

FOREWORD

The SUZUKI GSX250F has been developed as a new generation motorcycle to the GS-models. It is packed with highly advanced design concepts including a new highly efficient combustion system, a fully transistorized ignition system and a improved link type rear suspension. Combined with precise control and easy handling the GSX250F provides excellent performance and outstanding riding comfort.

This service manual has been produced primarily for experienced mechanics whose job is to inspect, adjust, repair and service SUZUKI motor cycles.

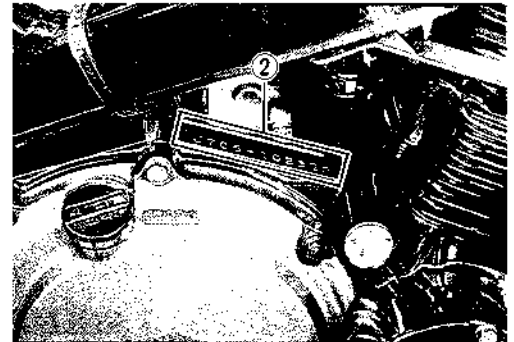
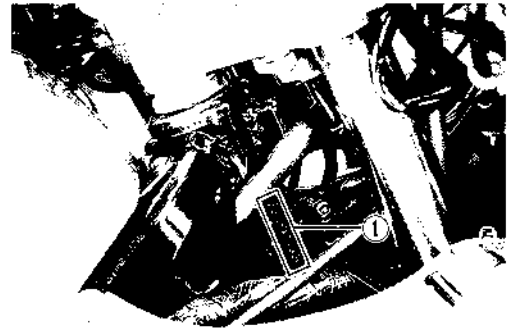
Apprentice mechanics and do-it-yourself mechanics, will also find this manual as an extremely useful repair guide. This manual contains the most up-to-date information at the time of publication. The rights are reserved to update or make corrections to this manual at any time.

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VIN AND SERIAL NUMBER LOCATIONS

The frame serial number or V.I.N. (Vehicle Identification Number) ① is stamped on the steering head pipe. The engine serial number ② is located on the right side of the upper crankcase. These numbers are required especially for registering the machine and ordering spare parts.



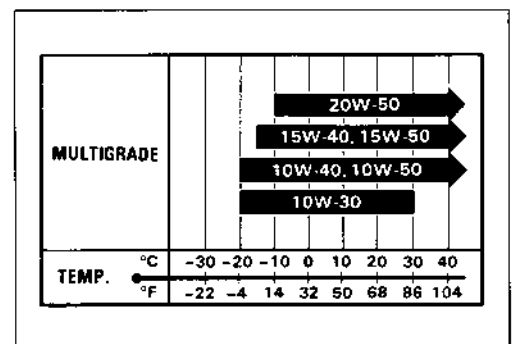
FUEL, OIL AND COOLING SOLUTION RECOMMENDATIONS

FUEL

Gasoline used should be graded 85—95 octane or higher. An unleaded gasoline is recommended.

ENGINE OIL

Be sure that the engine oil you use comes under API classification of SE or SF and that its viscosity rating is SAE 10W/40. If an SAE 10W/40 motor oil is not available, select the oil viscosity according to the right chart.



FRONT FORK OIL

Use fork oil # 10.

99000-99044-10G: SUZUKI FORK OIL # 10

BRAKE FLUID

specification and classification: DOT 4

99000-23110: SUZUKI BRAKE FLUID

CARBURETORS

Inspect Initial 1 000 km (2 months) and Every
5 000 km (15 months)

IDLE R/MIN (Idling adjustment)

NOTE:

Make this adjustment when the engine is hot.

- Start up the engine and set its speed at anywhere between 1 500 and 1 700 r/min to turn throttle stop screw ①.

Engine idle speed: 1 600 ± 100 r/min

THROTTLE CABLE PLAY

There should be 0.5–1.0 mm (0.02–0.04 in) play ① on the throttle cable.

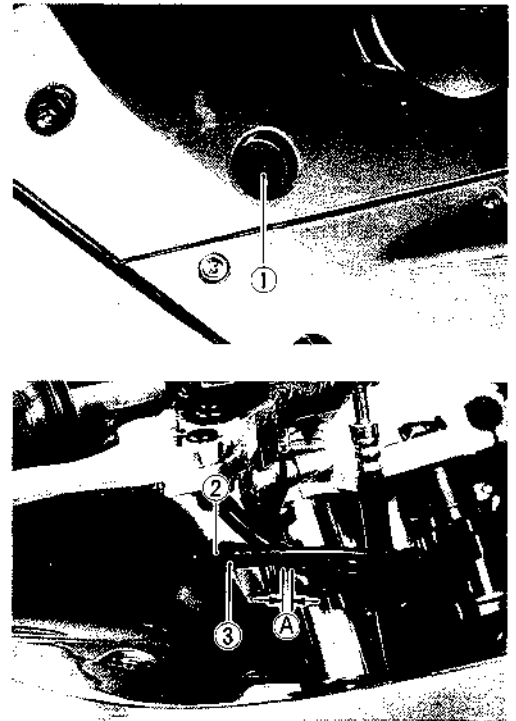
Adjust the throttle cable play by the following procedures.

- Loosen the lock nut ② and turn the adjuster ③ until the specified play can be obtained.
- Tighten the lock nut ② while holding the adjuster.

Throttle cable play ① : 0.5–1.0 mm (0.02–0.04 in)

WARNING:

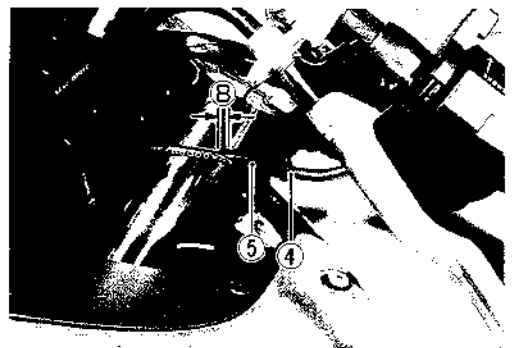
After the adjustment is completed, check that handlebar movement does not raise the engine idle speed and that the throttle grip returns smoothly and automatically.



CHOKE CABLE PLAY

- Loosen the lock nut ④ and turn the adjuster ⑤ until the specified play can be obtained.
- Tighten the lock nut.

Choke cable play ② : 0.5–1.0 mm (0.02–0.04 in)



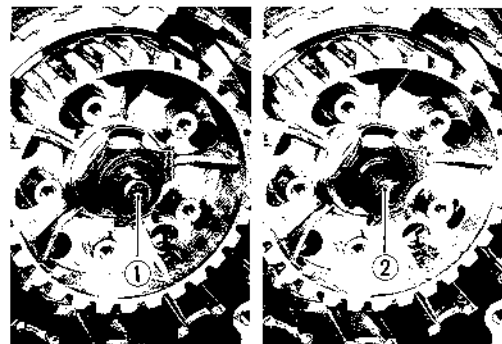
COOLING SYSTEM

Inspect Initial 1 000 km (2 months) and Every
5 000 km (15 months)

Replace (change) coolant Every 2 years

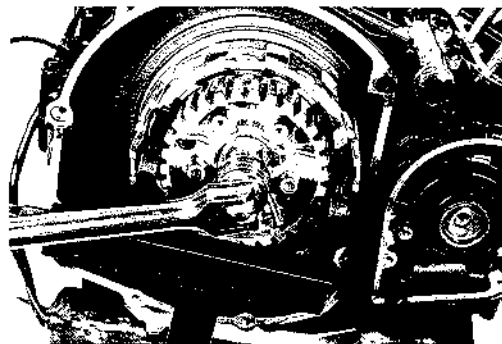
Replace hoses Every 4 years

- Remove the push piece ① and bearing.
- Remove the push rod ②.



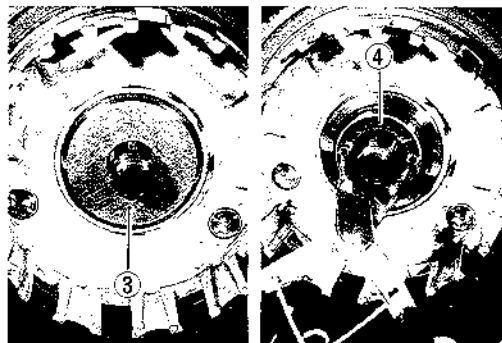
- Flatten the lock washer, and remove the clutch sleeve hub nut with the special tool.

09920-53710: Clutch sleeve hub holder

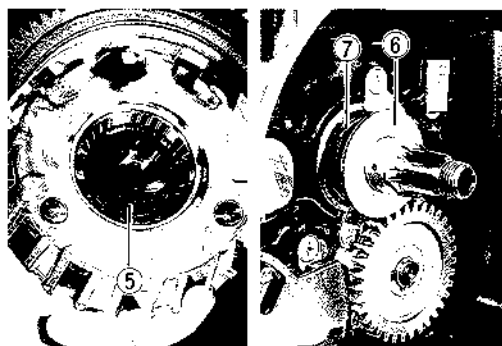


- Remove the thrust washer ③.
- Remove the primary driven gear spacer ④ with the special tool.

09900-06108: Snap ring pliers



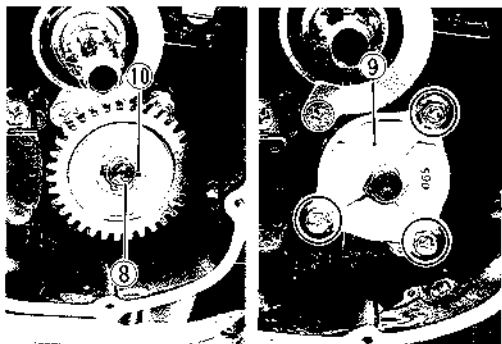
- Remove the bearing ⑤ and primary driven gear.
- Remove the thrust washers ⑥ and ⑦).



- Remove the oil pump driven gear by removing the circlip ⑧.
- Remove the oil pump ⑨.

NOTE:

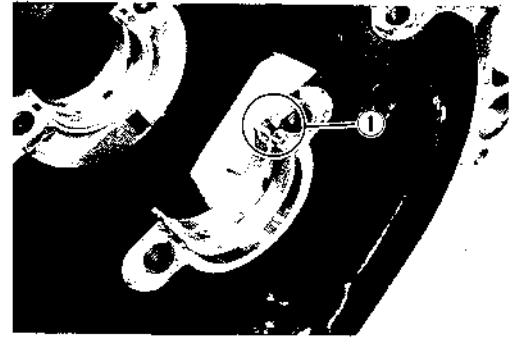
Do not loose the pin ⑩.



- When fitting the crankshaft journal bearings to the upper and lower crankcases, be sure to fix the stopper part ① first and press the other end.

CAUTION:

Do not touch the bearing surface with your hands. Grasp by the edge of the bearing shell.

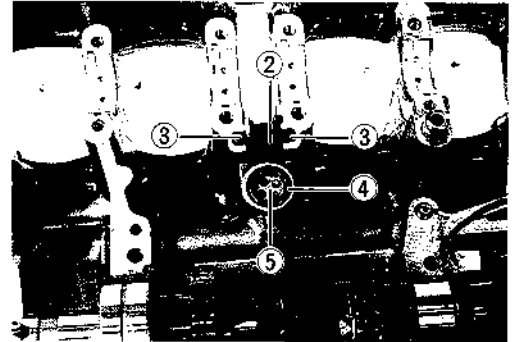


- Install the cam chain guide ② and two dampers ③ properly.

NOTE:

Be sure to face the arrow mark on the damper to the front and rear, not to the right and left.

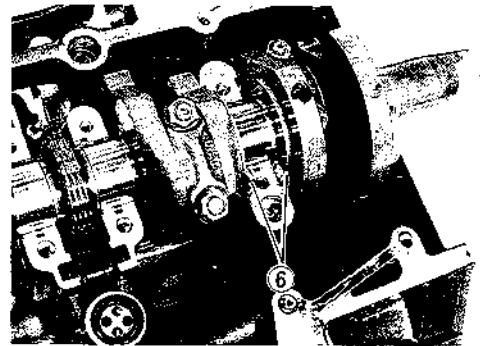
- Install the oil gallery plate ④ and new O-ring ⑤.



- Before installing the crankshaft, apply SUZUKI MOLY PASTE to each journal bearing.

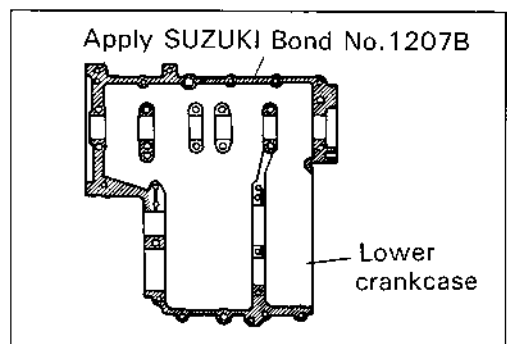
99000-25140: SUZUKI MOLY PASTE

- Install the crankshaft with the cam chain to the upper crankcase.
- Insert the right and left thrust bearings ⑥ with oil grooved facing the crank web.
- Clean the mating surface of the crankcases before matching the upper and lower ones.
- Install the dowel pins to the upper crankcase.
- Apply SUZUKI BOND NO. 1207B to the mating surface of the lower crankcase in the following procedure.

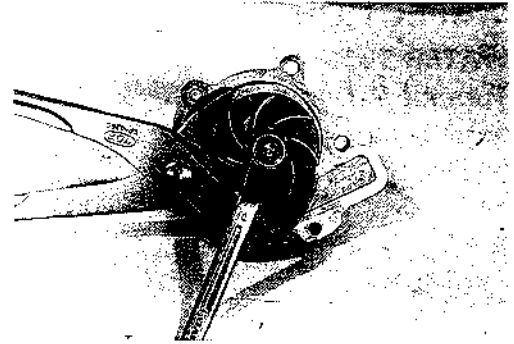
**99000-31140: SUZUKI BOND NO. 1207B****NOTE:**

Use of SUZUKI BOND NO. 1207B is as follows:

- * Make surfaces free from moisture, oil, dust and other foreign materials.
- * Spread on surfaces thinly to form an even layer, and assemble the cases within few minutes.
- * Take extreme care not to apply any BOND NO. 1207B to the bearing surfaces.
- * Apply to distorted surface as it forms a comparatively thick film.



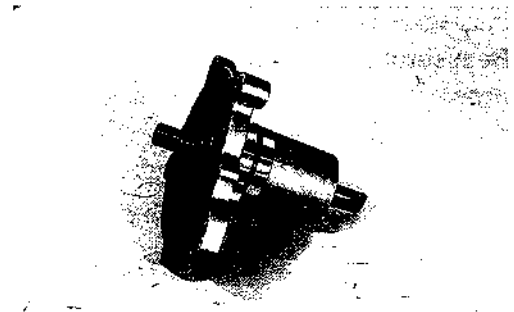
- Remove the impeller with a water pump plier.



- Remove the mechanical seal ring and gasket.



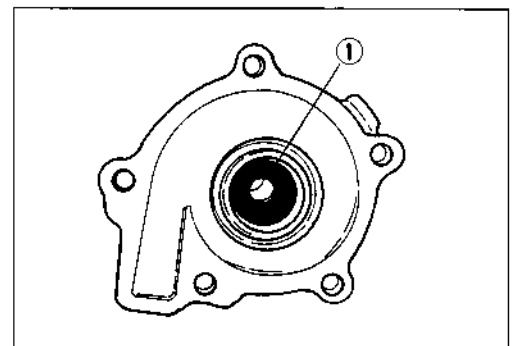
- Remove the water pump shaft by removing the circlip.
- Remove the mechanical seal.



- Remove the oil seal ①.

CAUTION:

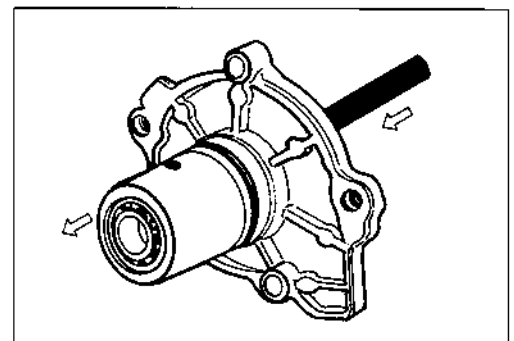
The removed mechanical seal or oil seal should be replaced with a new one.



- Drive out the bearing using a suitable bar.

CAUTION:

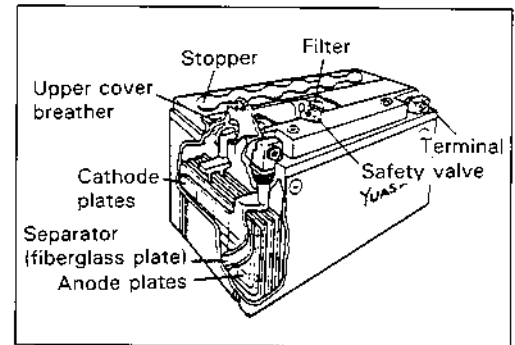
The removed bearing should be replaced with a new one.



BATTERY

SPECIFICATIONS

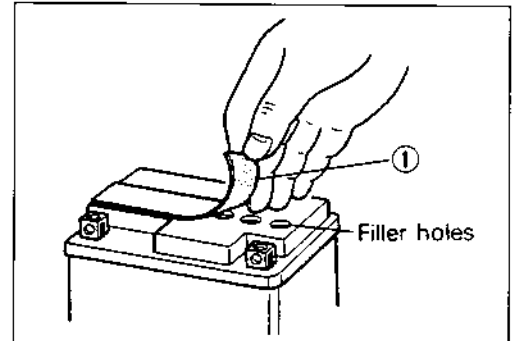
Type designation	YTX7A-BS or FTX7A-BS
Capacity	12 V 21.6 kC (6 Ah)/10HR
Standard electrolyte S.G.	1.320 at 20°C (68°F)



INITIAL CHARGING

Filling electrolyte

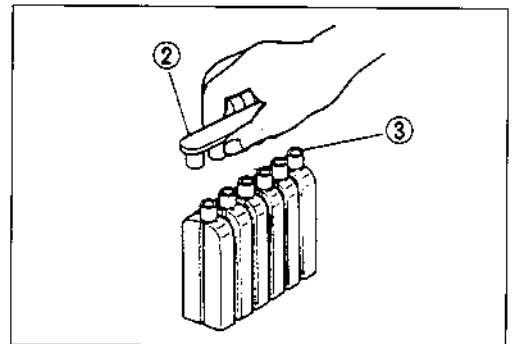
- Remove the aluminum tape ① sealing the battery electrolyte filler holes.



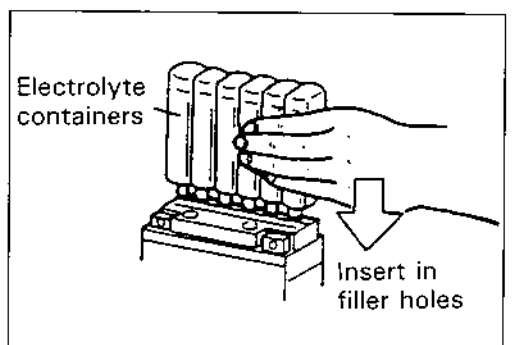
- Remove the caps ②.

NOTE:

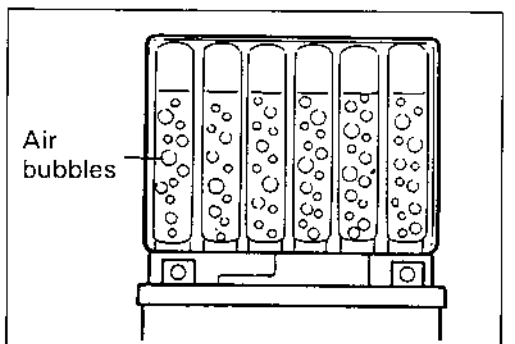
- * After filling the electrolyte completely, use the removed cap ② as the sealed caps of battery-filler holes.
- * Do not remove or pierce the sealed areas ③ of the electrolyte container.



- Insert the nozzle of the electrolyte container into the battery's electrolyte filler holes, holding the container firmly so that it does not fall. Take precaution not to allow any of the fluid to spill.



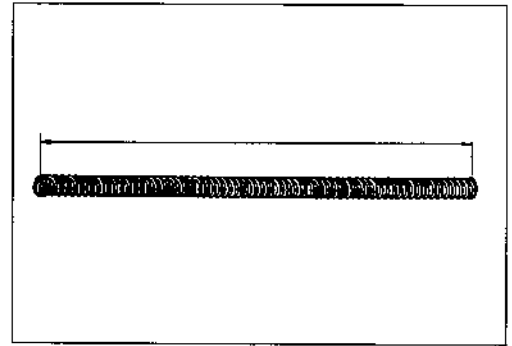
- Make sure air bubbles are coming up each electrolyte container, and leave in this position for about more than 20 minutes.



FORK SPRING

Measure the fork spring free length. If it is shorter than the service limit, replace it with a new one.

Service Limit: 274 mm (10.8 in)



REASSEMBLY AND REMOUNTING

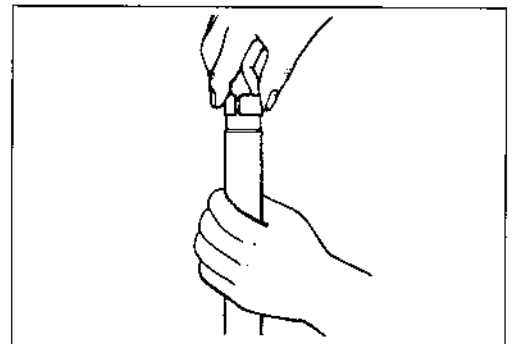
Reassemble and remount the front fork in the reverse order of removal and disassembly. Also observe the following instructions:

INNER TUBE METAL

- Hold the inner tube vertically and clean the metal groove.
- Clean inner and outer surfaces of the metal and install it by hand to the metal groove of the inner tube as shown.

CAUTION:

Use special care to prevent damage to the "Teflon" coated surface of the Anti-friction inner tube metal when mounting it.



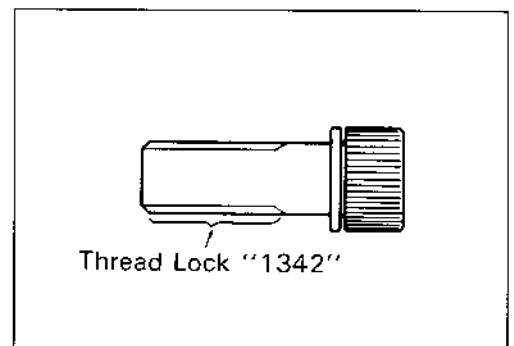
DAMPER ROD BOLT

- Apply THREAD LOCK "1342" to the damper rod bolt and tighten it to the specified torque with the special tool.

99000-32050: THREAD LOCK "1342"

09940-34520: "T" handle

09940-34581: Attachment "F"



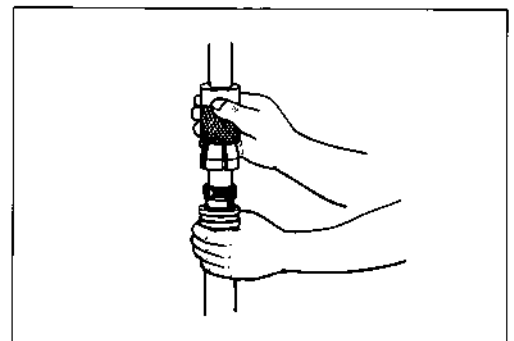
OUTER TUBE METAL, OIL SEAL AND DUST SEAL

- Clean the metal groove of outer tube and metal outer surface.
- Install the outer tube metal, oil seal retainer and oil seal.

09940-50113: Front fork oil seal installer

CAUTION:

Use special care to prevent damage to "Teflon" coated surface of the Anti-Friction outer tube metal when installing it.



CHASSIS

COMPLAINT	SYMPTOM AND POSSIBLE CAUSES	REMEDY
Steering is heavy.	<ol style="list-style-type: none"> 1. Overtightened steering stem nut 2. Broken steering stem bearing 3. Distorted steering stem 4. Unenough tire pressure 	Adjust Replace Replace Adjust
Handle is wobbly.	<ol style="list-style-type: none"> 1. Unbalance of right and left front forks 2. Distorted front fork 3. Distorted front axle 4. Crooked tire 	Replace Repair or replace Replace Replace
Front wheel is wobbly.	<ol style="list-style-type: none"> 1. Distorted wheel rim 2. Worn down front wheel bearing 3. Defective or incorrect tire 4. Loosened front axle 5. Incorrect front fork oil level 	Replace Replace Replace Retighten Adjust
Front suspension is too soft.	<ol style="list-style-type: none"> 1. Weakened spring 2. Unenough fork oil level 	Replace Refill
Front suspension is too stiff.	<ol style="list-style-type: none"> 1. Too viscous fork oil 2. Too much fork oil 	Replace Drain excess oil
Front suspension is noisy.	<ol style="list-style-type: none"> 1. Unenough fork oil level 2. Loosened suspension mountings 	Refill Retighten
Rear wheel is wobbly.	<ol style="list-style-type: none"> 1. Distorted wheel rim 2. Worn down rear wheel or swingarm bearing 3. Defective or incorrect tire 4. Worn swingarm and rear cushion bearing 5. Loosened suspension mountings 	Replace Replace Replace Replace Retighten
Rear suspension is too soft.	<ol style="list-style-type: none"> 1. Weakened shock absorber spring 2. Improper rear suspension adjuster setting 3. Leaked shock absorber oil 	Replace Adjust Replace
Rear suspension is too stiff.	<ol style="list-style-type: none"> 1. Improper rear suspension adjuster setting 2. Bent shock absorber shaft 3. Bent swingarm 4. Worn swingarm and rear cushion bearing 	Adjust Replace Replace Replace
Rear suspension is noisy.	<ol style="list-style-type: none"> 1. Loosened suspension mountings 2. Worn swingarm and rear cushion bearing 	Retighten Replace

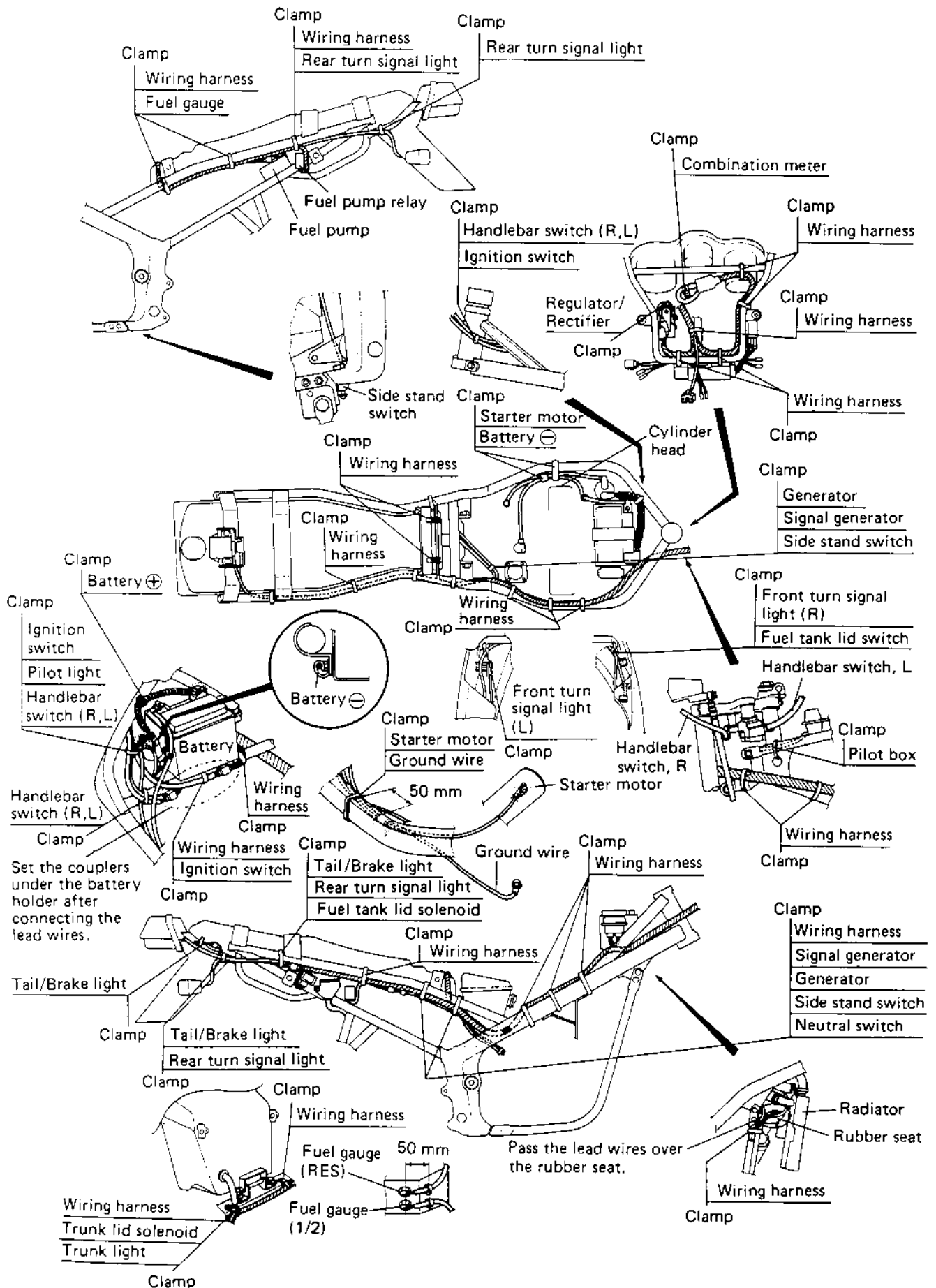
ITEM	STANDARD		LIMIT
Camshaft journal O.D.	IN. & EX.	21.959–21.980 (0.8645–0.8654)	—
Camshaft runout	IN. & EX.	—	0.10 (0.004)
Cam chain 20-pitch length	—		128.9 (5.07)
Cam chain pin (at arrow "3")	16th pin		—
Cylinder head distortion	—		0.20 (0.008)

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD		LIMIT	
Compression pressure	1 100–1 700 kPa (11–17 kg/cm ²) (156–241 psi)		900 kPa (9 kg/cm ²) (128 psi)	
Compression pressure difference	—		200 kPa (2 kg/cm ²) (28 psi)	
Piston to cylinder clearance	0.040–0.050 (0.0016–0.0020)		0.120 (0.0047)	
Cylinder bore	49.000–49.015 (1.9291–1.9297)		49.090 (1.9327)	
Piston diam.	48.955–48.970 (1.9274–1.9279) Measure at 10 mm (0.4 in) from the skirt end.		48.880 (1.9244)	
Cylinder distortion	—		0.20 (0.008)	
Piston ring free end gap	1st	R	Approx. 7.0 (0.28)	5.6 (0.22)
	2nd	R	Approx. 5.2 (0.20)	4.2 (0.17)
Piston ring end gap	1st	0.10–0.25 (0.004–0.010)		0.7 (0.03)
	2nd	0.25–0.45 (0.010–0.018)		0.7 (0.03)
Piston ring to groove clearance	1st	—		0.180 (0.0071)
	2nd	—		0.150 (0.0059)
Piston ring groove width	1st	0.81–0.83 (0.032–0.033)		—
	2nd	0.81–0.83 (0.032–0.033)		—
	Oil	2.01–2.03 (0.079–0.080)		—
Piston ring thickness	1st	0.77–0.79 (0.030–0.031)		—
	2nd	0.77–0.79 (0.030–0.031)		—

WIRE ROUTING



WATTAGE

Unit:W

ITEM		SPECIFICATION
Headlight	HI	60
	LO	55
Position light		4
Tail/Brake light		5/21
Turn signal light		21
Tachometer light		3
Speedometer light		3
Water temp. meter light		3
Turn signal indicator light		3
High beam indicator light		1.7
Neutral indicator light		3
Oil pressure indicator light		3
Fuel level light	Yellow	1.7
	Red	1.7
Trunk light		2

BRAKE + WHEEL

Unit: mm (in)

ITEM		STANDARD	LIMIT
Rear brake pedal height		50 (2.0)	—
Brake disc thickness	Front	4.5 ± 0.2 (0.177 ± 0.008)	4.0 (0.157)
	Rear	6.0 ± 0.2 (0.236 ± 0.008)	5.5 (0.217)
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	Leading	Front	27.000 – 27.076 (1.0630 – 1.0660)
			33.960 – 34.036 (1.3370 – 1.3400)
	Trailing	Rear	38.180 – 38.256 (1.5031 – 1.5061)
Brake caliper piston diam.	Leading	Front	26.920 – 26.970 (1.0598 – 1.0618)
			33.884 – 33.934 (1.3340 – 1.3360)
	Trailing	Rear	38.098 – 38.148 (1.4999 – 1.5019)

FUEL + OIL + COOLANT

ITEM	SPECIFICATION		NOTE
Fuel type	Gasoline used should be graded 85-95 octane or higher. An unleaded gasoline is recommended.		
Fuel tank including reserve reserve	12 L (3.2/2.6 US/lmp gal)		
	2.0 L (0.5/0.4 US/lmp gal)		
Engine oil type	SAE 10W/40, API SE or SF		
Engine oil capacity	Change	2 700 ml (2.9/2.4 US/lmp qt)	
	Filter change	2 900 ml (3.1/2.6 US/lmp qt)	
	Overhaul	3 200 ml (3.4/2.8 US/lmp qt)	
Front fork oil type	Fork oil # 10		
Front fork oil capacity (each leg)	401 ml (13.6/14.1 US/lmp oz)		
Brake fluid type	DOT4		
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	2 000 ml (2.1/1.8 US/lmp qt)		

CARBURETOR

ITEM	SPECIFICATION
Carburetor type	MIKUNI BSW27
Bore size	27 mm
I.D. No.	24D0
Idle r/min.	1 600 ± 100 r/min.
Float height	20.5 ± 1.0 mm
Main jet (M.J.)	# 90
Main air jet (M.A.J.)	1.4 mm
Jet needle (J.N.)	5D52-3rd
Needle jet (N.J.)	O-1
Throttle valve (Th.V.)	# 85
Pilot jet (P.J.)	# 30
By-pass (B.P.)	0.8, 0.8, 0.8 mm
Pilot outlet (P.O.)	0.9 mm
Valve seat (V.S.)	1.0 mm
Starter jet (G.S.)	# 22.5
Pilot screw (P.S.)	PRE-SET (1½ turns back)
Throttle cable play	3–6 mm (0.12–0.24 in)
Choke cable play	0.5–1.0 mm (0.02–0.04 in)

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION	NOTE	
Ignition timing	20° B.T.D.C. below 1 800 r/min.		
Firing order	1,2,4,3		
Spark plug	Type	ND.: U22FSR-U N.G.K.: CR7HSA	
	Gap	0.6–0.7 (0.024–0.028)	
Spark performance	Over 8 (0.3) at 1 atm.		
Signal coil resistance	Approx. 400 Ω		
Ignition coil resistance	Primary	2.0–4.0 kΩ	Terminal— Terminal
	Secondary	36–56 kΩ	Plug cap— Plug cap
Generator no-load voltage	More than 50V (AC) at 5 000 r/min.		
Regulated voltage	13.5–15.5 V at 5 000 r/min.		
Starter motor brush length	ND	Limit: 3.5 (0.14)	
	commutator under-cut	Limit: 0.2 (0.008)	
Starter relay resistance	2–6 Ω		
Battery	Type designation	YTX7A-BS	
	Capacity	12 V 21.6 kC (6 Ah)/10HR	
	Standard electrolyte S.G.	1.320 at 20°C (68°F)	
Fuse size	Headlight	10 A	
	Signal	10 A	
	Ignition	10 A	
	Main	25 A	

ITEM	STANDARD		LIMIT
	Wheel rim runout	Axial	
	Radial	—	2.0 (0.08)
Wheel axle runout	Front	—	0.25 (0.010)
	Rear	—	0.25 (0.010)
Wheel rim size	Front	J17 × MT3.00	—
	Rear	J17 × MT4.00	—
Tire size	Front	110/70-17 54H	—
	Rear	140/70-17 66H	—
Tire tread depth	Front	—	1.6 (0.06)
	Rear	—	2.0 (0.08)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	130 (5.1)	—	
Front fork spring free length	—	274 (10.8)	
Front fork oil level	90 (3.5)	—	
Rear wheel travel	122 (4.8)	—	
Swingarm pivot shaft runout	—	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm ²	psi	kPa	kg/cm ²	psi
FRONT	200	2.00	29	200	2.00	29
REAR	225	2.25	33	250	2.50	36