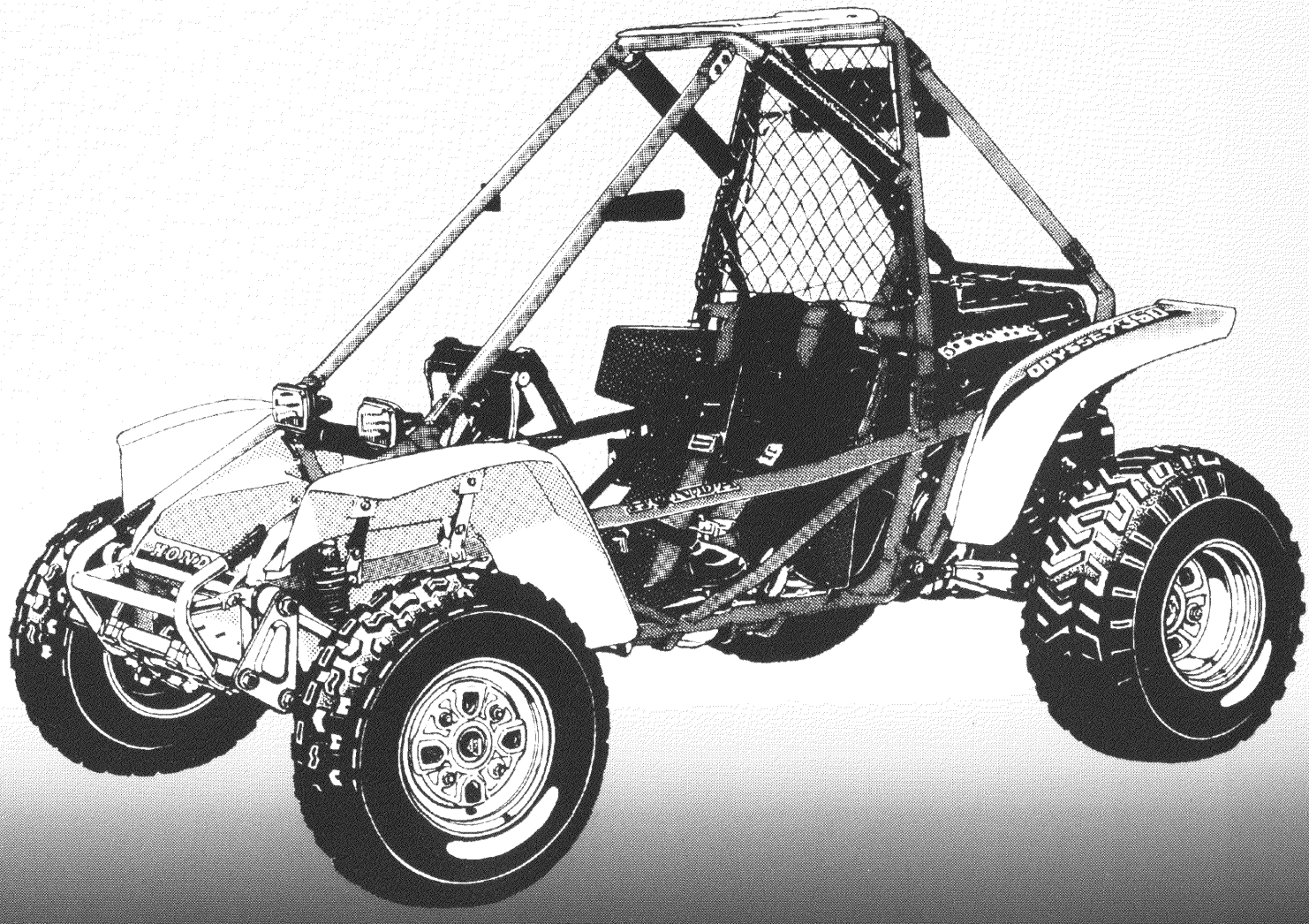
Official

HONDA

SHOP MANUAL

FL350R ODYSSEY 350



'85
Second Edition

IMPORTANT SAFETY NOTICE

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

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

NOTE: Gives helpful information.

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

HOW TO USE THIS MANUAL

Follow the Competition Maintenance Schedule recommendations (Page 3-2) to ensure that the FL350R is always in peak operating condition.

Sections 1 through 3 apply to the whole FL350R, while sections 4 through 13 describe parts of the FL350R, grouped according to location.
Find the section you want on this page, then turn to the table of contents on page 1 of that section.

Most sections start with an assembly or system illustration and specifications, torque values, general instructions, tools and troubleshooting for the section. The subsequent pages give detailed procedures for the section.

If you don't know the source of the trouble, see section 18, Troubleshooting.

HONDA MOTOR CO., LTD.
SERVICE PUBLICATIONS OFFICE

CONTENTS

Date of Issue: November, 1985

1. GENERAL INFORMATION

GENERAL SAFETY

WARNING

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

WARNING

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

WARNING

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

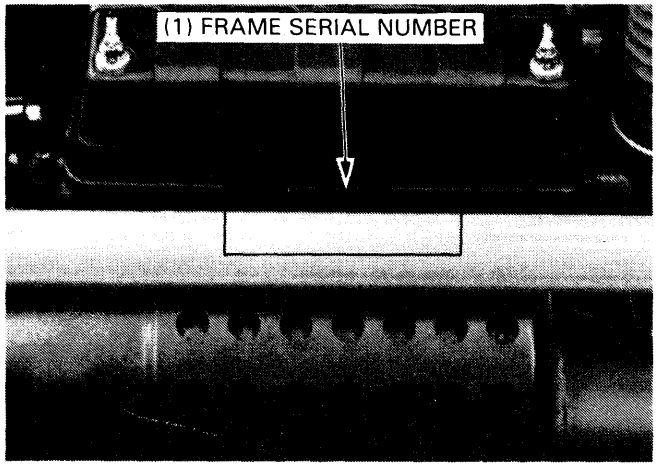
WARNING

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

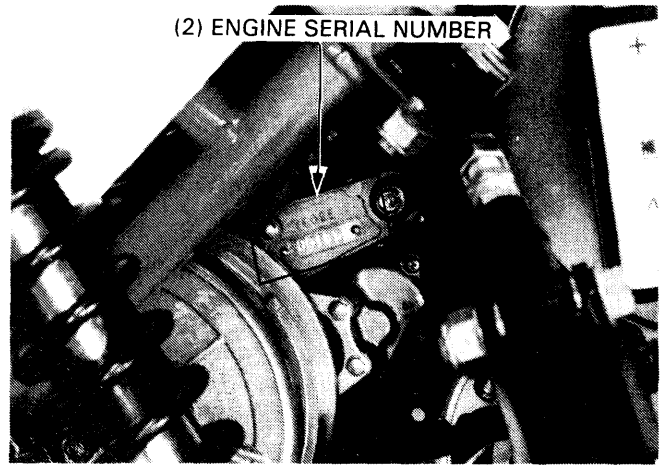
SERVICE RULES

1. Use genuine HONDA or HONDA-recommended parts and lubricants or their equivalent. Parts that don't meet HONDA's design specifications may damage the vehicle.
2. Use the special tools designed for this product to avoid damage and incorrect assembly.
3. Use only metric tools when servicing this 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 large-diameter or inner bolt first. Then tighten to the specified torque diagonally in 2-3 steps, unless a particular sequence is specified.
6. Clean parts in non-flammable or high flash point solvent upon disassembly.
7. Lubricate any sliding surfaces before reassembly.
8. After reassembly, check all parts for proper installation and operation.

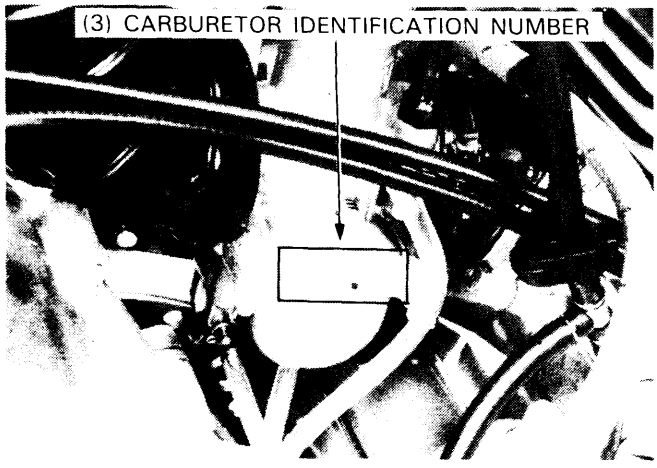
MODEL IDENTIFICATION



The frame serial number is stamped on the rear frame pipe.



The engine serial number is stamped on the left side of the engine.



The carburetor identification number is on the right side of the carburetor.

SPECIFICATIONS

ITEM			SPECIFICATIONS
DIMENSIONS	Overall length		2,160 mm (85.0 in)
	Overall width		1,475 mm (58.1 in)
	Overall height		1,390 mm (54.7 in)
	Wheelbase		1,540 mm (60.6 in)
	Seat height		280 mm (11.0 in)
	Ground clearance		210 mm (8.3 in)
	Dry weight		273 kg (602 lb)
	Weight distribution	Front	93.5 kg (206 lb)
		Rear	179.5 kg (396 lb)
FRAME	Type		Space frame
	F. Suspension, travel		Double trailing arm, travel 110 mm (4.3 in)
	R. Suspension, travel		Diagonal link, travel 150 mm (5.9 in)
	Front tire size, pressure		21 x 7.00–10 (5.0 psi, 34 kPa, 0.35 kg/cm²)
	Rear tire size, pressure		24 x 11.00–10 (6.4 psi, 44 kPa, 0.45 kg/cm²)
	Front brake		Hydraulic operated leading trailing shoe
	Rear brake, lining swept area		Single disc brake, 446 cm² (69 sq in)
	Fuel tank capacity		14.5 lit (3.8 US gal, 3.2 Imp gal)
	Fuel reserve capacity		2.5 lit (0.7 US gal, 0.6 Imp gal)
	Toe	Front	Out 23 ± 7.5 mm (0.9 ± 0.3 in)
		Rear	In 10 ± 7.5 mm (0.4 ± 0.3 in)
	Camber angle	Front	0° ± 1°
		Rear	0° ± 1°
	Caster angle	Front	0° 30' ± 1°
	Trail length		21 mm (0.8 in)
	Tread	Front	1,065 mm (41.9 in)
		Rear	1,200 mm (47.2 in)
ENGINE	Type		Air cooled 2-stroke engine
	Cylinder arrangement		Single cylinder 11° inclined from vertical
	Bore x stroke		78.5 x 68 mm (3.09 x 2.68 in)
	Displacement		329.1 cc (20.08 cu in)
	Compression ratio		6.0 : 1
	Balancer oil capacity		0.12 lit (0.13 US qt. 0.11 Imp qt) at draining
	Lubrication system		Gasoline/oil mixture
	Fuel required		Gasoline 20 : oil 1 (pre-mixed) (R.O.N. 92–100)
	Air cleaner type		Semi-dry type
	Ignition timing		17° BTDC/3,000 rpm

ITEM		SPECIFICATIONS
CARBURETOR	Type	Reed valve
	Venturi dia	32 mm (1.3 in)
	Setting mark	PE 32 A
	Float level	16.0 mm (0.63 in)
	Air screw opening	1-1/2 turns out
	Idle speed	1,300 ± 150 rpm
	Jet needle clip	3th groove
	Throttle lever free play	3—8 mm (0.12—0.31 in)
DRIVE TRAIN	Belt converter	SALSBURY Torque sensitive belt converter
	Transmission oil capacity	0.75 lit (0.79 US qt, 0.66 Imp qt) at draining
	Belt converter ratio	Forward: 2.92—0.63 : 1
		Reverse: 2.92—2.04 : 1
	Final reduction ratio	Forward: 9.99 : 1
		Reverse: 8.79 : 1
	Gear shift pattern	Right gear shift lever operated Forward-Neutral-Reverse
ELECTRICAL	Ignition system	CDI
	Ignition timing "F" mark	17.0° ± 1.0°/2,000 rpm
	Full retard	9.6° ± 1.2°/8,000 rpm
	Starting system	Starter motor and recoil starter
	Alternator	160 W/5,000 rpm
	Spark plug	

	NGK	CHAMPION
Standard	BR9ES	RN-2C
For cold climate (Below 5°C, 41°F)	BR8ES	RN-3C

Spark plug gap	0.7—0.8 mm (0.028—0.031 in)
Headlight	12 V—25/25 W x 2
Taillight	12 V—5 W

TORQUE VALUES

ENGINE

Item	Q'ty	Thread Dia (mm)	Torque N·m (kg-m, ft-lb)	Remarks
Cylinder head nut	7	8 x 1.25	25–29 (2.5–2.9, 18–21)	
Flywheel center nut	1	12 x 1.25	75–85 (7.5–8.5, 54–61)	
Cylinder nut	4	10 x 1.25	38–48 (3.8–4.8, 27–35)	
Balancer drive gear nut	1	32 x 1.0	70–90 (7.0–9.0, 51–65)	
Balancer driven gear bolt	1	10 x 1.25	40–50 (4.0–5.0, 29–36)	
Starter pulley mounting bolt	4	8 x 1.25	28–32 (2.8–3.2, 20–23)	Apply locking agent
Carburetor tube band screw	3	5 x 0.8	6–10 (0.6–1.0, 4.3–7.2)	
Carburetor intake pipe bolt	6	6 x 1.0	8–12 (0.8–1.2, 6–9)	
Engine balancer oil drain bolt	1	10 x 1.25	30–40 (3.0–4.0, 22–29)	
Transmission oil drain bolt	1	10 x 1.25	30–40 (3.0–4.0, 22–29)	
Crankcase bolt	9	6 x 1.0	8–12 (0.8–1.2, 6–9)	
Drive pulley bolt	1	12 x 1.25	60–80 (6.0–8.0, 43–58)	
Drive pulley special screw	1	3/4–16	120–140 (12.0–14.0, 87–101)	
Drive pulley clamp bolt	6	1/4–20	11–14 (1.1–1.4, 8–10)	
Drive pulley torque bearing slider bolt	3	8–32	2.3–3.5 (0.23–0.35, 1.7–2.5)	
Driven pulley bolt	1	8 x 1.25	24–30 (2.4–3.0, 17–22)	

FRAME

Item	Q'ty	Thread Dia (mm)	Torque N·m (kg-m, ft-lb)	Remarks
Ball joint castle nut	4	10 x 1.25	35–43 (3.5–4.3, 25–31)	
Tie-rod lock nut	4	10 x 1.25	35–43 (3.5–4.3, 25–31)	
Front arm castle nut	4	10 x 1.25	35–43 (3.5–4.3, 25–31)	
Steering shaft nut	1	12 x 1.25	60–70 (6.0–7.0, 43–50)	
Steering column bolt	5	8 x 1.25	30–35 (3.0–3.5, 22–25)	
Front arm pivot nut	4	16 x 1.5	80–100 (8.0–10.0, 58–72)	
Wheel nut	16	10 x 1.25	60–70 (6.0–7.0, 43–50)	
Front axle nut	2	18 x 1.5	80–120 (8.0–12.0, 58–87)	
Rear axle nut	2	18 x 1.5	80–120 (8.0–12.0, 58–87)	
Brake hose bolt	3	10 x 1.25	30–40 (3.0–4.0, 22–29)	
Brake pipe joint bolt	4	10 x 1.0	13–16 (1.3–1.6, 9–11)	
Caliper bleeder	1	8 x 1.25	4–7 (0.4–0.7, 2–5)	
Caliper pin bolt	2	12 x 1.25	25–30 (2.5–3.0, 18–22)	
Caliper hanger pin	2	10 x 1.0	15–20 (1.5–2.0, 10–14)	
Caliper bracket bolt	2	10 x 1.25	35–43 (3.5–4.3, 25–31)	
Caliper parking attaching bolt	2	8 x 1.25	20–25 (2.0–2.5, 14–18)	
Caliper parking arm lock nut	1	8 x 1.25	15–20 (1.5–2.0, 10–14)	
Brake disc hub nut	4	27 x 1.0	100–120 (10.0–12.0, 72–86)	
Brake disc mounting nut	1	8 x 1.25	30–35 (3.0–3.5, 22–25)	Apply 4-stroke oil
Master cylinder cap	2	4 x 0.7	1–2 (0.1–0.2, 0.7–1.5)	
Front shock absorber	2	12 x 1.25	40–50 (4.0–5.0, 29–36)	
Rear shock absorber	2	14 x 1.5	80–100 (8.0–10.0, 58–72)	
Shock absorber damper locknut	2	—	25–40 (2.5–4.0, 18–29)	Apply locking agent
Radius arm rod end lock nut	2	16 x 1.5	80–100 (8.0–10.0, 58–72)	
Radius arm pivot bolt	2	16 x 1.5	80–100 (8.0–10.0, 58–72)	
Upper arm stay nut	4	12 x 1.25	100–120 (10.0–12.0, 72–86)	Apply 4-stroke oil
Roll bar nut	20	10 x 1.25	40–50 (4.0–5.0, 29–36)	
Drive shaft bolt	4	8 x 1.25	19–25 (1.9–2.5, 13–18)	
Change arm bolt	1	6 x 1.0	16–18 (1.8–1.6, 11–13)	
Upper arm nut	2	14 x 1.5	80–100 (8.0–10.0, 58–72)	
Front bumper side plate bolt	2	12 x 28	70–80 (7.0–8.0, 50–58)	
Front bumper mount bolt (Upper)	2	8 x 35	30–35 (3.0–3.5, 22–25)	
Front bumper mount bolt (Lower)	2	8 x 16	30–35 (3.0–3.5, 22–25)	
Front bumper clamp bolt (Center)	4	10 x 55	40–50 (4.0–5.0, 29–36)	
Front bumper clamp bolt (Side)	2	10 x 70	40–50 (4.0–5.0, 29–36)	
Skid plate mounting bolt	6	8 x 12	25–30 (2.5–3.0, 18–22)	
		8 x 16	25–30 (2.5–3.0, 18–22)	

Item	Q'ty	Thread Dia (mm)	Torque N·m (kg-m, ft-lb)	Remarks
Engine connecting bracket bolt	4	8 x 1.25	24–30 (2.4–3.0, 17–22)	
Front engine mounting bolt	2	10 x 1.25	35–45 (3.5–4.5, 25–33)	
Rear engine hanger bolt	2	10 x 1.25	35–45 (3.5–4.5, 25–33)	
Seat mounting bolt	4	10 x 1.25	35–45 (3.5–4.5, 25–33)	
Seat belt bolt	4	7/16–20	30–35 (3.0–3.5, 22–25)	
Transmission mounting bolt	4	10 x 1.25	35–45 (3.5–4.5, 25–32)	
Center arm castle nut	1	10 x 1.25	35–43 (3.5–4.3, 25–31)	
Backing plate	8	8 x 1.25	18–25 (1.8–2.5, 13–18)	
Shift lever bolt	1	17 x 1.0	40–45 (4.0–4.5, 29–33)	
Shift lever lock nut	1	8 x 1.25	12–17 (1.2–1.7, 8.7–12)	
Throttle cable lock nut	1	6 x 0.75	3–4 (0.3–0.4, 2.2–2.9)	
Choke valve	1	12 x 1.0	2–3 (0.2–0.3, 1.4–2.2)	
Drive belt cover nut	2	6 x 1.0	5–8 (0.5–0.8, 3.6–5.8)	

Torque specifications listed above are for the most important tightening points. If a torque specification is not listed, follow the standards given below.

STANDARD TORQUE VALUES

Item	Torque N·m (kg-m, ft-lb)	Item	Torque N·m (kg-m, ft-lb)
5 mm bolt, nut	4.5–6 (0.45–0.6, 3.5–4.5)	5 mm screw	3.5–5 (0.35–0.5, 2.5–3.6)
6 mm bolt, nut	8–12 (0.8–1.2, 6–9)	6 mm screw and 6 mm bolt with 8 mm head	7–11 (0.7–1.1, 5–8)
8 mm bolt, nut	18–25 (1.8–2.5, 13–18)	6 mm flange bolt, nut	10–14 (1.0–1.4, 7–10)
10 mm bolt, nut	30–40 (3.0–4.0, 22–29)	8 mm flange bolt, nut	24–30 (2.4–3.0, 17–22)
12 mm bolt, nut	50–60 (5.0–6.0, 36–43)	10 mm flange bolt, nut	35–45 (3.5–4.5, 25–33)

TOOLS

SPECIAL

TOOL NAME	NUMBER	ALTERNATE TOOL	NUMBER	REF. PAGE
*Crankcase assembly tool	07965–VM00000			8-8, 8-9
–Threaded adapter	07965–VM00300			8-8, 8-9
–Thread shaft	07965–VM00200			8-8, 8-9
–Collar	07965–VM00100			8-8, 8-9
*Crankcase puller	07935–VM00000	Crankcase puller	07933–9500001	8-5
Wheel alignment gauge attachment	07910–MJ30100	Equivalent commercially available in U.S.A.		3-8
Wrench set, 41 mm	07916–9580300	Lock nut wrench attachment	07916–958010A	8-3, 8-4
Bearing remover set, 20 mm	07936–3710001			8-7
–weight	07741–0010201	Remover weight	07936–3710200	8-7
–spindle assy	07936–3710600			8-7
–handle	07936–3710100			8-7
Bearing remover, 17 mm	07936–3710300			9-9
Remover weight	07741–0010201	Remover weight	07936–3710200	9-9
Remover handle	07936–3710100			9-9
Shock absorber compressor base attachment kit	07959–MB10000			10-5, 11-8, 11-9
Shock absorber compressor attachment	07967–GA70101	Not available in U.S.A.		10-5
Shock absorber compressor attachment	07967–KC10000	Not available in U.S.A.		10-5, 11-8, 11-9
Lock nut wrench, 30/64 mm	07916–MB00000			12-13
Snap ring pliers	07914–3230001			12-9
Ball joint remover	07941–6920001			10-13

COMMON

TOOL NAME	NUMBER	ALTERNATE TOOL	NUMBER	REF. PAGE
Float level gauge	07401—0010000			4-12
Universal holder	07725—0030000			7-6, 7-7, 8-3, 8-4 9-26, 9-30
Universal holder	07724—0050000			12-12, 12-13
Flywheel puller	07733—0010000	Flywheel puller	07933—0010000	7-6
Driver	07749—0010000			
Attachment, 32 x 35 mm	07746—0010100			9-22, 10-11
Attachment, 42 x 47 mm	07746—0010300			8-8, 9-10, 10-4, 10-15
Attachment, 52 x 55 mm	07746—0010400			11-11
Attachment, 62 x 68 mm	07746—0010500			8-7, 9-9, 9-10
Attachment, 72 x 75 mm	07746—0010600			8-8, 9-10
Pilot, 17 mm	07746—0040400			9-10
Pilot, 20 mm	07746—0040500			8-8, 10-4
Pilot, 28 mm	07746—0041100			9-10
Pilot, 30 mm	07746—0040700			8-8, 9-9, 9-10, 11-11
Pilot, 35 mm	07746—0040800			8-8, 9-10
Bearing remover shaft	07746—0050100			10-4
Bearing remover head, 20 mm	07746—0050600			10-4
Shock absorber compressor	07959—3290001			10-5, 11-8
Wheel adapter plate	07972—VM0010A (U.S.A only)			
Tire bead breaker	07772—0050000	Universal bead breaker (U.S.A. only)	GN-AH-958-BB1	11-5
—Breaker arm	07772—0050200			11-5
—Breaker arm compressor	07772—0050100			11-5

OPTIONAL

TOOL NAME	NUMBER	ALTERNATE TOOL	NUMBER	REF. PAGE
Pin spanner	89215-404-670			3-9

SALSBURY TOOLS

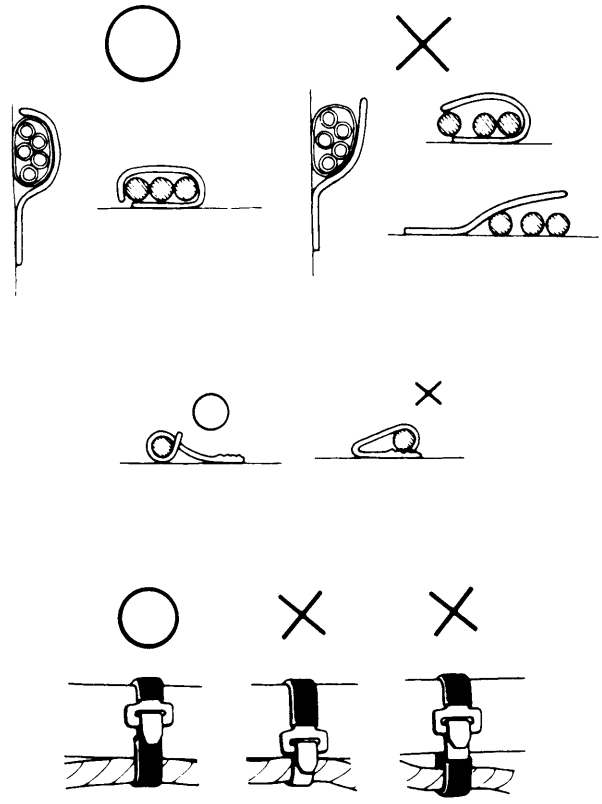
TOOL NAME	NUMBER	ALTERNATE TOOL	NUMBER	REF. PAGE
Holder	# 79-0002			9-20, 9-25, 9-26
Dismount tool	# 601552			9-20, 9-21
Special screw	# 56-0011			9-27, 9-30
Cap	# 704292			9-27, 9-30
Nut, 1/2—20	# 901840			9-27, 9-30,
Flat washer	# 704236			9-27, 9-30

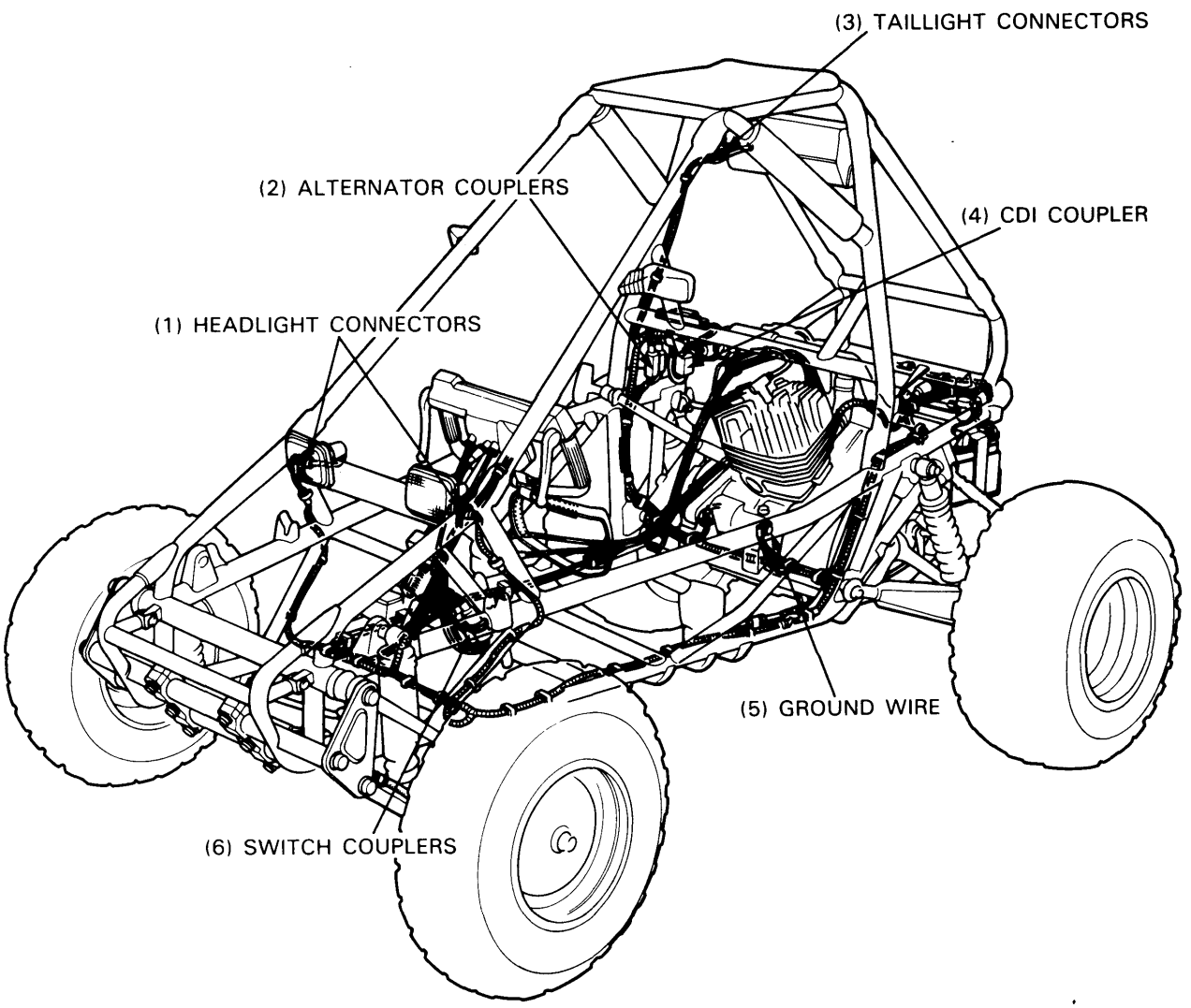
The tools marked "*" are new for 1985 FL350R.

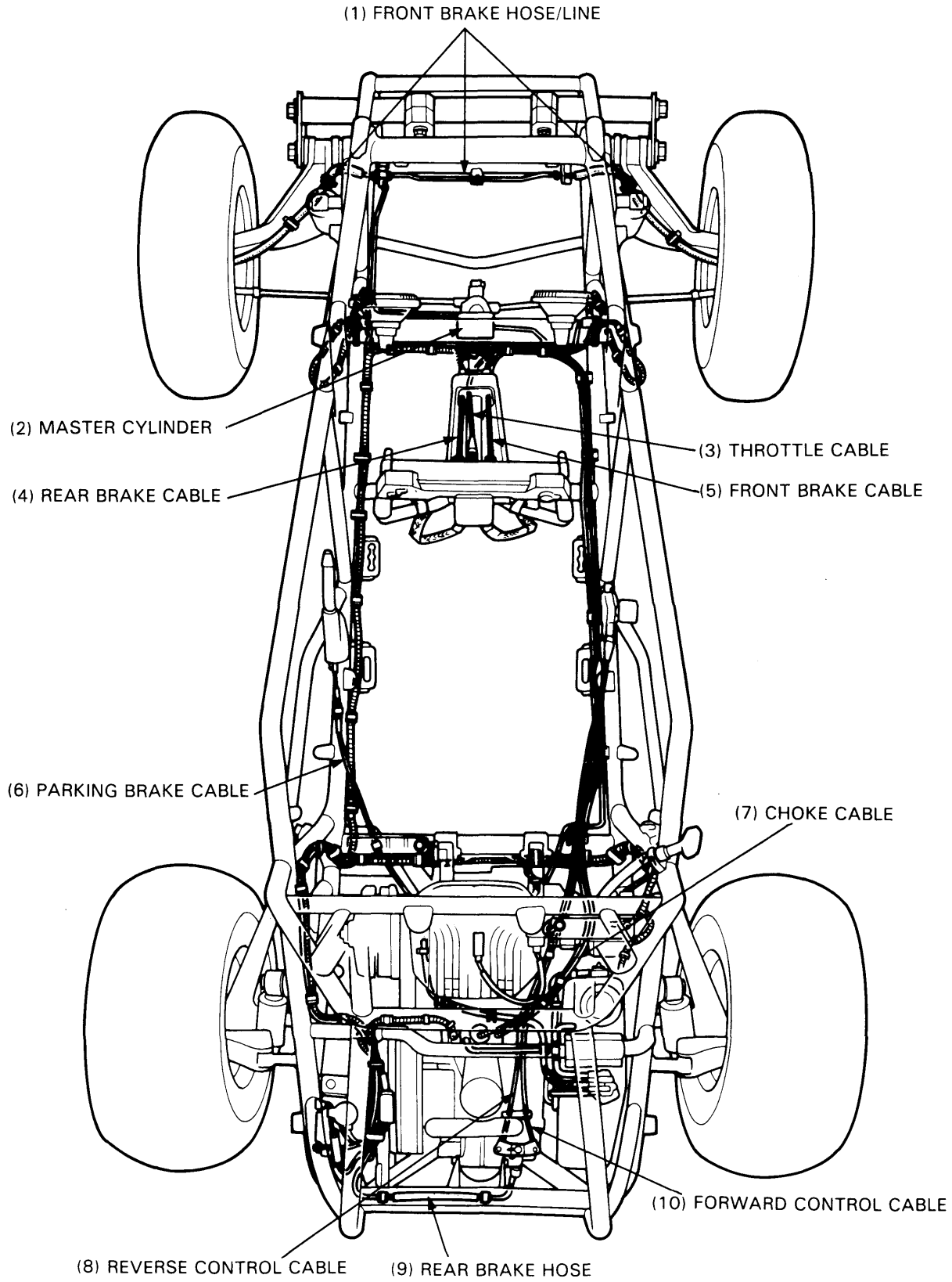
CABLE AND HARNESS ROUTING

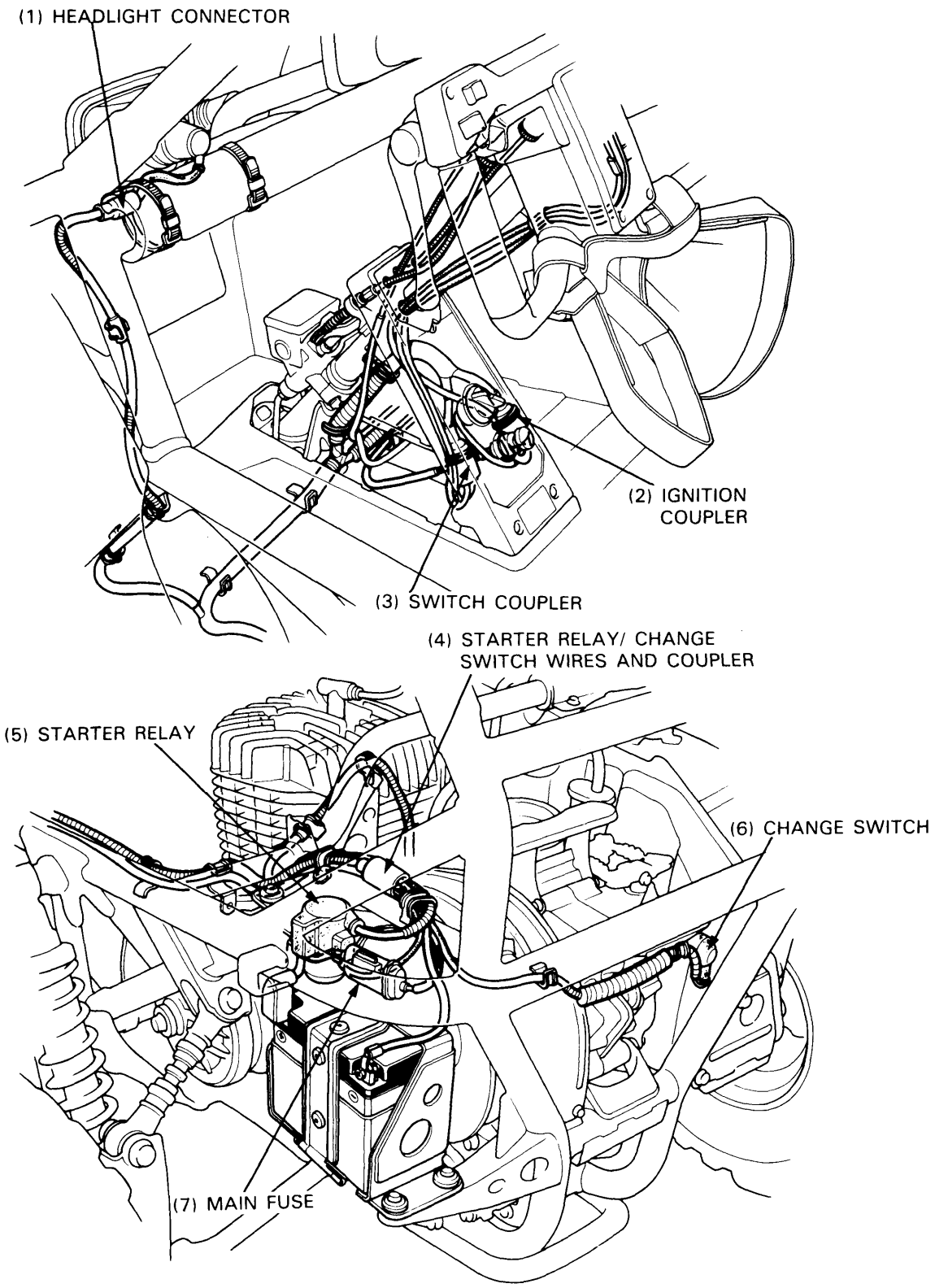
Note the following when routing cable and wire harness.

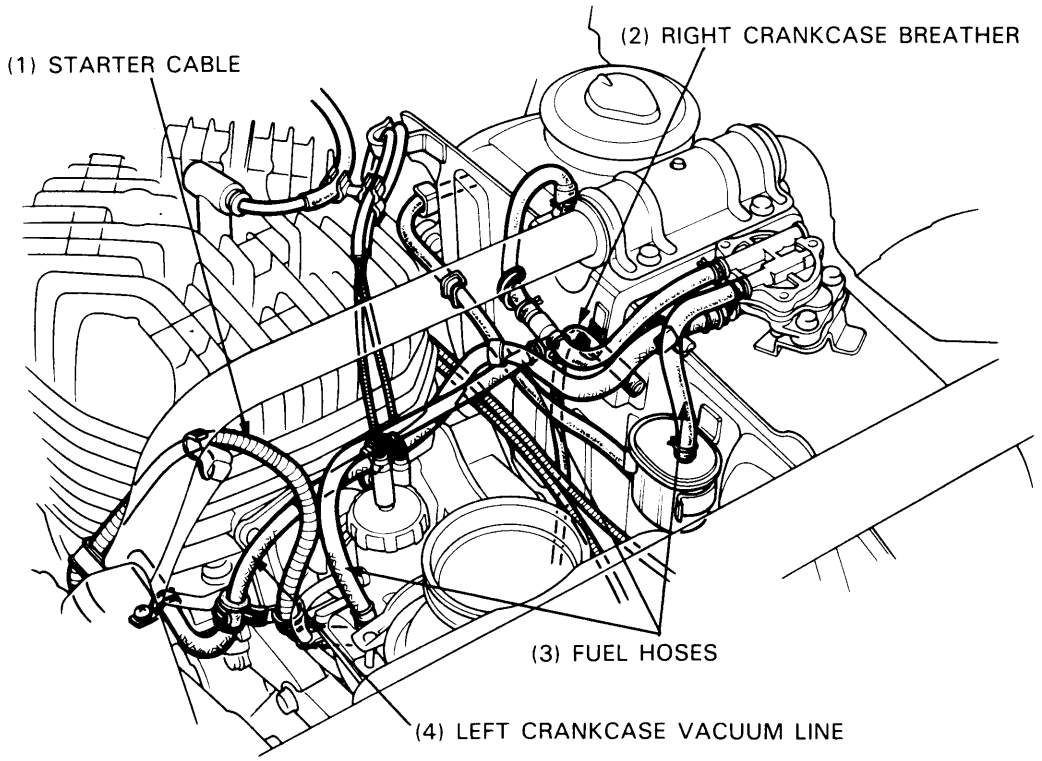
- A loose wire, harness or cable can be a safety hazard. After clamping, check each wire to be sure it is secure.
- Do not squeeze wires against the weld or end of its clamp when a weld-on clamp is used.
- Secure wires and wire harness to the frame with their respective wire bands at the designated locations.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

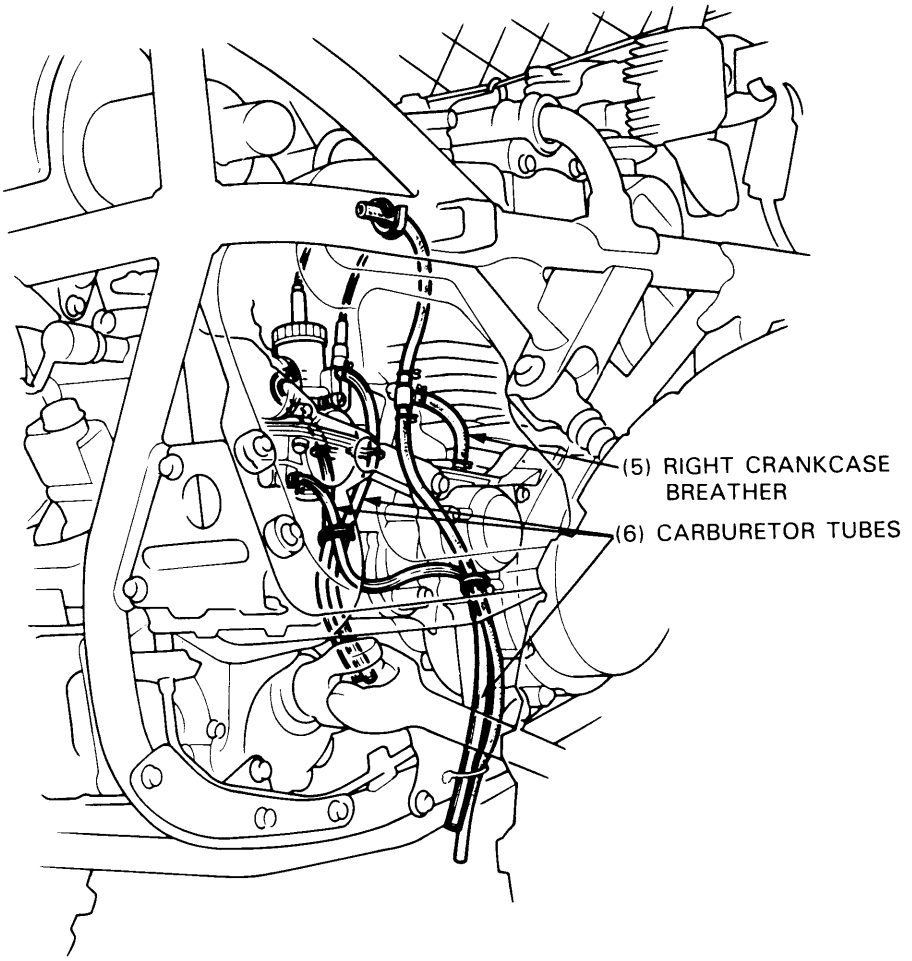



(3) TAILLIGHT CONNECTORS
(2) ALTERNATOR COUPLERS
(4) CDI COUPLER
(1) HEADLIGHT CONNECTORS
(5) GROUND WIRE
(6) SWITCH COUPLERS


(1) FRONT BRAKE HOSE/LINE
(2) MASTER CYLINDER
(3) THROTTLE CABLE
(4) REAR BRAKE CABLE
(5) FRONT BRAKE CABLE
(6) PARKING BRAKE CABLE
(7) CHOKE CABLE
(10) FORWARD CONTROL CABLE
(8) REVERSE CONTROL CABLE
(9) REAR BRAKE HOSE


(1) HEADLIGHT CONNECTOR
(2) IGNITION COUPLER
(3) SWITCH COUPLER
(4) STARTER RELAY/ CHANGE SWITCH WIRES AND COUPLER
(5) STARTER RELAY
(6) CHANGE SWITCH
(7) MAIN FUSE


(1) STARTER CABLE
(2) RIGHT CRANKCASE BREATHER
(3) FUEL HOSES
(4) LEFT CRANKCASE VACUUM LINE


(5) RIGHT CRANKCASE BREATHER
(6) CARBURETOR TUBES

SERVICE INFORMATION

GENERAL

- This section describes the inspection and replacement of the engine balancer oil and transmission oil.
- The FL350R's two-stroke engine requires a pre-mixed fuel.

SPECIFICATIONS

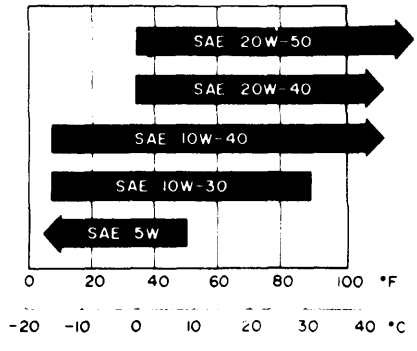
Recommended engine oil	Honda 2-stroke oil or equivalent.
Mixing ratio (Fuel : Oil)	20 : 1
Engine balancer oil capacity	0.15 lit(0.16 U.S.qt, 0.13 Imp qt) at disassembly.
	0.12 lit(0.13 U.S.qt, 0.11 Imp qt) at draining
Transmission oil capacity	0.8 lit(0.85 U.S.qt, 0.70 Imp qt) at disassembly.
	0.75 lit(0.79 U.S.qt, 0.66 Imp qt) at draining.

Engine balancer oil, Transmission oil recommendation
Use HONDA 4—stroke oil or equivalent.
API service classification: SE or SF
Viscosity: SAE 10W—40

NOTE

- Other oil viscosities may be used when the average temperature in your riding area is within indicated range.

OIL VISCOSITIES



TORQUE VALUES

Engine balancer oil drain bolt	30—40 N·m (3.0—4.0 kg-m, 22—29 ft-lb)
Transmission oil drain bolt	30—40 N·m (3.0—4.0 kg-m, 22—29 ft-lb)

TROUBLESHOOTING

Engine does not have sufficient power
1. Deteriorated fuel-oil mixture.
2. Worn rings and/or piston
3. Worn cylinder

Engine stalls frequently.
— Deteriorated fuel-oil mixture.

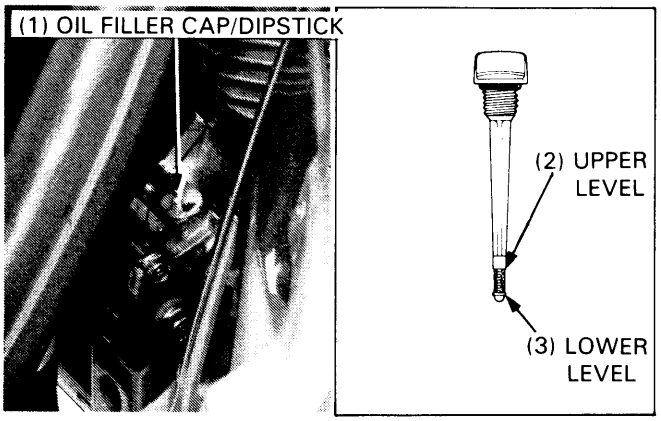
Spark plug is fouled.
— Incorect fuel-oil mixture ratio.

Engine balancer oil level and transmission oil level too low.
— External oil leaks.

ENGINE BALANCER OIL

OIL LEVEL

Place the FL350R on level ground.
Check the oil level by inserting the cap/dipstick into the crankcase without screwing it into the case.
If the oil level is below the lower level mark on the dipstick, fill to the upper level mark with the recommended oil (page2-1).



OIL CHANGE

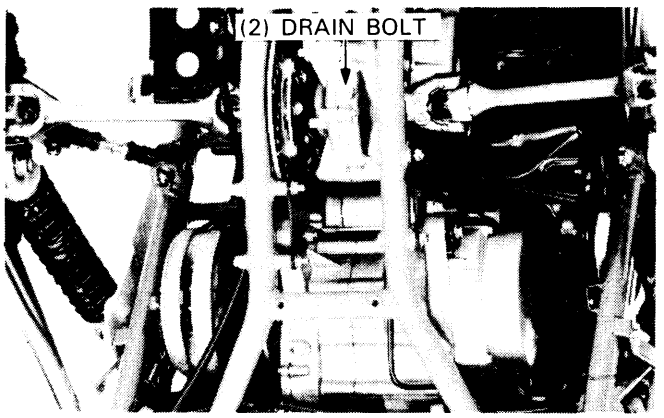
Remove the skid plate (page 9-20).

NOTE

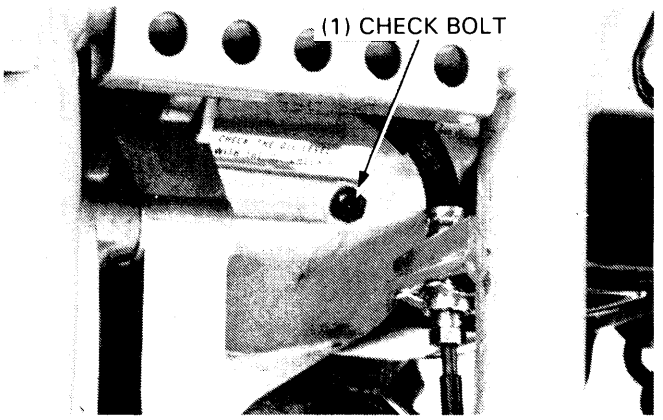
- Warm-up the engine before draining the oil.
- This ensures rapid and complete draining.

Remove the balancer oil filler cap/dipstick from the engine.
Place an oil drain pan under the engine to catch the oil, and remove the drain bolt.
After the oil has been completely drained, check that the drain bolt sealing washer is in good condition and install the drain bolt.

TORQUE: 30—40 N·m (3.0—4.0 kg-m, 22—29 ft-lb)



Fill the balancer case with the recommended oil up to the upper level.



TRANSMISSION OIL

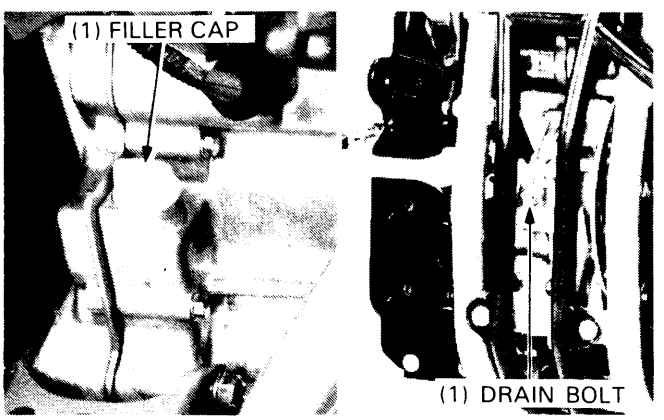
OIL LEVEL

Place the FL350R on level ground and remove the oil check bolt.
The oil should flow out from the oil check bolt hole.
If the oil does not flow out, remove the oil filler cap and fill the recommended oil (page 2-1) until it flows out.
After checking, tighten the oil check bolt securely.

OIL CHANGE

Remove the transmission oil filler cap.
Place the oil drain pan under the transmission to catch the oil, and remove the drain bolt.
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.

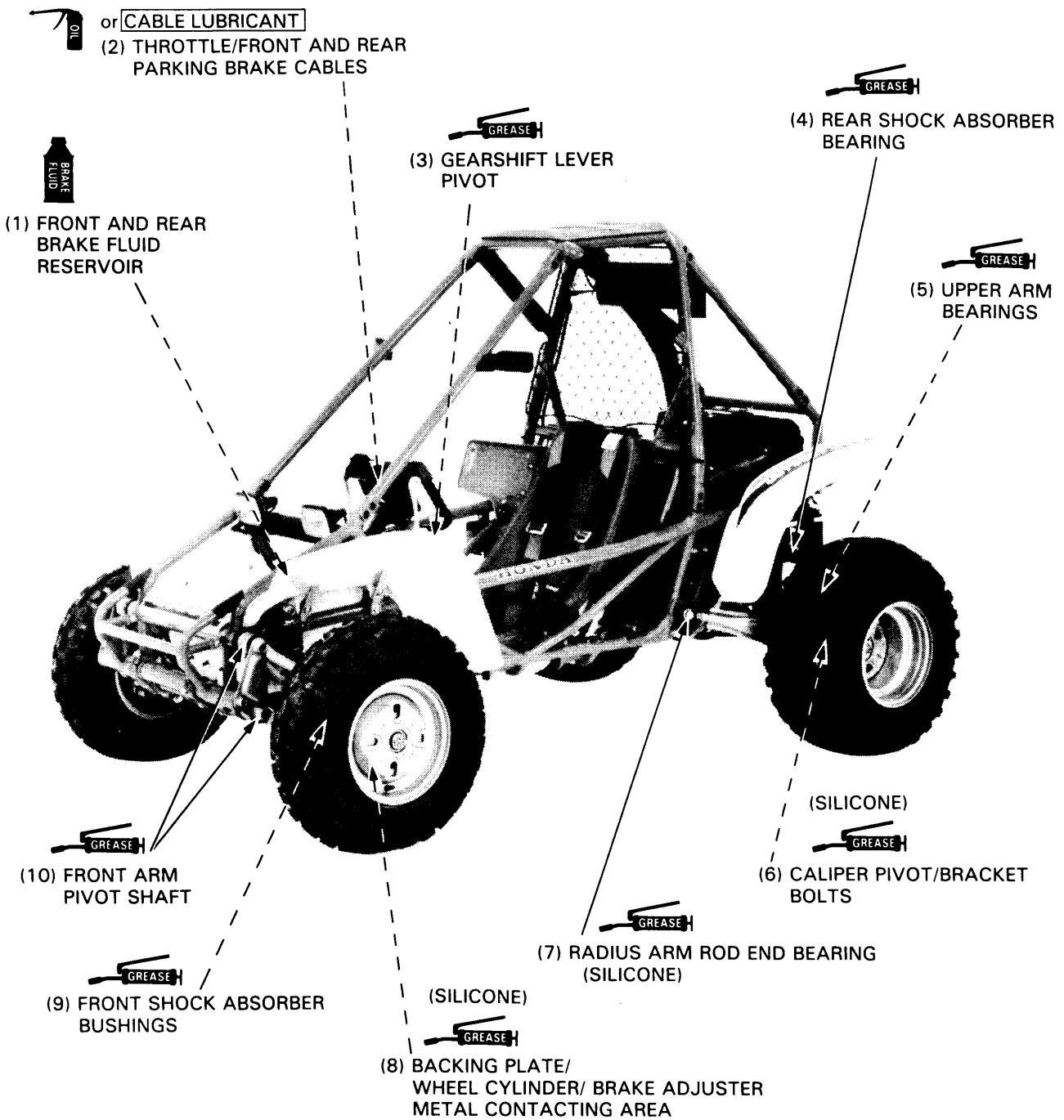
TORQUE: 30—40 N·m (3.0—4.0 kg-m, 22—29 ft-lb)



Fill the transmission with the recommended oil up to the proper level.

LUBRICATION POINTS

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



MEMO

SERVICE INFORMATION

SPECIFICATIONS

<ENGINE>

Spark plug gap	0.7—0.8 mm (0.028—0.031 in)
Spark plug type	NGK: BR9ES [BR8ES]
[ ] : Cold climate (Below 5°C, 41°F)	CHAMPION: RN-2C [RN-3C]
Throttle lever free play	3—8 mm (1/8—5/16 in)
Idle speed	1,300 ± 150 rpm
Engine balancer oil capacity	0.15 lit (0.16 U.S.qt, 0.13 Imp qt) at disassembly 0.12 lit (0.13 U.S.qt, 0.11 Imp qt) at draining

<FRAME>

Tire pressures and circumferences

	Recommended pressure	Min. pressure	Max. pressure	Standard tire circumference
Front	5.0 psi (34 kPa, 0.35 kg/cm²)	4.3 psi (29 kPa, 0.3 kg/cm²)	5.7 psi (39 kPa, 0.4 kg/cm²)	1,735 mm (68.3 in)
Rear	6.4 psi (44 kPa, 0.45 kg/cm²)	5.7 psi (39 kPa, 0.4 kg/cm²)	7.1 psi (49 kPa, 0.5 kg/cm²)	1,880 mm (74.0 in)

Front brake lever free play				15—25 mm (5/8—1 in)
Rear brake lever free play				15—25 mm (5/8—1 in)
Front brake shoe lining thickness			Standard	4 mm (0.16 in)
			Service limit	2 mm (0.08 in)
Toe	Front	Toe-out		23 ± 7.5 mm (0.9 ± 0.3 in)
	Rear	Toe-in		10 ± 7.5 mm (0.4 ± 0.3 in)
Camber	Front			0° ± 1°
	Rear			0° ± 1°
Caster	Front			0° 30′ ± 1°
Brake lever height			Standard	75 ± 2 mm (2.9 ± 0.08 in)
Drive belt thickness			Standard	30.2 mm (1.19 in)
			Service Limit	27 mm (1.06 in)
Master cylinder piston and master cylinder lever clearance				0.2—0.5 mm (0.008—0.019 in)
Parking brake arm free play				3.5—4.5 mm (0.14—0.18 in)
Cylinder compression				97 kPa (9.7 kg/cm², 138.6 psi)
Steering wheel force				2.2 kg (4.85 lb)
Upper arm length				133—162 mm (5.2—6.4 in)

TORQUE VALUES

Spark plug	12—19 N•m (1.2—1.9 kg-m, 9—14 ft-lb)
Radius arm rod end lock nut	80—100 N•m (8.0—10.0 kg-m, 58—72 ft-lb)
Radius arm pivot bolt	80—100 N•m (8.0—10.0 kg-m, 58—72 ft-lb)
Parking arm adjusting bolt lock nut	15—20 N•m (1.5—2.0 kg-m, 10—14 ft-lb)
Master cylinder oil cap screw	1—2 N•m (0.1—0.2 kg-m, 0.7—1.5 ft-lb)

TOOLS

Optional

Pin spanner	89215—404—670

Special

Wheel alignment gauge attachment	07910—MJ30100 or Equivalent commercially available in U.S.A.

MAINTENANCE SCHEDULE

The maintenance intervals shown in the following schedule are based upon average riding conditions. FL350R's subjected to severe use, or ridden in unusually dusty areas, require more frequent servicing.
Perform the PRE-RIDE INSPECTION in the Owner's Manual at each scheduled maintenance period.

I: Inspect and Clean, Adjust, Lubricate or Replace, if necessary C: Clean R: Replace A: Adjust L: Lubricate		EVERY	BREAK-IN MAINTENANCE (First week of operation)	REGULAR SERVICE PERIOD (Every 30 operating days)	Refer to page
	TRANSMISSION OIL	2 YEARS R		I	2-2
	AIR CLEANER	NOTE (1)		C	3-4
	SPARK PLUG			I	3-4
*	CARBURETOR IDLE SPEED		I	I	3-5
*	CARBURETOR CHOKE			I	3-5
*	FUEL LINE	YEAR I			3-5
*	FUEL FILTER	6 MONTHS R			3-6
*	THROTTLE OPERATION		I	I	3-6
	DRIVE BELT	NOTES (1),(2)	I	I	3-13
*	BRAKE PAD WEAR	YEAR I NOTES (1),(2)			3-9
*	BRAKE SHOE WEAR	YEAR I NOTES (1),(2)			3-9
*	STEERING SYSTEM	YEAR I			3-7
	BRAKE FLUID	2 YEARS R		I	3-10
*	SUSPENSION			I,L	3-8
	BRAKE SYSTEM		I	I	3-10
*	MASTER CYLINDER OIL CAP	2 YEARS R			3-13
*	FRONT/REAR BRAKE HOSE	4 YEARS R			3-12
	PARKING BRAKE SYSTEM		I	I	3-12
*	BELT CONVERTER		I	I	3-13
*	SPARK ARRESTER	NOTE(3)		C	3-13
*	NUT, BOLT, FASTENER		I	I	3-14
**	WHEEL		I	I	3-14
	BALANCER OIL		I	I	2-2

* Should be serviced by an authorized Honda dealer, unless the owner has proper tools and is mechanically qualified.
**In the interest of safety, we recommend these items be serviced ONLY by an authorized HONDA dealer.
NOTE: (1) Service more frequently when driving in dusty areas, sand or snow.
(2) Service more frequently after driving in very wet or muddy conditions.
(3) USA only.

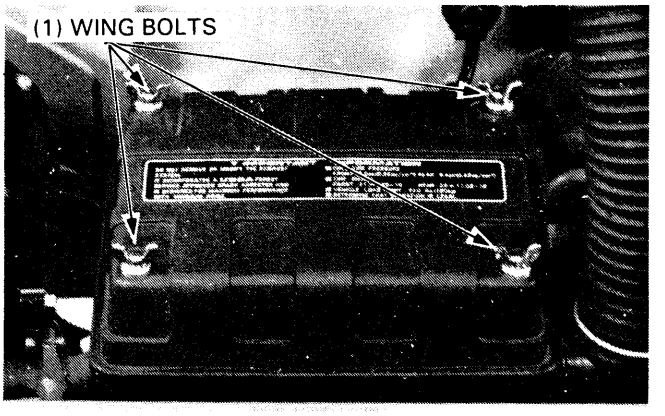
PERIODIC REPLACEMENT PARTS

Machines subject to severe use, or driven in unusually dusty areas, require more frequent servicing. The following table serves as a guide in replacing parts when the machine is used for competition.

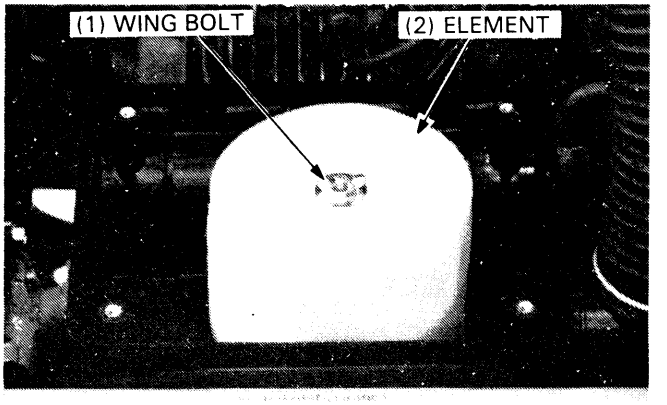
Part Name	Interval	Items to be checked
Piston	Every 30 hours	Damage at skirt, wear
Piston pin	Every 30 hours	Seizure, damage, wear
Piston rings	Every 30 hours	Chipped end, wear
Connecting rod big end bearing	Every 30 hours	Wear, damage
Connecting rod small end bearing	Every 30 hours	Wear, damage
Spark plug	Every 10 hours	Worn electrode, improper gap, cracked insulator
Transmission oil	Every 30 hours	Dirt, contamination
Drive belt	Every 10 hours	Wear, cracks, damage
Front brake shoes	——	Wear
Rear brake pads	——	Wear indicator
Front/Rear brake fluid	Every year	Dirt, contamination
Master cylinder oil cup	Every year	Damage
Cylinder head gasket	Every 30 hours	Leak
Exhaust pipe spring	——	Wear on hook
Reed valve	Every 30 hours	Improper seating, cracks

AIR CLEANER

Remove the four wing bolts attaching the air cleaner case cover.



Remove the air cleaner element assembly by removing the wing bolt.
Remove the element from the element holder.
Wash the element in non-flammable or high flash point solvent, squeeze out the solvent thoroughly, and allow to dry.
Soak the element in gear oil (SAE 80—90) and squeeze out excess.
Place the element onto the element holder.
Install the element assembly into the air cleaner case.
Install the air cleaner case cover by using four wing bolts.



SPARK PLUG

Disconnect the spark plug cap and remove the spark plug.
Visually inspect the spark plug electrodes for wear.
The center electrode should have square edges and the side electrode should have a constant thickness.
Discard the spark plug if there is apparent wear or if the insulator is cracked or chipped. Measure the gap with a wire-type feeler gauge and adjust by carefully bending the side electrode.

RECOMMENDED REPLACEMENT PLUG:

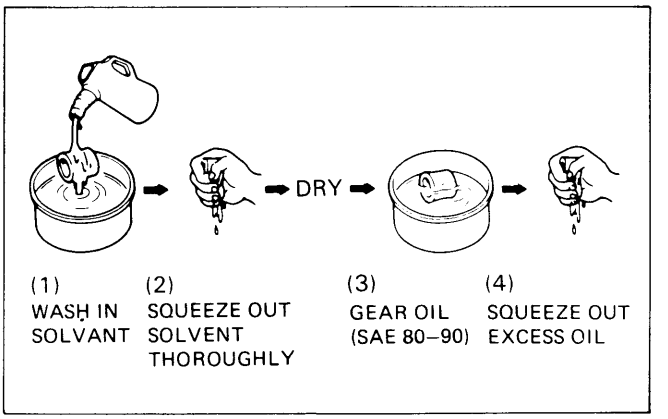
	NGK	CHAMPION
Standard	BR9ES	RN-2C
For cold climate (Below 5°C, 41°F)	BR8ES	RN-3C

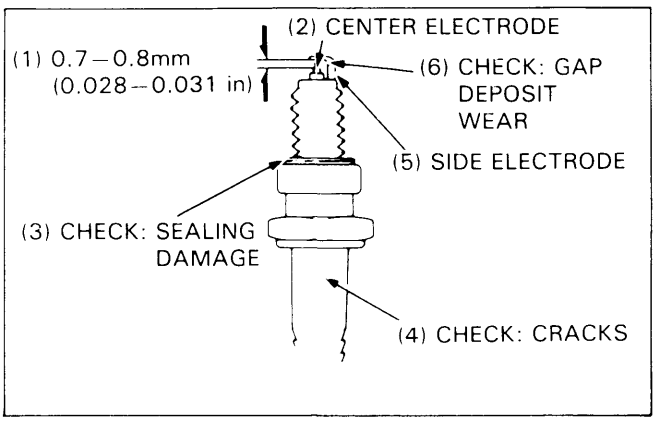
SPARK PLUG GAP: 0.7—0.8 mm (0.028—0.031 in)

Check the sealing washer and replace with a new one if damage.
With the sealing washer attached, thread the spark plug in by hand to prevent cross-threading.
Tighten the spark plug to the specified torque.

TORQUE: 12—19 N·m (1.2—1.9 kg-m, 9—14 ft-lb)

Connect the spark plug cap.

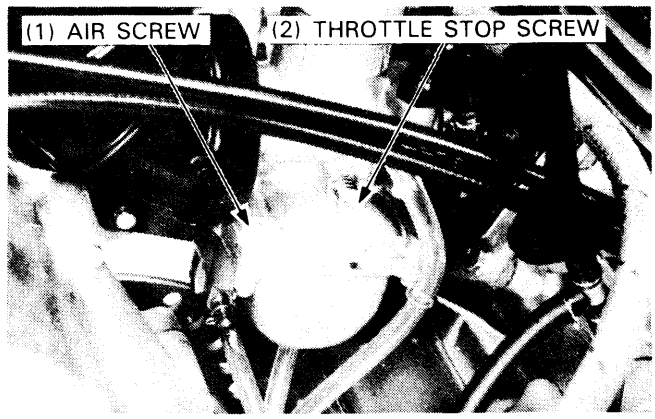




CARBURETOR IDLE SPEED

NOTE

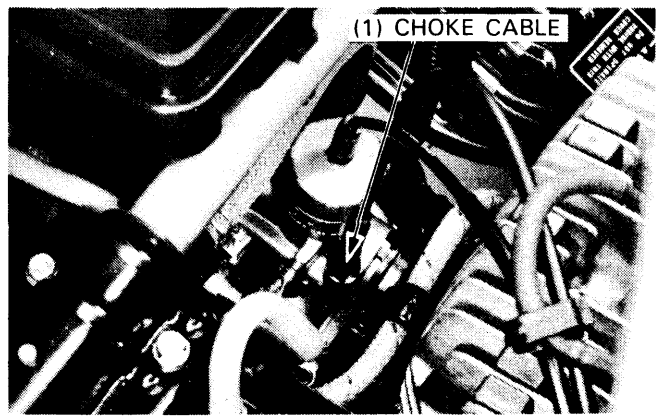
- Inspect and adjust the idle speed after all other maintenance items have been performed and are within specifications.
- The engine must be warm for accurate idle speed inspection and adjustment.



Warm up the engine for about ten minutes.
Turn the throttle stop screw to obtain the specified idle speed (page 4-13).
When the engine misses or runs erratically, proceed as follows:
Screw in the air screw until it lightly seats, then turn it out as specified (1-1/2 turns out).
Reset idle speed with the throttle stop screw.
Turn the air screw to find the highest idle speed.
Reset idle speed with the throttle stop screw.
Make sure that the engine does not miss or run erratically.
If necessary, repeat the above steps.

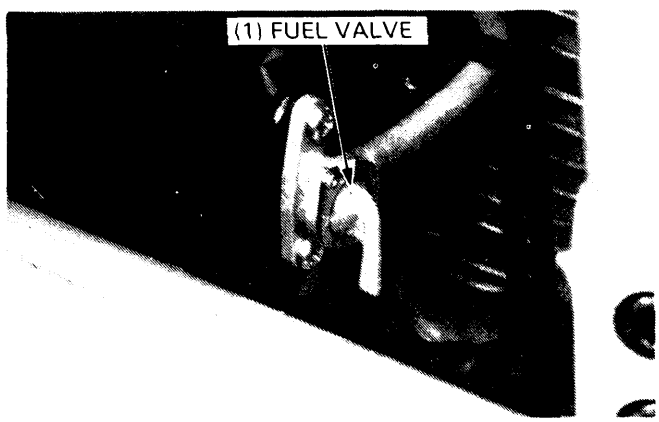
CARBURETOR CHOKE

Check for smooth choke knob operation.
Lubricate the cable if necessary. (page 4-8).



FUEL LINE/FUEL VALVE

Inspect the fuel valve in all positions.
Check the fuel line for damage and that is a clamp at each connection.
Replace any parts that are damaged, leaking or shown signs of deterioration.

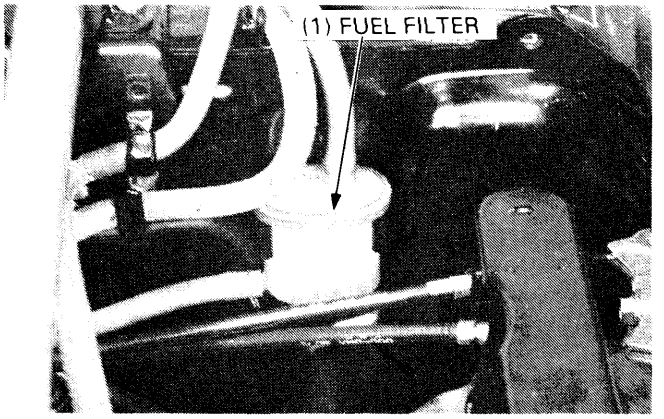


FUEL FILTER

Turn fuel valve to off.
Remove the air cleaner case (page 3-4).
Disconnect the fuel tubes.

WARNING

- *Keep gasoline away from flames or sparks.*
- *Wipe up spilled gasoline at once.*

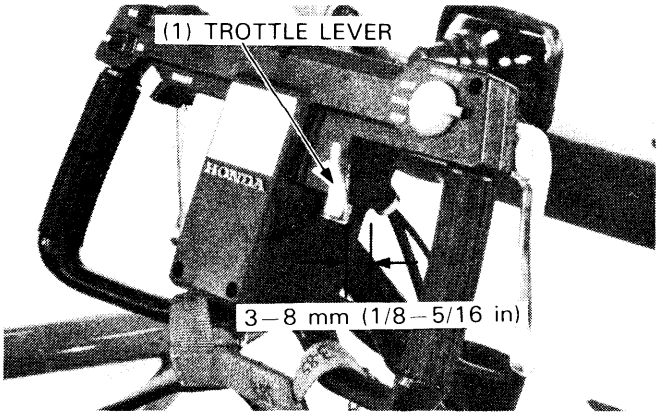


THROTTLE OPERATION

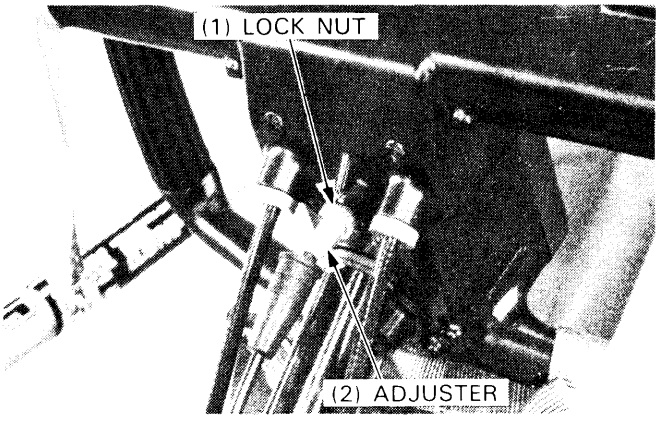
Check that the throttle opens smothly and completely.
Measure the throttle lever free play at the tip of the throttle lever.

FREE PLAY: 3–8 mm (1/8–5/16 in)

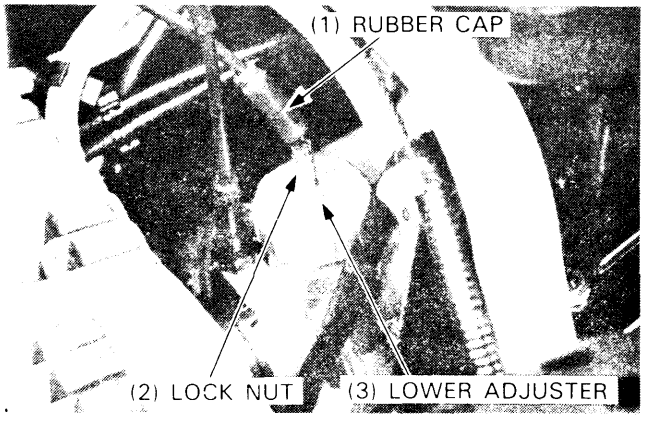
Check that the throttle cable doesn't bind or stick through the entire range of steering positions.
Replace the cable if it has become worn or kinked. Lubricate the cable with a commercially available cable lubricant to prevent premature wear and corrosion.



The cable adjuster is located behind the steering wheel.
Loosen the lock nut and turn the adjuster to obtain the correct free play.



Adjust as follows:
Pull the rubber cap free, loosen the lock nut, and turn the lower adjuster.
Tighten the lock nut and reinstall the rubber cap.
Check that the throttle lever moves smoothly and returns completely.



STEERING SYSTEM

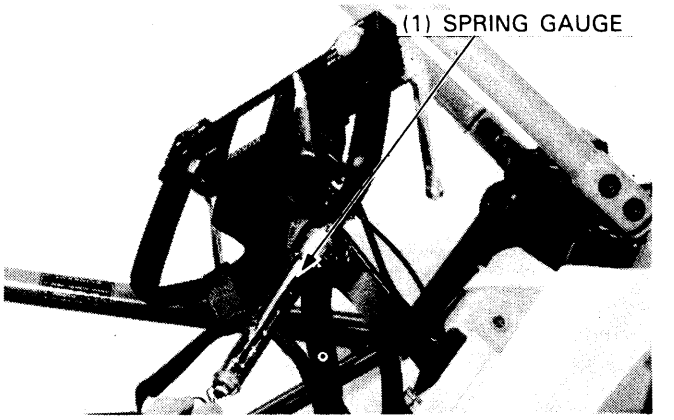
NOTE

- Make sure the cables do not interfere with the rotation of the steering handle.

Raise the front wheel off the ground and make sure that the steering handle rotates freely.
Check the amount of force needed to move the steering wheel.

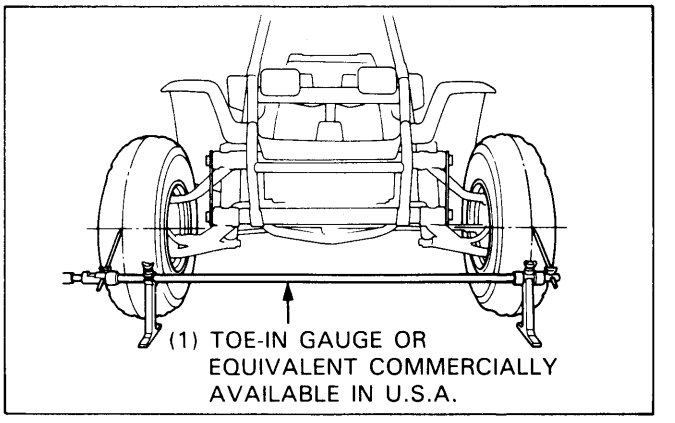
SERVICE LIMIT: 2.2 kg (4.85 lb)

If the reading exceeds the service limit, inspect the steering shaft, tie rods and front hub.

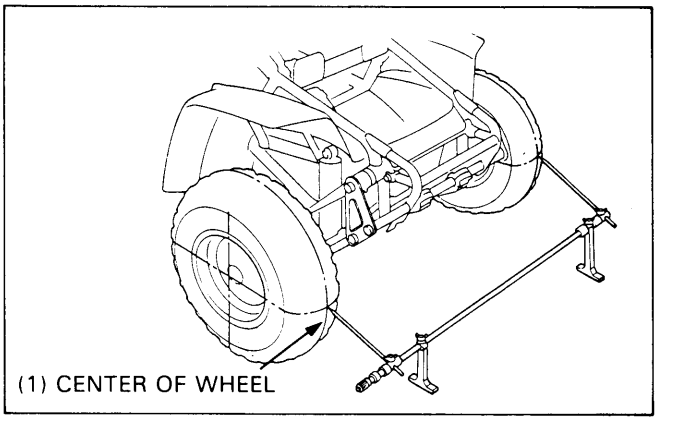


TOE-IN/TOE-OUT

Place the vehicle on level ground with the front wheels facing straight ahead.
Mark the centers of the tires with chalk to indicate the axle center height.



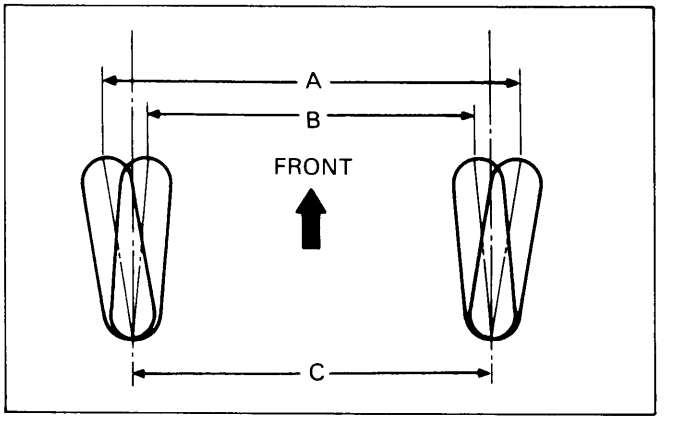
Align the toe-in gauge with the marks on the tires as shown.
Check the readings on the gauge scales.
Slowly move the vehicle back until the wheels have turned 180° so the marks on the tires are aligned with the gauge height on the rear side.
Measure the toe-in on the rear part of the tires at the same points.



FRONT WHEEL TOE-OUT: 23 ± 7.5 mm (0.9 ± 0.3 in)

REAR WHEEL TOE-IN: 10 ±7.5 mm (0.4 ± 0.3 in)

(A – C): TOE-OUT
(C – B): TOE-IN

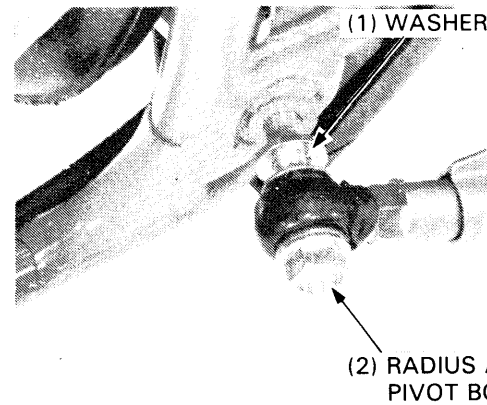


If the toe-out of the front wheel exceeds the limit, adjust it by changing the length of the tie-rods equally, then remeasure. (page 10-13).

If toe-in of the rear wheel exceeds the service limit, adjust it with the radius arm pivot bolt washer.

NOTE

- The number of washers must be one or zero for one side.
- If it is necessary to use two washers on one side, check the frame and radius arm for signs of bending.



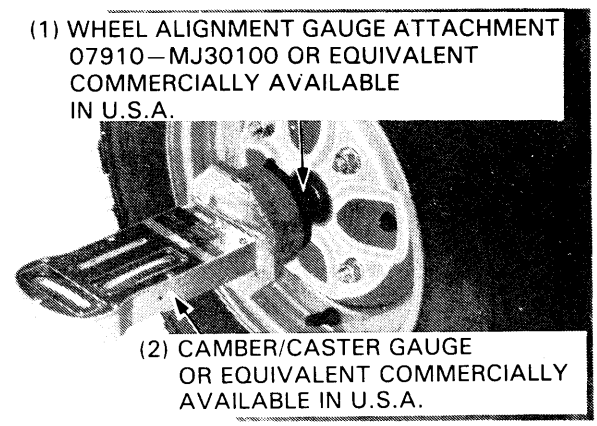
CAMBER

Measure the camber of the front and rear wheels

NOTE

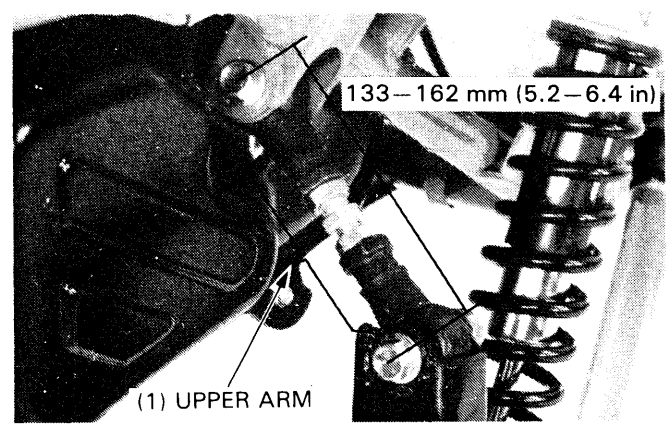
- Place the vehicle on levei ground and adjust all shock absorber spring adjusters to the standard position (III) to measure and adjust the camber and caster properly.
- Front wheel camber is not adjustable.

FRONT: 0° ± 1°
REAR: 0° ± 1°



If camber of the rear wheel exceeds the limit, adjust the upper arm length.

ADJUSTING LENGTH: 133—162 mm (5.2—6.4 in)

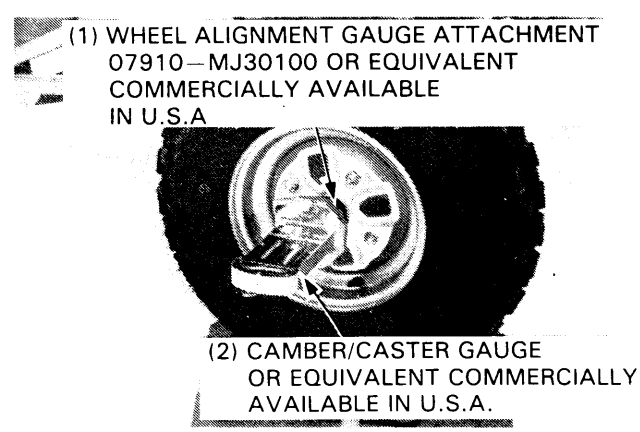


Measure the caster of the front wheel.

CASTER: 0° 30' ± 1°

NOTE

- Front caster is not adjustable.



SUSPENSION

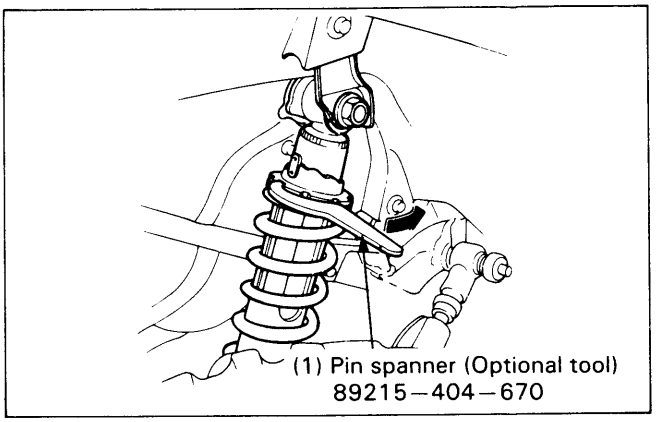
SHOCK ABSORBER

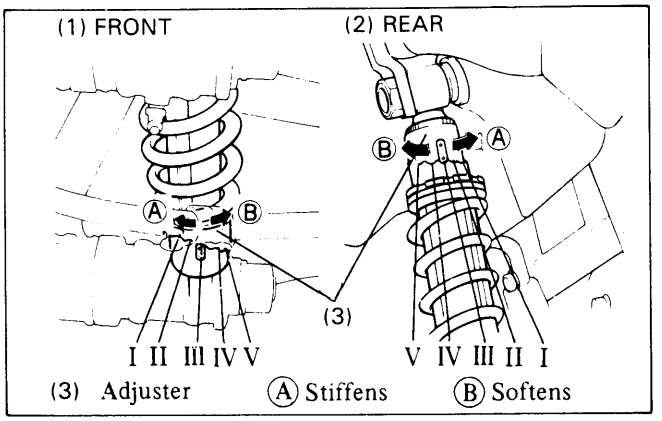
Check the action of the front and rear shock absorber by compressing them several times.
Check the entire of the shock absorber assembly for leaks or damage.
Tighten all suspension nuts and bolts.
The front and rear shock absorbers have several settings for different driving positions.

NOTE

- Be certain to adjust both the right and left shock absorbers to same position.

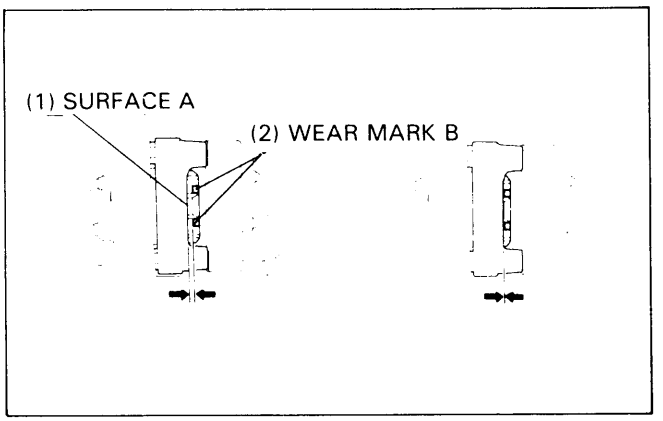
Position III is the standard setting for both the front and rear shock absorbers.
Turning the shock absorber adjuster with the Pin spanner (89215−404−670).





BRAKE PAD

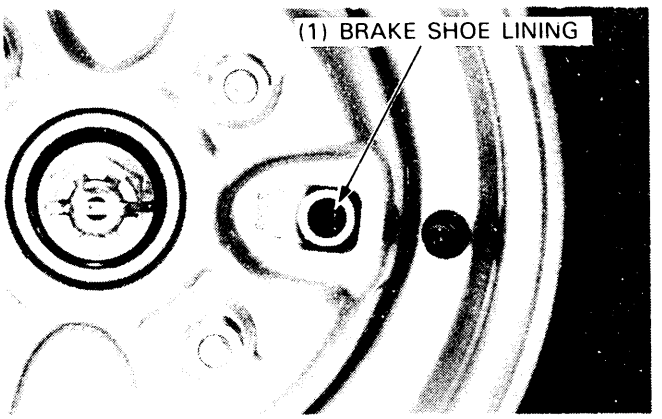
The brake pads must be checked more often when the FL350R is operated in wet or muddy conditions.
The pads must be replaced when surface A becomes aligned with the wear mark B on the caliper body.
Check the brake lever free play if the surface A is not aligned with the wear mark.



BRAKE SHOE

Remove the inspection hole plug on the brake drum and inspect each brake shoe thickness.

LINING THICKNESS
STANDARD: 4.0 mm (0.16 in)
SERVICE LIMIT: 2.0 mm (0.08 in)

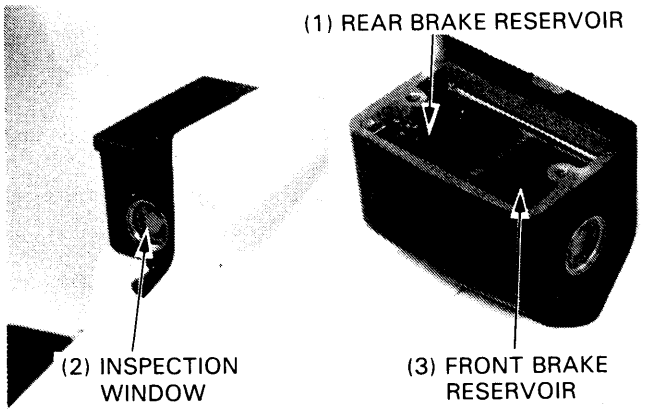


BRAKE FLUID

Check the front and rear brake fluid reservoir levels.
If the level can't be seen through the inspection window on the reservoir, remove the screws, cap, diaphragm, and fill the reservoir with DOT-3 or 4 brake fluid up to the upper level.
If the level is low, check the entire system for leaks and brake pads for wear.

CAUTION

- *Avoid operating the brake lever with the cap removed. Brake fluid will squirt out if the lever is pulled.*
- *Do not mix different types of fluid, as they may not be compatible.*



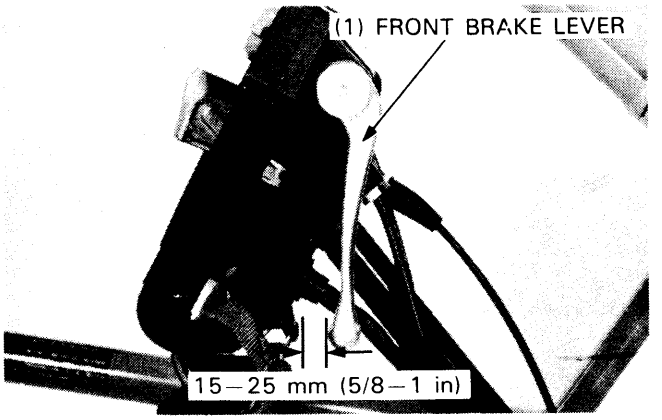
BRAKE SYSTEM

FRONT BRAKE

Check the front brake fluid reservoir level and measure the front brake lever free play.

FREE PLAY: 15—25 mm (5/8—1 in)

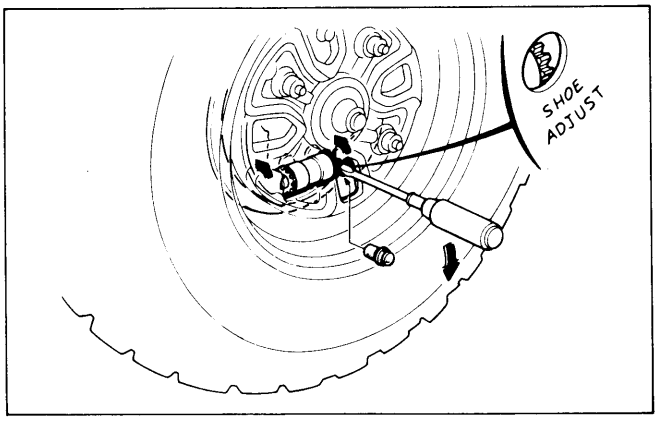
If the free play exceeds the limit, adjust the front brake shoes.



BRAKE SHOE ADJUSTMENT

Raise the front wheels off the ground and support the frame with blocks.

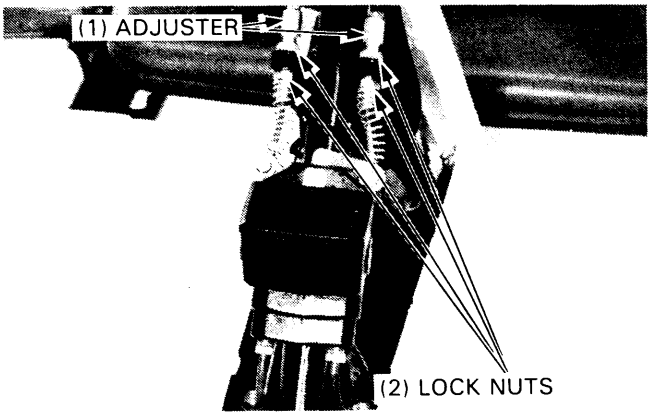
Remove the adjustment hole plug.
Rotate the brake adjusters with a screw driver until the front wheel locks, then, back off the brake adjuster 2 or 3 clicks and pump the brake lever 2 or 3 times.
Turn the wheel manually marking sure there is no drag.
Do the same with the other wheel.
Recheck the brake lever free play.
If the free play exceeds the limit, adjust the front brake cable.



FRONT/REAR BRAKE CABLE

Remove the left and right steering colum covers.

To adjust:
At the lower end of the cable, loosen the lock nut.
Turn the adjuster to obtain the specified free play at the brake lever.

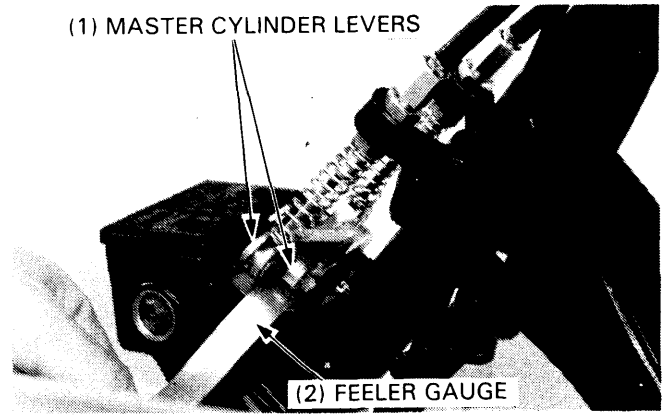


Measure the clearance between the master cylinder piston surface and the master cylinder lever.

SERVICE LIMIT: 0.2 mm (0.008 in)

WARNING

- *The clearance between the master cylinder piston and the lever must remain within 0.2—0.5 mm (0.008—0.020 in).*

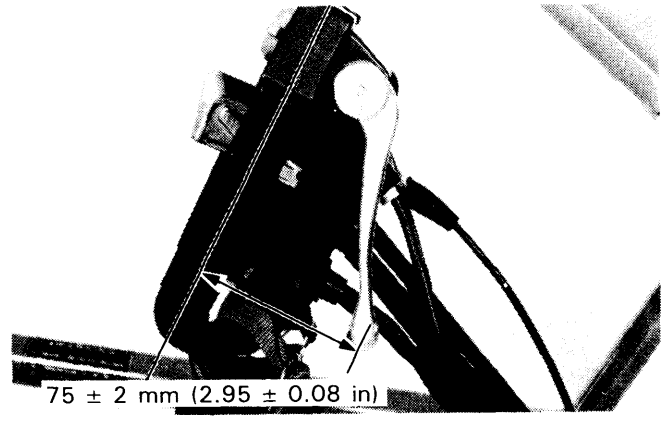


BRAKE LEVER HEIGHT

Remove the right and left steering column covers.
Loosen the front and rear brake cable lock nuts.
Measure the brake lever height.

STANDARD: 75 ± 2 mm (2.9 ± 0.08 in)

To adjust, see below.



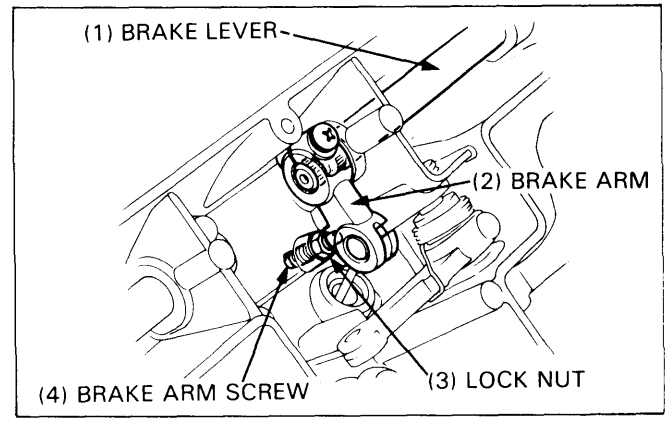
ADJUSTMENT

Remove the steering wheel cover.
Loosen the brake arm screw lock nut.

Turn the brake arm screw bring the brake lever height to 75 ± 2 mm (2.9 ± 0.08 in).

Then tighten the brake arm screw lock nut.

Check for brake lever free play.

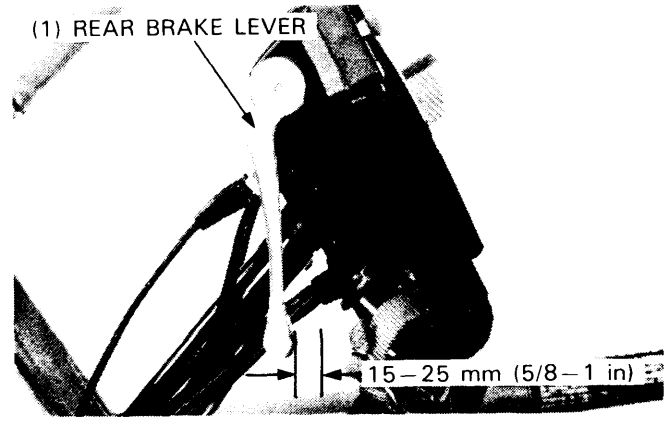


REAR BRAKE

Check the rear brake fluid reservoir level (page 3-10) and measure the rear brake lever free play.

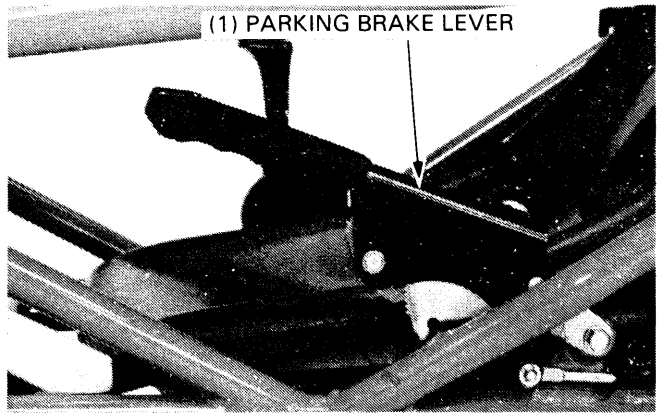
FREE PLAY: 15—25 mm (5/8—1 in)

If free play exceeds the limit, check the brake pad wear and the rear brake cable adjustment.
Adjustment procedure is the same as the front brake.



PARKING BRAKE SYSTEM

Raise the rear wheels off the ground.
Pull the parking brake lever up 1 – 5 notches, and try to turn the rear wheels; if they can be moved, follow the adjustment procedures below.



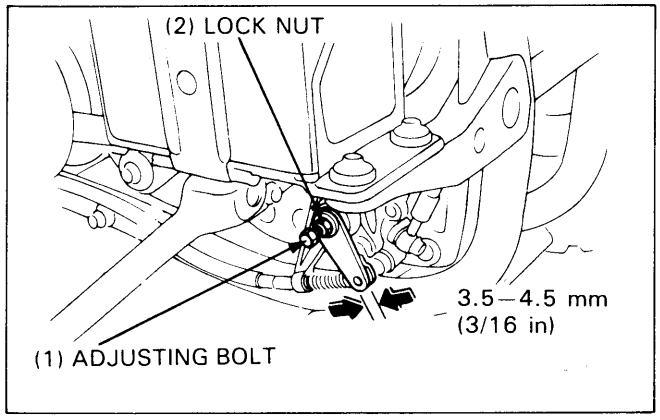
PARKING BRAKE ARM FREE PLAY

To adjust:
Loosen the lock nut on the rear caliper.
Screw in the adjusting bolt until you feel resistance, then tighten the lock nut.

TORQUE: 15 – 20 N·m (1.5 – 2.0 kg-m, 10 – 14 ft-lb)

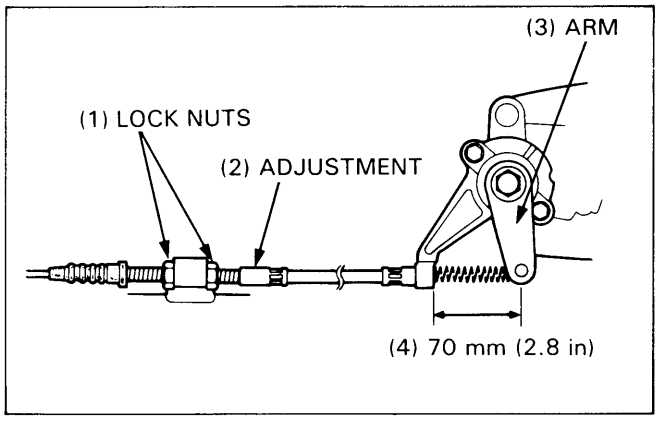
Measure the parking brake arm free play at the tip of the parking brake arm.

FREE PLAY: 3.5 – 4.5 mm (3/16 in)



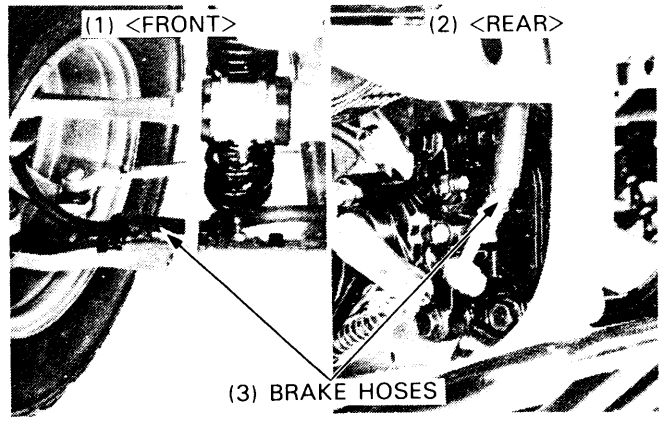
TO ADJUST;

Move the cable adjustment position so that the distance from the cable housing end to the side of the parking brake arm is 70 mm (2.8 in) as shown.



FRONT/REAR BRAKE HOSE

Check the brake hoses for deterioration and the system for leaks.

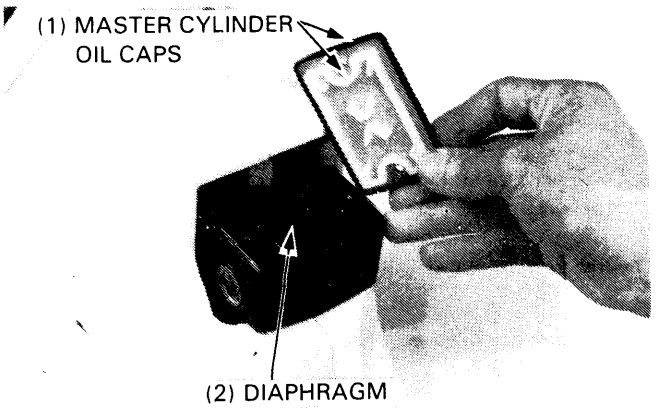


MASTER CYLINDER OIL CAP

Check for damage of the diaphragm and master cylinder caps. Replace, if necessary.

Tighten the screws securely.

TORQUE: 1 – 2 N·m (0.1 – 0.2 kg-m, 0.7 – 1.5 ft-lb)



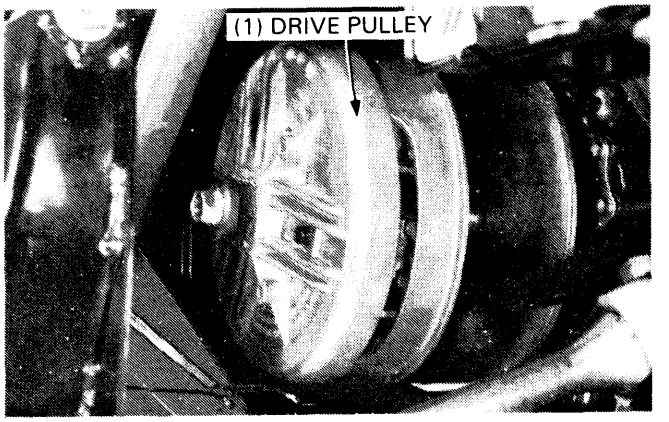
BELT CONVERTER

Place the rear of the FL350R on a support with the wheels, off the ground and remove the wheels (page 11-3).
Start the engine and move the gear selector in and out of gear to check the drive and driven pulley operation.

Check the drive belt.
Install the rear wheels.

NOTE

- Prevent any foreign objects from falling between the drive housing and the movable face.



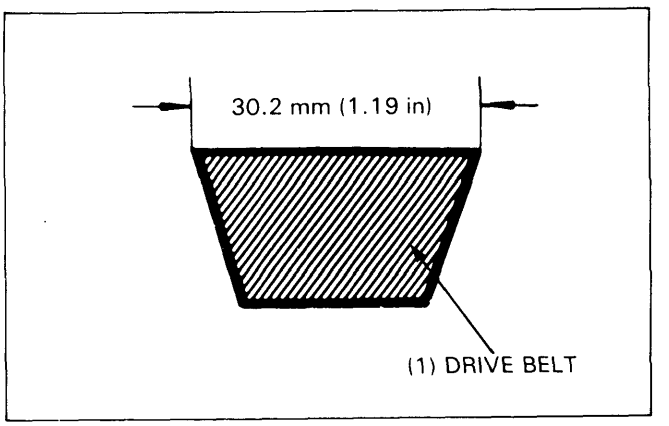
DRIVE BELT

Remove the rear drive belt cover.
Remove the drive belt (page 9-19).
Check for wear, burnt spots, or cracks.
Replace the belt if it shows any signs of damage.

Measure the thickness of the drive belt.

Replace if necessary.

STANDARD: 30.2 (1.19 in)
SERVICE LIMIT: 27 mm (1.06 in)



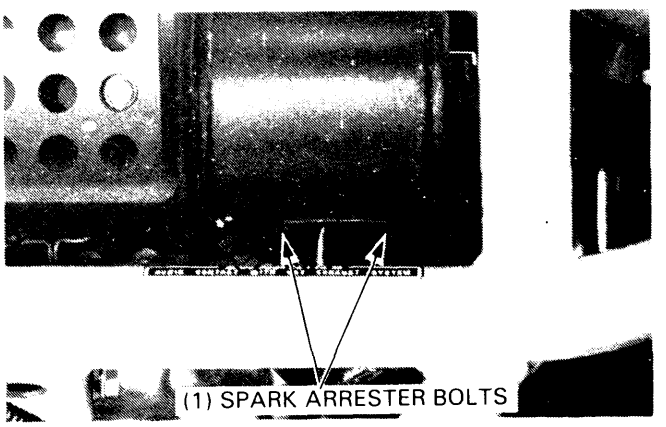
SPARK ARRESTER

The exhaust system must be periodically purged of accumulated carbon.

WARNING

- ***The exhaust system becomes VERY HOT even after short periods of engine operation.***
- ***To avoid fire hazards, DO NOT perform this maintenance in the vicinity of flammable materials.***

Remove the spark arrester bolts and spark arrester lid
Start the engine, and purge accumulated carbon from the system by momentarily revving up the engine several times.
Stop the engine and allow the exhaust pipe to cool.
Reinstall the spark arrester lid and bolts.



WHEEL

Check the tires for cuts, imbedded nails, or other damage.

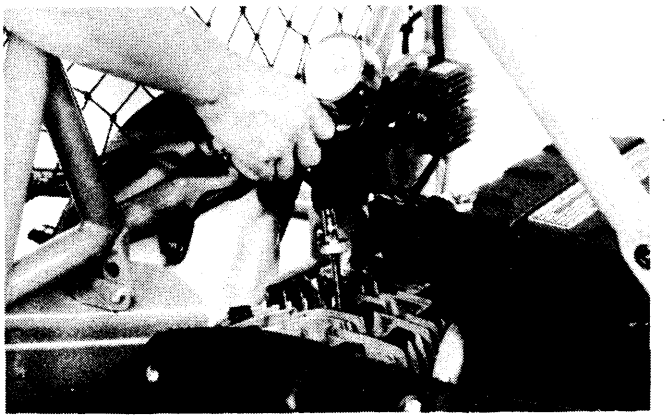
NOTE

- Tire pressures and circumferences should be checked when the tires are COLD.
- The circumferences of the tires should be measured with the tires raised off the ground.

Check the tire pressures and circumferences.

	Recommended pressure	Min. pressure	Max. pressure	Standard tire circumference
Front	5.0 psi (34 kPa, 0.35 kg/cm²)	4.3 psi (29 kPa, 0.3 kg/cm²)	5.7 psi (39 kPa, 0.4 kg/cm²)	1,735 mm (68.3 in)
Rear	6.4 psi (44 kPa, 0.45 kg/cm²)	5.7 psi (39 kPa, 0.4 kg/cm²)	7.1 psi (49 kPa, 0.5 kg/cm²)	1,880 mm (74.0 in)

CYLINDER COMPRESSION



Warm up the engine.
Stop the engine and remove the spark plug.
Insert a compression gauge.
Pull the starter valve all the way up.
Fully open the throttle.
Crank the engine with the starter motor until the gauge reading stops rising.

NOTE

- The maximum reading is usually reached within 4-7 seconds.

COMPRESSION: 97 kPa (9.7 kg/cm², 138.6 psi)

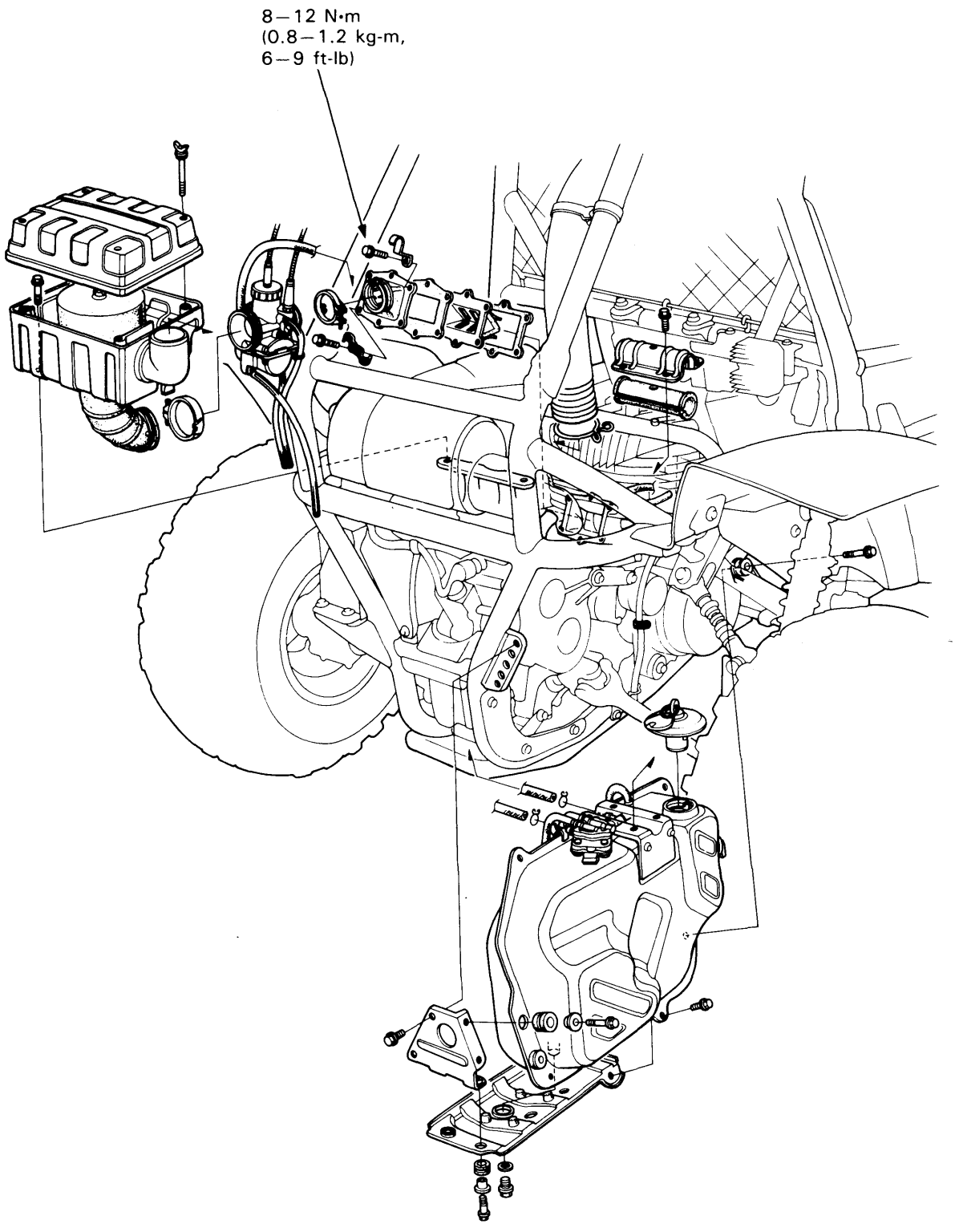
Low compression can be caused by:
- Blown cylinder head gasket
- Worn piston rings
- Worn cylinder

High compression can be caused by:
- Carbon deposits in combustion chamber or on piston head.

NUT, BOLT, FASTENER

Tighten bolts, nuts and fasteners at regular intervals shown in the Maintenance Schedule (page 3-2).
Check that all chassis nuts and bolts are tightened to their correct torque values (page 1-8). Check that all cotter pins and safety clips are in place.

MEMO


8–12 N·m
(0.8–1.2 kg-m,
6–9 ft-lb)

4. FUEL SYSTEM

SERVICE INFORMATION

GENERAL

- Use caution when working with gasoline. Always work in a well-ventilated area and away from sparks or flames.
- The float bowl has a drain plug that can be loosened to drain residual fuel.
- When disassembling fuel system parts, note the locations of the O-rings. Replace them during assembly.

SPECIFICATIONS

Fuel tank capacity	14.5 lit (3.8 US gal, 3.2 Imp gal)
Fuel reserve capacity	2.5 lit (0.7 US gal, 0.6 Imp gal)
Fuel	Premium or leaded gasoline (R.O.N. 92–100)
Oil	Honda 2-Stroke oil or equivalent
Mixing ratio (Fuel : Oil)	20 : 1
Carburetor	

Identification mark	PE32A
Type	Reed valve
Venturi dia	32 mm (1.3 in)
Float level	16.0 mm (0.63 in)
Air screw opening	1-1/2 Turns out
Idle speed	1,300 ± 150 rpm
Main jet	#142
Jet needle	#3BC-3rd groove
Throttle lever free play	3–8 mm (0.12–0.31 in)

TOOL

Common

Float level gauge	07401–0010000

TROUBLESHOOTING

Engine cranks but won't start

1. No fuel in tank
2. No fuel to carburetor
3. Too much fuel getting to cylinder
4. No spark at plug (ignition malfunction)
5. Air cleaner clogged

Engine idles roughly, stalls, or runs poorly

1. Idle speed incorrect
2. Ignition malfunction
3. Low compression
4. Rich mixture
5. Lean mixture
6. Air cleaner clogged
7. Air leaking into inlet pipe
8. Fuel contaminated

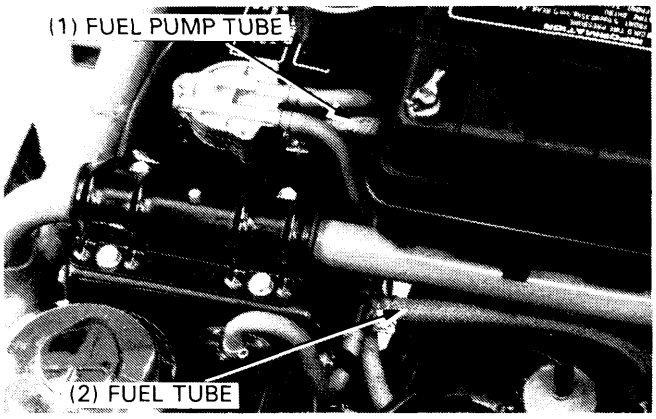
FUEL TANK

FUEL TANK REMOVAL

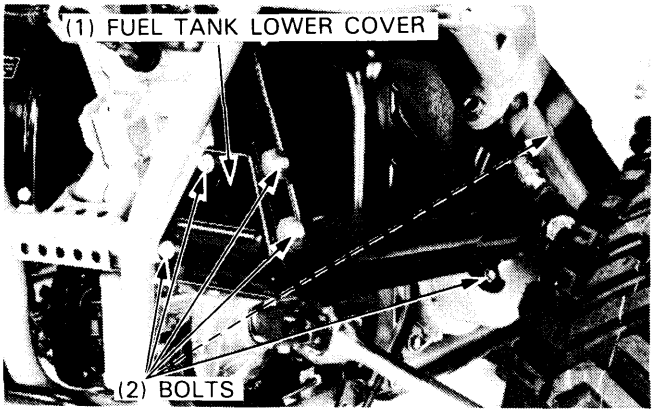
Turn the fuel valve OFF, disconnect the fuel check valve to carburetor fuel tube and left crankcase to fuel pump tube.

WARNING

- *Keep gasoline away from flames or sparks.*
- *Wipe up spilled gasoline at once.*

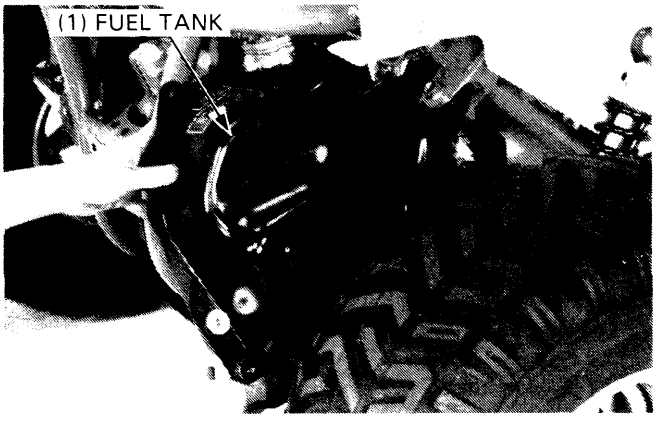


Remove the fuel tank lower cover by removing five mounting bolts.

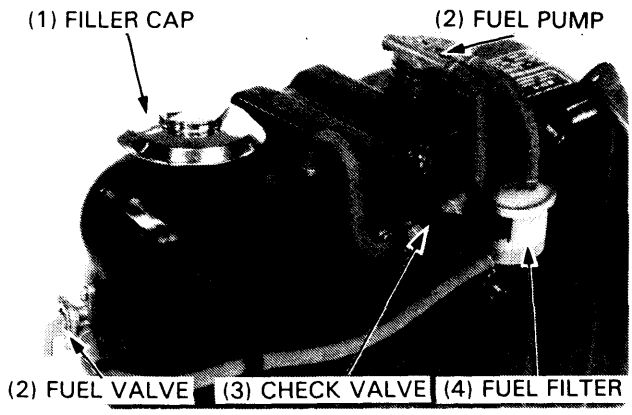


Remove the fuel tank upper hanger bolts and hanger.
Remove the fuel tank filler cap.

Remove the fuel tank.



Replace the filler cap on the fuel tank.
Remove the fuel pump, fuel filter, fuel check valve, fuel tubes and fuel valve.



FUEL PUMP INSPECTION

WARNING

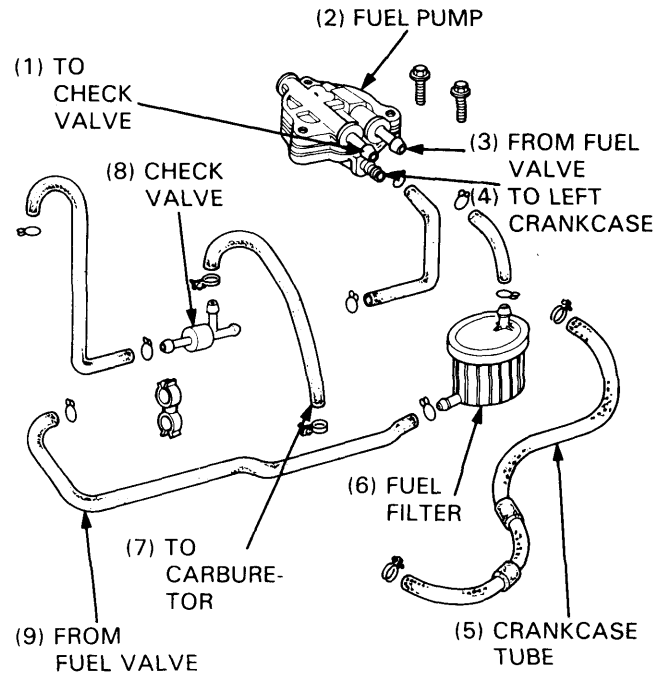
- ***Gasoline is extremely flammable and is explosive under certain conditions. Perform this operation in a well ventilated area and do not smoke or allow sparks in the area.***

Remove the spark plug cap.
Disconnect the fuel line from the fuel pump at the check valve and place a suitable container under the line to catch the fuel.
Place the gear selector in neutral and the engine stop switch to the "RUN" position. Turn the ignition switch and the fuel valve "ON."
Push the starter button and check for fuel flow from the disconnected line.

NOTE

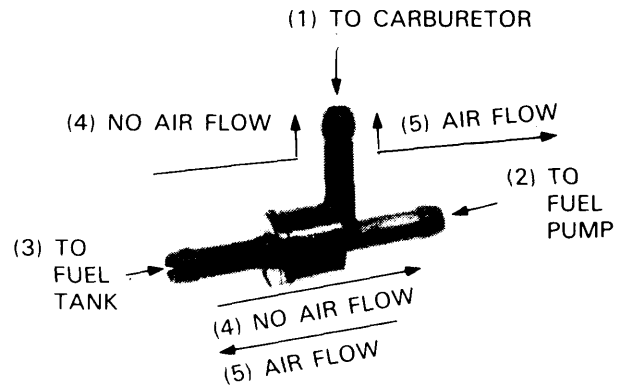
- Don't run the starter any longer than 4 or 5 seconds at a time.

If there is no fuel flow, check that the line to the crankcase is not disconnected, plugged or pinched.
If the crankcase line is OK, but fuel doesn't flow when the test is made, replace the fuel pump.

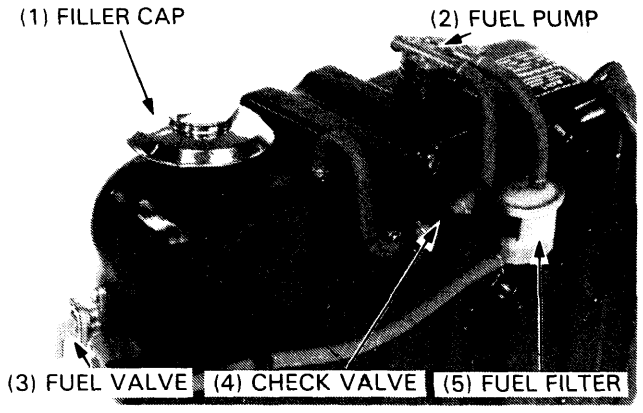


FUEL CHECK VALVE INSPECTION

Check the fuel check valve for proper operation by blowing with low pressure compressed air.
Air should flow in the direction shown.



FUEL VALVE / FUEL FILTER INSPECTION

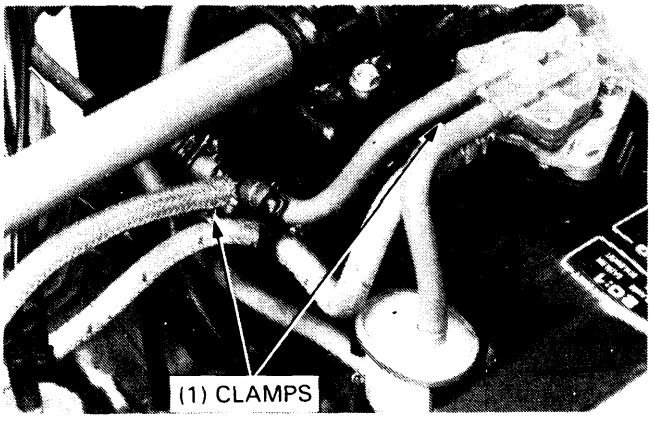


WARNING

- ***Keep gasoline away from flames or sparks.***
- ***Wipe up spilled gasoline at once.***

Check that fuel flows freely out of the fuel valve.
If the flow is restricted, replace the fuel filter.

FUEL TANK INSTALLATION



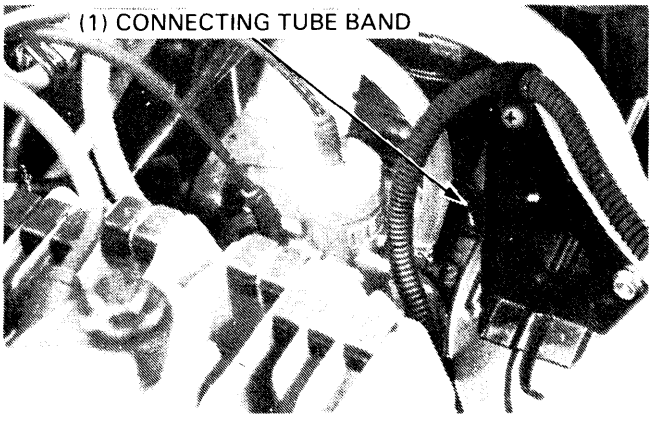
Install the removed parts onto the tank in the reverse order of removal.
Install the fuel tank in the reverse order of removal.

NOTE

- Route the fuel tubes as shown and tighten all clamps.
- After assembly, check for fuel leaks.

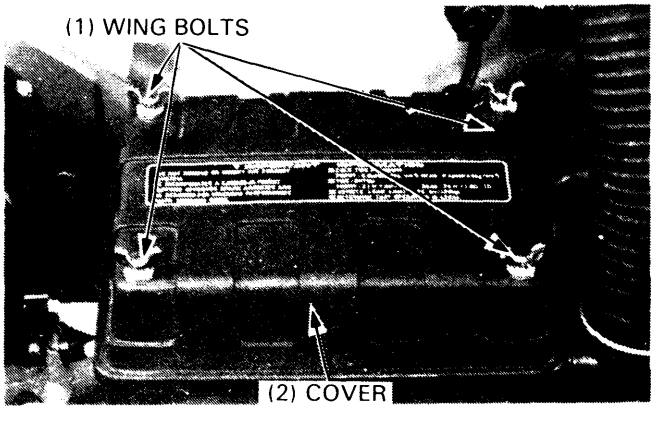
AIR CLEANER CASE

REMOVAL

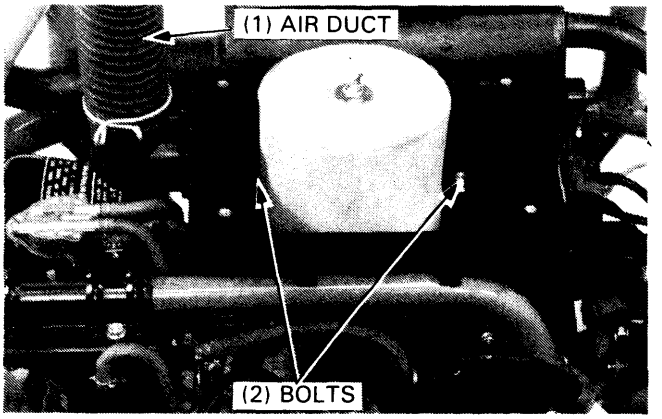


Loosen the carburetor to air cleaner case connecting tube band.

Remove the four air cleaner case cover wing bolts and cover.



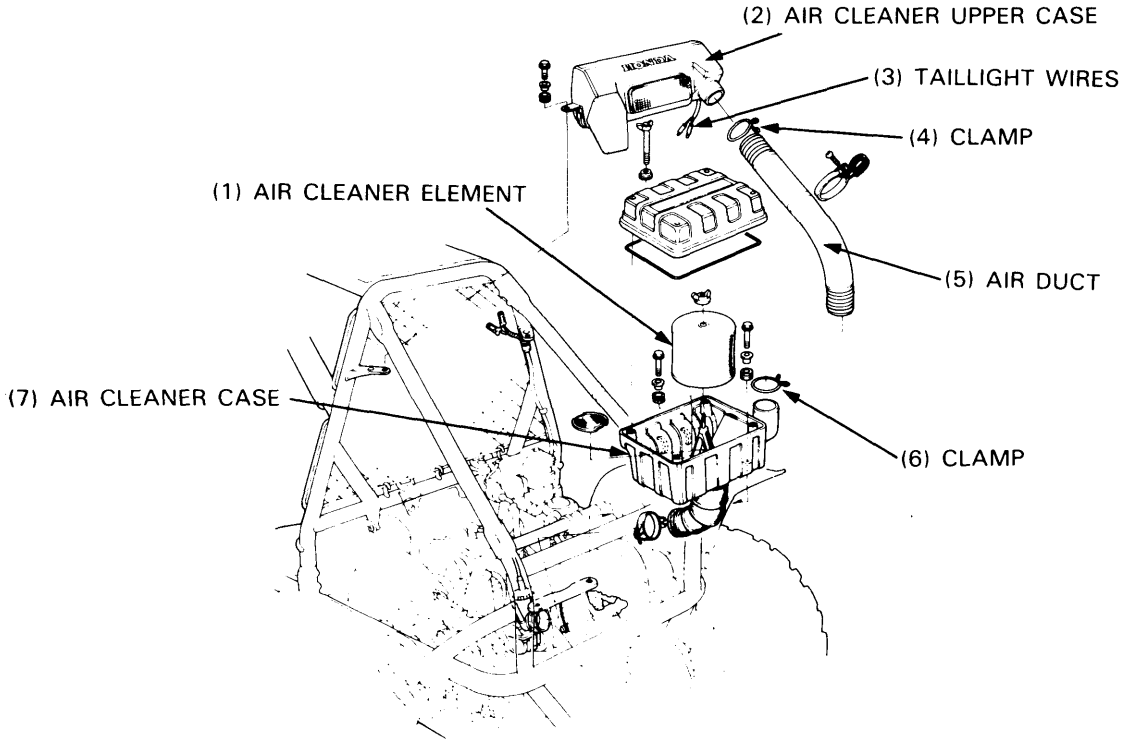
Disconnect the air duct from the air cleaner case.
Remove the air cleaner case by removing two bolts.



Disconnect the air duct from the air cleaner upper case.
Disconnect the taillight wires and remove the air cleaner upper case mounting bolts and case.

INSTALLATION

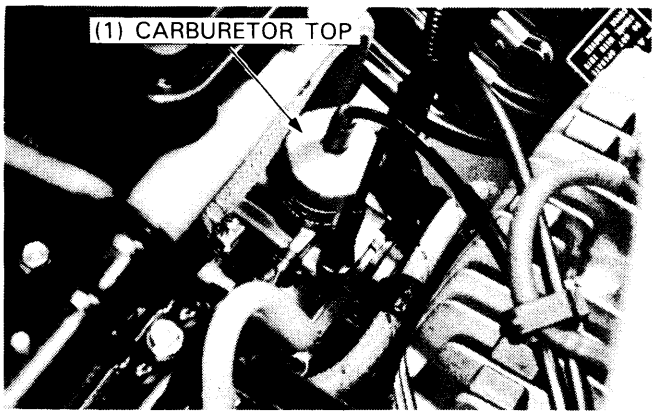
Install the air cleaner case and air cleaner upper case in the reverse order of removal.



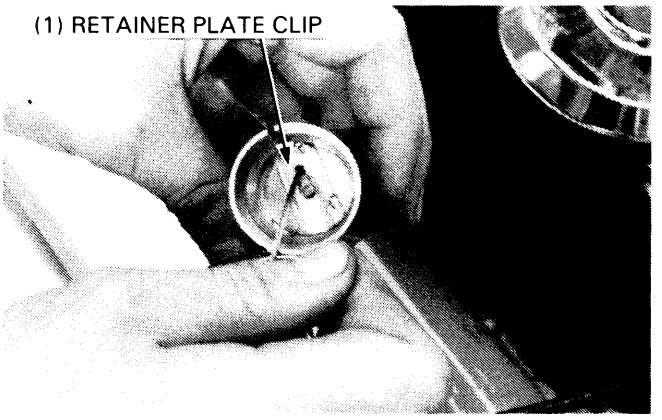
THROTTLE VALVE

REMOVAL

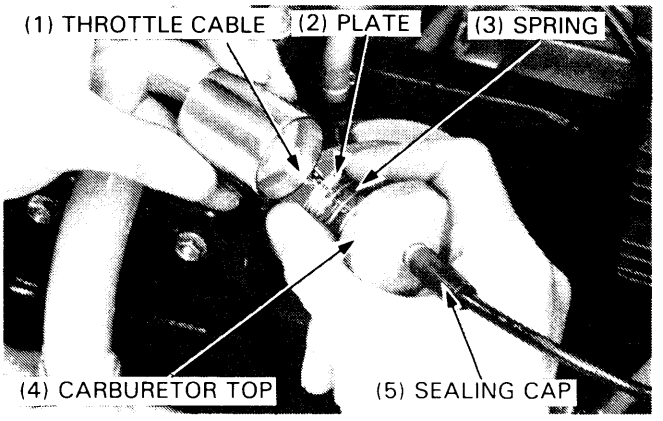
Remove the carburetor top and lift out the throttle valve.



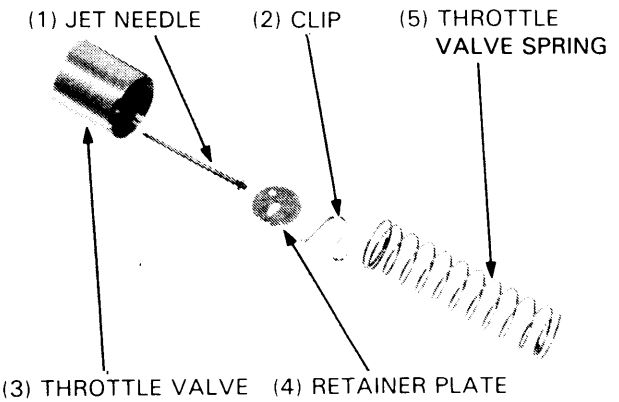
Remove the retainer plate clip.



Disconnect the throttle cable from the throttle valve.
Remove the retainer plate, spring, carburetor top and sealing cap.



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

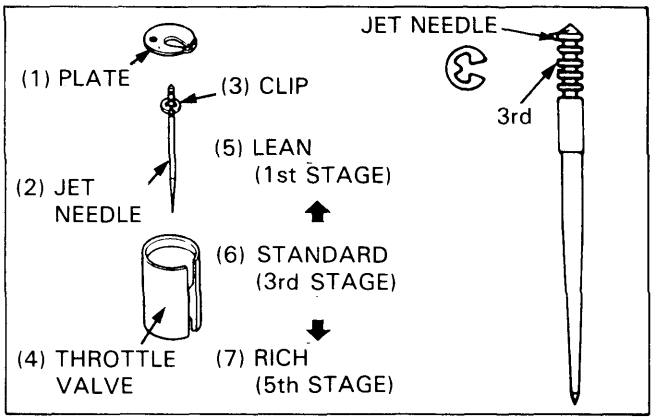


INSTALLATION

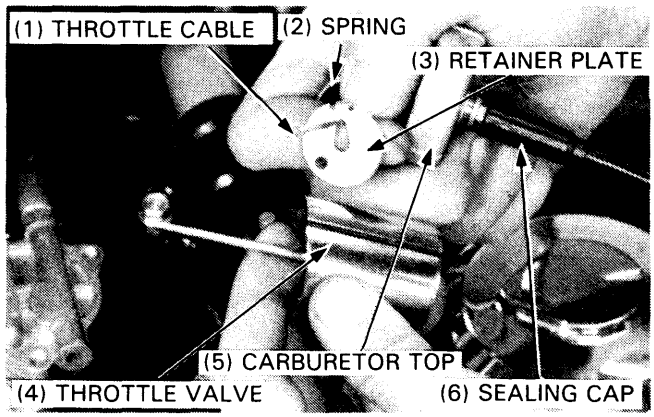
Install the needle clip on the jet needle.

STANDARD SETTING: 3rd groove

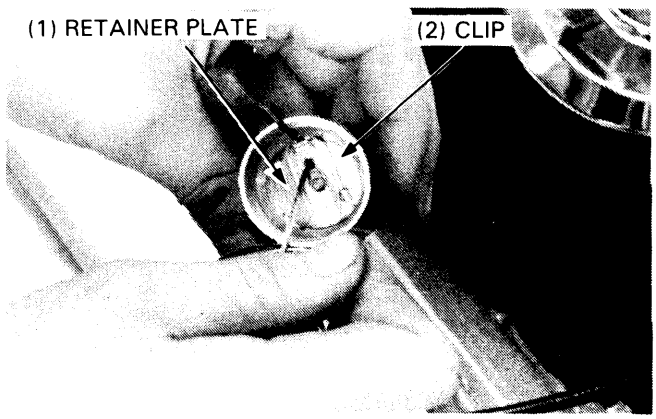
Install the jet needle into the throttle valve.



Insert the throttle cable into the sealing cap and carburetor top.
Compress the spring and insert the throttle cable into the retainer plate and throttle valve.



Insert the retainer plate into the recess of the throttle valve completely and secure with the clip.



Install the throttle valve assembly into the carburetor.

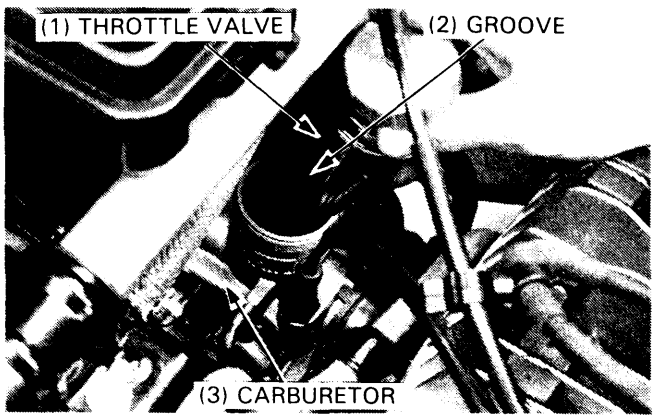
NOTE

- Align the groove in the throttle valve with the locating pin in the carburetor.

Install the carburetor top.

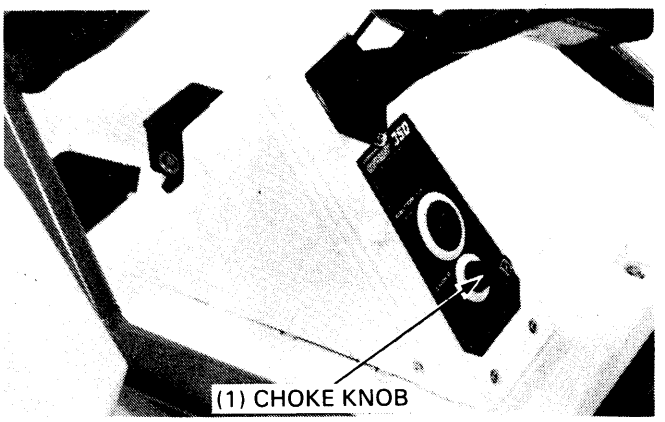
CAUTION

- ***Hand-tighten*** *the top until it is just snug, not tight.* ***Overtightening*** *could damage the carburetor. Do not use tools* ***to tighten*** *the carburetor top.*

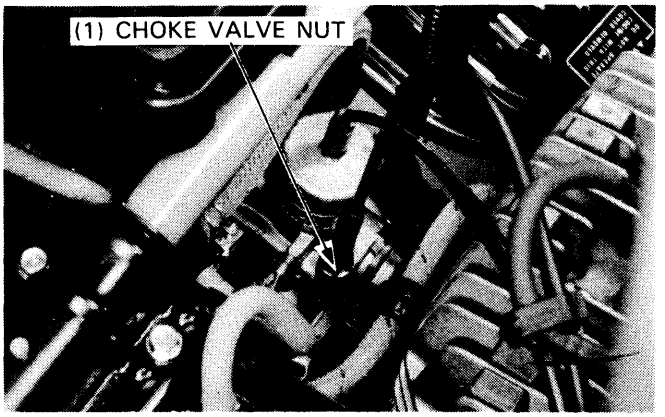


CARBURETOR CHOKE

The choke system uses a fuel enrichment circuit controlled by a choke valve.
Operation is via a cable and knob located on the steering column.



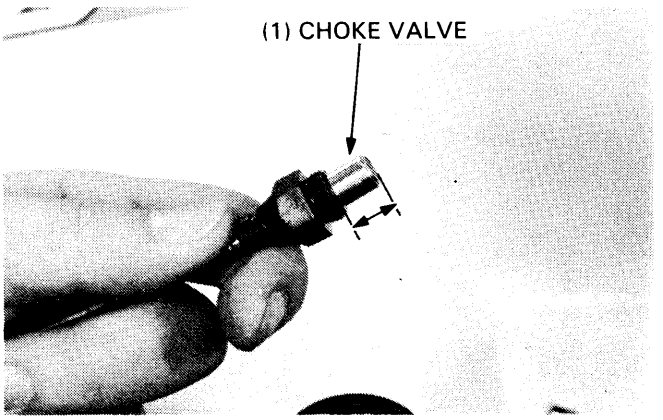
Loosen the choke valve nut and remove the valve from the carburetor.



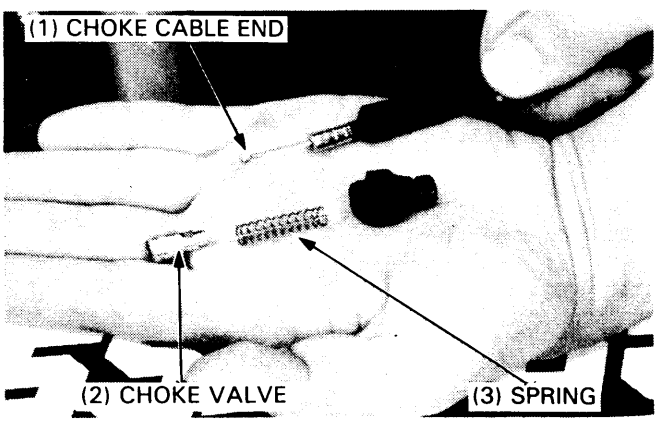
Move the choke knob all the way up and down and measure the choke valve stroke.

CHOKE VALVE STROKE: 11.0 mm (0.43 in)

Check the choke valve and spring for niks, grooves, or other damage.

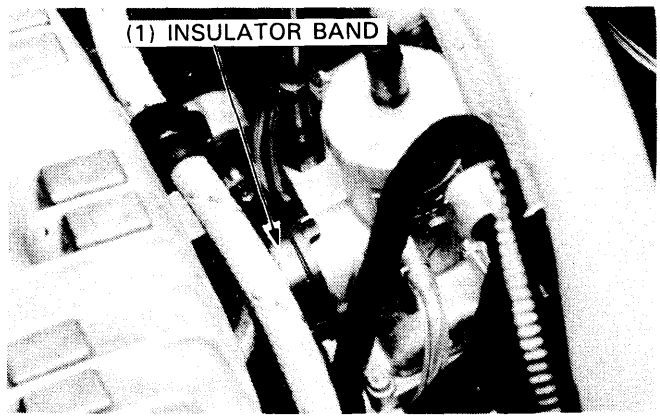


Disconnect the choke cable end from the choke valve to replace the valve and spring if required.

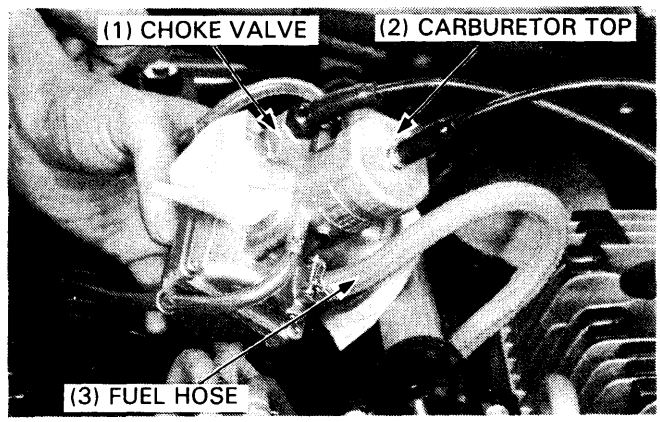


CARBURETOR REMOVAL

Remove the air cleaner case (page 4-4).
Loosen the carburetor insulator band and lift the carburetor out.

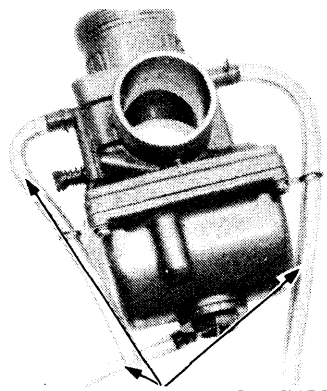


Remove the throttle valve (page 4-6).
Disconnect the choke valve and fuel hose from the carburetor.

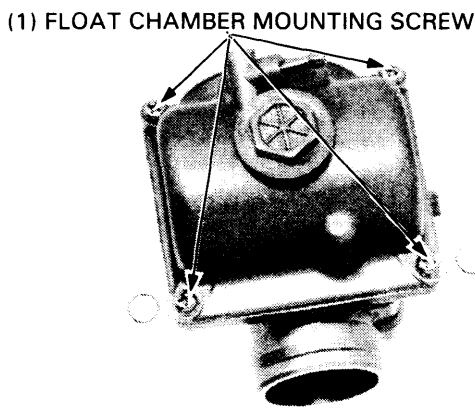


CARBURETOR DISASSEMBLY

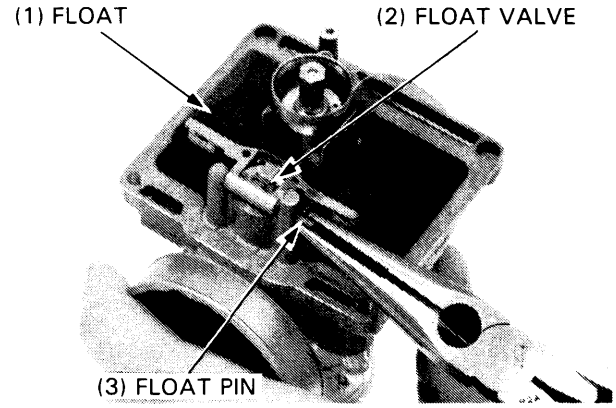
Disconnect the carburetor tubes from the carburetor.



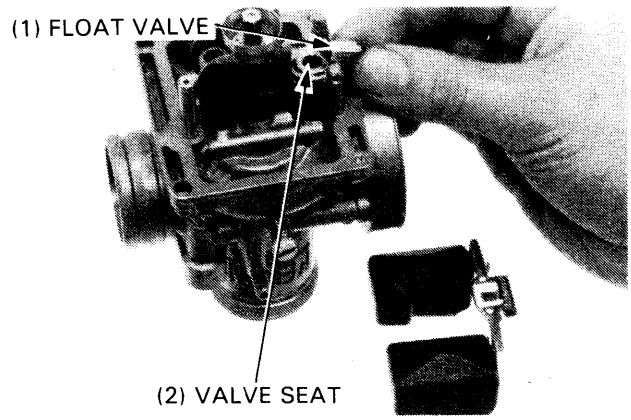
Remove the float camber mounting screws and chamber.



Remove the float pin, float and float valve.



Check the valve and seat for wear or damage.
Replace the valve and seat as a set if either parts is worn or damaged.
Check the float for deformation or the presence of fuel.



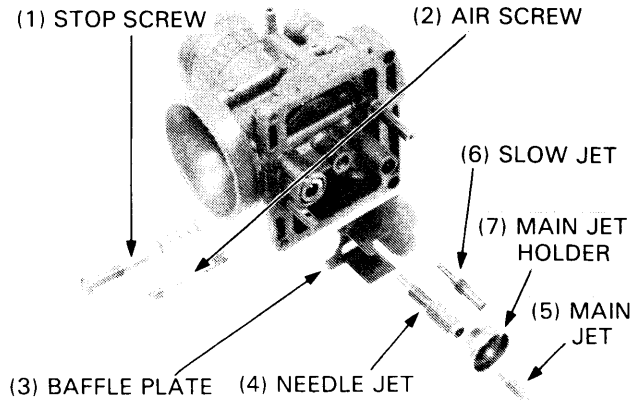
Remove the main jet, main jet holder, needle jet slow jet and baffle plate.
Remove the stop and air screws.

NOTE

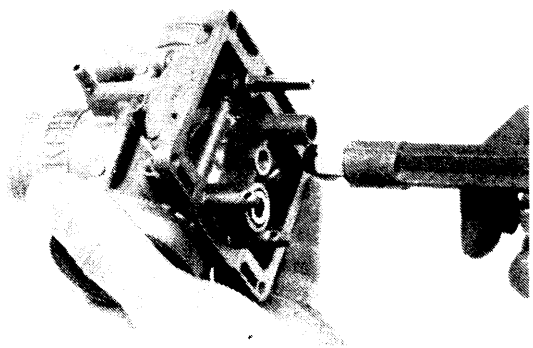
- Before removing the stop and air screws, turn them in slowly and record the number of rotations until they rest lightly, so they can be returned to their original positions.

CAUTION

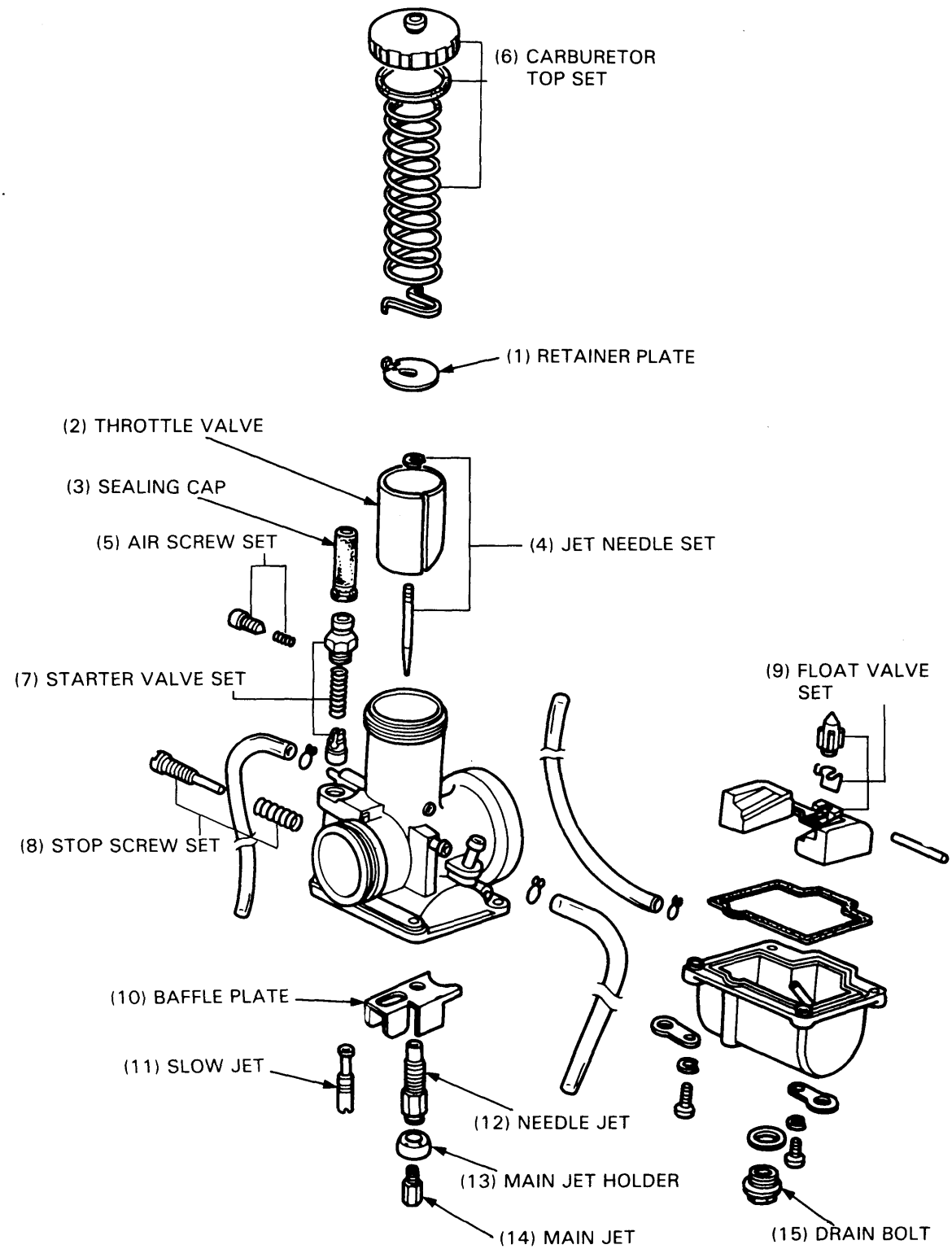
- *Damage to the air screw seat will occur if the air screw is tightened against the seat.*



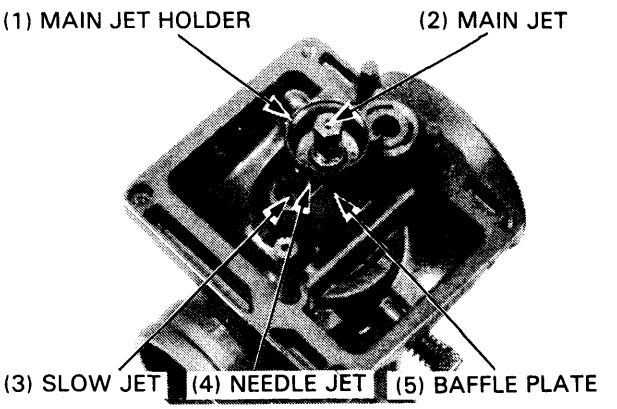
Blow open all jets and body openings with compressed air.



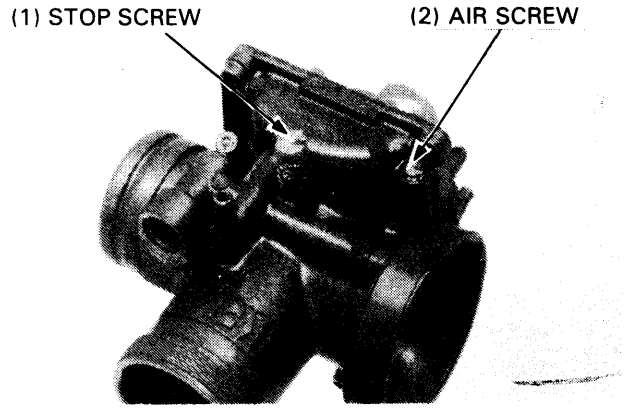
CARBURETOR ASSEMBLY



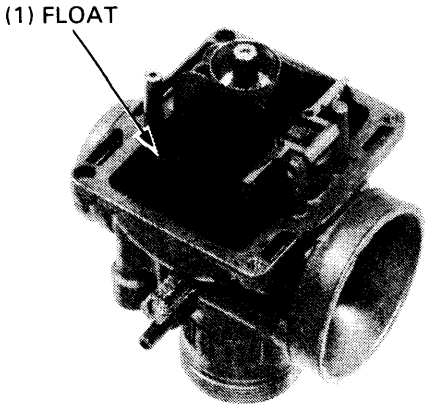
Install the baffle plate, needle jet, main jet holder and main jet.
Install the slow jet.



Install the air and stop screws by and return them to their original positions.



Install the float valve, float and float pin.
Check the float for smooth movement.

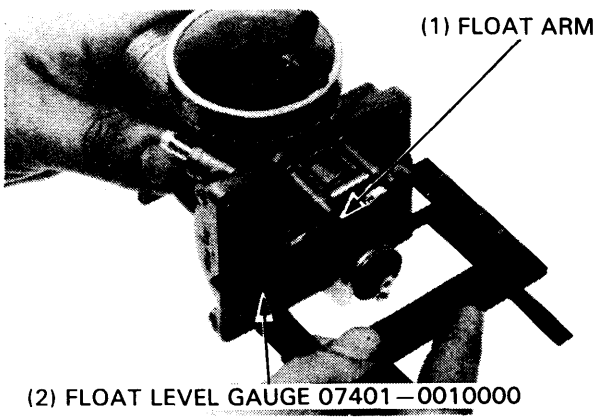


FLOAT LEVEL ADJUSTMENT

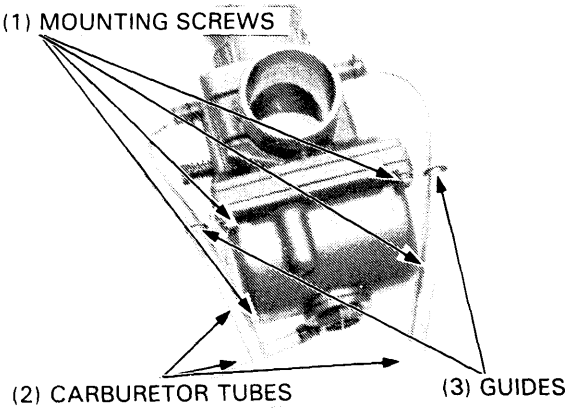
Measure the float level.

FLOAT LEVEL: 16.0 mm (0.63 in)

Adjust the float level by bending the float arm carefully until it just contacts the float valve.



Install the float chamber with the mounting screws and guides.
Install the caburetor tubes.



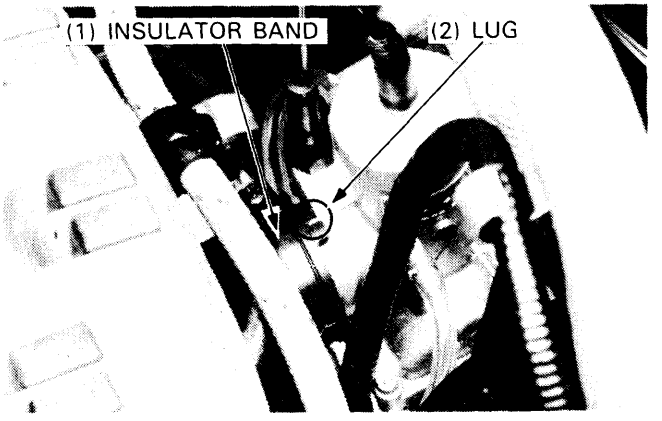
CARBURETOR INSTALLATION

Carburetor installation is essentially the reverse of removal.

NOTE

- Align the lug on the carburetor with the groove of the caburetor insulator.

Install the throttle valve (page 4-7).
Connect the fuel hose and choke valve (page 4-8).



AIR SCREW/STOP SCREW ADJUSTMENT

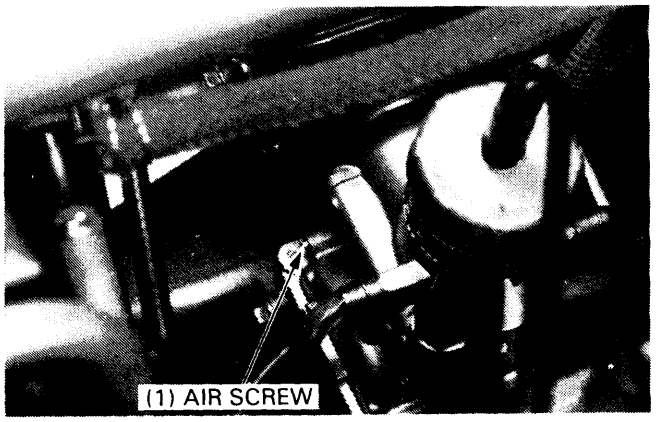
NOTE

- The air screw is factory pre-set.
- Adjustment is not necessary unless the caburetor is overhauled or a new air screw is installed.

CAUTION

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

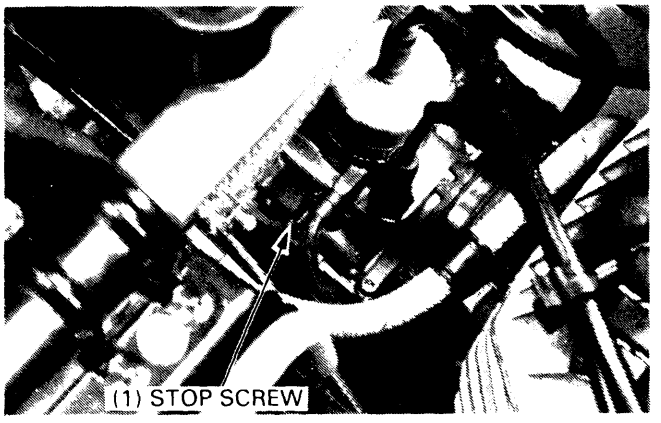
Turn the air screw clockwise until it seats lightly and back it out 1-1/2 truns.



This is an initial setting prior to the final air screw adjustment.
Warm the engine up to operating temperature.
Stop the engine and connect a tachometer.
Start the engine and adjust the idle speed with the stop screw.

IDLE SPEED: 1,300 ± 150 rpm

Turn the air screw clockwise slowly until the engine stops, then back it out according to the chart on page 4-14. Start the engine and readjust the idle speed with the stop screw, if necessary.



HIGH ALTITUDE ADJUSTMENT

When operating this vehicle at high altitude the air-fuel mixture becomes overly rich.
Above 5,000 feet (1,500 m) driveability and performance may be reduced and fuel consumption increased.
A high altitude jet is available for carburetor modification to compensate for this high altitude richness.

CAUTION

- *Sustained operation at altitudes below 5,000 feet (1,500 m) with the high altitude jet installed may cause the engine overheating and damage.*

			Temperature		
			−30°C− −17.5°C (−22°F− 0°F)	−17.5°C− −5°C (0°F− 22°F)	−5°C− 40°C (22°F− 104°F)
Altitude	over 5000 feet (1500m)	Main jet	#142	#140	#138
		Jet needle setting	3rd groove	2nd groove	1st groove
		Air screw opening	1-1/2 turns out	1-1/2 turns out	2 turns out
	3300−6600 feet (1000−2000m)	Main jet	#145	#142	#140
		Jet needle setting	4th groove	3rd groove	2nd groove
		Air screw opening	1-1/2 turns out	1-1/2 turns out	1-1/2 turns out
	0−5000 feet (0−1500m)	Main jet	#145	#145	#142
		Jet needle setting	5th groove	4th groove	3rd groove
		Air screw opening	1 turn out	1-1/2 turns out	1-1/2 turns out

Hight altitude carburetor adjustment is performed as follows;
Turn the fuel valve OFF.
Turn the carburetor drain bolt counterclockwise and drain the carburetor.

WARNING

- ***Keep gasoline away from flames or sparks.***
- ***Wipe up spilled gasoline at once.***

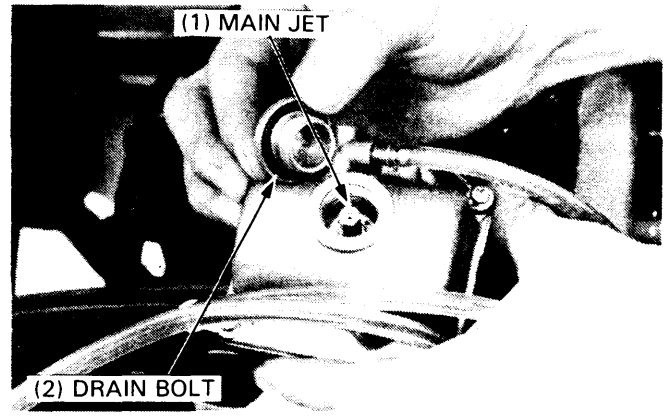
Remove the standard main jet (#142) and install the high altitude main jet in accordance with the chart.
For altitude from 6,000 to 10,000 feet, remove the jet needle from the throttle valve and change the position of the E-clip from the 3rd notch to the 1st notch.
Reinstall the jet needle into the throttle valve.
Tighten and torque the carburetor drain bolt.

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

Turn the fuel valve on.
Start the engine. Adjust the idle speed with the throttle stop screw; adjust the air screw.

NOTE

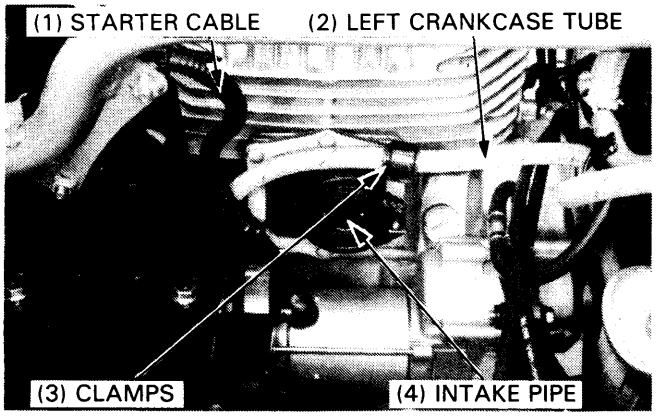
- Adjust the idle speed and air screw at high altitude to ensure proper high altitude operation.



REED VALVE

REMOVAL

Remove the carburetor (page 4-9).
Disconnect the left crankcase tube and starter cable from the clamps.
Remove the six bolts, intake pipe and reed valve from the cylinder.

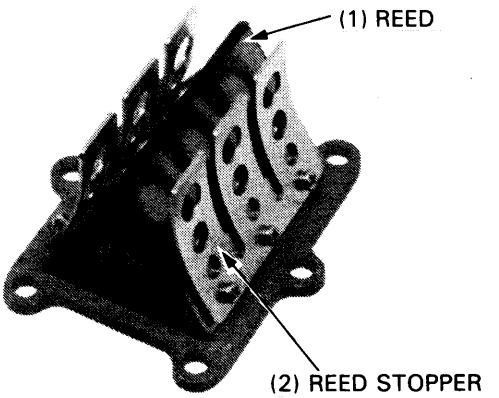


INSPECTION

Check the reed for damage or fatique and replace if necessary. Replace the valve with a new one if the seat rubber is cracked or damaged, or if there is clearance between the reed and seat.

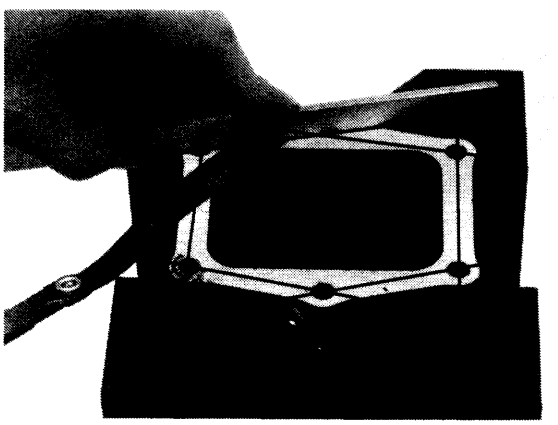
CAUTION

- *Do not disassemble or bend the reed stopper as this may cause improper engine performance.*
- *The reed valve must not be disassembled. If the stopper, reed or seat is faulty, replace the assembly.*



Check the reed valve for warpage in diagonal directions with a straight edge and a feeler gauge.

SERVICE LIMIT: 0.10 mm (0.004 in)

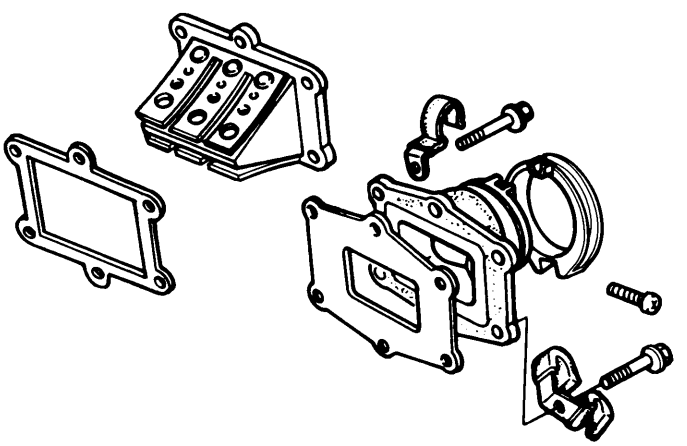


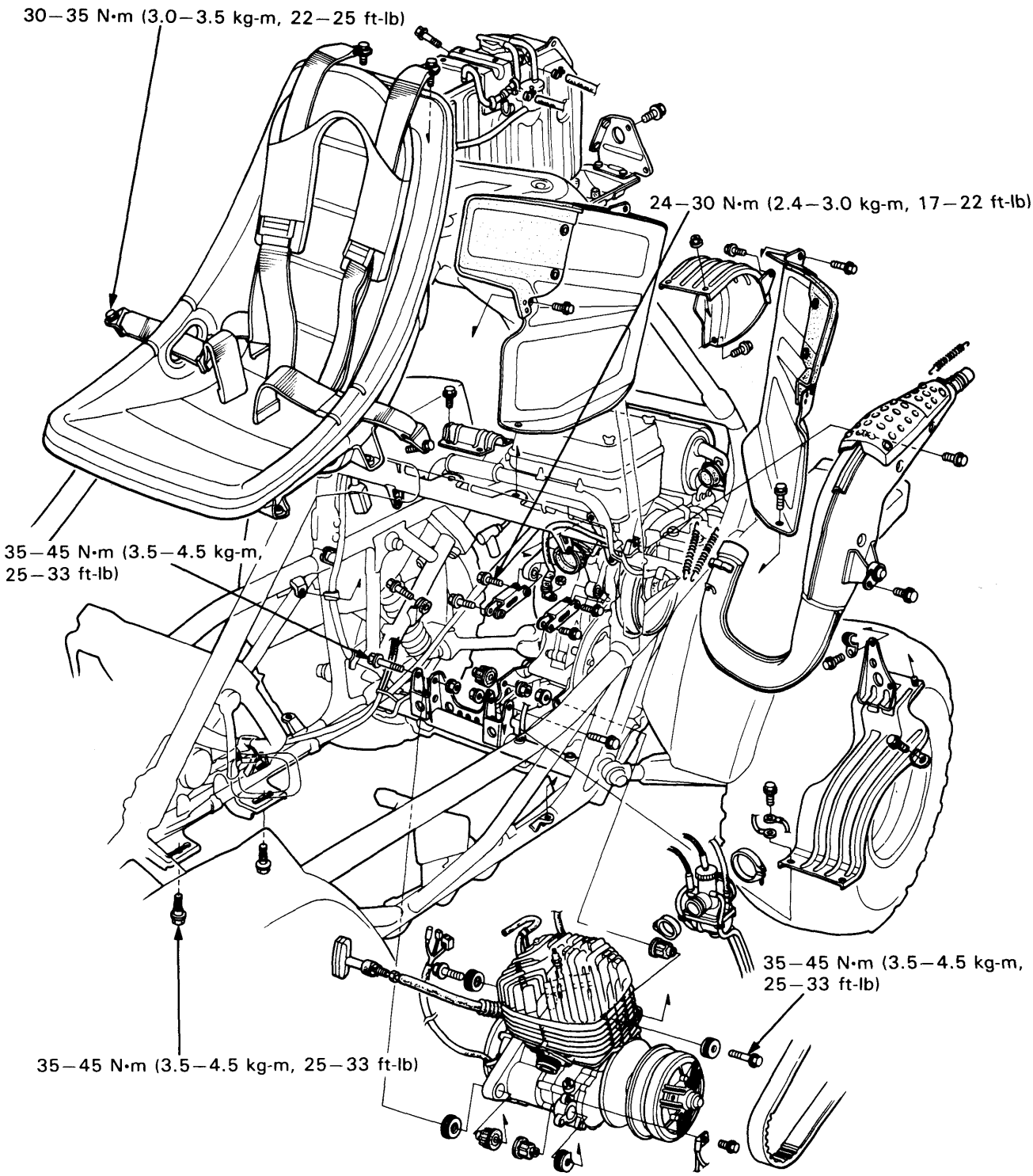
INSTALLATION

Installation of the reed valve is essentially the reverse order of removal.

NOTE

- After installation, check for secondary air leaks around the reed cage and intake pipe.




30—35 N•m (3.0—3.5 kg-m, 22—25 ft-lb)
24—30 N•m (2.4—3.0 kg-m, 17—22 ft-lb)
35—45 N•m (3.5—4.5 kg-m, 25—33 ft-lb)
35—45 N•m (3.5—4.5 kg-m, 25—33 ft-lb)
35—45 N•m (3.5—4.5 kg-m, 25—33 ft-lb)

5. ENGINE REMOVAL/INSTALLATION

SERVICE INFORMATION

GENERAL

- These parts require engine removal for servicing:
  - Crankshaft
  - Balance gears and balancer weigth

SPECIFICATIONS

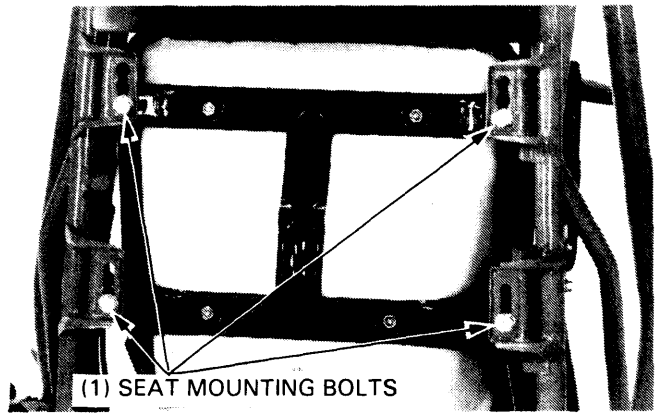
Engine dry weight	29 kg (63.9 lbs)
Engine balancer oil	See page 2-1.
Engine balancer oil capacity	0.15 lit (0.16 US qt, 0.13 Imp qt) at disassembly 0.12 lit (0.13 US qt, 0.11 Imp qt) at draining

TORQUE VALUES

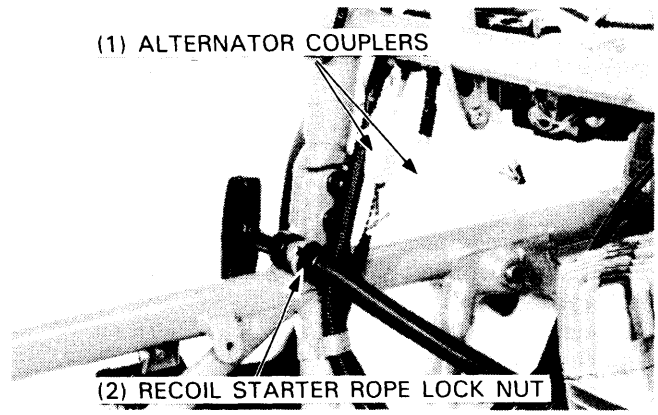
Connecting bracket bolt	24–30 N·m (2.4–3.0 kg–m, 17–22 ft–lb)
Front engine mounting bolt	35–45 N·m (3.5–4.5 kg–m, 25–33 ft–lb)
Rear engine hanger bolt	35–45 N·m (3.5–4.5 kg–m, 25–33 ft–lb)
Seat mounting bolt	35–45 N·m (3.5–4.5 kg–m, 25–33 ft–lb)
Seat belt bolt	30–35 N·m (3.0–3.5 kg–m, 22–25 ft–lb)

ENGINE REMOVAL

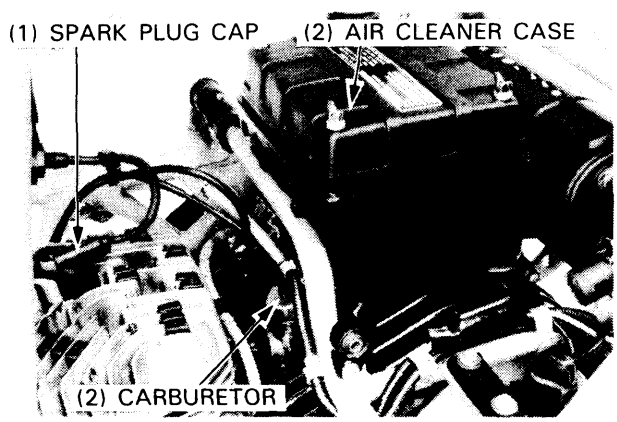
Disconnect the negative cable at the battery.
Turn the fuel valve OFF and remove the fuel tank (page 4-2).
Remove the seat and seat belt by removing the mounting bolts.
Remove the right and left air guides and main muffler (page 13-3).



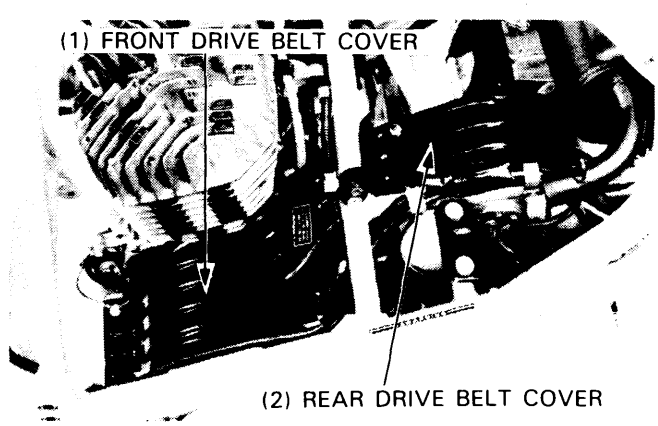
Disconnect the alternator couplers.
Disconnect the recoil starter rope by loosening the lock nut from the frame.



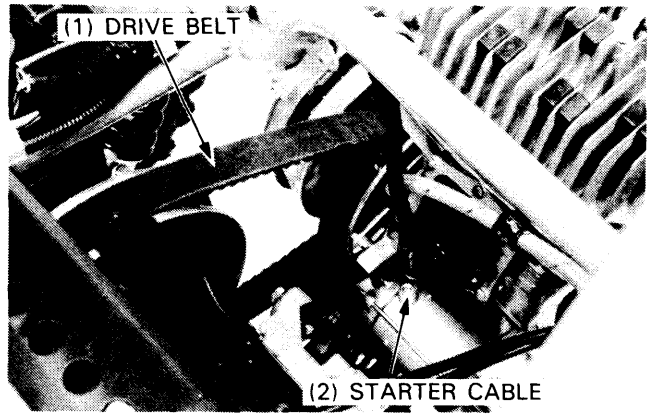
Remove the air cleaner case (page 4-4).
Remove the carburetor (page 4-9).
Disconnect the spark plug cap from the spark plug.



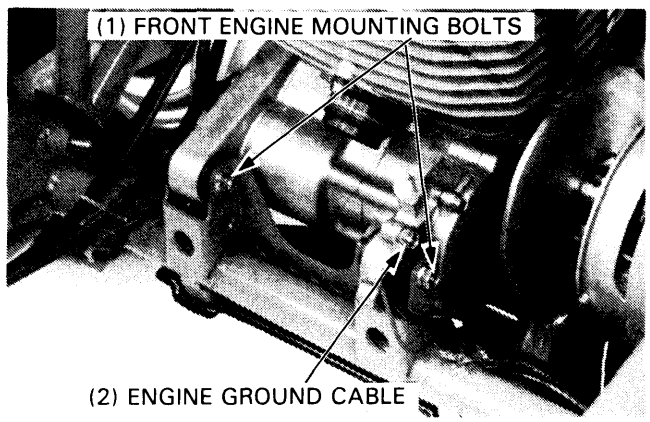
Remove the front and rear drive belt covers.



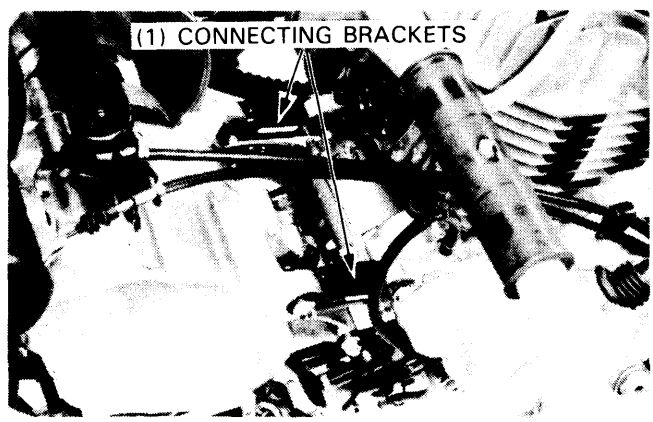
Disconnect the starter negative cable from the starter motor.
Remove the drive belt.



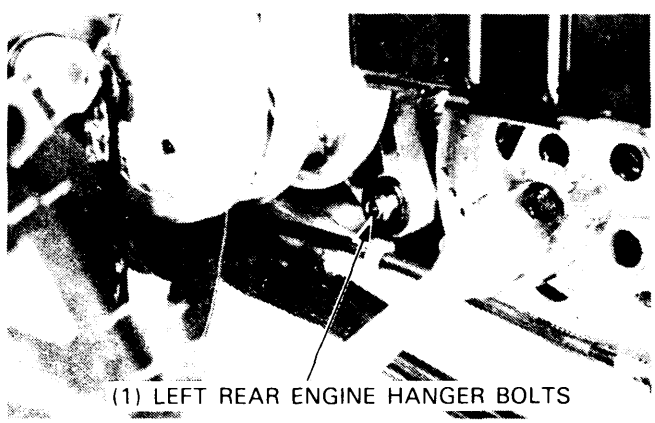
Disconnect the engine ground cable.
Remove the front engine mounting bolts and nuts.



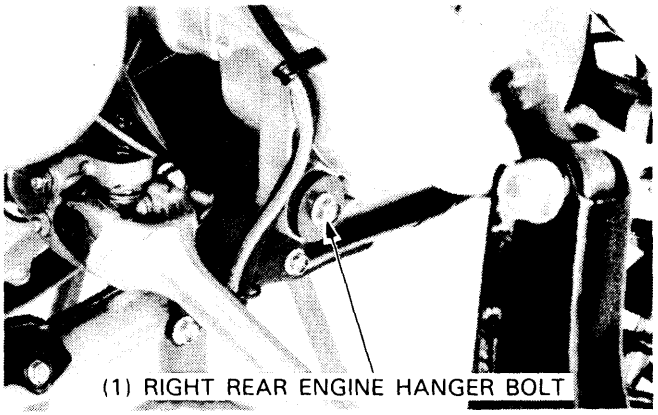
Loosen the connecting bracket bolts on the transmission sides and remove the engine side bolts.



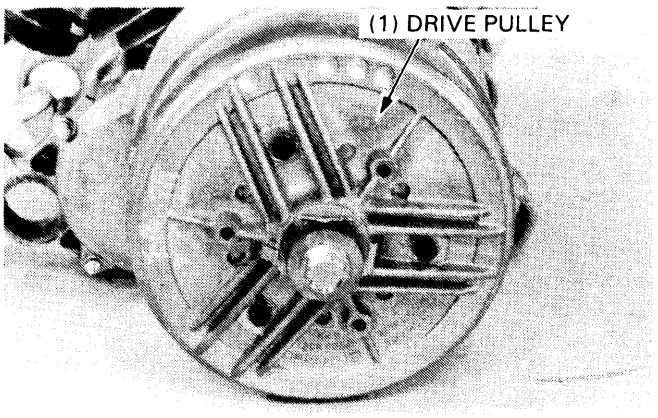
Remove the left rear engine hanger bolts and nuts.



Remove the right rear engine hanger bolts and nuts.
Remove the engine from the front side.

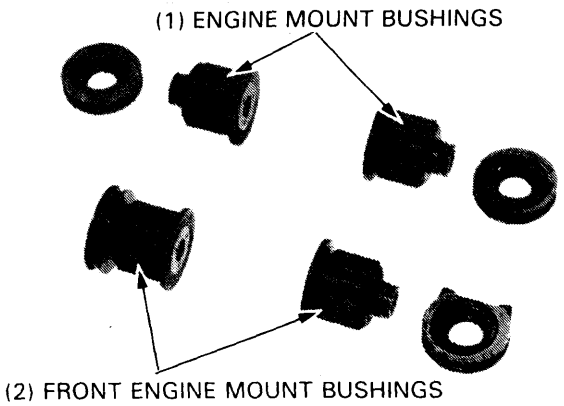


Drain the engine balancer oil.
Remove the drive pulley (page 9-20).



ENGINE INSTALLATION

Install the drive pulley onto the crankshaft (page 9-26).
Install the front and rear engine mount bushings to the engine.

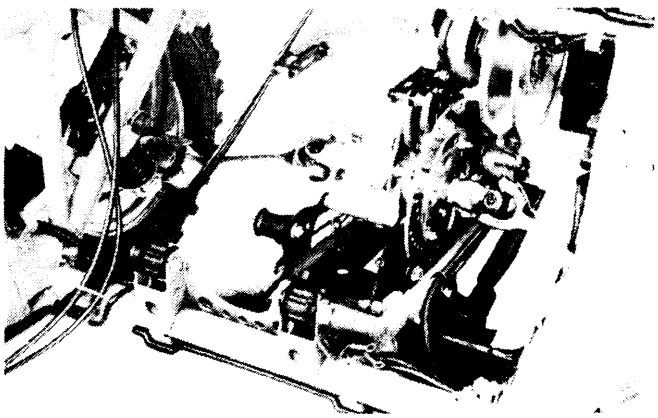


Install the engine in the reverse order of removal.
Tighten all fasteners to the specified torque values.

TORQUE:
FRONT ENGINE MOUNTING BOLTS
35–45 N·m (3.5–4.5 kg-m, 25–33 ft-lb)

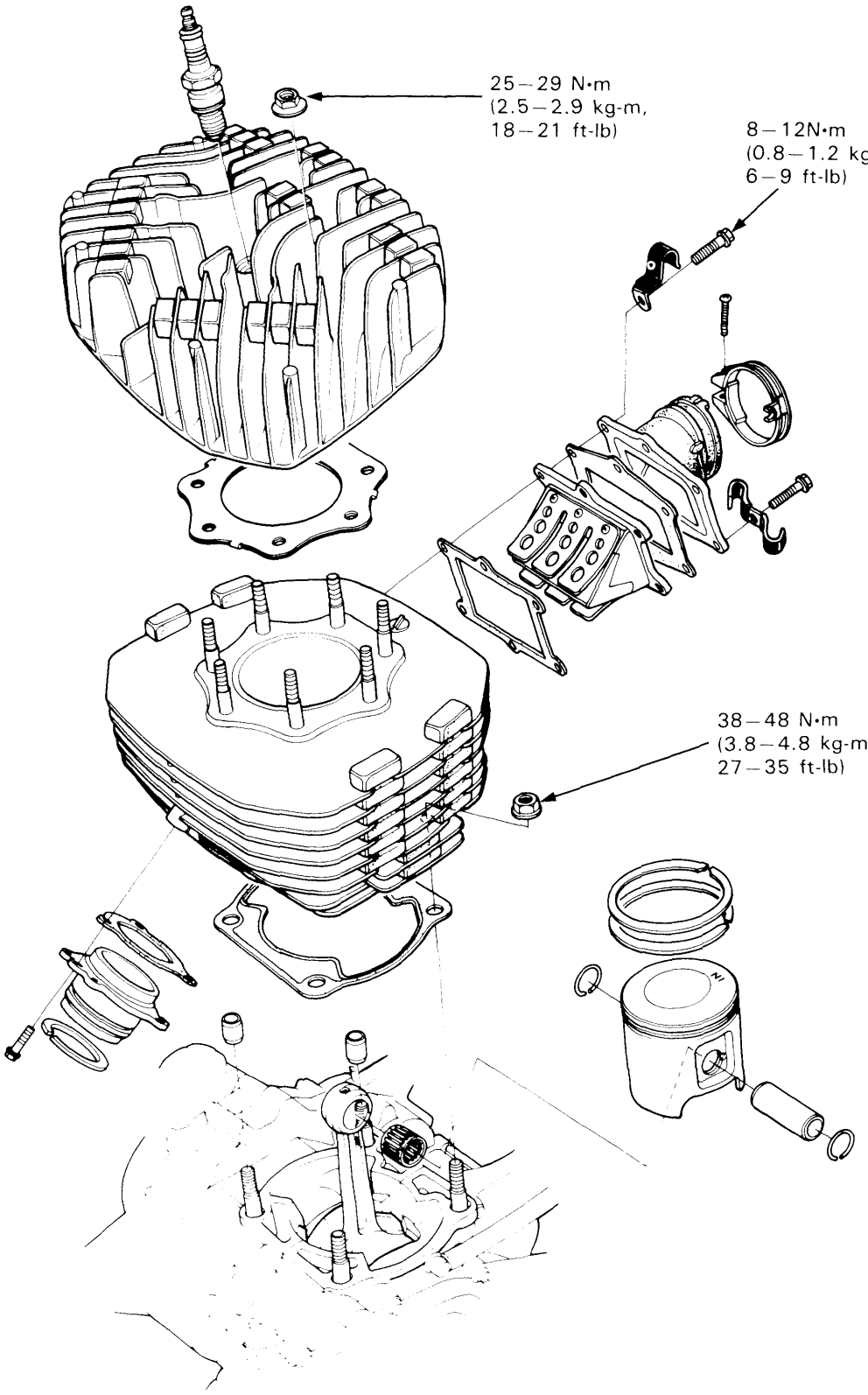
REAR ENGINE HANGER BOLTS
35–45 N·m (3.5–4.5 kg-m, 25–33 ft-lb)

CONNECTING BRACKET BOLTS
24–30 N·m (2.4–3.0 kg-m, 17–22 ft-lb)



NOTE

- Route the wires and cables properly (page 1-8).
- After installing the engine, perform the following inspections and adjustments:
  - Engine balancer oil level (page 2-1)
  - Throttle operation and adjustment (page 3-6).
  - Carburetor idle speed (page 3-5).
  - Transmission oil (page 2-2).
  - Check for exhaust pipe connection leaks.


25 – 29 N·m
(2.5 – 2.9 kg-m,
18 – 21 ft-lb)
8 – 12N·m
(0.8 – 1.2 kg-m,
6 – 9 ft-lb)
38 – 48 N·m
(3.8 – 4.8 kg-m,
27 – 35 ft-lb)

6. CYLINDER HEAD/CYLINDER/PISTON

SERVICE INFORMATION

GENERAL

- All cylinder head maintenance and inspection can be accomplished with the engine installed.
- Before disassembling the engine, clean the engine thoroughly so that dirt and dust will not fall into the cylinder and crankcase.
- Remove all traces of gasket material from the mating surfaces of the cylinder head, cylinder and crankcase.
- Before assembling, apply clean 2-stroke engine oil to all sliding surfaces of parts.

SPECIFICATIONS

mm (in)

ITEM	STANDARD	SERVICE LIMIT
Cylinder head, cylinder warpage	——	0.05 (0.002)
Cylinder bore	78.500—78.515 (3.0905—3.0911)	78.555 (3.0927)
Piston O.D. (20 mm (0.8 in) from piston skirt bottom)	78.425—78.440 (3.0876—3.0882)	78.365 (3.0853)
Cylinder-to-piston clearance	0.06—0.095 (0.0023—0.0037)	0.16 (0.006)
Piston pin bore	18.007—18.013 (0.7089—0.7091)	18.033 (0.7100)
Piston pin O.D.	17.994—18.000 (0.7084—0.7087)	17.979 (0.7078)
Piston-to-piston pin clearance	0.007—0.019 (0.0003—0.0008)	0.03 (0.001)
Piston ring end gap (top/bottom)	0.2—0.4 (0.0008—0.0157)	0.5 (0.02)
Connecting rod small end I.D.	21.997—22.009 (0.8660—0.8665)	22.024 (0.8671)

TORQUE VALUES

Cylinder head nut	25—29 N·m (2.5—2.9 kg-m, 18—21 ft-lb)
Cylinder nut	38—48 N·m (3.8—4.8 kg-m, 27—35 ft-lb)
Intake pipe bolt	8—12 N·m (0.8—1.2 kg-m, 6—9 ft-lb)

TROUBLESHOOTING

Compression too low, hard starting or poor performance at low speed
1. Blown cylinder head gasket
2. Loose spark plug
3. Worn, stuck or broken piston rings
4. Worn or damaged cylinder and piston
5. Faulty reed valve

Compression too high, overheating or knocking
- Excessive carbon buildup in cylinder head or on piston top.

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

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

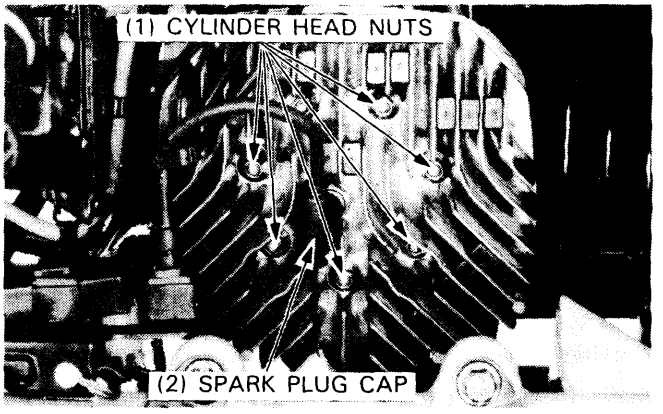
CYLINDER HEAD

REMOVAL

Disconnect the spark plug cap.
Remove the seven cylinder head nuts.

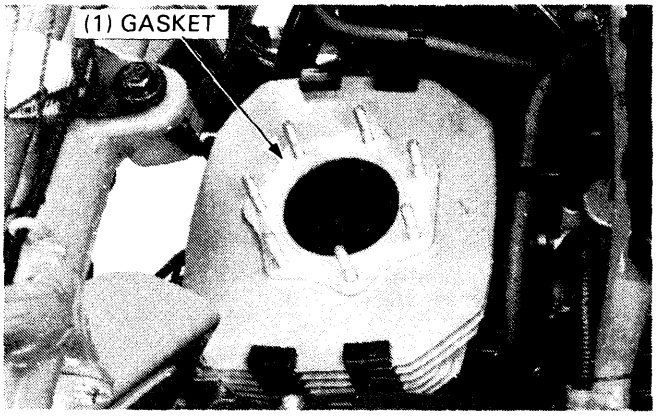
NOTE

- To avoid warping the cylinder head, use a crisscross pattern to loosen each nut about 1/4 turn at a time, then remove the nuts.



Remove the cylinder head.

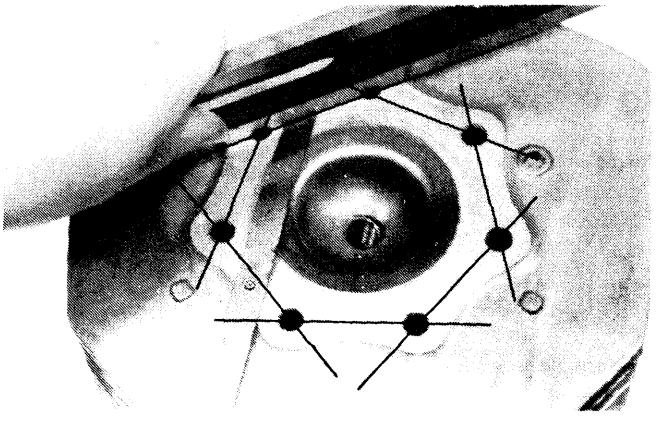
Remove the gasket from the cylinder.



INSPECTION

Remove the spark plug from the cylinder head.
Check the cylinder head for warparge with the straight edge and feeler gauge as shown.

SERVICE LIMITE: 0.05 mm (0.002 in)

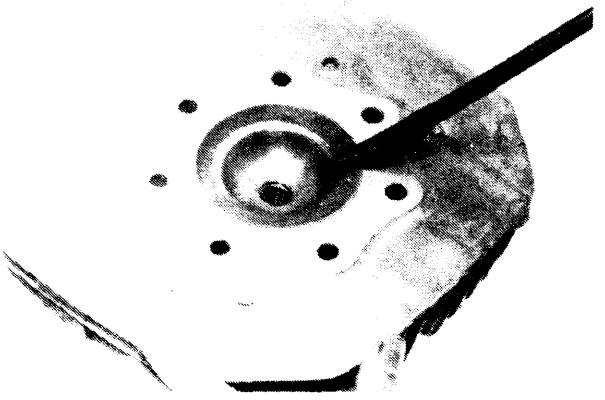


DECARBONIZING

Remove the carbon deposits from the combustion chamber.
Clean the head gasket surface of any gasket material.

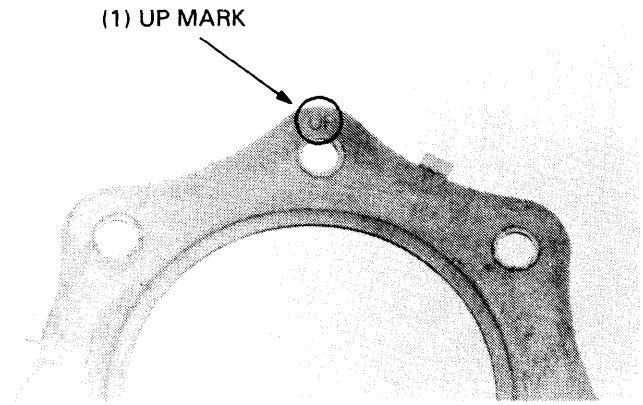
NOTE

- Avoid damaging the gasket surfaces.



INSTALLATION

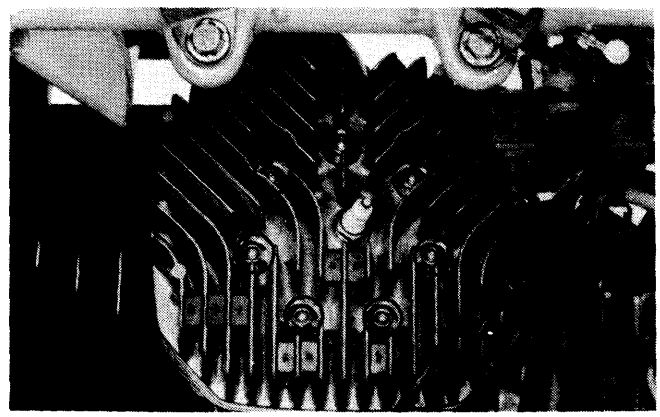
Install a new gasket with UP mark facing upward.



Install the cylinder head and cylinder head nuts.
Tighten the nuts to the specified torque in a criscross pattern in 2–3 steps.

TORQUE 25–29 N·m (2.5–2.9 kg-m, 18–21 ft-lb)

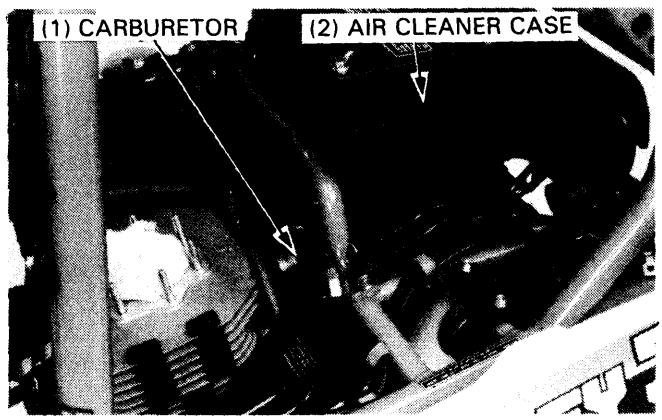
Connect the spark plug cap to the spark plug.



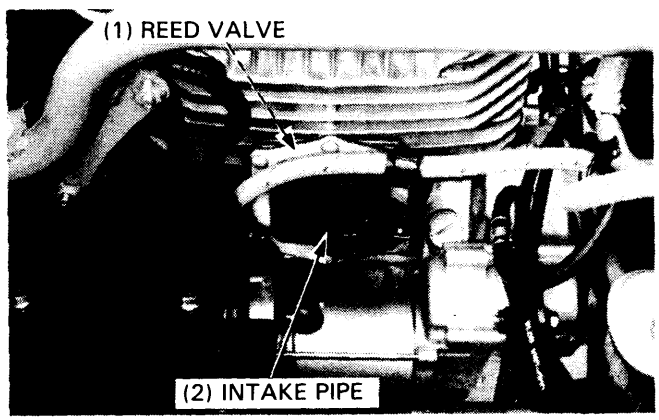
CYLINDER/ PISTON

CYLINDER REMOVAL

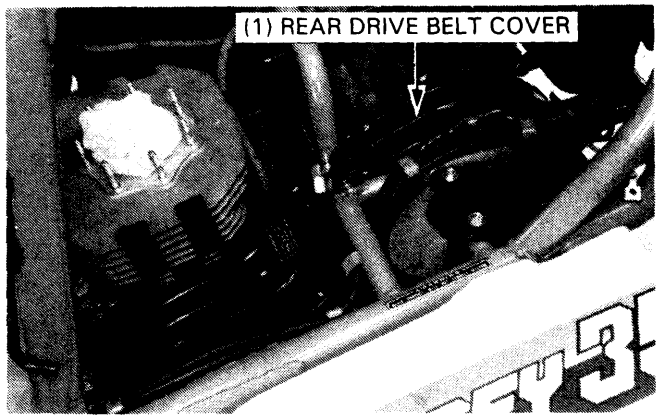
Remove the following:
- Cylinder head (page 6-2).
- Right and left air guide and main maffler (page 13-3).
- Air cleaner case (page 4-4).
- Carburetor from the intake pipe.
- Fuel tank.
- Seat.



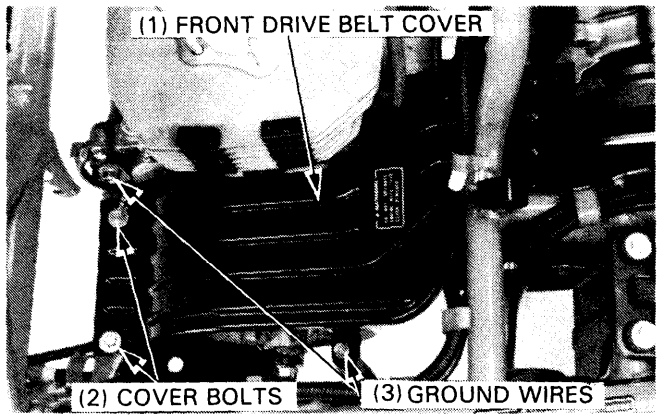
Remove the intake pipe and reed valve from the cylinder.



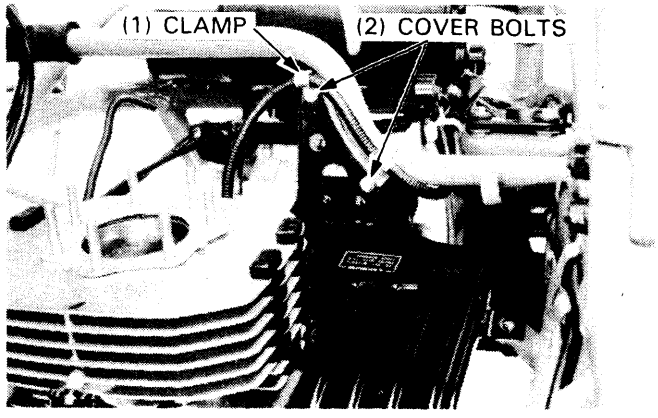
Remove the rear drive belt cover.



Remove the front drive belt cover bolts and ground wires.



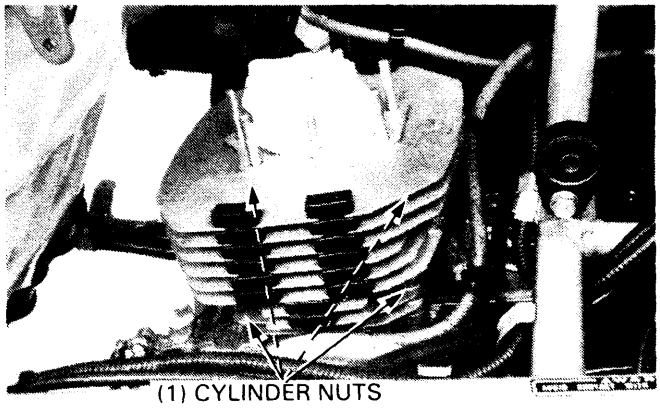
Disconnect the starter cable from the clamp and remove the front drive belt cover bolts and cover.



Remove the cylinder nuts.
Remove the cylinder.

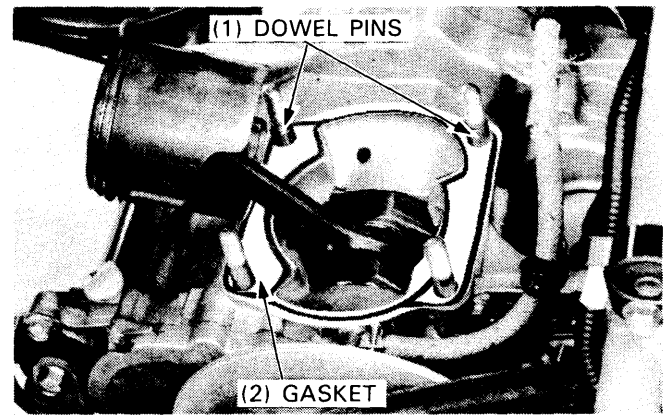
NOTE

- Do not pry or strike the cylinder cooling fins.



Remove the two dowel pins and gasket.

Place a clean shop towel into the crankcase to keep debris out.

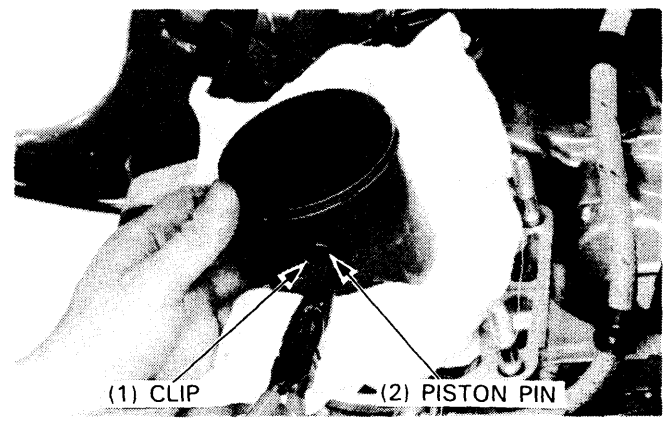


PISTON REMOVAL

Remove the piston pin clip using a pair of needlenose pliers.
Press the piston pin free of the piston.

NOTE

- Do not damage or scratch the piston.
- Do not apply force to the piston pin.
- Do not let the clips fall into the crankcase.

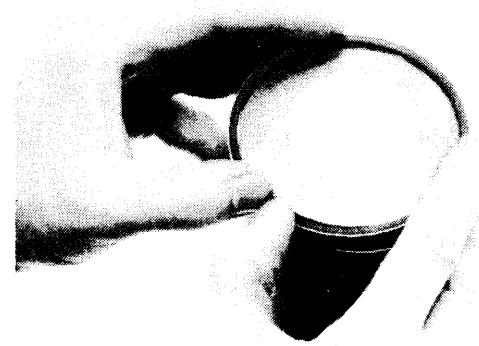


PISTON RING REMOVAL

Spread the end of each piston ring and remove by lifting it up and off.

CAUTION

- *Do not damage the piston rings by spreading the ends too far.*

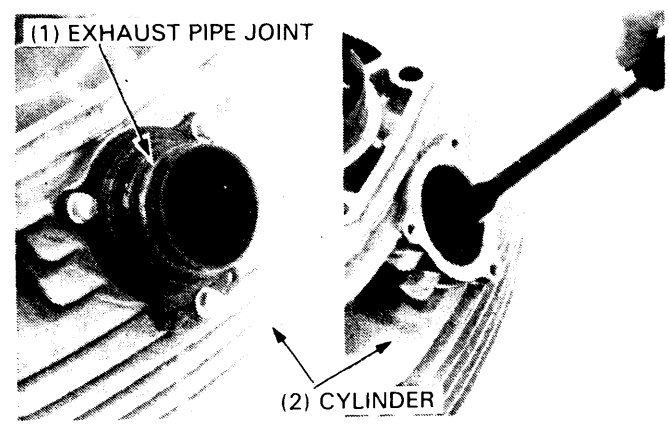


CYLINDER DECARBONIZING

Remove the exhaust pipe joint and gasket from the cylinder.
Clean carbon deposits from the exhaust port area.

CAUTION

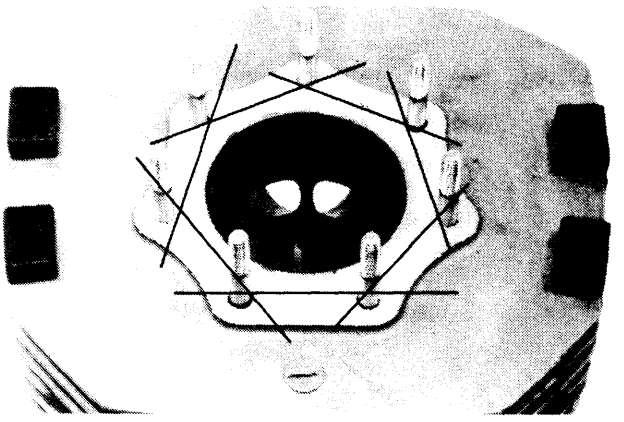
- *Do not damage the cylinder.*



CYLINDER/ PISTON INSPECTION

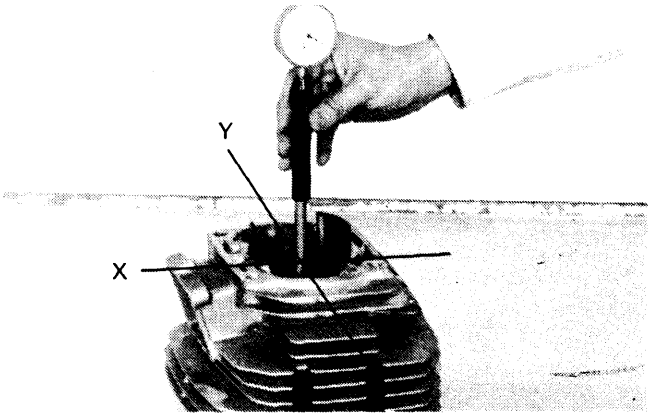
Check the cylinder surface for warpage with a straight edge and a feeler gauge as shown.

SERVICE LIMIT : 0.05 mm (0.002 in)



Inspect the cylinder bore for wear at three different levels in both the X and Y directions. Take the minimum figure measured to determine the cylinder wear.
Avoid the port area.

SERVICE LIMIT: 78.555 mm (3.0927 in)

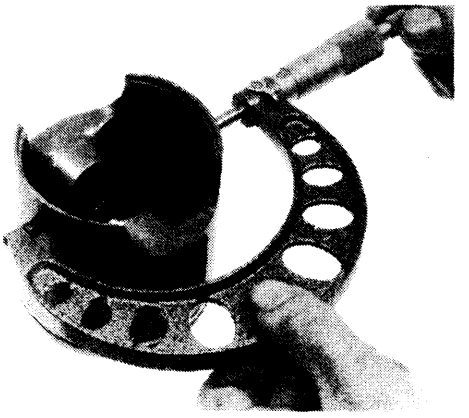


Measure the piston O.D. at a point 20 mm (0.8 in) from the bottom of the skirt and 90 degrees to the piston pin hole.

SERVICE LIMIT: 78.365 mm (3.0853 in)

Calculate the piston-to-cylinder clearance

SERVICE LIMIT: 0.16 mm (0.006 in)



Measure the piston pin bore I.D.

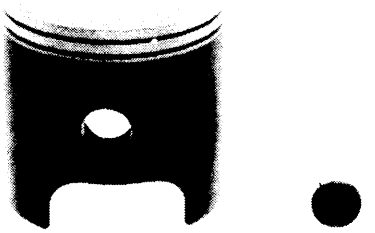
SERVICE LIMIT: 18.033 mm (0.7100 in)

Measure the piston pin O.D.

SERVICE LIMIT: 17.979 mm (0.7078 in)

Calculate the piston pin-to-piston clearance.

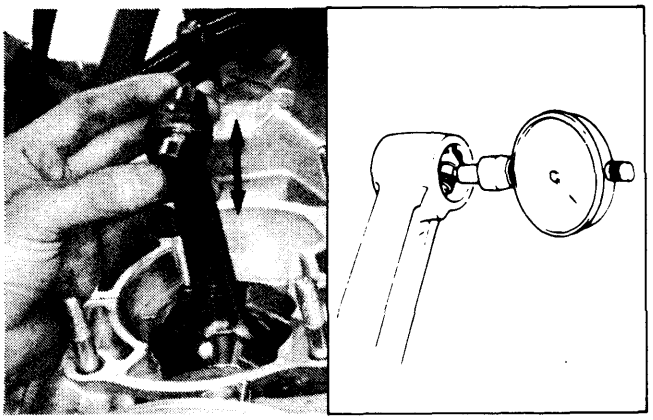
SERVICE LIMIT: 0.03 mm (0.001 in)



CONNECTING ROD INSPECTION

Install the bearing and piston pin in the connecting rod small end and check for excessive play. If it appears loose, measure as shown.
Measure the connecting rod small end I.D.

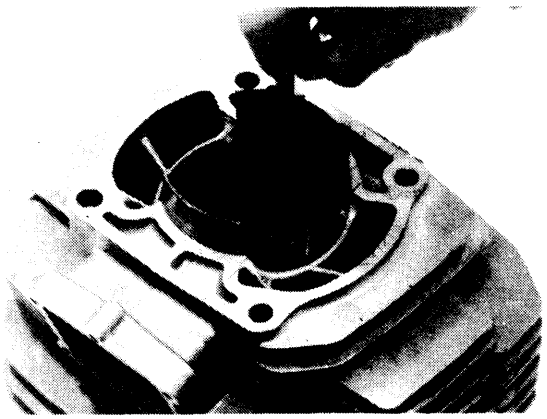
SERVICE LIMIT: 22.024 mm (0.8671 in)



PISTON RING INSPECTION

Insert the piston rings into the cylinder. Use the piston to square the ring in the cylinder.
Measure each piston ring's end gap with a feeler gauge.

SERVICE LIMITS:
TOP: 0.5 mm (0.02 in)
BOTTOM: 0.5 mm (0.02 in)

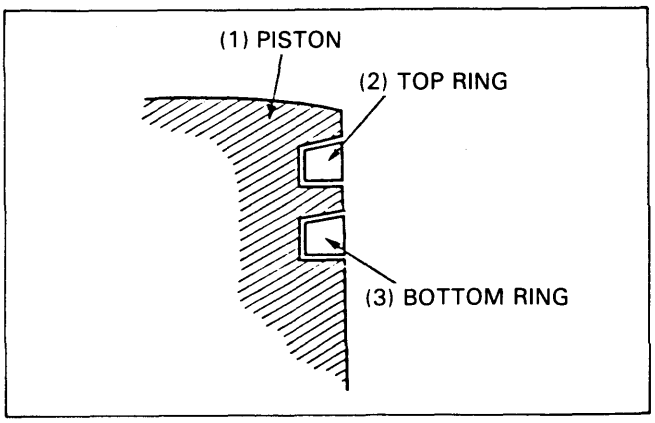


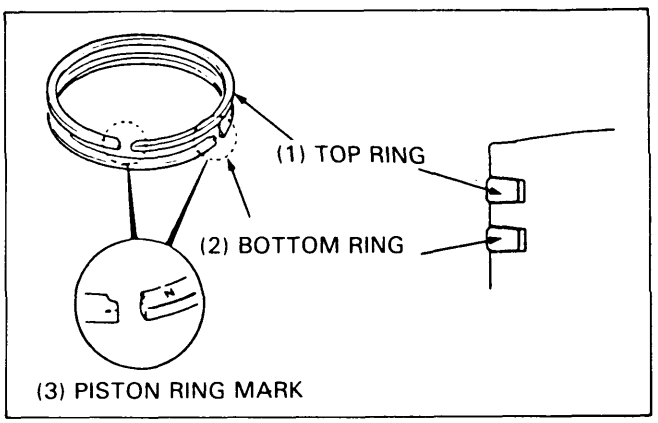
PISTON RING INSTALLATION

Install the top and bottom rings

NOTE

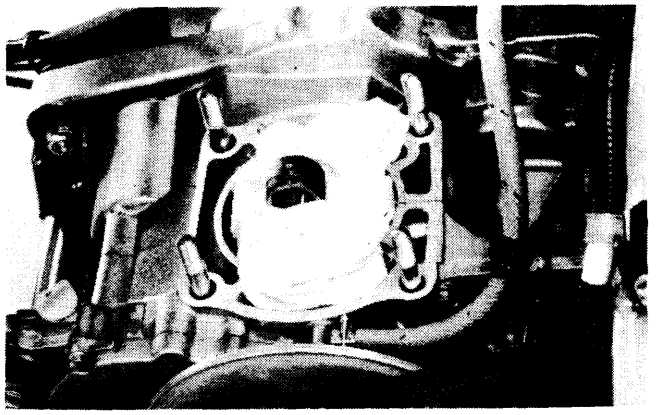
- Clean carbon deposits from the ring groove. The rings should be free enough to be rotated in the ring lands.
- Install the piston rings with the manufacturer's marks facing up.
- Do not interchange the top and bottom rings.





PISTON/ CYLINDER INSTALLATION

Clean off any gasket material from the cylinder and crankcase surface.



Lubricate the small end bearing and piston pin with clean 2–stroke oil.
Install the connecting rod small end bearing, piston and piston pin.

NOTE

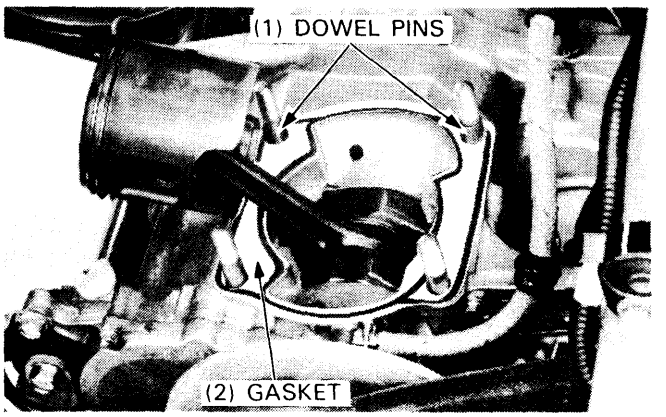
- Install the piston with the "IN" mark facing the intake side.

Install the piston pin clip.

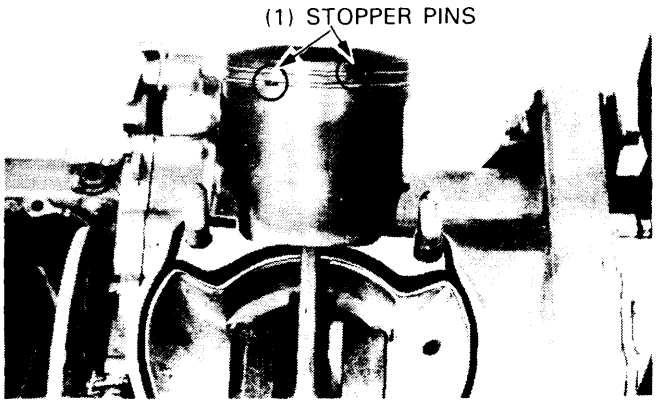
NOTE

- Use new pin clips. Never re-use old clips.
- Do not let the clips fall into the crankcase.

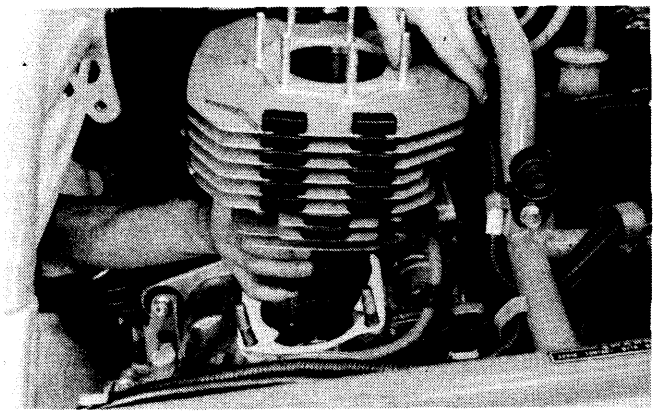
Place a new cylinder base gasket on the crankcase and install the dowel pins.



Align each ring end gap with the stopper pin in the ring land.



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

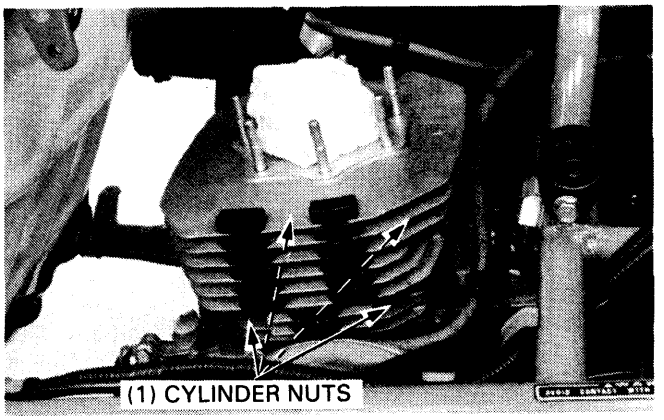


CAUTION

- *Do not rotate the cylinder, since this may cause the piston rings to pop out into a cylinder port.*

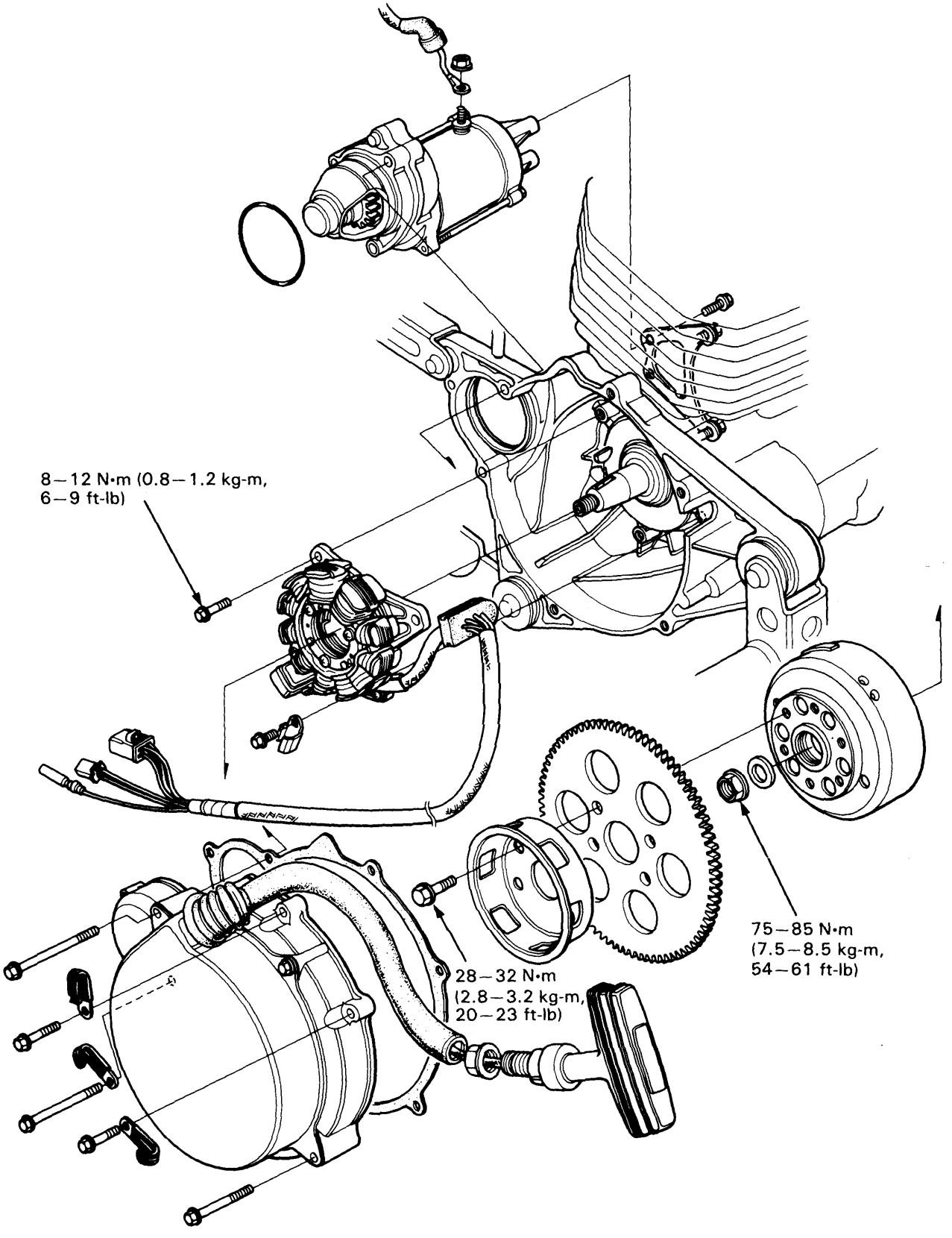
Install the four flange nuts and tighten them to the specified torque in a crisscross pattern in 2—3 steps.

TORQUE: 38—48 N·m (3.8—4.8 kg-m, 27—35 ft-lb)



Install the following:
- Cylinder head (page 6-3).
- Reed valve and intake pipe (page 4-15).
- Drive belt covers
- Exhaust main muffler (page 13-5).
- Right and left air guide.
- Carburetor (page 4-13).
- Air cleaner case (page 4-5).
- Spark plug and spark plug cap.

Perform the following inspections:
- Cylinder compression (page 3-14).
- Engine noise.
- Secondary air leaks.


8—12 N·m (0.8—1.2 kg-m,
6—9 ft-lb)
28—32 N·m
(2.8—3.2 kg-m,
20—23 ft-lb)
75—85 N·m
(7.5—8.5 kg-m,
54—61 ft-lb)

7. RECOIL STARTER/ALTERNATOR/STARTER MOTOR

SERVICE INFORMATION

GENERAL

- The fuel tank must be removed to remove the recoil starter or alternator.
- Refer to section 16 for alternator inspection.
- Refer to section 17 for starter motor inspection.

TORQUE VALUES

Flywheel center nut	75–85 N·m (7.5–8.5 kg-m, 54–61 ft-lb)
Stator mounting bolt	8–12 N·m (0.8–1.2 kg-m, 6–9 ft-lb)
Starter pulley mounting bolt	28–32 N·m (2.8–3.2 kg-m, 20–23 ft-lb) Apply a locking agent

TOOLS

Common

Universal holder	07725–0030000
Flywheel puller	07733–0010000

TROUBLESHOOTING

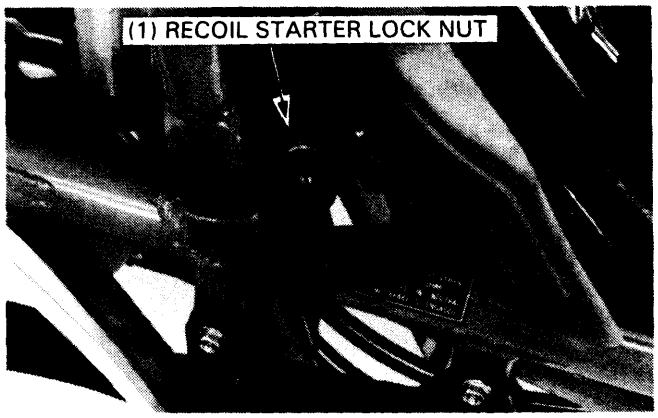
Engine does not turn when operating recoil starter.
1. Faulty starter ratchet.
2. Faulty starter driven gear.
3. Faulty starter pulley.

Starter rope does not recoil.
– Faulty recoil spring.

RECOIL STARTER

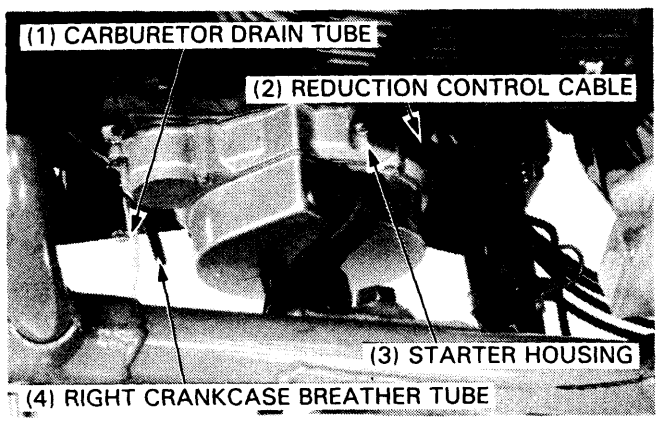
REMOVAL

Remove the fuel tank (page 4-2).
Loosen the recoil starter rope lock nut and remove the starter rope from the frame.



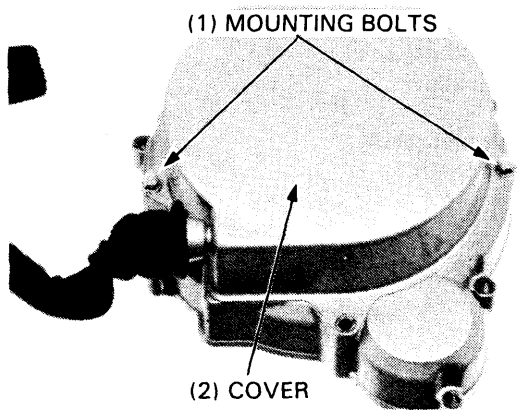
Bend up the clamp, and remove the carburetor drain hose, crankcase breather tube and reduction control cable.

Remove the recoil starter housing by removing the seven mounting bolts.

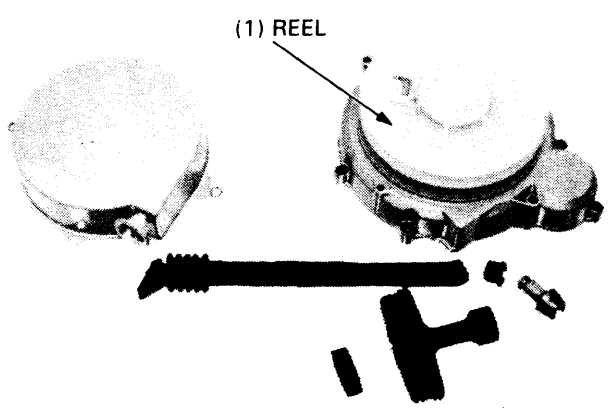


DISASSEMBLY

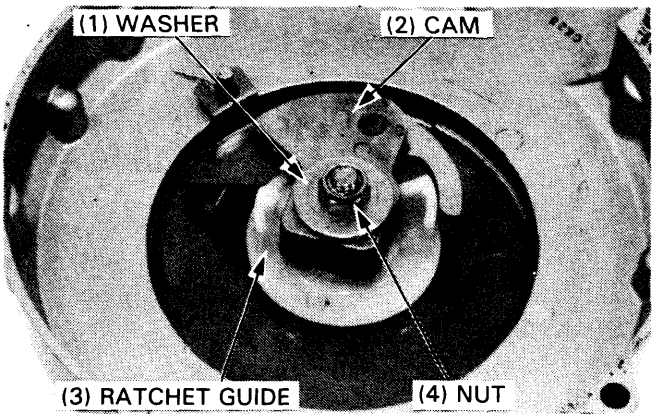
Remove the two recoil starter mounting bolts and cover.



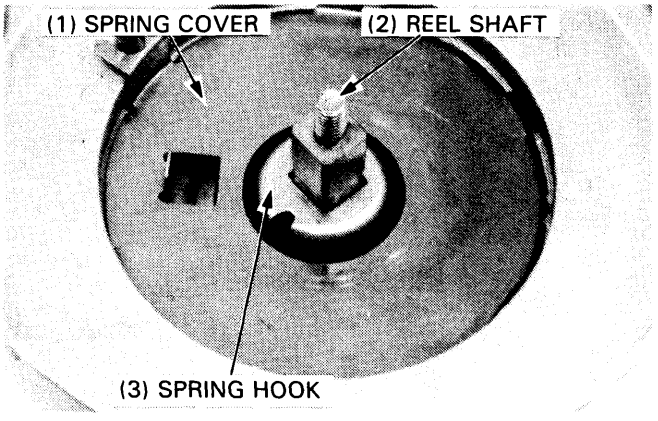
Remove the recoil starter rope from the reel.
Check the starter rope for wear or damage.



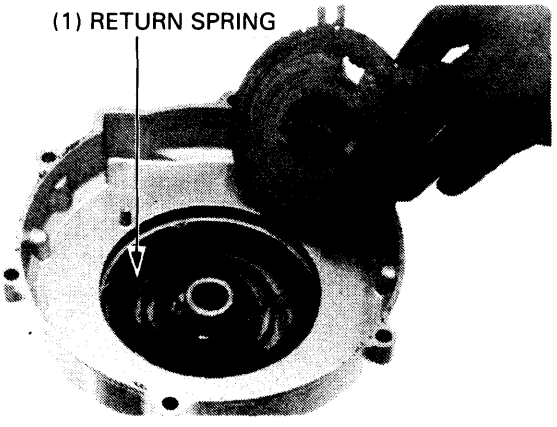
Remove the nut, washer, cam and ratchet guide.



Remove the reel shaft by pushing it out by hand.
Remove the spring hook and the spring cover.



Check the recoil starter return spring for damage.
Replace the spring if it is damaged or broken.

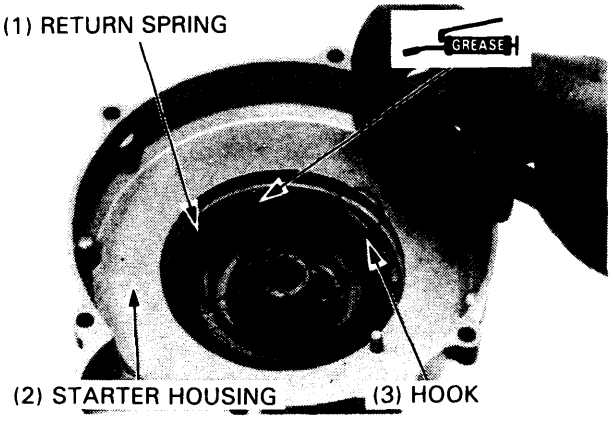


ASSEMBLY

CAUTION

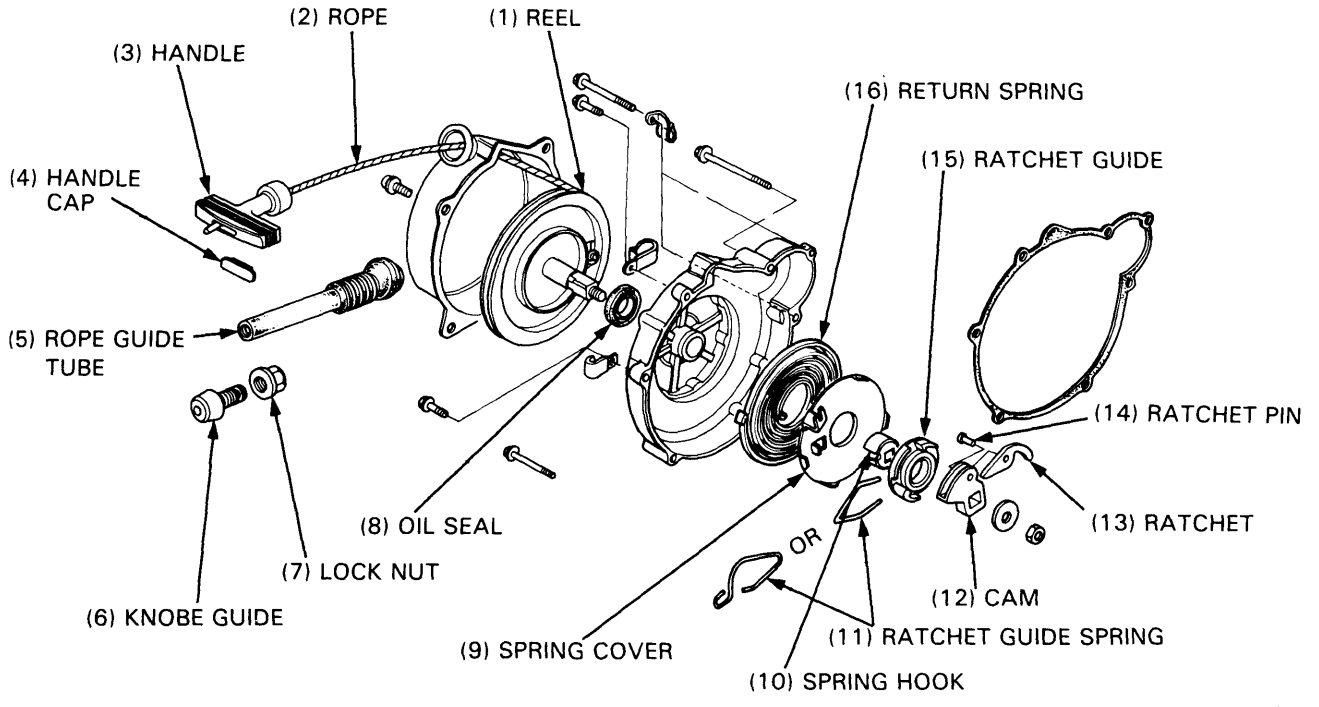
- *Wear eye protection and gloves and use care when installing the return spring. The spring can pop out of the housing easily.*

Install the spring by hooking the end on the starter housing hook.
Apply grease to the spring.

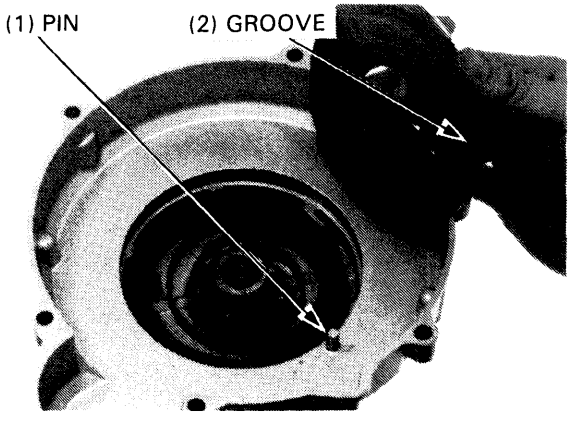


NOTE

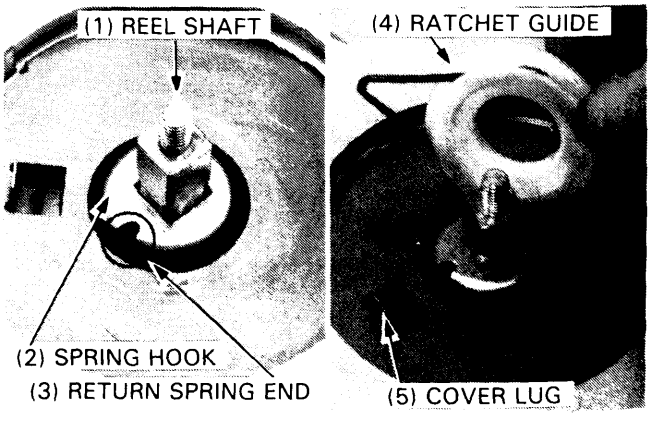
- There are 2 kinds of the ratchet guide spring for FL350R.



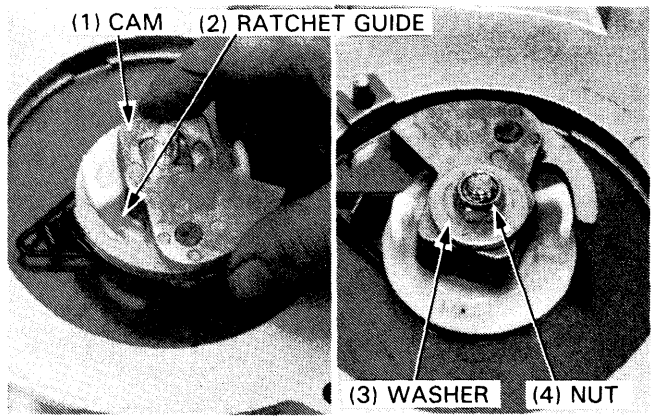
Install the spring cover by aligning the groove of the spring cover with the pin of the housing.



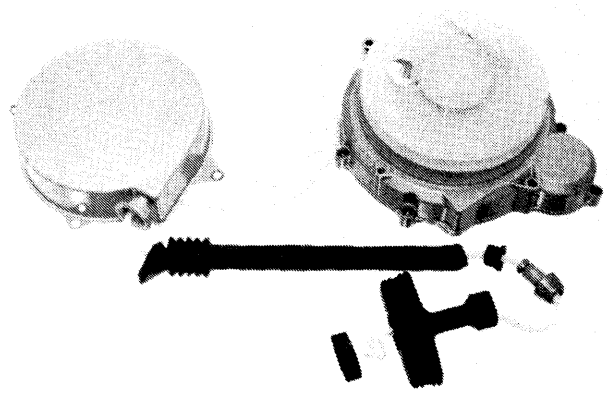
Install the reel shaft into the housing.
Install the spring hook by placing the end of the return spring into the spring hook hole.
Install the ratchet guide by hooking its spring on the spring cover lug.



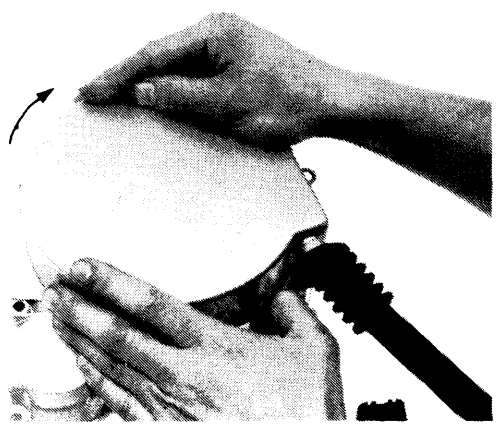
Install the cam on the ratchet guide.
Install the washer and nut and tighten.



Route the starter rope through the starter cover, rope guide tube, lock nut, knob guide and the handle.
Route the starter rope through the hole of the reel.
Tie a square knot at both ends of the rope as shown.
Wrap the rope around the reel in the clockwise direction as viewed from the ratchet side as shown.

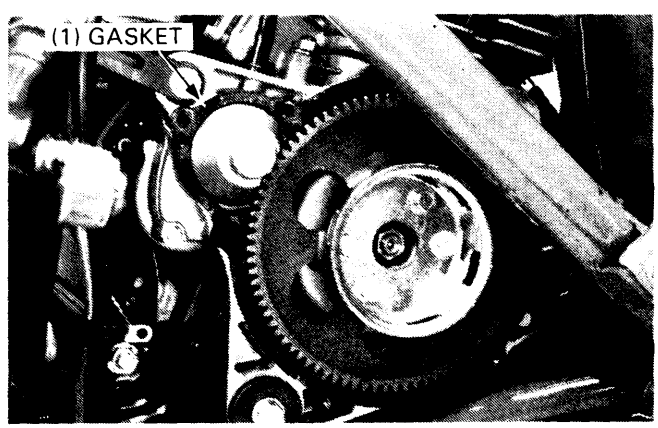


Preload the starter spring by turning the reel 2 turns clockwise.
Install the two recoil starter mounting cover bolts.
Install the handle cap into the handle.
After assembling, be sure that the recoil starter works properly.



INSTALLATION

Install a new gasket onto the right crankcase.

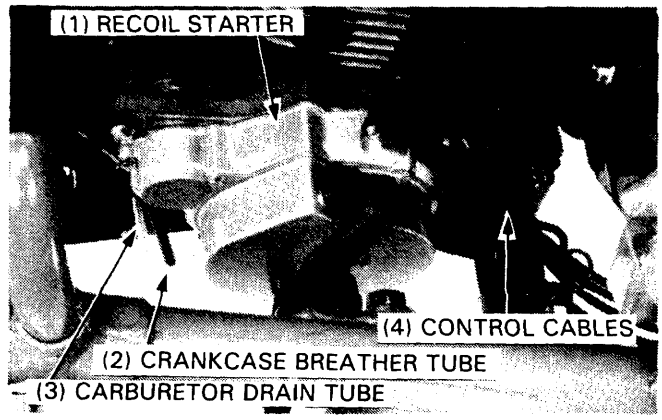


Install the recoil starter and clamps with the mounting bolts. Tighten the seven mounting bolts.

Install the recoil starter rope onto the frame and tighten the rope lock nut.

Route the crankcase breather tube, carburetor drain tube and control cables and clamp them.

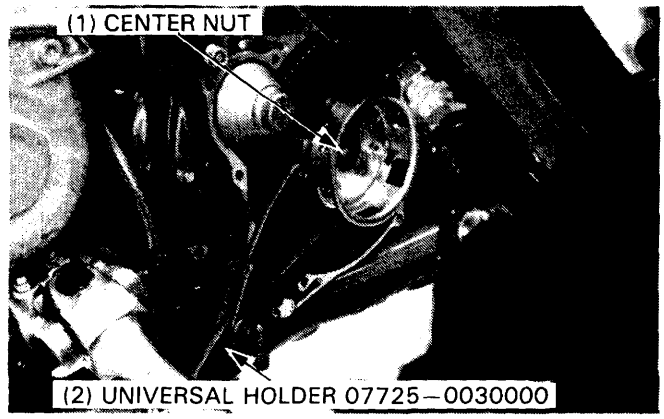
Install the fuel tank (page 4-4).



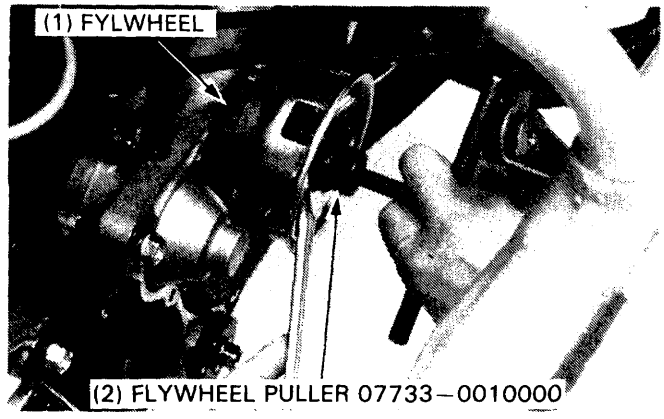
ALTERNATOR

REMOVAL

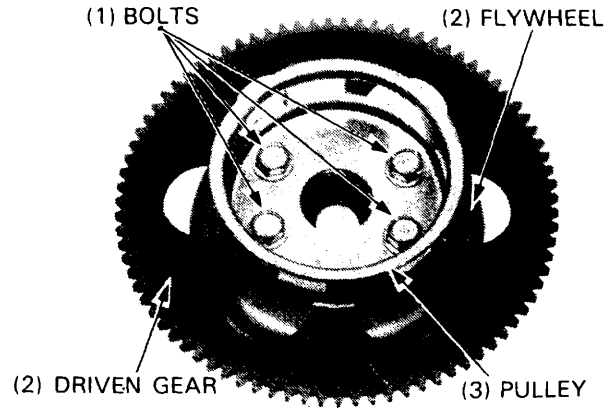
Remove the fuel tank (page 4-2).
Remove the recoil starter (page 7-2).
Hold the starter driven gear using the universal holder.
Remove the flywheel center nut and washer.



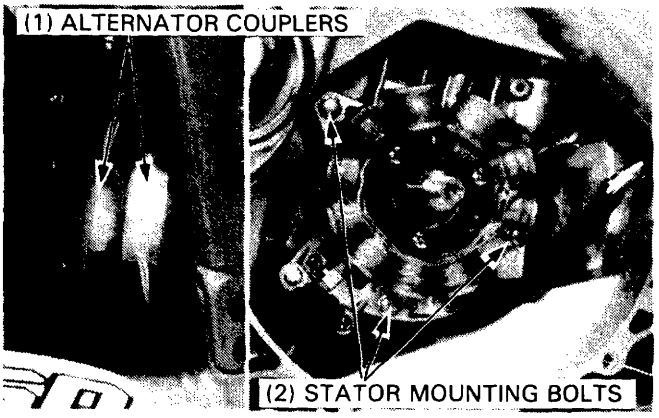
Remove the flywheel using the flywheel puller.



Remove the flywheel from the starter driven gear and pulley by removing the four bolts.



Disconnect the alternator couplers.
Remove the stator mounting bolts and stator.



CAUTION

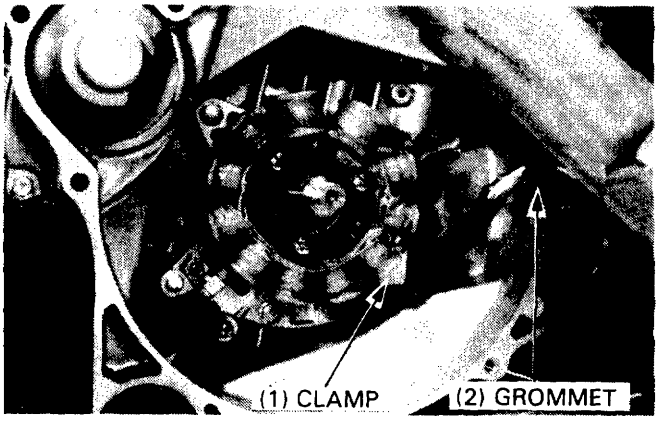
- *Do not separate the pulse generator from the stator base.*
- *Protect the stator assembly to prevent damage to the components.*

For alternator inspection, refer to page 14-2.

INSTALLATION

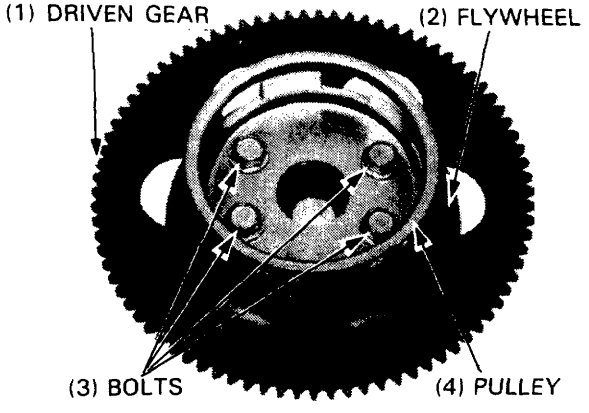
Install the stator and insert the alternator wire grommet into the case.
Tighten the stator mounting bolts and clamp.

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



Apply locking agent to the threads of the bolts.
Install the starter driven gear and pulley onto the flywheel with the four bolts and tighten to the specified torque.

TORQUE: 28–32 N·m (2.8–3.2 kg-m, 20–23 ft-lb)



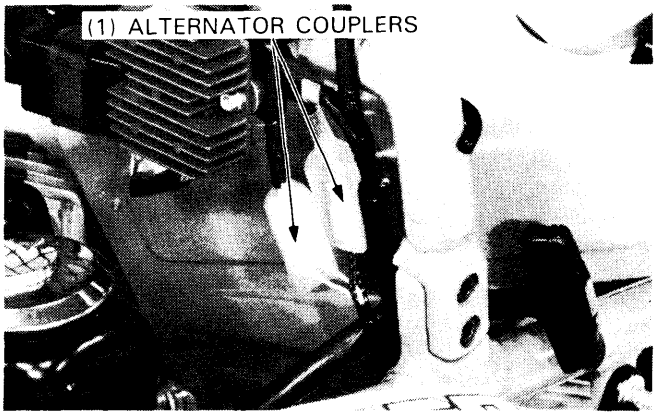
Place the woodruff key into its key way on the crankshaft, then install the flywheel.
Install the washer, flywheel center nut and tighten to the specified torque.

TORQUE: 75–85 N·m (7.5–8.5 kg-m, 54–61 ft-lb)

NOTE

- Check that there is no debris inside the flywheel before installation. The magnets tend to attract steel filings and other ferrous material.

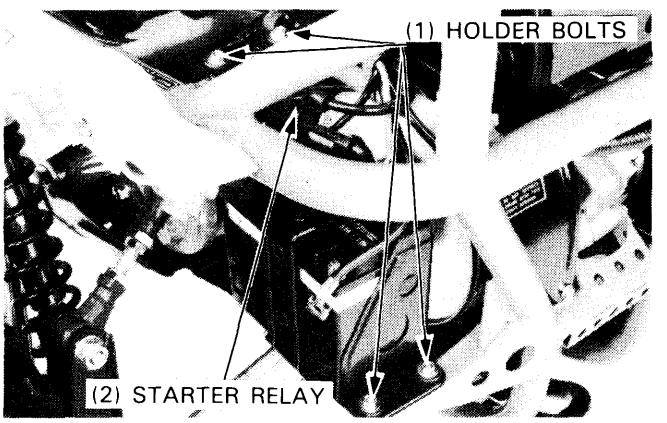
Route the alternator wire, clamp it to the frame and connect the couplers.
Install the recoil starter (page 7-5).
Install the fuel tank (page 4-4).



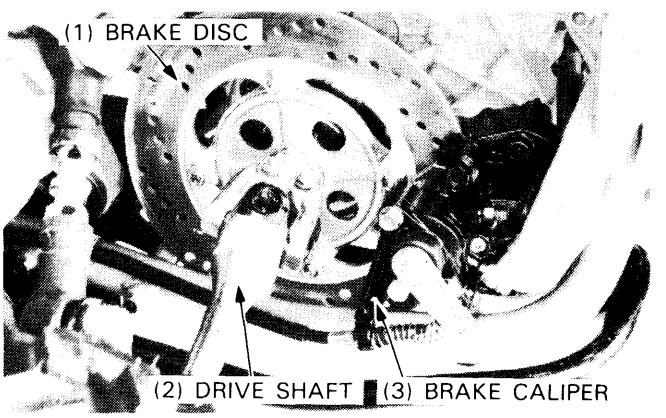
STARTER MOTOR

REMOVAL

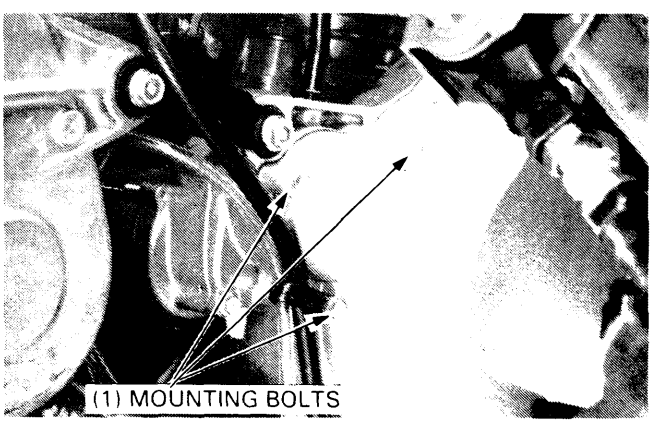
Raise the rear wheels off the ground and support the FL350R on blocks.
Remove the left rear wheel (page 11-3).
Disconnect the battery negative cable first, then positive cable from the terminals and remove the starter relay from the battery holder.
Remove the four battery holder bolts and holder with the battery.
Turn the fuel valve OFF and remove the fuel tank (page 4-4).



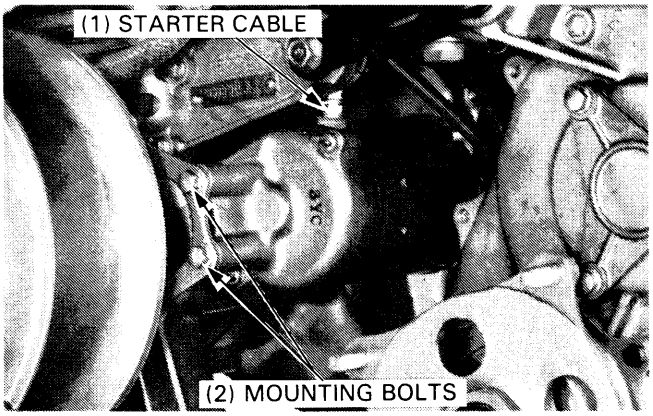
Remove the following:
— Rear drive belt cover and drive belt (page 9-19).
— Driven pulley (page 9-26).
— Brake caliper (page 12-10).
— Left radius arm with the drive shaft (page 9-3).
— Brake disc (page 12-12).



Remove the starter motor mounting bolts from the recoil starter side.



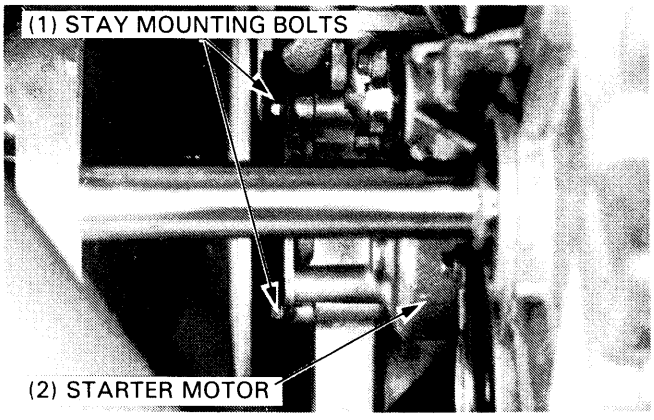
Remove the starter motor mounting bolts from the stay.
Disconnect the starter cable from the starter motor.



Loosen the stay mounting bolts.
Remove the starter motor.

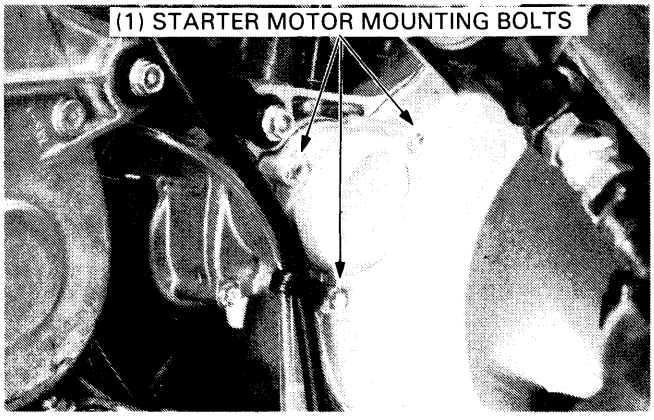
NOTE

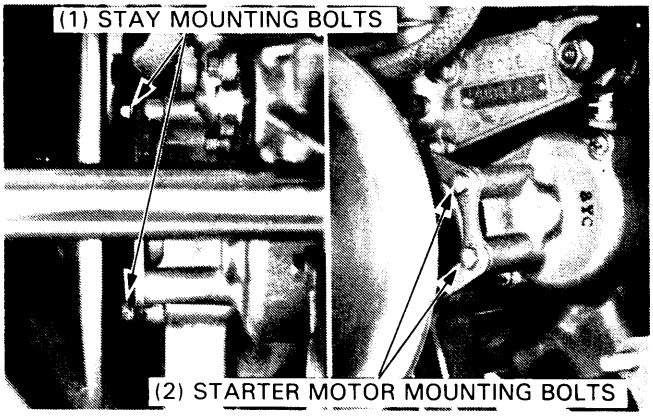
- Balancer oil may leak from the stay mounting holes in the left engine cover.

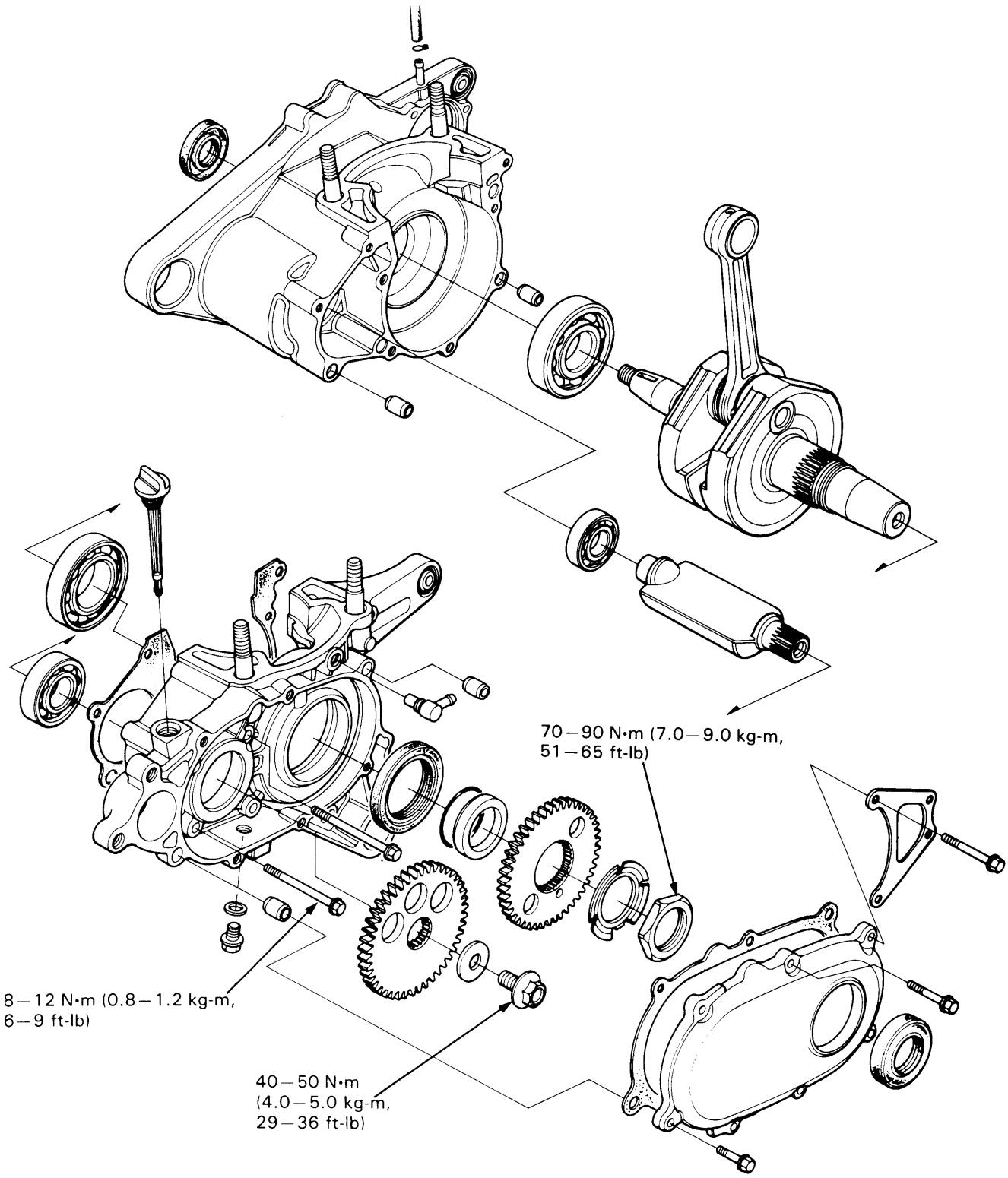


INSTALLATION

Install the removed parts in the reverse order of removal.
Tighten the starter motor and stay mounting bolts securely.
Check the balancer oil level.






70—90 N•m (7.0—9.0 kg-m,
51—65 ft-lb)
8—12 N•m (0.8—1.2 kg-m,
6—9 ft-lb)
40—50 N•m
(4.0—5.0 kg-m,
29—36 ft-lb)

8. BALANCER GEAR/CRANKSHAFT

SERVICE INFORMATION

GENERAL

- Fill the cavity between the double lips of the crankshaft oil seals with gasoline resistant grease. Check the lip for wear or damage.
- Crankshaft, balancer weight and bearing servicing requires crankcase separation.
- The balancer gears can be serviced with the engine in the frame.

SPECIFICATIONS

mm (in)

ITEM		STANDARD	SERVICE LIMIT
Crankshaft	Connecting rod big end side clearance	0.25–0.65 (0.0098–0.0256)	1.0 (0.04)
	Connecting rod big end radial clearance	0.008–0.020 (0.0003–0.0008)	0.04 (0.0016)
	Runout at journals	—	0.05 (0.002)

TORQUE VALUES

Balancer drive gear lock nut	70–90 N·m (7.0–9.0 kg-m, 51–65 ft-lb)
Balancer driven gear special bolt	40–50 N·m (4.0–5.0 kg-m, 29–36 ft-lb)
Crankcase bolt	8–12 N·m (0.8–1.2 kg-m, 6–9 ft-lb)

TOOLS

Special

Crankcase assembly tool	07965–VM00000
– Threaded adapter	07965–VM00300
– Thread shaft	07965–VM00200
– Collar	07965–VM00100
Crankcase puller	07935–VM00000
Wrench set, 41 mm	07916–9580300 or Lock nut wrench attachment 07916–958010A
Bearing romover set, 20 mm	07936–3710001
– weight	07741–0010201 or 07936–3710200
– handle	07936–3710100
– Spindle assy	07936–3710600

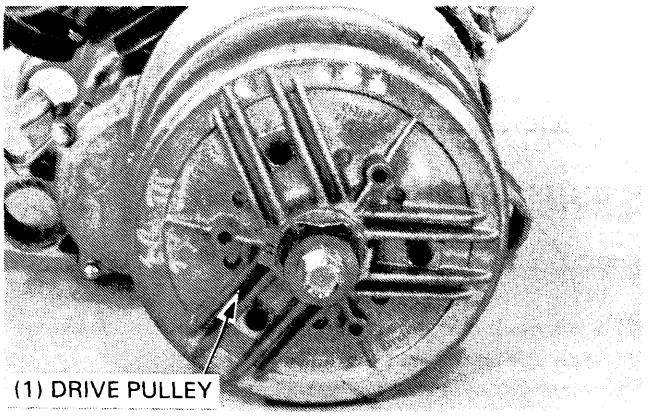
Common

Universal holder	07725–0030000
Driver	07749–0010000
Attachment, 42 x 47 mm	07746–0010300
Attachment, 62 x 68 mm	07746–0010500
Attachment, 72 x 75 mm	07746–0010600
Pilot, 20 mm	07746–0040500
Pilot, 30 mm	07746–0040700
Pilot, 35 mm	07746–0040800

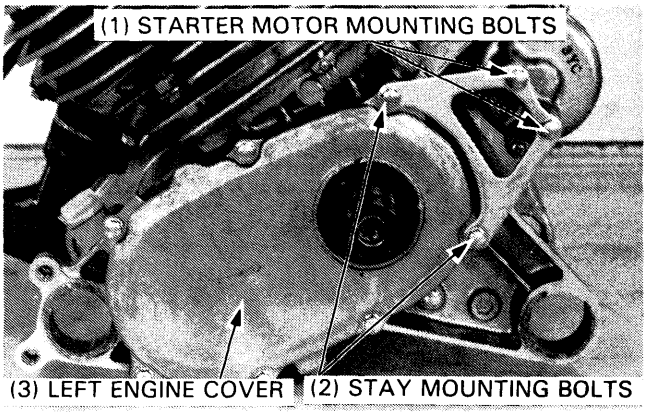
BALANCER GEARS

REMOVAL

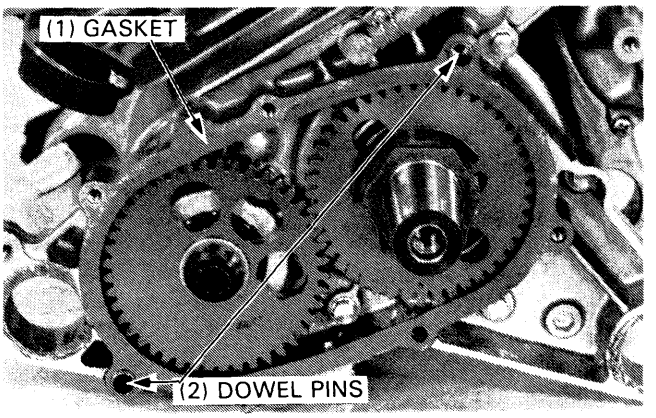
Remove the drive pulley from the engine (page 9-20).
Drain the balancer oil.



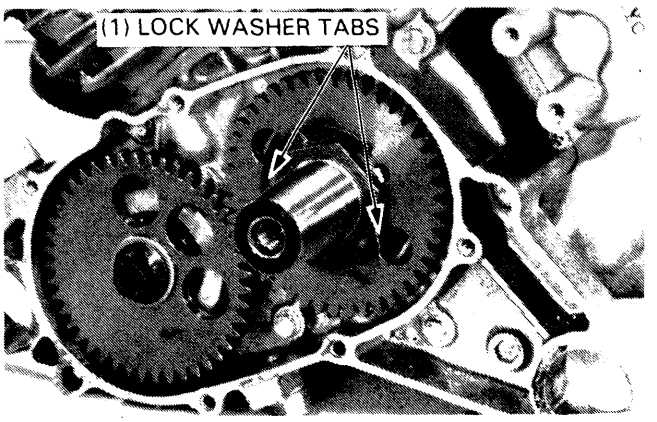
Remove the starter motor stay by removing the bolts.
Remove the left engine cover bolts and cover.



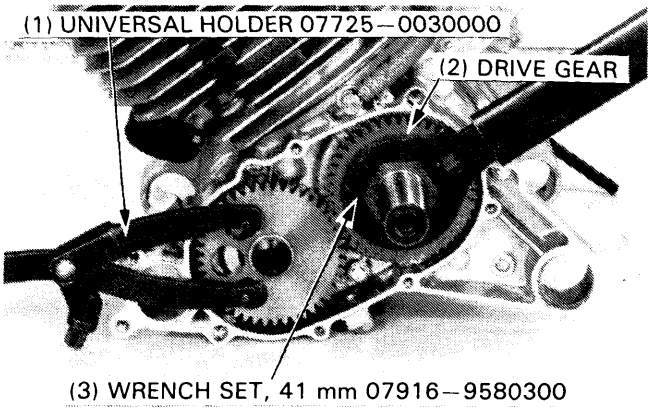
Remove the gasket and dowel pins.



Bend down the lock washer tabs.

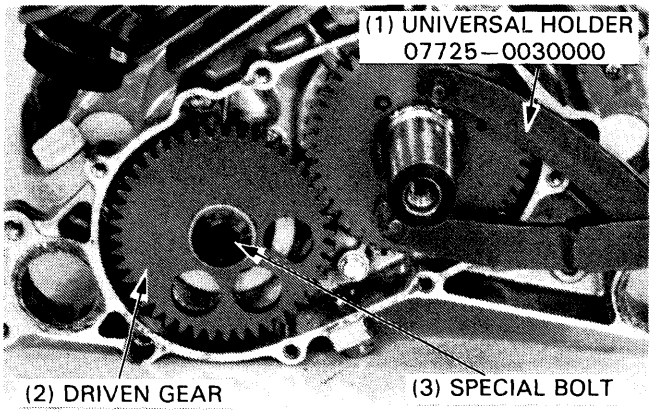


Remove the balancer drive gear lock nut using the lock nut wrench and univasal holder.



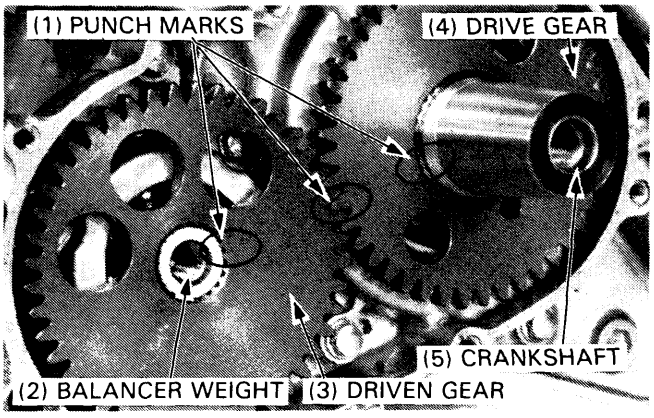
Hold the balancer gear with the universal holder.
Remove the balancer driven gear special bolt and washer.

Remove the drive and driven gears.

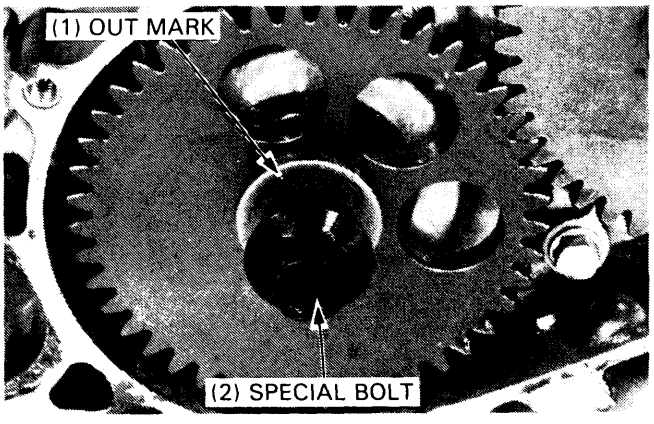


INSTALLATION

Align the punch marks for the balancer weight-to-driven gear, driven gear-to-drive gear and drive gear-to-crankshaft as shown.



Install the washer with the OUT mark facing out.
Install the special bolt.

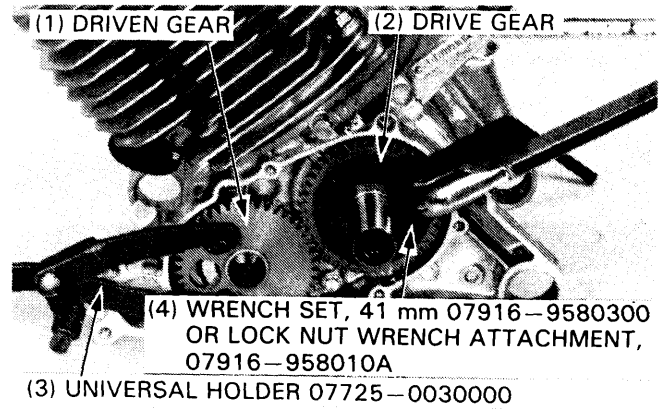


Install the lock washer and nut onto the drive gear, hold the driven gear using the universal holder and tighten the special bolt.

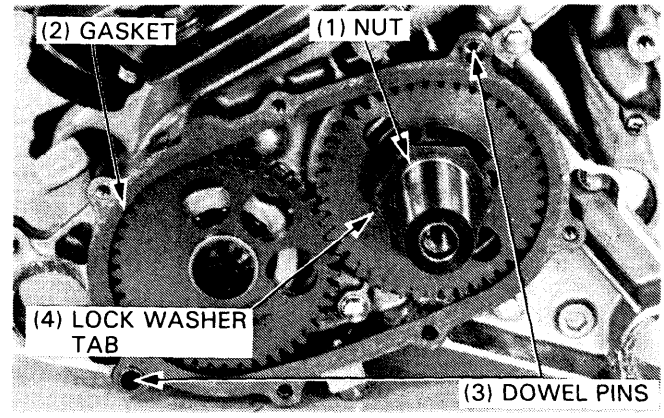
TORQUE: 40—50 N·m (4.0—5.0 kg-m, 29—36 ft-lb)

Tighten the drive gear nut using the lock nut wrench.

TORQUE: 70—90 N·m (7.0—9.0 kg-m, 51—65 ft-lb)

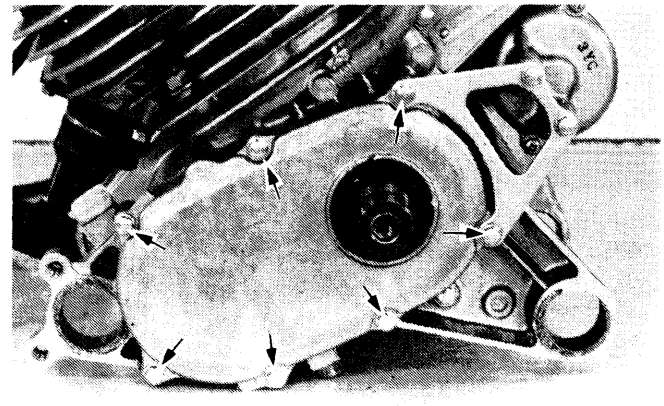


Bend up the lock washer tabs against the nut.
Install new dowel pins and a new gasket.



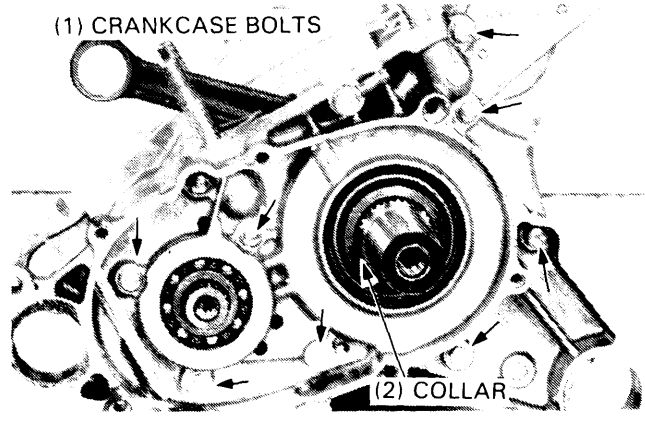
Install the left engine cover and the starter motor stay.
Tighten the bolts securely.

Install the drive pulley onto the crankshaft (page 9-26).

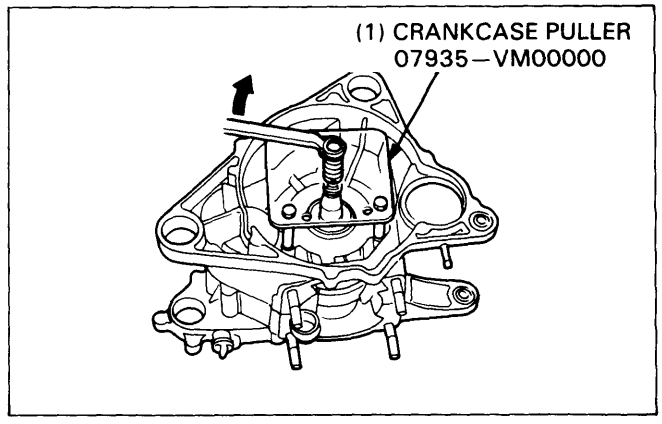


CRANKCASE SEPARATION

Remove the following:
— Balancer gears (page 8-2).
— Recoil starter (page 7-2).
— Alternator (page 7-6).
— Starter motor (page 7-8).
— Cylinder head (page 6-2).
— Cylinder and piston (page 6-3).
— Right and left crankcase tubes.
Remove the crankcase bolts and collar.



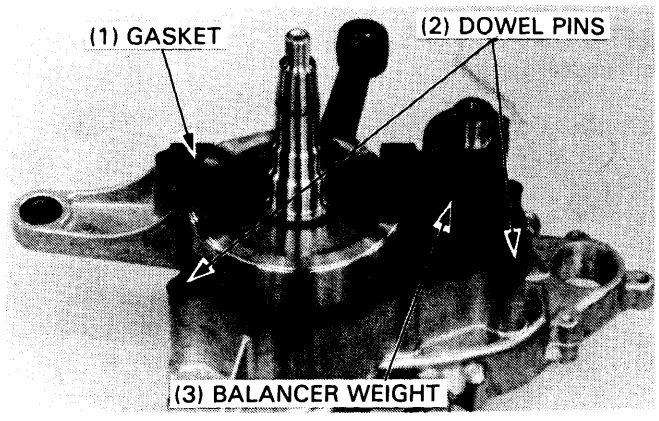
Set up the special tool on the right crankcase.
Remove the right crankcase.



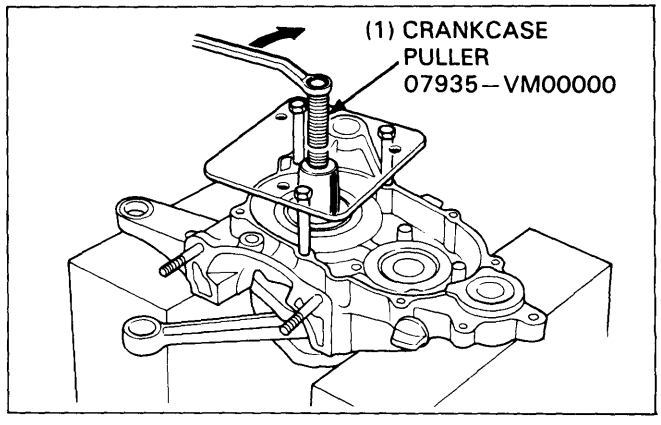
NOTE

- Separate the right and left crankcases from each other while tapping them at several locations with a soft hammer. Do not pry the crankcase apart with the end of a screwdriver.

Remove the gasket and dowel pins.
Remove the balancer weight.



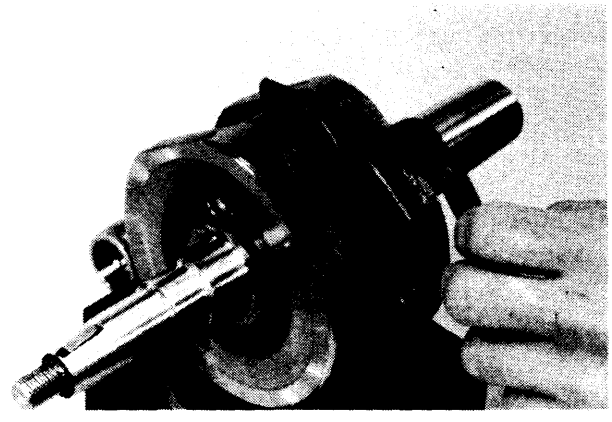
Remove the crankshaft using the crankcase puller.



CRANKSHAFT INSPECTION

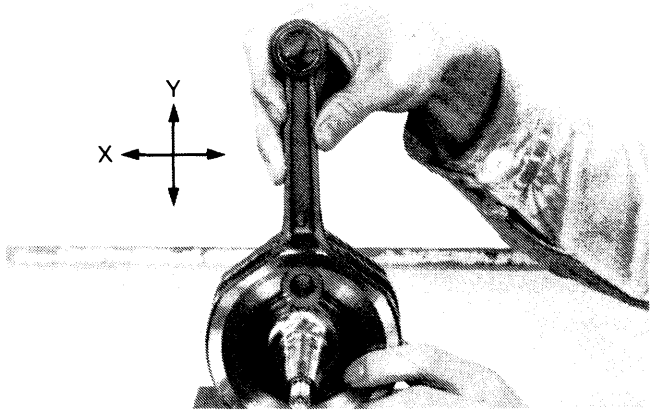
Measure the connecting rod big end side clearance with a feeler gauge.

SERVICE LIMIT: 1.0 mm (0.04 in)



Measure the connecting rod big end radial clearance at two points in the X and Y directions.

SERVICE LIMIT: 0.04 mm (0.0016 in)

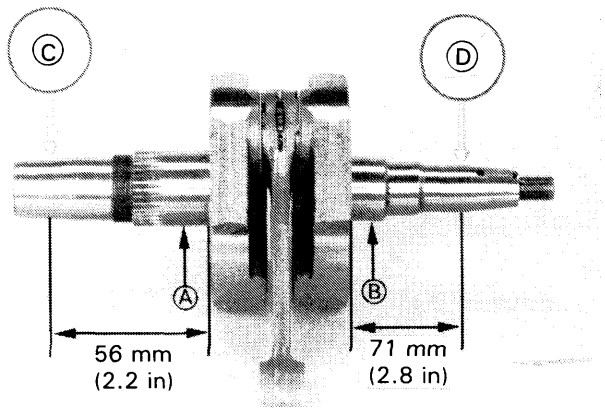


Set the crankshaft on a stand or V-blocks and read runout using a dial gauge.

SERVICE LIMIT: 0.05 mm (0.002 in)

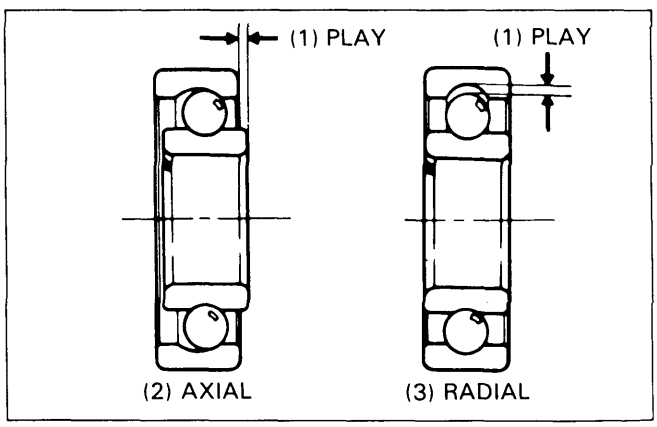
Support the crankshaft at points Ⓐ and Ⓑ, and then measure the points Ⓒ and Ⓓ.

If runout exceeds the service limit, replace the crankshaft.

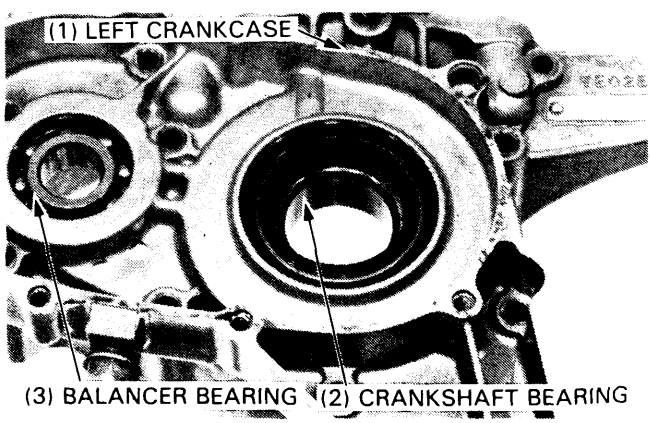


CRANKCASE BEARING REPLACEMENT

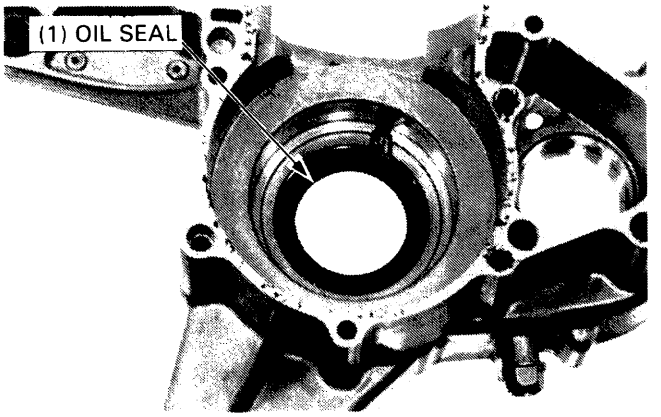
Spin the crankshaft bearing by hand and check for play. The bearing must be replaced if it is noisy or has excessive play.



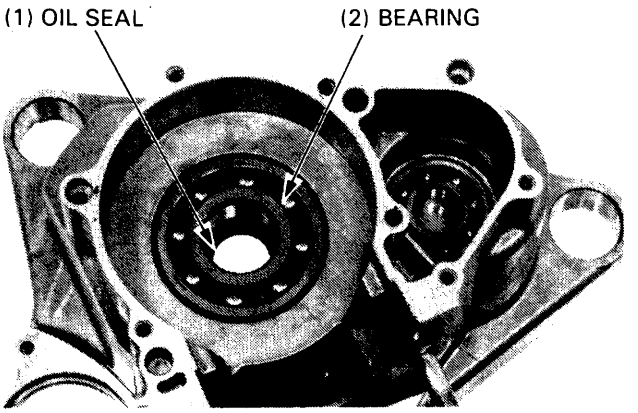
Remove the crankshaft and balancer bearings from the left crankcase.



Remove the oil seal from the left crankcase.



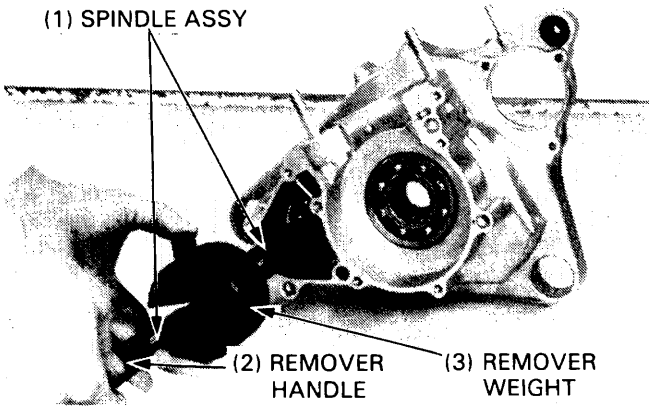
Remove the right crankshaft oil seal and bearing from the right crankcase.



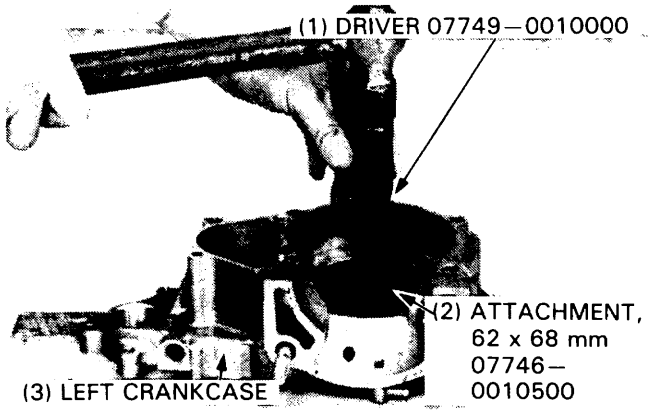
Remove the balancer bearing from the right crankcase

TOOL

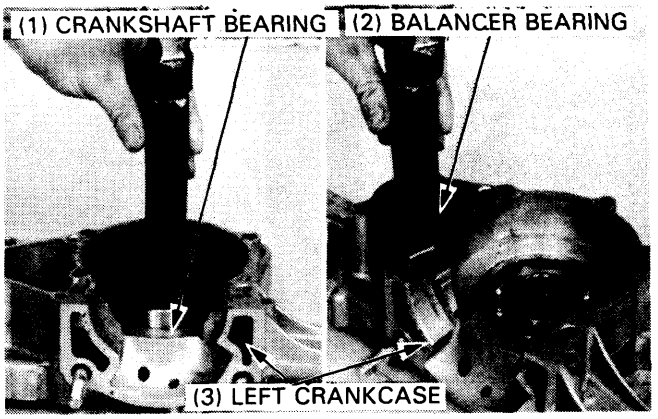
Bearing remover set, 20 mm	**07936—3710001**
Remover weight	**07741—0010201**
	or 07936—3710200
Spindle assy	**07936—3710600**
Remover handle	**07936—3710100**



Drive in a new left crankshaft oil seal.



Drive new bearings into the left and right crankcases.



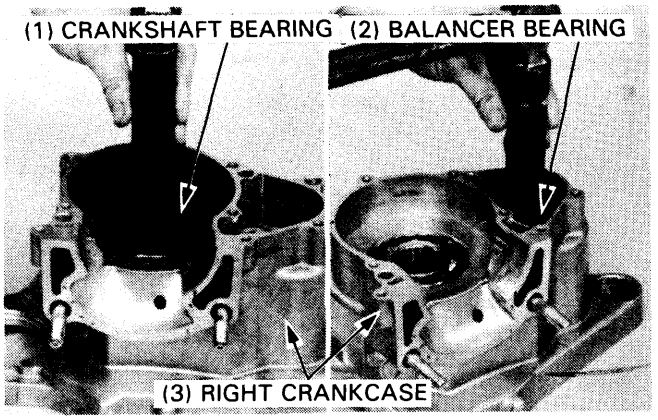
LEFT CRANKCASE

CRANKSHAFT BEARING

Driver	**07749–0010000**
Attachment, 72 x 75 mm	**07746–0010600**
Pilot, 35 mm	**07746–0040800**

BALANCER BEARING

Driver	**07749–0010000**
Attachment, 42 x 47 mm	**07746–0010300**
Pilot, 20 mm	**07746–0040500**



RIGHT CRANKCASE

CRANKSHAFT BEARING

Driver	**07749–0010000**
Attachment, 72 x 75 mm	**07746–0010600**
Pilot, 30 mm	**07746–0040700**

BALANCER BEARING

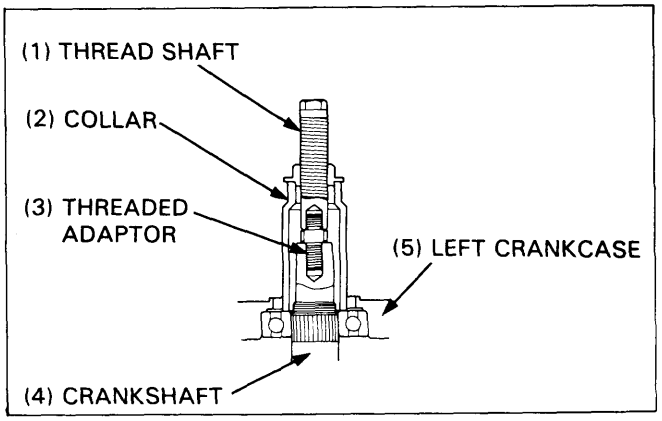
Driver	**07749–0010000**
Attachment, 42 x 47 mm	**07746–0010300**

CRANKCASE ASSEMBLY

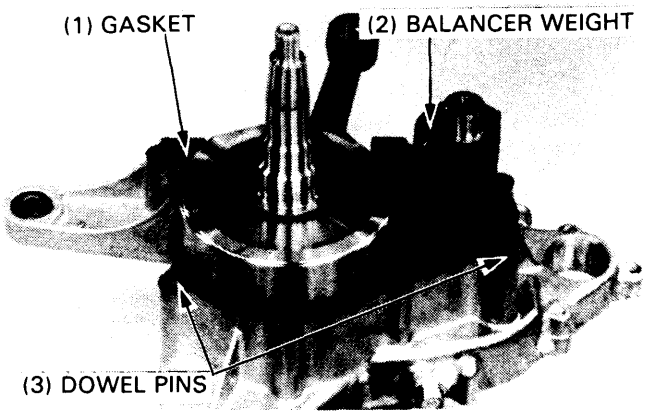
Install the crankshaft in the left crankcase using the crankcase assembly tool and threaded adapter.

TOOL

Threaded adapter	**07965–VM00300**
Thread shaft	**07965–VM00200**
Collar	**07965–VM00100**



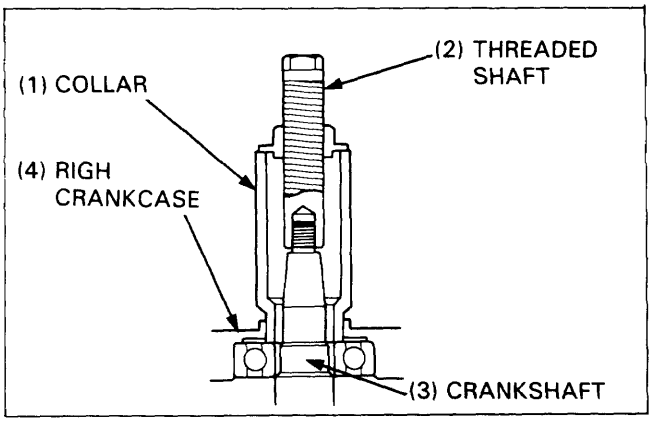
Install the balancer weight, a new gasket and the dowel pins.



Place the right crankcase onto the left crankcase.
Position the crankcase assembly tool as shown and assemble the crankcase.

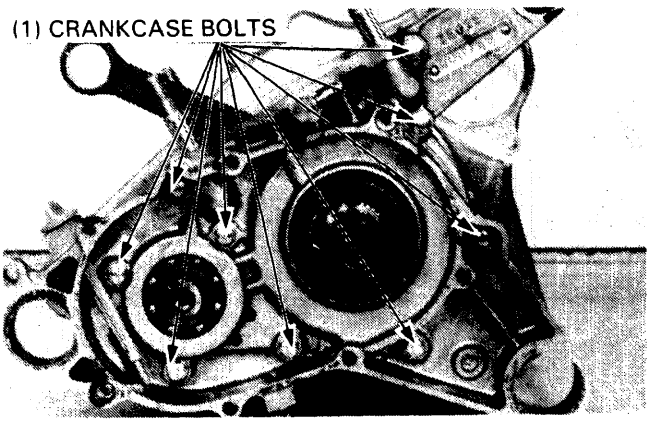
TOOL

Threaded shaft	**07965—VM00200**
Collar	**07965—VM00100**



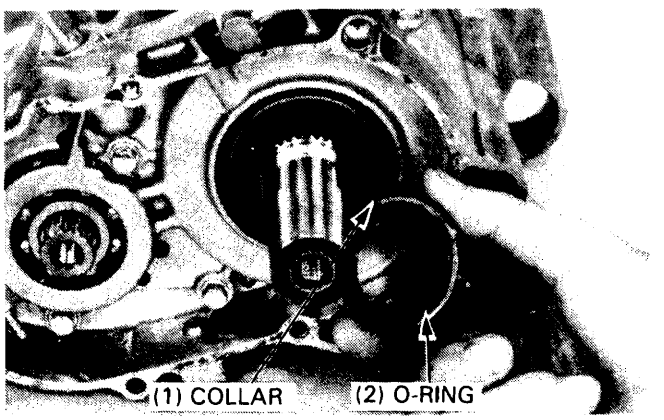
Tighten the crankcase bolts.

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



Install the collar with the O-ring onto the crankshaft.

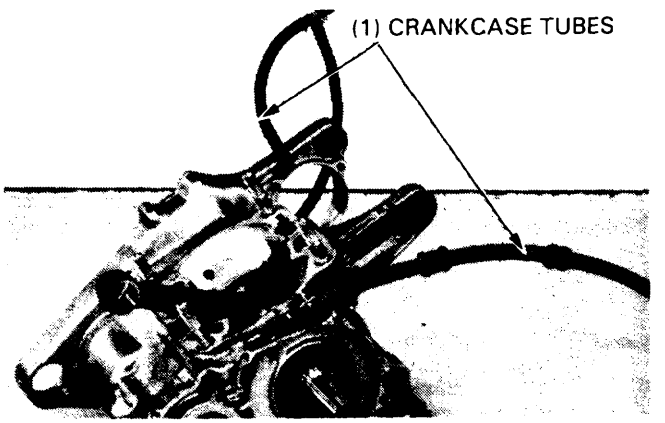
Press the oil seal into the right crankcase with the assembly tool until seal is flush with the case.

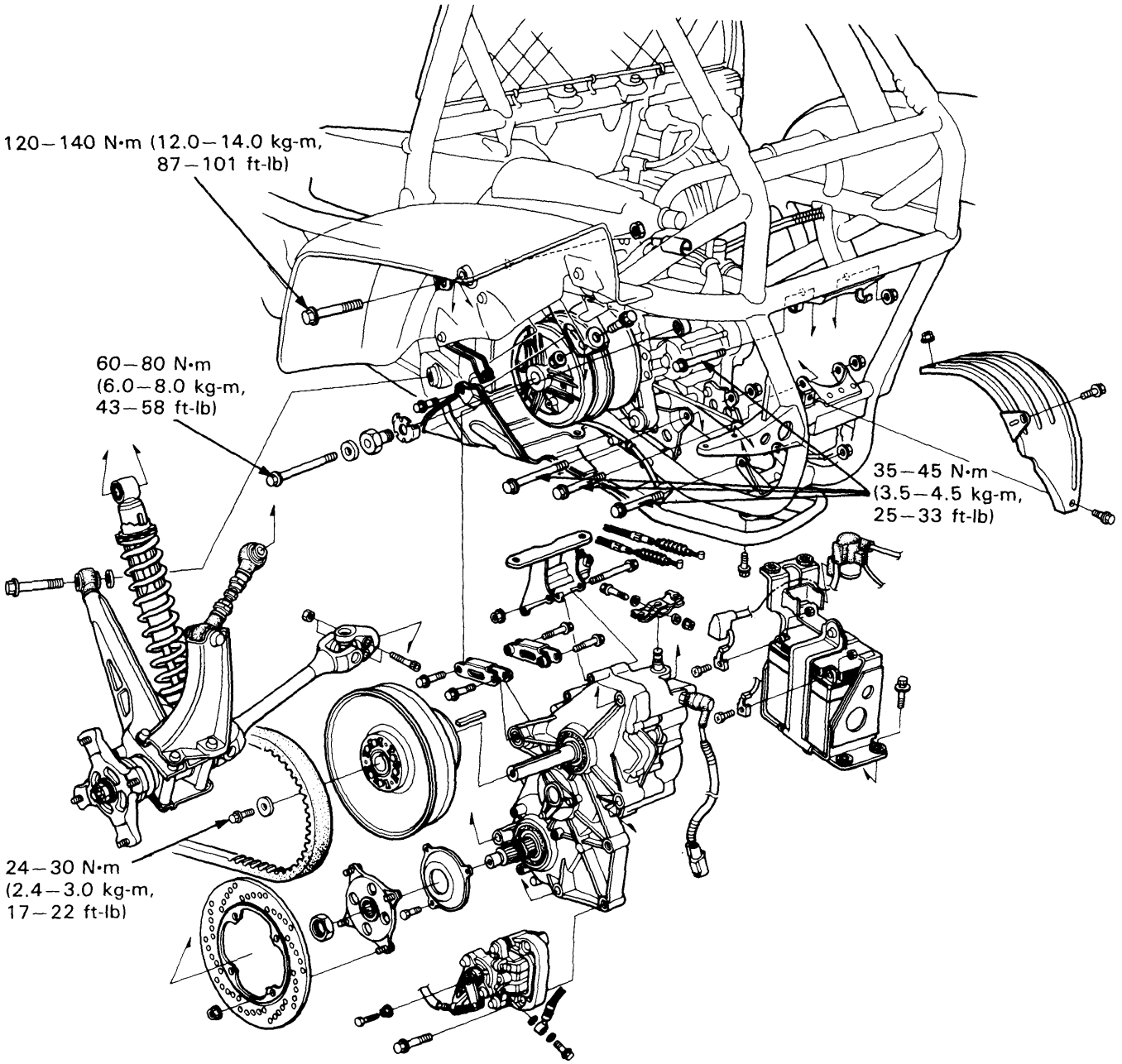


Connect the crankcase tubes.

Install the following:
- Balancer gears(page 8-3).
- Cylinder and cylinder head (section 6).
- Alternator, starter motor and recoil starter (section 7).

Fill engine balancer oil (page 2-2).




120–140 N·m (12.0–14.0 kg-m, 87–101 ft-lb)
60–80 N·m (6.0–8.0 kg-m, 43–58 ft-lb)
35–45 N·m (3.5–4.5 kg-m, 25–33 ft-lb)
24–30 N·m (2.4–3.0 kg-m, 17–22 ft-lb)

9. TRANSMISSION/BELT CONVERTER

SERVICE INFORMATION

GENERAL

- This section covers the servicing of the transmission, shift lever, shift cable, drive belt and belt converter.
- The drive pulley and driven pulley can be serviced with the engine in the frame.

SPECIFICATIONS

mm (in)

ITEM		STANDARD	SERVICE LIMIT
Shift fork claw thickness		5.93–6.00 (0.233–0.236)	5.8 (0.23)
Shift fork I.D.		18.000–18.018 (0.7087–0.7094)	18.09 (0.712)
Shift fork shaft O.D.		17.966–17.984 (0.9073–0.7080)	17.94 (0.706)
Driven pulley	Movable face I.D.	34.85–34.83 (1.372–1.373)	35.00 (1.378)
	Fixed face O.D.	34.80–34.77 (1.370–1.369)	34.72 (1.367)

TORQUE VALUES

Connecting bracket bolt	24–30 N·m (2.4–3.0 kg-m, 17–22 ft-lb)
Transmission mounting bolt	35–45 N·m (3.5–4.5 kg-m, 25–33 ft-lb)
Drive pulley bolt	60–80 N·m (6.0–8.0 kg-m, 43–58 ft-lb)
Drive pulley special screw	120–140 N·m (12.0–14.0 kg-m, 87–101 ft-lb)
Drive pulley clamp bolt	11–14 N·m (1.1–1.4 kg-m, 8–10 ft-lb)
Drive pulley torque bearing slider bolt	2.3–3.5 N·m (0.23–0.35 kg-m, 1.7–2.5 ft-lb)
Driven pulley bolt	24–30 N·m (2.4–3.0 kg-m, 17–22 ft-lb)
Change arm bolt	16–18 N·m (1.6–1.8 kg-m, 12–13 ft-lb)

TOOLS

Special

Bearing remover, 17 mm	07936–3710300
Remover weight	07741–0010201 or 07936–3710200
Remover handle	07936–3710100

Common

Driver	07749–0010000
Attachment, 32 x 35 mm	07746–0010100
Attachment, 42 x 47 mm	07746–0010300
Pilot, 17 mm	07746–0040400
Attachment, 62 x 68 mm	07746–0010500
Pilot, 28 mm	07746–0041100
Pilot, 30 mm	07746–0040700
Attachment, 72 x 75 mm	07746–0010600
Pilot, 35 mm	07746–0040800
Universal holder	07725–0030000

SALSBURY TOOLS

Special screw	#56-0011	Salsbury Tool Kit 07900—VM0000A
Cap	#704292	
Nut, 1/2—20	#901840	
Flat washer	#704236	
Holder	#79-0002	
Dismount tool	#601552	

TROUBLESHOOTING

Gear noisy
1. Worn transmission gear
2. Worn transmission bearing

Hard to shift
1. Shift fork bent or damage
2. Shift fork shaft damage
3. Worn selector gear

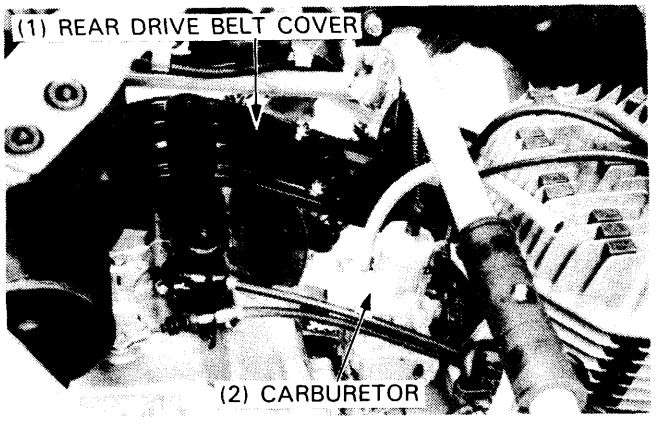
Clutch engagement engine speed too high (Standard: 3,400 rpm), FL350R speed can not be changed or speed change is rough
1. Sticking drive weight arm and roller pivot pin
2. Sticking drive torque post and slide bearing
3. Sticking driven movable face and fixed face
4. Worn drive belt

Engine fires but FL350R does not move
— Damaged driven key

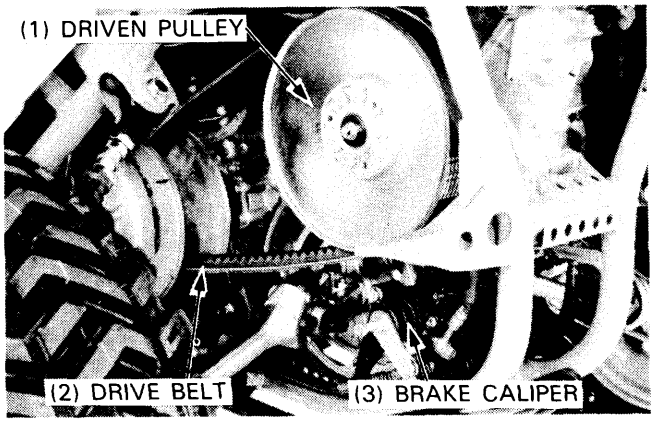
TRANSMISSION

REMOVAL

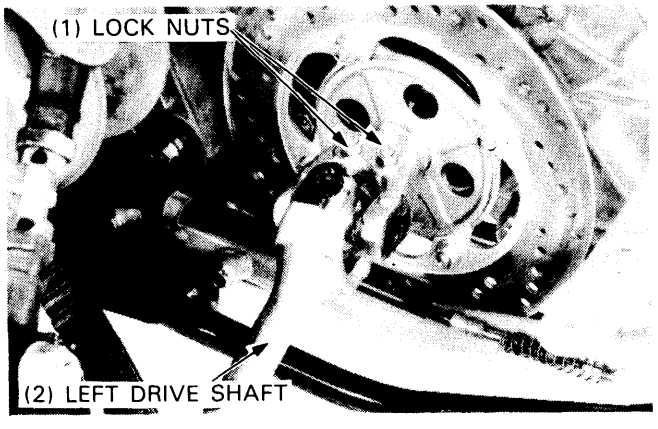
Raise the rear wheels off the ground with the jack or block under the frame.
Drain the transmission oil (page 2-2).
Remove the following:
- Battery with the battery holder (page 7-8).
- Fuel tank (page 4-2).
- Air cleaner case (page 4-4).
- Carburetor (page 4-9).
- Rear drive belt cover



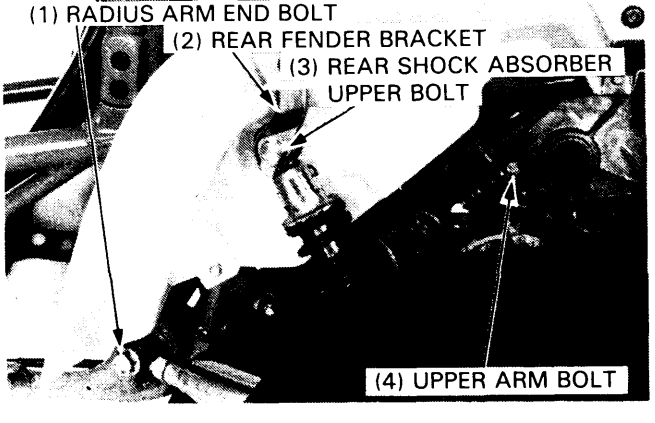
- Drive belt
- Driven pulley (page 9-26).
- Brake caliper (page 12-10).



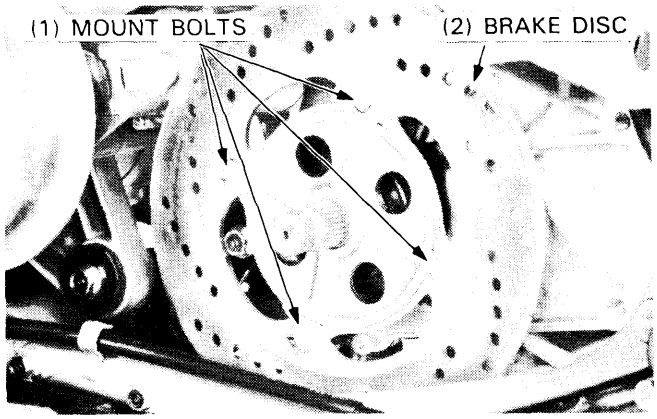
Remove the right and left drive shaft lock bolts and nuts.



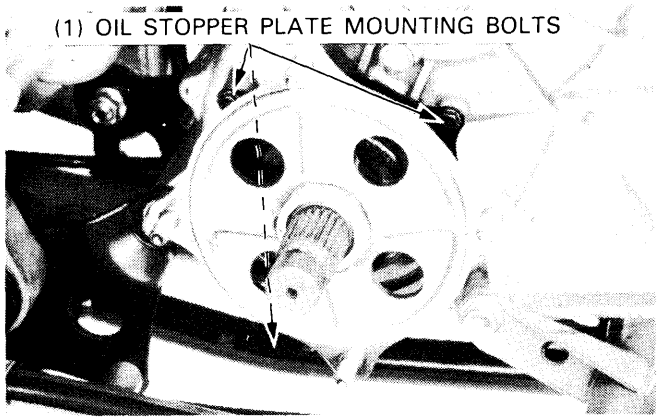
Remove the right and left radius arm end bolts, upper arm bolts, rear shock absorber upper bolts and the rear fender brackets.
Pull the drive shaft out of the final gear shaft and remove the radius arm, rear shock absorber and upper arm from the frame.



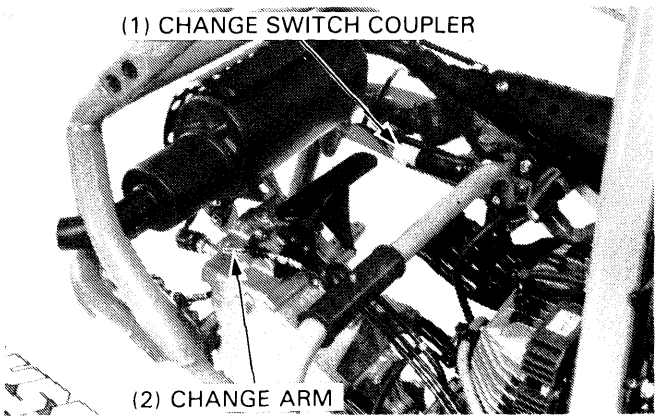
Remove the brake disc mount bolts and disc.



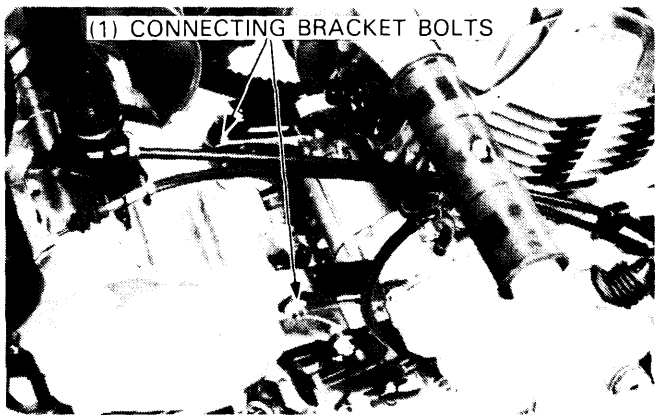
Remove the oil stopper plate mounting bolts.



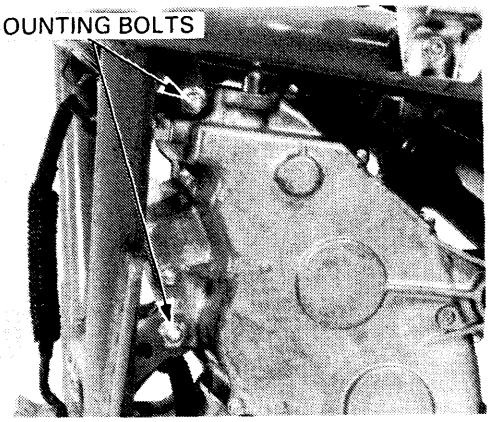
Disconnect the change switch coupler and change arm from the gear shift arm of the transmission.



Remove the right and left engine-to-transmission connecting bracket bolts from the transmission side.
Loosen the connecting bracket bolts on the engine side.



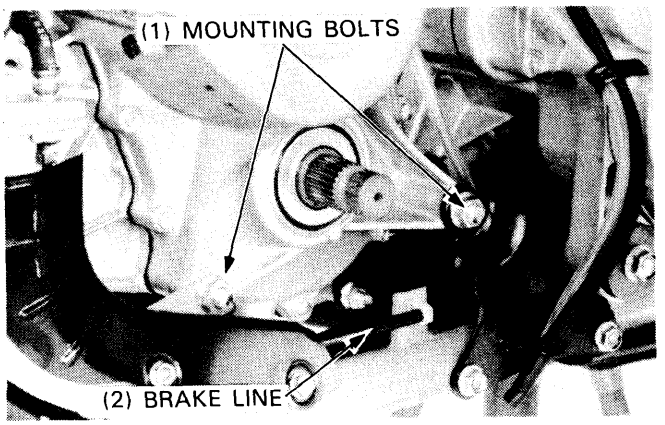
Remove the transmission mounting bolts and nuts.



Remove the transmission mounting bolts and nuts, then remove the transmission from the frame.

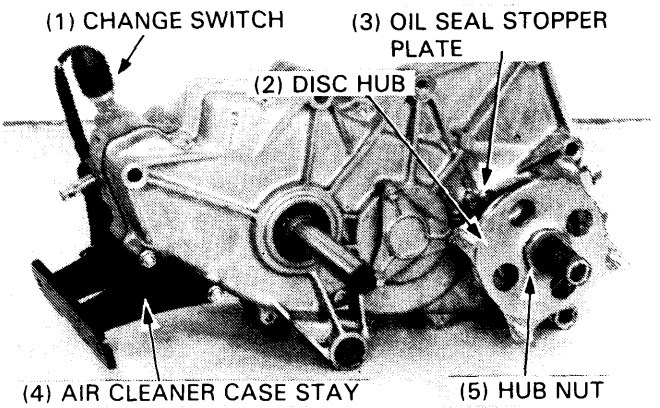
NOTE

- When removing the transmission, do not damage the brake line.

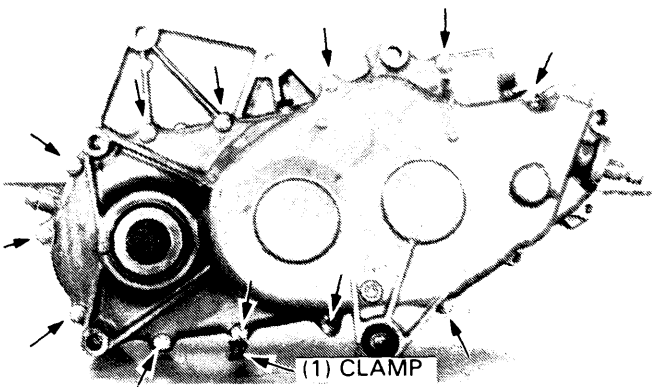


DISASSEMBLY

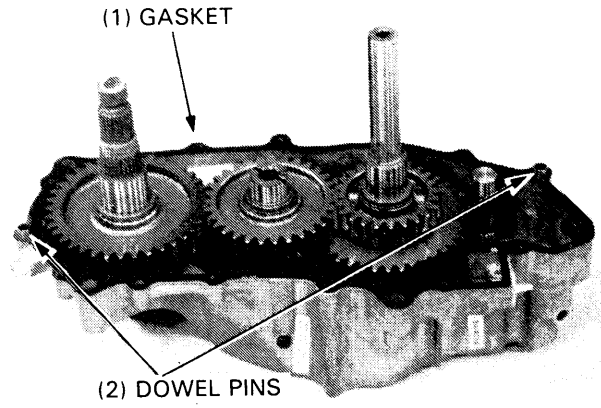
Remove the air cleaner case stay and change switch from the transmission.
Remove the brake disc hub nut and the disc hub using a universal holder 07724—0050000 and lock nut wrench, 07916—MB0000 (page 12-13).
Remove the oil seal stopper plate.



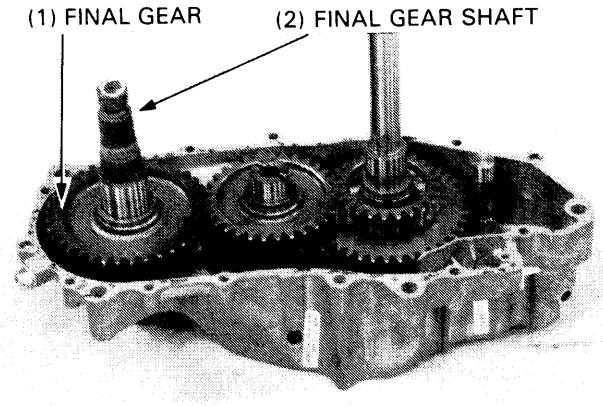
Remove the 12 transmission case bolts and clamp.
Remove the transmission cover.



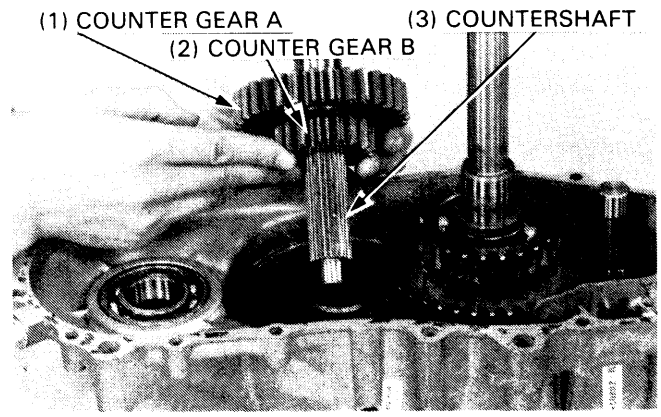
Remove the gasket and two dowel pins.



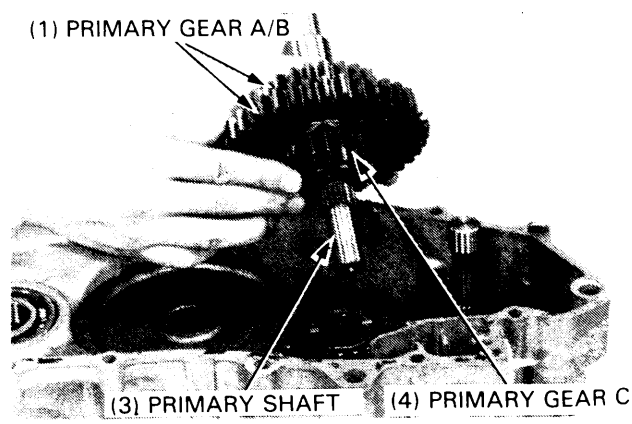
Remove the final gear and final gear shaft.



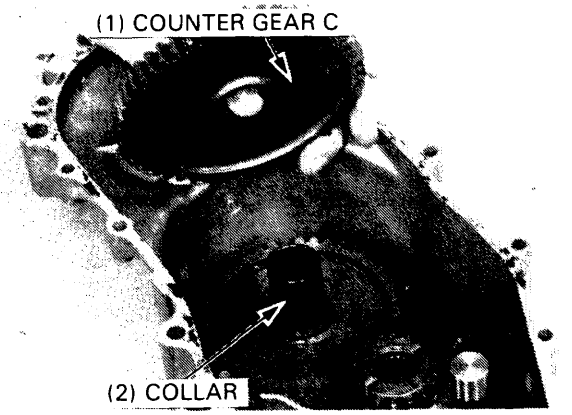
Remove counter gears A and B with the countershaft.



Remove final primary gears A/B and C with the final primary shaft.

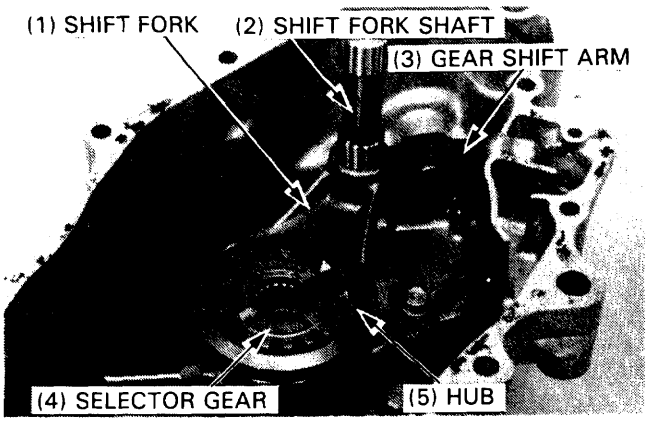


Remove the counter gear C and collar.

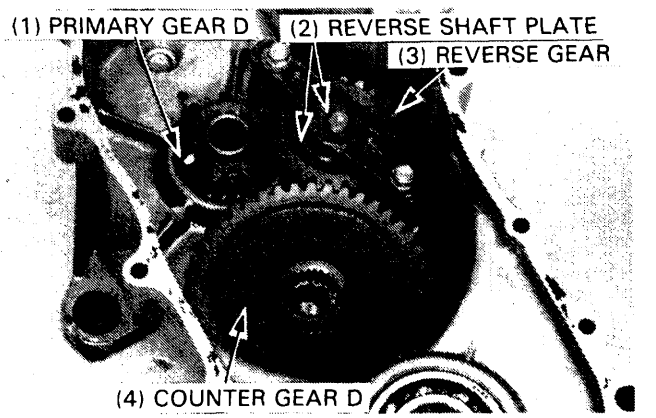


Remove the selector gear with the hub from the shift fork.

Remove the shift fork shaft with the shift fork and gear shift arm.



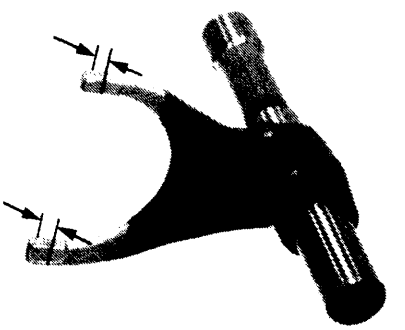
Remove the reverse shaft plate by removing two bolts.
Remove the reverse gear, primary and counter gears D.



INSPECTION

Check the shift fork for wear, bending or damage and measure the shift fork claw thickness.

SERVICE LIMIT: 5.8 mm (0.23 in)

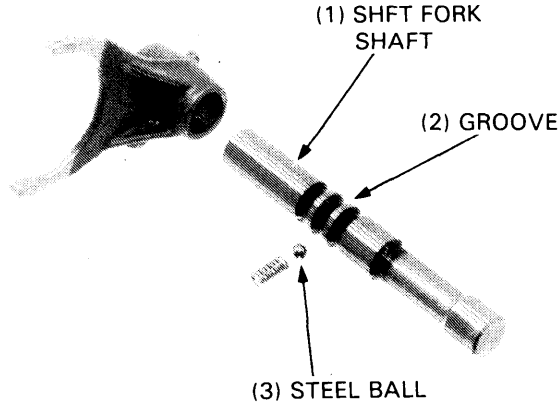


Remove the shift fork shaft from the shift fork.
Inspect the shift fork shaft for scoring, scratches or other damage.
Check the groove on the shift fork shaft, steel ball and spring for damage. Measure the O.D. of the shift fork shaft.

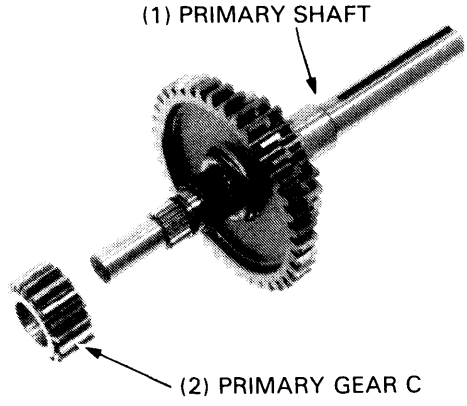
SERVICE LIMIT: 17.94 mm (0.706 in)

Measure the I.D. of the shift fork.

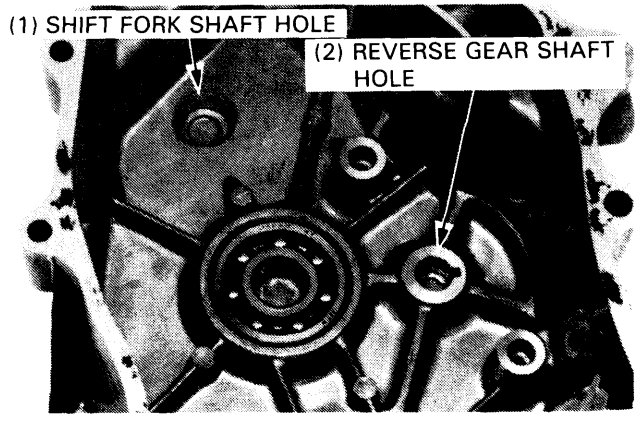
SERVICE LIMIT: 18.09 mm (0.712 in)



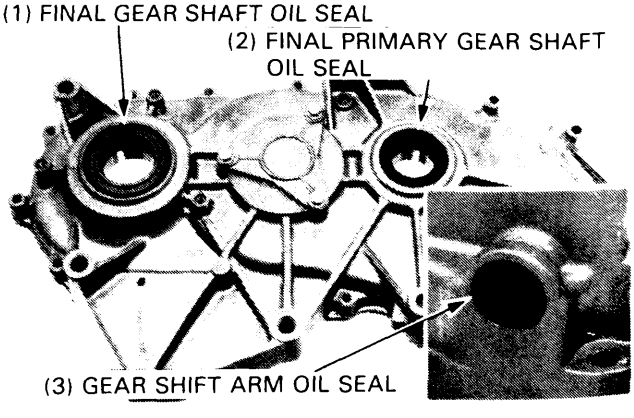
Check for wear or damage of the final gears, counter gears, primary gears and each shaft.



Check each holes in the transmission case for wear or damage.

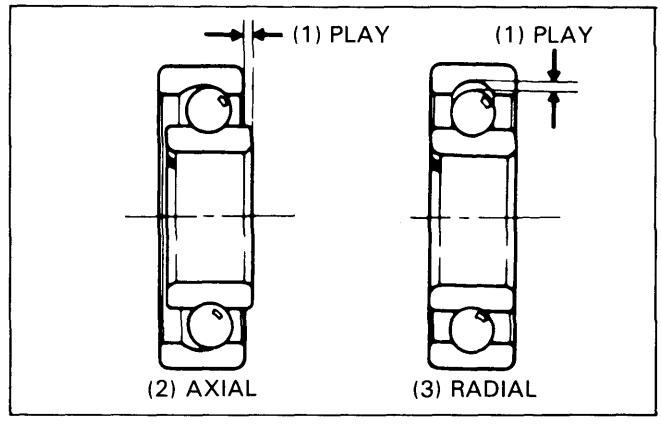


Check each oil seal for wear or damage.

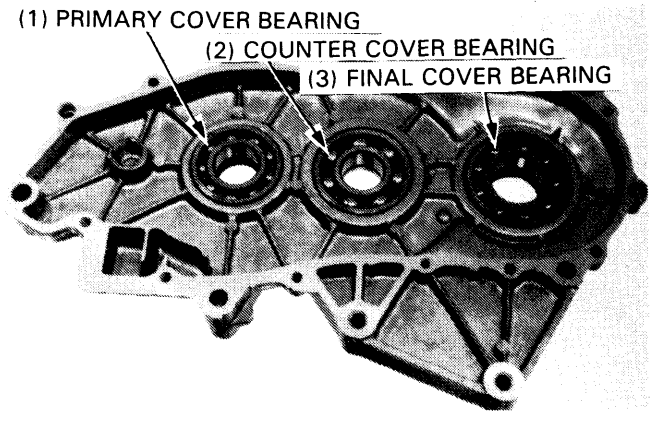


TRANSMISSION BEARING REPLACEMENT

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



Remove the bearings from the transmission cover.

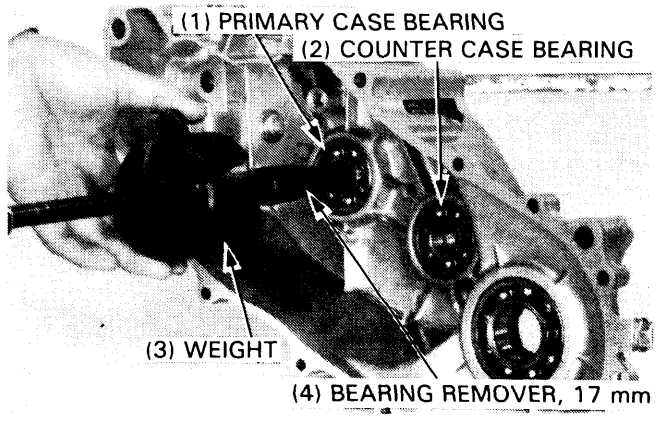


Remove the primary and counter case bearings using special tools.

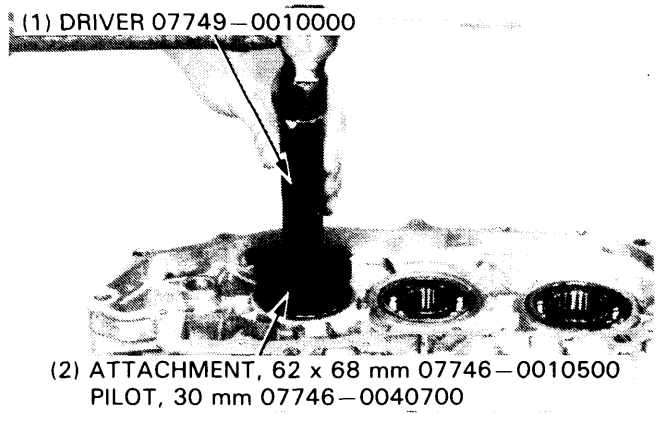
TOOL

Bearing remover, 17 mm	**07936–3710300**
Remover weight	**07741–0010201**
	or 07936–3710200
Remover handle	**07936–3710100**

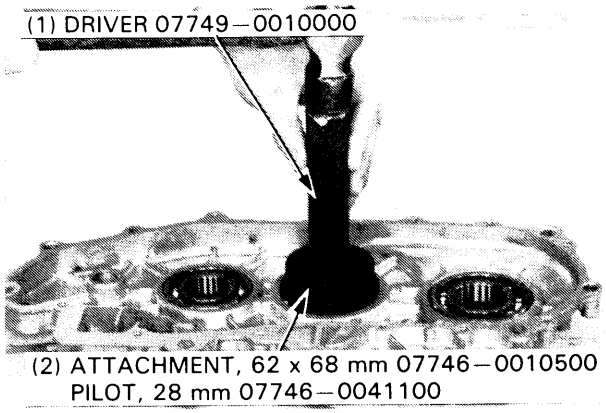
Remove the oil seal and final gear bearing from the case.



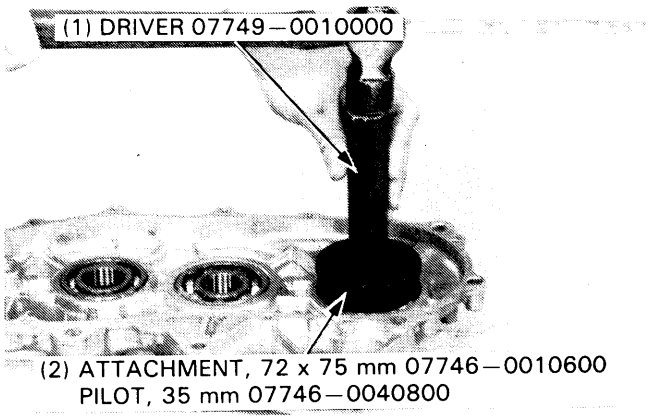
Drive in a new primary cover bearing.



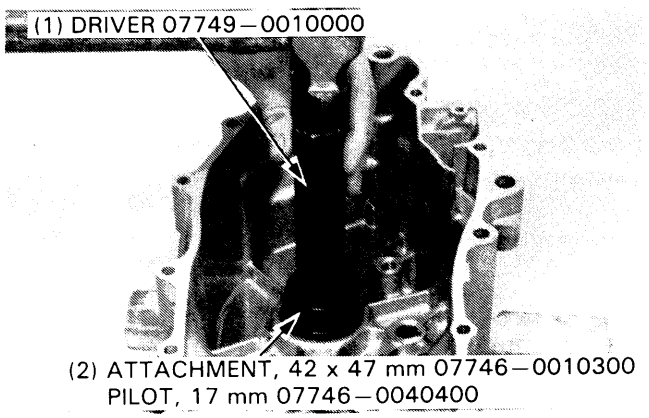
Drive in a new counter cover bearing.



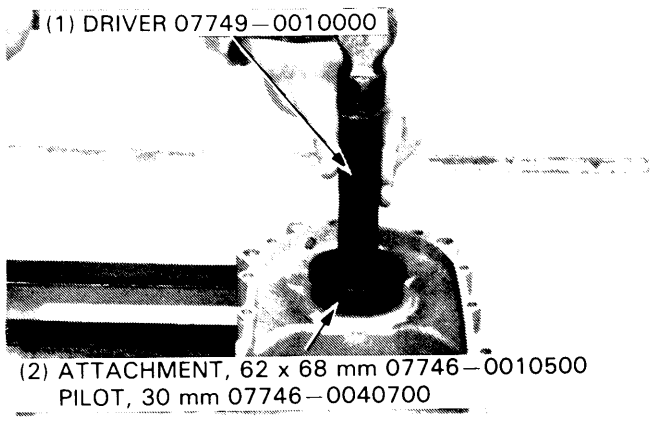
Drive in a new final gear cover bearing.



Drive in a new primary and counter case bearings.

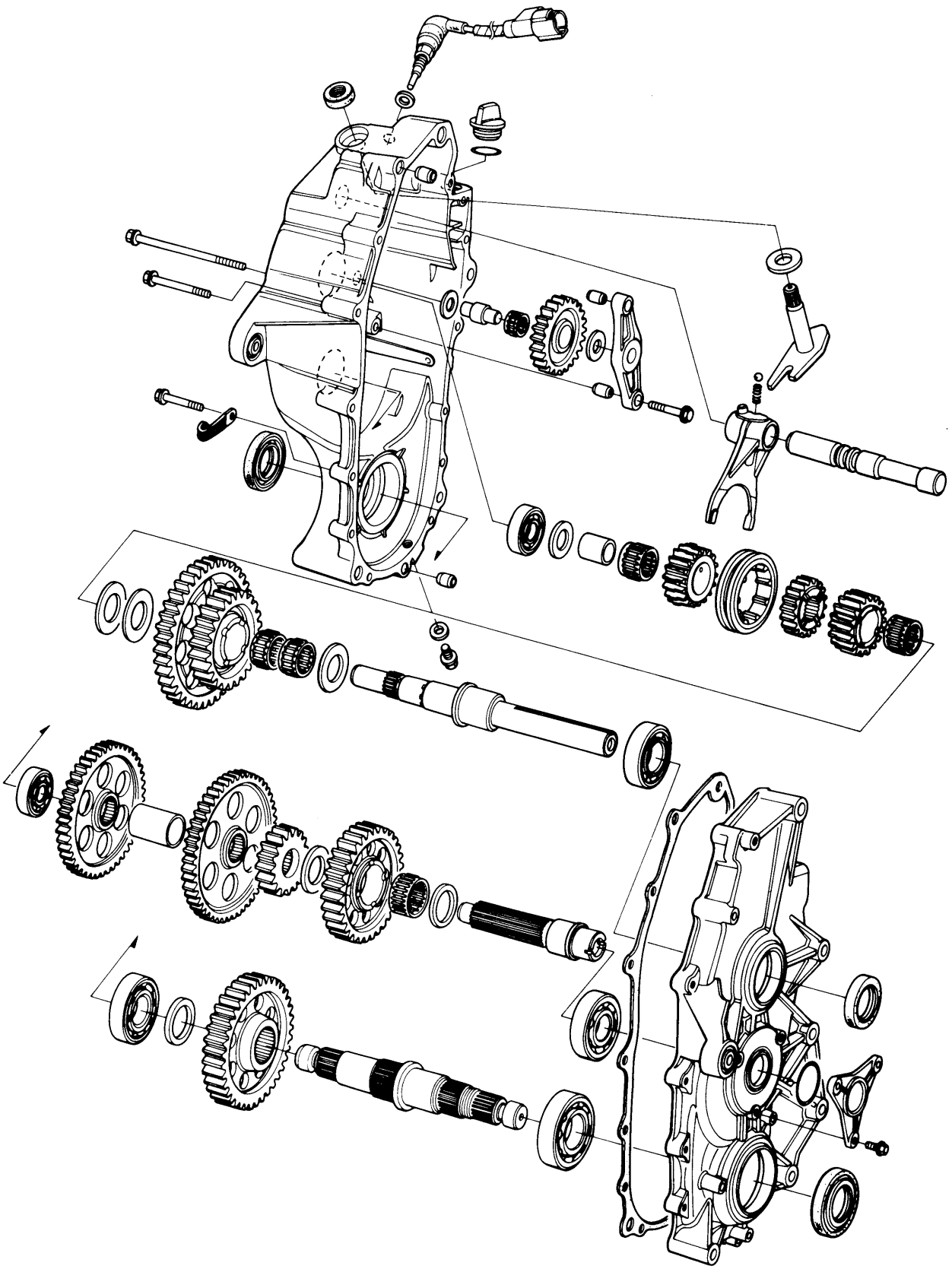


Drive in a new final gear case bearing.

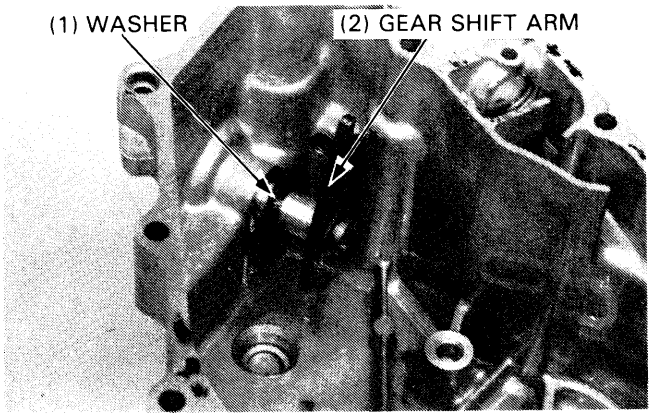


ASSEMBLY

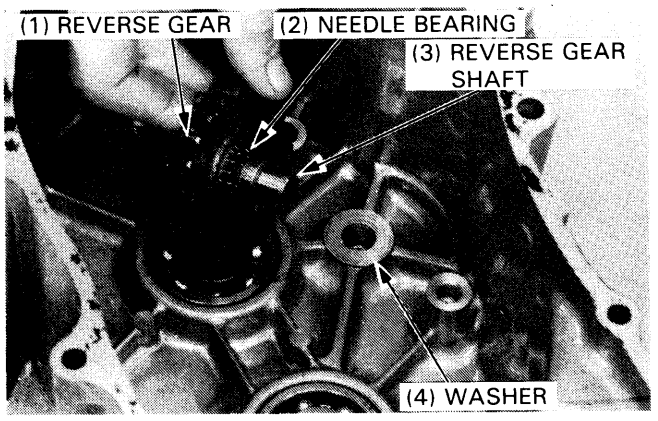
Coat each gear with transmission oil before assembling. After installing check for smooth movement of the gears.



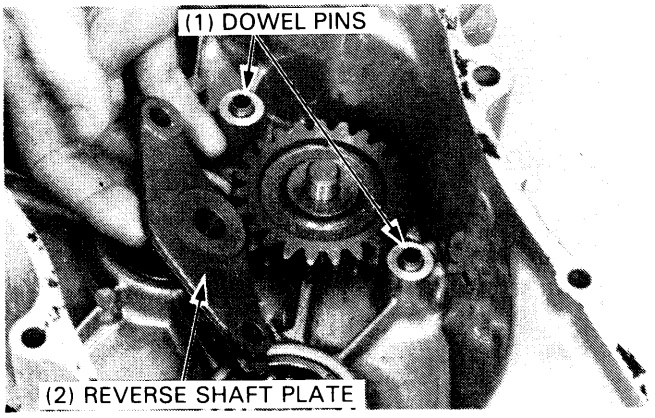
Install the washer onto the gear shift arm.
Insert the gear shift arm to the case.



Assemble the reverse gear, needle bearing reverse gear shaft and washers and install them.



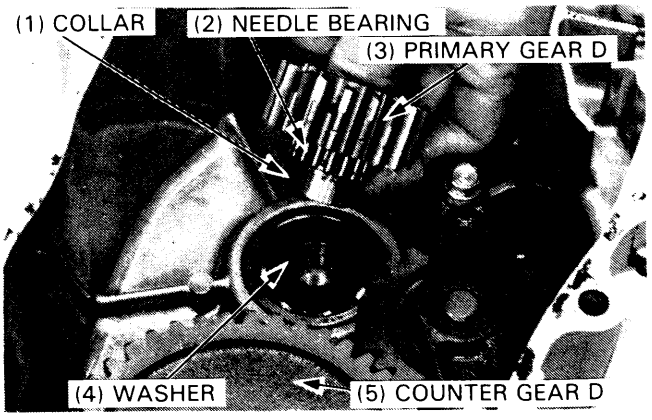
Install the dowel pins, reverse shaft plate and bolts.



Place the counter gear D onto the counter case bearing.
Install the primary gear D, needle bearing, collar and washer.

NOTE

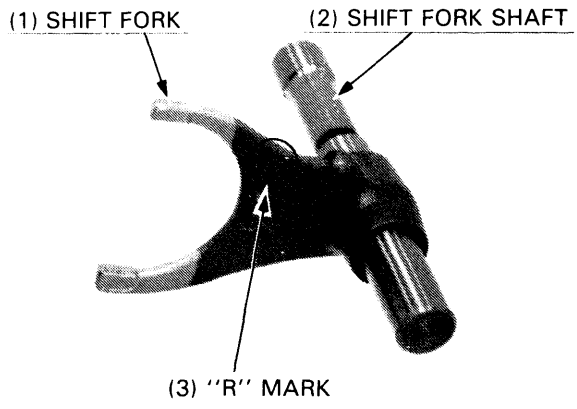
- Be sure the smaller diameter portion of the gear teeth is facing away from the case.



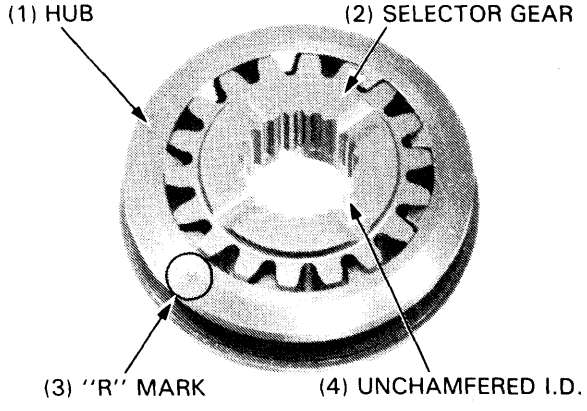
Insert the spring and steel ball into the shift fork bore, and install the shift fork shaft to the shift fork.

NOTE

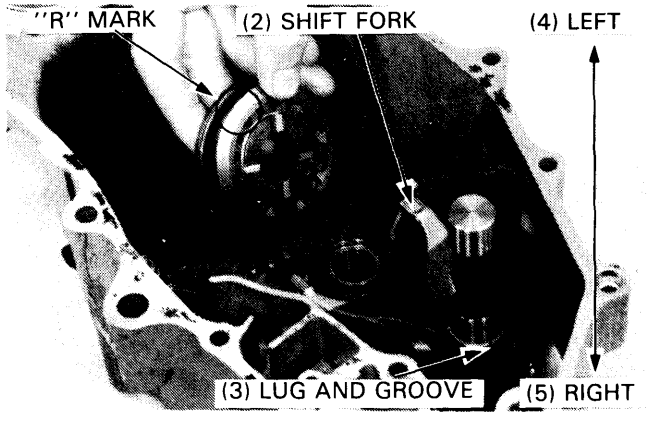
- The shift fork has the mark "R" indicating the right side.



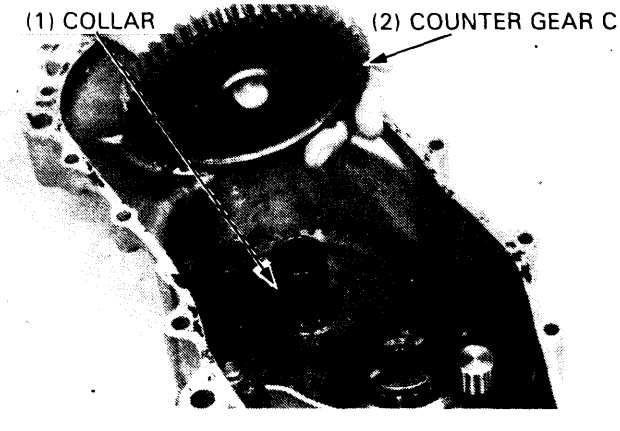
Assemble the selector gear and hub so that the unchamfered I.D. of the gear and "R" mark on the hub face the same direction.



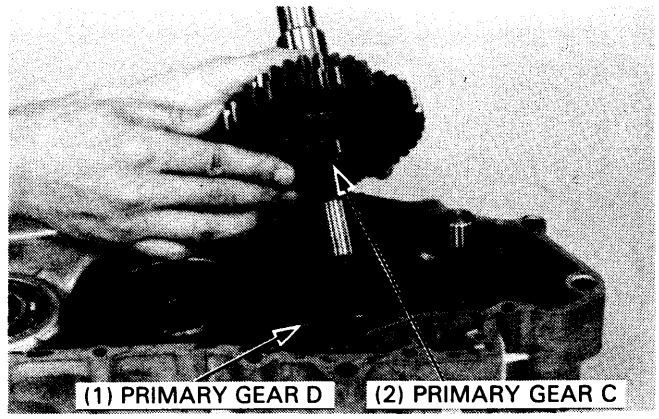
Install the shift fork shaft and fork onto the case.
Align the shift fork lug with the gear shift arm groove.
Install the selector gear and hub with the "R" mark down, then slip the hub onto the shift fork.



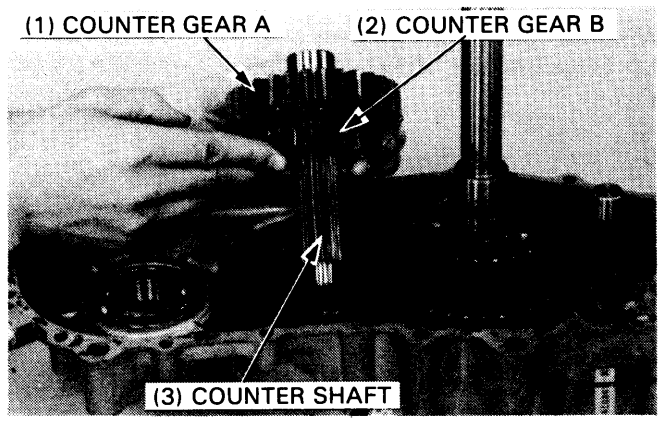
Set the collar onto the counter gear D and install the counter gear C.



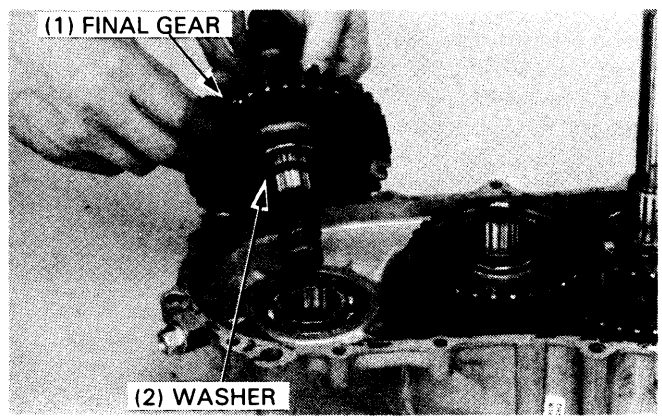
Place the primary gear C on the primary shaft with the smaller gear facing the case and install the assembly into the case.



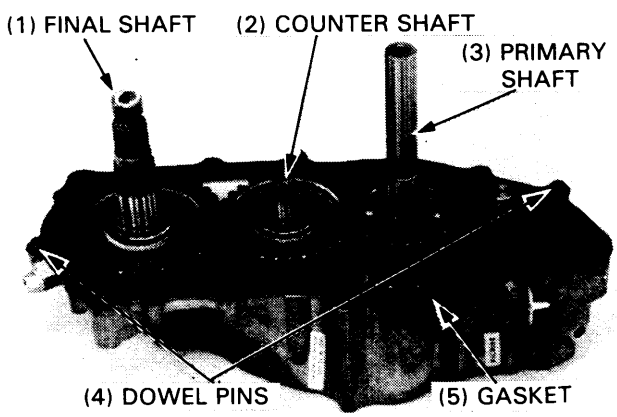
Assemble the washer, needle bearing, counter gear A, thrust washer, counter gear B onto the counter shaft and install the assembly into the case.



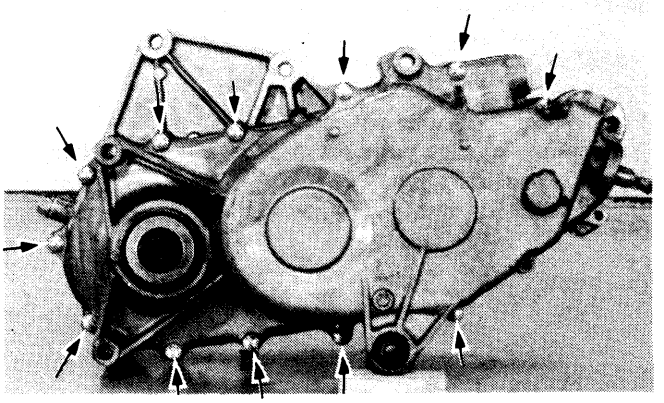
Assemble the final gear and washer to the final shaft and install the assembly into the case.



Check the engagement of all the gears.
Install the two dowel pins and a new gasket.

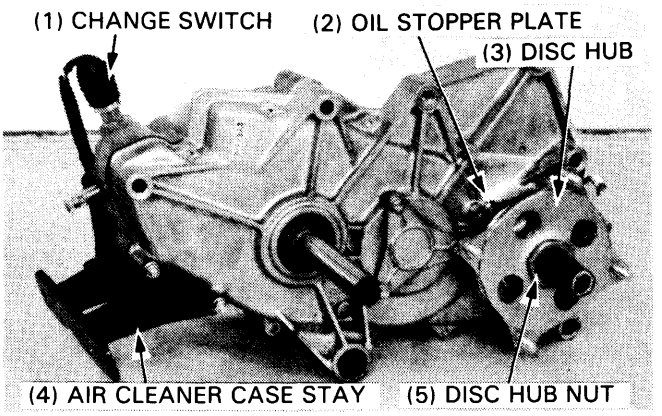


Install the transmission cover on the case and tighten the case bolts in a crisscross pattern in 2—3 steps.



Install the air cleaner case stay, change switch, oil stopper plate and brake disc hub.
Apply locking agent to the disc hub nut and tighten the nut to the specified torque.

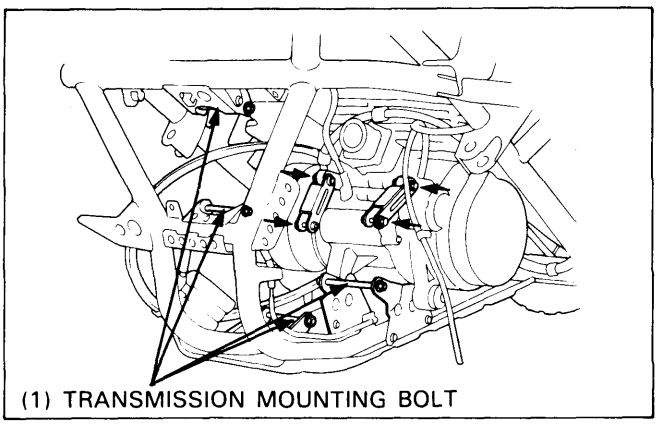
TORQUE: 100—120 N·m (10.0—12.0 kg-m, 72—86 ft-lb)



INSTALLATION

The installation sequence is essentially the reverse order of removal.
Tighten the transmission mounting bolts.

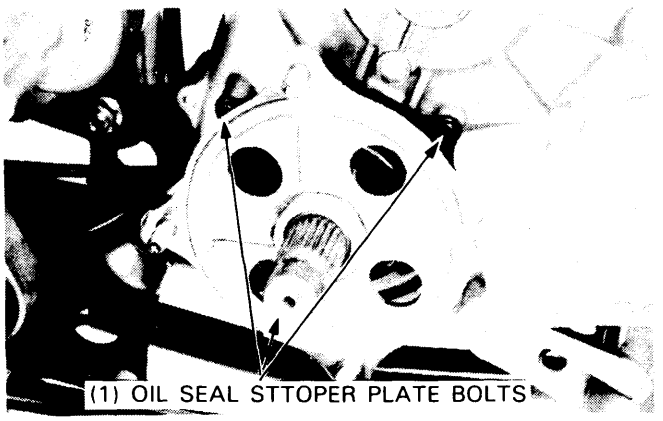
TORQUE:
Connecting bracket bolt
24—30 N·m (2.4—3.0 kg-m, 17—22 ft-lb)
Transmission mounting bolt
35—45 N·m (3.5—4.5 kg-m, 25—33 ft-lb)



Tighten the oil seal stopper plate bolts securely.

NOTE

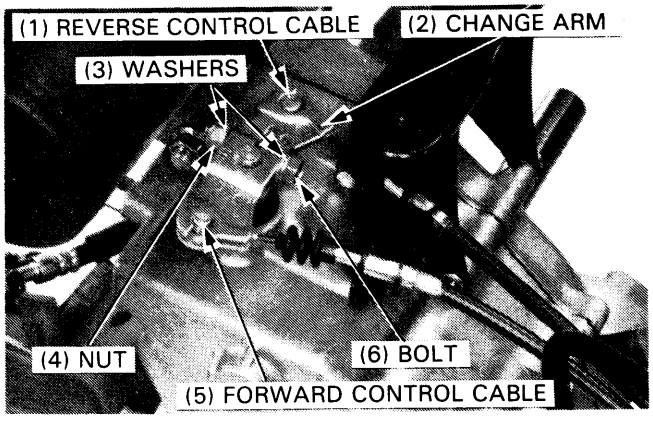
Perform the following inspections and adjustments:
- Transmission oil level (page 2-2).
- Tube, wire and cable routing (page 1-8).



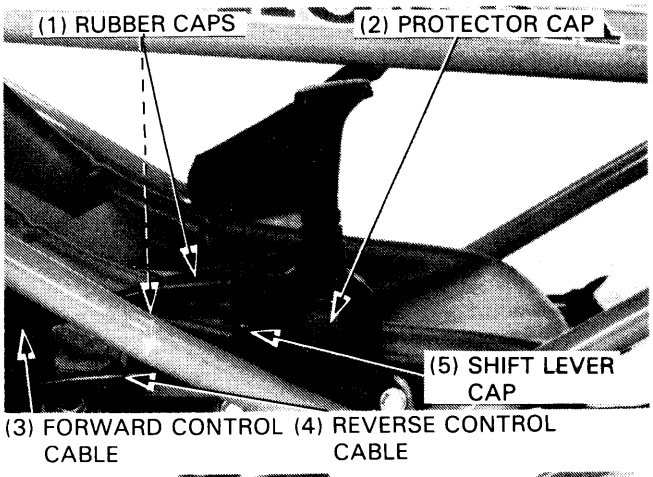
SHIFT LEVER/CONTROL CABLES

REMOVAL

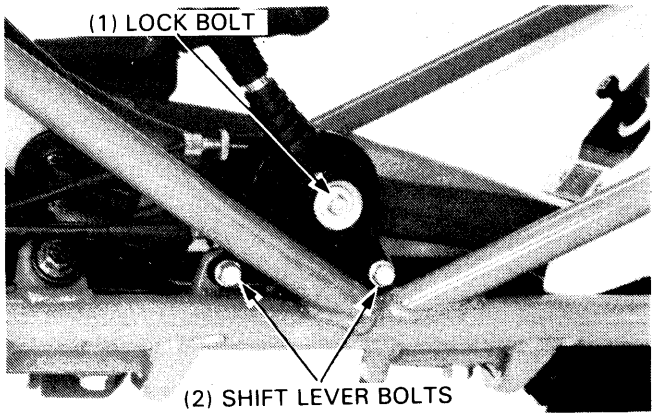
Remove the air cleaner case (page 4-4).
Remove the change arm bolt, nut, washers and change arm from the gear shift arm.
Disconnect the control cables from the change arm.



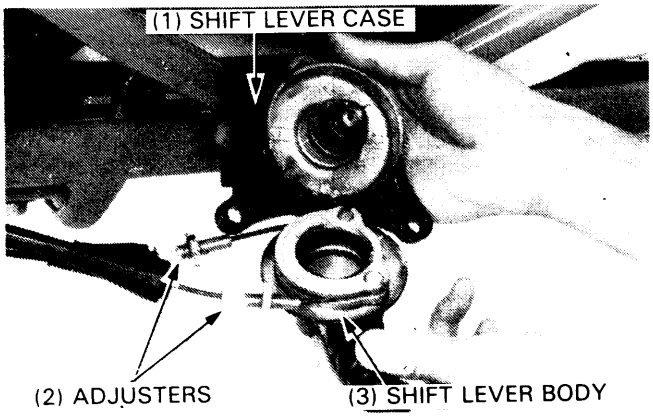
Slide the rubber cap off the adjuster and lock nut.
Remove the protector cap and shift lever case cover.



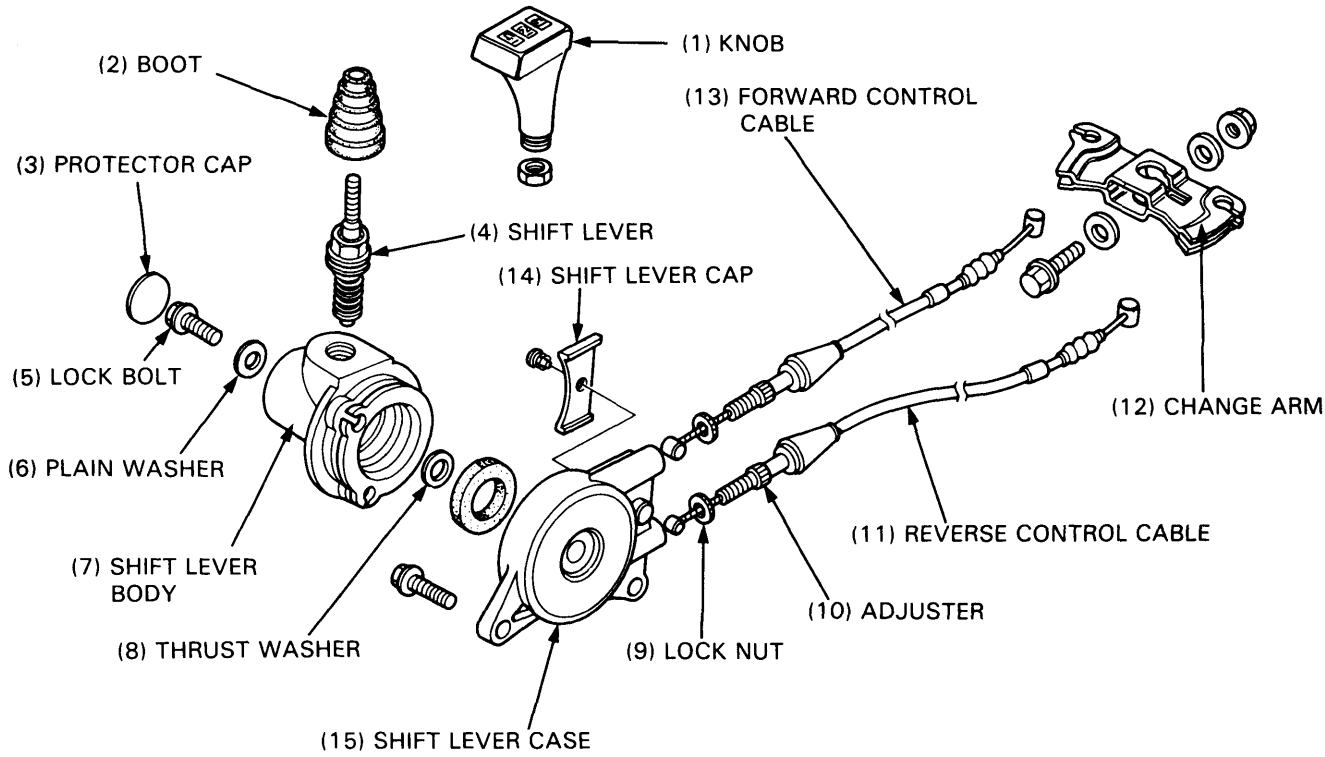
Remove the lock bolt and shift lever bolts.



Unscrew the adjuster from the shift lever case, then pull the shift lever up separating the shift lever body and shift lever case.
Remove the control cables from the shift lever body.



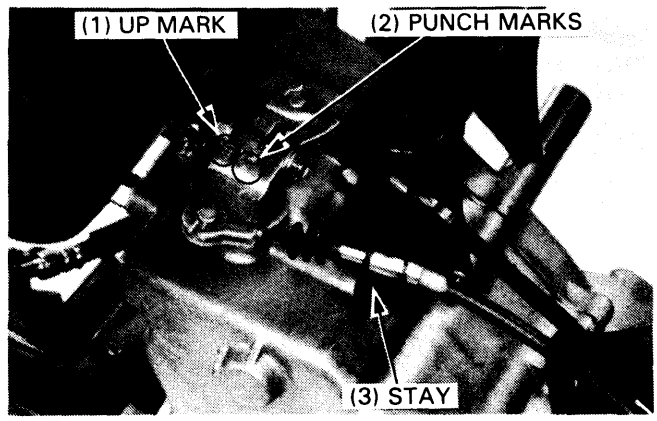
INSTALLATION



Connect the control cables to the change arm.
Set the control cable housing onto the stay and install the change arm onto the gear shift arm with its UP mark facing up.

NOTE

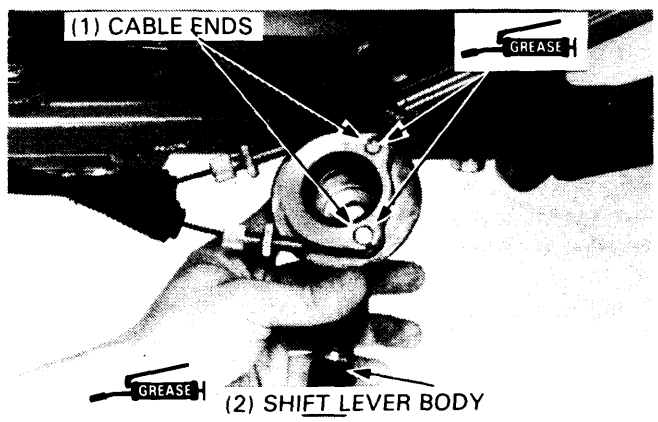
- Align the punch marks on the gear shift arm and the change arm.



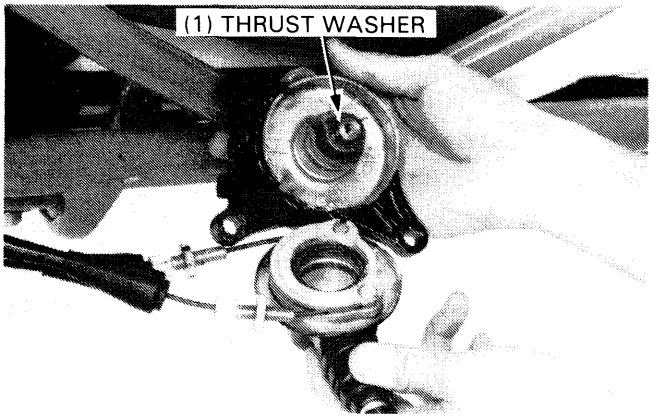
Install the bolt and nut, and torque the bolt.

TORQUE: 16–18 N·m (1.6–1.8 kg-m, 12–13 ft-lb)

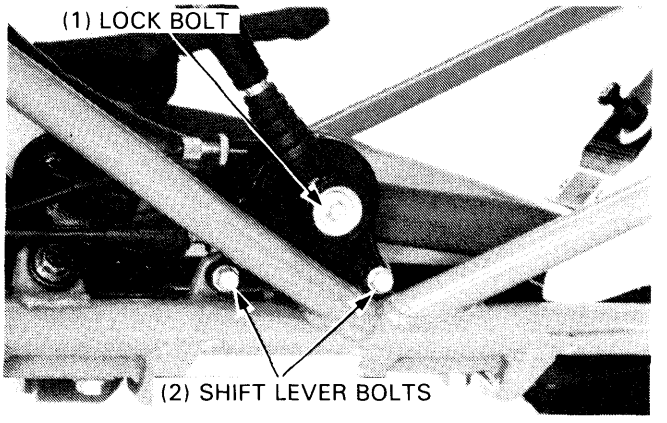
Route the control cables and connect them to the shift lever body.
Apply grease to the cable ends and the shift lever body.



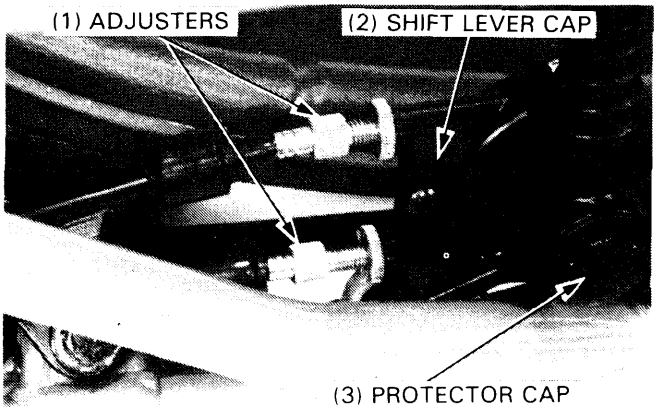
Install the thrust washer on the shift lever case.
Assemble the shift lever body and case and install them to the frame.



Tighten the shift lever bolts and lock bolt.



Install the protector, shift lever cap and the adjusters.
Check the gear shift operations.
Check the control cable free play.
Tighten the lock nut.
Install the air cleaner case (page 4-5).

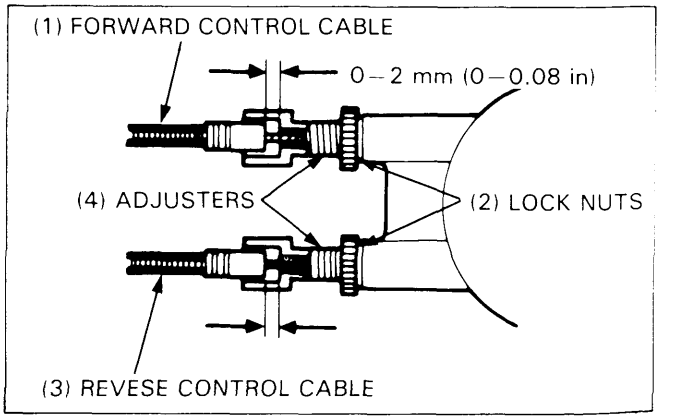


CONTROL CABLE FREE PLAY

Pull the control cable end and measure the clearance as shown.

FREE PLAY
Forward: 0—2 mm (0—0.08 in)
Reverse: 0—2 mm (0—0.08 in)

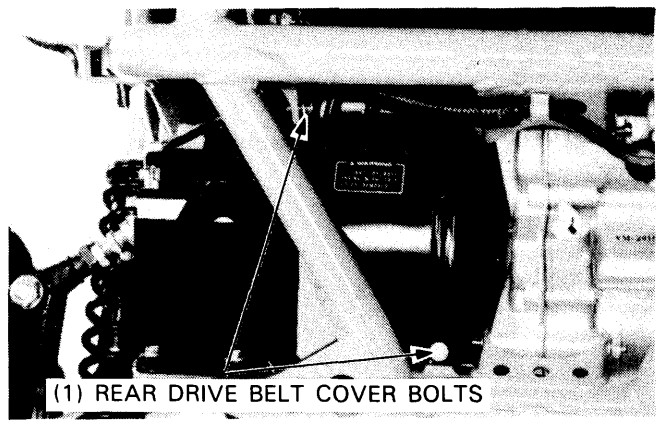
To adjust, loosen the lock nut and turn the adjuster.



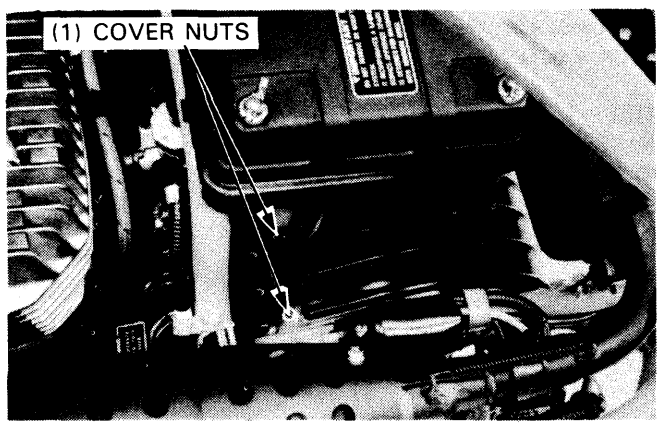
DRIVE BELT

REMOVAL

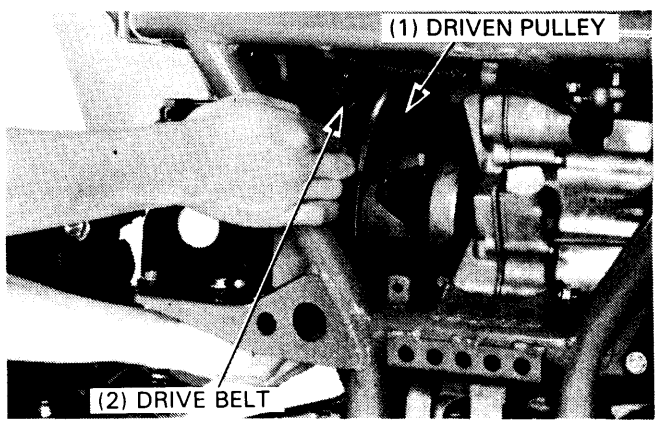
Remove the rear drive belt cover bolts.



Remove the drive belt cover nuts and rear drive belt cover.



Spread the driven pulley's apart, by hand and slide the loosened drive belt off the lower side.
Remove the drive belt from the drive pulley.



INSPECTION

Refer to page 3-13.

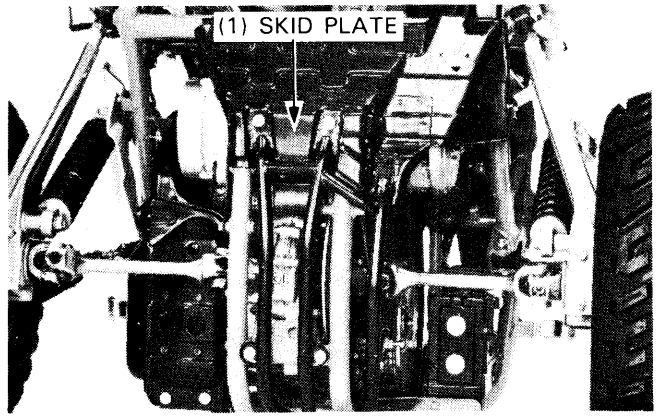
INSTALLATION

Installation is the reverse order of removal.

BELT CONVERTER

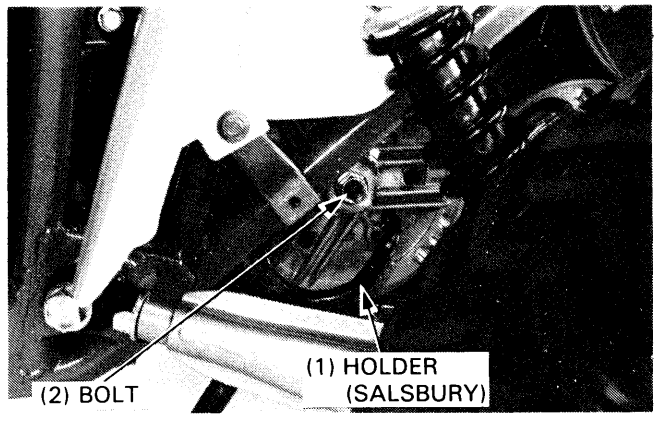
REMOVAL

Raise the rear wheels off the ground by placing a block or safety stand under the frame.
Remove the skid plate.

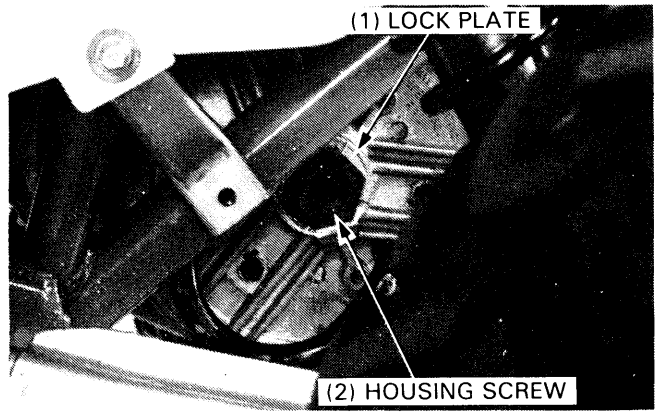


Place the holder and handle into the movable face and remove the drive pulley bolt.

TOOL
SALSBURY
HOLDER #79-0002



Flatten the lock plate tabs and remove the housing screws.

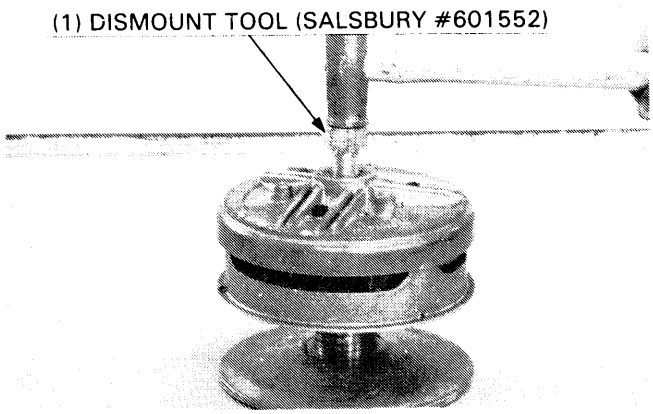


Insert the dismount tool into the threaded hub bore and turn the bolt until the hub has been separated from crankshaft.
Remove the drive pulley from the crankshaft.

TOOL
SALSBURY
DISMOUNT TOOL #601552

DISASSEMBLY

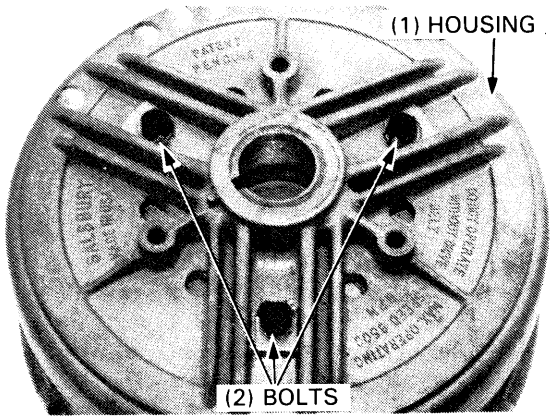
With the dismount tool installed into the hub (at least 15 threads), strike the top of tool with rawhide, brass or lead hammer as shown.



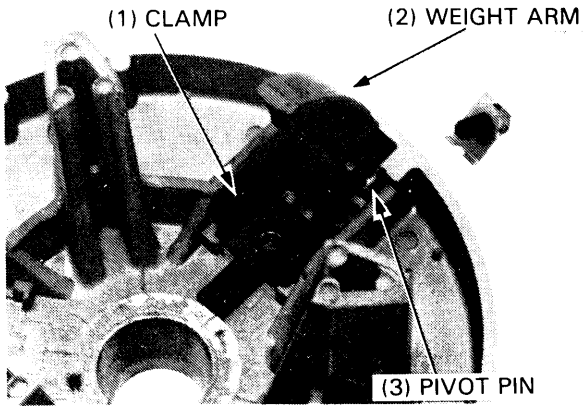
CAUTION

- *The movable face and housing assemblies will recoil from fixed face and hub upon separation from mating tapers due to pre-load on compression spring.*
- *This operation should be performed one or two inches above a wooden bench or similar soft surface to prevent the possibility of damage to the unit.*

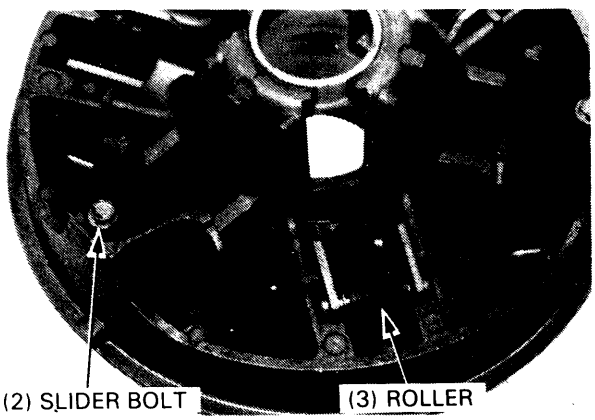
Remove the dismount tool, housing assembly and key from the fixed face.
Remove the housing from the movable face and bend lock platetabs away from the three bolts.



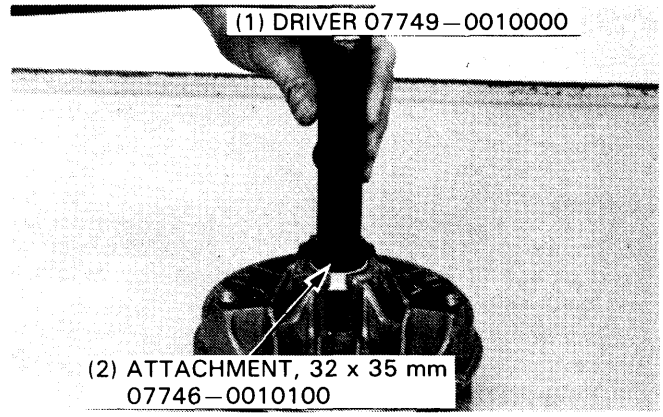
Remove the clamps, pivot arm pins, thrust washers and weight arm from the housing.



Bend the lock plate tabs away from the three roller clamp bolts on the movable face.
Remove the roller clamps, pins, rollers and thrust washers, and torque bearing slider bolts and sliders.



Drive out the center bearing.

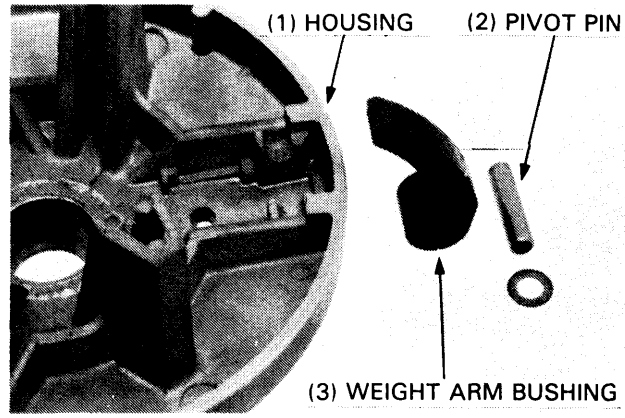


INSPECTION

Replace any parts that are:
— cracked or broken.
— show excess wear.
— have damaged threads.
— bent or obviously misshaped from abuse.

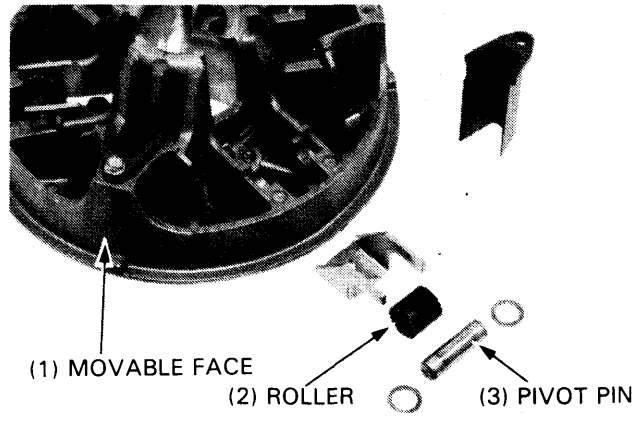
HOUSING:
WEIGHT ARM ASSEMBLIES/PIVOT PINS

Replace the weight arms with a new arm kit when:
— the weight arm sticks on the pivot pin.
— the pivot bushing is worn or loose.
— the weight arm tip wear exceeds 1.0 mm (0.040 in).



MOVABLE FACE:
ROLLER ASSEMBLYIES/PINS

Replace the roller arms with a new roller kit when:
— the roller will not move.
— the roller is excessively loose.
— the roller is grooved in excess of 0.38 mm (0.015 in).
Any clamp not adequately securing a pivot pin should be replaced.



FIXED FACE/MOVABLE FACE

Replace any pulley face (movable or fixed) which has grooves in excess of 1.5 mm (0.060 in).

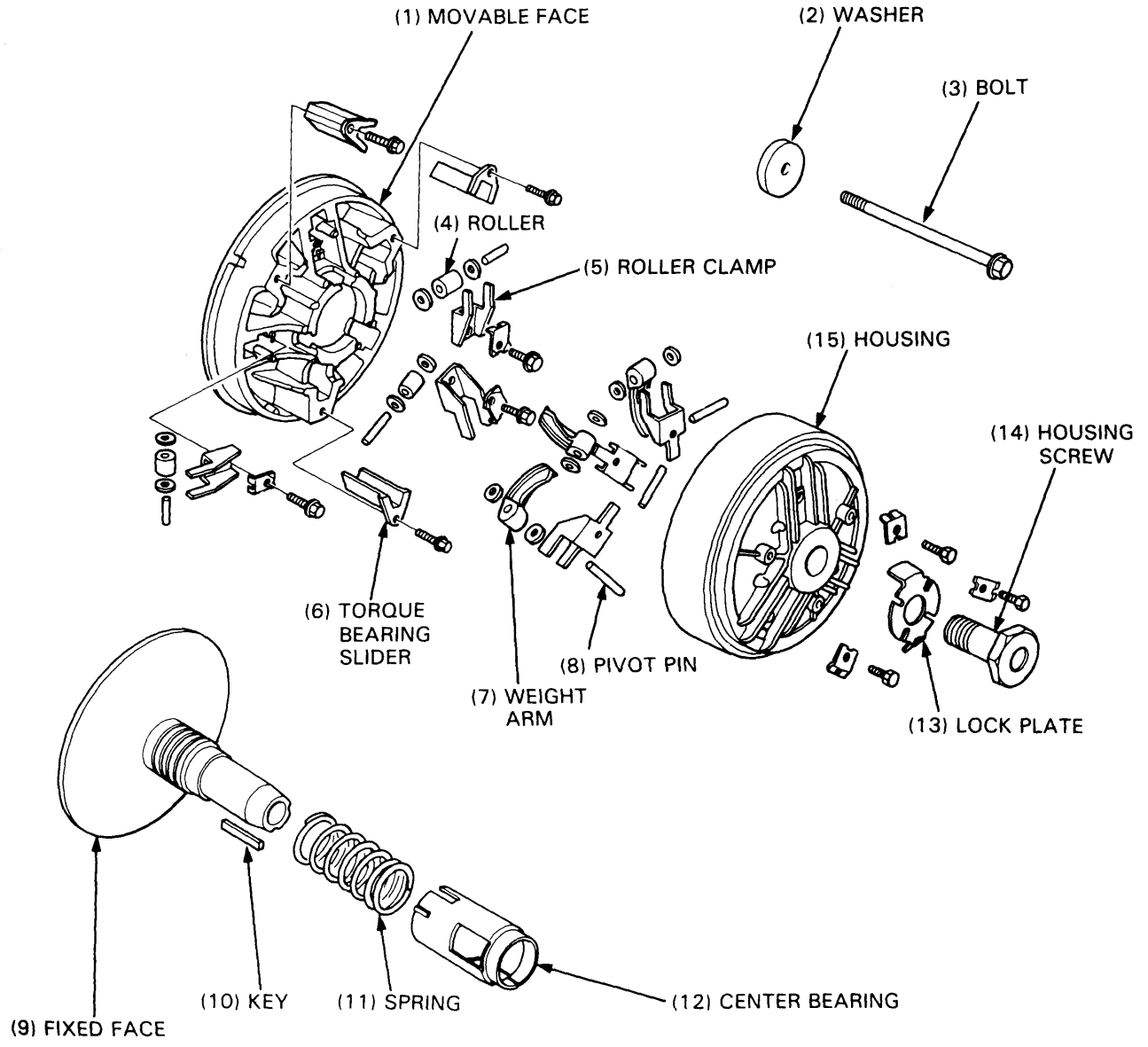
CENTER BEARING

Measure the gap between the center bearing and the fixed face hub; if it's greater than 0.38 mm (0.015 in) it should be replaced.

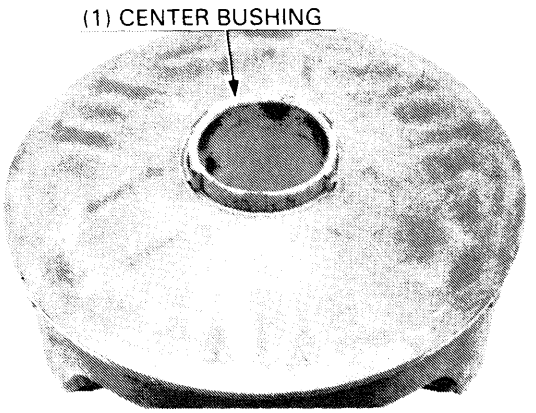
SPRING

Check for damage of spring.

ASSEMBLY


(1) MOVABLE FACE
(2) WASHER
(3) BOLT
(4) ROLLER
(5) ROLLER CLAMP
(15) HOUSING
(14) HOUSING SCREW
(6) TORQUE BEARING SLIDER
(7) WEIGHT ARM
(8) PIVOT PIN
(13) LOCK PLATE
(9) FIXED FACE
(10) KEY
(11) SPRING
(12) CENTER BEARING

Insert the center bearing into the bore of the movable face.

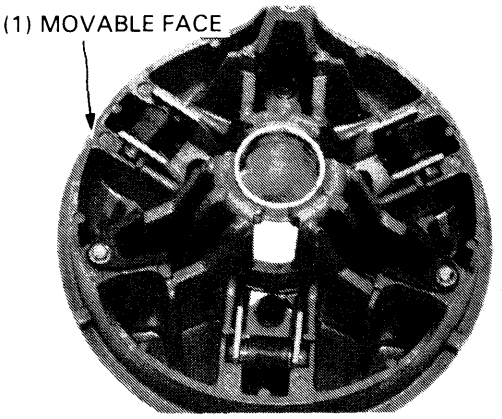


Install roller assemblies on pivot pins with a thrust washer on each side of roller.
Lay the roller and pin assemblies into their respective nests in the movable face.
Install the clamp, lock plate and self-tapping bolt.

TORQUE: 11–14 N·m (1.1–1.4 kg-m, 8–10 ft-lb)

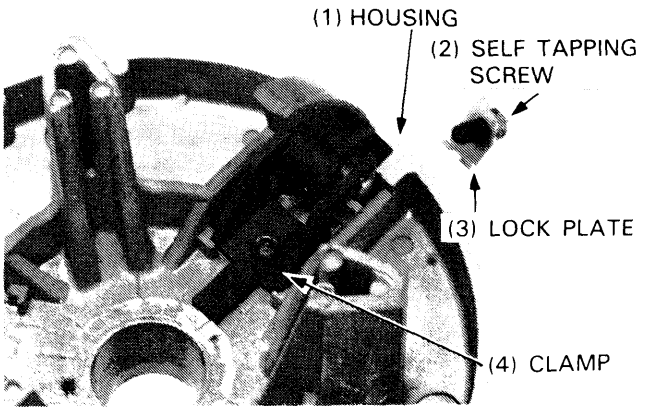
NOTE

- Double check torque on fasteners when reassembling.
- Use new lock plates.



Bend the lock plate against the bolt head.
Install the torque bearing slider onto the movable face.
Tighten the screw.

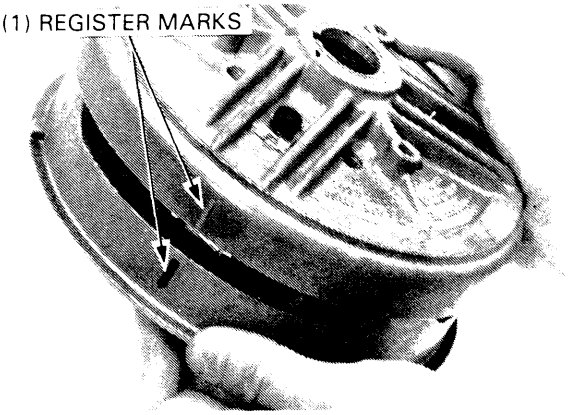
TORQUE: 2.3–3.5 N·m (0.23–0.35 kg-m, 1.7–2.5 ft-lb)



Install the weight arm assemblies on the pivot pins with thrust washer on each side of the arm.
Lay the arm and pin assemblies into their respective nests in the housing.
Install the clamp, lock plate and self-tapping screw.
Tighten the bolt.

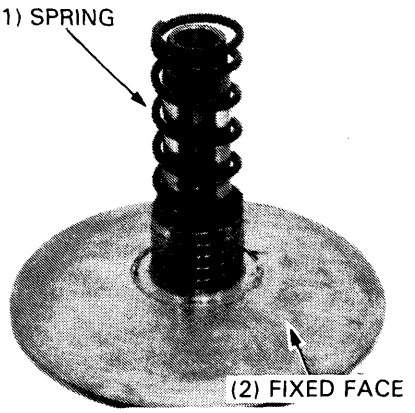
TORQUE: 11–14 N·m (1.1–1.4 kg-m, 8–10 ft-lb)

Bend the lock plate against the bolt head.

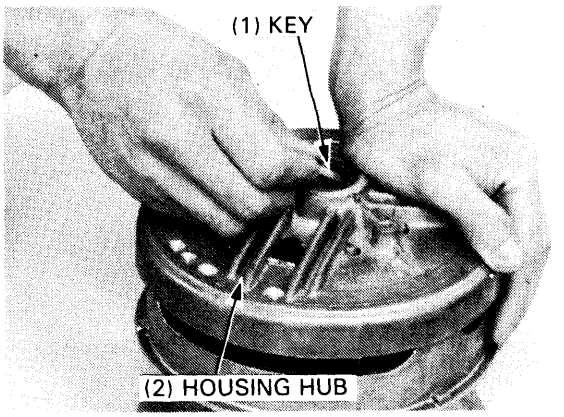


Install the housing onto the movebale face aligning the register marks.

Install the spring onto the fixed face.



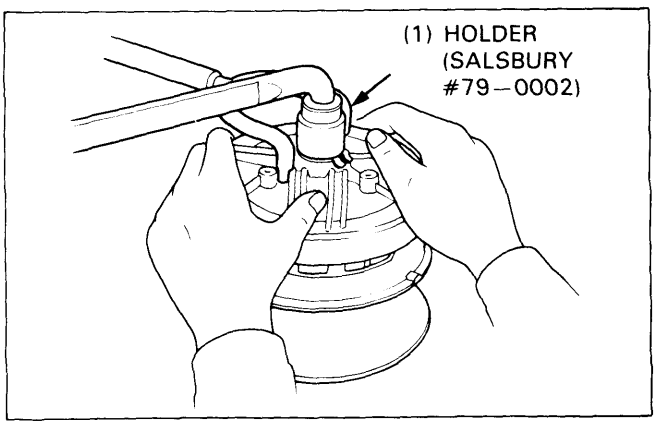
Slide the housing and movable face onto the fixed face. Line up the keyway in the housing hub with the keyway in the fixed face; press down on the housing and install the key. Install the lock plate and housing screw.



Hold the drive pulley using special holder.
Tighten the housing screw to specified torque.

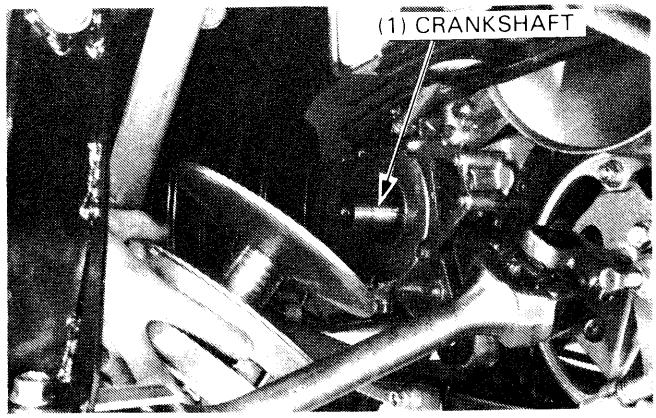
TORQUE: 120—140 N·m (12.0—14.0 kg-m, 87—101 ft-lb)

Bend lock plate tab against head of housing screw.



INSTALLATION

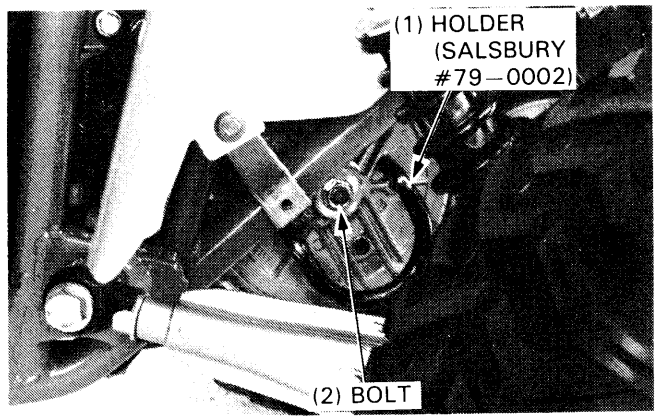
Install the drive pulley onto the crankshaft.



Hold the drive pulley using special holder.
Install the washer and bolt and tighten it.

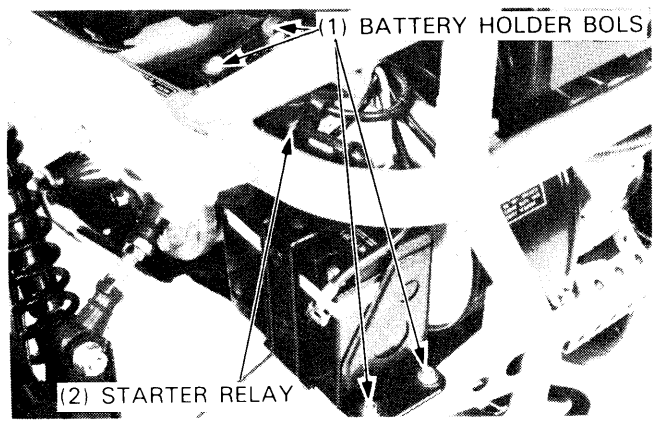
TORQUE: 60—80 N·m (6.0—8.0 kg-m, 43—58 ft-lb)

Install the following parts:
— Skid plate.
— Drive belt and rear drive belt cover.

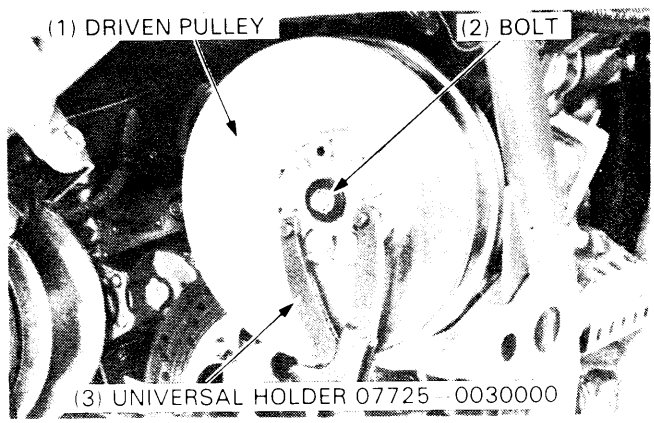


DRIVEN PULLEY REMOVAL

Disconnect the battery terminals and remove the starter relay from the battery holder.
Remove the four battery holder bolts and holder with the battery.

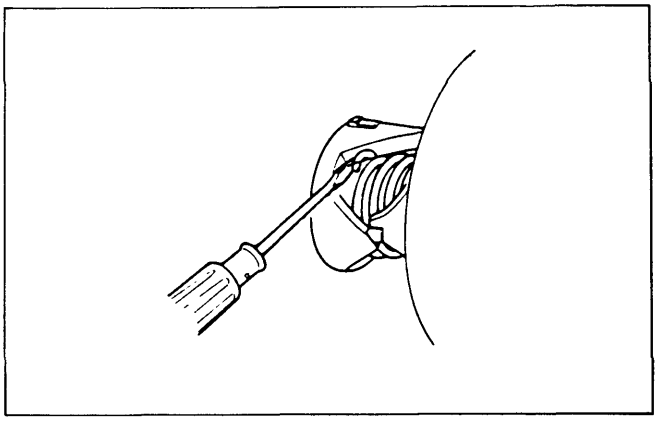


Remove the drive belt (page 9-19).
Remove the driven pulley bolt using a universal holder.
Remove the driven pulley and key from the primary shaft of the transmission.

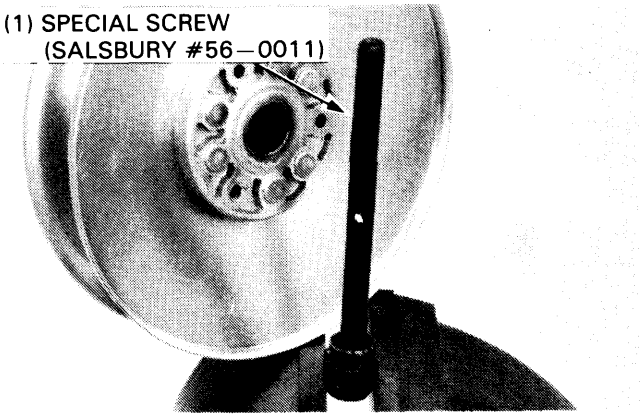


DISASSEMBLY

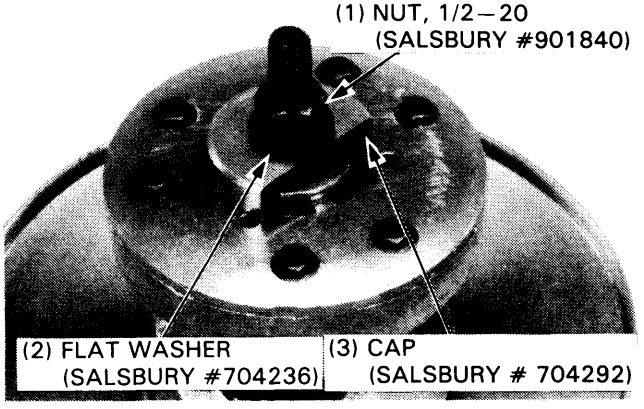
Disengage the torsion/compression spring end from the boss on the underside of the cam with a flat blade screwdriver. For total spring unloading, repeat the procedure to disengage the spring from the second boss.



Place the head of the special screw (1/2−20) in a bench vise.
Place the driven pulley on the special screw.
Align the pin of the special screw with key way in the clutch.



Place the cap washer and 1/2−20 nut on the special screw over the driven pulley so that the cutaway section of the cap exposes the snap ring holes.



Tighten the puller nut, to releave the pressure on the snap ring and remove the ring.
Loosen 1/2−20 nut allowing spring pressure to push the cam off the hub.

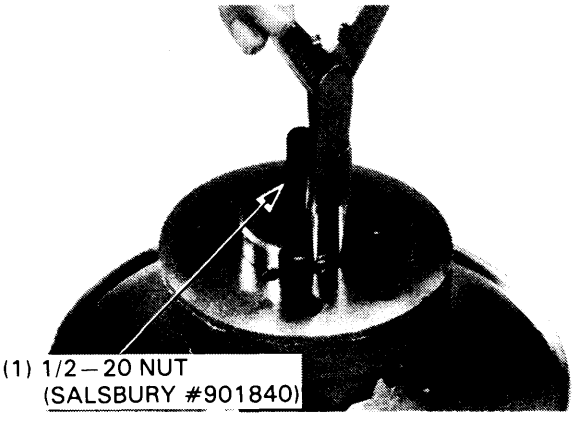
NOTE

- If the cam is tight due to tolerance variance, remove the SALSBURY tools and remove the cam from the hub using a bearing puller.

CAUTION

- *The cam under spring pressure. Use care when removing without bearing puller.*

Remove the nut, washer and cap.
Remove the morton key with diagonal pliers.
All parts are now loose and the movable face can be removed.



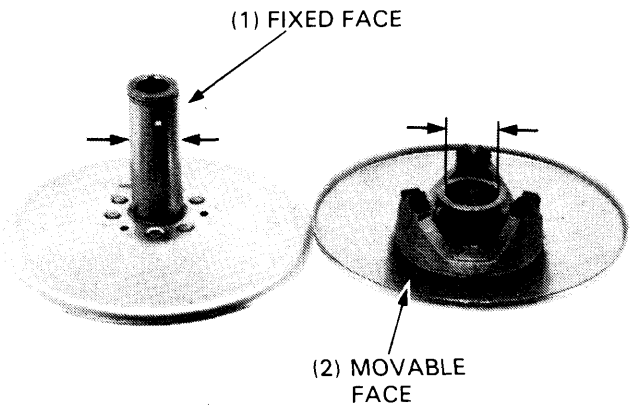
INSPECTION

Measure the O.D. of the fixed face

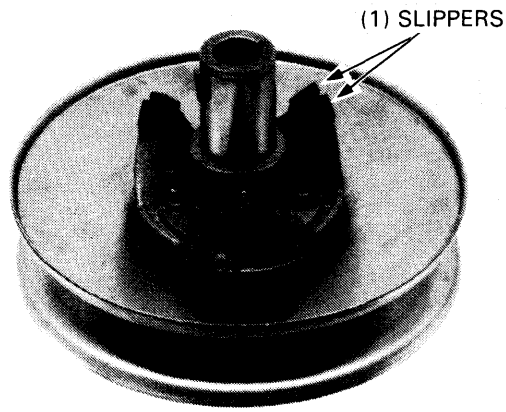
SERVICE LIMIT: 34.72 mm (1.367 in)

Measure the I.D. of the movable face bushing

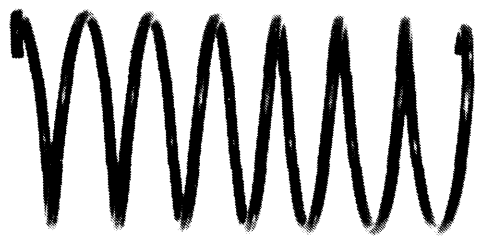
SERVICE LIMIT: 35.00 mm (1.378 in)



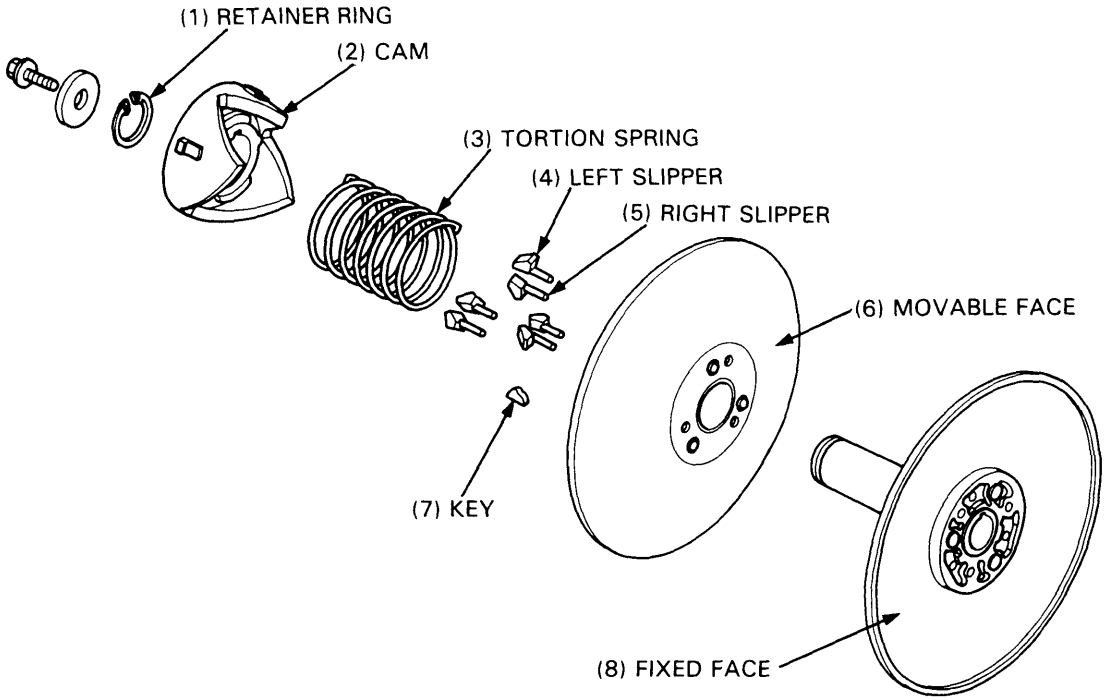
Check the right and left slippers for cracks or damage.
Check the snap ring groove and keyway for damage.



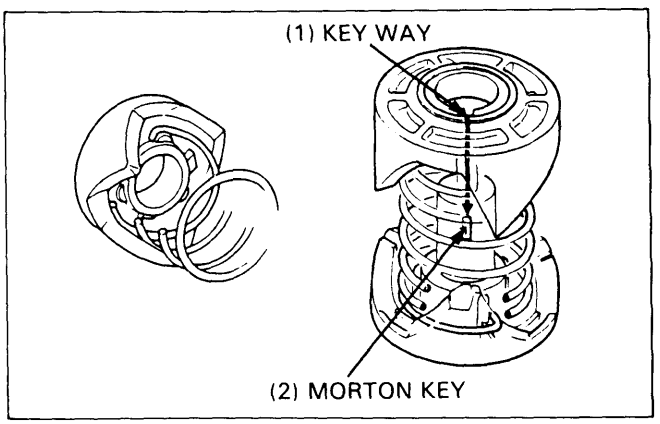
Inspect the spring for damage.



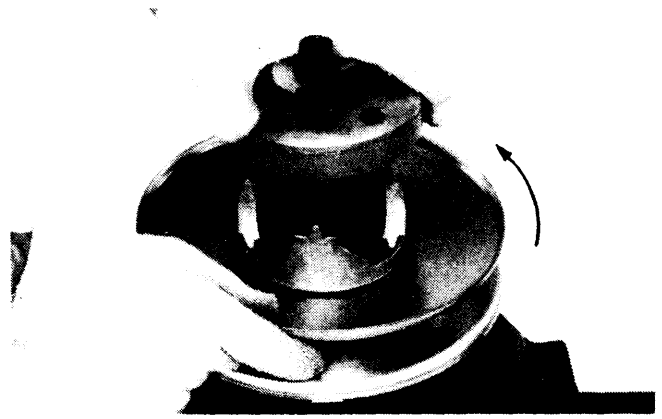
ASSEMBLY



Place the movable face over the fixed face hub and install the Morton Key.
Place the head of the special 1/2—20 bolt in a bench vise. Place the fixed and the movable face assembly on the screw (fixed face down).
Hook the spring end over any of the round bosses on the internal side of the cam. While holding the cam and spring, attach the other end of the spring to one of the three spring anchor points in the movable face. Rotate the fixed face and hub until the key and the keyway are aligned.
Place the cap, washer and 1/2—20 nut over the cam and press the cam on the hub until it engages with the key, allowing the movable face to rotate without cam contact.



Rotate the movable face counterclockwise to achieve a full 120° spring preload. Hold it in this position.



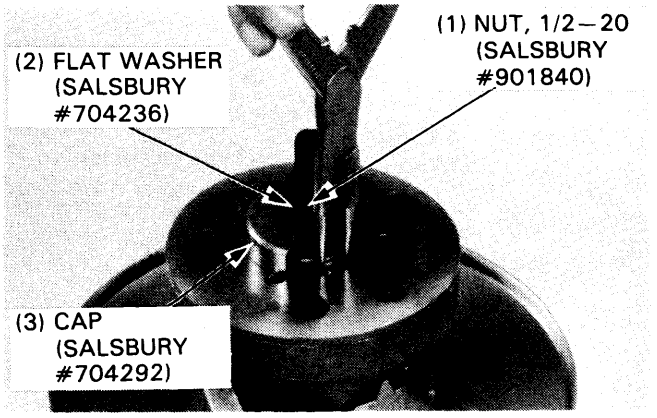
Continue depressing the cam until the cap has bottomed out on the hub end. Securely apply the cam over the ends of the movable face casting and the cam.

Install the snap ring (flattest surface up against the load side of the groove).

Be certain that the cam is against the snap ring.

Remove the 1/2—20 nut, washer and cap.

No special procedure is required when remounting.
Do not forget to install the key.

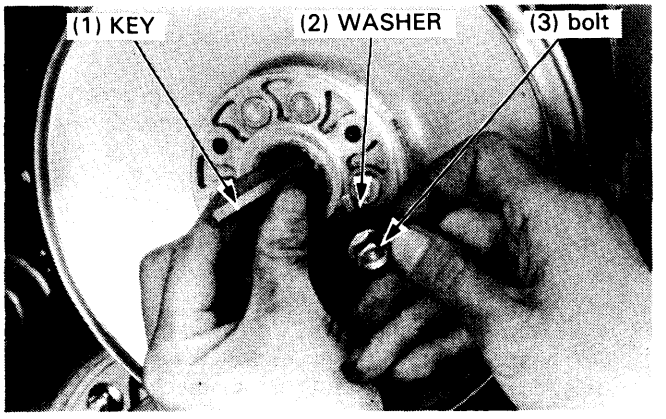


NOTE

- Keep the pulleys clean.
- Never apply grease or oil to the faces.
- When using the special screw (#56-0011), grease should be applied to the threads for ease of use and to extension of their service life.

INSTALLATION

Install the driven pulley with the key, washer and bolt onto the primary shaft of the reduction unit.

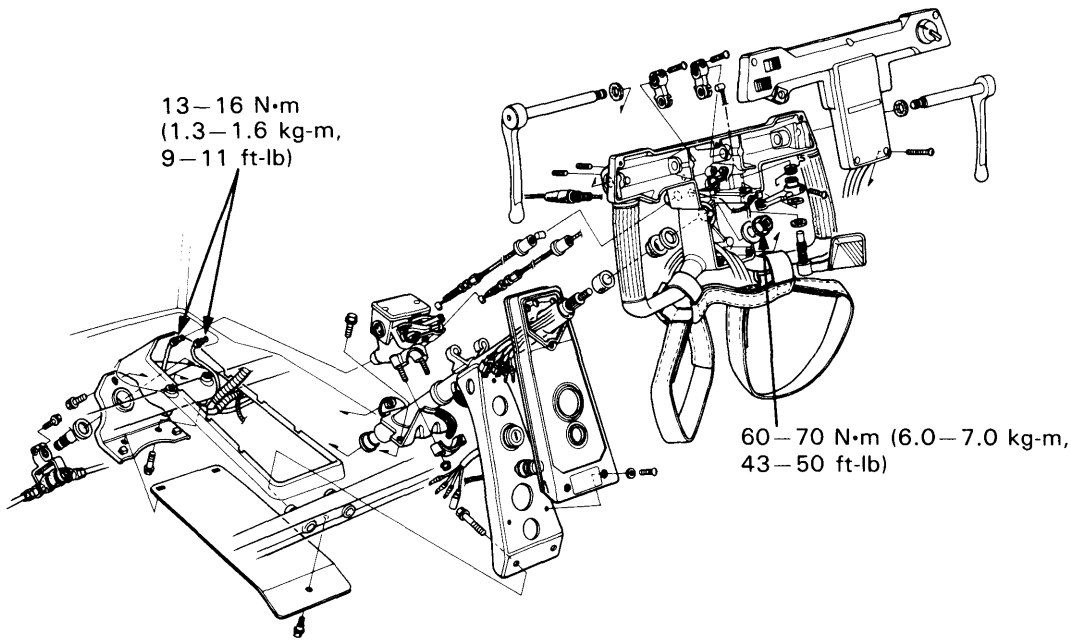


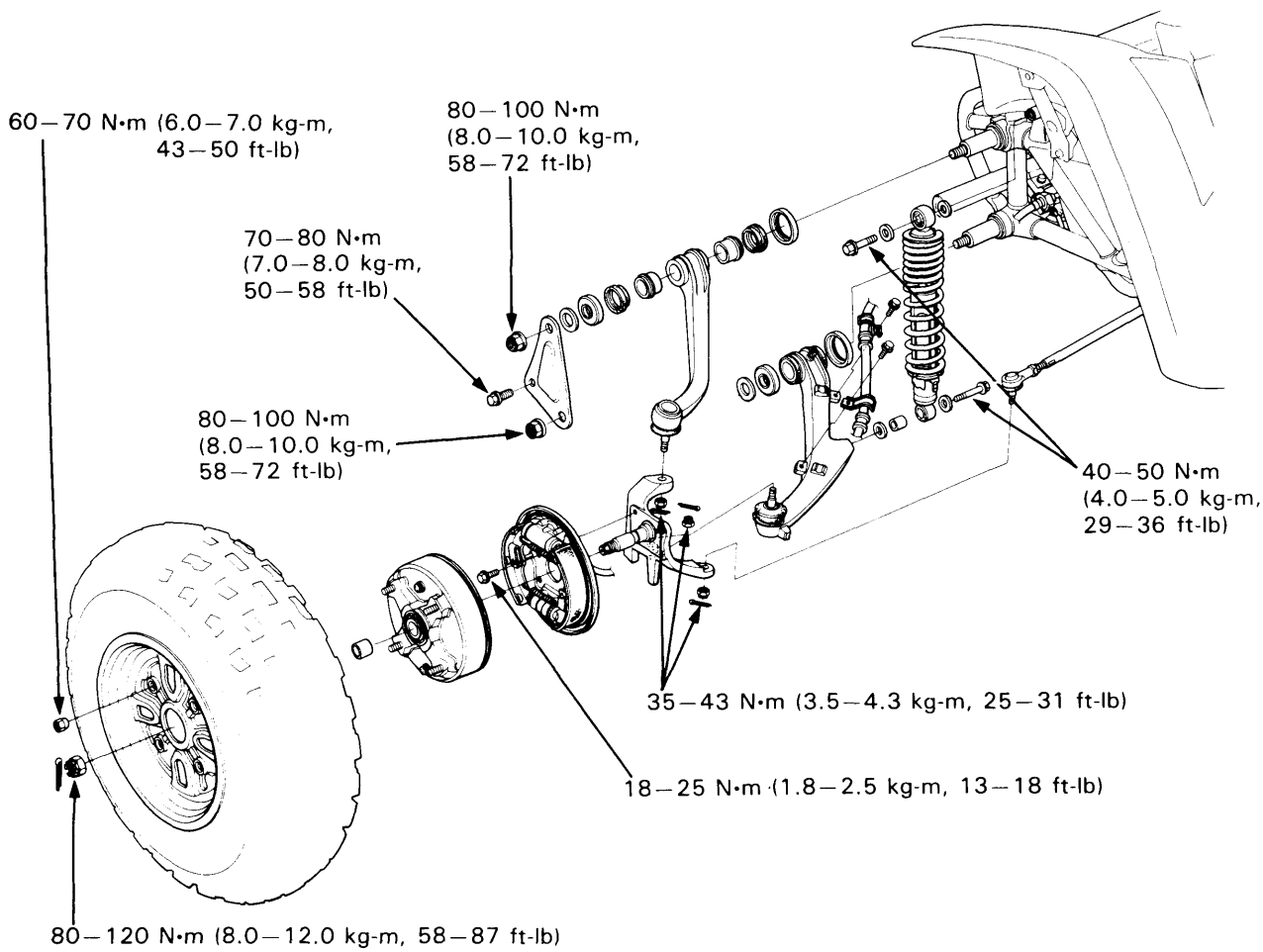
Tighten the bolt using universal holder to the specified torque.

24—30 N·m (2.4—3.0 kg-m, 17—22 ft-lb)

Install the removed parts in the reverse order of removal.

MEMO


13–16 N·m
(1.3–1.6 kg-m,
9–11 ft-lb)
60–70 N·m (6.0–7.0 kg-m,
43–50 ft-lb)


60–70 N·m (6.0–7.0 kg-m,
43–50 ft-lb)
80–100 N·m
(8.0–10.0 kg-m,
58–72 ft-lb)
70–80 N·m
(7.0–8.0 kg-m,
50–58 ft-lb)
80–100 N·m
(8.0–10.0 kg-m,
58–72 ft-lb)
40–50 N·m
(4.0–5.0 kg-m,
29–36 ft-lb)
35–43 N·m (3.5–4.3 kg-m, 25–31 ft-lb)
18–25 N·m (1.8–2.5 kg-m, 13–18 ft-lb)
80–120 N·m (8.0–12.0 kg-m, 58–87 ft-lb)

10. FRONT WHEEL/SUSPENSION/STEERING

SERVICE INFORMATION

GENERAL

- This section covers the maintenance for the front wheels, tires, shock absorbers and steering system.
- A box or workstand is required to support the FL350R.

SPECIFICATIONS

mm (in)

ITEM	STANDARD	SERVICE LIMIT
Front wheel toe-out	23 ± 7.5 (0.9 ± 0.3)	——
Front arm pivot O.D.	26.979–27.000 (1.0622–1.0629)	26.84 (1.057)
Front arm pivot bushing I.D.	27.020–27.104 (1.0638–1.0671)	27.24 (1.072)
Steering shaft bushing I.D.	18.060–18.081 (0.7110–0.7118)	18.2 (0.72)
Steering column bushing I.D.	17.6–18.0 (0.69–0.71)	18.5 (0.73)
Shock absorber spring free length	224.6 (8.84)	220.1 (8.67)

TORQUE VALUES

Front wheel nut	60–70 N·m (6.0–7.0 kg-m, 43–50 ft-lb)
Front axle nut	80–120 N·m (8.0–12.0 kg-m, 58–87 ft-lb)
Steering shaft nut	60–70 N·m (6.0–7.0 kg-m, 43–50 ft-lb)
Front shock absorber mounting bolt	40–50 N·m (4.0–5.0 kg-m, 29–36 ft-lb)
Ball joint castle nut	35–43 N·m (3.5–4.3 kg-m, 25–31 ft-lb)
Tie-rod lock nut	35–43 N·m (3.5–4.3 kg-m, 25–31 ft-lb)
Front arm pivot nut	80–100 N·m (8.0–10.0 kg-m, 58–72 ft-lb)
Center arm castle nut	35–43 N·m (3.5–4.3 kg-m, 25–31 ft-lb)
Backing plate mount bolt	18–25 N·m (1.8–2.5 kg-m, 13–18 ft-lb)
Brake pipe joint bolt	13–16 N·m (1.3–1.6 kg-m, 9–11 ft-lb)
Front bumper side plate bolt	70–80 N·m (7.0–8.0 kg-m, 50–58 ft-lb)

TOOLS

Special

Shock absorber compressor base attachment kit	07959–MB10000
Shock absorber compressor attachment	07967–KC10000
Shock absorber compressor attachment	07967–GA70101
Ball joint remover	07941–6920001

Common

Shock absorber compressor	07959—3290001
Driver	07749—0010000
Attachment, 42 x 47 mm	07746—0010300
Pilot, 20 mm	07746—0040500
Attachment, 32 x 35 mm	07746—0010100
Bearing remover shaft	07746—0050100
Bearing remover head, 20 mm	07746—0050600 or equivalent commercially available in U.S.A.

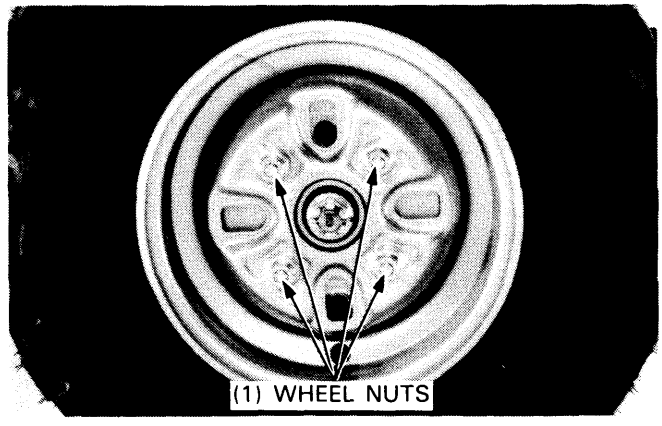
TROUBLESHOOTING

Hard steering
1. Bent steering shaft
2. Damaged steering shaft and column bushing
3. Insufficinent tire pressure
4. Damaged upper or lower arm ball joint

Steers to one side or does not track straight
1. Bent tie-rods
2. Wheel installed incorrectly

Front wheel wobbling
1. Bent rim
2. Worn front wheel bearing
3. Faulty tire
4. Axle not tightened properly

FRONT WHEEL



REMOVAL

Raise the front wheels off the ground with the jack or block under the frame.
Remove the front wheel nuts and remove the front wheel.

INSTALLATION

Install the front wheel and tighten the nuts.

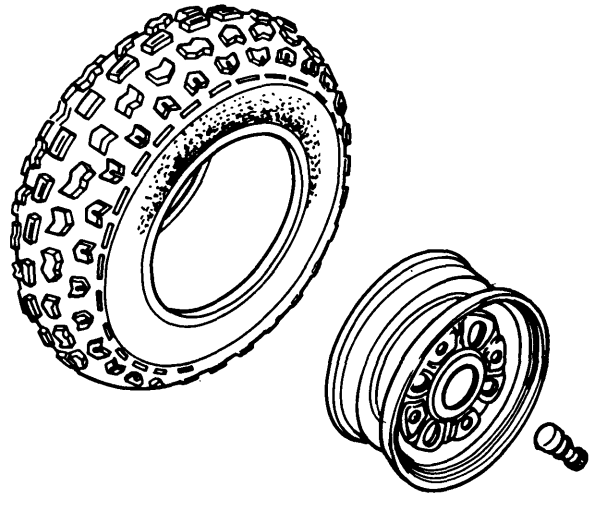
TORQUE: 60—70 N·m (6.0—7.0 kg-m, 43—51 ft-lb)

FRONT TIRE

Remove the front tire from the rim using automoble tire changer.

WARNING

- *Use only water as a lubricant when removing or mounting tires. Soap or some mounting lubricants may leave a slippery residue which cause the tire to shift on the rim and lose pressure during riding.*

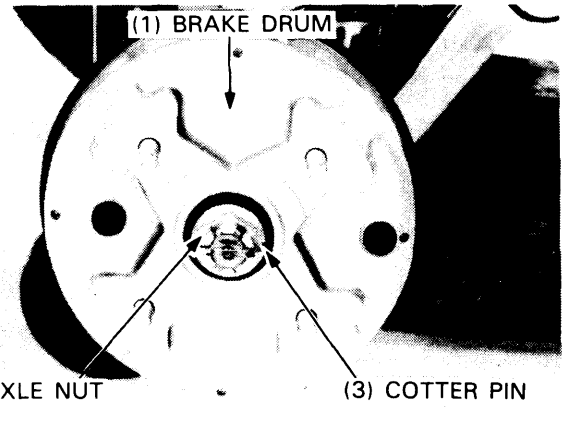


For tire repair and assembly, refer to section 11.

FRONT BRAKE DRUM

REMOVAL

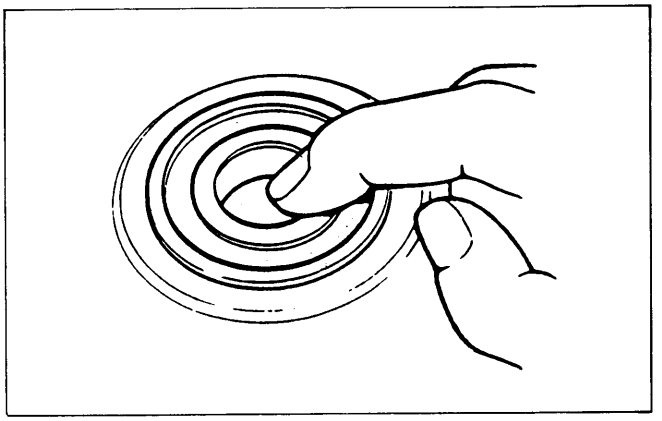
Remove the front wheel.
Remove the cotter pin and axle nut.
Remove the brake drum.



BEARING INSPECTION

Turn the inner race of each bearing with your finger. The bearings should turn smoothly and quietly. Also check that the bearing outer race fits tightly in the hub.

Remove and discard the bearings if the races do not turn smoothly, quietly, or if they fit loosely in the drum.



NOTE

- Replace drum bearings in pairs.

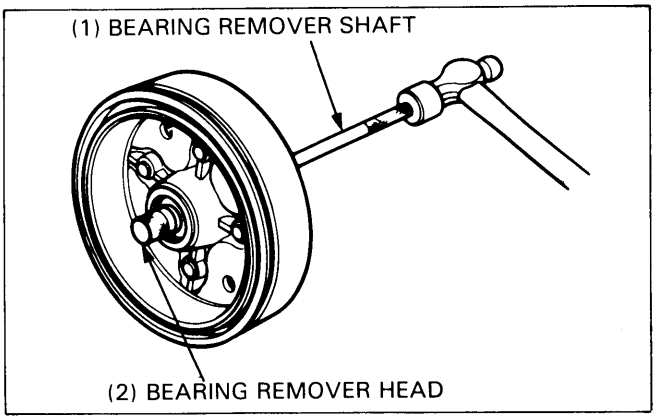
BEARING REPLACEMENT

Remove the dust seals.
Remove the brake drum bearings.

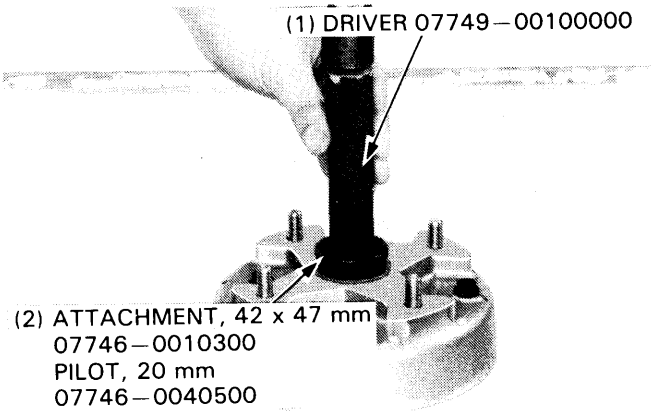
TOOL

Bearing remover shaft	**07746–0050100**
Bearing remover head, 20 mm	**07746–0050600**

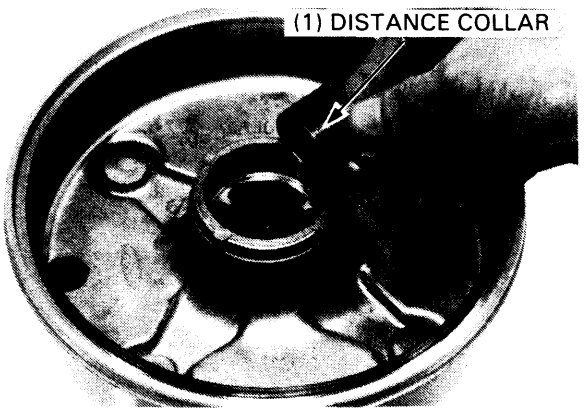
or equivalent commercially available in U.S.A.



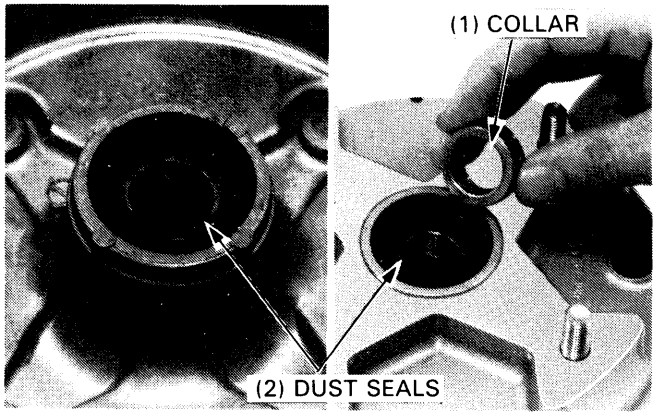
Drive in a new bearing.



Insert the distance collar into the brake drum.
Drive in a new bearing from the other side.



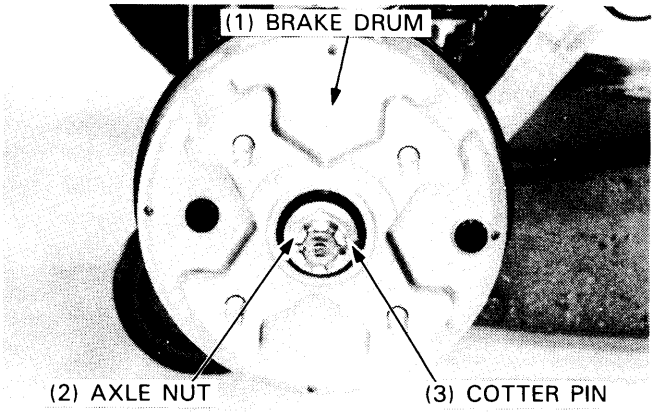
Install the dust seals and the collar.



INSTALLATION

Install the front brake drum onto the axle.
Tighten the axle nut and install a new cotter pin.

TORQUE: 80—120 N·m (8.0—12.0 kg-m, 58—87 ft-lb)

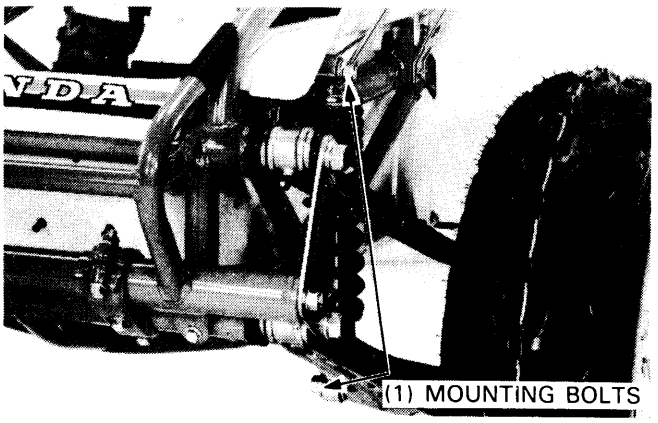


FRONT SHOCK ABSORBER

REMOVAL

Raise the front wheels off the ground by placing a block under the frame.

Remove the upper and lower shock absorber mounting bolts and shock absorber.



DISASSEMBLY

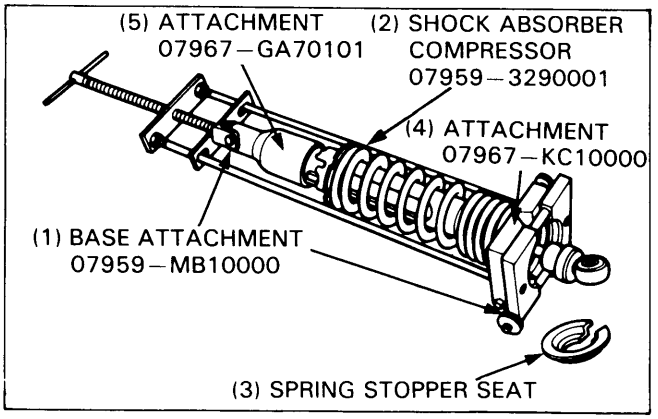
Replace base and guide of the shock absorber compressor with attachment, 07959—MB10000.

CAUTION

- *Be sure the base is adjusted correctly for the spring seat and the clevis pin is in all the way.*

Set the shock in the compressor with attachments as shown and compress the spring by turning the compressor handle.

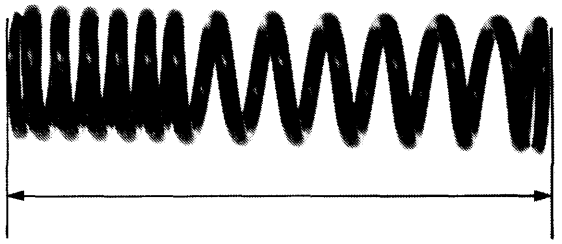
Remove the spring stopper seat, spring, spring guide and spring adjuster.



SPRING FREE LENGTH

Measure the spring free length.

SERVICE LIMIT: 220.1 mm (8.67 in)



ASSEMBLY

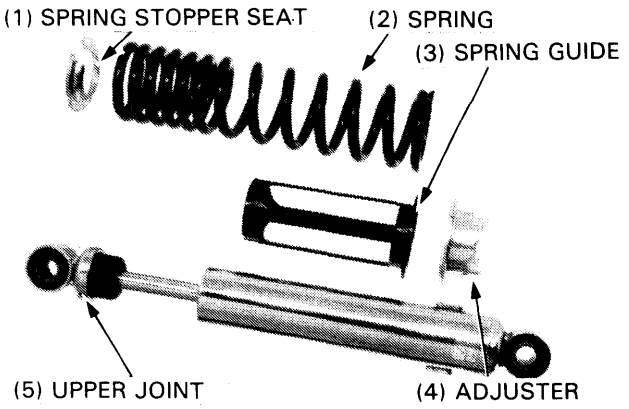
Place the spring adjuster, spring guide and spring onto the shock damper. Set the adjuster in the softest position.

Set the shock in the compressor, compress the spring and install the spring stopper seat.

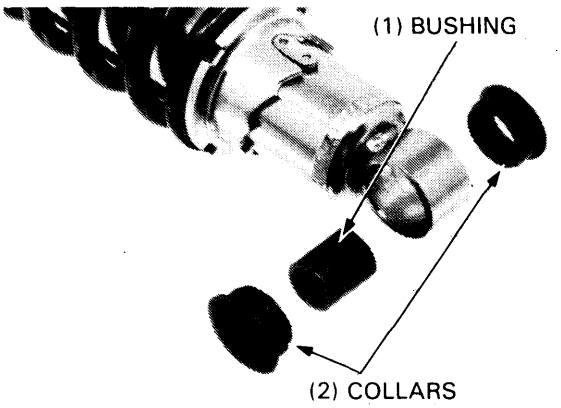
NOTE

- Install the spring with its tightly wound coil end facing up.

Align the spring stopper seat with the upper joint while releasing the compressor.



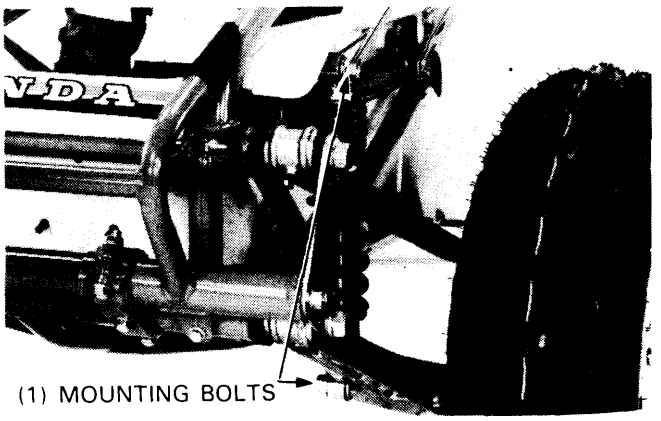
Apply grease to the lower mount bushing and collars and install them.



INSTALLATION

Install the front shock absorber onto the frame and lower front arm.
Tighten the upper and lower mounting bolts to the specified torque.

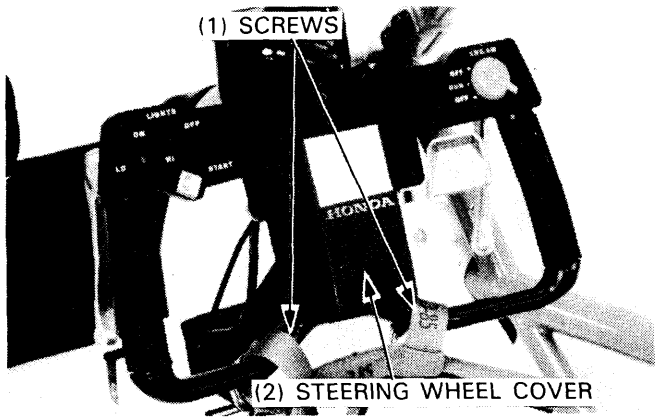
TORQUE: 40—50 N·m (4.0—5.0 kg-m, 29—36 ft-lb)



STEERING WHEEL

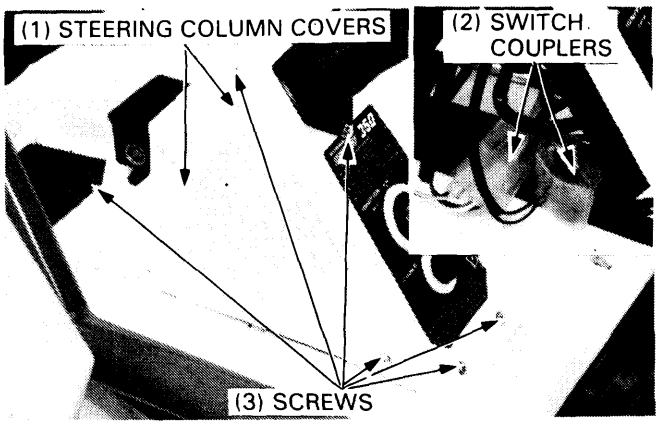
REMOVAL

Remove the steering wheel cover mounting screws and cover.

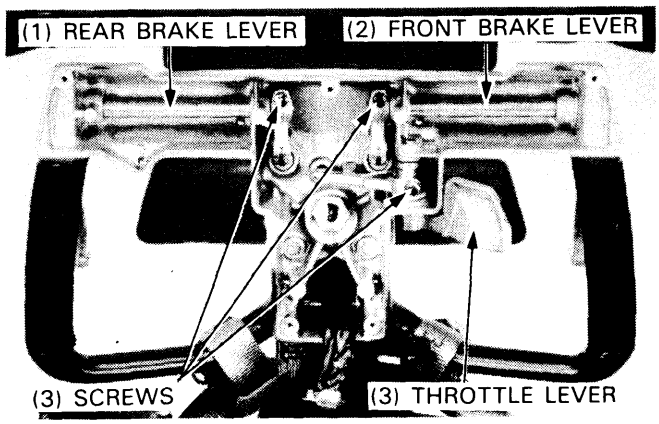


Remove the steering column covers and switch under cover by removing the screws.

Disconnect the switch couplers.

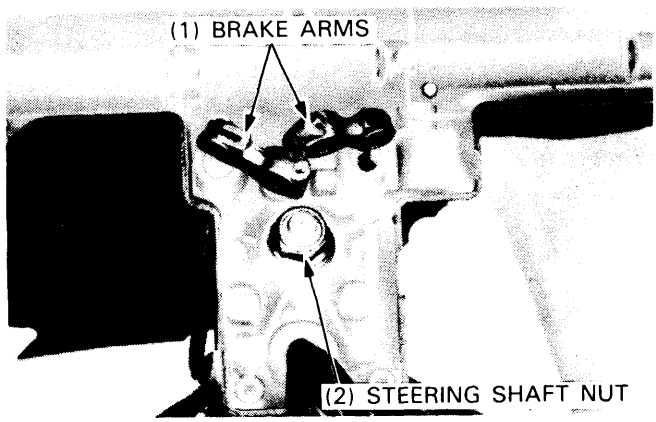


Remove the front, rear brake lever and the throttle lever by removing the screws.



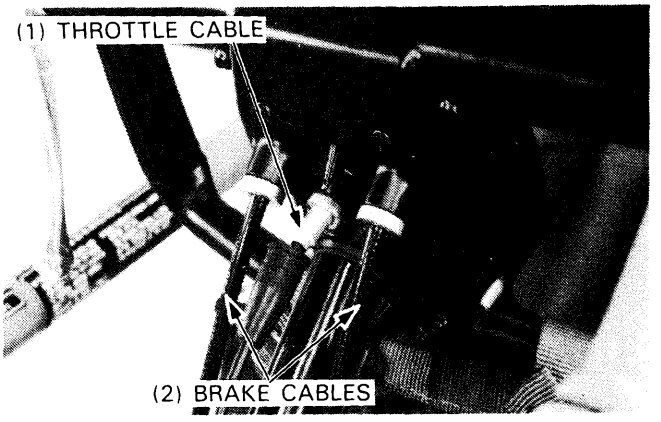
Disconnect the brake arms and throttle arm from the cables.

Remove the steering shaft nut.



Loosen the throttle adjusting lock nut, then remove the throttle cable and brake cables from the steering wheel.

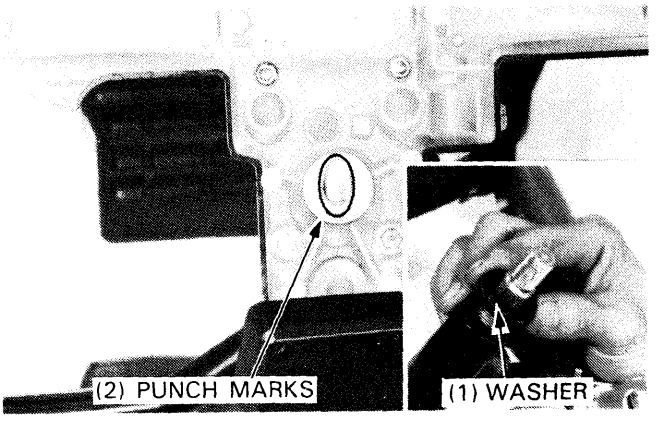
Remove the steering wheel from the steering shaft.



INSTALLATION

Install the steering wheel by aligning the punch marks on the steering shaft and steering wheel.

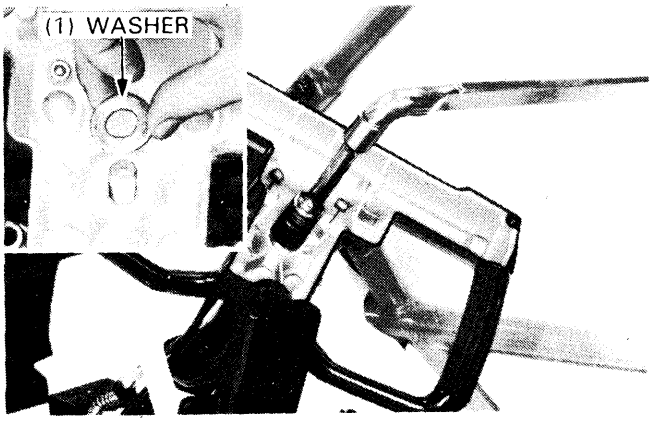
Install the washer onto the steering shaft.



Install the washer and steering shaft nut.

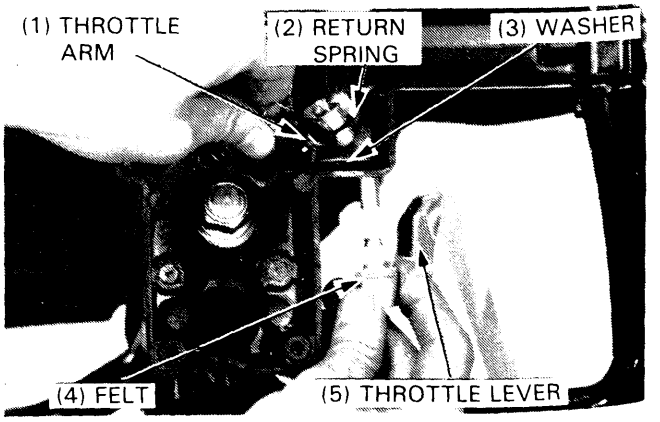
Tighten the steering shaft nut to the specified torque.

TORQUE: 60—70 N·m (6.0—7.0 kg-m, 43—50 ft-lb)



Connect the throttle cable to the throttle arm.

Position the return spring, throttle arm, washer, felt and throttle lever as shown; assemble them by aligning the wide groove on the throttle lever with the wide tooth on the throttle arm.

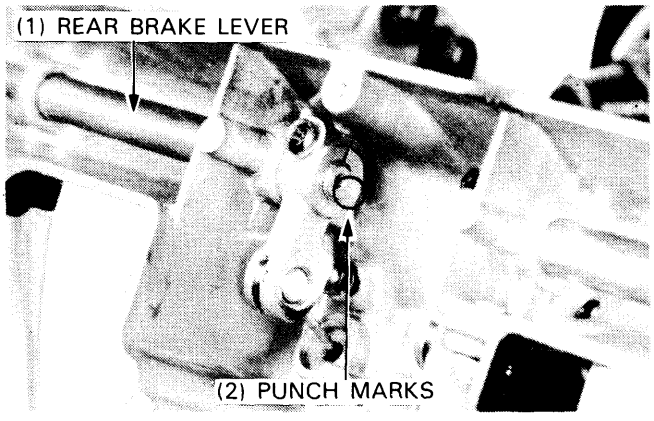


Align the punch marks on the brake levers and arms then install them onto the steering wheel.

Adjust the brake lever height (page 3-11).

Install the parts in the reverse order of removal.

Adjust brake lever free play (page 3-10) and throttle lever free play (page 3-6).



STEERING SHAFT/COLUMN

REMOVAL

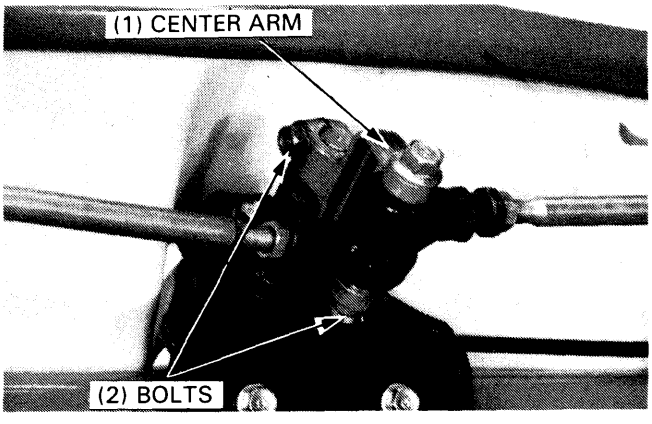
Drain brake system (page 12-3).

CAUTION

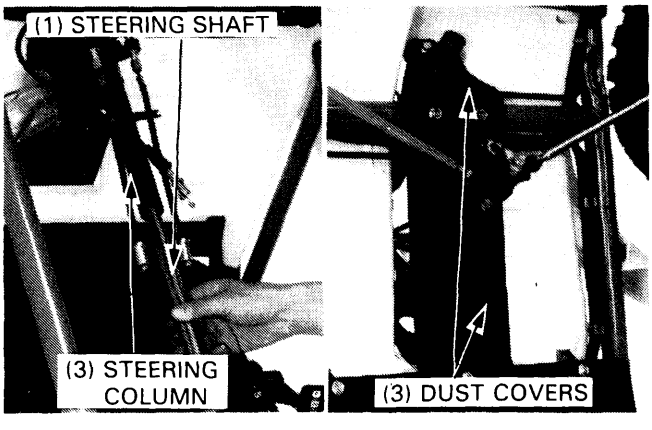
- *Avoid spilling fluid on painted surface, plastic lenses or rubber parts as it can cause damage.*

Remove the steering wheel (page 10-7).

Remove the steering center arm by removing the cotter pin, castle nut and bolts.



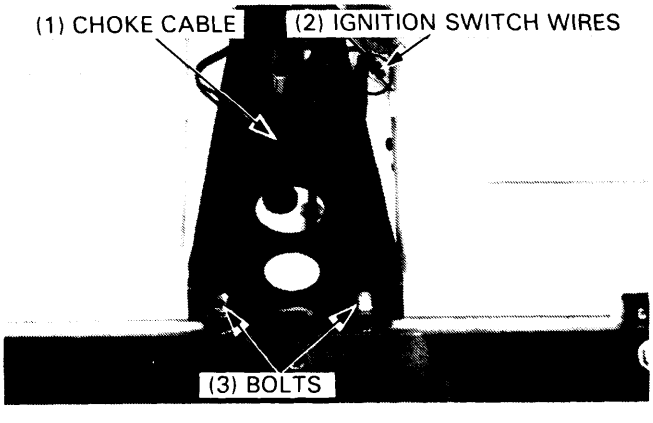
Remove the steering shaft from the steering column.
Remove the dust covers.



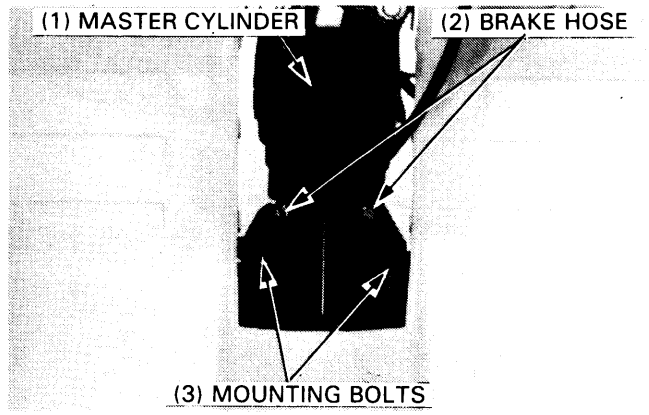
Disconnect the ignition switch wires.

Loosen the choke knob lock nut and remove the starter valve at the carburetor.
Remove the choke cable from the frame.

Remove the steering column lower mounting bolts.



Disconnect the brake hose from the master cylinder.
Remove the steering column upper mounting bolts and steering column from the frame.
Remove the master cylinder from the steering column.



STEERING COLUMN INSPECTION

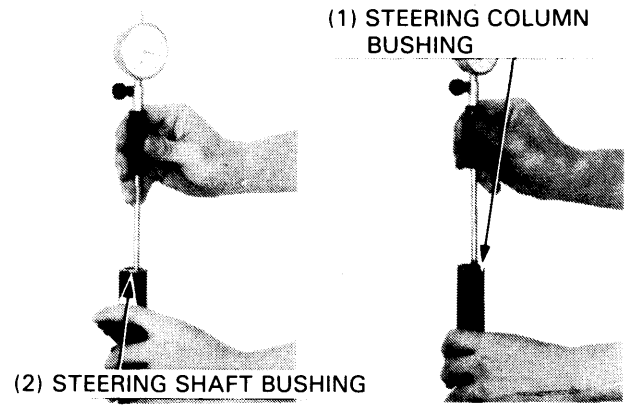
Check for wear or damage of the steering column bushing.

Measure the steering shaft bushing I.D.

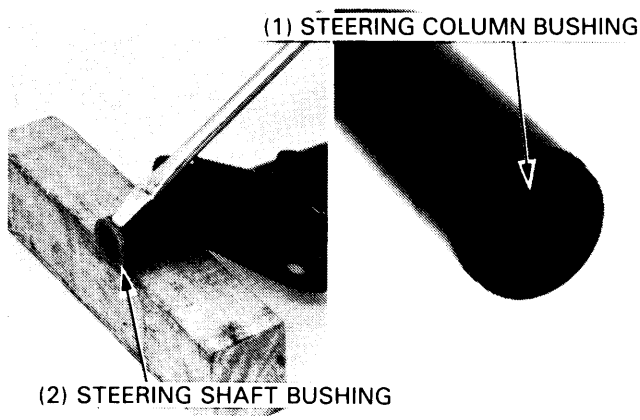
SERVICE LIMIT: 18.2 mm (0.72 in)

Measure the steering column bushing I.D.

SERVICE LIMIT: 18.5 mm (0.73 in)



Replace, if necessary.

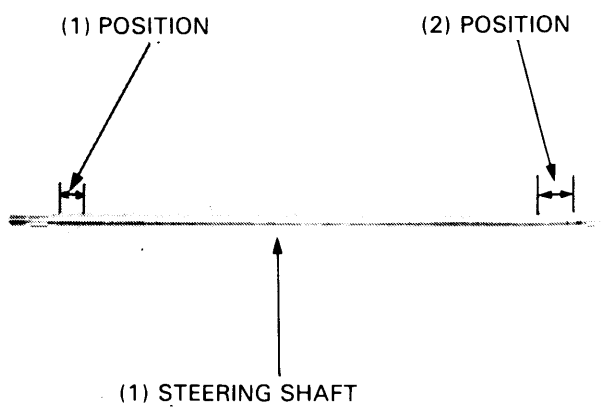


STEERING SHAFT INSPECTION

Measure the steering shaft O.D.

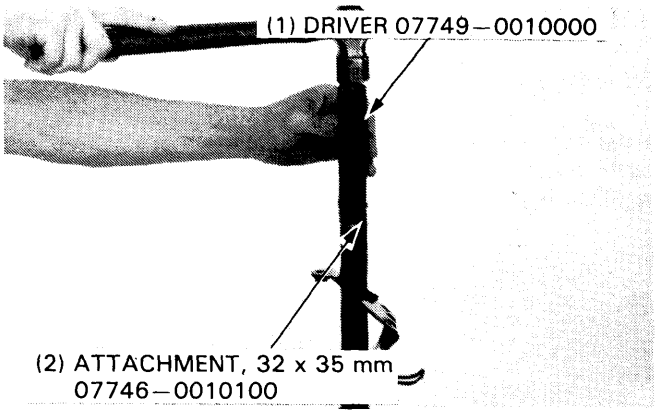
(A) POSITION
SERVICE LIMIT: 17.86 mm (0.703 in)

(B) POSITION
SERVICE LIMIT: 17.86 mm (0.703 in)



ASSEMBLY

Drive in a new bushings into the column as shown.

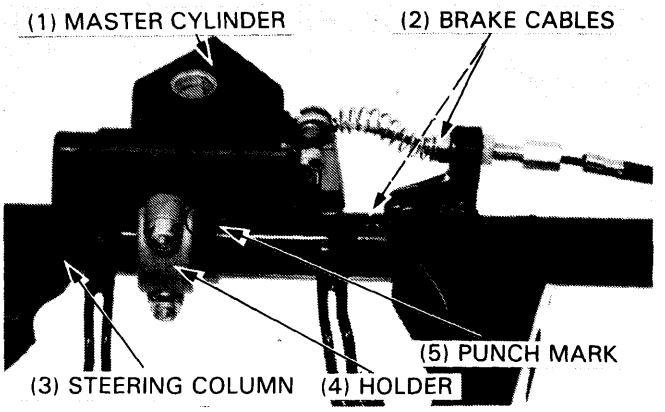


INSTALLATION

Install the master cylinder and brake cables to the steering column.

Align the punch mark on the steering column with the end of the master cylinder holder.

Tighten the holder bolts securely.



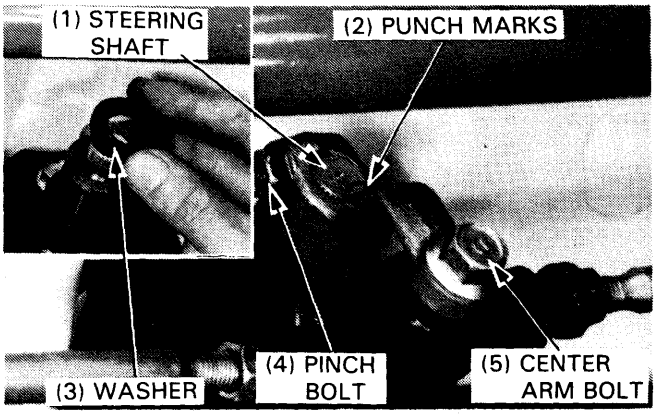
Install the steering column and dust covers onto the frame and insert the steering shaft into the steering column.

Install the washer and center arm onto the steering shaft aligning the punch marks on the steering shaft and center arm.

Install and tighten the arm pinch bolt.
Align the tie-rod ends with the center arm, install the center arm bolt and tighten the castle nut.

TORQUE: 35–43 N·m (3.5–4.3 kg-m, 25–31 ft-lb)

Install a new cotter pin.



Install the washer and steering wheel (page 10-8).
Connect the switch couplers, connectors and brake pipes.

TORQUE: 13–16 N·m (1.3–1.6 kg-m, 9–11 ft-lb)

Fill and bleed the brake hydraulic system (page12-3).

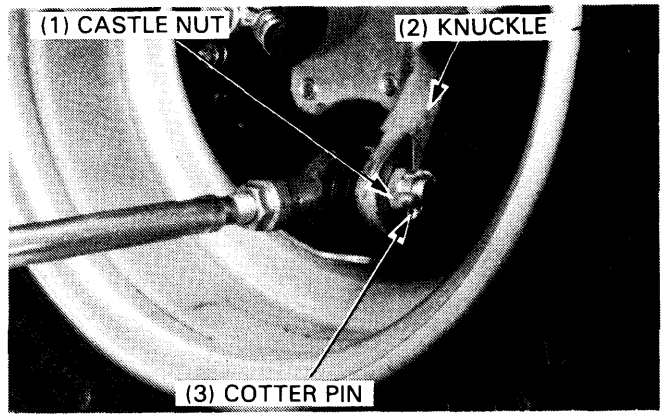
Check the following:
– throttle lever (page 3-6).
– brake lever (page 3-10).

Install the steering column covers.

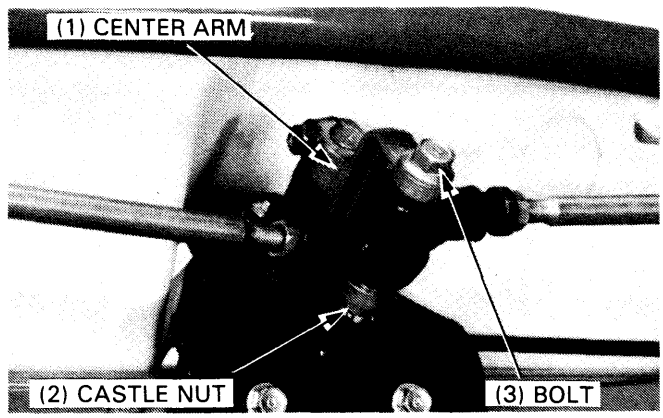
TIE-ROD

REMOVAL

Raise the front wheels off the ground by placing a block under the frame.
Remove the cotter pin and castle nut from the knuckle.



Remove the cotter pin, castle nut and bolt from the steering center arm.
Remove the tie-rod.



DISASSEMBLY

Loosen the lock nuts and remove the spherical joint and ball joint from the tie-rod.

INSPECTION

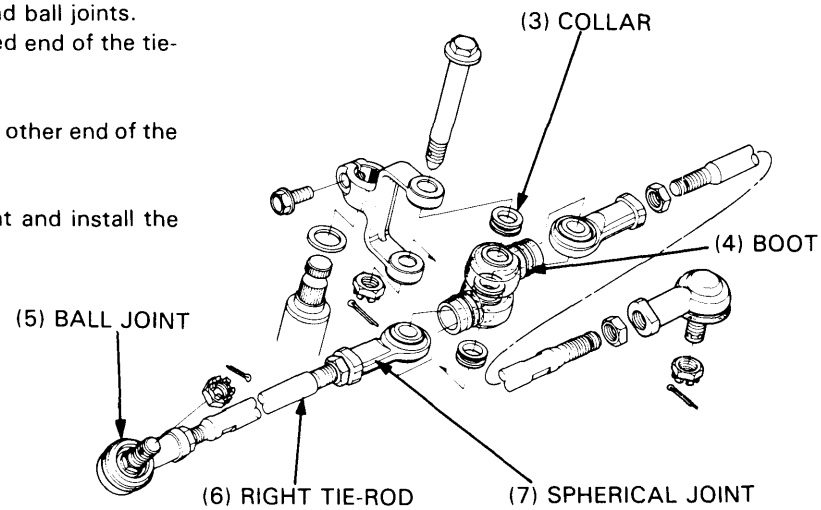
Inspect the tie-rod, tie-rod ball joint, spherical joint and boots for wear or damage.

ASSEMBLY

Apply grease to the inside of the spherical and ball joints.
Install the lock nut and ball joint onto the flated end of the tie-rod and screw in the ball joint.

Install the lock nut and spherical joint onto the other end of the tie-rod and screw in the spherical joint.

Install the rubber boot over the spherical joint and install the collars.



INSTALLATION

NOTE

- Install the right tie-rod spherical joint above the left tie-rod spherical joint.

Install the tie-rod onto the knuckle and tighten the castle nut.

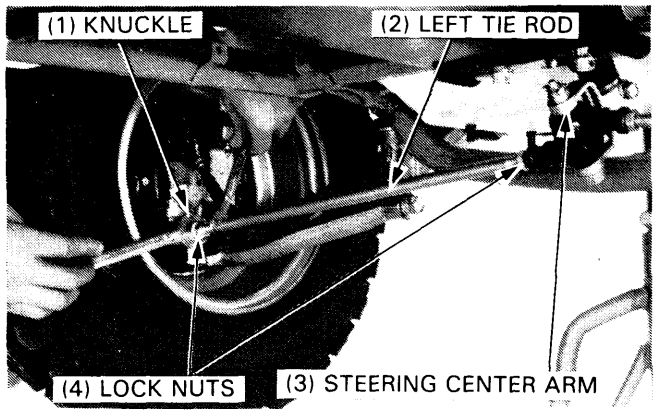
TORQUE: 35–43 N·m (3.5–4.3 kg-m, 25–31 ft-lb)

Install a new cotter pin.
Connect the tie-rods to the center arm with the bolt and castle nut and tighten the nut.

TORQUE: 35–43 N·m (3.5–4.3 kg-m, 25–31 ft-lb)

Install a new cotter pin.
Adjust toe-out (page 3-7) and tighten the lock nut.

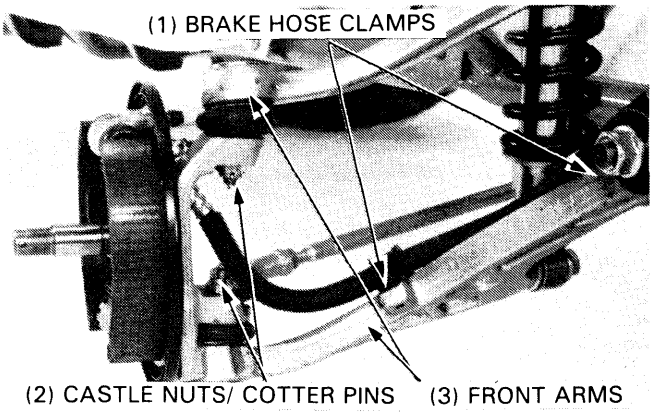
TORQUE: 35–43 N·m (3.5–4.3 kg-m, 25–31 ft-lb)



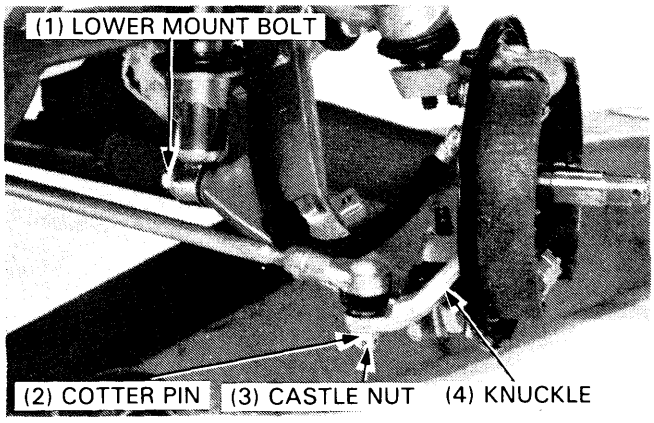
FRONT ARM/KNUCKLE

REMOVAL

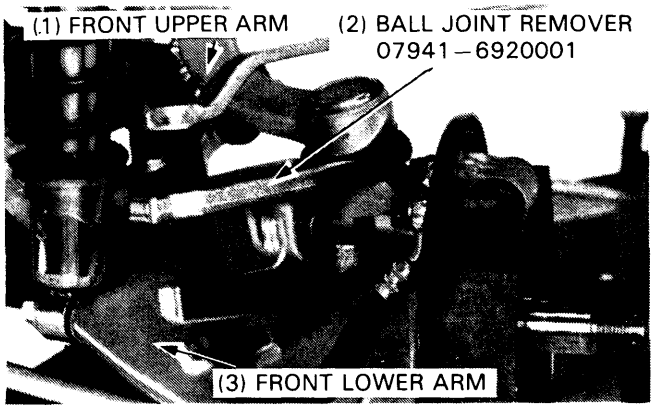
Remove the front wheel and brake drum (page 10-3).
Disconnect the brake hose from the front arm by removing the hose clamps.
Remove the cotter pins and castle nuts from the front arms.



Remove the cotter pin, castle nut and disconnect the tie-rod from the knuckle.
Remove the shock lower mount bolt.

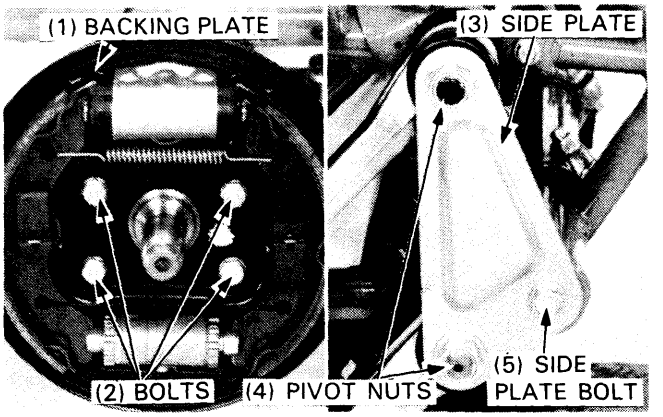


Disconnect the knuckle from the front upper and lower arms using the special tool.



Remove the knuckle from the backing plate by removing four bolts.

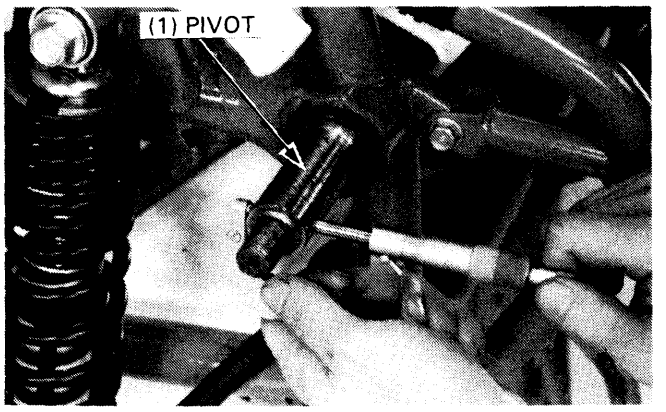
Remove the pivot nuts and side plate bolt from the side plate. Remove the side plate, front arms and outer dust seal caps from the pivots.



INSPECTION

Measure the upper and lower front arm pivot O.D.

SERVICE LIMIT: 26.84 mm (1.057 in)

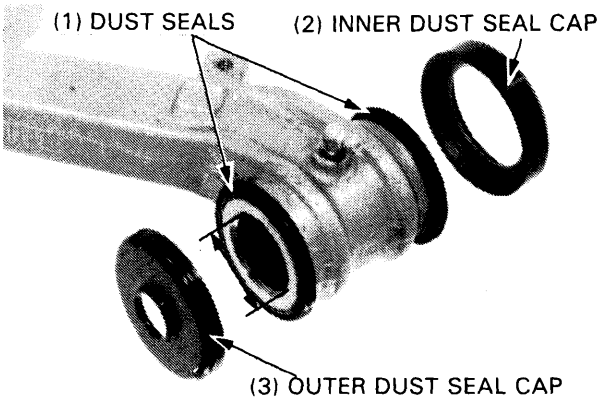


Check the pivot bushing and dust seals for wear or damage.

Measure the bushing I.D.

SERVICE LIMIT: 27.24 mm (1.072 in)

Replace, if necessary.



Remove the clip and boot.

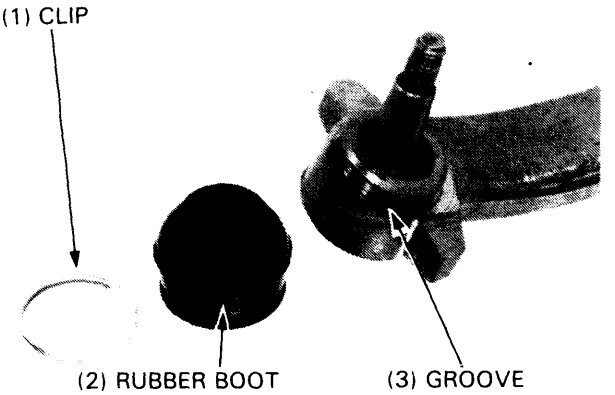
Check the front arm ball joint and rubber boot for damage.

Apply grease to the inside of the ball joint.

Install the boot and clip.

NOTE

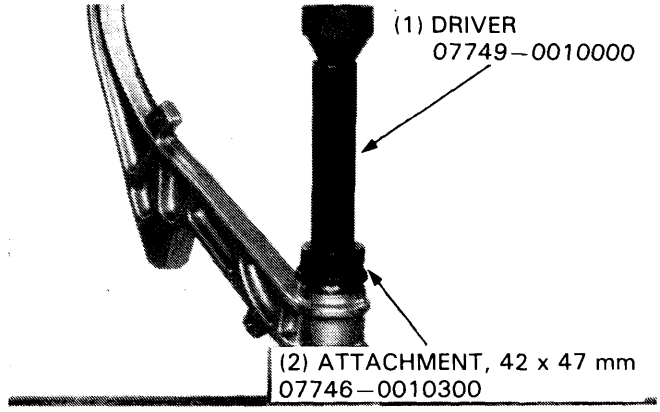
- Be sure that the boot is seated in the groove.



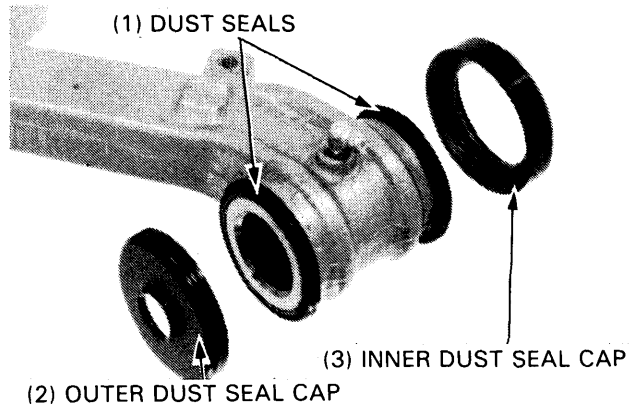
BUSHING REPLACEMENT

Remove the dust seals from the front arm.

Drive the inner and outer bushings out of the front arm.
Press new outer and inner bushings into the front arm.
Grease the bushings.



Install new dust seals onto the front arm and apply grease to the sealing lips.
Install the inner and outer dust seal caps.



INSTALLATION

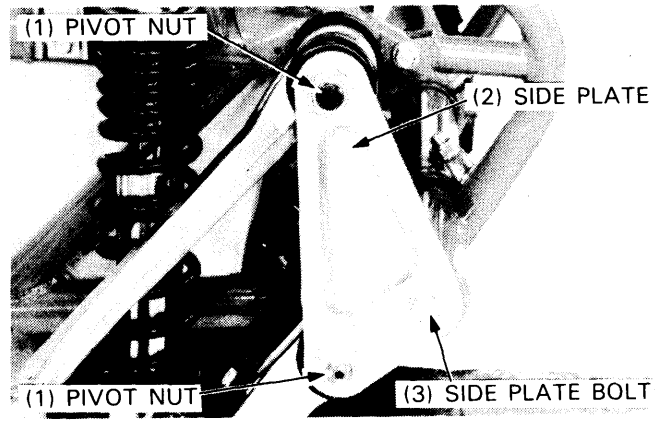
Install the upper and lower front arms onto the pivots.

Install the side plate and tighten the front arm pivot nuts.

TORQUE: 80–100 N·m (8.0–10.0 kg-m, 57–72 ft-lb)

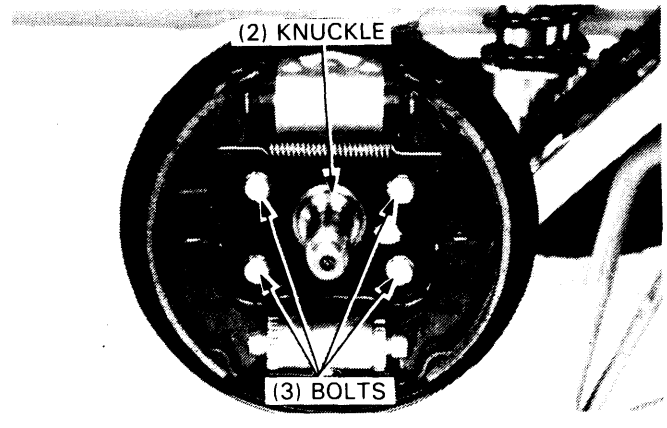
Tighten the side plate bolt.

TORQUE: 70–80 N·m (7.0–8.0 kg-m, 51–59 ft-lb)



Install the knuckle onto the brake backing plate and tighten the bolts.

TORQUE: 18–25 N·m (1.8–2.5 kg-m, 13–18 ft-lb)

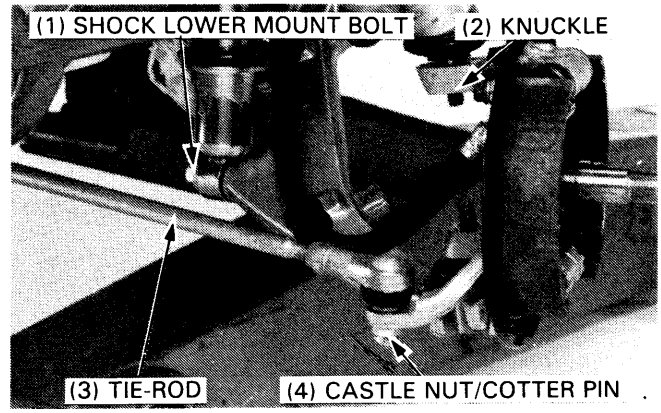


Connect the tie-rod to the knuckle and tighten the castle nut.

TORQUE: 35—43 N·m (3.5—4.3 kg-m, 25—31 ft-lb)

Install a new cotter pin.
Install and tighten the shock lower mount bolt.

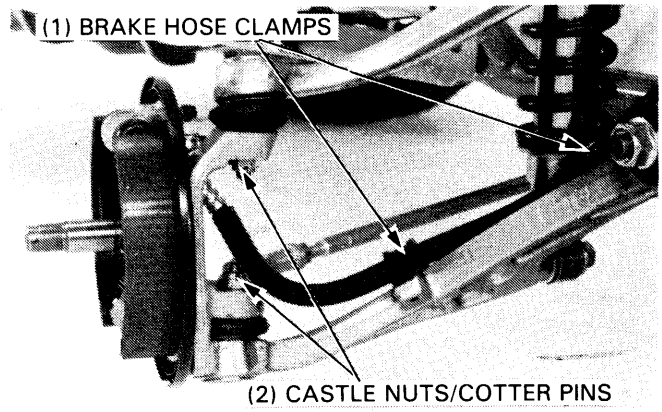
TORQUE: 40—50 N·m (4.0—5.0 kg-m, 29—36 ft-lb)



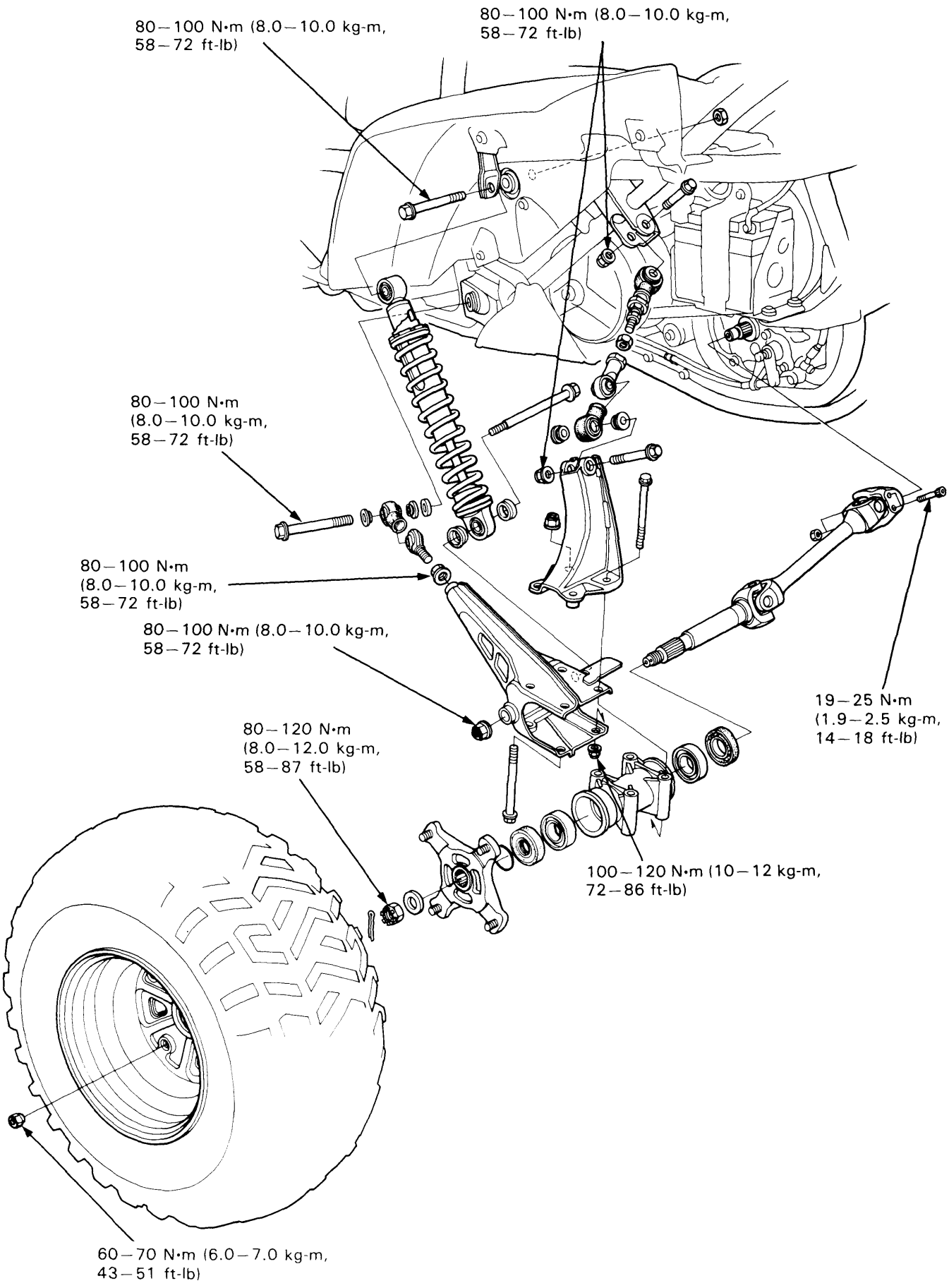
Attach the front arms to the knuckle using the castle nuts.

TORQUE: 35—43 N·m (3.5—4.3 kg-m, 25—31 ft-lb)

Install new cotter pins.
Secure brake hose to the lower front arm using the clamps and bolts.
Install the front wheels (page 10-3).



MEMO


80—100 N•m (8.0—10.0 kg-m, 58—72 ft-lb)
80—100 N•m (8.0—10.0 kg-m, 58—72 ft-lb)
80—100 N•m (8.0—10.0 kg-m, 58—72 ft-lb)
80—100 N•m (8.0—10.0 kg-m, 58—72 ft-lb)
80—100 N•m (8.0—10.0 kg-m, 58—72 ft-lb)
19—25 N•m (1.9—2.5 kg-m, 14—18 ft-lb)
80—120 N•m (8.0—12.0 kg-m, 58—87 ft-lb)
100—120 N•m (10—12 kg-m, 72—86 ft-lb)
60—70 N•m (6.0—7.0 kg-m, 43—51 ft-lb)

11. REAR WHEEL/SUSPENSION/RADIUS ARM

SERVICE INFORMATION

GENERAL

- This section covers maintenace for rear wheel, tire, rear shock absorber, radius arm, bearing housing and drive shaft.

SPECIFICATIONS

mm (in)

ITEM		STANDARD	SERVICE LIMIT
Rear wheel rim runout	Radial	—	2.0 (0.08)
	Axial	—	2.0 (0.08)
Rear shock absorber spring free length		292.4 (11.512)	286.5 (11.28)
Rear wheel	toe-in	10 ± 7.5 (0.4 ± 0.3)	—
	camber	0° ± 1°	—

11

TORQUE VALUES

Rear wheel nut	60—70 N·m (6.0—7.0 kg-m, 43—51 ft-lb)
Rear axle nut	80—120 N·m (8.0—12.0 kg-m, 58—87 ft-lb)
Shock absorber upper bolt	80—100 N·m (8.0—10.0 kg-m, 58—72 ft-lb)
Shock absorber lower nut	80—100 N·m (8.0—10.0 kg-m, 58—72 ft-lb)
Shock absorber damper lock nut	25—40 N·m (2.5—4.0 kg-m, 18—29 ft-lb) apply a locking agent
Rod end lock nut	80—100 N·m (8.0—10.0 kg-m, 58—72 ft-lb)
Radius arm pivot bolt	80—100 N·m (8.0—10.0 kg-m, 58—72 ft-lb)
Drive shaft bolt	19—25 N·m (1.9—2.5 kg-m, 14—18 ft-lb)
Upper arm stay nut	100—120 N·m (10.0—12.0 kg-m, 72—86 ft-lb)
Upper arm nut	80—100 N·m (8.0—10.0 kg-m, 58—72 ft-lb)

TOOLS

Special		
Shock absorber compressor attachment	07967—KC10000	Not available in U.S.A.
Shock absorber compressor attachment kit	07959—MB10000	
Common		
Shock absorber compressor	07959—3290001	
Driver	07749—0010000	
Attachent, 52 x 55 mm	07746—0010400	
Pilot, 25 mm	07746—0040600	
Pilot, 30 mm	07746—0040700	
Tire bead breaker	07772—0050000	
— Breaker arm compressor	07772—0050100	Universal bead breaker GN-AH-958-BBI (U.S.A. only)
— Breaker arm	07772—0050200	
Adapter plate	07972—VM0010A	(U.S.A. only)

TROUBLESHOOTING

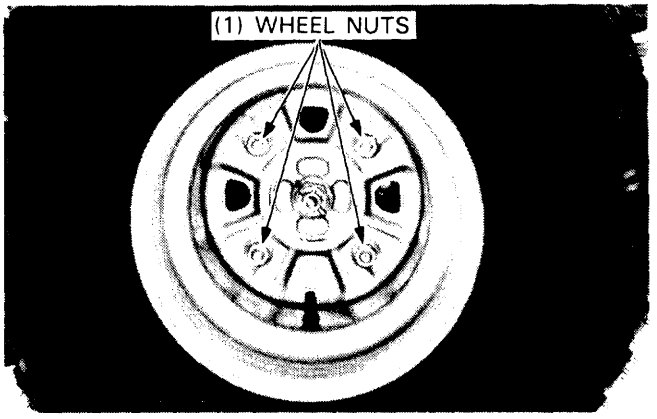
Wobble or vibration in FL350R
1. Bent rim
2. Loose wheel nuts
3. Damaged tire
4. Axle not tightened properly
5. Worn drive shaft bearing
6. Bent radius arm or frame

Soft suspension
1. Shock damper oil leaks
2. Weak shock spring

Hard suspension
1. Bent shock damper rod
2. Bent frame or radius arm.

Suspension noisy
1. Faulty rear damper
2. Loose fasteners
3. Worn drive shaft bearing

REAR WHEEL



REMOVAL

Raise the rear wheels off the ground with a jack or block under the frame.
Remove the rear wheel nuts and rear wheel.

INSTALLATION

Install the rear wheel with the tire valve facing out.
Tighten the wheel nuts to the specified torque.

TORQUE: 60—70 N·m (6.0—7.0 kg-m, 43—51 ft-lb)

TIRE

REMOVAL (U.S.A. ONLY)

NOTE

- This service requires the Universal Bead Breaker, GN-AH-958-BB1 Use with adapter plate, 07972—VM0010A.

Remove the core from the valve stem.

CAUTION

- *Use of the Bead Breaker tool is required for tire removal.*
- *Do not damage the bead seating area of the rim.*
- *Use a Coats 220 Tire Changer or equivalent to remove the tire from the rim. If a tire changer is not available, rim protectors and tire irons may be used.*

Install the blade for 9''/11'' rims onto the breaker arm assembly.

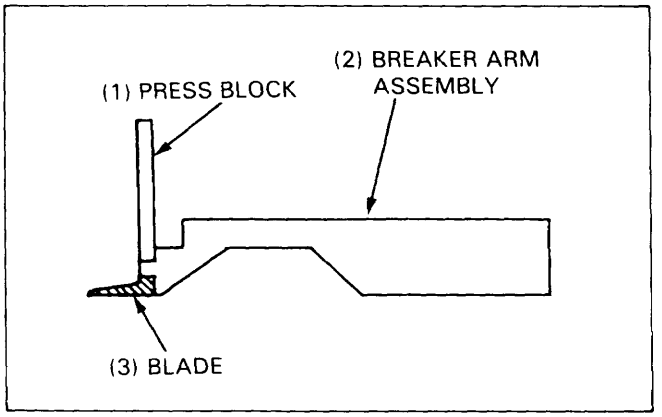
CAUTION

- *Use of an improper size blade may result in damage to the rim, tire or blade.*

Place the proper size adapter onto the threaded shaft and then put the wheel over the threaded shaft and adapter.
Lube the bead area with water, pressing down on the tire sidewall/bead area in several places, to allow the water to run into and around the bead. Also wet the area where the breaker arm will contact the sidewall of the tire.

WARNING

- ***Use only water as a lubricant when removing or mounting tires. Soap or some mounting lubricants may leave a slippery residue which can cause the tire to shift on the rim and lose air pressure during riding***



While holding the breaker arm assembly at an approximate 45° position, insert the blade of the breaker arm between the tire and rim. Push the breaker arm inward and downward until it is in the horizontal position with its press block in contact with the rim.

NOTE

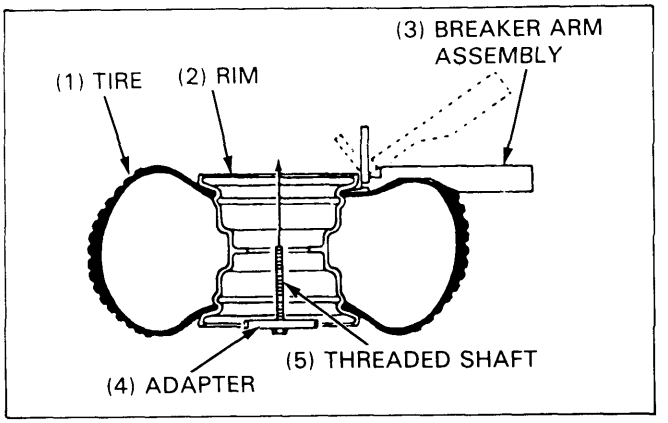
- It may be necessary to tap the breaker arm with a brass hammer to install it the last 3 mm. While doing so, be sure to hold the arm down in the horizontal position.

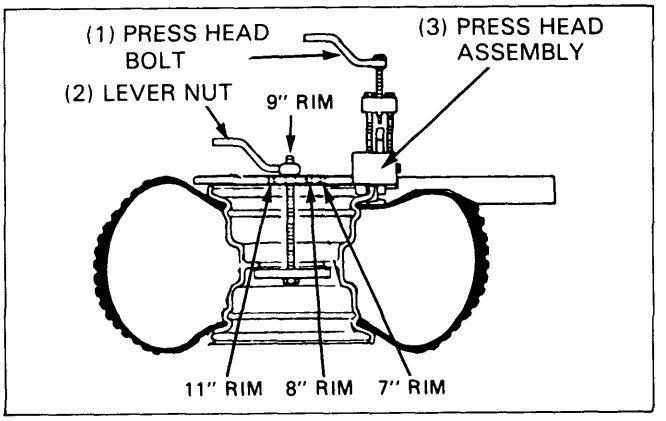
With the breaker arm in the horizontal position, place the breaker press head assembly over the breaker arm press block. Make sure the press head bolt is backed out all the way and then position the nylon buttons on the press head against the inside edge of the rim.
Insert the threaded shaft through the appropriate hole in the breaker press head assembly and then tighten the lever nut until both ends of the breaker press head assembly are in firm contact with the rim.

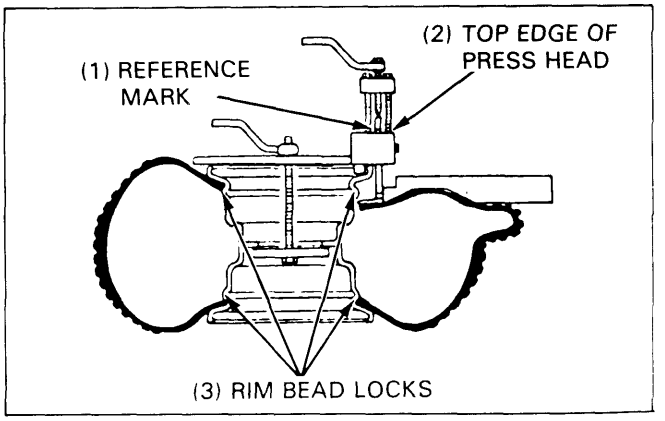
NOTE

- Insert bolts through the holes in the rim hub mounting tabs and the adapter to position the adapter properly.

Tighten the press head bolt until the reference mark on the press block is aligned with the top edge of the press head.
If the rest of the bead cannot be pushed down into the center of the rim by hand, loosen the press head bolt and the lever nut. Rotate the breaker arm assembly and breaker press head assembly 1/8 to 1/4 the circumference of the rim. Tighten the lever nut and then tighten the press head bolt as described. Repeat this procedure as necessary until the remainder of the bead can be pushed down into the center of the rim.
Assemble the Universal Bead Breaker on the other side of the wheel and break the bead following the same procedures.
Remove the tire from the rim using a tire changer machine or tire irons and rim protectors.
Remove the tire from the rim that has the smallest shoulder area to simplify removal.







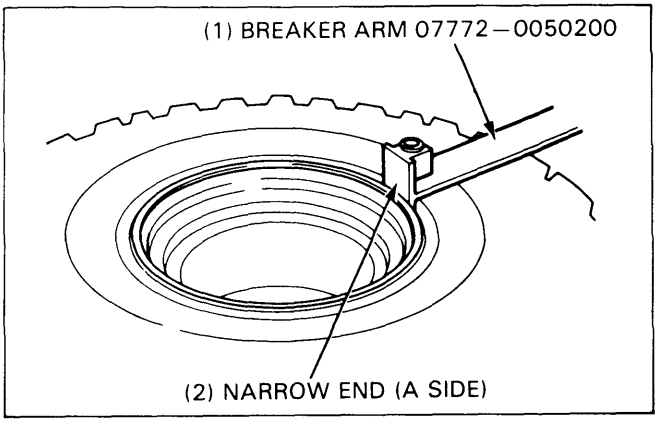
TIRE REMOVAL (EXCEPT U.S.A.)

NOTE

- This service requires the Tire Bead Breaker (07772–0050000) not available in U.S.A.

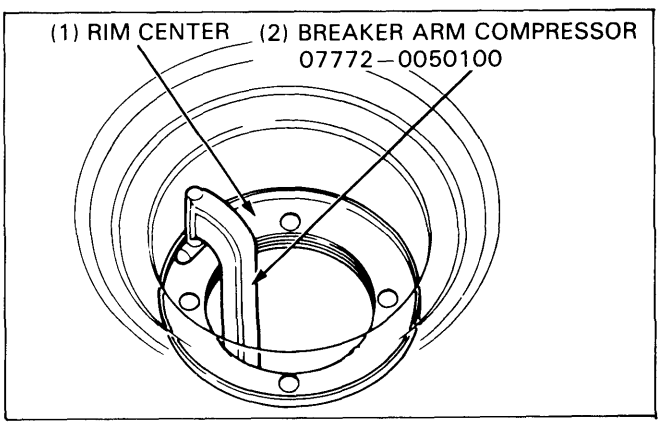
CAUTION

- *Do not apply water, soapy water, oil etc. to the tire, rim and tool when removing the tire. The tool breaker arm may slip off the tire and the bead can not be broken off the tire.*
- *Do not damage the bead seating area of the rim.*
- *Follow the breaker manufacturer's instructions.*

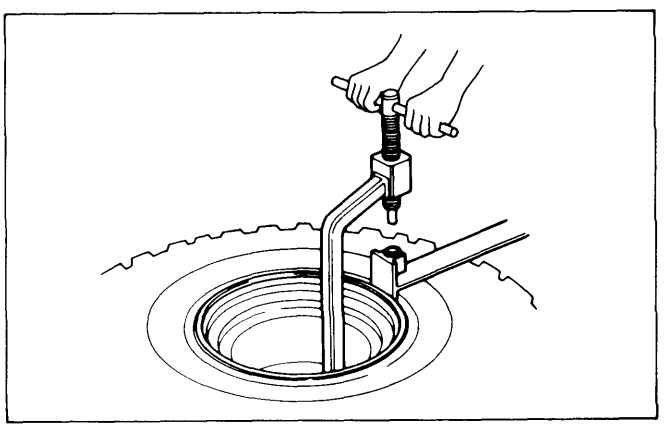


Insert the narrow end (A side) of the breaker arm between the tire and the rim.

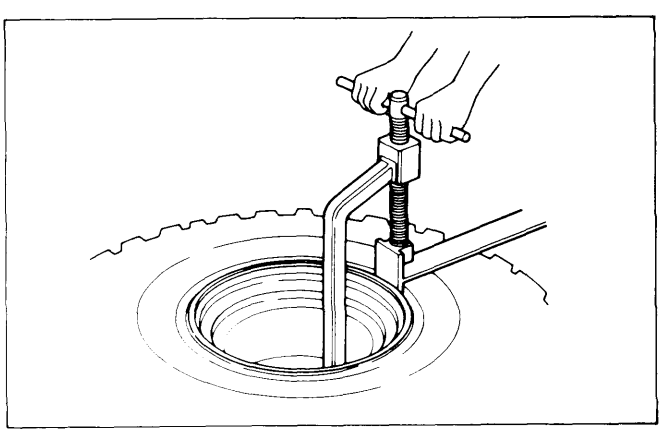
Position the breaker arm compressor onto the rim center as shown.



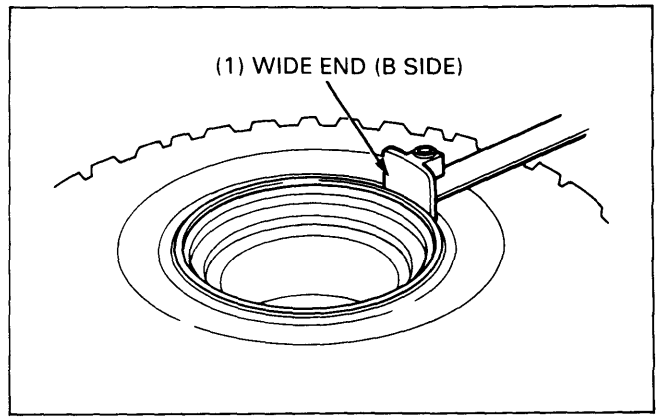
Keep the breaker arm horizontally and align the end of the compressor bolt with the arm hole.



Screw in the breaker arm compressor bolt to break the bead from the tire.
If the rest of the bead cannot be pushed down into the center of the rim, remove and reposition the compressor and arm 1/8 to 1/4 the circumference of the rim. Tighten the compressor bolt to break the bead. Repeat this procedure as necessary until the remainder of the bead can be pushed down into the center of the rim.



If the bead breaking is difficult with the narrow end (A side) of the breaker arm, use the wide end (B side) of the arm and repeat the procedure above.

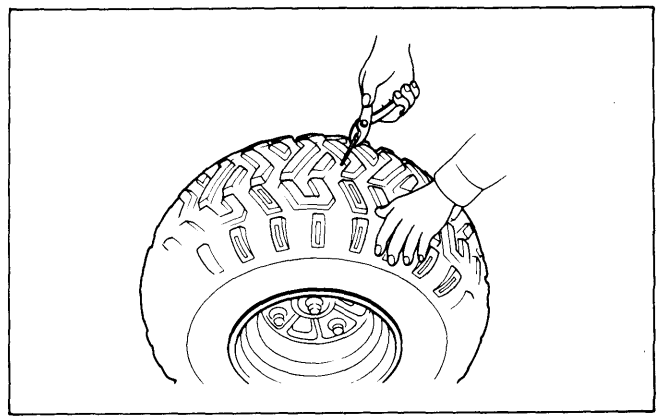


TIRE REPAIR

NOTE

- Use the manufacturer's instructions for the tire repair kit you are using. If your kit does not have instructions, use the procedures provided here.

Check the tire for puncturing objects. Chalk mark the punctured area and remove the puncturing object.
Inspect and measure the injury. Tire repairs for injuries larger than 15 mm (5/8 in) should be a section repair. Section repairs should be done by a professional tire repair shop.

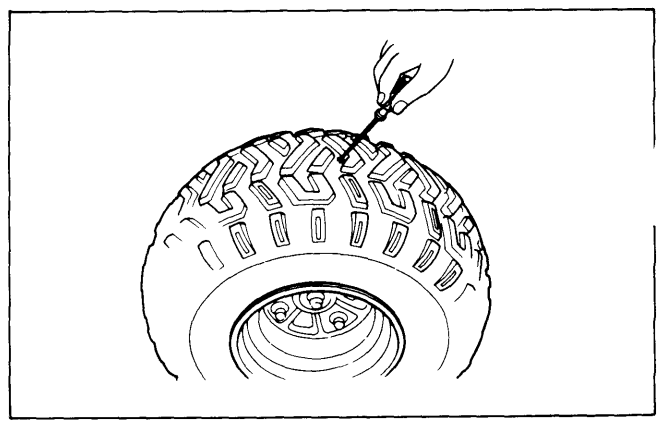


Install a rubber plug into the injury as follows:
Apply cement to a plug inserting needle and work the needle into the injury to clean and lubricate it.
Do this three times. Do not let the cement dry.

Insert and center a rubber plug through the eye of the inserting needle.

Apply cement to the rubber plug.

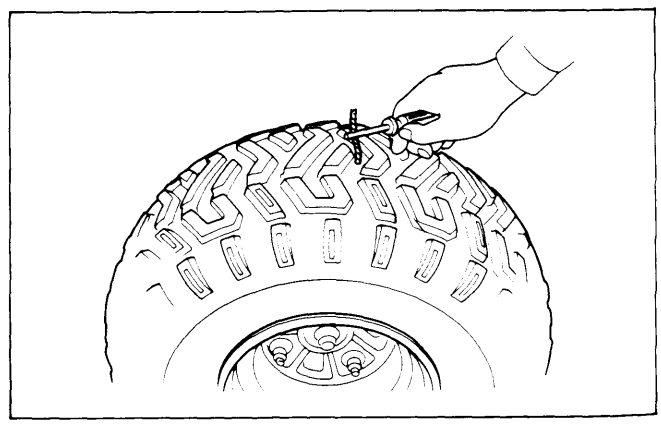
Push the inserting needle with plug into the injury until the plug is slightly above the tire. Twist the needle and remove it from the tire, the plug will stay in the tire.



NOTE

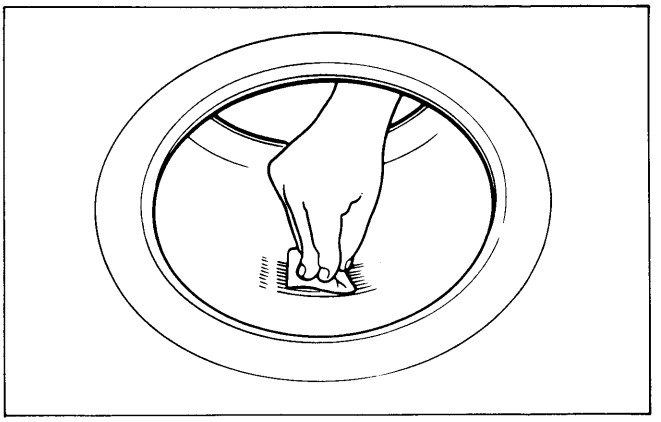
- Be careful not to push the plug all the way into the tire to prevent it from falling inside.

Trim the plug to 6 mm (1/4 in) above the tire surface.
Repeat the above procedure if the puncture is large.
Do not use more than two plugs per injury.
Allow the repair to dry. Drying time will vary with air temperature. Refer to the tire repair kit manufacturer's recommendations.
Inflate the tire and test the seal by dabbing a small amount of cement around the plug. Escaping air will cause a bubble in the cement. If there is leakage, remove the tire (page 11-3) and apply a patch to the inside of the tire as described on the next page.



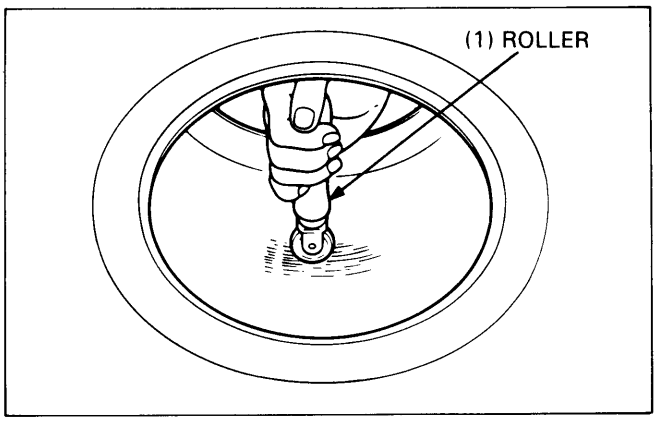
If a plug has been inserted, trim it even with the inner tire surface.
Temporarily place a rubber patch that is at least twice the size of the puncture over the injury. Make a mark around the patch, slightly larger than the patch itself. Remove the patch.
Roughen the area marked inside the tire with a tire buffer or a wire brush.
Clean the rubber dust from the buffed area.

Apply cement over the area marked and allow it to dry. Remove the lining from patch and center it over the injury. Press the patch against the injury using a special roller.



NOTE

- Refer to patch manufacturer's instructions.
- Allow cement to dry until tacky before applying patch.
- Do not touch the cement with dirty or greasy hands.



TIRE ASSEMBLY

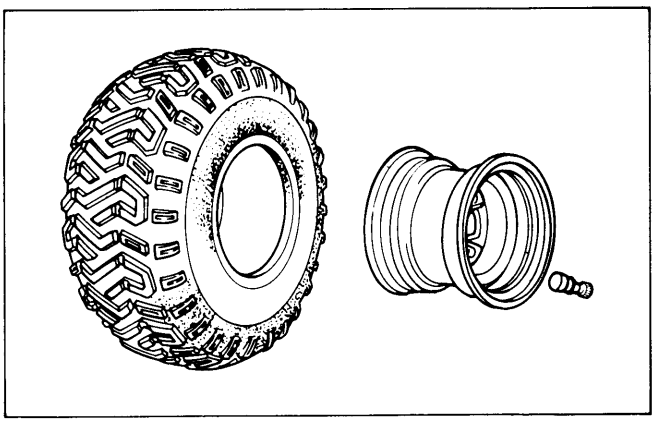
Clean the rim bead seat and flanges.
Install the tire on the rim.
NOTE

- The arrow on the tire indicates the normal direction of rotation.

Install the valve stem core.
Rinse the rim flanges, bead seat and tire bead with clean water.
Inflate the tire to seat the tire bead.

WARNING

- ***Use only water as a lubricant when removing or mounting tires. Soap or some mounting lubricants may leave a slippery residure which can cause the tire to shift on the rim and lose air pressure during riding***



CAUTION

- *Do not inflate the tire with more than 1.4 kg/cm² (20 psi) of air.*

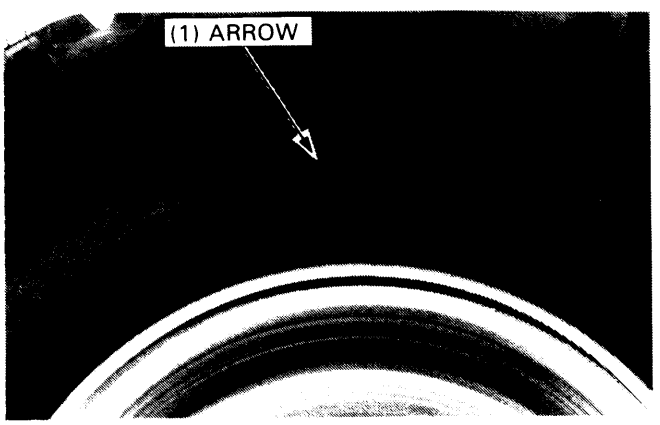
If the tire does not seat on the rim with 1.4 kg/cm² (20 psi) of air pressure, release the air from the tire and wet the tire bead and bead seating surface of the rim. Then, inflate the tire with air again.
Deflate the tire. Wait 1 hour and inflate the tire to the specified pressure.

	Recommended pressure	Min. pressure	Max. pressure	Standard tire circumference
Front	5.0 psi (34 kPa, 0.35 kg/cm²)	4.3 psi (29 kPa, 0.3 kg/cm²)	5.7 psi (39 kPa, 0.4 kg/cm²)	1,735 mm (68.3 in)
Rear	6.4 psi (44 kPa, 0.45 kg/cm²)	5.7 psi (39 kPa, 0.4 kg/cm²)	7.1 psi (49 kPa, 0.5 kg/cm²)	1,880 mm (74.0 in)

NOTE

The rear tires must have the same circumference for proper handling.

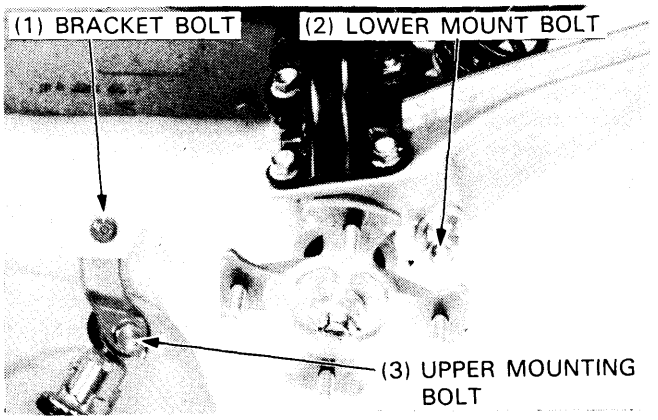
Check for air leaks and install the valve cap.



REAR SHOCK ABSORBER

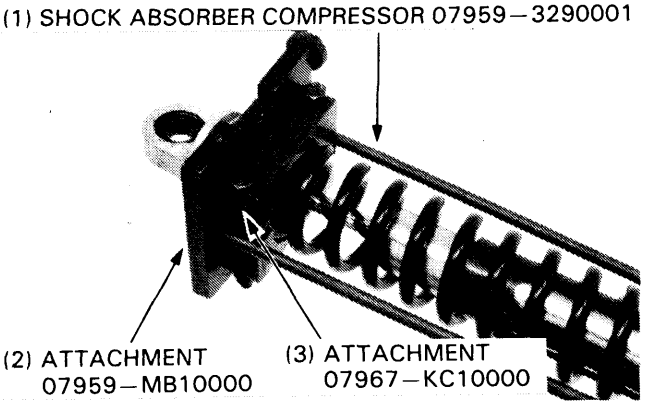
REMOVAL

Raise the rear wheels off the ground by placing a block or safety stand under the frame.
Remove the rear wheels (page 11-3).
Remove the following parts:
— bracket bolt.
— rear shock absorber upper mounting bolt and nut.
— bracket.
— rear shock absorber lower mounting bolt and nut.
— rear shock absorber from the frame and radius arm

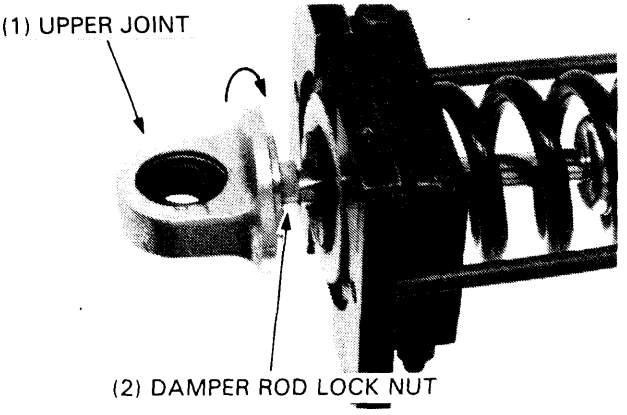


DISASSEMBLY

Set the rear shock absorber in the compressor with the attachment as shown and compress the spring.



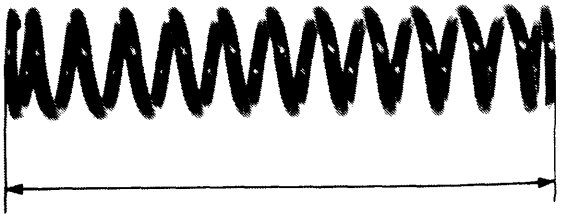
Place the upper joint in a vise and pull the damper rod out.
Separate the upper joint by rotating the damper rod lock nut in the direction shown and remove the compressor.
Remove the spring seat, spring, lock nut stopper rubber, spring guide and adjuster from the shock damper.



SPRING FREE LENGTH

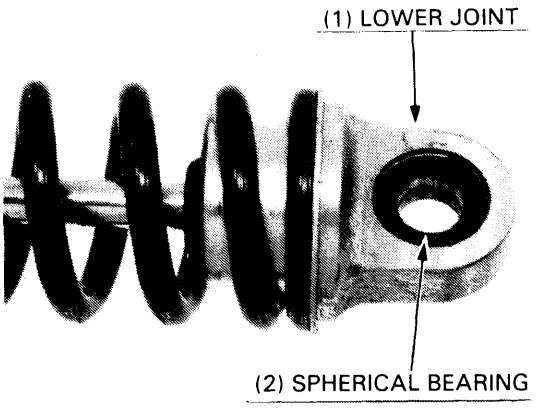
Measure the rear shock absorber spring free length.

SERVICE LIMIT: 286.5 mm (11.28 in)

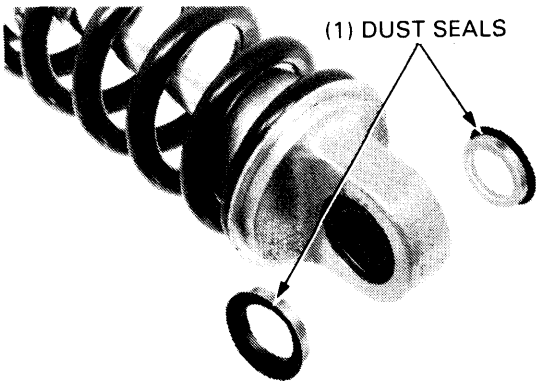


SPHERICAL BEARING INSPECTION

Check the spherical bearing for wear or damage.
Replace it if necessary.

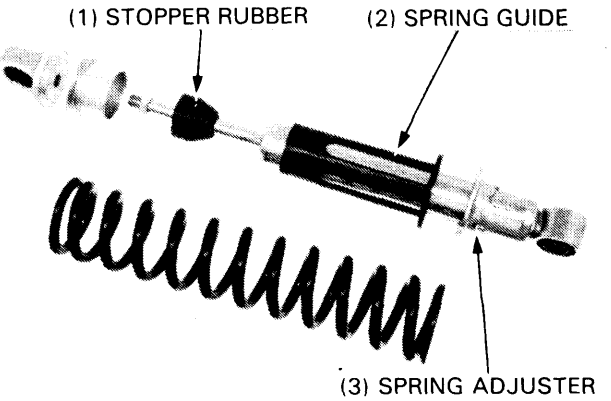


Apply grease to the bearing and dust seals.
MULTIPURPOSE GREASE NLG1 NO.2 (MoS2 additive) or equivalent.



ASSEMBLY

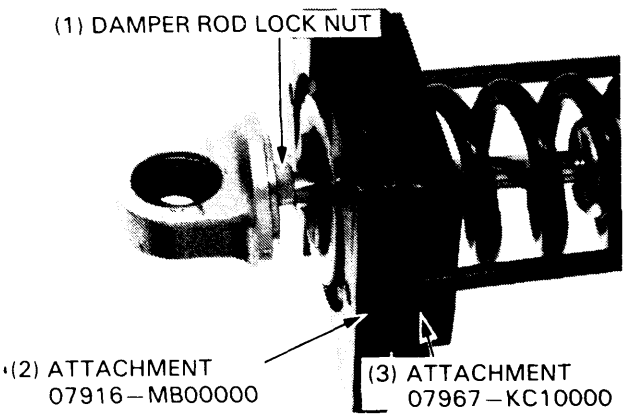
Place the spring adjuster, spring guide, stopper rubber, spring and spring seat onto the damper.



Compress the spring with the shock absorber compressor and attachment tools.
Apply a locking agent to the damper rod threads and screw the lock nut and upper joint on.
Tighten the damper rod lock nut.

TORQUE : 25—40 N·m (2.5—4.0 kg-m, 18—29 ft-lb)

Align the spring stopper with the upper joint while releasing the compressor.

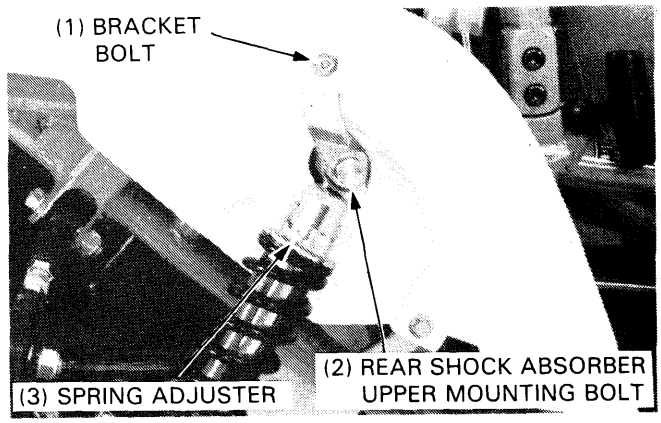


INSTALLATION

Install the shock absorber onto the frame and radius arm.
Tighten the upper mounting bolt.

TORQUE : 80—100 N·m (8.0—10.0 kg-m, 58—72 ft-lb)

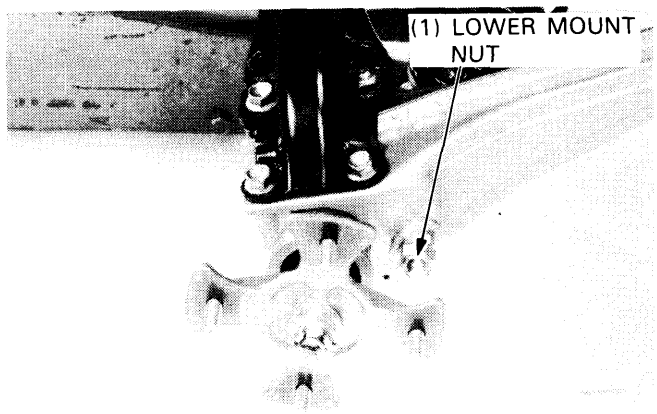
Tighten the bracket bolt.



Tighten the lower mounting.

TORQUE : 80—100 N·m (8.0—10.0 kg-m, 58—72 ft-lb)

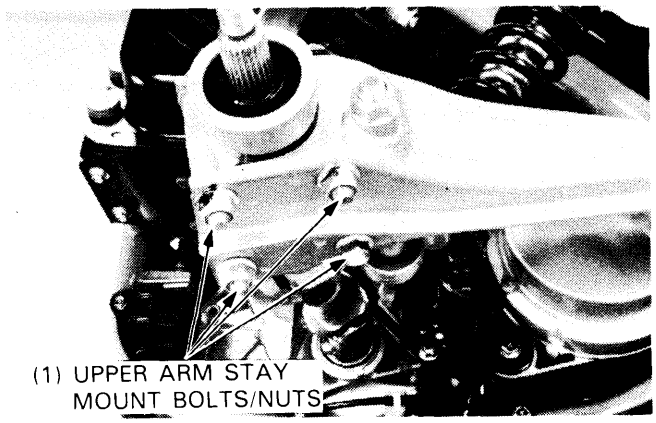
Install the rear wheel (page 11-3).
Adjust the right and left rear shock absorber to same position by turning the spring adjuster (page 3-9).



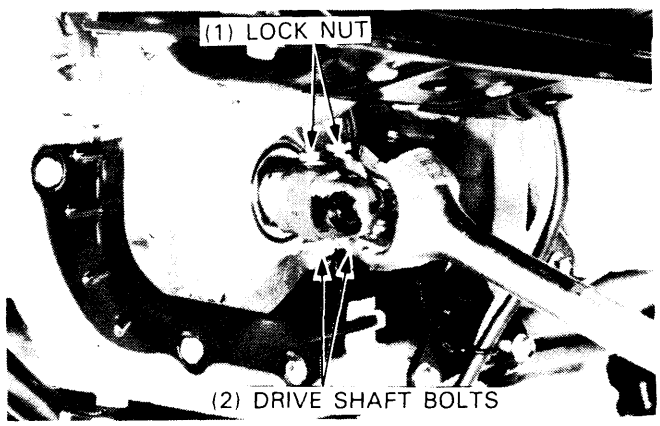
DRIVE SHAFT

REMOVAL

Remove the following parts :
— cotter pin, axle nut, washer, hub and rear wheel.
— upper arm stay mounting bolts and nuts.
Remove the bearing housing with drive shaft from the radius arm.

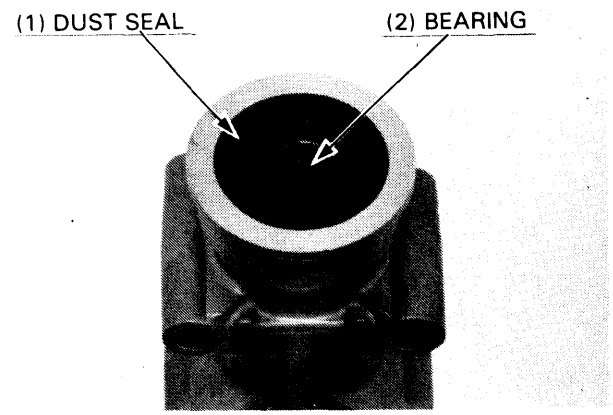


Remove the drive shaft bolts and lock nuts and remove the drive shaft from the transmission final gear shaft.
Remove the bearing housing from the drive shaft.

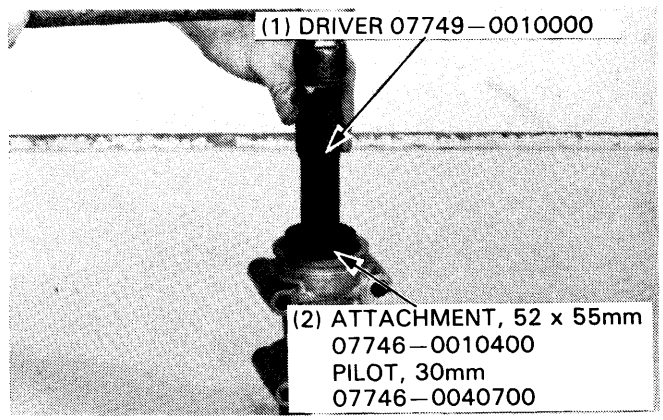


BEARING REPLACEMENT

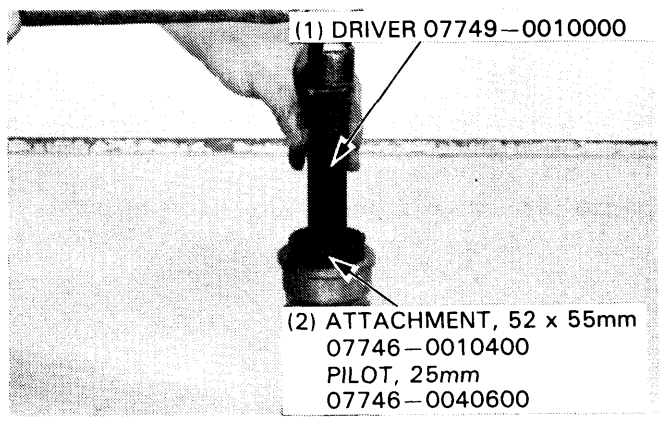
Remove the dust seals from the drive shaft bearing housing.
Drive out the bearings.



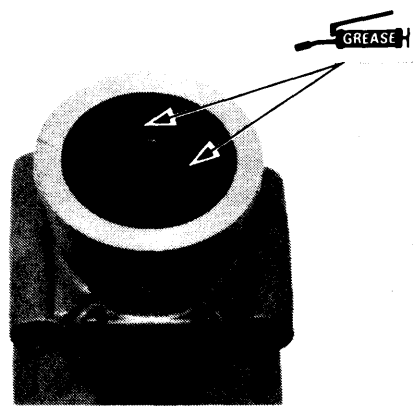
Drive in a new inner bearing.



Drive in a new outer bearing.

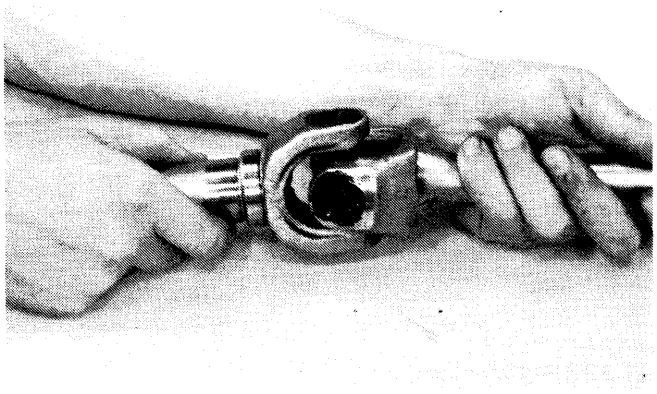


Install new dust seals onto the bearing housing.
Apply grease to the dust seals and the inside of the housing between the bearings.

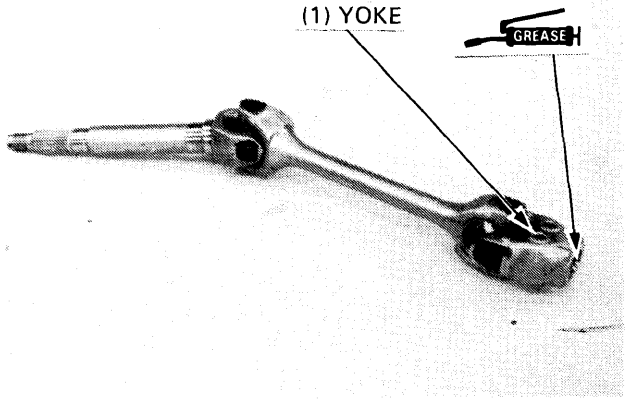


DRIVE SHAFT INSPECTION

Move the cross joint of the drive shaft up and down to check for wear or damage.
Replace the assembly if it is worn or damaged.



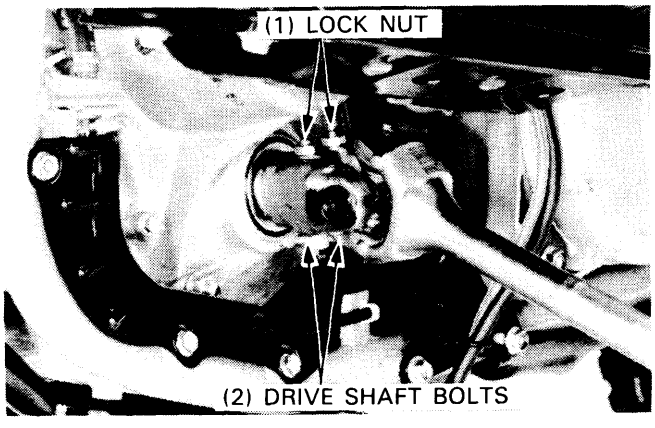
Apply grease to the yoke joint splines.



DRIVE SHAFT INSTALLATION

Install the drive shaft onto the final gear shaft.
Insert the drive shaft bolts into the holes in the yoke joint and tighten the bolts.

TORQUE : 19–25 N·m (1.9–2.5 kg-m, 14–18 ft-lb)



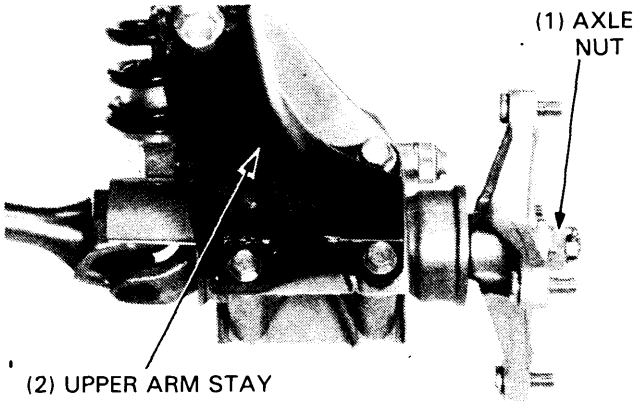
Insert the drive shaft to the bearing housing and install them to the radius arm with the bolts and nuts.

TORQUE: 100–120 N·m (10.0–12.0 kg-m, 72–86 ft-lb)
(Apply oil to threads)

Install the hub, washer, axle nut and tighten the nut.

TORQUE: 80–120 N·m (8.0–12.0 kg-m, 58–87 ft-lb)

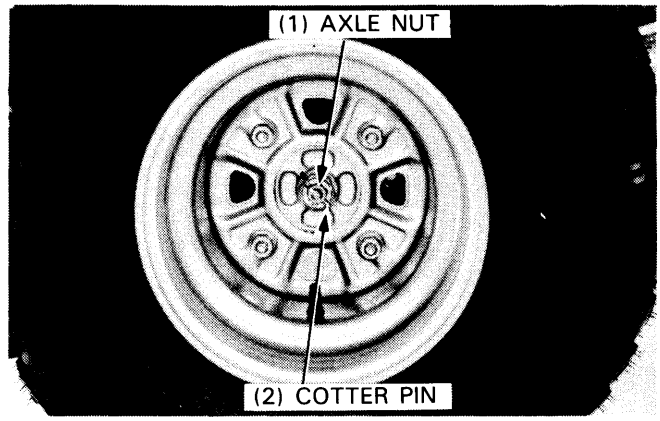
Install a new cotter pin and rear wheel (page 11-3).



RADIUS ARM

REMOVAL

Raise the rear wheel off the ground by placing a block or safety stand under the frame.
Remove the cotter pin and axle nut, washer, and rear wheel with the hub.

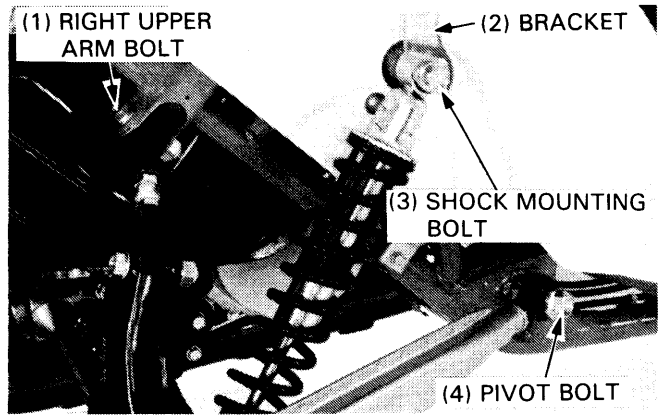


Remove the following :
— Upper arm bolt and nut.

NOTE

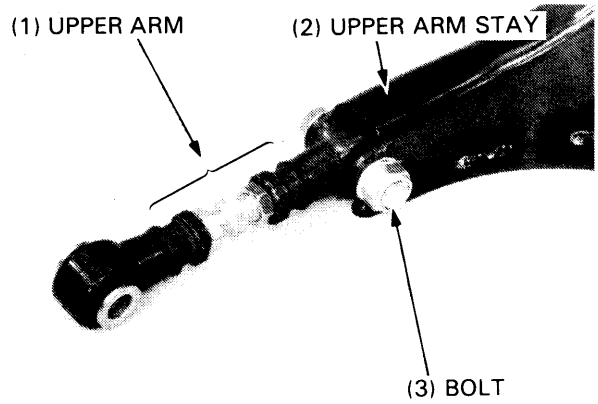
- To remove the right upper arm bolt, remove the fuel tank lower cover and loosen the upper hanger mounting bolts (page 4-2).

— Radius arm pivot bolt.
— Rear shock absorber upper mounting bolt and nut.
— Shock bracket.

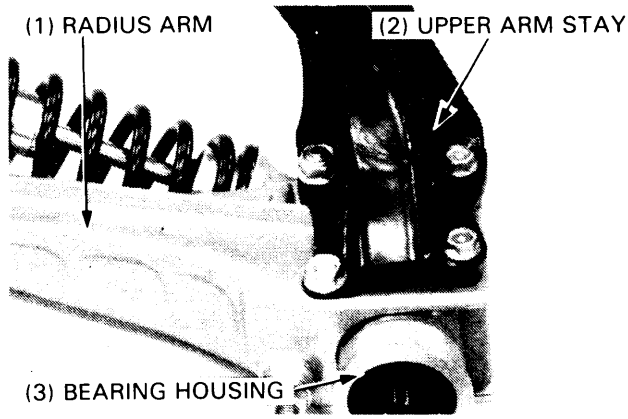


Remove the radius arm together with the upper arm, upper arm stay, drive shaft bearing housing and rear shock absorber from the drive shaft.

Remove the upper arm from the upper arm stay by removing the bolt and nut.

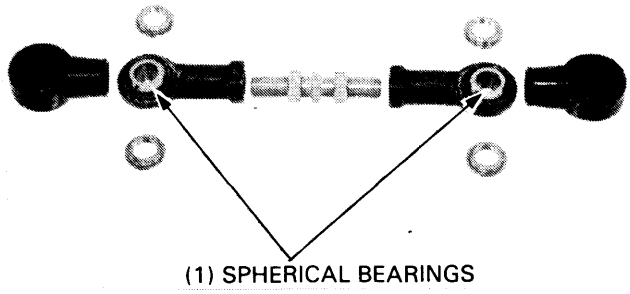


Remove the rear shock absorber, upper arm stay and drive shaft bearing housing from the radius arm.

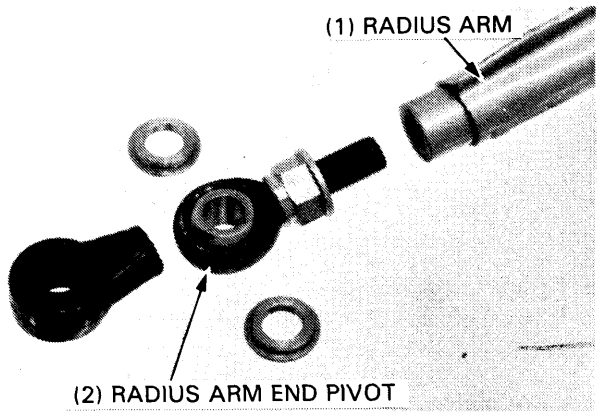


INSPECTION

Check the spherical bearings on the upper arm for wear or damage.
Replace the bearings if necessary.

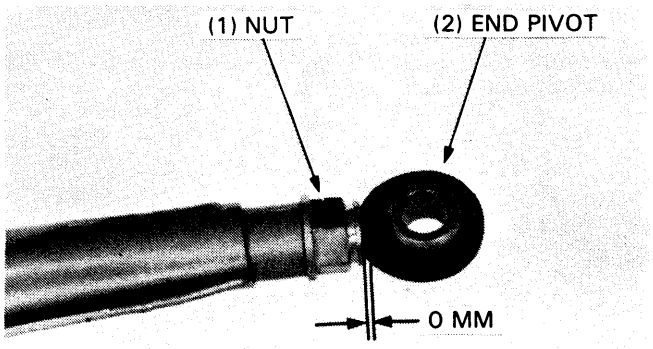


Check the radius arm for wear or damage.
Inspect the spherical bearing on the radius arm end pivot.
Replace the bearing if damaged or worn.



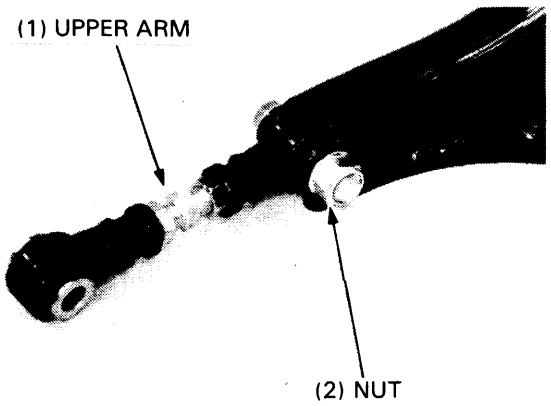
ASSEMBLY/ INSTALLATION

Install the nut onto the pivot and thread it on completely.
Install the end pivot onto the radius arm and thread it on completely.

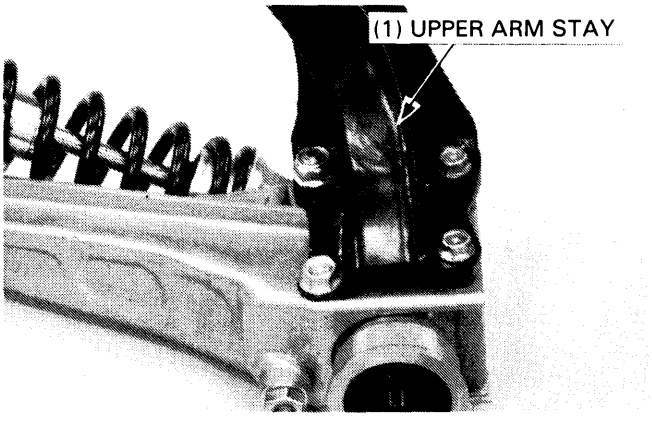


Assemble the upper arm and install it onto the upper arm stay using the bolt and nut.

TORQUE : 80—100 N·m (8.0—10.0 kg-m, 58—72 ft-lb)



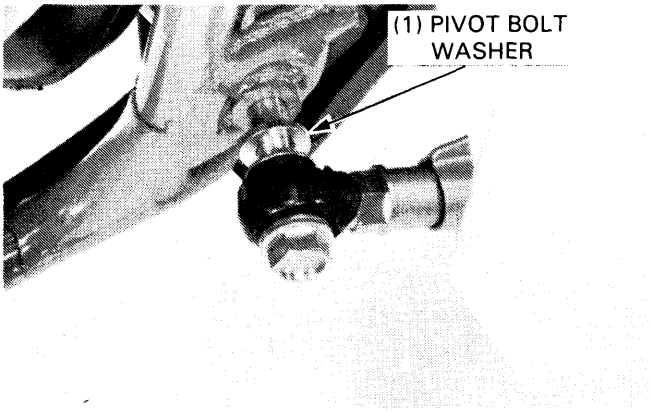
Install the bearing housing and upper arm stay with bolts and nuts.
Tighten the nut to the specified torque (page 11-12).
Install the rear shock absorber lower mounting bolt (page 11-10).



Install the radius arm assembly onto the frame.

NOTE

- Install the washer under the radius arm end pivot if it was installed before removal.



Tighten each bolt to the specified torque.

TORQUE:
REAR SHOCK ABSORBER UPPER AND LOWER MOUNT
80—100 N·m (8.0—10.0 kg-m, 58—72 ft-lb)

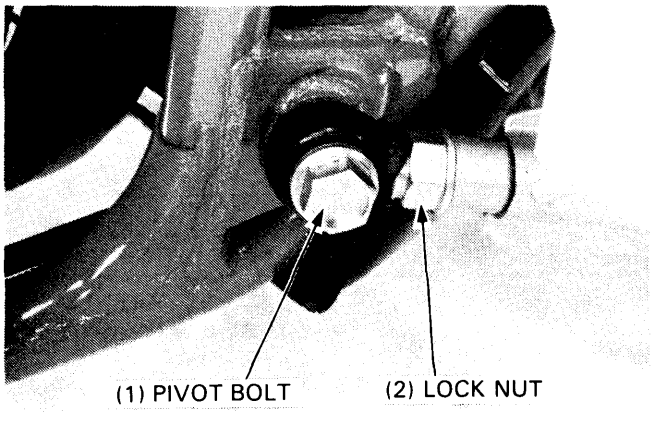
RADIUS ARM PIVOT BOLT
80—100 N·m (8.0—10.0 kg-m, 58—72 ft-lb)

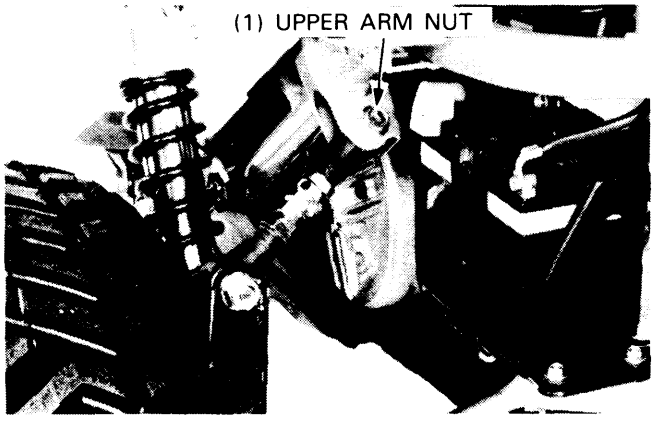
ROD END LOCK NUT
80—100 N·m (8.0—10.0 kg-m, 58—72 ft-lb)

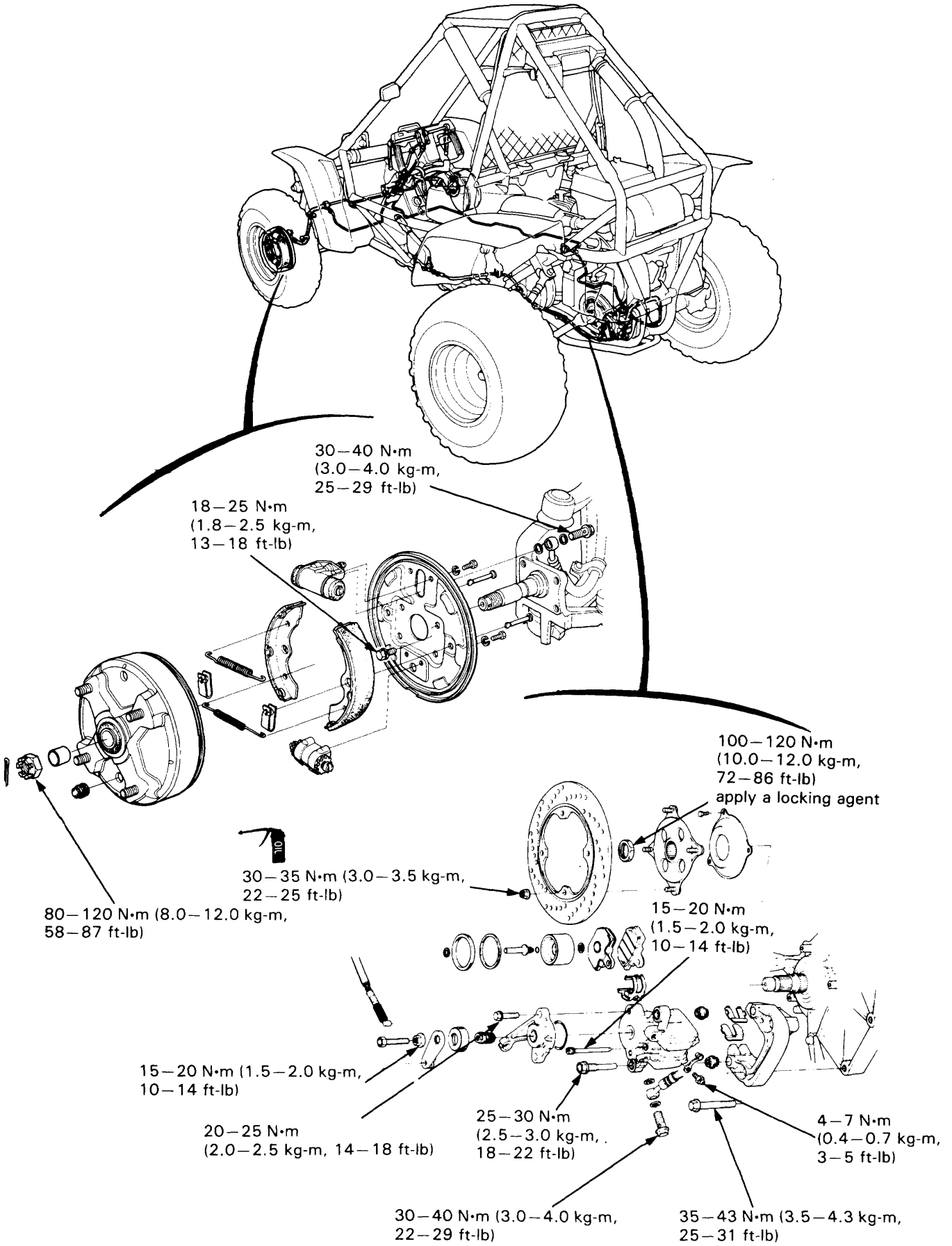
UPPER ARM NUT
80—100 N·m (8.0—10.0 kg-m, 58—72 ft-lb)

AXLE NUT
80—120 N·m (8.0—12.0 kg-m, 58—87 ft-lb)

Measure and adjust the rear wheel toe-in, and the upper arm length for the camber (page 3-8).






30–40 N·m
(3.0–4.0 kg-m,
25–29 ft-lb)
18–25 N·m
(1.8–2.5 kg-m,
13–18 ft-lb)
100–120 N·m
(10.0–12.0 kg-m,
72–86 ft-lb)
apply a locking agent
30–35 N·m (3.0–3.5 kg-m,
22–25 ft-lb)
80–120 N·m (8.0–12.0 kg-m,
58–87 ft-lb)
15–20 N·m
(1.5–2.0 kg-m,
10–14 ft-lb)
15–20 N·m (1.5–2.0 kg-m,
10–14 ft-lb)
20–25 N·m
(2.0–2.5 kg-m, 14–18 ft-lb)
25–30 N·m
(2.5–3.0 kg-m,
18–22 ft-lb)
4–7 N·m
(0.4–0.7 kg-m,
3–5 ft-lb)
30–40 N·m (3.0–4.0 kg-m,
22–29 ft-lb)
35–43 N·m (3.5–4.3 kg-m,
25–31 ft-lb)

SERVICE INFORMATION

GENERAL

- The brake caliper can be removed without disconnecting the hydraulic system.
- Bleed the hydraulic system if it is disassembled or if the brake feels spongy.
- Do not allow foreign material to enter the system when filling the reservoir.
- Avoid spilling brake fluid on painted surfaces or instrument lenses, as severe damage can result.
- Always check brake operation before driving the FL350R.

SPECIFICATIONS

mm(in)

ITEM		STANDARD	SERVICE LIMIT
Front brake drum I.D.		160–160.3 (6.29–6.31)	161.0 (6.3)
Front brake shoe lining thickness		4.0 (0.16)	2.0 (0.08)
Front wheel cylinder I.D.		17.46–17.50 (0.687–0.689)	17.513 (0.6895)
Front wheel cylinder piston O.D.		17.44–17.41 (0.686–0.685)	17.407 (0.6853)
Master cylinder I.D.	Front	14.0–14.043 (0.55–0.5529)	14.055 (0.5533)
	Rear	12.7–12.743 (0.49–0.5017)	12.755 (0.5022)
Master cylinder piston O.D.	Front	13.984–13.957 (0.5506–0.5495)	13.945 (0.5490)
	Rear	12.684–12.657 (0.4994–0.4983)	12.645 (0.4978)
Rear brake pad thickness		5.5 (0.22)	0.5–1 (0.02–0.04)
Rear brake disc	thickness	4.5 (0.18)	3.5 (0.14)
	runout	—	0.15 (0.006)
Caliper cylinder I.D.		42.85–42.90 (1.687–1.6889)	42.91 (1.689)
Caliper cylinder piston O.D.		42.822–42.772 (1.6859–1.6839)	42.76 (1.684)

TORQUE VALUES

Front wheel nut	60–70 N·m (6.0–7.0 kg-m, 43–50 ft-lb)
Front axle nut	80–120 N·m (8.0–12.0 kg-m, 58–87 ft-lb)
Caliper bleeder valve	4–7 N·m (0.4–0.7 kg-m, 2–5 ft-lb)
Caliper pad hangar pin	15–20 N·m (1.5–2.0 kg-m, 10–14 ft-lb)
Caliper pin bolt	25–30 N·m (2.5–3.0 kg-m, 18–22 ft-lb)
Caliper bracket bolt	35–43 N·m (3.5–4.3 kg-m, 25–31 ft-lb)
Brake hose bolt	30–40 N·m (3.0–4.0 kg-m, 22–29 ft-lb)
Brake disc hub nut	100–120 N·m (10.0–12.0 kg-m, 72–86 ft-lb) Apply locking agent
Brake disc mounting nut	30–35 N·m (3.0–3.5 kg-m, 22–25 ft-lb) Apply 4-Stroke oil to the threads
Caliper parking arm lock nut	15–20 N·m (1.5–2.0 kg-m, 10–14 ft-lb)
Front brake backing plate bolt	18–25 N·m (1.8–2.5 kg-m, 13–18 ft-lb)
Caliper parking brake attaching bolt	20–25 N·m (2.0–2.5 kg-m, 14–18 ft-lb)

TOOLS

Special

Snap ring pliers	07914—3230001
Lock nut wrench, 30/64 mm	07916—MB00000

Common

Universal holder	07724—0050000

TROUBLESHOOTING

Poor brake performance
1. Air bubbles in hydraulic system
2. Worn front linings or brake pads
3. Linings or pads fouled or glazed
4. Hydraulic system leaking

Brake lever soft or spongy
1. Air bubbles in hydraulic system
2. Low fluid level
3. Hydraulic system leaking

Brake lever too hard
1. Sticking piston(s)
2. Clogged hydraulic system
3. Pads or linings glazed or worn excessively

Brakes drag
1. Hydraulic system sticking
2. Incorrect adjustment of lever
3. Sticking piston(s)

Brakes grab or pull to one side
1. Pads or linings contaminated
2. Disc or wheel misaligned

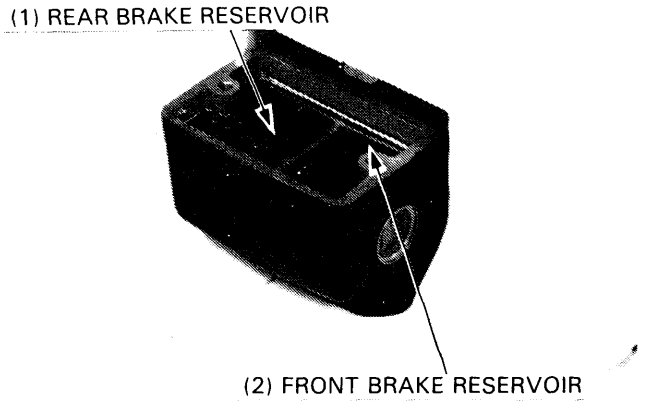
Brakes chatter or squeal
1. Pads or linings contaminated
2. Excessive disc runout
3. Caliper installed incorrectly
4. Disc or wheel misaligned

BRAKE FLUID REPLACEMENT/ AIR BLEEDING

Check the front and rear fluid level with the fluid reservoir parallel to the ground.

CAUTION

- *Install the diaphragm on the reservoir when operating the brake lever.*
  Failure to do so will allow brake fluid to squirt out of the reservoir during brake operation.
- *Avoid spilling fluid on painted surfaces.*
  Place a rag over the fuel tank whenever the system is serviced.

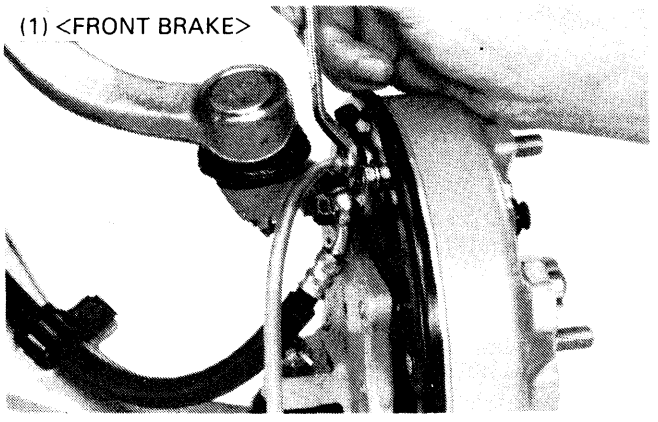


BRAKE FLUID DRAINING

Connect a bleed hose to the bleed valve.
Loosen the front wheel cylinder bleed valve or brake caliper bleed valve and slowly pump the brake lever.
Stop pumping the lever when no more fluid flows out of the bleed valve.

WARNING

- ***A contaminated brake disc or pad reduces stopping power. Discard contaminated pads and clean a contaminated disc with a high quality brake degreasing agent.***

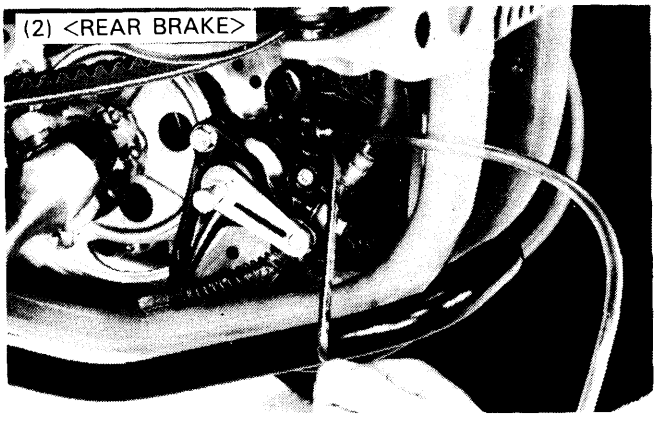


BRAKE FLUID FILLING

NOTE

- Use only DOT-3 or 4 brake fluid from a sealed container. Do not mix different types of fluid.
  They are not compatible.

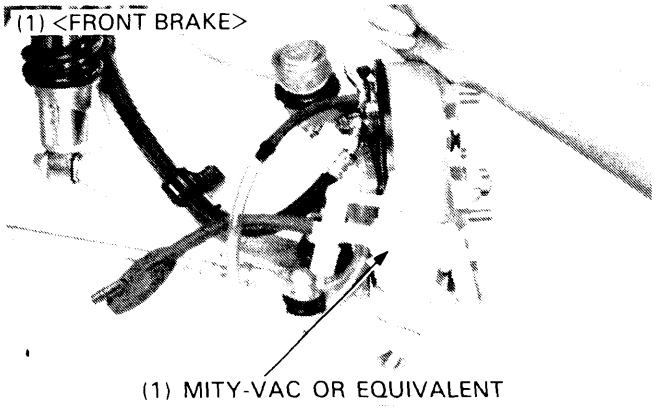
Close the bleed valve, fill the reservoir, and install the diaphragm.
Pump up the system pressure with the lever until there are no air bubbles in the fluid flowing out of the reservoir small hole, and lever resistance is felt.



AIR BLEEDING

NOTE

- Check the fluid level often while bleeding the brakes to prevent air from being pumped into the system.
- Use only DOT-3 or 4 brake fluid from a sealed container.
- Do not mix brake fluid types and never reuse the contaminated fluid which has been pumped out during brake bleeding, because that would will impair the efficiency of the brake system.
- When using a brake bleeding tool, follow the manufacturer's operating instructions.



Pump the brake lever to bring the front brake linings in contact with the drum or the caliper pads in contact with the disc.
Remove the master cylinder cap and fill the reservoir to near full.
Connect the Mity-vac Brake Bleeder or equivalent to the bleed valve.
Pump the brake bleeder and loosen the bleed valve.
Add fluid when the fluid level in the master cylinder reservoir is low.
Repeat the above procedures until air bubbles do not appear in the plastic hose.

NOTE

- If air is entering the bleeder from around the bleed valve threads, seal the threads with teflon tape.

If a brake bleeder is not available, perform the following procedure.
1) Squeeze the brake lever, open the bleed valve 1/2 turn and then close the valve.

NOTE

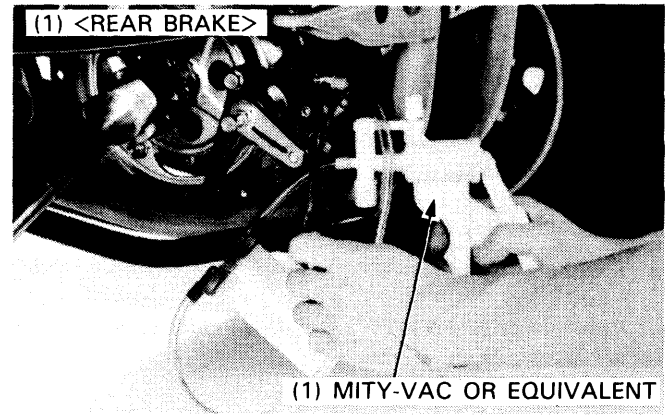
- Do not release the brake lever until the bleed valve has been closed.

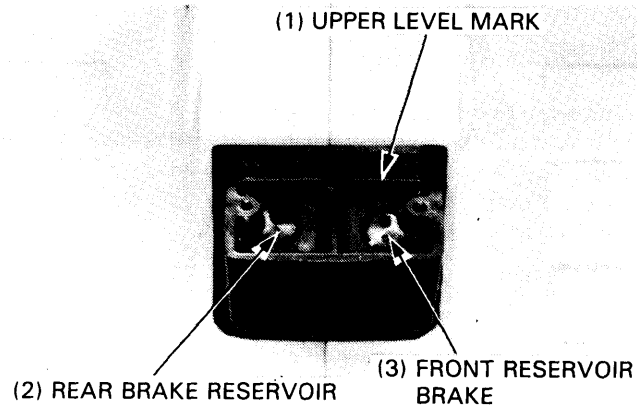
2) Release the brake lever slowly and wait several seconds after it reaches the end of its travel.

Repeat steps 1 and 2 until bubbles cease to appear in the fluid at the end of the hose.
Fill the fluid reservoir to the upper level mark.

WARNING

- ***A contaminated brake disc or pad reduces stopping power. Discard contaminated pads and clean a contaminated disc with a high quality brake degreasing agent.***



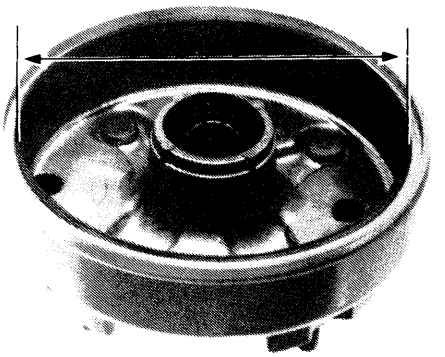


FRONT BRAKE

BRAKE DRUM INSPECTION

Remove the brake drum (page 10-3).
Inspect the brake drum for scoring, cracks and the lack of concentricity.
Measure the I.D. of the front brake drum.

SERVICE LIMIT: 161 mm (6.3 in)

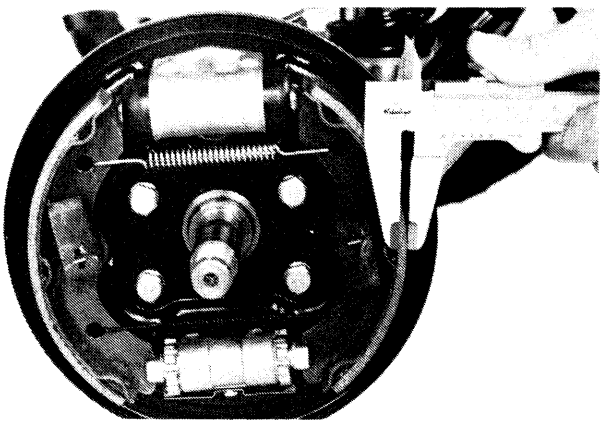


BRAKE SHOE INSPECTION

Measure the brake lining thickness.

SERVICE LIMIT: 2.0 mm (0.08 in)

Inspect the brake lining for cracking, glazing, wear or contamination.
Replace the brake shoes if the lining thickness is less than the service limit.
Check the springs for damage.

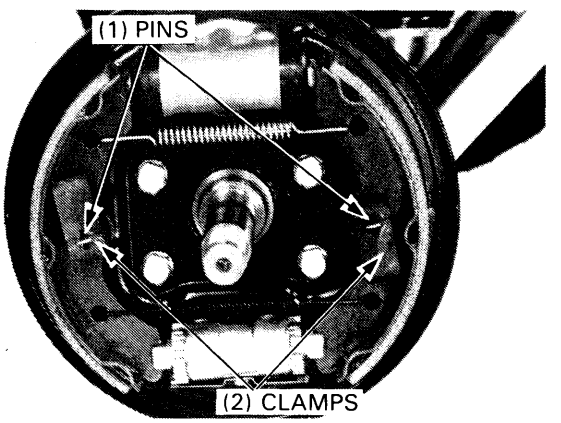


BRAKE SHOE REMOVAL

Remove the pins, shoe clamps, springs and brake shoes.

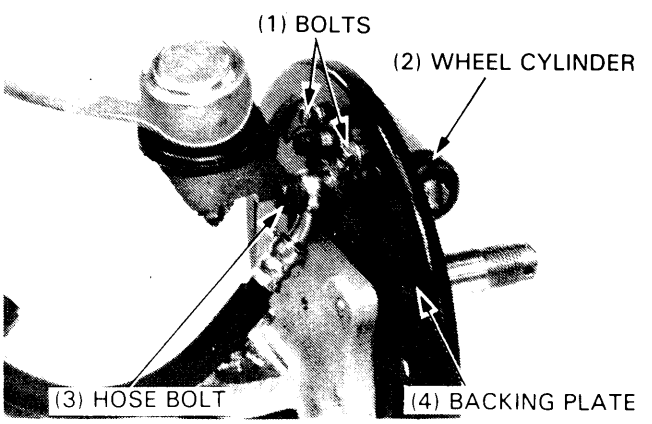
NOTE

- To remove the pins, push the shoe clamp and turn them.

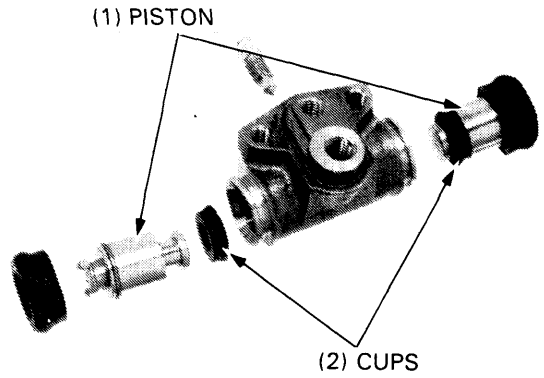


WHEEL CYLINDER REMOVAL

Drain the brake fluid from the hydraulic system (page 12-3).
Disconnect the brake hose from the wheel cylinder by removing the hose bolt and sealing washers.
Remove the two bolts and wheel cylinder from the backing plate.



WHEEL CYLINDER INSPECTION



CAUTION

- *Clean all parts thoroughly with the clean brake fluid.*
- *Blow out all passages with compressed air.*

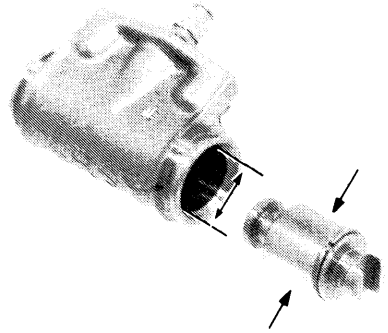
Inspect the wheel cylinder and piston sliding surfaces for scores, grooves, or other damage.
Replace the piston cups whenever the wheel cylinder is disassembled.

Measure the wheel cylinder I.D.

SERVICE LIMIT: 17.513 mm (0.6895 in)

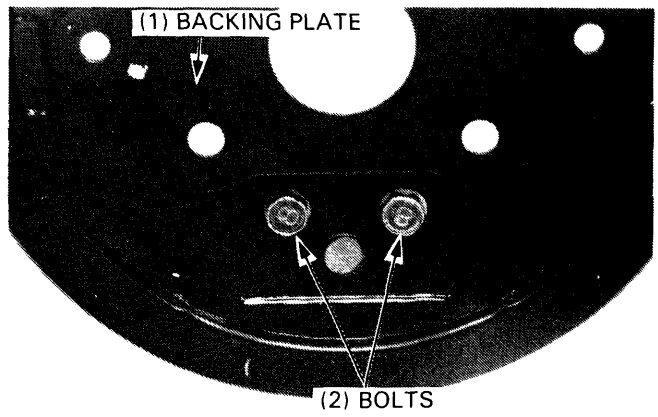
Measure the wheel cylinder piston O.D.

SERVICE LIMIT: 17.407 mm (0.6853 in)



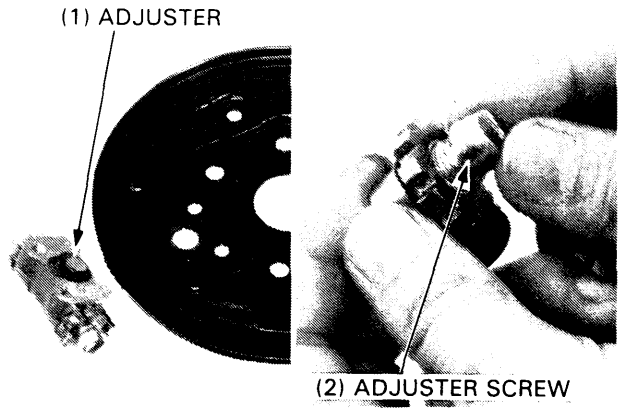
ADJUSTER REMOVAL

Remove the backing plate from the knuckle.
Remove the adjuster from the backing plate by removing the bolts.



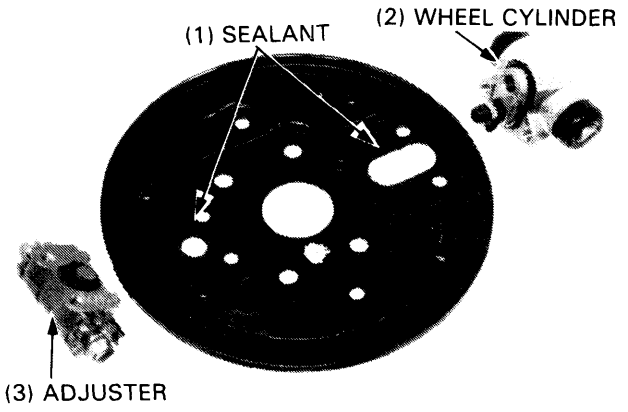
ADJUSTER INSPECTION

Check the adjuster screw for damage by rotating it by hand.



BACKING PLATE ASSEMBLY

Apply sealant to the adjuster and wheel cylinder mounting surfaces on the backing plate.
Install the adjuster and wheel cylinder onto the backing plate and tighten the mounting bolts.



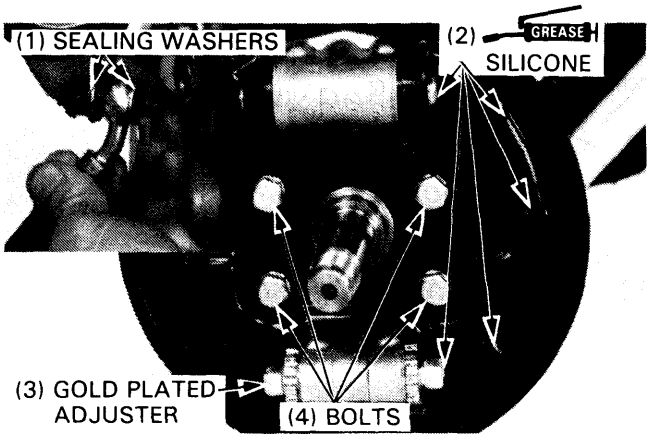
Install the backing plate onto the knuckle and tighten the four bolts.

TORQUE: 18—25 N·m (1.8—2.5 kg-m, 13—18 ft-lb)

Make sure that the gold plated adjusting screw is on your left side. If not, switch the adjusters.
Connect the brake hose to the wheel cylinder with hose bolt and two sealing washers.
Tighten the hose bolt.

TORQUE: 30—40 N·m (3.0—4.0 kg-m, 22—29 ft-lb)

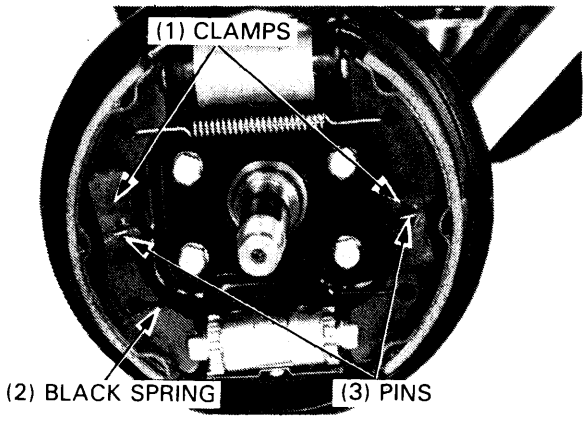
Apply silicone grease to the metal contacting areas as shown.



Install the brake shoes, springs, pins and shoe clamps.
Install the black spring on the bottom.

NOTE

- Do not get grease or oil on to the brake lining surface.

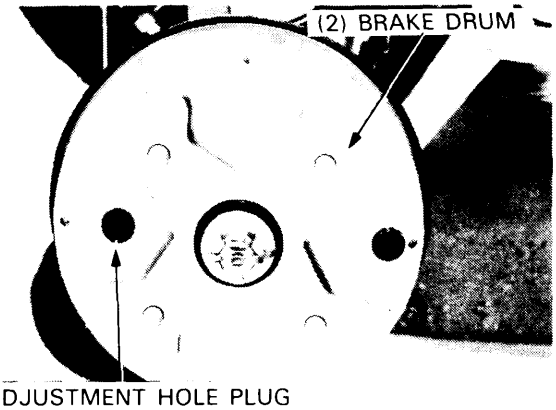


Install the brake drum (page 10-5).

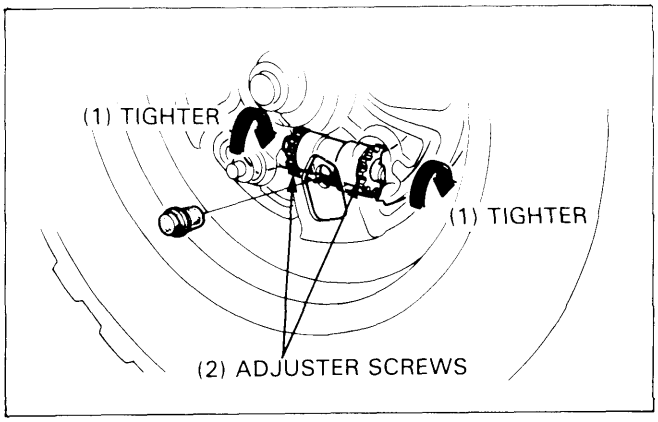
Fill and bleed the brake system (page 12-3).
Install the front wheel (page 10-3).
Adjust the brake shoe lining-to-drum clearance.

BRAKE ADJUSTMENT

Remove the adjustment hole plug.

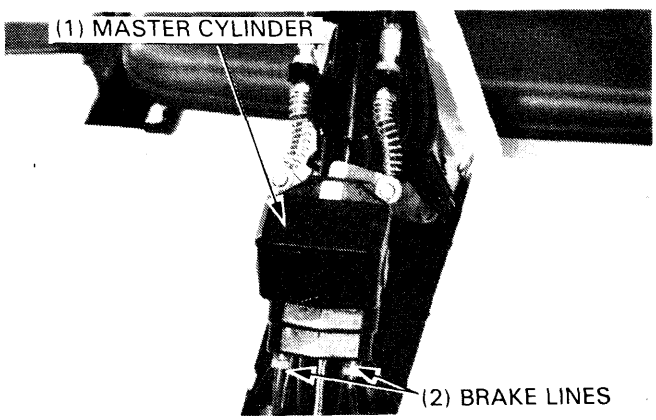


Turn both brake shoe adjuster screws up with a screwdriver until the front brake locks, then back off two or three stops. Install the adjustment hole plug.

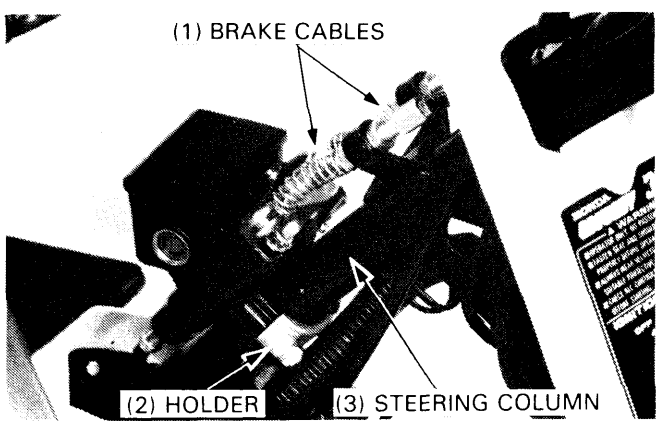


FRONT/REAR MASTER CYLINDER DISASSEMBLY

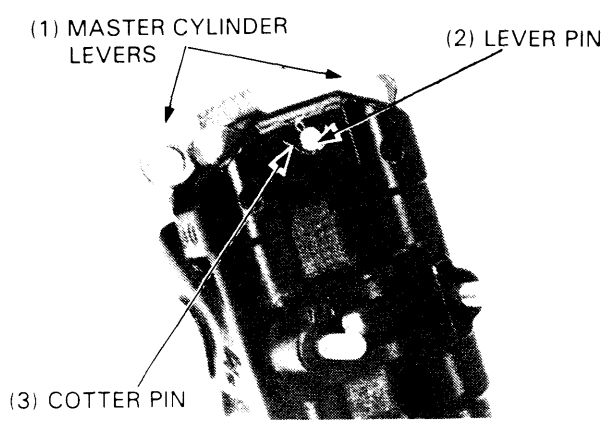
Drain the brake fluid from the hydraulic system.
Remove the right and left steering column covers (page 10-7).
Disconnect the brake lines from the master cylinder.
Remove the master cylinder holder nuts.



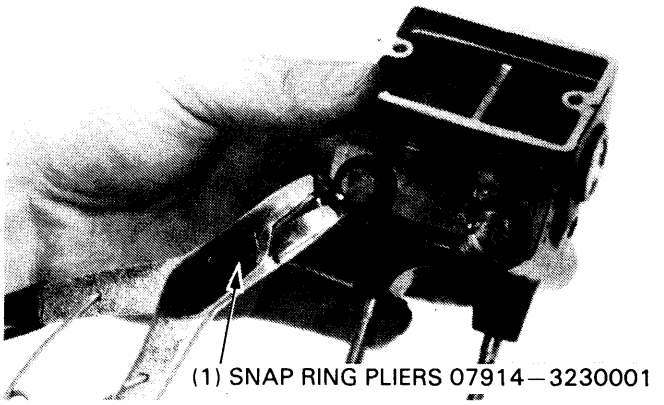
Loosen the brake cable lock nuts, then disconnect the brake cables from the steering column and master cylinder levers.



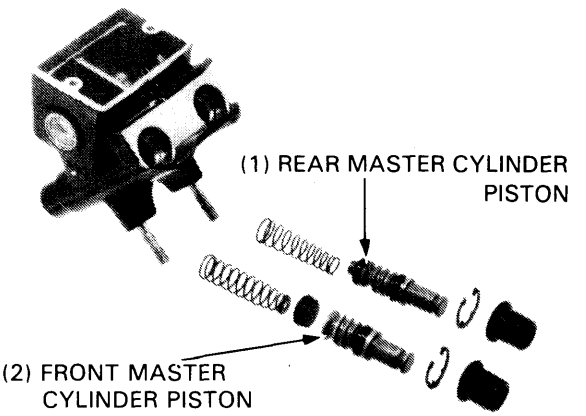
Remove the cotter pin, lever pin and master cylinder levers.



Remove the piston boots and circlips from the front and rear master cylinder bores.



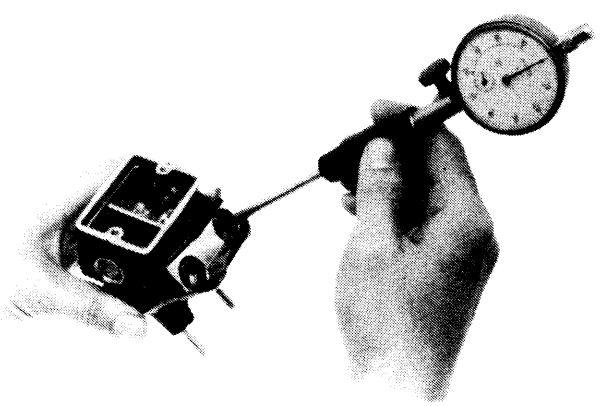
Remove the master cylinder pistons, cups and springs.
Clean the inside of the master cylinder and reservoir with clean brake fluid.



Check the master cylinder for scores, scratches or other damage.
Measure the front and rear master cylinder I.D.

SERVICE LIMIT:

FRONT: 14.055 mm (0.5533 in)
REAR: 12.755 mm (0.5022 in)

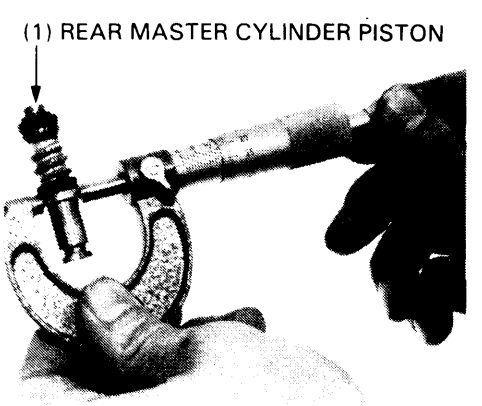


Measure the front and rear master cylinder piston O.D.

SERVICE LIMIT:

FRONT: 13.945 mm (0.5490 in)
REAR: 12.645 mm (0.4978 in)

Check the primary and secondary cups for wear or damage.
Replace if necessary.

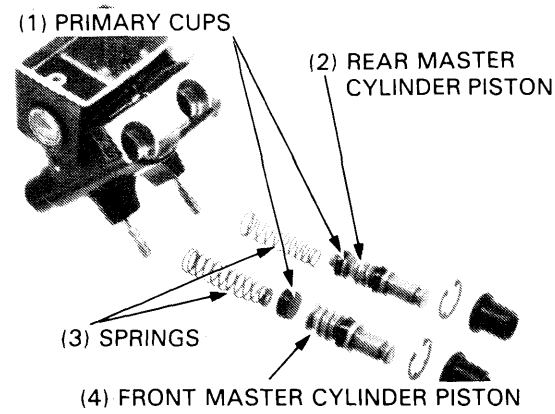


ASSEMBLY

CAUTION

- *Be sure the master cylinder piston, and spring are replaced in the same cylinder they were removed from.*

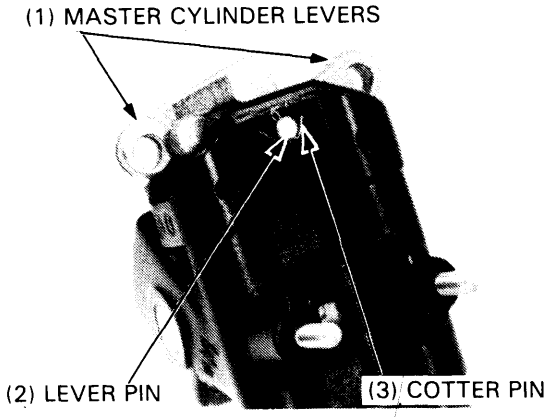
Assemble the master cylinder.
Coat all parts with clean brake fluid before assembly.
Install the spring and primary cup together into the front master cylinder.
Install the front master cylinder piston.
Install the rear spring and piston.
Install the circlips and boots.



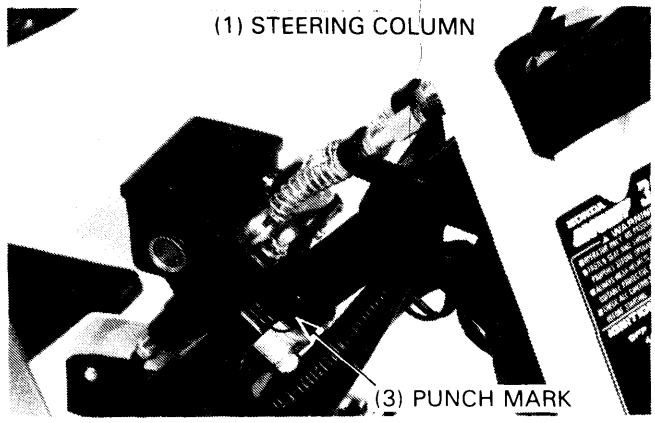
CAUTION

- *When installing the cup, do not allow the lips to turn inside out and be certain the circlips are firmly seated in the grooves.*

Install the master cylinder levers with the lever pin and cotter pin.



Place the master cylinder onto the steering column.
Connect the brake pipes to the master cylinder.
Align the master cylinder holder end with the punch mark on the steering column.
Tighten the master cylinder holder nuts.
Fill and bleed the brake system (page 12-3).



REAR BRAKE

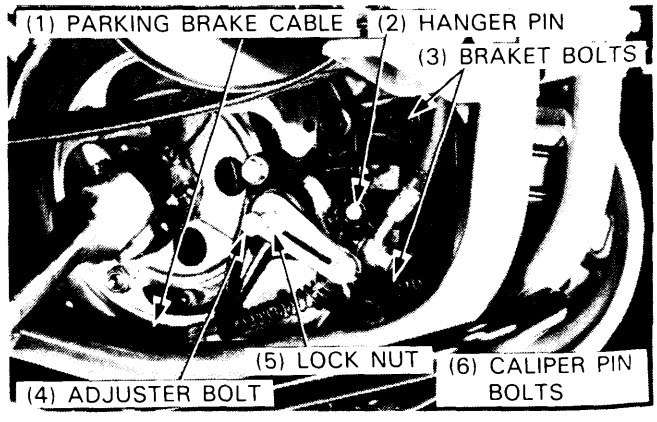
BRAKE PAD REPLACEMENT

NOTE

- Always replace the brake pads in pairs to assure even disc pressure.

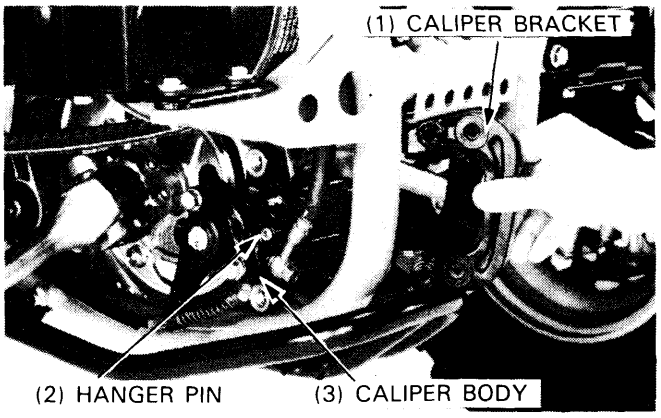
Loosen the brake pad hanger pin.

Remove the caliper pin and bracket bolts and disconnect the parking brake cable by removing the adjuster bolt and lock nut.



Remove the caliper bracket from the back.

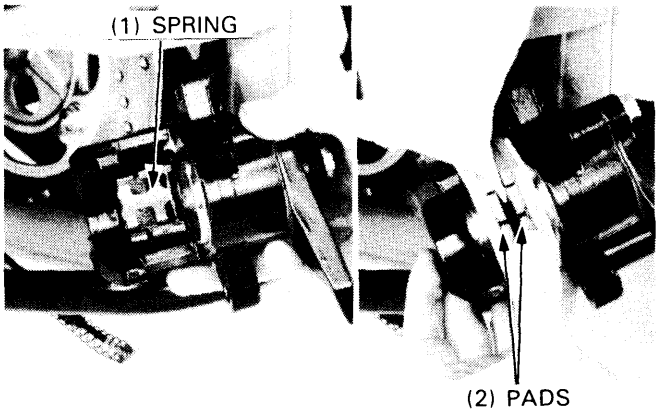
Remove the caliper body with the brake pads from the brake disc.
Remove the hanger pins and brake pads from the caliper body.



Install the pad springs into the caliper body.
Push the caliper piston in all the way.
Install the brake pads with the hanger pin.
Tighten the hanger pin.

TORQUE: 15—20 N·m (1.5—2.0 kg-m, 10—14 ft-lb)

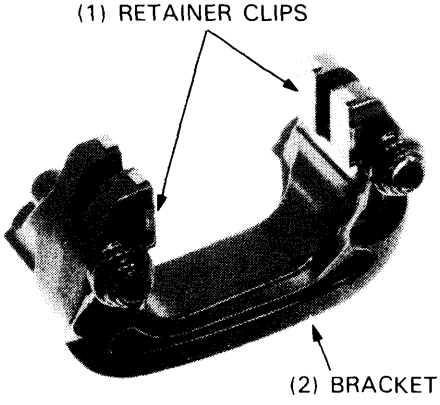
Place the caliper so that the brake disc is positioned between the pads, taking care not to damage the pads.



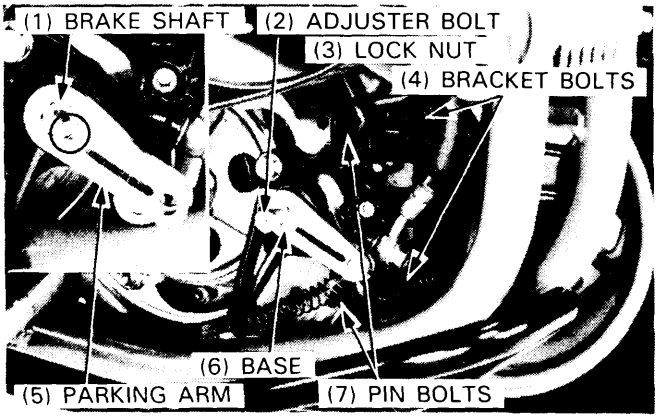
Apply silicone grease sparingly to the caliper pivot bolts and boots on the caliper bracket.
Make sure that the retainer clips are installed properly on the caliper bracket.
Install the caliper bracket onto the caliper body.

Install the caliper pin bolts and bracket bolts and tighten them.

TORQUE:
PIN BOLT 25—30 N·m (2.5—3.0 kg-m, 18—22 ft-lb)
BRACKET BOLT 35—43 N·m (3.5—4.3 kg-m, 25—31 ft-lb)



Connect the parking brake cable to the parking brake base and parking arm.
Align the punch marks on the parking arm and parking brake shaft, and install them with the adjuster bolt and lock nut.
Adjust the parking brake cable (page 3-12).

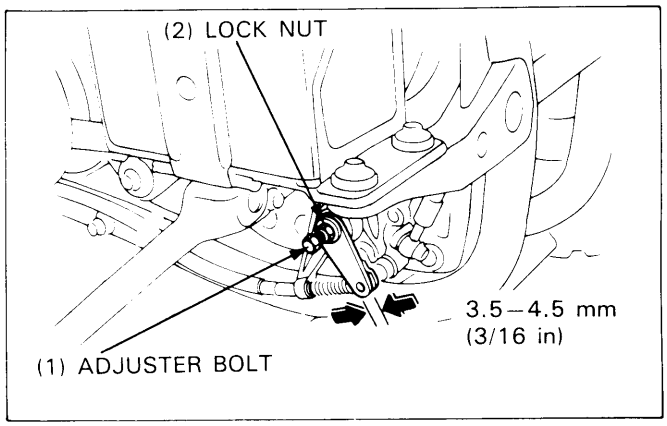


PARKING BRAKE ADJUSTMENT

Loosen the lock nut and screw in the adjuster bolt until you feel resistance without applying the parking brake lever, and tighten the lock nut.
Tighten the lock nut to the specified torque.

TORQUE: 15—20 N·m (1.5—2.0 kg-m, 11—14 ft-lb)

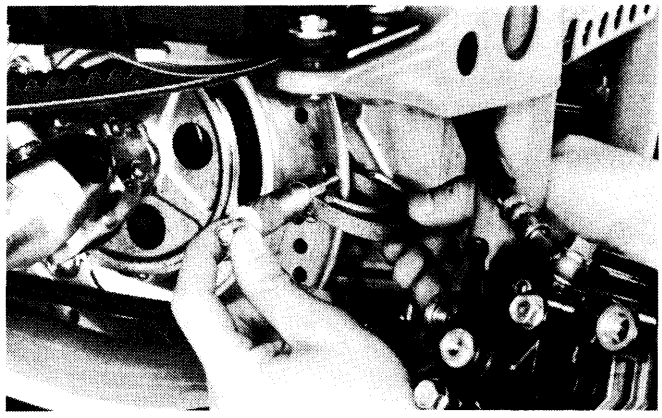
Measure the parking arm free play.
The arm free play should be 3.5—4.5 mm (3/16 in) at the tip of the parking arm.



BRAKE DISC INSPECTION

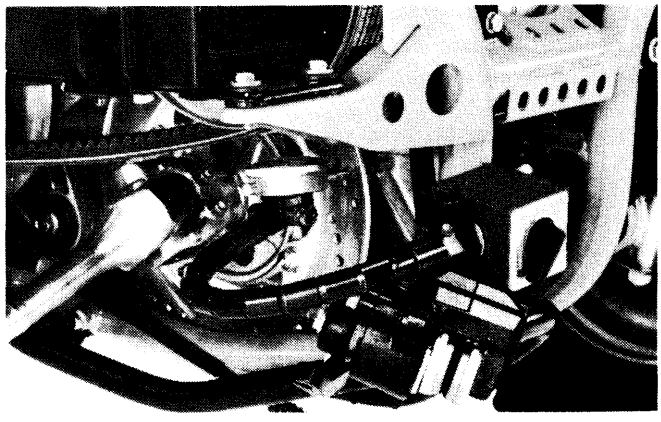
Measure the thickness of the brake disc.

SERVICE LIMIT: 3.5 mm (0.14 in)



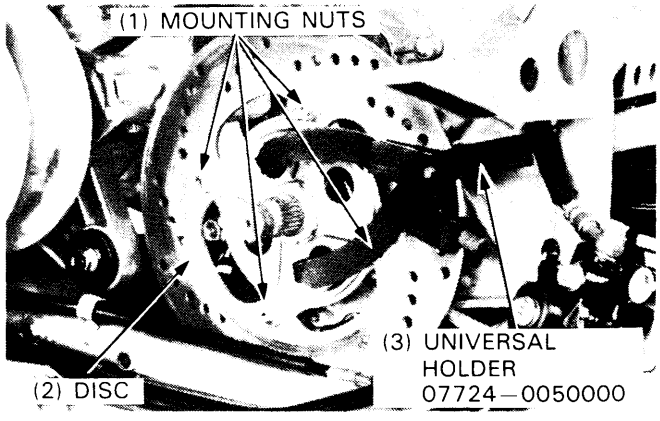
Raise the rear wheels off the ground by placing the block under the frame.
Measure the brake disc runout.

SERVICE LIMIT: 0.15 mm (0.006 in)

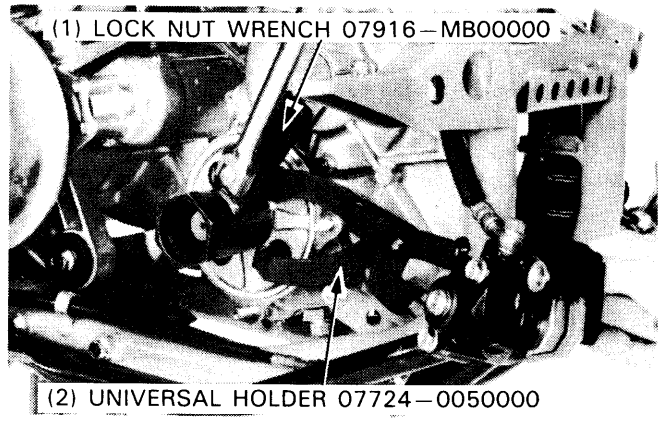


BRAKE DISC REPLACEMENT

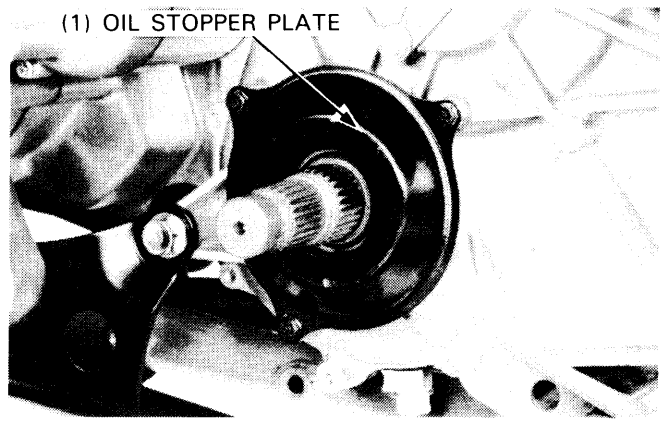
Remove the brake caliper (page 12-10).
Remove the drive belt (page 9-19).
Remove the left drive shaft (page 11-10).
Remove the driven pulley (page 9-26).
Remove the brake disc mounting nuts and brake disc.



Remove the disc hub nut from the disc hub.
Remove the oil stopper plate from the final gear shaft.

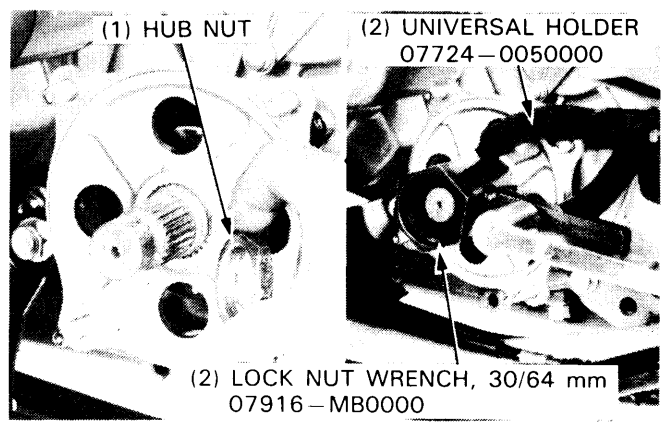


Install the oil stopper plate.



Install the brake disc hub onto the final gear shaft.
Apply locking agent to the hub nut and tighten it to the specified torque.

TORQUE: 100—120 N·m (10.0—12.0 kg-m, 72—86 ft-lb)



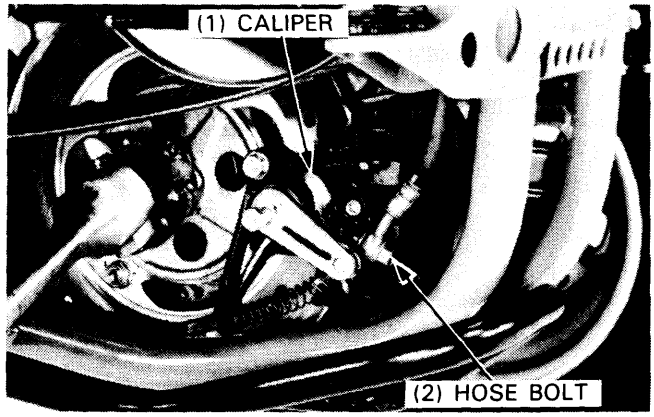
Install the brake disc onto the disc hub.
Tighten the brake disc mounting nuts.

TORQUE: 30—35 N·m (3.0—3.5 kg-m, 22—25 ft-lb)

Install the driven pulley (page 9-30).
Install the left drive shaft (page 11-12).
Install the drive belt (page 9-19).
Install the caliper (page 12-11).

BRAKE CALIPER DISASSEMBLY

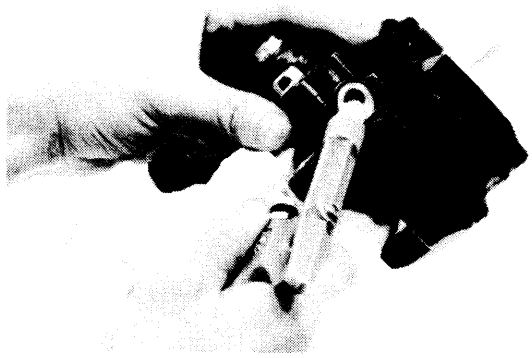
Drain the brake hydraulic system (page 12-3).
Disconnect the brake hose from the caliper by removing the hose bolt and two sealing washers.
Remove the brake caliper and brake pads (page 12-10).



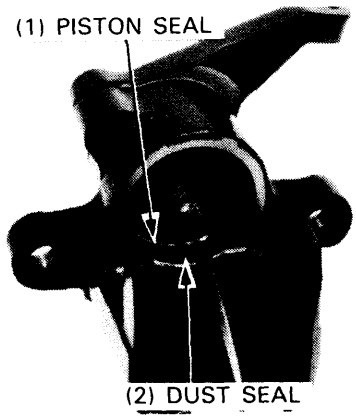
Remove the caliper piston.
If the piston is stuck in the caliper, place a shop towel or rag over the piston to prevent the piston and brake fluid from coming out, and apply a small amount of air pressure to the fluid inlet.

CAUTION

- *Do not use high pressure air or bring the nozzle too close to the inlet.*



Remove the piston seal and dust seal from the caliper.
Clean the caliper grooves with the brake fluid.



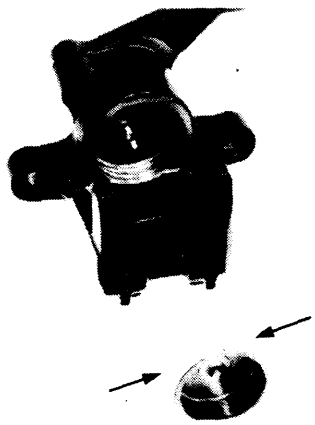
Check the caliper cylinder for scoring, scratches or other damage.

Measure the caliper cylinder I.D.

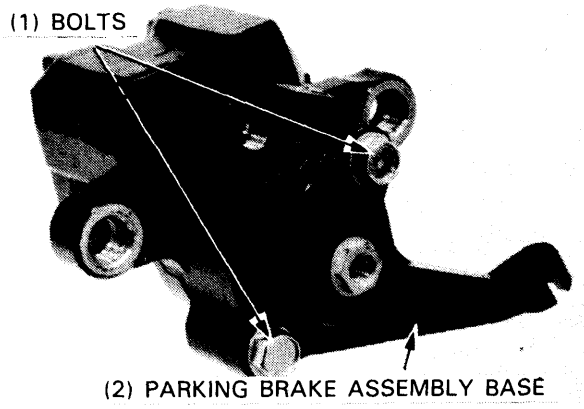
SERVICE LIMIT: 42.91 mm (1.689 in)

Measure the caliper piston O.D.

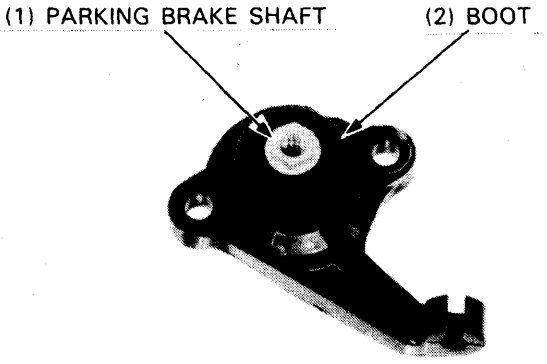
SERVICE LIMIT: 42.76 mm (1.684 in)



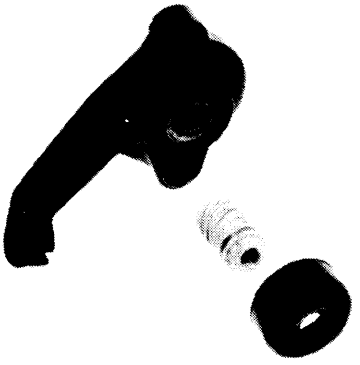
Remove the two attaching bolts and the parking brake base.



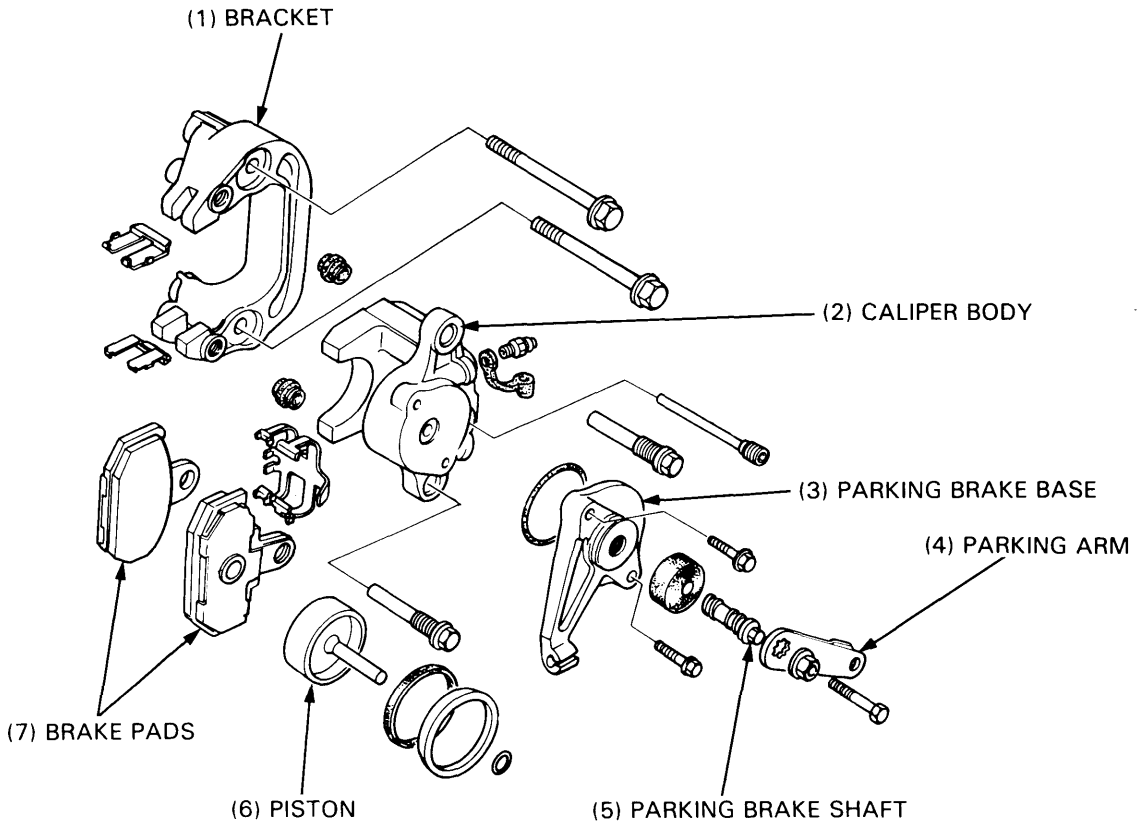
Remove the boot and parking brake shaft.



Check the parking brake shaft for wear or damage.



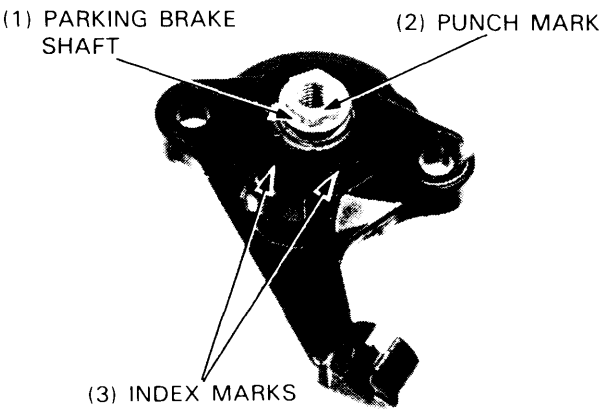
BRAKE CALIPER ASSEMBLY



Lubricate the inside of the caliper cylinder with brake fluid.
Install the piston seal and dust seal.
Install the piston with the concave end of the brake pad side.
Insert the piston into the caliper cylinder.
Wipe excess brake fluid off the caliper with a clean cloth.

Apply grease to the parking brake shaft, position the shaft so that the punch mark is within the index marks on the parking brake base and thread the shaft into the parking brake base.

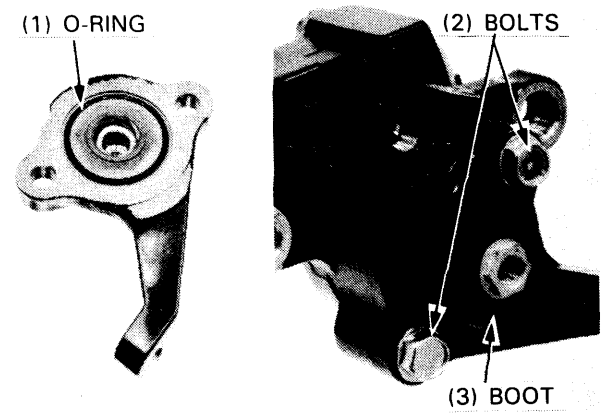
Screw the parking brake shaft in fully, back it about 1/8 turn and make sure that the punch mark on the shaft is within the index marks on the base.



Install an O-ring onto the parking brake base and install the parking brake base onto the caliper body.
Tighten the parking brake attaching bolts.

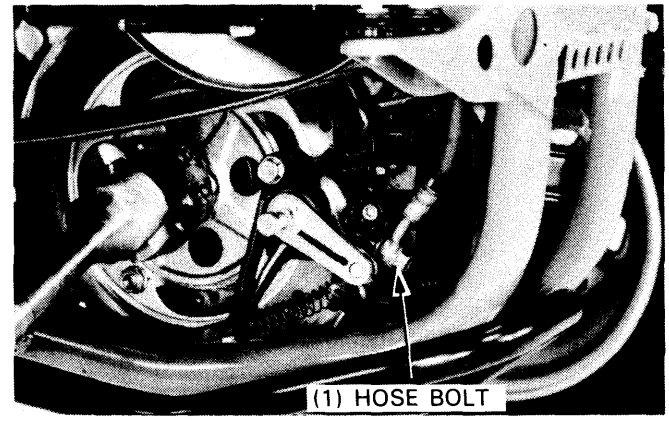
TORQUE: 20—25 N·m (2.0—2.5 kg-m, 14—18 ft-lb)

Install the boot over the shaft and base, making sure that the boot is seated in the groove in the shaft and base properly.
Install the brake pads with the hanger pin, and the caliper onto the disc.

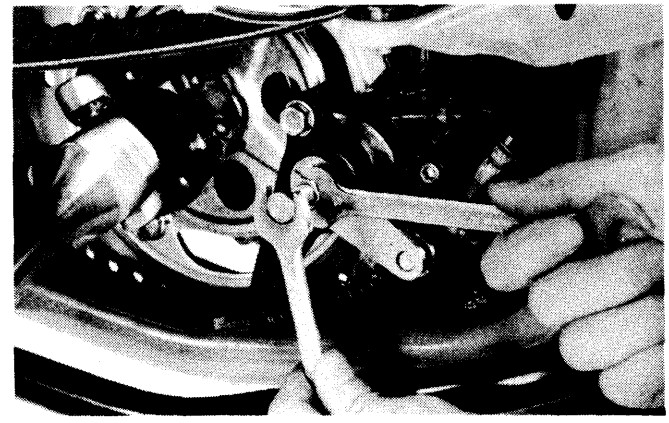


Install the brake pads into the caliper (page 12-11).
Install the caliper and bracket (page 12-11).
Connect the parking brake cable to the parking arm and parking brake base as shown.
Align the punch marks on the parking arm and parking brake shaft, and install the adjusting bolt and lock nut. (page 12-11).
Connect the brake hose to the caliper with the hose bolt and two sealing washers.
Tighten the hose bolt.

TORQUE: 30—40 N·m (3.0—4.0 kg-m, 22—29 ft-lb)



Fill and bleed the brake system (page 12-3).
Adjust the parking brake (page 12-12).



BRAKE CABLES

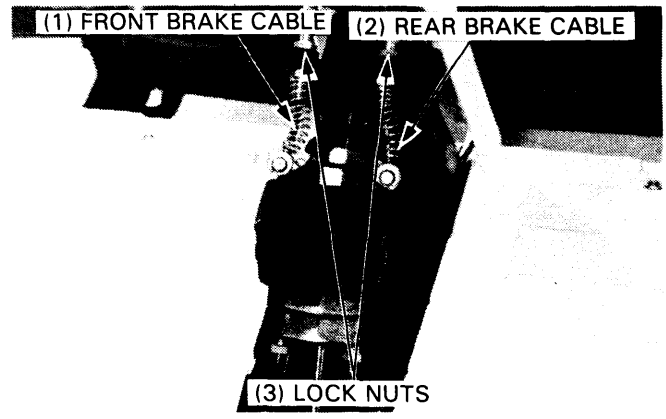
FRONT BRAKE CABLES

REMOVAL

Remove the following:
- steering wheel cover (page 10-7).
- steering column covers (page 10-7).
- front and rear brake levers from the steering wheel (page 10-7).

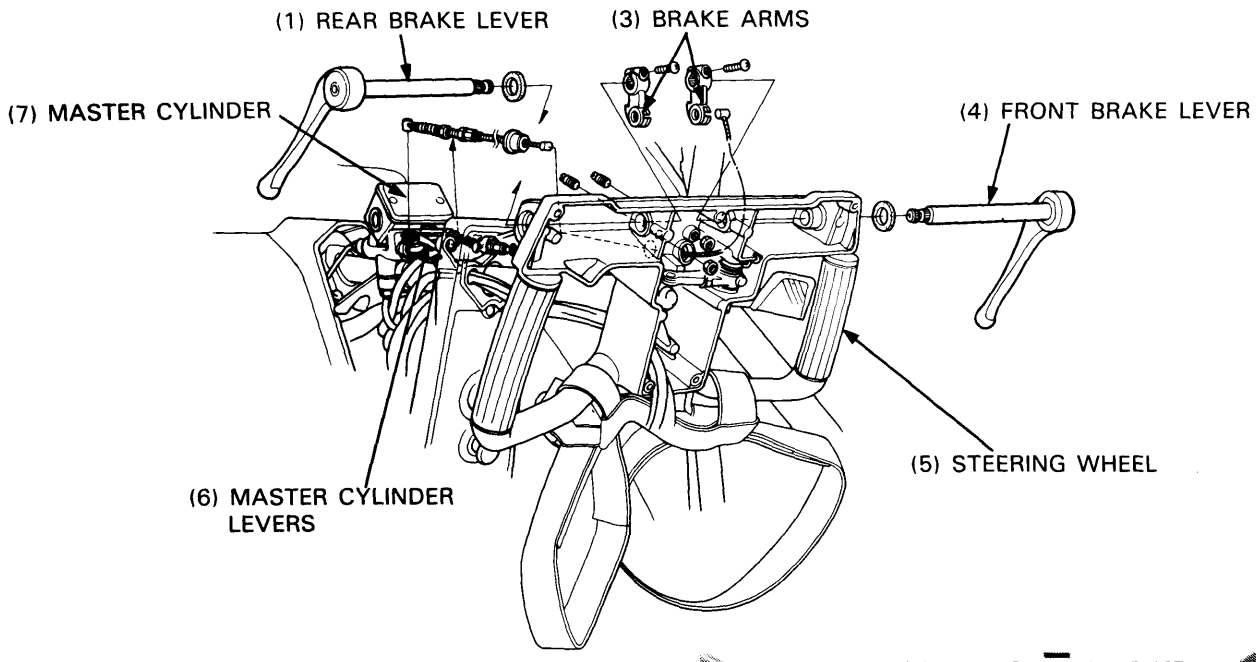
Disconnect the brake cables from the brake lever arms (page 10-7).

Loosen the brake cable lock nuts and disconnect the brake cables from the steering column and master cylinder levers.



INSTALLATION

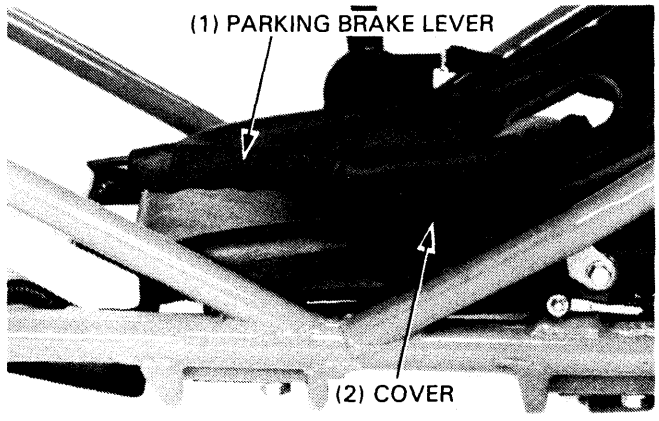
The installation sequence is essentially the reverse order of removal.
Adjust the front and rear brakes (page 3-10).
Check the operation of the front and rear brakes.



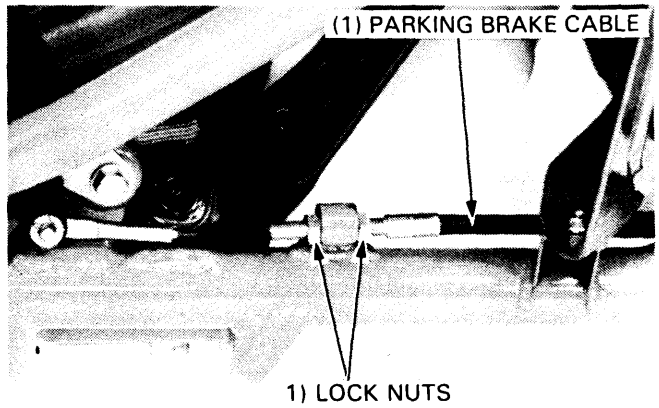
PARKING BRAKE LEVER/CABLE

REMOVAL

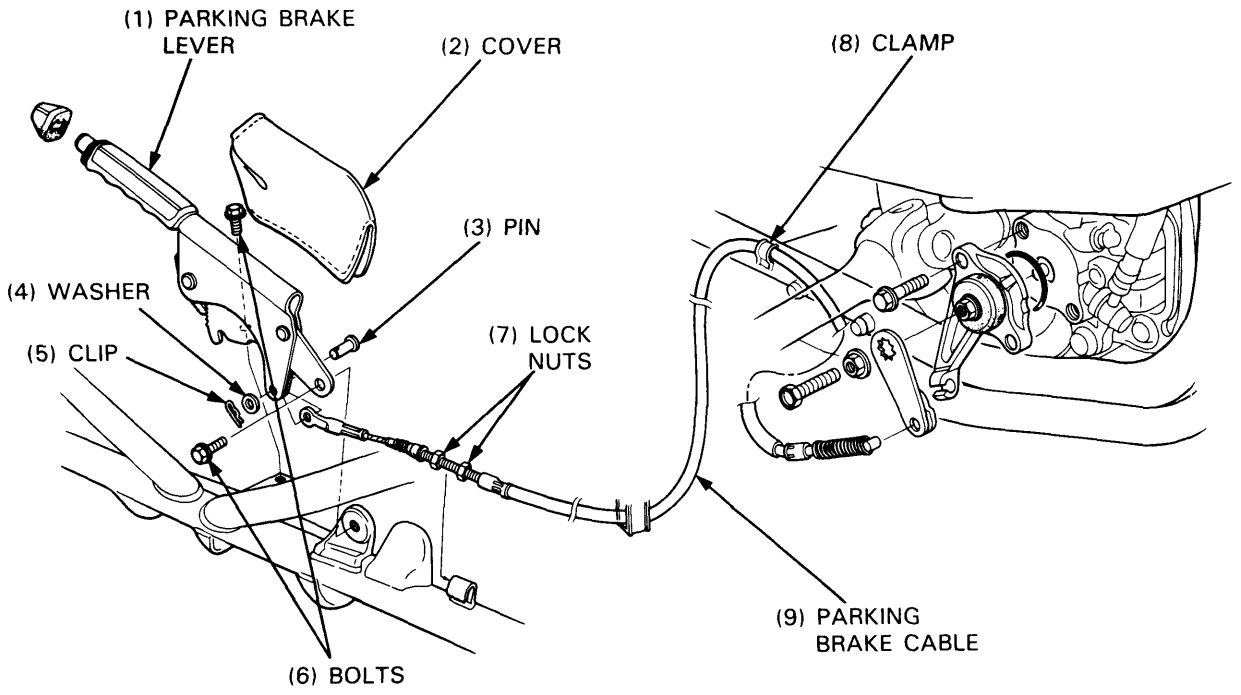
Remove the parking brake lever cover, clip and pin from the parking brake lever.
Remove the parking brake lever mounting bolts and lever assembly.



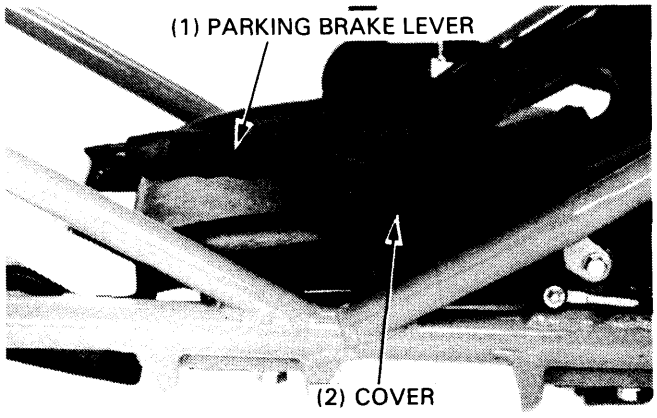
Loosen the parking brake cable lock nut.
Remove the parking brake cable from the brake caliper (page 12-10).
Remove the parking brake cable from the frame.



INSTALLATION



Connect the parking brake cable to the brake caliper.
Install the parking brake lever onto the frame using the bolts.
Connect the parking brake cable to the lever using the pin, washer and clip.
Install the parking brake lever cover.
Adjust the parking brake cable (page 3-12).

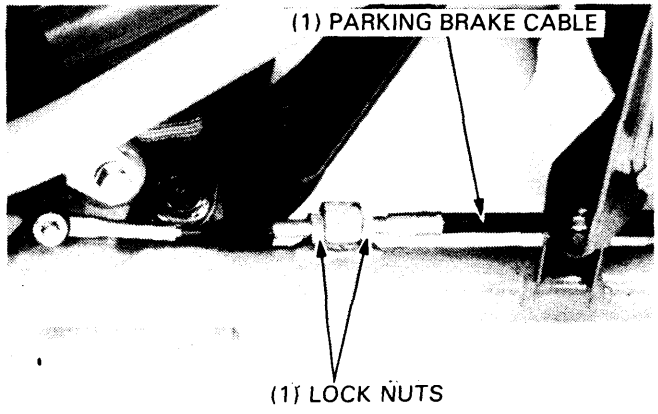


Install the parking brake cable in the holder on the frame and tighten the lock nuts.

CAUTION

- *Be careful not to pull the cable outer when tightening the lock nuts (page 3-12).*

Secure the cable onto the frame using the clamp.



MEMO

13. FRAME PARTS/EXHAUST MUFFLER

SERVICE INFORMATION

GENERAL

- This section describes removal/installation of the frame parts and exhaust pipe.

WARNING

- ***Do not service the exhaust system while it is hot.***

TORQUE VALUES

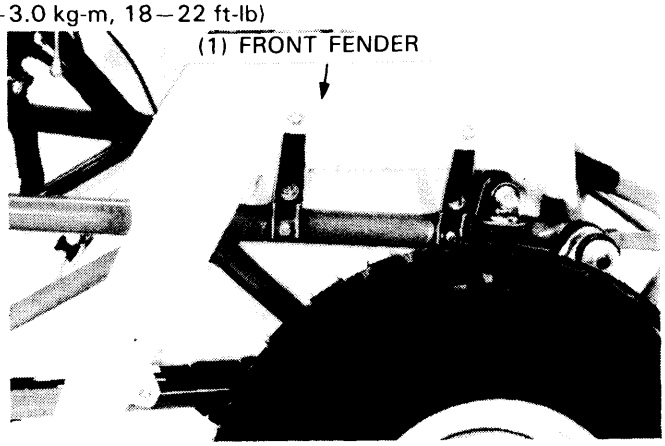
Seat mounting bolt	35—45 N·m (3.5—4.5 kg-m, 25—33 ft-lb)
Seat belt mounting bolt	30—35 N·m (3.0—3.5 kg-m, 22—25 ft-lb)
Roll bar mounting nut	40—50 N·m (4.0—5.0 kg-m, 29—36 ft-lb)
Rear shock absorber mounting bolt	80—100 N·m (8.0—10.0 kg-m, 58—72 ft-lb)
Front arm pivot nut	80—100 N·m (8.0—10.0 kg-m, 58—72 ft-lb)
Front bumper side plate bolt	70—80 N·m (7.0—8.0 kg-m, 50—58 ft-lb)
Front bumper mount bolt (Upper)	30—35 N·m (3.0—3.5 kg-m, 22—25 ft-lb)
Front bumper mount bolt (Lower)	30—35 N·m (3.0—3.5 kg-m, 22—25 ft-lb)
Front bumper clamp bolt (Center)	40—50 N·m (4.0—5.0 kg-m, 29—36 ft-lb)
Front bumper clamp bolt (Side)	40—50 N·m (4.0—5.0 kg-m, 29—36 ft-lb)
Skid plate mounting bolt	25—30 N·m (2.5—3.0 kg-m, 18—22 ft-lb)

13

FRONT FENDER

REMOVAL

Remove the front fender mounting bolts and stays.
Remove the front fender.



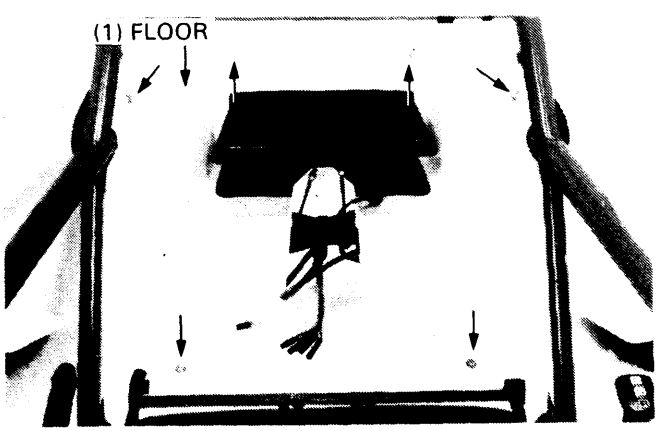
INSTALLATION

Install the front fender in the reverse order of removal.

FLOOR

REMOVAL

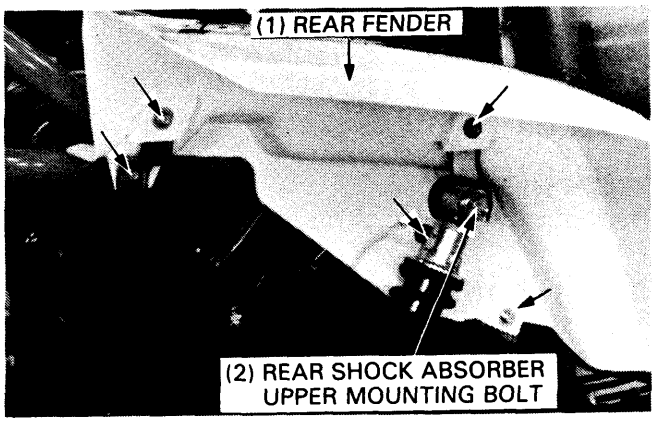
Remove the steering column from the frame (page 10-8).
Remove the six mounting bolts and floor.



INSTALLATION

Install the removed parts in the reverse order of removal.

REAR FENDER



REMOVAL

Remove the rear shock absorber upper mounting bolt and nut.
Remove the rear fender mounting bolts and rear fender.

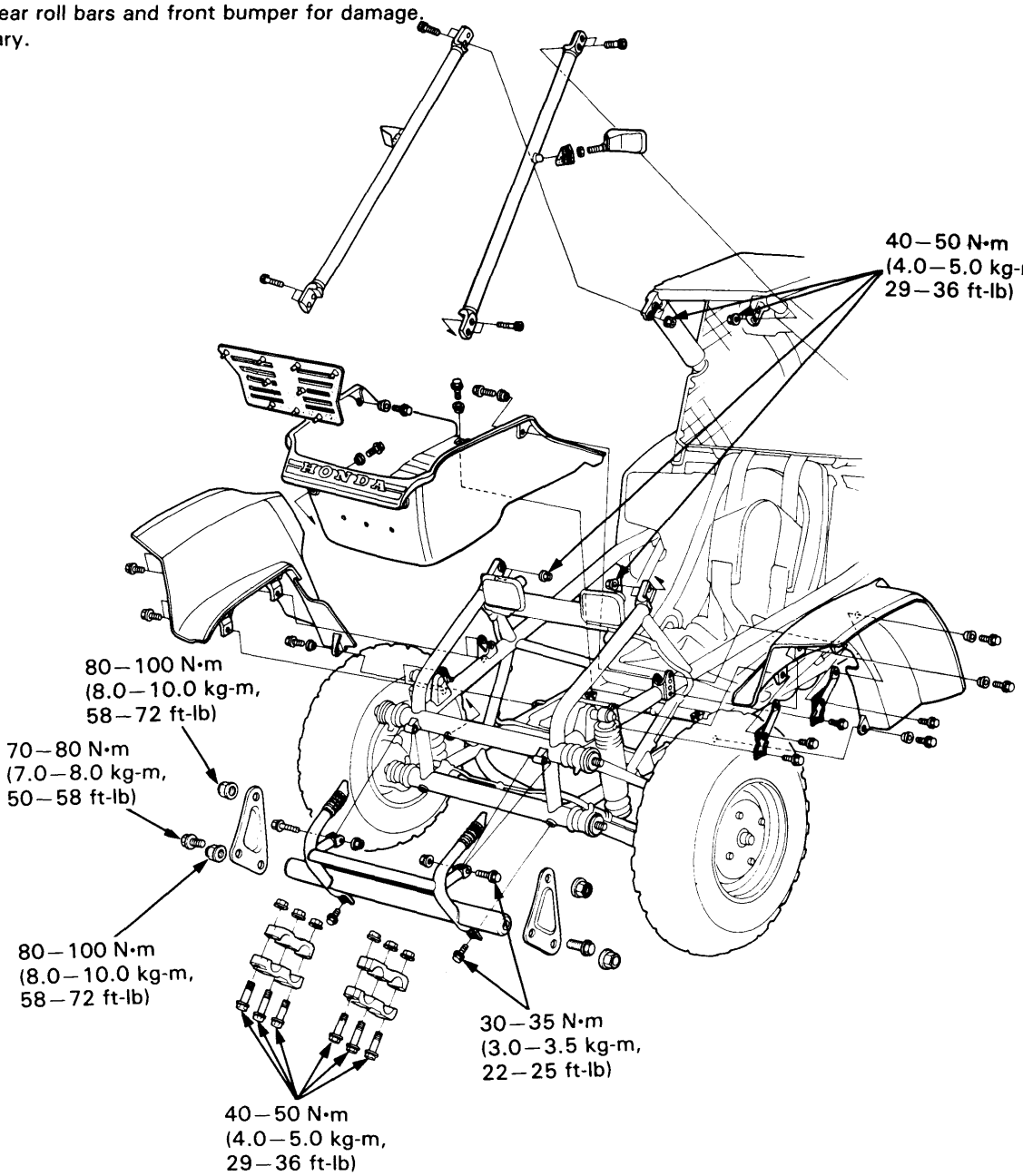
INSTALLATION

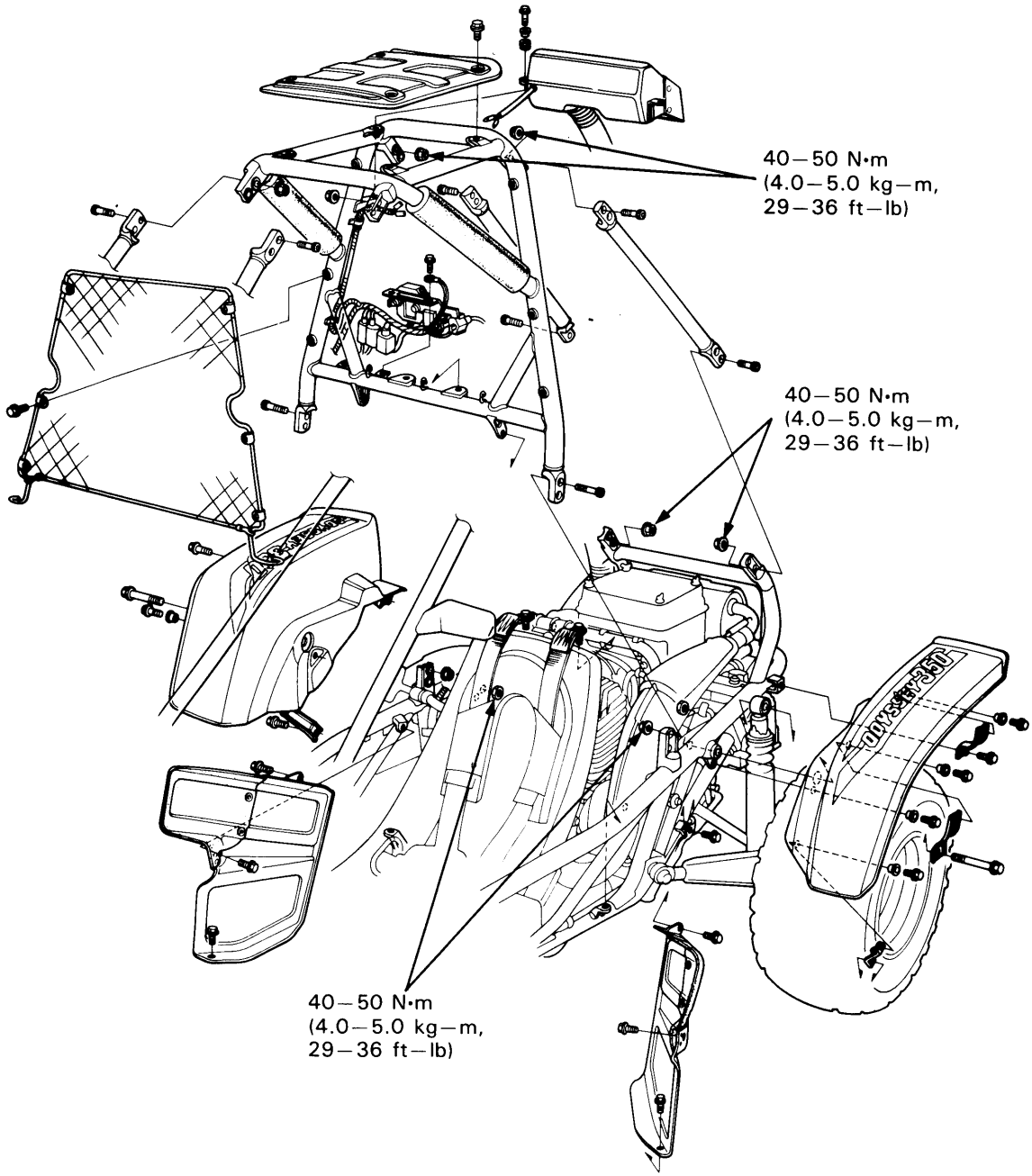
Installation is the reverse order of removal.
Tighten the rear shock absorber upper mounting bolts

TORQUE: 80—100 N·m (8.0—10.0 kg-m, 58—72 ft-lb)

ROLL BARS/FRONT BUMPER

Check the front, rear roll bars and front bumper for damage.
Replace if necessary.





EXHAUST PIPE

WARNING

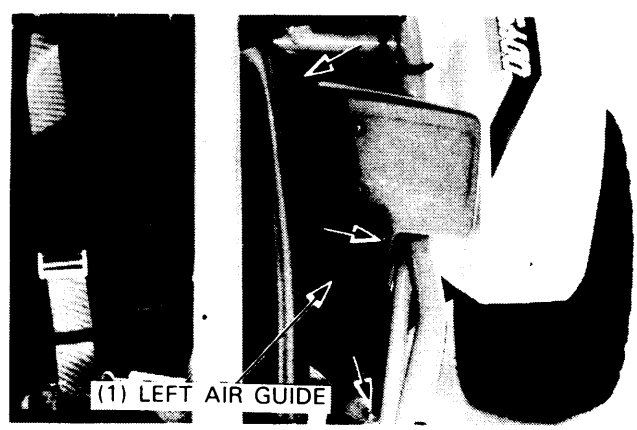
- *Do not service the exhaust pipe or muffler when they are hot.*

SPARK ARRESTER CLEANING

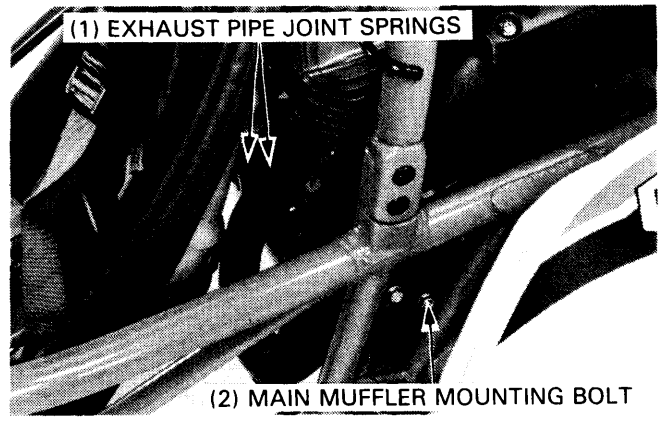
Refer to page 3-13.

EXHAUST PIPE/MUFFLER REMOVAL

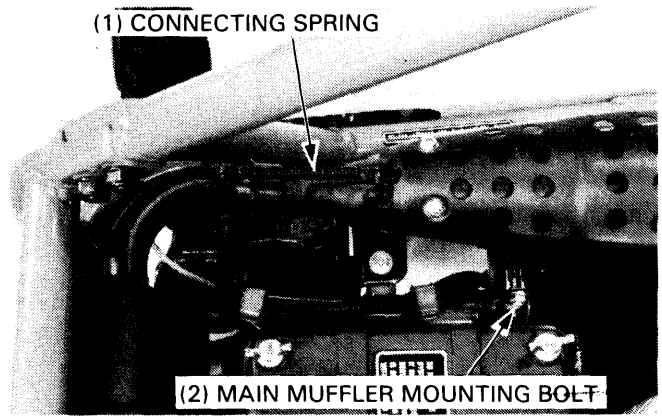
Remove the left air guide.



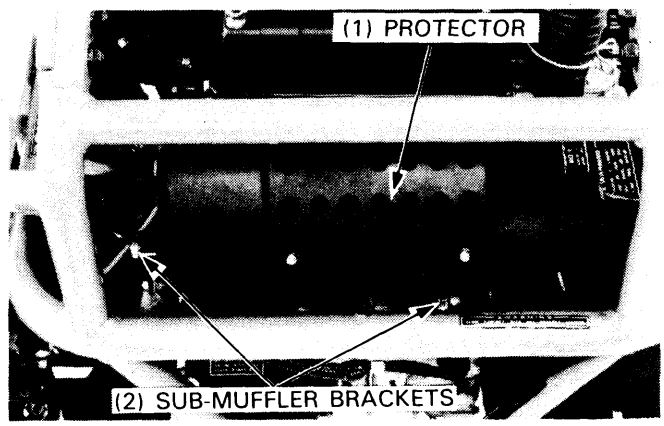
Remove the exhaust pipe joint mounting springs and main muffler mounting bolt.



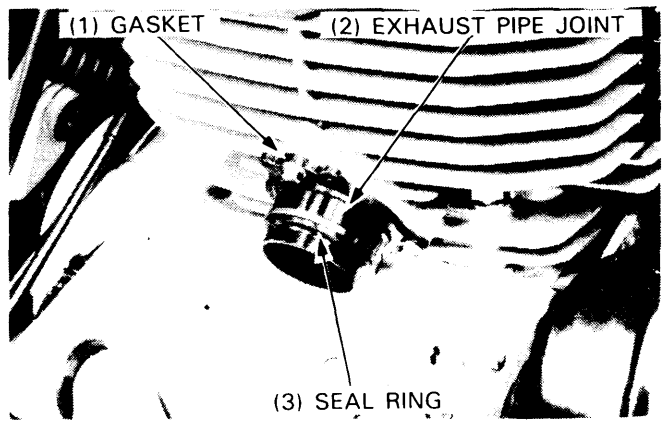
Remove the connecting spring and main muffler mounting bolt.



Remove the sub-muffler mounting bolts and brackets.
Remove the sub-muffler protector and sub-muffler.



Remove the exhaust pipe joint from the cylinder.
Remove the gasket and seal ring and replace if necessary.

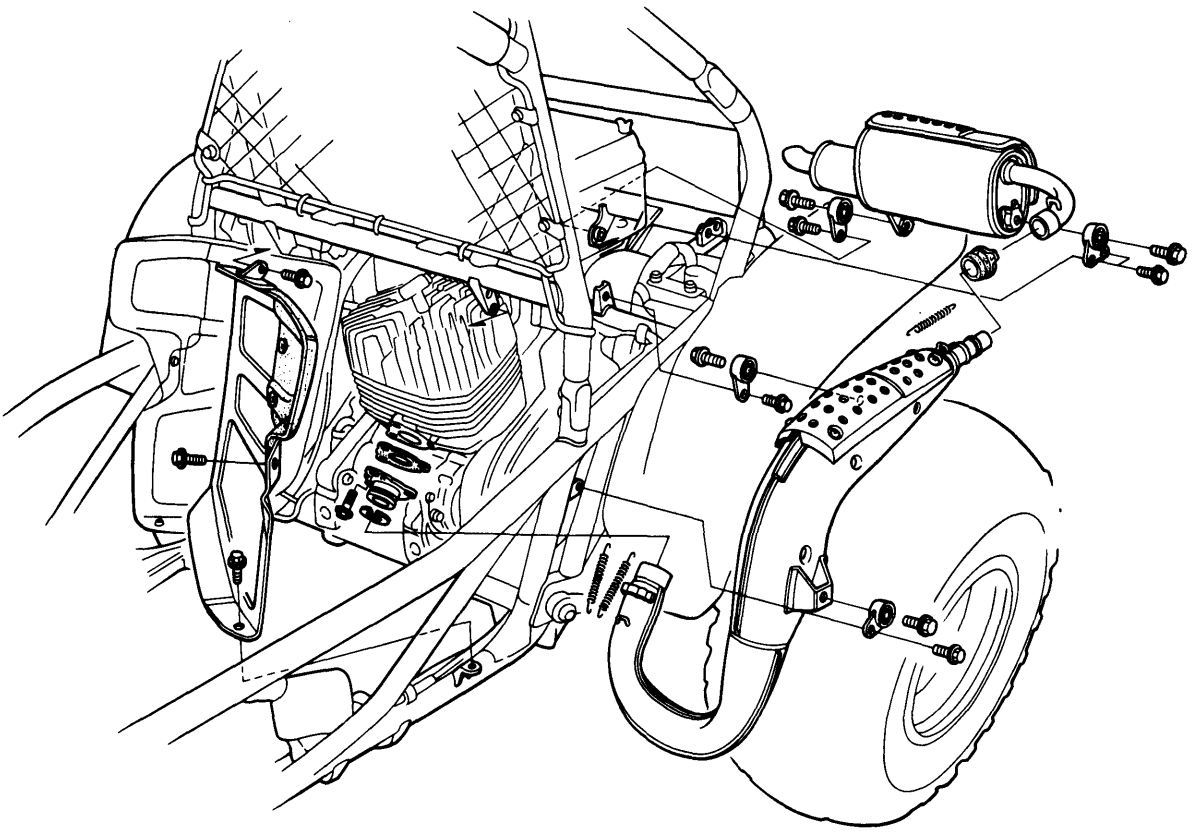


INSTALLATION

Installation is the reverse order of removal.

NOTE

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



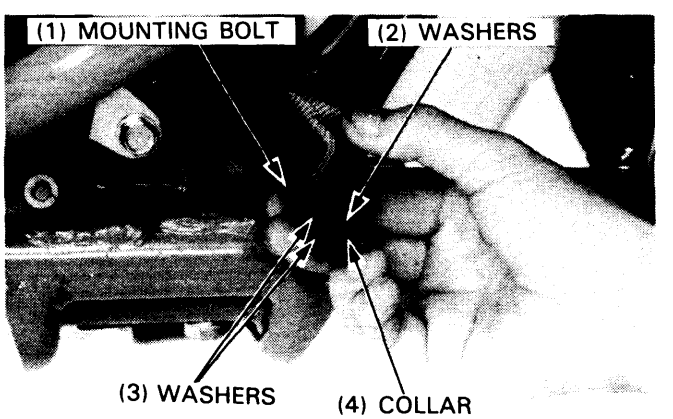
SEAT BELT/SEAT

REMOVAL

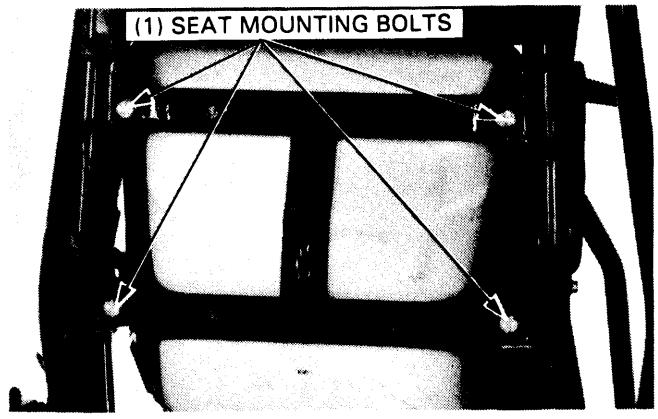
Remove the seat belt assembly and shoulder pad from the frame by removing the seat belt mounting bolts.

CAUTION

- *Check the belts, shoulder pad, mounting bolts and washers for damage, and replace if necessary. Be careful not to damage them during removal and installation.*



Remove the seat by removing the four seat mounting bolts.



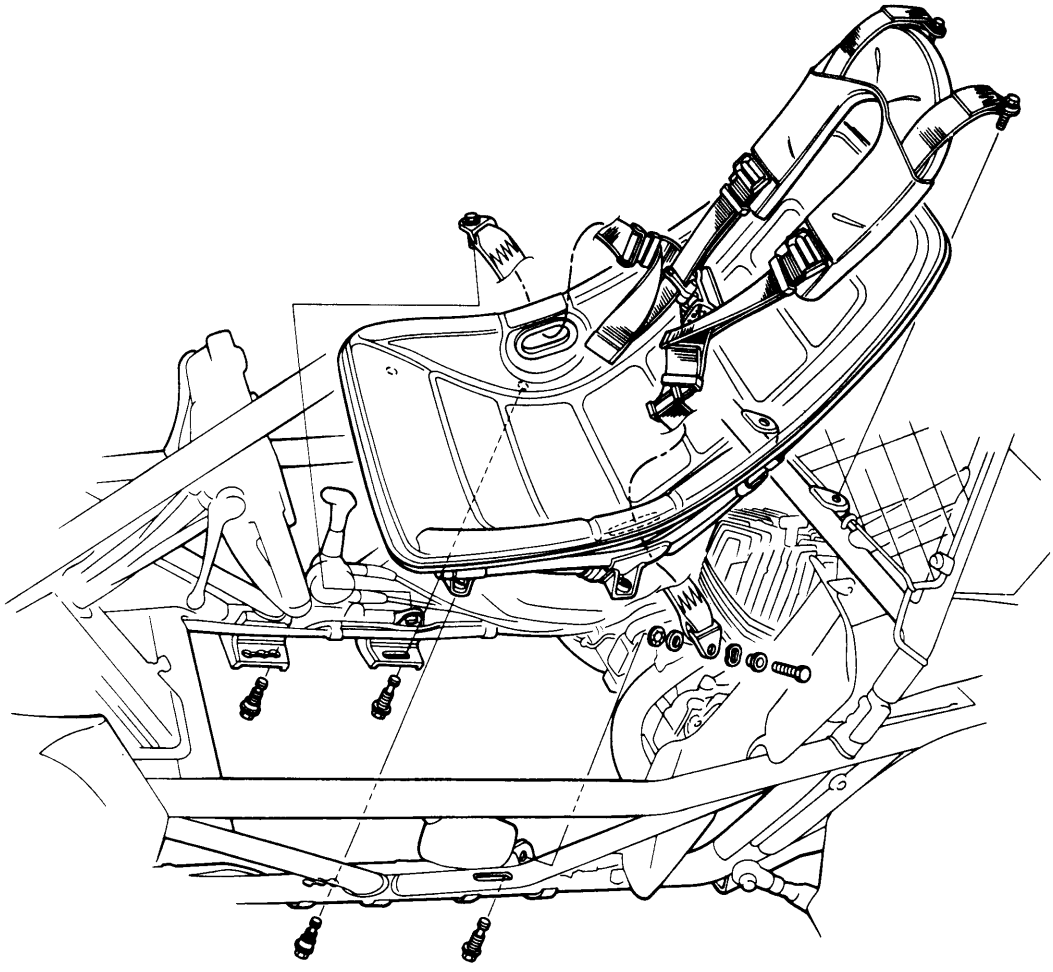
INSTALLATION

Install the seat on the frame and tighten the seat mounting bolts.

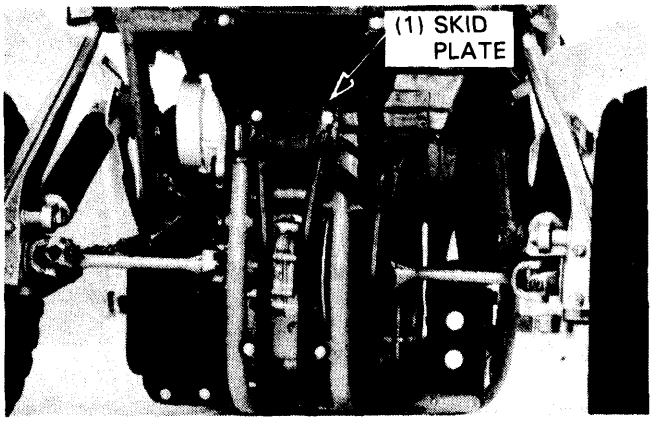
TORQUE: 35—45 N·m (3.5—4.5 kg-m, 25—33 ft-lb)

Install the seat belt mounting bolts and tighten the bolts to specified torque.

TORQUE: 30—35 N·m (3.0—3.5 kg-m, 22—25 ft-lb)



SKID PLATE

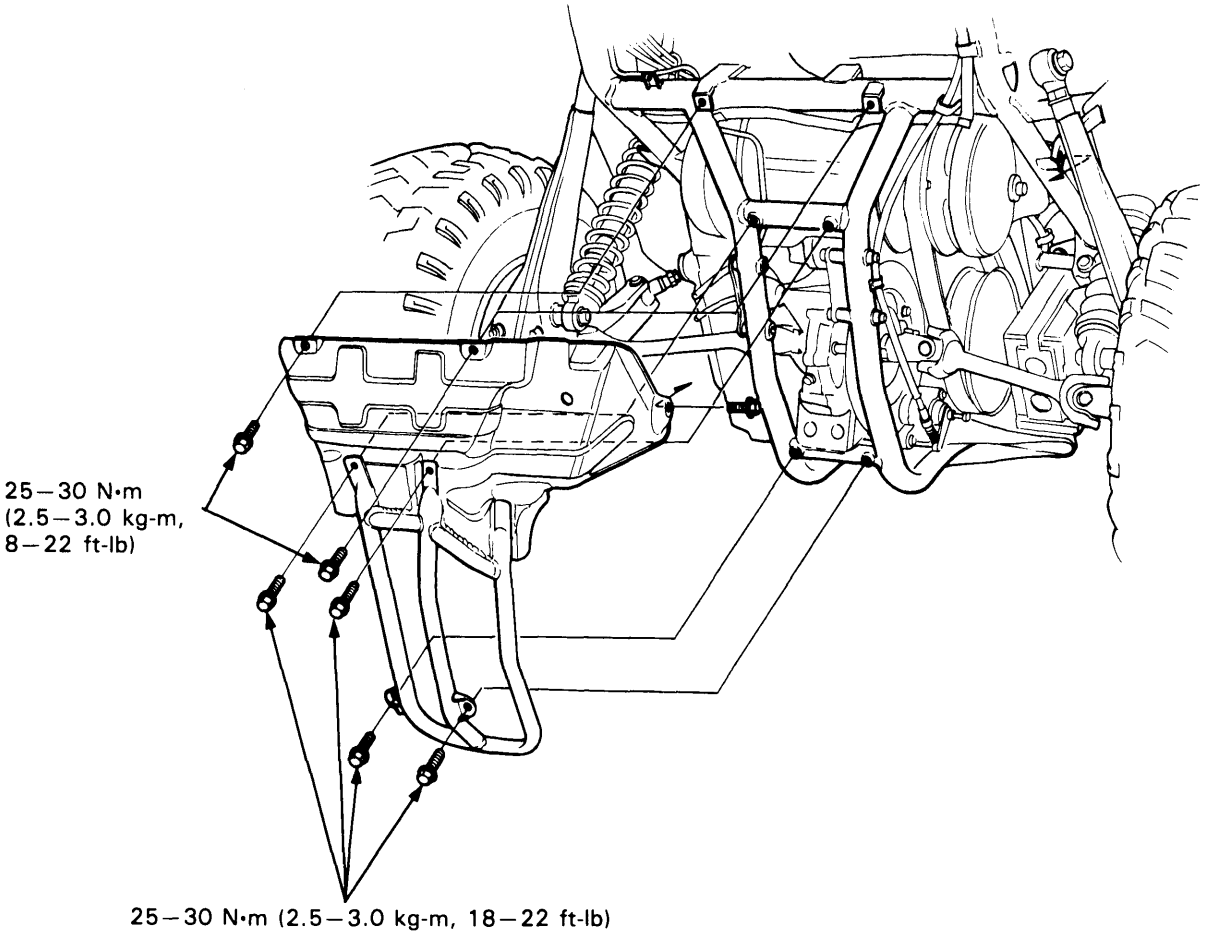


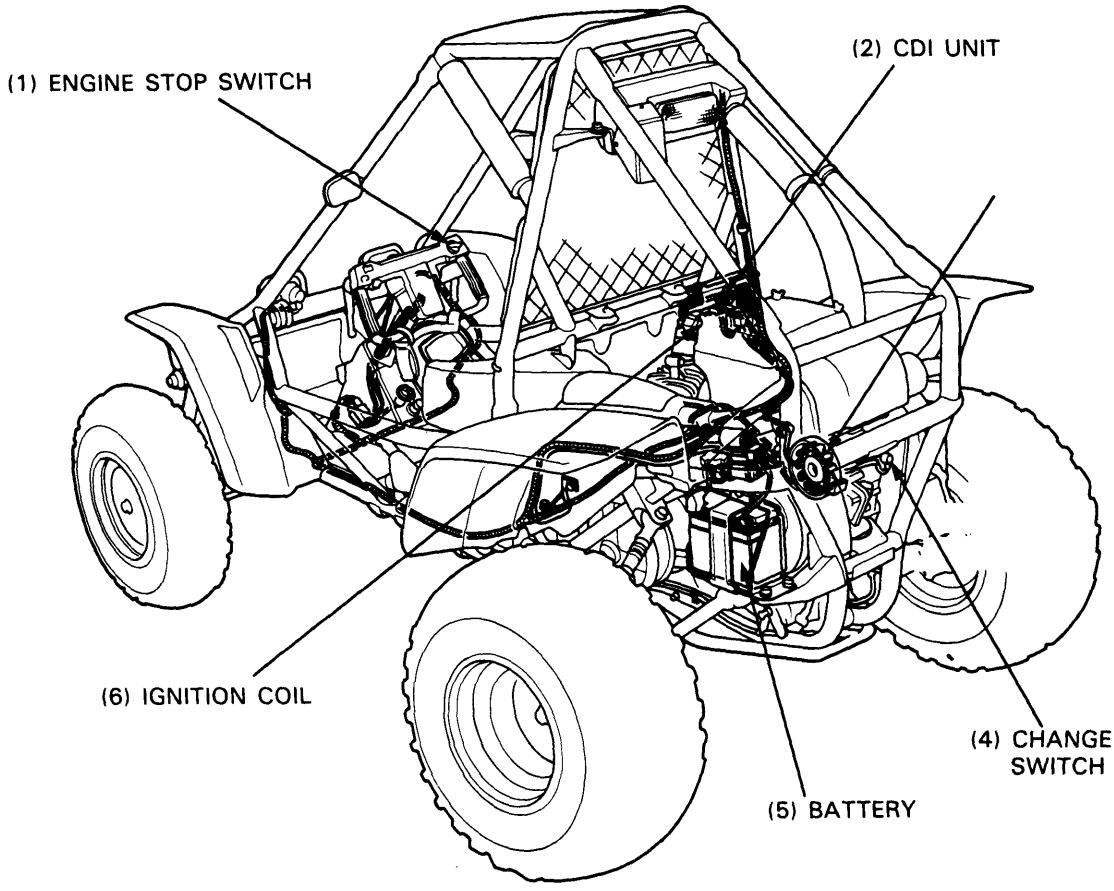
REMOVAL

Remove the skid plate mounting bolts and plate.

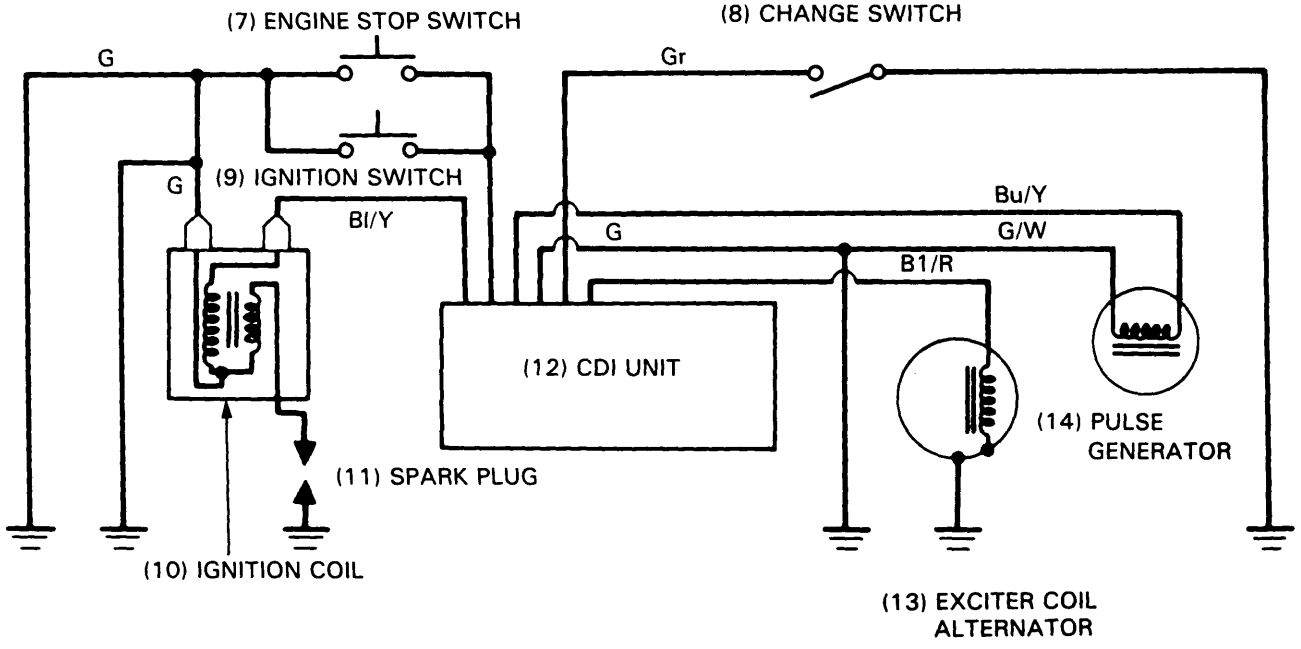
INSTALLATION

Install the skid plate in the reverse order of removal.
Tighten the skid plate mounting bolts securely.





R : Red
G : Green
Gr : Gray
Bl : Black
Y : Yellow
Bu: Blue



SERVICE INFORMATION

GENERAL

- Ignition timing requires no adjustment since CDI (Capacitive Discharge Ignition) system is factory pre-set.
- For spark plug inspection, refer to page 3-4.
- A continuity check can usually be made without removing the part from the frame by simply disconnecting the wires and connecting a continuity tester or ohmmeter to the terminals.

SPECIFICATIONS

Spark plug [ ] : Cold climate Below 5°C, 41°F	NGK	BR9ES [BR8ES]
	CHAMPION	RN-2C [RN-3C]
Spark plug gap		0.7—0.8 mm (0.028—0.031 in)
Ignition timing	Initial	17° ± 1.0° / 2,000 rpm
	Retard start	3,500 ± 500 rpm
	Full retard	9.6° ± 1.2° / 8,000 rpm
Ignition coil	Primary coil resistance	0.16—0.20 Ω
	Secondary coil resistance (Without plug cap)	3.7—4.5 kΩ
Exciter coil resistance		50—180 Ω
Pulse generator coil resistance		50—170 Ω

TROUBLESHOOTING

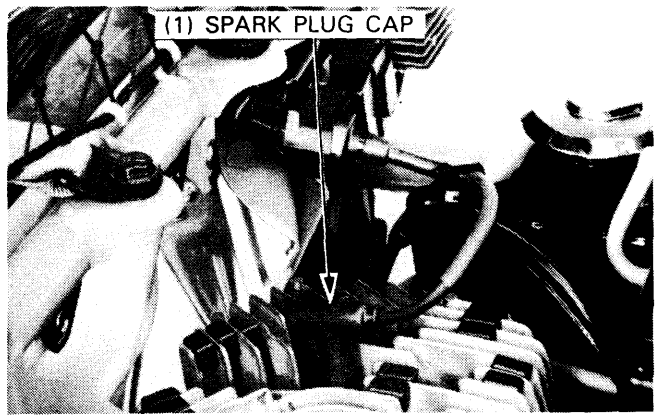
Engine starts but stops
1. No spark at plug
2. Faulty spark plug

No spark at plug
1. Engine stop switch off
2. Poorly connected, broken or shorted wires
   - Between alternator and ignition coil
   - Between CDI unit and engine stop switch
   - Between CDI unit and ignition coil
   - Between ignition coil and spark plug
   - Between pulse generator and CDI unit
3. Faulty ignition coil
4. Faulty CDI unit
5. Faulty alternator

IGNITION COIL

REMOVAL

Remove the spark plug cap from the spark plug.
Disconnect the ignition coil primary and ground wires and remove the ignition coil from the rubber holder.



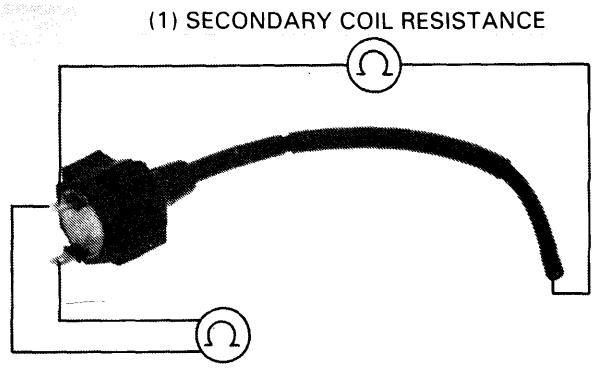
INSPECTION

Measure the resistances of the primary coil.

Primary coil: 0.16—0.20 Ω

Unscrew the spark plug cap and remove the spark plug wire.

Secondary coil: 3.7—4.5 kΩ



INSTALLATION

Install the ignition coil and connect the primary wires.
Connect the spark plug cap.

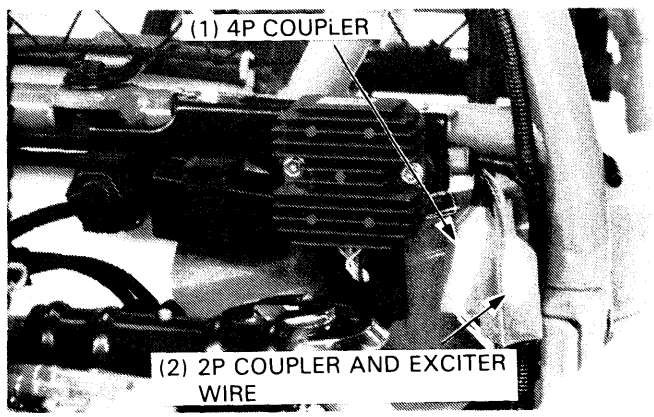
ALTERNATOR

Disconnect the exciter coil wire connector and measure the resistance between the black/red wire and ground.

NOTE

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

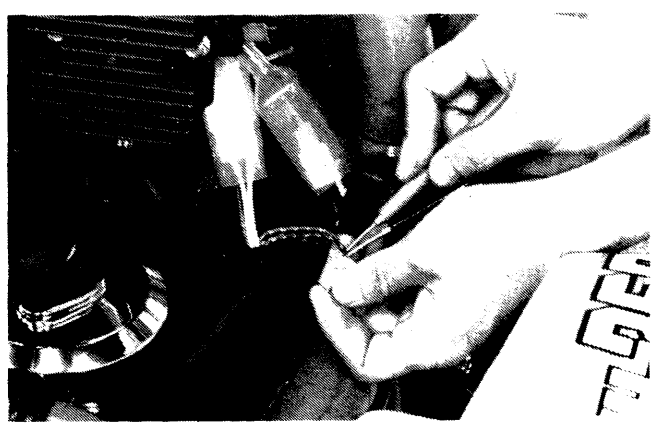
RESISTANCE: 50—180 Ω



PULSE GENERATOR

Measure the resistance between the blue/yellow and green/white wires.

RESISTANCE: 50—170 Ω

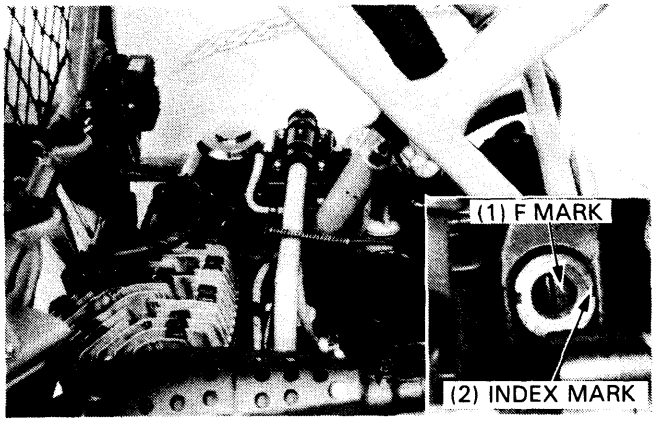


IGNITION TIMING

Remove the air cleaner case (page 4-4) and timing hole cap.
Connect a timing light and a tachometer.
Start the engine and allow it to idle.

IDLE (1,300 rpm): F mark should be aligned with index mark.

If ignition timing is not correct, inspect the CDI unit and pulse generator.
Replace any faulty component.
Install the timing hole cap with the O-ring.



CDI UNIT

REMOVAL

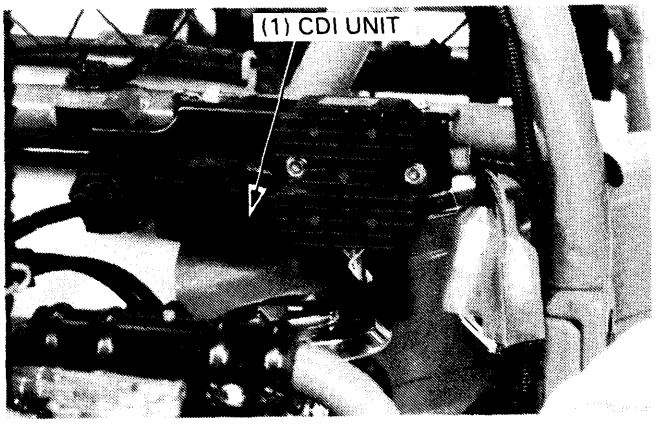
Disconnect the wire coupler and remove the CDI unit.

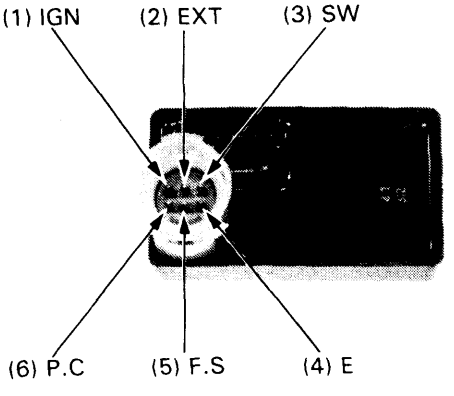
INSPECTION

Replace the CDI unit if the readings are not within the limits shown in the table.

NOTE

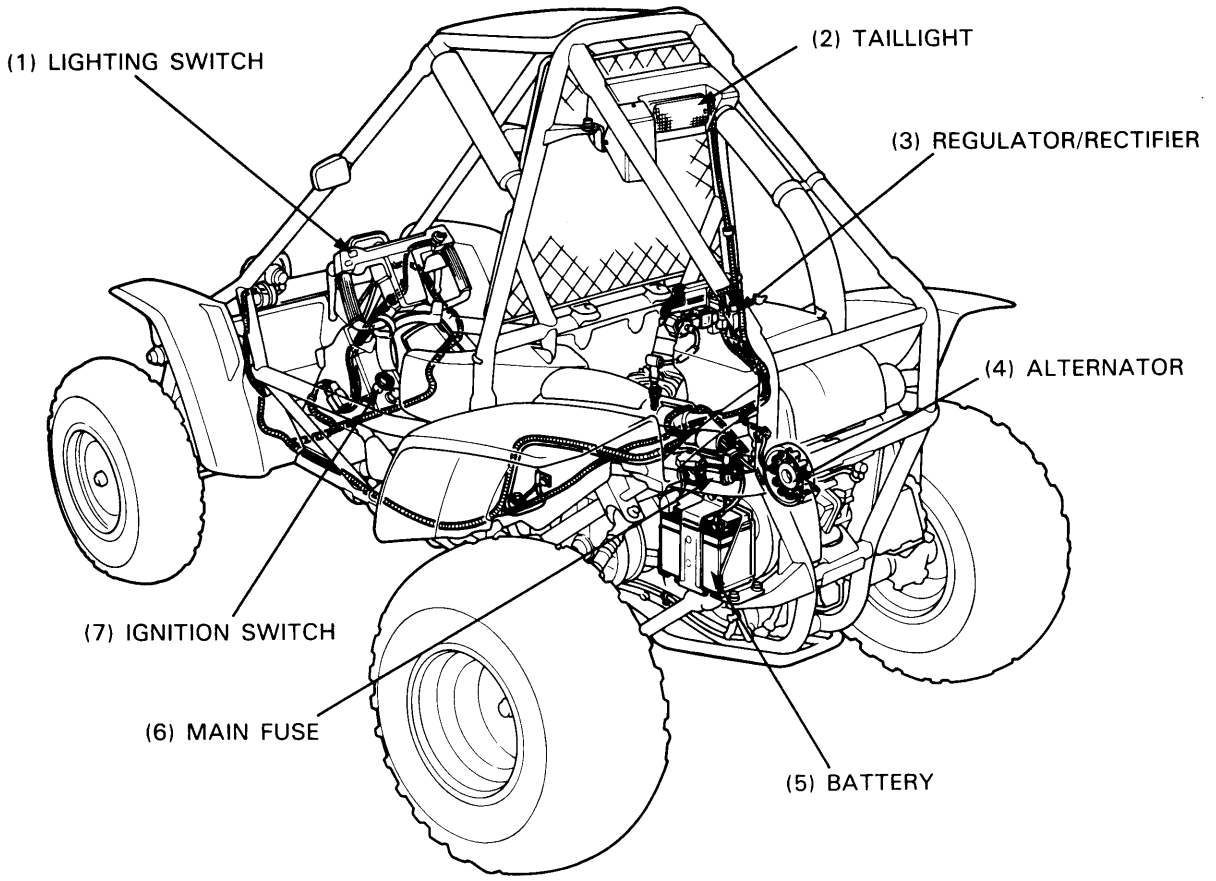
- The CDI unit is fully transistorized.
- For accurate testing, it is necessary to use a specified electric tester. Use of an improper tester may give a false reading.
- Use Sanwa Electric Tester (07308-0020000) or Kowa Tester (TH-5H-1) or Kowa Digital Multi-Tester (07411-0020000 or KS-AHM-32-003: U.S.A. only).

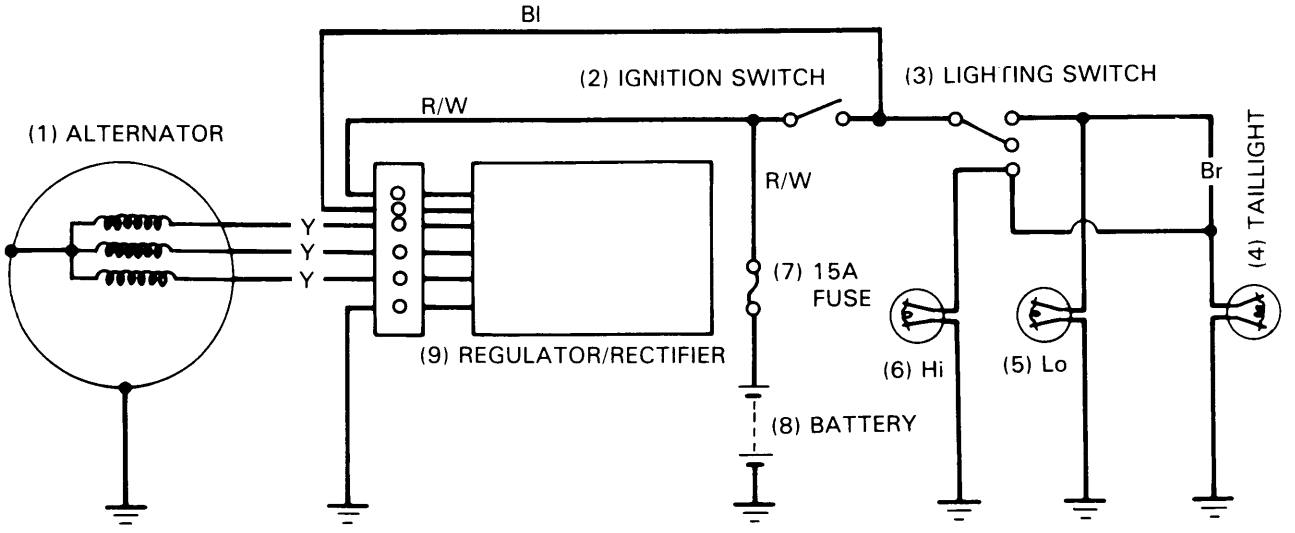




Unit: kΩ

Probe(+) / Probe(−)	SW	EXT	P.C	E	IGN	F.S
SW		∞	∞	∞	∞	∞
EXT	0.5-50		50-500	50-500	∞	50-500
P.C	10-500	∞		10-100	∞	10-300
E	0.5-50	∞	10-100		∞	0.5-50
IGN	∞	∞	∞	∞		∞
F.S	∞	∞	∞	∞	∞	





R : Red
W: White
Br: Brown
Bl: Black

15. BATTERY/CHARGING SYSTEM

SERVICE INFORMATION

GENERAL

- Quick charge a battery only in an emergency. Slow-charging is preferred.
- Remove the battery from the FL350R for charging. If the battery must be charged on the FL350R, disconnect the the battery cables.
- The battery on this vehicle is a sealed type. Do not remove the filling hole caps even during charging. Do not use a non-sealed type battery as a replacement.
- All charging system components can be tested on the vehicle.

WARNING

- ***Do not smoke around a charging battery, and keep flames away from a charging battery. The gas produced by a battery will explode if a flame or spark is brought near.***

CAUTION

- *For battery charging, do not exceed the charging current and time specified on the battery cover (and shown below). Using excessive current or extending the charging time may damage the battery.*

SPECIFICATIONS

Battery	Capacity	12 V−12 AH
	Charging current	Standard: 1.2 A, Maximum: 5 A
	Charging time	Standard: 5 hours, Maximum: 1.0 hour
Alternator capacity		0.16 KW/5,000 rpm
Voltage regulator		Transistorized non-adjustable regulator
Charging coil resistance		0.2−0.6 Ω

TROUBLESHOOTING

No power-key turned on:
1. Dead battery
2. Disconnected battery cable
3. Main fuse burned out
4. Faulty ignition switch

Low power-key turned on:
1. Weak battery
2. Loose battery connection

Low power-engine running:
1. Battery underchanged
2. Charging system failure
3. Loose connection or short circuit in lighting system

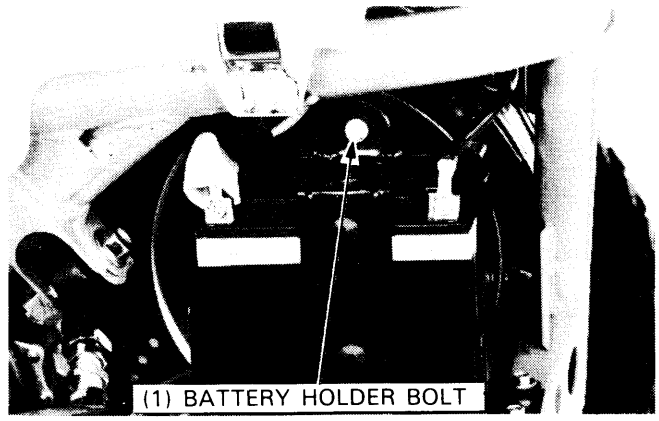
Intermittent power:
1. Loose battery connection
2. Loose charging system connection
3. Loose starting system connection

Charging system failure:
1. Loose, broken, or shorted wire or connection
2. Faulty voltage regulator
3. Faulty alternator

BATTERY

REMOVAL

Remove the battery holder bolt.
Disconnect the negative cable, and then positive cable.
Remove the battery.
Measure the battery voltage using a digital voltmeter (07411—0020000).
VOLTAGE: Fully charged: 13.1 V
Under changed: Below 12.8 V



CHARGING SYSTEM

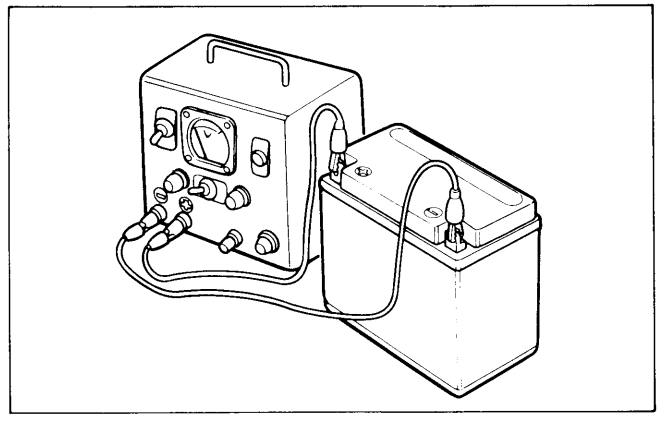
CHARGING

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

	Standard	Maximum
Charging current	1.2A	5.0A
Charging time	5 hours	1 hour

WARNING

- ***Keep flames and sparks away from a charging battery.***
- ***Turn power ON/OFF at the charger, not at the battery terminals.***



CAUTION

- *Quick-charging should only be done in an emergency; slow-charging is preferred.*
- *For battery charging, do not exceed the charging current and time specified on the battery cover. Using excessive current or extending the charging time may damage the battery.*

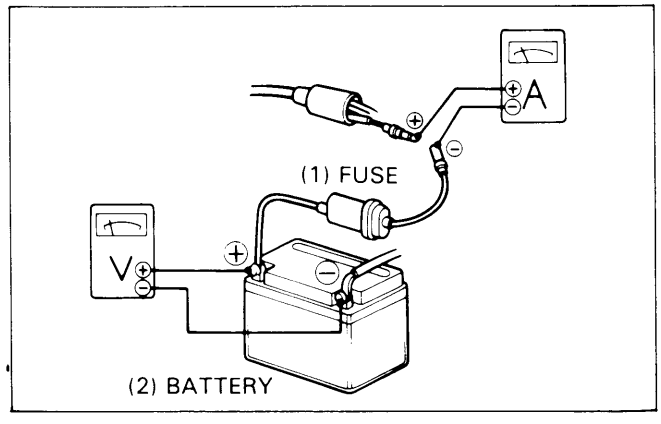
After installing the battery, coat the terminals with clean grease.

CHARGING OUTPUT TEST

NOTE

- Be sure the battery is in good condition before performing this test.

Warm up the engine before testing.
Disconnect the red/white wire at the fuse connector.
Connect an ammeter between the red/white wires.
Connect a voltmeter between the battery positive and negative terminals.

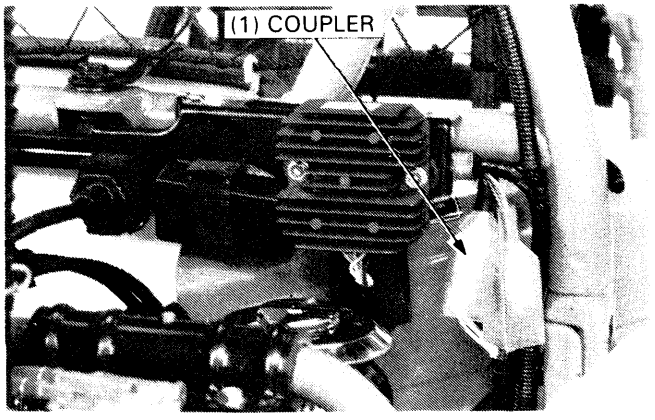


TECHNICAL DATA:

IGNITION SWITCH	LIGHTING SWITCH	5,000 rpm
ON	ON	12A(14V)

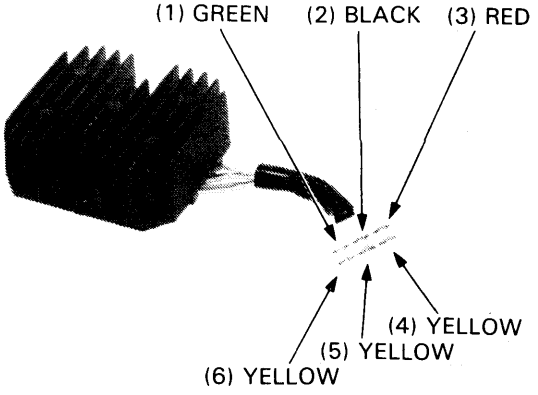
REGULATOR/RECTIFIER INSPECTION

Disconnect the regulator/rectifier coupler.
Check the resistance between the leads with an ohmmeter.
Replace the regulator/rectifier if the readings are not within the limits shown in the table below.



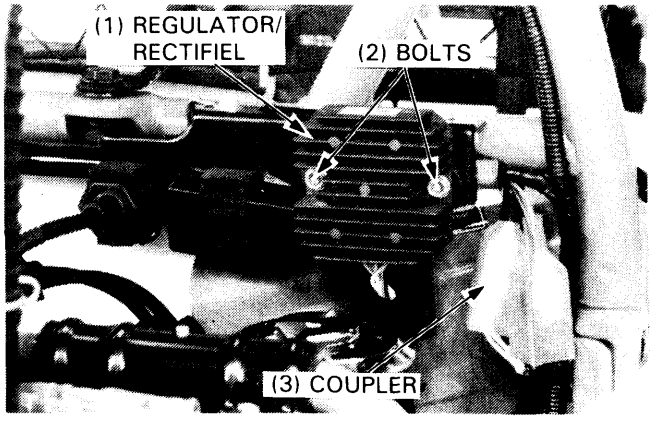
Range: Sanwa: kΩ
Kowa: 100 Ω

(+)Probe / (−)Probe	Yellow	Yellow	Yellow	Red	Green	Black
Yellow		∞	∞	1−20 (100−5K)	∞	∞
Yellow	∞		∞	1−20 (100−5K)	∞	∞
Yellow	∞	∞		1−20 (100−5K)	∞	∞
Red	∞	∞	∞		∞	∞
Green	1−20 (100−5K)	1−20 (100−5K)	1−20 (100−5K)	5−30 (500−8K)		1−20 (1K−5K)
Black	10−80 (10K−80K)	10−80 (10K−80K)	10−80 (10K−80)	20−100 (50K−∞)	10−50 (10K−50K)	



REGULATOR/RECTIFIER REPLACEMENT

Disconnect the regulator/rectifier coupler.
Remove the two bolts attaching the regulator/rectifier and replace it with a new one.

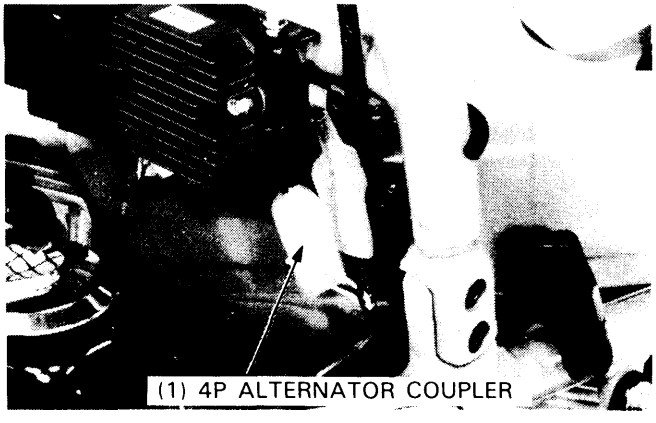


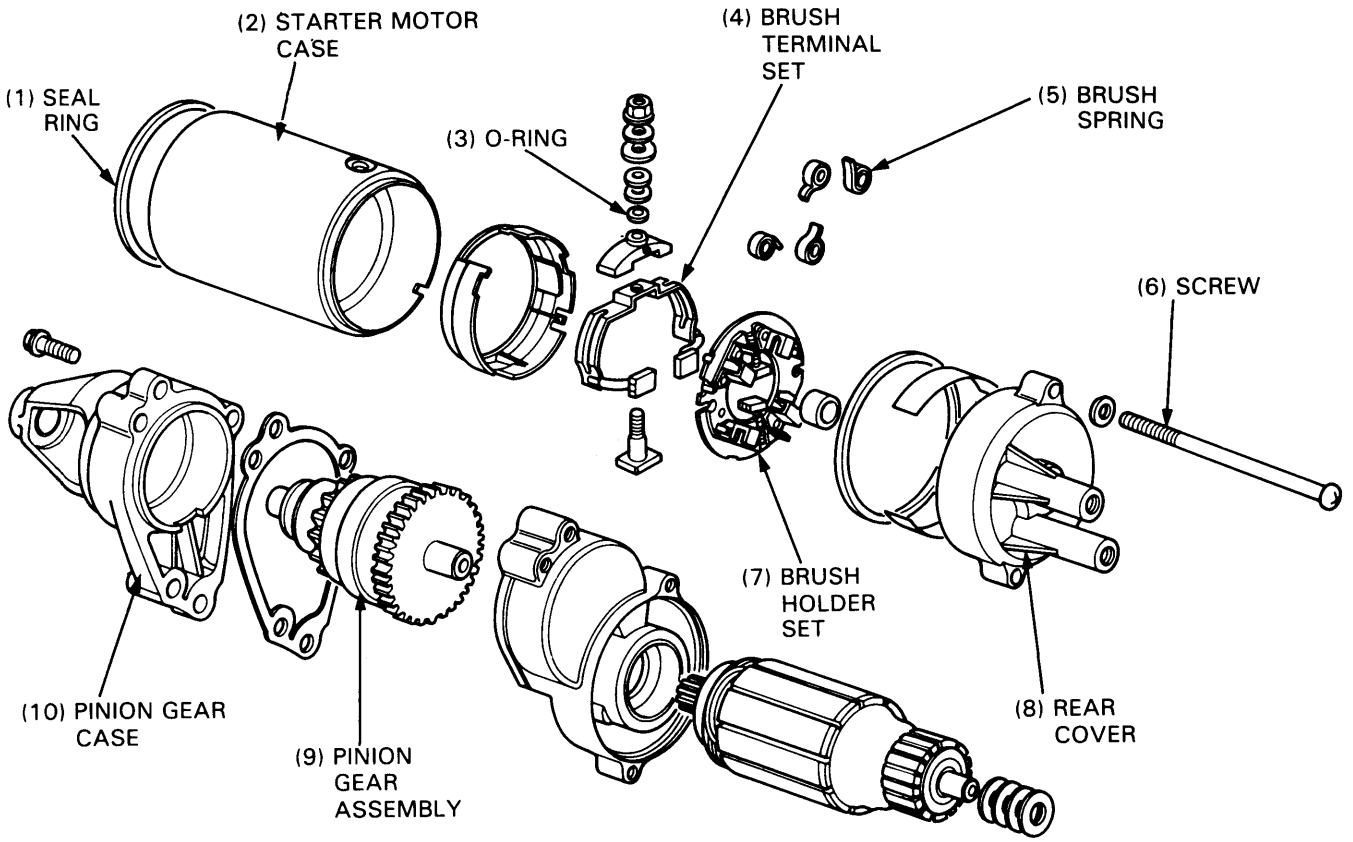
ALTERNATOR CHARGING COIL

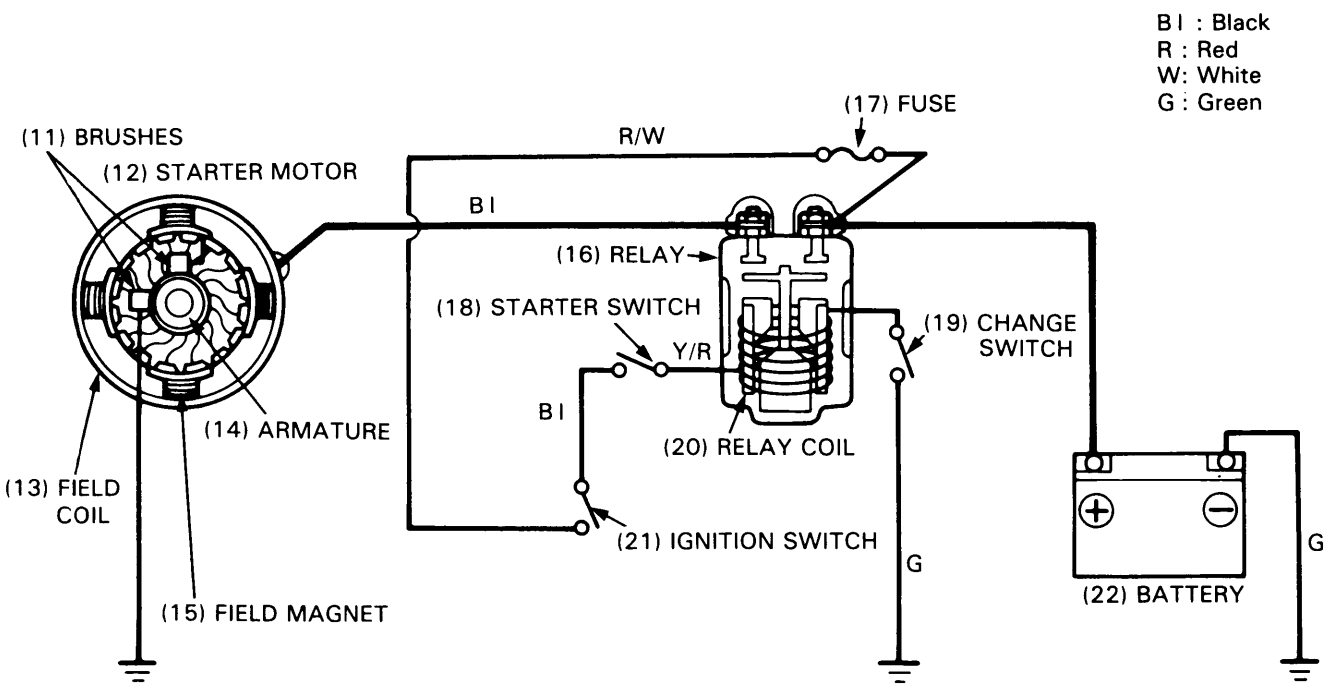
Disconnect the alternator 4P coupler.
Check the resistance between the yellow wire terminals of the coupler.

RESISTANCE: 0.2−0.6 Ω

Check for continuity between the coupler terminal and ground.
Replace the alternator coupler if readings are not within the limit or any lead has continuity to the ground.
Refer to section 7 for stator removal.




(1) SEAL RING
(2) STARTER MOTOR CASE
(3) O-RING
(4) BRUSH TERMINAL SET
(5) BRUSH SPRING
(6) SCREW
(7) BRUSH HOLDER SET
(8) REAR COVER
(9) PINION GEAR ASSEMBLY
(10) PINION GEAR CASE


Bl : Black
R : Red
W: White
G : Green
(11) BRUSHES
(12) STARTER MOTOR
(13) FIELD COIL
(14) ARMATURE
(15) FIELD MAGNET
(16) RELAY
(17) FUSE
(18) STARTER SWITCH
(19) CHANGE SWITCH
(20) RELAY COIL
(21) IGNITION SWITCH
(22) BATTERY
R/W
Bl
Y/R
G

16. STARTER SYSTEM

SERVICE INFORMATION

GENERAL

- The starter motor can be removed with the engine in the frame.
- Refer to section 7 for starter motor removal.

SPECIFICATIONS

		STANDARD	SERVICE LIMIT
Starter motor	Brush spring tension	800 ± 120 g (28.2 ± 4.2 oz)	545 g (19.2 oz)
	Brush length	12.0–13.0 mm (0.47–0.51 in)	6.5 mm (0.26 in)

TROUBLESHOOTING

Starter motor will not turn
1. Dead battery
2. Faulty ignition switch
3. Faulty starter switch
4. Faulty starter relay switch
5. Loose or disconnected wire or cable

Starter motor turns engine slowly
1. Low battery
2. Excessive resistance in circuit
3 Binding in starter motor

Starter motor and engine turn, but engine does not start
1. Faulty ignition system
2. Engine problems
3. Faulty engine stop switch

STARTER MOTOR

REMOVAL/INSTALLATION

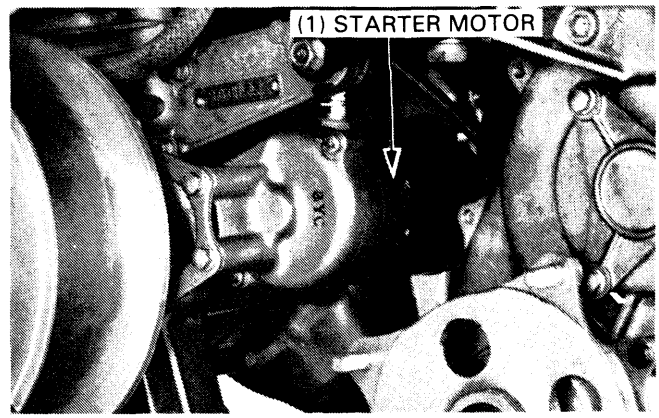
CAUTION

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

Refer to page 7-8 for removal and installation.

CAUTION

- *Check the balancer oil level after the starter motor installed.*



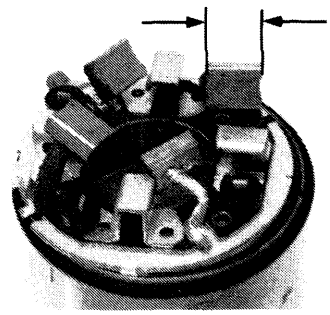
INSPECTION

BRUSH
Disassemble the starter motor by removing the screws and bolts.
Inspect the brushes and measure the brush length.

SERVICE LIMIT: 6.5 mm (0.26 in)

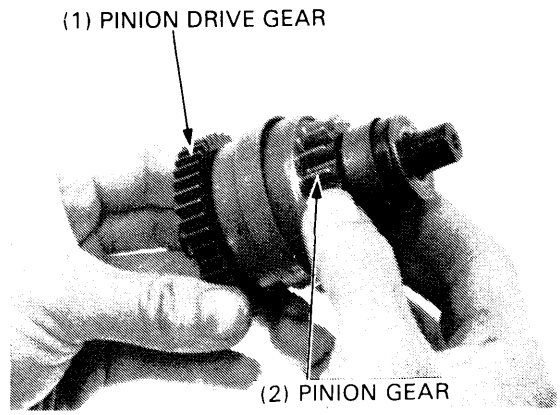
Measure brush spring tension with the spring scale.

SERVICE LIMIT: 545 g (19.2 oz)



PINION GEAR

Remove the pinion gear from the pinion gear case.
Inspect the pinion gear for damage or binding in the gears.
If it does not move freely, or if, while holding the pinion drive gear and rotating the pinion gear, slippage is detected, replace the assembly.



COMMUTATOR

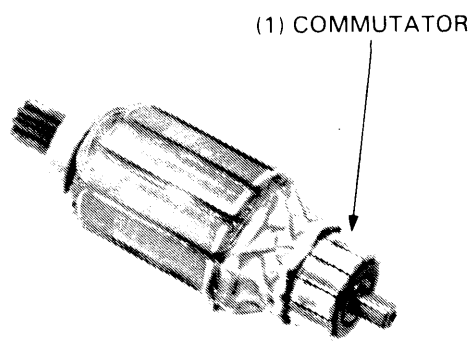
NOTE

- Record the location and number of thrust washers.

Inspect the commutator bars for discoloration. Bars discolored in pairs indicate grounded armature coils, in which case the starter motor must be replaced.

NOTE

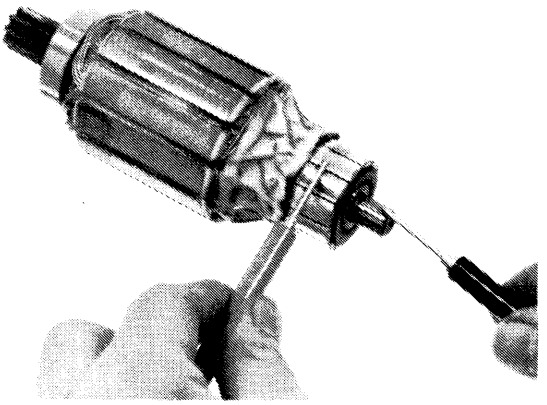
- Do not use emery or sand paper on the commutator.



Check for continuity between pairs of commutator bars. Also, make a resistance check between individual commutator bars and the armature shaft.

CONTINUITY BETWEEN COMMUTATOR BAR PAIRS: NORMAL

NO CONTINUITY BETWEEN COMMUTATOR BARS AND ARMATURE SHAFT: NORMAL

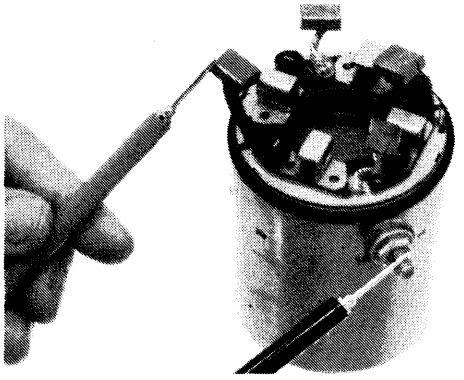


FIELD COIL

Check for continuity from the cable terminal to the motor case and from the cable terminal to the brush wire. Replace the starter motor if the field coil does not have continuity or if it is shorted to the motor case.

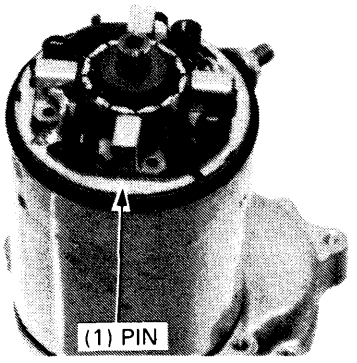
NO CONTINUITY BETWEEN CABLE TERMINAL AND MOTOR CASE: NORMAL

CONTINUITY BETWEEN CABLE TERMINAL AND BRUSH WIRE (INSULATED): NORMAL

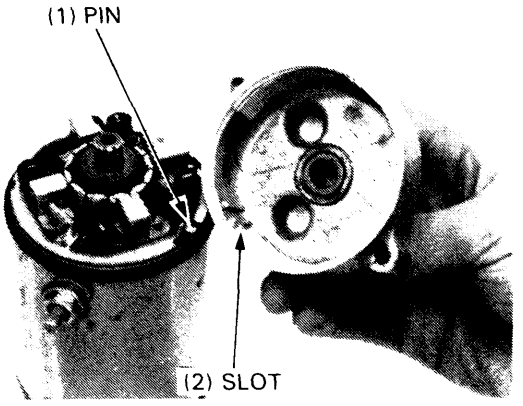


ASSEMBLY

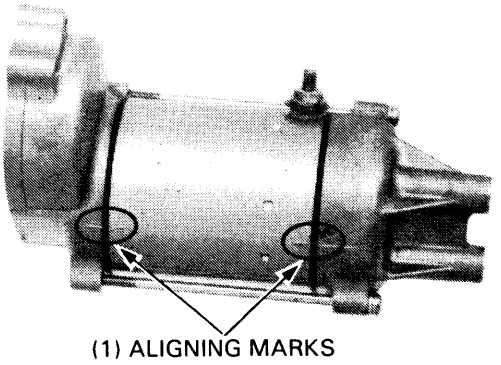
Assemble the starter motor.
Align the case notch with the brush holder pin.



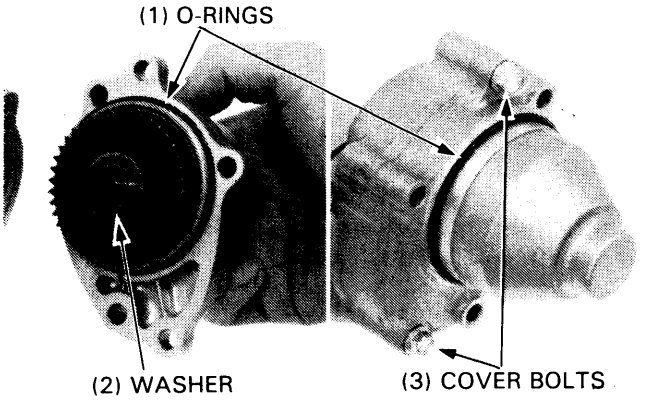
Install the rear cover aligning its slot with the brush holder pin.



Align the marks and tighten the screws securely.

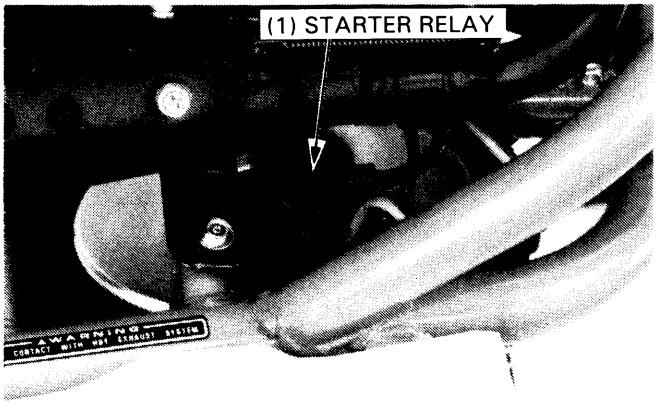


Install the pinion gear assembly to the cover.
Install the washer onto the pinion drive gear shaft and O-ring onto the case.
Tighten the pinion gear cover bolts and install the O-ring.

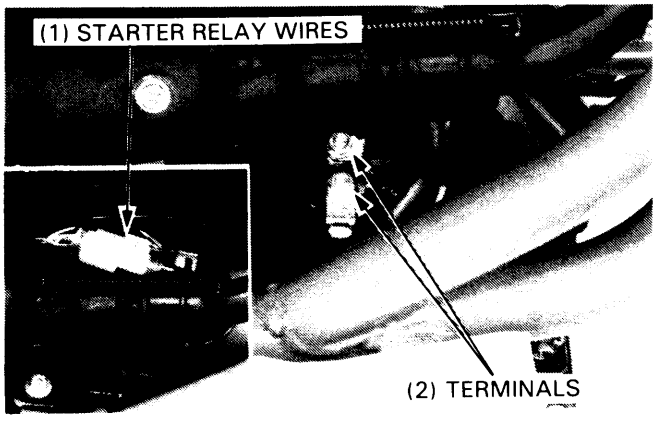


STARTER RELAY

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



Connect the ohmmeter to the starter relay terminals.
The relay is normal if there is continuity. When connecting the 12 V battery to the relay wire terminal and no continuity when the 12 V battery is disconnected.



SERVICE INFORMATION

GENERAL

- A continuity check can usually be made without removing the part from the FL350R by simply disconnecting the wires and connecting a continuity tester or ohmmeter to the terminals.

SPECIFICATIONS

Headlight	12V 25W/25W x 2
Taillight	12V 5W

TROUBLESHOOTING

Light does not come on when light switch is turned on (Engine is running)
1. Bulb burned out
2. Faulty switch
3. Wiring to that component has open circuit

Headlight beams do not shift when hi-lo switch is operated
1. Faulty dimmer switch
2. Bulb burned out
3. Wiring to that component has open circuit

HEADLIGHT

BULB REPLACEMENT

Remove the headlight dust cover and the bulb.
Replace the faulty bulb with a new one.
Align the pin of the bulb with slot in the headlight unit.

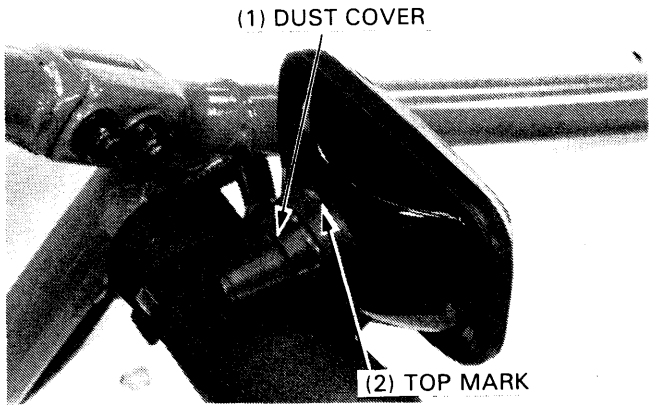
NOTE

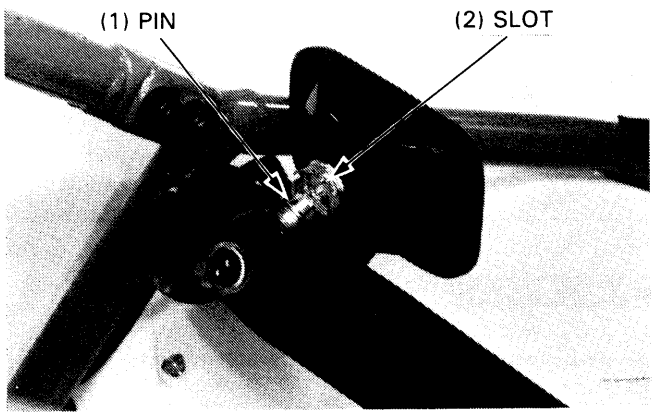
- Top mark on the dust cover facing up.

Install the removed parts in the reverse order of removal.

CAUTION

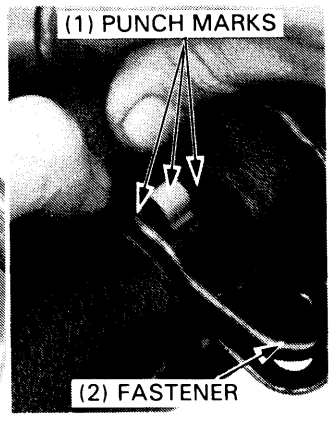
- *Do not touch the glass of the bulbs with the bare hand ~~or~~ dirty glove. It may shorten bulb life.*
- *Do not try to replace a bulb or clean the headlight with the light on.*

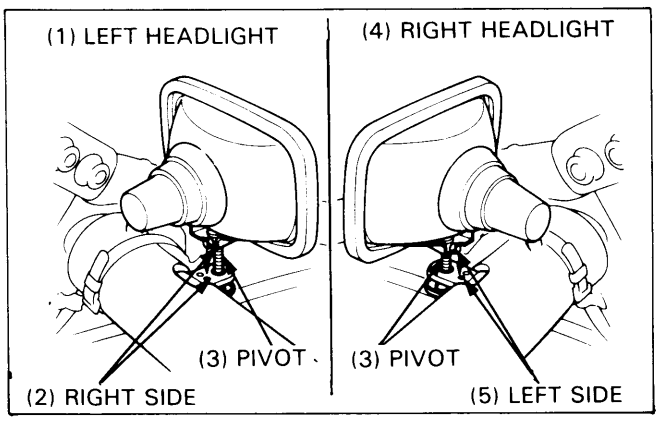




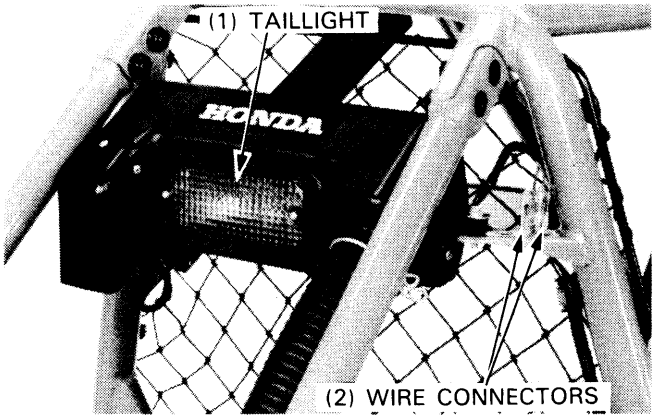
ADJUSTMENT

Vertical and Horizontal adjustment:
Loosen the pivot nut and position the light as required.
Tighten the pivot nut.
Install the fastener onto the frame, aligning the punch marks on the frame and fastener.





TAILLIGHT



DISASSEMBLY

Remove the lens screws and taillight bulb.
Disconnect the wire connectors and air hose from the air cleaner upper case.
Remove the taillight bracket bolts and air cleaner upper case with the taillight.
Remove the taillight from the air cleaner upper case.

ASSEMBLY

Assemble the removed parts in the reverse order of removal.

LIGHT SWITCH

Remove the right and left steering column covers (page 10-7).
Disconnect the headlight 4P coupler.

NOTE

- It is not necessary to remove the steering wheel cover to make this test.

Check the switch for continuity between the terminals shown in the table for each switch position.

COLOR / SWITCH POSITION	Brown	Black	White	Yellow
OFF				
Lo	O	O	O	
(N)	O	O	O	O
Hi	O	O		O

This switch is normal if there is continuity between the circuits marked O—O.

ENGINE STOP SWITCH

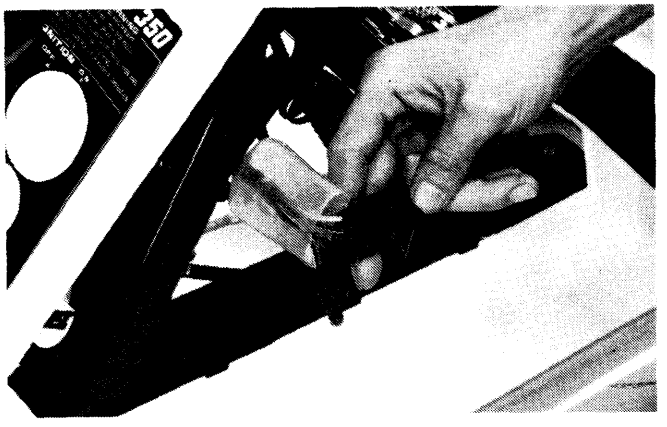
Disconnect the engine stop switch wires.
Check the switch for continuity between the green and black/white wires.
The switch is normal if there is continuity with the switch off, and there is no continuity with the switch on.

STARTER SWITCH

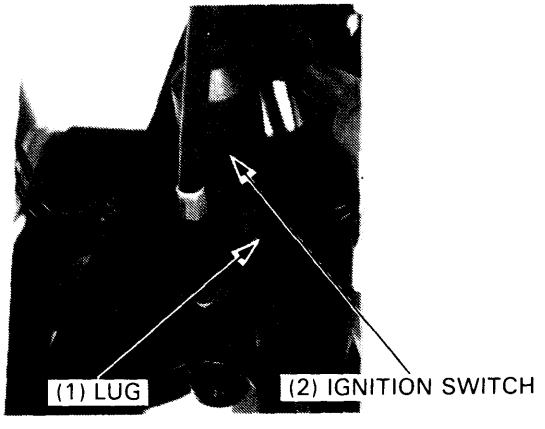
Disconnect the starter switch coupler.
Check the switch for continuity between the black and yellow/red terminals while pushing the starter button.

IGNITION SWITCH

Disconnect the ignition switch wires.
Check the switch for continuity between the black/white and green wires with the switch off, or red/white and black wires with the switch ON.

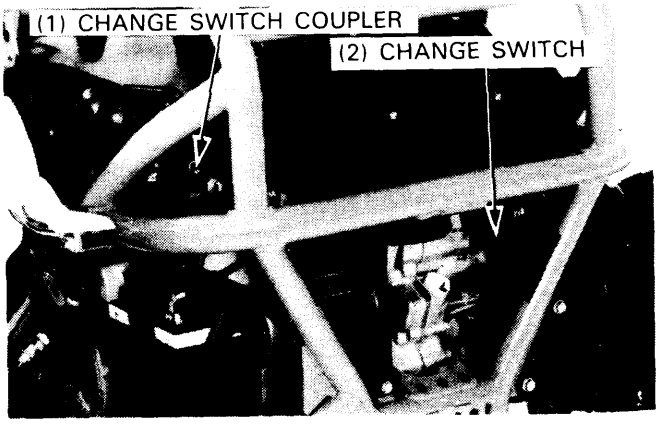


If necessary, replace the ignition switch assembly.
Push the lug on the ignition switch and remove the switch from the steering column.



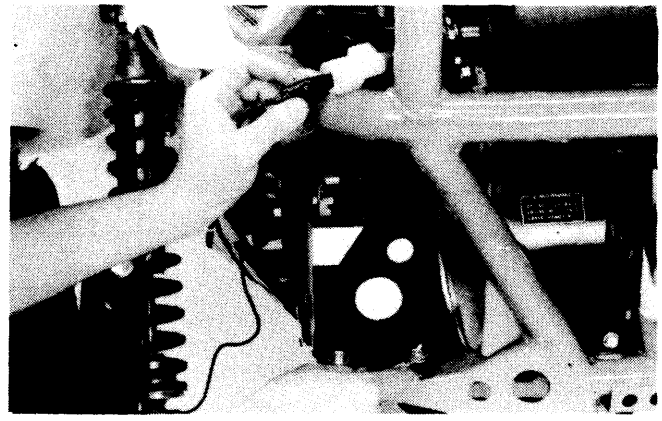
CHANGE SWITCH

Disconnect the change switch coupler.

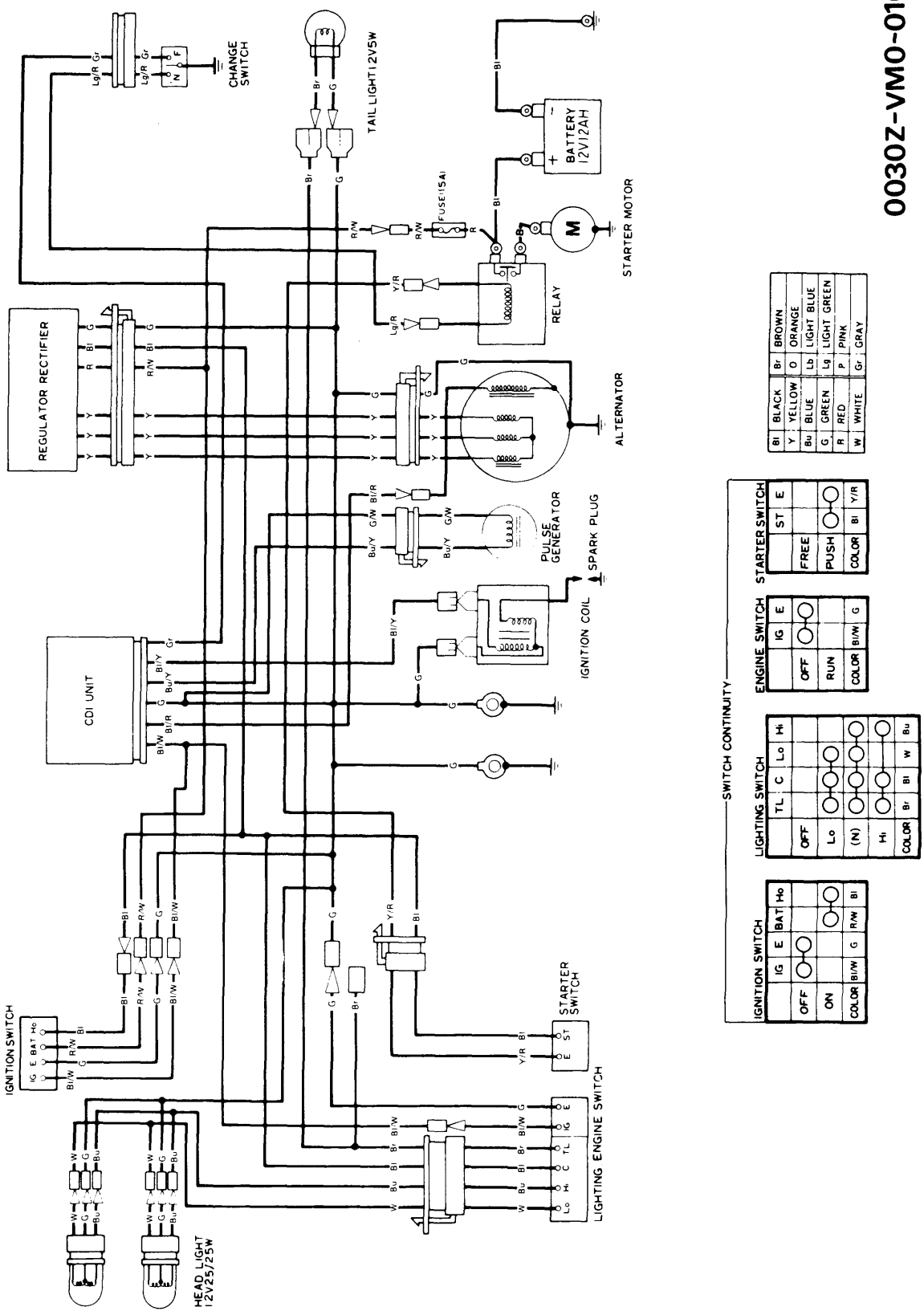


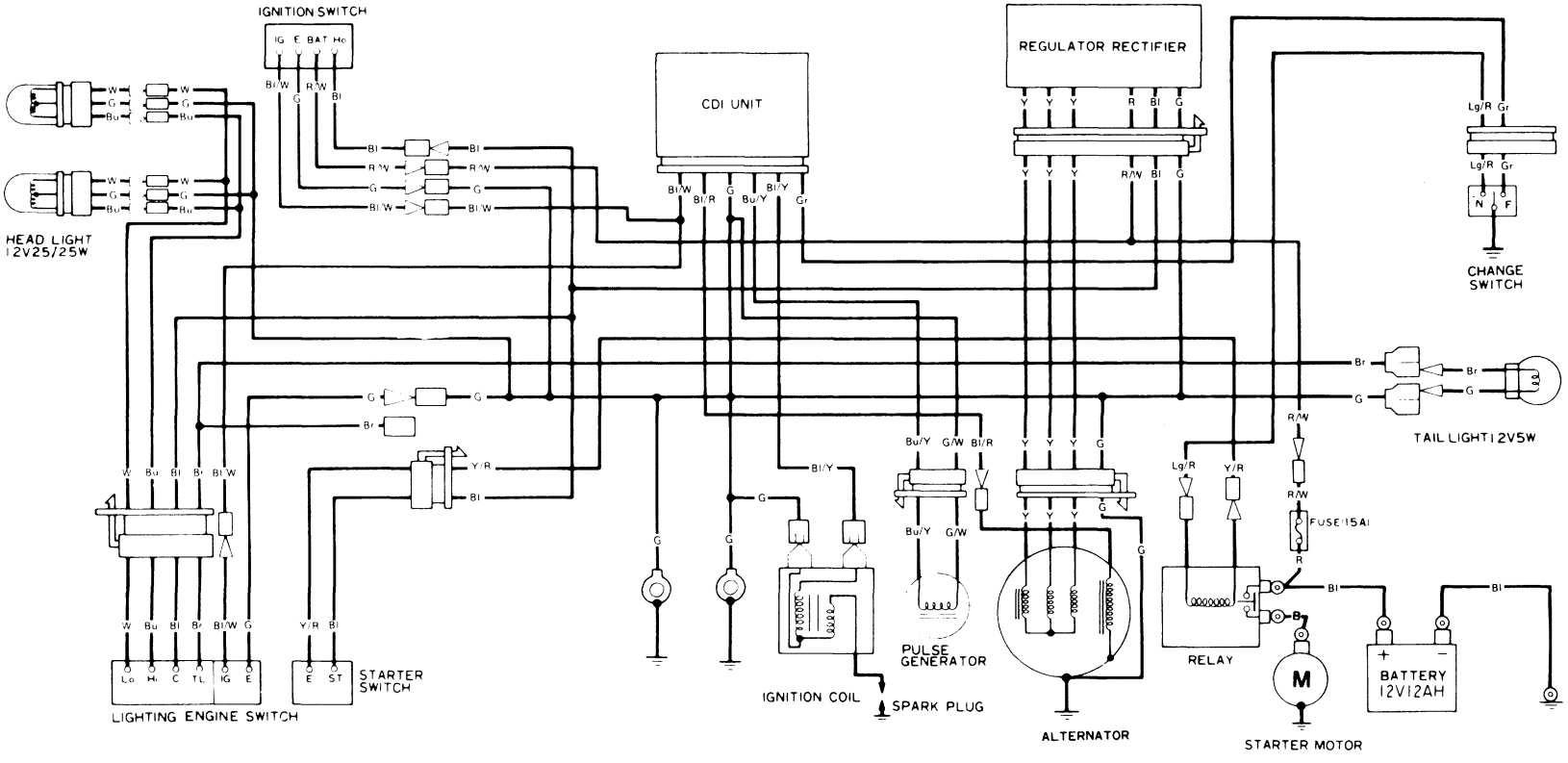
Check for continuity at the change switch wire coupler. Continuity should exist between color code wires indicated by interconnected circles on chart below.

Terminal / Trans	Gray	Light green/ red	Ground
Forward	O		O
Neutral		O	O



WIRING DIAGRAM





SWITCH CONTINUITY

IGNITION SWITCH

	IG	E	BAT	Ho
OFF	○	○		
ON			○	○
COLOR	Bl/W	G	R/W	Bl

LIGHTING SWITCH

	TL	C	Lo	Hi
OFF				
Lo	○	○	○	
(N)	○	○	○	
Hi	○	○		○
COLOR	Br	Bl	W	Bu

ENGINE SWITCH

	IG	E
OFF	○	○
RUN		
COLOR	Bl/W	G

STARTER SWITCH

	ST	E
FREE		
PUSH	○	○
COLOR	Bl	Y/R

Bl	BLACK	Br	BROWN
Y	YELLOW	O	ORANGE
Bu	BLUE	Lb	LIGHT BLUE
G	GREEN	Lg	LIGHT GREEN
R	RED	P	PINK
W	WHITE	Gr	GRAY

0030Z-VM0-0100

ENGINE DOES NOT START OR IS HARD TO START

CHECK	SYMPTOM	PROBABLE CAUSE
1. Check if fuel is reaching carburetor	FUEL NOT REACHING CARBURETOR →	(1) No fuel in fuel tank (2) Clogged fuel line from tank to carburetor (3) Clogged carburetor float valve (4) Clogged fuel tank cap breather hole (5) Clogged crankcase tube or check valve (6) Faulty fuel pump
FUEL REACHING CARBURETOR ↓		
2. Remove spark plug	WET →	(1) Carburetor flooded (2) Carburetor choke excessively closed (3) Throttle valve excessively opened
DRY ↓		
3. Test spark	NO SPARK OR SPARK IS WEAK →	(1) Faulty spark plug (2) Fouled spark plug (3) Faulty CDI unit (4) Broken or shorted high tension wire (5) Broken or shorted ignition coil (6) Faulty ignition switch (7) Faulty alternator (8) Faulty pulse generator (9) Pulse generator rotor air gap incorrect
SPARK JUMPS ↓		
4. Test cylinder compression by starter button	LOSS OF COMPRESSION →	(1) Piston rings stuck in ring lands (2) Compression leak past crankcase (3) Faulty or clogged reed valve (4) Worn cylinder and piston rings (5) Blown cylinder head gasket
COMPRESSION IS NORMAL ↓		
5. Start by following normal starting procedure	ENGINE FIRES BUT STOPS SOON →	(1) Excessively open choke (2) Choke stuck closed (3) Air leaking past manifold (4) Improper Ignition timing (CDI unit or pulse generator faulty)
ENGINE DOES NOT FIRE ↓		
6. Restart with choke applied		

18

ENGINE LACKS POWER

CHECK	SYMPTOM	PROBABLE CAUSE
1. Raise wheels off ground and spin by hand	WHEEL DOES NOT SPIN FREELY →	(1) Brake dragging (2) Worn or damaged wheel bearing (3) Wheel bearing not lubricated properly (4) Front and rear axle nuts excessively tightened
WHEEL SPINS FREELY ↓		
2. Check tire pressure with tire gauge	TIRE PRESSURE IS TOO LOW →	(1) Punctured tire (2) Faulty tire valve
PRESSURE NORMAL ↓		
3. Accelerate rapidly	SPEED DOES NOT CHANGE →	(1) Drive belt slipping (2) Worn drive belt (3) Warped drive belt (4) Faulty belt converter
4. Lightly accelerate engine	ENGINE SPEED DOES NOT INCREASE SUFFICIENTLY →	(1) Carburetor choke closed (2) Clogged air cleaner (3) Restricted fuel flow (4) Clogged fuel tank cap breather hole (5) Clogged muffler
ENGINE SPEED INCREASED ↓		
5. Check ignition timing using timing light	IGNITION TIMING IS INCORRECT →	(1) Faulty CDI unit (2) Faulty pulse generator
IGNITION TIMING IS CORRECT ↓		
6. Test cylinder compression by using a compression gauge	COMPRESSION IS LOW →	(1) Worn cylinder and piston rings (2) Blown cylinder head gasket (3) Flaws in compression parts (4) Faulty or deteriorated reed valve
COMPRESSION IS NORMAL ↓		
7. Check for clogged carburetor	CARBURETOR IS CLOGGED →	(1) Damaged fuel strainer (2) Carburetor not serviced frequently enough
CARBURETOR IS NOT CLOGGED ↓		
8. Remove spark plug	FOULED OR DISCOLORED →	(1) Plug not serviced frequently enough (2) Use of plug with improper heat range (3) Incorrect fuel-oil mixture
NOT FOULED OR DISCOLORED ↓		

CHECK	SYMPTOM	PROBABLE CAUSE
9. Check if engine overheats	OVERHEATS →	(1) Excessive carbon build-up in exhaust pipe
ENGINE DOES NOT OVERHEAT ↓		(2) Use of improper quality of fuel
		(3) Fuel-air mixture too lean
10. Accelerate or run at high speed	ENGINE KNOCKS →	(1) Worn piston and cylinder
ENGINE DOES NOT KNOCK		(2) Fuel air mixture too lean
		(3) Use of improper grade of fuel
		(4) Excessive carbon build-up in exhaust pipe
		(5) Ignition timing too advanced (Faulty CDI unit)

POOR PERFORMANCE AT LOW AND IDLE SPEEDS

CHECK	SYMPTOM	PROBABLE CAUSE
1. Check ignition timing	INCORRECT →	(1) Faulty CDI unit
		(2) Faulty alternator
NORMAL ↓		(3) Faulty pulse generator
2. Check carburetor air screw adjustment	INCORRECT →	(1) Fuel-air mixture too lean (To correct, screw in)
		(2) Fuel-air mixture too rich (To correct, screw out)
NORMAL ↓		
3. Air is leaking past carburetor	LEAKING →	(1) Loose carburetor
		(2) Deteriorated carburetor gasket
NOT LEAKING ↓		
4. Remove spark plug and try spark test	WEAK OR INTERMITTENT SPARK →	(1) Faulty, carbon or wet fouled spark plug
		(2) Faulty CDI unit
GOOD SPARK		(3) Faulty alternator
		(4) Faulty ignition coil

POOR PERFORMANCE AT HIGH SPEEDS

CHECK	SYMPTOM	PROBABLE CAUSE
1. Check ignition timing	INCORRECT →	(1) Faulty CDI unit (2) Faulty pulse generator
PROPER ↓		
2. Disconnect fuel tube at carburetor FUEL FLOWS OUT FREELY ↓	FUEL FLOW RESTRICTED →	(1) Lack of fuel in tank (2) Clogged fuel line (3) Clogged fuel tank cap breather hole (4) Clogged fuel valve (5) Clogged crankcase tube or check valve (6) Faulty fuel pump
3. Remove carburetor and check for clogged jet	CLOGGED →	(1) Damaged fuel strainer

POOR HANDLING — Check tire pressure

	PROBABLE CAUSE
1. If steering is heavy →	(1) Steering shaft nut too tight (2) Damaged steering column or shaft bushing (3) Bent steering shaft or tie-rod
2. If either wheel is wobbling →	(1) Excessive bearing play (2) Distorted rim (3) Improperly installed wheel hub (4) Rear axle shaft bearing excessively worn (5) Distorted frame
3. If the vehicle pulls to one side →	(1) Rear tire pressure not equal (2) Worn front arm bushing (3) Bent radius arm
4. If the front shock absorber too soft →	(1) Weak springs (2) Improper front shock absorber adjustment
5. If the front shock absorber is hard →	(1) Improper front shock absorber adjustment (2) Bent shock absorber damper rod
6. If the rear shock absorber too soft →	(1) Weak spring (2) Improper rear shock absorber adjustment
7. If the rear shock absorber is hard →	(1) Improper rear shock absorber adjustment (2) Bent shock absorber damper rod

19. INDEX

HONDA

HONDA MOTOR CO., LTD. TOKYO, JAPAN

MADE FROM 50% RECYCLED PAPER
MINIMUM 10% POST-CONSUMER CONTENT

61VM001

IPC Ⓨ1500.2000.10
PRINTED IN USA