Introduction

This service manual describes the service procedures for and technical features of the CH250.
This Model Specific Manual includes every service procedure that is of a specific nature to this particular model. Basic service procedures that are common to other Honda Motorcycle/Motor Scooter/ATVs are covered in the Common Service Manual. This Model Specific Service Manual should be used together with the Common Service Manual in order to provide complete service information on all aspects of this motorcycle.

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 and the California Air Resources Board.
Performing the first scheduled maintenance is very important. It compensates for the initial wear that occurs during the break-in period.

Section 1 and 3 apply to the whole motorcycle, Section 2 illustrates procedures for removal/installation of components that may be required to perform service described in the following sections.
While Section 4 through 18 describe parts of the motorcycle, grouped according to locations.

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

Most sections describe the service procedure through a system illustration. Refer to the next page for details on how to use this manual.

If you don't know the source of the trouble, go to Section 19 TROUBLESHOOTING.

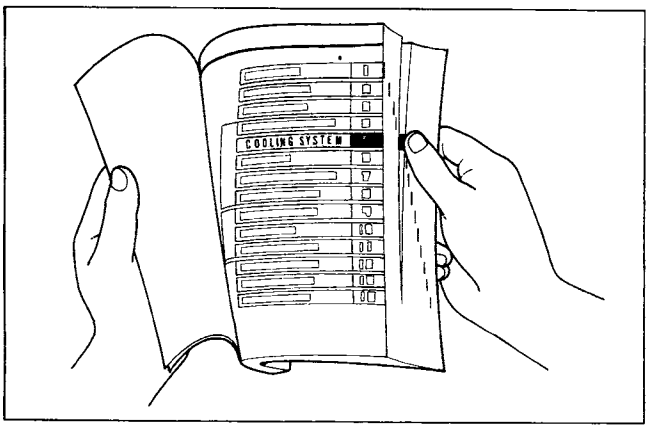
HONDA MOTOR CO., LTD.
SERVICE PUBLICATION OFFICE

Contents

Date of Issue: May, 1989

How to Use This Manual

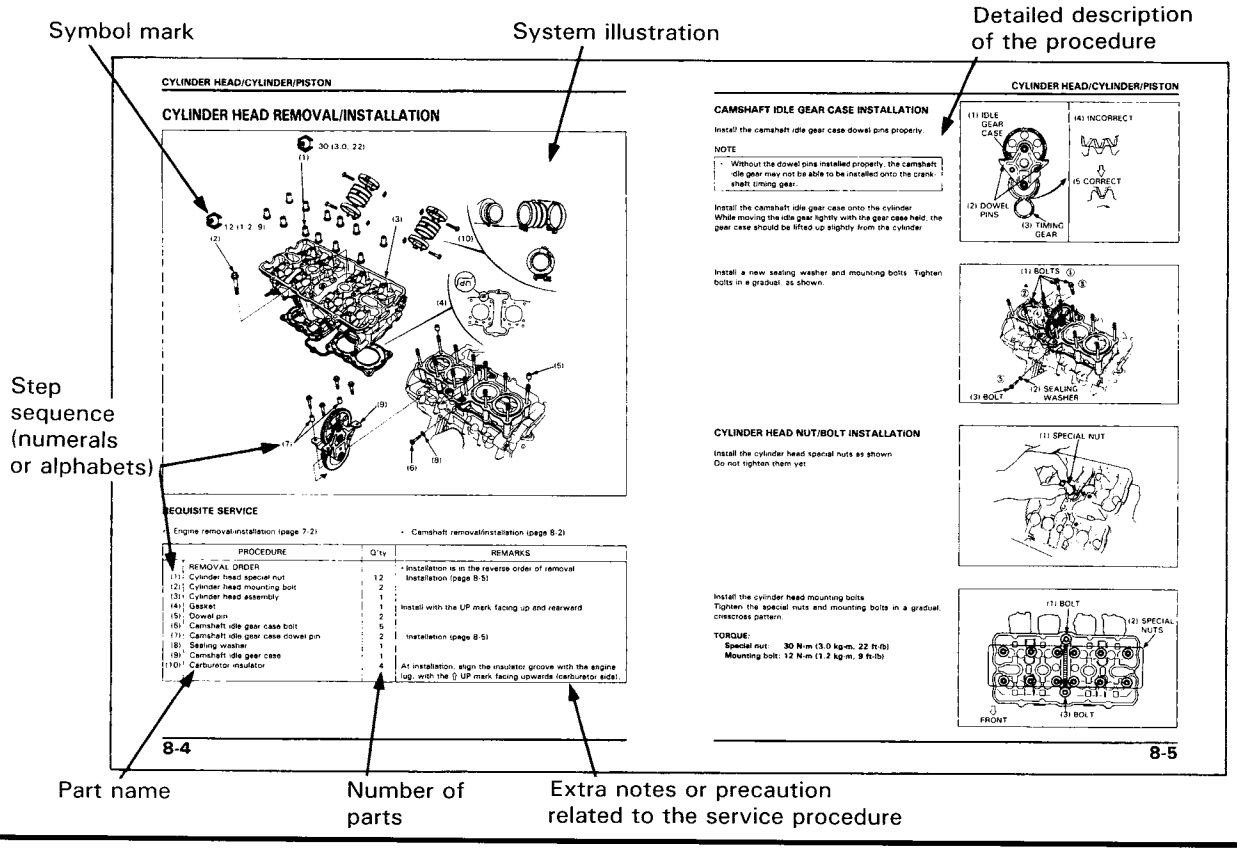
Finding Information You Need



- This manual is divided into sections which cover each of the major components of the motorcycle.
  To quickly find the section you are interested in, the first page of each section is marked with a black tab that lines up with one of the thumb index tabs before this page.
  The first page of each section lists the table of contents within the section.
  Read the service information and troubleshooting related to the section before you begin working.
- An index of the entire book is provided in the last chapter to directly locate the information you need.

Note on the Explanation Method of This Manual

- The removal and installation of parts are for the most part illustrated by large and clear illustrations that should provide the reader with visual aid in understanding the major point for servicing.
- The system illustrations are augmented by callouts whose numbers or letters indicate the order in which the parts should be removed or installed.
- The sequence of steps represented numerically are differentiated from the ones represented alphabetically to notify the reader that they must perform these steps seperately.
  For example, if the steps prior and up to camshaft removal are performed with the engine installed, but the subsequent steps like cylinder head removal require engine removal, the callouts are grouped in numerical and alphabetical orders.
- The illustrations may contain symbol marks to indicate necessary service procedures and precautions that need to be taken. Refer to the next page for the meaning of each symbol mark.
- Also in the illustration is a chart that lists information such as the order in which the part is removed/installed, the name of the part, and some extra notes that may be needed.
- Step by step instructions are provided to supplement the illustrations when detailed explanation of the procedure is necessary or illustrations alone would not suffice.
- Service procedures required before or after the procedure described on that particular page, or inspection/adjustment procedures required following the installation of parts, are described under the title Requisite Service.
- Standard workshop procedures and knowledge covered in the Common Service Manual are abbreviated in this manual.



Symbols

The symbols used throughout this manual show specific service procedures. If supplementary information is required pertaining to these symbols, it would be explained specifically in the text without the use of the symbols.

	Replace the part(s) with new one(s) before assembly.
	Use special tool
	Use optional tool. These tools are obtained as you order parts.
 10 (1.0, 7.2)	Torque specification. 10 N·m (1.0 kg-m, 7.2 ft-lb)
	Use recommended engine oil, unless otherwise specified.
	Use molybdenum oil solution (mixture of the engine oil and molybdenum grease with the ratio 1 : 1).
	Use multi-purpose grease (Lithium based multi-purpose grease NLGI #2 or equivalent)
	Use molybdenum disulfide grease (containing more than 3% molybdenum disulfide, NLGI #2 or equivalent) Example: Molykote® BR-2 plus manufactured by Dow Corning, U.S.A. Multi-purpose M-2 manufactured by Mitsubishi Oil Japan
	Use molybdenum disulfide paste (containing more than 40% molybdenum disulfide, NLGI #2 or equivalent) Example: Molykote® G-n Paste manufactured by Dow Corning, U.S.A. Honda Moly 45 (U.S.A. only) Rocol ASP manufactured by Rocol Limited, U.K. Rocol Paste manufactured by Sumico Lubricant, Japan
	Use silicone grease
	Apply a locking agent. Use the agent of the middle strength, unless otherwise specified.
	Apply sealant
	Use brake fluid, DOT 3 or DOT 4. Use the recommended brake fluid, unless otherwise specified.
	Use Fork or Suspension Fluid.

1. General Information

General Safety

Carbon Monoxide

If the engine must be running to do some work, make sure the area is well ventilated. Never run the engine in an enclosed area.

⚠WARNING

- **The exhaust contains poisonous carbon monoxide gas that can cause loss of consciousness and may lead to death.**

Run the engine in an open area or with an exhaust evacuation system in an enclosed area.

Gasoline

Work in a well ventilated area. Keep cigarettes, flames or sparks away from the work area or where gasoline is stored.

⚠WARNING

- **Gasoline is extremely flammable and is explosive under certain conditions. KEEP OUT OF REACH OF CHILDREN.**

Hot Components

⚠WARNING

- **Engine and exhaust system parts become very hot and remain hot for some time after the engine is run. Wear insulated gloves or wait until the engine and exhaust system have cooled before handling these parts.**

Battery Hydrogen Gas & Electrolyte

⚠WARNING

- **The battery gives off explosive gases; keep sparks, flames and cigarettes away. Provide adequate ventilation when charging.**
- **The battery contains sulfuric acid (electrolyte). Contact with skin or eyes may cause severe burns. Wear protective clothing and a face shield.**
  - **If electrolyte gets on your skin, flush with water.**
  - **If electrolyte gets in your eyes, flush with water for at least 15 minutes and call a physician.**
- **Electrolyte is poisonous.**
  - **If swallowed, drink large quantities of water or milk and follow with milk of magnesia or vegetable oil and call a physician. KEEP OUT OF REACH OF CHILDREN.**

Used Engine/Transmission Oil

⚠WARNING

- **Used engine oil (or transmission oil in two-strokes) may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil. KEEP OUT OF REACH OF CHILDREN.**

Brake Dust

Never use an air hose or dry brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner or alternate method approved by OSHA, designed to minimize the hazard caused by airborne asbestos fibers.

⚠WARNING

- **Inhaled asbestos fibers have been found to cause respiratory disease and cancer.**

Coolant

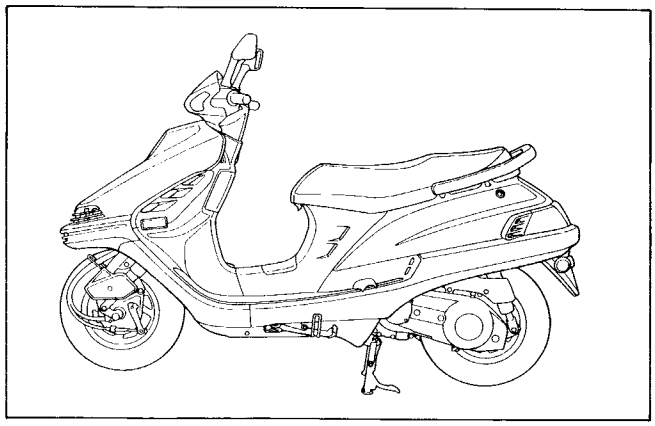
Under some conditions, the ethylene glycol in engine coolant is combustible and its flame is not visible. If the ethylene glycol does ignite, you will not see any flame, but you can be burned.

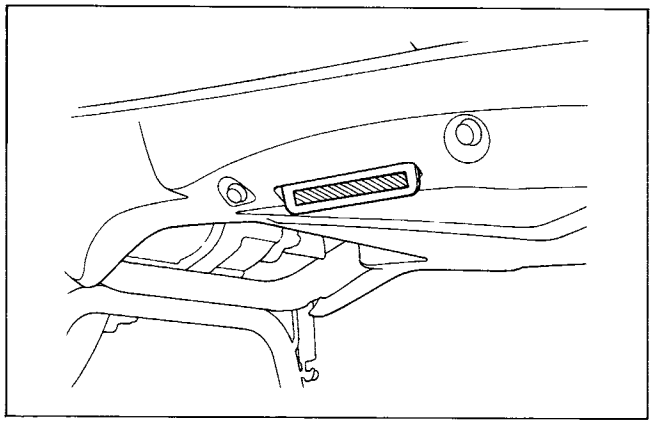
⚠WARNING

- **Avoid spilling engine coolant on the exhaust system or engine parts. They may be hot enough to cause the coolant to ignite and burn without a visible flame.**
- **Coolant (ethylene glycol) can cause some skin irritation and is poisonous if swallowed. KEEP OUT OF REACH OF CHILDREN.**
- **Do not remove the radiator cap when the engine is hot. The coolant is under pressure and could scald you.**
- **Keep hands and clothing away from the cooling fan, as it starts automatically.**

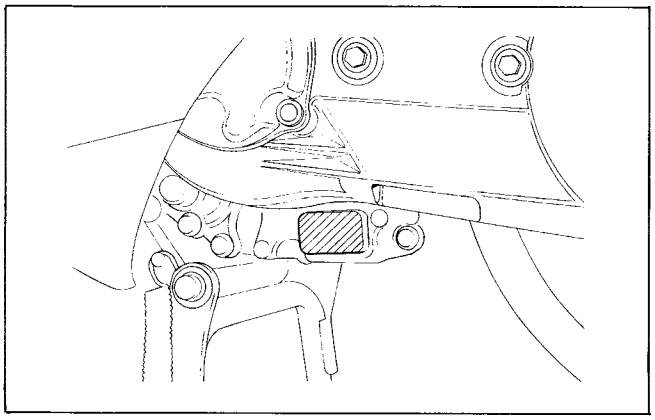
If it contacts your skin, wash the affected areas immediately with soap and water. If it contacts your eyes, flush them thoroughly with fresh water and get immediate medical attention. If it is swallowed, the victim must be forced to vomit then rinse mouth and throat with fresh water before obtaining medical attention. Because of these dangers, always store coolant in a safe place, away from the reach of children.

Model Identification

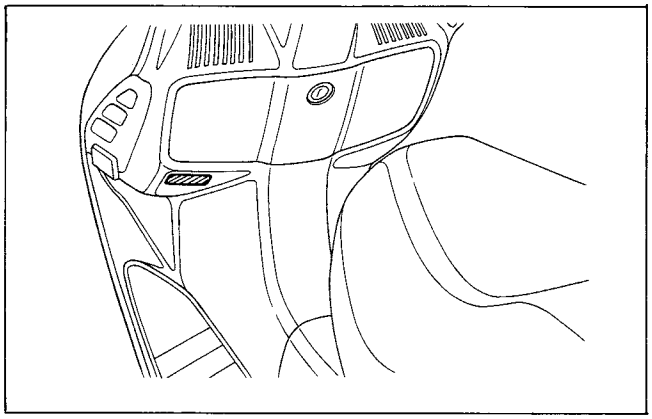




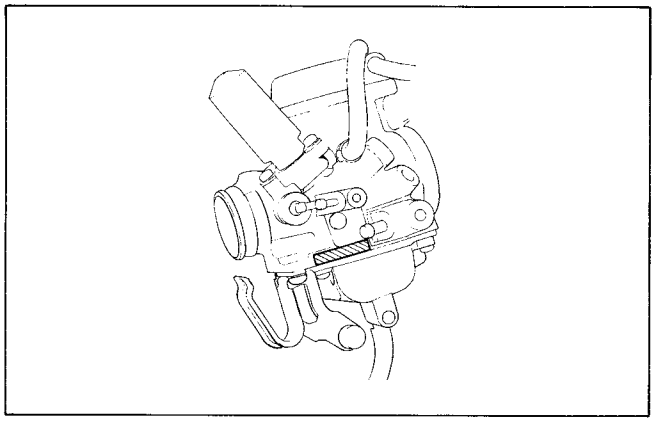
(1) FRAME SERIAL NUMBER
The frame serial number is stamped on the left side of the frame.



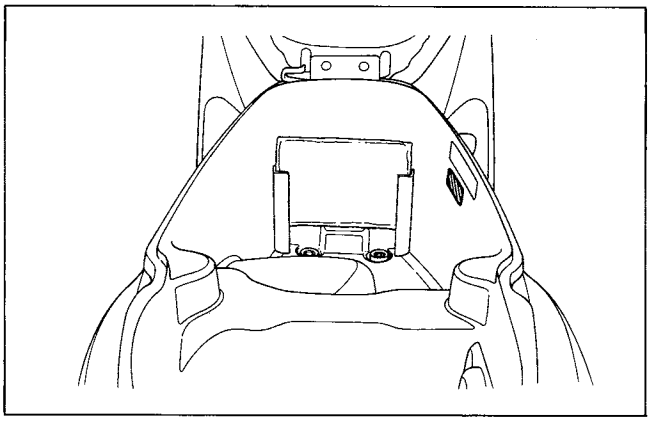
(2) ENGINE SERIAL NUMBER
The engine serial number is stamped on the left side of the crankcase.



(3) VEHICLE IDENTIFICATION NUMBER
The Vehicle Identification Number (VIN) is located on the left side of the front inner box.



(4) CARBURETOR NUMBER
Carburetor identification number is on the left side of the carburetor.



(5) COLOR CODE LABEL
The color code label is attached on the luggage box right inner surface. When ordering a color coded part, always specify its designated color code.

Specifications

Unit: mm (in)

General

Item		Specifications
Dimensions	Overall length	1,845 (72.6)
	Overall width	730 (28.7)
	Overall height	1,100 (43.3)
	Wheel base	1,300 (51.2)
	Seat height	760 (29.9)
	Foot peg height	——
	Ground clearance	120 (4.7)
	Dry weight	130 kg (287 lbs)
	Curb weight	140 kg (309 lbs)
	Maximum weight capacity	156 kg (344 lbs)
Frame	Frame type	Back bone
	Front suspension	Bottom link
	Front wheel travel	82.7 (3.3)
	Rear suspension	Power unit swingarm
	Rear wheel travel	81.6 (3.2)
	Front damper	——
	Rear damper	——
	Front tire size	100/90-10 61J
	Rear tire size	120/90-10 65J
	Tire brand (Bridgestone) FR/RR	ML35/ML36
	Tire brand (Dunlop) FR/RR	K488F/K488
	Tire brand (Yokohama) FR/RR	——
	Tire brand (IRC) FR/RR	——
	Front brake	Internal expanding shoe
	Rear brake	Internal expanding shoe
	Caster angle	27°
	Trail length	69 (2.7)
	Fuel tank capacity	9.2 ℓ (2.43 US gal, 2.02 Imp gal)
	Fuel tank reserve capacity	——
Engine	Bore and stroke	72.0 x 60.0 (2.83 x 2.36)
	Displacement	244.3 cc (15.0 cu-in)
	Compression ratio	10.0 : 1
	Valve train	Silent, multi-link chain drive and OHC with rocker arm
	Intake valve opens at 1 mm lift	0° TDC
	Intake valve closes at 1 mm lift	40° ABDC
	Exhaust valve opens at 1 mm lift	35° BBDC
	Exhaust valve closes at 1 mm lift	5° ATDC
	Lubrication system	Forced pressure and wet sump
	Oil pump type	Trochoid
	Cooling system	Liquid cooled
	Air filtration	Paper filter
	Crankshaft type	——
	Engine weight	35 kg (77 lbs)
	Cylinder arrangement	Single cylinder

General (Cont'd)

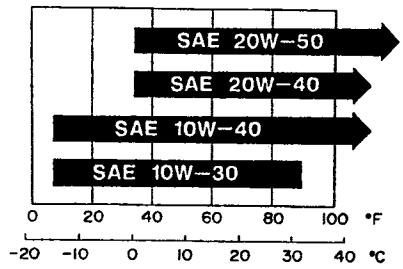
Unit: mm (in)

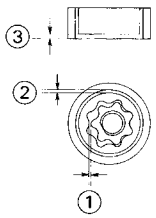
Item		Specifications
Carburetor	Carburetor type	Constant Velocity single carburetor
	Throttle bore	30 (1.2)
Drive train	Clutch system	Dry, automatic centrifugal clutch
	Primary reduction	1.000
	Final reduction	6.418
	Gear ratio	V-matic, 2.100—0.880
Electrical	Ignition system	DC-CDI (Capacitive Dischaged Ignition)
	Starting system	Starting motor
	Charging system	AC Generator 12 V 290 W/5,000 rpm
	Regulator/rectifier type	Transistorized, non-adjustable
	Lighting system	Battery
	AC regulator type	——

Unit: mm (in)

Lubrication

Item	Standard	Service Limit
Engine oil capacity at draining or oil filter change	1.1 lit. (1.16 US qt, 0.97 Imp qt)	—
at disassembly	1.3 lit. (1.37 US qt, 1.14 Imp qt)	—
at oil filter change	—	—
Recommended engine oil	Use Honda 4-stroke Oil or equivalent API Service Classification: SE or SF. Viscosity: SAE 10 W–40 Other viscosities shown in the chart may be used when the average temperature in your riding area is within the indicated range.	
Oil pump rotor tip clearance ①	0.15 (0.006)	0.20 (0.008)
body clearance ②	0.15–0.20 (0.006–0.008)	0.25 (0.010)
end clearance ③	0.04–0.09 (0.002–0.004)	0.12 (0.005)





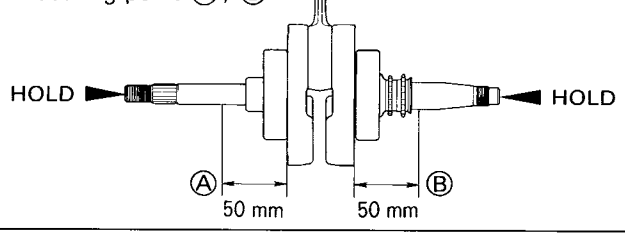
Fuel System

Carburetor identification number	VE41A	—
(California)	VE42A	—
Main jet	#112	—
(High altitude)	#110	—
Slow jet	#40	—
Jet needle clip position	—	—
Pilot screw initial opening	2-1/8	—
(California)	2-1/8	—
final opening	1 turn out	
Pilot screw high altitude adjustment	1/2 turn in	—
Air screw initial opening	—	—
(California)	—	—
Air screw high altitude adjustment	—	—
Float level	18.5 (0.728)	—
Idle speed	1,500 ± 100 rpm	—
Choke type	Auto-bystarter	—
Throttle grip free play	2–6 (0.08–0.24)	—
Air injection control valve vacuum pressure	—	—

Crankshaft

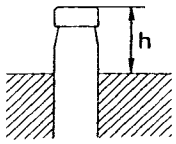
Connecting rod small end I.D.	17.016–17.034 (0.6699–0.6706)	17.06 (0.672)
Connecting rod big end side clearance	0.05–0.40 (0.002–0.016)	
radial clearance	0–0.008 (0–0.0004)	0.05 (0.002)
Crankshaft runout	—	0.10 (0.004)

measuring point Ⓐ, Ⓑ



Unit: mm (in)

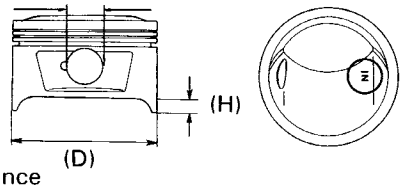
Cylinder Head

Item	Standard	Service Limit
Cylinder compression	1,300—1,700 kPa (13—17 kg/cm², 185—242 psi)/600 rpm	——
Valve clearance IN	0.10—0.14 (0.004—0.006)	——
EX	0.10—0.14 (0.004—0.006)	——
Cylinder head warpage	——	0.05 (0.002)
Cam lobe height ① IN	34.231—34.351 (1.3477—1.3524)	34.181 (1.3457)
IN (California model)	34.231—34.351 (1.3477—1.3524)	34.181 (1.3457)
EX	34.231—34.351 (1.3477—1.3524)	34.181 (1.3457)
EX (California model)	34.231—34.351 (1.3477—1.3524)	34.181 (1.3457)
		
Camshaft runout	——	——
Camshaft oil clearance A	——	——
B	——	——
Camshaft journal O.D. A	——	——
B	——	——
Camshaft holder I.D. A	——	——
B	——	——
Valve stem O.D. IN	4.975—4.990 (0.1959—0.1965)	4.90 (0.193)
EX	4.955—4.970 (0.1951—0.1957)	4.90 (0.193)
Valve guide I.D. IN	5.000—5.012 (0.1969—0.1973)	5.03 (0.198)
EX	5.000—5.012 (0.1969—0.1973)	5.03 (0.198)
Stem-to-guide clearance IN	0.010—0.037 (0.0004—0.0015)	0.08 (0.003)
EX	0.030—0.057 (0.0012—0.0023)	0.10 (0.004)
Valve guide projection above cylinder head IN (h)	11.5 (0.45)	——
EX (h)	11.5 (0.45)	——
		
Valve seat width	1.1 (0.04)	1.8 (0.07)
Valve spring free length IN	——	——
EX	——	——
inner IN	31.06 (1.223)	29.5 (1.16)
inner EX	31.06 (1.223)	29.5 (1.16)
outer IN	40.42 (1.591)	38.4 (1.51)
outer EX	40.42 (1.591)	38.4 (1.51)
Rocker arm I.D. IN	12.000—12.018 (0.4725—0.4732)	12.10 (0.476)
EX	12.000—12.018 (0.4725—0.4732)	12.10 (0.476)
Rocker arm shaft O.D. IN	11.966—11.984 (0.4711—0.4718)	11.91 (0.469)
EX	11.966—11.984 (0.4711—0.4718)	11.91 (0.469)
Rocker arm-to-rocker arm shaft clearance	0.016—0.052 (0.0006—0.0020)	

Unit: mm (in)

Cylinder/Piston

Item	Standard	Service Limit
Cylinder I.D.	72.000—72.010 (2.8346—2.8350)	72.10 (2.839)
out of round	—	0.05 (0.002)
taper	—	0.05 (0.002)
warpage	—	0.05 (0.002)
Piston mark direction	With "IN" mark facing the intake side	—
Piston O.D. (D)	71.970—71.990 (2.8338—2.8342)	71.90 (2.831)
Piston O.D. measurement point (H)	10 (0.4) from the bottom	—
Piston pin hole I.D. (d)	17.002—17.008 (0.6694—0.6696)	17.04 (0.671)
Cylinder-to-piston clearance	0.010—0.040 (0.0004—0.0016)	0.10 (0.004)
Piston pin O.D.	16.994—17.000 (0.6691—0.6693)	16.96 (0.668)
Piston-to-piston pin clearance	0.002—0.014 (0.0001—0.0006)	0.02 (0.001)
Connecting rod-to-piston pin clearance	0.016—0.040 (0.0006—0.0016)	0.06 (0.002)
Top ring-to-ring groove clearance	0.015—0.050 (0.0006—0.0020)	0.09 (0.004)
Second ring-to-ring groove clearance	0.015—0.050 (0.0006—0.0020)	0.09 (0.004)
Top ring end gap	0.15—0.35 (0.006—0.014)	0.50 (0.020)
Second ring end gap	0.15—0.35 (0.006—0.014)	0.50 (0.020)
Top ring mark	Install with the marked side up	—
Second ring mark	Install with the marked side up	—



Clutch System

Clutch outer I.D.	135.0—135.2 (5.31—5.32)	135.5 (5.33)
Drive belt width	22.0—23.0 (0.87—0.91)	21.0 (0.83)
Moveable drive face bushing I.D.	27.000—27.021 (1.0630—1.0638)	27.06 (1.065)
boss O.D.	26.970—26.990 (1.0618—1.0626)	26.94 (1.061)
weight roller O.D.	23.8 (0.94)	23.2 (0.91)
Clutch lining thickness	—	0.5 (0.02)
Driven face spring free length	98.8 (3.89)	94.0 (3.70)
Driven face O.D.	39.965—39.985 (1.5734—1.5742)	39.94 (1.572)
Moveable driven face I.D.	40.000—40.025 (1.5748—1.5758)	40.06 (1.577)
Final reduction gear case oil capacity at disassembly	200 cc (6.76 US oz, 7.02 Imp oz)	—
at draining	180 cc (6.09 US oz, 6.32 Imp oz)	—
Recommended final reduction gear oil	Hypoid gear oil SAE #90	—

Cooling System

Coolant capacity (Radiator and engine)	1.6 lit. (0.42 US gal, 0.35 Imp gal)	—
(Reserve tank)	0.4 lit. (0.11 US gal, 0.09 Imp gal)	—
Radiator cap relief pressure	75—105 kPa (0.75—1.05 kg/cm², 10.7—14.9 psi)	—
Thermostat begins to open	69.5—72.5°C (157°—162°F)	—
Thermostat fully open	80°C (176°F)	—
Thermostat valve lift	3.5—4.5 (0.14—0.18) at 80°C (176°F)	—

Unit: mm (in)

Wheels/Tires

Item	Standard	Service Limit
Cold tire pressure (FR)	—	—
(RR)	—	—
up to 90 kg (200 lb) load (FR)	175 kPa (1.75 kg/cm², 25 psi)	—
up to 90 kg (200 lb) load (RR)	200 kPa (2.00 kg/cm², 29 psi)	—
up to maximum weight capacity (FR)	175 kPa (1.75 kg/cm², 25 psi)	—
up to maximum weight capacity (RR)	225 kPa (2.25 kg/cm², 33 psi)	—
Front and rear axle runout	—	0.20 (0.008)
Front and rear wheel rim runout (Radial)	—	2.0 (0.08)
(Axial)	—	2.0 (0.08)

Front Suspension

Front shock absorber spring direction	With tightly wound coil end facing up	—
free length	218.8 (8.61)	214.4 (8.44)

Rear Suspension

Rear shock absorber spring free length	—	—
Rear shock absorber spring free length (R)	271.5 (10.69)	266.0 (10.47)
(L)	256.8 (10.11)	251.6 (9.91)
Rear shock absorber spring direction	With tightly wound coil end facing down	—

Brakes

Front brake fluid	—	—
brake lever free play	10—20 (0.4—0.8)	—
brake pad wear indicator	—	—
brake disc thickness	—	—
brake disc runout	—	—
master cylinder I.D.	—	—
master piston O.D.	—	—
caliper cylinder I.D.	—	—
caliper piston O.D.	—	—
brake drum I.D.	130.0 (5.12)	131.0 (5.16)
brake lining thickness	4.0 (0.16)	2.0 (0.08)
Rear brake fluid	—	—
brake lever free play	—	—
brake pedal free play	—	—
brake disc thickness	—	—
brake disc runout	—	—
master cylinder I.D.	—	—
master piston O.D.	—	—
caliper cylinder I.D.	—	—
brake drum I.D.	130.0 (5.12)	131.0 (5.16)
brake lining thickness	4.0 (0.16)	2.0 (0.08)

Starting System

Starter motor brush length	12.5—13.0 (0.49—0.51)	6.5 (0.26)
Starter driven gear I.D.	22.026—22.045 (0.8672—0.8679)	22.10 (0.870)
O.D.	42.195—42.208 (1.6612—1.6617)	42.15 (1.659)
Starter clutch outer I.D.	58.897—58.927 (2.3187—2.3200)	58.98 (2.322)

Unit: mm (in)

Battery/Charging System

Item	Standard	Service Limit
Alternator charging coil resistance (At 20°C/68°F)	0.1—0.5 Ω	—
Regulator/rectifier regulated voltage/amperage	14.0—15.0 V/5,000 rpm	—
Battery capacity	12 V—10 AH	—
Battery specific gravity (Fully charged)	—	—
(Needs charging)	—	—
Battery charging rate	—	—
Battery charging rate (Normal)	1.2 A	—
(Quick)	—	—
Battery voltage (Fully charged 20°C/68°F)	13.0—13.2 V	—
(Needs charging 20°C/68°F)	12.3 V	—

Ignition System

Spark plug (Standard NGK)	DPR6EA-9	—
(Standard ND)	X20EPR-U9	—
(For cold climate/below 5°C/41°F NGK)	DPR5EA-9	—
(For cold climate/below 5°C/41°F ND)	X16EPR-U9	—
(For extended high speed riding NGK)	DPR7EA-9	—
(For extended high speed riding ND)	X22EPR-U9	—
Spark plug gap	0.8—0.9 (0.03—0.04)	—
Ignition timing "F" mark	BTDC 11°/1,500 rpm	—
Alternator exciter coil resistance (At 20°C/68°F)	—	—
Ignition coil resistance (Primary: at 20°C/68°F)	0.2—0.3 Ω	—
(Secondary with plug cap)	6.0—10.0 kΩ	—
(Secondary without plug cap)	2.5—3.5 kΩ	—
Pulse generator resistance (At 20°C/68°F)	190—250 Ω	—

Lights/Meters/Switches

Main fuse	30 A			—
Headlight (high/low beam)	12 V 60/55 W			—
Tail/brake light	12 V 35/3 cp (21/5 W)			—
License light	12 V 2 cp (3.8 W)			—
Position light	—			—
Front turn signal/running light	12 V 35/3 cp (21/5 W)			—
Front turn signal light	—			—
Rear turn signal light	12 V 37 cp (21 W)			—
Instrument lights	12 V 1.7 W x 3			—
Side stand warning indicator	12 V 3 W			—
Oil level indicator	—			—
Low fuel indicator	—			—
Coolant temperature indicator	—			—
High beam indicator	12 V 3 W			—
Turn signal indicator	12 V 3 W x 2			—
Fuel unit resistance	Float level		Upper (Full)	Lower (Empty)
	Resistance	Bl/W—Y/W	600 Ω	600 Ω
		Bl/W—G	566 Ω	33 Ω
		G—Y/W	33 Ω	566 Ω
Auto-bystarter resistance (At 20°C/68°F)	10 Ω			—
Coolant temperature sensor resistance				
(At 50°C/122°F)	140—180 Ω			—
(At 100°C/212°F)	25—30 Ω			—

Torque Values

Standard

Fastener Type	Torque N·m (kg-m, ft-lb)	Fastener Type	Torque N·m (kg-m, ft-lb)
5 mm hex bolt and nut	5 (0.5, 3.5)	5 mm screw	4 (0.4, 3)
6 mm hex bolt and nut	10 (1.0, 7.2)	6 mm screw	9 (0.9, 7)
8 mm hex bolt and nut	22 (2.2, 16)	6 mm flange bolt (8 mm head)	9 (0.9, 7)
10 mm hex bolt and nut	35 (3.5, 25)	6 mm flange bolt (10 mm head) and nut	12 (1.2, 9)
12 mm hex bolt and nut	55 (5.5, 40)	8 mm flange bolt and nut	27 (2.7, 20)
		10 mm flange bolt and nut	40 (4.0, 29)

- The torque specifications listed below are for fasteners at specific tightening points.
- Others should be tightened to standard torque values listed above.

Notes: 1. Apply sealant to the threads.
2. Apply a locking agent to the threads.
3. Apply molybdenum disulfide oil to the threads and flange surface.
4. Left hand threads.
5. Stake.
6. Apply oil to the threads and flange surface.
7. Apply clean engine oil to the O-ring.
8. Torque wrench scale reading using a special tool.
9. Apply grease to the threads and flange surface.
10. UBS bolt.

Engine

Item	Q'ty	Thread dia. (mm)	Torque N·m (kg-m, ft-lb)	Remarks
Lubrication:				
Right crankcase flange bolt	10	6	12 (1.2, 9)	
Right crankcase cover flange bolt	11	6	12 (1.2, 9)	
Oil pump cover attaching screw	1	3	2 (0.2, 1.4)	
Oil filter screen cap special bolt	1	30	20 (2.0, 15)	
Fuel system:				
Carburetor throttle cable stay screw	2	5	5 (0.5, 3.6)	Note 2
Carburetor insulator band bolt	1	5	5 (0.5, 3.6)	
Cooling system:				
Water pump impeller	1	7	12 (1.2, 9)	
Cylinder head, cylinder, piston:				
Cylinder head cover bolt	6	6	12 (1.2, 9)	
Cylinder head cap nut	4	8	24 (2.4, 18)	
Spark plug	1	12	18 (1.8, 13)	
Cylinder stud bolt (crankcase side)	4	8	9 (0.9, 7)	
Cam chain tensioner base bolt	2	6	12 (1.2, 9)	
Cam chain tensioner sealing bolt	1	11	22 (2.2, 16)	
Thermo sensor	1	PT1/8	10 (1.0, 7.2)	
Exhaust pipe stud spcial bolt (cylinder head side)	2	8	9 (0.9, 6.5)	
Drive train:				
Drive face nut	1	14	110 (11.0, 80)	
Drive face seal cover bolt	3	4	3.3 (0.33, 2.4)	
Clutch outer flange nut	1	12	75 (7.5, 54)	
Moveable driven face special nut	1	30	80 (8.0, 58)	
Final reduction cover bolt	7	8	27 (2.7, 20)	
Final reduction oil check bolt	1	8	13 (1.3, 11)	
Final reduction oil drain bolt (Left crankcase)	1	8	13 (1.3, 11)	
Belt cover special bolt	2	6	10 (1.0, 7.2)	
Rear brake shoe anchor pin flange lock nut	1	8	18 (1.8, 13)	

Engine (Cont'd)

Item	Q'ty	Thread dia. (mm)	Torque N·m (kg-m, ft-lb)	Remarks
Ignition system:				
Pulse generator mounting hex bolt	2	5	5 (0.5, 3.6)	
Alternator:				
Flywheel nut	1	16	110 (11.0, 80)	Note 6
Starter one-way clutch socket bolt	3	8	30 (3.0, 22)	Note 2
Stator mounting socket bolt	3	6	12 (1.2, 9)	

Frame

Engine mount:				
Engine hanger pivot nut (frame side)	1	12	80 (8.0, 50)	
Tension rod U-nut (washer side)	1	8	20 (2.0, 15)	
Engine hanger adjusting bolt	1	22	30 (3.0, 22)	
Engine hanger lock nut	1	22	45 (4.5, 33)	
Front suspension:				
Steering stem nut	1	25.4	140 (14.0, 101)	
Pivot arm mounting bolt	2	10	40 (4.0, 29)	
Front axle nut	1	12	70 (7.0, 51)	
Fork cover mounting bolt	2	6	6 (0.6, 4.3)	
Front shock absorber upper mounting bolt	2	10	40 (4.0, 29)	
lower mounting bolt/nut	2	8	10 (1.0, 7.2)/ 18 (1.8, 13)	
damper lock nut	2	8	20 (2.0, 15)	Note 2
Rear suspension:				
Rear axle nut	1	16	110 (11.0, 80)	
Rear shock absorber upper mounting nut	2	8	26 (2.6, 19)	
lower mounting nut (R)	1	12	45 (4.5, 33)	
(L)	1	10	40 (4.0, 29)	
damper lock nut	2	8	20 (2.0, 15)	Note 2
Frame/exhaust system:				
Exhaust pipe cap nut	2	8	30 (3.0, 22)	Note 6
Muffler mounting bolt (engine case side)	2	8	35 (3.5, 25)	
(swingarm side)	2	8	35 (3.5, 25)	
Other:				
Speedometer cable setting screw	1	5	5 (0.5, 3.6)	

Tools

* The tools for bearing removal and installation are not contained in this list.
Refer to section 1, Ball Bearing Replacement, of the Common Service Manual.
** New tools are indicated with a * mark in the list.

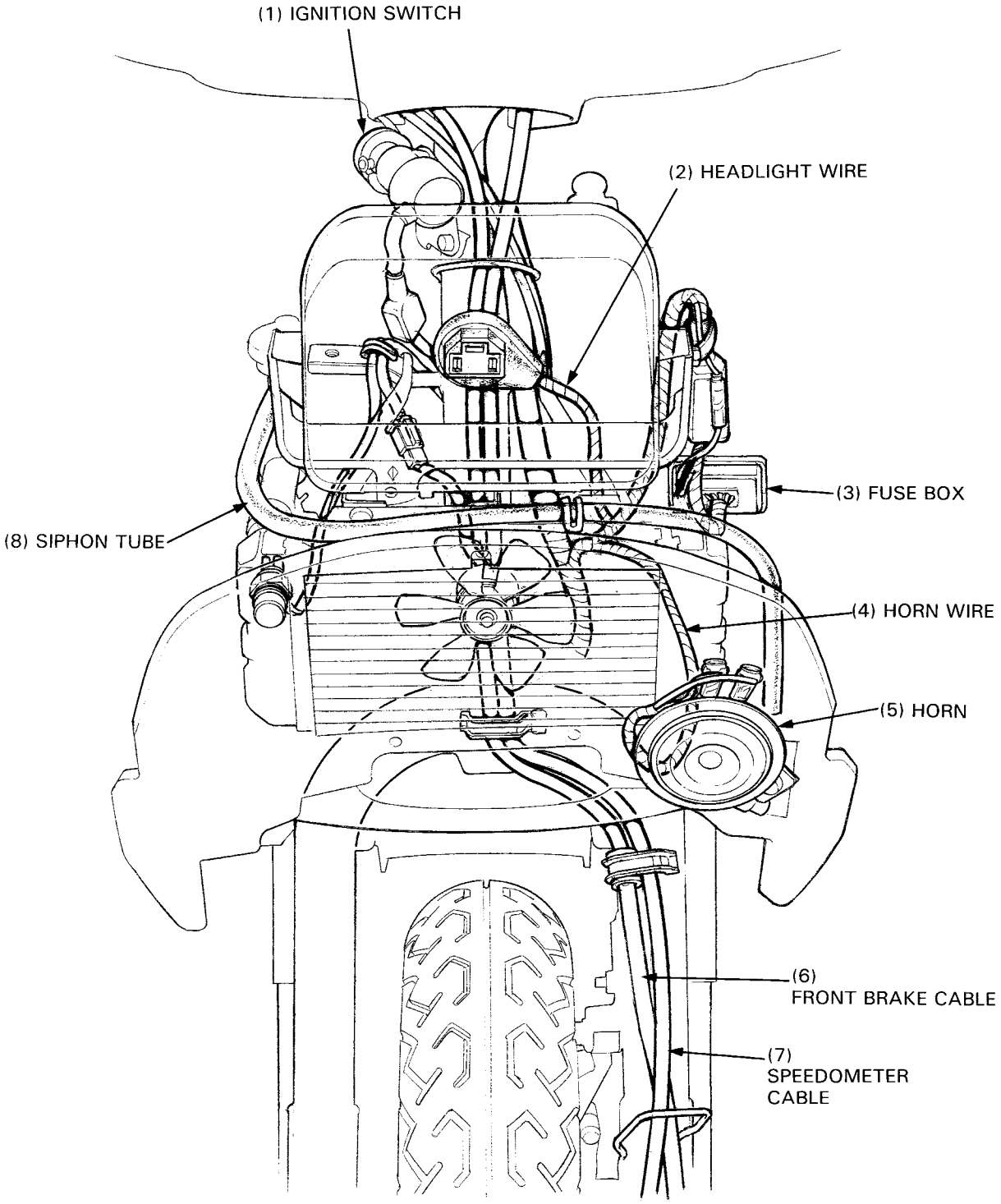
Description	Tool Number	Applicability	Refer to Section
Mechanical seal driver attachment	07945—4150400		6
Bearing remover, 15 mm	07936—KC10000		6
Remover weight	07741—0010201		6
*Lock nut wrench	07KMA—KAB0100		7
Valve guide driver	07942—MA60000		8
Valve seat cutter, 27.5 mm (45° EX)	07780—0010200		8
Valve seat cutter, 33 mm (45° IN)	07780—0010800		8
Valve flat cutter, 28 mm (32° EX)	07780—0012100		8
Valve flat cutter, 33 mm (32° IN)	07780—0012900		8
Valve interior cutter, 30 mm (60° IN/EX)	07780—0014000		8
Cutter holder, 5 mm	07781—0010400		8
Valve compressor attachment	07959—KM30101		8
Valve guide reamer	07984—MA60001		8
Socket wrench 39 x 41 mm	07GMA—KS40100		10
Drive pulley holder	07923—KM10000		10
Ball race & bearing driver attachment	07945—3330300		10, 11
Clutch spring compressor attachment	07960—KM10000		10
Crankshaft assembly shaft	07965—1660200		10
Driver	07749—0010000		10
Bearing remover set, 12 mm	07936—1660001		10
Bearing remover set, 20 mm	07936—3710001		10
Attachment, 32 x 35 mm	07746—0010100		10
Attachment, 52 x 55 mm	07746—0010400		10
Pilot, 12 mm	07746—0040200		10
Pilot, 20 mm	07746—0040500		10
Pilot, 22 mm	07746—0041000		10
Pilot, 25 mm	07746—0040600		10
Lock nut wrench A	07916—KM10000		11
Lock nut wrench B	07916—1870101		11
Ball race remover	07946—GA70000	Not available in U.S.A.	11
Ball race remover attachment	07953—KM10100		11
Shock absorber compressor attachment	07JME—KW40100		11
Shock absorber compressor	07GME—0010000		11, 12
Spring compressor attachment	07967—VM50100		12
Flywheel puller	07933—KM10000		14
Christie battery charger	MC1012/2		14
Battery tester	BM-210		14
Digital multimeter (KOWA)	07411—0020000	—KS—AHM—32—003 (U.S.A. only)	14, 15, 16, 17
Universal holder	07725—0030000		15
Analogue tester		07308—0020001 (SANWA) or TH—5H (KOWA)	14, 15, 16, 17

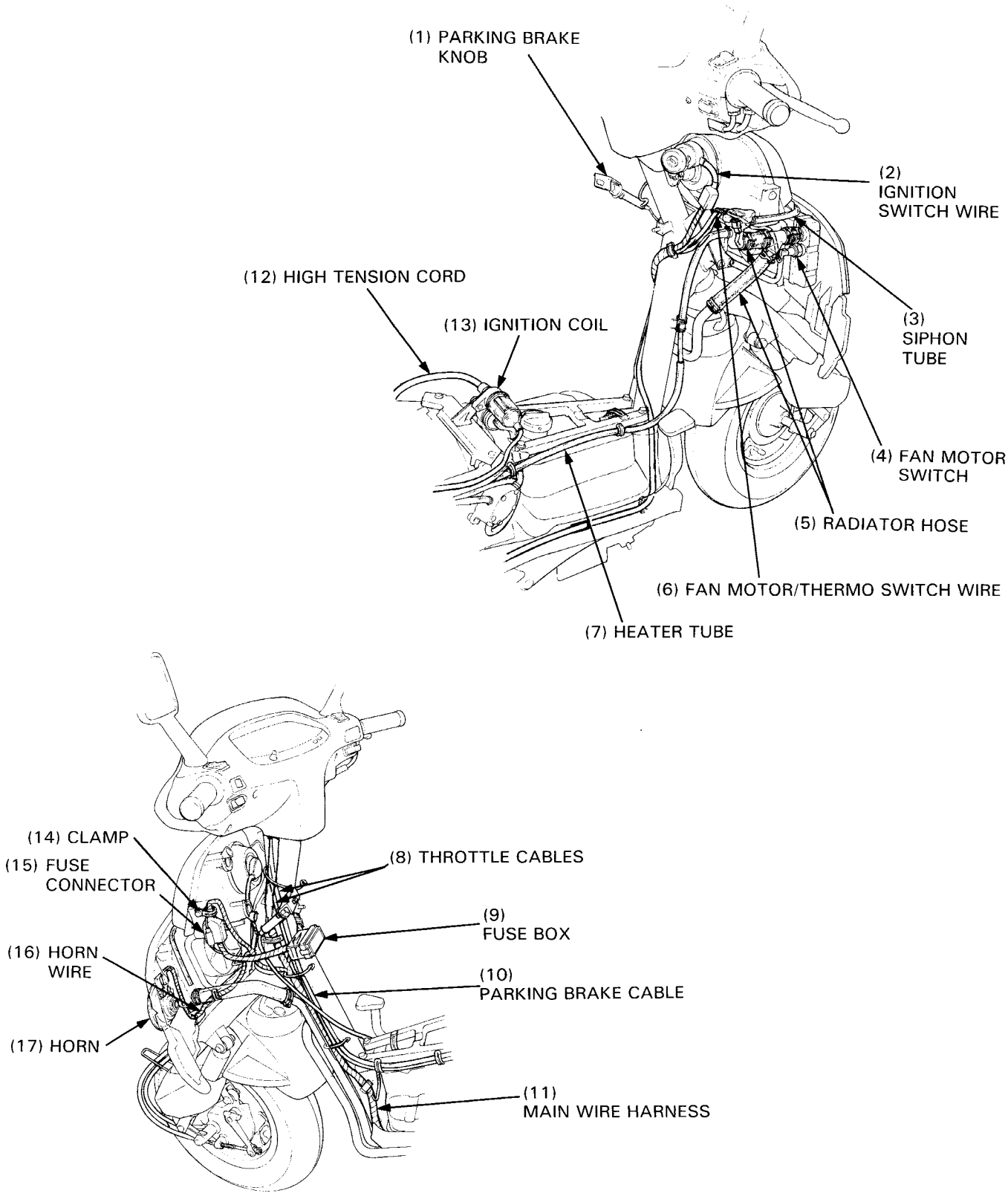
Lubrication & Seal Points

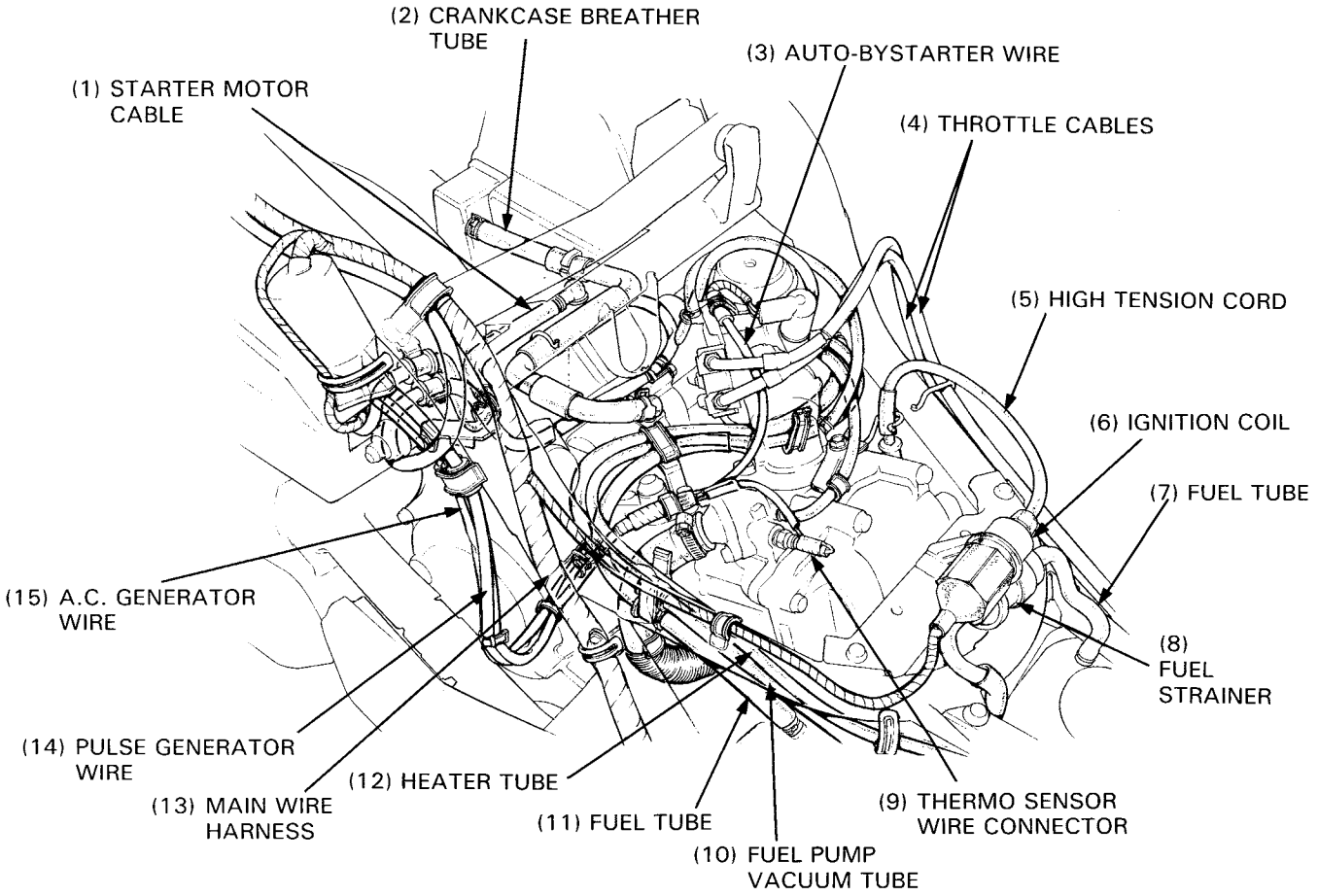
Engine

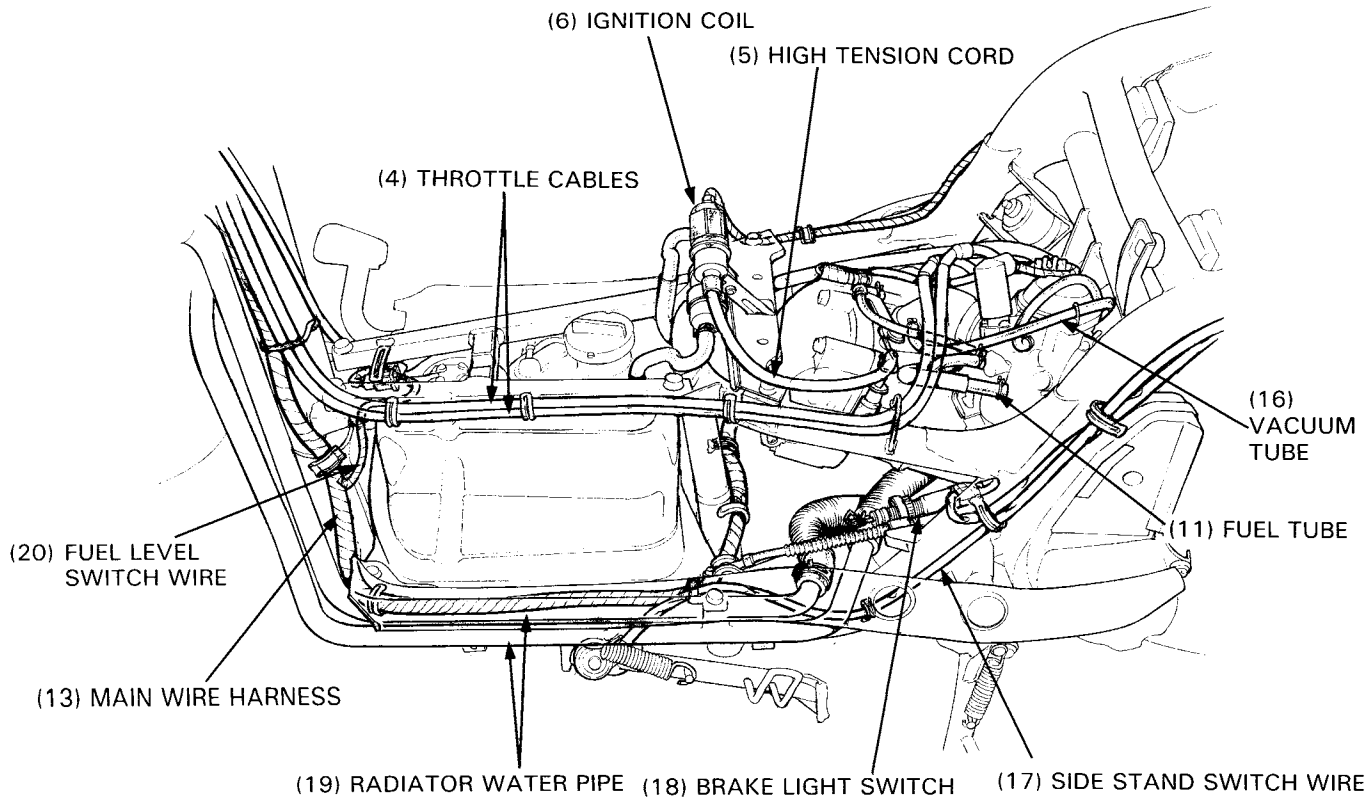
Location	Material	Remarks
Cylinder head camshaft bearing surface Camshaft bearing/sprocket tooth Rocker arm shaft surface and O-ring Rocker arm slipper surface Valve stem seal Piston pin outer surface Piston ring Cylinder sleeve inner surface Cam chain Crankshaft big end Connecting rod small end Crankshaft main bearings Crankshaft right oil pass hole Timing sprocket tooth Right crankcase cover oil pass Starter clutch gear tooth/one-way clutch Oil pump chain Starter reduction gear tooth/pivot Starter reduction gear shaft Starter motor pinion gear tooth Oil pump rotor and shaft Oil pump drive/driven sprocket tooth Oil drain bolt threads and O-ring Transmission gear and gear shaft Ball bearings and needle bearings Oil seal lips O-rings Flywheel nut threads	Engine oil	 3 cc (0.1 US oz) 2 cc (0.07 US oz) 1 cc (0.03 US oz)
Valve stem (valve guide sliding surface) Camshaft journals and cam lobe Starter clutch gear pivot Water pump shaft 15 mm (O.D.) pivot surface	Molybdenum disulfide oil	 Do not apply to tapered surface Do not apply to mechanical seal sliding surface
Fan motor switch	Sealant	
Starter one way clutch socket bolt threads Carburetor throttle cable stay mounting screws	Locking agent	
Final shaft 17 mm (O.D.) pivot surface 3 mm (width) groove	Multi purpose grease	
Moveable drive face weight roller Moveable drive face boss/collar inner surface Driven face inside Moveable driven face inside	Lithium based grease —Mitsubishi HD-3 —Nippon sekiyu: Lipanox delux 3 —Idemitsu: Autolex B —Bel-Ray: Moly lube 124 —Sta-Lube: MP 3141	Use 35—40 g of grease. Use 4—5 g of grease and apply to the inside evenly. Use 11—13 g of grease • Use 4—5 g of grease and apply to the inside evenly. • Do not apply to pulley face.

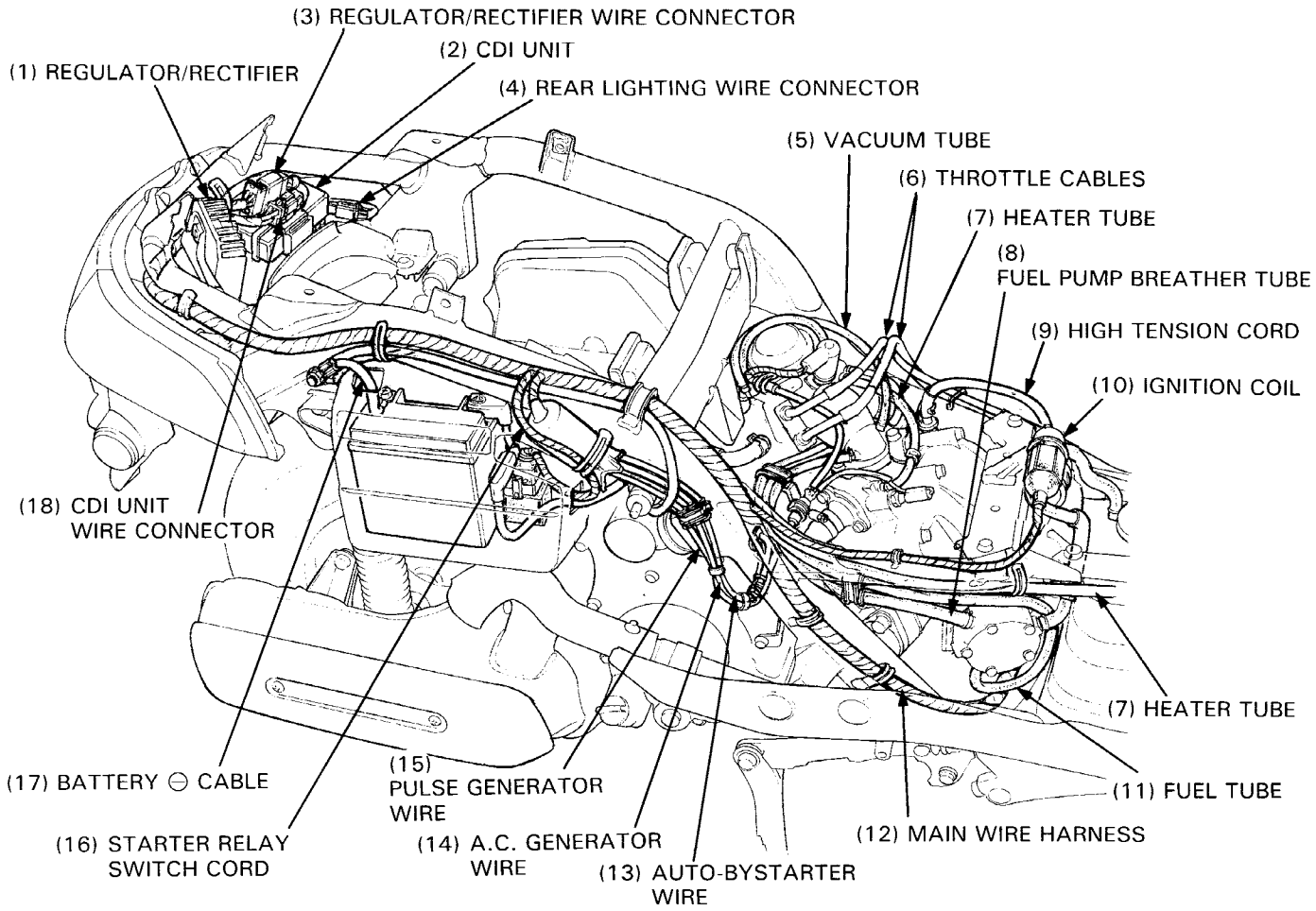
Cable & Harness Routing

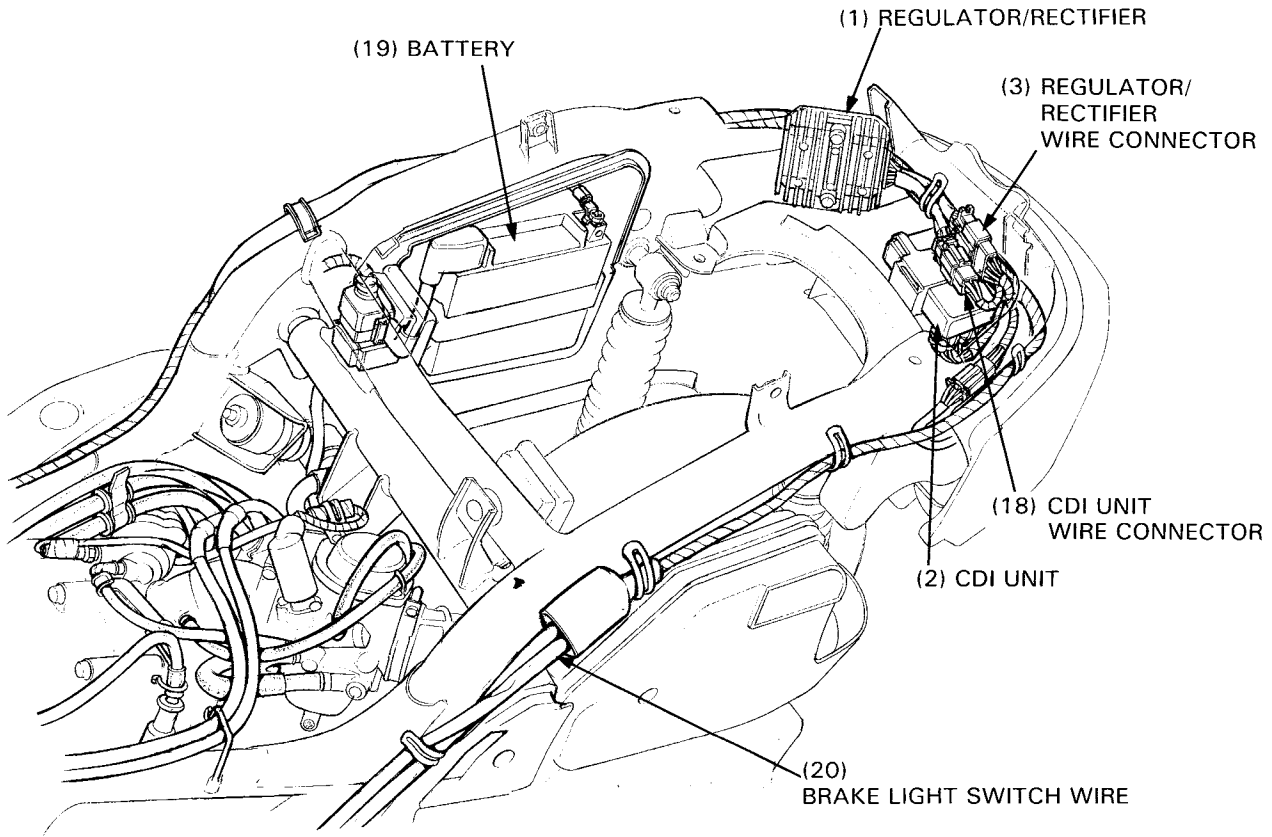


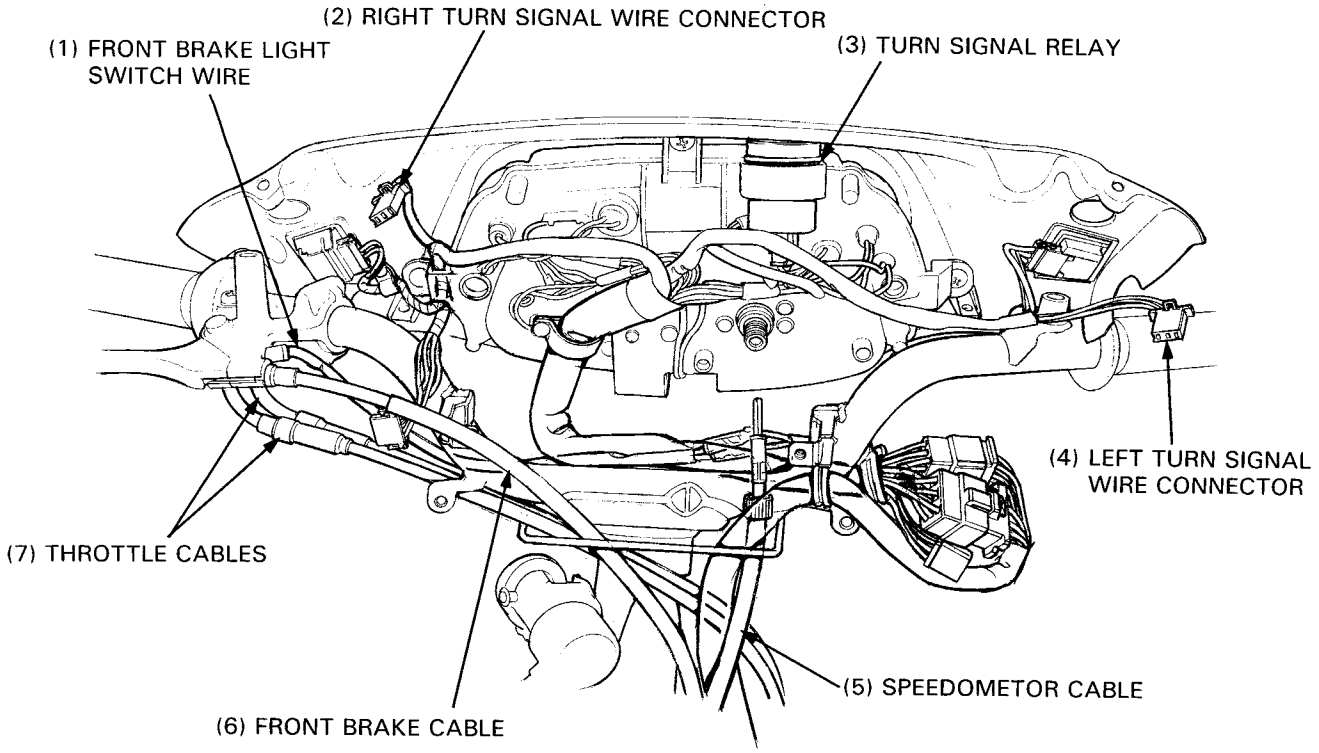

(1) PARKING BRAKE KNOB
(2) IGNITION SWITCH WIRE
(3) SIPHON TUBE
(4) FAN MOTOR SWITCH
(5) RADIATOR HOSE
(6) FAN MOTOR/THERMO SWITCH WIRE
(7) HEATER TUBE
(8) THROTTLE CABLES
(9) FUSE BOX
(10) PARKING BRAKE CABLE
(11) MAIN WIRE HARNESS
(12) HIGH TENSION CORD
(13) IGNITION COIL
(14) CLAMP
(15) FUSE CONNECTOR
(16) HORN WIRE
(17) HORN


(2) CRANKCASE BREATHER TUBE
(3) AUTO-BYSTARTER WIRE
(1) STARTER MOTOR CABLE
(4) THROTTLE CABLES
(5) HIGH TENSION CORD
(6) IGNITION COIL
(7) FUEL TUBE
(15) A.C. GENERATOR WIRE
(8) FUEL STRAINER
(14) PULSE GENERATOR WIRE
(12) HEATER TUBE
(13) MAIN WIRE HARNESS
(11) FUEL TUBE
(9) THERMO SENSOR WIRE CONNECTOR
(10) FUEL PUMP VACUUM TUBE

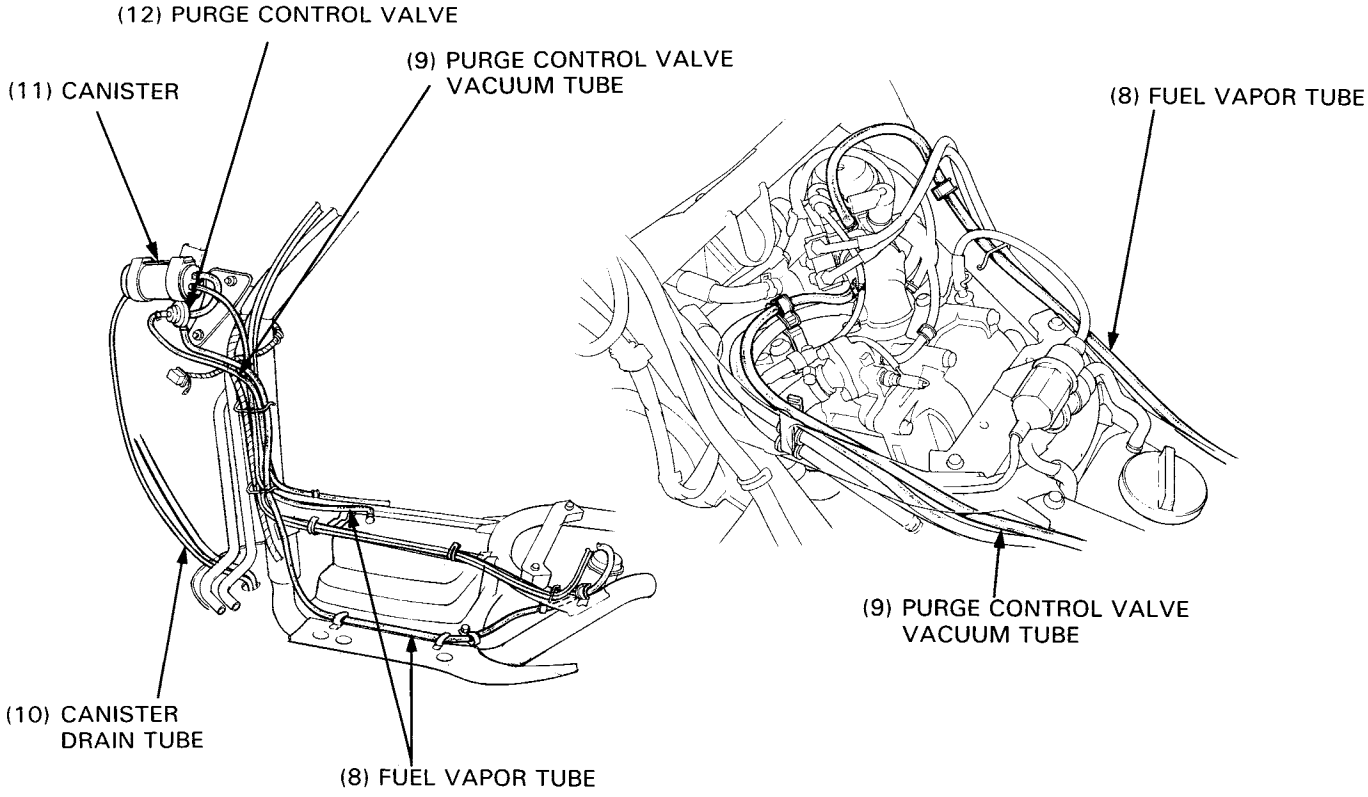

(6) IGNITION COIL
(5) HIGH TENSION CORD
(4) THROTTLE CABLES
(16) VACUUM TUBE
(11) FUEL TUBE
(20) FUEL LEVEL SWITCH WIRE
(13) MAIN WIRE HARNESS
(19) RADIATOR WATER PIPE
(18) BRAKE LIGHT SWITCH
(17) SIDE STAND SWITCH WIRE


(3) REGULATOR/RECTIFIER WIRE CONNECTOR
(2) CDI UNIT
(1) REGULATOR/RECTIFIER
(4) REAR LIGHTING WIRE CONNECTOR
(5) VACUUM TUBE
(6) THROTTLE CABLES
(7) HEATER TUBE
(8)
FUEL PUMP BREATHER TUBE
(9) HIGH TENSION CORD
(10) IGNITION COIL
(18) CDI UNIT
WIRE CONNECTOR
(7) HEATER TUBE
(17) BATTERY ⊖ CABLE
(15)
PULSE GENERATOR
WIRE
(11) FUEL TUBE
(16) STARTER RELAY
SWITCH CORD
(14) A.C. GENERATOR
WIRE
(12) MAIN WIRE HARNESS
(13) AUTO-BYSTARTER
WIRE


(1) REGULATOR/RECTIFIER
(19) BATTERY
(3) REGULATOR/
RECTIFIER
WIRE CONNECTOR
(18) CDI UNIT
WIRE CONNECTOR
(2) CDI UNIT
(20)
BRAKE LIGHT SWITCH WIRE



[CALIFORNIA MODEL ONLY]



Emission Control Systems

The U.S. Environmental Protection Agency and California Air Resources Board (CARB) require manufacturers to certify that their scooters comply with applicable exhaust emissions standards during their useful life, when operated and maintained according to the instructions provided, and that scooters built after January 1, 1983 comply with applicable noise emission standards for 1 year or 6,000 km (3.730 miles) after the time of sale to the ultimate purchaser, when operated and maintained according to the instructions provided. Compliance with the terms of the Distributor's Warranties for Honda Motorcycle Emission Control Systems is necessary in order to keep the emissions system warranty in effect.

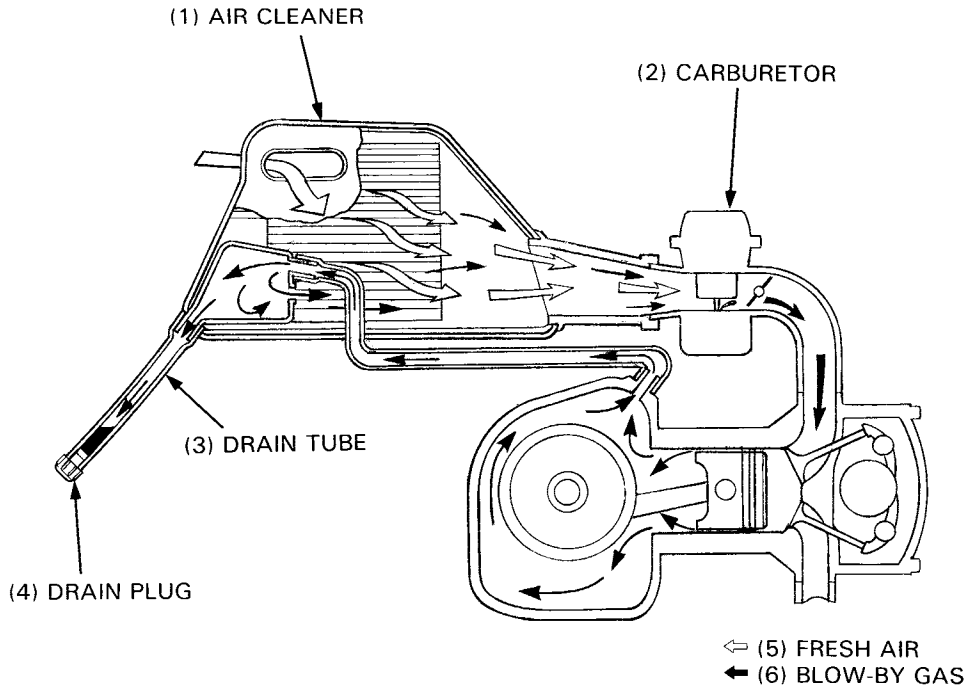
Source of Emissions

The combustion process produces carbon monoxide and hydrocarbons. Control of hydrocarbons is very important because, under certain conditions, they react to form photochemical smog when subjected to sunlight. Carbon monoxide does not react in the same way, but it is toxic.

Honda Motor Co., Ltd. utilizes lean carburetor settings, as well as other systems, to reduce carbon monoxide and hydrocarbons.

Crankcase Emission Control System

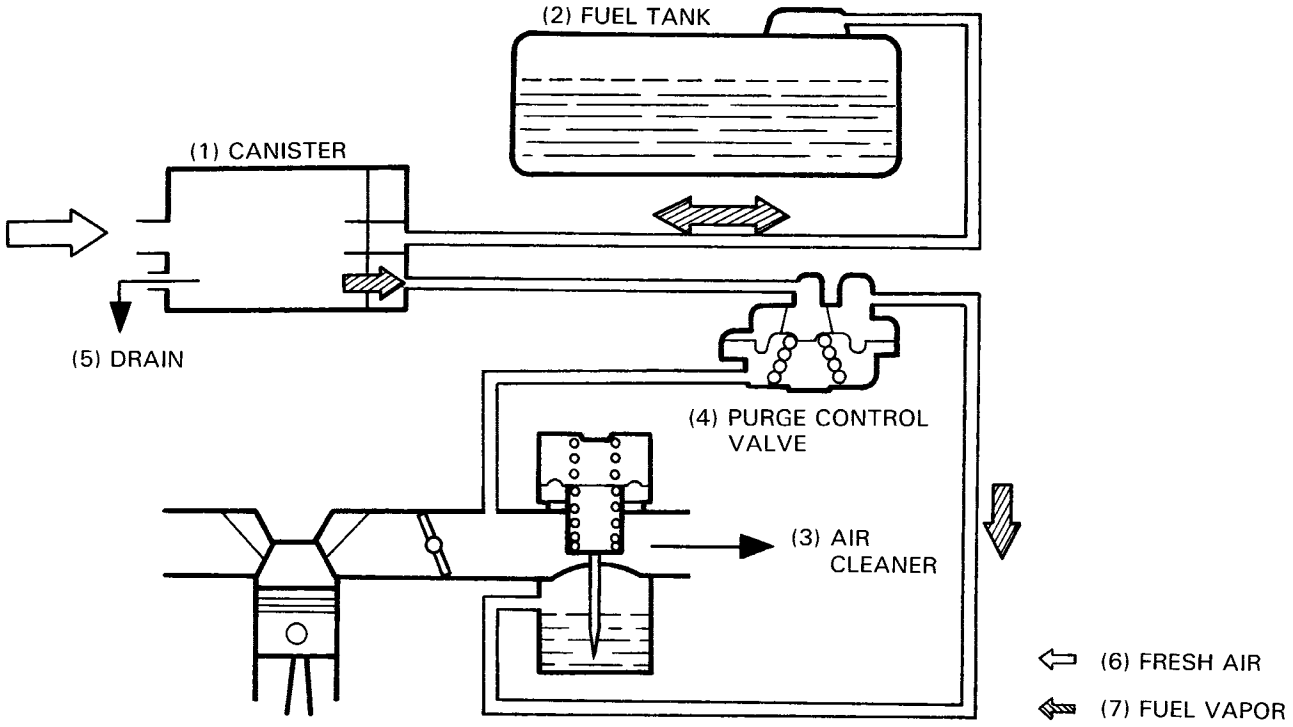
The crankcase emission control system routes crankcase emission through the air cleaner and into the combustion chamber. Condensed crankcase vapors are accumulated in an air/oil separator and drain tube which must be emptied periodically. Refer to the Maintenace Schedule (page 3-4). The drain tube needs to be checked for oil accumulation more frequently if the machine has been ridden mostly at high speeds or in rain.



Evaporative Emission Control System (California Model Only)

This vehicle complies with California Air Resouces Board requirements.

Fuel vapor from the fuel tank and carburetor is routed into the charcoal canister where it is adsorbed and stored while the engine is stopped. When the engine is running and the purge control diaphragm valve is open, fuel vapor in the charcoal canister is drawn into the engine through the air cleaner.



Noise Emission Control System

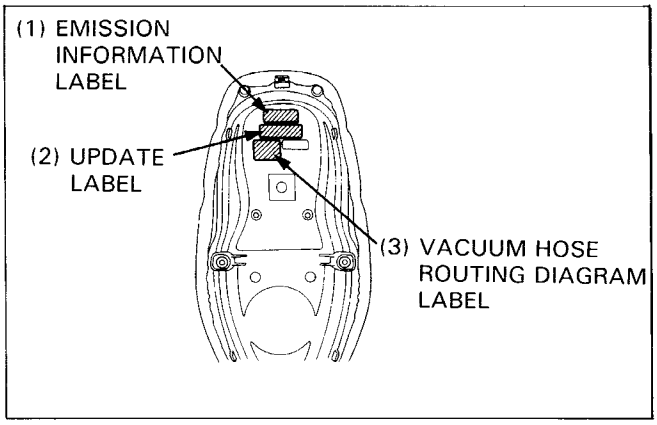
TAMPERING WITH THE NOISE CONTROL SYSTEM IS PROHIBITED: Federal law prohibits the following acts or the causing thereof: (1) the removal or rendering inoperative by any person, other than for purposes of maintenance, repair or replacement, of any device or element of design incorporated into any new vehicle for purpose 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:

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

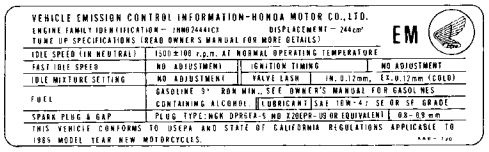
Emission Control Information Labels (U.S.A. Only)

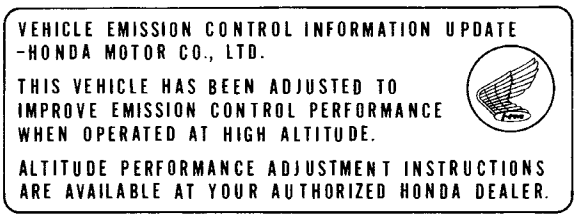
Emission Information Label are located on the back of the seat.
It contains basic tune-up specifications.



Vehicle Emission Control Information Update Label

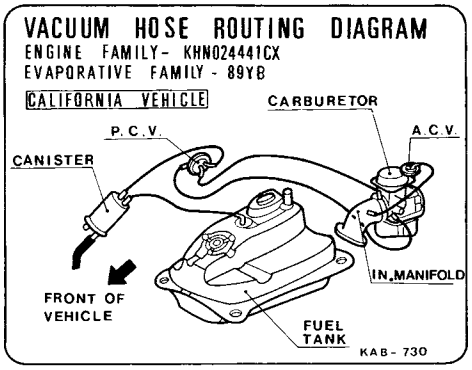
After making a high altitude carburetor adjustment, attach an update label on the back of the seat.





Vacuum Hose Routing Diagram Label (California Model Only)

The Vacuum Hose Routing Diagram Label is located on the back of the seat.



2. Frame/Body Panels/Exhaust System

Service Information

⚠ WARNING

- **Gasoline is extremely flammable and is explosive under certain conditions.**
- **Serious burns may result if the exhaust system is not allowed to cool before components are removal or serviced.**

- Work in a well ventilated area. Smoking or allowing flames or sparks in the working area or where gasoline is stored can cause a fire or explosion.
- This section covers removal and installation of the frame body panels, fuel tank and exhaust system. Installation of the frame body panels is in the reverse order of removal, unless noted otherwise.
- When removing the cover, be careful not to damage the tabs and/or grooves.
- Alway replace the exhaust pipe gaskets when removing the exhaust pipe from the engine.
- Note the positions of the clamps installed between the exhaust pipe and muffler. The tab on the clamp should slign with the groove on the muffler.
- When installing the exhaust pipe first, install all the fasteners loosely. Tighten the exhaust clamps first, then securely tighten the mounting fasteners. If you tighten the mounting fasterners first, the exhaust pipe may not seat properly.
- Always inspect the exhaust system for leaks after installation.

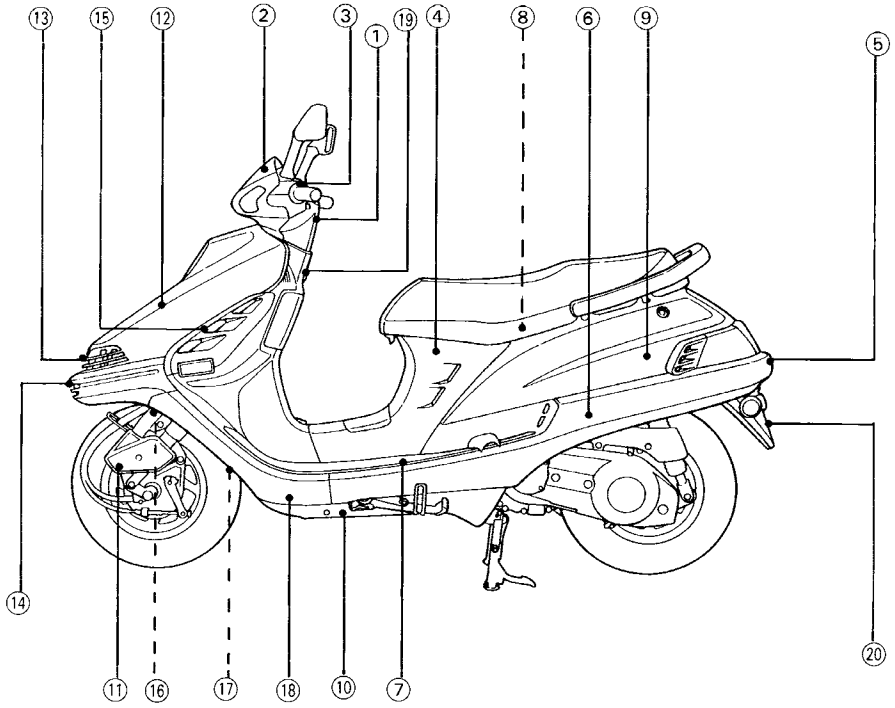
Troubleshooting

Excessive Exhaust Noise
- Broken exhaust system
- Exhaust gas leak

Poor Performance
- Deformed exhaust system
- Exhaust gas leak
- Clogged muffler

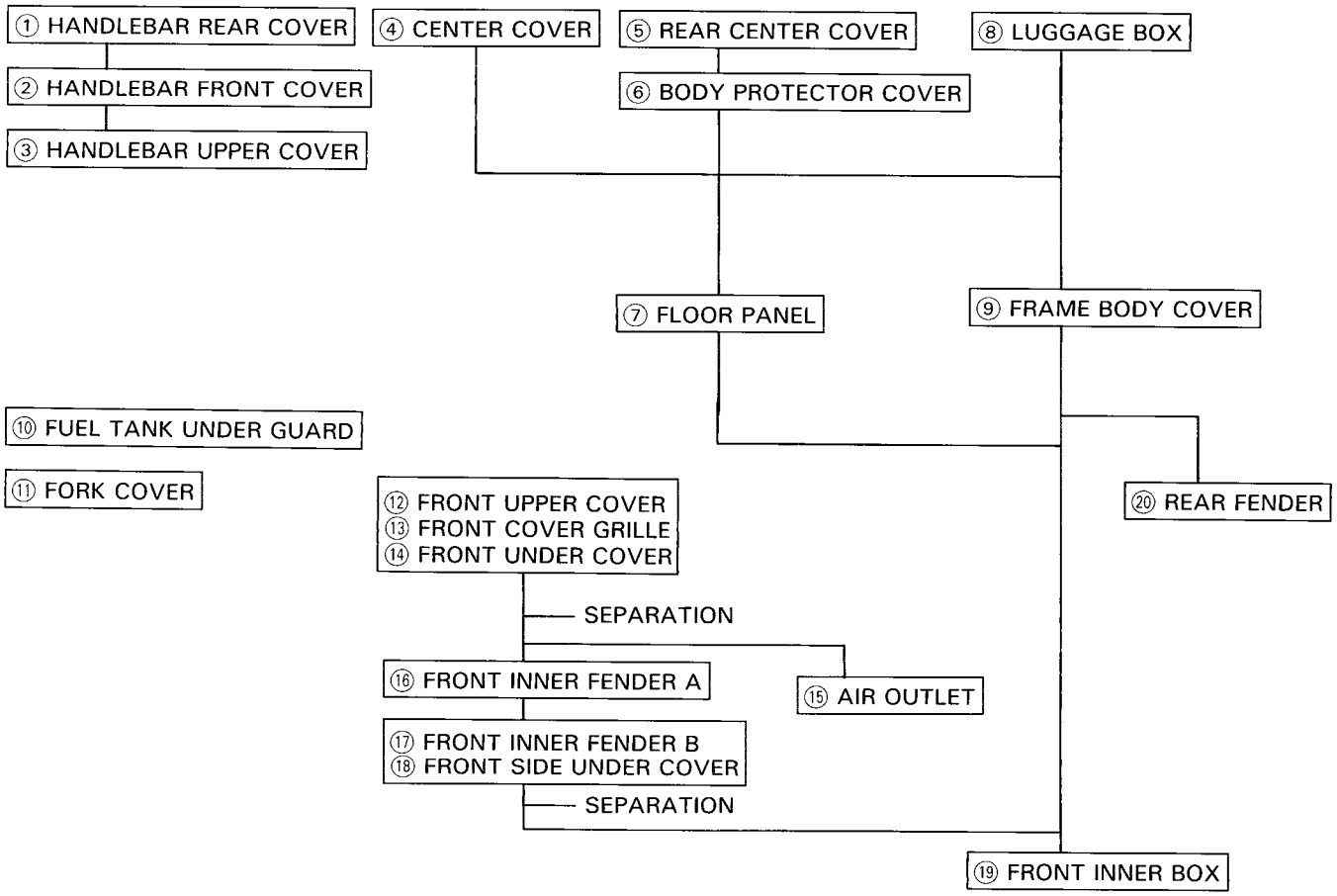
Body Panels

Body Panel Locations



Frame Cover Removal Chart

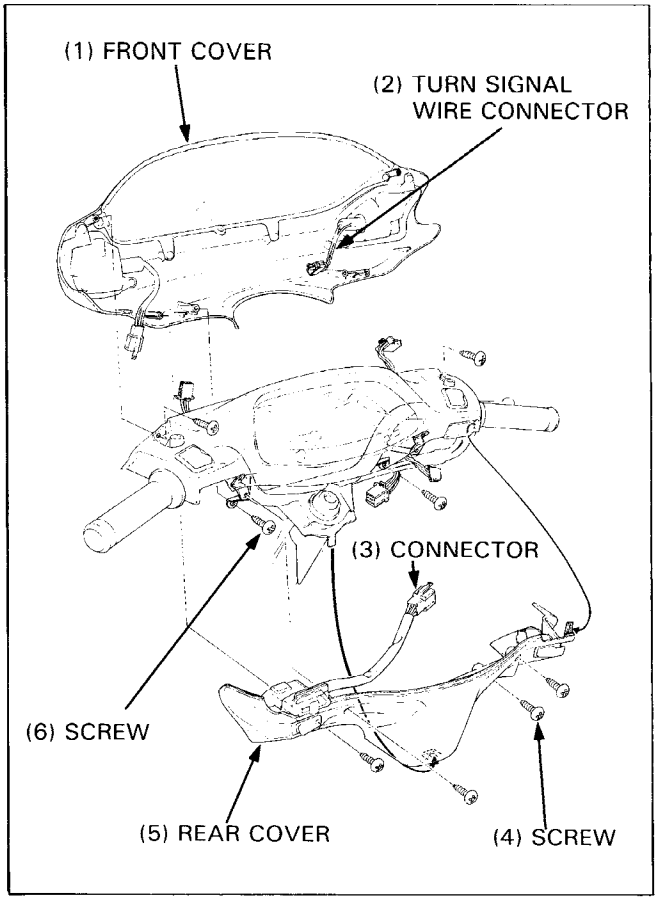
- This chart shows removal order of frame covers.
- The chart line indicate the proper order for component removal.



Handlebar Cover Removal/Installation

Handle Rear Cover Removal/Installation
Remove the following parts:
– rear view mirror.
– four screws from the rear cover.
– tongue of the cover from the lug of the frame.
– tongue of the cover from the lug of the upper cover.
– rear cover.

Disconnect the turn signal/horn and starter switch wire connectors.
Connect the turn signal/horn and starter switch wire connectors.
Set the rear cover on the handlebar aligning the tongue of the cover with the lug of the frame first, then align the tongue of the cover with the lug of the upper cover securely.
Tighten the four screws.

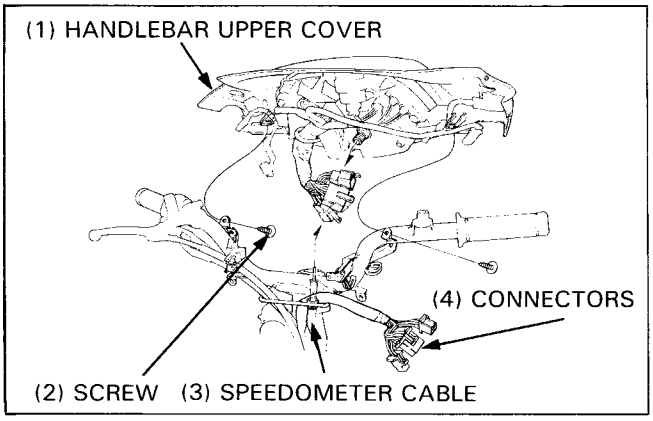


Handlebar Front Cover Removal/Installation
Remove the four screws from the frame and upper cover.
Disconnect the both turn signal wire connectors.
Remove the front cover.

Install the front cover in the reverse order of removal.

Handlebar Upper Cover Removal/Installation
Remove the two screws.
Disconnect the speedometer cable.
Disconnect the two 8P and engine stop switch wire connectors.
Remove the handlebar upper cover.

Install the handlebar upper cover in the reverse order of removal.



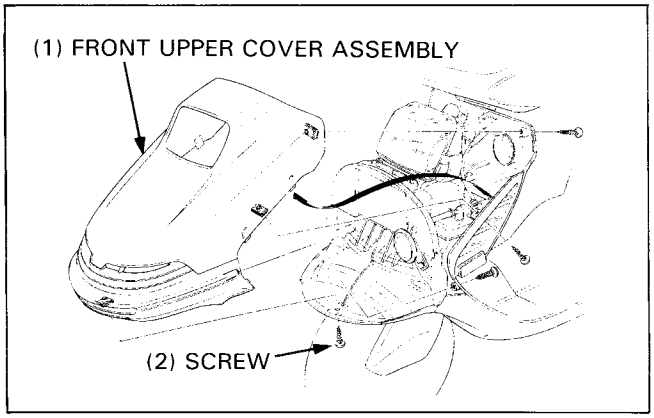
Front Upper Cover Assembly

Remove the seven screws from the front inner cover, air outlet and front inner fender A as shown.
Disconnect the claws of the under cover and both side covers, then remove the front upper cover assembly.

Installation is the reverse order of removal.

NOTE

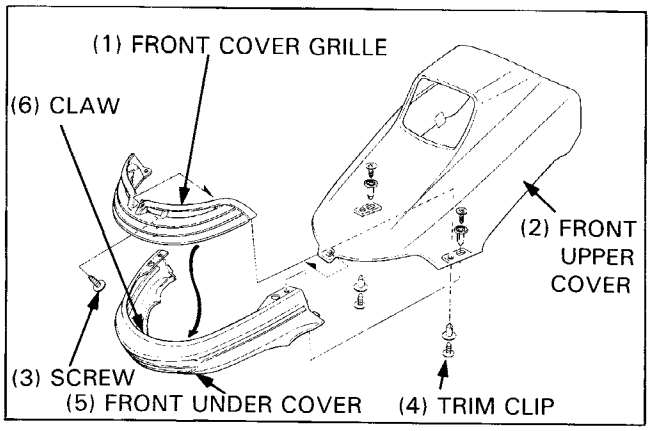
- At installation, align the claws of the front and side covers securely.



Separation
Remove the upper cover assembly.
Remove the two screws.
Unhook the cover claw from the hole of the front cover grille and pull the front under cover off the assembly.

Remove the two trim clips, screw, and front cover grille from the front upper cover.

Installation is the reverse order of removal.



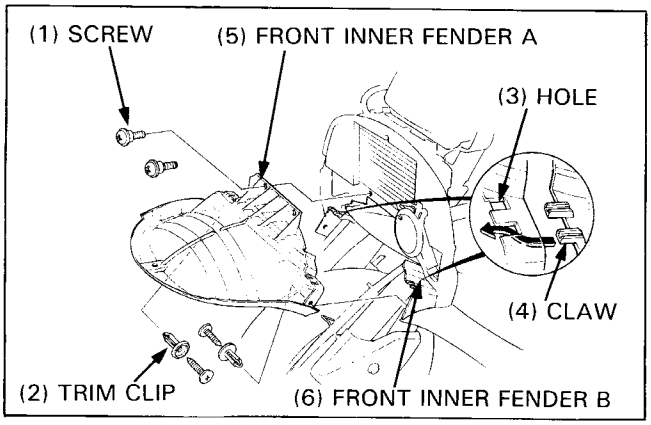
Front Inner Fender A Removal/Installation

Remove the front upper cover, front cover grille and under cover.
Remove the fender A upper mounting screws and two trim clips.
Unhook the four fender B claws from the holes in the fender A while pulling front side of the fender A down slowly.
Remove the front inner fender A.

Installation is the reverse order of removal.

NOTE

- At installation, insert the claws of the fender B into the holes in the fender A securely to avoid breaking the claws.

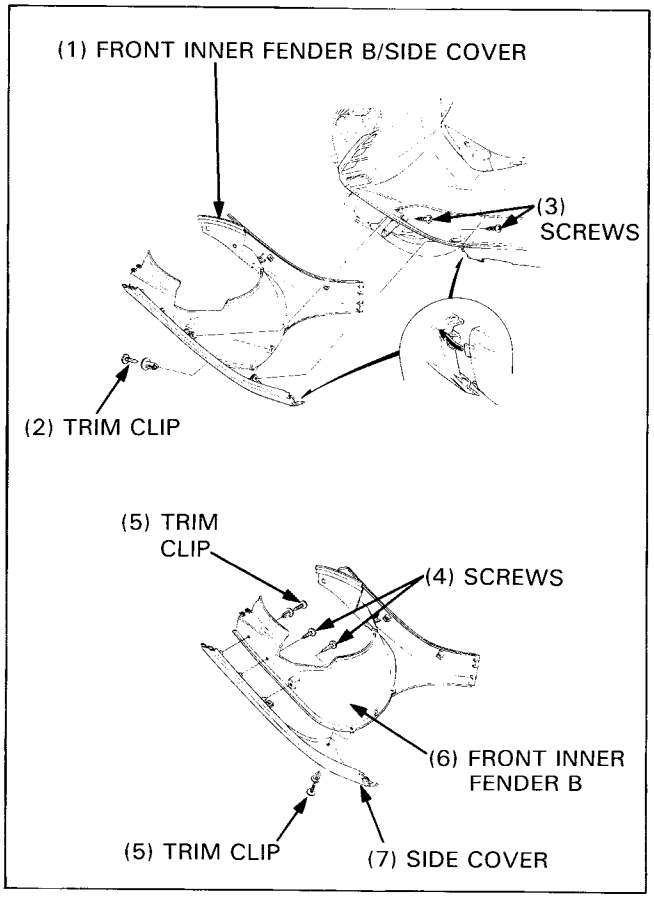


Front Inner Fender B/Side Cover Removal/ Installation

Remove the front upper cover assembly and front inner fender A.

Remove the trim clip from the fuel tank under cover first.
Remove the four screws at the front inner box, then remove the front inner fender B and under covers as an assembly.

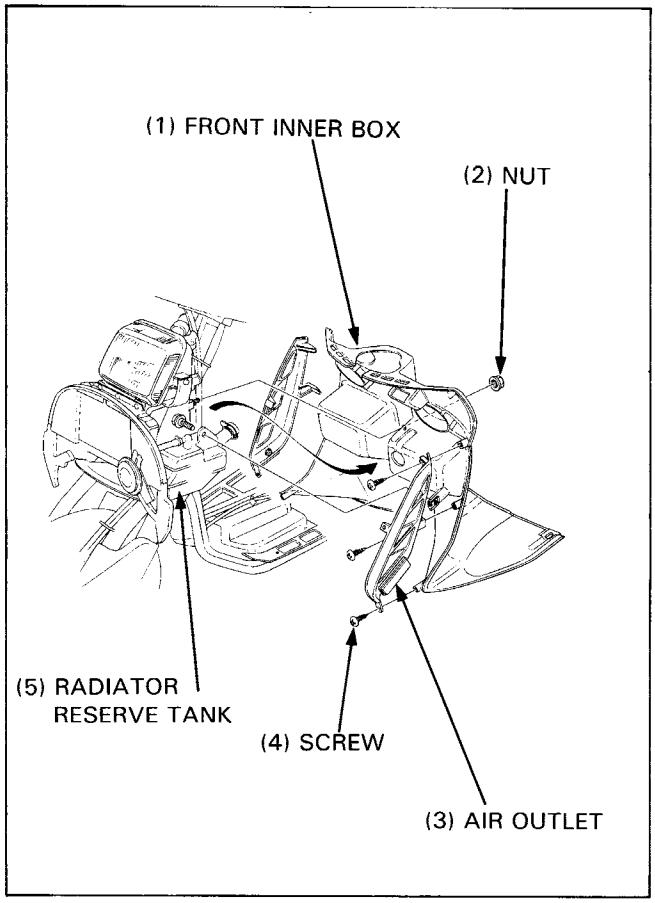
Separation
Remove the four screws and four trim clips, then separate the front inner fender B from both front side under covers.



Air Outlet Removal/Installation

Remove the front upper cover assembly (page 2-3).
Remove the two screws and remove the right air outlet.
Remove the left air outlet in the same way.

Installation is the reverse order of removal.



Front Inner Box Removal/Installation

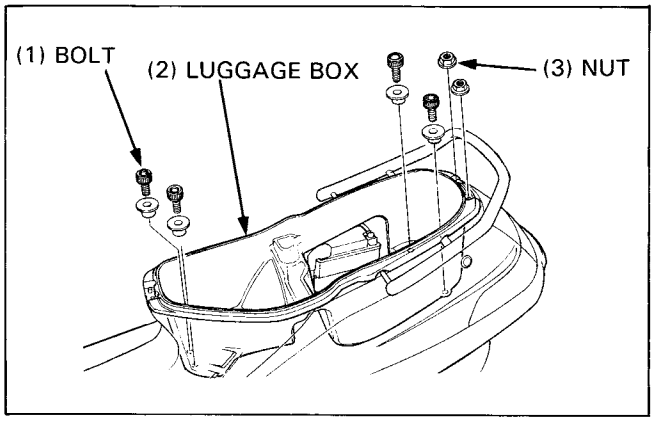
Remove the following:
- front upper cover assembly (page 2-3).
- front inner fender A (page 2-4).
- front inner fender B/side covers (page 2-4).
- center cover (page 2-6).
- both floor panels (page 2-7).
- radiator reserve tank (page 6-4).

Disconnect the fuse box wire connector and remove the nut.
Remove the inner box by unhooking its upper end from the steering stem.
Remove the parking brake knob from the front inner box (page 13-6).

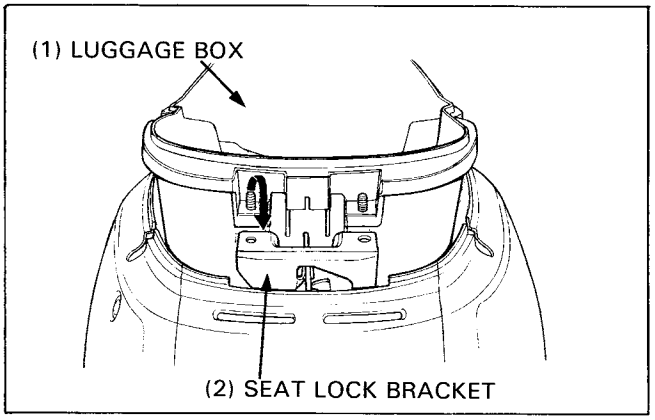
Installation is the reverse order of removal.

Luggage Box Removal/Installation

Remove the seat.
Remove the case setting screw and the battery case cover (page 14-4).
Remove the four socket bolts and two seat lock bracket mounting nuts.



Raise the front end of the luggage box while pushing down on the rear to free the studs from the seat lock bracket.
Remove the luggage box.

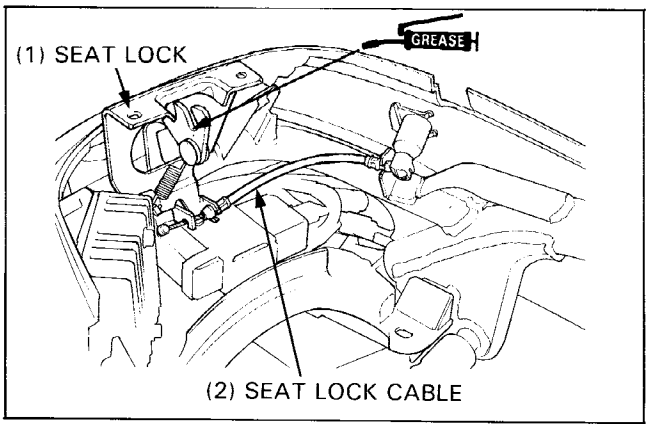


Disconnect the seat lock cable from the key body and remove the seat lock.

Installation is the reverse order of removal.

NOTE

- Apply grease to the seat lock ratch and striker.



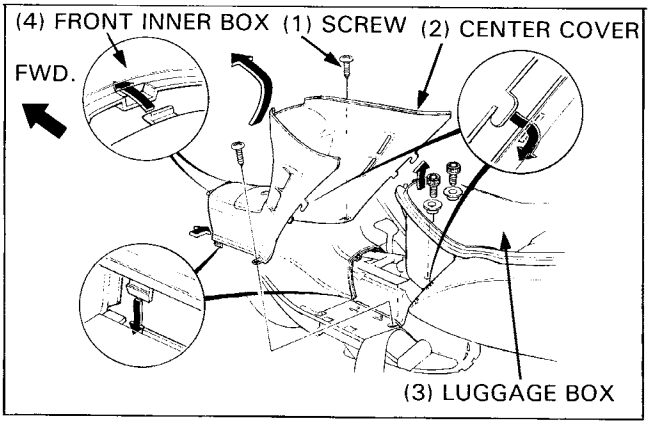
Center Cover Removal/Installation

Remove the two luggage box front mounting bolts.
Remove the two center cover mounting screws.
Unhook the rear center cover tabs from the body cover by slightly raising both parts together, then pulling the cover forward as shown.
Unhook the front tabs from the front inner box and remove the center cover.

Installation is the reverse order of removal.

NOTE

- When reinstalling the cover, make sure that its tabs are correctly positioned through the luggage box grooves and into the slots.



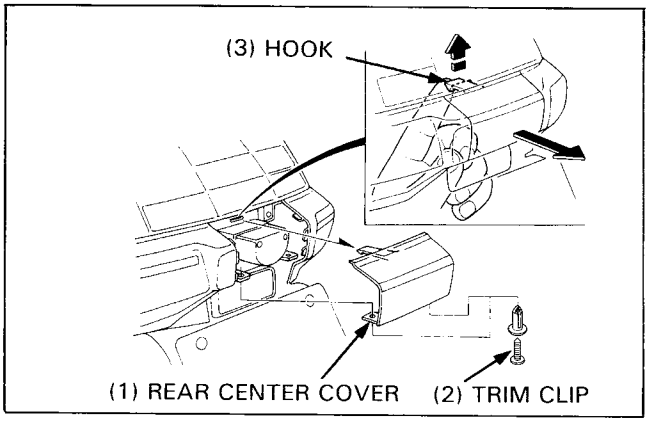
Body Protector Cover Removal/Installation

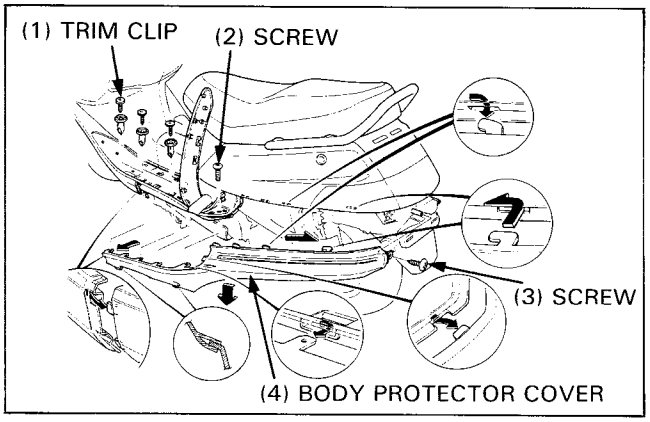
Remove the two rear center cover trim clips.
Raise the cover hook with your finger and remove the rear center cover.

Remove the three trim crips and a screw on the floor panel.
Remove the left protector cover screw.
Remove the four lugs from the floor panel.
Slide the left protector cover to rear and remove the tabs from the body cover, then remove the left protector cover.

Remove the right protector cover in the same way.

Install the protector covers in the reverse order of removal.





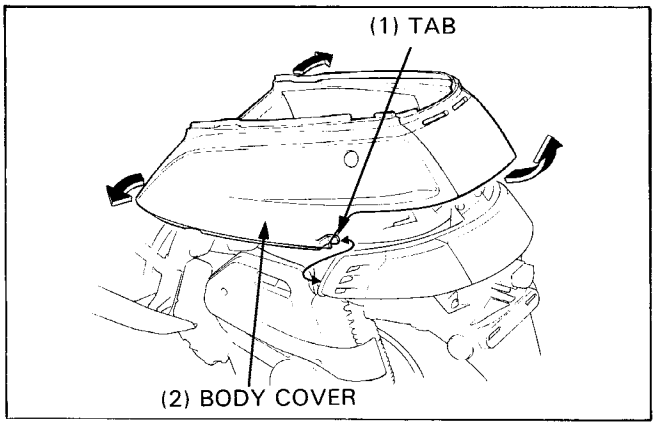
Body Cover Romoval/Installation

Remove the luggage box, center cover and body protector covers (page 2-5, 6).
Remove the cover by raising and carefully spreading it open just enough to clear the grab rail.

CAUTION

- **Damage to the body cover will occur if the sides are too much.**

Installation is the reverse order of removal.

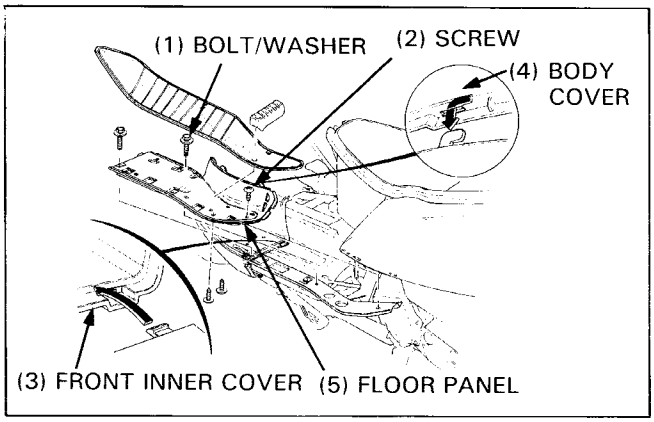


Floor Panel Removal/Installation

Remove the following:
— protector cover and body cover (page 2-6).
— center cover (page 2-6).
— two bolts/washers and screw.
— two tabs from the front inner cover by moving the inner cover forward.
Remove the three tabs from the body cover, sliding the floor panel forward, then remove the left floor panel.

Remove the right floor panel in the same way.

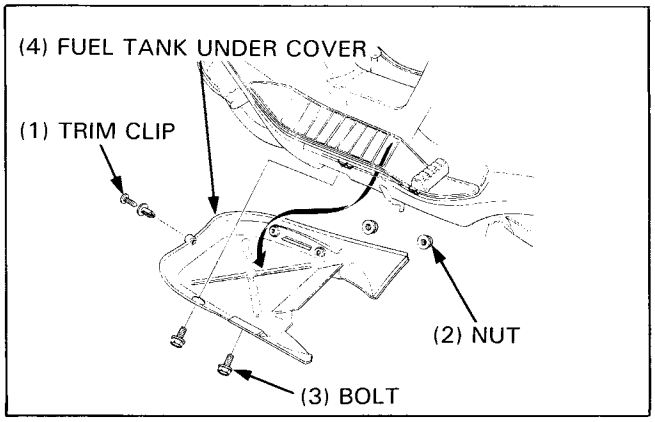
Install the floor panel in the reverse order of removal.



Fuel Tank Under Cover Removal/Installation

Remove the trim clip.
Remove the four nuts, bolts and fuel tank under cover.

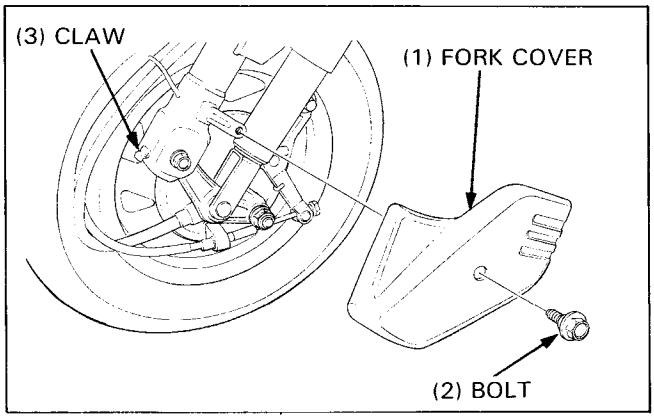
Installation is the reverse order of removal.



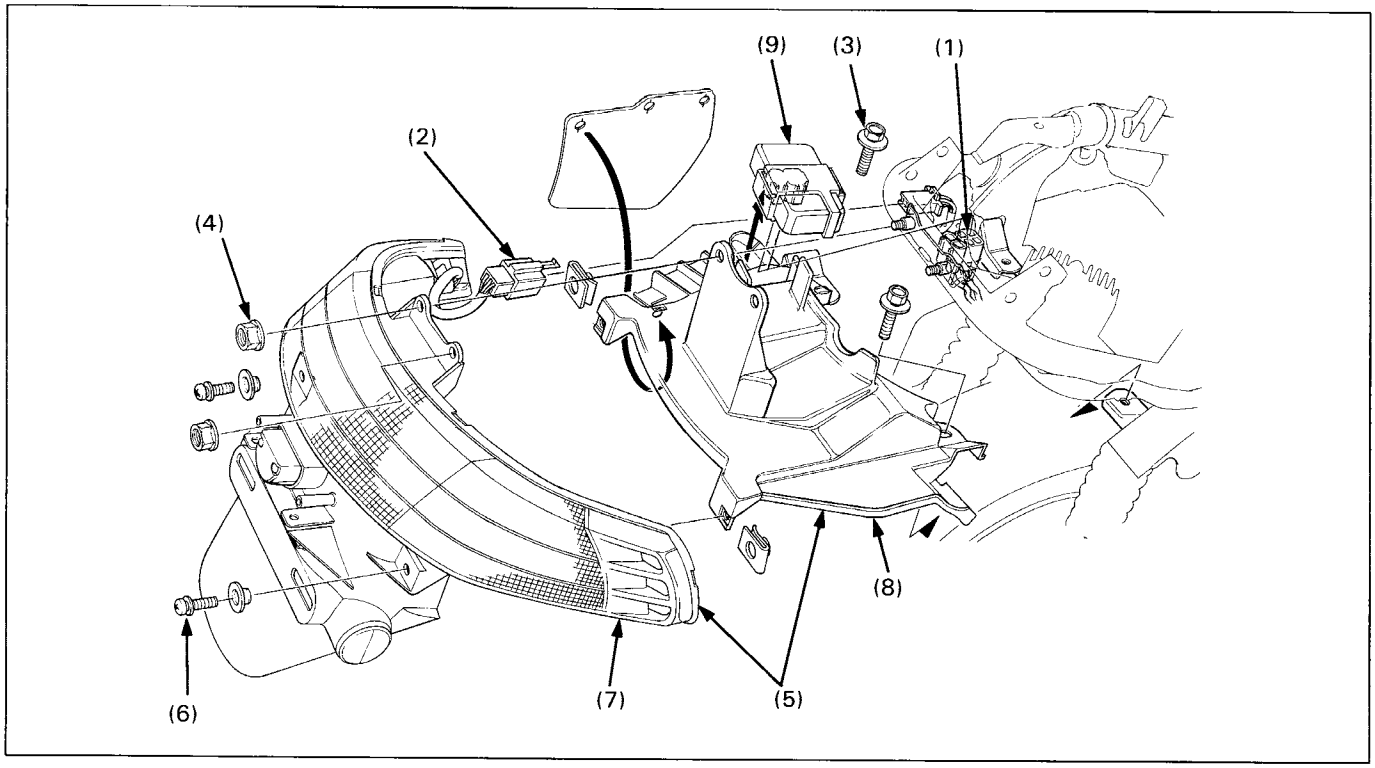
Fork Cover Removal/Installation

Remove the bolt and remove the fork cover by unhooking the hole in the cover from the claw on the steering stem.

Reinstall the fork cover by hooking the claw in the hole, then tighten the bolt.



Rear Fender Removal/Installation

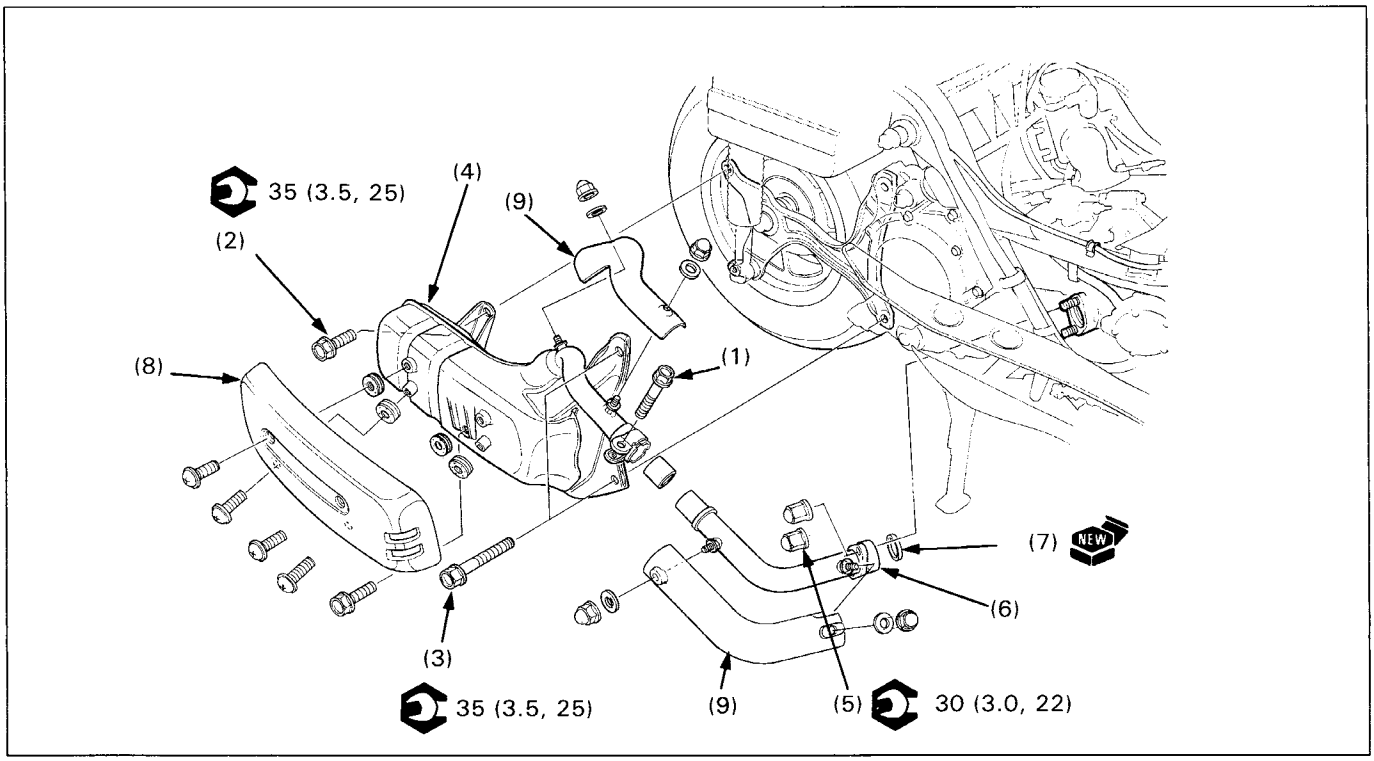


Requisite Service

- Luggage box removal/installation (page 2-5)
- Body protector cover/body cover removal (page 2-6, 7)

	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	CDI unit wire	1	Disconnect the wire connector from the CDI unit.
(2)	Taillight/turn signal wire	1	Disconnect the wire connector.
(3)	Fender mounting bolt	2	
(4)	Fender mounting nut	2	
(5)	Rear fender/taillight assembly	1	
(6)	Taillight mounting screw	2	
(7)	Taillight assembly	1	Separate it from the rear fender.
(8)	Rear fender	1	
(9)	CDI unit	1	

Exhaust System Removal/Intallation



⚠ WARNING

- **Serious burns may result if the exhaust system is not allowed to cool before components are removed or serviced.**

NOTE

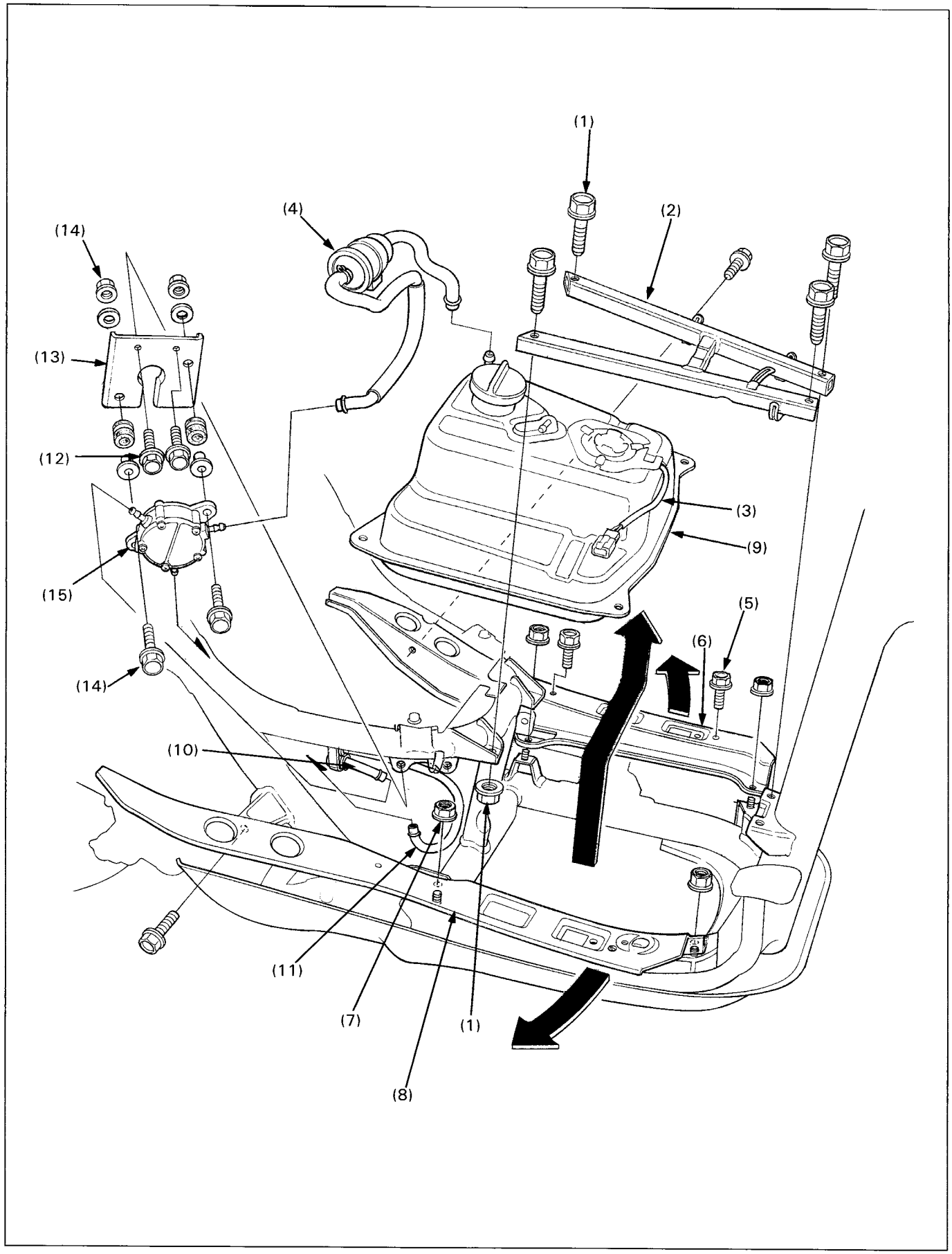
- After installing, make sure that there are no exhaust leaks.

Requisite Service

- Body protector cover removal/installation (page 2-6)

	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Muffler joint bolt	1	Loosen the bolt.
(2)	Rear mounting bolt	2	
(3)	Muffler mounting bolt	2	
(4)	Muffler	1	NOTE • When installing, connect the muffler to the exhaust pipe securely, then align the bolt hole on the muffler, swing-arm and engine.
(5)	Exhaust pipe joint nut	2	
(6)	Exhaust pipe	1	
(7)	Gasket	1	
(8)	Muffler protector	1	
(9)	Exhaust pipe protector	2	

Fuel Tank Removal/Installation



⚠WARNING

- **Gasoline is extremely flammable and is explosive under certain conditions. Work in a well ventilated area. Smoking or allowing flames or sparks in the work area or where gasoline is stored can cause a fire or explosion.**

NOTE

- If you are only removing the fuel tank, it is not necessary to drain the fuel.

Requisite Service

- Front inner box removal/installation (page 2-5)

	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Center cross pipe mounting bolt/nut	4/2	
(2)	Center cross pipe	1	Remove the throttle cables and heater tube from the cross pipe cramp.
(3)	Fuel level switch wire	1	Disconnect the switch wire connector.
(4)	Fuel strainer	1	Disconnect the fuel tubes from the fuel tank and fuel pump.
(5)	Left floor board mounting bolt/nut	3/2	
(6)	Left floor board	1	Slide it to the left to remove.
(7)	Right floor board mounting bolt/nut	1/2	
(8)	Right floor board	1	Slide it to the right to remove.
(9)	Fuel tank	1	Lift the tank and remove it to the left.
(10)	Fuel pump breather tube	1	Disconnect it from the fuel pump.
(11)	Fuel tube	1	Clamp the end with a tube clamp to avoid spilling fuel and disconnect it from the pump.
(12)	Fuel pump bracket bolt	2	Before removing, loosen the fuel pump bolts.
(13)	Fuel pump bracket	1	
(14)	Fuel pump bolt/nut	2/2	
(15)	Fuel pump	1	Do not disassemble.

3. Maintenance

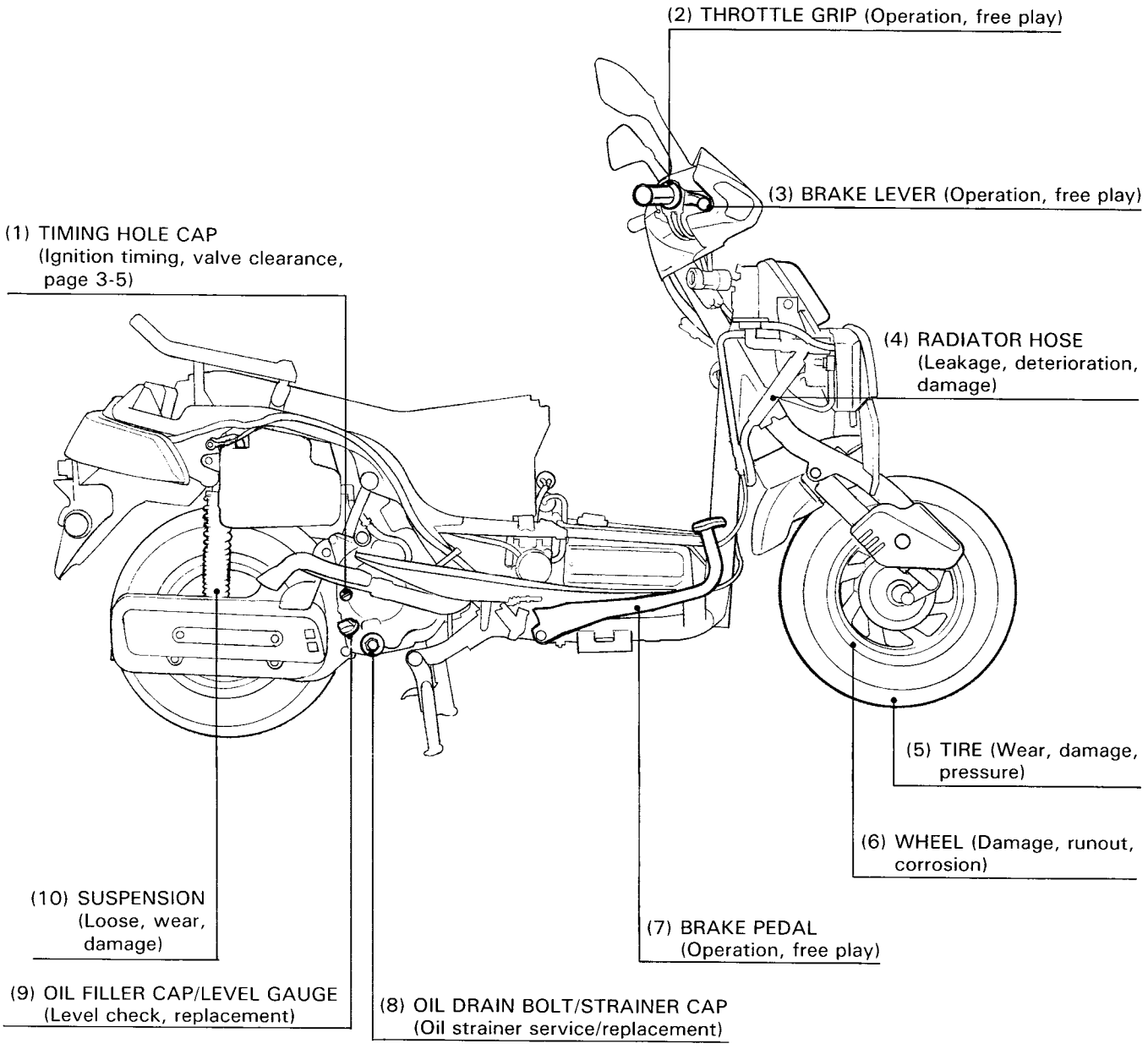
Service Information

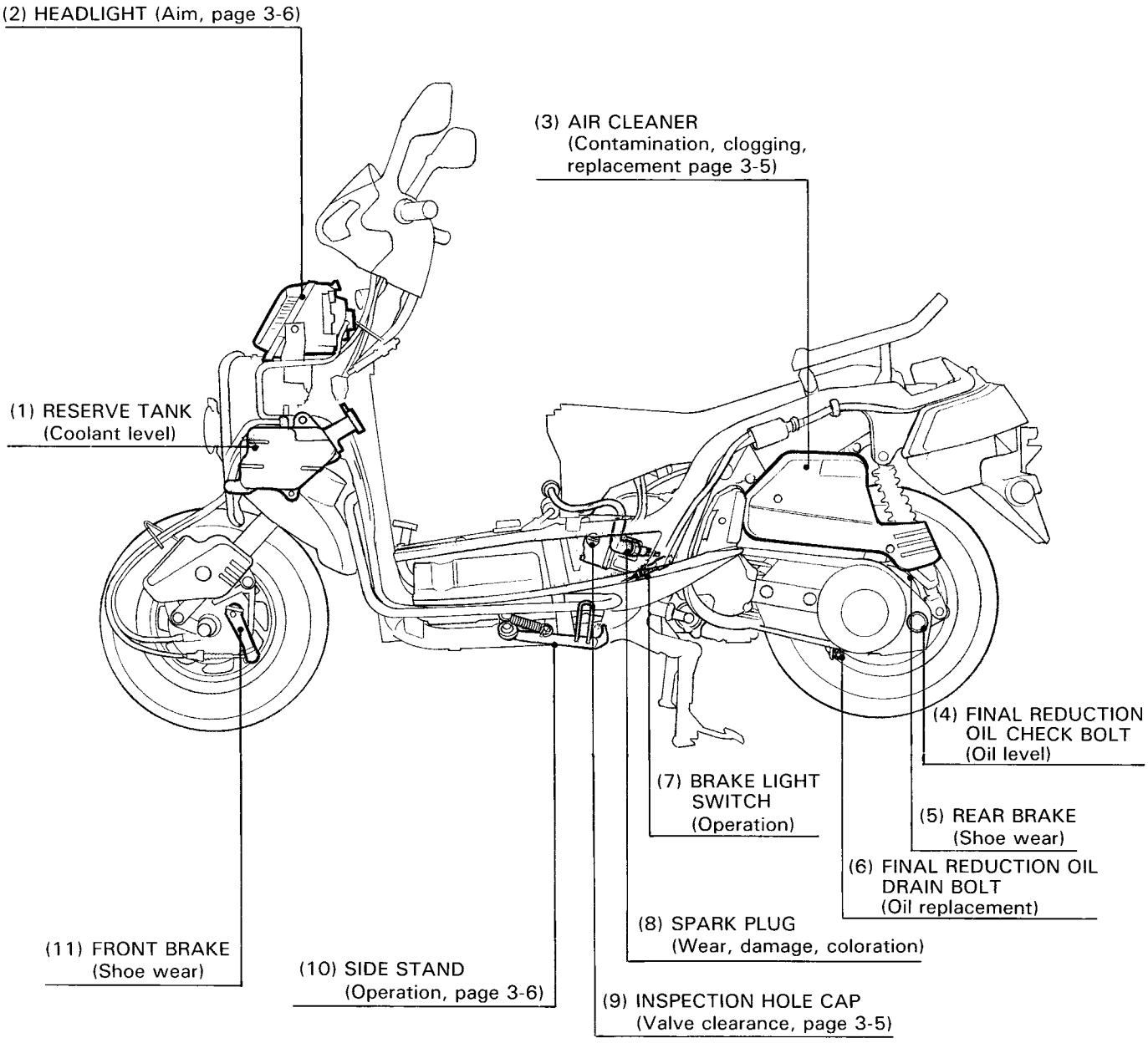
- Refer to the Common Service Manual for service procedures on items not included in this manual.
- Refer to section 1 (Specifications) for maintenance data.

Service Access Guide

- The following illustrations show the locations of the parts that must be checked according to the maintenance schedule. Refer to the Common Service Manual for maintenance not included in this section.
- Refer to section 2 for instructions on removal of frame parts.
  For example: AIR CLEANER (Contamination, clogging, replacement): Part
  - Side cover
  - Fuel tank

  The parts that must be removed for service.




(2) HEADLIGHT (Aim, page 3-6)
(3) AIR CLEANER
(Contamination, clogging,
replacement page 3-5)
(1) RESERVE TANK
(Coolant level)
(4) FINAL REDUCTION
OIL CHECK BOLT
(Oil level)
(7) BRAKE LIGHT
SWITCH
(Operation)
(5) REAR BRAKE
(Shoe wear)
(6) FINAL REDUCTION OIL
DRAIN BOLT
(Oil replacement)
(8) SPARK PLUG
(Wear, damage, coloration)
(11) FRONT BRAKE
(Shoe wear)
(10) SIDE STAND
(Operation, page 3-6)
(9) INSPECTION HOLE CAP
(Valve clearance, page 3-5)

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.
R: Replace, C: Clean, L: Lubricate, A: Adjust
The following items require some mechanical knowledge. Certain items (particularly those marked * and **) may require more technical information and tools. Consult their authorized Honda dealer.

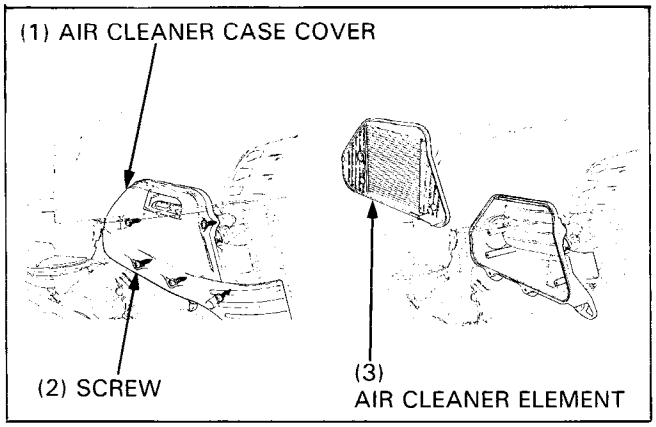
		Item \ Frequency	Note	Odometer Reading (Note 1)								Refer to page
				x 1,000 mi	0.6	4	8	12	16	20	24	
			⬇	x 100 km	10	64	128	192	256	320	384	
Emission Related Items	*	Fuel Line					I		I		I	Note 6
	*	Throttle Operation					I		I		I	Note 6
		Air Cleaner	(Note 2)					R			R	3-5
		Crankcase Breather	(Note 3)			C	C	C	C	C	C	Note 6
		Spark Plug				R	R	R	R	R	R	3-5
	*	Valve Clearance			I		I		I		I	3-5
		Engine Oil			R	R; Every 2000 mi (3200 km)						Note 6
	*	Engine Oil Strainer Screen					C		C		C	Note 6
	*	Carburetor Idle Speed			I	I	I	I	I	I	I	3-6
		Radiator Coolant	(Note 5)				I		I		R	6-3
	*	Cooling System					I		I		I	Note 6
	*	Evaporative Emission Control System	(Note 4)					I			I	5-8
Non-emission Related Items	*	Drive Belt					I	R	I	I	R	Note 6
		Belt Case Air Cleaner				C	C	C	C	C	C	Note 6
	*	Final Drive Oil	(Note 5)		R			R			R	Note 6
		Brake Shoe Wear				I	I	I	I	I	I	Note 6
		Brake System			I		I		I		I	Note 6
	*	Brake Light Switch					I		I		I	Note 6
	*	Starter Limit Switch				I	I	I	I	I	I	Note 6
	*	Brake Lock Operation				I	I	I	I	I	I	Note 6
	*	Headlight Aim					I		I		I	3-7
	**	Clutch Shoe Wear				I	I	I	I	I	I	Note 6
		Side Stand					I		I		I	3-7
	*	Suspension					I		I		I	Note 6
	*	Nuts, Bolts, Fasteners			I		I		I		I	Note 6
	**	Wheels/Tires					I		I		I	Note 6
	**	Steering Head Bearings			I		I		I		I	Note 6

* Should be serviced by an authorized Honda dealer, unless the owner has the proper tools and service data and is mechanically qualified.
** In the interest of safety, we recommended these items be serviced only by an authorized Honda dealer.

Notes: 1. At higher odometer readings, repeat at the frequency interval established here.
2. Service more frequently when unusually wet or dusty areas.
3. Service more frequently when riding in rain or at full throttle.
4. California model only.
5. Replace every 2 years, or at indicated odometer interval, whichever comes first. Replace requires mechanical skill.
6. Refer to Common Service Manual.

Air Cleaner

Remove the body protector cover (Section 2).
Remove the five screws and the air cleaner case cover.
Remove the air cleaner element and discard it.
Set the new element in the case securely and install the cover.



Spark Plug

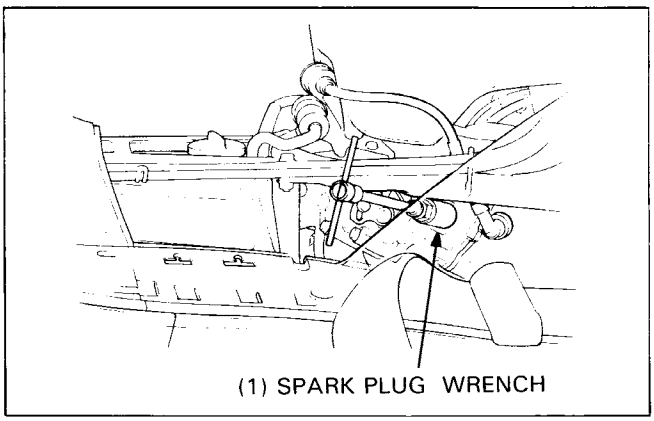
Remove the center cover (see section 2).
Remove the spark plug cap.
Using the spark plug wrench which is included in the tool kit, remove the spark plug.
Install a new spark plug into the cylinder.
Tighten the spark plug 1/2 turn with a open end wrench to compress the plug sealing washer.

Spark Plug Gap: 0.8—0.9 mm (0.03—0.04 in)

Torque: 18 N·m (1.8 kg-m, 13 ft-lb)

Recommend Spark Plug:

	NGK	ND
Standard	DPR6EA-9	X20EPR-U9
For cold climate	DPR5EA-9	X16EPR-U9
For extended high speed riding	DPR7EA-9	X22EPR-U9

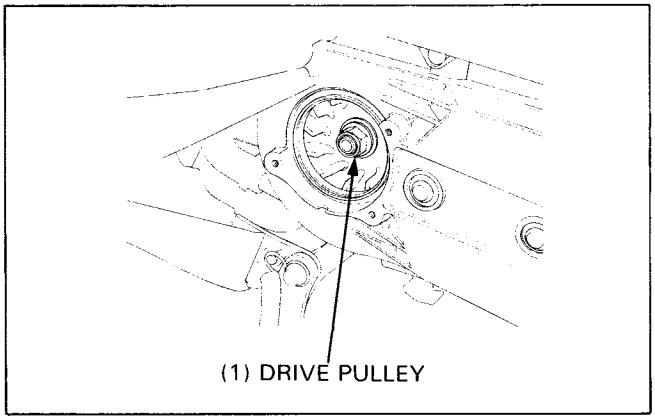


Valve Clearance

NOTE

- Inspect and adjust valve clearance while the engine is cold (below 35°C/95°F).

Remove the center cover and body protector cover (Section 2).
Remove the inspection hole cap and belt case air cleaner case (page 10-2).
Remove the two luggage box front mounting bolts.
Remove the two luggage box front bracket bolts and move the bracket forward.
Rotate the drive pulley counterclockwise and align the index mark on the camshaft with the index mark on the cylinder head cover to bring the piston to TDC (Top Dead Center) on the compression stroke.

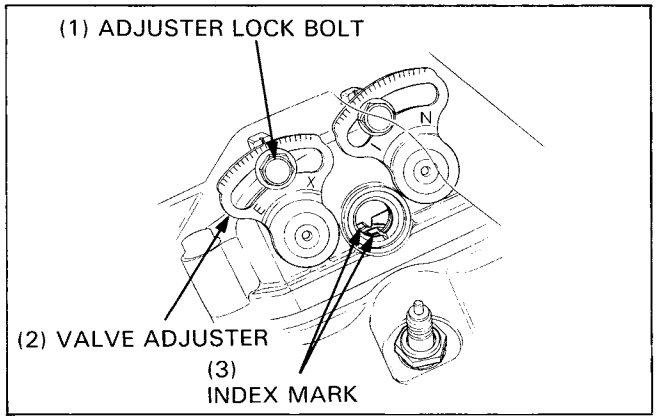


Loosen the valve adjuster lock bolts, which are located on the left side of the cylinder head.
Move the intake and exhaust adjusters outward (away from each other) fully, until resistance is felt.
Then move them inward (toward each other) one graduation.
Tighten the lock bolts.

NOTE

- One graduation on the adjusters equals 0.10 mm (0.004 in), which is the specified clearance.

Install the removed parts in the reverse order of removal.



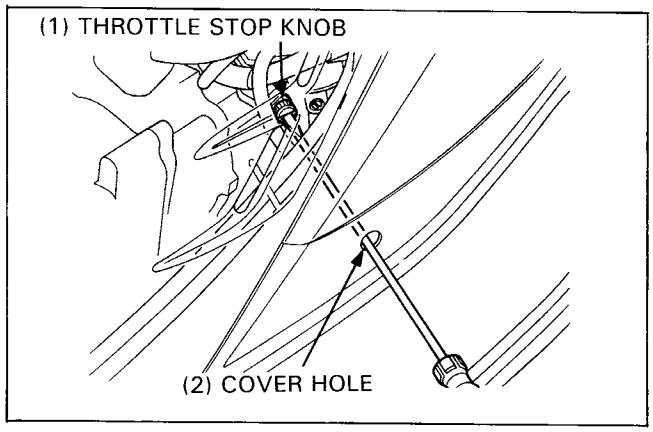
Carburetor Idle Speed

NOTE

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

Place the scooter on its center stand and warm up the engine.
Remove the center cover (Section 2).
Connect a tachometer.
Insert the driver through the cover hole and turn the throttle stop knob to obtain the specified idle speed.

Idle Speed: 1,500 ± 100 rpm



Headlight Aim

⚠WARNING

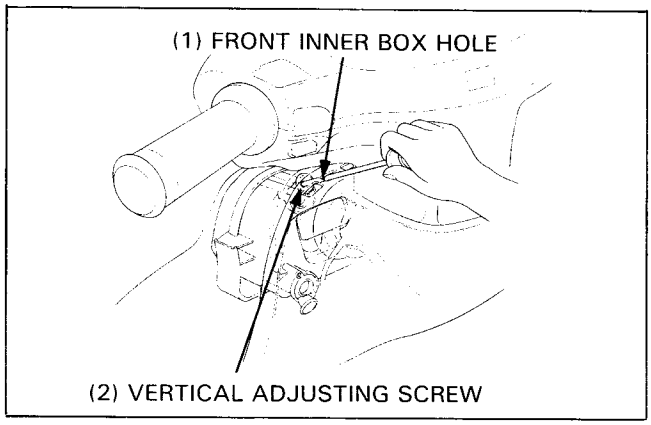
- **An improperly adjusted headlight may blind oncoming drivers, or it may fail to light the road for a safe distance.**

Vertical Adjustment

NOTE

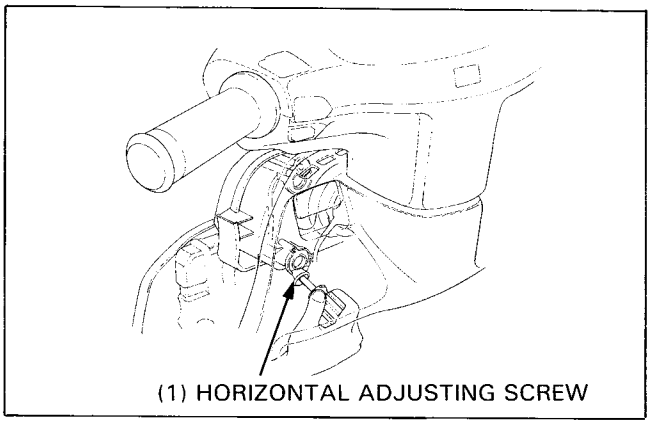
- Adjust the headlight beam as specified by local laws and regulations.
- It is not necessary to remove the front upper cover to make the horizontal adjustment.

Insert the screw driver through the front inner box hole as shown and adjust vertically by turning the vertical adjusting screw.



Horizontal Adjustment

Remove the front upper cover (Section 2).
Adjust horizontally by turning the horizontal adjusting screw.

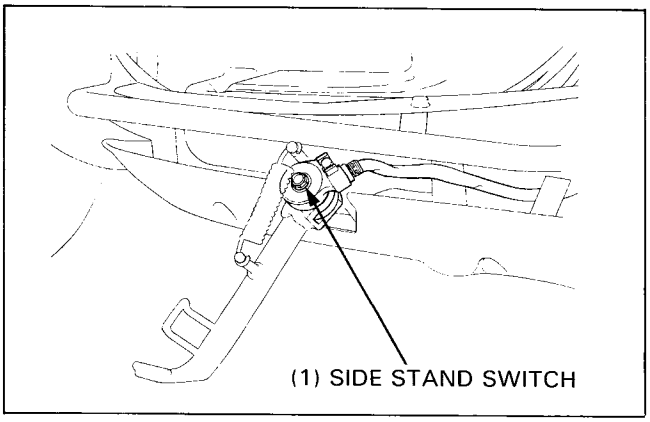


Side Stand

Starter motor cut-off system inspection:
— Place the scooter on its center stand and lower the side stand.
— The starter motor should not turn when the starter switch is pushed.

Ignition cut-off system inspection:
— Place the scooter on its center stand and retract the side stand.
— Start the engine in neutral and lower the side stand.
— The engine should stop as the side stand is lowered.
If there is a problem with the system, check the side stand switch (page 17-10).

Check the side stand switch mounting bolt for looseness.



4. Lubrication System

Service Information

⚠WARNING

- **If the engine must be running to do some work, make sure the area is well ventilated. Never run the engine in an enclosed area. The exhaust contains poisonous carbon monoxide gas that can cause loss of consciousness and may lead to death. Run the engine in an open area or with an exhaust evacuation system in an enclosed area.**
- **Used engine oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to throughly wash your hands with soap and water as soon as possible after handling used oil.**

- When removing and installing the oil pump use care not to allow dust or dirt to enter the engine.
- If any portion of the oil pump is worn beyond the specified service limits, replace the oil pump as an assembly.
- After the oil pump has been installed, check that there are no oil leaks and that oil pressure is correct.
- For oil pressure warning light inspection, refer to section 25 of the Common Service Manual.

Troubleshooting

Oil Level Low
- Oil consumption
- External oil leak
- Worn piston ring or incorrect piston ring installation
- Worn valve guide or seal

Low or No Oil Pressure
- Clogged oil orifice
- Incorrect oil being used

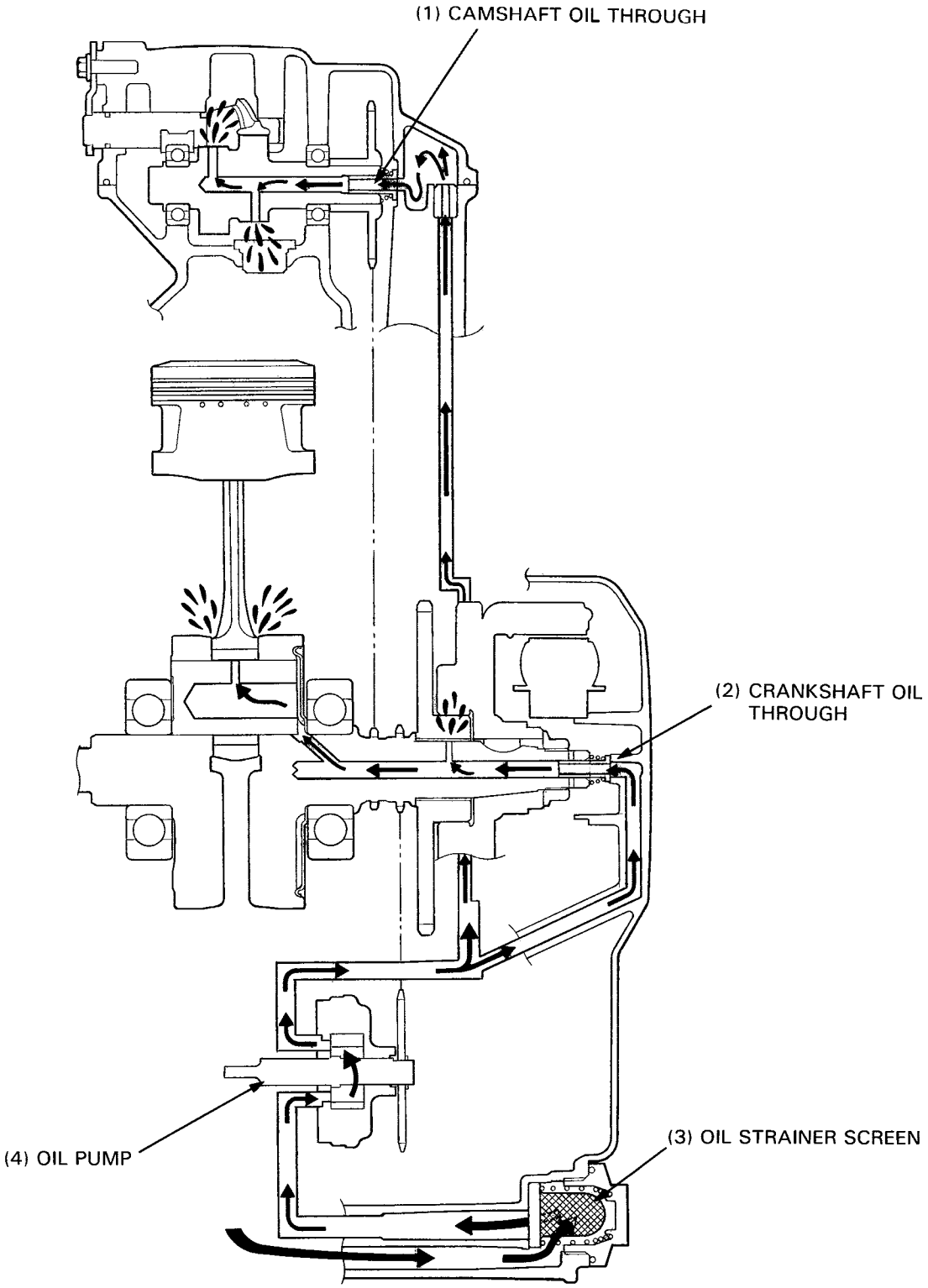
Oil Contamination
- From coolant mixing with oil
  - — Faulty head gasket
  - — Water leak in crankcase

No Oil Pressure
- Oil level too low
- Oil pump drive chain or drive sprocket broken
- Oil pump damaged (pump shaft)
- Internal oil leaks

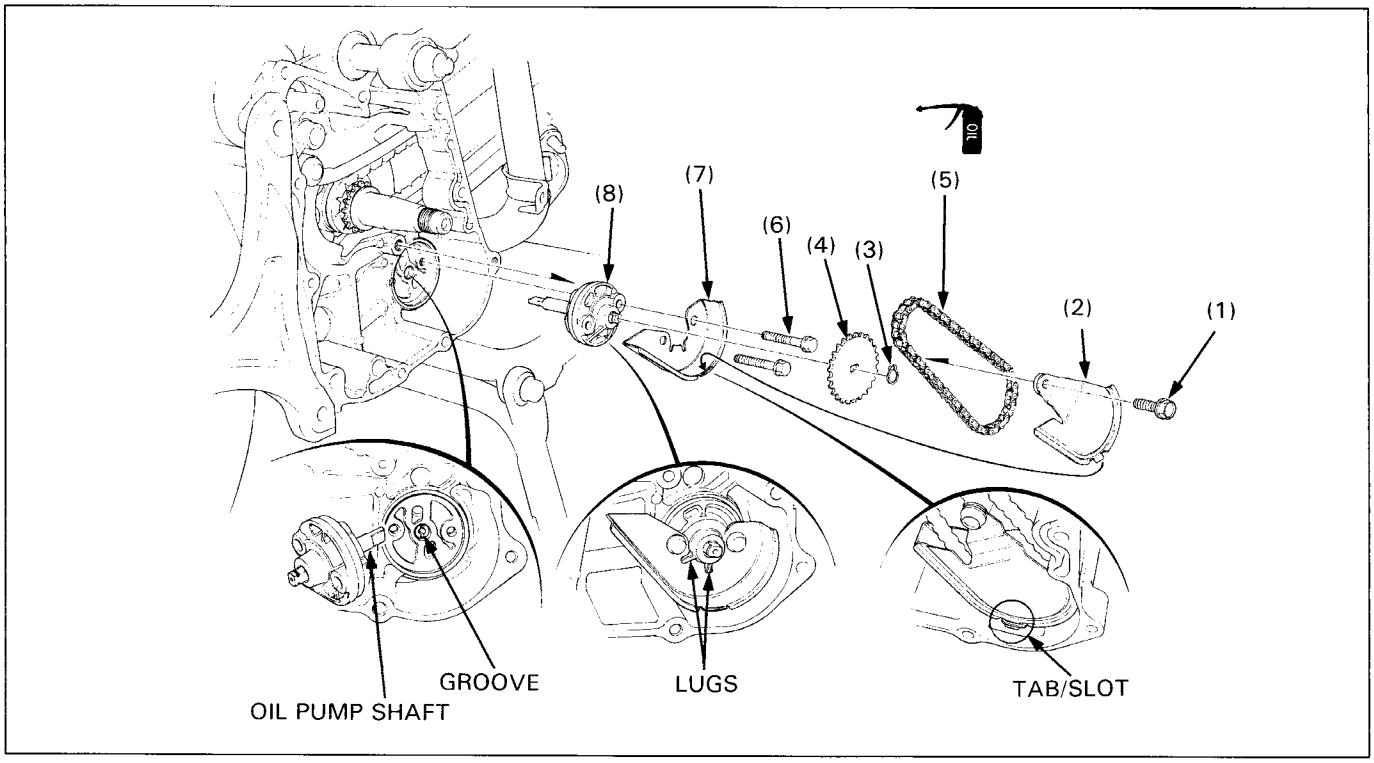
Low Oil Pressure
- Clogged oil filter screen
- Oil pump worn or damaged
- Internal oil leak
- Incorrect oil being used
- Low oil level

High Oil Pressure
- Plugged oil filter, gallery, or metering orifice
- Incorrect oil being used

Lubrication System Diagram



Oil Pump Removal/Installation

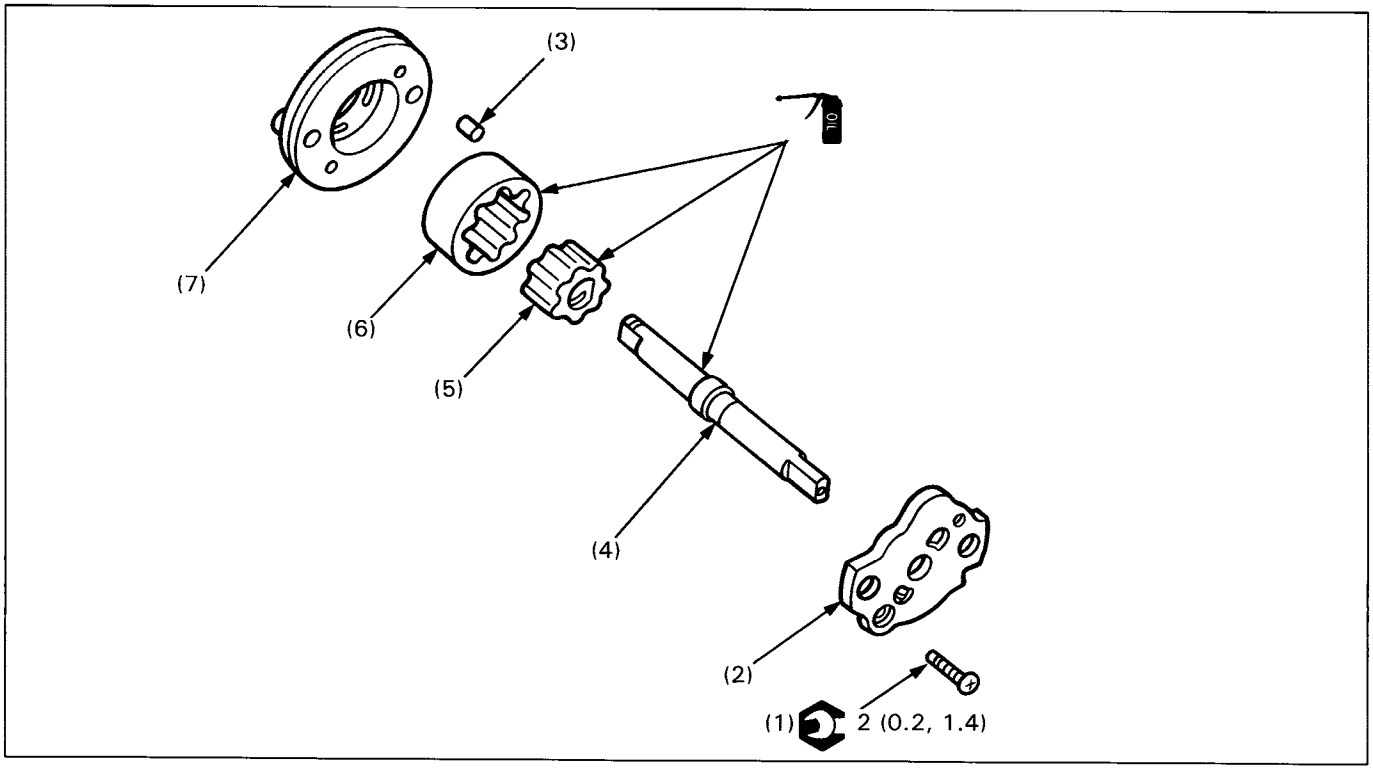


Requisite Service

- Engine oil draining (location: page 4-5, step: section 2 of the Common Service Manual)
- Body protector cover removal/installation (Section 2)
- AC Generator removal/installation (page 15-8)

	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Oil separator cover bolt	1	
(2)	Oil separator cover	1	At installation, fit the tab of the separator cover into the slit of the separator.
(3)	Circlip	1	At installation, set it in the groove of the oil pump shaft securely.
(4)	Drive sprocket	1	
(5)	Drive chain	1	
(6)	Oil pump mounting bolt	2	
(7)	Oil separator	1	
(8)	Oil pump	1	At installation, insert the pump shaft aligning the shaft slot with the groove of the water pump shaft, then rotate the oil pump body so the two lugs face down.

Oil Pump Disassembly/Assembly



NOTE

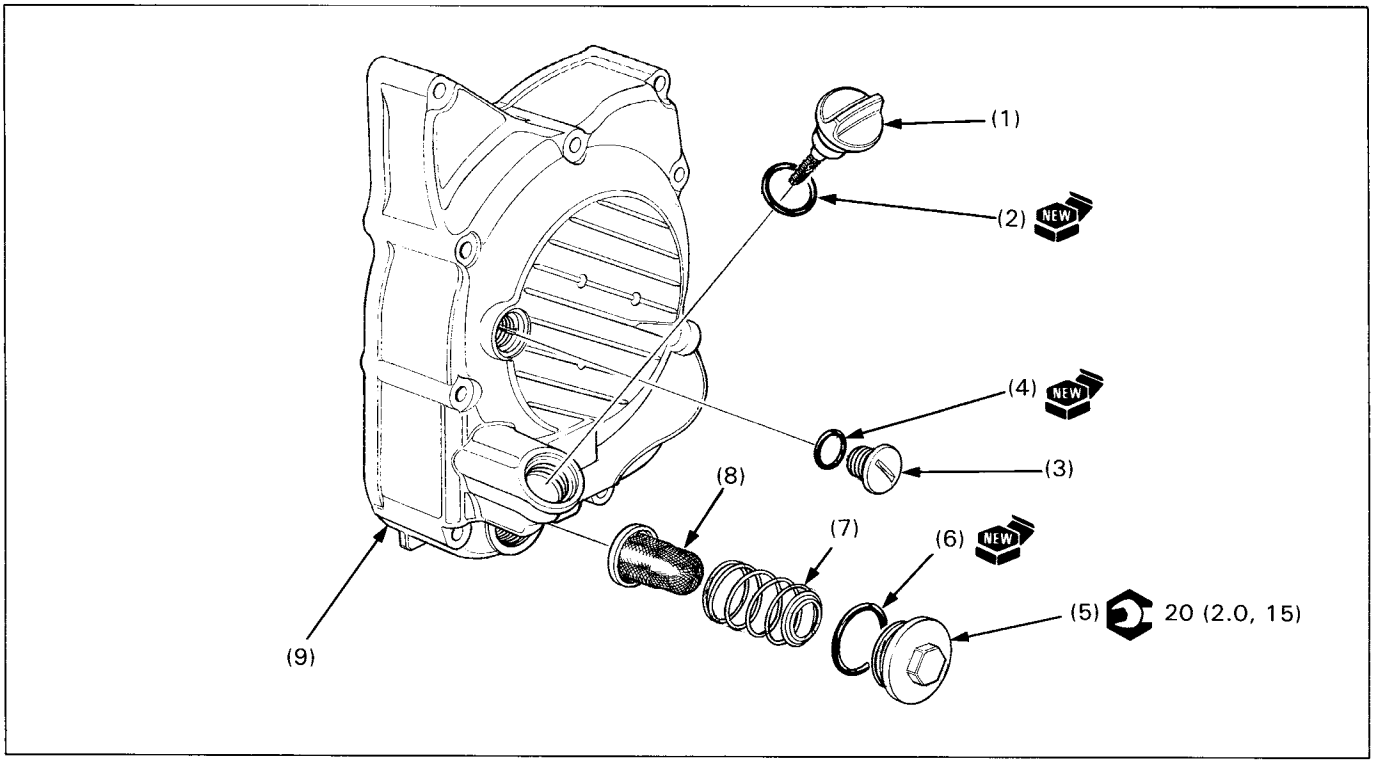
- If any portion of the oil pump is worn beyond the specified service limit, replace the oil pump as an assembly.
- Before installation, clean all removed parts thoroughly with clean engine oil.
- Refer to section 4 of the Common Service Manual for inspection information.
- Refer to page 1-3 for specifications.

Requisite Service

- Oil pump removal/installation (page 4-3)

	Procedure	Q'ty	Remarks
	Disassembly Order		• Assembly is the reverse order of disassembly.
(1)	Pump cover attaching screw	1	
(2)	Pump cover	1	At installation, align the hole of the cover with the dowel pin.
(3)	Dowel pin	1	
(4)	Oil pump shaft	1	At installation, align the flat on the shaft with the flat in the inner rotor.
(5)	Inner rotor	1	
(6)	Outer rotor	1	
(7)	Oil pump body	1	After installation, make sure that the pump shaft rotates freely without binding.

Right Crankcase Cover Disassembly/Assembly



Requisite Service

- Right crankcase cover removal/installation (page 15-8)
- Stator removal/installation (page 15-8)

	Procedure	Q'ty	Remarks
	Disassembly Order		• Assembly is the reverse order of disassembly.
(1)	Oil filler cap	1	
(2)	Oil filler cap O-ring	1	
(3)	Timing hole cap	1	
(4)	Timing hole cap O-ring	1	
(5)	Oil strainer cap	1	
(6)	Oil strainer cap O-ring	1	
(7)	Oil strainer set spring	1	
(8)	Oil strainer	1	
(9)	Right crankcase cover	1	

5. Fuel System

NEW

5

Service Information

⚠ WARNING

- **Gasoline is extremely flammable and is explosive under certain conditions. Work in a well ventilated area. Smoking or allowing flames or sparks in the work area or where gasoline is stored can cause a fire or explosion.**
- **Bending or twisting the control cables will impair smooth operation and could cause the cables to stick or bind, resulting in loss of vehicle control.**

CAUTION

- **Be sure to remove the diaphragms before cleaning air and fuel passages with compressed air. The diaphragms might be damaged.**

- Refer to section 2 for fuel tank removal and installation.
- Refer to section 2 for fuel pump removal and installation.
- When disassembling fuel system parts, note the locations of the O-rings. Replace them with new ones on reassembly.
- Before disassembling the carburetor, place a suitable container under the carburetor drain bolt. Then loosen the bolt and drain the carburetor.
- After removing the carburetor, wrap the intake port of the engine with a shop towel or cover it with a piece of tape to prevent any foreign material from dropping into the engine.

NOTE

- If the vehicle is to be stored for more than one month, drain the float chamber. Fuel left in the float chamber may cause clogged jets resulting in hard starting or poor driveability.

- **California Model Only:**
  All hoses used in the evaporative emission control system are numbered for identification. When connecting one of these hoses, compare the hose number with the Vacuum Hose Routing Diagram Label, page 1-21, and carburetor tubes routing, page 1-18.

Revised: June 1989

MSV 4732 (8906) '89 CH250

Troubleshooting

Engine won't Start
- Too much fuel getting to the engine
  - Air cleaner clogged
  - Flooded carburetor
- Intake air leak
- Fuel contaminated/deteriorated
- Bystarter circuit clogged
- No fuel to carburetor
  - Fuel strainer clogged
  - Fuel tube clogged
  - Float level misadjusted
  - Fuel tank breather hole clogged
  - Fuel pump malfunction

Lean Mixture
- Fuel jets clogged
- Float valve faulty
- Float level too low
- Fuel line restricted
- Carburetor air vent tube clogged
- Intake air leak
- Throttle valve faulty
- Vacuum piston faulty
- Fuel pump malfunction

Rich Mixture
- Float valve faulty
- Float level too high
- Air jets clogged
- Air cleaner element contaminated
- Flooded carburetor

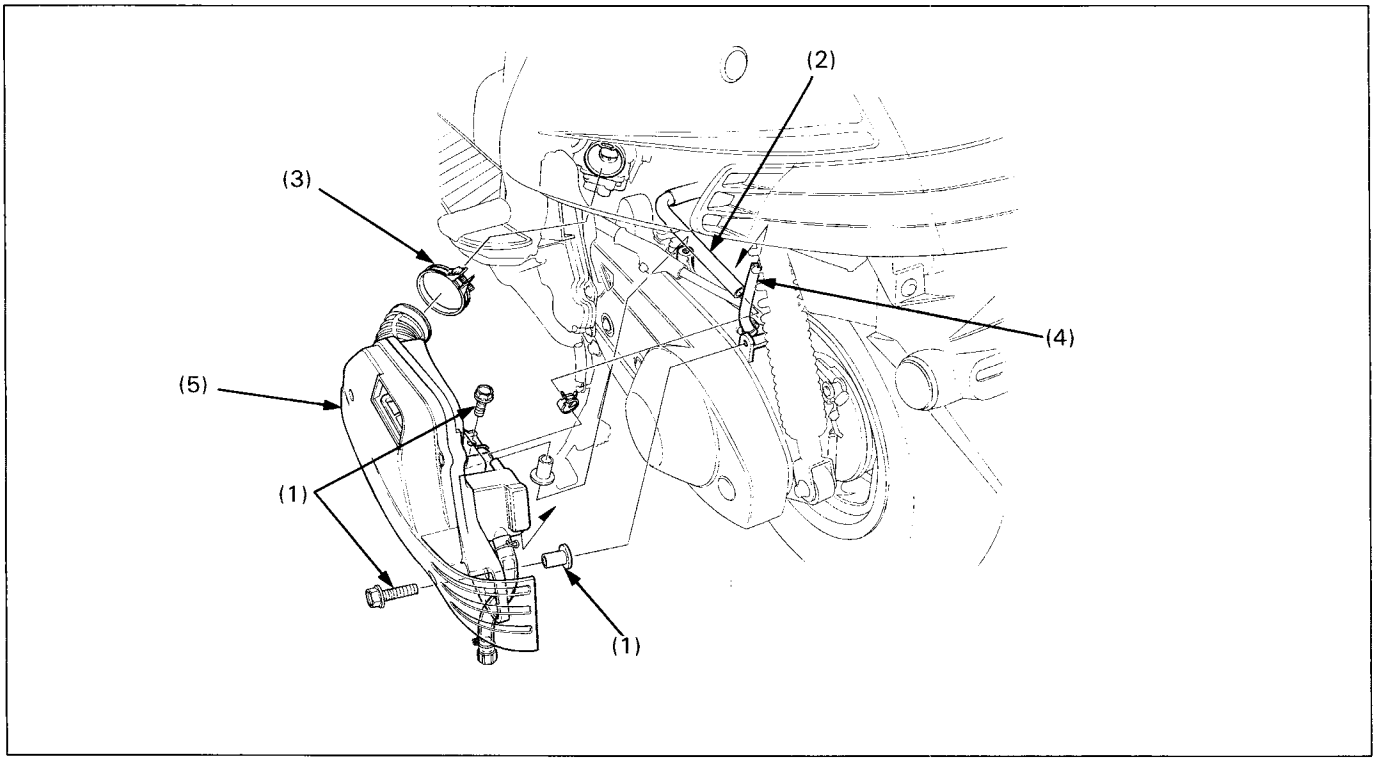
Engine Stalls, Hard to Start, Rough Idling
- Fuel line restricted
- Ignition malfunction
- Fuel mixture too lean/rich
- Fuel contaminated/deteriorated
- Intake air leak
- Idle speed misadjusted
- Float level misadjusted
- Fuel tank breather hole clogged
- Fuel pump malfunction
- Pilot screw misadjusted
- Bystarter circuit clogged
- Hoses of the emission control system faulty (California model only)
- Purge control valve faulty (California model only)

Afterburn On Deceleration
- Lean mixture in slow circuit
- Air cut-off valve malfunction
- Hoses of emission control system faulty (California model only)

Backfiring or Misfiring During Acceleration
- Ignition system faulty
- Fuel mixture too lean

Poor Performance (Driveability) and Poor Fuel Economy
- Fuel system clogged
- Ignition malfunction
- Damaged/misconnected emission control system hoses (California model only)

Air Cleaner Case Removal/Installation

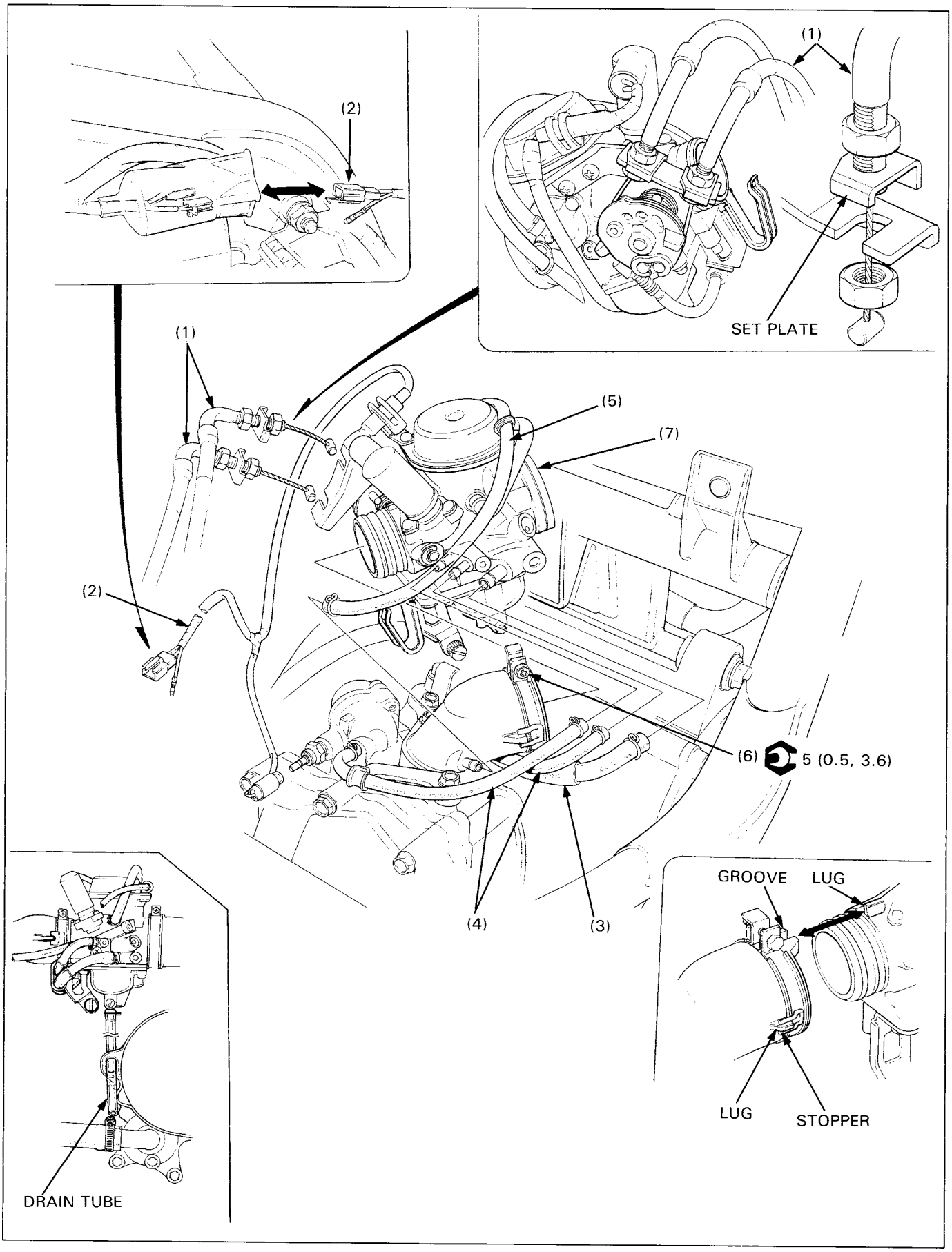


Requisite Service

- Body protector cover removal/installation (Section 2)

	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Air cleaner case mounting bolt/collar	2/2	
(2)	Crankcase breather tube	1	Disconnect the tube from the air cleaner case.
(3)	Connecting tube band	1	Loosen the screw.
(4)	Final reduction breather tube	1	Draw the tube from the air cleaner case. At installation, set the tube into the case securely.
(5)	Air cleaner case	1	Air cleaner element service (page 3-5).

Carburetor Removal/Installation



⚠ WARNING

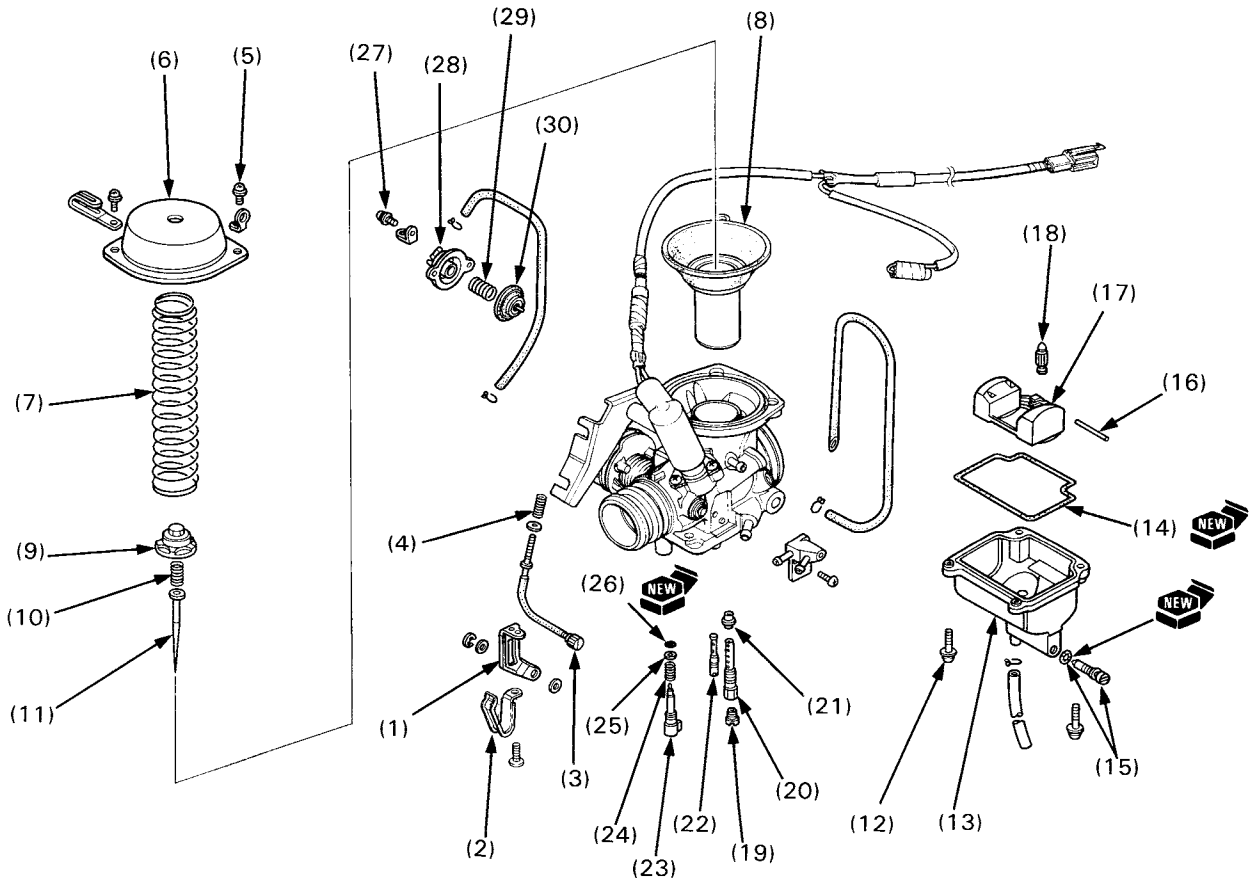
- **Gasoline is extremely flammable and is explosive under certain conditions.**

Requisite Service

- Center cover removal/installation (Section 2)
- Air cleaner case removal/installation (page 5-3)
- Coolant draining (page 6-3)
- Luggage box removal/installation (Section 2)
- Carburetor draining

	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Throttle cable	2	At installation, route the cable property and install the set plate securely as shown.
(2)	Auto-bystarter wire connector	1	Disconnect it from the wire harness and thermosensor.
(3)	Fuel tube	1	Disconnect them from the carburetor.
(4)	Heater tube	2	
(5)	Vacuum tube	1	Disconnect it from the insulator.
(6)	Insulator band screw	1	Loosen only. When retightening, make sure that the stopper of the band aligns with the lug on the insulator.
(7)	Carburetor assembly	1	• At installation, align the carburetor lug with the insulator groove. • After installation, route the drain tube securely as shown.

Carburetor Disassembly/Assembly



NOTE

- The pilot screw is factory pre-set and should not be removed unless the carburetor is overhauled. Turn the pilot screw in and carefully count the number of turns before it seats lightly. Make a note of this to use as a reference when reinstalling the pilot screw. If new pilot screw is installed, turn it out to the initial opening (page 5-9).

Requisite Service

- Carburetor removal/installation (page 5-4)

	Procedure	Q'ty	Remarks
	Disassembly Order		• Assembly is the reverse order of disassembly.
	Throttle Adjusting Knob		
(1)	Throttle adjusting knob stay	1	
(2)	Fuel tube binder	1	
(3)	Throttle adjusting knob	1	
(4)	Throttle adjusting spring	1	
	Vacuum Chamber		
(5)	Vacuum chamber cover screw	2	
(6)	Vacuum chamber cover	1	
(7)	Compression spring	1	
(8)	Vacuum piston	1	
(9)	Jet needle holder	1	Turn the jet needle holder clockwise while pressing it in and remove it.
(10)	Holder spring	1	
(11)	Jet needle	1	
	Float Chamber		
(12)	Float chamber setting screw	4	
(13)	Float chamber	1	
(14)	Float chamber O-ring	1	
(15)	Drain screw/O-ring	1/1	
(16)	Float pin	1	
(17)	Float	1	
(18)	Float valve	1	
(19)	Main jet	1	
(20)	Needle jet	1	
(21)	Needle jet holder	1	
(22)	Slow jet	1	
	Pilot Screw		
(23)	Pilot screw	1	
(24)	Pilot screw spring	1	
(25)	Washer	1	
(26)	O-ring	1	
	Air Cut-off Valve		
(27)	Air cut-off valve cover screw	2	Replace as an assembly, if necessary.
(28)	Air cut-off valve cover	1	
(29)	Air cut-off valve spring	1	
(30)	Diaphragm	1	

Purge Control Valve Inspection (California Model)

NOTE

- The purge control valve should be inspected if hot restart is difficult.

Check all fuel tank, Purge Control Valve (PCV), and charcoal canister hoses to be sure they are not kinked and are securely connected.
Replace any hose that shows signs of damage or deterioration.

NOTE

- The PCV is located on the left side of the headlight.

Disconnect the PCV hoses from their connections and remove the PCV from its mount. Refer to the routing label on the fuel tank for hose connections.

Connect a vacuum pump to the 8 mm I.D. hose that goes to the air cleaner. Apply the specified vacuum to the PCV.

Specified Vacuum: 250 mm (9.8 in) Hg

The specified vacuum should be maintained.
Replace the PCV if vacuum is not maintained.

Remove the vacuum pump and connect it to the hose that goes to the carburetor.
Apply the specified vacuum to the PCV.

Specified Vacuum: 250 mm (9.8 in) Hg

The specified vacuum should be maintained.
Replace the PCV if vacuum is not maintained.

Connect a pressure pump to the 8 mm I.D. hose that goes to the charcoal canister. While applying the specified vacuum to the PCV hose that goes to the caburetor, pump air through the canister hose. Air should flow through the PCV and out the hose that goes to the air cleaner. Replace the PCV if air does not flow out.

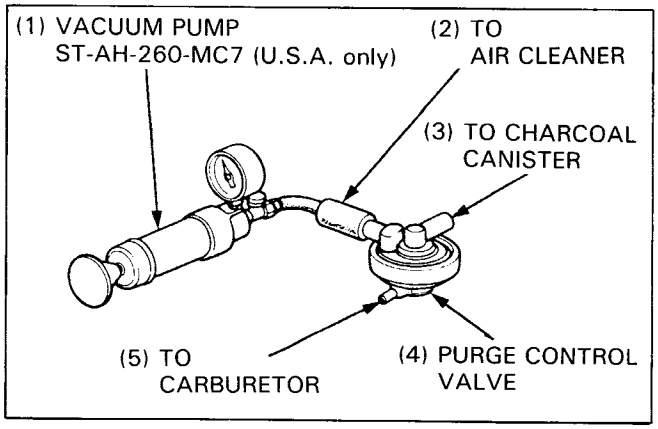
CAUTION

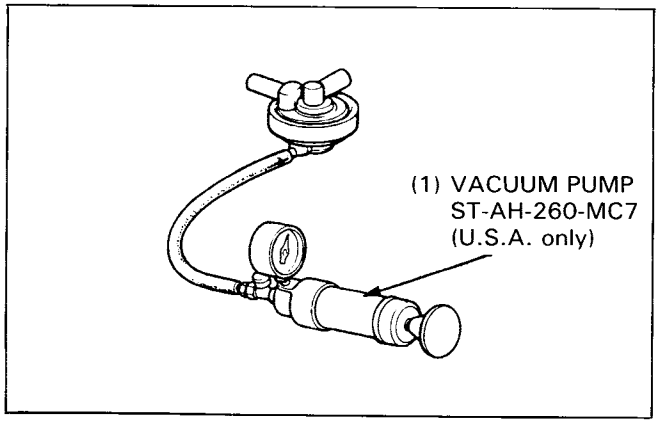
- **To prevent damage to the purge control valve, do not use high air pressure sources. Use a hand operated air pump only.**

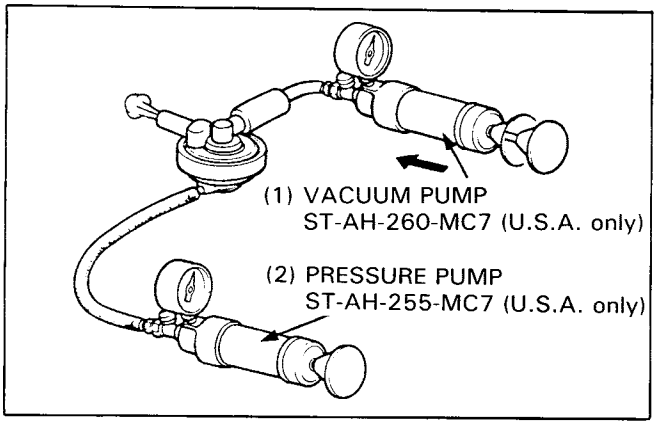
Remove the pumps, install the PCV on its mount, route and reconnect the hoses according to the Vacuum Hose Routing Label.

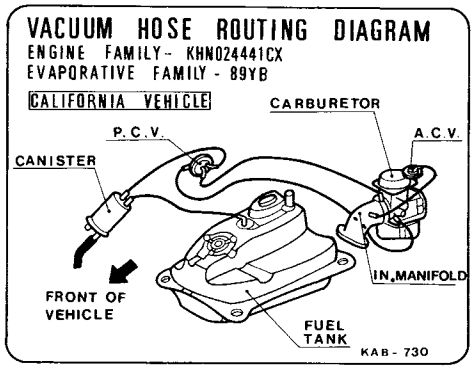
NOTE

- Be careful not to bend, twist or kink the tubes when installing.
- Slide the end of each tube onto its fitting fully and secure with the hose clamps.
- Check that the hoses are not contacting sharp edges or corners.

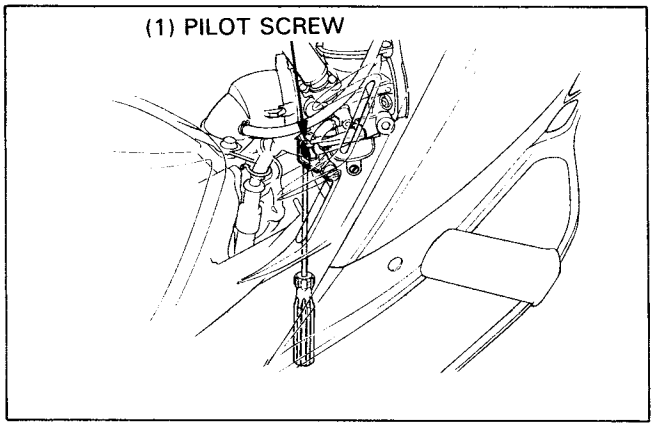








Pilot Screw Adjustment



Idle Drop Procedure (U.S.A. Only)

NOTE

- The pilot screw is factory pre-set and should not be adjusted unless the carburetor is overhauled.
- Use a tachometer with graduations of 100 rpm or smaller that will accurately indicate a 100 rpm change.

1. Insert a flat blade screwdriver from the bottom of the frame as shown.
   Turn the pilot screw clockwise until it seats lightly and back it out to the specification given. This is an initial setting prior to the final pilot screw adjustment.

   Initial Opening: 2-1/8 turns out

CAUTION

- **Damage to the pilot screw seat will occur if the pilot screw is tightened against the seat.**

2. Warm up the engine to operating temperature. Stop and go riding for 10 minutes is sufficient.
3. Attach a tachometer according to the manufacturer's instructions.
4. Adjust the idle speed with the throttle stop knob.

   Idle Speed: 1,500 ± 100 rpm

5. Turn the pilot screw in or out slowly to obtain the highest engine speed.
6. Readjust the idle speed with the throttle stop screw.
7. Turn the pilot screw in gradually until the engine speed drops 50 rpm.
8. Turn the pilot screw 1 turn out from the position obtained in step 7.
9. Readjust the idle speed with the throttle stop screw.

High Altitude Adjustment

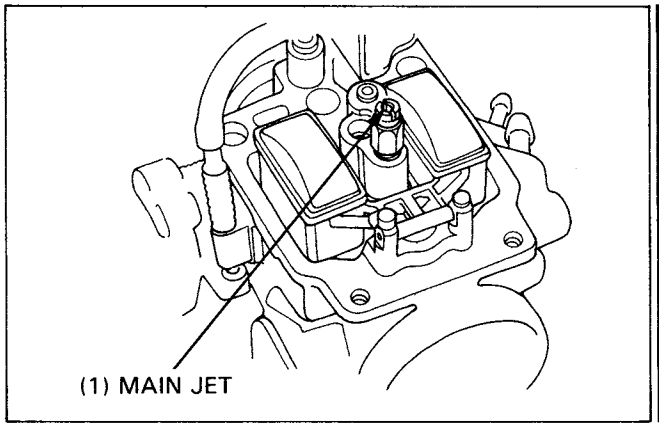
(U.S.A. Only)

When the vehicle is to be operated continuously above 2,000 m (6,000 feet), the carburetor main jet must be replaced with a high altitude main jet as follows to improve driveability and decrease exhaust emissions.

Remove the carburetor (page 5-4).

⚠ WARNING

- **Do not smoke or allow flames or sparks in the work area.**



NEW

Revised: June 1989

MSV 4732 (8906) '89 CH250

5-9

Drain the fuel from the float chamber.

Remove the float chamber.

Replace the main jet with the high altitude main jet.

Turn the pilot screw in ½ turn.

Reinstall the float chamber, tighten the drain screw, and install the carburetor (page 5-4).

Attach a Vehicle Emission Control Information Update Label on the underside of the seat.

Refer to Service Bulletin No. SL 132 for information on obtaining the label.

NOTE

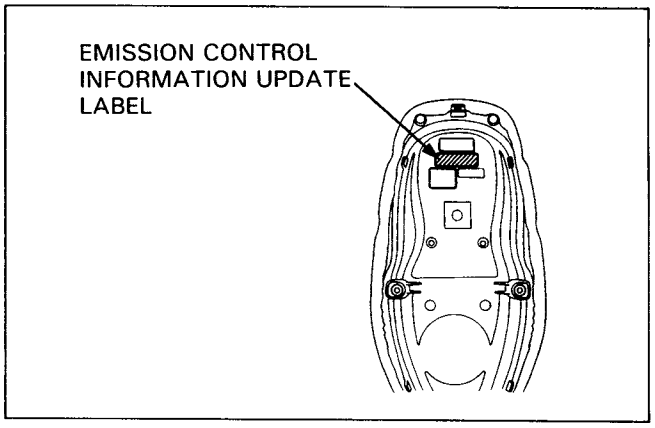
- Do not attach the label to any part that can be easily removed from the vehicle.

⚠WARNING

- **Operation at an altitude lower than 1,500 m (5,000 feet) with the carburetor adjusted for high altitudes may cause the scooter to idle roughly and stall.**

When the vehicle is to be operated continuously below 5,000 feet (1,500 m): turn the pilot screw to its original position, reinstall the standard main jet, and adjust the idle speed to the specified rpm.

Be sure to make these adjustments at low altitude.



NEW

	STANDARD (BELOW 1500 m, 5,000 ft)	HIGH ALTITUDE (ABOVE 2,000 m, 6,500 ft)
MAIN JET No.	#112	#110
PILOT SCREW INITIAL OPENING	2-1/8 turns out	1-5/8 turns out
Idle speed	1,500±100 rpm	1,500±100 rpm

Revised: June 1989

MSV 4732 (8906) '89 CH250

6. Cooling System

Service Information

⚠ WARNING

- **Wait until the engine is cool before slowly removing the radiator cap. Removing the cap while the engine is hot and the coolant is under pressure may cause serious scalding.**
- **Radiator coolant is toxic. Keep it away from eyes, mouth, skin and clothes.**
  - **— If any coolant gets in your eyes, rinse them with water and consult a doctor immediately.**
  - **— If any coolant is swallowed, induce vomiting, gargle and consult a physician immediately.**
  - **— If any coolant gets on your skin or clothes, rinse thoroughly with plenty of water.**
- **KEEP OUT OF REACH OF CHILDREN.**

- Add coolant at the reserve tank. Do not remove the radiator cap except to refill or drain the system.
- All cooling system service can be made with the engine in the frame.
- Avoid spilling coolant on painted surfaces.
- After servicing the system, check for leaks with a cooling system tester.
- Refer to section 17 for fan motor switch inspection.

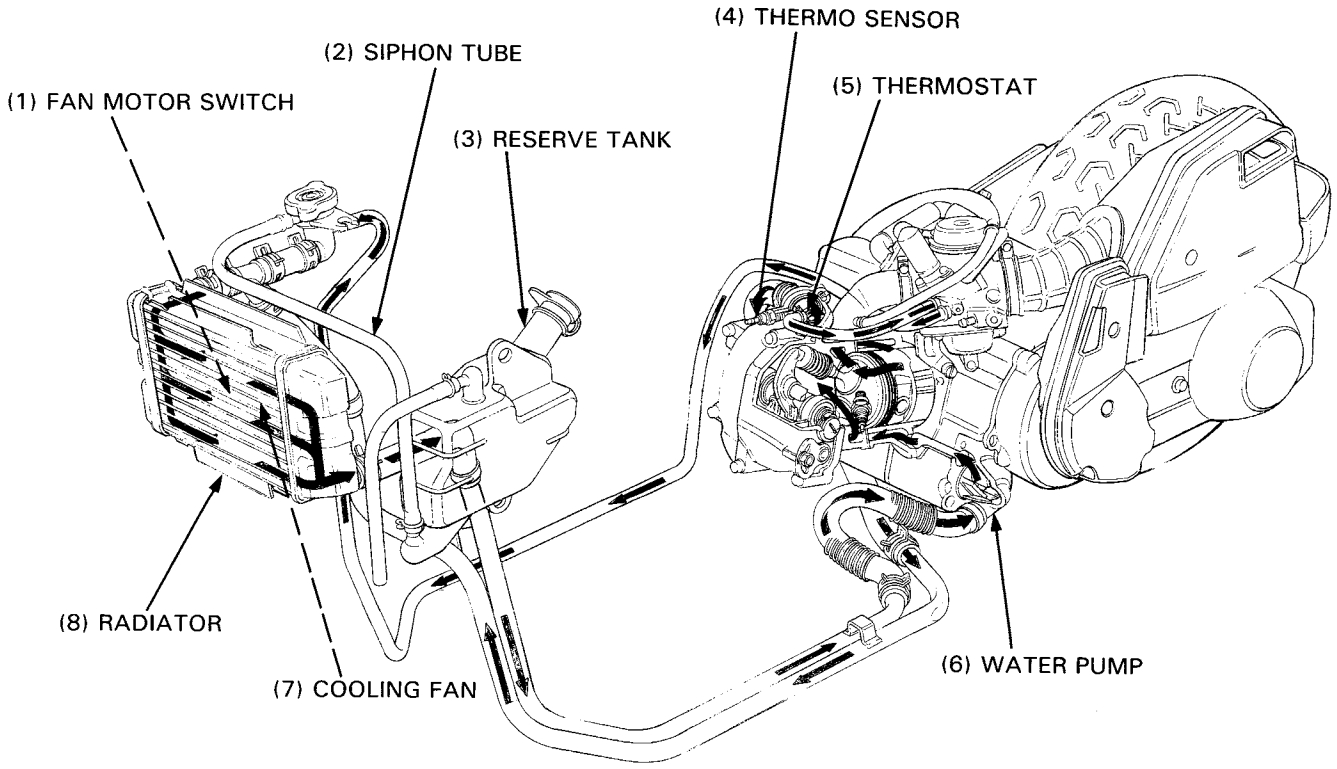
Troubleshooting

Engine Temperature Too High
- Faulty radiator cap
- Insufficient coolant
- Passages blocked in radiator, hoses, or water jacket
- Air in system
- Faulty water pump
- Thermostat stuck closed
- Faulty temperature gauge or thermosensor
- Faulty cooling fan motor
- Faulty fan motor switch

Engine Temperature Too Low
- Faulty temperature gauge or thermosensor
- Thermostat stuck open
- Faulty cooling fan motor switch (see section 17)

Coolant Leaks
- Faulty pump mechanical seal
- Deteriorated O-rings
- Faulty radiator cap
- Damaged or deteriorated gasket
- Loose hose conection or clamp
- Damaged or deteriorated hoses

System Flow Pattern



Coolant Draining

⚠ WARNING

- **Wait until the engine is cool before slowly removing the radiator cap. Removing the cap while the engine is hot and the coolant is under pressure may cause serious scalding.**

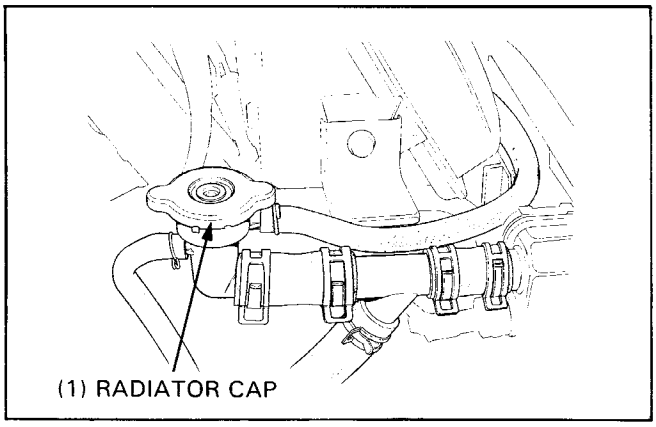
NOTE

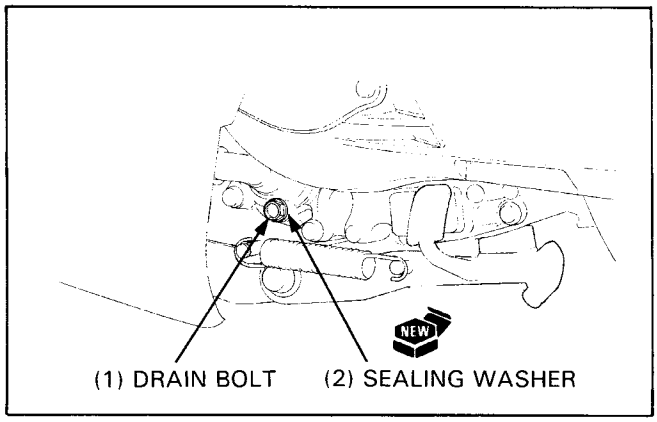
- For coolant replacement refer to section 5 of the Common Service Manual.

Support the scooter with the side stand.
Remove the front upper cover (Section 2).
Remove the radiator cap.

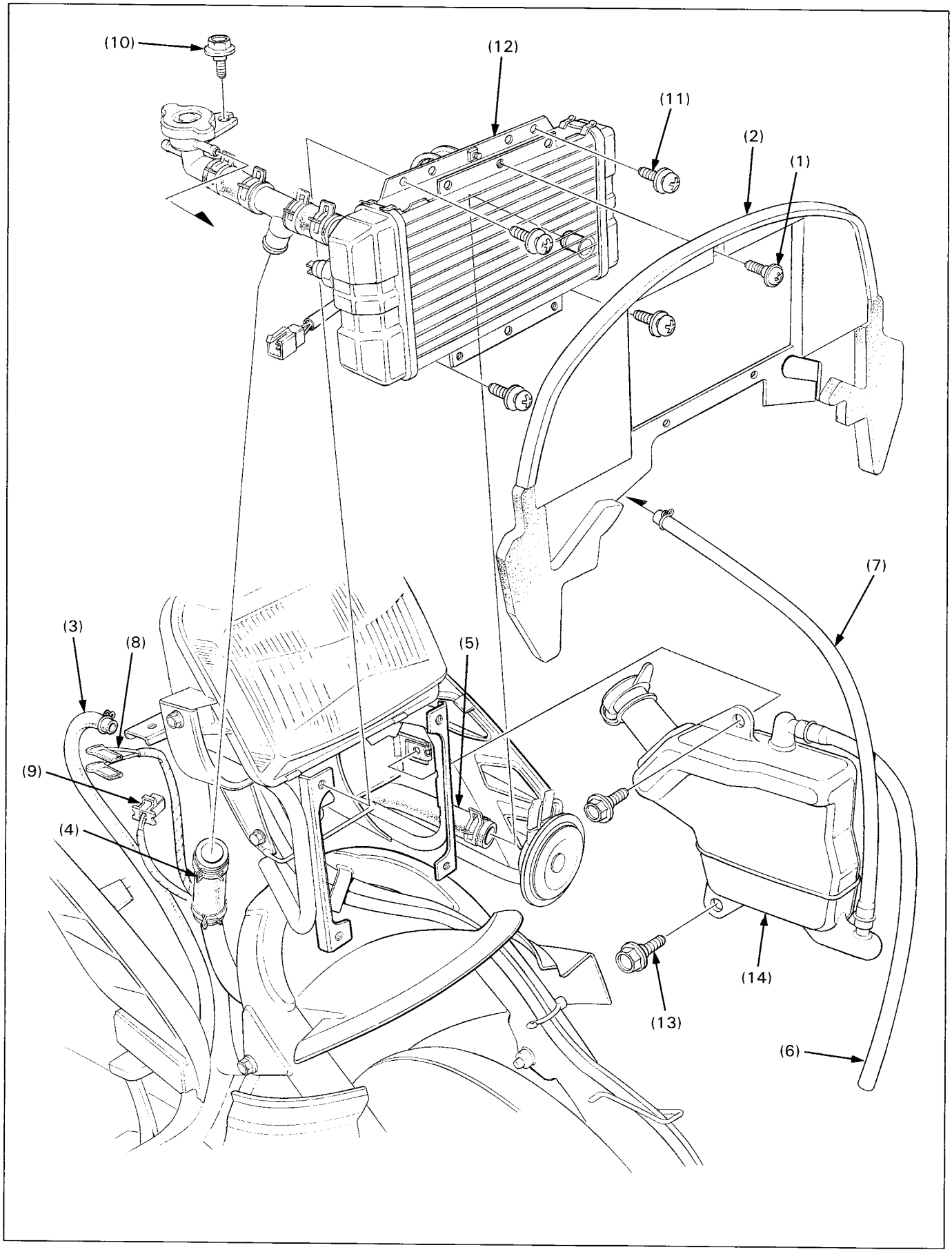
Place the drain pan under the water pump and drain the coolant from the system by removing the drain bolt.
Remove the reserve tank (page 6-4) and empty out.

Reinstall the drain bolt with a new sealing washer.





Radiator Removal/Installation

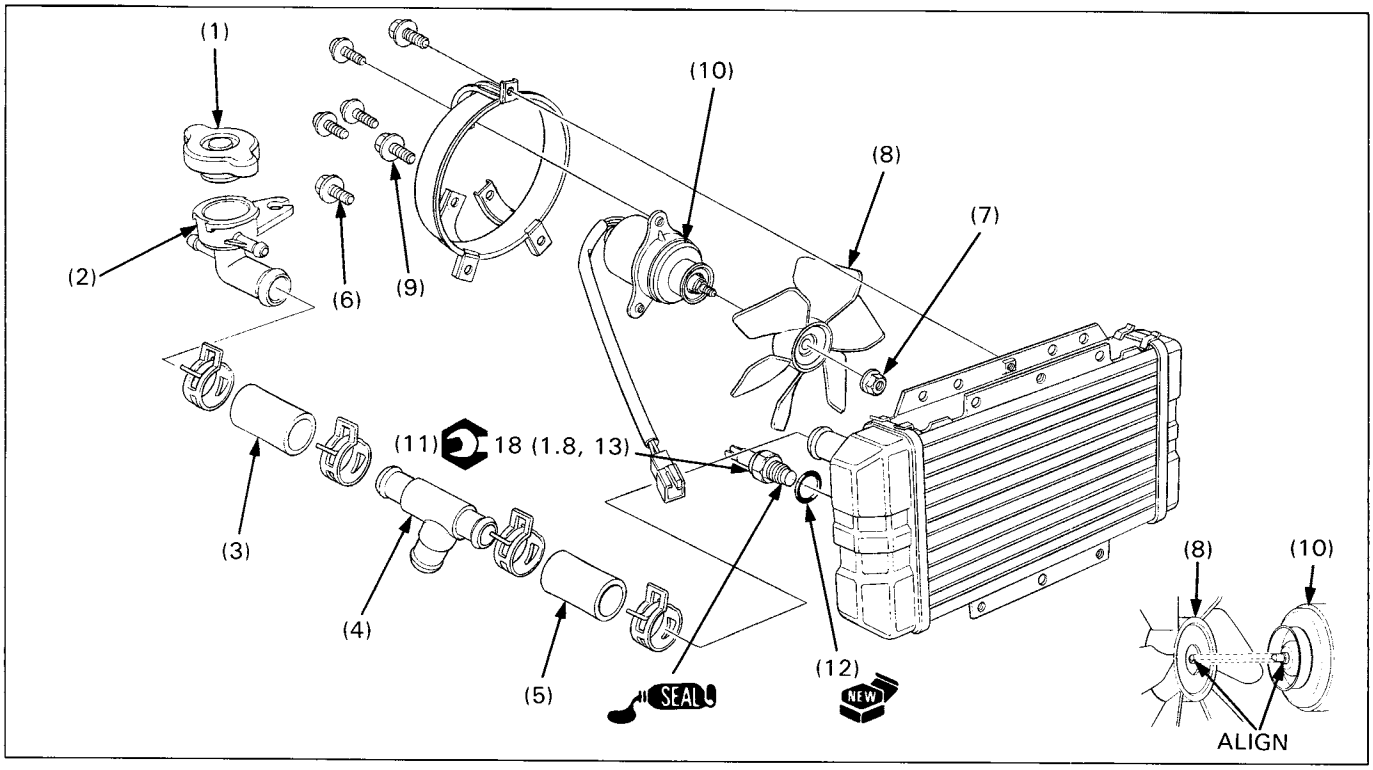


Requisite Service

- Coolant draining (page 6-3)
- Front upper cover, front inner cover removal (Section 2)
- Coolant replacement (Section 5 of the Common Service Manual)

	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Radiator grille mounting screw	1	
(2)	Radiator grille	1	
(3)	Heater tube	1	
(4)	Upper radiator hose	1	
(5)	Lower radiator hose	1	
(6)	Overflow tube	1	
(7)	Siphon tube	1	
(8)	Fan motor switch wire connector	1	
(9)	Cooling fan motor coupler	1	
(10)	Radiator filler neck setting bolt	1	Loosen only.
(11)	Radiator mounting screw	4	
(12)	Radiator assembly	1	
(13)	Reserve tank mounting bolt	2	
(14)	Reserve tank	1	

Radiator/Fan Motor Disassembly/Assembly

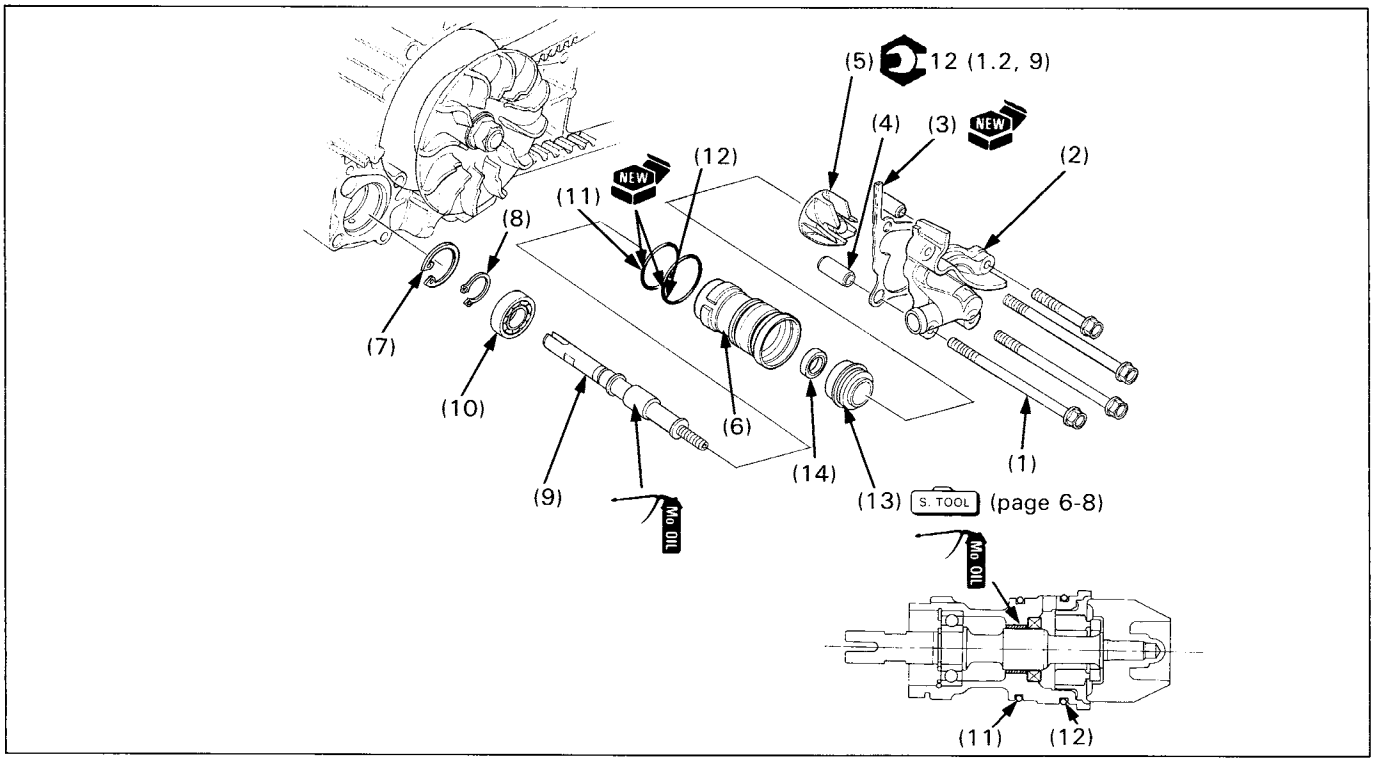


Requisite Service

- Radiator removal/installation (page 6-4)

	Procedure	Q'ty	Remarks
	Disassembly Order		• Assembly is the reverse order of disassembly.
(1)	Radiator cap	1	
(2)	Radiator filler neck	1	
(3)	Radiator hose A	1	
(4)	Water hose joint	1	
(5)	Radiator hose B	1	
(6)	Fan shroud mounting bolt	3	Remove the fan shroud and motor as an assembly.
(7)	Cooling fan lock nut	1	
(8)	Cooling fan	1	At installation, align the cutout of the motor shaft with the fan.
(9)	Fan motor mounting bolt	3	
(10)	Fan motor	1	
(11)	Fan motor switch	1	At installation, clean and apply the sealant to the threads of the switch.
(12)	O-ring	1	

Water Pump Disassembly/Assembly



NOTE

- The water pump assembly can be removed with the engine in the frame.

Requisite Service

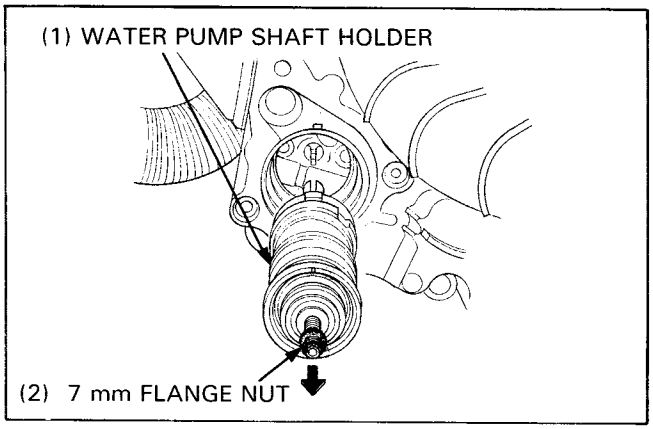
- Drive belt cover removal (page 10-2)

	Procedure	Q'ty	Remarks
	Disassembly Order		• Assembly is the reverse order of disassembly.
(1)	Water pump cover bolt	4	
(2)	Water pump cover	1	
(3)	Gasket	1	
(4)	Dowel pin	2	
(5)	Impeller	1	
(6)	Water pump shaft holder	1	Removal/installation (page 6-8).
(7)	Snap ring A		
(8)	Snap ring B	1	
(9)	Water pump shaft	1	
(10)	Water pump shaft bearing	1	Remove it from the water pump shaft.
(11)	O-ring A	1	• O-ring A is smaller than O-ring B.
(12)	O-ring B	1	• At installation, set them to the proper position.
(13)	Mechanical seal	1	• Removal/installation (page 6-8).
(14)	Oil seal	1	• Whenever remove them, replace with new.

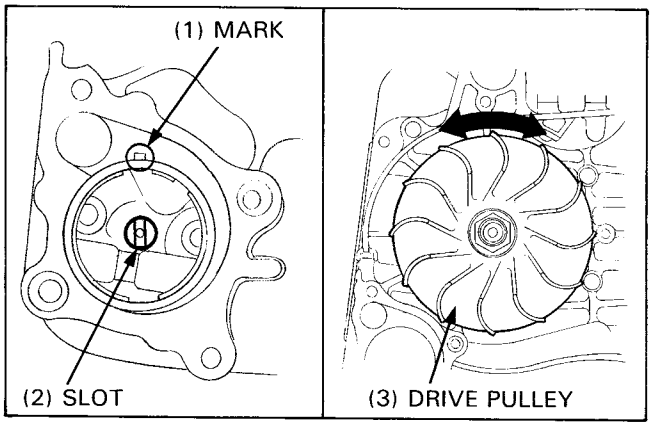
Water Pump Shaft Holder Removal/Installation

Install the 7 mm flange nut to the water pump shaft end.
Remove the shaft holder pulling the nut.

7 mm Flange Nut: **90355—MA6—0000**



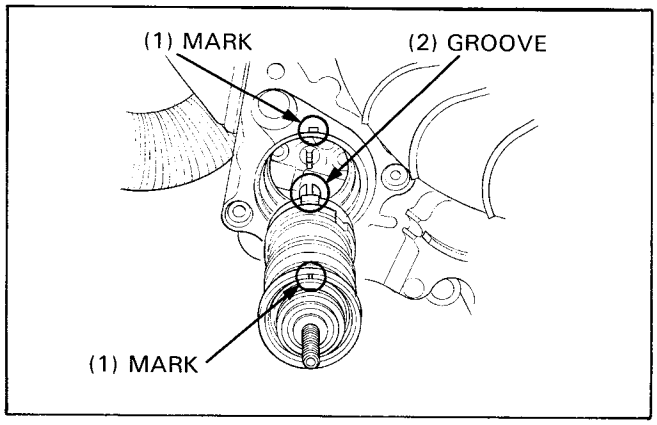
Before install the shaft holder, align the slot of the oil pump shaft with the mark on the crankcase, rotating the drive pulley.



Align the groove of the water pump shaft with the mark of the shaft holder.
Install the shaft holder into the case, aligning the marks on the holder and case.
After installation, rotate the drive pulley and check that the impeller should rotate smoothly.

CAUTION

- **To prevent damage the water pump shaft or shaft holder, do not strike into the case.**



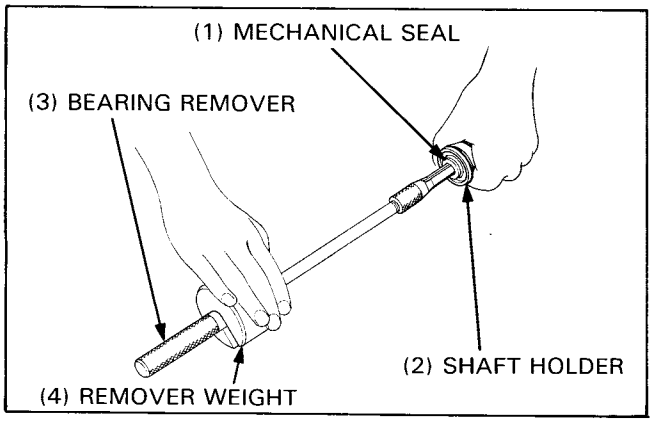
Mechanical Seal Replacement

Remove the water pump shaft holder from the crankcase (page 6-7).
Remove the mechanical seal from the shaft holder using the special tool.

S. TOOL

Bearing remover, 15 mm **07936—KC10000**
Remover weight **07741—0010201**

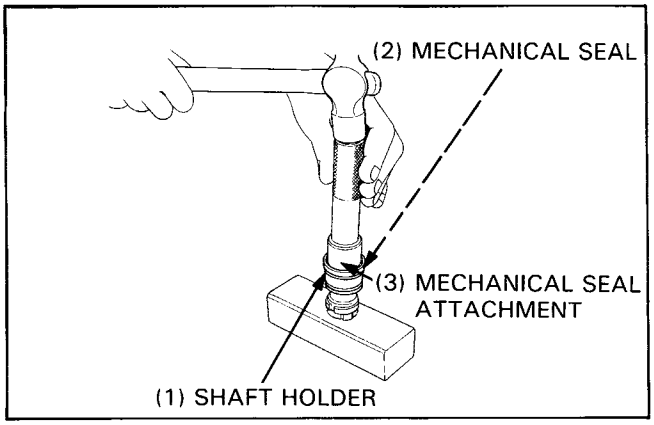
Remove the oil seal.



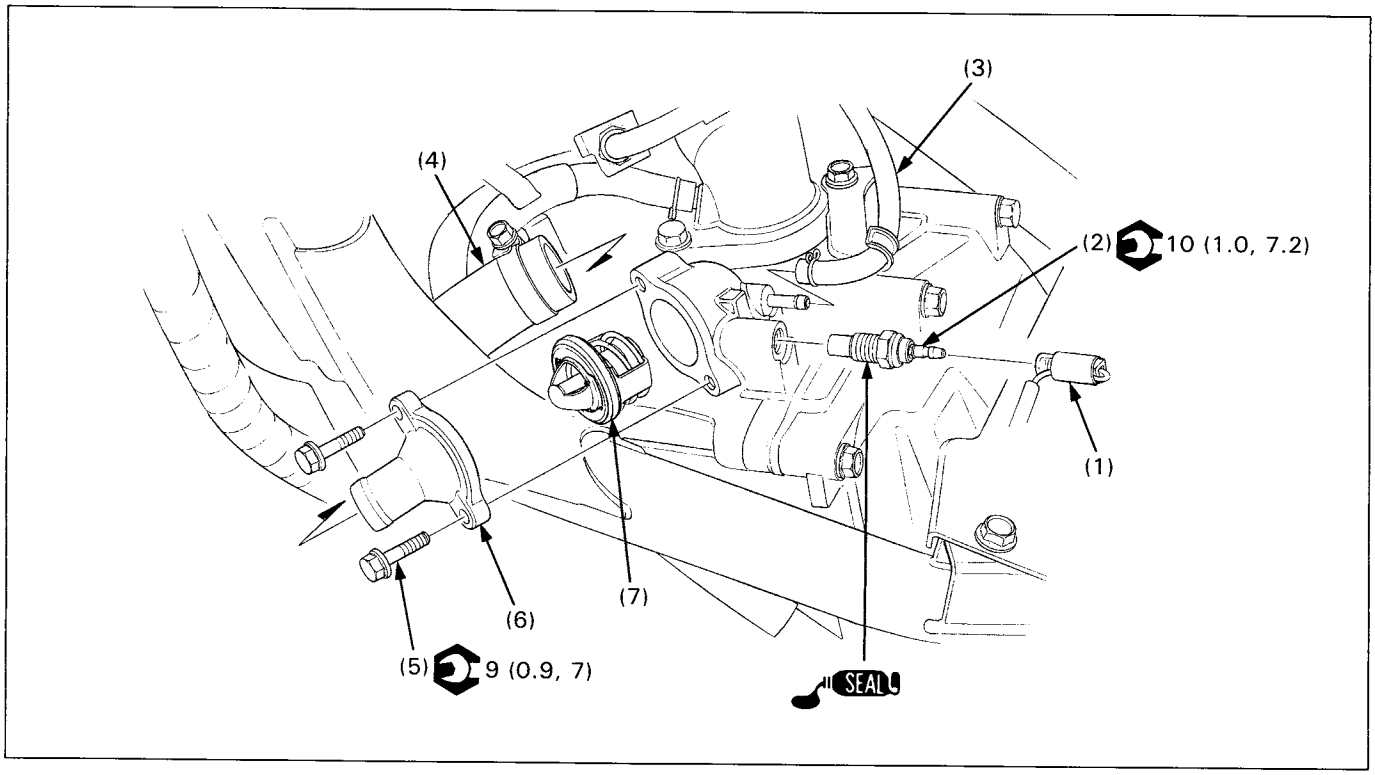
Drive a new oil seal into the shaft holder with the oil seal maker mark facing out.
Apply sealant to the surface of a new mechanical seal.
Install the mechanical seal into the shaft holder using the special tool.

S. TOOL

Driver	**07749–0010000**
Mechanical seal driver attachment	**07945–4150400**



Thermostat Removal/Installation



Requisite Service

- Coolant draining (page 6-3)
- Center cover removal/installation (Section 2)

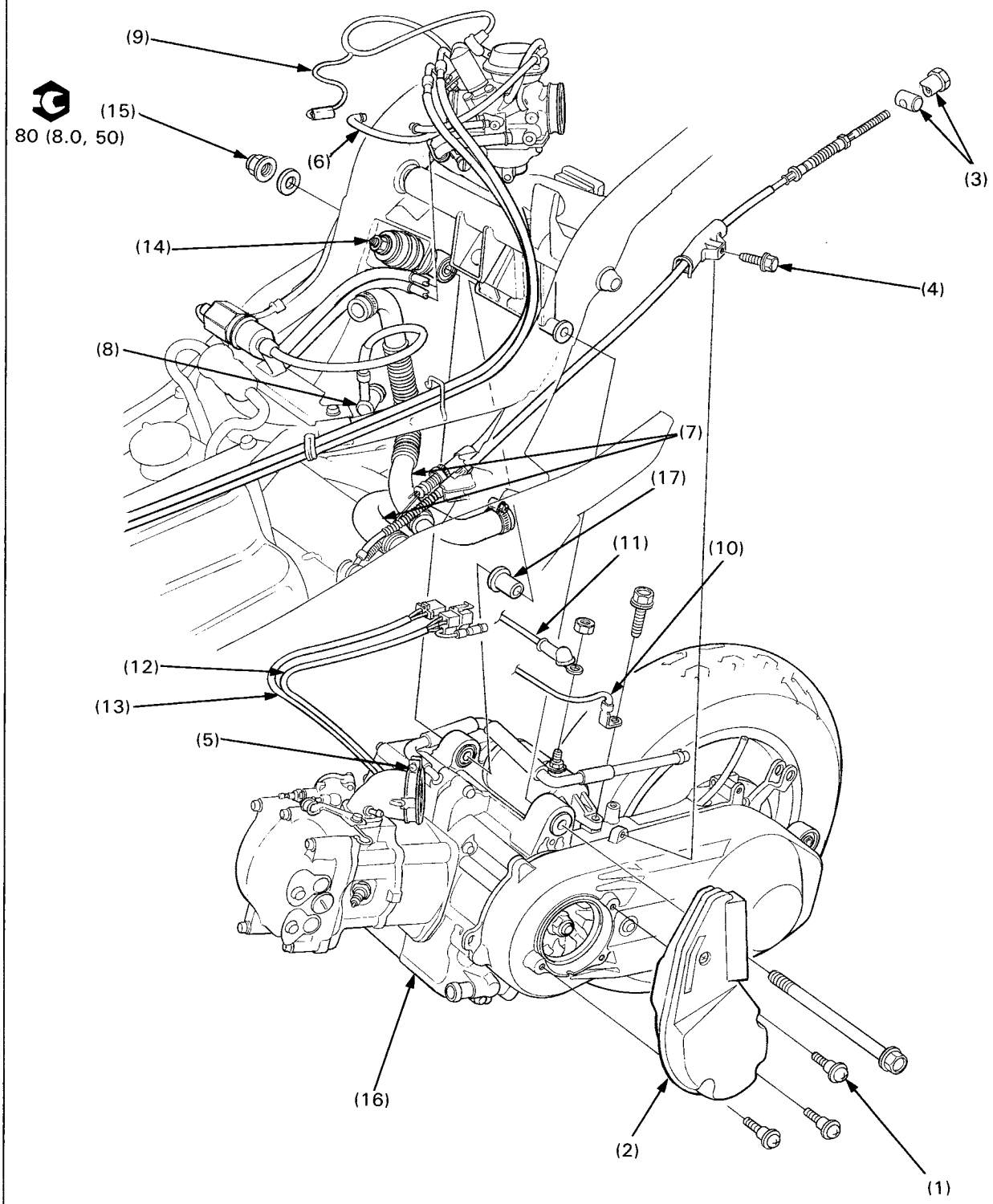
	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Thermo sensor wire connector	1	
(2)	Thermo sensor	1	
(3)	Heater tube	1	
(4)	Radiator hose	1	
(5)	Thermostat cover bolt	2	
(6)	Thermostat cover	1	
(7)	Thermostat	1	At installation, install the thermostat with its air bleeding hole facing up.

7. Engine Removal/Installation

Service Information

- A floor jack or other adjustable support is required to support and maneuver the engine.
- The following components can be serviced with the engine installed in the frame:
  - alternator/pulse generator (Section 15)
  - cylinder head/cylinder/pistion (Section 8)
  - starter motor/starter clutch (Section 16)
  - drive train (Section 10)
  - water pump (Section 6)
- The crankcase/crankshaft should be serviced with the engine removed.

Engine Removal/Installation



NOTE

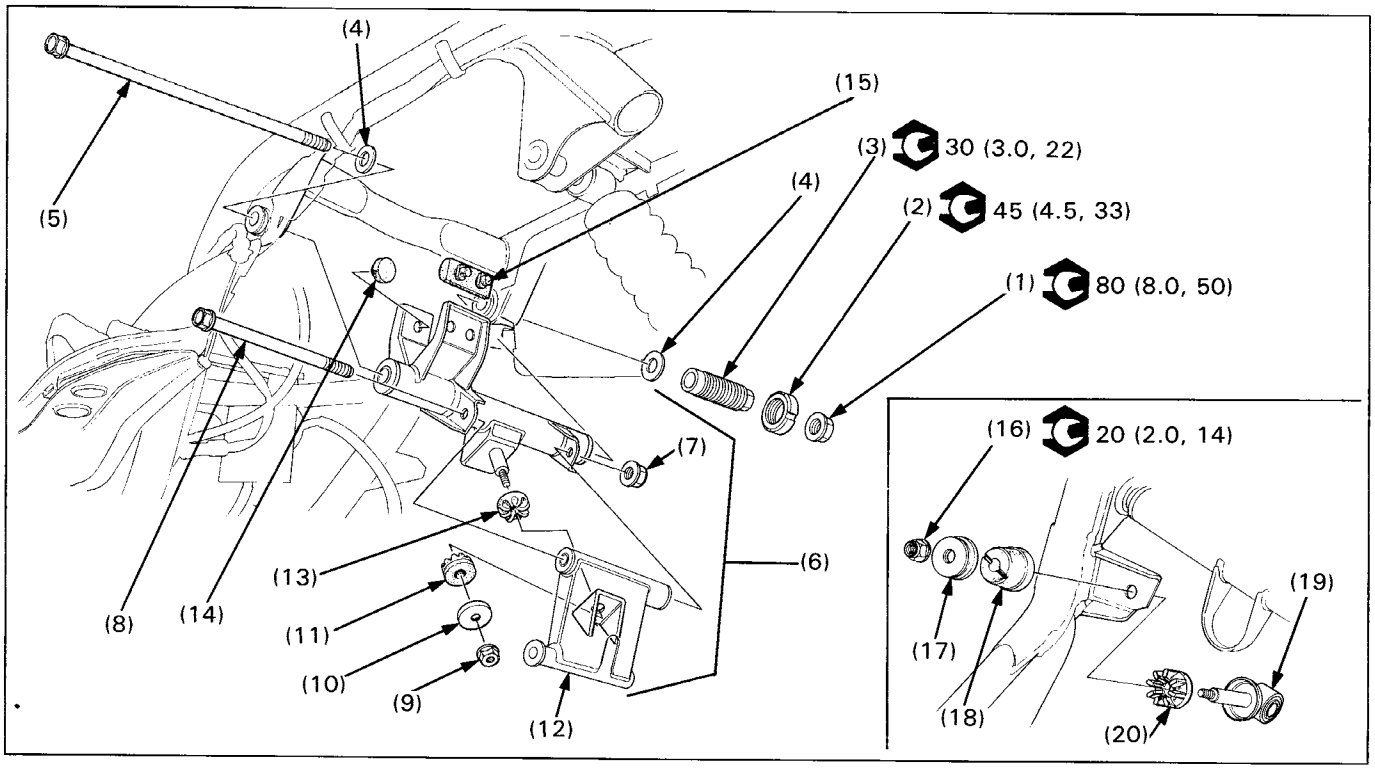
- It is not necessary to remove the carburetor or to disconnect the cables and harness from the carburetor.
- After installation, route the wires and cables properly (page 1-14)

Requisite Service

- Luggage box, center cover, body protector cover removal/installation (Section 2)
- Air cleaner removal/installation (page 5-3)
- Muffler removal/installation (page 2-9)
- Rear shock absorber removal/installation (page 12-3)
- Coolant draining (page 6-3)
- Engine oil draining, refilling (Section 2 of the Common Service Manual)

	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Belt cover air cleaner case screw	3	
(2)	Belt cover air cleaner case	1	
(3)	Rear brake cable adjusting nut/joint pin	1/1	After installation, adjust the brake pedal free play.
(4)	Rear brake cable clamp bolt	1	
(5)	Carburetor insulator band screw	1	Loosen only.
(6)	Heater tube (carburetor to cylinder head)	1	Disconnect it from the cylinder head.
(7)	Water hose	2	Disconnect them from the water pump and cylinder head.
(8)	Spark plug cap	1	
(9)	Thermosensor wire	1	Disconnect the wire connector from the sensor.
(10)	Engine ground cable	1	Remove the starter motor mounting bolt.
(11)	Starter motor cable	1	Disconnect it from the starter motor.
(12)	A.C. generator wire	1	Disconnect them from the wire harness.
(13)	Pulse generator wire	1	
(14)	Sub engine hanger bracket nut	1	Loosen only.
(15)	Engine hanger bolt/nut	1/1	
(16)	Engine assembly	1	Lower the cylinder head side slowly, then draw the engine assembly out to the rear, lifting the frame rear side.
(17)	Side collar	1	

Engine Hanger Bracket Disassembly/Assembly



Requisite Service

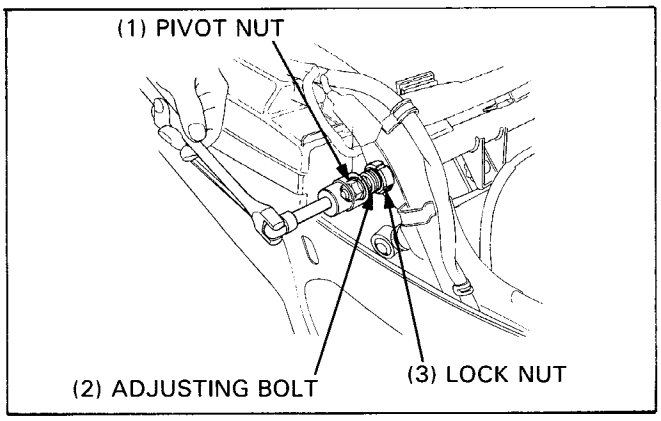
- Engine removal/installation (page 7-2)

	Procedure	Q'ty	Remarks
	Disassembly Order		• Assembly is the reverse order of disassembly.
(1)	Engine hanger pivot nut	1	
(2)	Engine hanger lock nut	1	Removal/installation (page 7-5).
(3)	Engine hanger adjusting bolt	1	
(4)	Washer	2	
(5)	Engine hanger bolt	1	
(6)	Engine hanger bracket assembly	1	
(7)	Sub bracket pivot nut	1	
(8)	Sub bracket pivot bolt	1	
(9)	Sub bracket joint nut	1	
(10)	Stopper rubber cap	1	
(11)	Engine hanger rubber A	1	
(12)	Sub bracket	1	
(13)	Engine hanger rubber B	1	
(14)	Stopper rubber A	1	
(15)	Stopper rubber B	1	
(16)	Tension rod mounting nut	1	
(17)	Tension rod stopper	1	
(18)	Stopper rubber C	1	
(19)	Tension rod	1	
(20)	Stopper rubber D	1	

Engine Hanger Bolt Removal/Installation

Remove the pivot nut, pivot bolt and engine hanger bracket.
Remove the engine hanger lock nut, adjusting bolt and washer.

S. TOOL
Lock nut wrench **07KMA—KAB0100**

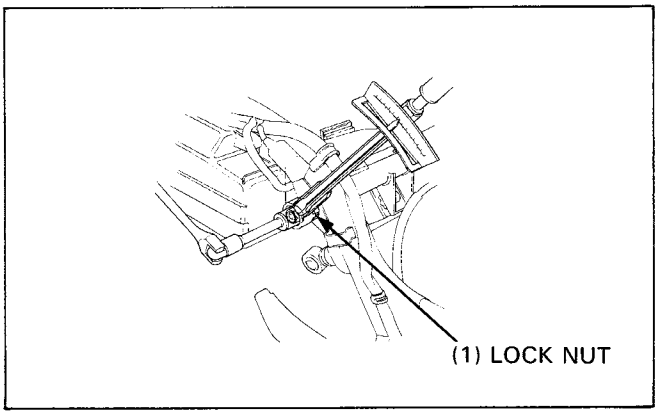


To reinstall, place the adjusting bolt in the frame, but do not tighten yet.
Install the engine hanger bracket and pivot bolt.
Tighten the adjusting bolt.

Torque: 30 N·m (3.0 kg-m, 22 ft-lb)

Install the lock nut and tighten it, holding the adjusting bolt as shown.

Torque: 45 N·m (4.5 kg-m, 33 ft-lb)



S. TOOL
Lock nut wrench **07KMA—KAB0100**

Tighten the pivot nut.

8. Cylinder Head/Cylinder/Piston

Service Information

- The camshaft can be serviced with the engine in the frame.
- Camshaft lubricating oil is fed through oil passages in the cylinder head. Clean the oil passages before assembling the cylinder head.
- Clean all disassembled parts with clean solvent and dry them by blowing them off with compressed air before inspection.
- When disassembling, mark and store the disassembled parts to ensure that they are reinstalled in their proper locations.
- Take care not damage the cylinder walls and pistons.

Troubleshooting

- Engine top-end problems usually affect engine performance. These can be diagnosed by a compression or leak down test, or by tracing noises to the top-end with a sounding rod or stethoscope.
- If performance is poor at low speeds, check for white smoke in the crankcase breather tube. If the tube is smokey, check for a seized piston ring.

Compression Too Low, Hard Starting or Poor Performance at Low Speed

- Valves
  - Incorrect valve adjustment
  - Burned or bent valves
  - Incorrect valve timing
  - Broken valve spring
  - Uneven valve seating
- Cylinder head
  - Leaking or damaged head gasket
  - Warped or cracked cylinder head
- Cylinder, piston
  - Leaking cylinder head gasket
  - Loose spark plug
  - Worn, stuck or broken piston ring
  - Worn or damaged cylinder and piston

Compression Too High, Overheating or Knocking

- Excessive carbon build-up in cylinder head or on top of piston

Excessive Smoke

- Cylinder head
  - Worn valve stem or valve guide
  - Damaged stem seal
- Cylinder, piston
  - Worn cylinder, piston, or piston rings
  - Improper installation of piston rings
  - Scored or scratched piston or cylinder wall

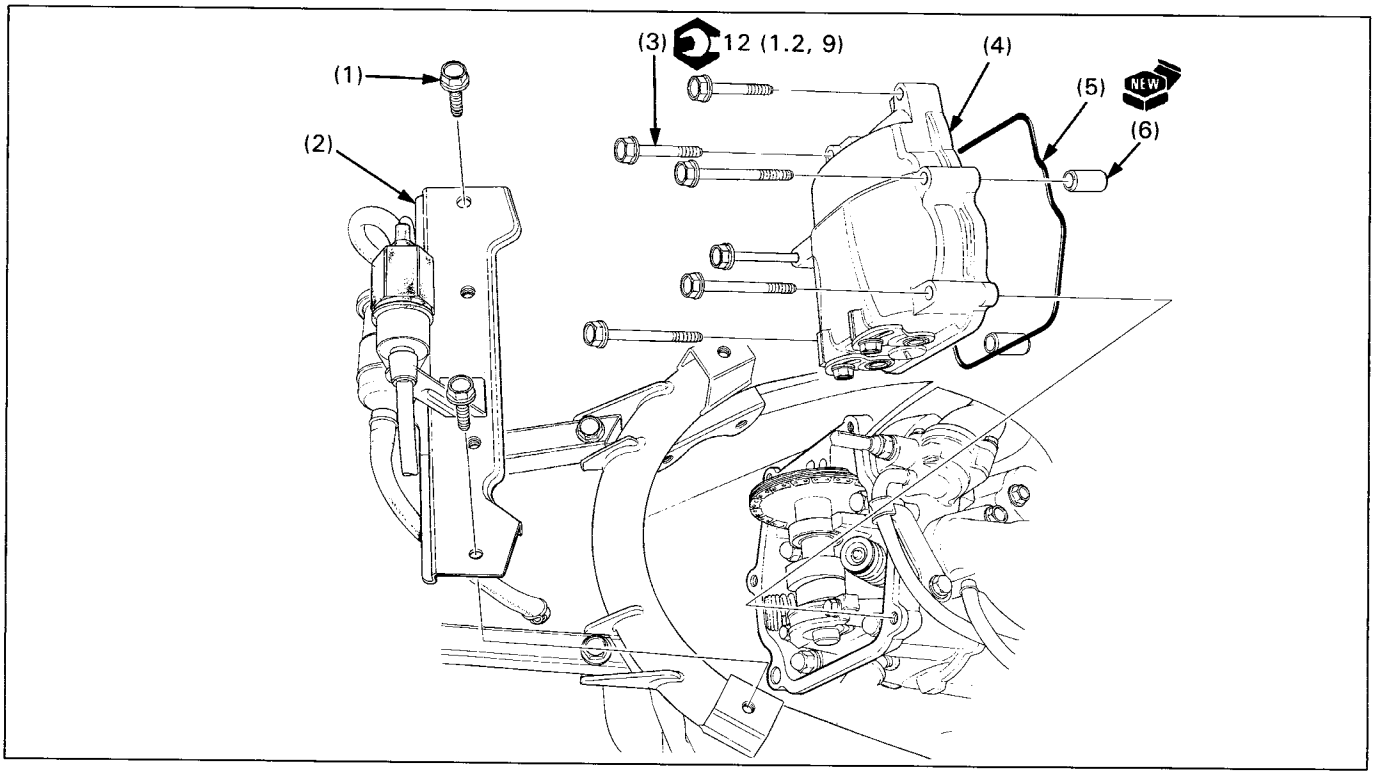
Excessive Noise

- Cylinder head
  - Incorrect valve adjustment
  - Sticking valve or broken valve spring
  - Damaged or worn camshaft
  - Loose, worn or damaged cam chain
  - Worn or damaged cam chain tensioner
  - Worn cam sprocket teeth
  - Worn rocker arm and/or shaft
- Cylinder, piston
  - Worn cylinder and piston
  - Worn piston pin and piston pin hole

Rough Idle

- Low cylinder compression

Cylinder Head Cover Removal/Installation



NOTE

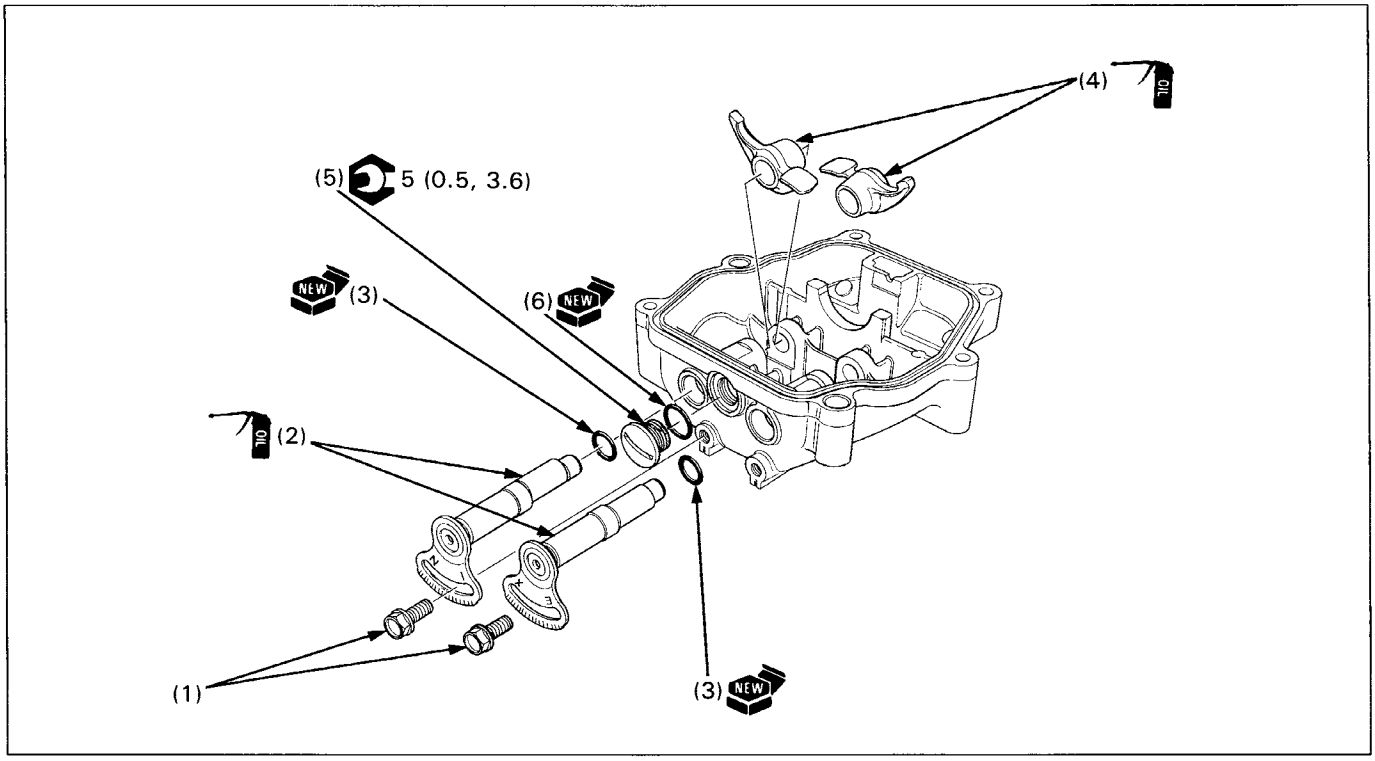
- To remove the cylinder head cover easily, remove the two fuel pump bracket bolts.

Requisite Service

- Center cover removal/installation (Section 2)
- Luggage box removal/installation (Section 2)

	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Luggage box front bracket bolt	2	
(2)	Luggage box front bracket	1	It is not necessary to remove the ignition coil or to disconnect the fuel tube.
(3)	Cylinder head cover bolt	6	Before install the cylinder head cover, set the bolts to the cover first.
(4)	Cylinder head cover	1	
(5)	O-ring	1	
(6)	Dowel pin	2	

Cylinder Head Cover Disassembly/Assembly

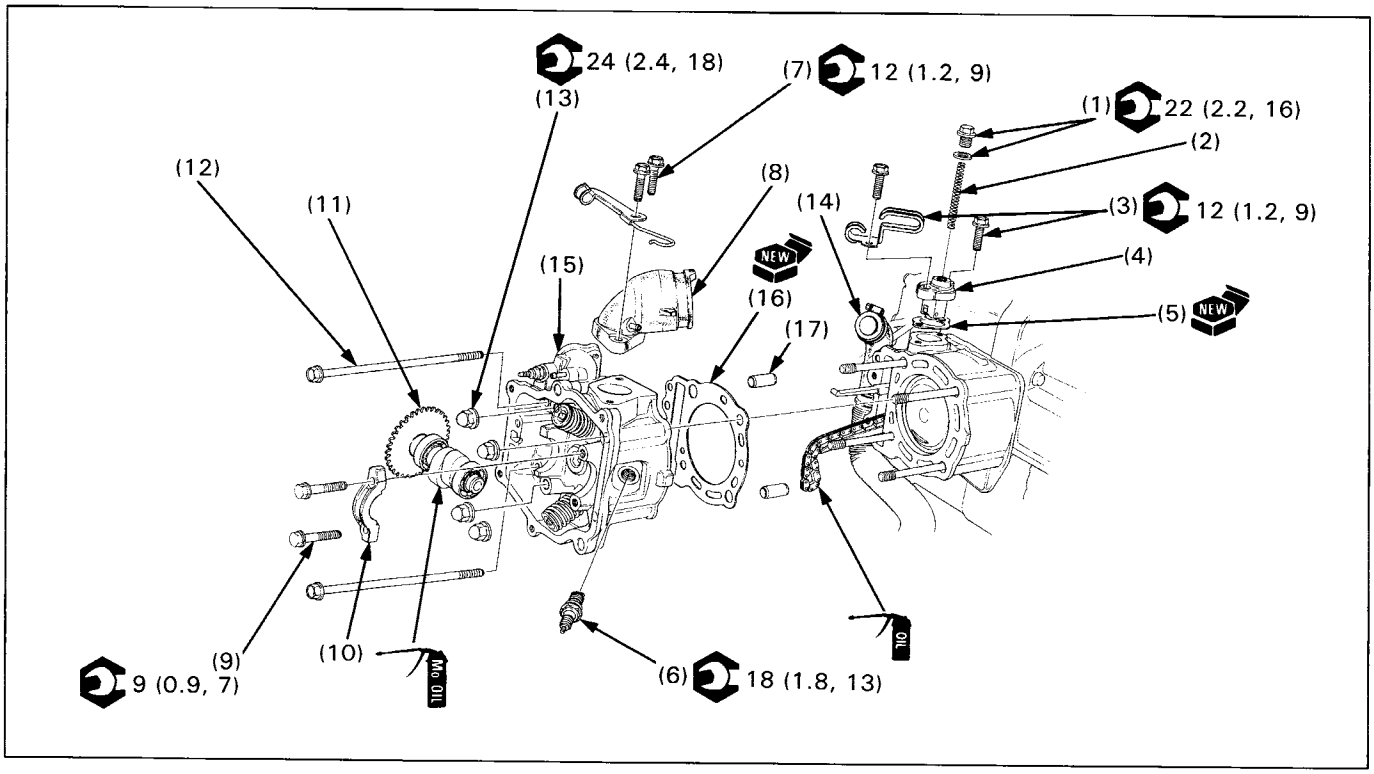


Requisite Service

- Cylinder head cover removal/installation (page 8-2)

	Procedure	Q'ty	Remarks
	Disassembly Order		• Assembly is the reverse order of disassembly.
(1)	Valve adjuster lock bolt	2	
(2)	Rocker arm shaft	2	
(3)	O-ring	2	
(4)	Rocker arm	2	
(5)	Inspection hole cap	1	
(6)	O-ring	1	

Cylinder Head Removal/Installation



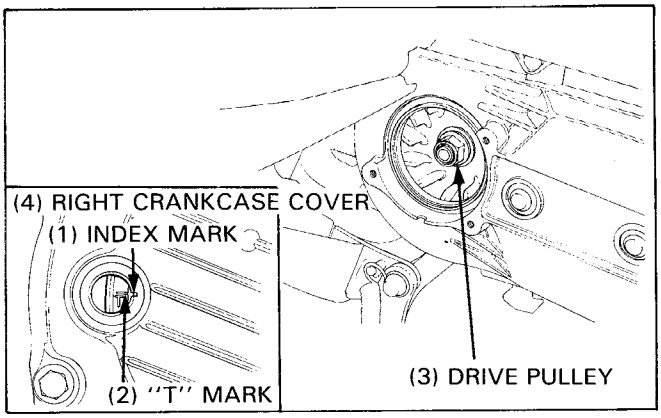
Requisite Service

- Cylinder head cover removal/installation (page 8-2)
- Exhaust system removal/installation (page 2-9)

	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Cam chain tensioner sealing bolt/washer	1	
(2)	Cam chain tensioner spring	1	
(3)	Cam chain tensioner bolt/tube clamp	2/1	Installation (page 8-5).
(4)	Cam chain tensioner	1	
(5)	Cam chain tensioner gasket	1	
(6)	Spark plug	1	
(7)	Insulator mounting bolt/tube clamp	2/1	
(8)	Insulator	1	
(9)	Camshaft holder bolt	1	
(10)	Camshaft holder	1	
(11)	Camshaft	1	• Derail the cam chain from the cam sprocket teeth. • Installation (page 8-5).
(12)	Cylinder head bolt	2	
(13)	Cylinder head cap nut	4	Loosen or tighten the nuts in two or three steps, alternating from one nut to the other.
(14)	Water hose	1	Loosen the screw and disconnect the hose from the cylinder head.
(15)	Cylinder head	1	
(16)	Gasket	1	
(17)	Dowel pin	2	

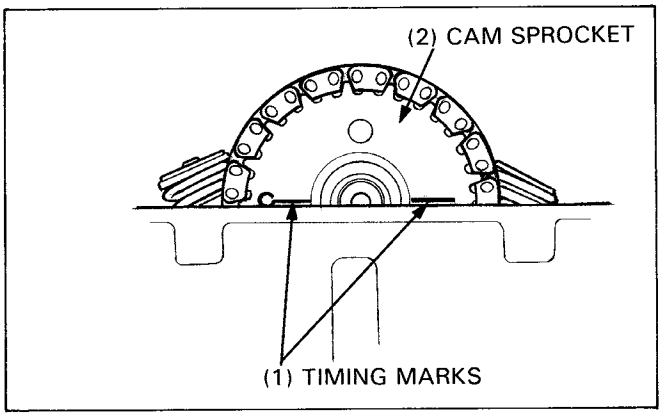
Camshaft Installation

Remove the drive belt air cleaner case (page 10-2).
Remove the timing hole cap.
Turn the drive pulley counterclockwise and align the "T" mark on the flywheel with the index mark on the right crankcase.



Install the camshaft with the intake and exhaust cam lobes facing towards the cylinder side.
Align the timing marks on the cam sprocket with the cylinder head surface and install the cam chain over the cam sprocket.
Install the camshaft holder onto the cylinder head and tighten the two bolts.

Torque: 9 N·m (0.9 kg-m, 7 ft-lb)



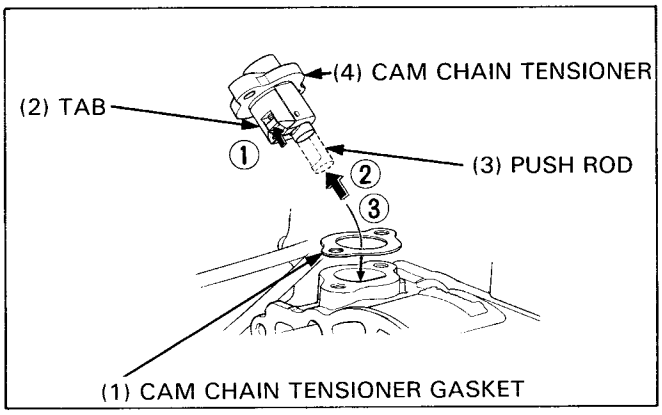
Cam Chain Tensioner Installation

Install the new cam chain tensioner gasket.
Press down on the tab to release the push rod.
Push the rod back into the tensioner body.
Install the tensioner body with the two bolts.

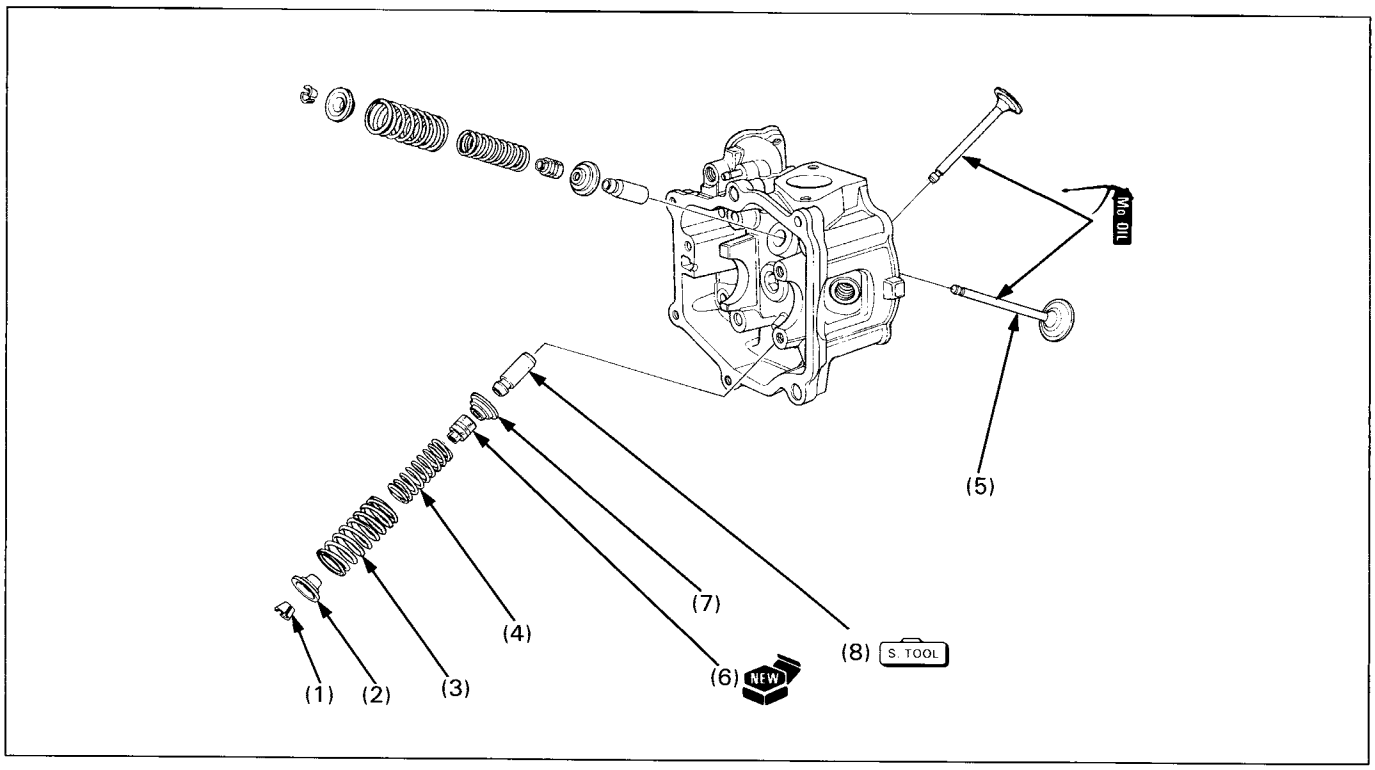
Torque: 12 N·m (1.2 kg-m, 9 ft-lb)

Install the tensioner spring and tighten the sealing bolt.

Torque: 22 N·m (2.2 kg-m, 16 ft-lb)



Cylinder Head Disassembly/Assembly



NOTE

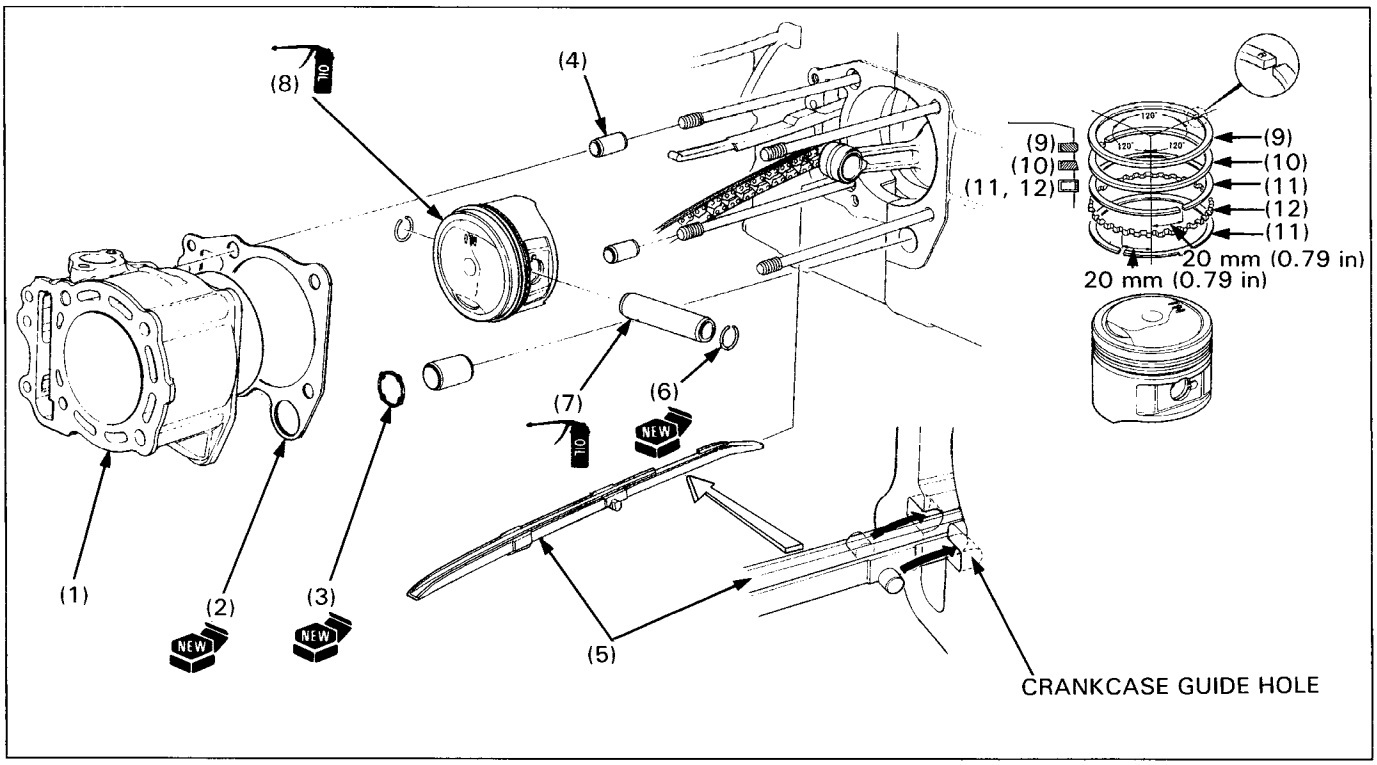
- Store the valve components in the same order they were installed so they can be reinstalled in the original positions.
- Refer to section 9 of the Common Service Manual for valve guide inspection/replacement.

Requisite Service

- Cylinder head removal/installation (page 8-4)

	Procedure	Q'ty	Remarks
	Disassembly		• Installation is the reverse order of disassembly.
(1)	Valve cotter	4	See page 9-4 of the Common Service Manual.
(2)	Retainer	2	
(3)	Outer valve spring	2	The tightly wound coils of the springs should face in toward the combusion chamber.
(4)	Inner valve spring	2	
(5)	Valve	2	
(6)	Stem seal	2	
(7)	Spring seat	2	
(8)	Valve guide	2	Valve guide height (page 1-3).

Cylinder/Piston Removal/Installation



NOTE

- Refer to section 10 of the Common Service Manual for piston and piston ring inspection.

Requisite Service

- Cylinder head removal/installation (page 8-4)

	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Cylinder	1	**CAUTION** • **At installation, do not force the cylinder over a ring; you may damage the piston and piston ring.**
(2)	Gasket	1	
(3)	O-ring	1	
(4)	Dowel pin	3	
(5)	Cam chain guide	1	NOTE • At installation, push the guide in until it bottoms in the crankcase guide hole.
(6)	Piston pin clip	2	NOTE • Place clean shop towels in the crankcase opening to keep the piston pin clips or other parts from falling into the crankcase. • Use pliers to remove.
(7)	Piston pin	1	
(8)	Piston	1	At installation, install the piston with the "IN" mark facing towards the intake side.
(9)	Top ring	1	NOTE • Be careful not to damage the piston rings during assembly. • All rings should be installed with the markings facing up. • After installing the rings they should rotate freely, without binding.
(10)	Second ring	1	
(11)	Side rail	2	
(12)	Spacer	1	

9. Crankcase/Crankshaft

Service Information

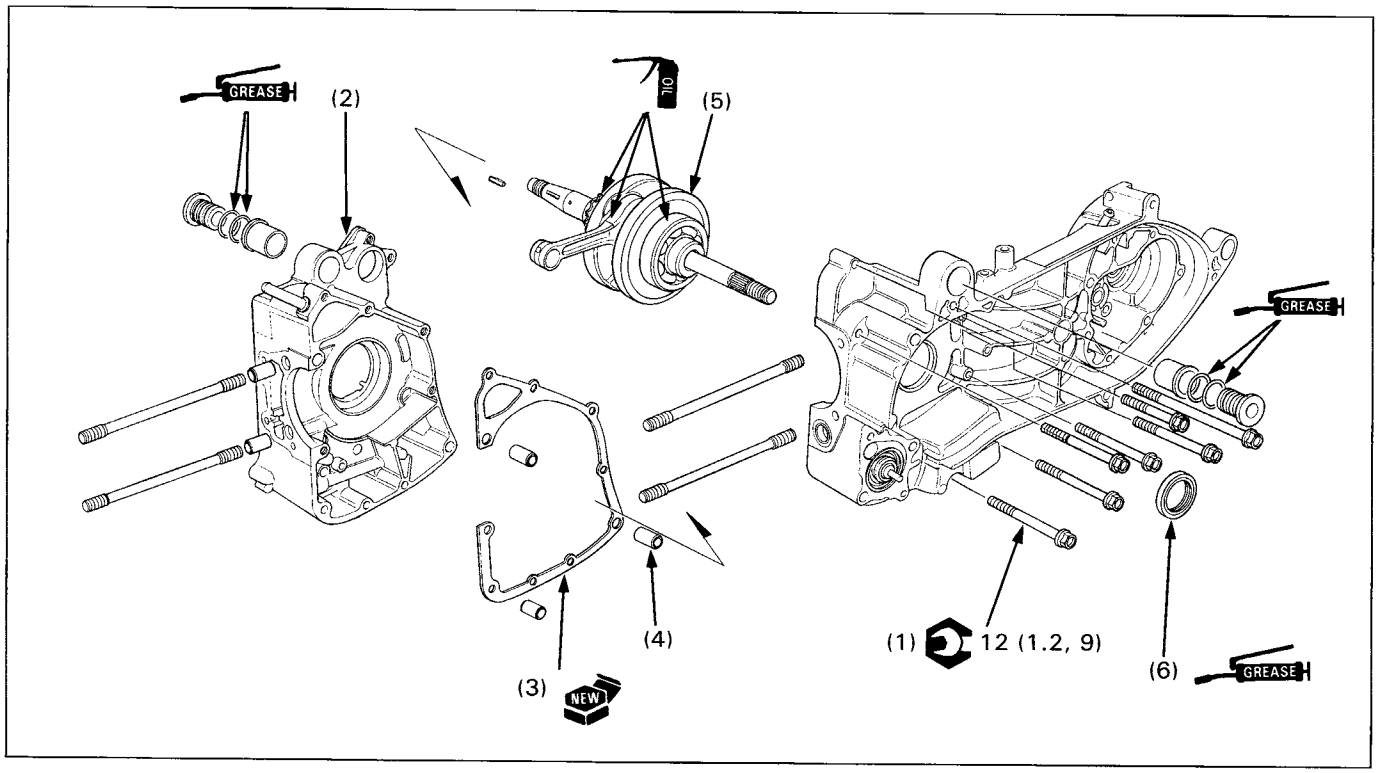
- For crankshaft repair, the crankcase must be separated.
- The following parts must be removed before disassembling the crankcase.
  - Engine (Section 7)
  - Cylinder head, cylinder, piston (Section 8)
  - Alternator (Section 15)
  - Starter driven gear (Section 16)
  - Drive and driven pulley (Section 10)
  - Starter motor (Section 16)
  - Oil pump (Section 4)
  - Rear wheel (Section 12)
  - Water pump cover and impeller (Section 6)

Troubleshooting

Excessive Noise
- Worn connecting rod big end bearing
- Bent connecting rod
- Worn crankshaft main bearing

Engine Vibration
- Excessive crankshaft runout

Crankcase Separation/Assembly



CAUTION

- **Never use a tool to pry the crankcase halves apart.**

NOTE

- Refer to Service Information (page 9-1) for removal of necessary parts before separating the crankcase.

	Procedure	Q'ty	Remarks
	Disassembly Order		• Assembly is the reverse order of disassembly.
(1)	Crankcase bolt	7	
(2)	Right crankcase	1	
(3)	Gasket	1	
(4)	Dowel pin	3	
(5)	Crankshaft	1	
(6)	Oil seal	1	

10. Drive Train

Service Information

- Avoid getting grease and oil on the V-belt and pulley drive faces.
- Drive train can be removed with the engine in the frame.

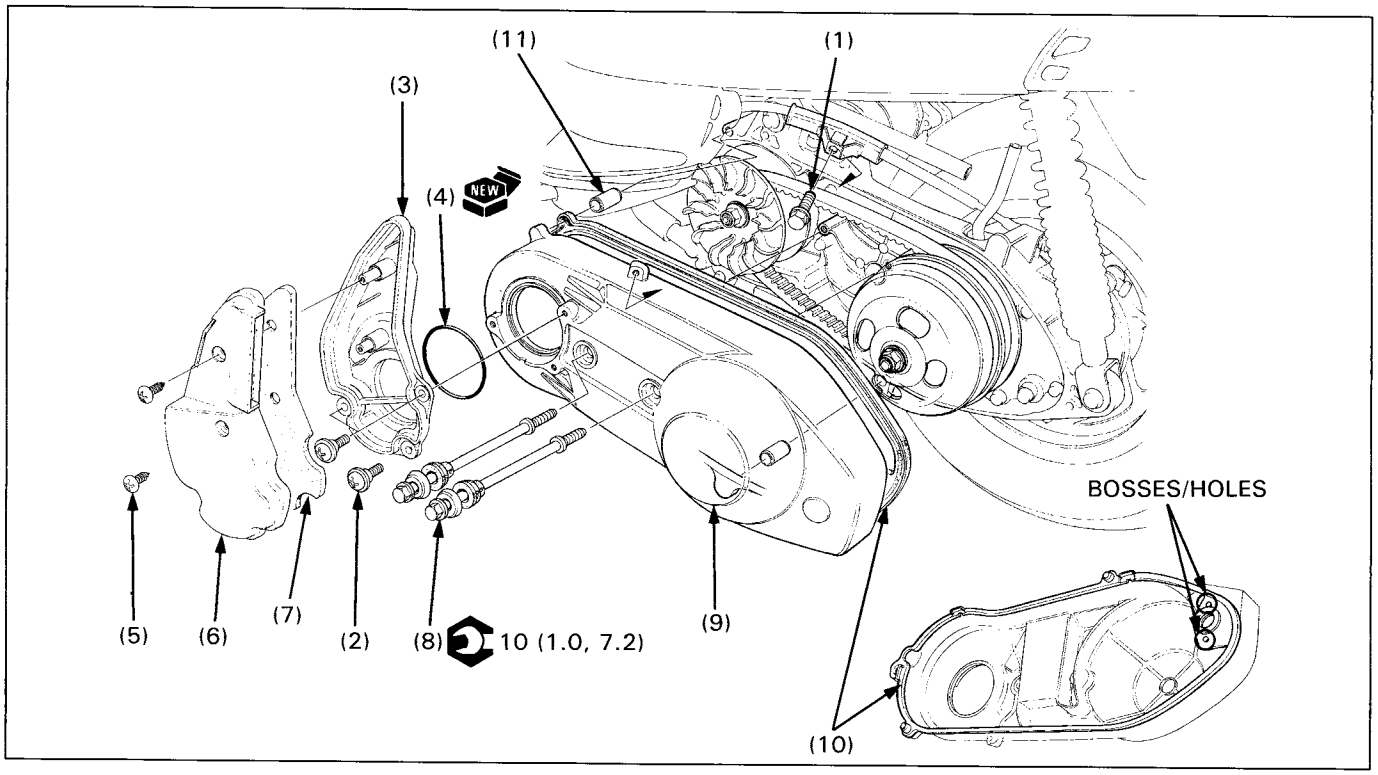
Troubleshooting

Engine Starts But Scooter won't Move
- Worn drive belt
- Damaged ramp plate
- Worn or damaged clutch lining
- Broken driven face spring

Engine Stalls or Scooter Creeps
- Broken clutch shoe spring
- Damaged clutch lining

Poor Performance at High Speed or Lack of Power
- Worn drive belt
- Weak driven face spring
- Worn weight roller
- Faulty driven pulley face
- Oil or grease on drive belt or pulley

Drive Belt Cover Removal/Installation

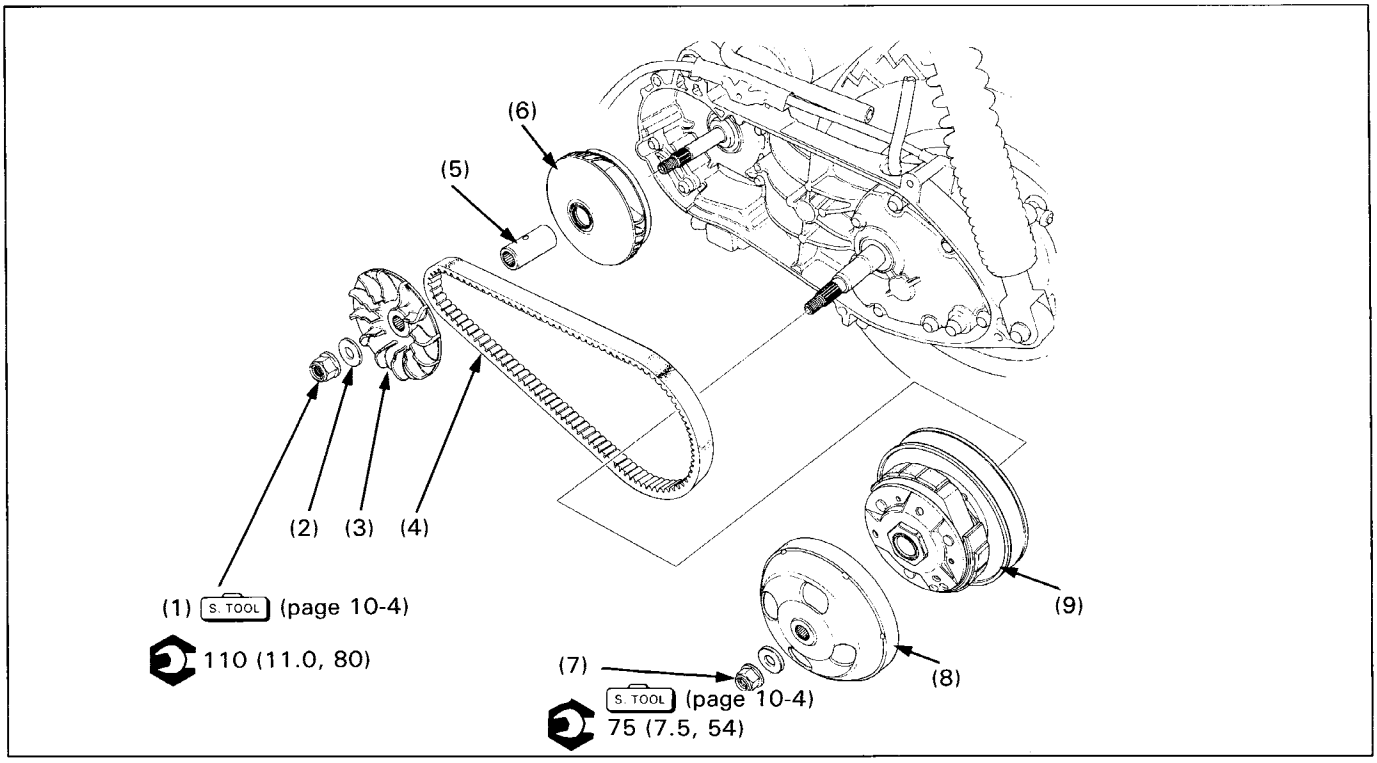


Requisite Service

- Body protector cover removal/installation (Section 2)

	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Rear brake cable clamp bolt	1	
(2)	Belt cover air cleaner case screw	3	
(3)	Belt cover air cleaner case	1	
(4)	O-ring	1	
(5)	Case cover screw	2	
(6)	Case cover	1	
(7)	Air cleaner element	1	
(8)	Drive belt cover mounting bolt	2	
(9)	Drive belt cover	1	
(10)	Drive belt cover packing	1	• At installation, apply Honda Bond A or Honda Grip Cement (U.S.A. only) to the groove of the cover packing and set it on the case aligning the holes of the packing with the bosses of the case. • After installation, route the carburetor drain tube securely (page 5-4).
(11)	Dowel pin	2	

Drive Belt/Drive Pulley/Clutch/Driven Pulley Removal/Installation



NOTE

- Do not get oil or grease on the drive belt or pulley face. Remove any misplaced grease or oil with a degreasing agent.

Requisite Service

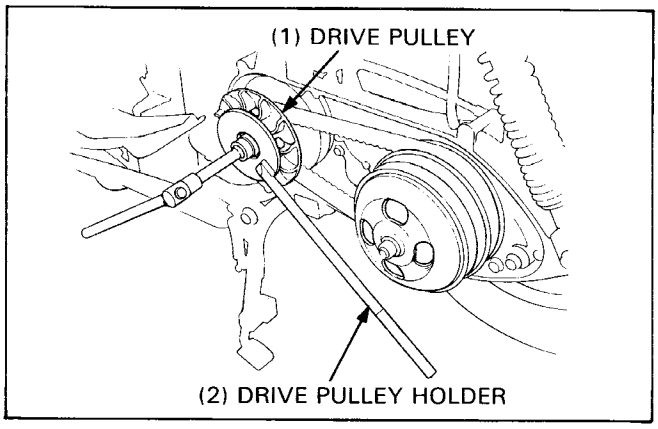
- Drive belt cover removal/installation (page 10-2)

	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Moveable drive face nut	1	Removal/installation (page 10-4).
(2)	Washer	1	
(3)	Drive pulley	1	
(4)	Drive belt	1	
(5)	Drive face collar	1	
(6)	Moveable drive face	1	Disassembly/assembly (page 10-5).
(7)	Clutch outer nut/washer	1	Removal/installation (page 10-4).
(8)	Clutch outer	1	
(9)	Moveable driven pulley/clutch assembly	1	Disassembly/assembly (page 10-6).

Moveable Drive Face Nut Removal/Installation

Hold the drive pulley with the drive pulley holder and remove the drive face nut, washer and drive pulley.

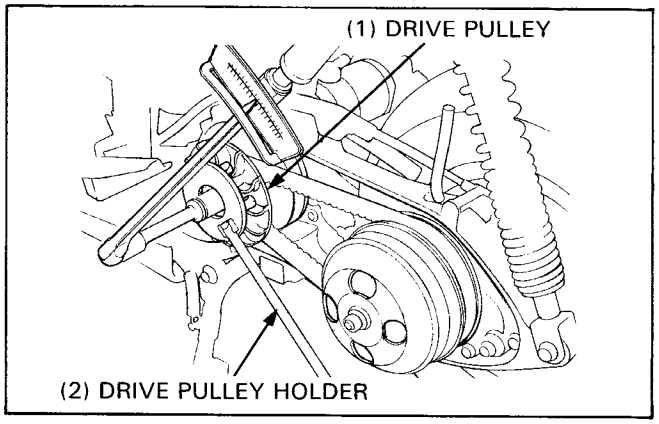
S. TOOL
Drive pulley holder **07923—KM10000**



To reinstall, hold the drive pulley and tighten the drive face nut.

S. TOOL
Drive pulley holder **07923—KM10000**

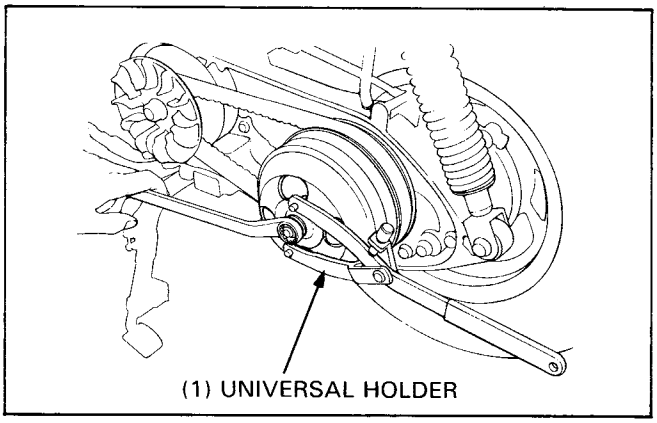
Torque: 110 N·m (11.0 kg-m, 80 ft-lb)



Clutch Outer Removal/Installation

Hold the clutch outer with the universal holder and remove the clutch outer nut.

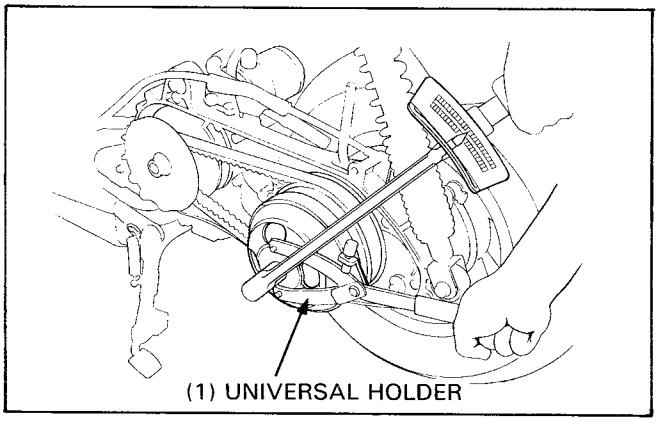
S. TOOL
Universal holder **07725—0030000**



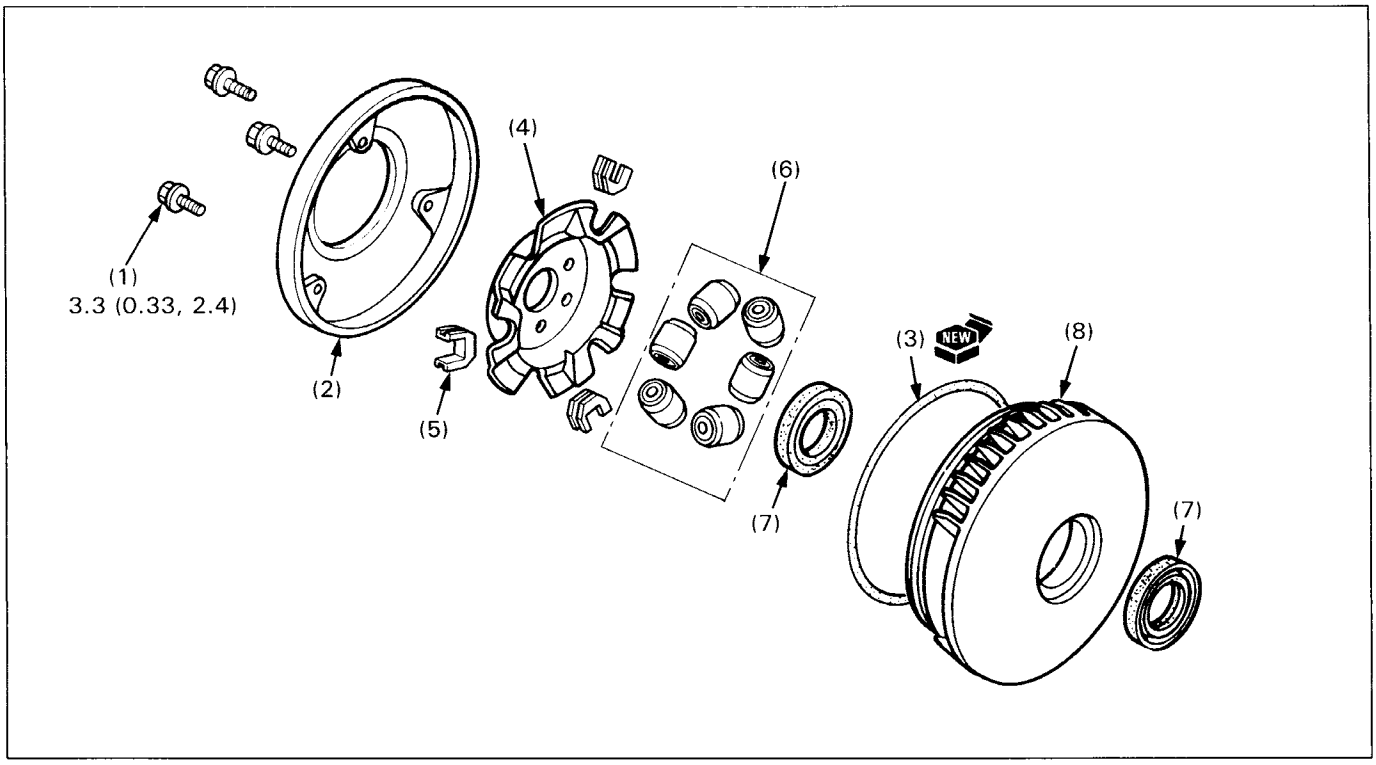
Install the clutch outer and tighten the nut while holding the clutch outer with the universal holder.

S. TOOL
Universal holder **07725—0030000**

Torque: 75 N·m (7.5 kg-m, 54 ft-lb)



Moveable Drive Face Disassembly/Assembly



NOTE

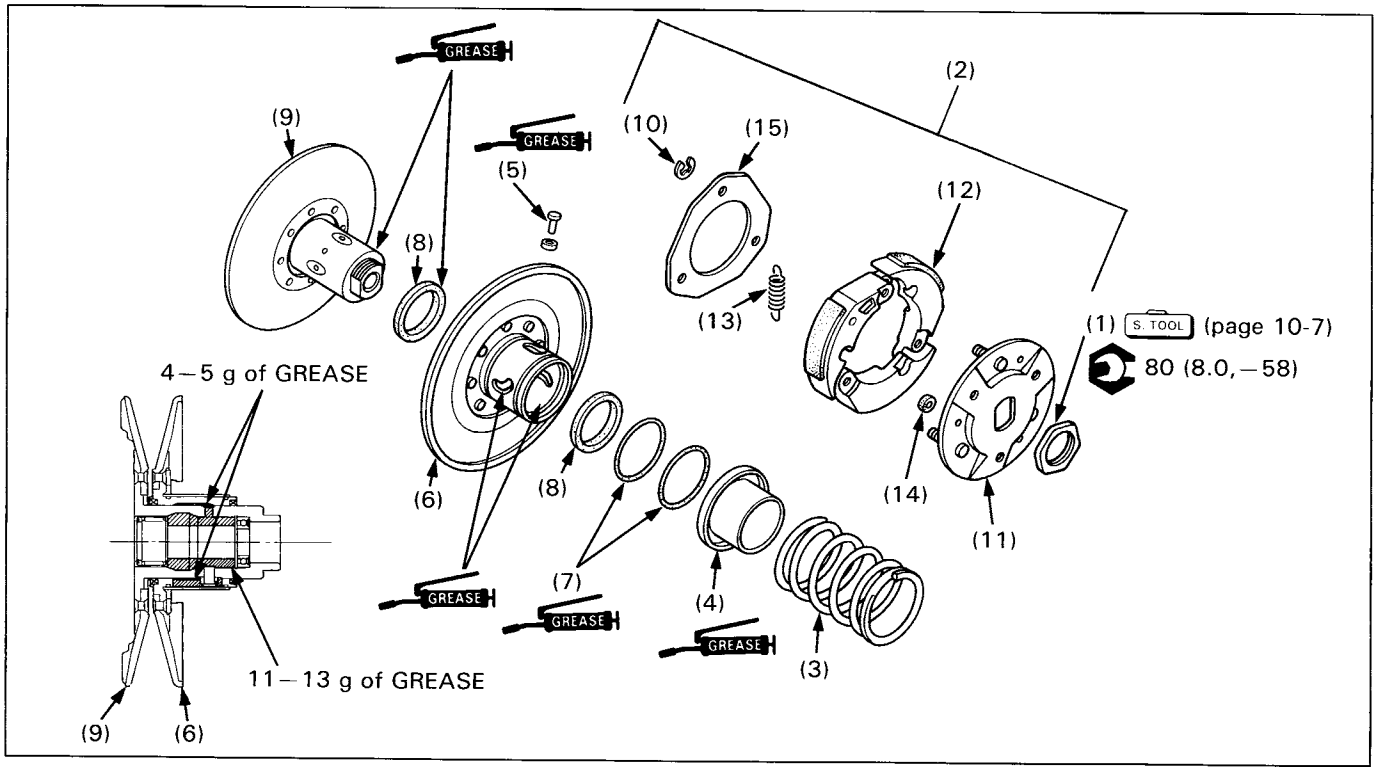
- Apply 35—40 g of lithium based grease evenly to the inside of the moveable drive face.
  Specified lithium based grease:
  — Bel-Ray: Moly Lube EP #0
  — Sta-Lube: MP #3141 or equivalent.

Requisite Service

- Drive belt cover removal/installation (page 10-2)
- Drive pulley removal/installation (page 10-3)

	Procedure	Q'ty	Remarks
	Disassembly Order		• Assembly is the reverse order of disassembly.
(1)	Face seal cover mounting bolt	3	
(2)	Face seal cover	1	
(3)	O-ring	1	At installation, make sure that the O-ring is in position.
(4)	Ramp plate	1	
(5)	Slide piece	3	At installation, make sure that the slide piece are installed.
(6)	Weight roller	6	At installation, first lubricate the inside of the moveable drive face with the specified grease, then install the weight rollers.
(7)	Face seal	2	Do not remove them, unless it is necessary to replace them with new one.
(8)	Moveable drive face	1	Use 35—40 g of grease and apply to the inside evenly. **CAUTION** **• Wipe out excess grease on the drive face surface panel.**

Clutch/Driven Pulley Disassembly/Assembly



Requisite Service

- Drive belt cover removal/installation (page 10-2)
- Clutch/driven pulley removal/installation (page 10-3)

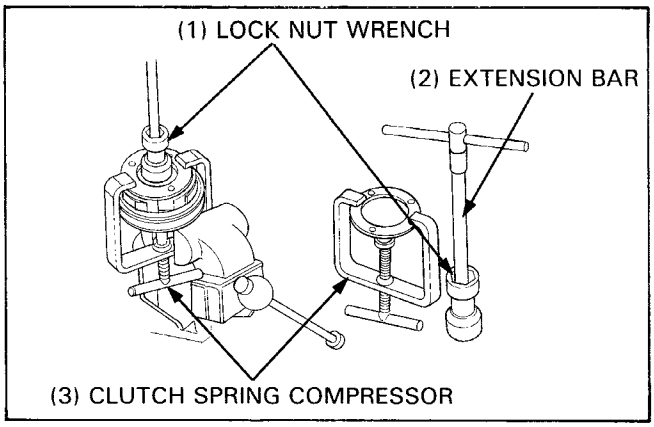
	Procedure	Q'ty	Remarks
	Disassembly Order		• Assembly is the reverse order of disassembly.
(1)	Driven pulley nut	1	Remove the nut while holding the pulley with the special tools (page 10-7).
(2)	Clutch assembly	1	
(3)	Driven pulley spring	1	
(4)	Spring collar	1	
(5)	Guide roller pin	3	
(6)	Moveable driven face	1	Use 4−5 g of grease and apply to the inside evenly.
(7)	O-ring	2	
(8)	Oil seal	2	
(9)	Driven face	1	Use 11−13 g of grease and apply to the inside evenly.
(10)	E-clip	3	
(11)	Drive plate	1	
(12)	Clutch weight	3	
(13)	Clutch spring	3	
(14)	Clutch damper rubber	3	
(15)	Clutch drive plate	1	

Clutch Disassembly/Assembly

Hold and compress the drive pulley/clutch assembly with the clutch spring compressor.

S. TOOL

Clutch spring compressor	**07960—KM10000** **07460—KM1000A** **U.S.A. only**
Lock nut wrench, 39 x 41 mm	**07GMA—KS40100 or equivalent commercially available in U.S.A.**
Extension bar	**07716—0020500 or equivalent commercially available U.S.A.**



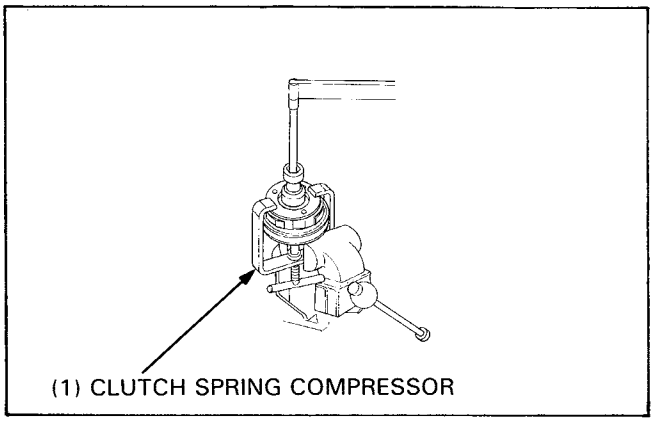
NOTE

- Do not tighten the tool more than necessary to avoid damaging the drive plate.

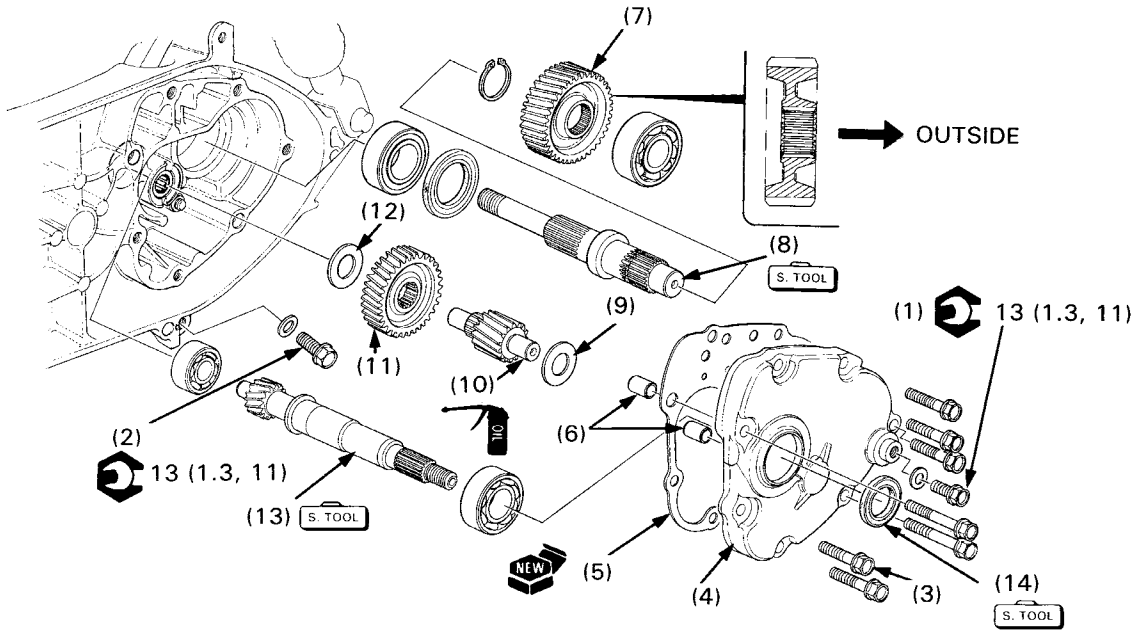
Set the tool in a vise and remove the lock nut.
Loosen the tool and disassemble the driven pulley/clutch assembly.

Assembly is the reverse order of removal.

Torque: 80 N·m (8.0 kg-m, 58 ft-lb)



Final Reduction Removal/Installation



NOTE

- Final drive oil will spill out when the final reduction cover is removed. Place a clean oil pan under the final reduction.
- For oil seal and bearing replacement, refer to page 10-9.

Requisite Service

- Clutch/driven pulley removal/installation (page 10-3)
- Rear wheel removal/installation (page 12-2)
- Final reduction oil draining/filling

	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Oil check bolt/washer	1/1	
(2)	Oil drain bolt/washer	1/1	
(3)	Final reduction cover bolt	7	
(4)	Final reduction cover	1	
(5)	Gasket	1	
(6)	Dowel pin	2	
(7)	Final gear	1	At installation, be sure the direction of the gear is as shown.
(8)	Final shaft	1	
(9)	Thrust washer	1	
(10)	Countershaft	1	
(11)	Counter gear	1	
(12)	Thrust washer	1	
(13)	Drive shaft	1	Removal/installation (page 10-9).
(14)	Oil seal	1	

Drive Shaft Replacement

Press the drive shaft out of the final reduction cover with the bearing attached.

NOTE

- Be careful not to damage the threads of the shaft.

Remove the bearing from the drive shaft using the commercial bearing puller.
Remove the drive shaft oil seal from the final reduction cover.

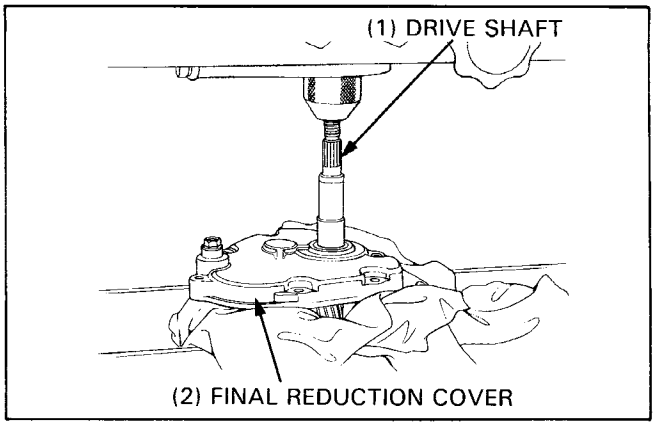
NOTE

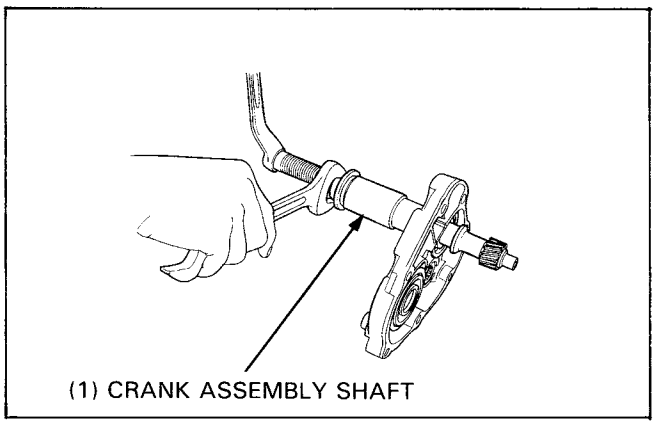
- If the drive shaft is removed from the final reduction cover, the bearing must be replaced with a new one.

Set the assembly collars and bolts as shown and pull in the drive shaft into the final reduction cover.

S. TOOL
Crank assembly shaft 07965—1660200

Install a new oil seal onto the drive shaft.





Bearing Replacement

Removal
Remove the bearings using a bearing remover as follows.

S. TOOL
Drive shaft bearing (case side):
Bearing remover set, 12 mm 07936—1660001

Final shaft bearing (cover side):
Bearing remover set, 20 mm 07936—3710001

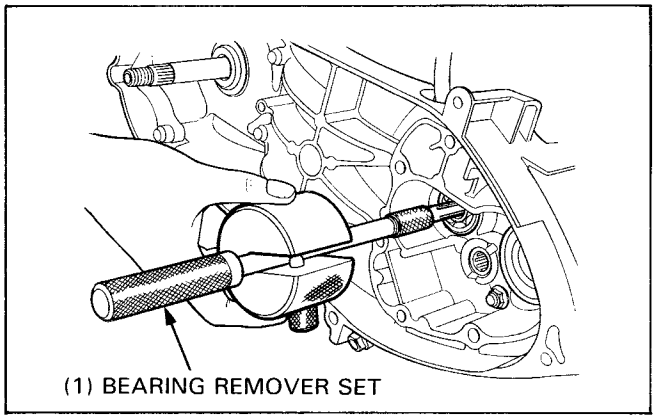
Installation
Drive in new bearings using a special tools as follows.

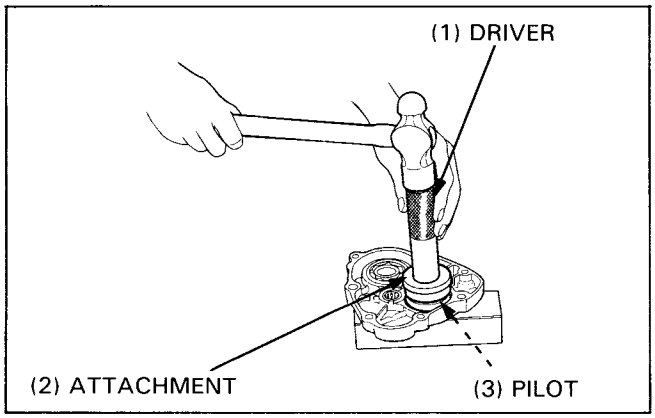
S. TOOL
Drive shaft bearing (case side):
Driver 07749—0010000
Attachment, 32 x 35 mm 07746—0010100
Pilot, 12 mm 07746—0040200

Drive shaft bearing (cover side):
Driver 07749—0010000
Attachment 07945—3330300
Pilot, 22 mm 07746—0041000

Final shaft (cover side):
Driver 07749—0010000
Attachment, 52 x 55 mm 07746—0010400
Pilot, 20 mm 07746—0040500

Final shaft (case side):
Driver 07749—0010000
Attachment, 52 x 55 mm 07746—0010400
Pilot, 25 mm 07746—0040600





11. Front Wheel/Suspension/Steering

Service Information

⚠WARNING

- **Riding on damaged rims impairs safe operation of the scooter.**
- **Any attempt to mount automobile tires on a motorcycle rim may cause the tire bead to separate from the rim with enough explosive force to cause serious injury or death.**

- When removing the wheel, shocks, or steering stem, support the scooter securely with a jack or other support under the engine.
- Refer to section 13 for brake system information.
- Use only tires marked "TUBELESS" and tubeless valves on rims marked "TUBELESS TIRE APPLICABLE". Refer to section 16 of the Common Service Manual for tubeless tire removal, repair, and remounting procedures.
- Refer to section 1 of the Common Service Manual for bearing inspection/replacement.

Troubleshooting

Hard Steering
- Faulty steering head bearings
- Steering head misadjusted (too tight)
- Low tire pressure
- Damaged tire

Steering to One Side or Does Not Track Straight
- Uneven front shock absorber spring length
- Bent fork
- Bent front axle

Front Wheel Wobbling
- Bent rim
- Axle nut tightened improperly
- Excessive wheel bearing play
- Damaged tire

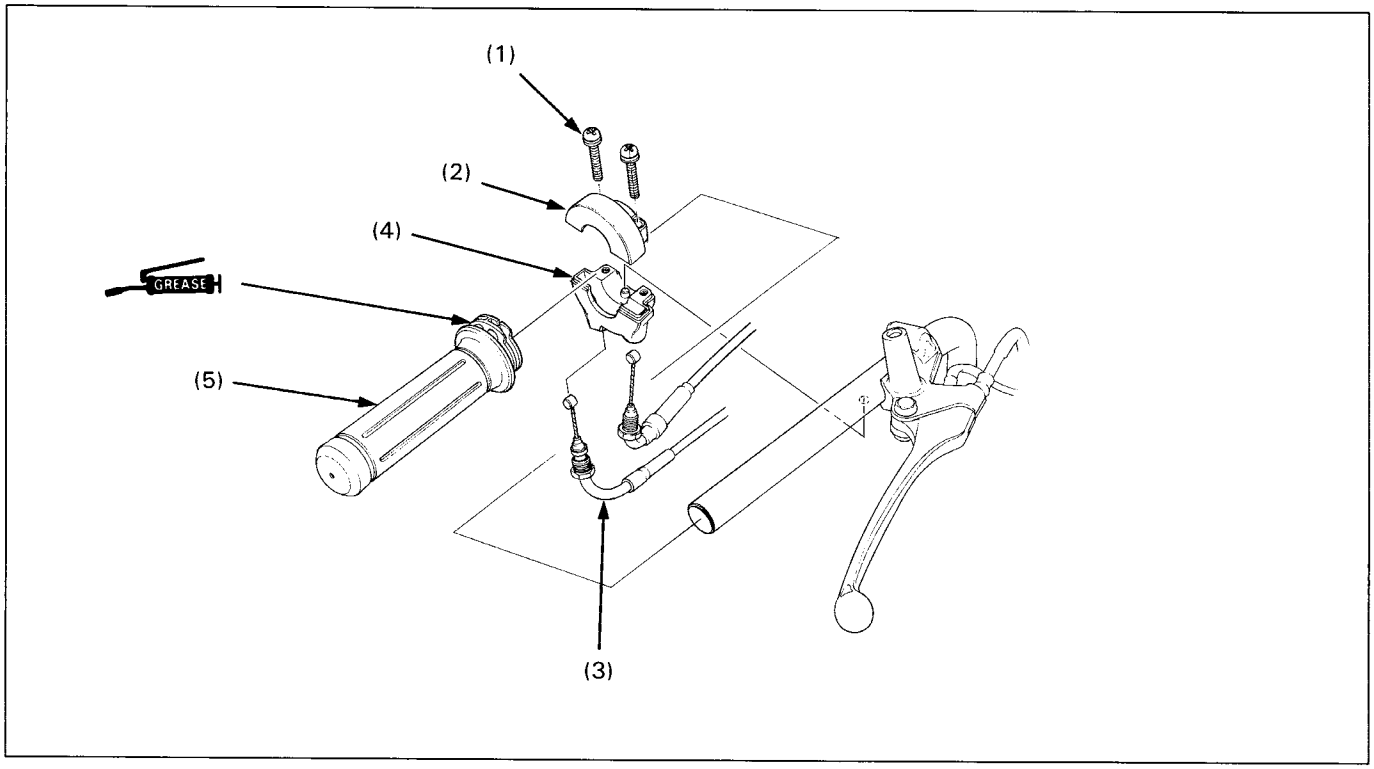
Wheel Turns Hard
- Brake misadjusted
- Worn wheel bearing
- Faulty speedometer gear box

Soft Suspension
- Weak fork springs

Hard Suspension
- Faulty front shock absorber

Front Suspension Noisy
- Fork pivot arm(s) binding
- Loose pivot arm fasteners

Throttle Housing Removal/Installation

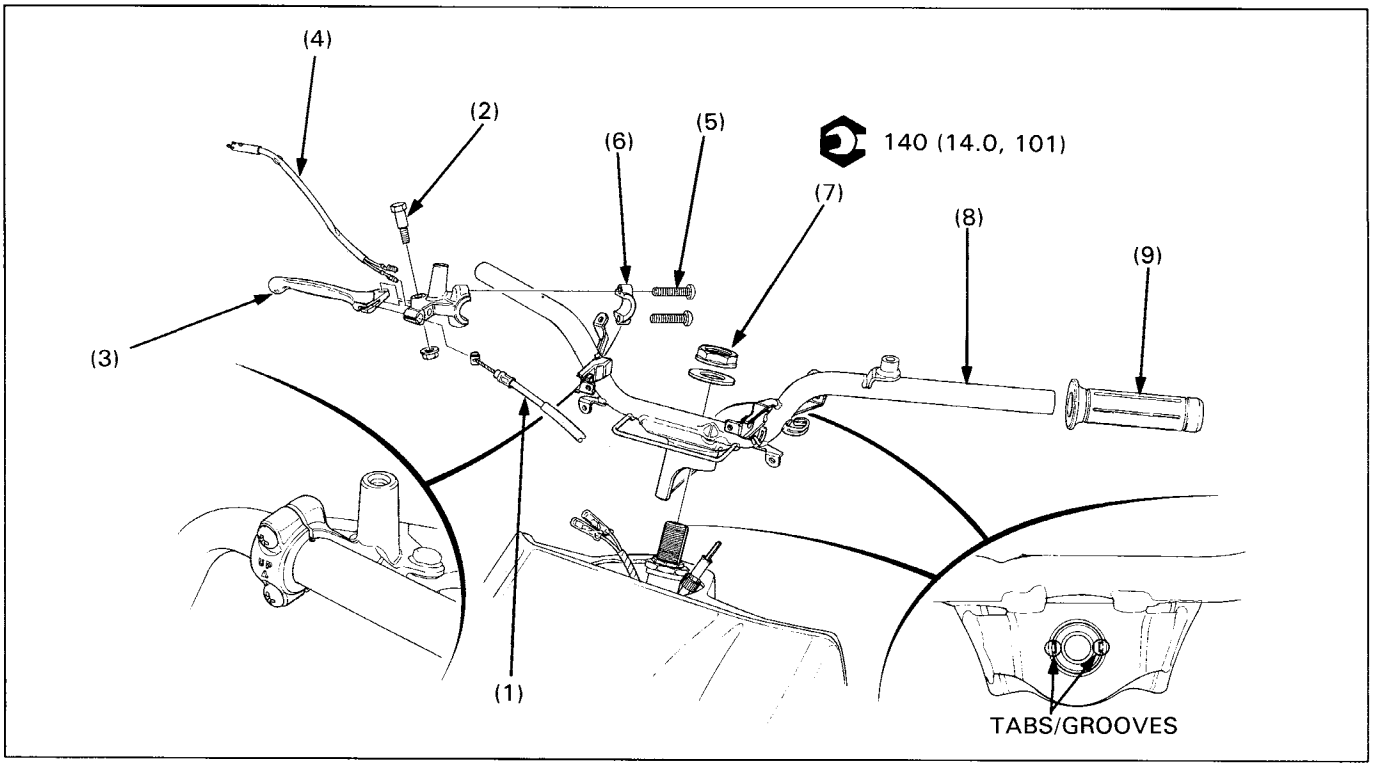


Requisite Service

- Handlebar cover removal/installation (Section 2)

	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Throttle housing holder screw	2	At installation, tighten the forward screw first, then the rear screw.
(2)	Throttle housing holder	1	
(3)	Throttle cable	2	
(4)	Throttle housing	1	At installation, align the pin with the hole in the handlebar.
(5)	Throttle grip	1	

Handlebar Removal/Installation



⚠WARNING

- **A kinked or pinched brake cable can cause a loss of braking ability.**

CAUTION

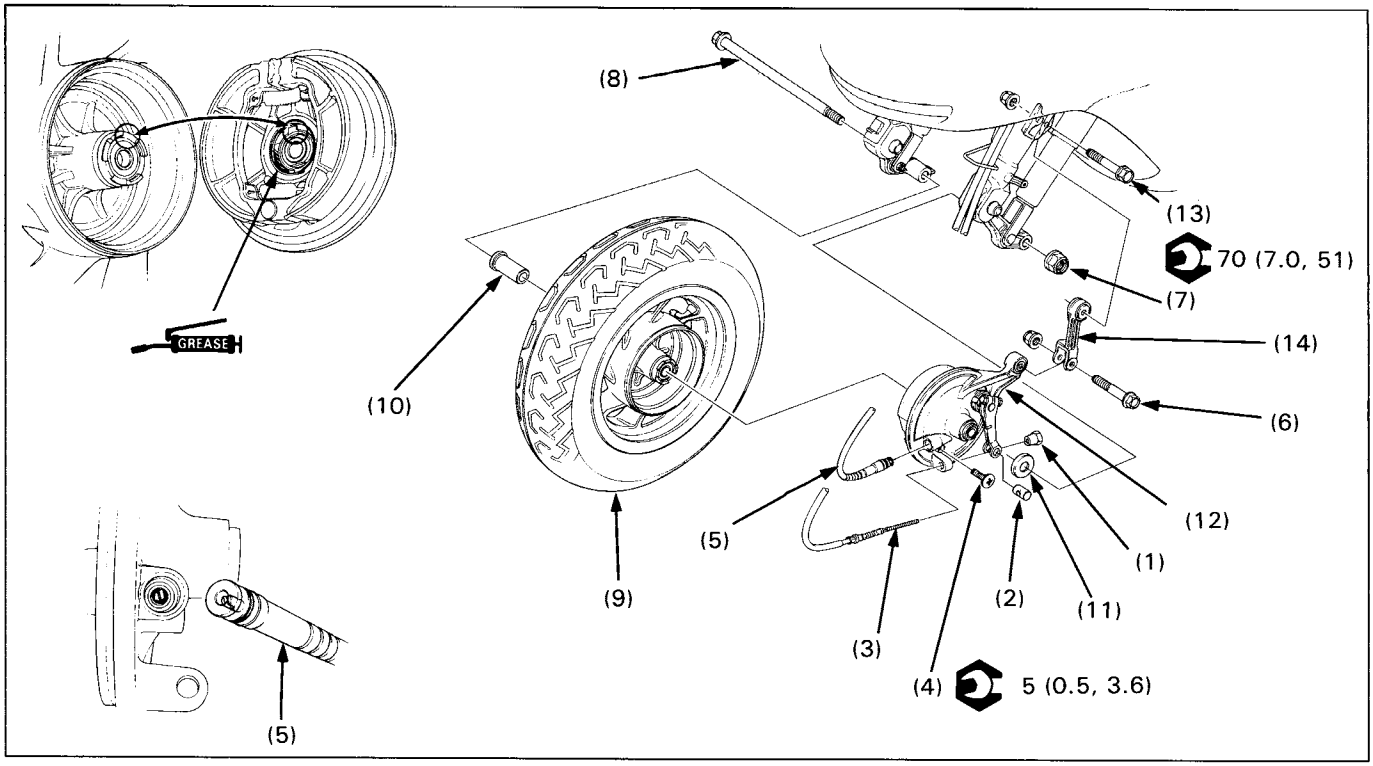
- **Improper routing may damage the brake cable.**

Requisite Service

- Handlebar cover removal/installation (Section 2)
- Throttle housing removal/installation (page 11-2)

	Procedure	Q'ty	Installation Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Brake cable	1	
(2)	Brake lever pivot bolt/nut	1/1	
(3)	Brake lever	1	
(4)	Brake light switch wire	1	
(5)	Brake lever holder screw	2	Tighten the upper screw first, then the lower screw.
(6)	Brake lever holder	1	Install by aligning the punch mark with the slit in the bracket and "UP" mark facing up.
(7)	Steering stem nut/washer	1/1	
(8)	Handlebar	1	Install by aligning the tabs of the handlebar with the grooves in the steering stem.
(9)	Grip	1	Apply Honda Bond A or Honda Hand Grip Cement (U.S.A. only) to the inside surface of the grip and to the clean surface of the left handlebar. Wait 3—6 minutes and install the grip.

Front Wheel Removal/Installation



⚠WARNING

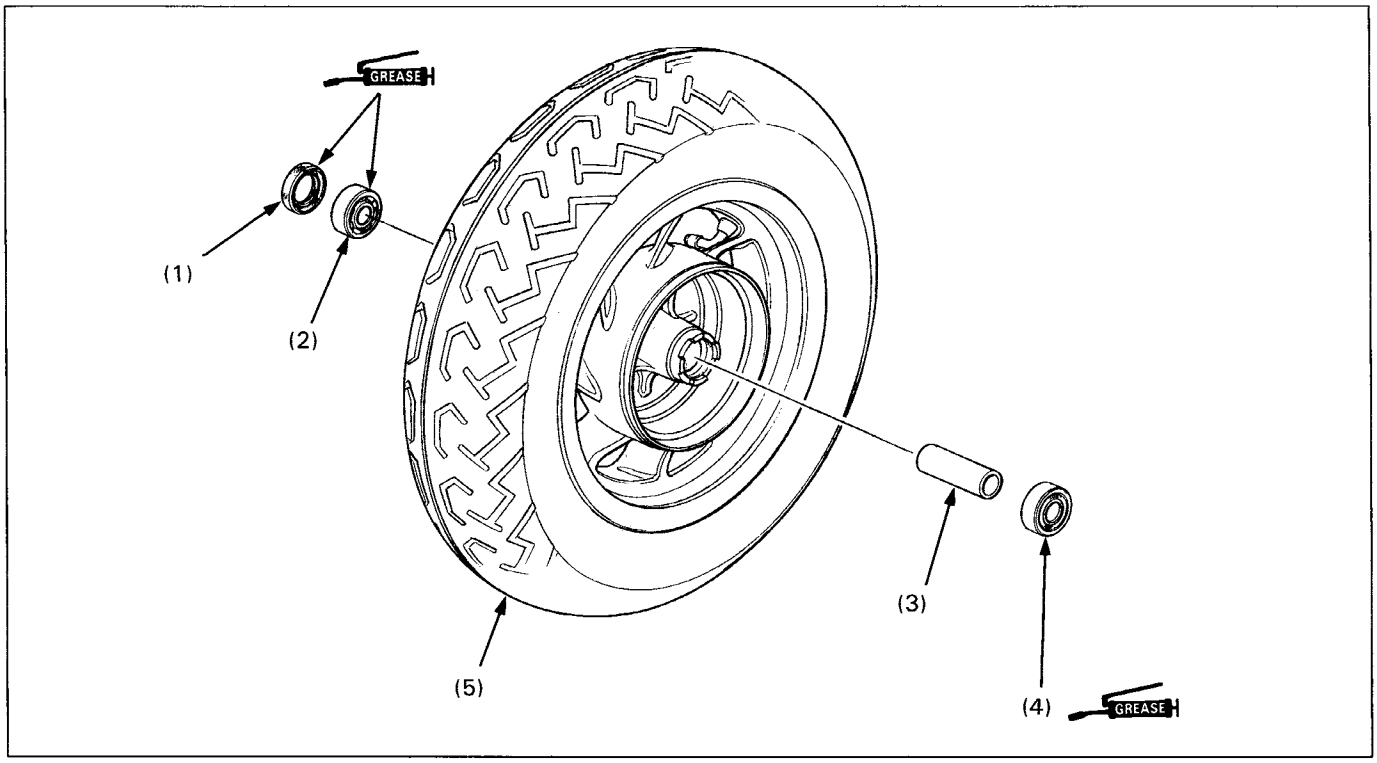
- **Contaminated brake linings reduce stopping power. Keep grease off the linings and brake drum inner surface.**

Requisite Service

- Support the scooter securely with a jack or other support under the engine.

	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Front brake adjusting nut	1	After installing, adjust the brake lever free play.
(2)	Joint pin	1	
(3)	Front brake cable	1	
(4)	Speedometer cable set screw	1	
(5)	Speedometer cable	1	At installation, align the cable slot with the groove of the gear box.
(6)	Brake torque link bolt/nut	1/1	
(7)	Front axle nut	1	
(8)	Front axle shaft	1	
(9)	Front wheel	1	Disassembly/assembly (page 11-5).
(10)	Side collar	1	
(11)	Dust seal	1	
(12)	Brake panel	1	At installation, align the tabs on the speedometer drive gear with the grooves in the hub.
(13)	Brake torque link mounting bolt/nut	1/1	
(14)	Brake torque link	1	

Front Wheel Disassembly/Assembly

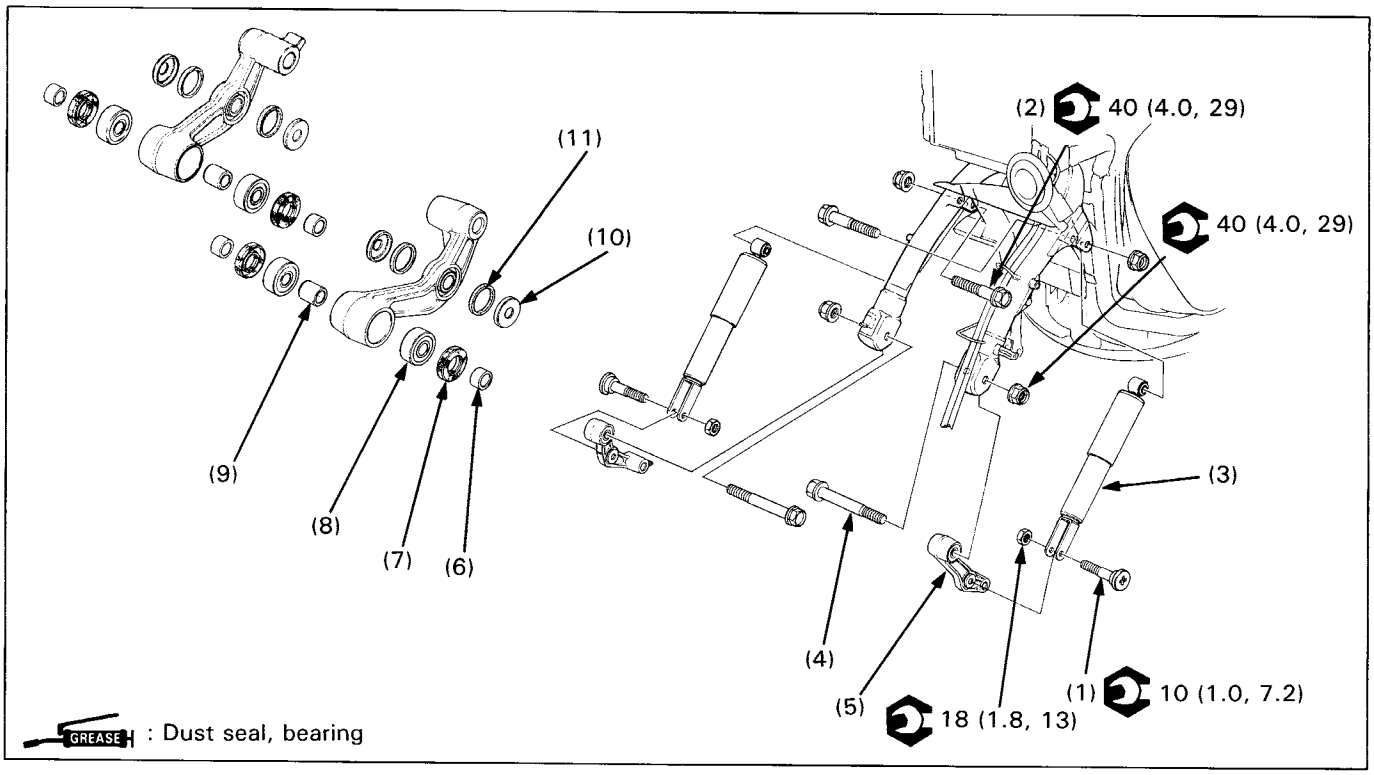


Requisite Service

- Front wheel removal/installation (page 11-4)

	Procedure	Q'ty	Installation Remarks
	Disassembly Order		• Assembly is the reverse order of disassembly.
(1)	Right dust seal	1	Apply grease to the dust seal lips and install them with the lip side facing inside.
(2)	Right wheel bearing (6201U)	1	If the bearings are removed, they must be replaced with new ones. See section 1 of the Common Service Manual.
(3)	Wheel distance collar	1	
(4)	Left wheel bearing (6201U)	1	
(5)	Front wheel/tire	1/1	

Front Shock Absorber Removal/Installation

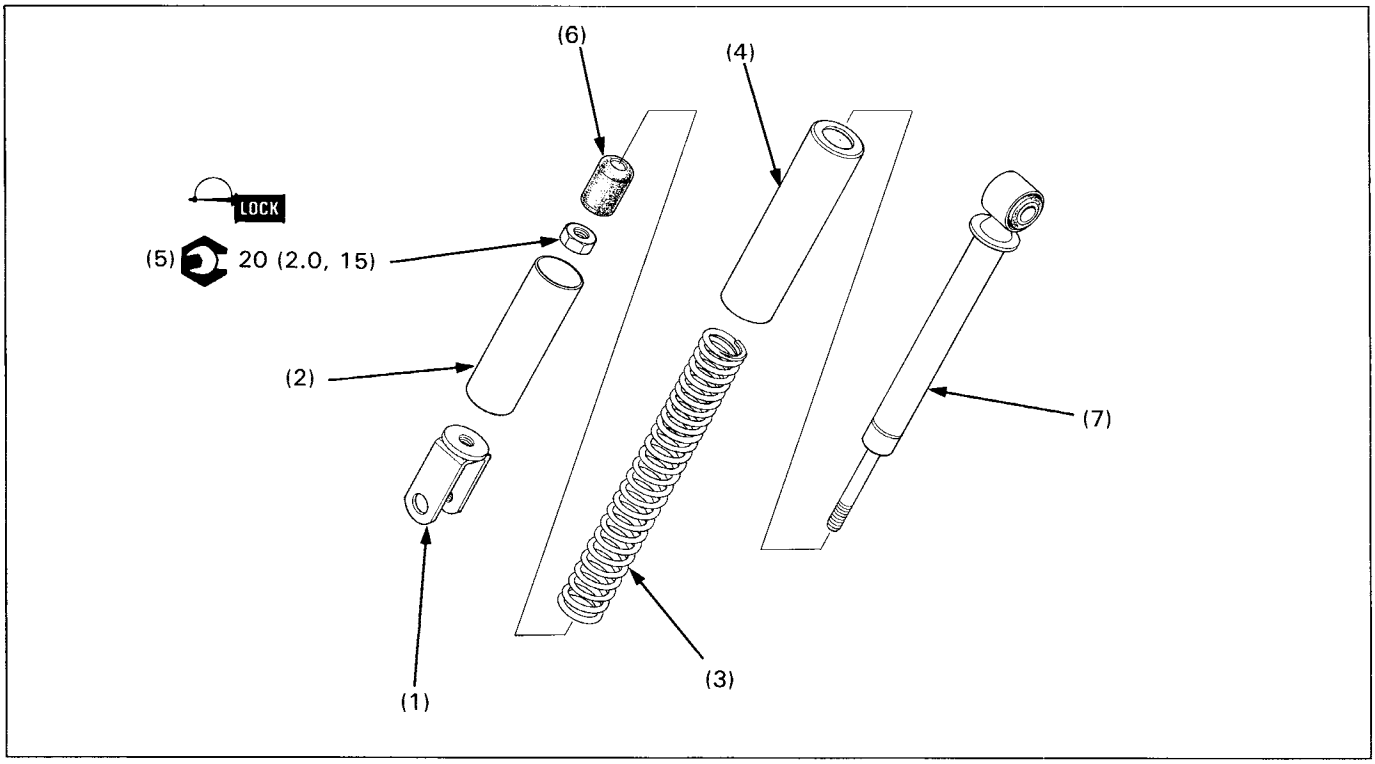


Requisite Service

- Front upper cover, inner fender, fork cover removal (Section 2)
- Front wheel removal (page 11-4)

	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Shock absorber lower mounting nut/screw	1/1	
(2)	Shock absorber upper mounting bolt	1	
(3)	Front shock absorber	1	
(4)	Pivot arm mounting nut/bolt	1/1	
(5)	Pivot arm	1	
(6)	Pivot arm collar A	4	
(7)	Dust seal	4	
(8)	Ball bearing (6000Z)	4	
(9)	Pivot arm collar B	2	
(10)	Front cushion under cap	4	
(11)	Front cushion under dust seal	4	

Front Shock Absorber Disassembly/Assembly



Requisite Service

- Front shock absorber removal/installation (page 11-6)

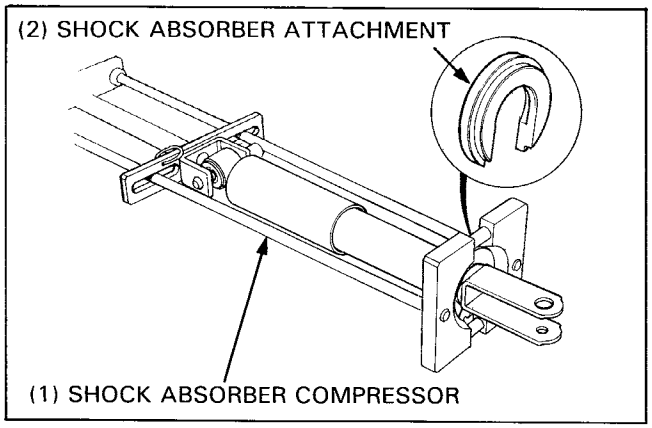
	Procedure	Q'ty	Remarks
	Disassembly Order		• Assembly is the reverse order of disassembly.
(1)	Shock absorber lower joint	1	Removal (page 11-8).
(2)	Spring lower cover	1	
(3)	Shock absorber spring	1	At installation, install it with the taper end facing upward.
(4)	Spring upper cover	1	
(5)	Damper lock nut	1	At installation, clean and apply a locking agent to the threads of the damper rod.
(6)	Bump rubber	1	
(7)	Damper	1	

Shock Absorber Lower Joint Removal

Assemble the shock absorber compressor and attachment on the shock absorber as shown.

S. TOOL

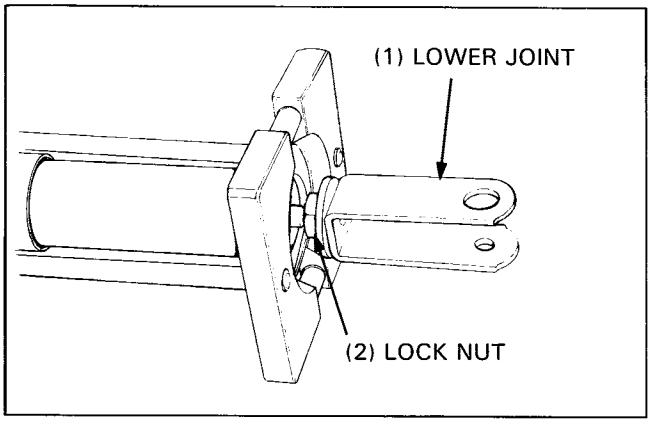
Shock absorber compressor 07GME–0010000
Cushion compressor attachment 07JME–KW40100



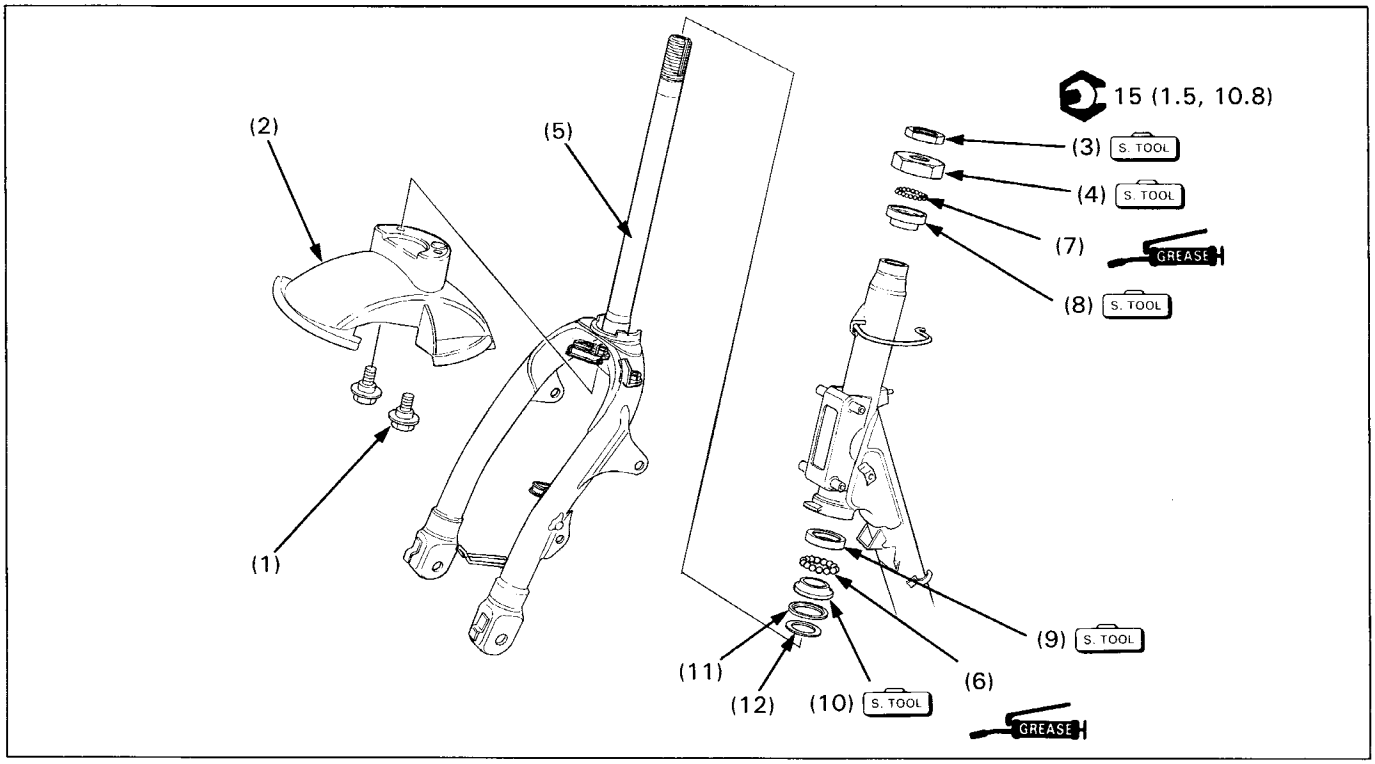
Compress the front shock absorber spring and loosen the lower joint lock nut, then remove the lower joint.
Disassemble the front shock absorber.

Assemble the front shock absorber in the reverse order of disassembly and tighten the lock nut.

Torque: 20 N·m (2.0 kg-m, 15 ft-lb)



Steering Stem Removal/Installation



NOTE

- Always replace bearings and races as a set.

Requisite Service

- Front inner fender A, B removal/installation (Section 2)
- Shock absorber removal/installation (page 11-6)
- Front wheel removal/installation (page 11-4)
- Handlebar removal/installation (page 11-3)

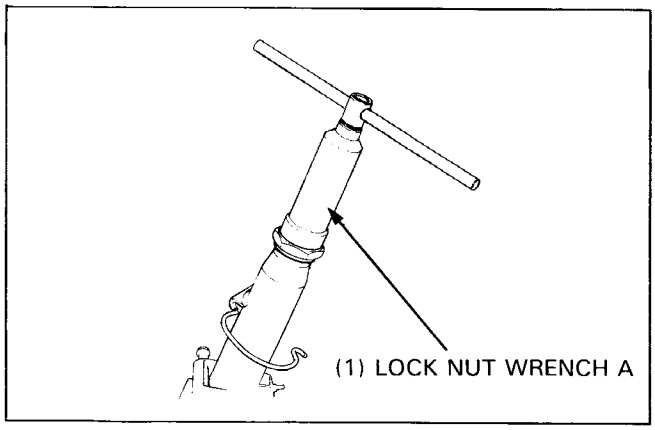
	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Front fender mounting bolt	2	
(2)	Front fender	1	
(3)	Steering stem lock nut	1	Removal/installation (page 11-10).
(4)	Top cone race	1	
(5)	Steering stem	1	Do not loose the upper and lower steel balls.
(6)	Lower steel balls (No. 8)	19	Large size diameter.
(7)	Upper steel balls (No. 5)	26	Small size diameter.
(8)	Top ball race	1	Removal/installation (page 11-10).
(9)	Bottom ball race	1	
(10)	Bottom cone race	1	
(11)	Dust seal	1	
(12)	Washer	1	

Steering Stem Removal/Installation

Remove the steering stem lock nut using the special tool.

S. TOOL
Lock nut wrench A **07916—KM10000**

Remove the top cone race and remove the steering stem.



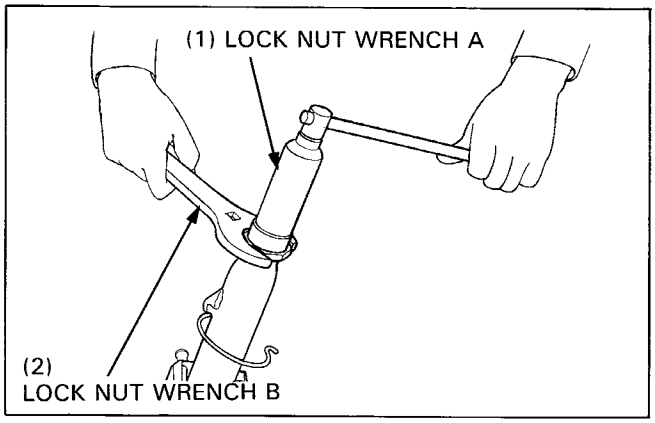
Apply grease to the top cone race and thread it on the stem until it is snug against the top ball race, then back it out 1/8 turn.

Turn the steering stem lock-to-lock 4—5 times to seat the bearing. Check that the steering stem rotates freely and that there is no vertical play.

Hold the top cone race and install and tighten the steering stem lock nut.

Torque: 15 N·m (1.5 kg-m, 10.8 ft-lb)

S. TOOL
Lock nut wrench A **07916—KM10000**
Lock nut wrench B **07916—1870101**



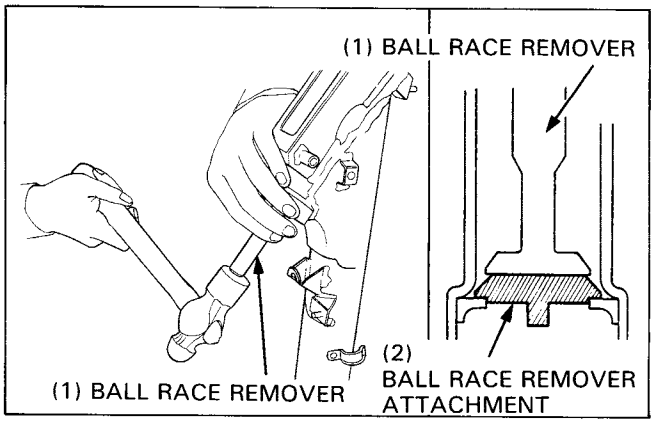
Ball Race Replacement

Drive out the top ball race using the ball race remover.

S. TOOL
Ball race remover **07946—GA70000**

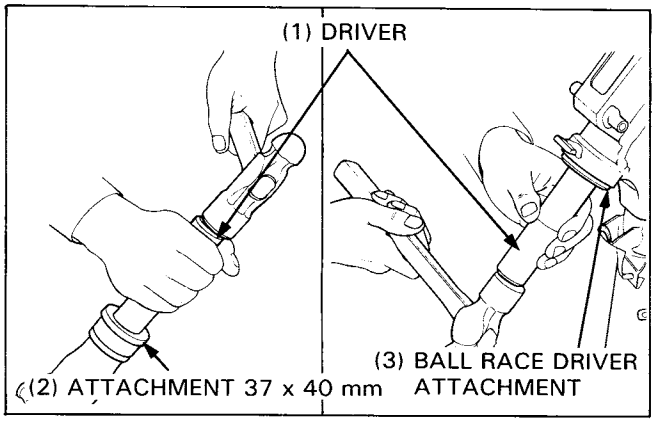
Drive out the bottom ball race using the ball race remover and attachment as shown.

S. TOOL
Ball race remover **07946—GA70000**
Ball race remover attachment **07953—KM10100**



Drive a new top and bottom ball race into the steering head using the driver and attachment.

S. TOOL
Driver **07749—0010000 or**
07949—3710000
(Top ball race)
Attachment, 37 x 40 mm **07746—0010200**
(Bottom ball race)
Ball race driver attachment **07945—3330300**



12. Rear Wheel/Suspension

Service Information

⚠ WARNING

- **Any attempt to mount automobile tires on a motorcycle rim may cause the tire bead to separate from the rim with enough explosive force to cause serious injury or death.**

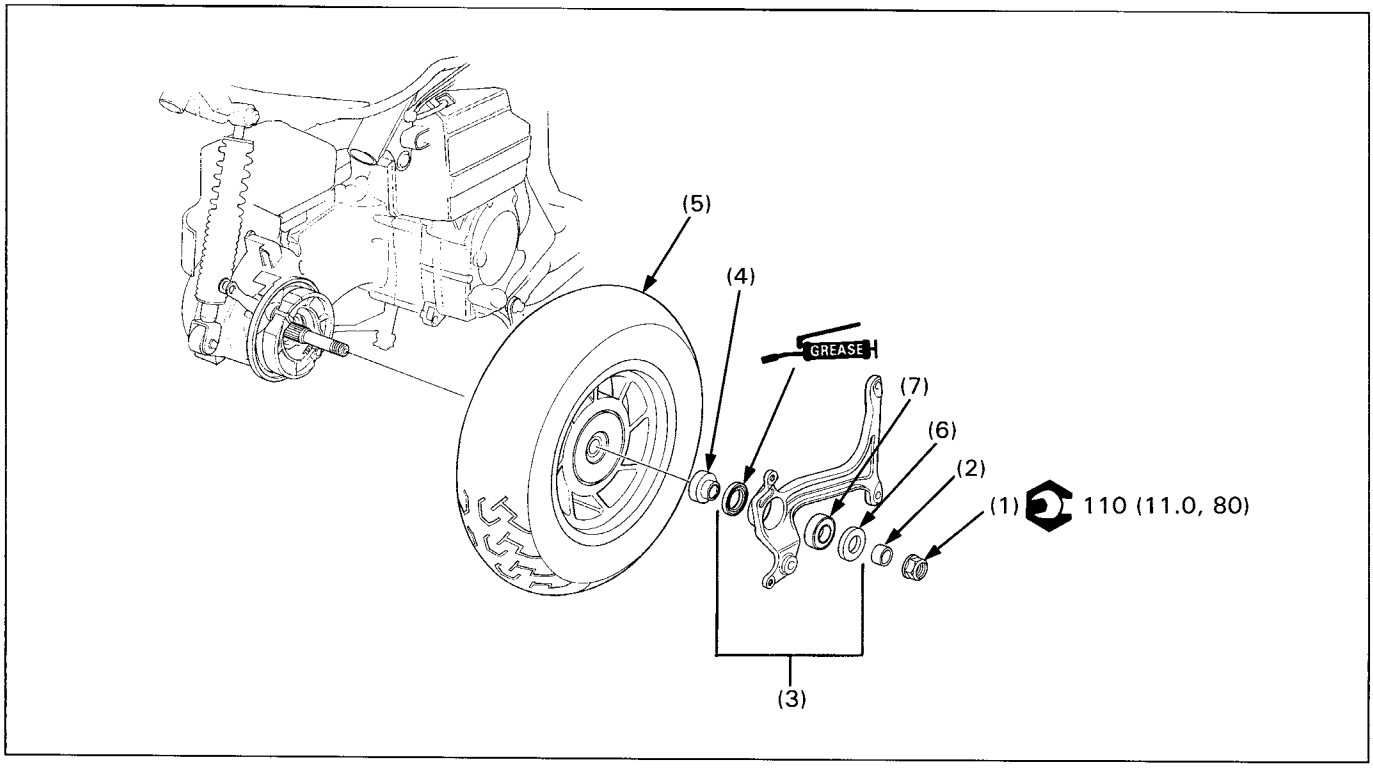
- When servicing the rear wheel, support the scooter securely with the center stand or other support under the engine.
- Refer to section 13 for brake system information.
- Use only tires marked "TUBELESS" and tubeless valves on rims marked "TUBELESS TIRE APPLICABLE". Refer to section 16 of the Common Service Manual for tubeless tire removal, repair, and remounting procedures.

Troubleshooting

Soft Suspension
- Weak shock springs
- Oil leakage from damper unit

Hard Suspension
- Incorrectly mounted suspension parts
- Bent damper rod

Swingarm/Rear Wheel Disassembly/Assembly



⚠ WARNING

- **Inhaled asbestos fibers have been found to cause respiratory disease and cancer. Never use an air hose or dry brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner or alternate method approved by OSHA designed to minimize the hazard caused by airbone asbestos fibers.**

NOTE

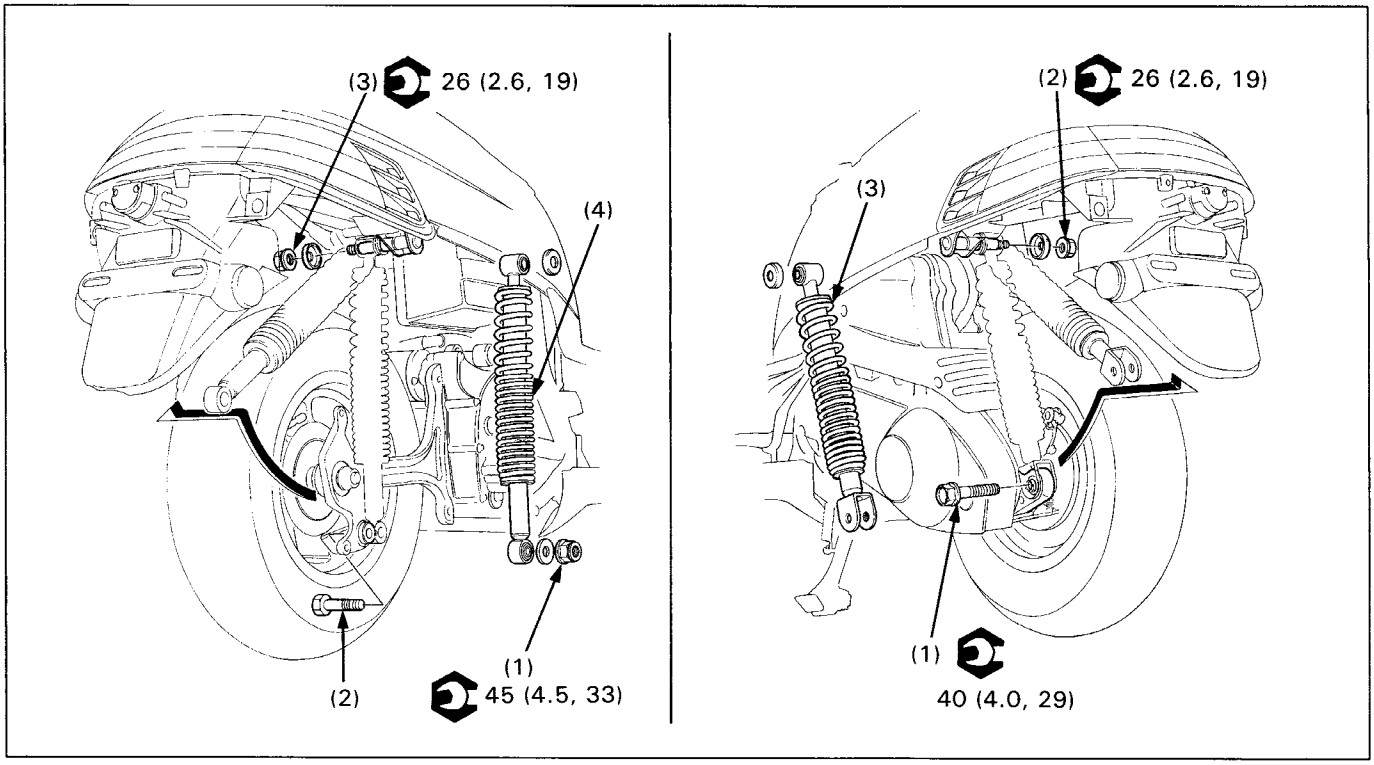
- It is not necessary to remove the exhaust pipe.

Requisite Service

- Right rear shock absorber removal/installation (page 12-3)
- Muffler removal/installation (page 2-9)

	Procedure	Q'ty	Remarks
	Disassembly Order		• Assembly is the reverse order of disassembly.
(1)	Rear axle nut	1	
(2)	Collar B	1	
(3)	Swingarm	1	
(4)	Collar A	1	
(5)	Rear wheel	1	
(6)	Dust seal	2	
(7)	Bearing (6303UU)	1	At installation, install the new bearing with the sealed side facing out.

Rear Shock Absorber Removal/Installation



NOTE

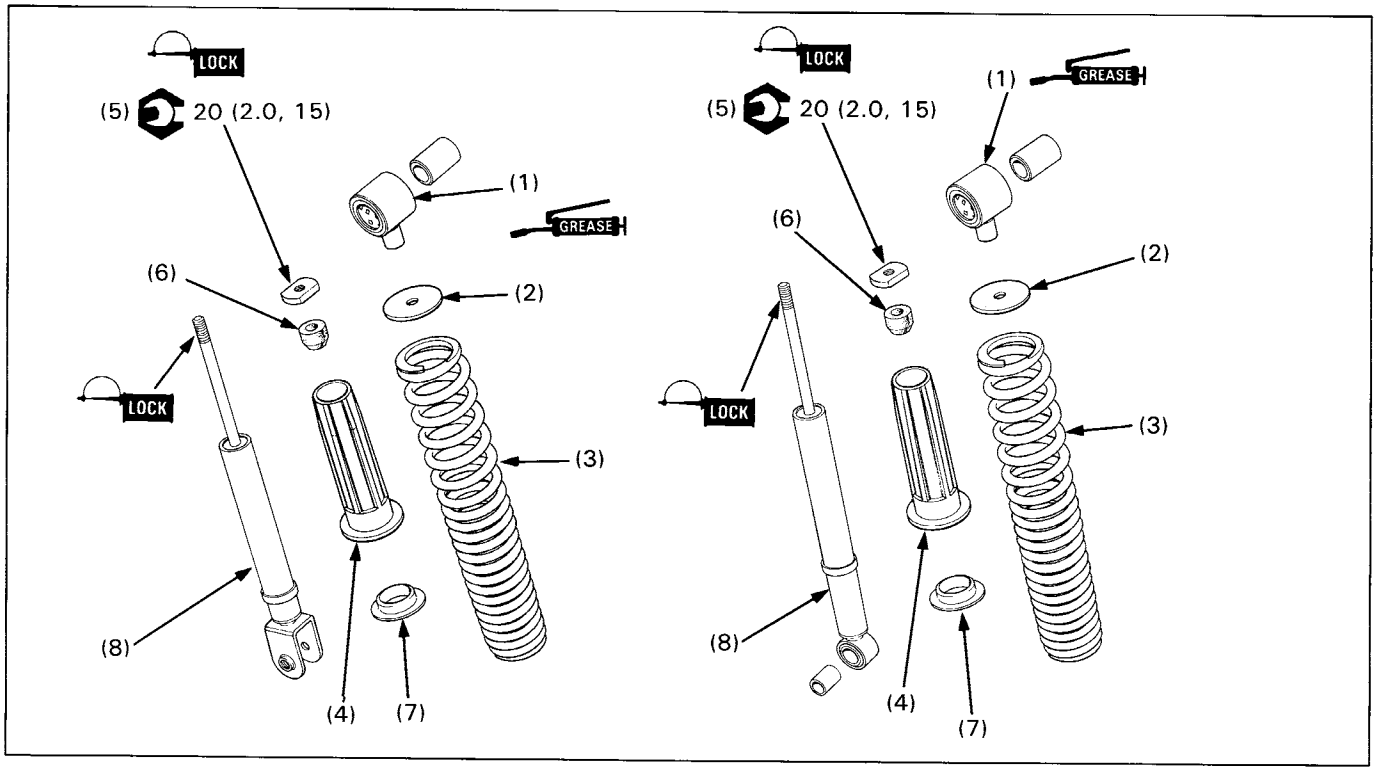
- It is not necessary to remove the exhaust pipe.

Requisite Service

- Body protector cover removal/installation (Section 2)
- Muffler removal/installation (page 2-9)

	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
	(Right shock absorber)		
(1)	Lower mounting nut	1	
(2)	Lower mounting bolt	1	
(3)	Upper mounting nut/washer	1/2	When installing, place the larger I.D. washer on the upper mount first.
(4)	Right shock absorber	1	NOTE • Swing the shock absorber to rear and remove it as shown.
	(Left shock absorber)		
(1)	Lower mounting bolt	1	
(2)	Upper mounting nut/washer	1/2	When installing, put insert the larger I.D. washer into the frame first.
(3)	Left shock absorber	1	NOTE • Swing the shock absorber to rear and remove it as.

Shock Absorber Disassembly/Assembly



Requisite Service

- Shock absorber removal/installation (page 12-3)

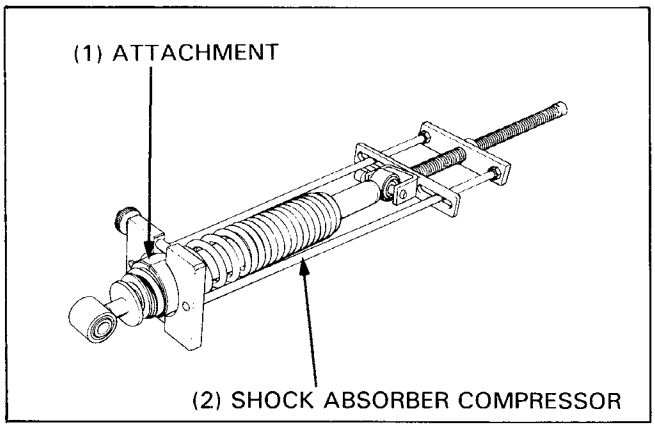
	Procedure	Q'ty	Remarks
	Disassembly Order		• Assembly is the reverse order of disassembly.
(1)	Shock absorber upper joint	1	Removal (see page 12-5).
(2)	Spring seat, A	1	
(3)	Shock absorber spring	1	At installation, install it with the taper end facing upward.
(4)	Spring guide	1	
(5)	Damper lock nut	1	
(6)	Bump rubber	1	
(7)	Spring seat, B	1	
(8)	Damper	1	Do not disassemble.

Upper Joint Removal/Installation

Assemble the shock absorber compressor and attachment to the shock absorber as shown.

S. TOOL

Shock absorber compressor 07GME—0010000
Spring compressor attachment 07967—VM50100



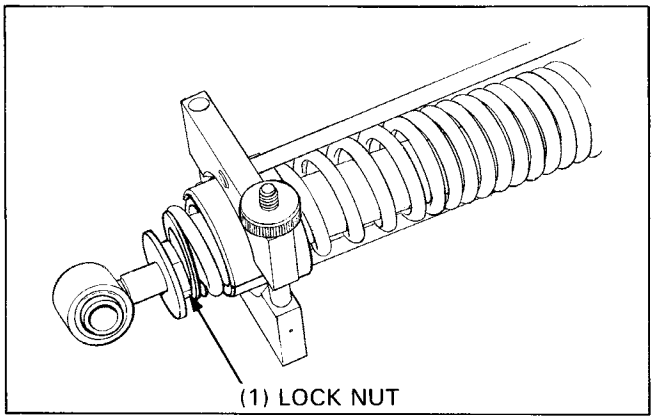
Compress the rear shock absorber spring and loosen the upper joint lock nut, then remove the upper joint.
Disassemble the rear shock absorber.

Assemble the rear shock absorber in the reverse order of removal and tighten the lock nut.

NOTE

- Clean and apply a locking agent to the threads of the damper rod and screw the nut.

Torque: 20 N·m (2.0 kg-m, 15 ft-lb)



13. Brake System

Service Information

⚠ WARNING

- **Inhaled asbestos fibers have been found to cause respiratory disease and cancer. Never use an air hose or dry brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner or alternate method approved by OSHA-designed to minimize the hazard caused by airbone asbestos fibers.**
- **Always reinstall the brake shoes in their original positions to prevent loss of braking efficiency.**
- **Grease on the brake linings will reduce stopping ability and may cause brake failure.**

- Always check the brake operation before riding the motorcycle.

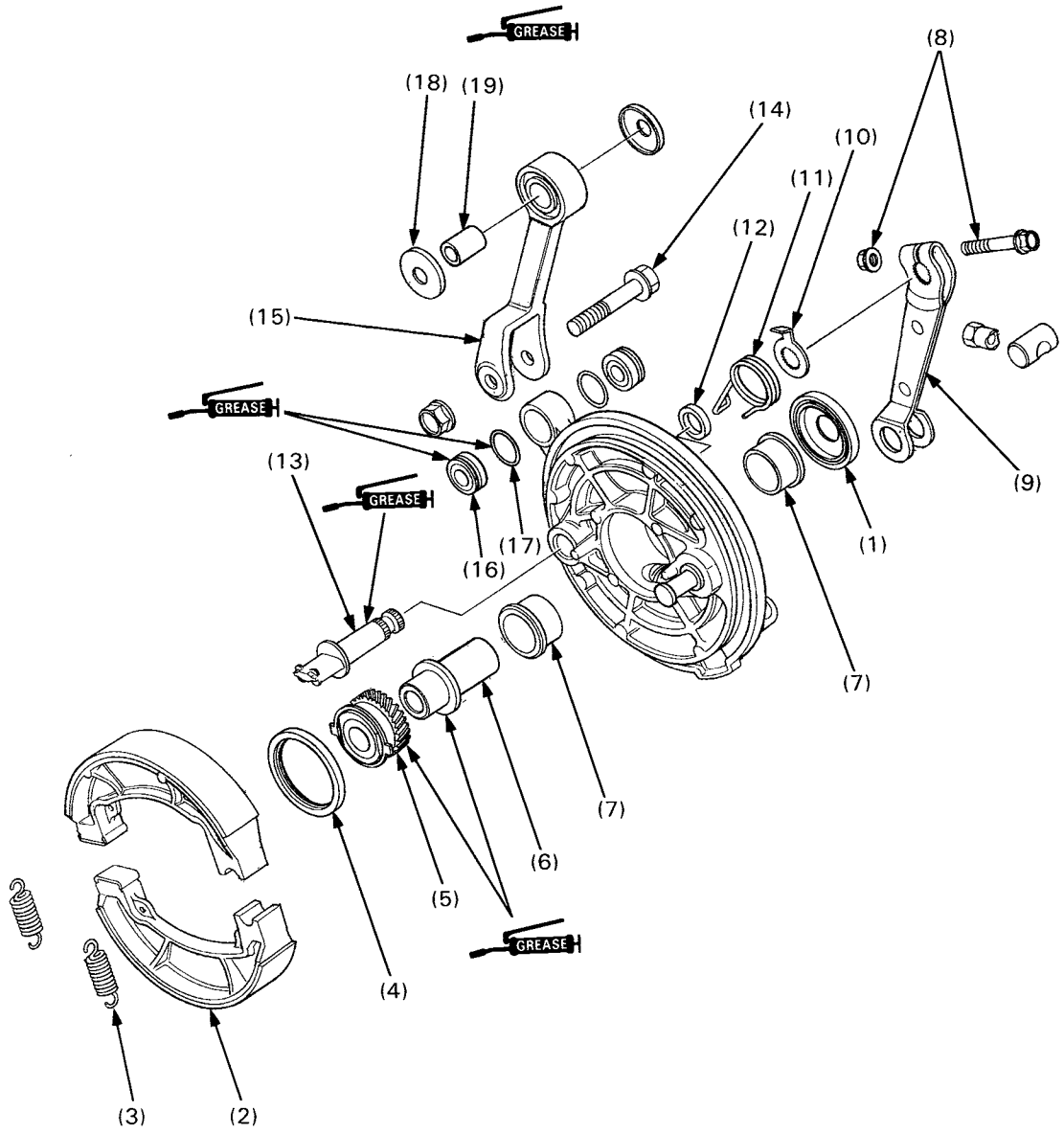
Troubleshooting

Poor Brake Performance
- Improper brake adjustment
- Worn brake linings
- Worn brake drum
- Worn brake cam
- Improperly installed brake linings
- Brake linkage needs lubrication
- Contaminated brake linings
- Contaminated brake drum
- Brake shoes worn at cam contact areas
- Improper engagement between brake arm and brake cam serrations
- Sticking brake cable

Brake Pedal Hard or Slow to Return
- Worn/broken return spring
- Improper brake adjustment
- Contaminated brake drum/linings
- Worn brake shoes at cam contact areas
- Brake linkage needs lubrication
- Worn brake cam
- Improperly installed brake linings
- Sticking brake cable

Brake Squeaks
- Worn brake linings
- Worn brake drum
- Contaminated brake linings
- Contaminated brake drum

Front Brake Disassembly/Assembly



⚠ WARNING

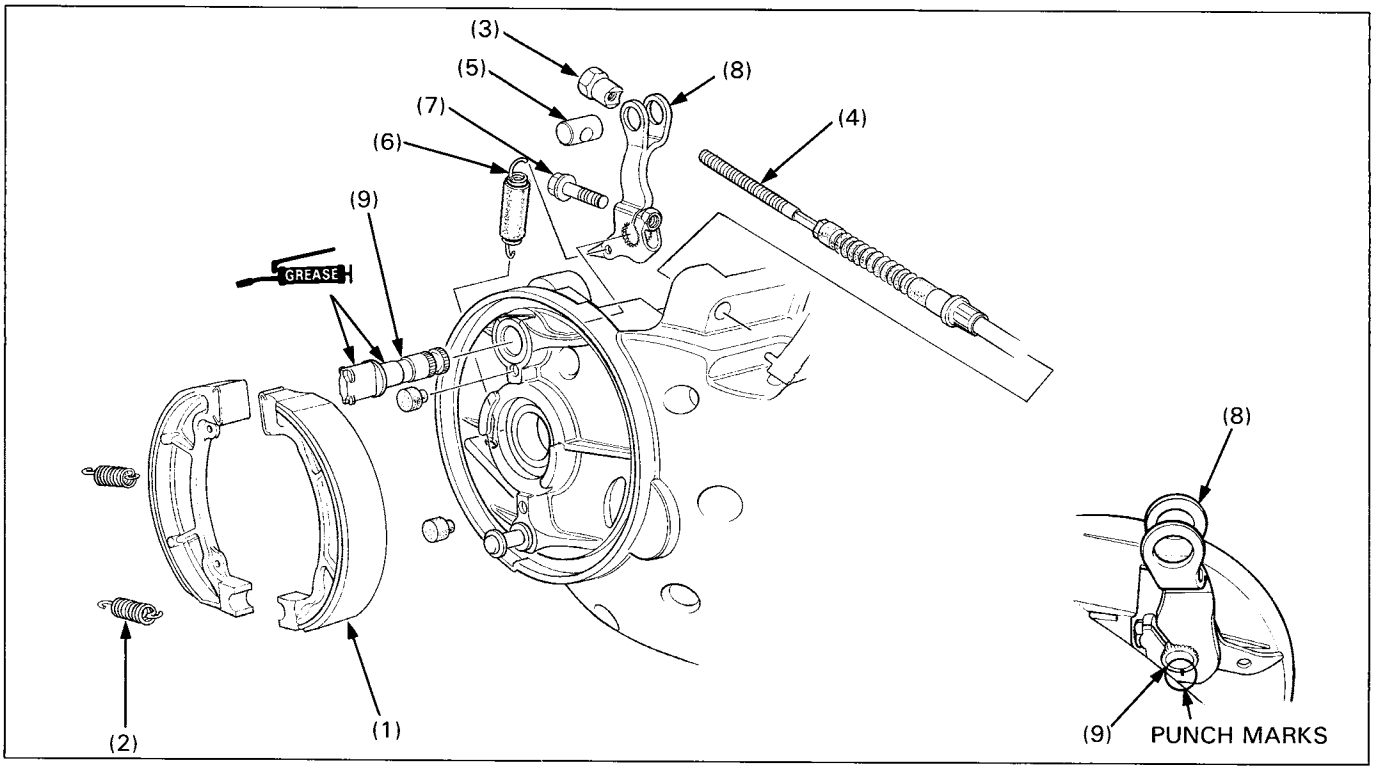
- **Inhaled asbestos fibers have been found to cause respiratory disease and cancer. Never use an air hose or dry brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner or alternate method approved by OSHA-designed to minimize the hazard caused by airbone asbestos fibers.**
- **Always reinstall the brake shoes in their original positions to prevent loss of braking efficiency.**
- **Grease on the brake linings will reduce stopping ability and may cause brake failure.**

Requisite Service

- Front wheel removal/installation (page 11-4)

	Procedure	Q'ty	Remarks
	Disassembly Order		• Assembly is the reverse order of disassembly.
(1)	Dust seal	1	
(2)	Brake shoe	2	
(3)	Brake shoe spring	2	
(4)	Oil seal	1	
(5)	Speedometer drive gear	1	
(6)	Brake panel collar A	1	
(7)	Brake panel bushing	2	
(8)	Brake arm bolt/nut	1/1	
(9)	Brake arm	1	Before removing, unhook the return spring from the arm. NOTE • Install by aligning the punch marks on the arm and brake cam.
(10)	Wear indicator	1	NOTE • Install by aligning the wide tooth on the plate with the groove in the cam.
(11)	Brake arm return spring	1	
(12)	Felt seal	1	
(13)	Brake cam	1	
(14)	Brake torque link bolt	1	
(15)	Brake torque link	1	
(16)	Brake panel bracket bushing	2	
(17)	O-ring	2	
(18)	Dust seal	2	
(19)	Torque link pivot collar	1	

Rear Brake Disassembly/Assembly



⚠WARNING

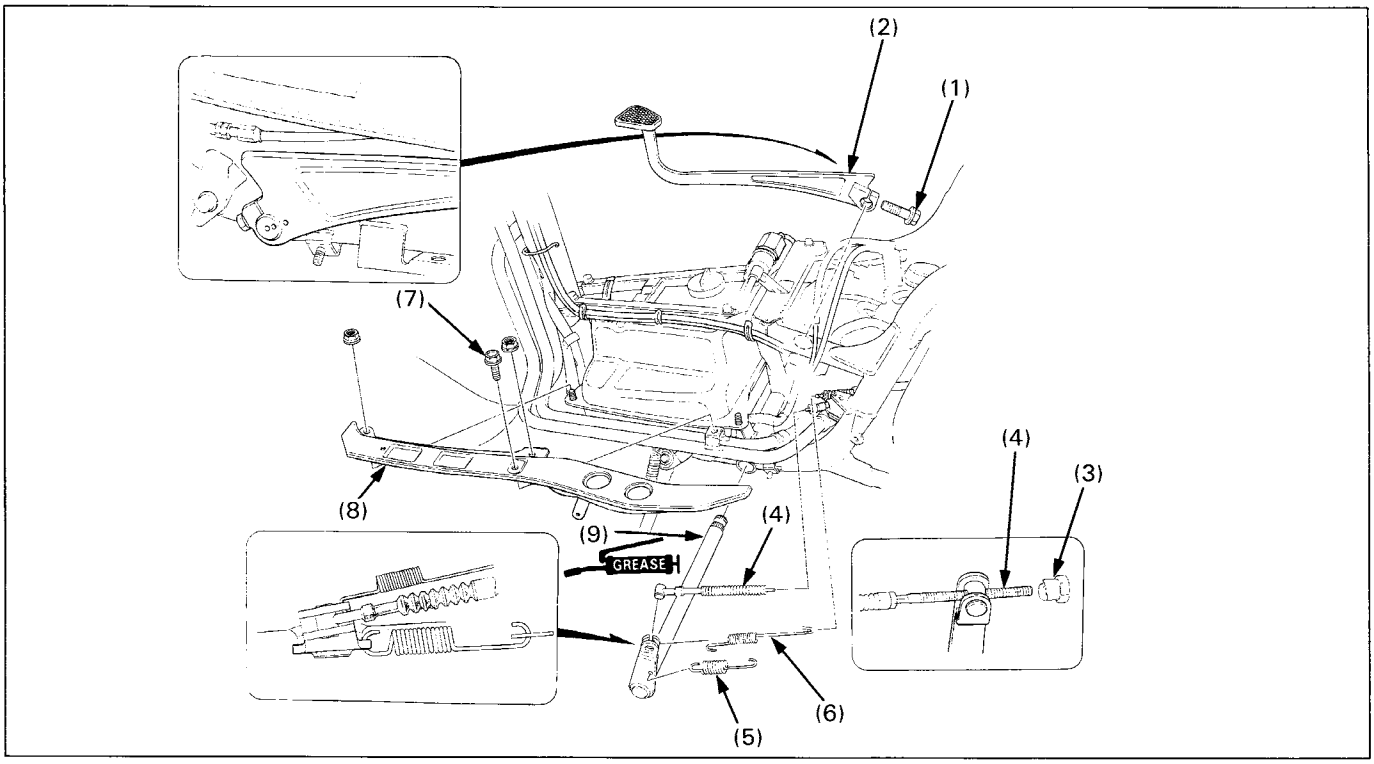
- **Inhaled asbestos fibers have been found to cause repiratory and cancer. Never use an air hose or dry brush to clean brake assemblies. Use an OSHA-vacuum cleaner or alternate method approved by OSHA-designed to minimize the hazard caused by airbone asbestos fibers.**
- **Keep grease off the brake linings. Wipe off excess grease.**

Requisite Service

- Rear wheel removal/installation (page 12-2)

	Procedure	Q'ty	Installation Remarks
	Disassembly Order		• Assembly is the reverse order of disassembly.
(1)	Brake shoe	2	
(2)	Brake shoe spring	2	
(3)	Brake adjusting nut	1	After installing, adjust the brake lever free play.
(4)	Brake rod	1	
(5)	Joint pin	1	
(6)	Brake arm return spring	1	
(7)	Brake arm bolt	1	
(8)	Brake arm	1	Install by aligning the punch marks on the arm and cam.
(9)	Brake cam	1	

Brake Pedal Removal/Installation

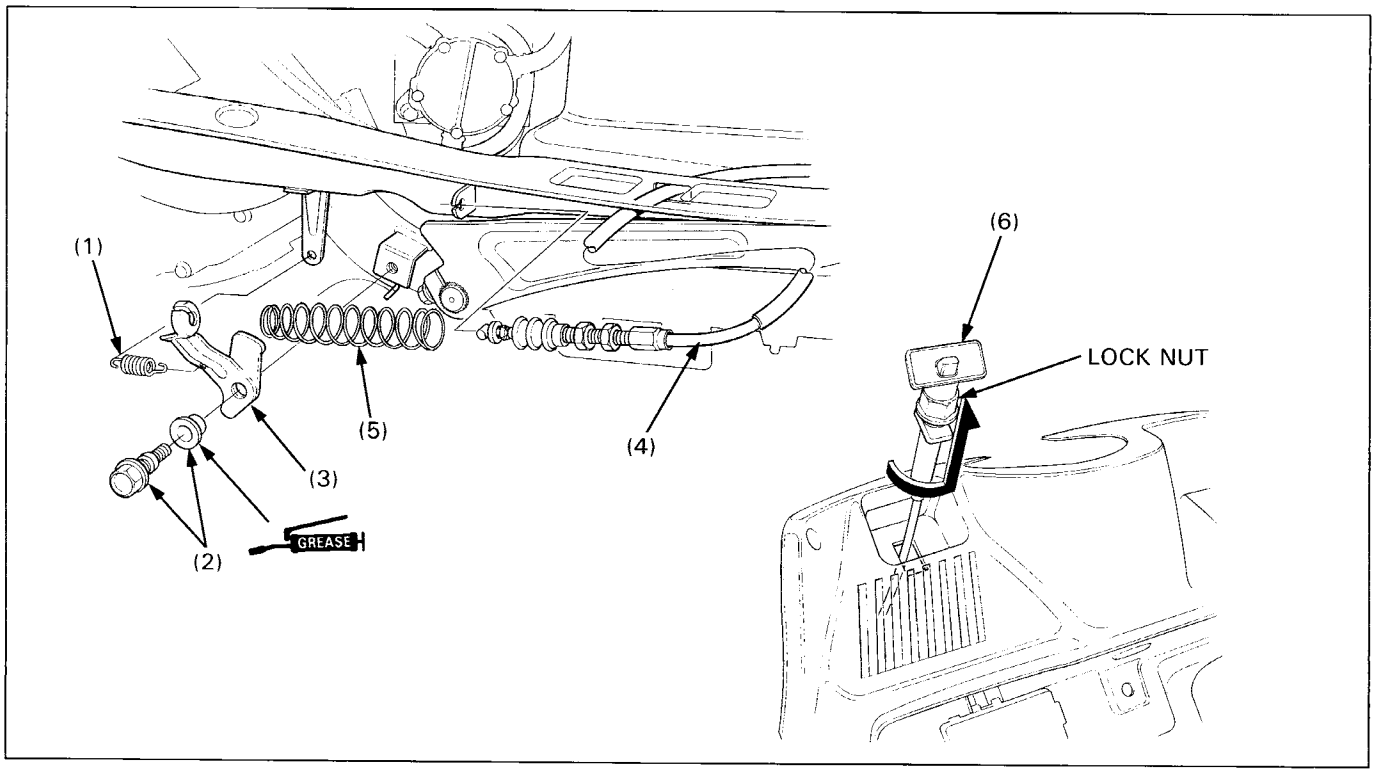


Requisite Service

- Body cover front inner box removal/installation (Section 2)

	Procedure	Q'ty	Remarks
	Removal		• Installation is the reverse order of removal.
(1)	Brake pedal pivot bolt	1	
(2)	Brake arm	1	At installation, align the punch mark with the punch mark on the spindle.
(3)	Brake pedal adjusting nut	1	After installation, adjust the brake pedal free play.
(4)	Brake cable	1	
(5)	Brake pedal return spring	1	At installation, hook them to the spindle as shown.
(6)	Brake light switch spring	1	
(7)	Left floor panel mounting bolt/nut	3	
(8)	Left floor panel	1	
(9)	Brake spindle	1	At installation, apply grease to the sliding surface.

Parking Brake Removal/Installation



Requisite Service

- Front inner box, floor panel removal/installation (Section 2)

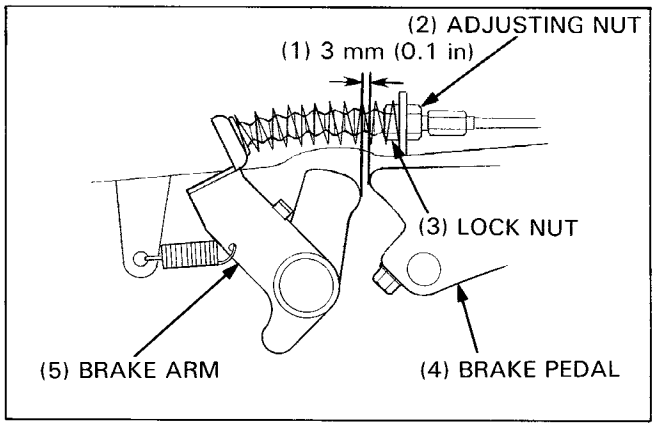
	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Parking brake arm return spring	1	• After installation, adjust the brake cable free play. Adjustment page 13-7.
(2)	Parking brake arm pivot bolt/collar	1/1	At installation, apply grease onto the collar.
(3)	Parking brake arm	1	
(4)	Parking brake cable	1	Pull the cable out through the floor panel.
(5)	Spring	1	
(6)	Parking brake knob	1	Loosen the lock nut and pull the knob out through the front inner box as shown.

Parking Brake Adjustment

Check the parking brake free play by measuring the clearance between the brake arm and brake pedal.

Free Play: 3 mm (0.1 in)

If necessary, loosen the lock nut and adjust the free play by turning the adjusting nut.
After adjustment, tighten the lock nut securely and recheck the parking brake for smooth operation.



14. Charging System/Alternator

Service Information

General

⚠WARNING

- **The battery gives off explosive gases; keep sparks, flames, and cigarettes away. Provide adequate ventilation when charging or using the battery in an enclosed space.**
- **The battery contains sulfuric acid (electrolyte). Contact with skin or eyes may cause severe burns. Wear protective clothing and a face shield.**
  - **— If electrolyte gets on your skin, flush with water.**
  - **— If electrolyte gets on your eyes, flush with water for at least 15 minutes and call a physician immediately.**
- **Electrolyte is poisonous. If swallowed, drink large quantities of water or milk and follow with milk of magnesia or vegetable oil and call a physician.**
- **KEEP OUT OF REACH OF CHILDREN.**

- Always turn off the ignition switch before disconnecting any electrical components.

CAUTION

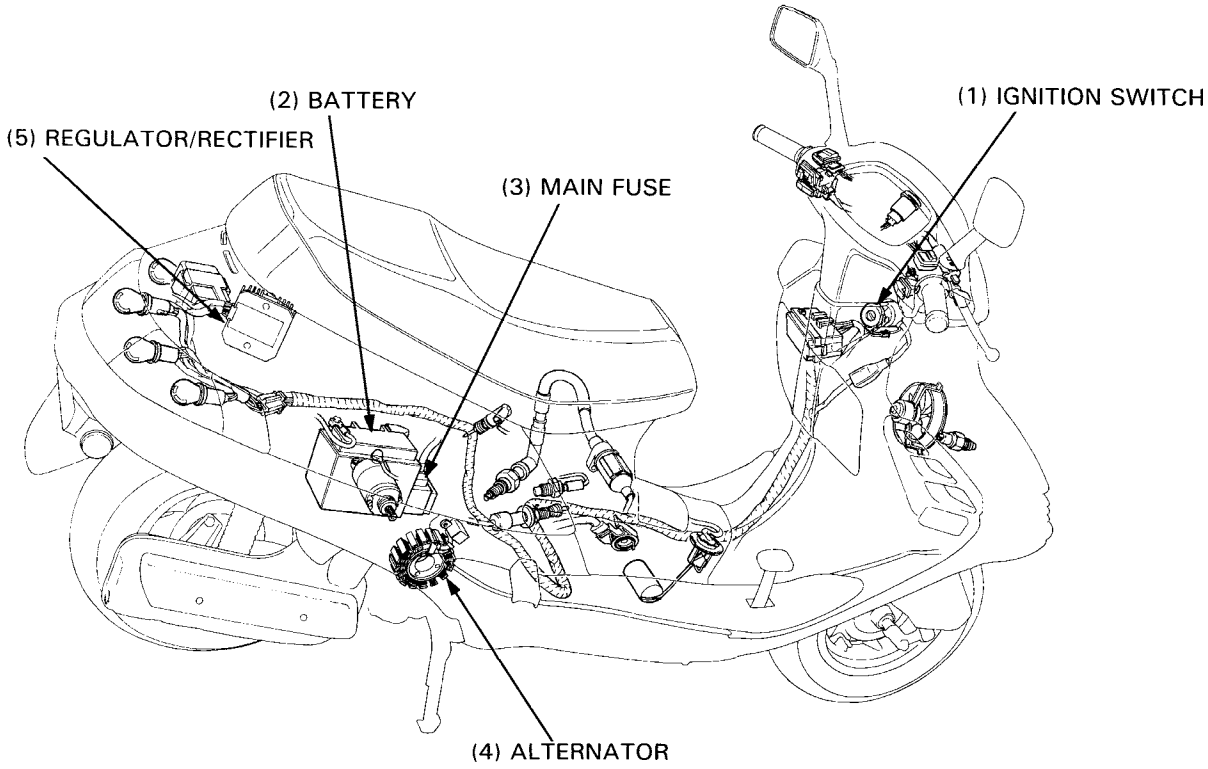
- **Some electrical components may be damaged if terminals or connectors are connected or disconnected while the ignition switch is ON and current is present.**
- **The battery on this scooter is a sealed type. Do not try to remove the filler hole caps even during charging. Do not use a non-sealed battery as a replacement.**

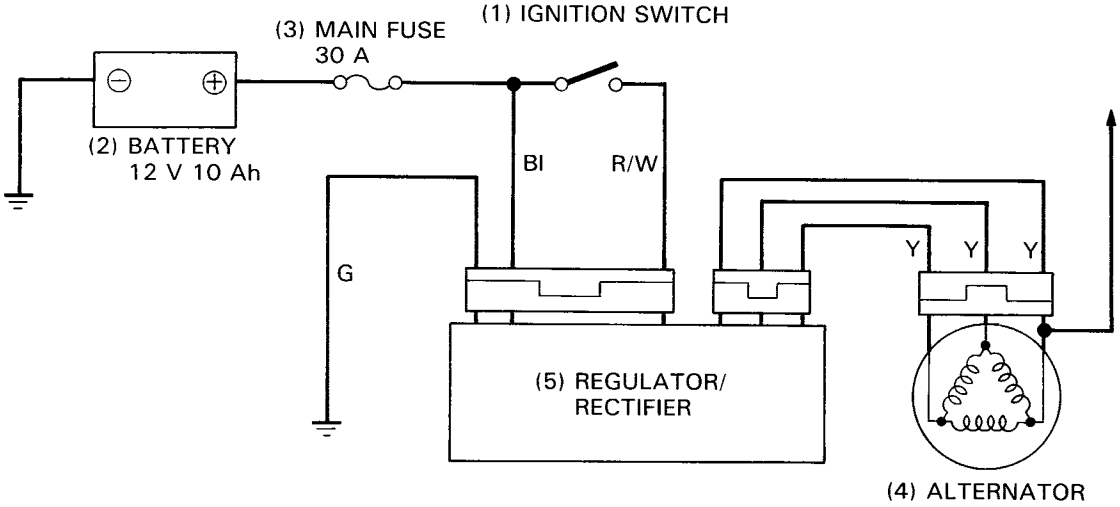
NOTE

- Refer to the instructions in the Operation Manual for the HONDA Battery Tester and Christie Battery Charger for detailed battery charging steps.
- The maintenance free battery must be replaced when it reaches the end of its service life.

- Quick charge a battery only in an emergency. Slow-charging is preferred.
- A battery can be damaged if overcharged or undercharged, or if left to discharge for long periods. These same conditions contribute to shortening the "life span" of the battery. Even under normal use, the performance of a battery deteriorates after 2—3 years.
- Battery voltage may recover after battery charging, but under heavy load, battery voltage will drop quickly and eventually die out. For this reason, the charging system often suspected to be the problem. Battery overcharge often results from problems in the battery itself, which may appear to be an overcharge symptom. If one of the battery cells is shorted and battery voltage does not increase, the regulator/rectifier supplies excess voltage to the battery. Under these conditions, the electrolyte level goes down quickly.
- Before troubleshooting the charging system, check for proper use and maintenance of the battery. Check if the battery is frequently under heavy load, such as having the headlight and taillight ON for long periods of time without riding the scooter.
- The battery will self-discharge when the scooter is not in use. For this reason, charge the battery every two weeks to prevent sulfation from forming.
- Filling a new battery with electrolyte will produce some voltage, but in order to achieve its maximum performance, always charge the battery. Also, the battery life is lengthened when it is initial-charged.
- When checking the charging system, always follow the steps in the troubleshooting flow chart (page 14-3).
- For battery testing/charging, refer to section 22 of Common Service Manual.
- For charging system location, see page 14-2.

System Location





Bl: Black
G: Green
R: Red
W: White
Y: Yellow

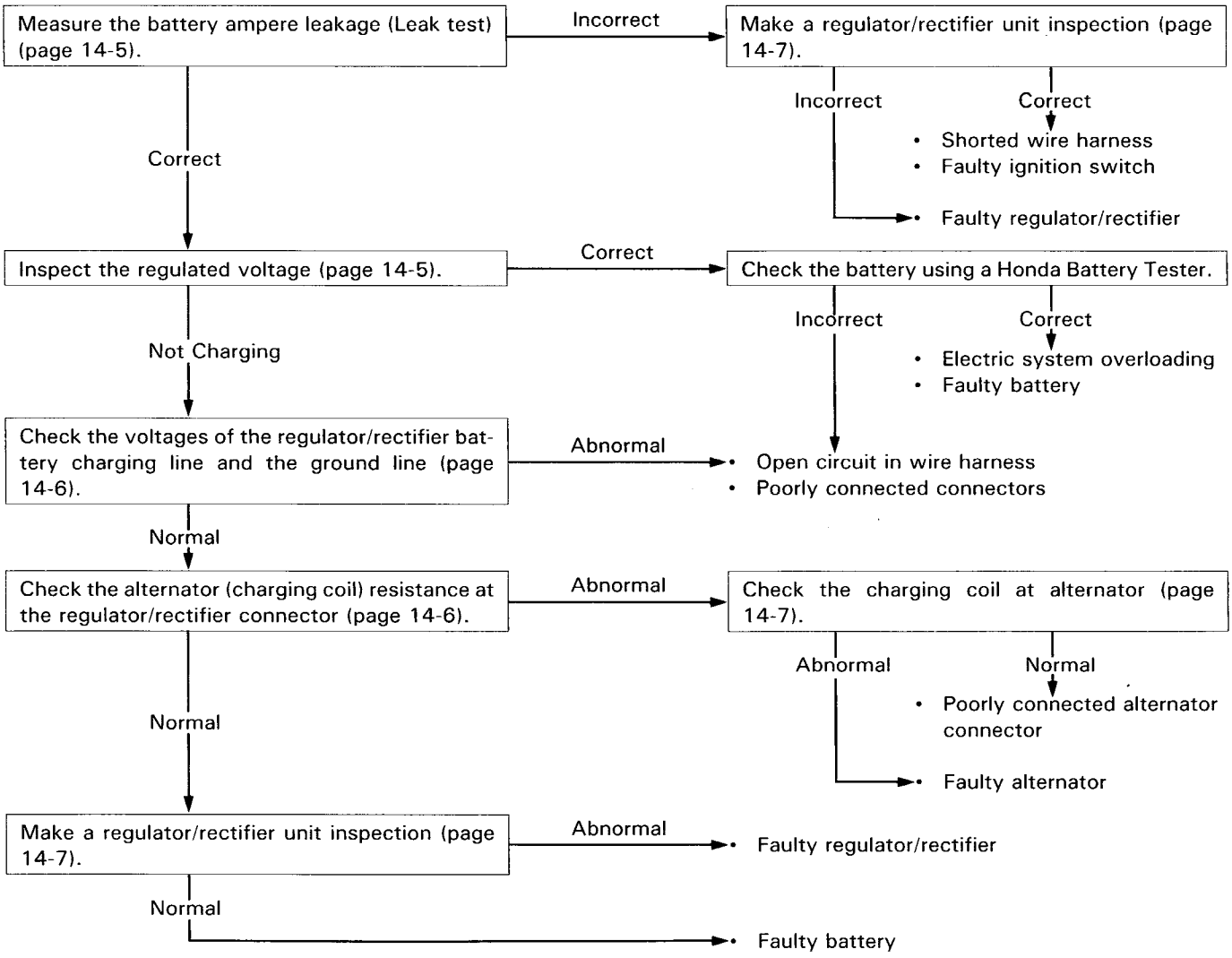
Troubleshooting

Battery Overcharging:

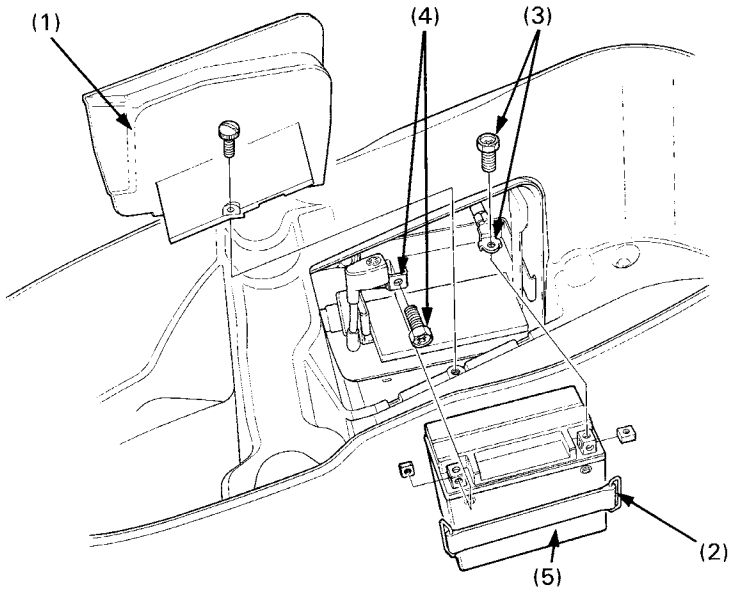
- Check if battery voltage is measured at voltage feedback line (Black wire).
- Check the voltage feedback line for a loose connection at the regulator/rectifier connector.

If voltage is present and the connection is good, replace the regulator/rectifier with a new one.

Battery Undercharging



Battery Removal/Installation



⚠WARNING

- **With the ignition switch OFF, remove the negative (−) cable at the battery first, then remove the positive (+) cable.**

Requisite Service

- Open the seat

	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Battery cover	1	Remove the cover bolt and the cover.
(2)	Battery retaining band	1	
(3)	Battery negative (−) cable	1	• Pull the battery out of the case, being careful not to pull the cable faultly.
(4)	Battery positive (+) cable	1	• At installation: Connect the positive (+) cable first, then connect the negative (−) cable. • Apply thin coat of grease to each terminal.
(5)	Battery	1	Be careful not to lose the battery terminal nuts.

Charging System Inspection

Leak Test

Turn off the ignition switch, and disconnect the ground (−) cable from the battery.

Connect the ammeter (+) probe to the ground cable and the ammeter (−) probe to the battery (−) terminal.

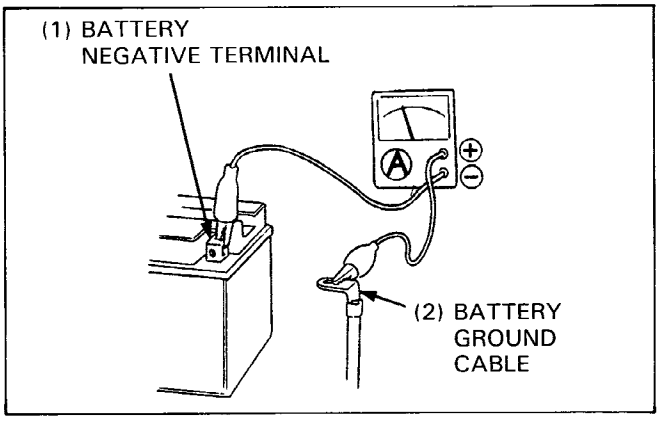
With the ignition switch off, measure the leakage current.

NOTE

- When measuring current using a tester, set it to a high range, and then bring the range down to an appropriate level. Current flow larger than the range selected may blow out the fuse in the tester.
- While measuring current, do not turn the ignition on. A sudden surge of current may blow out the fuse in the tester.

Specified Current Leakage: 1.0 mA max.

If current leakage exceeds the specified value, a shorted circuit is likely.
Locate the short by disconnecting connections one by one and measuring the current.



Regulated Voltage/Charging Current Inspection

NOTE

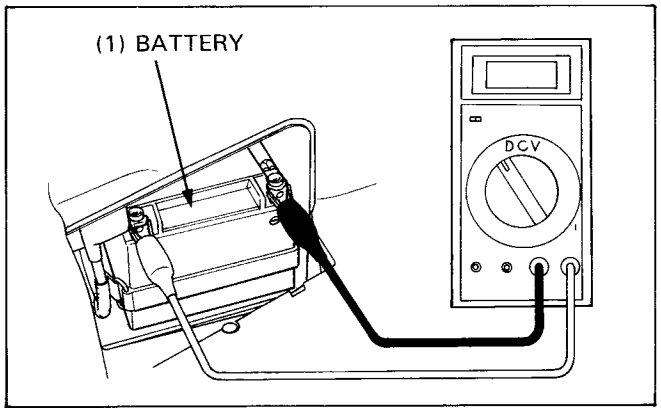
- Before performing this test, be sure that the battery is fully charged (voltage between the terminals is greater than 12.8 V).

Start the engine and warm it up to operating temperature, then turn the ignition switch OFF.

Connect a volt meter between the battery terminals.

S. TOOL

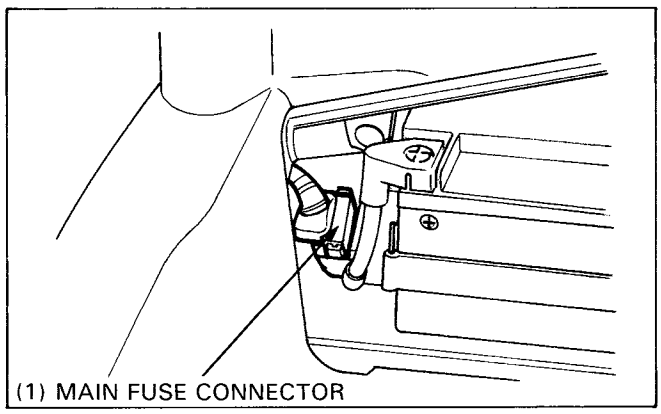
Digital Multimeter — **07411−0020000 or KS−AHM−32−003 (U.S.A. only)**



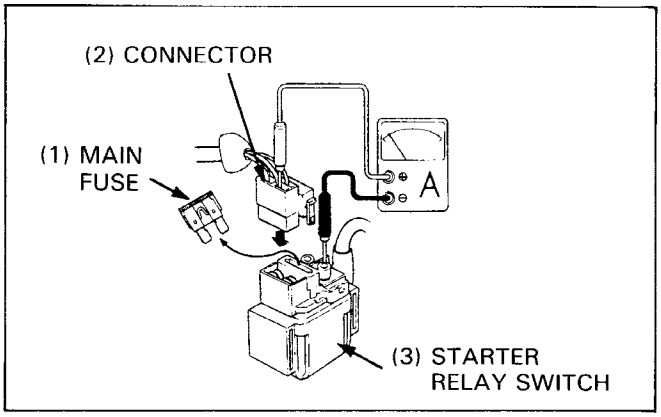
⚠WARNING

- **If the engine must be running to do some work, make sure the area is well-ventilated. Never run the engine in an enclosed area.**
- **The exhaust contains poisonous carbon monoxide gas that may cause loss of consciousness and lead to death.**

Disconnect the main fuse connector and remove the main fuse.
Reconnect the connector securely.



Connect the ammeter as shown.



CAUTION

- **Be careful not to short any tester probes.**
- **Although the current could be measured when the ammeter is connected between the battery positive terminal and the positive cable, a sudden surge of current to the starter motor could damage the ammeter.**
- **Always turn the ignition off when conducting the test. Disconnecting the ammeter or wires when current is flowing may damage the ammeter.**

Start the engine and increase the engine speed gradually.

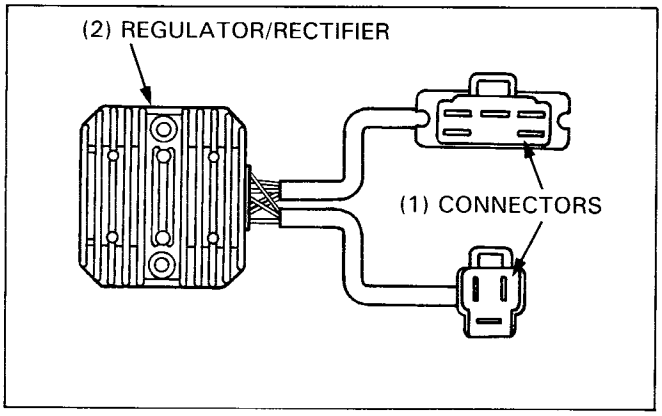
Regulated Voltage: 14.0—15.0 V/5,000 rpm
Charging Current: 1.2 A/5,000 rpm

Regulator/Rectifier

Wire Harness Inspection

Remove the luggage box (Section 2).

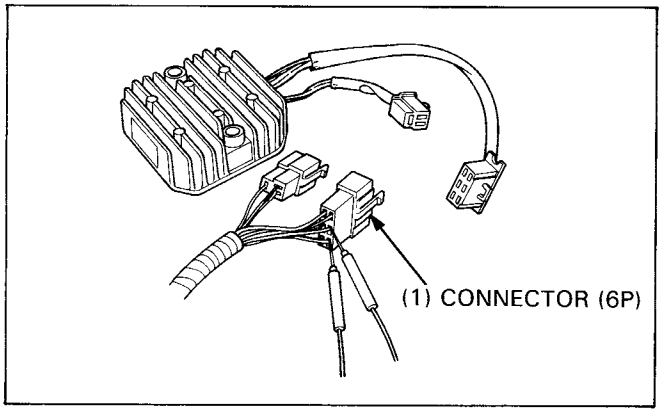
Disconnect the 6P (WHITE) and 3P (WHITE) regulator/rectifier connectors.



Check the connectors for loose or corroded terminals.

Measure the following between connector terminals of the wire harness side.

Item	Terminals	Specification
Battery charging line	Red/White (+) and ground (−)	Battery voltage should register.
Ground line	Green and ground	Continuity
Charging coil line	Yellow and Yellow	0.1—0.5 Ω (20°C/68°F)
	Yellow and ground	No continuity
Battery voltage feedback line	Black (+) and Green (−)	Battery voltage should register with ignition switch ON.



If the charging coil line reading was out of specification, check the alternator (page 14-7).

Unit Inspection

Provided the circuits on the wire harness side are normal and there are no loose connections at the connector, inspect the regulator/rectifier unit by measuring the resistance between the terminals.

NOTE

- You'll get false readings if the probes touch your fingers.
- Use the specified multimeters. Using other equipment may not allow you to obtain the correct results. This is due to the characteristic of semiconductors, which have different resistance values depending on the applied voltage.

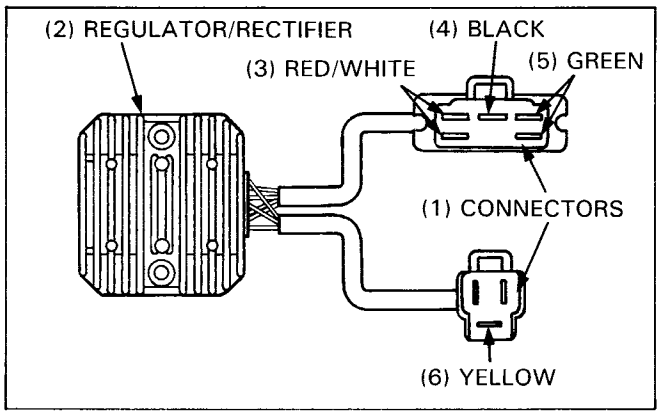
Specific Multimeter:
– 07411–0020000 (KOWA Digital type)
– KS–AHM–32–003 (KOWA Digital type; U.S.A. only)
– 07308–0020001 (SANWA Analogue type)
– TH–5H (KOWA Analogue type)

- Select the following range:
  SANWA: kΩ
  KOWA: X100
- An old battery stored in the multitester could cause inaccurate readings. Check the battery if the multimeter registers incorrectly.
- When using the KOWA multimeter, remember that all readings should be multiplied by 100.

Replace the regulator/rectifier unit if the resistance value between the terminals is abnormal.

Unit: kΩ

(+) Probe / (–) Probe	Red/White	Black	Yellow 1	Yellow 2	Yellow 3	Green
Red/White		∞	∞	∞	∞	∞
Black	20–100		10–80	10–80	10–80	10–50
Yellow 1	1–20	∞		∞	∞	∞
Yellow 2	1–20	∞	∞		∞	∞
Yellow 3	1–20	∞	∞	∞		∞
Green	5–30	1–20	1–20	1–20	1–20	



Alternator

Inspection

NOTE

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

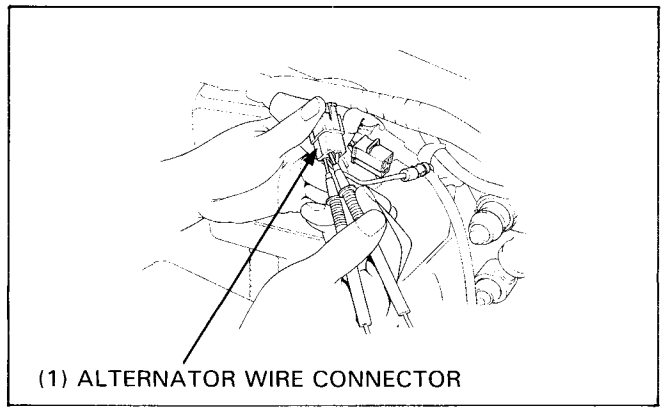
Remove the body cover (Section 2).
Disconnect the alternator 3P (WHITE) connector.

Measure the resistance between the yellow wire terminals and check for no continuity between each terminal and ground.

Standard: 0.1–0.5 Ω (20°C/68°F)

Replace the stator if the resistance is out of specification or if there is continuity between any yellow wire terminal and ground.

For alternator replacement, see page 15-8.



15. Ignition System

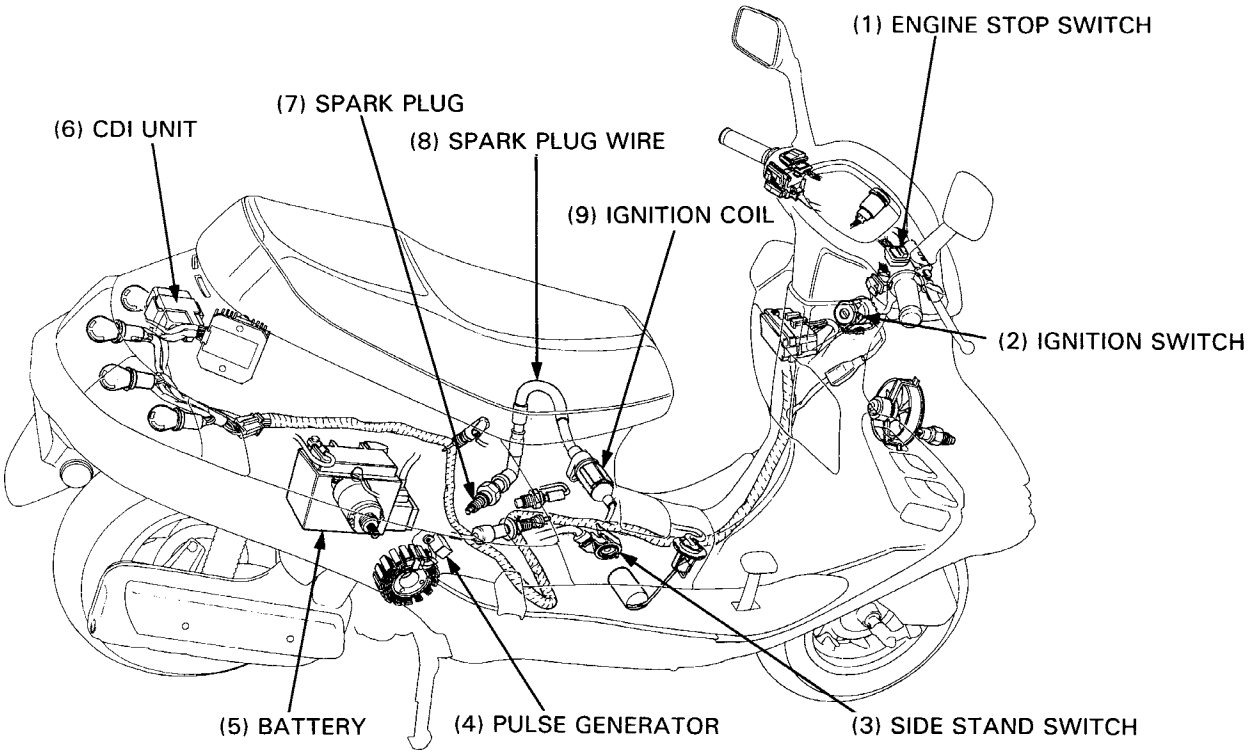
Service Information

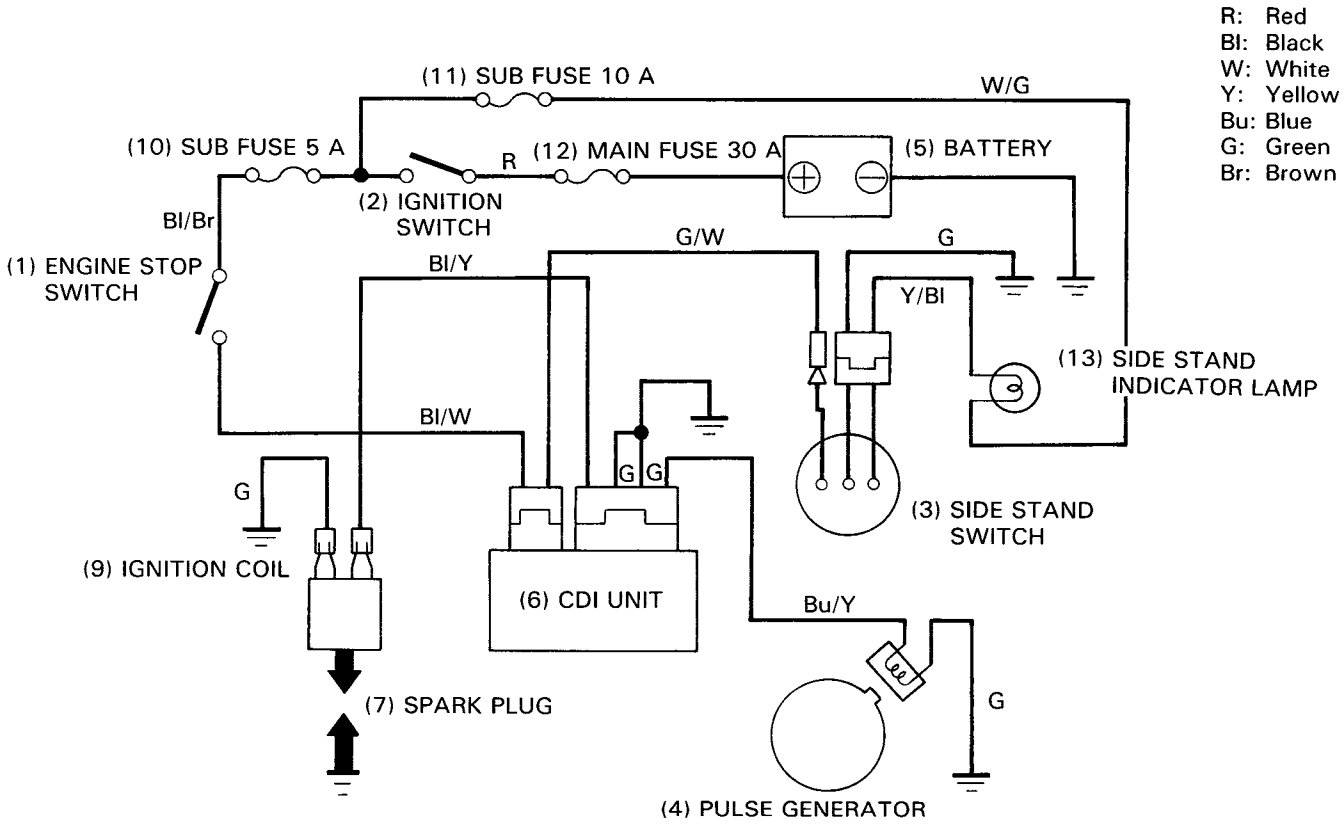
⚠WARNING

- **If the engine must be running to do some work, make sure the area is well-ventilated. Never run the engine in an enclosed area.**
- **The exhaust contains poisonous carbon monoxide gas that may cause loss of consciousness and lead to death.**

- When checking the ignition system, alway follow the steps in the troubleshooting flow chart (page 15-3).
- The DC CDI ignition system uses an electrically controlled ignition timing system. No adjustments can be made to the ignition timing.
- The DC CDI unit may be damaged if dropped. Also, if the connector is disconnected when current is following, the excessive voltage may damage the unit. Always turn off the ignition switch before servicing.
- A faulty ignition system is often related to poorly connected connectors. Check those connections before proceeding.
- Make sure the battery is adequately charged. Using the starter motor with a weak battery results in a slower engine cranking speed as well as no spark at the spark plug.
- Use a spark plug of the correct heat range. Using spark plug with an incorrect heat range can damage the engine. Refer to section 2 of the Common Service Manual.
- For the ignition switch and engine stop switch inspection, check for continuity on the continuity chart of the Wiring Diagram, page 18-1.
- For the side stand switch inspection, check for continuity on page 17-10.

System Location



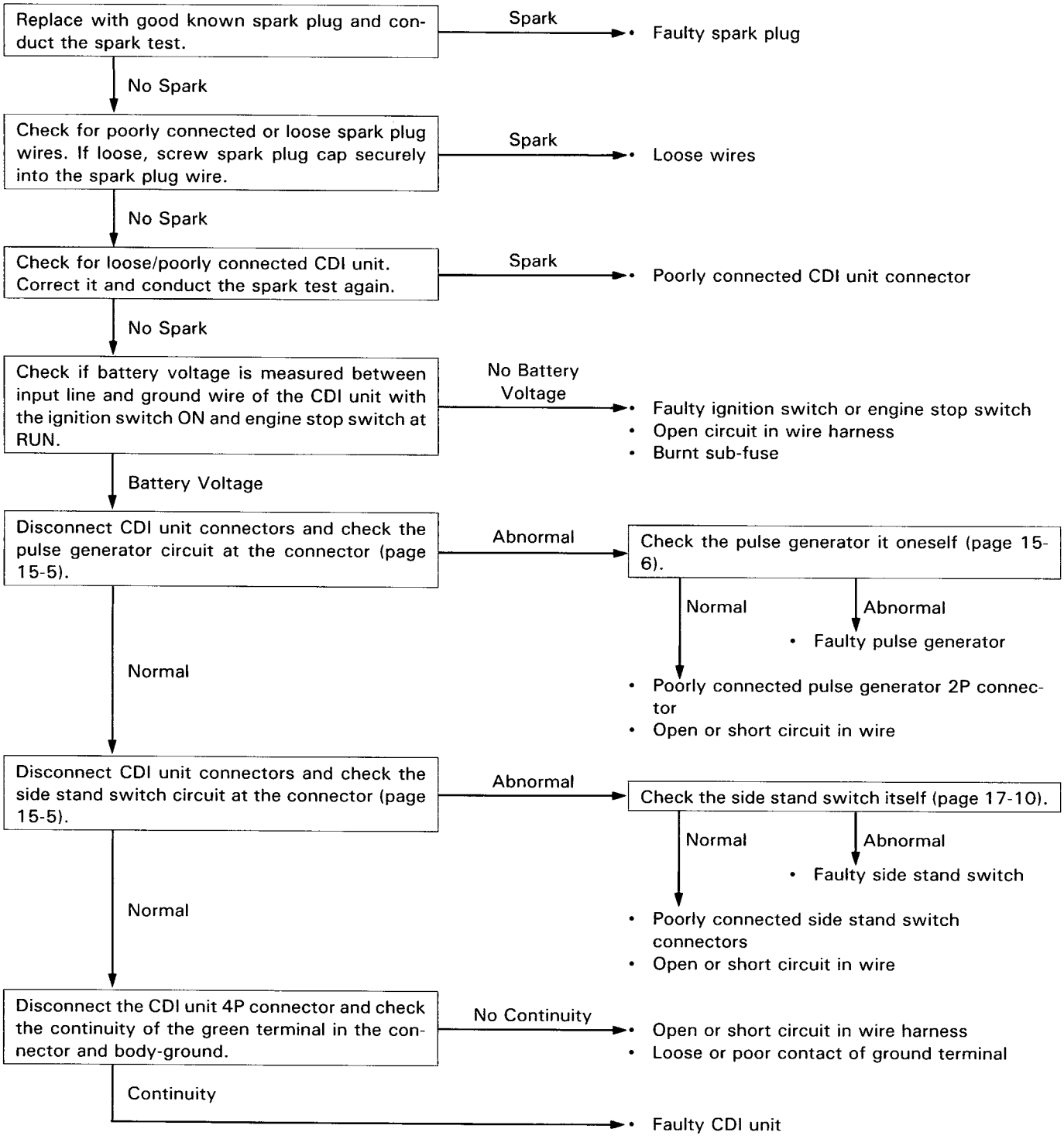


Troubleshooting

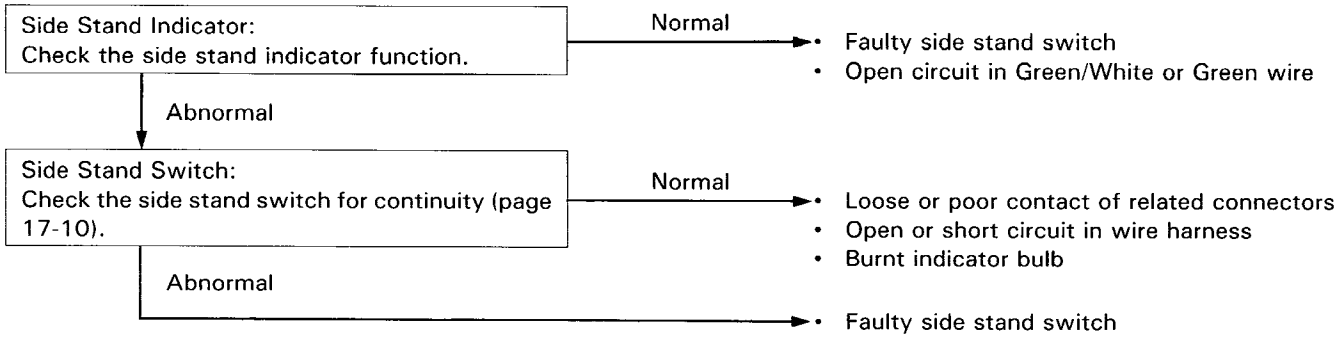
⚠ WARNING

- **When performing a spark test, keep open flames or sparks away from the work area.**

No Spark at Spark Plug



Side stand switch does not function at all.



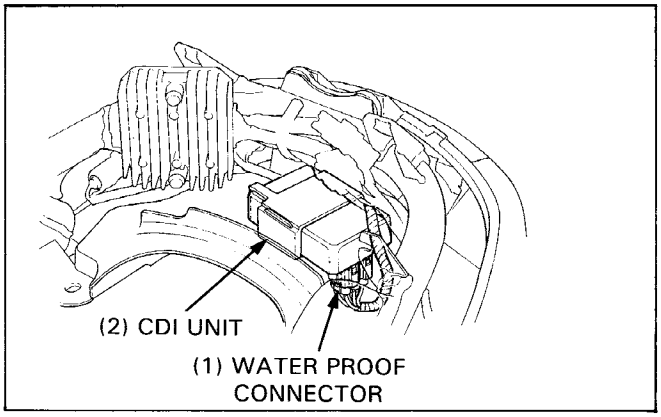
Ignition System Inspection

Remove the luggage box (Section 2).

NOTE

- Check the system components and lines step-by-step according to the troubleshooting chart on pages 15-2, 3.

Disconnect the CDI unit connectors and check them for loose or corroded terminals.
Use the multimeter to check the data between the connector terminals (; wire harness side) for the standards shown in the following chart.



<CDI unit connectors>

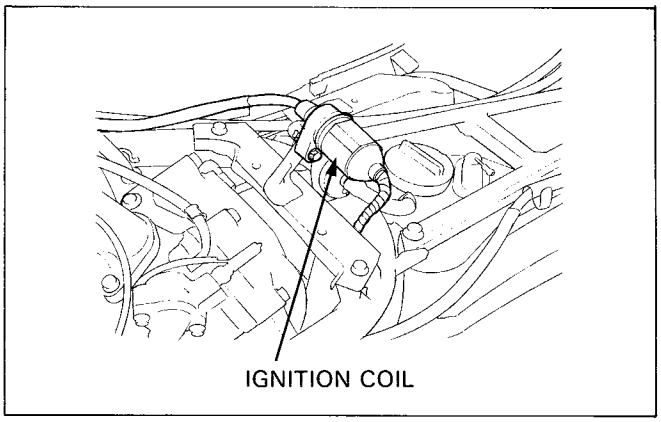
Item	Terminals		Standards (20°C/68°F)
Ignition primary coil line	Bl/Y [4P connector] — Body ground		0.2—0.3 Ω
DC power supply circuit line	Bl/W — G Ignition switch: ON, engine stop switch: RUN.		Battery voltage should obtained
Side stand switch line	Retracted	G/W [2P connector] — Body ground	Continuity
	Down		No continuity
Pulse generator line	Bl/Y [4P connector] — Body ground		190—250 Ω
Ground line	G [4P connector] — Body ground		Continuity

Ignition Coil

NOTE

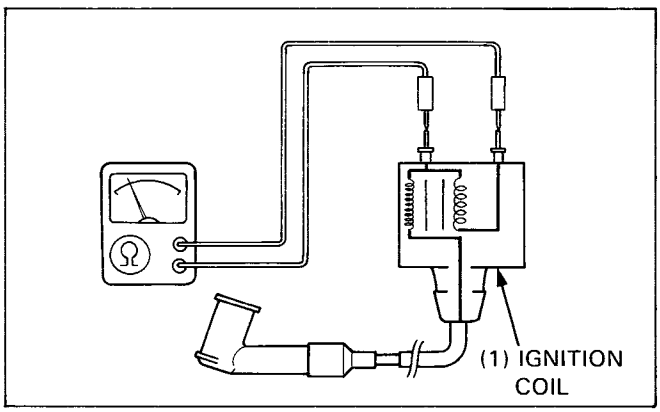
- It is not necessary to remove the ignition coil to make this inspection.

Remove the center cover (Section 2) and pull the rubber boot off the ignition coil.



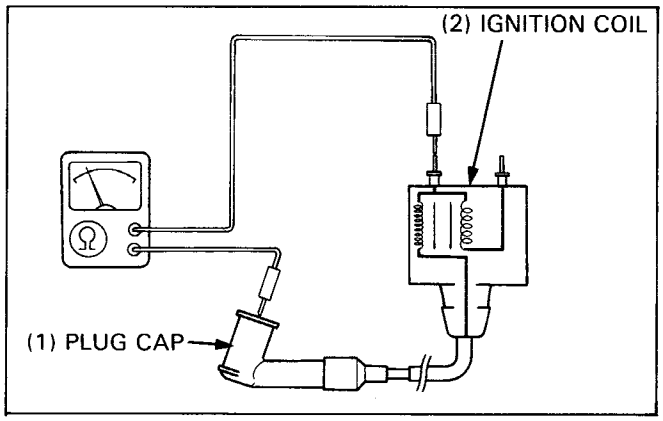
Measure the primary coil resistance of the ignition coil.

Primary Coil Resistance:
Standard: 0.2—0.3 Ω (20°C/68°F)



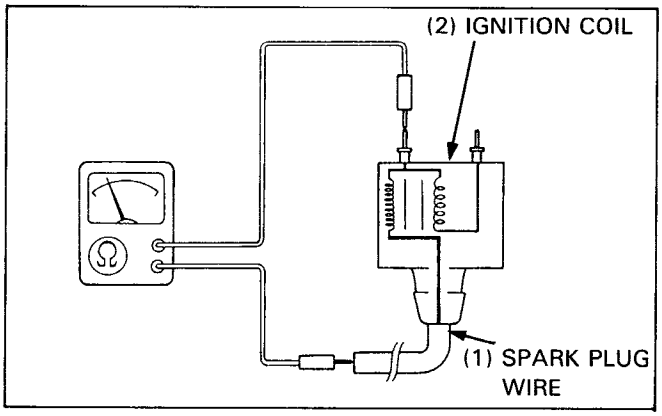
Disconnect the spark plug cap from the plug and measure the secondary coil resistance with the spark plug cap in place.

Standard: 8.0—9.5 kΩ (20°C/68°F)



If the resistance is out ot range, remove the spark plug cap and measure the resistance between the secondary coil terminals.

Standard: 3.0—4.5 kΩ (20°C/68°F)



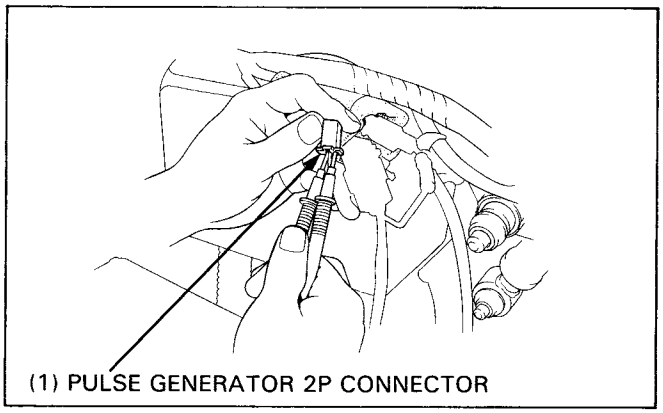
Pulse Generator

Inspection

NOTE

- It is not necessary to remove the pulse generator to make this inspection.

Remove the luggage box (Section 2).



Disconnect the pulse generator 2P connector and measure the pulse generator resistance between the green and blue/yellow terminals.

Standard: 190—250 Ω (20°C/68°F)

For pulse generator replacement (page 15-8).

Ignition Timing

⚠WARNING

- **If the engine must be running to do some work, make sure the area is well-ventilated. Never run the engine in an enclosed area.**
- **The exhaust contains poisonous carbon monoxide gas that may cause loss of consciousness and lead to death.**

Warm up the engine.
Connect a timing light and tachometer to the spark plug wire.

NOTE

- Read the operating instructions for the timing light and tachometer.

Remove the timing mark hole cap.
Start the engine and let it idle.
The timing is correct if the "F" mark aligns with the crankcase cover index mark.

Idle Speed: 1,500 ± 100 rpm

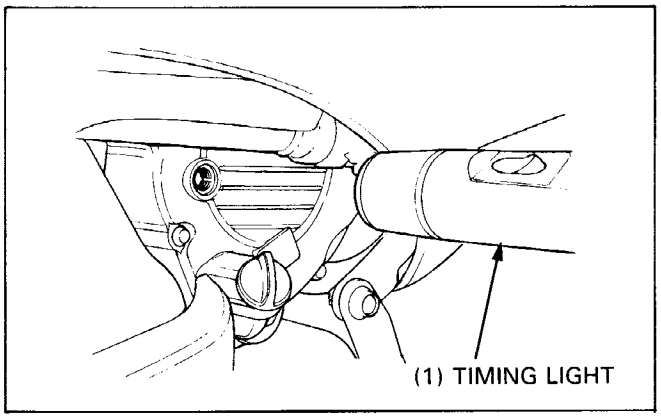
Increase the engine speed by rotating the throttle stop screw on the carburetor. Make sure the "F" mark begins to move clockwise at approximately 2,400 rpm.

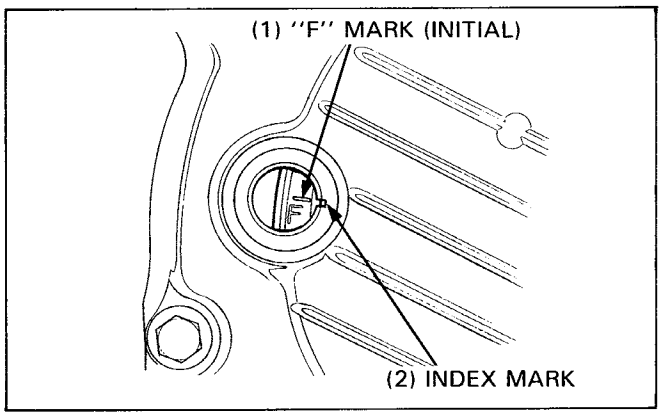
If the ignition timing is incorrect, make an ignition system inspection (page 15-5) and replace any faulty parts.

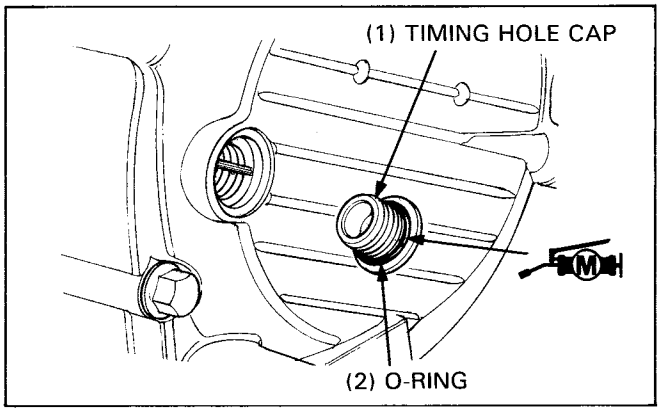
Check the timing hole cap's O-ring for damage and replace it with a new one if necessary.

Apply molybdenum disulfide grease to the threads, and install the timing inspection hole cap.

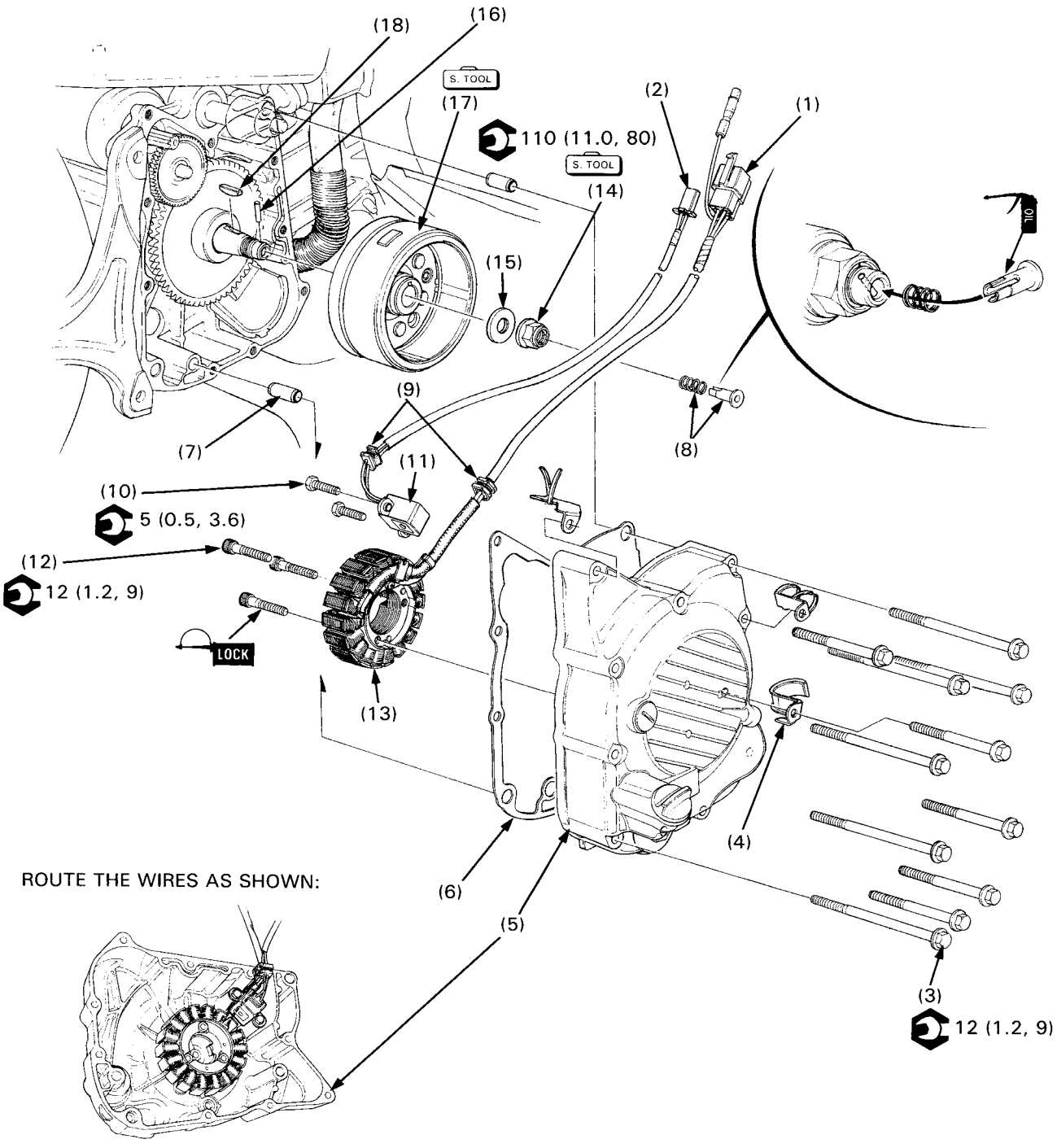
Torque: 5 N·m (0.5 kg-m, 3.6 ft-lb)







Pulse Generator and Alternator Removal/Installation



NOTE

- Engine oil will spill out when the left crankcase cover is removed. Place a clean oil pan under the engine and add the recommended oil to the specified level after the installation.
- The left crankcase cover (stator) is magnetically attached to the flywheel; remove and install carefully.
- When installing the oil through guide and spring, make sure that the oil through guide hole is not clogged and align the cutout of the guide with the pin in the crankshaft.

Requisite Service

- Engine oil draining
- Muffler removal (page 2-9)

	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Alternator wire connector	2	Disconnect the 3P-white and auto bystarter connector.
(2)	Pulse generator connector	1	
(3)	Crankcase cover bolt	11	
(4)	Hose clamp	2	
(5)	Crankcase cover assembly	1	
(6)	Gasket	1	
(7)	Dowel pin	2	
(8)	Oil through guide/spring	1	At installation, apply engine oil to the sliding surface.
(9)	Wire grommet	2	At installation, insert the grommet onto the case cover securely.
(10)	Pulse generator mounting bolt	2	
(11)	Pulse generator	1	For inspection, see page 15-6.
(12)	Stator mounting bolt	3	At installation, clean and apply a locking agent to the threads.
(13)	Stator	1	
(14)	Flywheel nut	1	Loosen the nut while holding the flywheel with the universal holder (page 15-10).
(15)	Washer	1	
(16)	Oil through guide pin	1	
(17)	Flywheel	1	
(18)	Woodruff key	1	

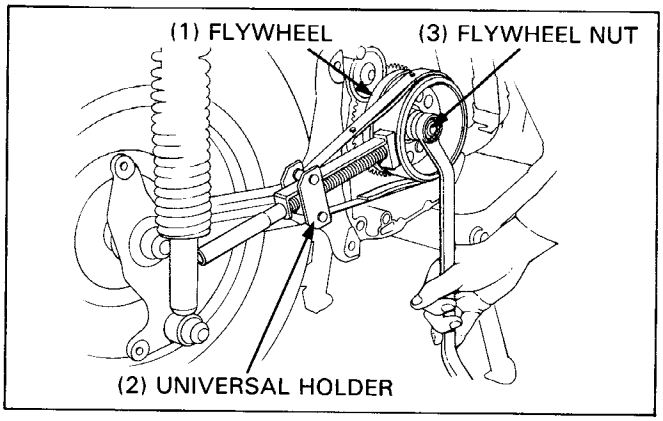
Flywheel Nut Removal

Remove the crankcase cover (page 15-9).

Hold the flywheel with the universal holder and remove the flywheel nut.

S. TOOL

Universal holder — **07725—0030000 or band strap wrench (Commercially available in U.S.A.)**



Flywheel Nut Installation

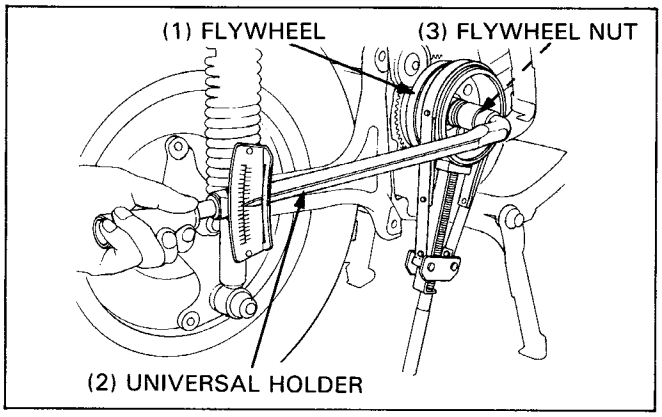
Install the flywheel (page 15-8).
Clean and apply a engine oil to the threads of the flywheel nut and crankshaft.

Hold the flywheel with the universal holder and tighten the flywheel nut to the specified torque.

Torque: 110 N·m (11.0 kg-m, 80 ft-lb)

S. TOOL

Universal holder — **07725—0030000 or band strap wrench (Commercially available in U.S.A.)**



Install the crankcase cover (page 15-8).

16. Electric Starter/Starter Clutch

Service Information

⚠ WARNING

- **Always turn the ignition switch OFF before servicing the starter motor. The motor could suddenly start, causing serious injury.**

- A weak battery may be unable to turn the starter motor quickly enough, or supply adequate ignition current.
- If the current is kept flowing through the starter motor to turn it while the engine is not cranking over, the starter motor may be damaged.
- The starter motor and starter clutch can be removed with the engine in the frame.
- For the following component inspections, refer to the following pages. For the parts locations, see page 16-3.

Starter motor	Section 24 of the Common Service Manual.
Ignition switch	Check for continuity using the continuity chart on the Wiring Diagram, page 18-1. Disconnect the switch connector inside the headlight case (page 1-14) and check it.
Side stand switch	(page 17-10)
Brake light switch	(page 17-7)

Troubleshooting

NOTE

- Check for the following before troubleshooting the system.
  - Misadjusted brake light switch.
  - Blown main (30 A) or sub (10 A) fuse.
  - Loose battery and starter motor cable.
  - Discharged battery.

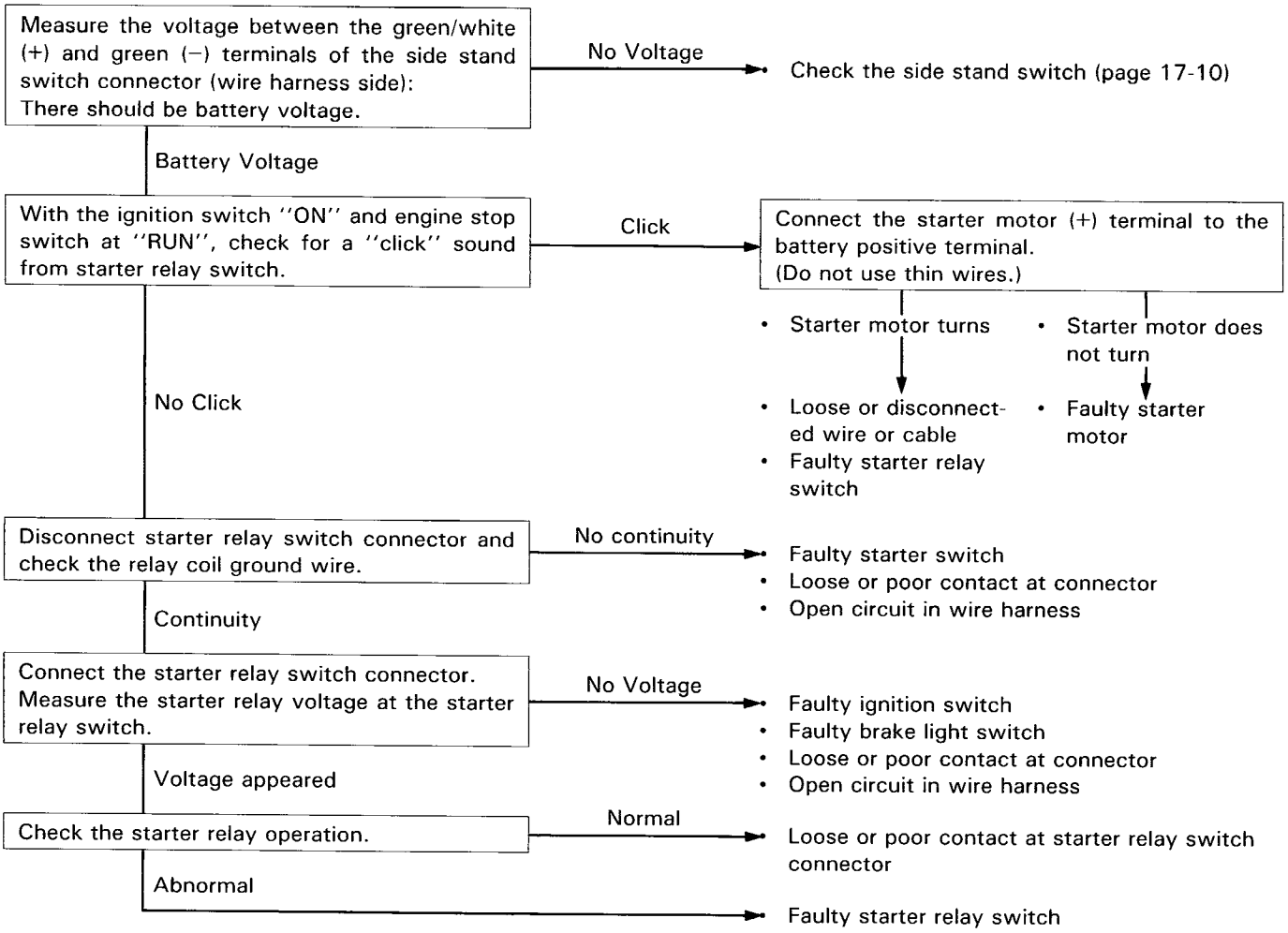
- The starter motor should turn when the side stand is retracted and brake pedal applied.

Starter Motor Turns Engine Slowly
- Weak battery
- Excessive resistance in circuit
- Starter motor binding

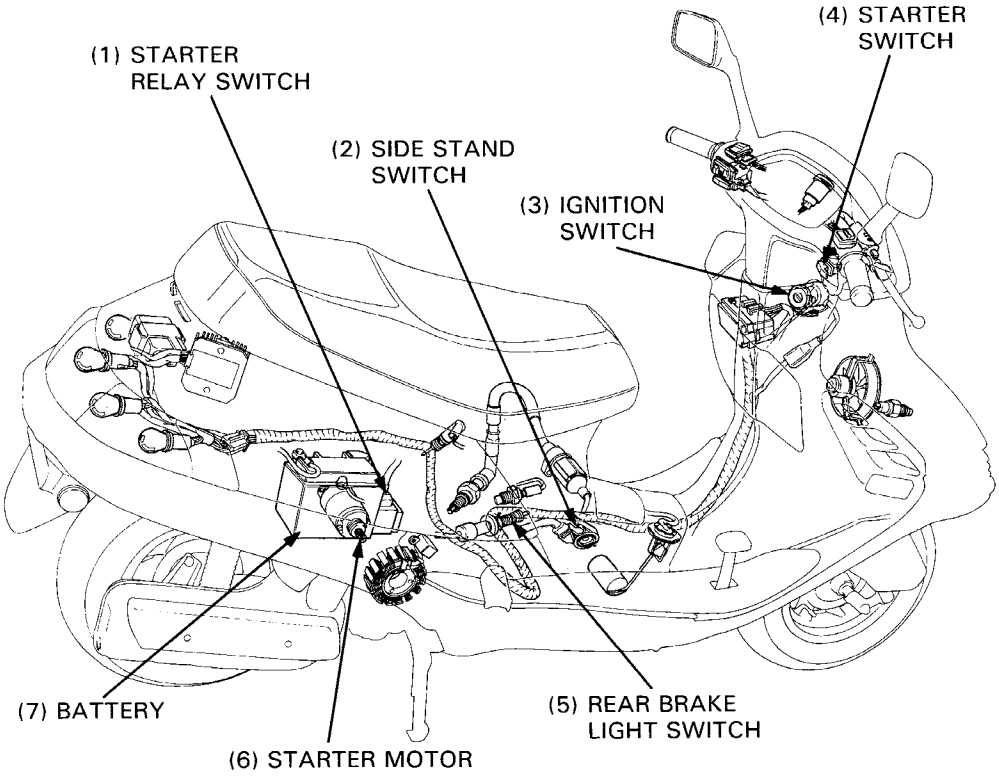
Starter Motor Turns, But Engine Does Not Turn
- Faulty starter clutch
- Faulty starter motor gears

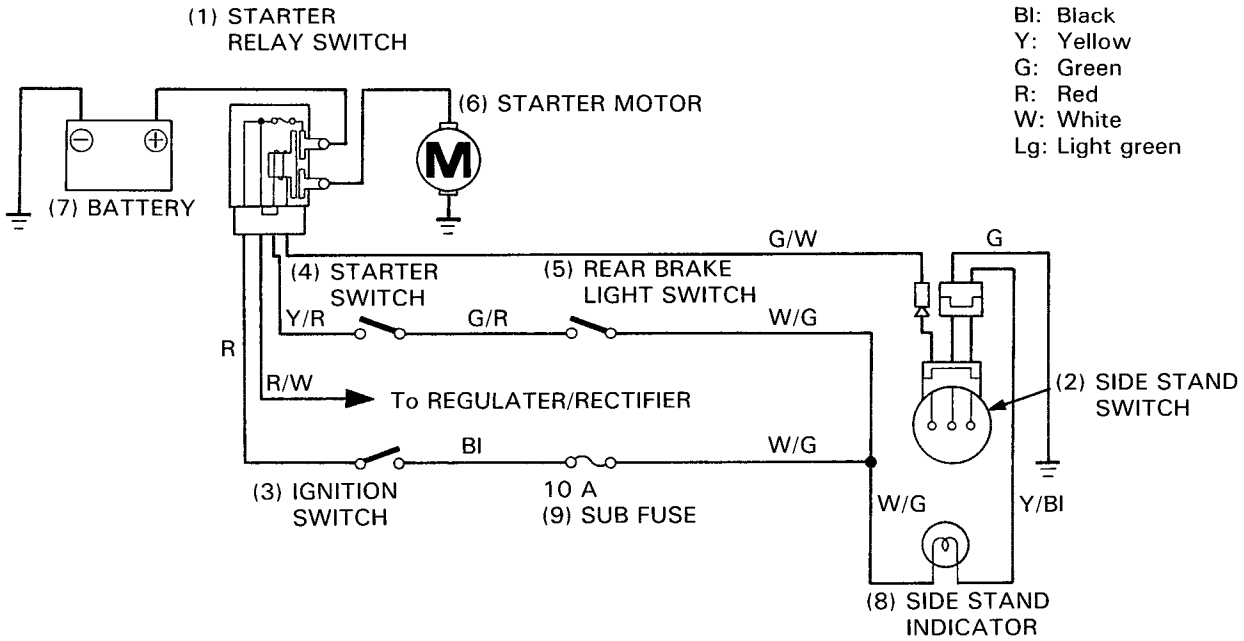
Starter Motor and Engine Turns, But Engine Does Not Start
- Faulty ignition system
- Engine problems
  - Low compression
  - Fouled spark plug

Starter Motor Will Not Turn

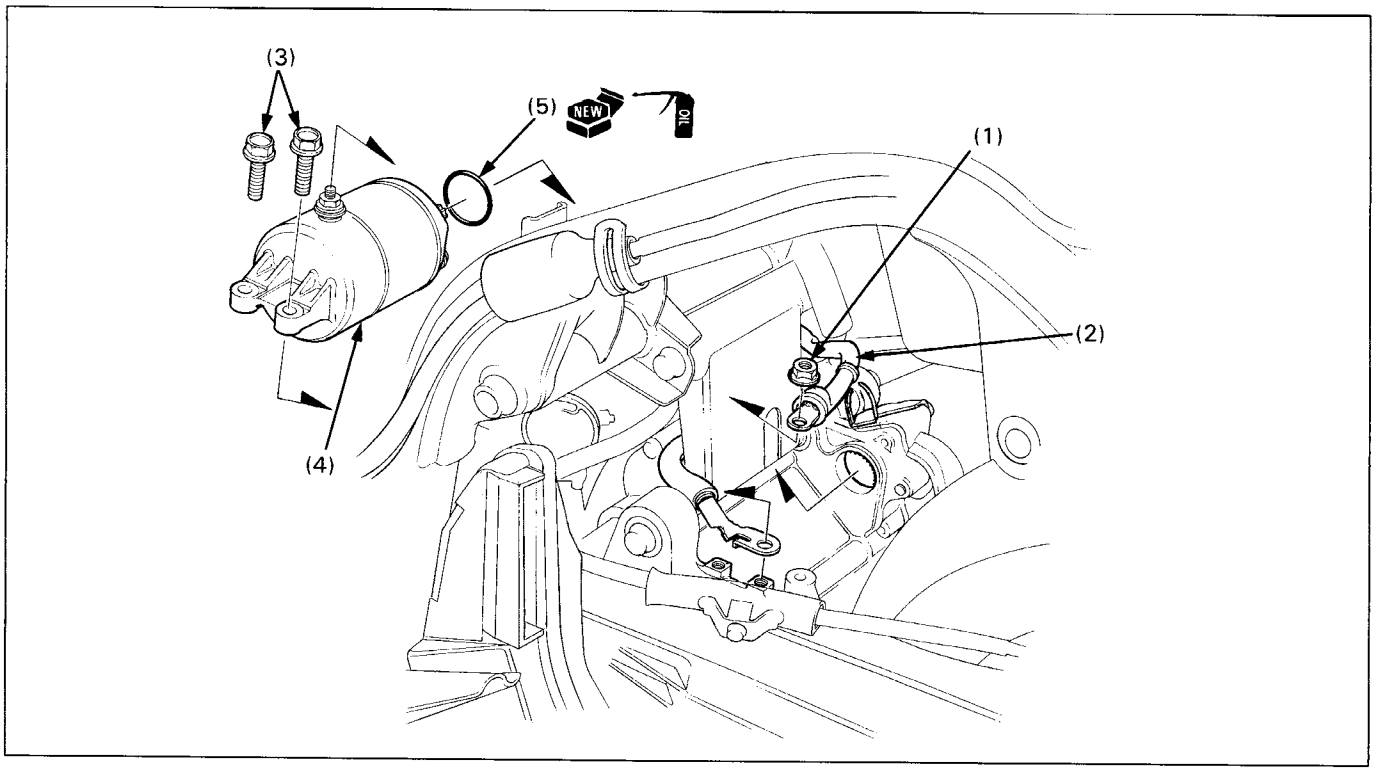


System Location





Starter Motor Removal/Installation



⚠ WARNING

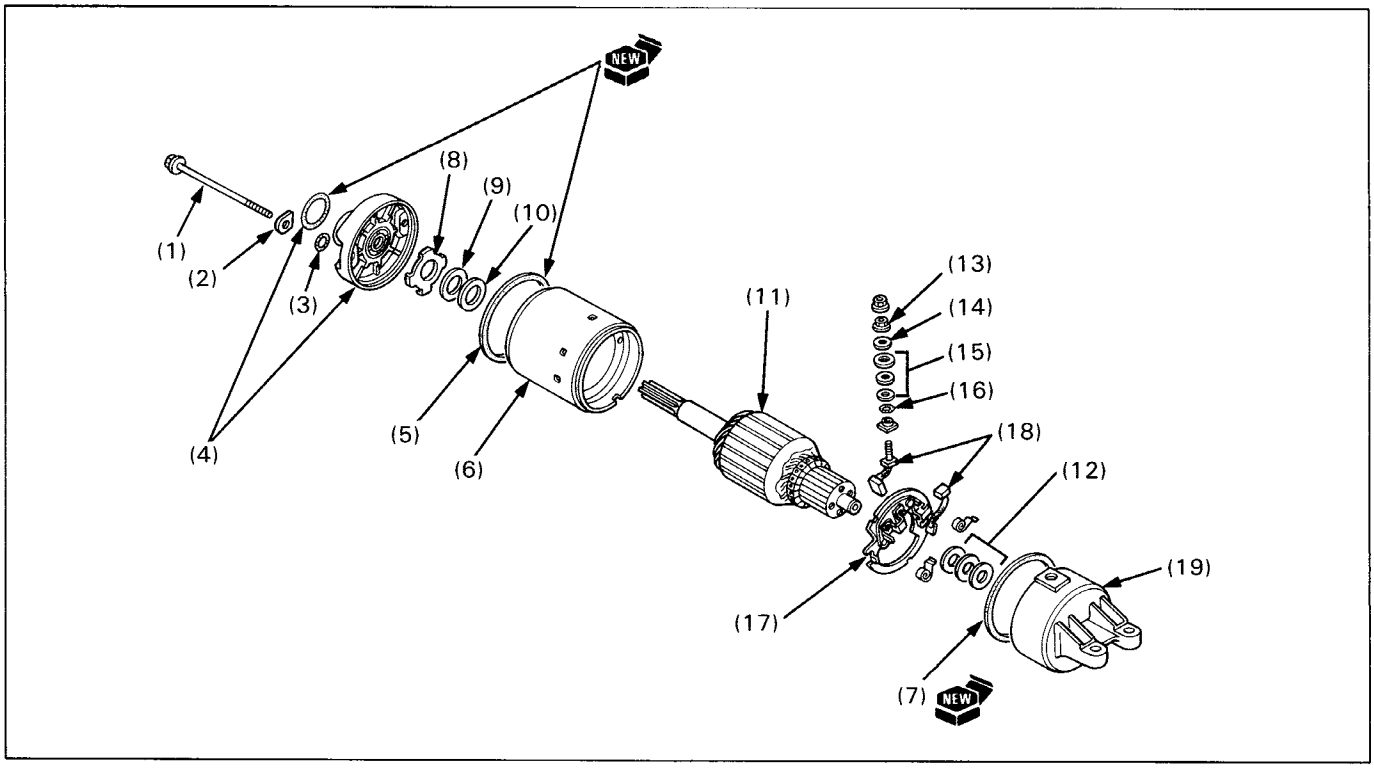
- **With the ignition switch OFF, remove the negative cable at the battery before servicing the starter motor.**

Requisite Service

- Luggage box removal/installation (Section 2)

	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Starter motor cable nut	1	
(2)	Starter motor cable	1	
(3)	Starter motor mounting bolt	2	At installation, tighten one bolt with the body ground wire as shown.
(4)	Starter motor	1	When removing, pull the motor straight out, or the O-ring may be damaged.
(5)	O-ring	1	

Starter Motor Disassembly/Assembly

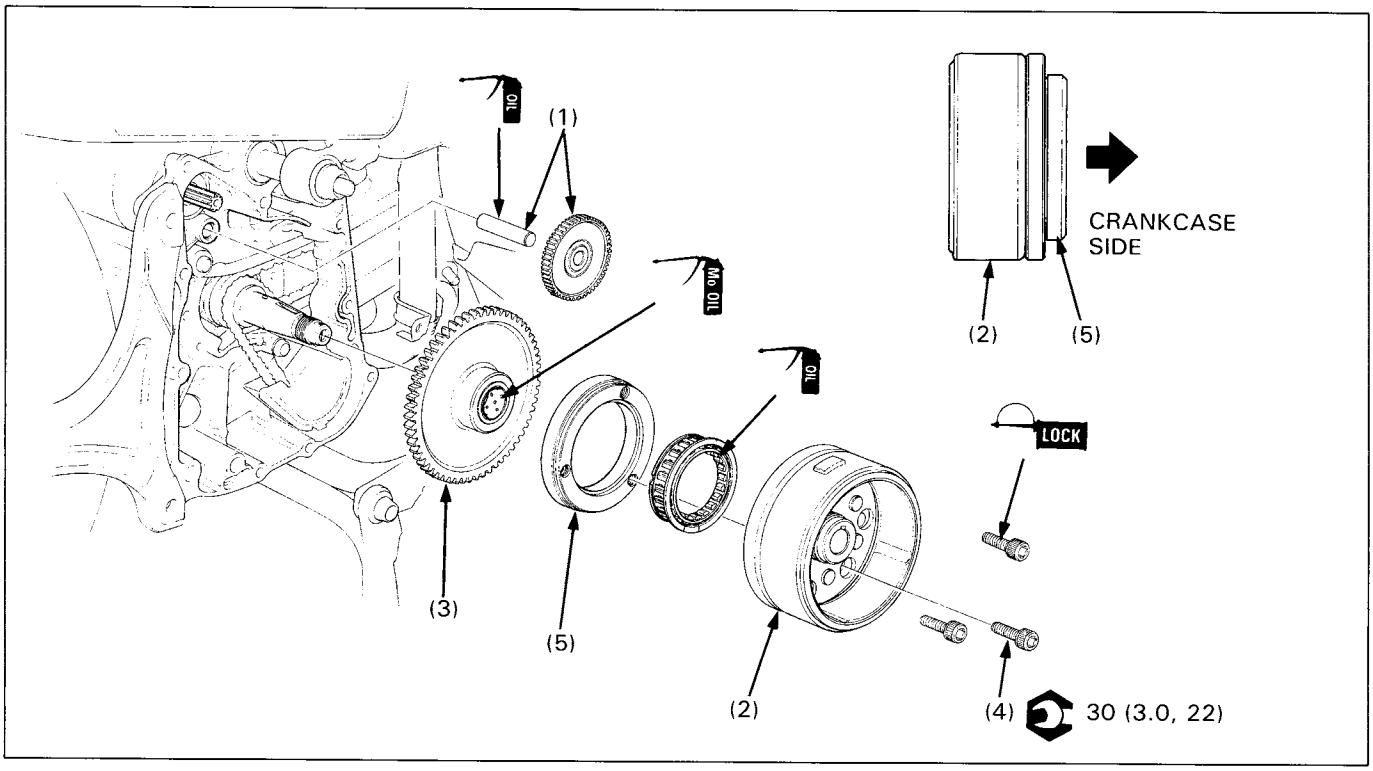


Requisite Service

- Starter motor removal/installation (page 16-4)

	Procedure	Q'ty	Remarks
	Disassembly Order		• Assembly is the reverse order of disassembly.
(1)	Set screw	2	
(2)	Set plate	2	
(3)	O-ring	2	
(4)	Front cover O-ring	1	
(5)	O-ring	1	
(6)	Starter motor case	1/1	Align the index marks on the rear cover and case.
(7)	O-ring	1	
(8)	Lock washer	1	
(9)	Insulated washer	1	
(10)	Washer	1	
(11)	Armature	1	
(12)	Shim	———	Record and store the shims in the same order they were installed so they can be reinstalled in the original position.
(13)	Brush terminal holding nut	1	
(14)	Washer	1	
(15)	Insulated washer	3	
(16)	O-ring	1	
(17)	Brush holder assembly	1	Align the holder tab with the rear cover groove.
(18)	Brush and terminal	1	
(19)	Rear cover	1	

Starter Clutch Disassembly/Assembly



⚠WARNING

- **When the starter clutch is correctly assembled, the driven gear will only turn clockwise.**

Requisite Service

- Right crankcase cover removal/installation (page 15-8)
- Alternator removal (page 15-8)

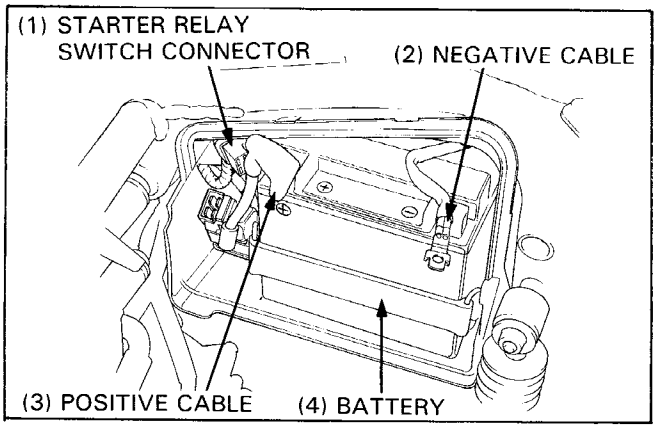
	Procedure	Q'ty	Remarks
	Disassembly Order		
(1)	Starter drive gear shaft/gear	1	
(2)	Flywheel assembly	1	
(3)	Starter driven gear	1	
(4)	Starter clutch mount bolt	3	
(5)	Starter clutch assembly	1	
	Assembly Order		
(5)	Starter clutch assembly	1	Clean and apply engine oil to the roller.
(4)	Starter clutch mount bolt	3	Clean and apply a locking agent to the threads.
(3)	Starter driven gear	1	Install the flywheel onto the driven gear while turning the flywheel clockwise. Install the flywheel and starter driven gear as an assembly into the crankshaft.
(2)	Flywheel assembly	1	
(1)	Starter drive gear shaft/gear	1	Apply a engine oil to the gear shaft sliding surface and gear.

Starter Relay Switch

Removal

Turn the ignition switch OFF.
Remove the battery cover by removing the mounting bolt.
Disconnect the battery negative (−) cable first, then disconnect the positive (+) cable from the battery terminals.

Disconnect the starter relay switch 4P connector from the starter relay switch.



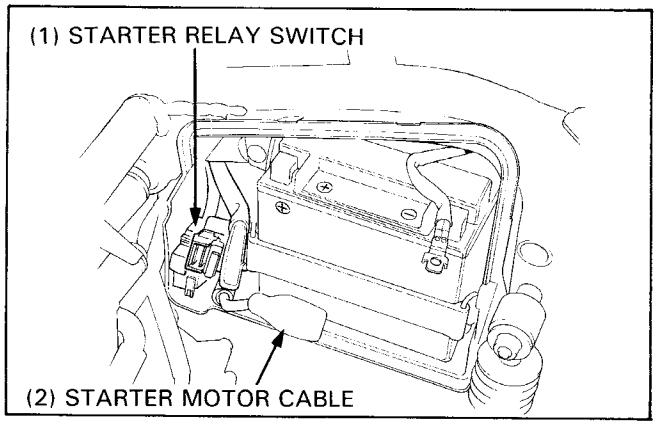
Remove the starter motor cable terminal screw and starter motor cable from the starter relay switch.

Pull the starter relay switch and battery positive (+) cable as an assembly out of the rubber suspension.

Installation is the reverse order of removal.

NOTE

- When reconnecting the battery cables, connect the positive (+) cable first, then the connect the negative (−) cable.

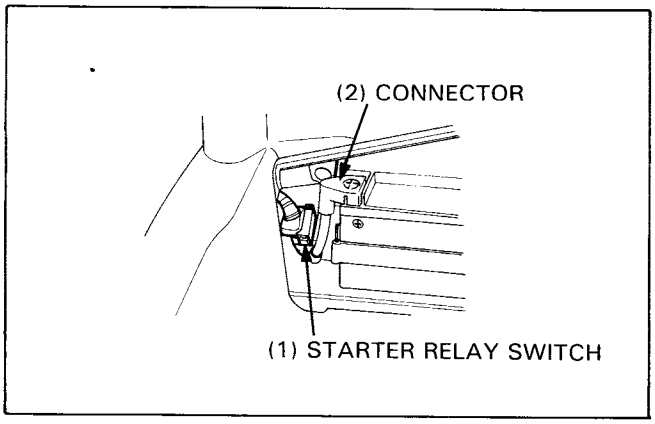


Operation Inspection

Depress the starter switch button with the ignition switch ON.
The coil is normal if the starter relay switch clicks.

Voltage Inspection

If you don't hear the switch "CLICK", disconnect the switch connector.
Turn the ignition switch ON.
Measure the voltage between the yellow/red (+) and green/red (−) wires of the relay connector as you press the starter.
The tester should show battery voltage. If it does not, make the following continuity inspection.

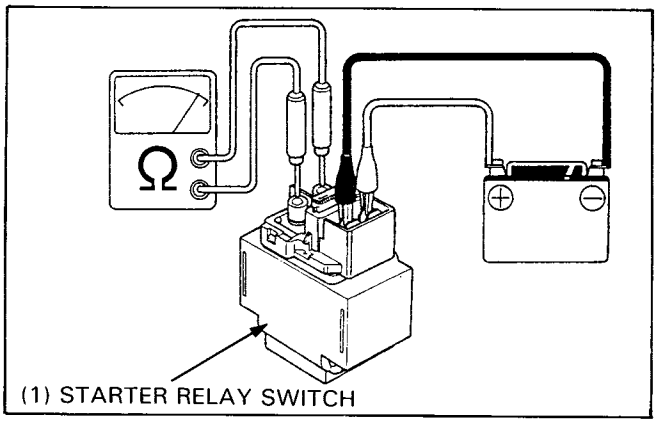


Continuity Inspection

Remove the starter relay switch.
Connect an ohmmeter to the switch large terminals.

Connect a fully charged 12 V battery positive wire to the starter relay switch yellow/red wire terminal, and the battery negative wire to the green/red wire terminal.

There should be continuity while the battery is connected to the terminals, and no continuity when the battery is disconnected.



17. Lights/Meters/Switches

Service Information

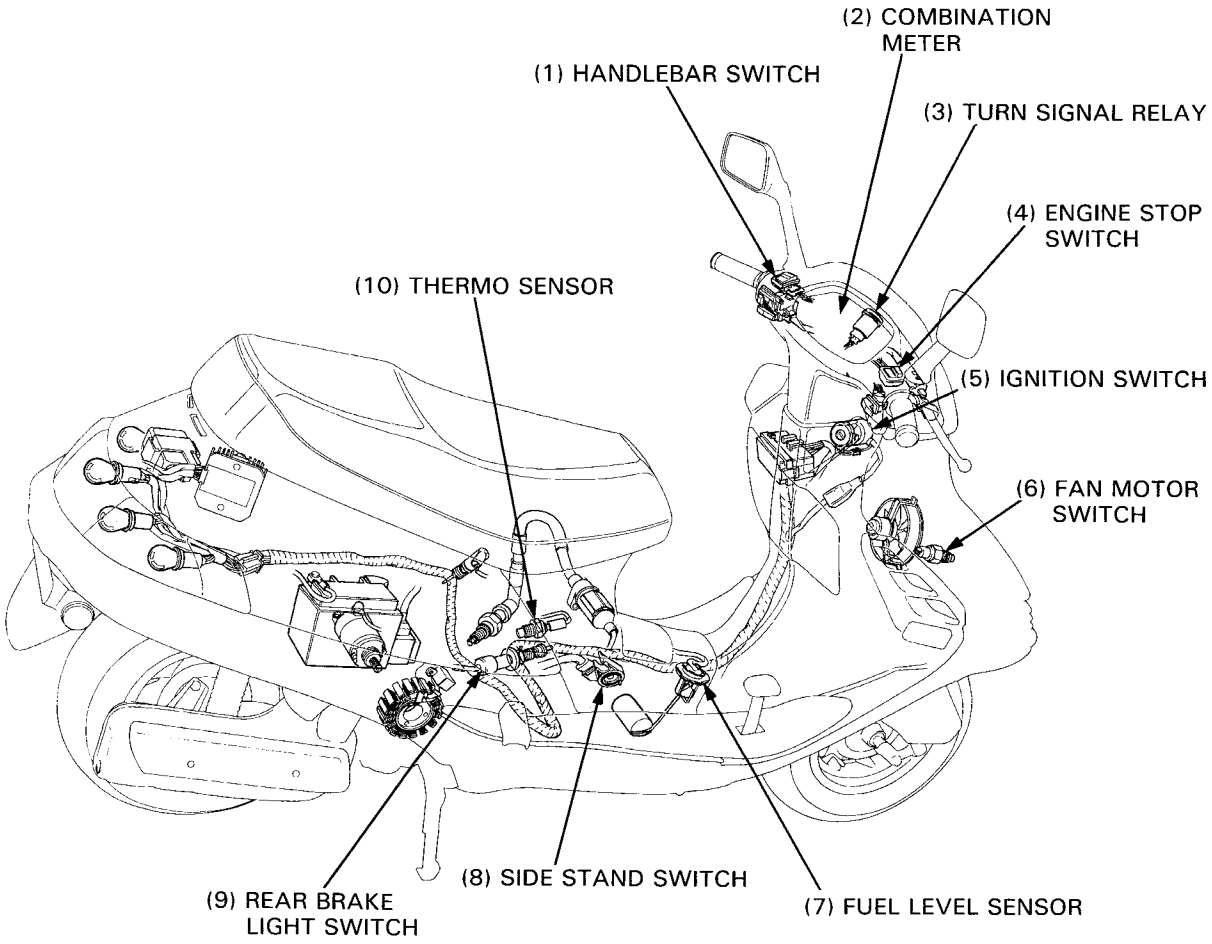
⚠ WARNING

- **Halogen headlight bulbs become very hot while the headlight is ON, and remain hot for a while after they are turned OFF. Be sure to let them cool down before servicing.**
- **Use a flame and heated water/coolant mixture for the fan motor switch inspection. Keep all flammable materials away from the flame. Wear protective clothing, gloves and eye protection.**

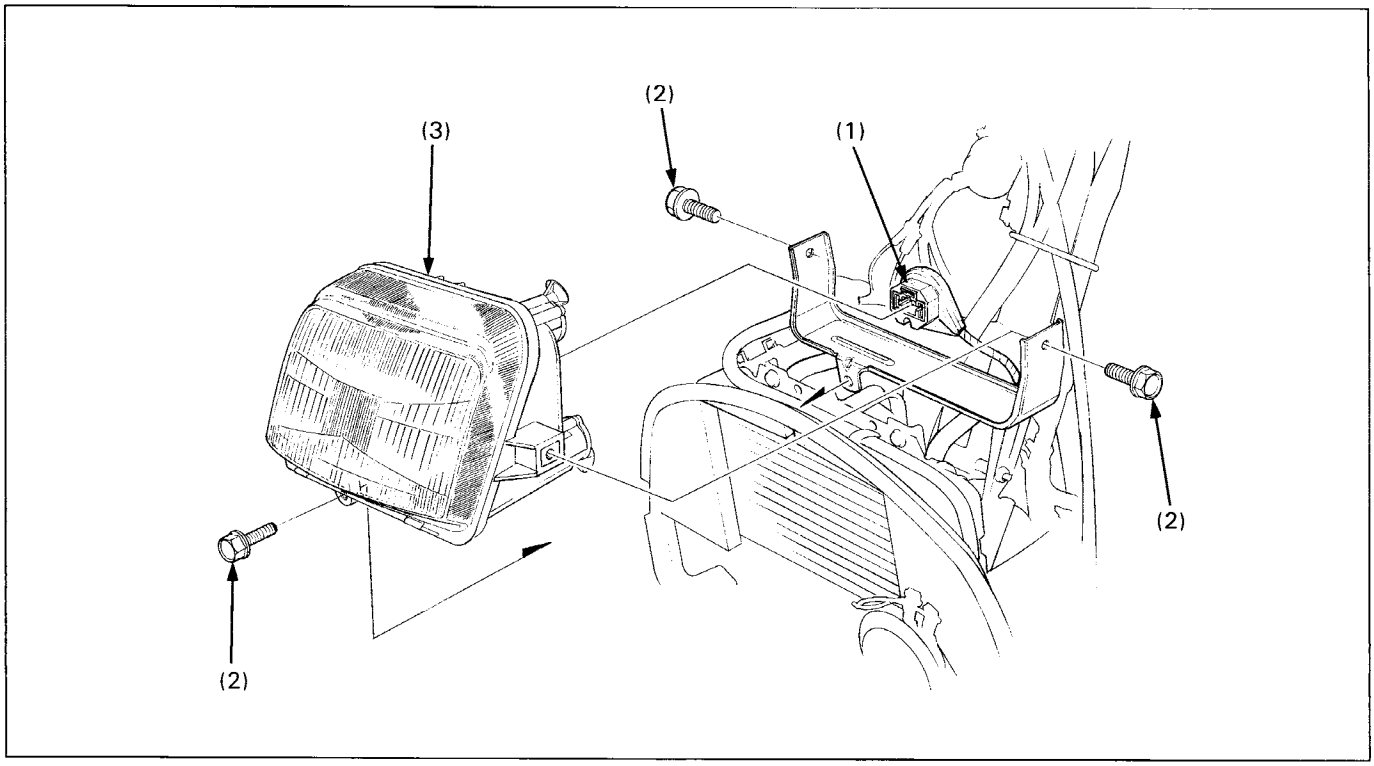
- Note the following when replacing the halogen headlight bulb:
  - Wear clean gloves while replacing the bulb. Do not put fingerprints on the headlight bulb, as they may create hot spots on the bulb and cause it to break.
  - If you touch the bulb with your bare hands, clean it with a cloth moistened with alcohol to prevent its eary failure.
  - Be sure to install the dust cover after replacing the bulb.
- All plactic plugs have locking tabs that must be released before disconnecting, and must be aligned when reconnecting.
- To isolate an electrical failure, check the continuity of the electrical path through the part. A continuity check can usually be made without removing the part from the motorcycle. Simply disconnect the wires and connect a continuity tester or volt-ohmmeter to the terminals or connections.
- Check the battery condition before performing any inspection that requires proper battery voltage.
- A continuity test can be made with the switches installed on the scooter.
  For the following component locations see page 17-2 of this manual (System Location): for inspection, refer to the applicable pages.

Component	Inspection Method	Remarks
Coolant thermo sensor	Section 25 of the Common Service Manual	Thermo sensor removal (page 6-9)
Front brake light switch	Section 25 of the Common Service Manual	
Horn	Section 25 of the Common Service Manual	
Handlebar switches	Check for continuity using the continuity chart on the Wiring Diagram, page 18-1.	Switch connectors are located inside the handlebar cover (page 1-19).
Ignition switch		
Turn signal lights	Section 25 of the Common Service Manual	3 terminal relay.

System Location



Headlight Assembly Removal/Installation



⚠ WARNING

- **A halogen headlight bulb becomes very hot while the headlight is ON, and remain hot for a while after it is turned OFF. Be sure to let it cool down before servicing.**

Requisite Service

- Front upper cover removal (Section 2)

	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Headlight connector	1	Disconnect the 3P connector from the headlight bulb.
(2)	Headlight mounting bolt	3	
(3)	Headlight assembly	1	

Headlight Bulb Replacement

CAUTION

- **If you touch the bulb with your bare hands, clean it with a cloth moistened with alcohol to prevent early failure.**
- **Do not try to replace or clean the headlight bulb while the light is ON and hot.**

Remove the front upper cover (Section 2).

Disconnect the headlight connector and remove the rubber cover.

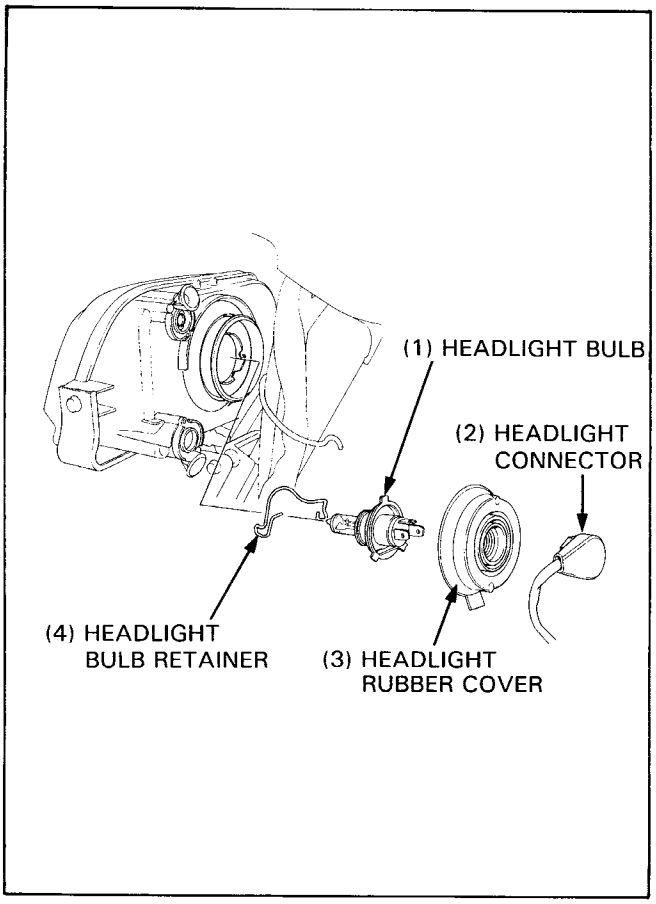
Unhook the headlight bulb retainer and remove the headlight bulb.

Install a new headlight bulb and secure it with the bulb retainer.

Install the rubber cover with it "TOP" mark facing up.

Connect the headlight connector.

Install the front upper cover (Section 2).



Front Turn Signal Light

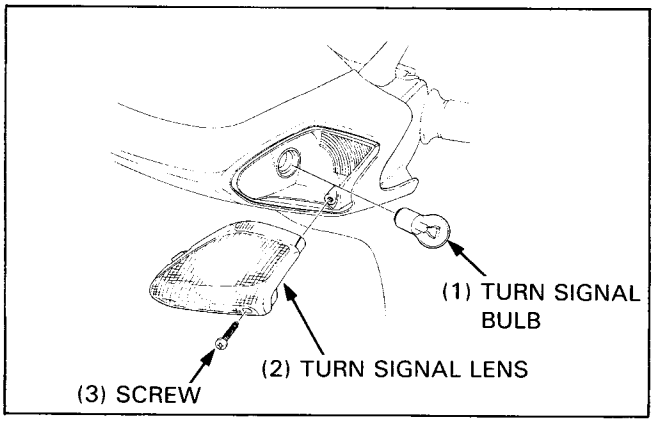
Bulb Replacement

Remove the turn signal lens mounting screw and the lens.

Remove the turn signal bulb from the socket by turning it counterclockwise.

Replace the turn signal bulb.

Install the turn signal lens.



Rear Turn Signal and Tail/ Brake Light

Bulb Replacement

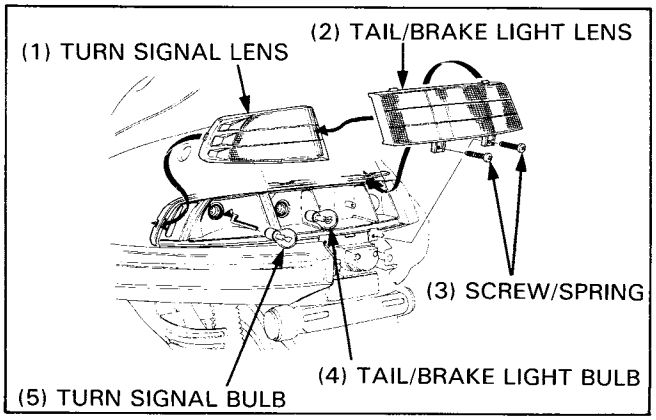
Remove the rear center cover (Section 2).

Remove the following:
— two screws and springs as an assembly
— tail/brake light lens
— turn signal lens

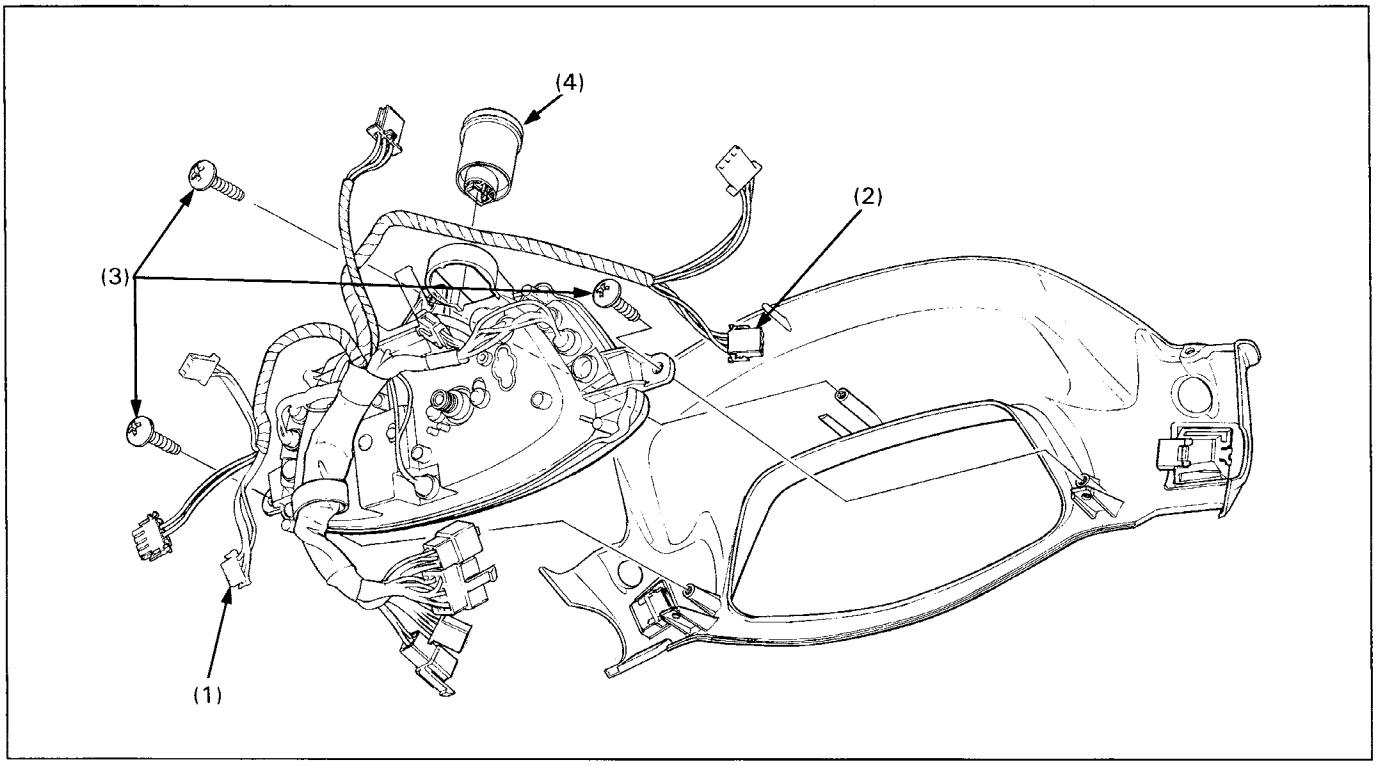
Remove the turn signal and tail/brake light bulb from the socket by turning it counterclockwise.

Installation is the reverse order of removal.

Install the rear center cover (Section 2).



Combination Meter Removal/Installation

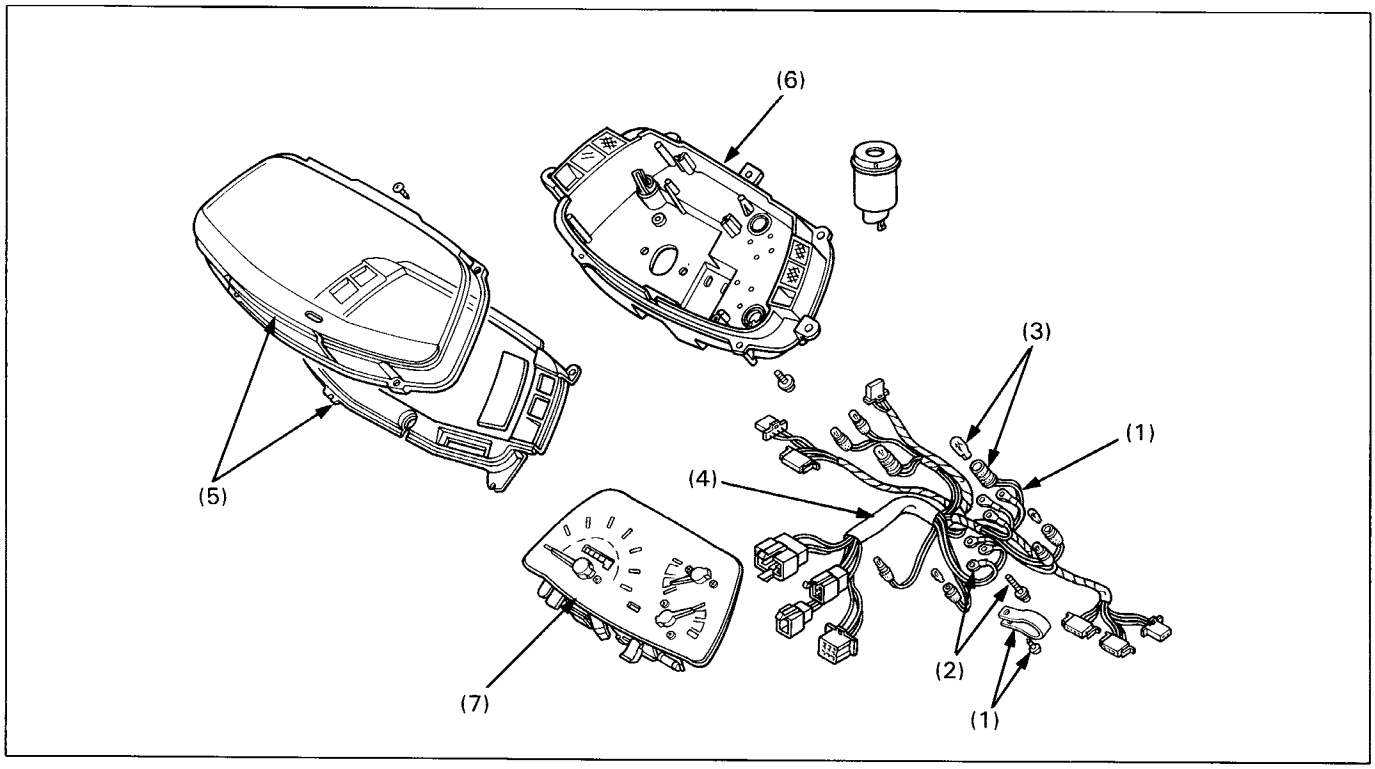


Requisite Service

- Steering upper cover removal/installation (Section 2)

	Procedure	Q'ty	Remarks
	Removal Order		• Installation is the reverse order of removal.
(1)	Engine stop switch connector	1	
(2)	Dimmer switch connector	1	
(3)	Meter mounting screw	3	
(4)	Turn signal relay	1	Disconnect the turn signal relay connector and remove the relay from the rubber suspension.

Combination Meter Disassembly/Assembly



NOTE

- Route the wire harness as illustrated on page 1-14.

Requisite Service

- Combination meter removal/installation (page 17-5)

	Procedure	Q'ty	Remarks
	Disassembly		• Assembly is the reverse order of disassembly.
(1)	Wire clamp/screw	1	
(2)	Wire harness terminal	6	Remove the terminal screws.
(3)	Meter bulb socket	6	Pull the sockets and bulbs as an assembly out of the back panel.
(4)	Wire harness	1	Disconnect the connectors from the meter and remove the wire harness from the meter.
(5)	Front meter cover	1	Remove the mounting screws and the cover.
(6)	Rear meter cover	1	Remove the mounting screws and the cover.
(7)	Combination meter	1	

Brake Light Switch/Starter Limiter Switch

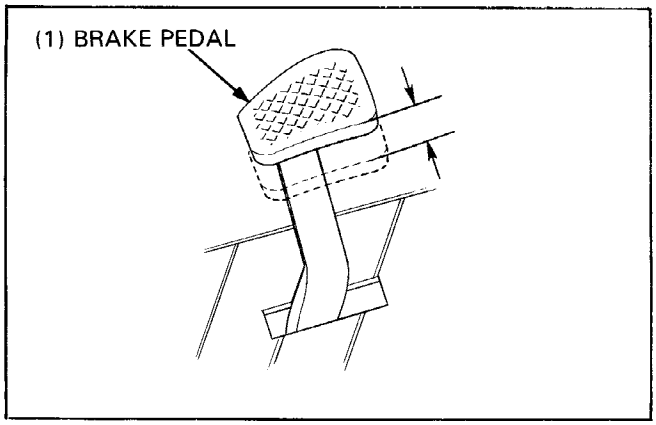
Adjustment

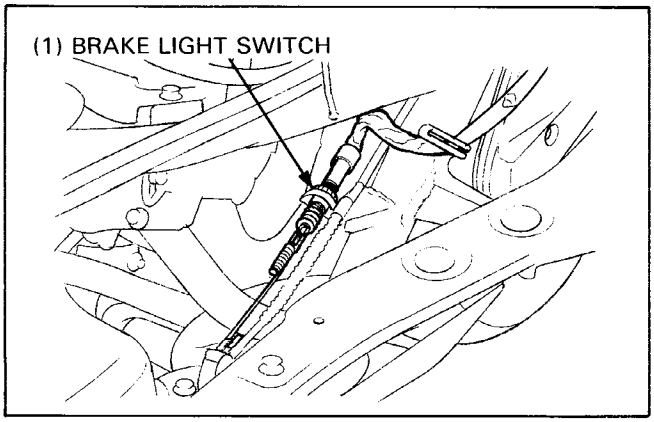
NOTE

- Perform the brake light switch adjustment after adjusting the brake pedal free play.

Adjust the brake light/starter limiter switch as follows
- Depress the brake pedal about 45—50 mm (1.88—2.0 in).
- Turn the adjustment nut so that the starter will engage at that point.
- The rear brake adjustment should be such that the rear wheel is locked when the starter engages.

After adjustment, check the switch operation. The brake light should come on when depressing the brake pedal 5—20 mm (0.2—0.8 in).

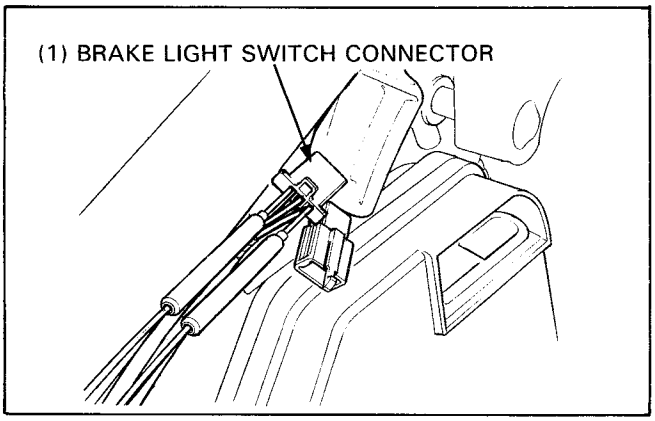




Inspection

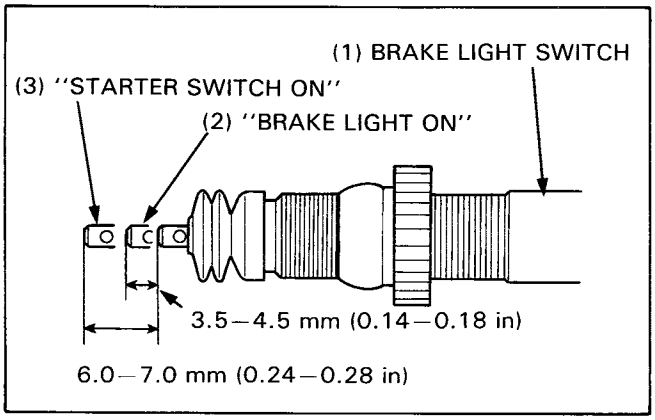
Disconnect the brake light/starter limiter switch connectors and check for continuity between the terminals in the chart.

	Terminal Color		
Brake Pedal	White—Green	Green—Yellow	Green—Red
Free			
Brake light comes on	O——	——O	
Starter motor turns	O——	——O	——O



[Switch Stroke]
Brake light comes on: 3.5—4.5 mm (0.14—0.18 in)
Starter motor turns: 6.0—7.0 mm (0.24—0.28 in)

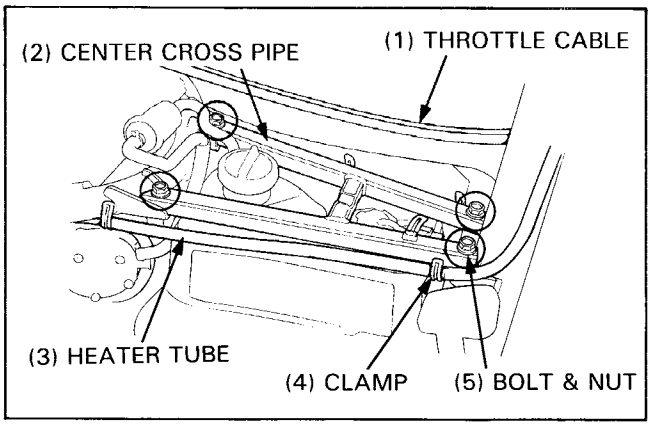
Replace the switch, if necessary.



Fuel Level Sensor

Removal

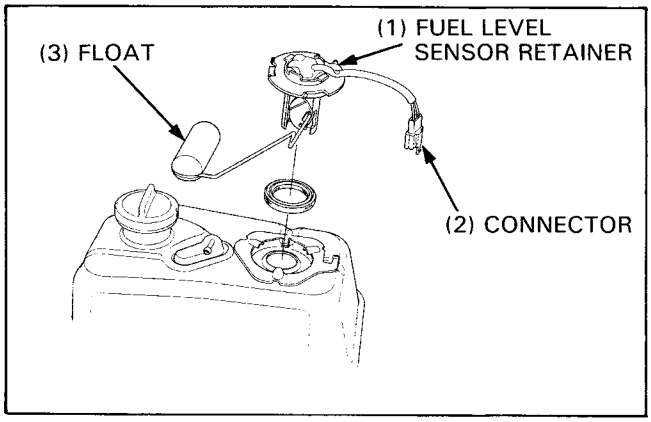
Unclamp the throttle cables and heater tube.
Remove the center cross pipe mounting bolts and nuts (4 pcs).
Remove the center cross pipe.



Remove the center cover (Section 2).
Unclamp the wire and disconnect the fuel level sensor connector.
Turn the fuel level sensor retainer counterclockwise and remove the fuel level sensor.

CAUTION

- **Do not bend the fuel level sensor arm.**

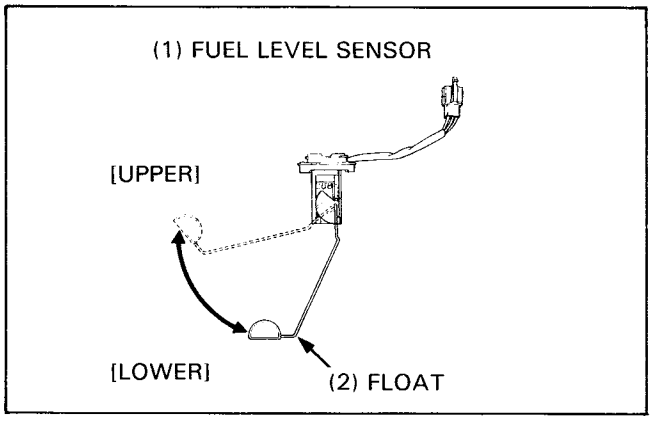


Inspection

Measure the resistance between the fuel level sensor wire terminals with the float at the upper (FULL) and lower (EMPTY) positions.

Float Level		Upper (Full)	Lower (Empty)
Resistance	Bl/W-Y/W	600 Ω	600 Ω
	Bl/W-G	566 Ω	33 Ω
	G-Y/W	33 Ω	566 Ω

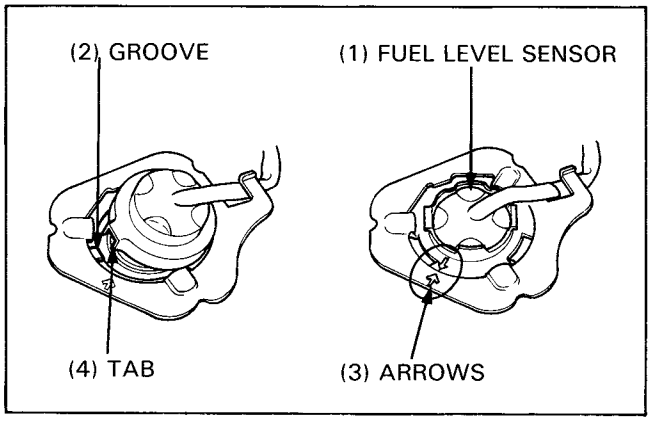
Replace the fuel lever sensor if it is out of specification by more than 10% at either position.



Installation

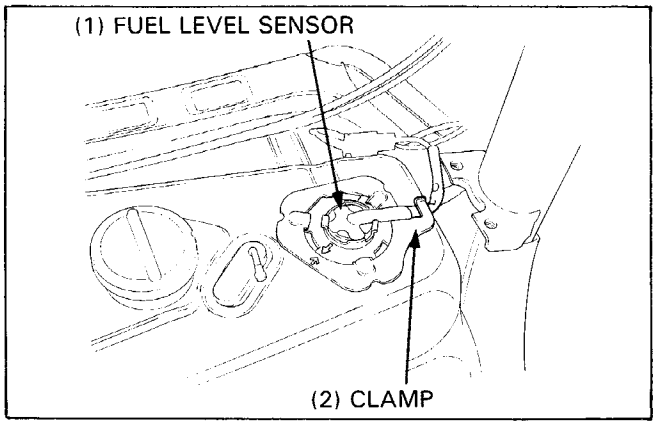
Set the fuel level sensor gasket onto the fuel tank and align the groove in the sensor base with the tab of the fuel tank.

Install the fuel level sensor retainer by turning it clockwise. Make sure that the arrows are aligned.



Connect the sensor connector and clamp the wire properly as shown.

Install the center cover (Section 2).



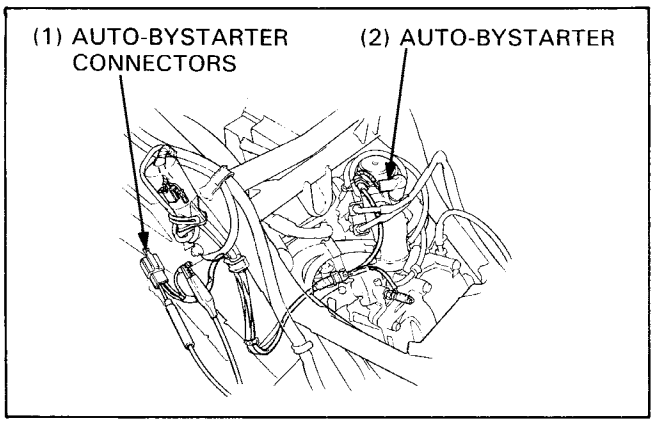
Auto-bystarter

Inspection

Stop the engine and wait at least 10 minutes to cool down, then disconnect the auto-bystarter connectors.
Measure the resistance between the terminals.

Standard: Approx 10 Ω (20°C/68°F)

If the reading is out of the specification, replace the auto-bystarter with a new one.

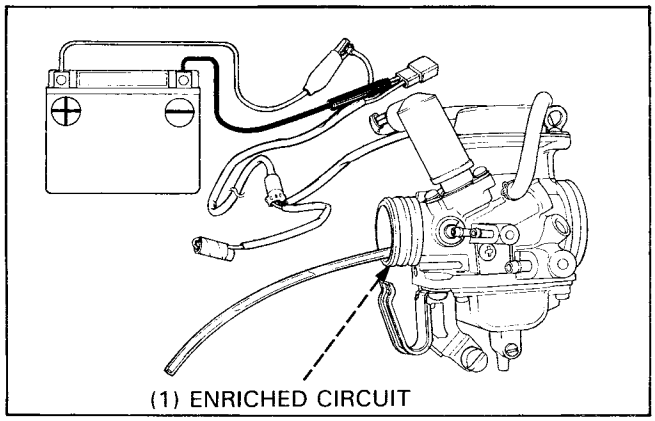


Functional Test

Remove the carburetor (page 5-4).

Connect a 12 V battery to the auto-bystarter and wait about 5 minutes. Connect a pressure tester to the fuel enrichment circuit and apply a light pressure. Replace the auto-bystarter if there is no restriction to the applied pressure.

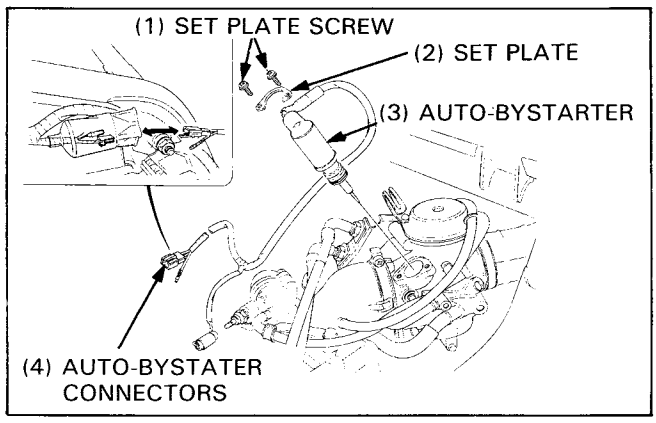
Disconnect the battery and wait about 30 minutes.
Connect a pressure tester to the fuel enrichment circuit and apply a light pressure. Replace the auto-bystarter, if the passage is blocked.



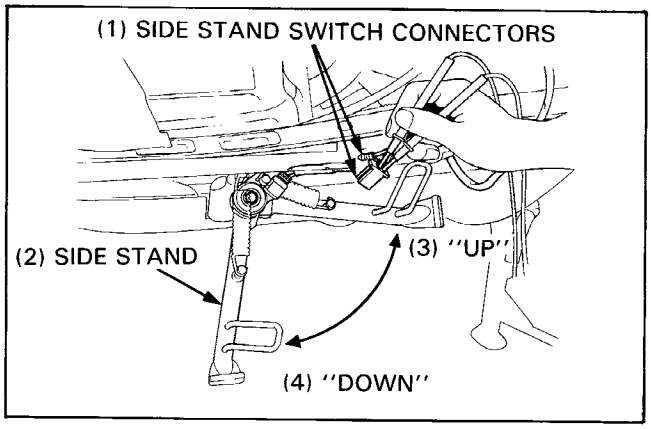
Removal

Remove the set plate screws, set plate and auto-bystarter from the carburetor.

Installation is the reverse order of removal.



Side Stand Switch



Inspection

Disconnect the side stand switch 2P connector and the connector.
Check for continuity between each terminal as below.
There should be continuity between the O—O marks on the continuity chart.

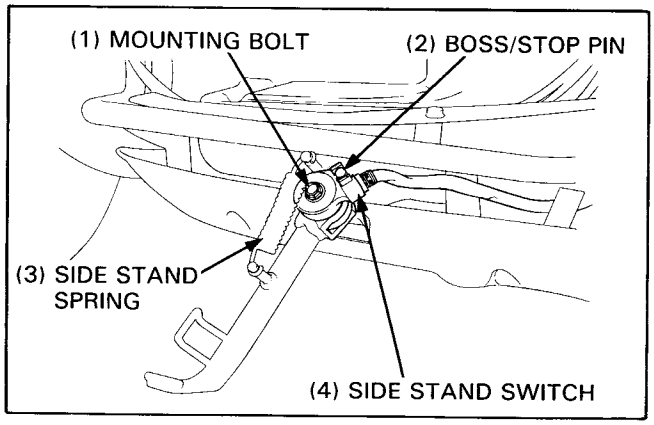
	Green/White	Yellow/Black	Green
Side stand is up		O—O	
Side stand is down	O—O		

If the switch is normal, check the related circuit.

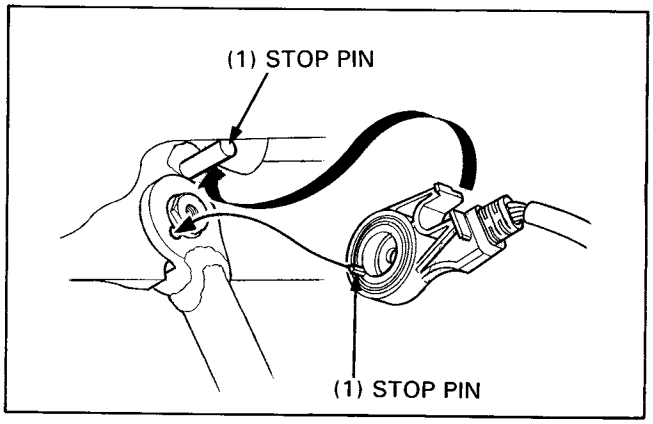
If the reading is abnormal, replace the side stand switch with a new one.

Removal

Support the scooter on its center stand.
Remove the lower cover (Section 2).
Disconnect the side stand switch connectors.
Remove the following:
- side stand spring
- mounting bolt
- side stand switch



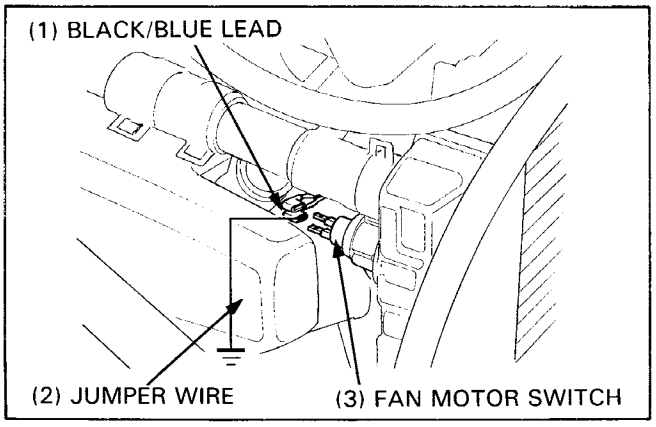
Installation is the reverse order of removal.
Align the switch on the side stand as shown.



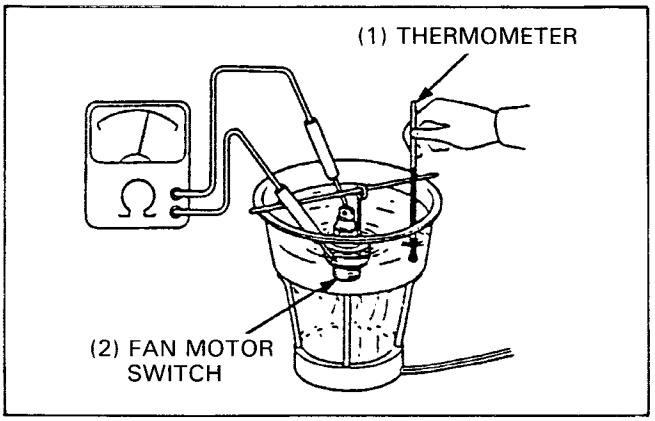
Fan Motor Switch

Remove the front upper cover assembly (Section 2).
The cooling fan motor is actuated by the fan motor switch located in the radiator.

If the fan motor does not start, disconnect the black/blue lead from the fan motor switch and ground it with a jumper wire as shown.
Turn the ignition switch ON. The cooling fan motor should start running. If it does not start, check for battery voltage from the black/blue lead of the fan motor connector and ground with ignition switch ON.
If there is no voltage, check for a blown fuse, loose terminals or connectors, or an open circuit.
If there is voltage, inspect the fan motor switch as follows:
Remove the switch.
Connect one lead of an ohmmeter to the connector of the fan motor switch and the other to the body.



Suspend the fan motor switch in a pan of coolant (50—50 mixture) and check the temperatures at which the switch opens and closes.
Make sure that there is no continuity at room temperature and then gradually raise the coolant temperature. The switch should show continuity (close) at 93°—97°C (199°—207°F).

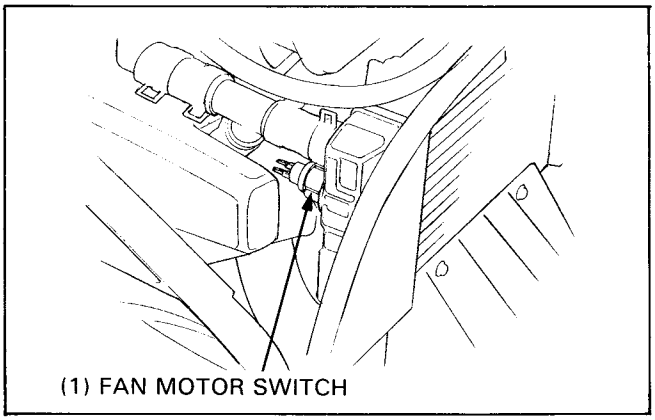


NOTE

- Keep the temperature constant for 3 minutes to confirm continuity.
  A sudden change of temperature will cause error temperature reading between the thermometer and switch.
- Do not let the switch or thermometer touch the pan as it will give a false reading.
- Immerse the switch in coolant up to its threads.

Install a new O-ring on the switch.
Apply sealant to the switch threads and install it.
Tighten the switch to the specified torque.

Torque: 18 N·m (1.8 kg-m, 13 ft-lb)

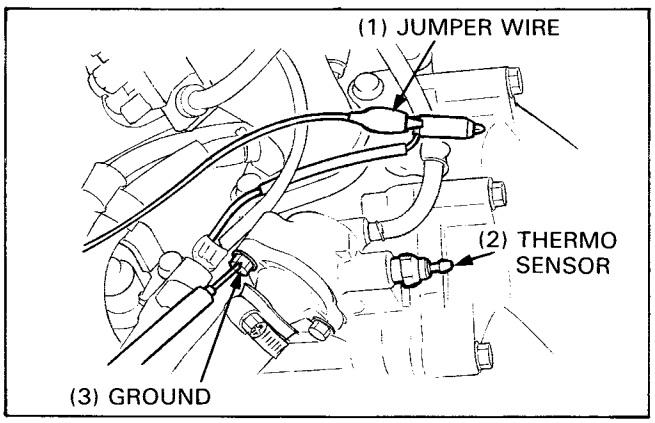


NOTE

- Do not over tighten the switch.

Temperature Gauge

Disconnect the wire from the thermo sensor and short it to ground.

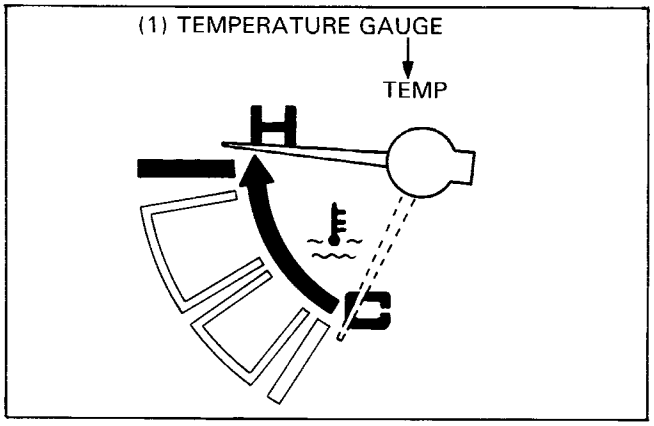


Turn the ignition switch ON. The temperature gauge needle should move all the way to (H).

CAUTION

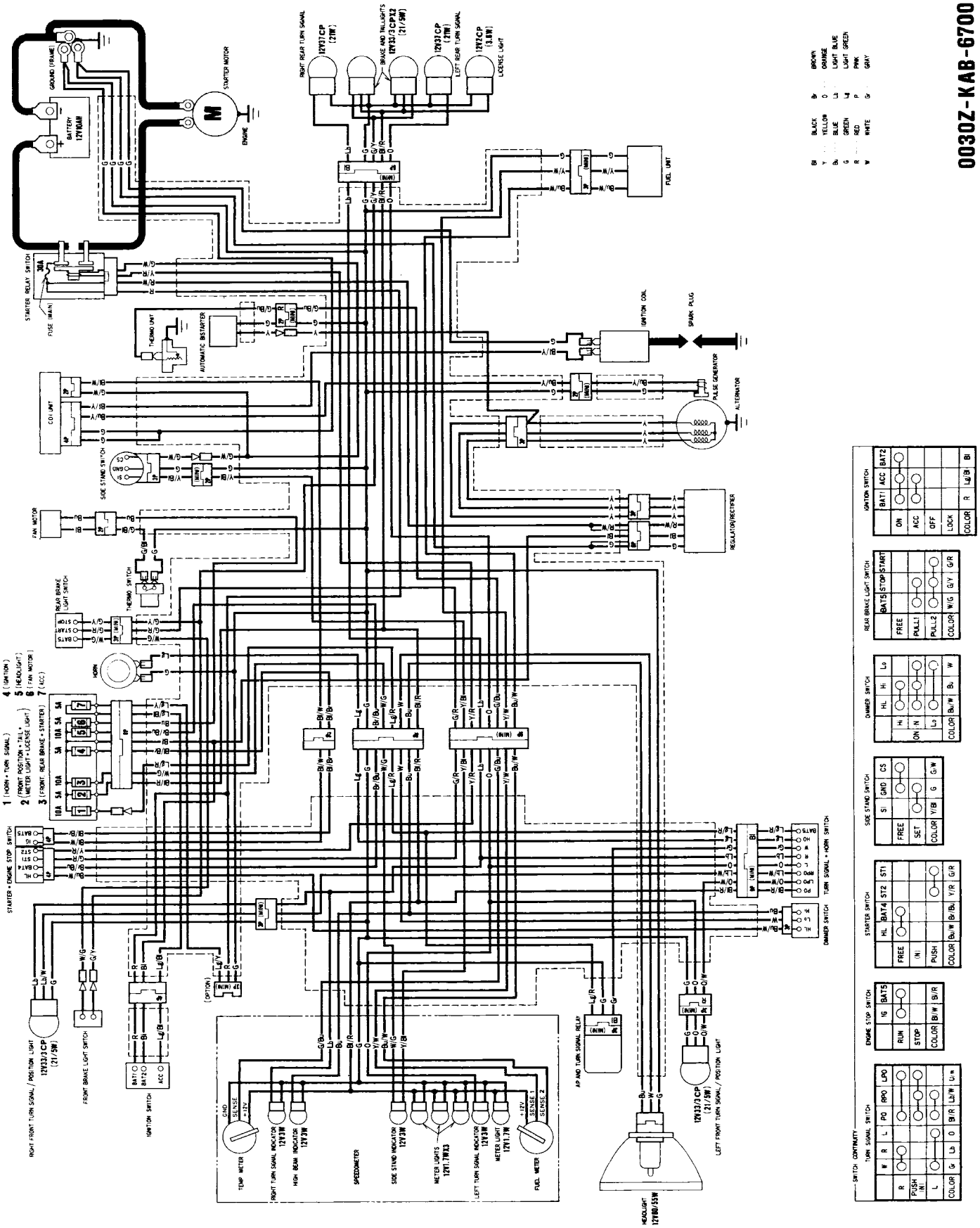
- **Do not leave the temperature sensor wire grounded for longer than a few seconds or the temperature gauge will be damaged.**

Replace the temperature gauge if necessary.
Refer to combination meter disassembly (page 17-6).



18. Wiring Diagram

0030Z-KAB-6700



18

19. Troubleshooting

Engine Does Not Start or is Hard to Start

		Probable Cause
1. Check for fuel flow at the carburetor by loosening drain screw	No Fuel to Carburetor →	• Clogged fuel tube to carburetor, vacuum tube to intake pipe • Clogged float valve • Clogged fuel tank cap breather hole • Clogged fuel strainer • Faulty fuel pump
Fuel to Carburetor ↓		
2. Try spark test	Weak or No Spark →	• Faulty spark plug • Fouled spark plug • Faulty CDI unit • Faulty pulse generator • Broken or shorted ignition coil • Faulty ignition switch
Spark Jumps ↓		
3. Test cylinder compression	Low Compression →	• Improper valve and seat contact • Worn cylinder and piston rings • Valve stuck open • Seized valve • Improper valve timing • Leaking cylinder head gasket
Normal Compression ↓		
4 Start by following normal starting procedure	Engine Fires But Soon Stops →	• Faulty auto-bystarter • Intake pipe leaking • Improper ignition timing • Incorrectly adjusted pilot screw
Engine Does Not Fire ↓		
5. Remove the spark plug	Wet Plug →	• Flooded carburetor • Faulty auto-bystarter • Throttle valve open excessively • Dirty air cleaner
Dry		

Engine Lacks Power

		Probable Cause
1. Accelerate lightly Engine Speed Increases	Engine Speed Does Not Increase Sufficiently →	• Clogged air cleaner • Restricted fuel flow • Clogged fuel tank breather hole • Clogged muffler • Faulty auto-bystarter • Split carburetor vacuum piston diaphragm
2. Check ignition timing Correct	Incorrect →	• Faulty CDI unit • Faulty pulse generator
3. Check valve clearance Correct	Incorrect →	• Improper valve clearance adjustment • Worn valve seat
4. Test cylinder compression Normal	Too Low →	• Improper valve and seat contact • Worn cylinder and piston rings • Leaking cylinder head gasket • Flaws in cylinder head • Improper valve timing
5. Check carburetor for clogging Not Clogged	Clogged →	• Carburetor not serviced frequently enough
6. Remove spark plug Not Fouled or Discolored	Fouled or Discolored →	• Plug not serviced frequently enough • Use of plug with improper heat range
7. Check oil level and condition Correct and Not Contaminated	Incorrect or Contaminated →	• Oil level too high • Oil level too low • Oil not changed
8. Remove cylinder head oil pipe bolt and inspect Valve Train Lubricated Properly	Valve Train Not Lubricated Properly →	• Clogged oil pipe • Faulty oil pump
9. Check for engine overheating Not Overheating	Overheating →	• Insufficient coolant • Thermostat stuck closed • Worn cylinder and piston rings • Lean mixture • Fuel contaminated • Excessive carbon build-up in combustion chamber • Faulty CDI unit
10. Accelerate or run at high speed Engine Does Not Knock	Engine Knocks →	• Excessive carbon build-up in combustion chamber • Use of poor quality fuel • Lean mixture • Faulty CDI unit

Poor Performance at Low and Idle Speeds

		Probable Cause
1. Check ignition timing (page 15-7)	Incorrect →	• Faulty CDI unit • Faulty pulse generator
Correct ↓		
2. Check carburetor pilot screw adjustment	Incorrect →	• Fuel air mixture too rich (Turn screw in) • Fuel air mixture too lean (Turn screw out)
Correct ↓		
3. Check for leaking intake pipe	Leaking →	• Deteriorated O-ring • Loose carburetor • Damaged insulator rubber • Air leaking past intake pipe vacuum joint
Not Leaking ↓		
4. Perform spark test	Weak or Intermittent Spark →	• Faulty, carbon or wet fouled spark plug • Faulty CDI unit • Faulty pulse generator • Faulty ignition coil • Broken or shorted spark plug wire • Faulty ignition switch
Good Spark ↓		
5. Check the air cut-off valve	Incorrect →	• Faulty air cut-off valve
Correct		

Poor Performance at High Speed

		Probable Cause
1. Check ignition timing (page 3-8)	Incorrect →	• Faulty CDI unit • Faulty pulse generator
Correct ↓		
2. Check valve clearance	Incorrect →	• Improper valve clearance adjustment • Worn valve seat
Correct ↓		
3. Disconnect fuel tube at fuel pump	Fuel Flow Restricted →	• Clogged fuel tube or strainer • Clogged fuel tank cap breather hole • Faulty fuel pump
Fuel Flows Freely ↓		
4. Remove carburetor and check for clogged jet	Clogged →	• Clean
Not Clogged ↓		
5. Check valve timing	Incorrect →	• Cam sprocket aligning marks not aligned
Correct ↓		
6. Check valve spring tension	Weak →	• Faulty spring
Not Weakened		

Engine Noise

	Probable Cause
1. Valve noise	• Valve clearance too large • Worn rocker arm and/or camshaft
2. Piston noise	• Worn piston and cylinder • Worn piston pin and connecting rod small end • Excessive carbon build-up in combustion chamber
3. Cam chain noise	• Damaged cam chain tensioner • Worn cam sprocket teeth • Worn or damaged cam chain
4. Crankshaft noise	• Worn main journal bearing • Worn crank pin bearing
5. Gear noise	• Worn or damaged final reduction gears • Worn final reduction gear shaft splines

20. Index

Revised: June 1989

MSV 4732 (8906) '89 CH250

20-1

Revised: June 1989

MSV 4732 (8906) '89 CH250