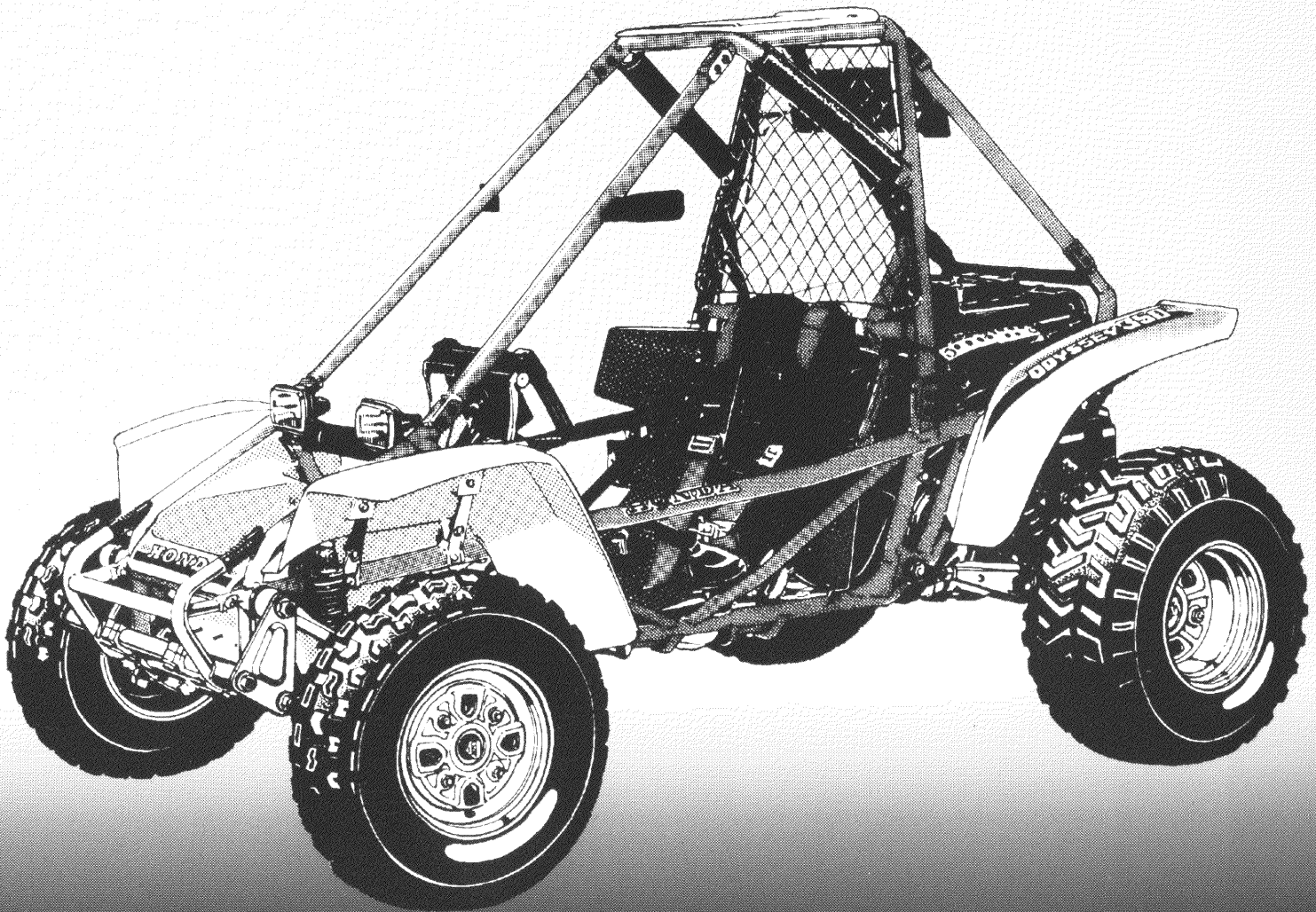


**Official**


# **HONDA**

## **SHOP MANUAL**

**FL350R** *ODYSSEY 350*



## 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.

All information, illustrations, directions and specifications included in this publication are based on the latest product information available at the time of approval for printing.

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# 1. GENERAL INFORMATION

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## GENERAL SAFETY

**WARNING**

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

**WARNING**

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

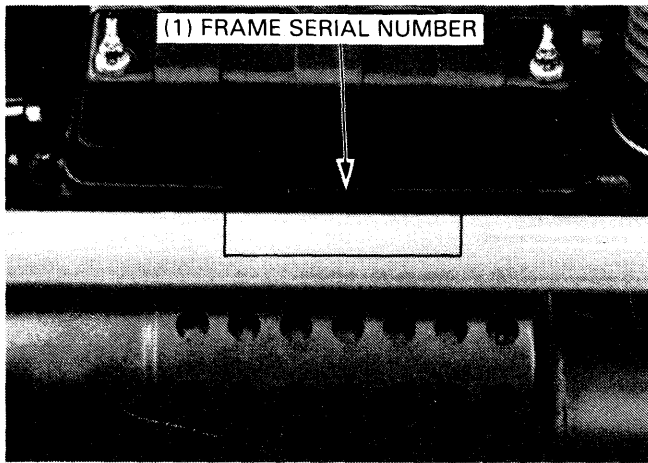
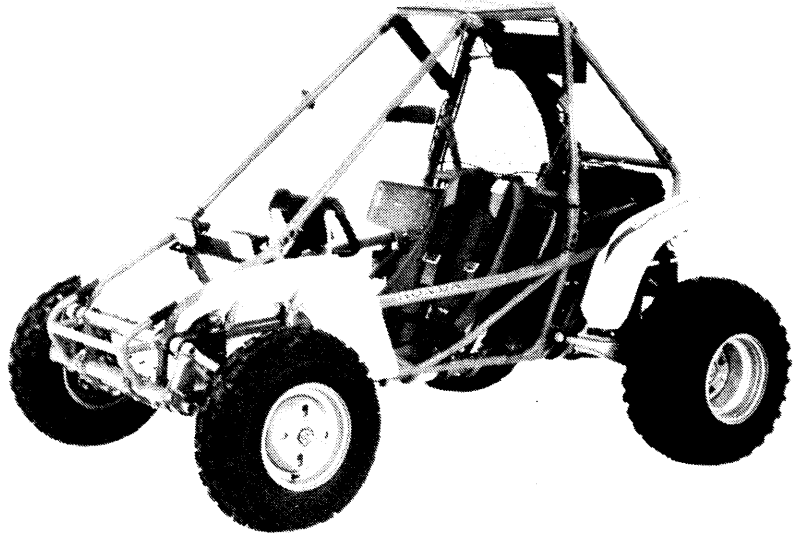
**WARNING**

*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.*

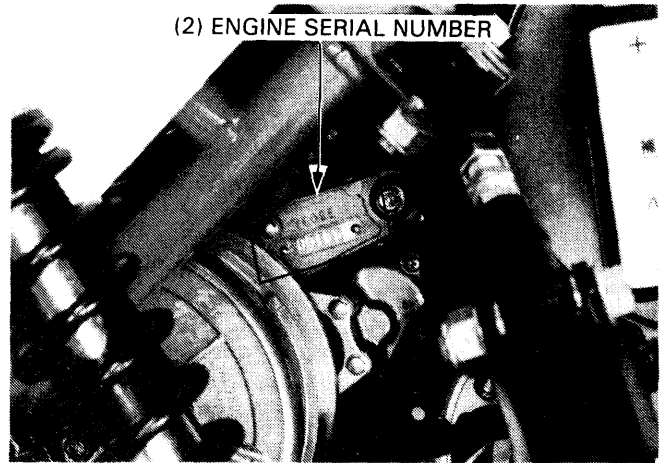
## SERVICE RULES

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.

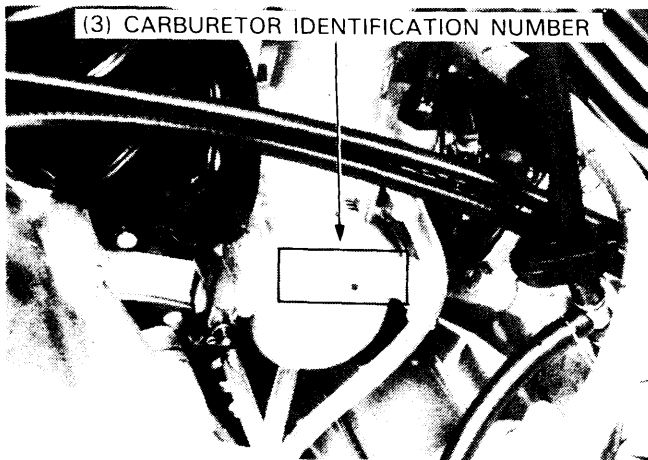
## MODEL IDENTIFICATION



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 Rear	93.5 kg (206 lb) 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/cm <sup>2</sup> )	
	Rear tire size, pressure	24 x 11.00—10 (6.4 psi, 44 kPa, 0.45 kg/cm <sup>2</sup> )	
	Front brake	Hydraulic operated leading trailing shoe	
	Rear brake, lining swept area	Single disc brake, 446 cm <sup>2</sup> (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 Rear	Out 23 ± 7.5 mm (0.9 ± 0.3 in) In 10 ± 7.5 mm (0.4 ± 0.3 in)
	Camber angle	Front Rear	0° ± 1° 0° ± 1°
	Caster angle	Front	0° 30' ± 1°
	Trail length		21 mm ( 0.8 in)
	Tread	Front Rear	1,065 mm (41.9 in) 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	

## GENERAL INFORMATION

ITEM		SPECIFICATIONS	
CARBURETOR	Type	Reed valve	
	Venturi dia	32 mm (1.3 in)	
DRIVE TRAIN	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)	
	Belt converter	SALSURY Torque sensitive belt converter	
	Transmission oil capacity	0.75 lit (0.79 US qt, 0.66 Imp qt) at draining	
ELECTRICAL	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	
Ignition system	Ignition timing "F" mark	CDI	
	Full retard	17.0° ± 1.0°/2,000 rpm 9.6° ± 1.2°/8,000 rpm	
Starting system	Alternator	Starter motor and recoil starter	
	Spark plug	160 W/5,000 rpm	
Spark plug gap	Headlight	Standard	NGK BR9ES
		For cold climate (Below 5°C, 41°F)	CHAMPION RN-2C
Taillight	Taillight	Standard	NGK BR8ES
		For cold climate (Below 5°C, 41°F)	CHAMPION RN-3C
Headlight	Taillight	0.7–0.8 mm (0.028–0.031 in)	
		12 V–25/25 W x 2	
Taillight	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)	Apply locking agent
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)	
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)	Apply 4-stroke oil
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)	
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)	



## GENERAL INFORMATION

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 12-12, 12-13
Universal holder	07724-0050000	Flywheel puller	07933-0010000	7-6
Flywheel puller	07733-0010000			
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

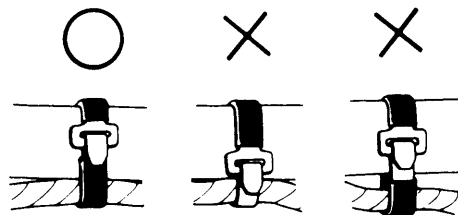
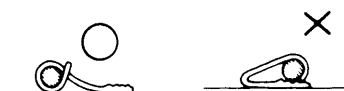
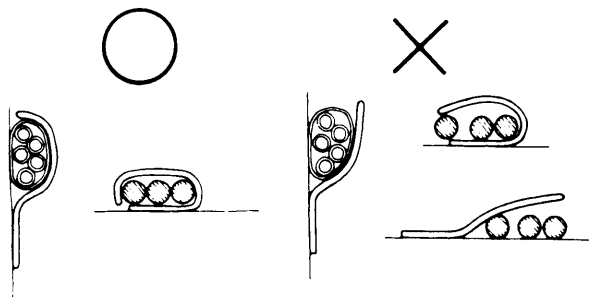
TOOL NAME	NUMBER	ALTERNATE TOOL	NUMBER	REF. PAGE
Holder	# 79-0002			9-20, 9-25, 9-26
Dismount tool	# 601552			9-20, 9-21
Special screw	# 56-0011			9-27, 9-30
Cap	# 704292			9-27, 9-30
Nut, 1/2-20	# 901840			9-27, 9-30,
Flat washer	# 704236			9-27, 9-30

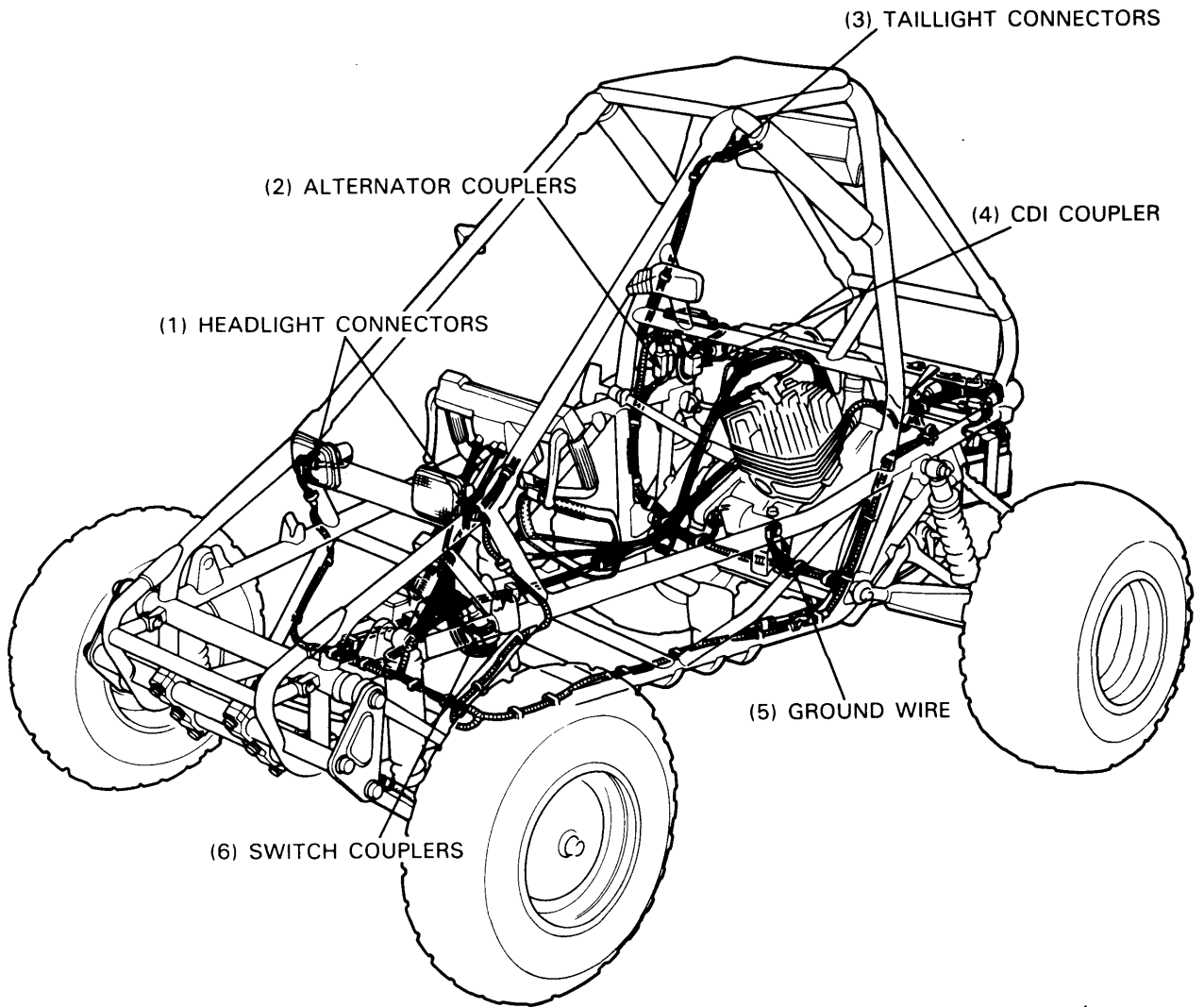
The tools marked "\*" are new for 1985 FL350R.

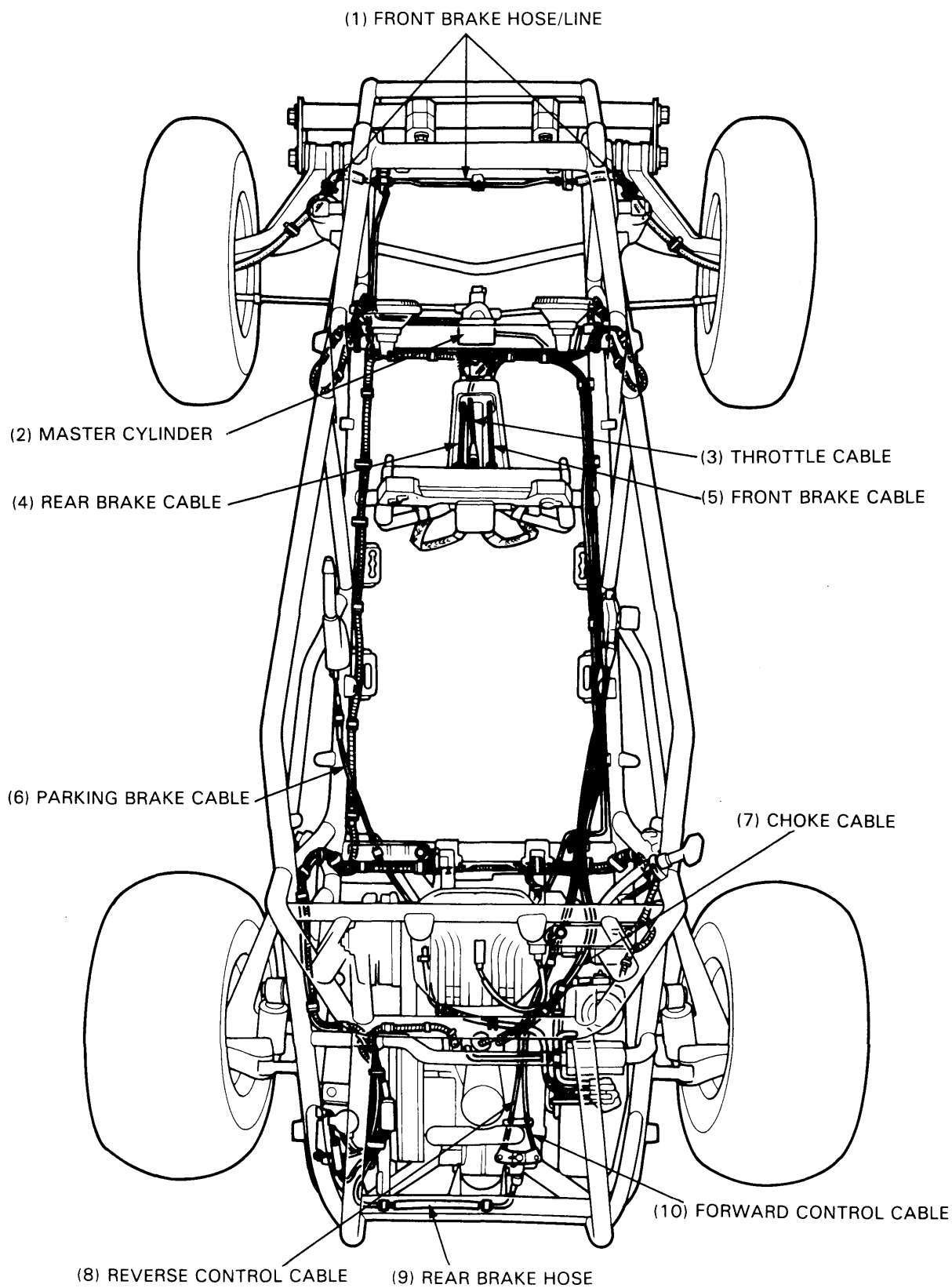
## CABLE AND HARNESS ROUTING

Note the following when routing cable and wire harness.

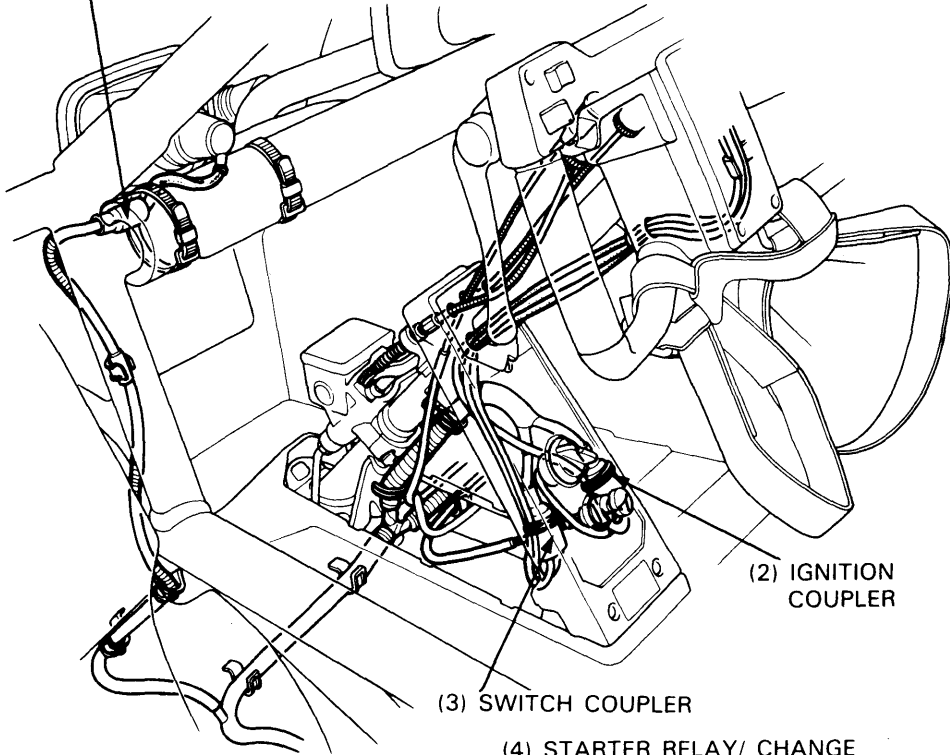
- A loose wire, harness or cable can be a safety hazard. After clamping, check each wire to be sure it is secure.
- Do not squeeze wires against the weld or end of its clamp when a weld-on clamp is used.
- Secure wires and wire harness to the frame with their respective wire bands at the designated locations. 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.







(1) HEADLIGHT CONNECTOR

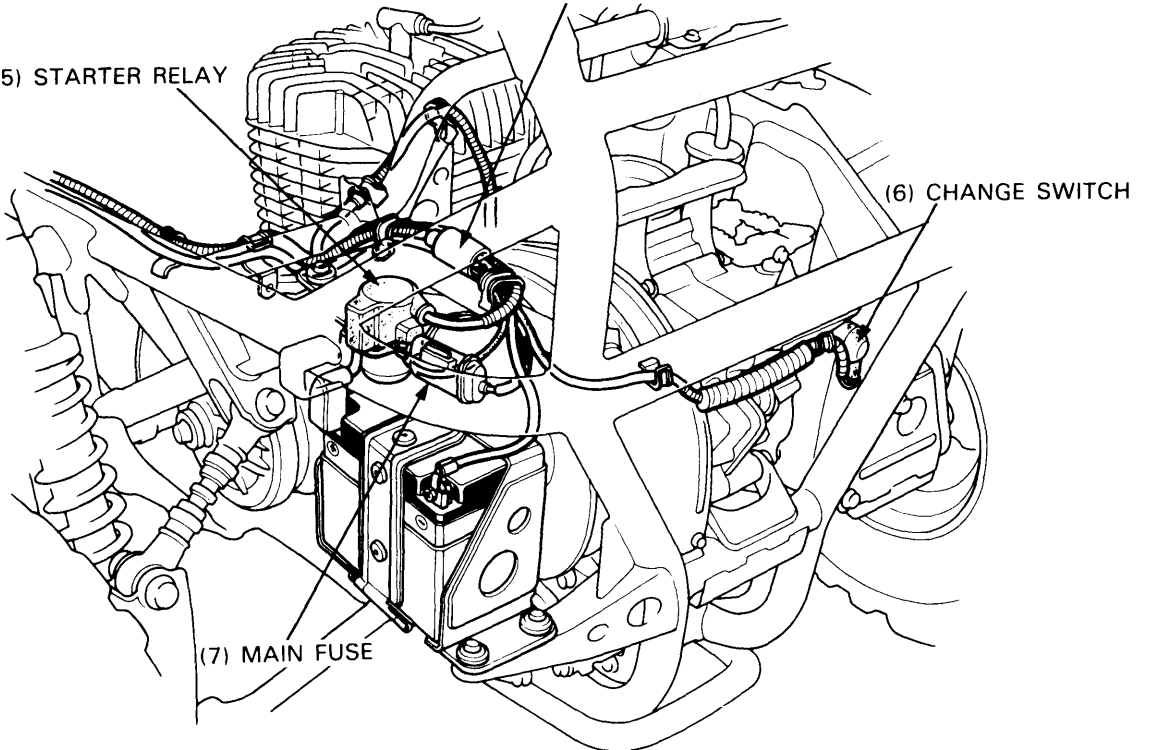


(2) IGNITION  
COUPLER

(3) SWITCH COUPLER

(4) STARTER RELAY/ CHANGE  
SWITCH WIRES AND COUPLER

(5) STARTER RELAY

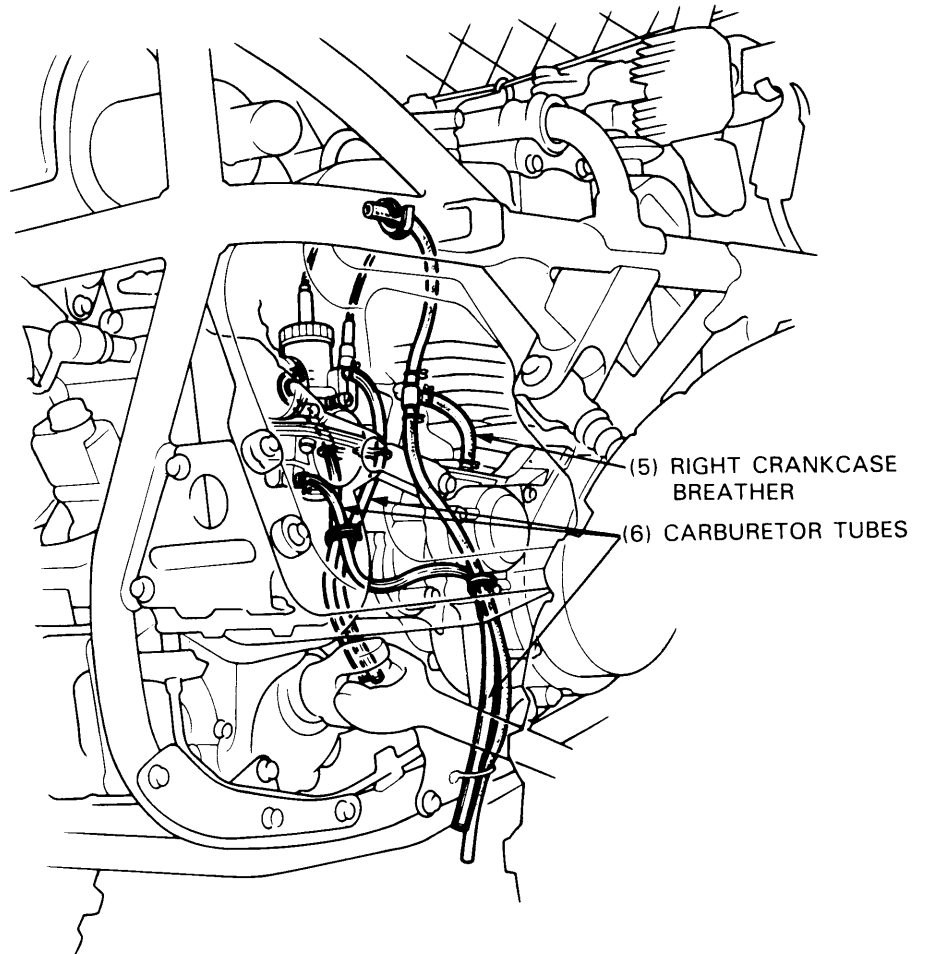
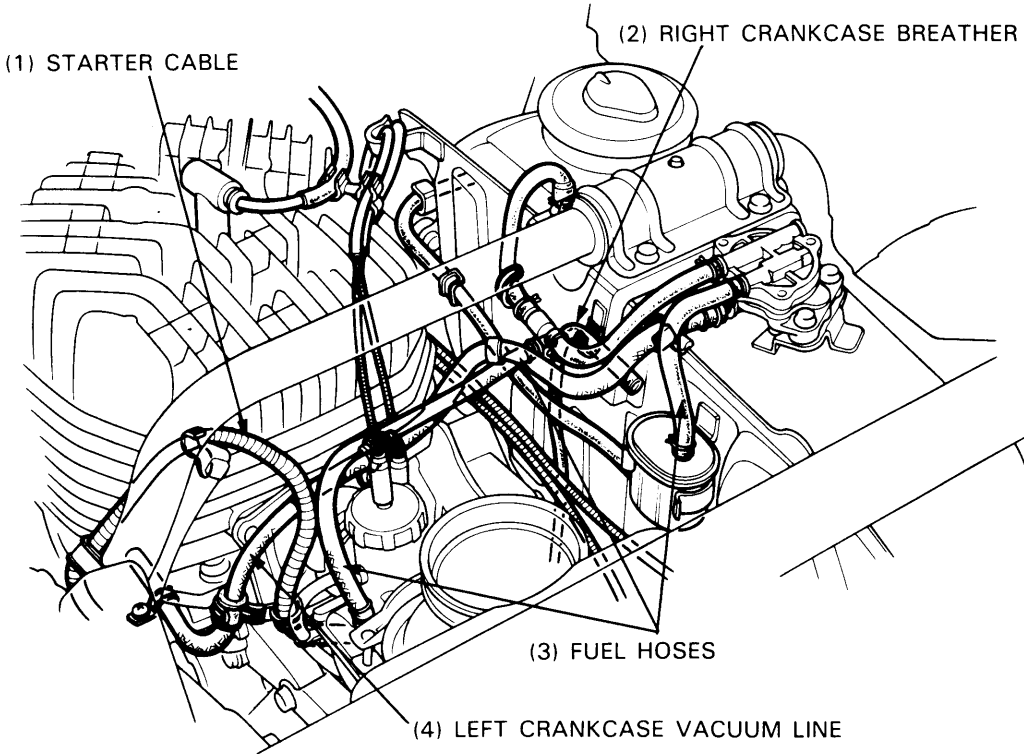


(6) CHANGE SWITCH

(7) MAIN FUSE

**GENERAL INFORMATION**

---



# 2. LUBRICATION

SERVICE INFORMATION	2-1	TRANSMISSION OIL	2-2
TROUBLESHOOTING	2-1	LUBRICATION POINTS	2-3
ENGINE BALANCER OIL	2-2		

## 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

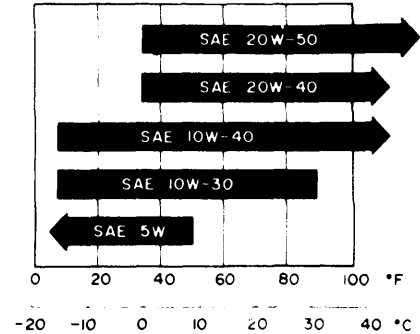
Recommended engine oil	Honda 2-stroke oil or equivalent.
Mixing ratio (Fuel : Oil)	20 : 1
Engine balancer oil capacity	0.15 lit(0.16 U.S.qt, 0.13 Imp qt) at disassembly. 0.12 lit(0.13 U.S.qt, 0.11 Imp qt) at draining
Transmission oil capacity	0.8 lit(0.85 U.S.qt, 0.70 Imp qt) at disassembly. 0.75 lit(0.79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

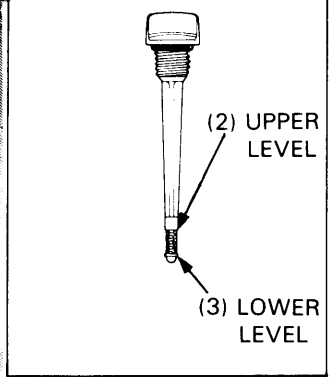
### OIL LEVEL

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 (page 2-1).

(1) OIL FILLER CAP/DIPSTICK



### OIL CHANGE

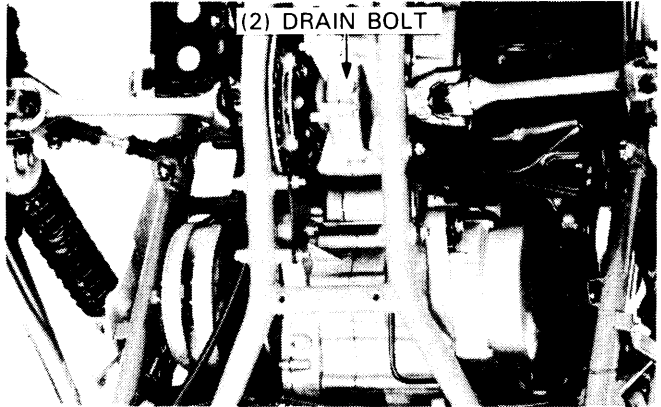
Remove the skid plate (page 9-20).

#### NOTE

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

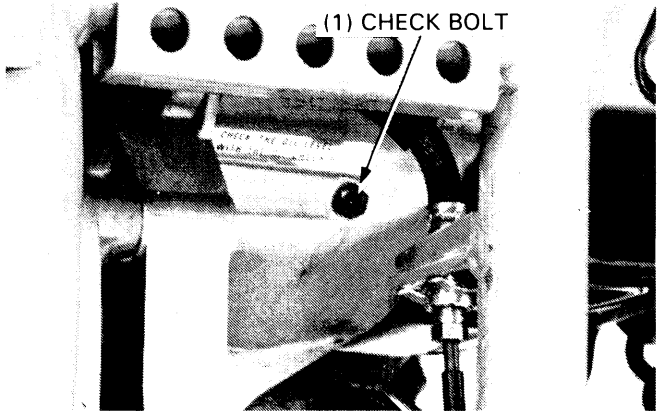
Remove the balancer oil filler cap/dipstick from the engine. Place an oil drain pan under the engine to catch the oil, and remove the drain bolt.

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.

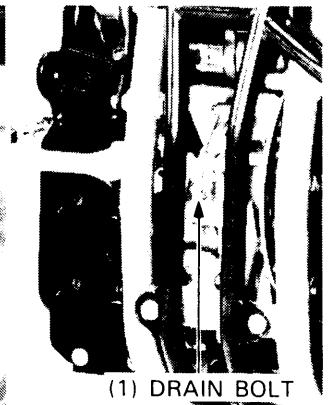
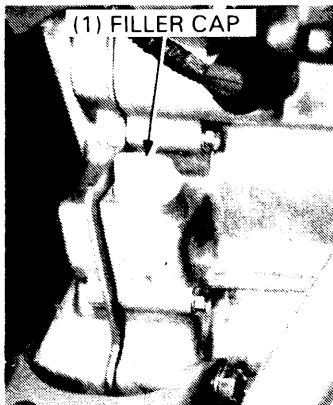
After checking, tighten the oil check bolt securely.

### 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.

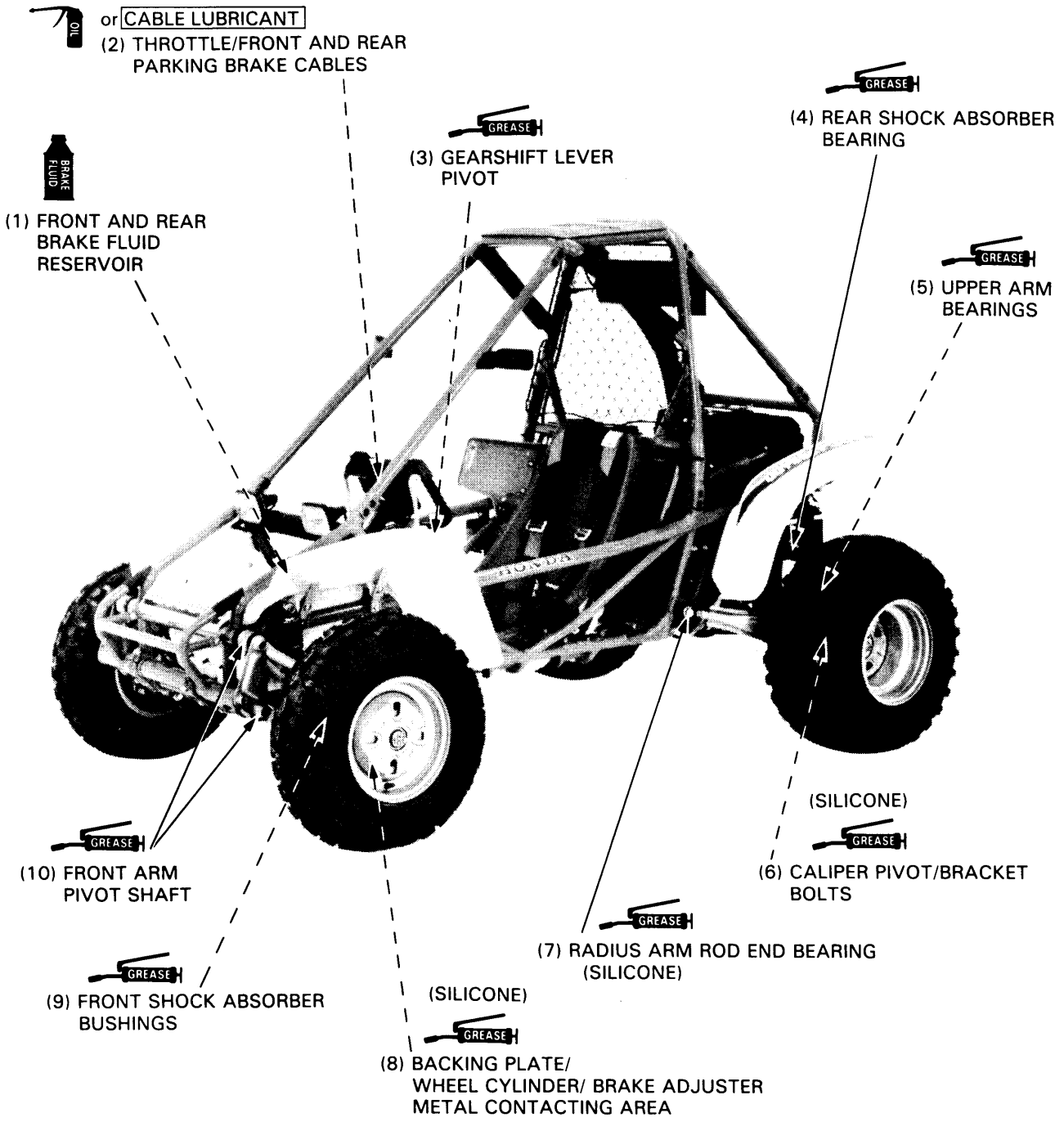


**TORQUE: 30–40 N·m (3.0–4.0 kg·m, 22–29 ft·lb)**

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.



SERVICE INFORMATION	3-1	BRAKE SHOE	3-9
MAINTENANCE SCHEDULE	3-2	BRAKE FLUID	3-10
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STEERING SYSTEM	3-7	CYLINDER COMPRESSION	3-14
SUSPENSION	3-9	NUT, BOLT, FASTENER	3-14
BRAKE PAD	3-9		

## SERVICE INFORMATION

### SPECIFICATIONS

#### <ENGINE>

Spark plug gap	0.7—0.8 mm (0.028—0.031 in)
Spark plug type	NGK: BR9ES (BR8ES) CHAMPION: RN-2C (RN-3C)
[ ] : Cold climate (Below 5°C, 41°F)	3—8 mm (1/8—5/16 in)
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/cm <sup>2</sup> )	4.3 psi (29 kPa, 0.3 kg/cm <sup>2</sup> )	5.7 psi (39 kPa, 0.4 kg/cm <sup>2</sup> )	1,735 mm (68.3 in)
Rear	6.4 psi (44 kPa, 0.45 kg/cm <sup>2</sup> )	5.7 psi (39 kPa, 0.4 kg/cm <sup>2</sup> )	7.1 psi (49 kPa, 0.5 kg/cm <sup>2</sup> )	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 23 ± 7.5 mm (0.9 ± 0.3 in) Rear 10 ± 7.5 mm (0.4 ± 0.3 in)
	Toe-out Toe-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/cm <sup>2</sup> , 138.6 psi)
Steering wheel force	2.2 kg (4.85 lb)
Upper arm length	133—162 mm (5.2—6.4 in)

## MAINTENANCE

### 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	3-5
*	CARBURETOR CHOKE		I	3-5
*	FUEL LINE	YEAR I		3-5
*	FUEL FILTER	6 MONTHS R		3-6
*	THROTTLE OPERATION		I	3-6
	DRIVE BELT	NOTES (1),(2)	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	3-10
*	MASTER CYLINDER OIL CAP	2 YEARS R		3-13
*	FRONT/REAR BRAKE HOSE	4 YEARS R		3-12
	PARKING BRAKE SYSTEM		I	3-12
*	BELT CONVERTER		I	3-13
*	SPARK ARRESTER	NOTE(3)	C	3-13
*	NUT, BOLT, FASTENER		I	3-14
**	WHEEL		I	3-14
	BALANCER OIL		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.

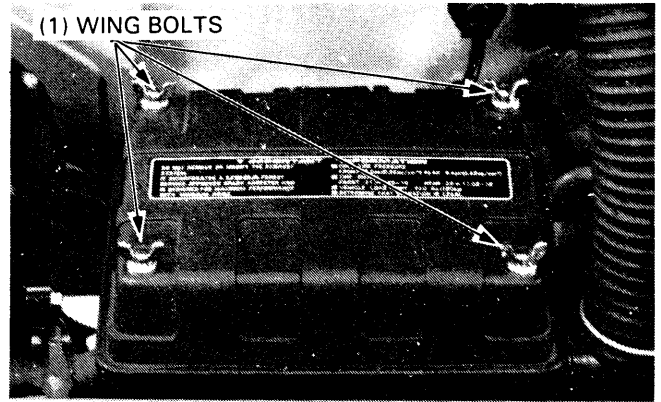
## PERIODIC REPLACEMENT PARTS

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.

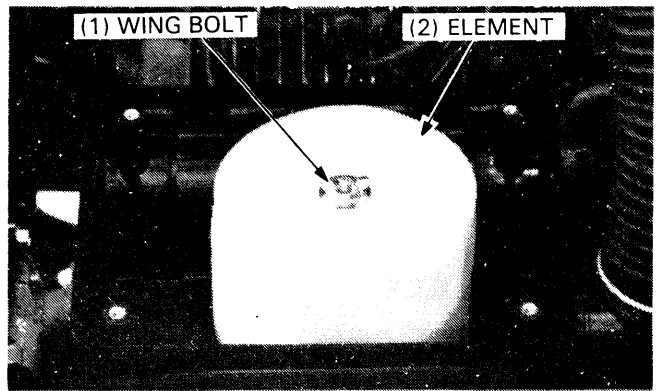
Part Name	Interval	Items to be checked
Piston	Every 30 hours	Damage at skirt, wear
Piston pin	Every 30 hours	Seizure, damage, wear
Piston rings	Every 30 hours	Chipped end, wear
Connecting rod big end bearing	Every 30 hours	Wear, damage
Connecting rod small end bearing	Every 30 hours	Wear, damage
Spark 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:**

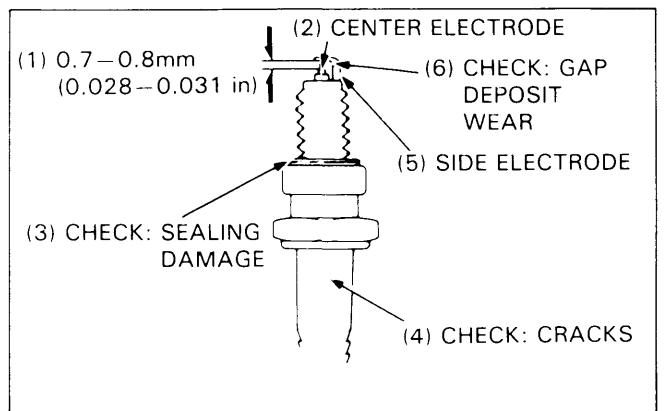
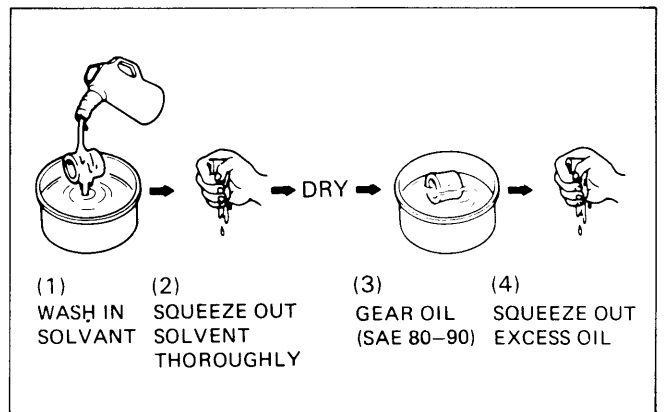
	NGK	CHAMPION
Standard	BR9ES	RN-2C
For cold climate (Below 5°C, 41°F)	BR8ES	RN-3C

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

Check the sealing washer and replace with a new one if damaged.  
 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.

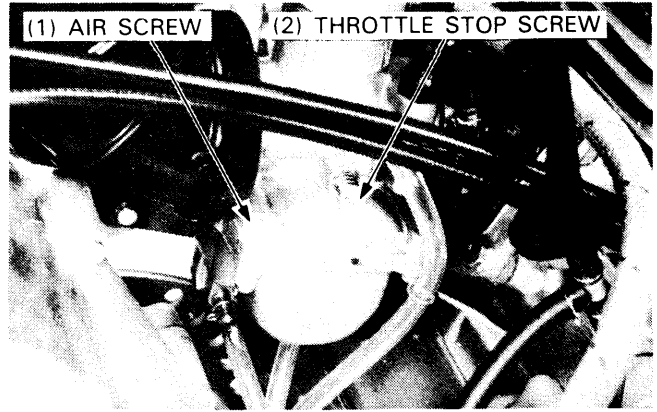


## CARBURETOR IDLE SPEED

### NOTE

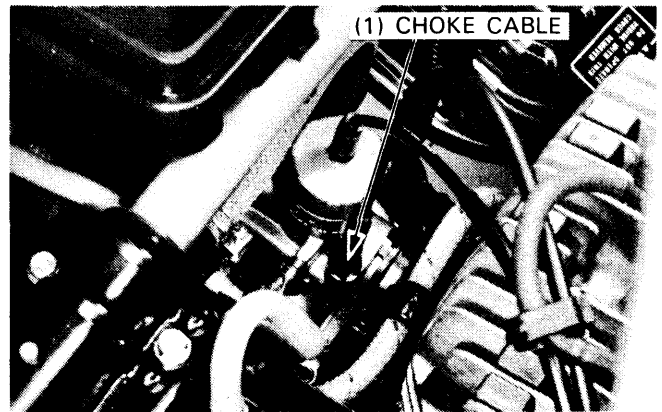
- Inspect and adjust the idle speed after all other maintenance items have been performed and are within specifications.
- The engine must be warm for accurate idle speed inspection and adjustment.

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.



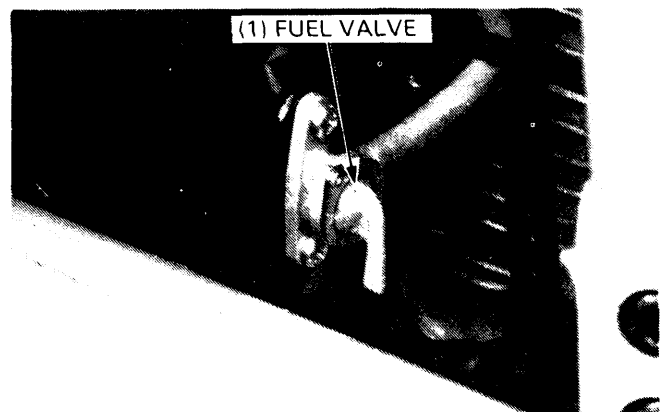
## CARBURETOR CHOKE

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.



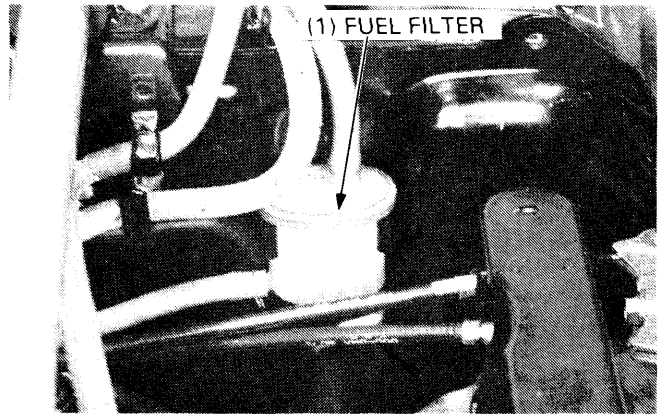
## MAINTENANCE

### 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.*

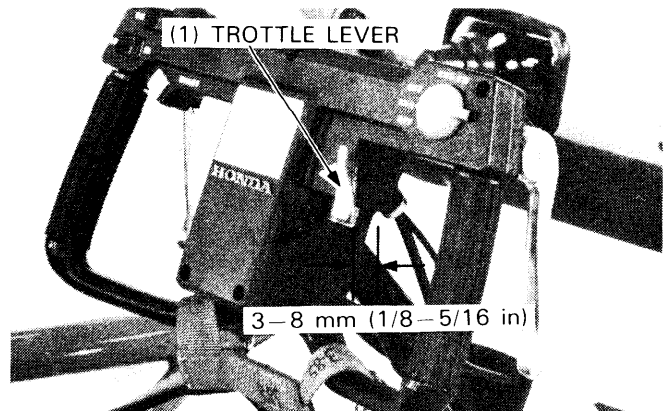


### THROTTLE OPERATION

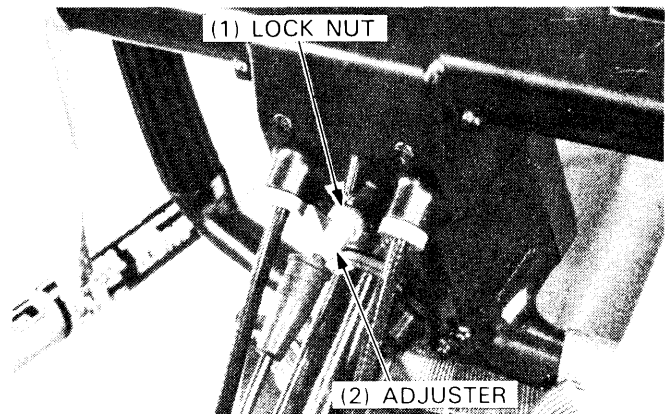
Check that the throttle opens smoothly and completely.  
Measure the throttle lever free play at the tip of the throttle lever.

**FREE PLAY: 3–8 mm (1/8–5/16 in)**

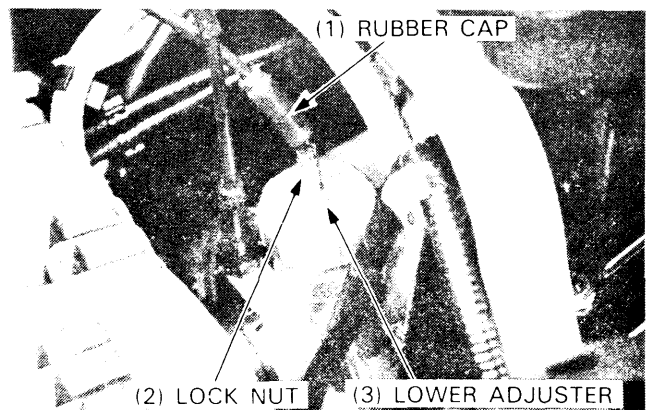
Check that the throttle cable doesn't bind or stick through the entire range of steering positions.  
Replace the cable if it has become worn or kinked. Lubricate the cable with a commercially available cable lubricant to prevent premature wear and corrosion.



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

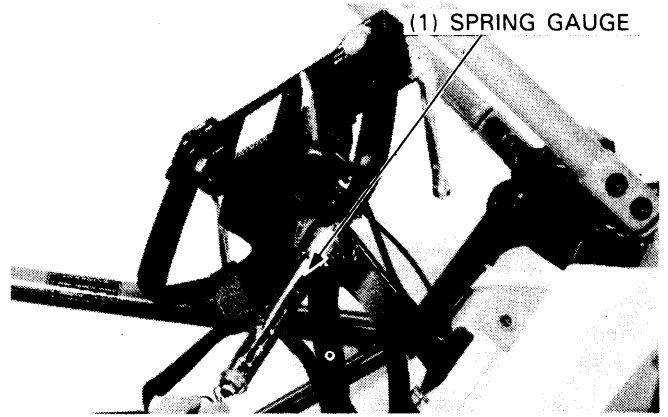
**NOTE**

- 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.

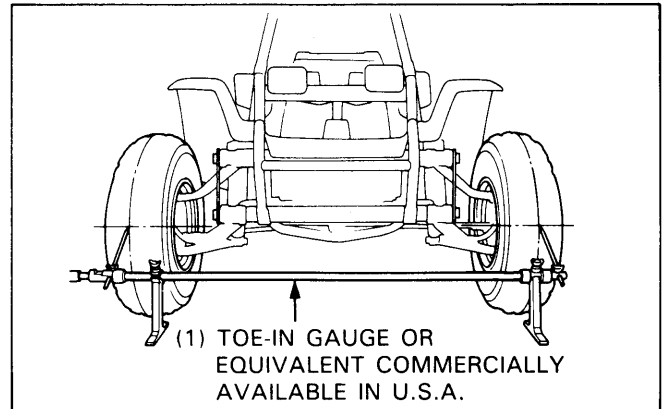
**SERVICE LIMIT: 2.2 kg (4.85 lb)**

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

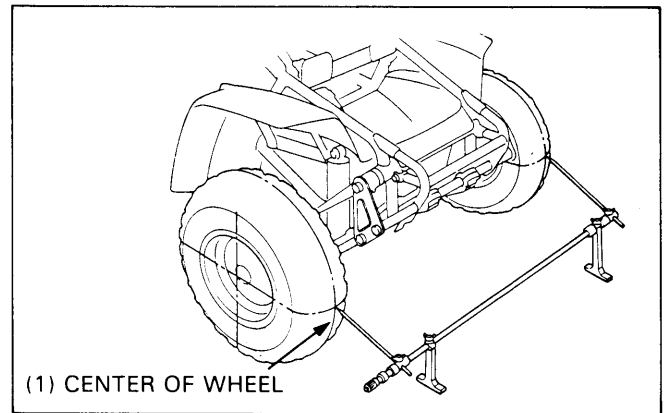


## TOE-IN/TOE-OUT

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.



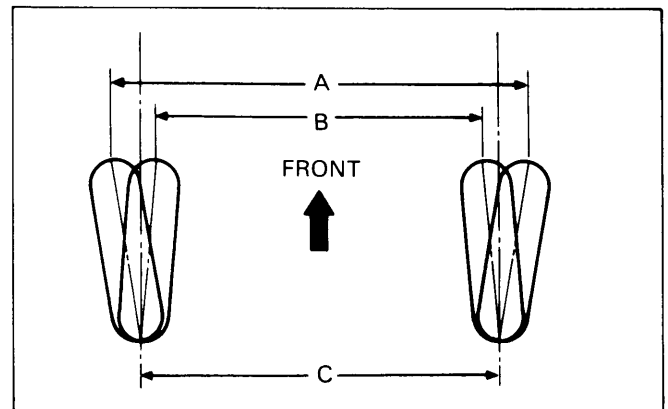
Align the toe-in gauge with the marks on the tires as shown.  
Check the readings on the gauge scales.  
Slowly move the vehicle back until the wheels have turned 180° so the marks on the tires are aligned with the gauge height on the rear side.  
Measure the toe-in on the rear part of the tires at the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



**FRONT WHEEL TOE-OUT:  $23 \pm 7.5$  mm ( $0.9 \pm 0.3$  in)**

**REAR WHEEL TOE-IN:  $10 \pm 7.5$  mm ( $0.4 \pm 0.3$  in)**

**(A - C): TOE-OUT**  
**(C - B): TOE-IN**



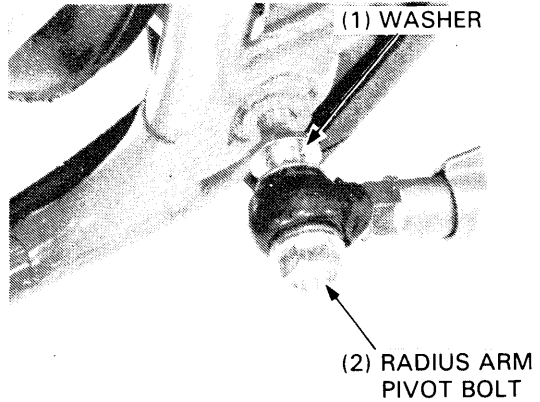
## MAINTENANCE

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 level 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:**  $0^{\circ} \pm 1^{\circ}$

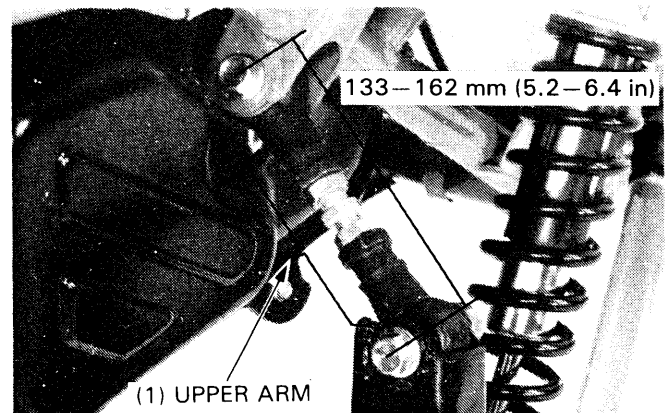
**REAR:**  $0^{\circ} \pm 1^{\circ}$

(1) WHEEL ALIGNMENT GAUGE ATTACHMENT  
07910—MJ30100 OR EQUIVALENT  
COMMERCIALY AVAILABLE  
IN U.S.A.



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:**  $0^{\circ} 30' \pm 1^{\circ}$

### NOTE

- Front caster is not adjustable.

(1) WHEEL ALIGNMENT GAUGE ATTACHMENT  
07910—MJ30100 OR EQUIVALENT  
COMMERCIALY AVAILABLE  
IN U.S.A.





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