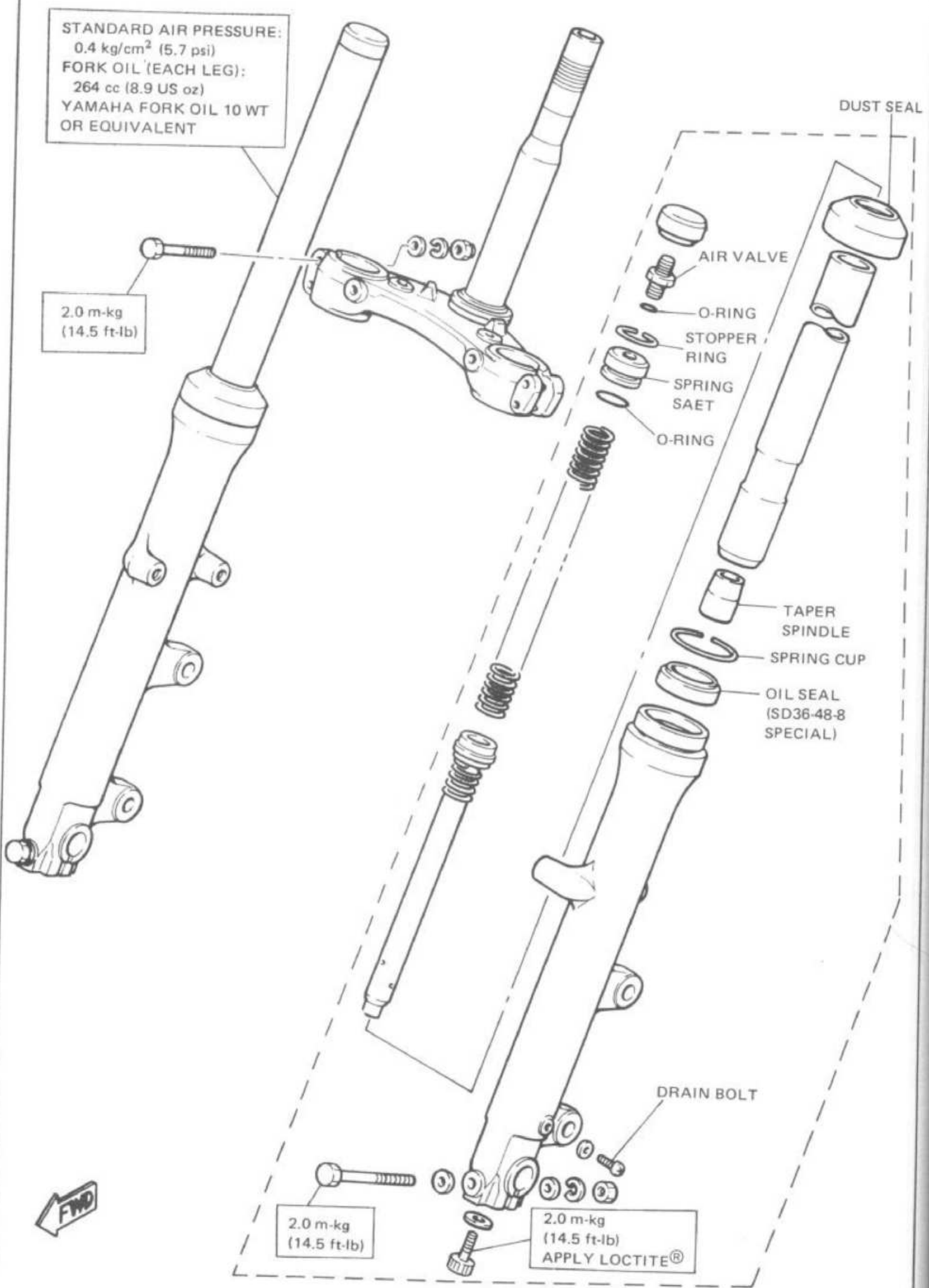


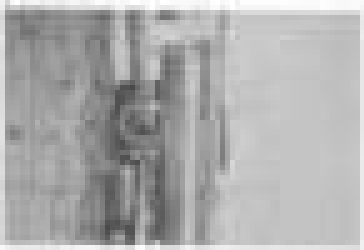


FRONT BRAKE CALIPER



FRONT FORK


STANDARD AIR PRESSURE:
0.4 kg/cm² (5.7 psi)
FORK OIL (EACH LEG):
264 cc (8.9 US oz)
YAMAHA FORK OIL 10 WT
OR EQUIVALENT
2.0 m-kg
(14.5 ft-lb)
DUST SEAL
AIR VALVE
O-RING
STOPPER
RING
SPRING
SAET
O-RING
TAPER
SPINDLE
SPRING CUP
OIL SEAL
(SD36-48-8
SPECIAL)
DRAIN BOLT
FWD
2.0 m-kg
(14.5 ft-lb)
2.0 m-kg
(14.5 ft-lb)
APPLY LOCTITE®



a - Tighten nut left and right steering tie-rod

Minimum tread clearance
0.8 in (20 mm)

...ment
1. Place the front wheels in the straight-ahead position.
2. Measure the tread clearance between the front wheels and the rear fenders.





3 - Remove the retainer nut and the brake rod from the brake shaft lever. The retainer nut can be removed by pressing the spring clip and nut lever and remove nut bolt. The brake rod can be removed by removing the cotter pin.



4 - Remove rear axle shaft outer nut and axle nut. (Model's 124 and up).



5 - Pull out the axle shaft.

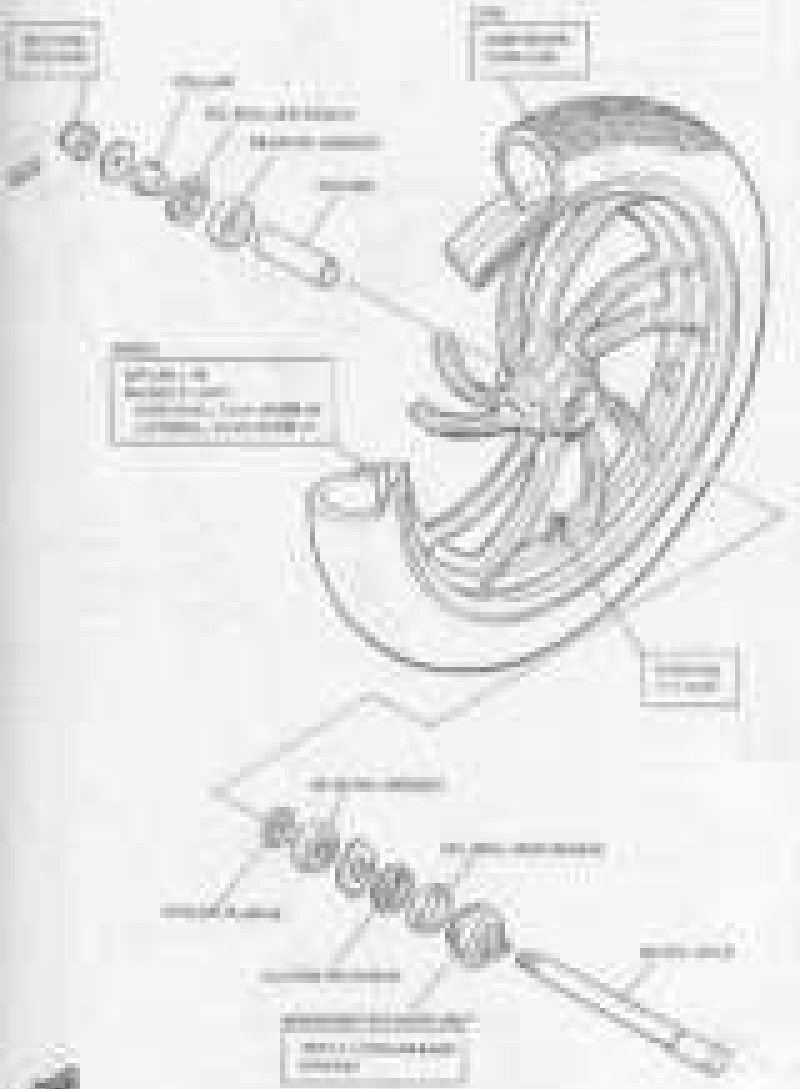


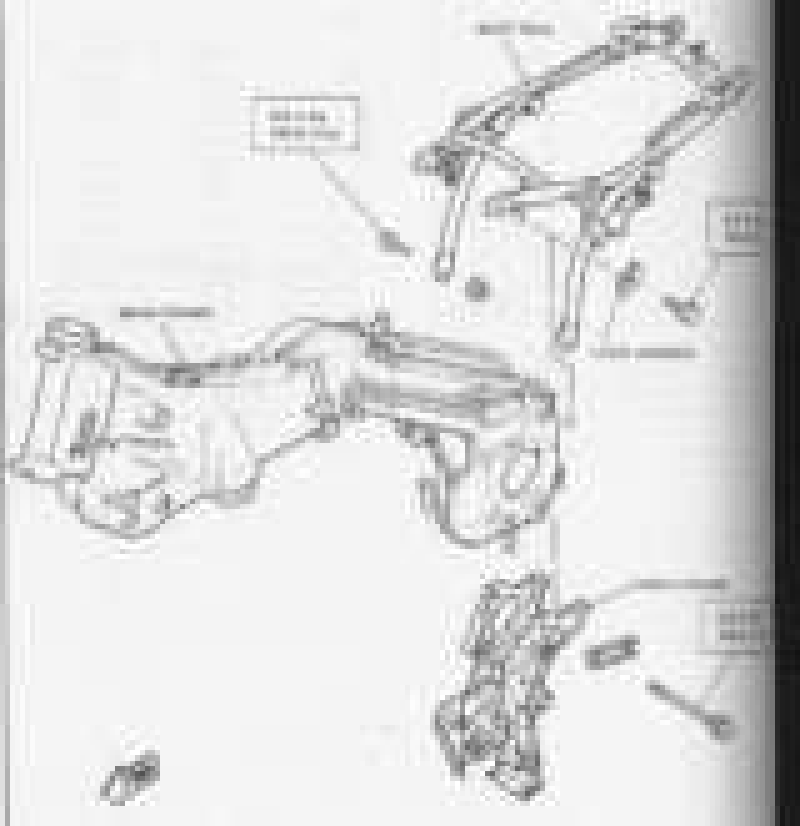
6 - Raise the wheel on the right side to approx. 4 feet. Put grease under rear axle housing and wheel.

7 - For installation, follow the procedure below with care.

a - Before installing the rear wheel, apply light coating of lithium base grease to the wheel bearing.

b - When inserting the axle shaft, be sure the splines on the wheel hub or axle shaft are not damaged.



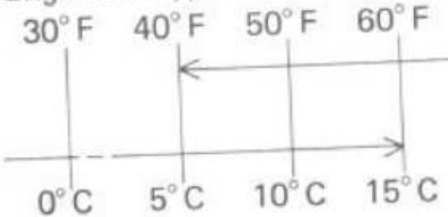


No.	Item	Remarks	Type	Initial break-in		Thereafter every		
				1,000 km (600 mi) or 1 month	5,000 km (3,000 mi) or 7 months	4,000 km (2,500 mi) or 6 months	8,000 km (5,000 mi) or 12 months	16,000 km (10,000 mi) or 24 months
12*	Steering bearing and races	Check bearings assembly for looseness. Moderately repack every 16,000 km (10,000 mi).	Medium weight wheel bearing grease		○	○		Repack
13*	Wheel bearings	Check bearings for smooth rotation. Replace if necessary.	—		○	○		
14	Battery	Check specific gravity. Check breather pipe for proper operation.	—		○	○		
15	Brake/Clutch lever pivot shaft	Apply chain lube lightly	Yamaha chain and cable lube or SAE 10W/30 motor oil		○	○		

* It is recommended that these items be serviced by a Yamaha dealer or other qualified mechanic.

NOTE:

Engine oil type:



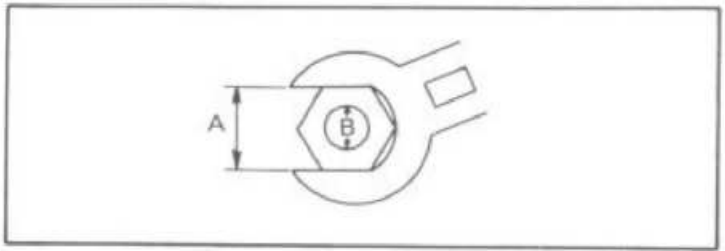
YAMALUBE 4-cycle oil or SAE 20W/40 type "SE" motor oil

SAE 10W/30 type "SE" motor oil

Part to be tightened	Part name	Thread size	Q'ty	Tightening torque		Remarks
				m-kg	ft-lb	
Caliper cylinder & brake hose	Union bolt	M10 P1.25	1	2.6	19.0	
Caliper cylinder & front fork	Nut	M8 P1.25	1	2.6	19.0	
Caliper cylinder bleed screw	—	M8 P1.25	1	0.6	4.3	
Front fender	Bolt	M8 P1.25	4	1.0	7.0	
Main frame & seat rail	Bolt	M10 P1.25	2	5.5	40.0	Use lock washer
Main frame & lower frame	Bolt	M10 P1.25	2	5.5	40.0	
Seat rail & muffler bracket	Bolt/Nut	M10 P1.25	2/2	5.5	40.0	
Footpeg (rear), muffler bracket & muffler	Bolt	M10 P1.25	2	5.5	40.0	
Sidestand bracket & engine	Nut	M10 P1.25	1	5.5	40.0	

GENERAL TORQUE SPECIFICATIONS

This chart specifies torque for standard fasteners with standard I.S.O. pitch threads. Torque specifications for special components or assemblies are included in the applicable sections of this book. To avoid warpage, tighten multi-fastener assemblies in a crisscross fashion, in progressive stages, until full torque is reached. Unless otherwise specified, torque specifications call for clean, dry threads. Components should be at room temperature.



A (Nut)	B (Bolt)	General torque specifications	
		m-kg	ft-lb
10 mm	6 mm	0.6	4.5
12 mm	8 mm	1.5	11
14 mm	10 mm	3.0	22
17 mm	12 mm	5.5	40
19 mm	14 mm	8.5	51
22 mm	16 mm	13.0	94

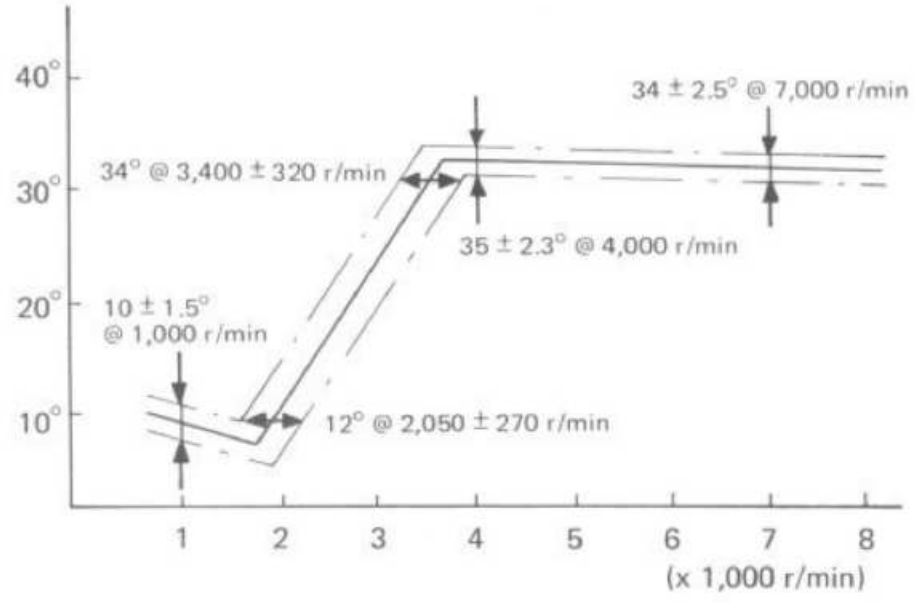
Part to be tightened		Part name	Thread size	Q'ty	Tightening torque		Remarks
					m-kg	ft-lb	
Crankcase		Bolt	M6 P1.0	16	1.0	7,0	
Connecting rod		Nut	M9 P1.25	4	4.8	35.0	Apply molybdenum desulfide grease
Drain plug		Bolt	M14 P1.5	1	4.3	31.0	
Clutch push screw lock nut		Nut	M8 P1.25	1	1.2	9.0	
Exhaust pipe		Nut	M8 P1.25	4	2.0	14.5	
Exhaust pipe joint		Bolt	M8 P1.25	2	2.0	14.5	
Carburetor joint		Bolt	M6 P1.0	4	1.0	7.0	
Change pedal		Bolt	M6 P1.0	1	1.0	7.0	
Oil level switch		Bolt	M6 P1.0	2	1.0	7.0	
CHASSIS:							
Engine Mounting	Bracket (front)	Nut	M12 P1.25	4	5.4	39.0	
	Bolt (front)	Bolt/Nut	M10 P1.25	2/2	5.5	40.0	
	Bolt (rear)	Bolt	M10 P1.25	2	5.5	40.0	
	Bolt (rear, upper)	Bolt	M10 P1.25	2	5.5	40.0	
	Bolt (rear, under)	Bolt/Nut	M10 P1.25	1/2	5.5	40.0	
Handle crown & steering stem		Bolt	M14 P1.25	1	5.4	39.0	
		Bolt	M8 P1.25	1	2.0	14.5	
Handle crown & front forks		Bolt/Nut	M8 P1.25	2/2	2.0	14.5	
Under bracket & front forks		Bolt	M8 P1.25	4	2.0	14.5	
Front wheel axle		Nut	M14 P1.5	1	10.7	77.5	
Front wheel axle pinch bolt		Bolt/Nut	M8 P1.25	1/1	2.0	14.5	
Rear arm pivot shaft		Bolt	M16 P1.5	1	7.8	56.5	Use lock washer
Rear wheel axle		Nut	M14 P1.5	1	10.7	77.5	
Rear shock absorber		Bolt	M12 P1.25	1	4.5	32.5	
Foot peg (front)		Nut	M10 P1.25	4	5.5	40.0	
Tension bar & barke plate		Bolt/Nut	M8 P1.25	1/1	2.0	14.5	
Tension bar & rear arm		Bolt/Nut	M8 P1.25	1/1	2.0	14.5	
Rear brake camshaft lever & brake camshaft		Bolt	M6 P1.0	1	0.9	6.5	
Brake disc & hub		Bolt	M8 P1.25	6	2.0	14.5	Use lock plate
Brake master cylinder & brake hose		Union bolt	M10 P1.25	1	2.6	19.0	

TIGHTENING TORQUE

Part to be tightened	Part name	Thread size	Q'ty	Tightening torque		Remarks
				m-kg	ft-lb	
ENGINE:						
Cylinder nut (#1)	Nut	M12 P1.25	4	5.0	36.0	Apply oil
Cylinder nut (#2)	Nut	M12 P1.25	4	6.4	46.5	Apply oil
Cylinder head nut	Nut	M10 P1.25	2	4.0	29.0	
Cylinder head bolt	Bolt	M8 P1.25	4	2.0	14.5	
Spark plug	—	—	2	2.0	14.5	
Cam sprocket cover	Bolt	M6 P1.0	4	1.0	7.0	
Cam sprocket	Bolt	M10 P1.25	2	5.5	40.0	
Camshaft bushing	Bolt	M8 P1.25	2	2.0	14.5	
Rocker arm cover	Bolt	M6 P1.0	8	1.0	7.0	
Rocker arm shaft	Union bolt	M16 P1.5	2	3.8	27.5	
Rocker arm shaft/oil delivery pipe	Union bolt	M16 P1.5	2	2.0	14.5	
Oil delivery pipe	Union bolt	M10 P1.25	1	2.0	14.5	
Valve adjuster lock nut	Nut	M8 P1.25	4	2.7	19.5	
Cam chain tensioner	Bolt	M6 P1.0	4	1.0	7.0	
Cylinder	Bolt	M6 P1.0	6	1.0	7.0	
Cam chain guide (rear)	Bolt	M8 P1.25	2	0.8	5.8	
Cam chain guide (rear)	Nut	M8 P1.25	2	1.2	9.0	
Starter motor	Flange bolt	M6 P1.0	2	1.0	7.0	
Timing gear shaft stopper plate	Bolt	M6 P1.0	2	1.0	7.0	
Flywheel	Nut	M14 P1.5	1	15.5	112.0	
Primary dirve gear	Nut	M20 P1.5	1	11.0	79.5	Use lock washer
Clutch boss	Nut	M20 P1.5	1	7.0	50.5	Use lock washer
Crankshaft end cover	Bolt	M32 P1.5	1	1.2	9.0	
Oil pump cover	Bolt	M6 P1.0	3	1.0	7.0	
Oil pump sprocket	Bolt	M6 P1.0	1	1.2	9 0	
Oil pump	Bolt	M6 P1.0	3	1.0	7.0	
Neutral switch	—	M10 P1.25	1	2.0	14.5	
Shift fork guide bar sprocket	Flat head screw	M6 P1.0	2	0.7	5.1	Use Loctite®
Crankcase	Bolt	M10 P1.25	3	3.9	28.0	Apply oil

Electric Starter System:	
Type	Constant Mesh
Starter Motor:	
Model/Manufacturer	SM-224/Mitsuba
Output	0.6kW
Armature Coil Resistance	0.006Ω
Field Coil Resistance	0.003Ω
Brush:	
Overall Length	12.5 ± 0.5 mm (0.492 ± 0.020 in)
Wear Limit	5.5 mm (0.217 in)
Spring Pressure	620 ± 60g (21.82 oz)
Conmutator:	
Min Diameter	27 mm (1.063 in)
Mic Undercut	0.5 mm (0.02 in)
Max. Current Draw Underload	330A @ 3.7V
Starter Swtich:	
Amperage Rating	150A
Coil Winding Resistance	3.5Ω
Horn:	
Type/Quantity	Plane Type/2
Model/Manufacturer	SF3-12/Nikko
Maximum Amperage	3A
Flasher Relay:	
Type	Condenser Type
Model/Manufacturer	FU257CD/ND
Self-Cancelling Device	Yes
Flasher Frequency	85 ± 10 Cycle/Min
Capacity	12V-27W x 2 + 3.4W
Starting-Circuit Cut-off Relay:	
Model/Manufacturer	4H7-01/Omron
Coil Winding Resistance	100Ω
Color Code	None
Starter Cut-out Relay:	
Model/Manufacturer	4U8-00/Omron
Coil Winding Resistance	100Ω
Color Code	Blue
Headlight Relay:	
Model/Manufacturer	3H5-00/Omron
Coil Winding Resistance	100Ω
Color Code	Yellow
Sidestand Relay:	
Model/Manufacturer	4U8-00/Omron
Coil Winding Resistance	100Ω
Color Code	Blue
Circuit Breaker:	
Type	Fuse
Rating	Main 20A-1
	Headlight 15A-1
	Signal 15A-1
	Ignition 10A-1
	Tail 10A-1

C. Electrical

Voltage	12V
Ignition System:	
Ignition Timing (BTDC)	10° at 1,000 r/min
Advance (BTDC)	35° at 3,600 r/min
	
Advancer Type	Electrical
Ignition Type	TCI
Pickup Coil Resistance (Color)	155Ω ± 20% at 20°C (68°F) #1 (Br ~ Gr), #2 (R ~ L)
TCI Unit-Model/Manufacturer	J4T00671/Mitsubishi
Ignition Coil:	
Model/Manufacturer	F6T423/Mitsubishi
Minimum Spark Gap	6 mm (0.236 in)
Primary Winding Resistance	2.7Ω ± 15% at 20°C (68°F)
Secondary Winding Resistance	8.5kΩ ± 15% at 20°C (68°F)
Spark Plug Gap/Torque/ Cap Resistance	0.7 ~ 0.8 mm (0.028 ~ 0.32 in)/2.0 m-kg (14.5 ft-lb)/ 5kΩ ± 15% @ 20°C (68°F)
Charging System:	
Type	AC Magneto
Model/Manufacturer	F3T414/Mitsubishi
Output	14V-16V @ 5,000 r/min
Armature Coil Resistance (Color)	0.5Ω ± 10% at 20°C (68°F) (W-W)
Rectifier:	
Model/Manufacturer	SH238/Shindengen
Capacity	16A
Voltage Regulator:	
Type	IC Type
Model/Manufacturer	SH238/Shindengen
No Load Regulated Voltage	14.5 ± 0.5V
Battery:	
Capacity	12V-20AH
Specific Gravity	1.280

Rear Suspension:	
Shock Absorber:	
Travel/Wheel Travel	55 mm (2.17 in)/105 mm (4.13 in)
Spring Free Length	172 mm (6.77 in)
Spring Rate	0 ~ 24 mm (0 ~ 0.95 in) : 6.33 kg/mm (355 lb/in) 24 ~ 55 mm (0.95 ~ 2.17 in) : 9.6 kg/mm (538 lb/in)
Air Pressure	1.0 kg/cm^2 (14.2 psi)
Swing Arm Free Play-Side	0.1 ~ 0.3 mm (0.008 ~ 0.0012 in)
Pivot Shaft:	
Bearing Type	Needle Roller Bearing/TA2428Z
Dust Seal Type	Thrust Cover
Wheel:	
Type-Front/Rear	Cast Wheel
Rim Size:	
Front/Material	MT1.85 x 19/Aluminium
Rear/Material	MT2.15 x 18/Aluminium
Rim Run-out Limit (Front/Rear):	
Vertical	2 mm (0.079 in)
Lateral	2 mm (0.079 in)
Front Wheel Bearing Type:	
Left	6302Z
Right	6302Z
Rear Wheel Bearing Type:	
Left	6204RS
Right	6304LU/3A
Clutch Hub	6206LU/2A
Front Wheel Oil Seal Type-Right	SD-22-42-7
Meter Gear Oil Seal Type	SDD-45-56-6
Disc Brake (Front):	
Type	Dual Disc
Disc Size-Outside Dia x Thickness	267 x 5 mm (10.51 x 0.20 in)
Disc Wear Limit	4.5 mm (0.117 in)
Pad Thickness	11 mm (0.433 in)
Pad Wear Limit	6 mm (0.236 in)
Master Cylinder Inside Diameter	15.87 mm (0.625 in)
Caliper Cylinder Inside Diameter	38.18 mm (1.503 in)
Brake Fluid Type	DOT #3
Drum Brake (Rear):	
Type	Leading Trailing
Drum Diameter	200 mm (7.874 in)
Lining Thickness	4 mm (0.157 in)
Lining Wear Limit	2 mm (0.079 in)
Shoe Spring Free Length	68 mm (2.677 in)
Drive Chain:	
Type	DID 630DS
Number of Links (Include the joint)	90
Free Play	7 ~ 10 mm (0.276 ~ 0.394 in)

NEW SERVICE

Procedure

A. FRONT WHEEL

1. Place the motorcycle on the centerstand.
2. Remove the front fender securing bolts and remove the fender.



3. Remove the cotter pin and axle nut from the axle.
4. Loosen the pinch bolt and right pinch bolt securing the axle.



5. Remove the axle shaft, or pull case, make sure the motorcycle is properly supported.

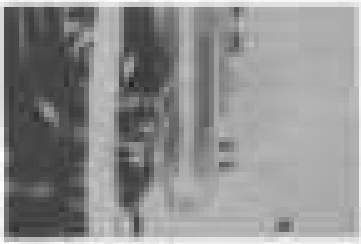
NOTE:

Do not remove the brake shoe when the wheel is off the motorcycle as the brake shoe can be forced out.

6. Loosen the screw and the allen screw on the adjuster. Then turn the adjuster counterclockwise and remove the cable from the brake arm and remove the wheel.



7. Put suspension below the crankcase bolted with nuts.
8. Make sure the engine/gearbox mounts support of the gearbox. Inserting a suspension is possible.



9. Loosen bolts.

10. Tighten the axle nut and install a new cotter pin.

Axle nut torque: 50 N·m (5.0 kgf·m)

NOTE:

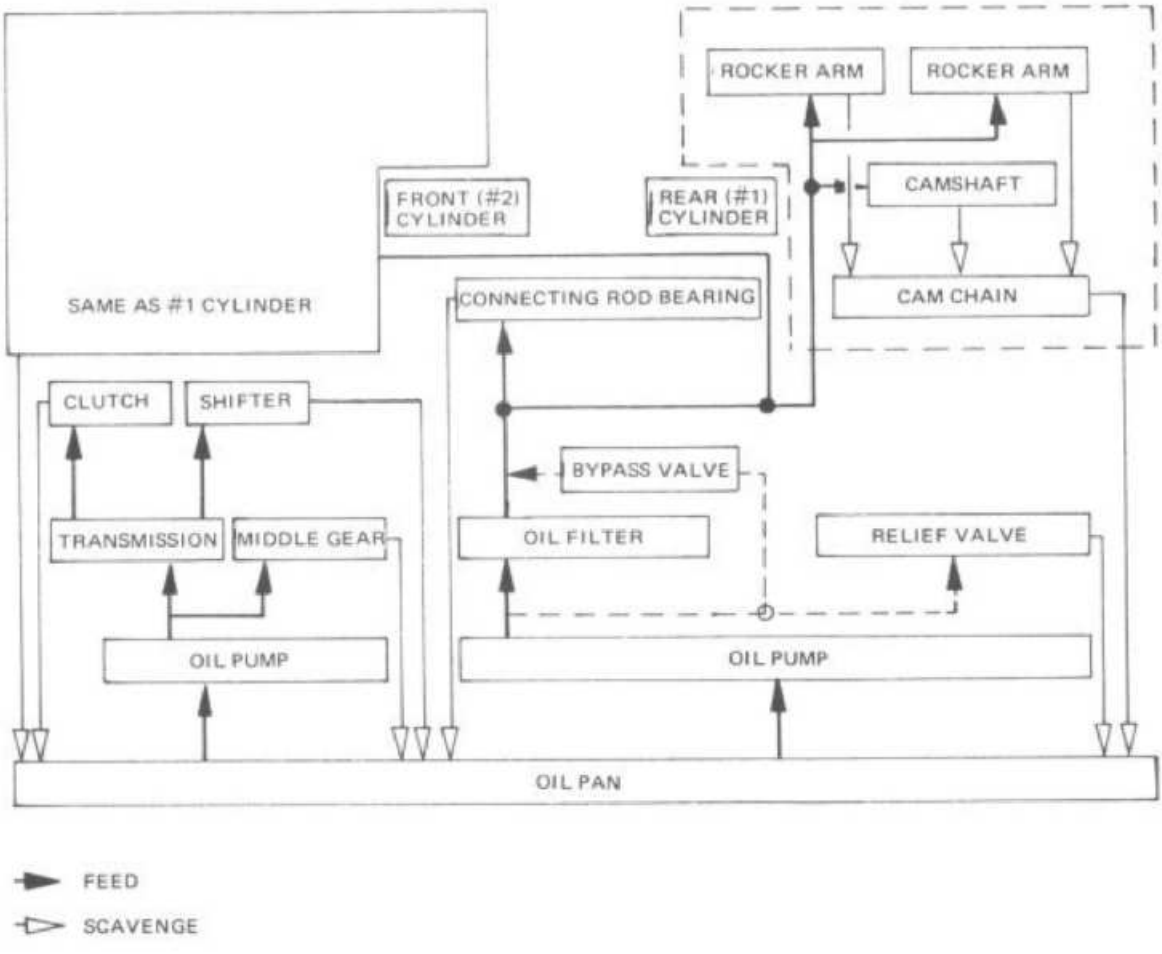
Tighten the pinch bolt temporarily before tightening the axle nut.

B. REAR WHEEL

Adjust the 4 axle nuts pin on the front and rear.

1. Install the front fender.
2. Before tightening the pinch bolts, screw the front bolts against stroke so make sure all pinch bolt operates. With the pinch bolts loose, push up and then up both and forth until the pinch clearance between the clip and pinch bolt is and clearance.

Lubrication System:	
Oil Filter Type	Paper Type
Oil Pump Type	Trochoid Pump
Tip Clearance	0.03 ~ 0.09 mm (0.0012 ~ 0.0035 in)
Side Clearance	0.03 ~ 0.08 mm (0.0012 ~ 0.0031 in)
Bypath Valve Setting Pressure	1.0 ± 0.2 kg/cm^2 (14.2 ± 2.8 psi)
Relief Valve Operating Pressure	5 ± 0.5 kg/cm^2 (71.1 ± 7.1 psi)

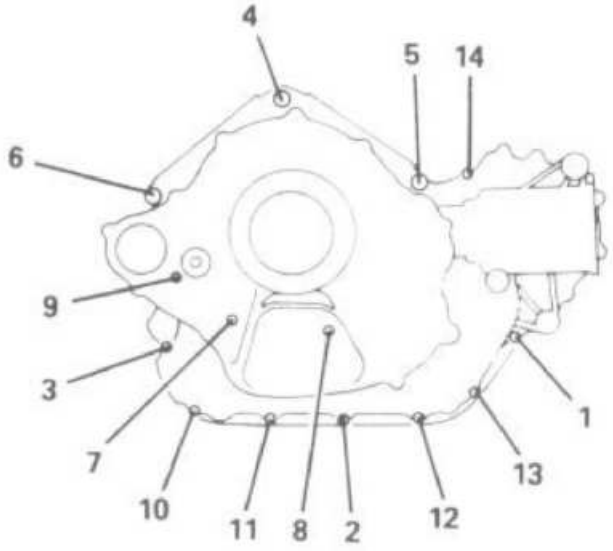


B. Chassis

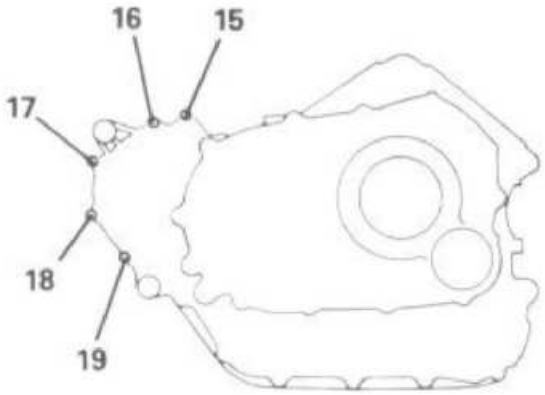
Steering System:	
Head Pipe Bearing Type	Ball Bearing
Number and Size of Balls in Steering Head:	
Upper	19 pcs 1/4 in
Lower	19 pcs 1/4 in
Front Suspension:	
Front Fork:	
Travel/Diameter	150 mm (5.91 in)/37 mm (1.46 in)
Spring Free Length	577.5 mm (22.7 in)
Spring Rate	0.417 kg/mm (23.35 lb/in)
Oil Capacity	264 cc (8.9 US. oz)
Oil Type	Yamaha Fork Oil 10 Wt or Equivalent
Oil Seal Type	SD36-48-8 (Special)
Standard Air Pressure	0.4 kg/cm^2 (5.69 psi)

Crankcase Tightening Sequence:

Left Case

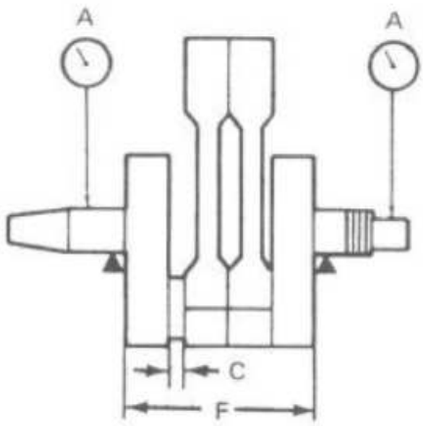
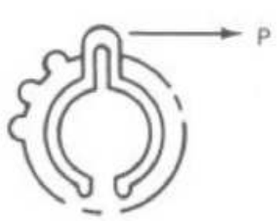


Right Case



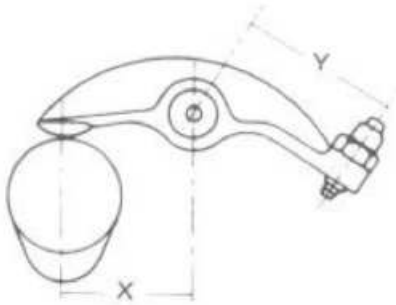
Carburetor:

Type/Manufacturer/Quantity		HSC40/Hitachi/2
I.D. Mark		5H1 00
Venturi Size		ϕ36
Main Jet	(M.J.)	Left (#1) Carburetor: #126 Right (#2) Carburetor: #124
Main Air Jet	(M.A.J.)	#50
Jet Needle	(J.N.)	Y-22
Pilot Jet	(P.J.)	#41
Pilot Air jet	(P.A.J.)	#180
Pilot Screw	(P.S.)	Preset
Starter Jet	(G.S.)	#40 (G.S.2: ϕ1.4)
Valve Seat Size	(V.S.)	ϕ2.0
Fuel level	(F.L.)	Left (#1) Carburetor: 1.0 ± 1.0 mm (0.04 ± 0.04 in) Right (#2) Carburetor: 2.0 ± 1.0 mm (0.08 ± 0.04 in)
Engine Idling Speed		1,000 ± 50 r/min
Vacuum Pressure		180 mm Hg (7.09 in Hg)

Crankshaft:	
Assembly Width (F)	102 $^{0}_{-0.005}$ mm (4.016 $^{0}_{-0.002}$ in)
Deflection (A)	0.02 mm (0.0008 in)
Connecting Rod:	
Big End Side Clearance (C)	0.370 ~ 0.474 mm (0.0146 ~ 0.0187 in)
Crankshaft Bearing:	
Type (Left)/Quantity	Ball Bearing B6308C4/1
Type (Right)/Quantity	Ball Bearing B6308C3/1
Oil Seal:	
Type (Right)/Quantity	FAJ-1-14-25-5.2-VR
Clutch:	
Friction Plate:	
Thickness/Quantity	3.0 ± 0.1 mm (0.12 in)/8
Wear Limit	2.8 mm (0.11 in)
Clutch Plate:	
Thickness/Quantity	1.6 mm (0.063 in)/7
Warp Limit	0.1 mm (0.004 in)
Clutch Spring:	
Free Length/Quantity	41.2 mm (1.622 in)/6
Minimum Length	40.2 mm (1.583 in)
Clutch Release Method	Inner Push/Screw Push
Push Rod Bending Limit	0.5 mm (0.02 in)
Transmission:	
Main Axle Deflection Limit	0.08 mm (0.0031 in)
Drive Axle Deflection Limit	0.08 mm (0.0031 in)
Main Axle Bearing:	
Type (Left)	6304
Type (Right)	6305
Drive Axle Bearing:	
Type (Left)	6205 DU8
Type (Right)	6204
Shifter:	
Shifting Type	Cam Drum, Guide Bar
Change Pedal Shaft Oil Seal Type	SD-12-22-5HS
Starter:	
Type	Bendix Type
Spring Clip Friction Weight:	
Idle Gear #2	P = 2.2 ~ 2.5 kg (4.9 ~ 5.5 lb)
Starter Gear	P = 2.0 ~ 2.3 kg (4.4 ~ 5.1 lb)
	

Rocker Arm/Rocker Arm Shaft:

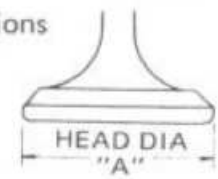
Bearing Inside Diameter	$14\ ^{+0.018}_{0}$ mm ($0.5511\ ^{+0.0007}_{0}$ in)
Shaft Outside Diameter	$14\ ^{-0.010}_{-0.025}$ mm ($0.5511\ ^{-0.0004}_{-0.0010}$ in)
Arm-to-Shaft Clearance	0.010 ~ 0.043 mm (0.0004 ~ 0.0017 in)
Lift Ratio (X : Y)	26.50 mm : 35.69 mm (1.0433 in : 1.4051 in) / 1 : 1.347

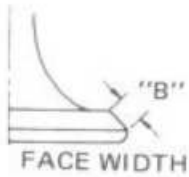


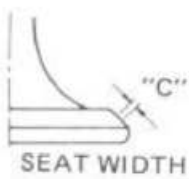
Valve/Valve Seat/Valve Guide:

Valve Clearance (Cold) IN.	0.10 mm (0.0039 in)
EX.	0.15 mm (0.0059 in)

Valve Dimensions





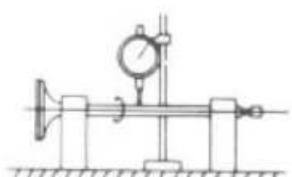




Intake	Standard	Limit
A	$43\ ^{+0.2}_{0}$ mm ($1.693\ ^{+0.008}_{0}$ in)	–
B	2.1 mm (0.083 in)	–
C	1.3 ± 0.1 mm (0.051 ± 0.0039 in)	2.0 mm (0.08 in)
D	1.3 ± 0.2 mm (0.051 ± 0.0079 in)	0.7 mm (0.028 in)

Exhaust	Standard	Limit
A	$37\ ^{+0.2}_{0}$ mm ($1.457\ ^{+0.008}_{0}$ in)	–
B	2.1 mm (0.083 in)	–
C	1.3 ± 0.1 mm (0.051 ± 0.0039 in)	2.0 mm (0.08 in)
D	1.3 ± 0.2 mm (0.051 ± 0.0079 in)	0.7 mm (0.028 in)

Stem Diameter (O.D.) IN.	$8\ ^{-0.010}_{-0.025}$ mm ($0.315\ ^{-0.0004}_{-0.0010}$ in)
EX.	$8\ ^{-0.025}_{-0.040}$ mm ($0.315\ ^{-0.0010}_{-0.0016}$ in)
Guide Diameter (I.D.) IN.	$8\ ^{+0.012}_{0}$ mm ($0.315\ ^{+0.0005}_{0}$ in)
EX.	$8\ ^{+0.012}_{0}$ mm ($0.315\ ^{+0.0005}_{0}$ in)
Stem-to-Guide Clearance/Limit	
IN.	0.01 ~ 0.037 mm (0.0004 ~ 0.0015 in)/0.1 mm (0.0039 in)
EX.	0.025 ~ 0.051 mm (0.0010 ~ 0.0020 in)/0.1 mm (0.0039 in)
Stem Run-out Limit	0.03 mm (0.0012 in)

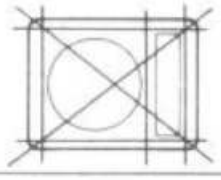


MAINTENANCE SPECIFICATIONS

A. Engine

Cylinder Head:

Volume	63.0 cc (3.84 cu.in)
Warp Limit	0.03 mm (0.0012 in)
Head Gasket Thickness (New)	2.3 mm (0.091 in)



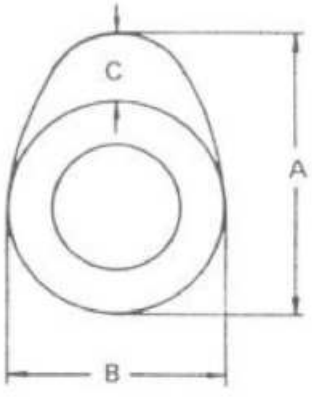
Cylinder:

Material	Aluminum Alloy with Cast Iron Sleeve
Bore Size	93 mm (3.661 in)
Taper Limit	0.05 mm (0.002 in)

Camshaft:

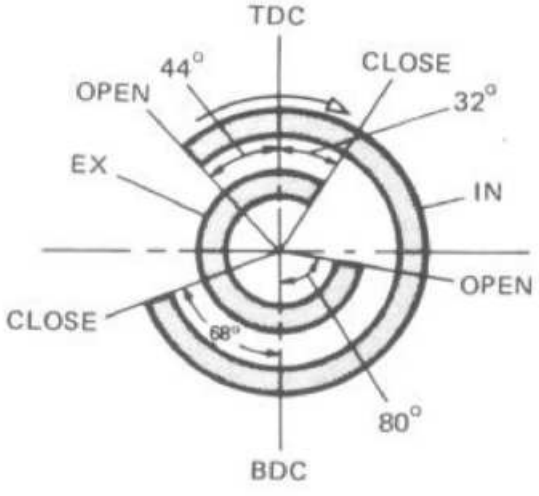
Drive Method	Chain Drive
Bearing Type/Number	Cylinder Head Direct Support/2
Cam Bearing Inside Diameter	24 $^{+0.021}_{0}$ mm (0.9448 $^{+0.0008}_{0}$ in)/
	25 $^{+0.021}_{0}$ mm (0.9843 $^{+0.0008}_{0}$ in)
Camshaft Outside Diameter	24 $^{-0.020}_{-0.033}$ mm (0.9448 $^{-0.0008}_{-0.0013}$ in)/
	25 $^{-0.020}_{-0.033}$ mm (0.9843 $^{-0.0008}_{-0.0013}$ in)
Shaft-to-Bearing Clearance	0.020 ~ 0.054 mm (0.0008 ~ 0.0021 in)

Cam Dimensions



Intake	Standard	Wear Limit
A	39.17 mm (1.5421 in)	39.02 mm (1.5362 in)
B	32.00 mm (1.2598 in)	31.85 mm (1.2539 in)
C	7.17 mm (0.2823 in)	–
Exhaust	**Standard**	**Wear Limit**
A	39.20 mm (1.5433 in)	39.05 mm (1.5374 in)
B	32.00 mm (1.2598 in)	31.85 mm (1.2539 in)
C	7.20 mm (0.2834 in)	–

Valve Timing:



Cam Chain Type/No. of Links	Silent Chain/98 Links

Transmission:	
Primary Reduction System	Gear
Primary Reduction Ratio	78/47 (1.660)
Secondary Reduction System	Chain
Secondary Reduction Ratio	55/38 x 35/16 (3.166)
Transmission Type	Constant Mesh, 5-Speed
Operation System	Left Foot Operation
Gear Ratio 1st	40/17 (2.353)
2nd	40/24 (1.667)
3rd	36/28 (1.286)
4th	32/31 (1.032)
5th	30/33 (0.909)
Chassis:	
Frame Type	Pressed Backbone
Steering:	
Caster	28° 30'
Trail	126 mm (4.96 in)
Fuel:	
Type	Regular Gasoline
Tank Capacity, Total	19 lit (5.0 US. gal)
Reserve	3.2 lit (0.8 US. gal)
Tire Size:	
Front	3.25H19-4PR (Tubeless Tire)
Rear	120/90-18 65H (Tubeless Tire)

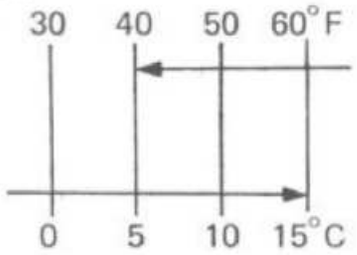
Tire Pressure (Cold):	**Front**		**Rear**	
	kg/cm^2	psi	kg/cm^2	psi
Up to 90 kg (198 lb) load*	1.8	26	2.0	28
90 kg (198 lb) load ~ 213 kg (470 lb) load*	2.0	28	2.3	32
High Speed Riding	2.0	28	2.3	32

Braking System:	
Front	Disc Brake/Right-Hand Operation
Rear	Drum/Right Foot Operation
Suspension:	
Front	Telescopic Fork (Pneumo-Mechanical)
Rear	Swingarm (Monocross Suspension, Pneumo-Mechanical)
Shock Absorber:	
Front	Air, Coil Spring, Oil Damper
Rear	Air, Coil Spring, Gas, Oil Damper
Electrical:	
Voltage	12V
Bulb Wattage x Quantity:	
Headlight	60-55W x 1
Tail-Brake Light	8-27W x 2
Turn Light	27W x 4
Meter Light	3.4W x 2
Indicator Lights:	
Neutral	3.4W x 1
Highbeam	3.4W x 1
Oil	3.4W x 1
Turn	3.4W x 2
Battery:	
Model/Capacity	GM18Z-3A/12V, 20AH

* Total weight of accessories, etc. excepting motorcycle

SPECIFICATIONS

GENERAL SPECIFICATIONS

Model IBM Number:	5H1
Engine Starting Number:	5H1-000101
Frame Starting Number:	5H1-000101
Dimension:	
Overall Length	2,260 mm (89.0 in)
Overall Width	930 mm (36.6 in)
Overall Height	1,170 mm (46.1 in)
Wheelbase	1,540 mm (60.6 in)
Minimum Ground Clearance	140 mm (5.5 in)
Weight:	
Net Weight	224 kg (493 lb)
Performance:	
Minimum Turning Radius	2,700 mm (106.3 in)
Engine:	
Type	Air Cooled, 4-Stroke, Gasoline, SOHC
Model	5H1
Cylinder	V-Twin
Displacement	920 cc (56.14 cu.in)
Bore x Stroke	92.0 x 69.2mm (3.622 x 2.724 in)
Compression Ratio	8.3 : 1
Starting System	Electric Starter
Ignition System	TCI
Engine Oil:	
Type 	Yamalube 4-cycle oil or SAE 20W/40 type SE motor oil (if temperature does not go below 50°C (40°F)) SAE 10W/30 type SE motor oil (if temperature does not go above 15°C (60°F))
Oil Capacity:	
Total Amount	3.6 lit (3.8 US. qt)
Periodic Oil Change	3.0 lit (3.2 US. qt)
Drive Chain Grease:	
Type	Shell Alvania 1 or EP2
Amount	1.0 lit (1.1 US. qt)
Lubrication System	Wet Sump
Generator System	AC Magneto
Spark Plug	BP7ES (NGK)
Carburetor x Quantity	HSC40 x 2
Air Cleaner Element	Dry Type
Clutch Type	Wet, Multiple-Disc

MAINTENANCE AND LUBRICATION CHART

Periodic maintenance emission control system

No.	Item	Remarks	Initial break-in		Thereafter every	
			1,000 km (600 mi) or 1 month	5,000 km (3,000 mi) or 7 months	4,000 km (2,500 mi) or 6 months	8,000 km (5,000 mi) or 12 months
1*	Valve clearance	Check and adjust valve clearance when engine is cold.	○	○	○	
2	Spark plugs	Check condition. Adjust gap. Clean. Replace at 13,000 km (or 18 months) or thereafter every 12,000 km (or 18 months).		○	○	Replace every 12,000 km (7,500 mi) or 18 months.
3*	Crankcase ventilation system	Check ventilation hose for cracks or damage. Replace if necessary.		○		○
4*	Fuel line	Check fuel hose and vacuum pipe or damage. Replace if necessary.		○		○
5*	Exhaust system	Check for leakage. Retighten if necessary. Replace gasket(s) if necessary.		○	○	
6*	Carburetor synchronization	Adjust synchronization of carburetors.		○	○	
7*	Idle speed	Check and adjust engine idle speed. Adjust cable free play.		○	○	

* It is recommended that these items be serviced by a Yamaha dealer or other qualified mechanic.

General maintenance/lubrication

No.	Item	Remarks	Type	Initial break-in		Thereafter every		
				1,000 km (600 mi) or 1 month	5,000 km (3,000 mi) or 7 months	4,000 km (2,500 mi) or 6 months	8,000 km (5,000 mi) or 12 months	16,000 km (10,000 mi) or 24 months
1	Engine oil	Warm-up engine before draining	Refer to NOTE	○	○	○		
2	Oil filter	Replace	–	○	○		○	
3*	Air filter	Clean with compressed air	–		○		○	
4*	Brake system	Adjust free play. Replace pads if necessary (front). Replace shoes if necessary (rear).	–	○	○	○		
5*	Clutch	Adjust free play	–	○	○	○		
6*	Drive chain	Check chain tension and condition. Adjust as required. Replace chain at every 50,000 km (30,000 mi) or if necessary.	Alvania grease 1 or EP1	○			○	
7*	Control and meter cable	Apply chain lube thoroughly	Yamaha chain and cable lube or SAE 10W/30 motor oil	○	○	○		
8	Brake pedal and change pedal shaft	Apply chain lube lightly	Yamaha chain and cable lube or SAE 10W/30 motor oil		○	○		
9	Center and sidestand pivots	Apply chain lube lightly	Yamaha chain and cable lube or SAE 10W/30 motor oil		○	○		
10*	Rear arm pivot bearings	Check bearings assembly for looseness. Moderately repack every 16,000 km (10,000 mi).	Medium weight wheel bearing grease					Repack
11*	Front fork oil	Drain completely. Refill to specification.	Yamaha fork oil 10Wt or equivalent					○

Tightening torque:	
Wiper arm/wiper motor	15.0 N·m (1.5 kgf·m, 11 lbf·ft)
Wiper motor bracket/body	5.0 N·m (0.5 kgf·m, 44 lbf·in)
Nut	2.5 N·m (0.3 kgf·m, 22 lbf·in)
Bolt	4.5 N·m (0.5 kgf·m, 40 lbf·in)
Bolt (new)	7.5 N·m (0.8 kgf·m, 66 lbf·in)

10. Remove the screw (the one used when the assembly is taken out of grease) from the rear main case.

Screw lock:	Solid Wave or equivalent
Amount:	1 cc (0.1 US oz)

11. Reinstall the filler plug and tighten to specification.

Tightening torque: 3.9 N·m (0.4 kgf·m, 35 lbf·in)

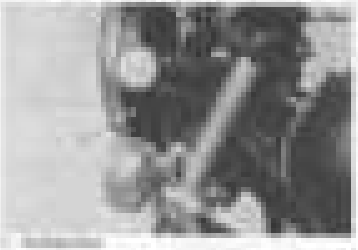
ELECTRICAL

Headlight

Headlight bulb replacement

This motorcycle is equipped with a quartz bulb headlight. If the headlight bulb burns out, replace the bulb as follows.

1. Remove the 2 screws holding the light unit assembly to the headlight body.



2. Disconnect the quick lamp and remove the light unit assembly.



3. Unhook the headlight bulb spring at bottom as shown and remove the defective bulb from the headlight unit unit.



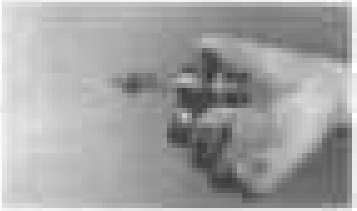
4. Plug a new bulb into position and secure it with the bulb holder.

CAUTION

Avoid touching the glass part of the bulb. Keep it free from oil or moisture, otherwise the transparency of the glass, life of the bulb, and luminance flux will be adversely affected. If the glass is dirt stained, thoroughly clean it with a cloth moistened with alcohol or lacquer thinner.

WARNING

Keep flammable products or your hands away from the bulb while it is lit, because it heats up. Do not install the bulb hold in place.



5. Reinstall the light unit assembly in the headlight body. Adjust the headlight beam if necessary.

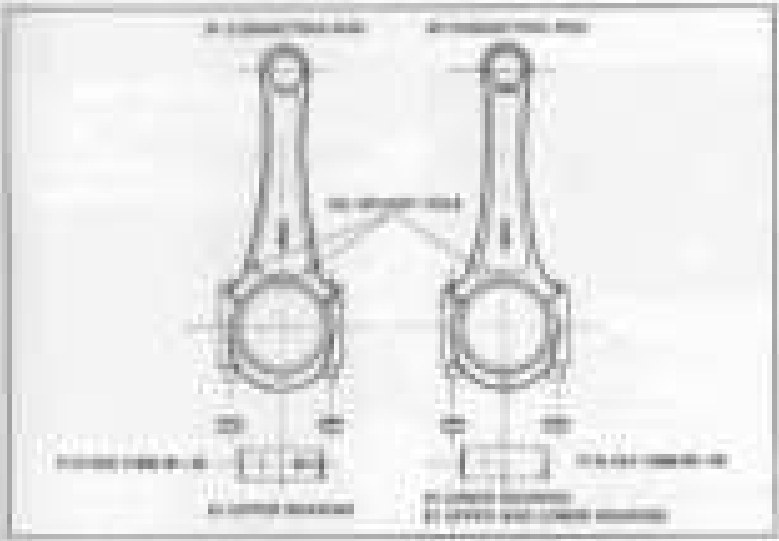
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A. Connecting rods and crankpin bearing selection

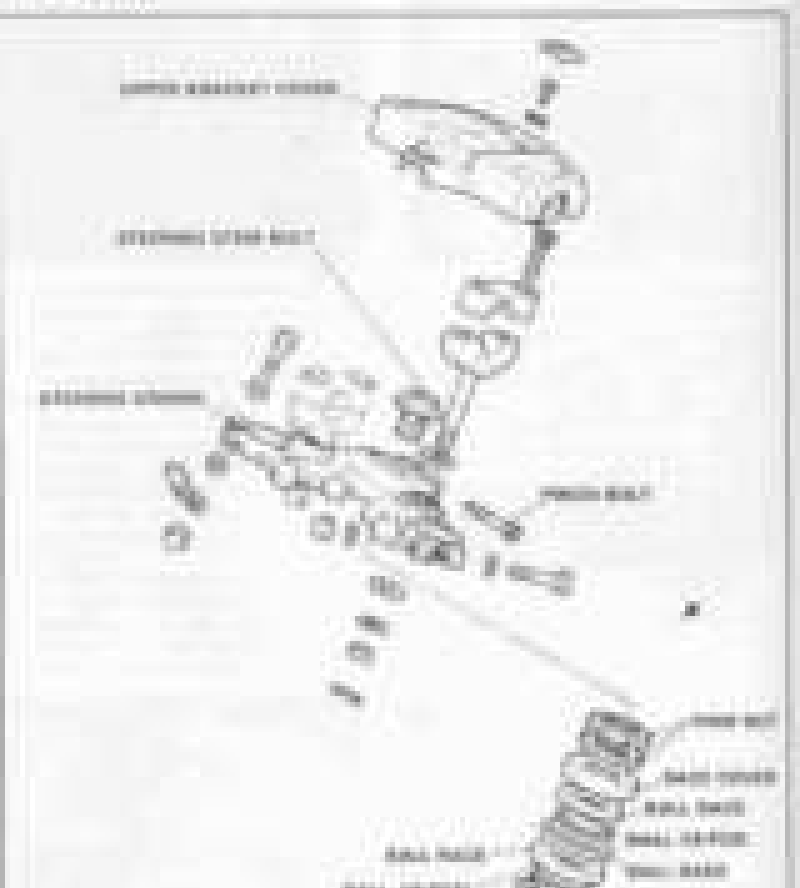
The connecting rods are sorted into two weight classes. The 31 main cylinders connecting rods are then sorted into eight further, using the 23 inch calibrated connecting rod has only two bolts. The bearings are two types of connecting rod bearings on any model: a bearing with one oil groove and an alternate bearing with two grooves in order.

The upper bearing for the 31 main cylinder connecting rod must have been fitted to match the one fitted on the connecting rod. When selecting the upper bearing for the 31 main cylinder connecting rod, use the standard formula to calculate the bearing number, and use the standard chart to get the proper combination for a two-hole bearing. Use a bearing with one oil groove hole for the lower bearing on the 31 main cylinder connecting rod and for both bearings on the 80 inch cylinder connecting rod.

Bearing Number = Rod Number + Crankpin Number



Bearing Number	31 cylinder bearings		80 inch bearings	
	PART NUMBER	COLOR	PART NUMBER	COLOR
1	[illegible]	Black	[illegible]	Blue
2			[illegible]	Black
3	[illegible]	Brown	[illegible]	Brown
4	[illegible]	Green	[illegible]	Green
5			[illegible]	Yellow



B. Adjustment
Refer to "D. Assembly" for steering gear adjustment procedures.

B. Removal
1. Remove the seat, fuel tank, and the cable bracket cover.