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## GENERAL SAFETY

### ⚠ WARNING

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

### ⚠ WARNING

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

### ⚠ WARNING

- *Gasoline is extremely flammable and is explosive under certain conditions so work in a well ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the work area or where gasoline is stored.*

### ⚠ 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.*

### CAUTION

*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 thoroughly wash your hands with soap and water as soon as possible after handling used oil.*

## SERVICE RULES

- 1) Use genuine HONDA or HONDA-recommended parts and lubricants or their equivalents. Parts that don't meet HONDA's design specifications may damage to the vehicle.
- 2) Use the special tools designed for this product to avoid damage and incorrect assembly.
- 3) Use only metric tools when servicing the vehicle. Metric bolts, nuts, and screws are not interchangeable with English fasteners.
- 4) Install new gaskets, O-rings, cotter pins, and lock plates when reassembling.
- 5) When tightening bolts or nuts, begin with the larger-diameter or inner bolts first. Then tighten to the specified torque diagonally in 1-5 steps, unless a particular sequence is specified.
- 6) Clean parts in non-flammable or high flash point solvent upon disassembly.
- 7) Lubricate any sliding surfaces before reassembly.
- 8) After reassembly, check all parts for proper installation and operation.

**GENERAL INFORMATION**

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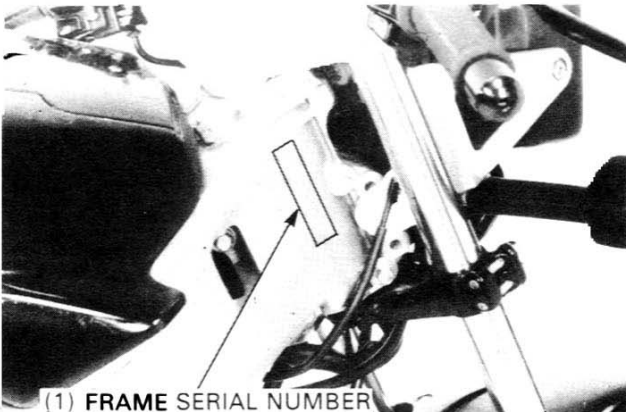
**MODEL IDENTIFICATION**



**NSR 125 F**



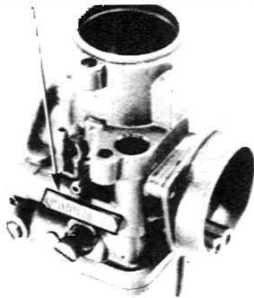
**NSR 125 R**



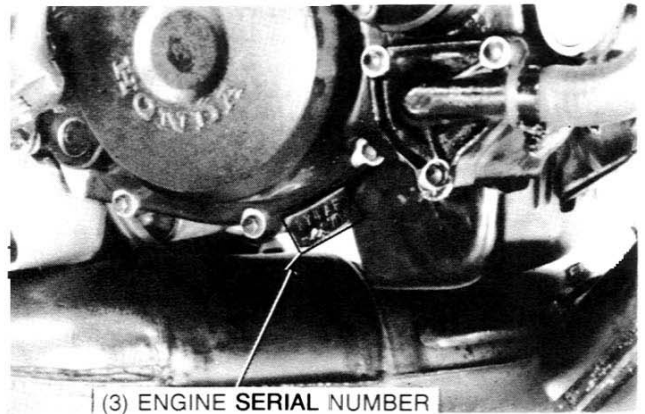
**(1) FRAME SERIAL NUMBER**

The frame serial number is stamped on the right side of the steering head.

**(2) CARBURETOR IDENTIFICATION NUMBER**



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



**(3) ENGINE SERIAL NUMBER**

The engine serial number is stamped on the crankcase lower right side.

**SPECIFICATIONS**

[R-Type] [R-Type Code]

ITEM		SPECIFICATIONS		
DIMENSIONS	Overall length	2,010 mm (79.1 in) [2,060 mm (81.1 in) SW-FI-SD] [2,015 mm (79.3 in) F-BH]		
	Overall width	680 mm (26.7 in) [690 mm (27.1 in)]		
	Overall height	1,035 mm (40.7 in) [1,080 mm (42.5 in)]		
	Wheelbase	1,350 mm (53.1 in)		
	Seat height	780 mm (30.7 in)		
	Footpeg height	345 mm (13.6 in)		
	Ground clearance	135 mm (5.3 in)		
	Dry weight	121 kg (266 lb) [127 kg (279,4 lb)]		
Curb weight	132 kg (290 lb) [138 kg (304 lb)]			
FRAME	Type	Almi cast bolt on		
	Front suspension, travel	Telescopic fork, 135 mm (5.3 in)		
	Rear suspension, travel (at rear axle)	Pro link, 110 mm (4.3 in)		
	Front tire size	100/80-17 52S		
	Rear tire size	130/70-18 63S		
	Cold tire pressure	Rider only	Front	200 kPa (2.00 kg/cm <sup>2</sup> , 29 psi)
			Rear	225 kPa (2.25 kg/cm <sup>2</sup> , 33 psi)
		Rider and one passenger	Front	200 kPa (2.00 kg/cm <sup>2</sup> , 29 psi)
			Rear	250 kPa (2.50 kg/cm <sup>2</sup> , 36 psi)
	Front brake, lining swept area	Hydraulic single disc, 61.4 cm <sup>2</sup> (9.5 sq in)		
Rear brake lining swept area	Hydraulic single disc, 48.9 cm <sup>2</sup> (7.6 sq in)			
Fuel capacity	10.0 lt. (2.6 US gal, 2,19 Imp gal)			
Fuel reserve capacity	2.0 lt. (0,52 US gal, 0,43 Imp gal)			
Caster angle	25°30'			
Trail length	97 mm (3.8 in)			
Fork oil capacity	280 cc (9.4 US oz, 7.8 Imp oz)			
ENGINE	Type	Water cooled 2-stroke		
	Cylinder arrangement	Single cylinder 18.5° inclined from vertical		
	Bore and stroke	54.0 × 54.5 mm (2.13 × 2.15 in)		
	Displacement	124.8 cm <sup>3</sup> (7.62 cu in)		
	Compression ratio	7.0:1		
	Transmission oil capacity	0,75 liters (0.79 US qt, 0.66 Imp qt) after disassembly		
	Engine oil tank capacity	0,70 liters (0.74 US qt, 0.62 Imp qt) after draining		
	Coolant capacity	1.0 liters (1.06 US qt, 0.88 Imp qt)		
	Lubrication system	1.1 liters (1,16 US qt, 0,96 Imp qt)		
	Air filtration	Separate lubrication		
	Cylindercompression	Oiled urethane foam		
	Port timing	Intake	Open	Reed valve controlled
			Close	Reed valve controlled
		Exhaust	Open	75°-95° BBDC
			Close	73°-93° ABDC
Scavenge		Open	64° BBDC	
		Close	62° ABDC	
Engine dry weight	22 kg (49 lb)			
Idle speed	1.400 ± 100 min <sup>-1</sup> (rpm)			
CARBURETOR	Type	Throttle valve		
	Identification number	PHBH 28 FS		
	Venturi diameter	28 mm		
	Pilot screw initial opening	2.5 turns out {2 turns out SW}		
	Float level	24 ± 0.5 mm (0.94 ± 0.02 in)		

GENERAL INFORMATION

**SPECIFICATIONS**

[R-Type] [R-Type Code]

ITEM		SPECIFICATIONS		
DRIVE TRAIN	Clutch	Wet multi plate		
	Transmission	6-speed constant mesh		
	Primary reduction	3,250 (65/20)		
	Gear ratios	I	3,090 (34/11)	
		II	2.000 (30/15)	
		III	1.470 (25/17)	
		IV	1.210 (23/19)	
		V	1.043 (24/23)	
		VI	0.916 (22/24)	
	Final reduction	2.692 (35/13)		
	Gearshift pattern	1—N—2—3—4—5—6		
ELECTRICAL	Ignition	CDI		
	Ignition timing F mark	24.3° ± 2°/3,000 min <sup>-1</sup> (rpm)		
	Alternator	168W/5,000 min <sup>-1</sup> (rpm) [276W/5,000 min <sup>-1</sup> (rpm)]		
	Spark plug		NGK	ND
		Standard	BR9ECS	W27ESR-U
For extended high speed riding		BR10ES	W31ESR-U	
Spark plug gap	0.7-0.8 mm (0.028—0.031 in)			
Fuse	15A			
LIGHTS	Headlight (high/low beam)	12V 35W/35W [12V 25W/25W × 2] [12V60W/55W-SW]		
	Position light	12V 5W [12V 5W × 2]		
	Brake/taillight	12V 21W/5W		
	Turn signal light	12V 10W × 4		
	Instrument light	12V 1.7W × 4		
	Neutral indicator light	12V 3W		
	Turn signal indicator light	12V 3W × 2		
	High beam indicator light	12V 1.7W		

# TORQUE VALUES

## ENGINE

ITEM	Q' ty	THREAD DIA. (mm)	TORQUE N·m (kg-m, ft-lb)	REMARKS
Water pump impeller	1	7	12 (1.2, 9)	Apply a locking agent to the threads
Cylinder head nut	6	7	16 (1.6, 12)	
Cylinder nut	4	8	23 (2.3, 17)	
Clutch center lock nut	1	14	65 (6.5, 47)	
Primary drive gear	1	12	65 (6.5, 47)	
Shift drum center pin	1	8	22 (2.2, 16)	
Shift drum stopper bolt	1	6	12 (1.2, 9)	
Flywheel nut	1	12	65 (6.5, 47)	
Balancer driven gear nut	1	14	60-70 (6.0-7.0, 43-51)	
Crankcase bolt	11	6	9 (0.9, 6.5)	
Transmission oil drain bolt	1	8	27 (2.7, 20)	
Starter motor bolt	2	8	27 (2.7, 20)	

## FRAME

ITEM	Q' ty	THREAD DIA. (mm)	TORQUE N·m (kg-m, ft-lb)	REMARKS
Fuel valve lock nut	1		10 (1.0, 7)	Apply a locking agent to the threads.
Engine mounting nut	3	10	37 (3.7, 27)	
Expansion chamber/silencer mounting nut	2	8	22 (2.2, 16)	
Expansion chamber joint nut	2	6	10 (1.0, 7)	
Front master cylinder holder bolt	2	6	10 (1.0, 7)	
Clutch lever bracket holder bolt	2	6	10 (1.0, 7)	
Front brake disc bolt	6	6	15 (1.5, 11)	
Front axle	1	12	55 (5.5, 40)	
Front axle pinch bolt	1	8	22 (2.2, 16)	
Fork slider socket bolt	2	10	28 (2.8, 20)	
Lower fork pinch bolt	4	8	27 (2.7, 20)	
Upper fork pinch bolt	2	7	11 (1.1, 8)	
Fork tube cap	2	-	18 (1.8, 13)	
Front caliper bracket bolt	2	8	27 (2.7, 20)	
Steering adjustment nut	1	22	2 (0.2, 1.4)	
Steering stem nut	1	22	70 (7.0, 51)	

## GENERAL INFORMATION

ITEM	Q'ty	THREAD DIA. (mm)	TORQUE N·m (kg-m, ft-lb)	REMARKS
Wheel flange bolt	10	6	15 (1.5, 11)	
Brake disc bolt (REAR)	3	10	33 (3.3, 24)	
(FRONT)	6	6	1.5 (1.5, 11)	
Driven sprocket bolt	5	10	45 (4.5, 33)	
Rear axle nut	1	16	90 (9.0, 65)	
Shock absorber upper mounting bolt	1	14	15 (1.5, 11)	
Shock absorber upper mounting bolt lock nut	1	22	35 (3.5, 25)	
Shock absorber upper mounting nut	1	8	35 (3.5, 25)	
Shock absorber lower mounting bolt	1	8	35 (3.5, 25)	
Shock arm-to-swing arm nut	1	10	45 (4.5, 33)	
Shock link-to-frame nut	1	10	45 (4.5, 33)	
Shock arm-to-shock link nut	1	10	45 (4.5, 33)	
Drive chain slider screw	2	—	9 (0.9, 6.5)	
Swing arm pivot bolt lock nut	1	22	70 (7.0, 51)	
Swing arm pivot nut	1	14	70 (7.0, 51)	
Bleed valve	2	6	6 (0.6, 4.3)	
Master cylinder reservoir cap screw	4	4	1.5 (0.15, 1.1)	
Brake hose bolt	2	10	30 (3.0, 22)	
Caliper bracket pin bolt A	1	8	18 (1.8, 13)	
Caliper bracket pin bolt B	1	8	23 (2.3, 17)	
Brake lever pivot nut	1	6	10 (1.0, 7)	
Caliper inner plate bolt	2	10	55 (5.5, 40)	
Rear caliper bolt	2	8	30 (3.0, 22)	

Torque specifications listed on previous page are for important fasteners. Others should be tightened to standard torque values listed below.

## STANDARD TORQUE VALUES

ITEM	TORQUE VALUES N·m (kg-m, ft-lb)	ITEM	TORQUE VALUES N·m (kg-m, ft-lb)
5 mm bolt and nut	5 (0.5, 3.6)	5 mm screw	4 (0.4, 2.9)
6 mm bolt and nut	10 (1.0, 7)	6 mm screw	9 (0.9, 6.5)
8 mm bolt and nut	22 (2.2, 16)	6 mm flange bolt and nut	12 (1.2, 9)
10 mm bolt and nut	35 (3.5, 25)	8 mm flange bolt and nut	27 (2.7, 20)
12 mm bolt and nut	55 (5.5, 40)	10 mm flange bolt and nut	40 (4.0, 29)

**TOOLS**

## NEWLY PROVIDED

DESCRIPTION	NUMBER	REF. SECT.
Rotor puller	07JMC-KY40100	9
Lock nut wrench	07JMA-KY40100	12

## SPECIAL

DESCRIPTION	NUMBER	REF. SECT.
Bearing remover set, 12 mm		5
– Remover handle		5
– Bearing remover		5
Mechanical seal driver attachment		5
Attachment, 28×30 mm		5
Clutch center holder		8
Crankcase puller		10
Universal bearing puller		10
Bearing remover		10
Remover handle		10
Crankshaft assembly collar A		10
Crankshaft assembly shaft A		10
Crankcase assembly tool		10
– Crankcase assembly collar B		10
– Crankcase assembly shaft B		10
Ball race remover		11
Fork seal driver attachment		11
Steering stem driver		11
Steering stem socket		11
Shock absorber spring compressor		12
Bearing remover, 20 mm		12
Remover sliding weight		12

## COMMON

DESCRIPTION	NUMBER	REF. SECT.
Float level gauge	07401-0010000	4
Driver	07749-0010000	5, 10, 11, 12
Pilot, 12 mm	07746-0040200	5
Lock nut wrench, 20×24 mm	07716-0020100	8, 9
Extension bar	07716-0020500	8, 9
Flywheel holder	07725-0040000	8, 9
Attachment, 37×40 mm	07746-0010200	10, 11, 12
Attachment, 42×47 mm	07746-0010300	10
Attachment, 52×55 mm	07746-0010400	10
Attachment, 62×68 mm	07746-0010500	10

## GENERAL INFORMATION

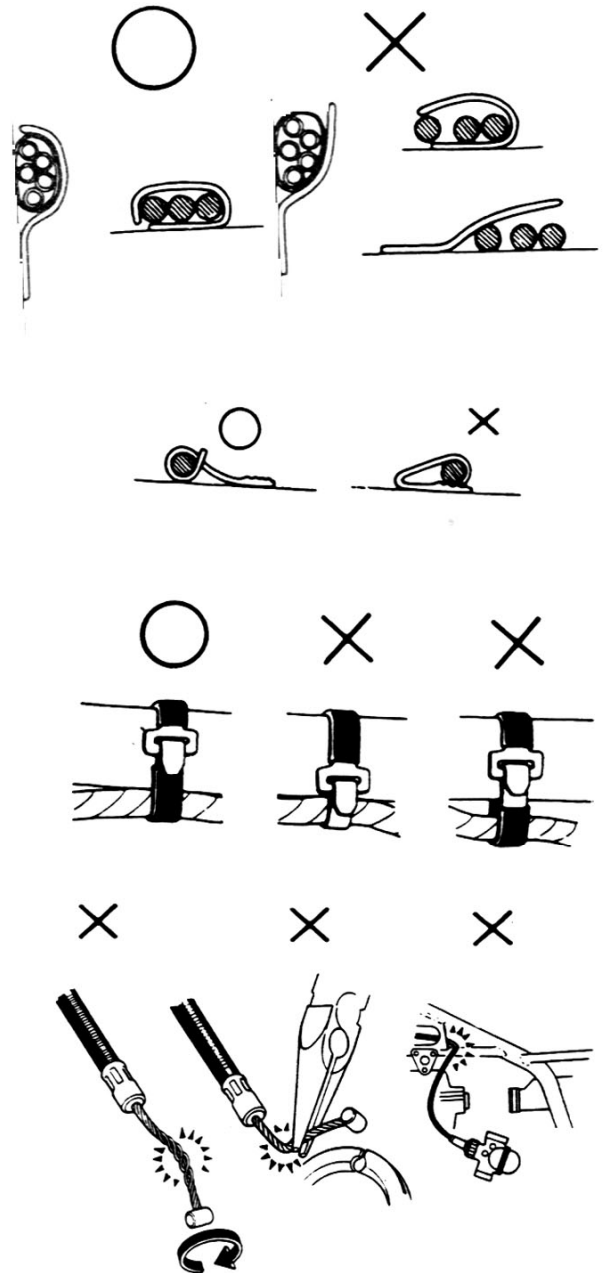
DESCRIPTION	NUMBER	REF. SECT.
Pilot, 15 mm	07746-0040300	10, 11
Pilot, 17 mm	07746-0040400	10, 12
Pilot, 20 mm	07746-0040500	10, 12
Pilot, 25 mm	07746-0040600	10, 12
Pilot, 22 mm	07746-0041000	10
Bearing remover shaft	07746-0050100	11, 12
Bearing remover head, 12 mm	07746-0050300	11
Bearing remover head, 17 mm	07746-0050500	12
Attachment, 32×35mm	07746-0010100	11, 12
Fork seal driver	07747-0010100	11
Digital multimeter (KOWA)	07411-0020000	15, 19
Circuit tester (SANWA) or Circuit tester (KOWA)	07308-0020000 TH5H	15, 16, 17, 18, 19



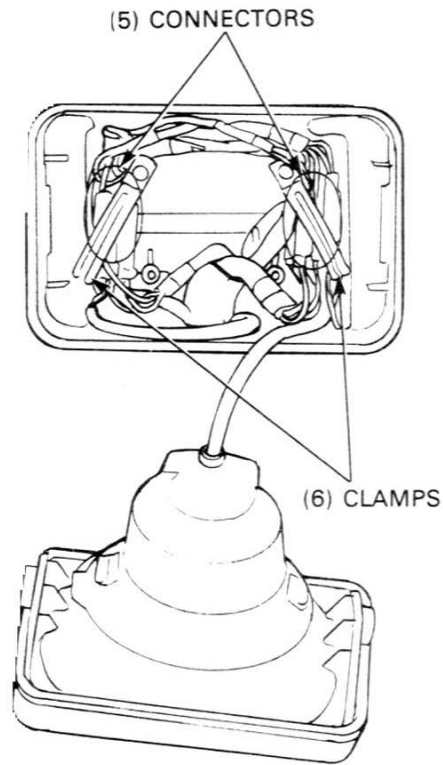
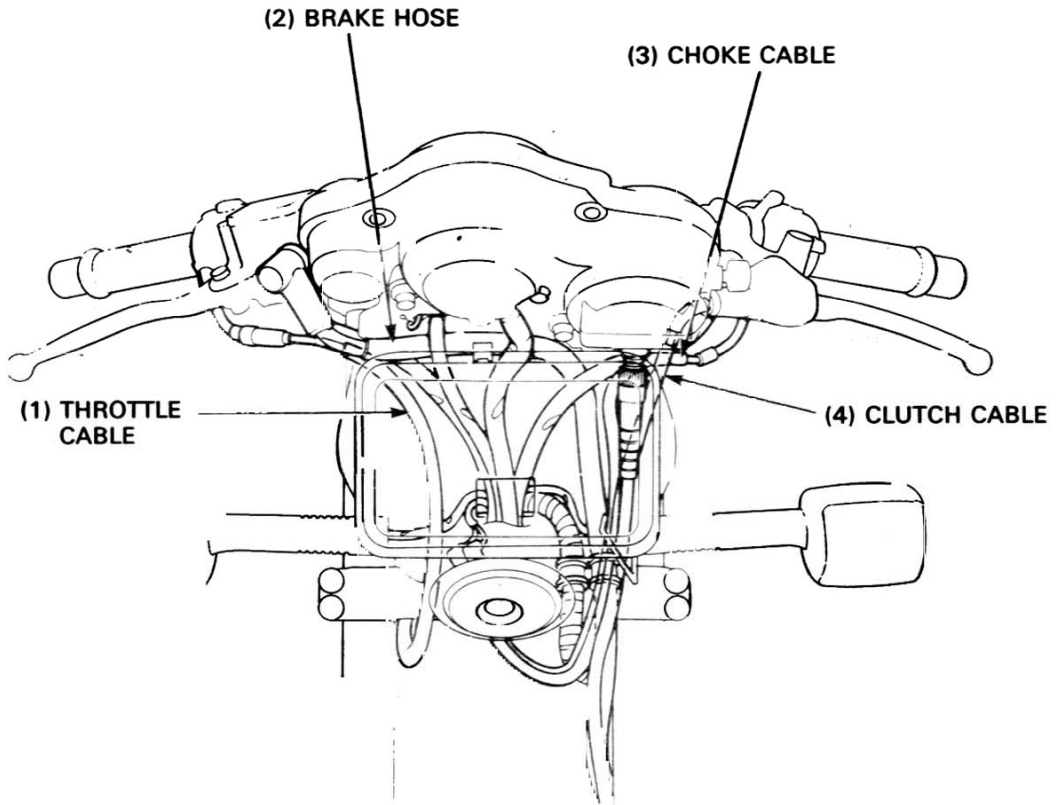
## CABLE & HARNESS ROUTING

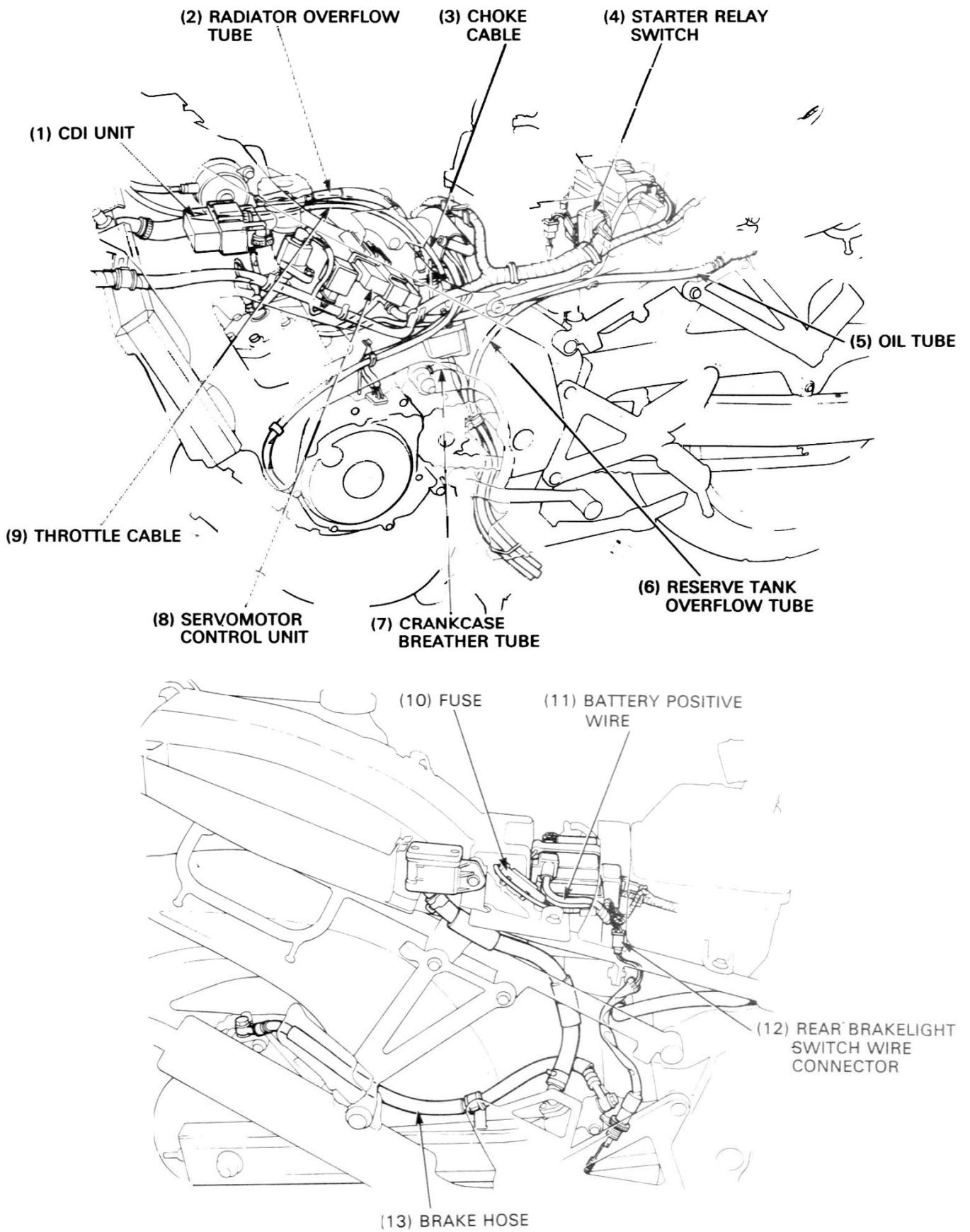
Note the following when routing cables and wire harnesses:

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

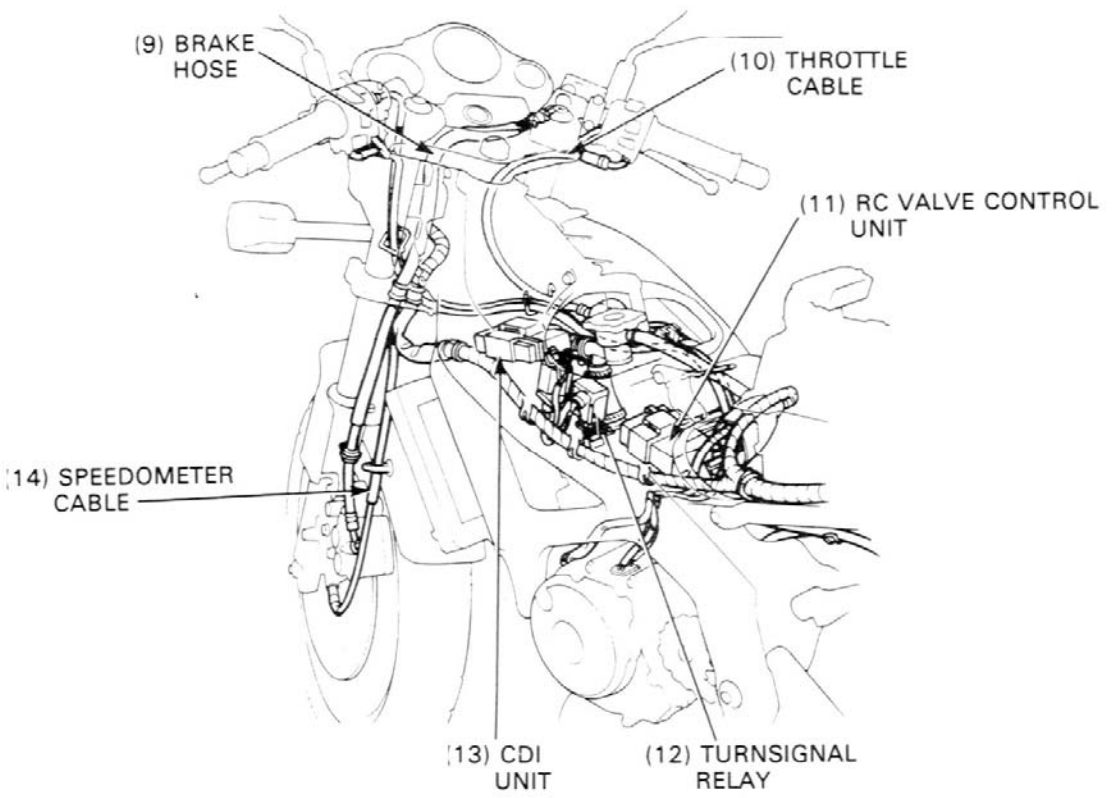
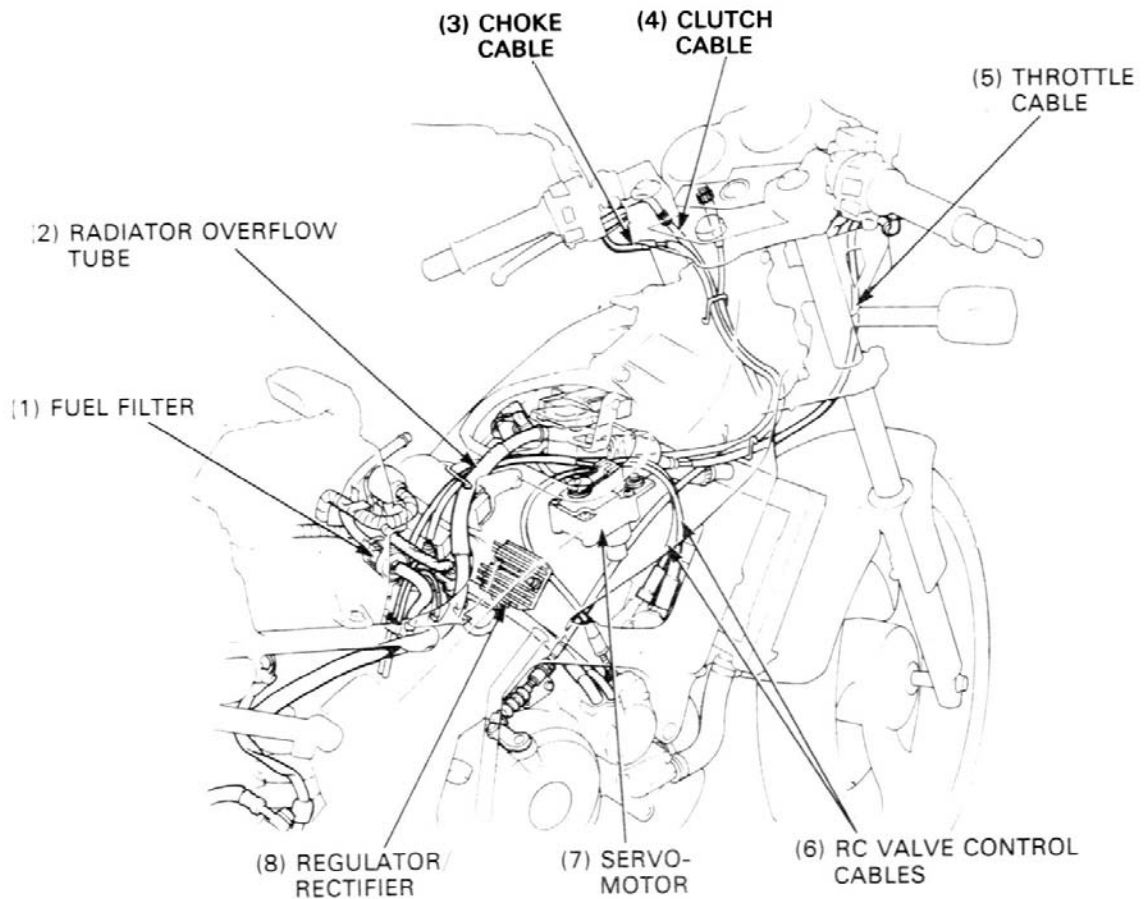


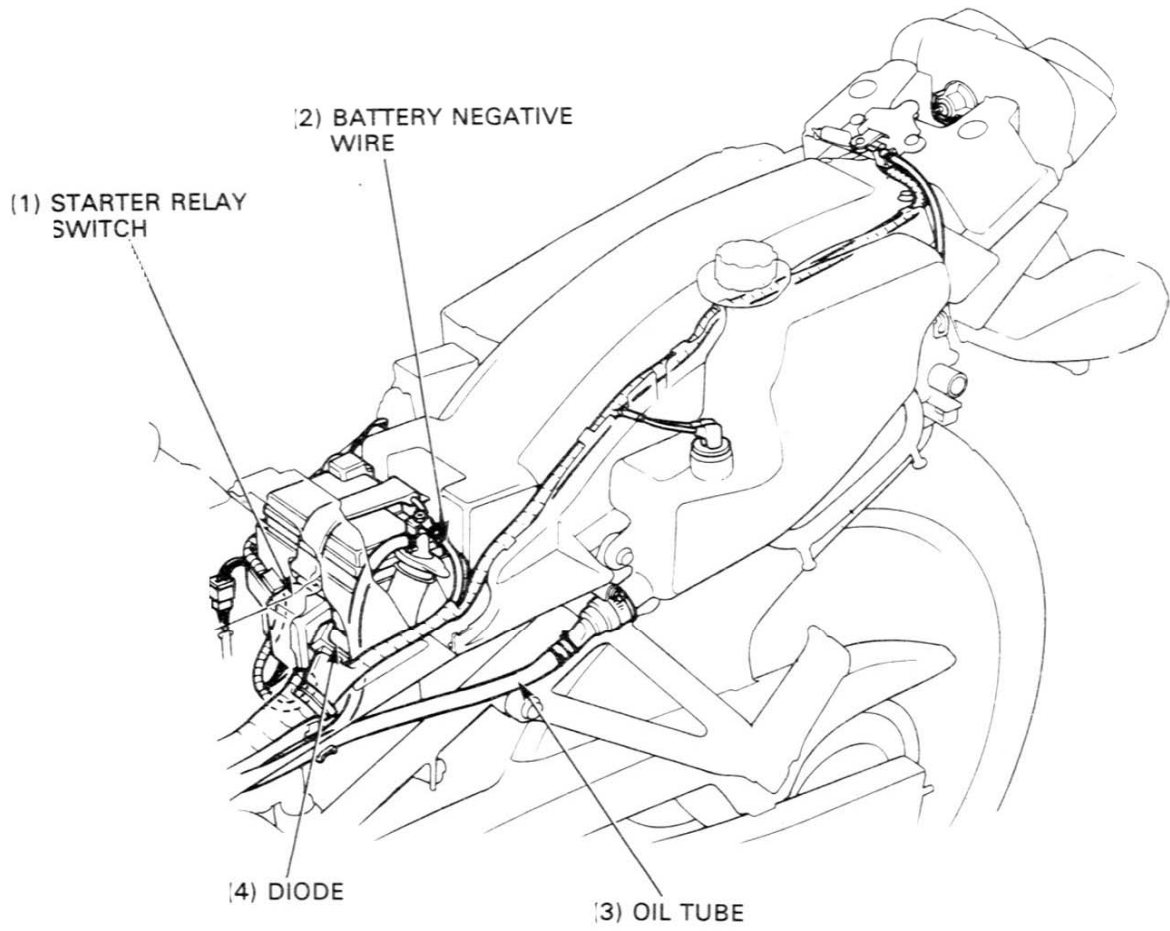
O: CORRECT  
 X: INCORRECT

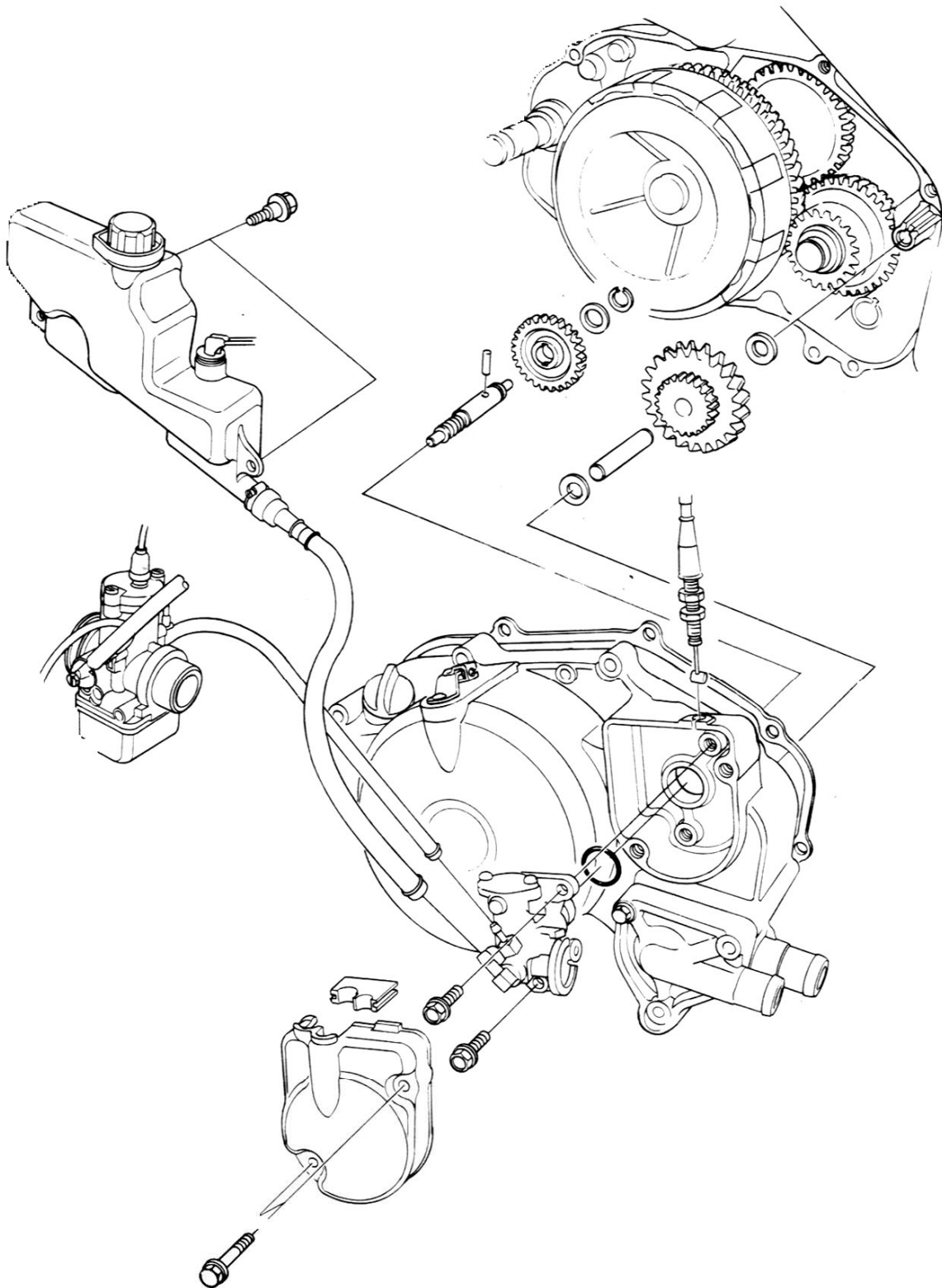




# GENERAL INFORMATION







## LUBRICATION

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OIL PUMP	2-2	LUBRICATION POINTS	2-6
OIL PUMP CONTROL CABLE ADJUSTMENT	2-4		

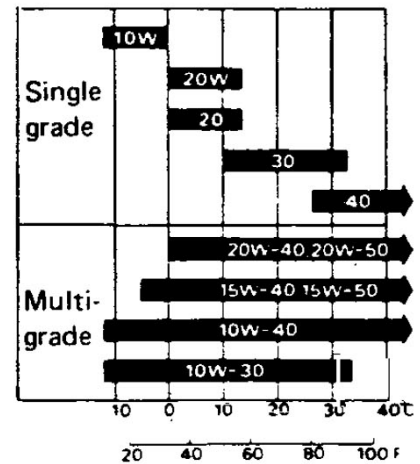
## SERVICE INFORMATION

### GENERAL

- Lubrication system service can be performed with the engine in the frame.
- When removing and installing the oil pump, use care not to allow dust or dirt to enter the oil lines.
- Do not attempt to disassemble the oil pump.
- Bleed air from the oil pump if there is air in the oil tube (from the oil tank to the oil pump) or whenever the oil tube has been disconnected.
- Bleed air from the oil pass tube (from the oil pump to the carburetor) whenever oil lines have been disconnected.
- Refer to page 3-6 for the engine oil strainer cleaning.

### SPECIFICATIONS

Engine oil recommendation:	Honda 2-stroke oil or equivalent
Engine oil tank capacity:	1.0 liters (1.06 US qt, 0.88 Imp qt)
Transmission oil capacity:	0.70 liters (0.74 US qt, 0.62 Imp qt) after draining
Transmission oil recommendation:	Honda 4-stroke oil or equivalent Viscosity: SAE 10W-40 API Service classification: SE or SF Other viscosities shown in the chart may be used when the average temperature in your riding area is within the indicated range.



## TROUBLESHOOTING

### Excessive smoke and/or carbon on spark plug

- Pump not properly adjusted (excessive oil)
- Low quality engine oil
- Incorrect engine oil

### Overheating

- Oil pump not adjusted properly (insufficient oiling)
- Low quality oil
- Incorrect engine oil

### Seized piston

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

### Oil not flowing out of tank

- Clogged oil tank cap breather hole
- Clogged oil strainer

# OIL PUMP

## REMOVAL

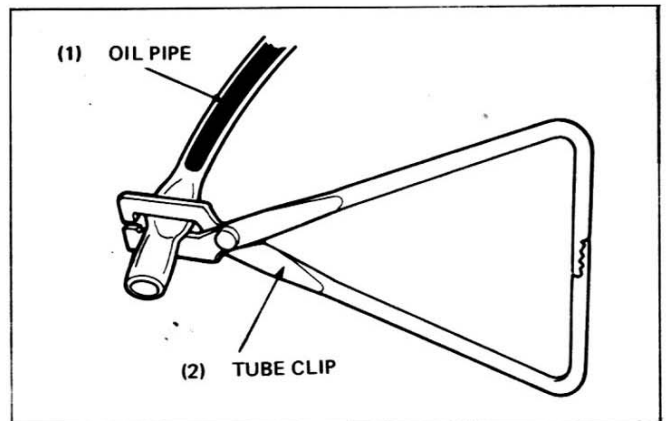
### NOTE

- Clean the oil pump and the crankcase before removing the oil pump.

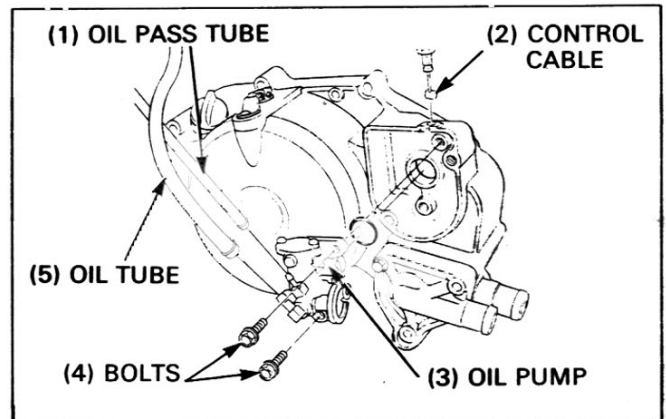
Remove the oil pump cover.



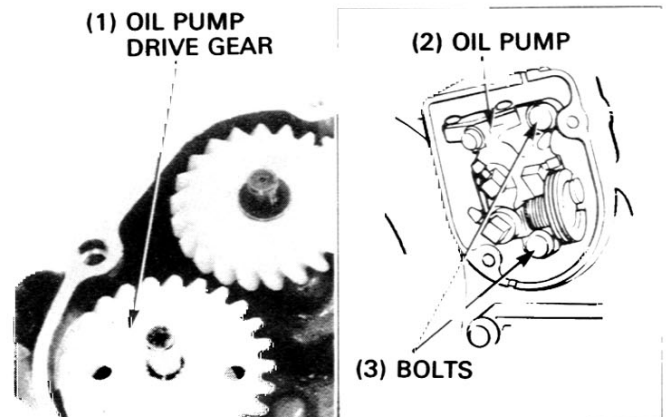
Clamp the oil tube and pass tube to prevent oil from flowing out.



Disconnect the oil control cable from the oil pump drum. Disconnect the oil tube and pass tube from the oil pump. Remove the right crankcase cover (page8-3).



Remove the oil pump drive gear. Remove the oil pump mounting bolts and oil pump from the right crankcase cover.





## LUBRICATION

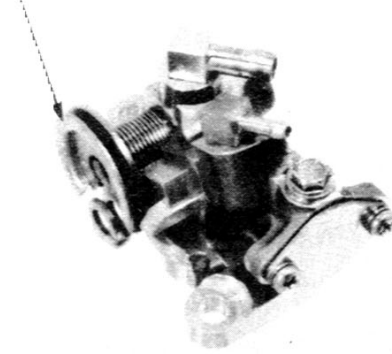
### INSPECTION

#### CAUTION

- *Do not disassemble the oil pump.*

Check the oil pump body for damage.  
Check the oil pump drum for smooth operation.

(1) OIL PUMP DRUM



### AIR BLEEDING/INSTALLATION

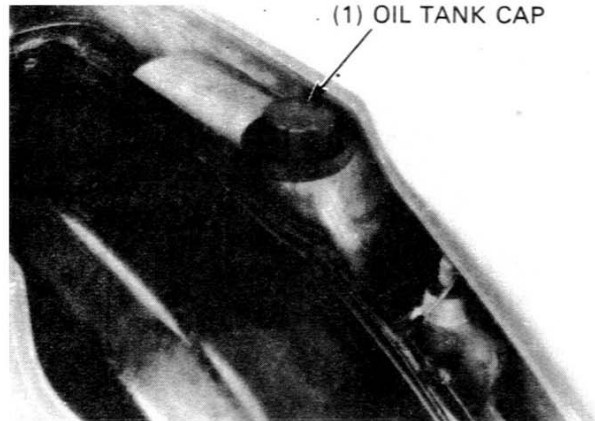
#### CAUTION

- *Air in the oil system will block or restrict oil flow and may result in severe engine damage.*
- *Bleed air from the system whenever the oil lines have been disconnected or there is air in the line.*

Remove the seat and oil tank cap, and fill the tank with the recommended engine oil.

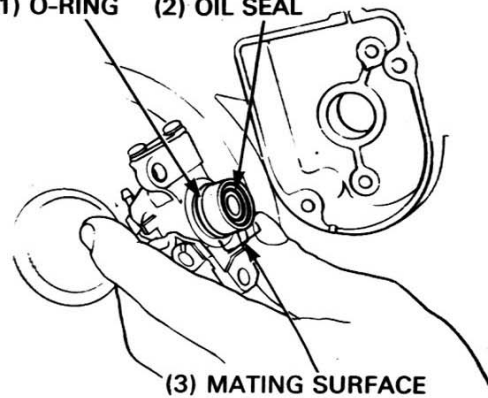
**RECOMMENDED OIL: HONDA 2-stroke oil or equivalent**

(1) OIL TANK CAP



Check the oil seal and O-ring for damage or deterioration.  
Check the right crankcase cover mating surface of the oil pump for damage.  
Coat the O-ring with clean engine oil, and install the oil pump onto the right crankcase cover

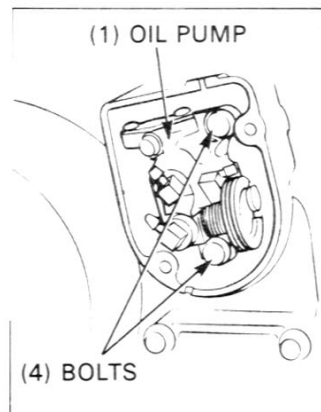
(1) O-RING (2) OIL SEAL



(3) MATING SURFACE

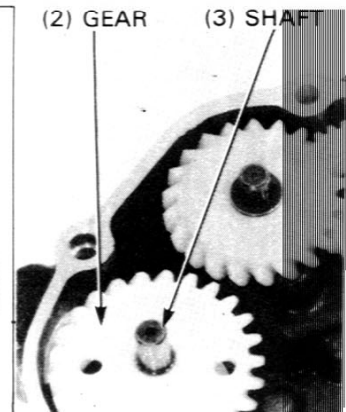
Secure the oil pump with two mounting bolts.  
Install the oil pump drive shaft into the oil pump and install the gear onto the shaft.  
Install the right crankcase cover (page 8-16).

(1) OIL PUMP



(4) BOLTS

(2) GEAR (3) SHAFT



Make sure that the oil tube is filled with the oil and connect it to the oil pump.  
 Place a shop towel around the oil pump.  
 Loosen the bleeder bolt on the oil pump and allow the oil to flow out until air bubbles do not appear in the oil.  
 Tighten the bleeder bolt.

Drain the fuel from the carburetor.  
 Turn the fuel valve OFF and disconnect the fuel line from the fuel valve.  
 Connect the fuel line to the container filled with fuel-oil mixture (25-50 parts fuel to 1 part oil).  
 Remove the air cleaner case (page 4-5).  
 Start the engine and run for about 10 minutes with the oil pump drum turned to fully open position to force air out of the oil pass tube with oil.

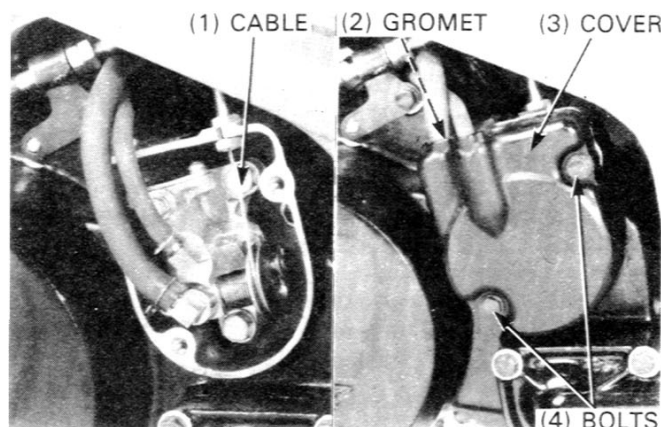
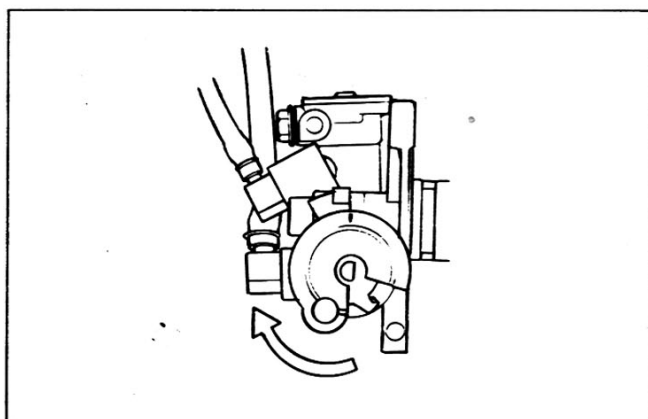
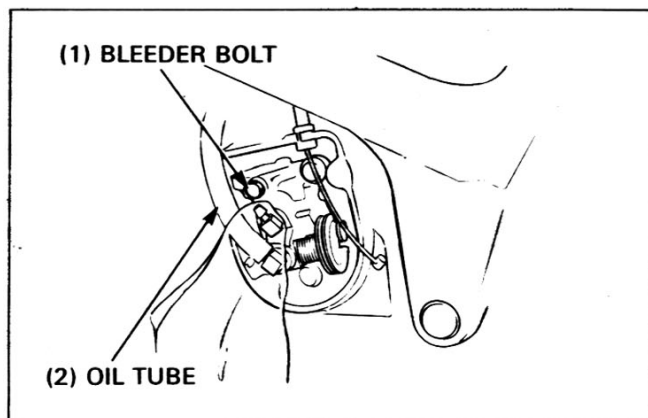
**⚠ WARNING**

- *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 the loss of consciousness and may lead to death.*

**CAUTION**

- *Use only the recommended engine oil (page 2-1).*
- *Do not race the engine.*

Connect the fuel line to the fuel valve.  
 Connect the oil control cable to the oil pump drum.  
 Adjust the oil control cable and install the oil pump cover with the grommet.  
 Secure the oil pump cover with the bolts.

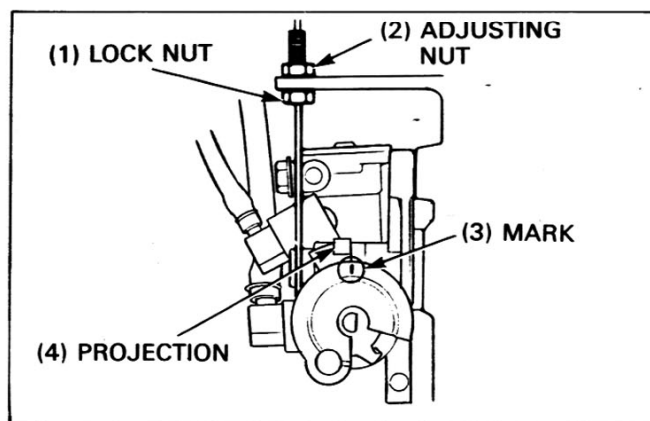


## OIL PUMP CONTROL CABLE ADJUSTMENT

**NOTE**

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

Remove the oil pump cover.  
 Loosen the oil control cable lock nut and open the throttle fully.  
 Check that the aligning mark on the oil pump control drum is aligned with the index mark projection on the pump body.  
 Adjust if necessary by turning the adjusting nut.



## LUBRICATION

### CAUTION

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

Tighten the control cable lock nut and install the oil pump cover.

## OIL TANK

### REMOVAL/INSTALLATION

Remove the left fairing (page 4-3).

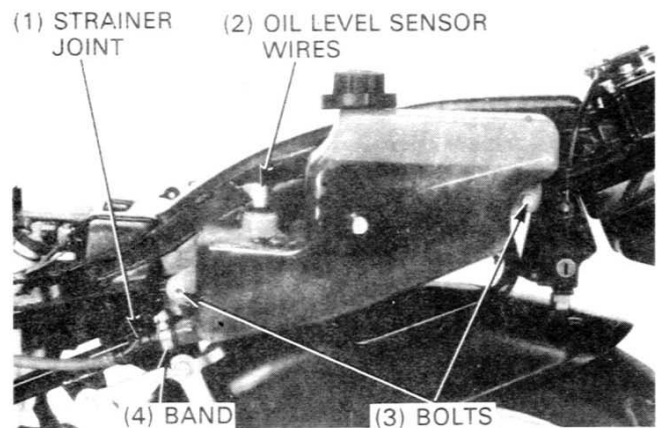
Disconnect the oil level sensor wires.

Loosen the oil strainer joint band, remove the strainer joint at the bottom of the oil tank and allow the oil to drain into a clean container.

Remove the two mounting bolts and oil tank.

Install the oil tank in the reverse order of removal.

After installation, fill the oil tank with the recommended engine oil and bleed air from system.



## TRANSMISSION OIL

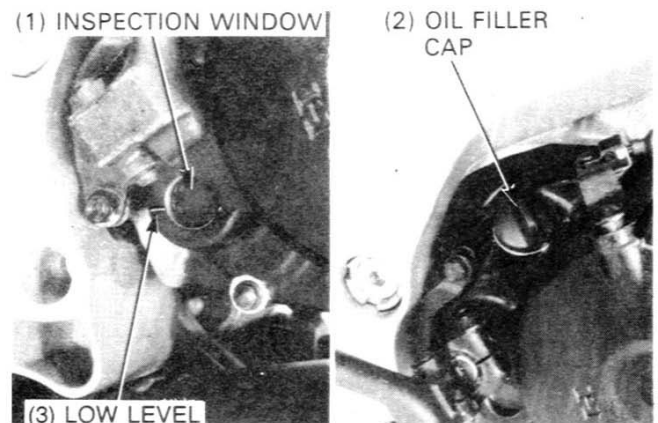
### CHECK

Place the motorcycle on firm, level ground and support it on its center stand.

Start the engine and let it idle for a few minutes, then stop the engine.

Check the oil level through the inspection window.

If the oil level is under the low level, remove the oil filler cap and fill the recommended transmission oil (see page 2-1) since to reached the upper part of the inspection window.



### CHANGE

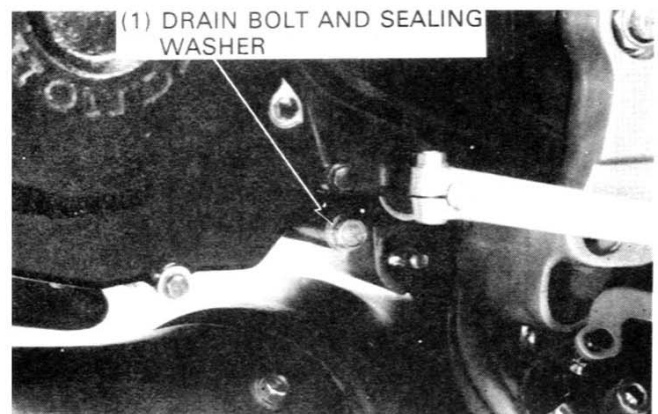
Remove the transmission oil filler cap.

Place the oil drain pan under the engine to catch the oil, and remove the oil drain bolt to drain the oil.

After the oil has been completely drained, check that the sealing washer on the drain bolt is in good condition and install the drain bolt.

Fill the crankcase with the recommended transmission oil up to the upper part of the inspection window.

**OIL CAPACITY: 0.70 liter (0.74 US qt, 0.62 Imp qt) after draining**



## LUBRICATION POINTS

Use general purpose grease when no other specification is given. Apply oil or grease to any 2 sliding surfaces and cables not shown here.

### CONTROL CABLE LUBRICATION

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

