# Official HONDA

# SHOP MANUAL **NH80** aero80



61GC801 A27008310

# **IMPORTANT SAFETY NOTICE**

WWW.

Indicates a strong possibility of severe personal injury or loss of life if instructions are not followed.

CAUTION:

Indicates a possibility of personal injury or equipment damage if instructions are not followed.

NOTE:

Gives helpful information.

Detailed descriptions of standard workshop procedures, safety principles and service operations are not included. It is important to note that this manual contains *some* warnings and cautions against some specific service methods which could cause PERSONAL INJURY to service personnel or could damage a vehicle or render it unsafe. Please understand that those warnings could not cover all conceivable ways in which service, whether or not recommended by Honda might be done or of the possible hazardous consequences of each conceivable way, nor could Honda investigate all such ways. Anyone using service procedures or tools, whether or not recommended by Honda *must satisfy himself thoroughly* that neither personal safety nor vehicle safety will be jeopardized by the service method or tools selected.



# **HOW TO USE THIS MANUAL**

Follow the Maintenance Schedule (Section 3) recommendations to ensure that the vehicle is in peak operating condition and the emission levels are within the standards set by the U.S. Environmental Protection Agency. Performing the first scheduled maintenance is very important. It compensates for the initial wear that occurs during the break-in period.

Sections 1 through 3 apply to the whole motor scooter, while sections 4 through 16 describe parts of the scooter, grouped according to location.

Find the section you want on this page, then turn to the table of contents on page 1 of that section.

Most sections start with an assembly or system illustration, service information and trouble-shooting for the section. The subsequent pages give detailed procedures.

If you are familiar with this scooter read the TECHNICAL FEATURES in section 16.

If you don't know what the source of the trouble is, refer to section 18, Troubleshooting.

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HONDA MOTOR CO., LTD. Service Publications Office

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DRIVE AND DRIVEN PULLEYS/ KICK STARTER/CLUTCH	
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# 1. GENERAL INFORMATION

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# **GENERAL SAFETY**

# WARNING

If the engine must be running to do some work, make sure the area is well-ventilated. Never run the engine in a closed area. The exhaust contains poisonous carbon monoxide gas.

# WARNING

Gasoline is extremely flammable and is explosive under certain conditions. Do not smoke or allow flames or sparks in your working area.

# WWW.

The battery electrolyte contains sulfuric acid. Protect your eyes, skin and clothing. In case of contact, flush thoroughly with water and call a doctor if electrolyte gets in your eyes.

# WARNING

The battery generates hydrogen gas which can be highly explosive. Do not smoke or allow flames or sparks near the battery, especially while charging it.

# **SERVICE RULES**

- Use genuine HONDA or HONDA-recommended parts and lubricants or their equivalents. Parts that do not meet HONDA's
  design specifications may damage the scooter.
- 2. Use the special tools designed for this product.
- 3. Use only metric tools when servicing this scooter. Metric bolts, nuts, and screws are not interchangeable with English fasteners. The use of incorrect tools and fasteners may damage the scooter.
- 4. Install new gaskets, O-rings, cotter pins, lock plates, etc. when reassembling.
- 5. When tightening bolts or nuts, begin with larger-diameter or inner bolts first, and tighten to the specified torque diagonally in 2–3 steps, unless a particular sequence is specified.
- 6. Clean parts in non-flammable or high flash point solvent upon disassembly. Lubricate any sliding surfaces before reassembly.
- 7. After reassembly, check all parts for proper installation and operation.
- 8. Route all electrical wires as shown on page 1-7 Cable and Harness Routing and always away from sharp edges and areas where they might be pinched between moving parts.



**MODEL IDENTIFICATION** 

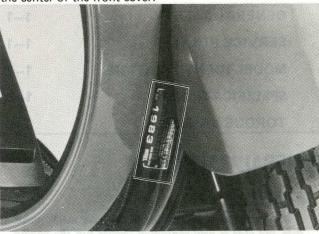


Beginning Frame Number: HF010\*DS000001

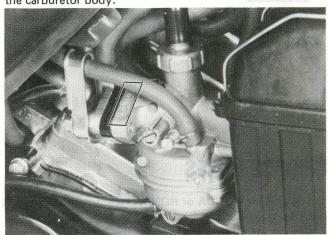
The frame serial number is stamped on the left side of the frame body.



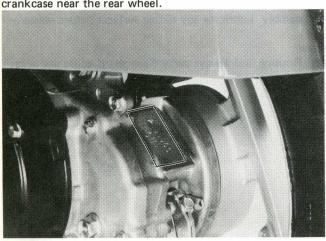
The vehicle identification number is on the frame pipe of the center of the front cover.



The carburetor identification number is on the left side of the carburetor body.



The engine serial number is stamped on the back of the crankcase near the rear wheel.



The color label is attached to the left side of the fuel tank, under the seat.





# **SPECIFICATIONS**

	x -   -	ITEM		SPECIFICATIONS
DIMENSIONS	Rear susp Gross veh	dth ight e nt height earance it ight bension, travel ension, travel icle weight ratin ipacity load, '83	′84: 3:	1,685 mm (66.3 in) 665 mm (26.2 in) 1,070 mm (42.1 in) 1,170 mm (46.1 in) 730 mm (28.7 in) 256 mm (10.1 in) 110 mm (4.3 in) 75 kg (165 lb) 80 kg (176 lb)  Back bone Bottom link, 81 mm (3.19 in) Engine/Final drive unit swingarm, 78 mm (3.07 in) 222 kg (490 lb) 232 kg (505 lb) 145 kg (320 lb) 150 kg (330 lb) 3,50-10-4PR
	Rear tire size			3.50-10-4PR
		Up to 90 kg (200 lbs) load	Front	21 psi (150 kPa, 1.5 kg/cm²)
		Rear	24 psi (175 kPa, 1.75 kg/cm²)	
		Up to vehicle capacity load	Front	21 psi (150 kPa, 1.5 kg/cm²)
	capacity load		Rear	36 psi (250 kPa, 2.5 kg/cm²)
	Rear brake Fuel capac	e, lining swept a e, lining swept a city ve capacity		Internal expanding shoe, 86 cm² (13.4 sq in) Internal expanding shoe, 60 cm² (9.3 sq in) 5.3 liters (1.4 US gal) 0.9 liters (0.25 US gal) 63° 70 mm (2.8 in)
ENGINE	Bore and some property of the compression of the co	ent on ratio horsepower torque ion oil capacity apacity a system on compression g Intake Exhaust Scavenge	Open Close Open Close Open Close	Air cooled 2-stroke Single cylinder 15° inclined from vertical 48 x 44 mm (1.89 x 1.73 in) 80 cm³ (4.88 cu in) 6.8: 1 5 BHP/5,000 rpm 0.82 kg-m (5.9 ft-lb)/3,500 rpm 90 cc (0.09 US qt) 1.3 liters (1.4 US qt) Lubricated by mixing oil with fuel Oiled urethane foam 10.0—14.0 kg/cm² (142—200 psi) Reed valve controlled Reed valve controlled 80° BBDC 80° ABDC 55° BBDC 55° ABDC 18 kg (39.7 lb)



	ITEM		SPECI	FICATION	
CARBURETION	Identification number Air screw Float level		Piston valve, 16 mm (0.63 in) venturi dia. PB54D Refer to page 4-10 8.5 mm (0.33 in)		
DRIVE TRAIN	Clutch type Primary reduc Gear ratio Final reductio		Automatic dry centrifugal clutch V-belt 2.3-1.2 : 1 6.914 : 1		
ELECTRICAL	Ignition type Ignition timin Starting syster Alternator Battery capaci	m	C.D.I.  14° BTDC at idle  Starting motor and kid  12V-110W/5,000 rpm  12V-5AH		
	Spark plug		NGK	ND	
		Standard	BPR6HS	W20FPR	
	7 7 7 2 1	For cold climate, (Below 5°C, 41°F)	BPR5HS	W16FPR	
	Charles of the Control of the Contro	For extended high speed riding	BPR7HS	W22FPR	
	Spark plug gap Fuse capacity		0.6-0.7 mm (0.024-0.028 in) 7A		
LIGHTS	Headlight (Hig Tail/brake ligh Turn signals Speedometer Oil indicator I Turn signal in High beam ind	nt (Front) (Rear) light ight dicator	12V-25/25W 12V-3/32 cp 12V-32 cp 12V-32 cp 12V-2 cp 12V-2 cp 12V-2 cp 12V-2 cp	SAE No. 1157 SAE No. 1156 SAE No. 1156 SAE No. 57 SAE No. 57 SAE No. 57 SAE No. 57	



# **TORQUE VALUES**

# **ENGINE**

ITEM	ЯЗВІ	THREAD mm	DIA.	LIERNAT	TORQUE ·m (kg-m, ft-lb)	REMARKS	
Cylinder head	001000	6 07865-0		8-12	(0.8-1.2, 6-9)	While the engine is cold	(below
Flywheel	480200	10 0/965-1	lyino no	35-40	(3.5-4.0, 25-29)	<sup>L</sup> 35°C, 95°F).	
Drive pulley		10		35-40	(3.5-4.0, 25-29)	and the second of the second o	
Clutch outer	001081	10	reblart r	35-40	(3.5-4.0, 25-29)	Inment holder 07967	
Driven face and clut	ch	-		35-40	(3.5-4.0, 25-29)	ench, 39 mm 07/916	
Intake pipe		6		8-12	(0.8-1.2, 6-9)	aring puller 07631	
Carburetor		6		9-12	(0.9-1.2, 7-9)	uller 07935	
Crankcase	001008	6	12 mm	8-12	(0.8-1.2, 6-9)	over set, 12 mm   07936	

# FRAME

ITEM	THREAD DIA.	N·r	TORQUE m (kg-m, ft-lb)	REMARKS
Steering stem nut	_	80-120	(8.0-12.0, 58-87)	28 x 30 mm 079
Front axle nut	12	50-70	(5.0-7.0, 36-51)	Self-locking nut
Engine hanger bolt	10	27-33	(2.7-3.3, 20-24)	Self-locking nut
Rear axle nut	14	80-100	(8.0-10.0, 58-72)	Self-locking nut
Rear shock absorber (Upper)	10	30-40	(3.0-4.0, 22-29)	
Rear shock absorber (Lower)	8	20-30	(2.0-3.0, 14-22)	OMMGN
Rear shock absorber damper lock nut	8 NUMB	15–25	(1.5-2.5, 11-18)	Apply a locking agent.
Rear brake arm	5	4-7	(0.4-0.7, 3-5)	Float level gauge 074
Kick starter pedal	6	8-10	(0.8-1.0, 6-7)	Universal tredder 077
Front brake arm	6	8-12	(0.8-1.2, 6-9)	
Front fork pivot arm	8 07702-00	20-24	(2.0-2.4, 14-17)	Pin spanner 077
Muffler	8	40-50	(4.0-5.0, 29-36)	Attachment, 32 x 35 mm 077

Torque specifications listed above are for important fasteners. Others should be tightened to the standard torque values below.

# STANDARD TORQUE VALUES

ITEM	TORQUE N·m (kg-m, ft-lb)	ITEM	TORQUE N·m (kg-m, ft-lb)
5 mm bolt and nut	4- 6 (0.4-0.6, 3-4)	5 mm screw	3- 5 (0.3-0.5, 3-4)
6 mm bolt and nut	8-12 (0.8-1.2, 6-9)	6 mm screw	7-11 (0.7-1.1, 5-8)
8 mm bolt and nut	18-25 (1.8-2.5, 13-18)	6 mm flange bolt and nut	10-14 (1.0-1.4, 7-10)
10 mm bolt and nut	30-40 (3.0-4.0, 22-29)	8 mm flange bolt and nut	20-30 (2.0-3.0, 14-22)
12 mm bolt and nut	50-60 (5.0-6.0, 36-43)	10 mm flange bolt and nut	30-40 (3.0-4.0, 22-29)



# **TOOLS**

# **SPECIAL**

DESCRIPTION	NUMBER	ALTERNATIVE	NUMBER	REF. SECT.
Clutch spring compressor	07960-KJ90000	(त-हुआ हा अ	11	8-15, 8-22
Seal and case assembling tool	07965-GC70000	Assembly collar	07965-GC70100	10-5, 10-6
	0. 26-291 -35"0	Assembly tool (bolt only)	07965-1480200	Flywheel
Bearing driver	07945-GC80000	0 35-40 (3.5-4		8-20
Spring attachment holder	07967-GC80000	Spring attachment holder	07967-1180100	13-7, 13-8
Lock nut wrench, 39 mm	07916-1870001	35-40 (3.5-A	donu	8-15, 8-22
*Universal bearing puller	07631-0010000	1-801 27-8		10-3
Crank case puller	07935-KG80000	9-12 (0.9-1		8-9, 10-2
*Bearing remover set, 12 mm	07936-1660001	Bearing remover, 12 mm	07936-1660100	9-4
		Remover weight	07936-3710200	
*Bearing remover, 15 mm	07936-KC10000			9-4
Hand vacuum pump	ST-AH-260-MC7	(U.S.A. only)		4-13 3MAR
Rear shock absorber				
attachment A	07967-GA70101		THREA	13-7, 13-8
*Bearing driver attachment,	(ता-ति	(m-g=) (m-14) m	n	Med 1 c
28 x 30 mm	07946-1870100	80-120 (8.0-12		8-21

<sup>\*</sup>These tools are not available in the U.S.A. Equivalent tools or commercially available in U.S.A. or other methods are recommended. Refer to the alternative column.

# COMMON

DESCRIPTION	NUMBER	ALTERNATIVE	NUMBER	REF. SECT.
Float level gauge	07401-0010000	0-4.0) 5-4	3	4-7
Universal holder	07725-0030000	1(-8.0) 01-8		7-2, 7-5, 8-2,
	2, 6-9)	(-80) 31-8	1	8-7, 8-15, 8-22
Pin spanner	07702-0020000	Pin spanner	07702-0010000	12-20, 12-23
Attachment, 32 x 35 mm	07746-0010100	8 40-50 (4.0-5.		9-5, 9-6, 12-11
Attachment, 37 x 40 mm	07746-0010200			9-5
Attachment, 42 x 47 mm	07746-0010300	or important fasteners. Others st	ing avode baself and	10-5, 12-22
Pilot, 12 mm	07746-0040200			9-6, 12-11
Pilot, 15 mm	07746-0040300			8-21, 9-5
Pilot, 17 mm	07746-0040400	**	STILL BALL SHAGE	9-5
Pilot, 25 mm	07746-0040600		COULMY DUM	10-5
Driver (dr. 11 .m-(kg-11 m-14 au080T	07749-0010000	Driver (May be used when pilot not used)	07949-6110000	MBTI
Bearing remover shaft	07746-0050100	5 (0.4-0.6 3-4) 5 mm	_b 3un	8-18
Bearing remover head, 12 mm	07746-0050300	10.8-1.2 6-9) 6 mm	1-8 fun	8-18
Bearing remover head, 15 mm	07746-0050400	6 mm 8 (1.8-2.5 13-18) 6 mm	S-8 300	8-18
Rear shock absorber	run bne riod enneit	8 mm 8 mm	ia-dis sun	bns flod mm 01
compressor	07959-3290001	16.0-5.0.36-430 10 mm	8-08 tun	13-7, 13-8
Rotor puller	07733-0010000	Rotor puller	07933-0010000	7-3
Lock nut wrench, 30 x 32 mm	07716-0020400	Equivalent tools commer-		12-7, 12-8
Extension bar	07716-0020500	☐ cially available in U.S.A.		12-7, 12-8
Fork seal driver	07747-0010100	Fork seal driver	07947-3550000	12-23
Fork seal driver attachment	07747-0010400	Fronk seal driver	0/94/-3550000	12-23

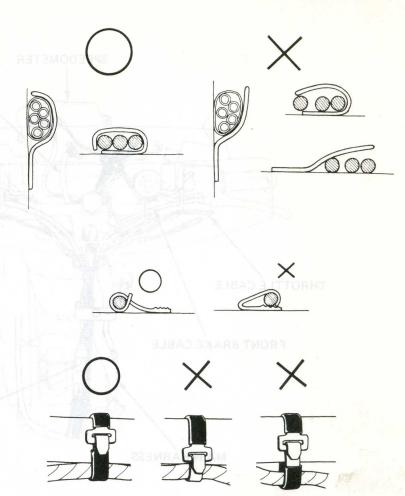


# **CABLE & HARNESS ROUTING**

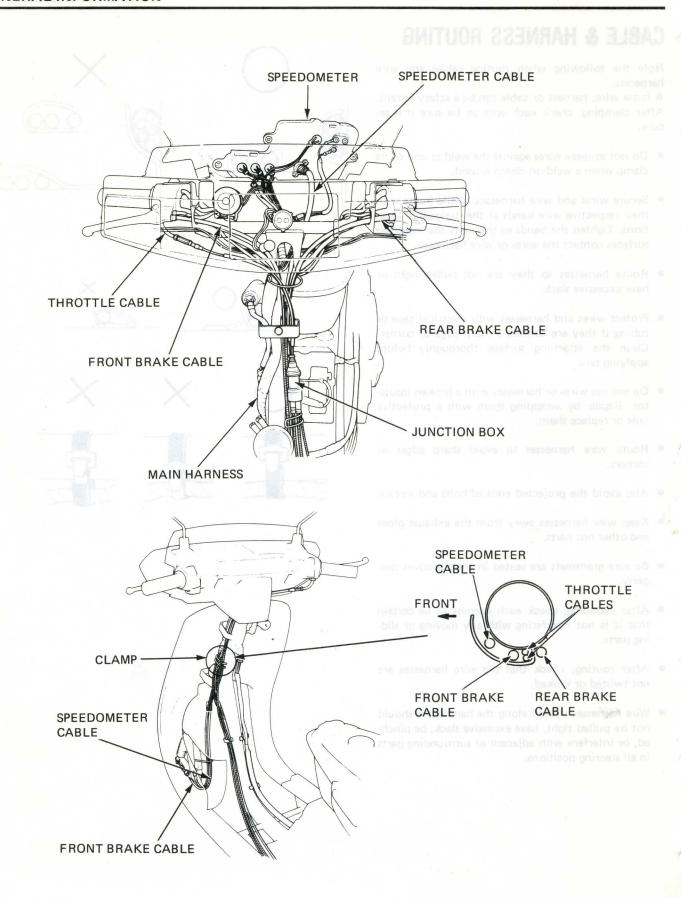
Note the following when routing cables and wire harnesses.

A loose wire, harness or cable can be a safety hazard. After clamping, check each wire to be sure it is secure

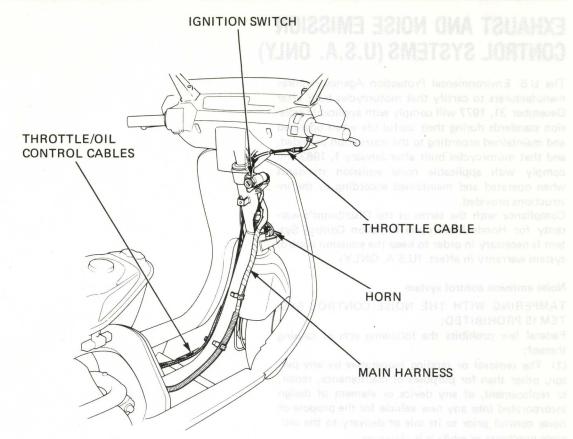
- Do not squeeze wires against the weld or end of its clamp when a weld-on clamp is used.
- Secure wires and wire harnesses to the frame with their respective wire bands at the designated locations. Tighten the bands so that only the insulated surfaces contact the wires or wire harnesses.
- Route harnesses so they are not pulled tight or have excessive slack.
- Protect wires and harnesses with electrical tape or tubing if they are contact a sharp edge or corner.
   Clean the attaching surface thoroughly before applying tape.
- Do not use wires or harnesses with a broken insulator. Repair by wrapping them with a protective tape or replace them.
- Route wire harnesses to avoid sharp edges or corners.
- Also avoid the projected ends of bolts and screws.
- Keep wire harnesses away from the exhaust pipes and other hot parts.
- Be sure grommets are seated in their grooves properly.
- After clamping, check each harness to be certain that it is not interfering with any moving or sliding parts.
- After routing, check that the wire harnesses are not twisted or kinked.
- Wire harnesses routed along the handlebars should not be pulled tight, have excessive slack, be pinched, or interfere with adjacent or surrounding parts in all steering positions.

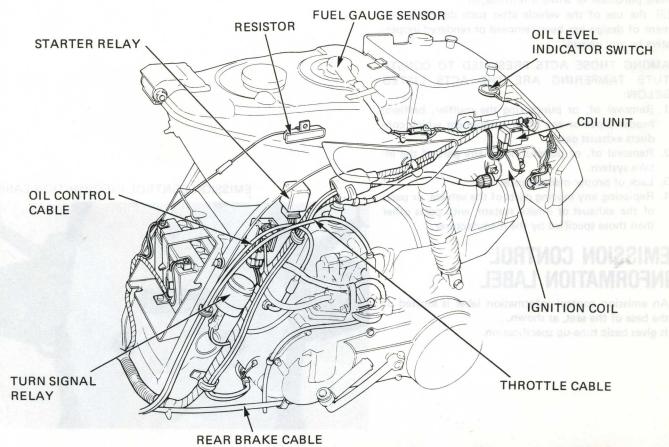














# EXHAUST AND NOISE EMISSION CONTROL SYSTEMS (U.S.A. ONLY)

The U.S. Environmental Protection Agency requires manufacturers to certify that motorcycles built after December 31, 1977 will comply with applicable emission standards during their useful life when operated and maintained according to the instruction provided, and that motorcycles built after January 1, 1983 will comply with applicable noise emission standards when operated and maintained according to the instructions provided.

Compliance with the terms of the Distributor's warranty for Honda Motorcycle Emission Control System is necessary in order to keep the emission control system warranty in effect. (U.S.A. ONLY)

### Noise emission control system

TAMPERING WITH THE NOISE CONTROL SYSTEM IS PROHIBITED:

Federal law prohibits the following acts or causing thereof:

(1) The removal or rending inoperative by any person, other than for purposes of maintenance, repair, or replacement, of any device or element of design incorporated into any new vehicle for the propose of noise control prior to its sale or delivery to the ultimate purchaser or while it is in use; or

(2) the use of the vehicle after such device or element of design has been removed or rendered inoperative by any person.

AMONG THOSE ACTS PRESUMED TO CONSTITUTE TAMPERING ARE THE ACTS LISTED BELOW:

- Removal of, or puncturing the muffler, bafflers, header pipes or any other component which conducts exhaust gases.
- Removal of, or puncturing of any part of the intake system.
- Lack of proper maintenance.
- Replacing any moving parts of the vehicle, or parts of the exhaust or intake system, with parts other than those specified by the manufacturer.

# EMISSION CONTROL INFORMATION LABEL

An emission control information label is located on the base of the seat, as shown.

It gives basic tune-up specification.

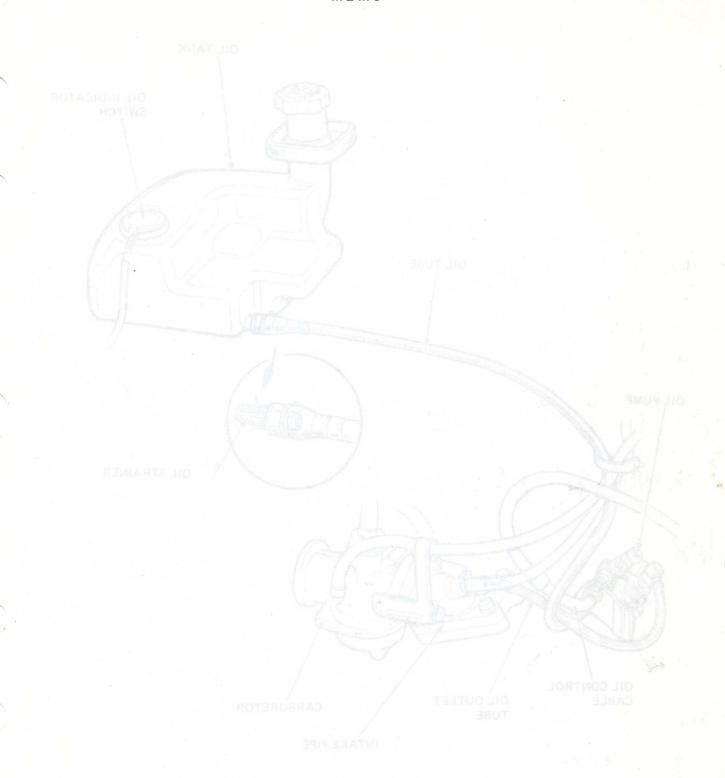
EMISSION CONTROL INFORMATION LABEL



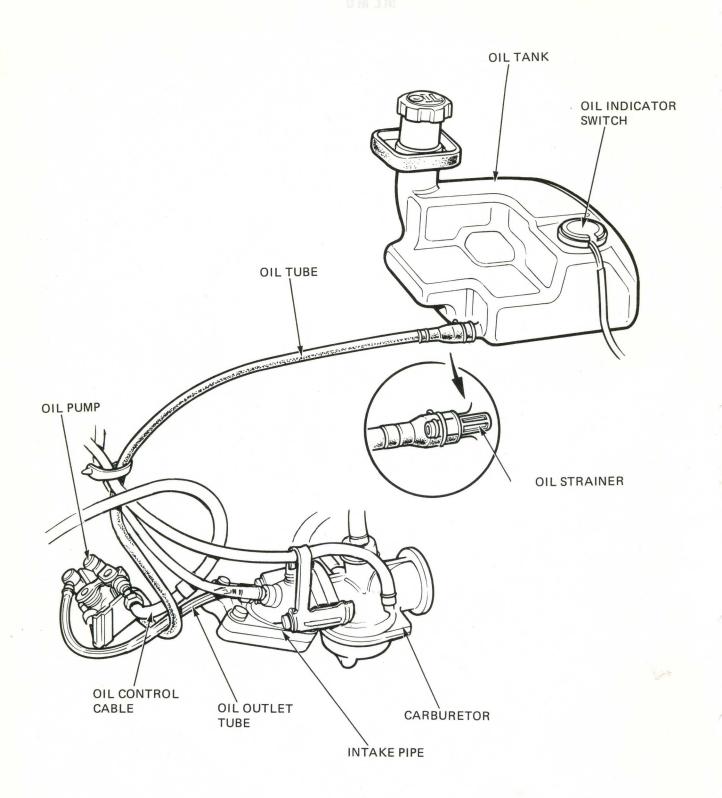
Date of Issue: May, 1983 © HONDA MOTOR CO., LTD.



# MEMO









# 2. LUBRICATION

		AMERI 多语 NO 多种多类结果 图	RETAINED TO DESCRIP
SERVICE INFORMATION	2-1	OIL PUMP BLEEDING	2–3
TROUBLESHOOTING	2-1	OIL PUMP CONTROL CABLE	Bafora remov
OIL PUMP REMOVAL	2-2	ADJUSTMENT	2–4
OIL PUMP INSPECTION	2-2	FINAL REDUCTION OIL	2–5
OIL PUMP INSTALLATION	2-2	CONTROL CABLE LUBRICATION	2-5
OIL FOWE INSTALLATION	2-2	LUBRICATION POINTS	2-6
			AMERITARI K

# **SERVICE INFORMATION**

# GENERAL

- The engine must be removed from the frame when removing and installing the oil pump.
- When removing and installing the oil pump, use care not to allow dust and dirt to enter the engine and oil line.
- Bleed air from the oil pump if there is air in the oil inlet line (from the oil tank to the oil pump) or if the oil line is
  disconnected.
- Bleed air from the oil outlet line (from the oil pump to the carburetor) if the line is disconnected.

# **SPECIFICATIONS**

Engine oil recommendation:

Final reduction oil capacity:

Final reduction oil recommendation:

Honda 2-stroke oil or equivalent

90 cc (0.09 US qt)

Honda 4-stroke oil or equivalent

Viscosity: SAE 10W-40

API Service classification: SE or SF

# TORQUE VALUE

Final reduction oil drain bolt

10-14 N·m (1.0-1.4 kg-m, 7-10 ft-lb)

# **TROUBLESHOOTING**

# Excessive smoke and/or carbon on spark plug

- 1. Pump not properly adjusted (excessive oil)
- 2. Low quality engine oil
- 3. Incorrect engine oil

# Overheating

- 1. Oil pump not adjusted properly (insufficient oiling)
- 2. Low quality oil
- 3. Incorrect engine oil

# Seized piston

- 1. No oil in tank or clogged oil line
- 2. Pump not properly adjusted (insufficient oiling)
- 3. Air in oil lines
- 4. Faulty oil pump

# Oil not flowing out of tank

- 1. Clogged oil tank cap breather hole
- 2. Clogged oil strainer



# **OIL PUMP REMOVAL**

NOTE:

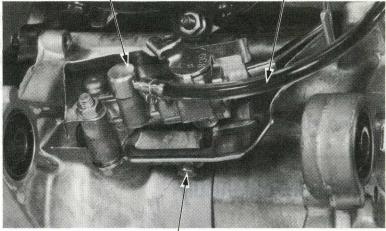
Before removing the oil pump, clean the oil pump and crankcase.

Remove the engine (Section 5).

Remove the starter motor (Page 15-13).

Disconnect the oil outlet line from the intake pipe. Remove the oil pump attaching bolt and remove the oil pump.





BOLT

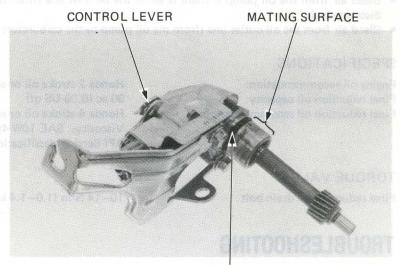
# **OIL PUMP INSPECTION**

Remove the oil pump and inspect the following items:

- Damaged or weak O-rings
- Damage to crankcase mating surface
- Damage to pump body
- Control lever operation
- Worn or damaged pump gears
- Oil leaks

# CAUTION:

Do not disassemble the oil pump.



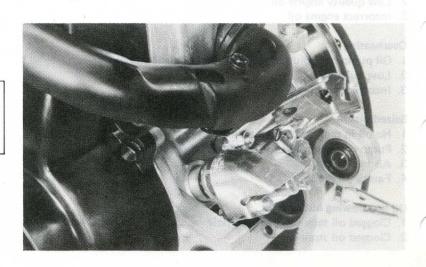
O-RING

# **OIL PUMP INSTALLATION**

Install the oil pump onto the crank case.

# CAUTION:

- Lubricate the pump gear and O-ring with clean grease before installation.
- Make sure that the oil pump is inserted into the crankcase properly.





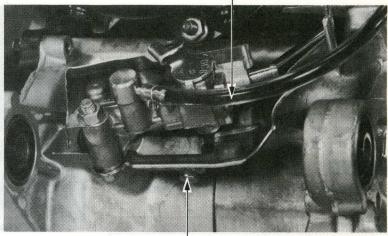
Tighten the oil pump attaching bolt securely. Connect the oil outlet line. Install the starter motor (Page 15-15). Install the engine (Page 5-4).

# NOTE:

After installation, perform the following inspections and adjustment:

- Control cable adjustment (Page 2-4)
- Oil pump bleeding.
- · Check for oil leaks.

OIL OUTLET LINE



BOLT

# **OIL PUMP BLEEDING**

# CAUTION:

- Air in the oil system will block or restrict oil flow and may result in severe engine damage.
- Bleed air from the oil inlet line first, then bleed air from the oil outlet line.

# OIL INLET LINE/OIL PUMP

### CAUTION:

Bleed air from the oil lines whenever the oil lines or pump have been removed or there is air in the oil lines.

Fill the oil tank with recommended oil.

Place a shop towel around the oil pump.

Disconnect the oil inlet line from the oil pump.

Fill the oil pump with oil by squirting clean oil through the joint (about 3 cc).

Fill the oil line with oil and connect it to the joint of the oil pump.

After installation, make sure there is no air in the oil inlet line.

# CAUTION:

Bleed air from the oil outlet line after bleeding the oil inlet line and oil pump.



OIL INLET LINE

# HONDA NH80

# OIL OUTLET LINE TO THE OUTLE

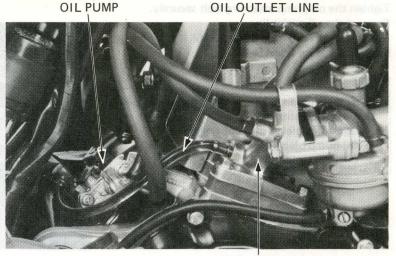
- Disconnect the oil outlet line at the carburetor and force air out of the tube by filling it with oil using an oil squirt can.
- 2. Connect the oil outlet line to the carburetor.
- 3. Start the engine and allow it to idle with the oil control lever in the fully open position, making sure that there are no air bubbles in the oil from the oil pump.
- 4. If there are air bubbles, repeat steps 1 through 3 until the oil line is free of air bubbles.

### WARNING

Perform this operation in a well ventilated area.

### CAUTION:

• Do not race the engine unnecessarily.



INTAKE PIPE

# OIL PUMP CONTROL CABLE ADJUSTMENT

# NOTE:

The oil pump control cable should be adjusted after the throttle grip free play adjustment.

Remove the frame center cover (Page 11-3).

Loosen the oil pump control cable lock nut and open the throttle fully.

Check that the aligning mark on the oil pump control lever is aligned with the index mark projection on the pump body.

Adjust if necessary by turning the adjusting nut.

### CAUTION:

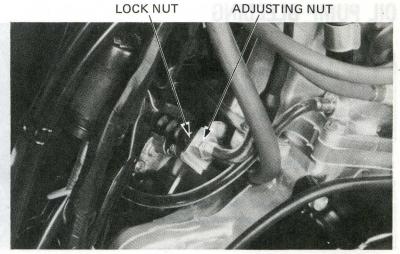
Reference tip adjustment within 1 mm (0.04 in) of index mark on the open side is acceptable. However, the aligning mark must never be on the closed side of the index mark, otherwise engine damage will occur because of insufficient lubrication.

Excessive white smoke or hard starting:

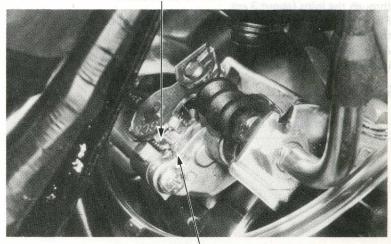
Pump control lever excessively open

# Seized piston:

Pump control lever not properly adjusted



ALIGNING MARK



INDEX MARK PROJECTION



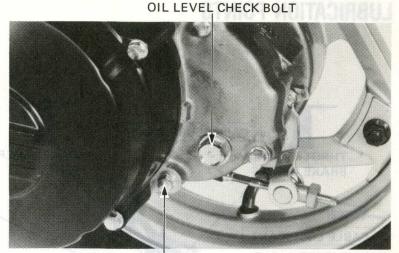
# FINAL REDUCTION OIL

# CHECK

### NOTE:

Place the scooter on a level ground and support with the center stand.

Remove the oil level check bolt and check that the oil level is at the oil level check bolt hole.



DRAIN BOLT

# CHANGE

Remove the oil level check bolt.

Remove the drain bolt to allow the oil to drain thoroughly.

Reinstall the drain bolt.

TORQUE: 10-14 N·m (1.0-1.4 kg·m,

7-10 ft-lb)

# NOTE:

Check that the sealing washer is in good condition.

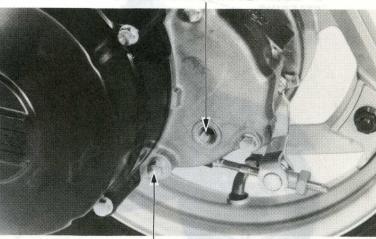
Fill the final reduction case up to the proper level with recommended oil.

OIL CAPACITY: 90 cc (0.09 US qt)

SPECIFIED OIL: HONDA 4-STROKE OIL or

equivalent, 10W-40

# OIL LEVEL CHECK BOLT HOLE



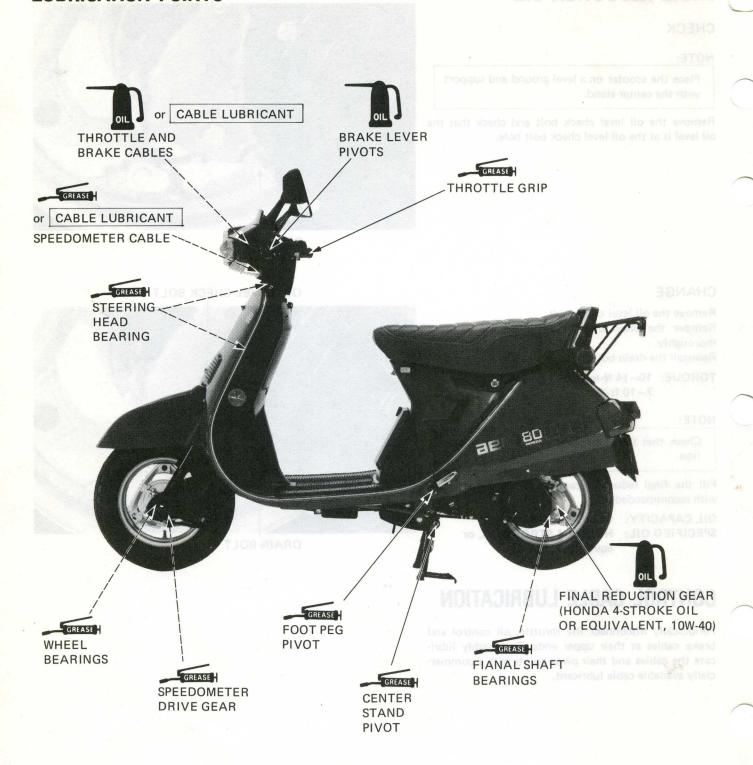
DRAIN BOLT

# **CONTROL CABLE LUBRICATION**

Periodically disconnect the throttle, oil control and brake cables at their upper ends. Thoroughly lubricate the cables and their pivot points with a commercially available cable lubricant.



# **LUBRICATION POINTS**





# 3. MAINTENANCE

	SERVICE INFORMATION	3–1	COMPRESSION TEST	3–8	
	MAINTENANCE SCHEDULE	3–2	BATTERY	3–8	
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	FUEL FILTER	3–3	BRAKE SYSTEM	3–9	
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	AIR CLEANER	3-4	BRAKE LIGHT SWITCH	3–10	
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of w	SPARK PLUG	3-6	SUSPENSION	3–11	
	ENGINE OIL LINE	3–6	NUTS, BOLTS, FASTENERS	3–11	
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	MUFFLER DECARBONIZATION	3-7	STEERING HEAD BEARINGS	3–12	
	CARBURETOR-IDLE SPEED	3–7		SJO RIA	
					150

# SERVICE INFORMATION

# **GENERAL**

Oil pump See page 2-2. Transmission oil See page 2-4. Clutch shoe wear See page 8-19.

# **SPECIFICATIONS**

<Engine> Spark plug:

Standard		For cold climate (below 5°C, 41°F)		For extended high speed riding	
NGK	ND	NGK	ND	NGK	ND
BPR6HS	W20FPR	BPR5HS	W16FPR	BPR7HS	W22FPR

Spark plug gap: Throttle grip free play:

Idle speed:

Cylinder compression:

0.6-0.7 mm (0.024-0.028 in)

2-6 mm (1/8-1/4 in)

1,800 ± 100 rpm

10.0-14.0 kg/cm<sup>2</sup> (142-200 psi)

<Chassis>

Front brake free play: Rear brake free play:

10-20 mm (3/8-3/4 in)

10-20 mm (3/8-3/4 in)

# Tire:

ECOMMEND THESE ITEMS OF STATED ONLY BY AN AUTHORIZED		Front	Rear
Tilesi	ze	3.50-10-4PR 3.50-10	
Cold tire pressure psi (kPa, kg/cm²)	Up to 90 kg (200 lbs) load	21 (150, 1.5)	24 (175, 1.75)
	90 kg (200 lbs) load and up to vehicle capacity load	21 (150, 1.5)	36 (250, 2.5)



# MAINTENANCE SCHEDULE

Perform the Pre-ride Inspection in the Owner's Manual at each scheduled maintenance period.

I : INSPECT AND CLEAN, ADJUST, LUBRICATE, OR REPLACE IF NECESSARY.

C : CLEAN R : REPLACE A : ADJUST

L : LUBRICATE

	FREQUENCY IO		WHICHEVER COMES FIRST	3-6	ODOMETER READING (NOTE 2)			
	IT	TEM	EVERY	600 mi (1,000 km)	2,500 mi (4,000 km)	5,000 mi (8,000 km)	7,500 mi (12,000 km)	Refer to
	*	FUEL LINES	9 190144	O O	Lana	98113	L	3-3
S	*	FUEL FILTER		0-0	<del>11337146</del>		R	3-3
EMISSION RELATED ITEMS	*	THROTTLE OPERATION	DUING	11-5	VICITAS	WORMAD:	ONSURE	3-4
		AIR CLEANER	NOTE 1	3+7	C 033	C	C	3-4
		CARBURETORCHOKE CLEANER	NOTE 1		С	С	С	3-5
		SPARK PLUG	× .		R	R	R	3-6
	**	OIL PUMP		ı	ı	I	I	2-2
		ENGINE OIL LINES			ı	ı		3-6
	*	ENGINE OIL STRAINER SCREEN		See page 2-2.		С		3-6
E	* *	MUFFLER DECARBONIZATION		350 DEGE 1-4.			С	3-7
	*	CARBURETOR-IDLE SPEED	· ·	ı	ı	1	ı	3-7
	*	TRANSMISSION OIL	2 YEARS R*				<b>身/约律组</b> 的	2-4
NS	1,5	BATTERY	MONTH		3. 是 <b>1</b> 是 第		5.81889	3-8
ITEMS		BRAKE SHOE WEAR			1 1	1215	12	3-8
	13(1)	BRAKE SYSTEM	alow 5°C, 41°1	E CEPTON	2027-1-3			3-9
RELATED		PARKING BRAKE	gu			TO The last	L. C. L. T.	3-10
EL	*	BRAKE LIGHT SWITCH	W16FPR	100	是。11世	THE ROLL OF THE PARTY.	1200	3-10
Z	*	HEADLIGHT AIM	0.024-0.028	1 1	1.01	1		3-10
SIO	*	SUSPENSION	(n) #\f-	15 10 19	1	119	<b>海海1</b> 甲霉	3-11
NON-EMISSION	*	NUTS, BOLTS, FASTENERS	MC_CLED_Land		16.1	2 11 1	5 K 12 12 1	3-11
N-E	**	CLUTCH SHOE WEAR				THE AREA	<b>法法比特</b>	8-19
NO	**	WHEELS		1 Supplement		1201		3-11
	**	STEERING HEAD BEARINGS	(n) 8\8; -8\		BAR MAR			3-12

<sup>\*</sup> SHOULD BE SERVICED BY AN AUTHORIZED HONDA SCOOTER DEALER, UNLESS THE OWNER HAS PROPER TOOLS AND SERVICE DATA AND IS MECHANICALLY QUALIFIED.

NOTES: 1. Service more frequently when riding in dusty areas.

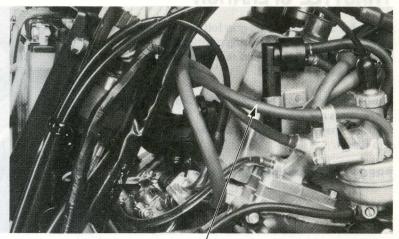
<sup>\*\*</sup> IN THE INTEREST OF SAFETY, WE RECOMMEND THESE ITEMS BE SERVICED ONLY BY AN AUTHORIZED HONDA SCOOTER DEALER.

<sup>2.</sup> For higher odometer readings, repeat at the frequency interval established here.



# **FUEL LINES**

Remove the frame center cover (Section 11). Check the fuel lines and replace any parts which show deterioration, damage or leakage. Install the frame center cover.



FUEL LINE

# **FUEL FILTER**

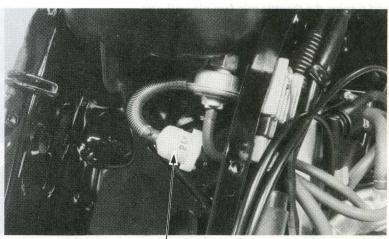
Replace the fuel filter with a new one when indicated by the maintenance schedule (page 3-2).

Remove the frame center cover and battery box (Section 11).

Disconnect the fuel lines from the fuel filter. Replace the fuel filter with a new one.

# WARNING

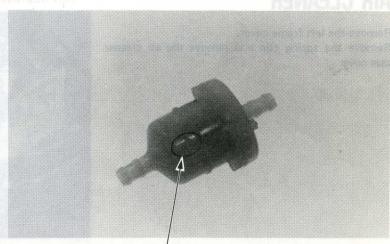
Gasoline is flammable and is explosive under certain conditions. Do not smoke or allow flames or sparks in your working area.



FUEL FILTER

Install the fuel filter with the arrow in the normal direction of fuel flow.

After installing, check that there are no fuel leaks.



ARROW



# THROTTLE OPERATION

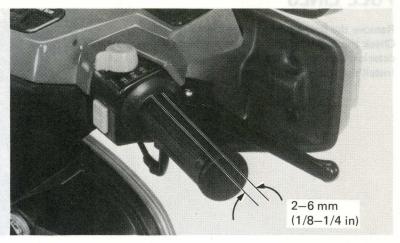
Check for smooth throttle grip full opening and automatic full closing in all steering positions.

Check the throttle cable and replace it, if it is deteriorated, kinked or damaged.

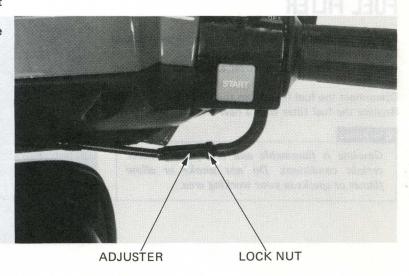
Lubricate the throttle cable (page 2-5), if throttle operation is not smooth.

Measure the throttle grip free play at the throttle grip flange.

FREE PLAY: 2-6 mm (1/8-1/4 in)



Adjustments can be made by loosening the lock nut and turning the throttle grip free play adjuster. Replace the throttle cable when the above procedure is no longer effective.



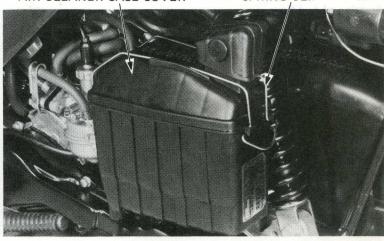
# AIR CLEANER

Remove the left frame cover.

Remove the spring clip and remove the air cleaner case cover.

AIR CLEANER CASE COVER

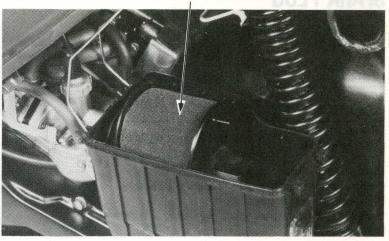
SPRING CLIP





Remove the air cleaner element.

# AIR CLEANER ELEMENT

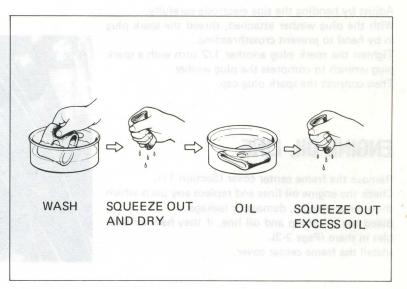


Wash the element in non-flammable or high flash point solvent, squeeze out and allow to dry.

# WARNING

Never use gasoline or low flash point solvents for cleaning the air cleaner element. A fire or explosion could result.

Soak the element in clean motor oil (SAE 10W-40) or gear oil (#80-90) and squeeze out the excess. Reinstall the element, element holder, air cleaner case cover and carburetor cover.



# CARBURETORCHOKE CLEANER

Remove the left frame cover.

Remove the carburetorchoke cleaner chamber and remove the element.

Wash the element in non-flammable or high flash point solvent, squeeze out the excess and allow it to dry.

### WARNING

Never use gasoline or low flash point solvents for cleaning the cleaner element. A fire or explosion could result.

Soak the element in clean motor oil (SAE 10W-40) or gear oil (#80-90) and squeeze out excess.

Reinstall the carburetorchoke cleaner element and chamber, and clamp the chamber in position.

# ELEMENT



CARBURETORCHOKE CLEANER CHAMBER



SIDE ELECTRODE

# SPARK PLUG

# RECOMMENDED SPARK PLUG

	NGK	ND
Standard	BPR6HS	W20FPR
For cold climate (Below 5°C, 41°F)	BPR5HS	W16FPR
For extended high speed riding	BPR7HS	W22FPR

Disconnect the spark plug cap.
Clean any dirt from around the spark plug base.
Remove and discard the spark plug.
Measure the new spark plug gap using a wire-type feeler gauge.

# 0.6-0.7 mm (0.024-0.028 in)

CENTER ELECTRODE

# SPARK PLUG GAP: 0.6-0.7 mm (0.024-0.028 in)

Adjust by bending the side electrode carefully. With the plug washer attached, thread the spark plug in by hand to prevent crossthreading.

Tighten the spark plug another 1/2 turn with a spark plug wrench to compress the plug washer.

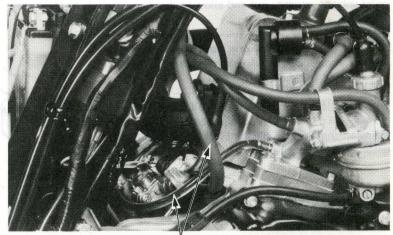
Then connect the spark plug cap.

# **ENGINE OIL LINE**

Remove the frame center cover (Section 11).
Check the engine oil lines and replace any parts which show deterioration, damage or leakage.

Bleed the oil pump and oil line, if they have air bubbles in them (Page 2-3).

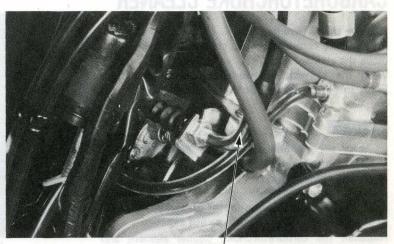
Install the frame center cover.



ENGINE OIL LINES

# **ENGINE OIL STRAINER SCREEN**

Remove the frame center cover (Page 11-3). Disconnect the oil inlet line at the oil pump and allow the oil to drain into a clean container.



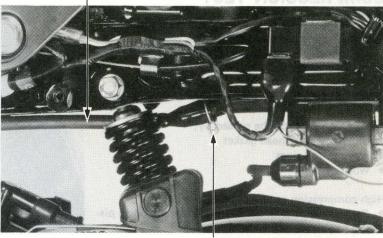
OIL INLET LINE



Disconnect the oil line at the bottom of the oil tank by loosening the clip.

Remove the oil strainer.

OIL LINE



CLIP

Clean the oil strainer with compressed air. Replace the oil strainer if necessary. The installation sequence is essentially the reverse order of removal.

Fill the tank with the recommended oil up to the proper level and bleed air from the oil pump and oil line (Page 2-3).

# NOTE:

- Connect the oil line securely.
- Check for leaks.

# **MUFFLER DECARBONIZATION**

Remove the muffler (Page 13-2). Remove the carbon from the muffler. Reinstall the muffler (Page 13-3).

# AIR GUN

# CARBURETOR IDLE SPEED

# NOTE:

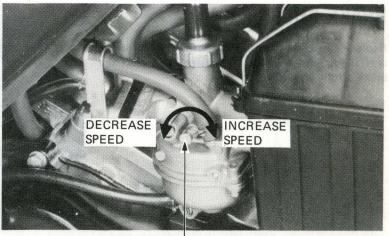
- Inspect and adjust idle speed after all other engine adjustments are within specifications.
- The engine must be warm for accurate adjustment. Ten minutes of stop-and-go riding is sufficient.

Remove the left side cover.

Warm up the engine and place the scooter on its center stand.

Turn the throttle stop screw as required to obtain the specified idle speed.

IDLE SPEED: 1,800 ± 100 rpm



THROTTLE STOP SCREW



# **COMPRESSION TEST**

Remove the left frame cover and warm up the engine. Stop the engine and remove the spark plug. Insert a compression gauge. Open the throttle grip fully and operate the kick starter several times.

COMPRESSION: 10.0-14.0 kg/cm<sup>2</sup> (142-200 psi)

Low compression can be caused by:

- Blown cylinder head gasket
- Worn piston rings
- Worn cylinder

High compression can be caused by:

Carbon deposits in combustion chamber or on piston head



**COMPRESSION GAUGE** 

# BATTERY NO SIA

Remove the battery cover.

Inspect the battery fluid level. When the fluid level nears the lower level mark, refill with distilled water to the upper level.

- Check the specific gravity of the battery electrolyte in each cell (Page 15-3).
- Recharge the battery if necessary (Page 15-4).

### NOTE:

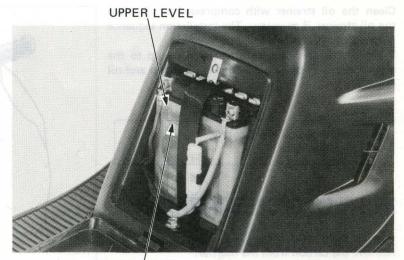
Add only distilled water. Tap water will shorten the service life of the battery.

# WARNING

The battery electrolyte contains sulfuric acid. Protect your eyes, skin and clothing. In case of contact, flush thoroughly with water and call a doctor if electrolyte gets in your eyes.

# **BRAKE SHOE WEAR**

Replace the brake shoes if the arrow on the brake arm aligns with the reference mark " $\Delta$ " when the brake is fully applied.



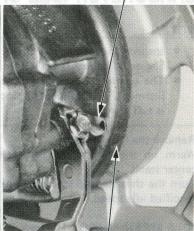
REAR

LOWER LEVEL

REFERENCE



ARROW



ARROW

REFÉRENCE MARK

MARK

**FRONT** 

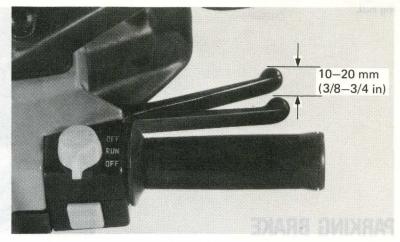


# **BRAKE SYSTEM**

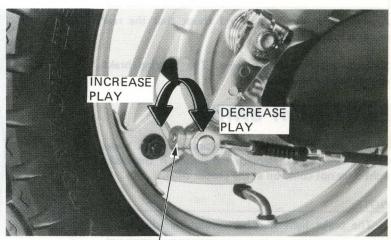
# FRONT BRAKE

Measure the front brake lever free play at the tip of the brake lever.

FREE PLAY: 10-20 mm (3/8-3/4 in)



If adjustment is necessary, turn the front brake adjusting nut.

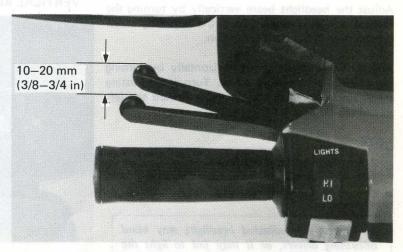


ADJUSTING NUT

# REAR BRAKE

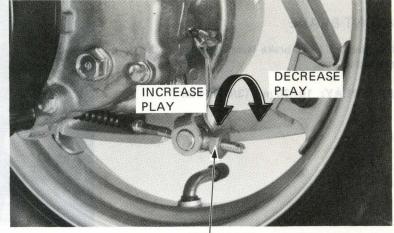
Measure the rear brake lever free play at the tip of the brake lever.

FREE PLAY: 10-20 mm (3/8-3/4 in)





If adjustment is necessary, turn the rear brake adjusting nut.



ADJUSTING NUT

# **PARKING BRAKE**

# NOTE:

Parking brake inspection must be made after the rear brake is adjusted properly.

Apply the parking brake and check that the rear wheel is locked securely.

Squeeze the rear brake lever. The parking brake should release automatically.

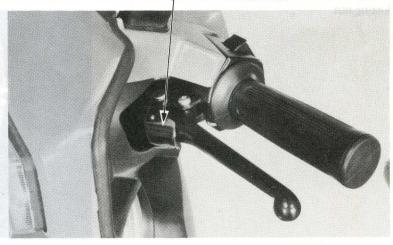
# **BRAKE LIGHT SWITCH**

Check that the brake light comes on when brake engagement begins. Replace the switch if the brake light does not come on at the proper time.

# NOTE:

The brake light switches cannot be adjusted.

# PARKING BRAKE LEVER di montrollo



# **HEADLIGHT AIM**

Adjust the headlight beam vertically by turning the vertical adjusting screw. Turn the adjusting screw clockwise to direct the beam down.

Adjust the headlight beam horizontally by turning the horizontal adjusting screw. Turn the adjusting screw clockwise to direct the beam toward the left side of the rider.

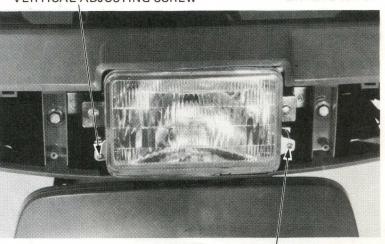
# NOTE:

Adjust the headlight beam as specified by local laws and regulations.

### WARNING

An improperly adjusted headlight may blind oncoming drivers, or it may fail to light the road for a safe distance.

# VERTICAL ADJUSTING SCREW



HORIZONTAL ADJUSTING SCREW

Date of Issue: May, 1983 © HONDA MOTOR CO., LTD.



# SUSPENSION

# WARNING

Do not ride a scooter with faulty suspension. Loose, worn or damaged suspension parts impair vehicle stability and control.

# **FRONT**

Check the action of the front fork/shocks by compressing them several times.

Check the entire fork assembly for damage.

Replace damaged components which cannot be repaired.

Tighten all nuts and bolts.

# REAR

Place the scooter on its center stand.

Move the rear wheel sideways with force to see if the engine hanger bushings are worn.

Replace the hanger bushings if there is any looseness.

Check the shock absorber for damage.

Tighten all rear suspension nuts and bolts.

# NUTS, BOLTS, FASTENERS

Check that all chassis nuts and bolts are tightened to their correct torque values (Section 1) at the intervals shown in the Maintenance Schedule (Page 3-2).

Check all cotter pins, safety clips, hose clamps and cable stays.



# **WHEELS**

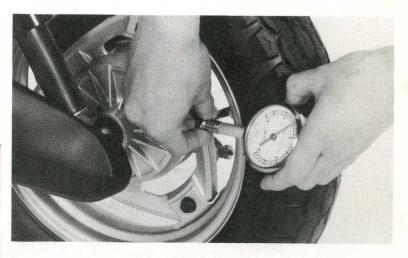
# NOTE:

Tire pressure should be checked when tires are COLD.

Check the tires for cuts, imbedded nails, or other sharp objects.

### **RECOMMENDED TIRES AND PRESSURES:**

		Front	Rear
	Tire size	3.50-10-4PR	3.50-10-4PR
Cold tire	Up to 90 kg (200 lbs) load	21 (150, 1.5)	24 (175, 1.75)
pressure psi (kPa, kg/cm²)	90 kg (200 lbs) and up to vehicle capacity load	21 (150, 1.5)	36 (250, 2.5)



31



Check the front and rear wheels for trueness.

Measure the tread depth at the center of the tires. Replace the tires if the tread depth reaches the following limits:

Minimum tread depth:

Front: 0.8 mm (0.03 in) Rear: 0.8 mm (0.03 in)



# STEERING HEAD BEARINGS

NOTE:

Check that the control cables do not interfere with handlebar rotation.

Raise the front wheel off the ground and check that the handlebar rotates freely.

If the handlebar moves unevenly, binds, or has vertical movement, adjust the steering head bearing by turning the steering head adjusting nut (Page 12-24).

WHEELS NOTE:

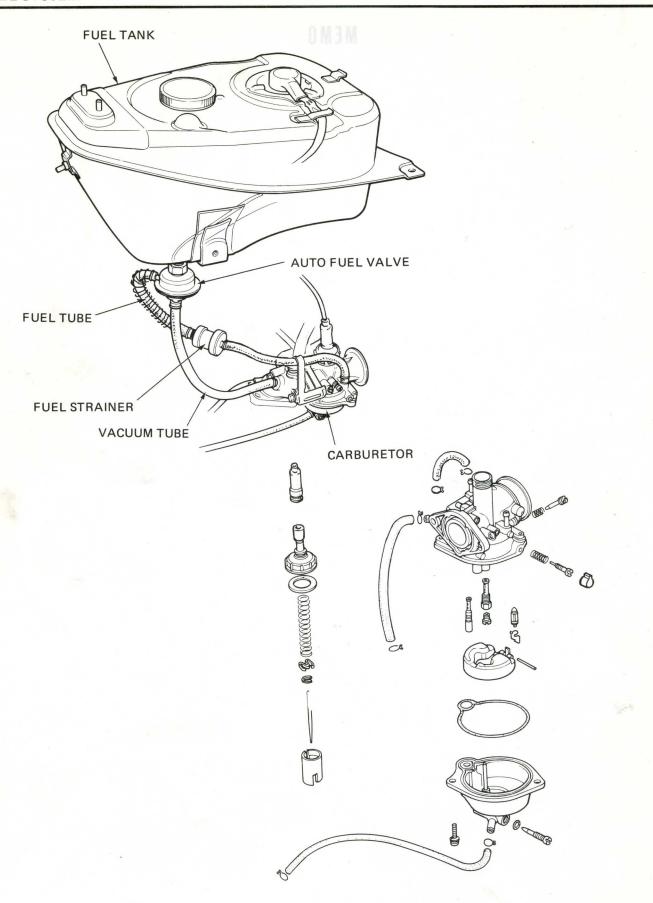
hook the tires for core, imbedded nalls, on sarp objects.

Tito size 3.50-10.49R 3.50-10-45R (up to 50 kg 21 25 co.15-45R (up to 50 kg (up to 50 kg) (up to 50











SERVICE INFORMATION	4-1	FLOAT LEVEL INSPECTION	4-7
TROUBLESHOOTING	4-1	CARBURETOR INSTALLATION	4-7
THROTTLE VALVE DISASSEMBLY	4–2	THROTTLE VALVE	4.0
CARBURETOR REMOVAL	4-3	INSTALLATION	4–9
	7 0	AIR SCREW	4-10
FLOAT/FLOAT VALVE/JETS DISASSEMBLY	4–5	HIGH ALTITUDE ADJUSTMENT	4–11
JETS/FLOAT VALVE/FLOAT		REED VALVE	4-12
ASSEMBLY	4–6	AUTO FUEL VALVE	4-13

### SERVICE INFORMATION

GENERAL

#### WARNING

Gasoline is extremely flammable and is explosive under certain conditions. Work in a well ventilated area. Do not smoke or allow flames or sparks in the work area.

- The fuel tank is equipped with an auto fuel valve that is turned OFF automatically when the engine is stopped.
- Use caution when working with gasoline. Always work in a well-ventilated area and away from sparks or flames.
- When disassembling fuel system parts, note the locations of the O-rings. Replace them with new ones during assembly.
- Bleed air from the oil outlet line whenever it is disconnected.

#### TOOLS

#### Special

Hand vacuum pump

ST-AH-260-MC7 (U.S.A. only)

Common

Float level gauge

07401-0010000

#### **SPECIFICATIONS**

Venturi dia.	16 mm (0.63 in)
Identification number	PB54D
Float level	8.5 mm (0.335 in)
Air screw opening IBRAD RAD DI LIABE	See page 4-10
Idle speed	1,800 ± 100 rpm 3 3450 3130 415 846 84000
Throttle grip free play	2–6 mm (1/8–1/4 in)
Main jet	#88

## **TROUBLESHOOTING**

#### Engine cranks but won't start

- 1. No fuel in tank
- 2. Fuel not reaching carburetor
- 3. Too much fuel getting to cylinder
- 4. Clogged air cleaner

#### Rich mixture

- 1. Faulty float valve
- 2. Float level too high
- 3. Carburetor jets clogged

#### Engine idles roughly, stalls or runs poorly

- 1. Idle speed incorrect
- 2. No spark at plug
- 3. Loss of compression
- 4. Rich mixture
- 5. Lean mixture
- 6. Clogged air cleaner
- 7. Intake pipe leaking
- 8. Fuel contaminated

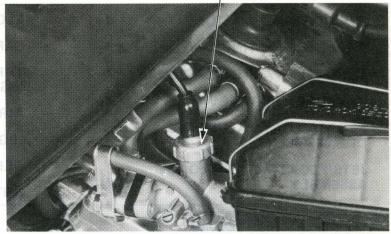
#### Lean mixture

- 1. Carburetor fuel jets clogged
- 2. Fuel cap vent clogged
- 3. Clogged fuel filter
- 4. Fuel line kinked or restricted
- 5. Faulty float valve
- 6. Float level too low
- 7. Clogged air vent tube
- 8. Clogged fuel strainer



## THROTTLE VALVE DISASSEMBLY

Remove the left frame cover.
Remove the carburetor top.



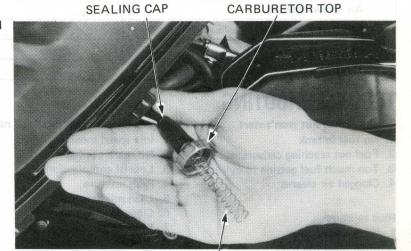
CARBURETOR TOP

Disconnect the throttle cable from the throttle valve.

THROTTLE VALVE

THROTTLE CABLE

Remove the throttle valve spring, carburetor top and sealing cap.



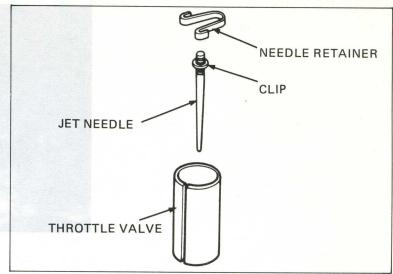
THROTTLE VALVE SPRING



Pry off the needle retainer and remove the jet needle.

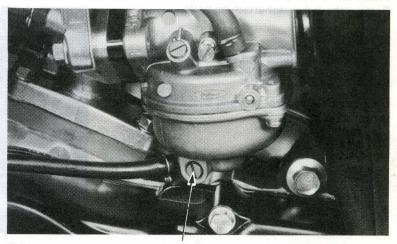
## JET NEEDLE/THROTTLE VALVE INSPECTION

Check the jet needle and throttle valve for wear or damage.



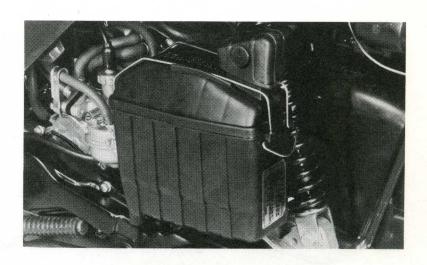
## **CARBURETOR REMOVAL**

Remove the right and left frame covers. Loosen the drain screw to drain fuel from the carburetor.



**DRAIN SCREW** 

Remove the air cleaner element.

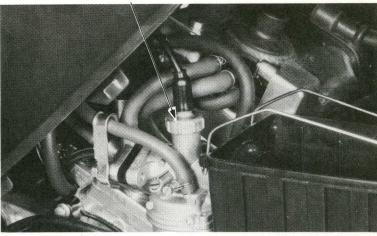




Remove the carburetor top and throttle valve.



CARBURETOR TOP systems but regulates silbean and the year



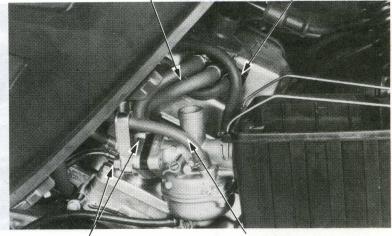
Disconnect the fuel tube from the carburetor. Remove the carburetor attaching bolts.

#### NOTE:

Remove the frame center cover for easy removal of the attaching bolts if necessary.

Disconnect the control box and bystarter tubes from the carburetor.

CHOKE CONTROL BOX TUBE BYSTARTER TUBE



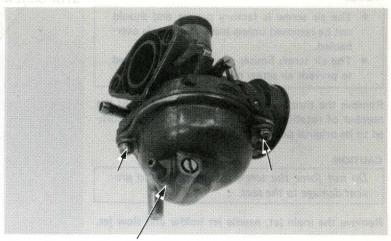
BOLTS

**FUEL TUBE** 



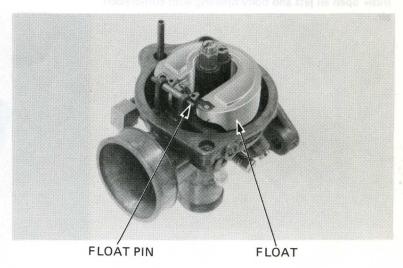
# FLOAT/FLOAT VALVE/JETS DISASSEMBLY

Remove the float chamber from the carburetor body.



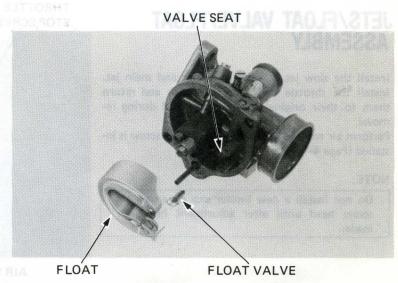
FLOAT CHAMBER

Remove the carburetor float and float valve by removing the pin.



#### FLOAT/FLOAT VALVE INSPECTION

Check the valve seat for wear or damage. Check the float for deformation or fuel inside the float.



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#### NOTE:

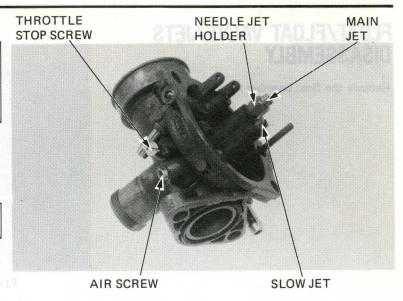
- The air screw is factory pre-set and should not be removed unless the carburetor is overhauled.
- The air screw limiter cap is factory installed to prevent air screw misadjustment.

Remove the throttle stop and air screws. Record the number of rotations until it seats, so it can be returned to its original positions.

#### CAUTION:

Do not force the screw against its seat to prevent damage to the seat.

Remove the main jet, needle jet holder and slow jet.



Blow open all jets and body opening with compressed air.



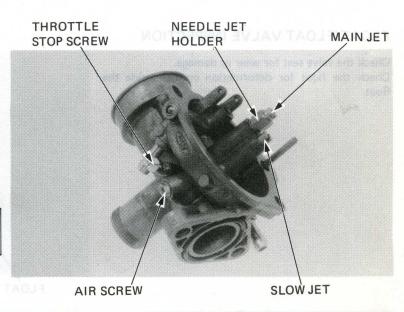
# JETS/FLOAT VALVE/FLOAT ASSEMBLY

Install the slow jet, needle jet holder and main jet. Install the throttle stop and air screws and return them to their original position as noted during removal.

Perform air screw adjustment if a new air screw is installed (Page 4-10).

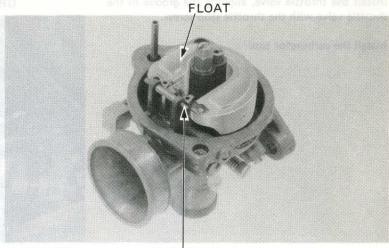
#### NOTE:

Do not install a new limiter cap on a new air screw head until after adjustment has been made.





Install the float valve, float and float pin.



FLOAT PIN

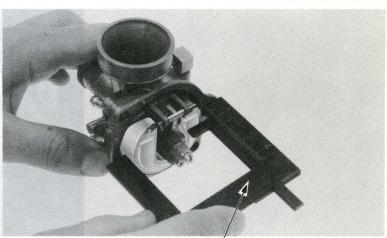
## FLOAT LEVEL INSPECTION

Measure the float level with the float tip just contacting the float valve.

FLOAT LEVEL: 8.5 mm (0.335 in)

Adjust by carefully bending the float arm until the float tip.

Check operation of the float and install the float chamber.



FLOAT GAUGE 07401-0010000

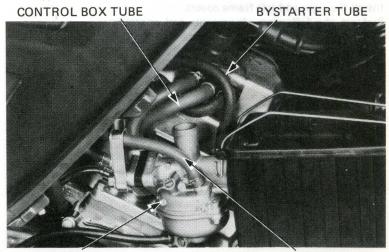
## **CARBURETOR INSTALLATION**

#### CAUTION:

Do not allow foreign particles to enter the carburetor.

Connect the control box and bystarter tubes to the carburetor.

Install the carburetor and connect the fuel tube. Install the frame center cover if it was removed.



CARBURETOR

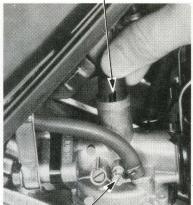
FUEL TUBE



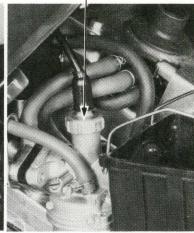
Install the throttle valve, aligning the groove in the throttle valve with the throttle stop screw.

Install the carburetor top.



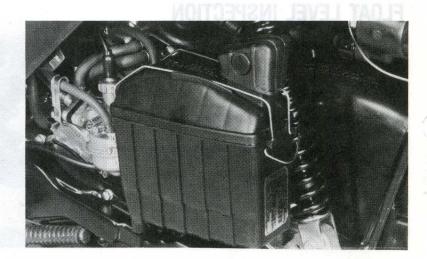


CARBURETOR TOP



**THROTTLE** STOP SCREW

Install the air cleaner element.



Install the right and left frame covers.

Perform the following adjustments and operation:

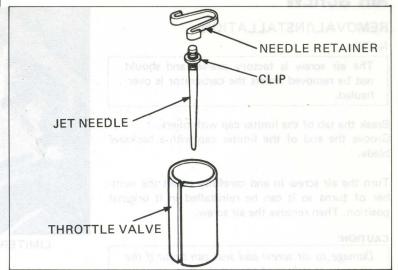
- Throttle cable free play adjustment (Page 3-4).
- Oil pump adjustment (Page 2-4).
- Idle speed adjustment (Page 3-7).



### THROTTLE VALVE INSTALLATION

Install the jet needle on the throttle valve and secure with the needle retainer.

Assemble the seal cap, carburetor top and throttle

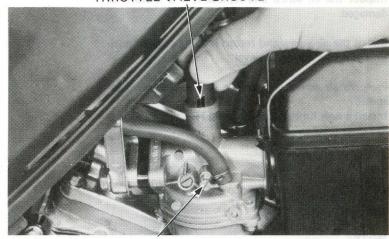


Connect the throttle cable to the throttle valve. Slide the throttle valve into the carburetor body.

#### NOTE:

Align the groove in the valve with the throttle stop screw on the carburetor body.

THROTTLE VALVE GROOVE



THROTTLE STOP SCREW

Tighten the carburetor top. Install the left frame cover. Adjust the throttle cable free play (Page 3-4).







## **AIR SCREW**

#### REMOVAL/INSTALLATION

NOTE:

The air screw is factory pre-set and should not be removed unless the carburetor is overhauled.

Break the tab of the limiter cap with pliers.

Groove the end of the limiter cap with a hacksaw blade.

Turn the air screw in and carefully count the number of turns so it can be reinstalled in it original position. Then remove the air screw.



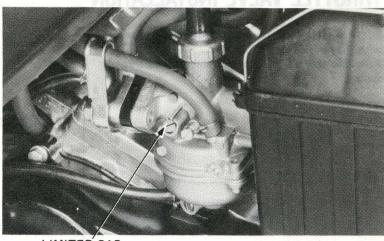
Damage to air screw and seat can occur if the air screw is tightened against the seat.

Inspect the air screw and replace it if it is worn or damaged.

Install the air screw and return it to its original position as noted during removal.

Perform air screw adjustment if a new screw is installed.

Install a new limiter cap (Page 4-11).



LIMITER CAP

#### **ADJUSTMENT**

#### NOTE:

The air screw is factory pre-set and no adjustment is necessary unless the air screw is replaced.

Turn the air screw clockwise until it seats lightly and back it out to the specification given. This is an initial setting prior to the final air screw adjustment.

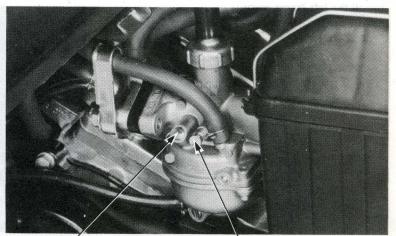
INITIAL OPENING: 1-1/2 turns out

#### CAUTION:

Damage to the air screw and seat will occur if the air screw is tightened against the seat.

Warm the engine up to operating temperature. Stop and go riding for 10 minutes is sufficient. Connect a tachometer and adjust the idle speed with the throttle stop screw.

IDLE SPEED: 1,800 ± 100 rpm



AIR SCREW

THROTTLE STOP SCREW



Turn the air screw in or out to obtain the highest engine speed.

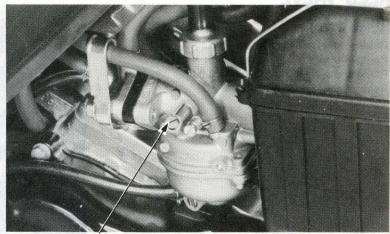
Readjust the idle speed to 1,800  $\pm$  100 rpm, using the throttle stop screw.

#### LIMITER CAP INSTALLATION

If the air screw has been removed, a new limiter cap must be installed after air screw adjustment is completed.

After adjustment, cement the limiter cap over the air screw, using LOCTITE ® #601 or equivalent. The limiter cap should be placed against its stop, preventing further adjustment that would enrich the fuel mixture (limiter cap position permits counterclockwise rotation and prevents clockwise rotation). NOTE:

An air screw limiter cap must be installed. It prevents misadjustment that could cause poor performance and increase emissions.



LIMITER CAP

## HIGH ALTITUDE ADJUSTMENT

For sustained high altitude operation (above 2,000 m/6,500 ft) install a #82 main jet and readjust idle speed.

Remove the carburetor from the engine and remove the float chamber.

Replace the standard main jet with the high altitude #82 main jet.

Assemble and install the carburetor.

Adjust idle speed to 1,800  $\pm$  100 rpm, using the throttle stop screw.

#### CAUTION:

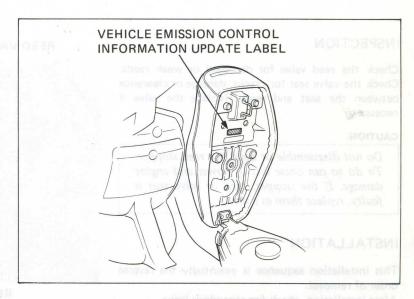
Sustained operation at altitudes lower than 1,500 m (5,000 ft) with the high altitude main jet installed may cause engine overheating and damage. For sustained operation below 1,500 m (5,000 ft), reinstall the standard main jet and readjust idle speed.

	Standard 2,000 m (6,500 ft) max.	High altitude type 1,500 m (5,000 ft) min.
Main jet	#88	#82
Idle speed	1,800 ± 100 rpm	
Air screw initial opening	Factory pre-set	

Attach the vehicle Emission Control Information Update Label as shown.

NOTE:

Do not attach the label to any part that can be easily removed from the vehicle.



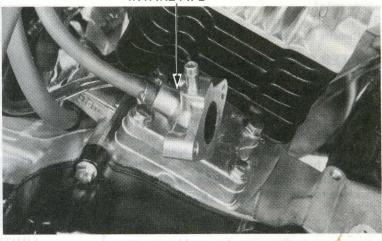


## **REED VALVE**

#### REMOVAL

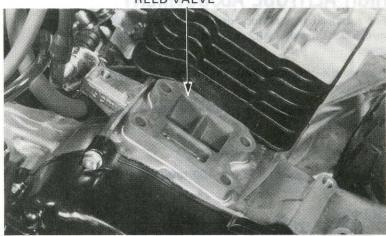
Remove the frame center cover. Remove the carburetor (Page 4-3). Remove the engine shrouds (Page 6-2). Remove the intake pipe.





Remove the reed valve.





#### INSPECTION

Check the reed valve for damaged or weak reeds. Check the valve seat for cracks, damage or clearance between the seat and reed. Replace the valve if necessary.

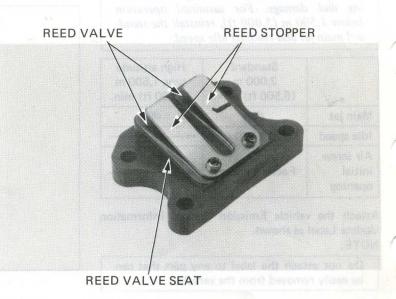
#### CAUTION:

Do not disassemble or bend the reed stopper. To do so can cause loss of power and engine damage. If the stopper, reed or valve seat is faulty, replace them as a unit.

#### INSTALLATION

This installation sequence is essentially the reverse order of removal.

After installation, check for secondary leaks.



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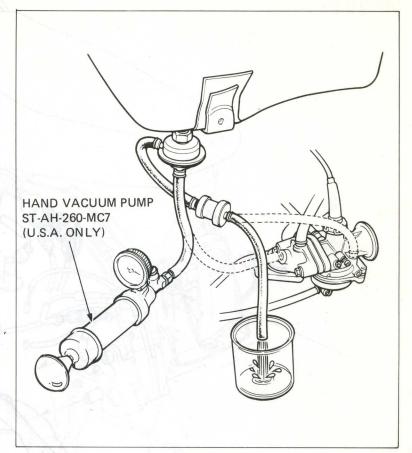
## **AUTO FUEL VALVE INSPECTION**

#### INSPECTION

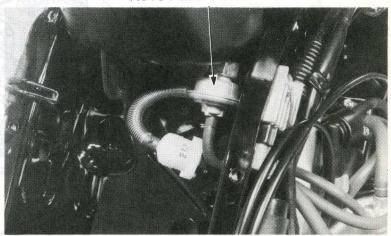
#### WARNING

Gasoline is extremely flammable and is explosive under certain conditions. Perform this operation in a well ventilated area and do not smoke or allow sparks in the area.

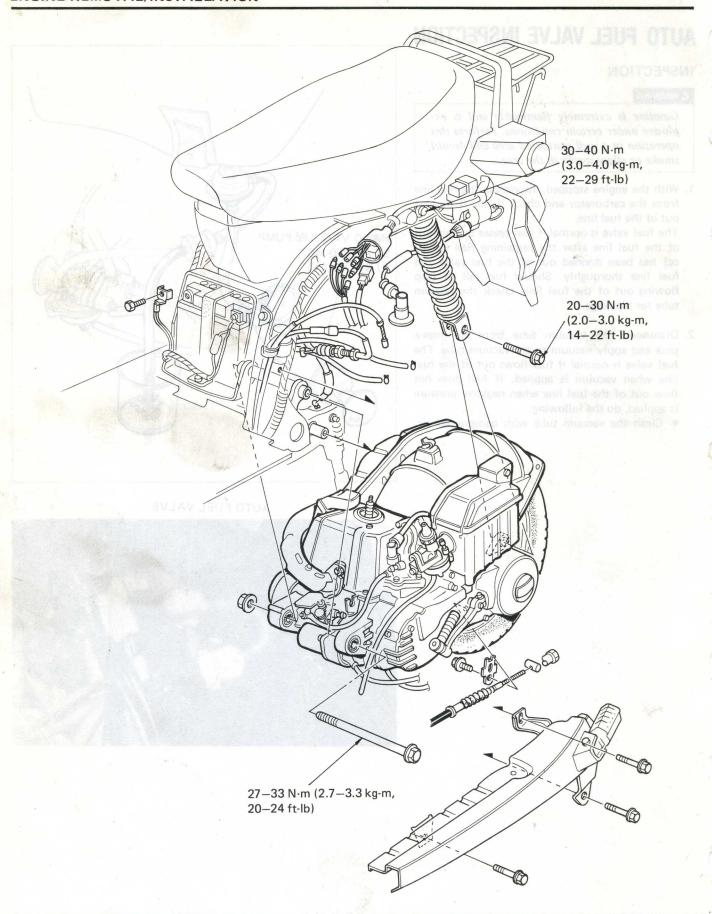
- 1. With the engine stopped, disconnect the fuel line from the carburetor and check if fuel is flowing out of the fuel line.
  - The fuel valve is normal if fuel ceases to flow out of the fuel line after the remaining fuel  $(5-10\,$ cc) has been drained out of the fuel valve and fuel line thoroughly. Should fuel fail to stop flowing out of the fuel line, check the vacuum tube for blockage.
- Disconnect the vacuum tube from the intake pipe and apply vacuum to the vacuum tube. The fuel valve is normal if fuel flows out of the fuel, line when vacuum is applied. If fuel does not flow out of the fuel line when negative pressure is applied, do the following;
  - Clean the vacuum tube with compressed air.



**AUTO FUEL VALVE** 









## 5. ENGINE REMOVAL/INSTALLATION

SERVICE INFORMATION
ENGINE REMOVAL
ENGINE INSTALLATION

5-1

5-2

5-4

## **SERVICE INFORMATION**

#### GENERAL

Parts requiring engine removal for servicing:

- Oil pump
- Starter motor
- Crankshaft

#### **SPECIFICATIONS**

Engine weight:

18 kg (40 lbs)

#### **TORQUE VALUES**

Engine mounting bolt
Rear shock absorber upper mounting bolt
Rear shock absorber lower mounting bolt

 $\begin{array}{l} 27{-}33 \; \text{N}{\cdot}\text{m} \; (2.7{-}3.3 \; \text{kg-m}, \, 20{-}24 \; \text{ft-lb}) \\ 30{-}40 \; \text{N}{\cdot}\text{m} \; (3.0{-}4.0 \; \text{kg-m}, \, 22{-}29 \; \text{ft-lb}) \\ 20{-}30 \; \text{N}{\cdot}\text{m} \; (2.0{-}3.0 \; \text{kg-m}, \, 14{-}22 \; \text{ft-lb}) \end{array}$ 

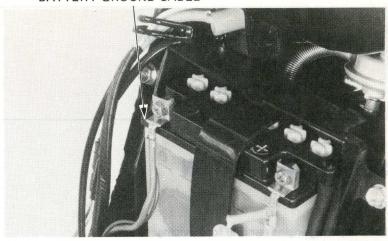


## **ENGINE REMOVAL**

Remove the frame center cover.

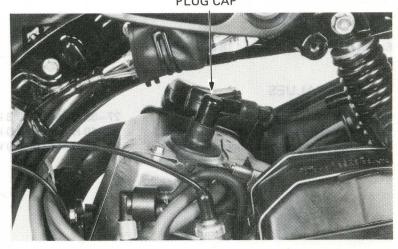
Remove the right and left floor boards (Section 11). Remove the battery cover and disconnect the battery ground cable from the battery negative terminal.

#### BATTERY GROUND CABLE



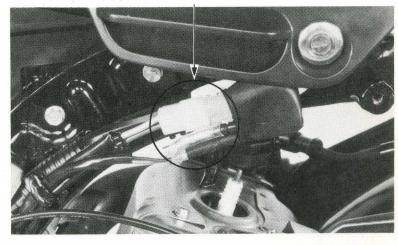
Remove the spark plug cap from the spark plug.

PLUG CAP



Remove the alternator and starter coupler and connectors.

COUPLER AND CONNECTORS

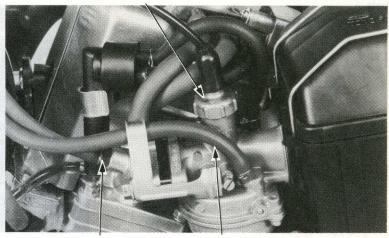




Remove the carburetor top.

Disconnect the vacuum tube and fuel line.

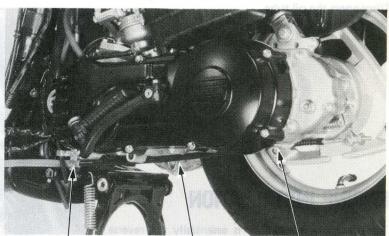
#### CARBURETOR TOP



**VACUUM TUBE** 

**FUEL LINE** 

Disconnect the rear brake cable.



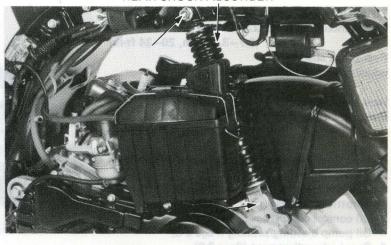
CABLE CLAMP

BRAKE CABLE

CABLE SET PLATE

Remove the rear shock absorber.

REAR SHOCK ABSORBER

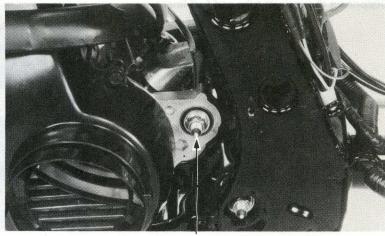


#### ENGINE REMOVAL/INSTALLATION



Unscrew the nut and remove the engine mounting

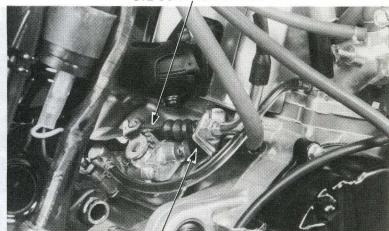
Slide the engine toward the rear.



ENGINE MOUNTING BOLT

Disconnect the oil control cable. Disconnect the oil tube. Remove the engine.

OIL CONTROL CABLE



OIL TUBE

52

## **ENGINE INSTALLATION**

The installation sequence is essentially the reverse order of removal.

Tighten the engine mounting bolt and rear shock absorber upper and lower bolts to the specified torque values.

#### TORQUE:

Engine mounting bolt: 27-33 N·m

(2.7-3.3 kg-m, 20-24 ft-lb)

Rear shock absorber

upper mounting bolt:

30-40 N·m

(3.0-4.0 kg-m, 22-29 ft-lb)

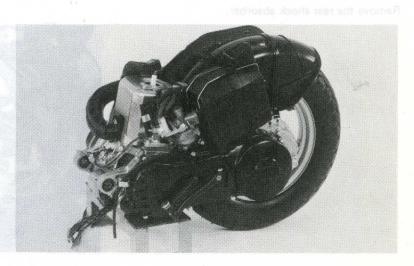
Rear shock absorber

lower mounting bolt: 20-30 N·m

(2.0-3.0 kg-m, 14-22 ft-lb)

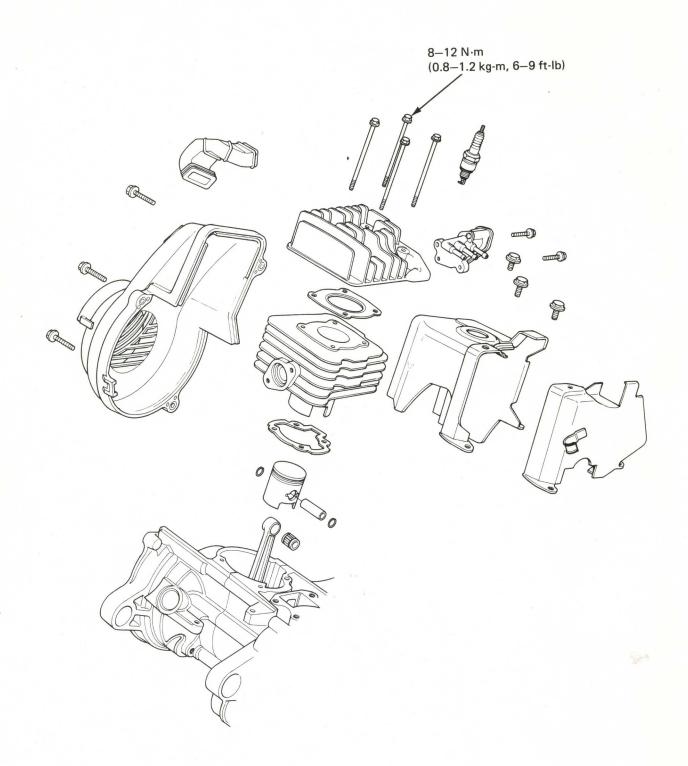
Perform the following inspections and adjustments after installation:

- Wire and cable routing (Page 1-8, 1-9)
- Throttle cable (Page 3-4)
- Oil control cable (Page 2-4)
- Oil pump bleeding/priming (Page 2-3)
- Rear brake adjustment (Page 3-9)









## 6. CYLINDER HEAD/CYLINDER/PISTON

SERVICE INFORMATION 6-1
TROUBLESHOOTING 6-1
CYLINDER HEAD 6-2
CYLINDER/PISTON 6-4

### SERVICE INFORMATION

#### GENERAL

- All cylinder head, cylinder and piston maintenance and inspection can be done with the engine installed.
- Before disassembly, clean the engine to prevent dirt and dust from entering the cylinder and crankcase.
- Remove all gasket material from the mating surfaces of the cylinder head, cylinder and crankcase.
- Use caution when disassembling and assembling the cylinder head, cylinder and piston to avoid damaging them.
- Clean all disassembled parts thoroughly before inspection. Coat all sliding surfaces with clean motor oil before assembly.

#### **SPECIFICATIONS**

ITEM		STANDARD	SERVICE LIMIT
Cylinder head	Warpage		0.10 mm (0.004 in)
Piston	Piston O.D.	47.965-47.975 mm (1.8884-1.8888 in)	47.900 mm (1.8858 in)
	Cylinder-to-piston clearance	0.035-0.050 mm (0.0013-0.0020 in)	0.100 mm (0.0039 in)
	Piston pin bore	12.002-12.008 mm (0.4725-0.4728 in)	12.025 mm (0.4734 in)
	Piston pin O.D.	11.994-12.000 mm (0.4722-0.4724 in)	11.980 mm (0.4717 in)
	Piston-to-piston pin clearance	0.002-0.012 mm (0.0001-0.0005 in)	0.030 mm (0.0012 in)
	Piston ring end gap (top/second)	0.15-0.35 mm (0.006-0.014 in)	0.60 mm (0.024 in)
	Connecting rod small end I.D.	17.005-17.017 mm (0.6695-0.6700 in)	17.025 mm (0.6703 in)
Cylinder	I.D.	48.000-48.010 mm (1.8898-1.8902 in)	48.050 mm (1.8917 in)

#### **TORQUE VALUE**

Cylinder head

A 3 U J H ≥ 8-12 N·m (0.8-1.2 kg-m, 6-9 ft-lb)

## **TROUBLESHOOTING**

Compression too low, hard starting or poor performance at low speed

- Leaking cylinder head gasket
- 2. Loose spark plug
- 3. Worn, stuck or broken piston rings
- 4. Worn or damaged cylinder and piston
- 5. Faulty reed valve

#### Compression too high, overheating or knocking

Excessive carbon build-up in cylinder or on piston top

#### Abnormal noise - piston

- 1. Worn cylinder and piston
- 2. Worn piston pin or piston pin hole
- 3. Worn connecting rod small end bearing

#### Abnormal noise - piston rings

- 1. Worn, stuck or broken piston rings
- 2. Worn or damaged cylinder



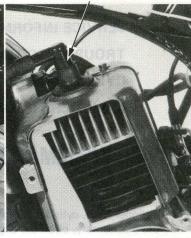
SPARK PLUG CAP

### CYLINDER HEAD

#### CYLINDER HEAD REMOVAL

Remove the right floor board (Section 11). Remove the exhaust muffler (Page 13-2). Remove the cooling fan cover. Remove the spark plug cap and spark plug.

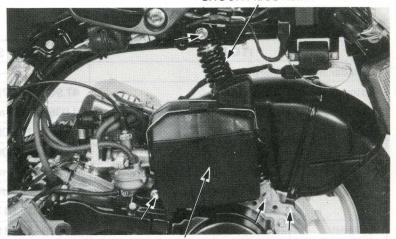




FAN COVER

Remove the rear shock absorber. Remove the air cleaner case/rear fender.

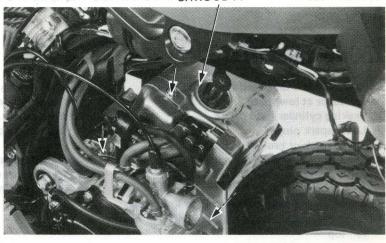
SHOCK ABSORBER



AIR CLEANER CASE/REAR FENDER

Remove engine shroud A.

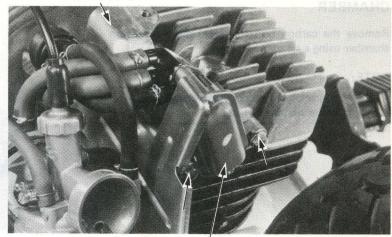






Remove the bolts attaching the control box and remove the control box.
Remove engine shroud B.





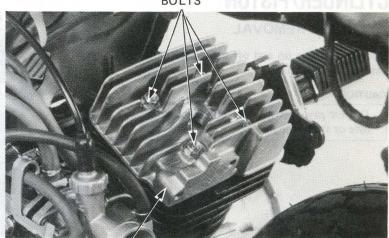
CONTROL BOX

Remove the four cylinder head attaching bolts and remove the cylinder head.

#### NOTE:

Loosen the bolts in a criss-cross pattern in 2-3 steps to prevent distorted head.

BOLTS

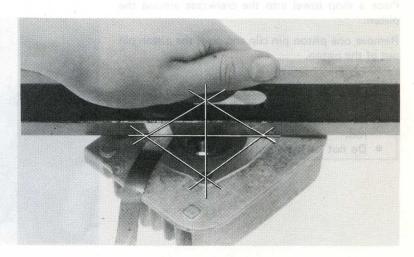


CYLINDER HEAD

#### CYLINDER HEAD INSPECTION

Check the cylinder head for warpage with a straight edge and a feeler gauge in the directions shown.

**SERVICE LIMIT: 0.10 mm (0.004 in)** 



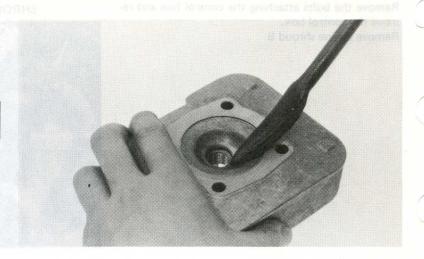


## DECARBONIZING COMBUSTION CHAMBER

Remove the carbon build-up from the combustion chamber using a scraper as shown.

#### NOTE:

Do not scratch the combustion chamber wall and cylinder mating surface.



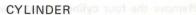
## CYLINDER/PISTON

#### CYLINDER REMOVAL

Pull the cylinder up and off being careful not to let the piston get damaged.

#### CAUTION:

Do not pry between the cylinder and crankcase or strike the fins.





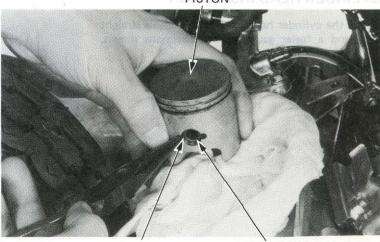
Place a shop towel into the crankcase around the piston.

Remove one piston pin clip and press the piston pin out of the piston.

#### NOTE:

- Do not damage or scratch the piston.
- Do not apply side force to the connecting rod
- Do not let the clip fall into the crankcase.

PISTON



PISTON PIN CLIP

PISTON PIN

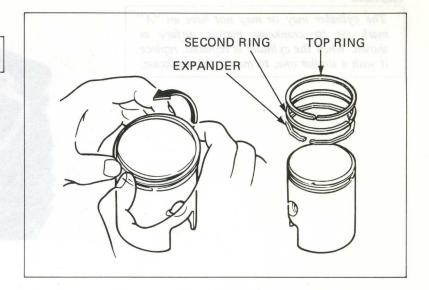


Remove the piston rings.

#### NOTE:

Spread each piston ring and remove by lifting it up at a point just opposite the gap.

Remove the expander.



#### CYLINDER/PISTON INSPECTION

Check the cylinder and piston for wear or damage. Clean carbon deposits from the cylinder exhaust port area and piston as shown.

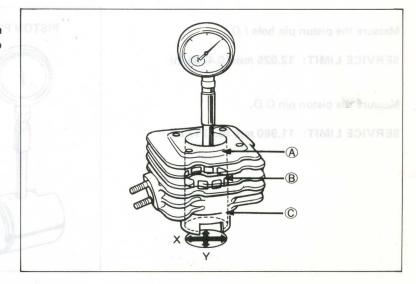
#### CAUTION:

Do not scratch or score the cylinder and piston.



Inspect the cylinder bore for wear at three levels in X and Y directions. Use the largest measurement to determine the cylinder wear.

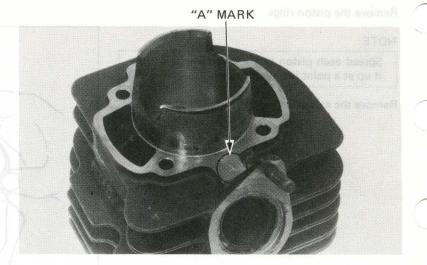
SERVICE LIMIT: 48.050 mm (1.8917 in)





CAUTION:

The cylinder may or may not have an "A" mark on its crankcase mating surface as shown. When the cylinder is replaced, replace it with a similar one, to match the crankcase.

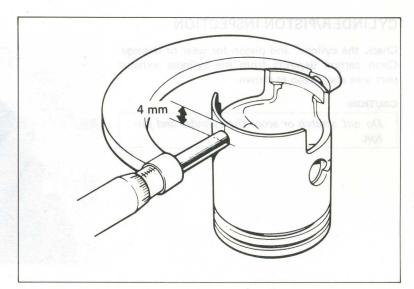


Measure the piston O.D. at a point 4 mm from the bottom of the skirt.

SERVICE LIMIT: 47.900 mm (1.8858 in)

Calculate the piston-to-cylinder clearance.

**SERVICE LIMIT: 0.100 mm (0.0039 in)** 

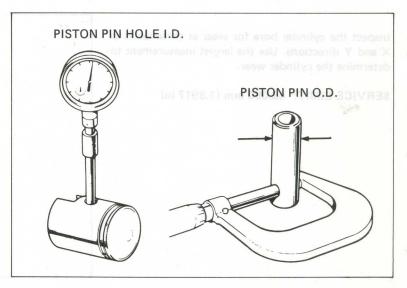


Measure the piston pin hole I.D.

SERVICE LIMIT: 12.025 mm (0.4734 in)

Measure the piston pin O.D.

SERVICE LIMIT: 11.980 mm (0.4717 in)





#### PISTON RING INSPECTION

Measure each piston ring end gap.

SERVICE LIMIT: 0.60 mm (0.024 in)

NOTE:

Use the piston to set each ring squarely in the cylinder.

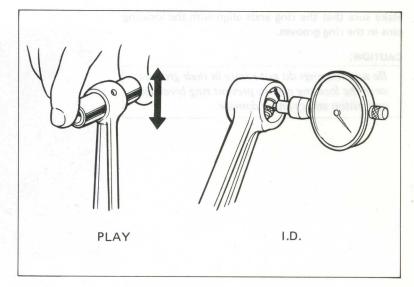


#### CONNECTING ROD INSPECTION

Install the bearing and piston pin in the connecting rod small end and check for excessive play.

Measure the connecting rod small end I.D.

SERVICE LIMIT: 17.025 mm (0.6703 in)



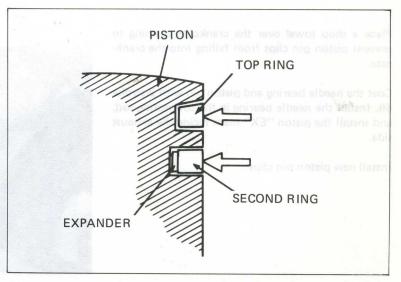
#### PISTON/CYLINDER INSTALLATION

Install the expander in the second ring groove. Align the ring ends with the locating pins in the ring grooves and install the top and second rings in their respective ring grooves.

#### NOTE:

The top ring is a keystone ring and is not interchangeable with the square second ring.

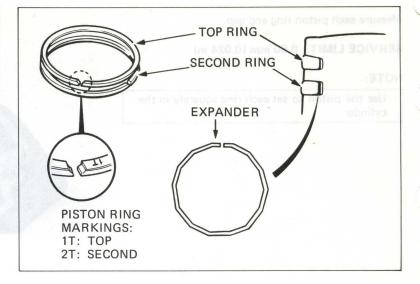
Check the fit of each ring in its groove by pressing the ring into the groove to make sure that it is flush with the piston at several points around the ring. A ring that will not compress means that the ring groove is dirty or that the ring is in the wrong groove.





#### NOTE:

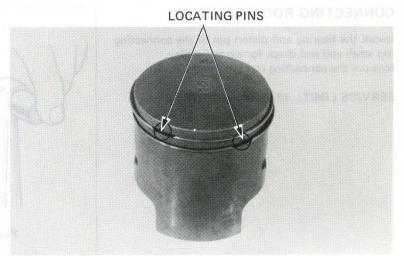
- Install the piston rings with the marks fac-
- Do not replace one ring without replacing the other.
- Do not mix different brands of rings in one engine.



Make sure that the ring ends align with the locating pins in the ring grooves.

#### CAUTION:

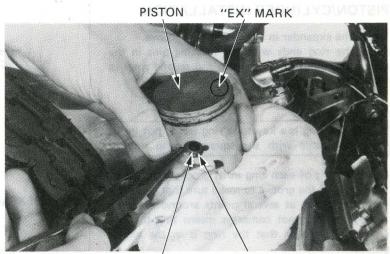
Be sure the rings do not rotate in their grooves over the locating pins to prevent ring breakage and piston and cylinder damage.



Place a shop towel over the crankcase opening to prevent piston pin clips from falling into the crankcase.

Coat the needle bearing and piston pin with 2-stroke oil. Install the needle bearing in the connecting rod, and install the piston "EX" mark facing the exhaust side.

Install new piston pin clips.



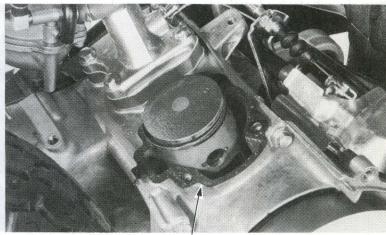
PISTON PIN CLIP PISTON PIN



Remove all gasket material from the cylinder and crankcase mating surfaces.



Place a new cylinder gasket on the crankcase.

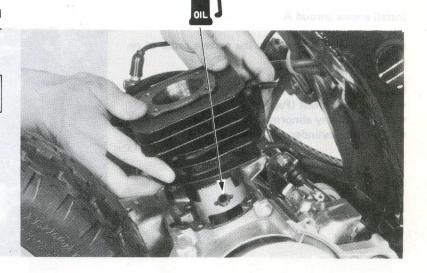


CYLINDER GASKET

Lubricate the cylinder and piston with 2-stroke oil and install the cylinder over the piston while compressing the piston rings.

#### CAUTION:

Avoid damaging the sliding surface of the piston



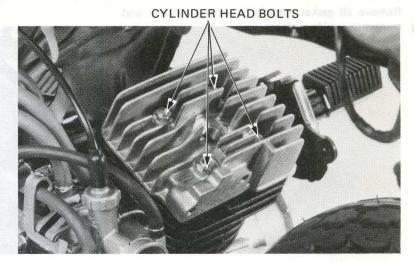


#### CYLINDER HEAD INSTALLATION

Install the cylinder head on the cylinder using a new cylinder head gasket.

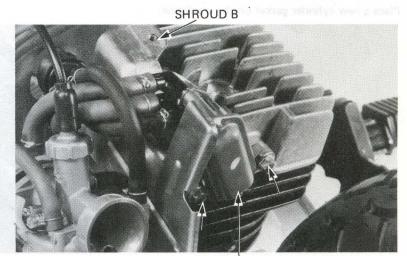
Install and tighten the four cylinder head bolts in a criss-cross pattern.

TORQUE: 8-12 N·m (0.8-1.2 kg-m, 6-9 ft-lb)



Install engine shroud B.

Clean the cylinder head mating face of the control box and install the control box.



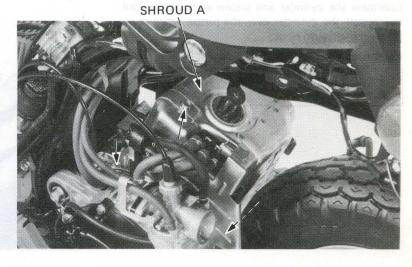
CONTROL BOX

Install engine shroud A.

Install all removed parts in the reverse order of removal.

Perform the following inspections:

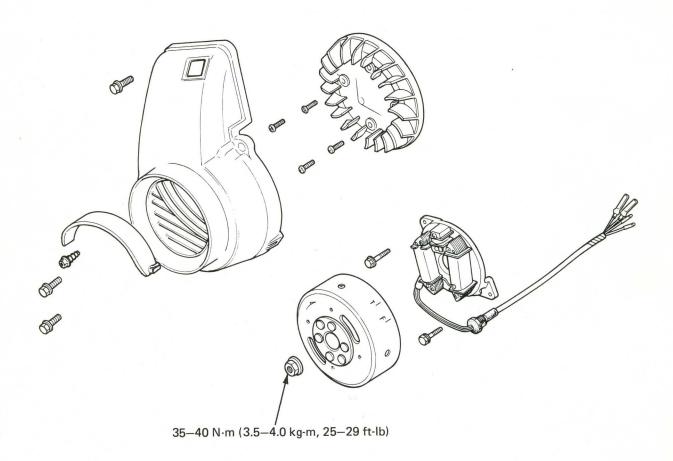
- Compression test (Page 3-8)
- Check for any abnormal engine noise.
- Check for cylinder air leaks.





MEMO

OMBM





SERVICE INFORMATION 7–1
ALTERNATOR REMOVAL 7–2
ALTERNATOR INSTALLATION 7–4

## **SERVICE INFORMATION**

#### GENERAL

- All alternator maintenance can be made with the engine installed.
- Do not remove the pulse generator from the stator base.
- See Section 15 for alternator inspection.

#### TORQUE VALUE MAR SMIJOCO

Flywheel

35-40 N·m (3.5-4.0 kg·m, 25-29 ft-lb)

#### TOOLS

#### Common

Rotor puller Universal holder

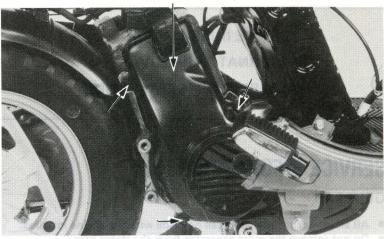
07733-0010000 or 07933-0010000 07725-0030000



## **ALTERNATOR REMOVAL**

Remove the frame center cover (Section 11). Remove the muffler. Remove the fan cover.

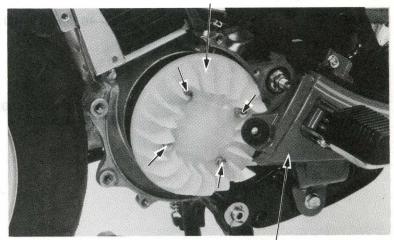




Remove the four bolts attaching the cooling fan and remove the cooling fan.

Remove the right floor board.

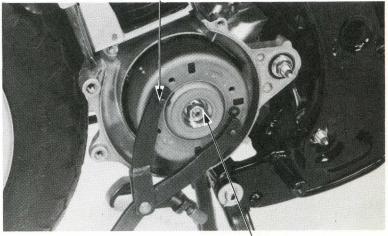
**COOLING FAN** 



RIGHT FLOOR BOARD

Attach the universal holder to the flywheel. Hold the flywheel and remove the flywheel 10 mm flange nut.

UNIVERSAL HOLDER 07725-0030000

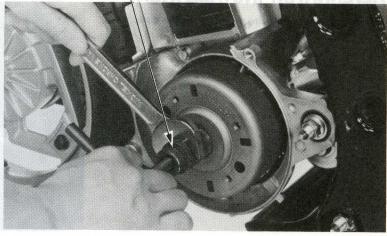


10 mm FLANGE NUT

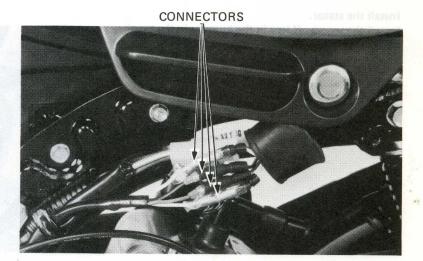


Remove the flywheel with the rotor puller. Remove the woodruff key.

ROTOR PULLER 07733-0010000 or 07933-0010000



Disconnect the alternator wire connectors.



Remove the two bolts attaching the stator and remove the stator.

#### NOTE:

- Do not remove the pulse generator from the stator base.
- Avoid damaging the stator coils.

PULSE GENERATOR

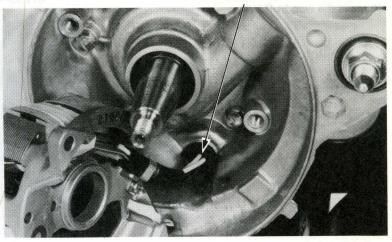
STATOR



## **ALTERNATOR INSTALLATION**

Install the alternator wire grommet in the case.

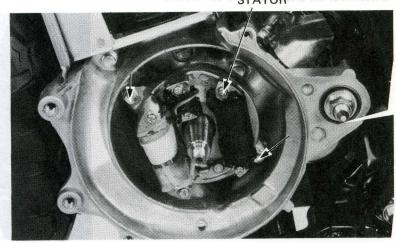




Install the stator.

Install the woodruff key in the keyway in the crankshaft.

STATOR

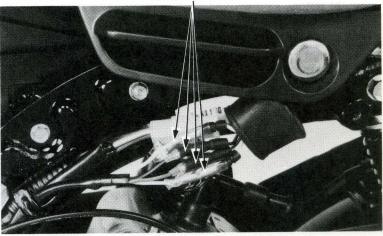


Connect the alternator wire connectors.

#### NOTE:

Route the alternator wires properly and secure with the wire clamp.

CONNECTORS and own our sydmen





#### NOTE:

Clean the tapered hole in the flywheel of any burrs.

Install the flywheel onto the crankshaft.

#### NOTE:

Make sure that there are no foreign particles inside the flywheel.

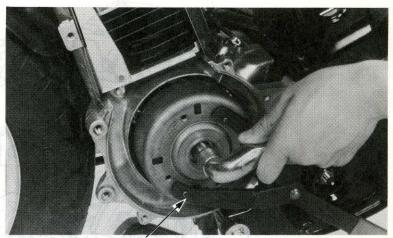
Torque the flywheel 10 mm flange nut.

TORQUE: 35-40 N·m

(3.5-4.0 kg-m, 25-29 ft-lb)

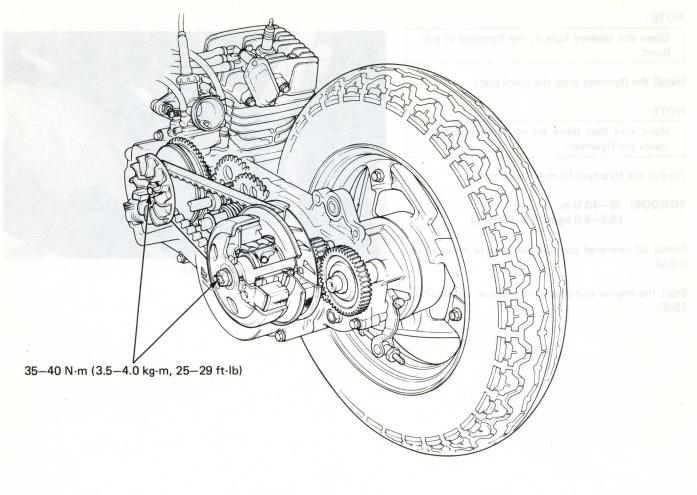
Install all removed parts in the reverse order of removal.

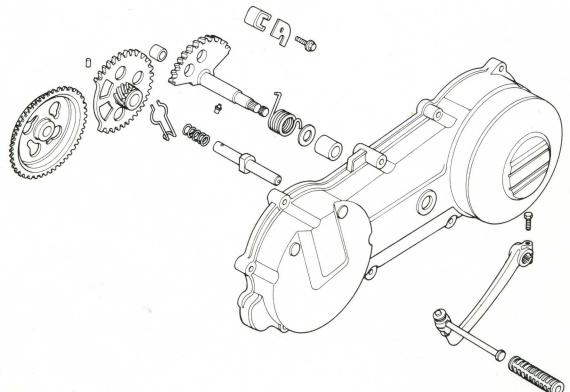
Start the engine and check the ignition timing (Page 15-8).



UNIVERSAL HOLDER 07725-0030000









SERVICE INFORMATION	CEFT CRANKE-81E COVER REMOVAL
TROUBLESHOOTING	Remove the fra 1-8 nter cover and left floor board
DRIVE PULLEY	. habeg as 8-2 by a first warmer
KICK STARTER	Remove the bolts and left case cover
CLUTCH/DRIVEN PULLEY	8–14

## SERVICE INFORMATION

GENERAL

Avoid getting grease and oil on the drive belt and pulley faces.

#### **SPECIFICATIONS**

ITEM	STANDARD	SERVICE LIMIT	
Movable drive face bushing I.D.	24.000-24.021 mm (0.9449-0.9457 in)	24.070 mm (0.9476 in)	
Drive face boss O.D.	23.970-23.990 mm (0.9437-0.9444 in)	23.940 mm (0.9425 in)	
Weight roller O.D.	17.92-18.08 mm (0.7055-0.7118 in)	17.40 mm (0.685 in)	
Clutch outer I.D.	112.0-112.2 mm (4.41-4.42 in)	112.5 mm (4.43 in)	
Driven face spring free length	64.5 mm (2.54 in)	59.1 mm (2.33 in)	
Driven face O.D.	33.950-33.975 mm (1.3366-1.3376 in)	33.930 mm (1.3358 in)	
Movable driven face I.D.	34.000-34.025 mm (1.3386-1.3396 in)	34.060 mm (1.3409 in)	

#### TORQUE VALUES

Movable drive face	35-40 N·m (3.5-4.0 kg-m, 25-29 ft-lb)
Movable driven face	35-40 N·m (3.5-4.0 kg·m, 25-29 ft-lb)
Clutch outer	35-40 N·m (3.5-4.0 kg·m, 25-29 ft-lb)

### TOOLS Special

Clutch spring compressor	0/960-KJ90000
Bearing driver	07945-GC80000
Lock nut wrench, 39 mm	07916-1870001
Crankcase puller	07935-KG80000
Bearing driver attachment, 28 x 30 mm	07946-1870100
Common	
Universal holder	07725-0030000
Bearing remover shaft	07746-0050100
Bearing remover head, 12 mm	07746-0050300
Bearing remover head, 15 mm	07746-0050400
Pilot, 15 mm	07746-0040300
Driver	07749-0010000

## **TROUBLESHOOTING**

Engine starts but scooter won't move

- 1. Worn drive belt
- 2. Damaged ramp plate
- 3. Worn or damaged clutch lining

Engine stalls or scooter creeps

- 1. Broken clutch weight spring
- Poor performance at high speed or lack of power
- 1. Worn drive belt
- 2. Weak driven face spring
- 3. Worn weight roller
- 4. Faulty driven face



### **DRIVE PULLEY**

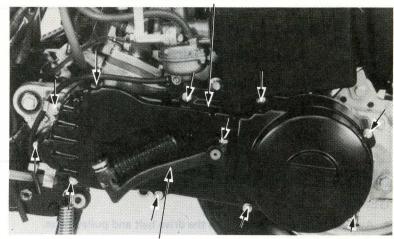
#### LEFT CRANKCASE COVER REMOVAL

Remove the frame center cover and left floor board (Section 11).

Remove the kick starter pedal.

Remove the bolts and left case cover.

#### LEFT CRANKCASE COVER



KICK STARTER PEDAL

#### DRIVE BELT REMOVAL

Install the universal holder to hold the flywheel and remove the 10 mm flange nut and drive face.

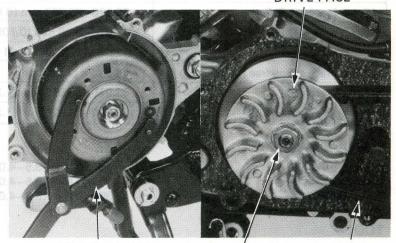
Remove the drive belt.

Remove the gasket and dowel pins.

#### CAUTION:

Do not bend the drive belt.

#### DRIVE FACE



UNIVERSAL HOLDER 07725-0030000

10 mm NUT

**DRIVE BELT** 

#### **DRIVE BELT INSPECTION**

Check the drive belt for cracks, separation or abnormal or excessive wear.

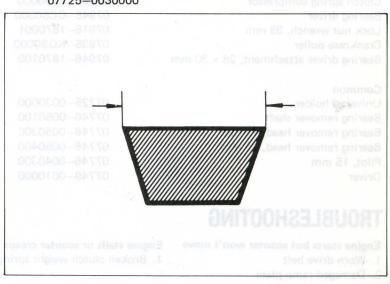
Measure the drive belt width.

SERVICE LIMITS: 13.5 mm (0.531 in)

#### NOTE:

Use a genuine Honda Drive Belt.

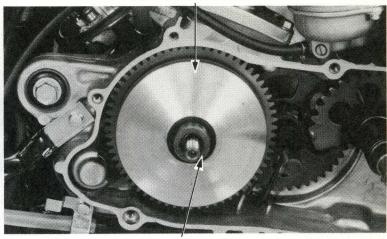
745mmx 15mm 23100-GC8-004



#### MOVABLE DRIVE FACE REMOVAL/ DISASSEMBLY

Remove the movable drive face assembly.





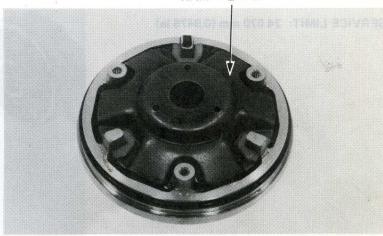
DRIVE FACE BOSS

Remove the drive face boss. Remove the three bolts attaching the movable drive face cover and remove the cover.



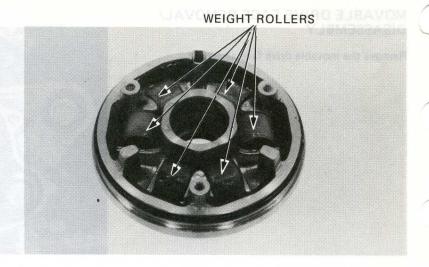
Remove the ramp plate.

RAMP PLATE





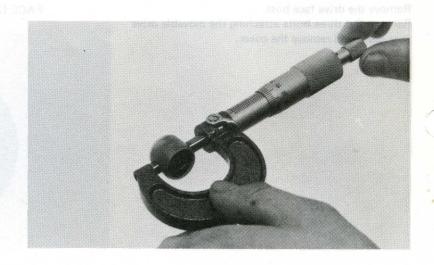
Remove the weight rollers.



#### MOVABLE DRIVE FACE INSPECTION

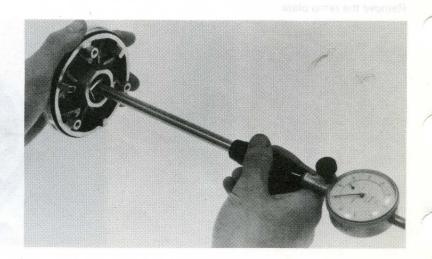
Check each roller for wear or damage. Measure each roller O.D.

SERVICE LIMIT: 17.40 mm (0.685 in)



Measure movable drive face bushing I.D.

SERVICE LIMIT: 24.070 mm (0.9476 in)

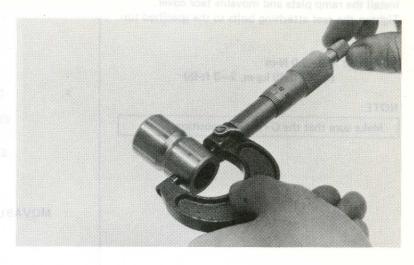


Inspect the drive face boss for wear or damage.

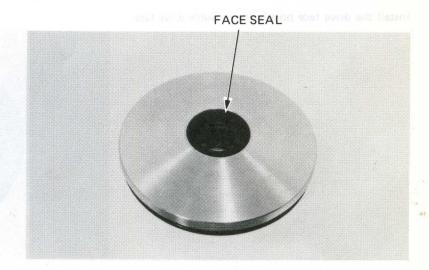
Measure the O.D. at the drive face contacting face.

SERVICE LIMIT: 23.940 mm (0.9425 in)

Replace if smaller than the service limit.



Check the face seal for wear or damage.



#### MOVABLE DRIVE FACE ASSEMBLY

Use 10-15g of grease and apply evenly to the inside of the drive face. Then install the weight rollers.

#### NOTE:

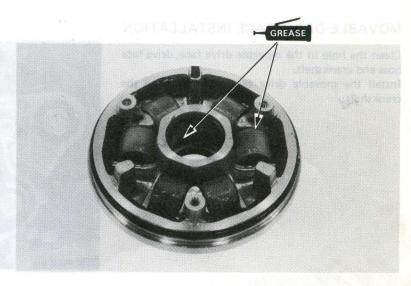
Specified grease:

Lithium based

• Mitsubishi: HD-3

Nippon Sekiyu: Lipanox Deluxe 3

• Idemitsu: Coronex 3







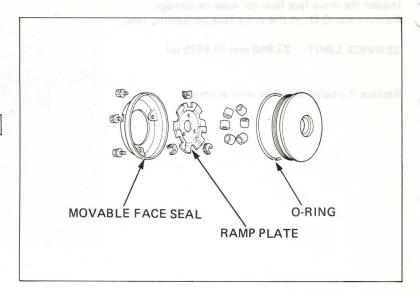
Install the ramp plate and movable face cover. Tighten the seal attaching bolts to the specified torque.

TORQUE: 2.5-4.0 N·m

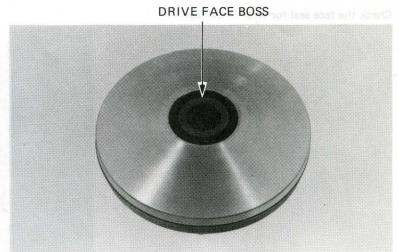
(0.25-0.40 kg-m, 2-3 ft-lb)

NOTE:

Make sure that the O-ring is in position.



Install the drive face boss in the movable drive face.

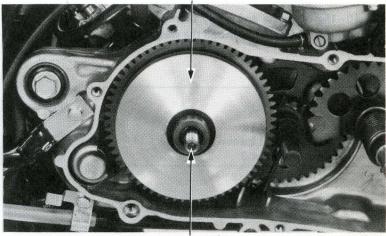


#### MOVABLE DRIVE FACE INSTALLATION

Clean the hole in the movable drive face, drive face boss and crankshaft.

Install the movable drive face assembly onto the crankshaft.

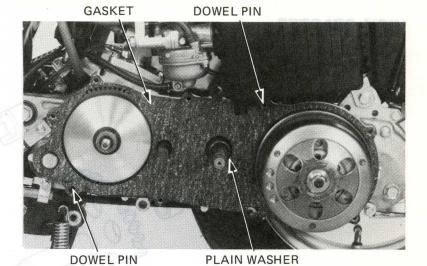
#### MOVABLE DRIVE FACE



CRANKSHAFT

# DRIVE FACE AND LEFT CASE COVER INSTALLATION

Install the gasket and dowel pins.
Install the plain washer onto the kick spindle.



Install the drive belt.

Install the universal holder.

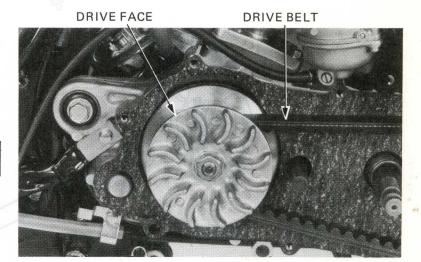
Install the movable drive face and tighten the 10 mm flange nut.

**TORQUE: 35-40 N·m** 

(3.5-4.0 kg-m, 25-29 ft-lb)

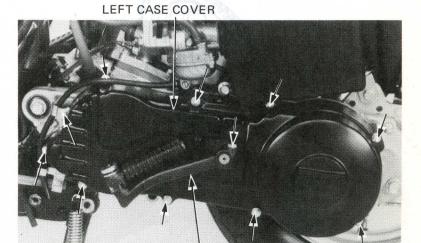
NOTE:

Do not get oil or grease on the drive belt or pulleys.



Install the left case cover and kick starter pedal.

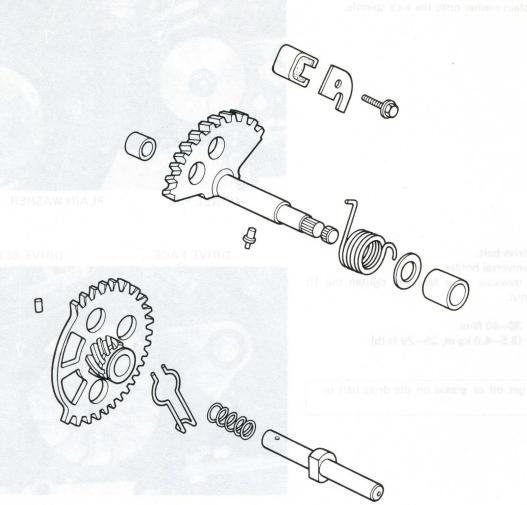
Install the left floor board and frame center cover.



KICK STARTER PEDAL



# **KICK STARTER**



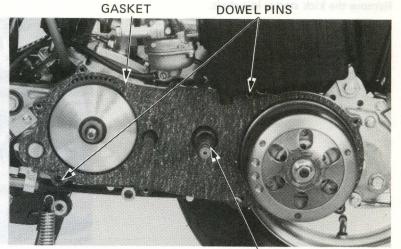


#### KICK STARTER REMOVAL

Remove the left case cover, movable drive face (Page 8-3) and drive belt (Page 8-2).

Remove the gasket and dowel pins.

Remove the plain washer from the kick starter spindle.

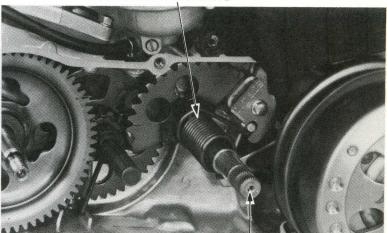


PLAIN WASHER

Remove the kick starter spring from the kick return stopper.

Remove the kick starter spindle.

### KICK STARTER SPRING

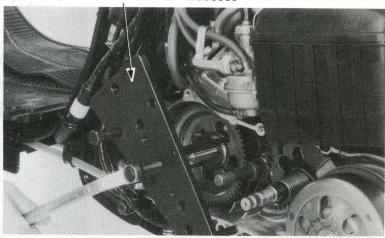


KICK STARTER SPINDLE

Attach the crankcase puller as shown with the two long special bolts.

Remove the kick starter driven gear with the case puller.

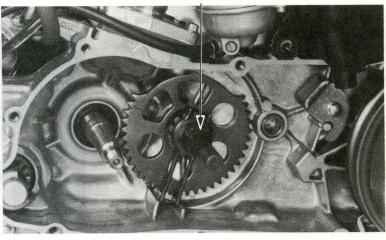
#### CRANK CASE PULLER 07935-KG80000





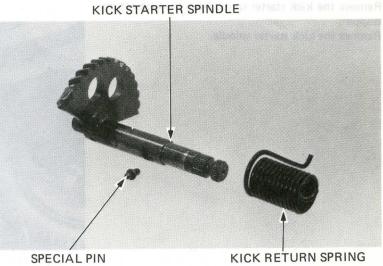
Remove the kick starter idle shaft.



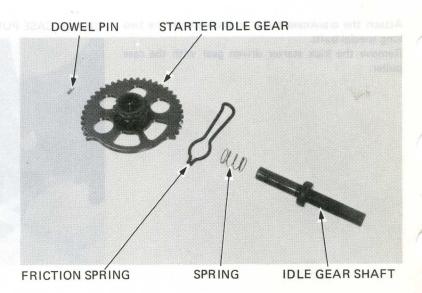


#### KICK STARTER DISASSEMBLY

Disassemble the kick starter spindle.



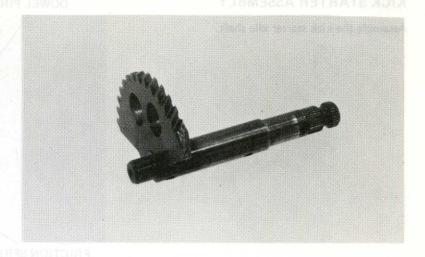
Disassemble the kick starter idle shaft.



Date of Issue: May, 1983 © HONDA MOTOR CO., LTD.

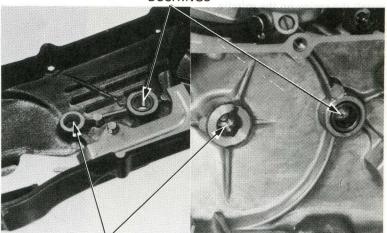
#### KICK STARTER INSPECTION

Inspect the kick starter spindle for wear or damage.



Inspect the kick starter spindle bushings and idle gear shaft bearings for wear or damage.

BUSHINGS



MISUAIDES IDLE GEAR SHAFT BEARING

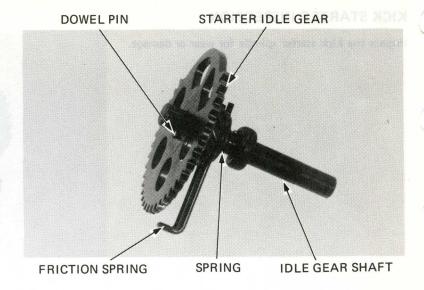
Inspect the idle gear and shaft for wear or damage.





#### KICK STARTER ASSEMBLY

Assemble the kick starter idle shaft.



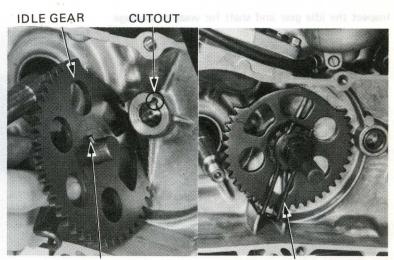
Install the special pin in the hole of the spindle and install the spring on the spindle.



#### KICK STARTER INSTALLATION

Apply grease to the spring groove and spline of the idle gear.

Install the kick starter idle gear aligning the dowel pin on the idle gear with the cutout of the case. Align the idle gear friction spring with the groove in the left case as shown.

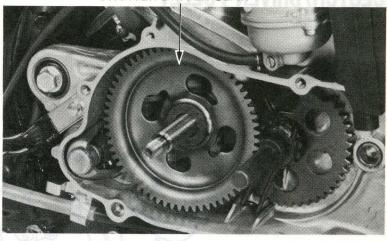


DOWEL PIN

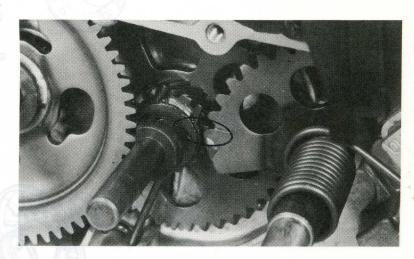
FRICTION SPRING

Install the starter driven gear.





Install the kick starter spindle; turning the idle gear to align the punch mark as shown.



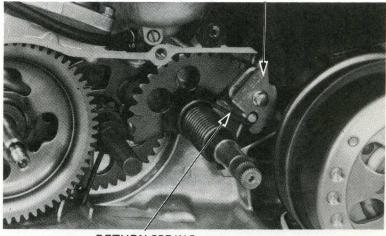
Hook the long end of the spindle return spring on the spring stopper as shown.

Install the drive belt and movable drive face assembly (Page 8-6).

Install the left case cover and kick starter pedal (Page 8-7).

Install the frame center cover (Section 11).

SPRING STOPPER



**RETURN SPRING** 





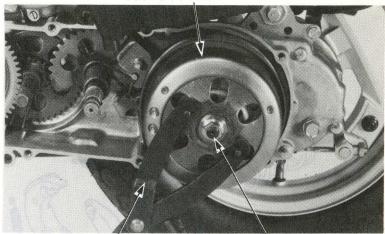


#### **CLUTCH REMOVAL**

Remove the left case cover (Page 8-2). Remove the movable drive face and drive belt.

Remove the 10 mm flange nut holding the clutch outer with the universal holder and remove the clutch outer.

#### **CLUTCH OUTER**

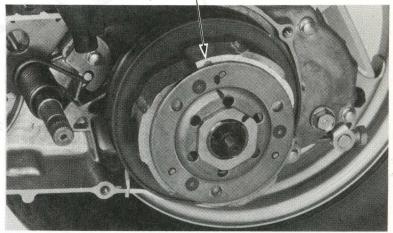


UNIVERSAL HOLDER 07725-0030000

10 mm FLANGE NUT

Remove the movable driven face and clutch from the drive shaft.

#### MOVABLE DRIVEN FACE/CLUTCH

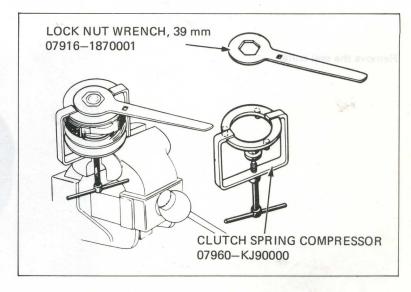


#### DRIVEN FACE DISASSEMBLY

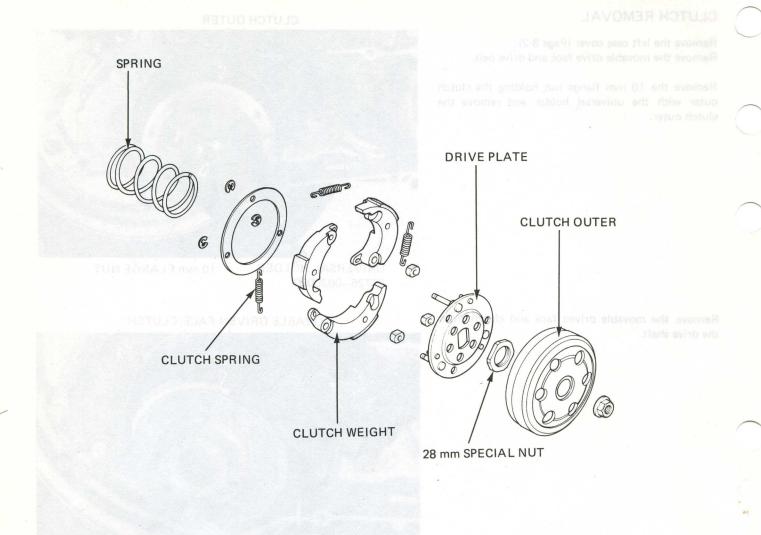
Position the driven pulley in the clutch spring compressor tool.

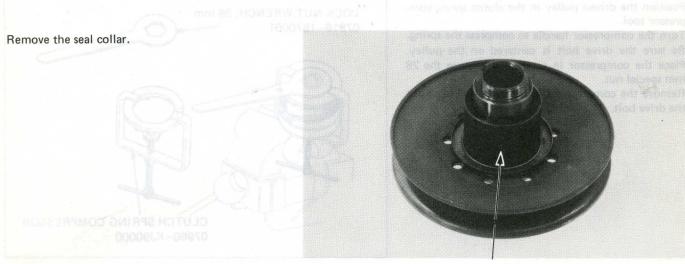
Turn the compressor handle to compress the spring. Be sure the drive bolt is centered on the pulley. Place the compressor in a vise and remove the 28 mm special nut.

Remove the compressor from the vise and back out the drive bolt.



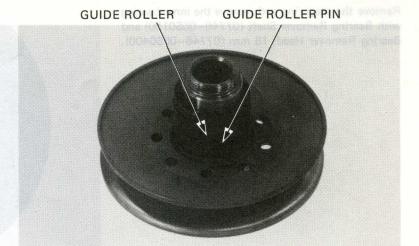


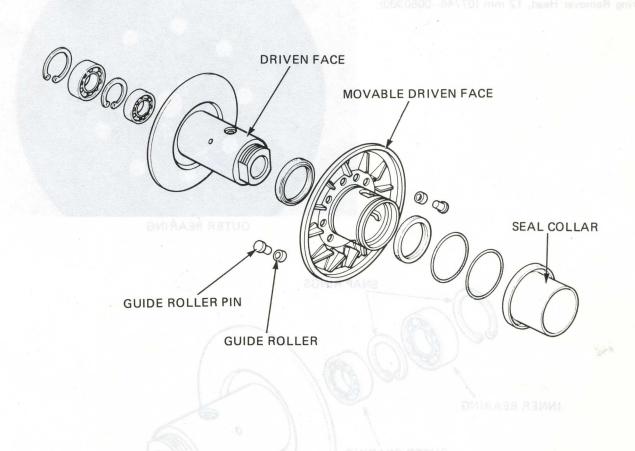




SEAL COLLAR

Withdraw the guide roller pin and guide roller.

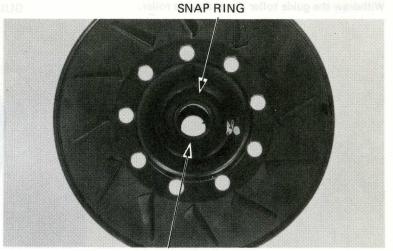




89

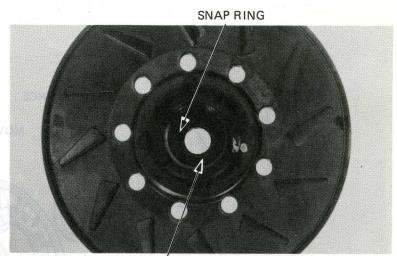


Remove the snap ring and remove the inner bearing with Bearing Remover Shaft (07746–0050100) and Bearing Remover Head, 15 mm (07746–0050400).

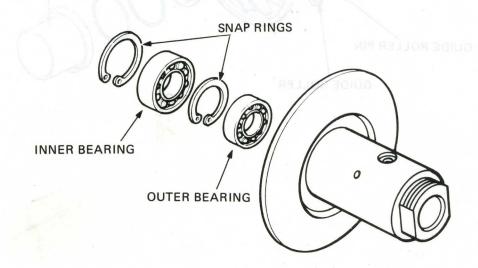


INNER BEARING

Remove the snap ring and remove the outer bearing with Bearing Remover Shaft (07746–0050100) and Bearing Remover Head, 12 mm (07746–0050300).



OUTER BEARING

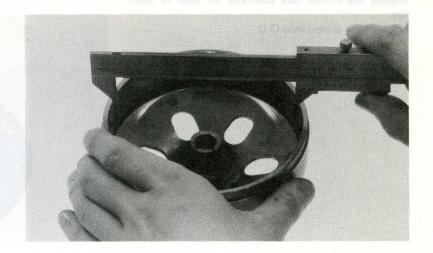




#### CLUTCH/DRIVEN FACE INSPECTION

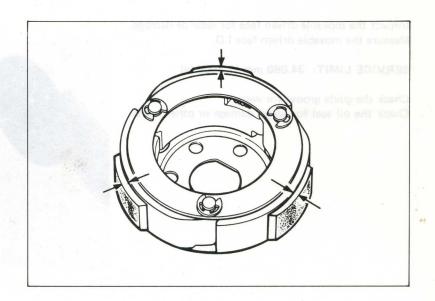
Inspect the clutch outer for wear or damage. Measure the clutch outer I.D.

**SERVICE LIMIT: 112.5 mm (4.43 in)** 



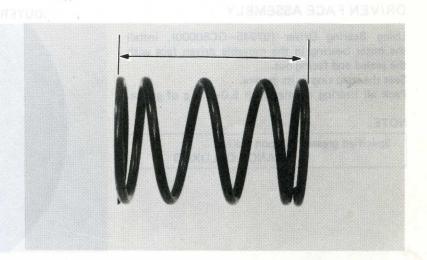
Inspect the clutch shoes for wear or damage. Measure the thickness of each shoe.

SERVICE LIMIT: 2.0 mm (0.08 in)



Measure the driven face spring free length.

SERVICE LIMIT: 59.1 mm (2.33 in)

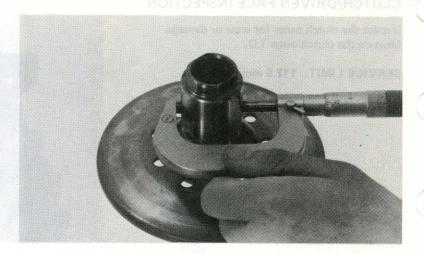




Inspect the driven face assembly for wear or damage.

Measure the driven face O.D.

SERVICE LIMIT: 33.930 mm (1.3358 in)

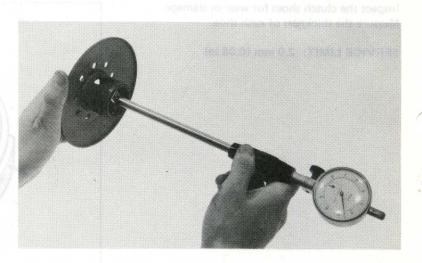


Inspect the movable driven face for wear or damage. Measure the movable driven face I.D.

SERVICE LIMIT: 34.060 mm (1.3409 in)

Check the guide groove for wear.

Check the oil seal for wear, damage or other faults.



#### DRIVEN FACE ASSEMBLY

Using Bearing Driver (07945–GC80000), install the outer bearing in the movable driven face with the sealed end facing out.

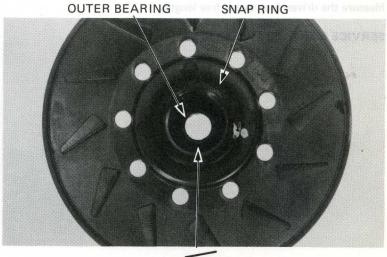
Seat the snap ring in its groove.

Pack all bearing cavities with 5.0-5.5 g of grease.

#### NOTE:

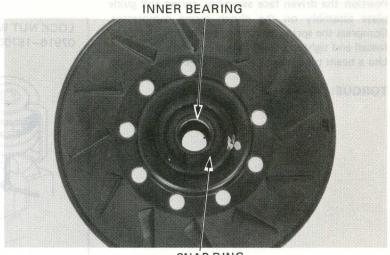
Specified grease: Nippon Sekiyu

LIPANOX DELUXE 3



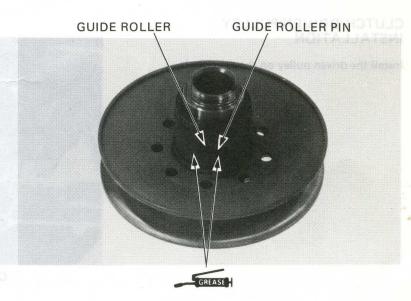


Using Driver (07749-0010000),  $28 \times 30 \text{ mm}$ Attachment (07946-1870100, not available in U.S.A.) and 15 mm Pilot (07746-0040300), install the inner bearing in the movable driven face with the sealed end facing out. Install the snap ring.



SNAP RING

Install the movable driven face, guide roller and roller pin.



Install the seal collar.



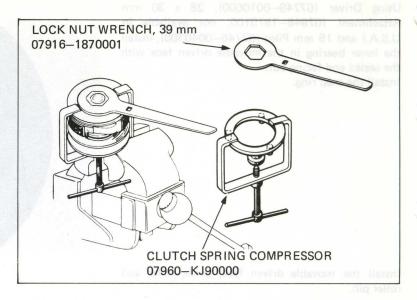




Position the driven face assembly, spring and guide plate assembly on the clutch spring compressor. Compress the spring by turning the handle. Install and tighten the 28 mm special nut. Use a beam type torque wrench 12—14 inches long.

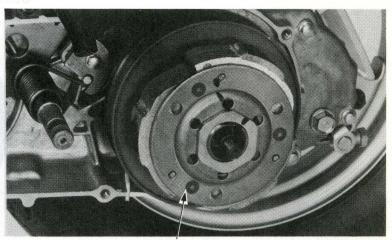
**TORQUE: 35-40 N·m** 

(3.5-4.0 kg-m, 25-29 ft-lb)



# CLUTCH/DRIVEN PULLEY INSTALLATION

Install the driven pulley on the drive shaft.

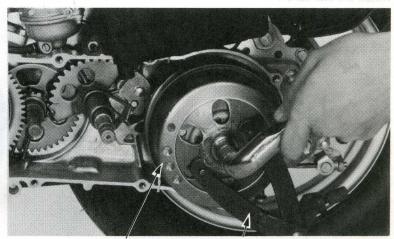


CLUTCH/DRIVEN PULLEY

Install the clutch outer and torque the nut while holding the clutch outer with the universal holder.

TORQUE: 35-40 N·m (3.5-4.0 kg-m, 25-29 ft-lb)

Install the driven face (Page 8-6). Install the left case cover (Page 8-7).

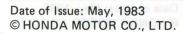


**CLUTCH OUTER** 

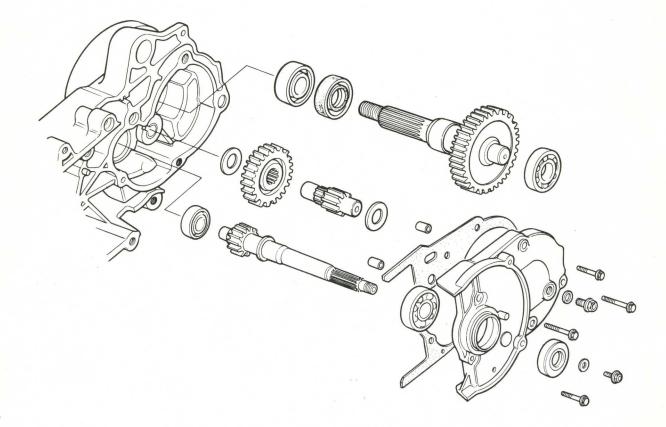
UNIVERSAL HOLDER 07725-0030000



MEMO







# 9. FINAL REDUCTION

SERVICE INFORMATION	9–1
TROUBLESHOOTING	remove the driven pulley (rage 6-2).  Crain the oil of 1-9 the transmission case (Page 2-1).
FINAL REDUCTION DISASSEMBLY	temove the received (Page 13.2).
FINAL REDUCTION INSPECTION	move the transgraph covers
FINAL REDUCTION INSTALLATION	9–5

## **SERVICE INFORMATION**

#### **GENERAL**

Specified oil

Specified oil

Oil quantity

Honda 4-stroke oil

SAE 10W-40 or equivalent

90 cc (0.09 US qt)

#### TOOLS

#### **Special**

Bearing remover set, 12 mm Bearing remover, 15 mm 07936–1660001 (not available in U.S.A.) or 07936–1660100 07936–KC10000 (not available in U.S.A.) 07936–3710200

#### Common

Attachment, 32 x 35 mm Attachment, 37 x 40 mm Pilot, 12 mm Pilot, 15 mm Pilot, 17 mm Driver 07746-0010100 07746-0010200 07746-0040200 07746-0040300 07746-0040400 07749-0010000

## **TROUBLESHOOTING**

#### Engine starts, but scooter won't move

- 1. Damaged transmission
- 2. Seized or burnt transmission

#### Abnormal noise

- 1. Worn, seized or chipped gears
- 2. Worn bearing

#### Oil leaks

- 1. Oil level too high
- 2. Worn or damaged oil seal

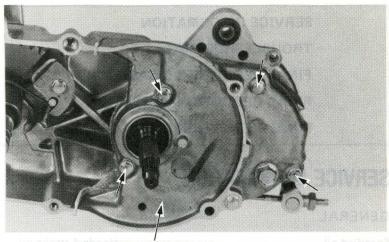


# FINAL REDUCTION DISASSEMBLY

Remove the driven pulley (Page 8-2).

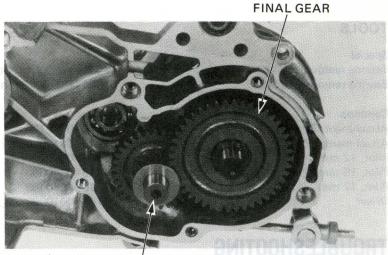
Drain the oil from the transmission case (Page 2-4). Remove the rear wheel (Page 13-2).

Remove the transmission case cover bolts and remove the transmission cover.



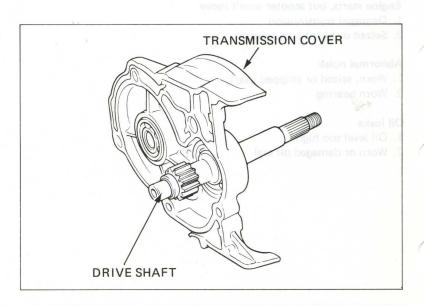
TRANSMISSION COVER

Remove the final gear and countershaft.



COUNTERSHAFT

Remove the drive shaft from the transmission cover.



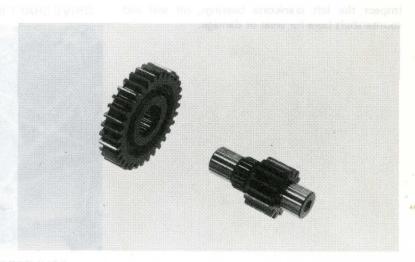


# FINAL REDUCTION INSPECTION

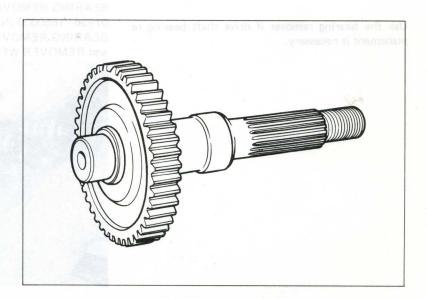
Inspect the drive shaft and gear for wear or damage.



Inspect the countershaft and gear for wear or damage.



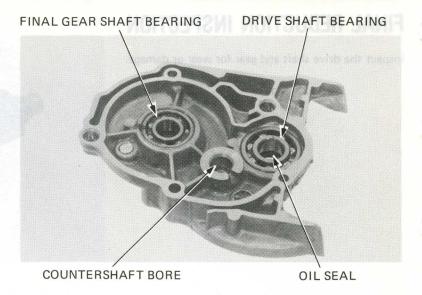
Inspect the final gear for wear or damage.



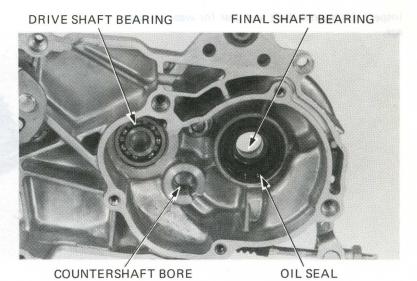


Inspect the transmission cover bearings, oil seal and countershaft bore for wear or damage.

If the final gear shaft bearing must be replaced, use 15mm Bearing Remover (07936–KC10000, not available in U.S.A.).

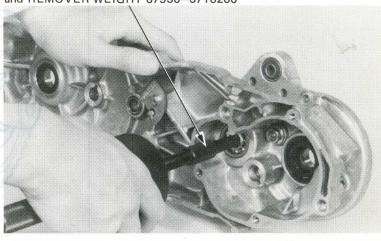


Inspect the left crankcase bearings, oil seal and countershaft bore for wear or damage.



Use the bearing remover if drive shaft bearing replacement is necessary.

BEARING REMOVER SET, 12 mm 07936–1660000 (Not available in U.S.A.) or BEARING REMOVER, 12 mm 07936–1660100 and REMOVER WEIGHT 07936–3710200







## FINAL REDUCTION INSTALLATION

Install the drive shaft bearing in the transmission cover.

Install the final gear shaft bearing in the transmission cover using the following tools:

Driver

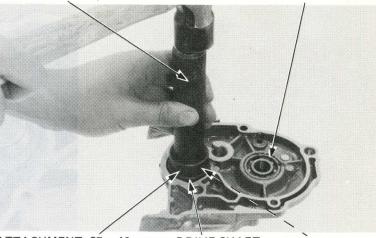
07749-0010000 07746-0010100

Attachment, 32 x 35 mm Pilot, 15 mm

07746-0040300

DRIVER 07749-0010000

FINAL GEAR SHAFT BEARING

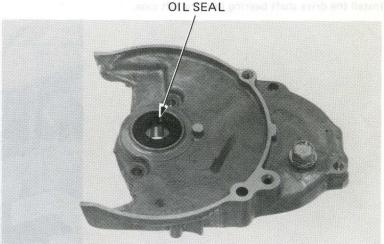


ATTACHMENT, 37 x 40 mm 07746-0010200

DRIVE SHAFT BEARING

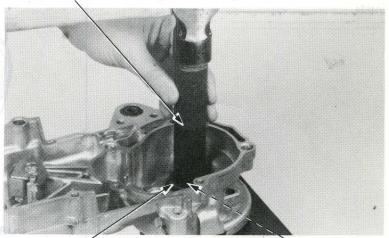
PILOT, 17 mm 07746-0040400

Install a new oil seal in the transmission cover.



Drive the final shaft bearing into the left case.

DRIVER 07749-0010000

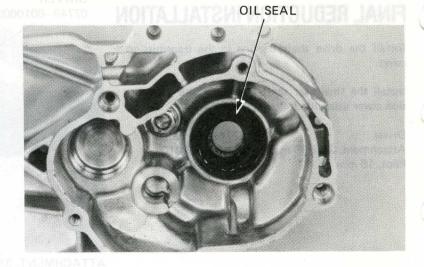


ATTACHMENT, 37 x 40 mm 07746-0010200

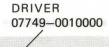
PILOT, 17 mm 07746-0040400

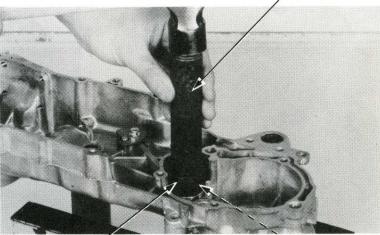


Install a new final shaft oil seal.



Install the drive shaft bearing into the left case.

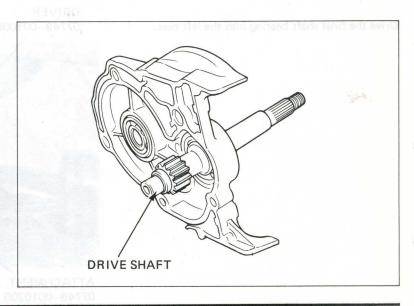




ATTACHMENŤ, 32 x 35 mm 07746-0010100

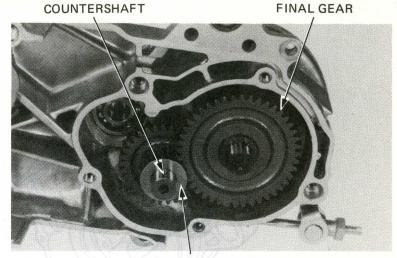
PILOT, 12 mm 07746-0040200

Slide the drive shaft through the bearing from the inside.



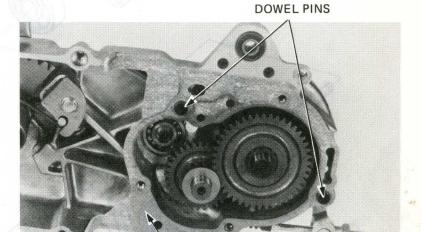


Install the countershaft, final gear and thrust washer



THRUST WASHER

Install a new gasket and dowel pins.



GASKET

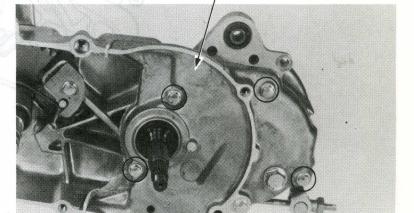
Install the transmission cover.

Install the movable driven face/clutch assembly (Page 8-22).

Install the drive pulley, drive belt and left case cover (Page 8-7).

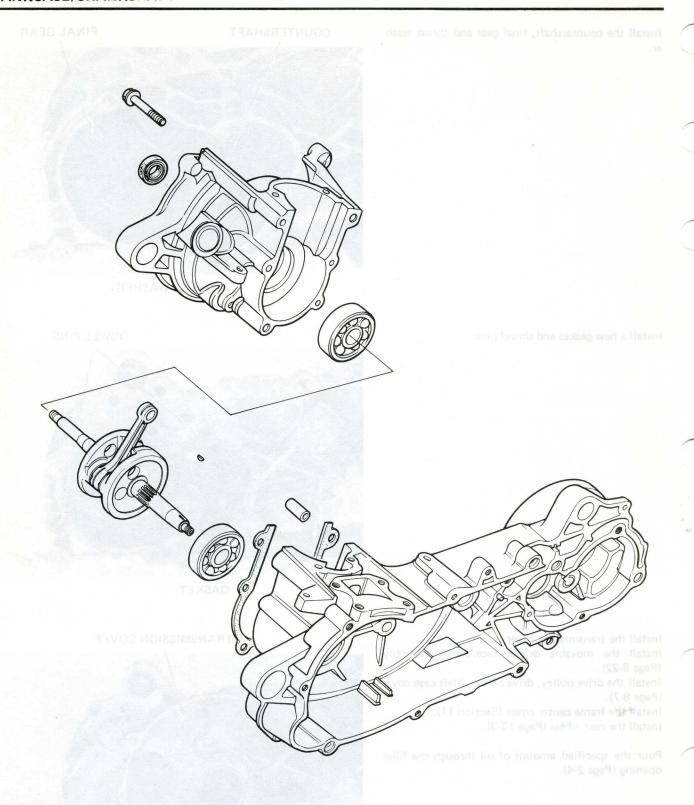
Install the frame center cover (Section 11). Install the rear wheel (Page 13-3).

Pour the specified amount of oil through the filler opening (Page 2-4).



TRANSMISSION COVER







# 10. CRANKCASE/CRANKSHAFT

SERVICE INFORMATION	10-1	CRANKSHAFT INSPECTION	10-3
CRANKCASE SEPARATION	10-2	CRANKSHAFT INSTALLATION	10-4
CRANKSHAFT REMOVAL	10-2	CRANKCASE ASSEMBLY	10-6

### **SERVICE INFORMATION**

#### **GENERAL**

• This section covers crankcase separation to service the crankshaft.

• The following parts must be removed before separating the crankcase:

Engine
Carburetor
Oil pump
Reed valve
Drive pulley
Alternator
Cylinder head, cylinder

Page 5-2
Page 4-3
Page 2-2
Page 4-12
Page 8-2
Page 7-2
Page 6-2

In addition to the above, remove the following parts when the left crankcase half must be replaced:

• Final reduction Page 9-2

When assembling the crankcase and crankshaft, force the crankshaft into the case bore with the special tool rested against
the crankshaft bearing inner race. To do this, it is necessary to remove the old bearing from the crankshaft and drive a new
bearing onto the crankshaft on the case side. Use a new oil seal after assembling the crankcase.

#### **SPECIFICATIONS**

ITEM	STANDARD	SERVICE LIMIT	
Connecting rod big end side clearance	<del>-</del>	0.5 mm (0.02 in)	
Connecting rod big end radial clearance		0.04 mm (0.0016 in)	
Crankshaft runout	<u> </u>	0.10 mm (0.004 in)	

#### **TOOLS**

S	n	۵	•	i	2	ı
0	μ	C	U	ı	a	ı

Seal and case assembling tool 07965–GC70000 or Assembly collar 07965–GC70100 Assembly tool 07965–1480001

Universal bearing puller 07631-0010000 (not available in U.S.A.)

Crankcase puller 07935-KG80000

Common

 Driver
 07749-0010000

 Attachment, 42 x 47 mm
 07746-0010300

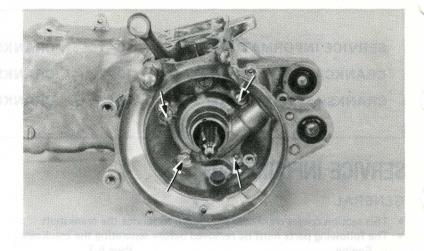
 Pilot, 25 mm
 07746-0040600



CRANKCASE PULLER

## **CRANKCASE SEPARATION**

Remove the crankcase attaching bolts.



Attach the crankcase puller on the right crankcase as shown with the two special long bolts.

Separate the right crank case half.



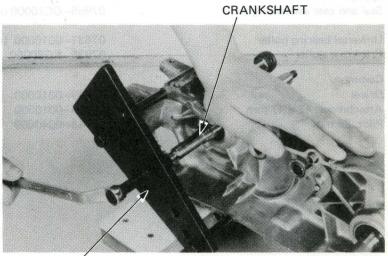
RIGHT CRANKCASE

### **CRANKSHAFT REMOVAL**

Attach the special tool on the left crankcase as shown with the three special short bolts.
Remove the crankshaft.

#### CAUTION:

Do not drive the crankshaft out with a hammer.



CRANKCASE PULLER 07935-KG80000



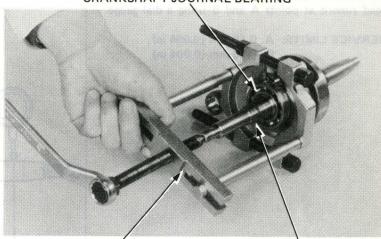
Remove the journal bearing from the crankshaft with the bearing puller.

Remove the right and left oil seals.

#### NOTE:

Replace the oil seals with new ones whenever disassembled.

#### CRANKSHAFT JOURNAL BEARING



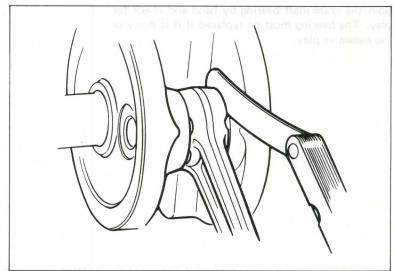
UNIVERSAL BEARING PULLER 07631-0010000 (NOT AVAILABLE IN U.S.A., EQUIVALENT AVAILABLE IN U.S.A.)

CRANKSHAFT

### **CRANKSHAFT INSPECTION**

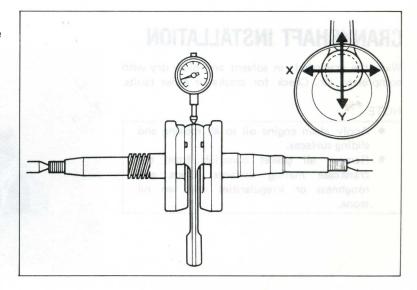
Measure the connecting rod big end side clearance with a feeler gauge.

SERVICE LIMIT: 0.5 mm (0.02 in)



Measure the connecting rod big end radial clearance at two points in the  $\boldsymbol{X}$  and  $\boldsymbol{Y}$  directions.

SERVICE LIMIT: 0.04 mm (0.0016 in)

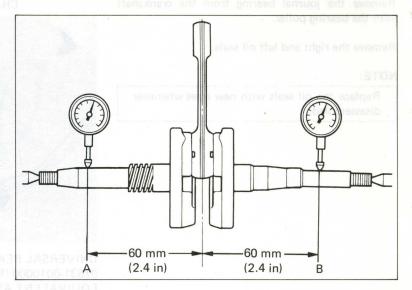


#### CRANKCASE/CRANKSHAFT

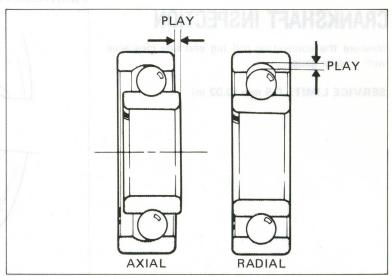


Set the crankshaft on a stand or in V blocks and read runout at points A and B using a dial gauge.

SERVICE LIMITS: A: 0.10 mm (0.004 in) B: 0.10 mm (0.004 in)



Spin the crankshaft bearing by hand and check for play. The bearing must be replaced if it is noisy or has excessive play.



### CRANKSHAFT INSTALLATION

Wash the crankshaft in solvent and blow dry with compressed air. Check for cracks or other faults.

#### NOTE:

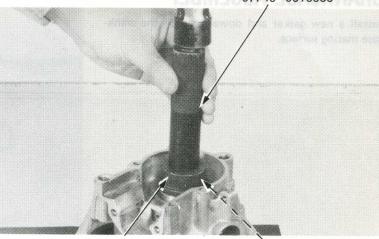
- Apply clean engine oil to all moving and sliding surfaces.
- Remove all gasket materials from the crankcase mating surfaces. Dress any roughness or irregularities with an oil stone.





Drive a new journal bearing into the right crankcase.

DRIVER 07749-0010000

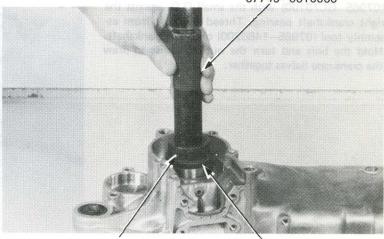


ATTACHMENT, 42 x 47 mm 07746-0010300

PILOT, 25 mm 07746-0040600

Drive a new journal bearing into the left crankcase.

DRIVER 07749-0010000



ATTACHMENT, 42 x 47 mm 07746-0010300

PILOT, 25 mm 07746-0040600

Install the crankshaft into the left crankcase.

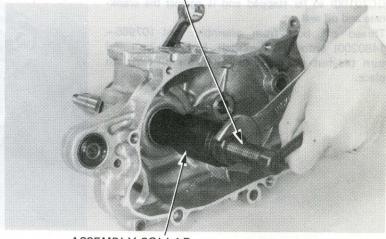
Position Collar (07965—GC70100) with the small O.D. against the crankshaft bearing.

Thread the bolt from Assembly Tool (07965—1480200) onto the crankshaft.

Hold the bolt and turn the nut clockwise to fully install the crankshaft.

Lubricate the crankshaft main and journal bearings with Honda 2-stroke oil or equivalent.

ASSEMBLY TOOL 07965-1480200 (INC. IN 07965-GC70000)

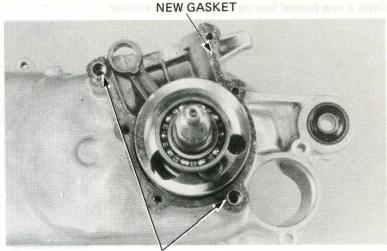


ASSEMBLY COLLAR 07965—GC70100 (INC. IN 07965—GC70000)



### **CRANKCASE ASSEMBLY**

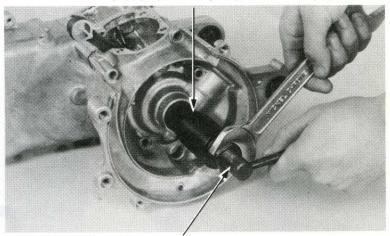
Install a new gasket and dowel pins on the crankcase mating surface.



DOWEL PINS

Assemble the crankcase halves; place the collar (07965—GC70100) with the small O.D. against the right crankshaft bearing. Thread the bolt from assembly tool (07965—1480200) onto the crankshaft. Hold the bolt and turn the nut clockwise to draw the crankcase halves together.

ASSEMBLY TOOL COLLAR 07965-GC70100 (INC. IN 07965-GC70000)

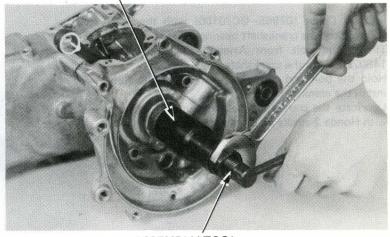


ASSEMBLING TOOL 07965-1480200 (INC. IN 07965-GC70000)

Install the right oil seal; place the collar (07965—GC70100) so its stepped end is against the crankcase and oil seal.

Thread the bolt from assembly tool (07965—1480200) onto the crankshaft. Hold the bolt and turn the nut clockwise to install the oil seal into place.

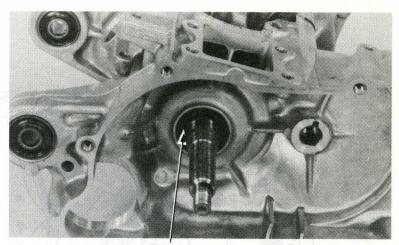
ASSEMBLING TOOL COLLAR 07965-GC70100 (INC. IN 07965-GC70000)



ASSEMBLY TOOL 07965-1480200 (INC. IN 07965-GC70000)



Drive the oil seal into the left crankcase until it is flush with the case.



LEFT OIL SEAL

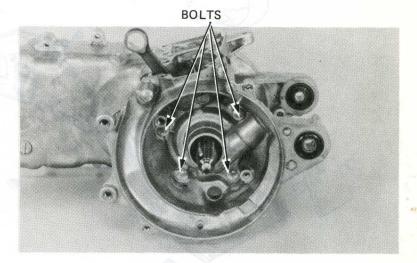
Install and tighten the crankcase bolts.

#### NOTE:

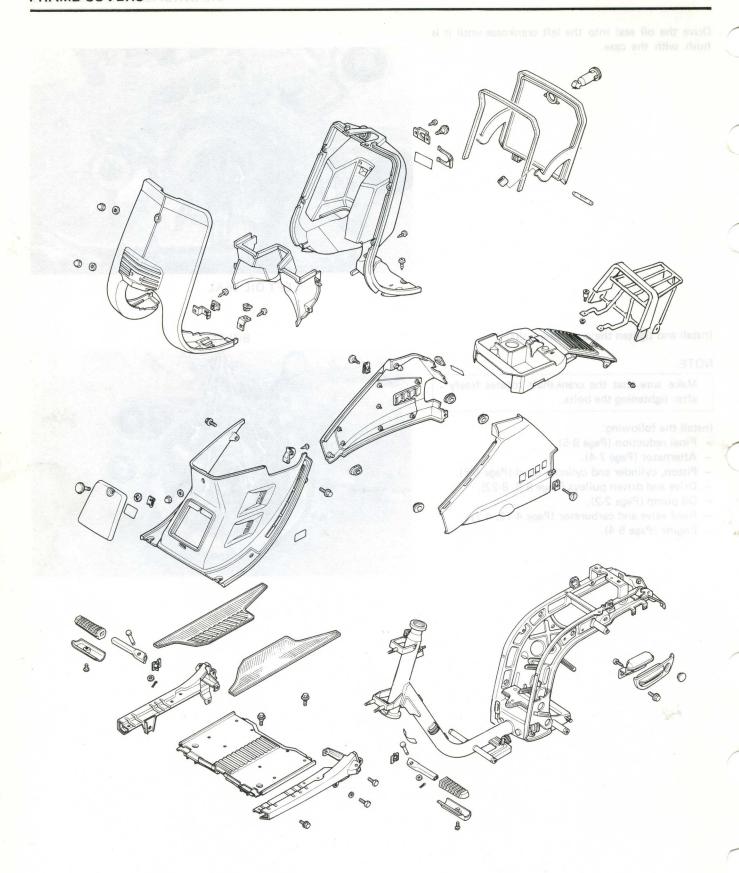
Make sure that the crankshaft rotates freely after tightening the bolts.

#### Install the following:

- Final reduction (Page 9-5).
- Alternator (Page 7-4).
- Piston, cylinder and cylinder head (Page 6-7).
- Drive and driven pulleys (Page 8-6, 8-22).
- Oil pump (Page 2-2).
- Reed valve and carburetor (Page 4-12, 4-7).
- Engine (Page 5-4).





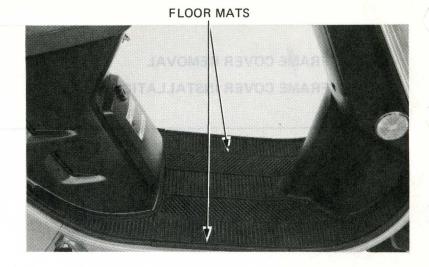




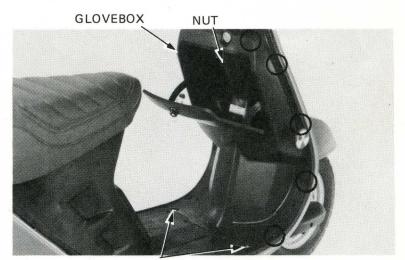
# FRAME COVER REMOVAL

GLOVEBOX/FLOOR PLATE REMOVAL

Remove the floor mats.

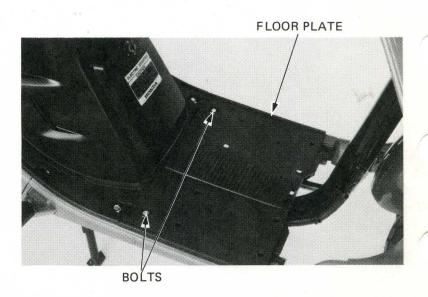


Open the glovebox lid and remove the glovebox by unscrewing the nut, two bolts and ten screws.



**BOLTS** 

Remove the two bolts attaching the floor plate and remove the floor plate.





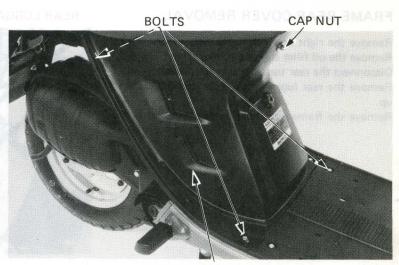
#### FRAME CENTER COVER REMOVAL

Remove the right and left frame covers. Remove the floor mats.



FRAME COVER

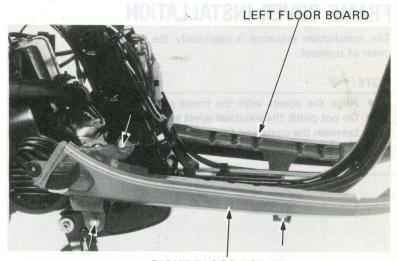
Remove the four bolts and cap nut and remove the frame center cover.



CENTER COVER

# RIGHT AND LEFT FLOOR BOARD REMOVAL

Remove the glovebox and floor plate (Page 11-2). Remove the frame center cover. Remove the right and left floor boards.

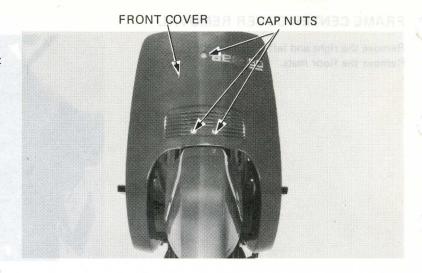


RIGHT FLOOR BOARD



#### FRONT COVER REMOVAL

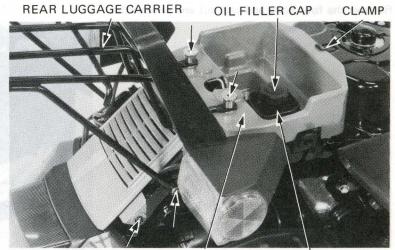
Remove the glovebox (Page 11-2).
Remove the three cap nuts and remove the front cover



#### FRAME REAR COVER REMOVAL

Remove the right and left frame covers (Page 11-2). Remove the oil filler cap and rubber cover. Disconnect the rear turn signal wire connectors. Remove the rear luggage carrier and bend the clamp up.

Remove the frame rear cover by removing the bolts.



BOLT

REAR COVER

RUBBER COVER

### FRAME COVER INSTALLATION

The installation sequence is essentially the reverse order of removal.

#### NOTE:

- Align the covers with the frame properly.
- Do not pinch the electrical wires and cables between the cover and frame.
- Make sure that the locating tabs are engaged securely.

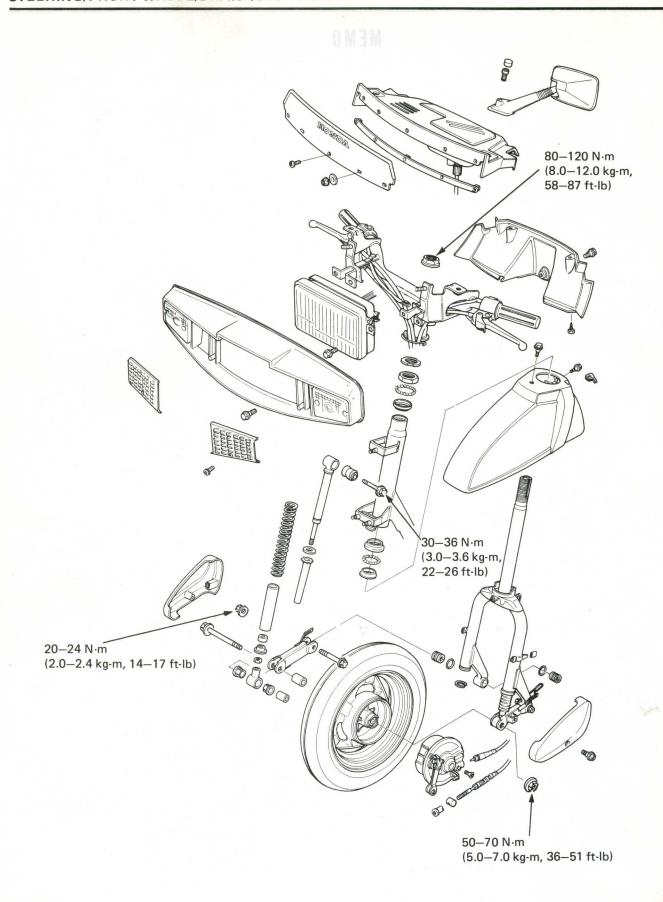
Remove the right and left floor boards



# MEMO

Date of Issue: May, 1983 © HONDA MOTOR CO., LTD.







	galasta to
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FRONT SHOCK	12–16
FRONT FORK	12–20

### **SERVICE INFORMATION**

#### **SPECIFICATIONS**

ITE	M	STANDARD	SERVICE LIMIT
Axle shaft runout		_	0.2 mm (0.01 in)
Rim runout	Radial	_	2.0 mm (0.08 in)
	Axial	_	2.0 mm (0.08 in)
Cushion spring free len	gth	225.8 mm (8.89 in)	219.0 mm (8.62 in)
Front brake drum I.D.		110.0 mm (4.33 in)	111.0 mm (4.37 in)
Brake lining thickness		4.0 mm (0.156 in)	2.0 mm (0.08 in)

#### **TORQUE VALUES**

Steering stem nut	80-120 N·m (8.0-12.0 kg·m, 58-87 ft-lb)
Front axle nut	50-70 N·m (5.0-7.0 kg-m, 36-51 ft-lb)
Front shock mount bolt	30-36 N·m (3.0-3.6 kg-m, 22-26 ft-lb)
Front fork pivot arm	20-24 N·m (2.0-2.4 kg-m, 14-17 ft-lb)
Front brake arm	8-12 N·m (0.8-1.2 kg-m, 6-9 ft-lb)

#### TOOLS

10013	
Common	
Rear shock absorber compressor	07959-3290001
Driver	07749-0010000
Attachment, 32 x 35 mm	07746-0010100
Attachment, 42 x 47 mm	07746-0010300
Pilot, 12 mm	07746-0040200
Extension	07716-0020500-
Lock nut wrench, 30 x 32 mm	07716-0020400 Equivalent tools commercially available in U.S.A.
Fork seal driver	07747-0010100-
Fork seal driver attachment	07747-0010100 07747-0010400 or Fork seal driver 07947-3550000
Pin spanner	07702-0020000, 07702-0010000 or
	M9361-412-099788 (U.S.A. only)



### **TROUBLESHOOTING**

#### Hard steering

- 1. Steering stem nut too tight
- 2. Steering stem bearings damaged
- 3. Steering ball and cone races damaged
- 4. Insufficient tire pressure

#### Steers to one side or does not track straight

- 1. Uneven front shocks
- 2. Bent front fork
- 3. Bent front axle

#### Front wheel wobbling

- 1. Bent rim
- 2. Axle nut tightened improperly
- 3. Bent spoke plate
- 4. Faulty or unevenly worn tire
- 5. Excessive wheel bearing play

#### Soft suspension

1. Weak fork springs

#### Front suspension noise

- 1. Fork link binding
- 2. Loose front fork fasteners

SPECIFICATIONS

Frent brake drum i D Brake lining thickness

ORQUE VALUES

ront shock mount belt ront fork pivot arm

Commens

ear shock absorber compressiver
trachment, 32 x 35 mm

Pilot, 12 mm Extension

ork seal driver attachment



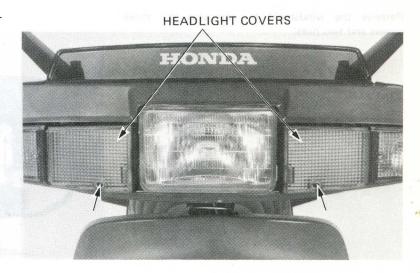
### **SPEEDOMETER**

#### SPEEDOMETER REMOVAL

Remove the meter lower cover by backing off the one bolt and two screws.



Remove the right and left headlight covers by removing the screws.



Disconnect the front turn signal wires. Remove the two bolts attaching the handlebar front cover and remove the front cover with the right and left front turn signals.

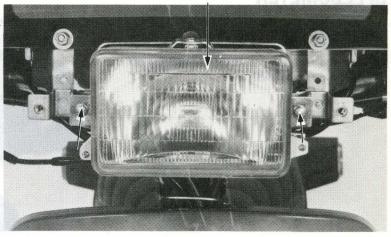




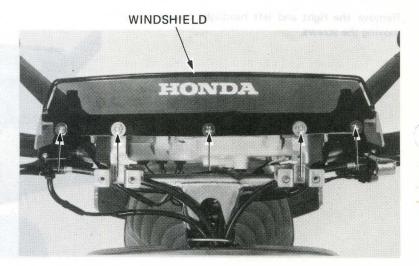
Disconnect the headlight wires.

Remove the two bolts and headlight.



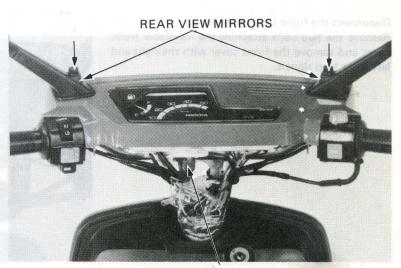


Remove the windshield by removing the three screws and two nuts.



Disconnect the meter wires and the speedometer cable.

Remove the rear view mirrors and meter cluster assembly.

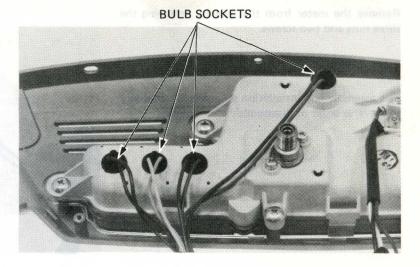


SPEEDOMETER CABLE



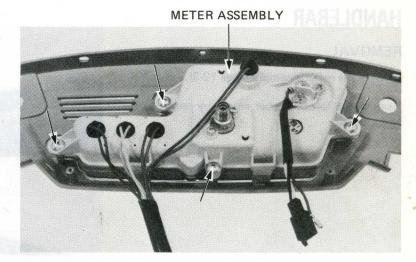
#### **BULB REPLACEMENT**

Remove the sockets and replace the bulbs with new ones.



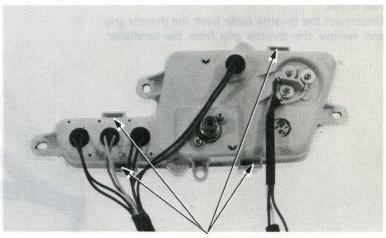
#### METER DISASSEMBLY

Remove the four screws and remove the meter assembly.



Remove the meter cover.

Remove the indicator panel by releasing the locking pawls.



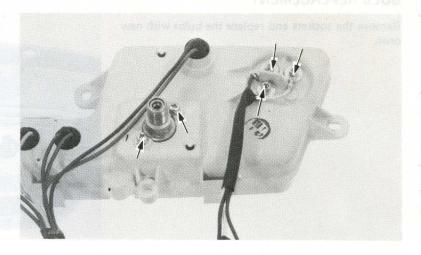
LOCKING PAWLS



Remove the meter from the case by removing the three nuts and two screws.

#### METER ASSEMBLY/INSTALLATION

The assembly and installation sequence is essentially the reverse order of disassembly and removal.



### **HANDLEBAR**

#### REMOVAL

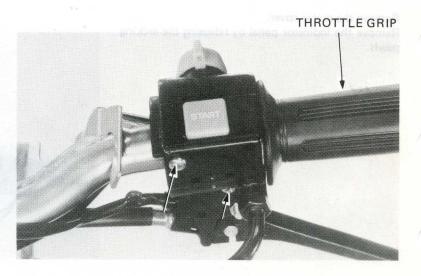
Remove the meter assembly (Page 12-3).

Remove the left handlebar switch by removing the two screws.



Remove the right handlebar switch by removing the two screws.

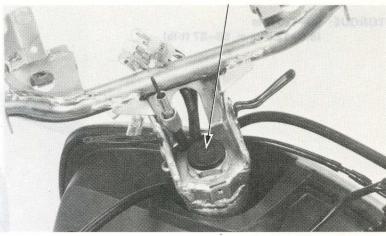
Disconnect the throttle cable from the throttle grip and remove the throttle grip from the handlebar.





Remove the steering stem cap.

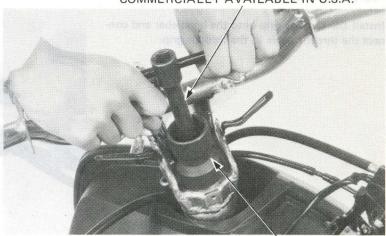
STEM CAP CONTROL OF SUPPORT



Remove the steering stem nut.

Remove the handlebar.

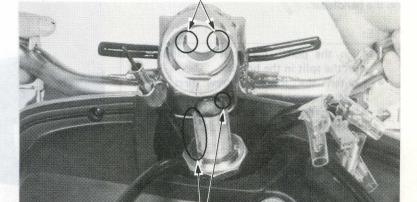
EXTENSION 07716-0020500 OR COMMERCIALLY AVAILABLE IN U.S.A.



LOCK NUT WRENCH, 30 x 32 mm 07716-0020400 OR COMMERCIALLY AVAILABLE IN U.S.A.

#### **INSTALLATION**

Install the handlebar, aligning the tabs of the handlebar bracket with the grooves in the steering stem.



STEM GROOVES

HONDA NH80

Torque the steering stem nut.

TORQUE: 80-120 N·m

(8.0-12.0 kg-m, 58-87 ft-lb)

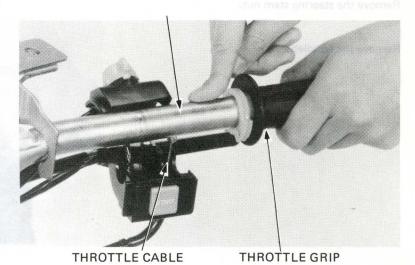
EXTENSION 07716-0020500 OR COMMERCIALLY AVAILABLE IN U.S.A.



LOCK NUT WRENCH, 30 x 32 mm 07716-0020400 OR COMMERCIALLY AVAILABLE IN U.S.A.

Apply grease to the throttle grip area of the handlebar.

Install the throttle grip onto the handlebar and connect the throttle cable to the throttle grip.



Install the right and left handlebar switch housings on the handlebar.

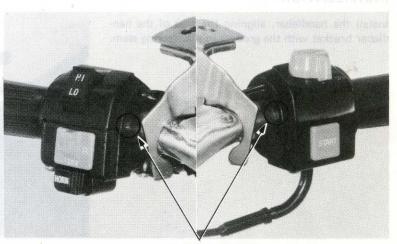
#### NOTE:

- Align the punch mark on the handlebar with the split in the housing.
- Tighten the forward screw first, then tighten the rear screw.
- After tightening the screws, check that the throttle grip rotates freely in all steering positions.

Install all the removed parts.

Perform the following adjustments and operations:

- Brake lever free play (Page 3-9)
- Headlight aiming (Page 3-10)
- Throttle grip free play (3-4)
- Check the operation of all electrical parts.



**PUNCH MARKS** 

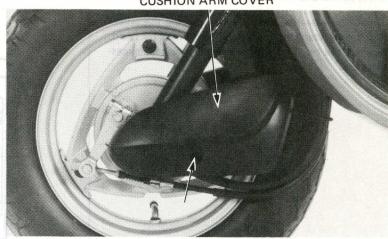


### FRONT WHEEL

REMOVAL

Remove the cushion covers.



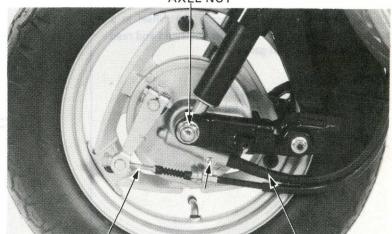


Disconnect the speedometer cable from the speedometer gearbox.

Disconnect the brake cable from the brake arm. Loosen the right and left pivot arm bolts.

Remove the axle nut, withdraw the axle shaft and remove the front wheel.

**AXLE NUT** 



BRAKE CABLE

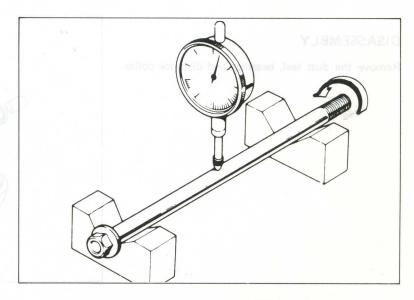
SPEEDOMETER CABLE

#### INSPECTION

#### AXLE SHAFT

Set the axle in V blocks and measure the runout. The actual runout is 1/2 of the total indicator reading.

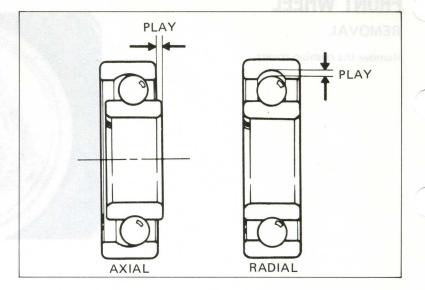
SERVICE LIMIT: 0.2 mm (0.01 in)





#### WHEEL BEARING OF MALE MOTHERS

Check the wheel bearing play by placing the wheel in a truing stand and spinning the wheel by hand. Replace the bearings if they are noisy or have excessive play.

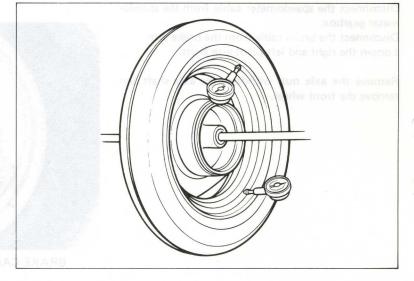


#### WHEEL RIM

Check the rim runout by placing the wheel in a truing stand. Then spin the wheel by hand and read the runout using a dial gauge.

#### SERVICE LIMITS:

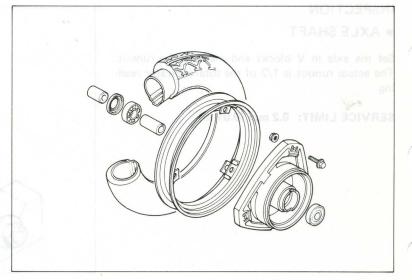
Radial: 2.0 mm (0.08 in) Axial: 2.0 mm (0.08 in)



#### DISASSEMBLY

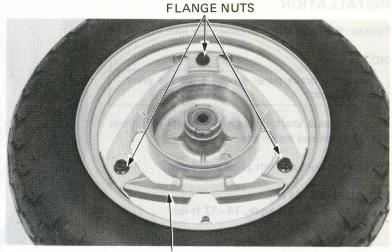
12-10

Remove the dust seal, bearings and distance collar.





Remove the three flange nuts and remove the spoke plate from the rim.



SPOKE PLATE

#### **ASSEMBLY**

Install the spoke plate onto the rim and tighten the flange nut.

**TORQUE: 22-28 N·m** 

(2.2-2.8 kg-m, 16-20 ft-lb)

Pack all bearing cavities with grease.

Drive in the left bearing and install the distance collar.

Then drive in the right bearing.

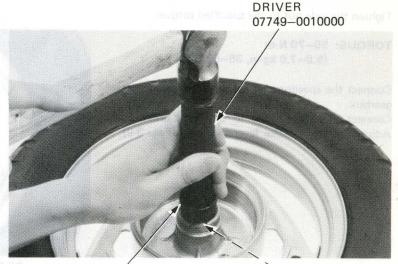
#### NOTE:

- Drive in the bearings squarely.
- Install the bearings with the sealed ends facing out.

#### WARNING

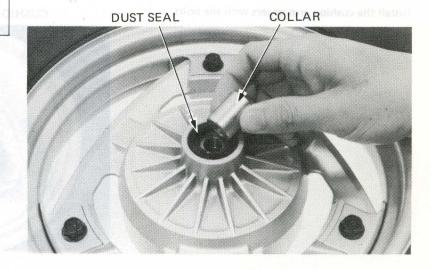
 Contaminated brake linings reduce stopping power. Keep grease off the linings and brake drum.

Apply grease to the inside of the dust seal. Install the dust seal and axle collar.



ATTACHMENT, 32 x 35 mm 07746-0010100

PILOT, 12 mm 07746-0040200





#### **INSTALLATION**

Position the front wheel between the fork legs.

#### NOTE:

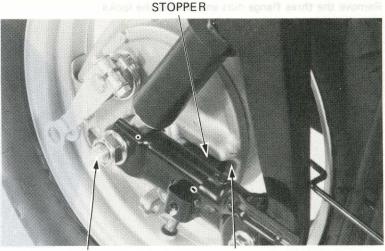
Align the brake panel groove with the pivot arm stopper.

Insert the axle shaft through the wheel hub from the right side and install the axle nut.

Tighten the right and left pivot arm bolts.

TORQUE: 20-24 N·m

(2.0-2.4 kg-m, 14-17 ft-lb)



AXLE SHAFT

**BRAKE PANEL GROOVE** 

Tighten the axle nut to the specified torque.

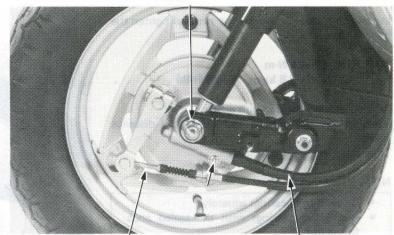
TORQUE: 50-70 N·m

(5.0-7.0 kg-m, 36-51 ft-lb)

Connect the speedometer cable to the speedometer gearbox.

Connect the brake cable to the front brake arm. Adjust the front brake lever free play (Page 3-9).

**AXLE NUT** 

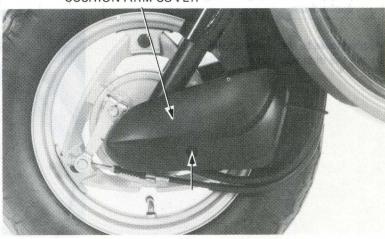


**BRAKE CABLE** 

SPEEDOMETER CABLE

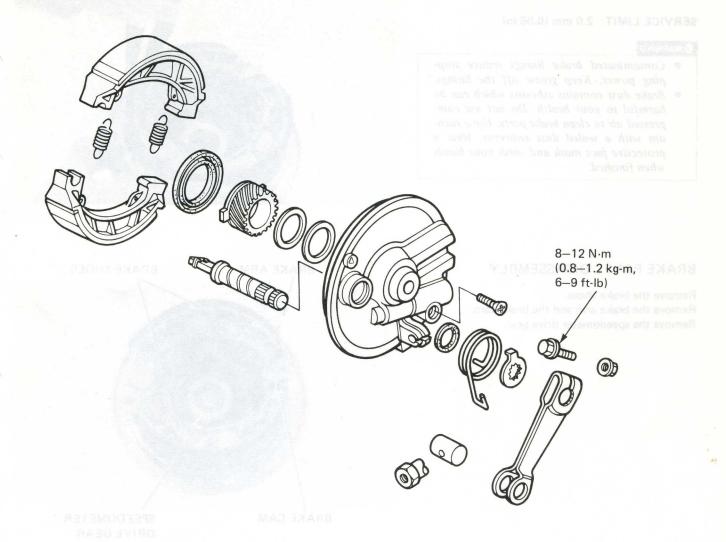
Install the cushion arm covers with the bolts.

**CUSHION ARM COVER** 





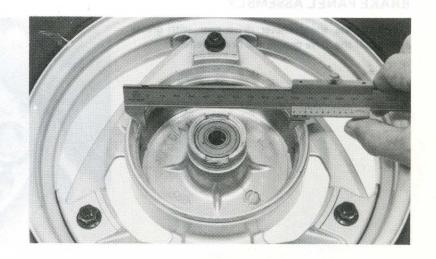
### FRONT BRAKE



#### FRONT BRAKE DRUM INSPECTION

Remove the front wheel (Page 12-9). Remove the brake panel. Measure the brake drum I.D.

**SERVICE LIMIT: 111.0 mm (4.37 in)** 





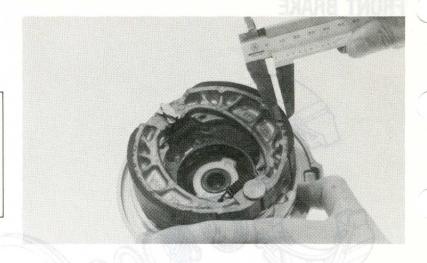
#### BRAKE LINING INSPECTION

Measure the brake lining thickness.

SERVICE LIMIT: 2.0 mm (0.08 in)

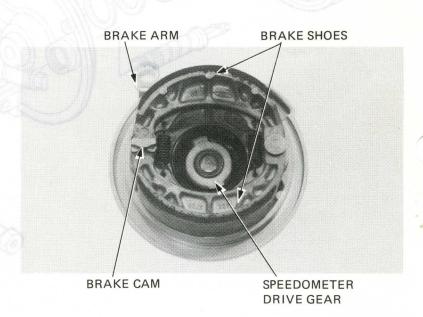
#### WARNING

- Contaminated brake linings reduce stopping power. Keep grease off the linings.
- Brake dust contains asbestos which can be harmful to your health. Do not use compressed air to clean brake parts. Use a vacuum with a sealed dust collector. Wear a protective face mask and wash your hands when finished.



#### BRAKE PANEL DISASSEMBLY

Remove the brake shoes. Remove the brake arm and the brake cam. Remove the speedometer drive gear.



#### BRAKE PANEL ASSEMBLY

Lubricate the speedometer drive gear with grease and install the drive gear in the brake panel.







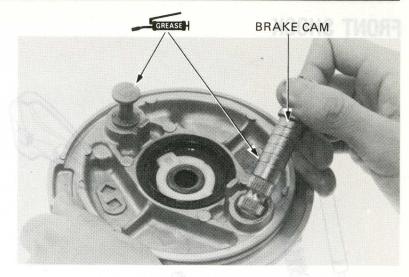
Apply silicone grease to the anchor contacting area of each shoe and to the brake shoe contacting area of the brake cam.

Install the brake cam.

#### WARNING

Avoid getting grease on the inside of the brake drum or braking power will be reduced. Clean the inside of the brake panel thoroughly.

Install the brake shoes.



Install the felt oil seal.

Install the wear indicator plate on the brake cam shaft.

#### NOTE:

Align the wide tooth on the plate with the wide groove on the camshaft.



Install the brake arm.

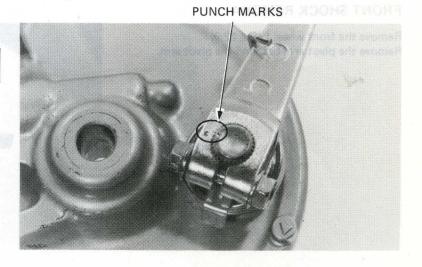
#### NOTE:

Align the punch marks on the brake arm and camshaft.

Torque the brake arm bolt.

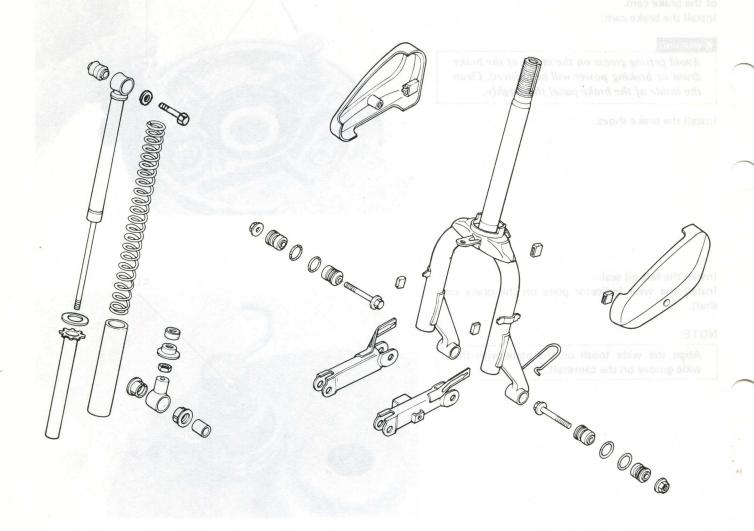
TORQUE: 8-12 N·m

(0.8-1.2 kg-m, 6-9 ft-lb)



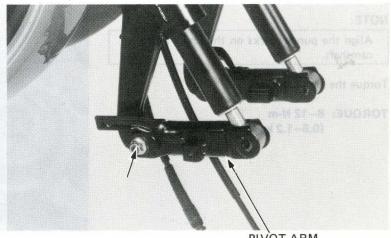


### FRONT SHOCK



#### FRONT SHOCK REMOVAL

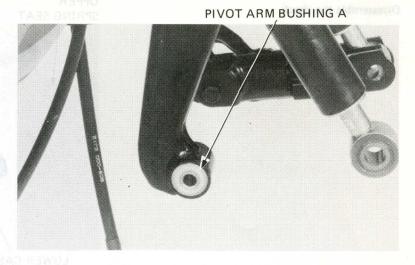
Remove the front wheel (Page 12-9). Remove the pivot arm bolt and the pivot arm.



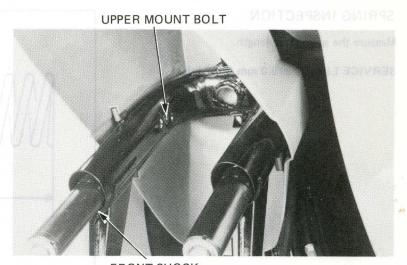
PIVOT ARM



Check the pivot arm bushing A for wear or damage. If bushing replacement is necessary, remove the front fork (Page 12-20).



Remove the front shock by removing the upper mount bolts.



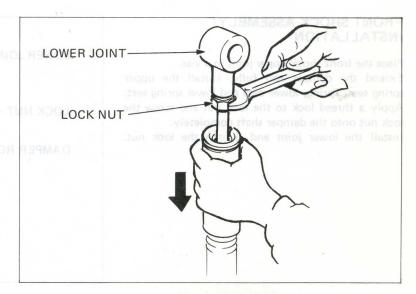
FRONT SHOCK

#### FRONT SHOCK DISASSEMBLY

Place the front shock upper joint in a vise. Compress the spring by hand and loosen the lock nut and joint.

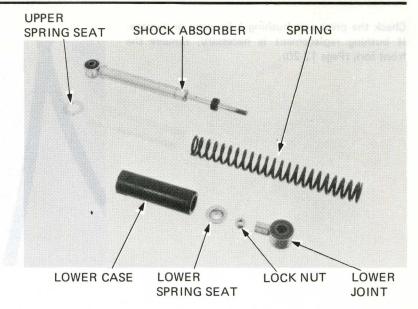
Remove the joint and lock nut.

Remove the spring, lower case and spring seat.





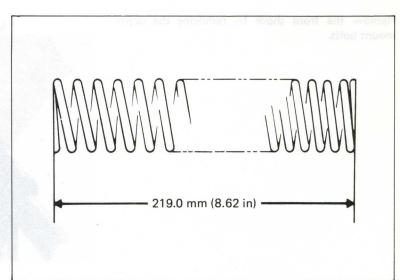
Disassemble the shock.



#### SPRING INSPECTION

Measure the spring free length.

**SERVICE LIMIT: 219.0 mm (8.62 in)** 



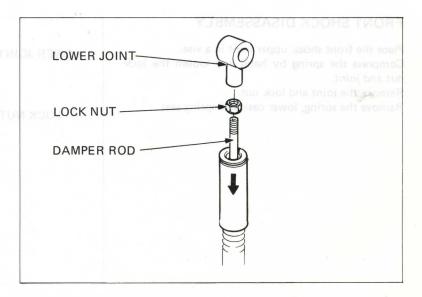
# FRONT SHOCK ASSEMBLY/INSTALLATION

Place the front shock upper joint in a vise.

Extend the damper rod fully. Install the upper spring seat, spring, lower case and lower spring seat.

Apply a thread lock to the lock nut and screw the lock nut onto the damper shaft completely.

Install the lower joint and tighten the lock nut.

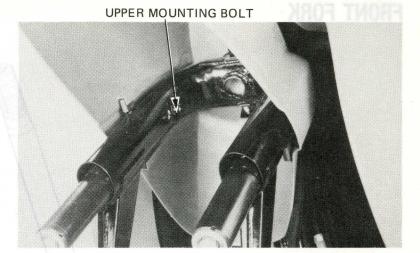




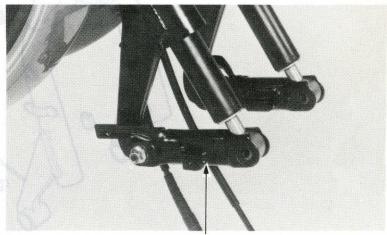
Slide the front shock into the front fork and secure with the upper mounting bolt.

TORQUE: 30-36 N·m

(3.0-3.6 kg-m, 22-26 ft-lb)



Lubricate and loosely install the front fork pivot arms with the attaching bolts and nuts.
Install the front wheel (Page 12-12).

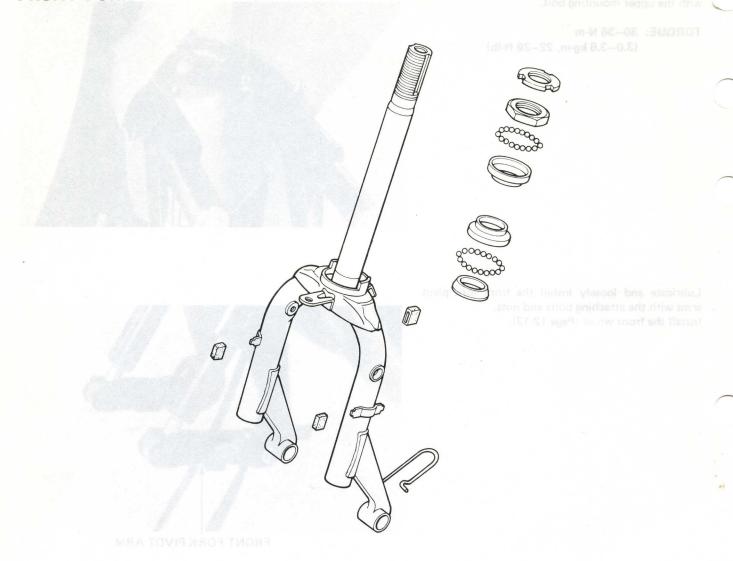


FRONT FORK PIVOT ARM

- From Wheel (Page 12-9).



### FRONT FORK

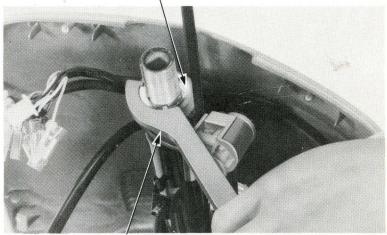


#### FRONT FORK REMOVAL

Remove the following:

- Meter assembly (Page 12-3).
- Handlebar (Page 12-6).
- Front wheel (Page 12-9).
- Glovebox (Section 11).
- Steering stem nut.

#### LOCK NUT

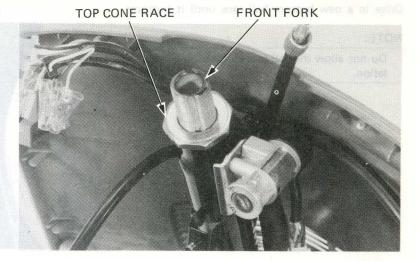


PIN SPANNER 07702—0020000, 07702—0010000 or M9361—412—099788 (U.S.A. only)

Remove the top cone race and remove the front fork.

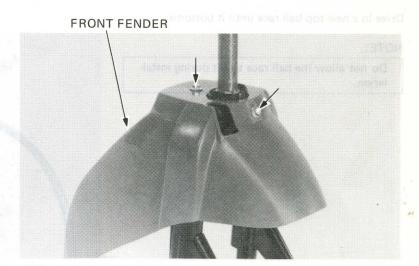
#### NOTE:

Place the steel balls in a parts tray so they are not lost.



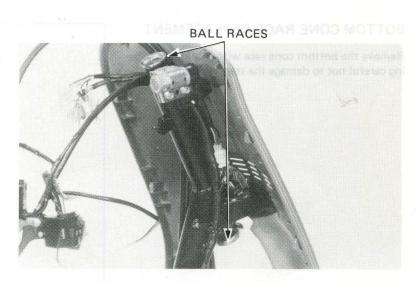
#### FRONT FENDER REMOVAL

Remove the two bolts attaching the front fender and remove the front fender.



#### BALL RACE REPLACEMENT

Remove the upper and lower ball races by tapping their flanges with a plastic hammer.



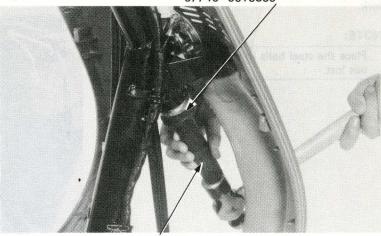


Drive in a new bottom ball race until it bottoms.

#### NOTE:

Do not allow the ball race to tilt during installation.





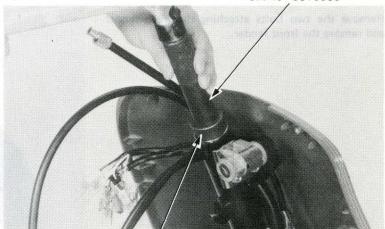
DRÍVER 07749-0010000

Drive in a new top ball race until it bottoms.

#### NOTE:

Do not allow the ball race to tilt during installation.

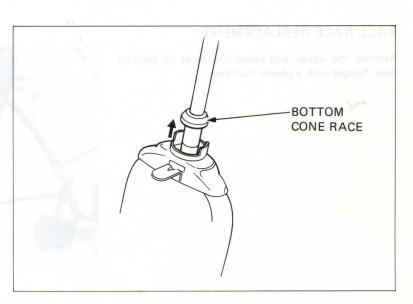




ATTACHMENT, 42 x 47 mm 07746-0010300

#### BOTTOM CONE RACE REPLACEMENT

Remove the bottom cone race with a cold chisel, being careful not to damage the steering stem.

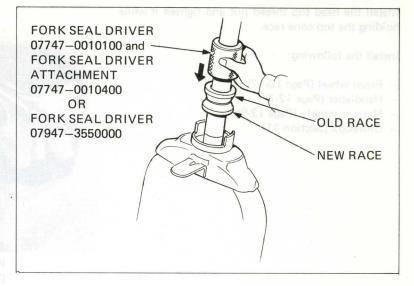




Install a new bottom cone race over the steering stem.

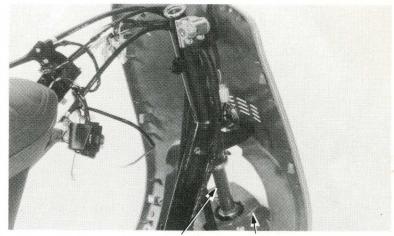
Install the old bottom cone race over the new bottom cone race upside down.

Drive the bottom cone race with special tools until it seats in place, then remove the old bottom cone race.



#### FRONT FORK INSTALLATION

Install the front fender on the front fork. Coat the ball races with grease and install 26 steel balls on the top ball race and 29 steel balls on the bottom ball race.



FRONT FORK FENDER

Lubricate the top cone race with grease. Screw in the race until snug against the top ball race, then back it out 1/8 turn.

#### NOTE:

Check that the steering stem rotates freely and there is no vertical play.



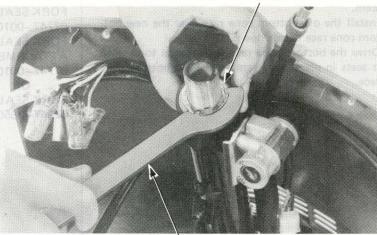


Install the head top thread nut and tighten it while holding the top cone race.

Install the following:

- Front wheel (Page 12-12)
- Handlebar (Page 12-7)
- Meter assembly (Page 12-6)
- Glovebox (Section 11)





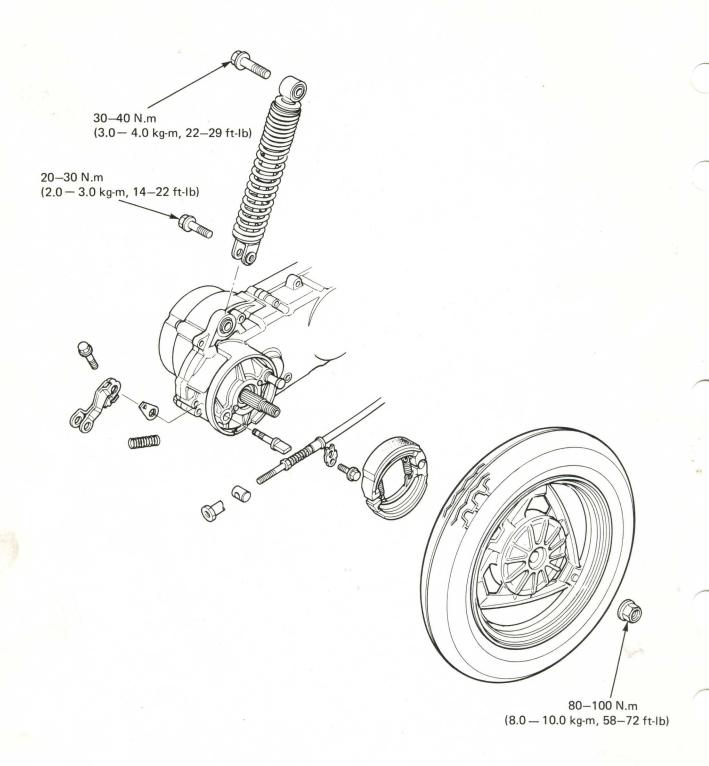
PIN SPANNER 07702-0020000, 07702-0010000 or M9361-412-099788 (U.S.A. only)



# MEMO







# 13. REAR WHEEL/BRAKE/SUSPENSION

SERVICE INFORMATION	13-1 JAVOMBR
TROUBLESHOOTING	Samove the fra 1-Efree cover (Section 11).
REAR WHEEL	13–2
REAR BRAKE	13–3
REAR SHOCK ABSORBER	13–6

## **SERVICE INFORMATION**

#### GENERAL

Brake dust contains asbestos which can be harmful to your health. Do not use compressed air to clean brake drums or brake
pads. Use a vacuum with a sealed dust collector. Wear a protective face mask and thoroughly wash your hands when finished.

#### **SPECIFICATIONS**

ITEM	STANDARD	SERVICE LIMIT
Rear wheel rim runout	<del>-</del>	2.0 mm (0.08 in)
Brake drum I.D.	95.0 mm (3.74 in)	95.5 mm (3.76 in)
Brake lining thickness	5.0 mm (0.20 in)	2.0 mm (0.08 in)
Rear shock absorber spring free length	228.6 mm (9.00 in)	221.7 mm (8.73 in)

#### **TORQUE VALUES**

Rear shock upper mount bolt Rear shock lower mount bolt

Rear axle nut

30–40 N·m (3.0–4.0 kg-m, 22–29 ft-lb) 20–30 N·m (2.0–3.0 kg-m, 14–22 ft-lb) 80–100 N·m (8.0–10.0 kg-m, 58–72 ft-lb)

#### TOOLS

#### Special

Rear shock absorber attachment A Spring attachment holder

Spring attachment holde

Common

Rear shock absorber compressor

07967-GA70101

07967-07967-GC80000 or 07967-1180100

07959-3290001

### **TROUBLESHOOTING**

#### Rear wheel wobbling

- Bent rim
- 2. Faulty tire
- 3. Axle not tightened properly

#### Soft suspension

1. Weak shock absorber spring

#### Brake squeaks

- 1. Worn brake linings
- 2. Foreign matter on linings
- 3. Rough brake drum shoe contacting face

#### Poor brake performance

- 1. Brake not adjusted properly
- 2. Contaminated brake linings
- 3. Worn brake linings
- 4. Worn brake shoes at cam contacting area
- 5. Worn brake cam
- 6. Worn brake drum
- 7. Improper engagement between brake arm and camshaft serrations

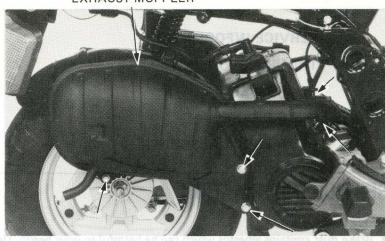


## **REAR WHEEL**

#### REMOVAL 1-81

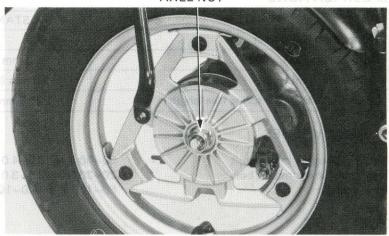
Remove the frame center cover (Section 11). Remove the exhaust muffler.

#### **EXHAUST MUFFLER**



Remove the axle nut and the rear wheel.

**AXLE NUT** 

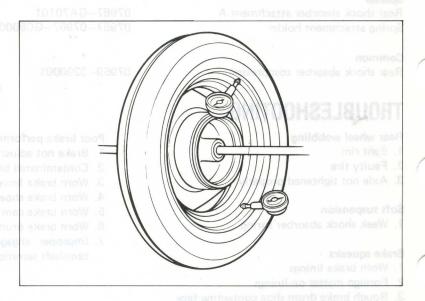


# REAR WHEEL RIM RUNOUT INSPECTION

Check the rim for runout using a dial gauge as shown.

#### **SERVICE LIMITS:**

Radial: 2.0 mm (0.08 in) Axial: 2.0 mm (0.08 in)





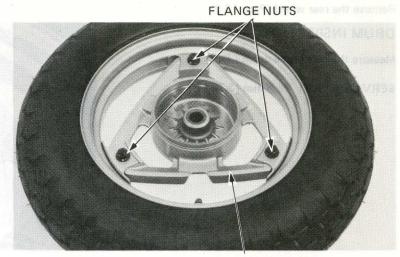
#### REAR WHEEL SPOKE

Remove the three flange nuts attaching the spoke plate to the wheel rim and remove the spoke plate.

Reinstall the spoke plate and tighten the flange nut.

**TORQUE: 22-28 N·m** 

(2.2-2.8 kg-m, 16-20 ft-lb)



SPOKE PLATE

#### INSTALLATION

Install the rear wheel and tighten the axle nut.

TORQUE: 80-100 N·m

(8.0-10.0 kg-m, 58-72 ft-lb)

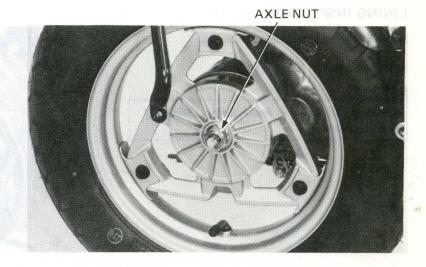
Install the muffler.

TORQUE:

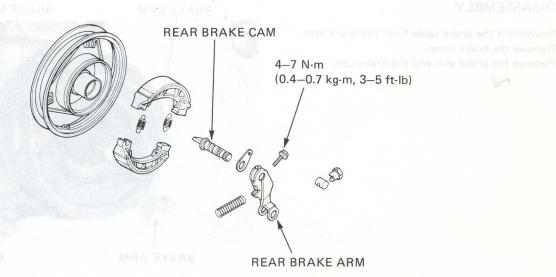
8 mm bolts: 40-50 N·m

(4.0-5.0 kg-m, 29-36 ft-lb)

Install the frame center cover.



## REAR BRAKE



#### REAR WHEEL/BRAKE/SUSPENSION

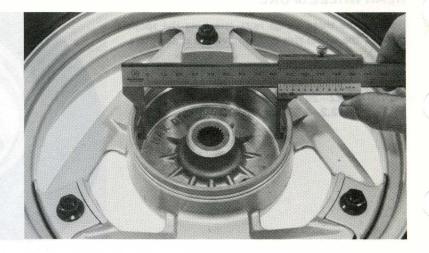


Remove the rear wheel (Page 13-2).

#### DRUM INSPECTION

Measure the rear brake drum I.D.

SERVICE LIMIT: 95.5 mm (3.76 in)



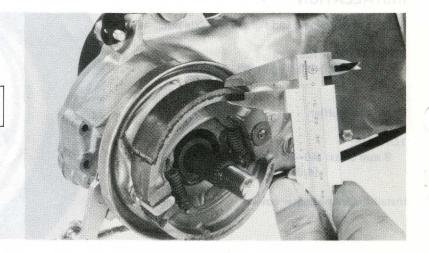
#### LINING INSPECTION

Measure the rear brake lining thickness.

SERVICE LIMIT: 2.0 mm (0.08 in)

#### WWW WARNING

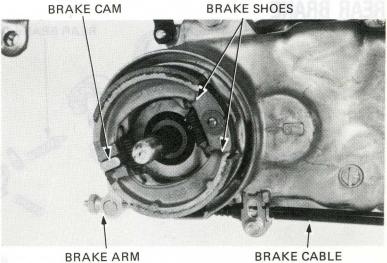
Keep grease off the brake linings. Wipe off excess grease.



#### DISASSEMBLY

Disconnect the brake cable from the brake arm. Remove the brake shoes.

Remove the brake arm and the brake cam.



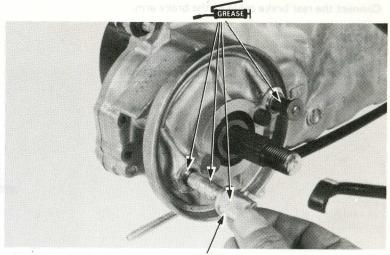
**BRAKE CABLE** 



#### **ASSEMBLY**

Apply grease to the anchor contacting area of the brake cam.

Apply grease to the brake cam, and install. Install the brake shoes.



BRAKE CAM

Install the wear indicator plate.

#### NOTE:

Align the wide groove on the cam with the wide tooth on the indicator plate.

Install the brake arm.

#### NOTE:

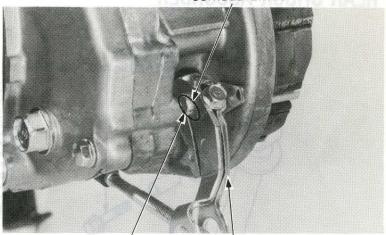
Align the scribed lines on the brake cam and brake arm.

Tighten the brake arm bolt to the specified torque.

TORQUE: 4-7 N·m

(0.4-0.7 kg-m, 3-5 ft-lb)

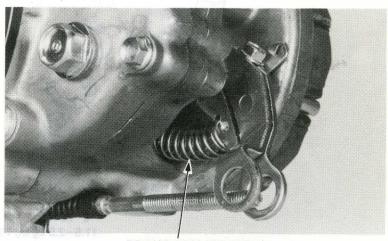
#### SCRIBED LINES



**BRAKE CAM** 

**BRAKE ARM** 

Install the brake arm spring.



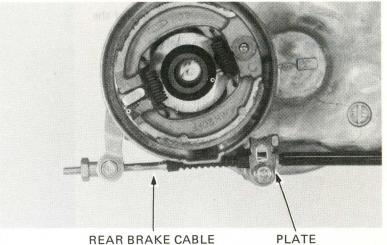
BRAKE ARM SPRING



Connect the rear brake cable to the brake arm.

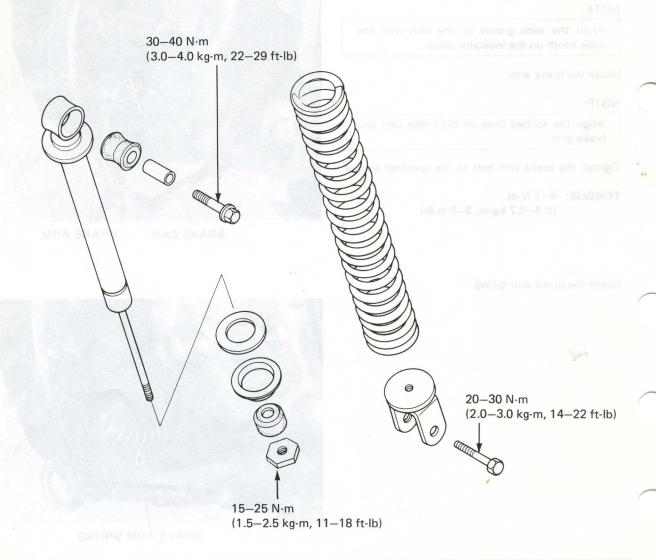
#### NOTE:

Insert the brake cable into the groove in the left crankcase and install the plate as shown.



REAR BRAKE CABLE

## **REAR SHOCK ABSORBER**



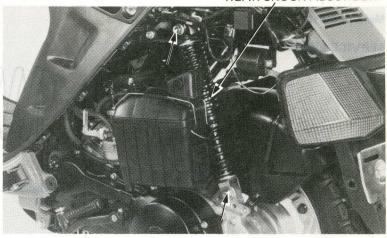


#### REMOVAL

Remove the rear shock absorber upper and lower

Remove the rear shock absorber.



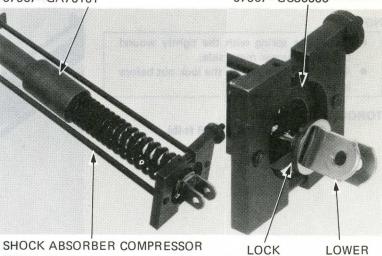


#### DISASSEMBLY

Remove the rear shock absorber lower joint by compressing it with the compressor.

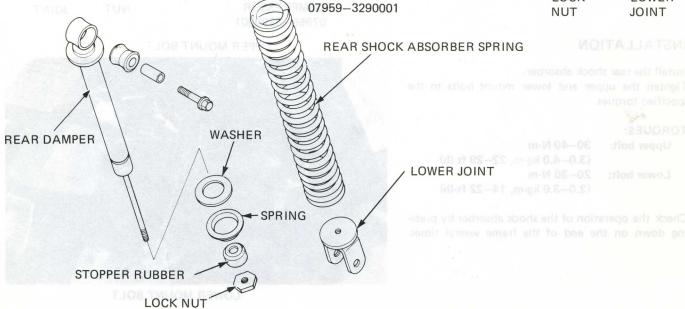
A TARAMADA TARAMADA ABSORBER ATTACHMENT A 07967-GA70101

ATTACHMENT HOLDER 07967-GC80000



NUT

LOWER

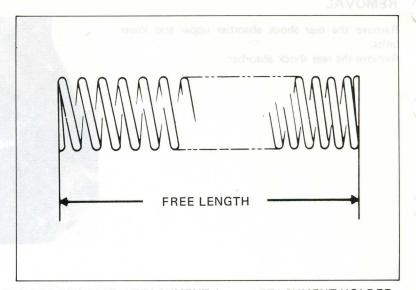




#### SPRING FREE LENGTH

Measure the spring free length.

**SERVICE LIMIT: 221.7 mm (8.73 in)** 



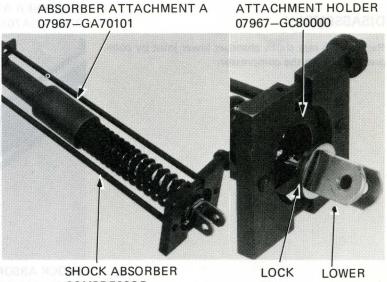
#### ASSEMBLY

#### NOTE:

- Install the spring with the tightly wound coil on the upper metal side.
- Apply locking agent to the lock nut before installation.

TORQUE: 15-25 N·m

(1.5-2.5 kg-m, 11-18 ft-lb)



COMPRESSOR 07959-3290001

NUT

JOINT

#### INSTALLATION

Install the rear shock absorber.

Tighten the upper and lower mount bolts to the specified torques.

#### **TORQUES:**

Upper bolt:

30-40 N·m

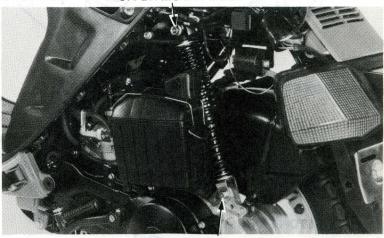
(3.0-4.0 kg-m, 22-29 ft-lb)

20-30 N·m Lower bolt:

(2.0-3.0 kg-m, 14-22 ft-lb)

Check the operation of the shock absorber by pressing down on the end of the frame several times.

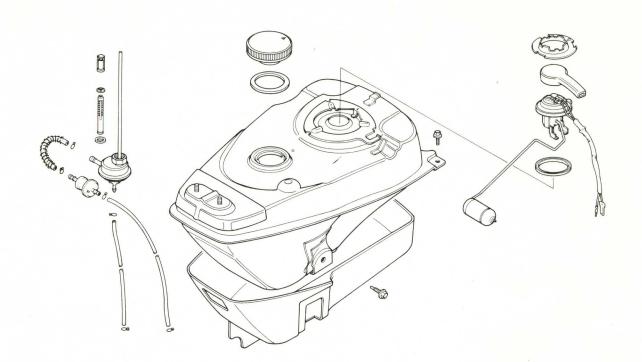
#### UPPER MOUNT BOLT

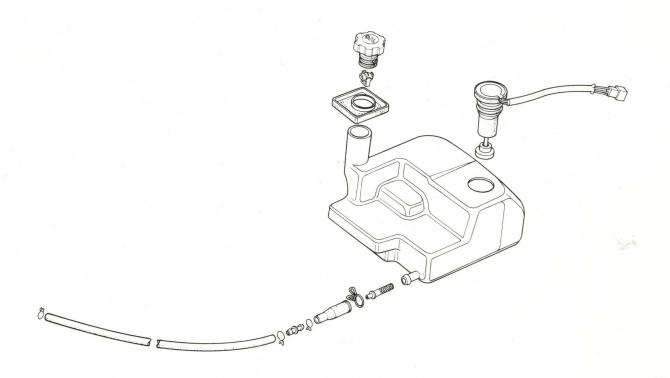


LOWER MOUNT BOLT



# MEMO







# 14. FUEL TANK/OIL TANK

SERVICE INFORMATION	PUEL GAUGE HEMOVAL/
TROUBLESHOOTING	14–1
FUEL TANK	Disconnect the gauge sensor wire connectors.
OIL TANK	14-4

## **SERVICE INFORMATION**

GENERAL

#### WWW WARNING

Gasoline is extremely flammable and is explosive under certain conditions. Work in a well ventilated area. Do not smoke or allow flames or sparks in the work area.

# **TROUBLESHOOTING**

#### Engine fails to start

- 1. No fuel in tank
- 2. Clogged fuel line
- 3. Clogged fuel strainer
- 4. Stuck fuel valve diaphragm

#### Mixture too lean

- 1. Clogged fuel tank cap breather hole
- 2. Clogged or collapsed fuel line
- 3. Clogged fuel strainer

14



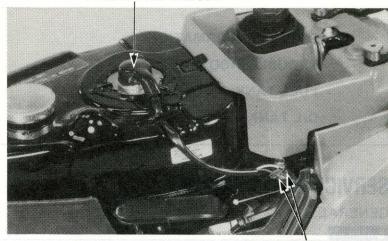
## **FUEL TANK**

# FUEL GAUGE SENSOR REMOVAL/INSTALLATION

Raise the seat.

Disconnect the fuel gauge sensor wire connectors. Remove the fuel gauge sensor by turning it counterclockwise.

#### **FUEL GAUGE SENSOR**

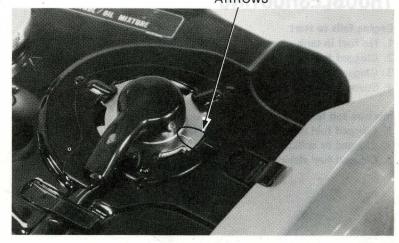


CONNECTORS

#### NOTE:

- Do not bend the float arm.
- Install the fuel gauge sensor with the arrow on the sensor aligned with the arrow on the fuel tank.

#### ARROWS



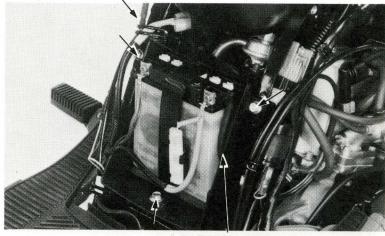
#### **FUEL TANK REMOVAL**

Remove the frame center and rear covers (Section 11)

Disconnect the resistor wire connector.

Remove the bolt and take out the battery.

#### RESISTOR WIRE CONNECTOR



BATTERY BOX



Disconnect the fuel and vacuum tubes.





VACUUM TUBE

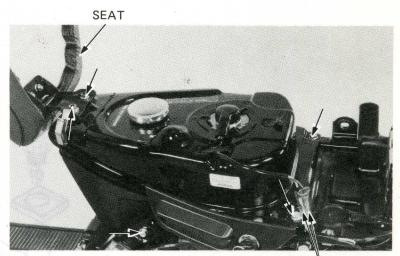
Remove the seat.

Disconnect the fuel gauge sensor wire connectors. Remove the fuel tank mount bolts and remove the fuel tank.

Remove and clean the fuel strainer.

Remove the fuel gauge sensor (Page 14-2).

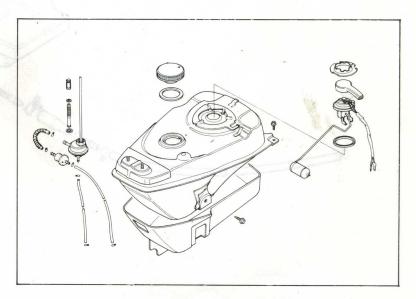
Check the fuel gauge sensor's operation (page 15-18).



WIRE CONNECTORS

#### **FUEL TANK INSTALLATION**

The installation sequence is essentially the reverse order of removal.





**OIL TANK** 

#### REMOVAL/INSTALLATION

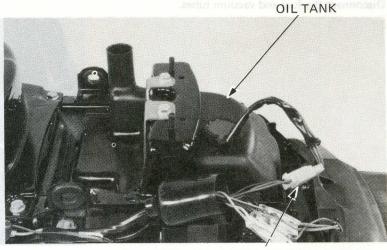
Remove the frame center and rear covers. (Section 11)

Drain oil from the oil tank.

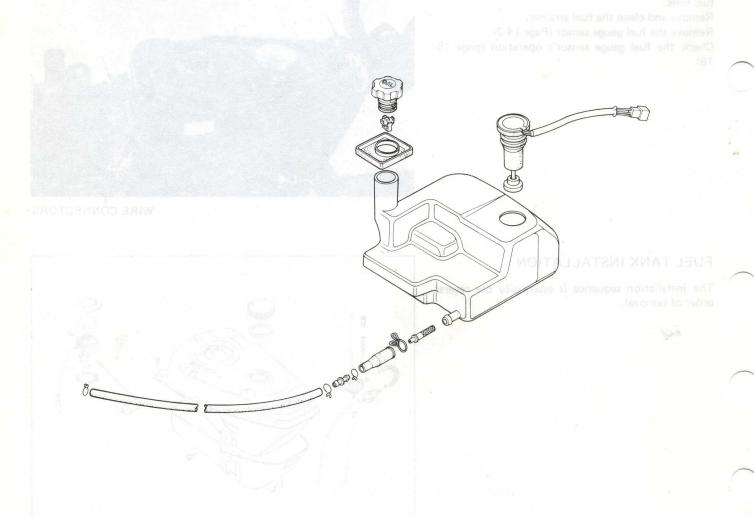
Disconnect the oil level indicator switch coupler. Remove the oil tank.

Clean the oil strainer (Page 3-6).

To install, reverse the foregoing removal procedure. Bleed the oil line after installing the oil pump (Page 2-3).



OIL LEVEL INDICATOR SWITCH COUPLER



# 15. ELECTRICAL EQUIPMENT

		NOTES I SPECE	I AND DESCRIPTION AND ARTS. AND IN
SERVICE INFORMATION	15–1	STARTING SYSTEM	15–11
TROUBLESHOOTING	15–2	SWITCHES/HORN	15–15
BATTERY printell of fluorio trocks	15–3	FUEL GAUGE SENSOR	15–17
CHARGING SYSTEM	15–5	OIL LEVEL INDICATOR UNIT	15–18
IGNITION SYSTEM	15–8	FRONT TURN SIGNALS	15–19
MENDENHALL OF AREA PARTOR	TOTAL DISCUSSION OF SE		

### **SERVICE INFORMATION**

#### **GENERAL**

- Do not quick charge the battery. Quick charging may damage the battery.
- Remove the battery from the motorcycle for charging. Remove the cell caps before charging the battery.
- Do not smoke or have flames near a charging battery. The gas produced by a battery is very flammable and can explode.
- Ignition timing cannot be adjusted.
- If the timing is incorrect, inspect the CDI unit and pulse generator and replace any faulty parts.

#### **SPECIFICATIONS**

#### **CHARGING SYSTEM**

TO SERVICE TO BUT IN THE PROPERTY.		
	Poorly contacted spritten MATI	SPECIFICATIONS 100 100 100 100 100 100 100 100 100 10
Battery	Capacity	12V 5AH
	Specific gravity	1.270-1.290 at 20°C (68°F)
	Charging rate	0.5A max.
Alternator	Charging rpm	2,000 rpm max. 16.4V
	Capacity states garden value?	0.9A min./4,000 rpm (17.7V)
	Stater not installed properly	1.4A max./6,000 rpm (18.0V)

#### **IGNITION SYSTEM**

ITEM		SPECIFICATIONS		
Spark plug		NGK	ND	
	Standard	BPR6HS	W20FPR	
	For cold climate (Below 5°C, 41°F)	BPR5HS	W16FPR	
tarter gear	For extended high speed riding	BPR7HS	W22FPR	
Spark plug gap	ing does not crank-starter rotates	0.6-0.7	mm (0.024-0.028 in)	
Ignition coil	Primary	0.2-0.3Ω		
resistance	Secondary	3.4–4.2 kΩ notom remain vitu		
Ignition timing		14° B	BTDC at 1,800 rpm	



### **TROUBLESHOOTING**

#### CHARGING SYSTEM

#### No power

- 1. Dead battery
  - Low fluid level
  - Battery sulfation
  - Internally shorted battery
  - Charging system failure
- 2. Disconnected battery cable
- 3. Fuse burned out
- 4. Faulty ignition switch

#### Low power

- 1. Weak battery
- 2. Loose battery connection
- 3. Charging system failure

#### **IGNITION SYSTEM**

#### No spark at plug

- 1. Faulty spark plug
- 2. Poorly connected, broken or shorted wire
  - Between pulse generator and CDI unit
  - Between CDI unit and ignition coil
  - Between CDI unit and ignition switch
  - Between ignition coil and spark plug
- 3. Faulty ignition switch
- 4. Faulty ignition coil
- 5. Faulty CDI unit
- 6. Faulty pulse generator

#### Intermittent power

- 1. Loose battery cable
  - 2. Loose charging system connection
  - 3. Loose connection or short circuit in lighting system
  - 4. Loose ignition system connection

#### Charging system failure

- 1. Loose, broken or shorted wire or connection
- 2. Faulty regulator/rectifier
- 3. Faulty alternator

#### Engine starts but turns poorly

- 1. Ignition primary circuit
  - Faulty ignition coil
  - Loose or bare wire or connector
  - Poorly contacted ignition switch
- 2. Ignition secondary circuit
  - Faulty ignition coil
  - Faulty spark plug
  - Faulty high tension wire
  - Poorly insulated plug cap
- 3. Improper ignition timing
  - Faulty pulse generator
  - Stator not installed properly
  - Faulty CDI unit

#### STARTING SYSTEM

#### Starter won't turn

- 1. Fuse burned out
- 2. Weak battery
- 3. Faulty ignition switch
- 4. Faulty starter switch
- 5. Faulty front or rear stop switch
- 6. Faulty starter relay
- 7. Poorly connected, broken or shorted wire
- 8. Faulty starter motor

#### Lack of power

- 1. Weak battery
- 2. Loose or bare wire or connection
- 3. Foreign matter stuck in starter or starter gear

#### Engine does not crank-starter rotates

- 1. Faulty starter pinion
- 2. Low battery



### **BATTERY**

#### REMOVAL/INSTALLATION

Remove the battery cover.

Remove the battery holder by removing the attaching bolt.

Disconnect the negative cable first.

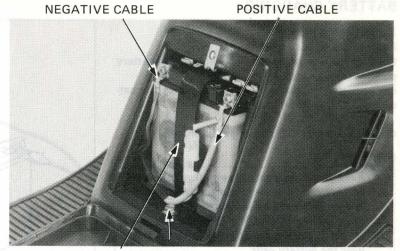
Then disconnect the positive cable.

Remove the battery.

The installation sequence is essentially the reverse order of removal.

#### NOTE:

Connect the battery breather tube to the battery breather pipe securely.



**BATTERY HOLDER** 

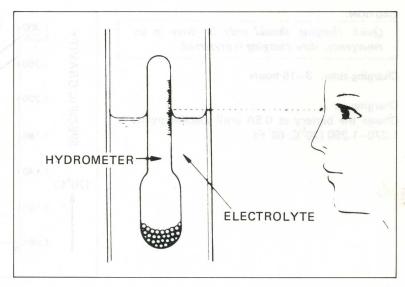
#### SPECIFIC GRAVITY TEST

Test each cell by drawing electrolyte into a hydrometer.

#### SPECIFIC GRAVITY (20°C, 68°F)

1.270-1.290	Fully charged
1.230 or below	Undercharged

The battery must be charged if the specific gravity falls below 1.230.

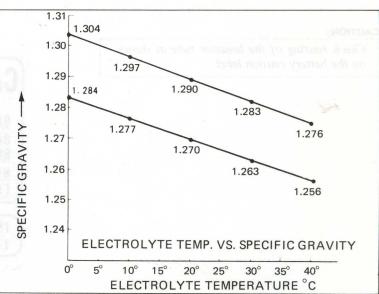


#### NOTE:

- The specific gravity varies with the temperature as shown. (Specific gravity changes by 0.007 for every 10°C).
- Replace the battery if sulfation has formed, or if the space below the cell plates is filled with sediment.

#### WARNING

The battery contains sulfuric acid. Avoid contact with skin, eyes, or clothing. Antidote: Flush with water and get prompt medical attention.





#### BATTERY CHARGING

Remove the battery.

Remove the cell cap from the battery.

Connect the charger positive (+) cable to the battery positive (+) terminal.

Connect the charger negative (—) cable to the battery negative (—) terminal.

Charging current: 0.5 amperes maximum

#### WWW.

- Keep flames and sparks away from a charging battery to prevent igniting the hydrogen gas produced by the battery.
- Turn power ON/OFF at the charger, not at the battery terminals to prevent sparks near the battery cells.
- Discontinue charging if the electrolyte temperature exceeds 45°C (117°F).

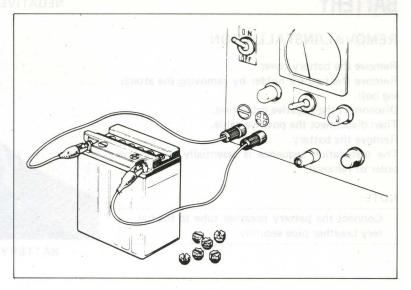


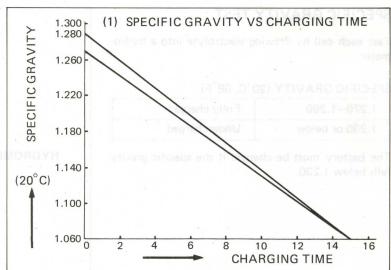
Quick charging should only be done in an emergency, slow charging is preferred.

Charging time: 3-15 hours

Charging:

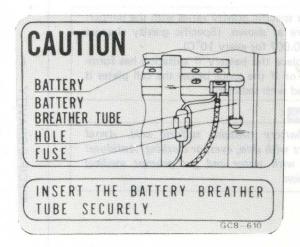
Charge the battery at 0.5A until specific gravity is  $1.270-1.290~(20^{\circ}C, 68^{\circ}F)$ .





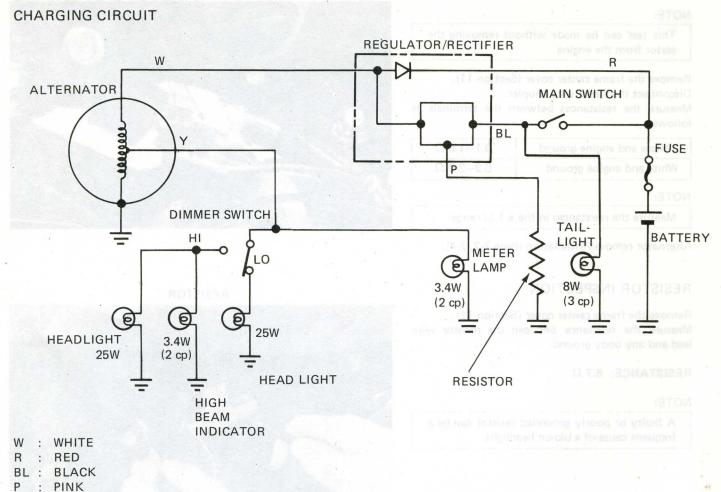
#### CAUTION:

Check routing of the breather tube as shown on the battery caution label.





### **CHARGING SYSTEM**



#### PERFORMANCE TEST

YELLOW

Warm up the engine.

#### NOTE:

Use a fully charged battery to check the charging system output.

Disconnect the black wire lead from the regulator/rectifier coupler.

Open the fuse holder and disconnect the red wire from the holder.

Connect an ammeter and voltmeter as shown.

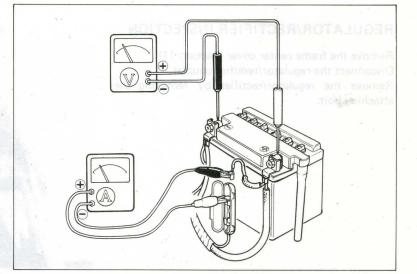
Start the engine and take meter readings.

The readings should match the chart.

#### TECHNICAL DATA

Charging rpm (Initial)	4,000 rpm	6,000 rpm
2,000 max.	0.9A min.	1.4A max.

If the readings are not within specifications, check the stator and regulator/rectifier.





#### ALTERNATOR INSPECTION

#### NOTE:

This test can be made without removing the stator from the engine.

Remove the frame center cover (Section 11).

Disconnect the stator wire coupler.

Measure the resistances between the terminals as follows:

Yellow and engine ground	0.1-1.0 Ω
White and engine ground	0.2-2.0 Ω

#### NOTE:

Measure the resistances in the x 1  $\Omega$  range.

Alternator removal/installation (Page 7-2, 7-4).

#### RESISTOR INSPECTION

Remove the frame center cover (Section 11). Measure the resistance between the resistor wire lead and any body ground.

RESISTANCE: 6.7  $\Omega$ 

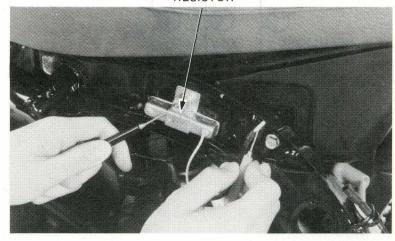
#### NOTE:

A faulty or poorly grounded resistor can be a frequent cause of a blown headlight.

#### STATOR WIRE CONNECTORS



#### RESISTOR



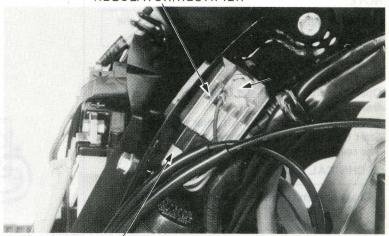
#### REGULATOR/RECTIFIER INSPECTION

Remove the frame center cover (Section 11).

Disconnect the regulator/rectifier coupler.

Remove the regulator/rectifier by removing the attaching bolt.

#### REGULATOR/RECTIFIER



COUPLER



Measure the resistances between the terminals. Replace the regulator/rectifier with a new one if the readings do not fall within the limits shown in the table.

#### NOTE:

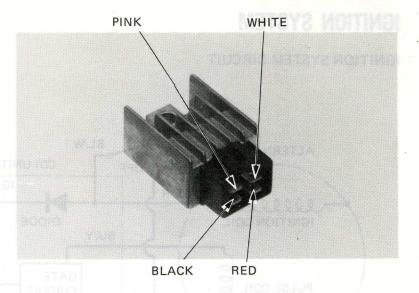
- For accurate testing, it is necessary to use a specified tester. Use of an improper tester or measurements in the improper range may give false readings.
- Use Sanwa Electric Tester SP-10D (07308— 0020000), Kowa Electric Tester TH-5H or Kowa Digital Multi Tester KS-AHM-32-003 (U.S.A. only).

#### Measuring range:

SANWA ELECTRIC TESTER:  $\times$  K  $\Omega$  KOWA ELECTRIC TESTER:  $\times$  100  $\Omega$ 

(1) UNIT: KΩ

+ PROBE - PROBE	PINK	WHITE	BLACK	RED
PINK		∞ .	1-5	∞
WHITE	. ∞		00	0.5-10
BLACK	1–5	∞		∞
RED	∞	∞	. ∞	



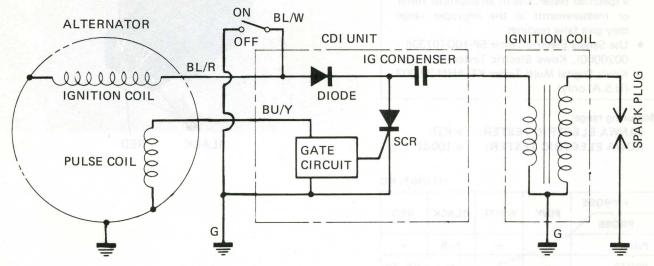
the tapplion timing is not correct, check the



### **IGNITION SYSTEM**

**IGNITION SYSTEM CIRCUIT** 

BL : BLACK
Y : YELLOW
BU : BLUE
G : GREEN
R : RED
W : WHITE



#### SPARK PLUG

For spark plug gap inspection and adjustment, see Page 3-6.

#### **IGNITION TIMING**

#### NOTE:

The CDI ignition timing is not adjustable. If the ignition timing is not correct, check the CDI unit and alternator and replace any faulty parts.

Remove the fan cover and check the ignition timing with a timing light.

Timing is correct if the index mark aligns with the "F" mark (within  $3^{\circ}$ ) at 1,800 rpm.

IGNITION TIMING: 14 ± 3° BTDC at 1,800 rpm



"F" MARK

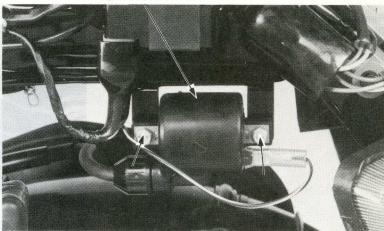


#### IGNITION COIL INSPECTION THAT IS

Remove the left frame cover.

Disconnect the plug cap from the high tension wire while rotating the plug cap.

**IGNITION COIL** 

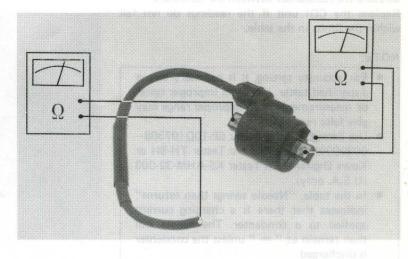


Measure the resistances of the primary and secondary coils.

#### **RESISTANCES:**

Primary coil Secondary coil **0.2–0.3**  $\Omega$ 

 $3.4-4.2 k\Omega$ 



#### PULSE GENERATOR INSPECTION

#### NOTE:

It is not necessary to remove the stator to make this test.

Remove the frame center cover (Section 11). Disconnect the stator coupler.

Measure the resistances between the terminals with an ohmmeter.

Black/red — Engine ground 50—300  $\Omega$  Blue/yellow — Body ground 10—100  $\Omega$ 

#### NOTE:

Measure the resistances in the x 1  $\Omega$  range.

Alternator removal/installation (Page 7-2, 7-4).

#### PULSE GENERATOR CONNECTORS

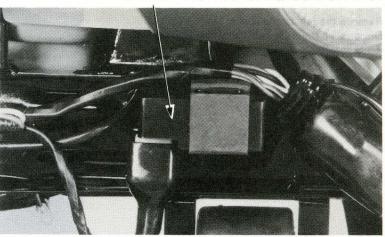




#### CDI UNIT INSPECTION

Remove the left frame cover (Section 11).
Disconnect the CDI coupler and remove the CDI unit.

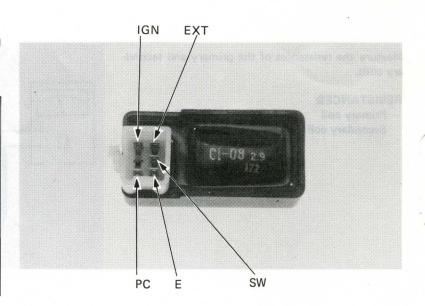




Measure the resistances between the terminals. Replace the CDI unit if the readings do not fall within the limits in the table.

#### NOTE:

- For accurate testing, it is necessary to use a specified tester. Use of an improper tester or measurements in an improper range may give false readings.
- Use Sanwa Electric Tester SP-10D (07308— 0020000), Kowa Electric Tester TH-5H or Kowa Digital Multi Tester KS-AHM-32-003 (U.S.A. only).
- In the table, "Needle swings then returns" indicates that there is a charging current applied to a condenser. The needle will then remain at "∞" unless the condenser is discharged.



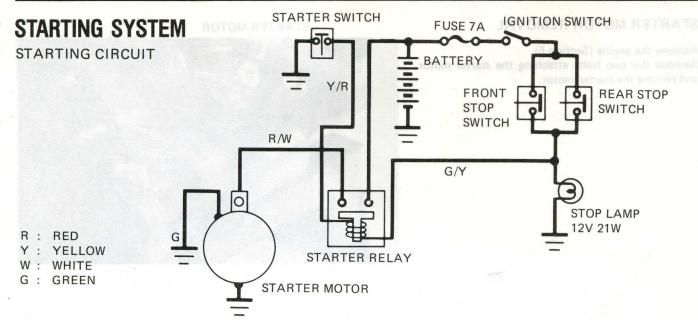
#### NOTE:

- Use the x  $K\Omega$  range for Sanwa Tester.
- Use the x 100  $\Omega$  for Kowa Tester.

UNIT:  $K\Omega$ 

⊕ PROBE	SW	EXT	PC ristwale.	ter cover (Section 11)  E coupler  S between the terms	IGN STATES
SW		∞	∞	∞	ohmm(∞*.
EXT	0.1–10		∞ ·	200E-03 ∞ beauting	"Needle swings then returns"
PC	0.5-200	0.5-50		1-50	00
Е	0.2-30	0.1-10	~	eater O. T. of eater	∞
IGN	80	∞ .	∞	∞	





#### STARTER RELAY INSPECTION

The primary coil is normal if you hear a click when the starter button is depressed.

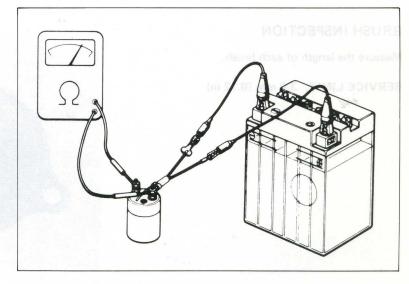
STARTER RELAY



Connect a 12V battery to the primary coil. Check for continuity of the secondary terminals. Replace the starter relay switch with a new one if there is no continuity.

#### STARTER RELAY REMOVAL

Remove the frame center cover (Section 11). Remove the battery box (Page 15-4). Remove the starter relay switch.



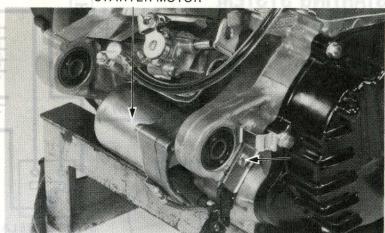


#### STARTER MOTOR REMOVAL AT 3203

Remove the engine (Section 5).

Remove the two bolts attaching the starter motor and remove the starter motor.

#### STARTER MOTOR

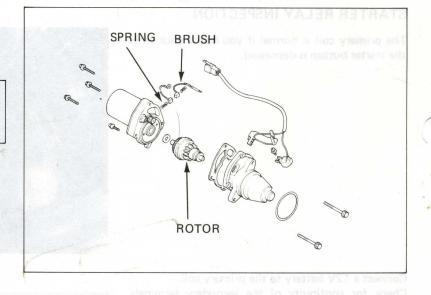


#### STARTER MOTOR DISASSEMBLY

Disconnect the starter wires.

#### NOTE:

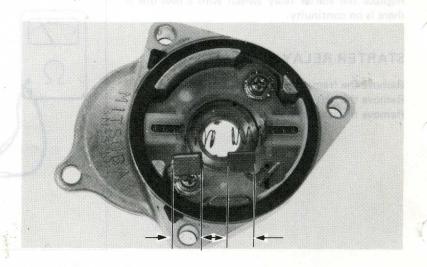
- The brush springs will pop out when removing the brush holder plate.
- Record the number and location of the commutator thrust washers.



#### **BRUSH INSPECTION**

Measure the length of each brush.

SERVICE LIMIT: 3.0 mm (0.12 in)





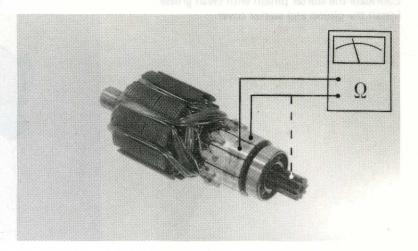
#### COMMUTATOR INSPECTION

Check the commutator for discoloration and other visual faults. Blackened adjacent segments are an indication of a shorted circuit.

#### NOTE:

Do not use sand paper to clean the commutator.

Check for continuity between segments, and commutator and shaft. The commutator is normal if there is continuity between the segments. There should be no continuity between the commutator and shaft.



#### STARTER MOTOR ASSEMBLY

Install the brush springs and brushes in the holder plate.

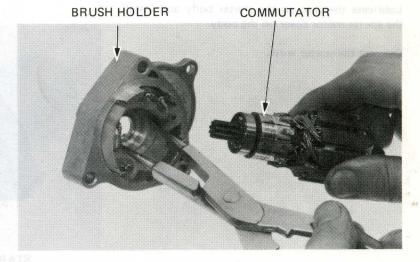
Install the commutator and thrust washers while extending the brushes outward.

#### NOTE:

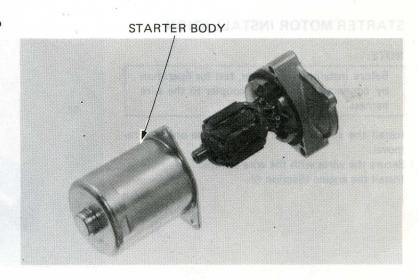
Note the number and location of the thrust washers.

#### CAUTION:

Check that there is no foreign material inside the starter body.



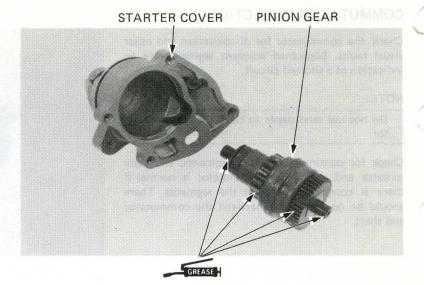
Install the commutator with the brush holder into the starter body.



#### **ELECTRICAL EQUIPMENT**

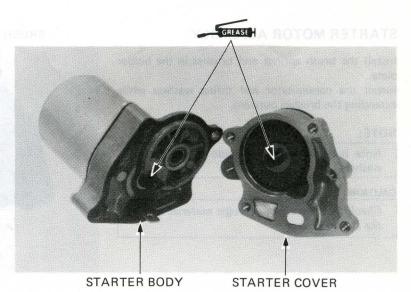


Lubricate the starter pinion with clean grease. Install the pinion and starter cover.



Lubricate the gear on the starter body and install the starter motor cover on the body.

Connect the starter wires.



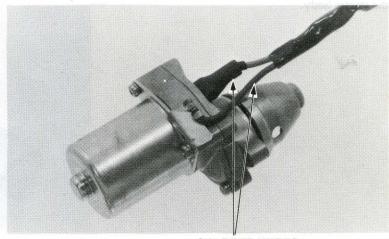
#### STARTER MOTOR INSTALLATION

#### NOTE:

Before installing the starter, test for operation by connecting the starter coupler to the wire harness.

Install the starter motor in the reverse order of removal.

Secure the wires with the wire clamps. Install the engine (Section 5).



STARTER WIRES



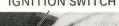
## SWITCHES/HORN

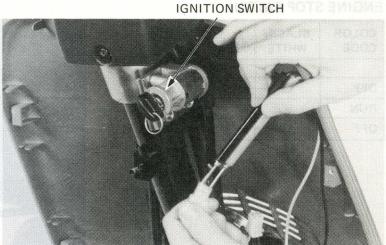
Remove the handlebar lower cover and glovebox. Check the continuity of each switch.

Continuity should exist between color coded wires indicated by interconnected circles on each chart.

#### **IGNITION SWITCH**

COLOR CODE	RED	BLACK	BLACK/ WHITE	GREEN
	BAT 1	BAT 2	IG	Е
ON	0—	-0		
OFF			0	-0
LOCK				





#### TURN SIGNAL SWITCH

COLOR CODE	GRAY	LIGHT BLUE	ORANGE
	W	R	L
R	0	0	
N			
L	0-		0

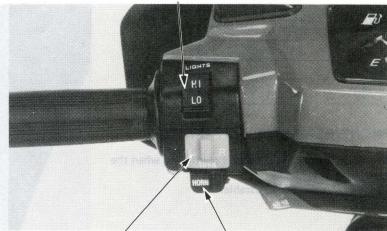
#### HORN SWITCH

COLOR CODE	LIGHT BLUE	BLACK
	НО	BAT 2
FREE		
PUSH	0-	-0

#### **HEADLIGHT HI-LOW SWITCH**

COLOR CODE	BROWN	BLUE	WHITE
	HL	Hi	Lo
Hi	0-	—	
(N)	0-	0	
Lo	0-		-0

HEADLIGHT HI-LOW SWITCH WE RETRATE



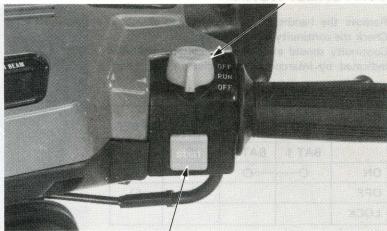
TURN SIGNÁL SWITCH HORN SWITCH



#### ENGINE STOP SWITCH

COLOR CODE	BLACK/ WHITE	GREEN
	IG	E
OFF	0	0
RUN		
OFF	0	

**ENGINE STOP SWITCH** 



STARTER SWITCH

## STARTER SWITCH

COLOR CODE	YELLOW/ RED	GREEN
	ST	E
FREE		
PUSH	0-	<del>-</del> •

#### FRONT/REAR STOPLIGHT SWITCH

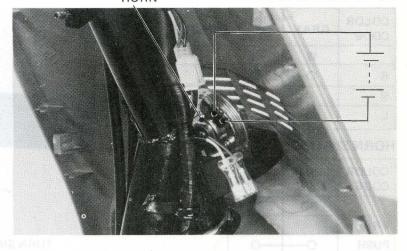
The switch is normal if there is continuity when the brake lever is applied.

The switches are not adjustable.

#### HORN

The horn is normal if it sounds when a 12V battery is connected across the terminals.

HORN



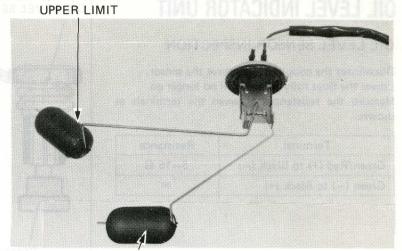


## **FUEL GAUGE SENSOR**

#### FUEL GAUGE SENSOR INSPECTION

Remove the sensor from the fuel tank (Page 14-2). Measure the resistances between the terminals with the float at the UPPER (FULL) and LOWER (EMPTY) positions.

Float position	Resistance
UPPER (FULL)	4–10 Ω
LOWER (EMPTY)	97.5–107.5 Ω



LOWER LIMIT

#### **FUEL GAUGE INSPECTION**

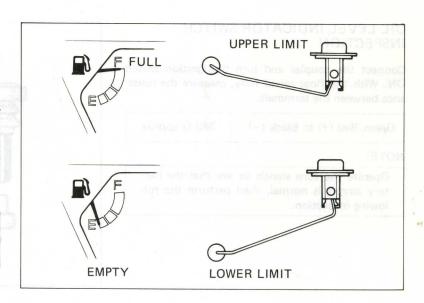
Connect the wire connectors and turn the ignition switch ON.

#### NOTE:

Before performing the following test, operate the turn signals to determine that the battery circuit is normal.

Check the gauge needle for correct indication by moving the float up and down.

Float position	Needle Position
FLOAT AT UPPER LIMIT	F (FULL)
FLOAT AT LOWER LIMIT	E (EMPTY)



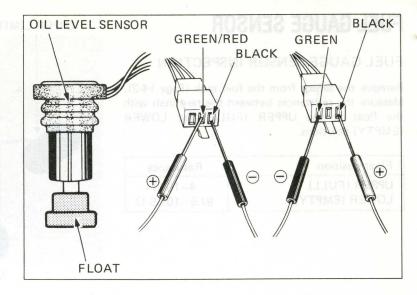


## **OIL LEVEL INDICATOR UNIT**

#### OIL LEVEL SENSOR INSPECTION

Disconnect the coupler and remove the sensor. Lower the float fully until it will no longer go. Measure the resistances between the terminals as shown.

Terminal	Resistance
Green/Red (+) to Black (-)	5–15 Ω
Green (-) to Black (+)	∞



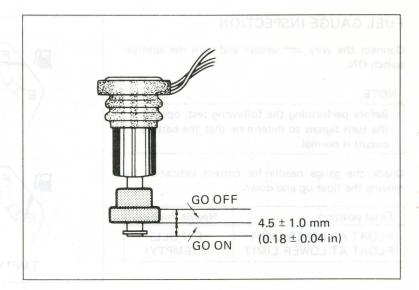
# OIL LEVEL INDICATOR SWITCH INSPECTION

Connect the coupler and turn the ignition switch ON. With the float raised fully, measure the resistance between the terminals.

Green/Red (+) to Black (-)	340 $\Omega$ approx.
Green/ned (+) to black (-)	340 22 approx.

#### NOTE:

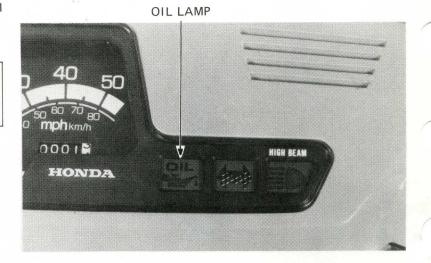
Operate the turn signals to see that the battery circuit is normal, then perform the following inspection.



Raise and lower the float to make sure that the oil level indicator lamp blinks.

#### NOTE:

Should the lamp fail to go on and go out as the float is moved up and down, check for loose connections and repeat the above procedure.

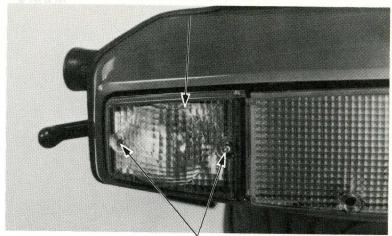




### TURN SIGNAL BULB REPLACEMENT

Remove the turn signal lenses by removing the screws.

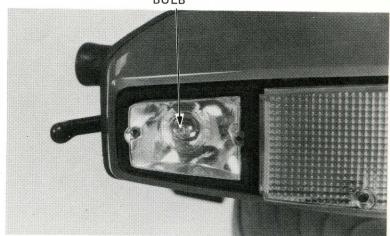
#### TURN SIGNAL LENS



SCREWS

Replace the bulb with a new one. Install the lens, being careful not to overtighten the screws.

BULB





# MEMO

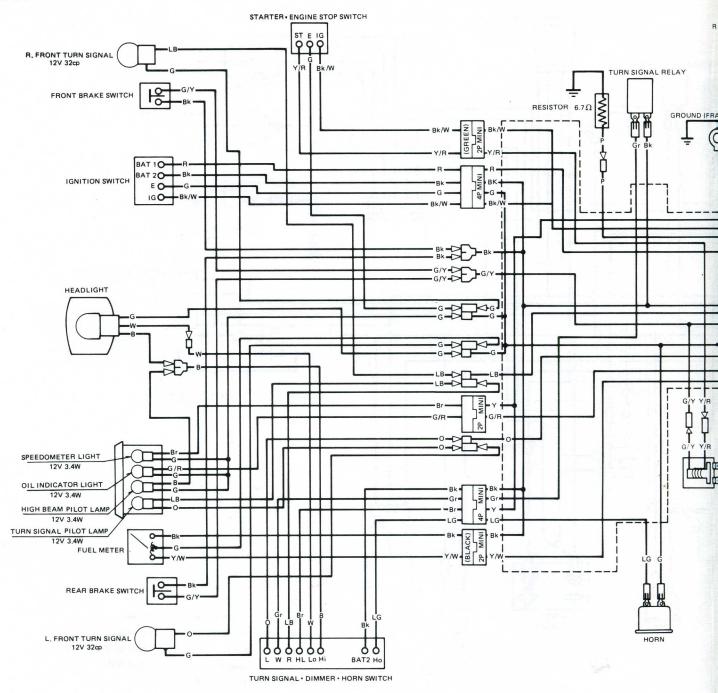
TURN SIGNAL BULE REPLACEMENT

Remove the turn signal lenses by removing the scrows.

and watch research and property and



# 1983:





COLOR

IGNITIO	N SWIT	СН		
	BAT 1	BAT2	IG	Е
ON	0	9		
OFF			Q	9
COLOR	R	Bk	Bk/W	G

	Но	BAT 2
FREE		
PUSH	0	0
COLOR	LB	Bk

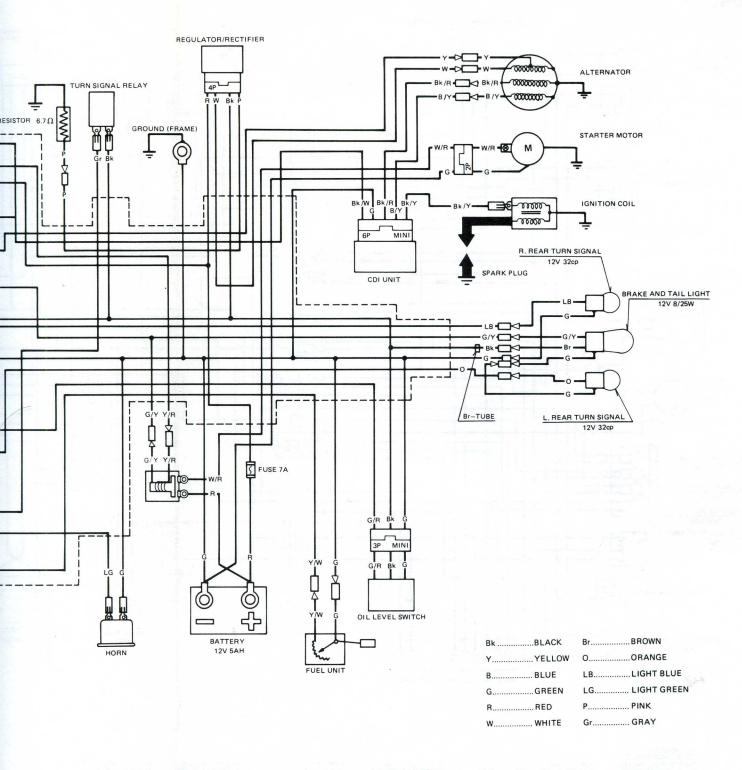
		HL	Hi	Lo
	н	0	9	
ON	(N)	0	Þ	9
	LO	0		9
COL	OR	Br	В	w

	ST	E
FREE		
PUSH	Q	0
COLOR	Y/R	G

	IG	E
OFF	0	0
RUN		
OFF	0	-0
COLOR	Bk/w	G

Gr LB

# 16. WIRING DIAGRAM

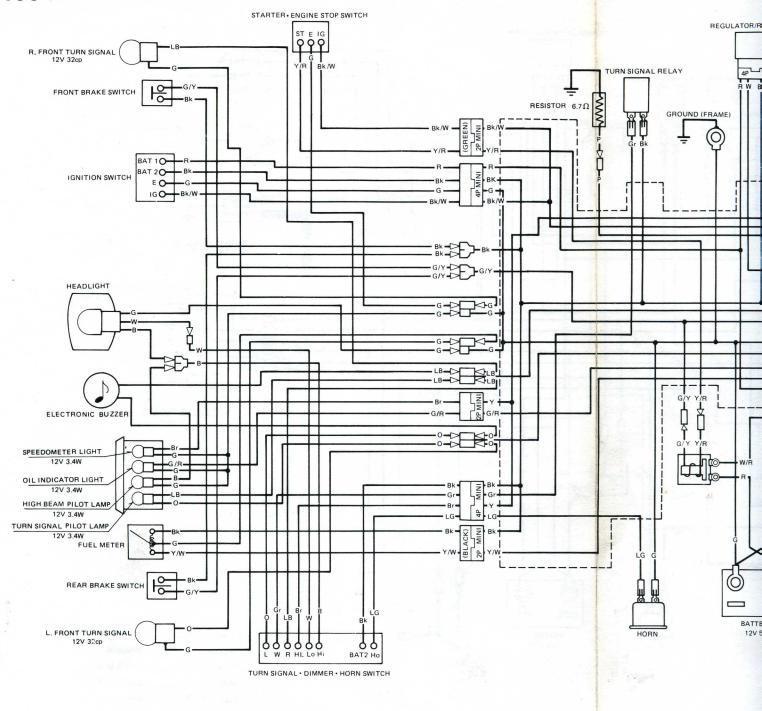


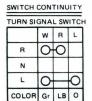
16

TARTER SWITCH				
	ST	E		
FREE				
PUSH	Ó	Q		
COLOR	Y/R	G		

	IG	Е
OFF	þ	9
RUN		
OFF	0	9
COLOR	Bk/ W	G

## 1984:





	BAT 1	BAT 2	IG	Ε
ON	0-	0		
OFF			0	0
COLOR	R	Bk	Bk/W	G

	Но	BAT 2
FREE		
PUSH	0	0
COLOR	LB	Bk

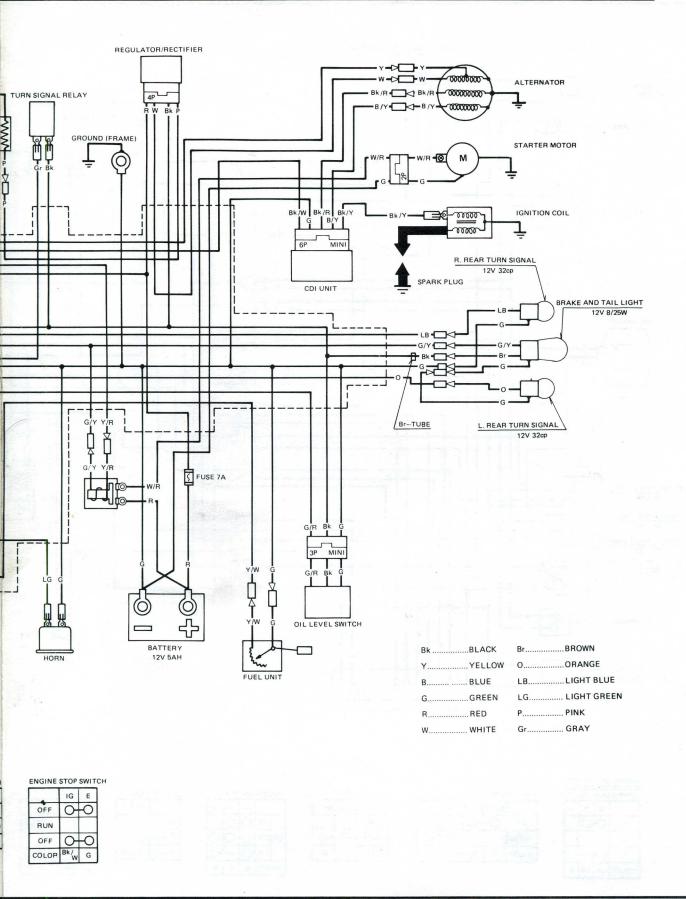
		HL	Hi	Lo
ON	ні	0	Ю	
	(N)	0	0	Ю
	LO	0		9
coı	OR	Br	В	w

	ST	E
FREE		
PUSH	0	0
COLOR	Y/R	G

	LIVOINE	0101	01111	٠.
2		IG	E	
	OFF	Q	9	
111111	RUN	-		
	OFF	Q	9	
	COLOP	Bk / W	G	

ENGINE STOP SWITCH







# 17. TECHNICAL FEATURES

ENGINE 17–1
AUTOMATIC TRANSMISSION 17–3

### **ENGINE**

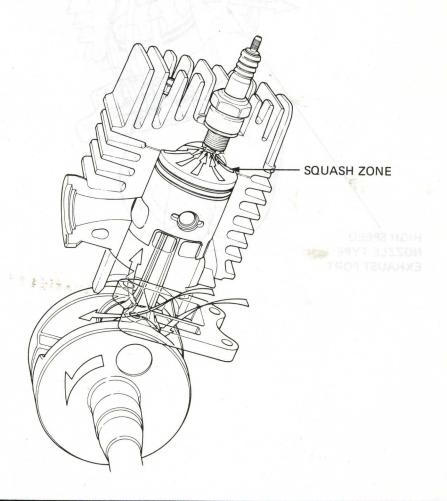
The features of the NH80 engine described below all contribute to meet United States emissions standards, and to provide better power and fuel economy than comparable engines in its displacement category.

#### 5-SCAVENGE PORTS

The NH80 engine has 5-scavenge ports. These ports are especially designed to swirl the incoming fuel-air mixture into the combustion chamber. This swirl effect causes turbulence that will give the most efficient combustion. This works with the special designs of the nozzle type exhaust port, piston and combustion chamber.

#### PISTON/COMBUSTION CHAMBER

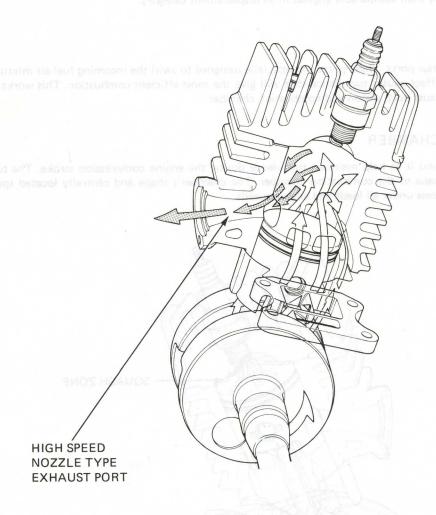
The piston top has a rim around it to help maintain turbulence during the engine compression stroke. The turbulence is also aided by the semi-spherical shape of the combustion chamber. The chamber's shape and centrally located spark plug provide a fast smooth combustion process under all loads and engine speeds.





#### **VENTURI EXHAUST PORT**

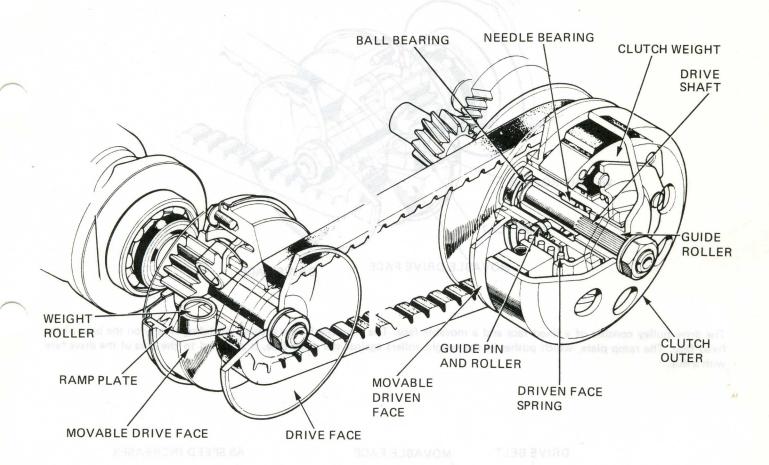
The exhaust port on this engine has been designed with a slight venturi shape to create just enough back pressure to momentarily restrict the exit of the exhaust gases for a more complete combustion cycle. The exhaust quickly exits the cylinder after passing the venturi of the exhaust port. This is a way that emission standards are met by the NH80 engine that also help improve fuel mileage.

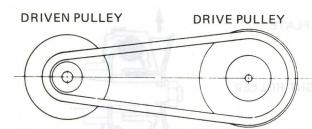




### **AUTOMATIC TRANSMISSION**

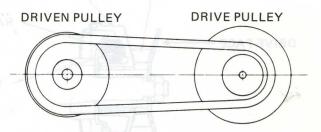
The automatic transmission provides various drive ratios between the engine and rear wheel according to the engine speed and load. It accomplishes this by two sets of pulleys; drive and driven, and by the use of a drive belt between the pulleys. The drive pulley is attached to the engine crankshaft. The driven pulley is attached to a shaft and also incorporates a centrifugal clutch. There is a final gear reduction between the driven pulley and rear wheel, providing an additional increase in torque.





When the engine is running at low speed, the unit can increase or multiply torque so that more torque is delivered than at high engine speed through a greater drive ratio.

**REDUCTION RATIO: 2:1** 

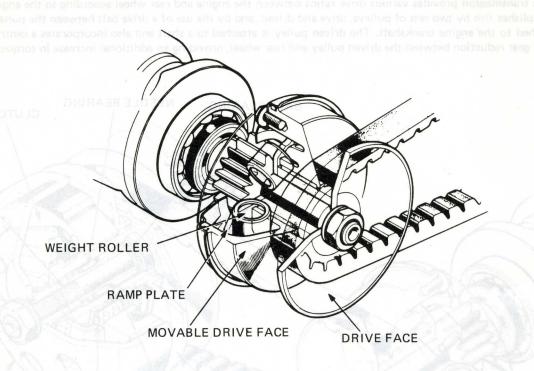


As the speed of the engine increases, or load on the rear wheel decreases, centrifugal force on the weight rollers throws the rollers radially outward. When the rollers are forced outward, they press-in the movable face of the drive pulley closer to the drive face which will result in a reduced drive ratio between the driven and drive pulleys.

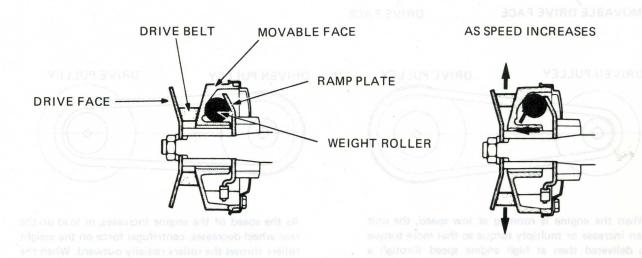
**REDUCTION RATIO: 1:1** 



#### **DRIVE PULLEY**



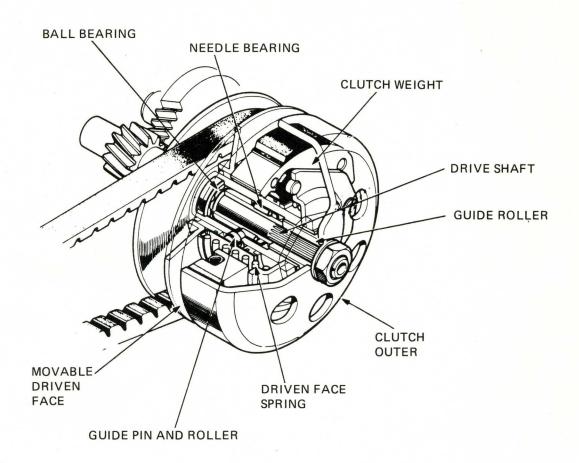
The drive pulley consists of a fixed face and a movable face. The movable face is capable of sliding axially on the boss of the fixed face. The ramp plate, which pushes in the weight rollers against the drive face, is attached to the boss of the drive face with a nut.



As the speed of the engine increases, centrifugal force on the weight rollers is also increased. This pushes the movable drive face inward. The unit then acts with a reduced drive ratio by allowing the drive belt to run on a pulley of greater diameter.



**DRIVEN PULLEY** 

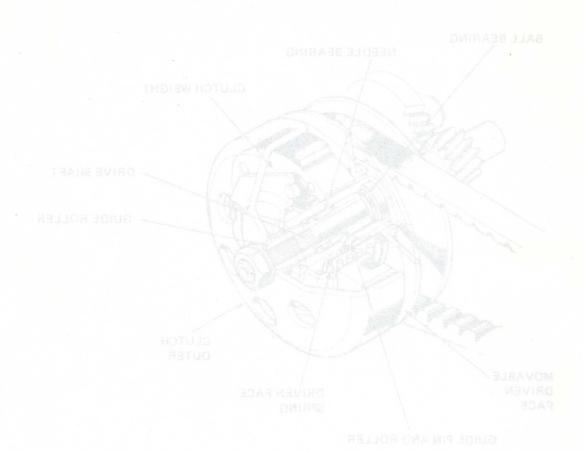


The driven pulley and clutch weights are attached over the drive shaft. The clutch outer is attached to the drive shaft with a nut. The force of the driven face spring is always exerted on the movable face to push it against the driven face. Therefore, when engine speed is increased, the driven pulley turns and the clutch connects automatically. The effective diameter of the drive pulley is increased. The movable face is forced outward by means of the belt until an equilibrium is reached between the torque tension of the belt and force of the spring. When this occurs, the drive ratio decreases and less torque is delivered to the final reduction.



DRIVEN PULLEY

## MEMO



The driven pulley and clutch weights are attached over the drive shelt. The clutch outer is attached to the driven shalf with a nut. The force of the driven face spring is always exerted on the movable face to push it spaints the driven face. Therefore, when engine speed is increased, the driven nulley turns and the clutch connects automatically. The effective dismeter of the drive pulley is increased. The movable face is forced outward by means of the belt until an equilibrium is reached between the torque tension of the beit and force of the spring. When this occurs, the drive ratio decreases and less torque is delivered to the firely eduction.

# 18. TROUBLESHOOTING

	THE RESERVE OF SAFETY AND APPLICATION
ENGINE DOES NOT START OR IS HARD TO START	18–1
ENGINE LACKS POWER	18–2
POOR PERFORMANCE AT LOW AND IDLE SPEEDS	18–3
POOR PERFORMANCE AT HIGH SPEED	18–3
POOR HANDLING	18–4
OIL INDICATOR	18–5
FUEL GAUGE	18-6
STARTER MOTOR	18-7
(2) Slown rylinder head acted	

# ENGINE DOES NOT START OR IS HARD TO START

		Probable Cause
Check if fuel is getting to carburetor by loosening drain screw	NOT GETTING TO CARBURETOR	(1) No fuel in fuel tank (2) Clogged fuel tube up to carburetor, vacuum tube up to inlet
GETTING TO CARBURETOR		pipe
(1) Plug not serviced fraquently enough		<ul><li>(3) Clogged float valve</li><li>(4) Clogged fuel tank cap breather hole</li></ul>
(2) Usa of plug with improper heat		(5) Clogged fuel strainer
2. Try spark test	WEAK OR NO SPARK	(1) Faulty spark plug (2) Fouled spark plug
SPARK JUMPS		(3) Faulty CDI unit
(2) Fuel alt mixture rob lean (3) Use of improper grade of fuel		<ul><li>(4) Faulty pulse generator</li><li>(5) Broken or shorted high tension</li></ul>
(4) Excession carbon bulliago		wire
combustion chamber		(6) Broken or shorted ignition coil
henriche par (iming too advarued		(7) Faulty ignition switch
3. Test cylinder compression	LOW COMPRESSION	► (1) Stuck piston rings (2) Faulty or deteriorated reed valve
NORMAL COMPRESSION		(3) Worn cylinder and piston rings
(3) Clutch slipping (4) Fuel air mixture too leen		<ul><li>(4) Flaw in cylinder or cylinder head</li><li>(5) Compression leak past crankcase</li></ul>
1,000		(6) Blown cylinder head gasket
<ol> <li>Start by following normal</li> </ol>	ENGINE FIRES BUT ————	→(1) Faulty control box
starting procedure	SOON STOPS	(2) Air leaking past intake pipe
ENGINE DOES NOT FIRE		<ul><li>(3) Improper ignition timing</li><li>(4) Carbon blocking exhaust system</li></ul>
5. Remove spark plug	WET PLUG -	(1) Carburetor flooded
		(2) Faulty control box
DRY		(3) Throttle valve open excessively



### **ENGINE LACKS POWER**

**Probable Cause** 1. Lightly accelerate engine **ENGINE SPEED DOES NOT-**► (1) Clogged air cleaner INCREASE SUFFICIENTLY (2) Restricted fuel flow **ENGINE SPEED INCREASES** (3) Clogged fuel tank cap breather hole (4) Clogged muffler 2. Check ignition timing INCORRECT-►(1) Faulty CDI unit (2) Faulty pulse generator CORRECT ►(1) Worn cylinder or piston rings 3. Test cylinder compression TOO LOW-(2) Blown cylinder head gasket NORMAL (3) Flaws in cylinder or cylinder head (4) Faulty or deteriorated reed valve TOO HIGH ►(1) Carbon build-up in combustion chamber 4. Check carburetor for clogging CLOGGED -► (1) Carburetor not serviced frequently enough NOT CLOGGED 5. Remove spark plug FOULED OR-◆(1) Plug not serviced frequently DISCOLORED enough NOT FOULED OR (2) Use of plug with improper heat DISCOLORED Check if engine overheats OVERHEATED-►(1) Worn cylinder or piston (2) Fuel air mixture too lean NOT OVERHEATED (3) Use of improper grade of fuel (4) Excessive carbon build-up in combustion chamber (5) Ignition timing too advanced 7. Try rapid acceleration or ENGINE KNOCKS -►(1) Excessive carbon build-up in run at high speed combustion chamber (2) Use of improper grade of fuel ENGINE DOES NOT KNOCK (3) Clutch slipping (4) Fuel air mixture too lean

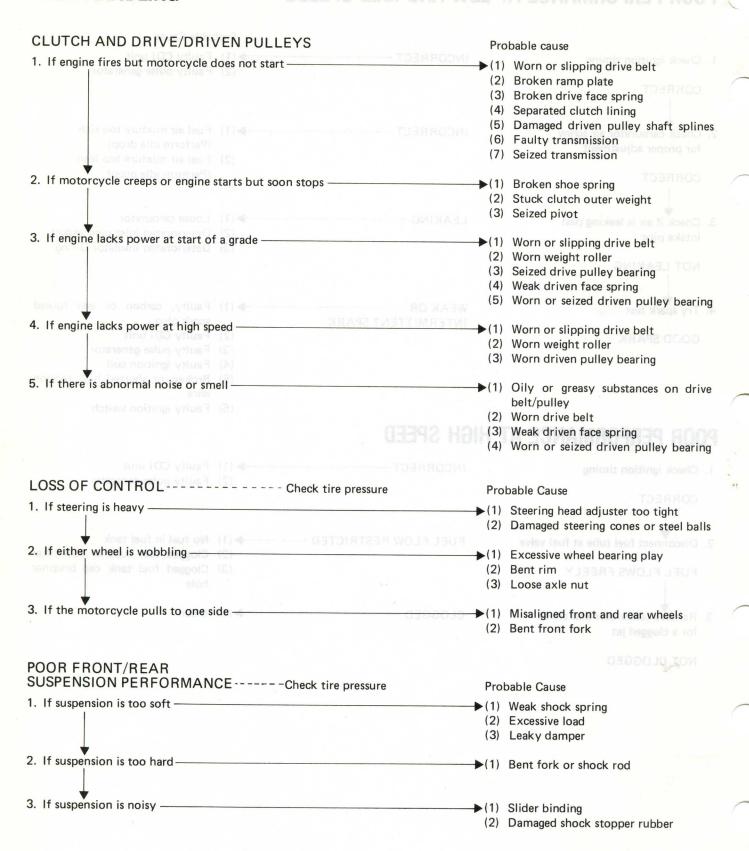


# POOR PERFORMANCE AT LOW AND IDLE SPEEDS

	ava i ilia Pr	obable Cause
1. Check ignition timing	INCORRECT → (1	) Faulty CDI unit ) Faulty pulse generator
(2) Broken ramp plats (3) Broken drive face spring TDBRROD (4) Separated clutch lining	(2	, Taulty pulse generator
Check carburetor air screw for proper adjustment		<ul><li>) Fuel air mixture too rich (Perform idle drop)</li><li>) Fuel air mixture too lean</li></ul>
CORRECT grange spoke mestors (1) at the cutter outer weight? (2)		(Perform idle drop)
Check if air is leaking past intake pipe		<ul><li>) Loose carburetor</li><li>i) Deteriorated inlet pipe gasket</li><li>ii) Deteriorated insulator O-ring</li></ul>
NOT LEAKING		
4. Try spark test  GOOD SPARK	(2	spark plug ?) Faulty CDI unit
	(4	3) Faulty pulse generator 4) Faulty ignition coil 5) Broken or shorted high tension
	(6	wire  S) Faulty ignition switch
POOR PERFORMANCE AT H	ונוח סרבבט	
1. Check ignition timing  CORRECT	Check the pressure	) Faulty CDI unit 2) Faulty pulse generator
(2) Damaged steering cones or deal balls		
2. Disconnect fuel tube at fuel valve		2) Clogged fuel tube or fuel filter
FUEL FLOWS FREELY mit med (3)		<ol> <li>Clogged fuel tank cap breather hole</li> </ol>
3. Remove carburetor and check for a clogged jet	CLOGGED ───────────────────────────────────	Clean I slive elevatorem entr II 8
NOT CLOGGED		DARRITANIA DOGG
		POOR FRONT/REAR SUSPENSION PERFORMANC
	,	



### **POOR HANDLING**





POOR BRAKE PERFORMANCE	Check brake adjustment	Pro	bable Cause
1. If wear indicator arrow aligns with index n	nark on brake panel —————	<b>(</b> 1)	Worn brake shoes
DRRECTLY (IGNITION SWITCH ON)			Worn brake cam
Probable Cause			Worn cam contacting face of shoe Worn brake drum
SHOPL PRINCOTS			
2. If either brake is squealing	STATES AND DESCRIPTION OF THE STATES OF THE	<b>→</b> (1)	Worn brake shoes
(3) Faulty ignition switch		(2)	Foreign matter on brake lining Rough shoe contact face of brake
(4) Disconnected terminal (6) Broken wire berness			drum
3. If brake performance is poor	2 2077748 61 27 17 17 17 17	<b>(1)</b>	Faulty or elongated brake cable
Tent Anna (114			Brake shoes partially contacting brake drum
		(3)	Mud or water in brake drum
OIL INDICATOR		(4)	Brake linings fouled with grease or oil
INDICATOR LAMB DOES NOT LICH	T WHEN ICHITION SWITCH I	C TII	DNED ON
INDICATOR LAMP DOES NOT LIGH	IT WHEN IGNITION SWITCH I		
			bable Cause abiz sannari salay no
Check battery circuit by operating	SIGNALS DIM, REMAINED—— ON OR NOT OPERATED		Blown fuse TOM 2900 RETMOS
turn signals	ON OR NOT OPERATED		Weak or dead battery Faulty ignition switch
SIGNALS OPERATING CORRECTLY		(4)	Disconnected wire connector
(60–120 flashings/min)		(5)	Broken wire harness
Remove lamp and check for broken filament	LAMP NOT LIT	→ (1)	Blown bulb
LAMP LIT			
(TCH ON)			
3. Check for loose, disconnected or and all	INCORRECT-		Loose or disconnected terminal
improperly connected terminal			Broken wire harness Incorrect wire connection
CORRECT created being of section (S) Active continue section as the continue of the continue o			VINSOUR CONNECTION TO THE CONN
4. Remove oil level sensor and	INCORRECT-		Stuck float
check operation:			Broken or shorted balancing coils
Float up: Lamp off			2. Remove tank unit and check for
Float down: Lamp on			
CORRECT			
INDICATOR LAMP REMAINS ON W	ITH SUFFICIENT OUT IN OUT	TANK	( (IGNITION SWITCH ON)
			bable Cause
1. Check for loose, disconnected or	INCORRECT		Loose or disconnected terminal
improperly connected terminals		(/	Broken wire harness
CORRECT: between cost b to seco. [1]		(3)	Incorrect wire connection
2. Remove oil level sensor and	INCORRECT	<b>(1)</b>	Jammed or stuck float
check operation:			Broken or shorted indicator sensor
Float up: Lamp off			
Float down: Lamp on			
CORRECT			Deformed oil tank Foreign matter in tank
COMMENT		161	. Oroigii iliuttoi ili talik



OOR BRAKE PERFORMANCE ----- char

## **FUEL GAUGE**

#### POINTER DOES NOT REGISTER CORRECTLY (IGNITION SWITCH ON)

	MRECILI (IGNITION SWITE	CH ON	1
		Pro	bable Cause
Check battery circuit by operating turn signals     SIGNALS OPERATED PROPERLY	SIGNALS DIM, REMAINED—ON OR NOT OPERATED AT ALL	(2) (3)	Blown fuse Weak or dead battery Faulty ignition switch Disconnected terminal Broken wire harness
2. Remove fuel level sensor and check for operation by moving float Float up: Pointer at FULL Float down: Pointer at EMPTY POINTER DOES NOT MOVE	POINTER MOVES	→ (1)	Faulty float  Sonsinioting extend to E  SOTADIGM 110
3. Short and open tank unit terminals on wire harness side	POINTER MOVES	<b>→</b> (1)	Broken or shorted balancing coil
POINTER DOES NOT MOVE (6) (1) (4)			
4. Check for loose, disconnected or incorrectly connected terminals  CORRECT	INCORRECT —		Disconnected terminal Incorrectly connected terminals
dind avoid (I)	LAMP NOT LIT	<b>(1)</b>	Shorted or broken balancing coil/lead
POINTER FLUCTUATES OR SWING	S VIOLENTLY (IGNITION SV		ON) bable Cause receib recol for Acad C. E.
Check battery circuit by operating turn signals     SIGNALS OPERATED PROPERLY	SIGNALS DIM, REMAINED—ON OR NOT OPERATED AT ALL	(2) (3) (4)	Blown fuse Weak or dead battery Broken or shorted ignition switch Loose or disconnected terminal Broken wire harness
Remove tank unit and check for operation by moving float  POINTER MOVES	POINTER DOES NOT MOVE—	→(1)	Loose or poor connection in fuel level sensor
3. Move float up and down rapidly (up-and-down stroke/sec)	POINTER DOES NOT MOVE —	→(1)	Lack of damper oil in meter

POINTER MOVES

INCORRECT — →(1)

→(1) Loose or disconnected terminal

CORRECT

→ (1) Shorted or broken balancing coil/lead



#### STARTER MOTOR

