HONDA

SERVICE MANUAL

86-89

TRX 250R

FOURTRAX® 250R

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 possibly hazardous consequences of each conceivable way, nor could Honda investigate all such ways. Anyone using service procedures or tools, whether or not recommended by Honda *must satisfy himself thoroughly* that neither personal safety nor vehicle safety will be jeopardized by the service method or tools selected.

HOW TO USE THIS MANUAL

Sections 1 and 2 apply to the whole FOURTRAX, while sections 3 through 15 describe parts of the FOURTRAX, 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, general instructions, specifications, torque values, tools and troubleshooting for the section. The subsequent pages give detailed procedures.

If you don't know the source of a problem, see section 16, TROUBLESHOOTING.

HONDA MOTOR CO., LTD.
Service Publications Office

CONTENTS

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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 that can cause loss of consciousness and may lead to death.

CAUTION

Used engine oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still adviseable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.

WARNING

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

WARNING

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

SERVICE RULES

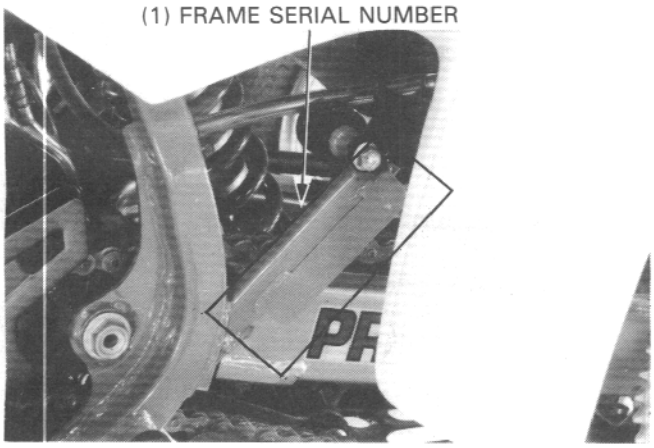
1. Use genuine HONDA or HONDA-recommended parts and lubricants or their equivalent. Parts that do not meet HONDA's design specifications may damage the Fourtrax.
2. Use the special tools designed for this product to avoid damage and incorrect assembly.
3. Install new gaskets, O-rings, cotter pins, lock plates, etc. when reassembling.
4. When torquing a series of bolts or nuts, begin with larger-diameter or inner bolts first, and tighten to the specified torque diagonally, in incremental steps, unless a particular sequence is specified.
5. Clean parts in non-flammable or high flash point solvent upon disassembly. Lubricate any sliding surfaces before reassembly.
6. When installing a new oil seal, make sure that the sealing lip is lubricated with grease. If an oil seal and related parts have been washed, apply proper grease to the lip of the oil seal.
7. After reassembly, check all parts for proper installation and operation.
8. Use only metric tools when servicing this Fourtrax. Metric bolts, nuts, and screws are not interchangeable with English fasteners. The use of incorrect tools and fasteners may damage the Fourtrax.
9. Route all electrical wires and control cables as shown on page 1-9 through 1-14 Cable and Harness Routing.

MODEL IDENTIFICATION

'86 shown: '87 similar

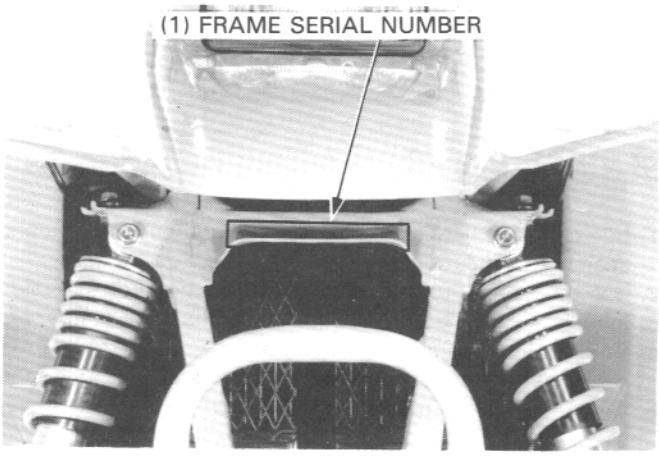
After '87:

'86, '87:

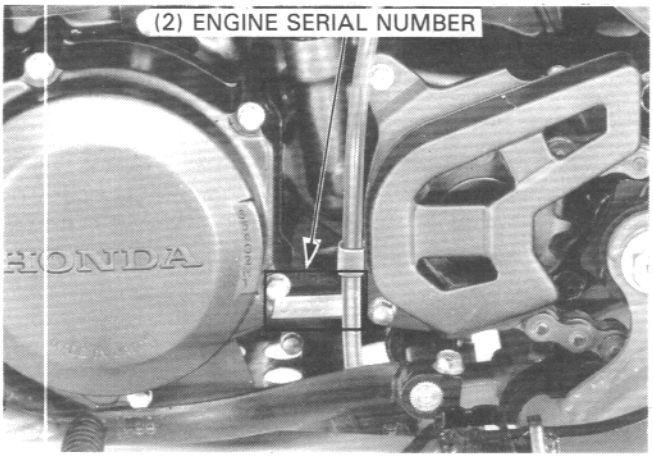


The frame serial number is stamped on the frame left side.

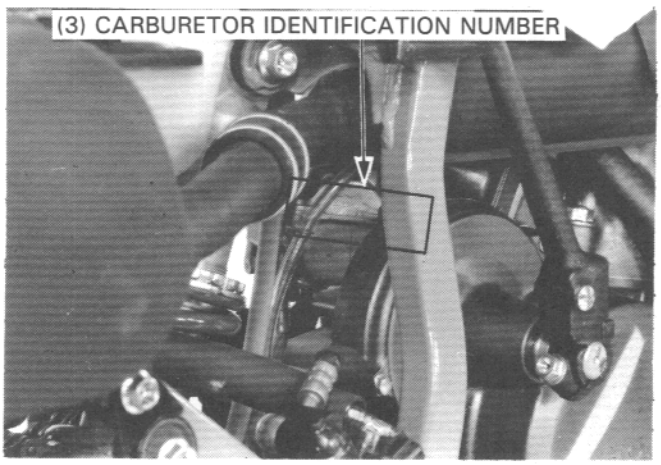
After '87:



The frame serial number is stamped on the frame front side.



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



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

SPECIFICATIONS

DIMENSIONS	Overall length		'86, '87:	1,825 mm (71.9 in)
			After '87:	1,840 mm (72.4 in)
	Overall width		'86, '87:	1,130 mm (44.5 in)
			After '87:	1,160 mm (45.7 in)
	Overall height		'86, '87:	1,070 mm (42.1 in)
			After '87:	1,080 mm (42.5 in)
	Wheelbase		'86, '87:	1,295 mm (51.0 in)
			After '87:	1,265 mm (49.8 in)
	Seat height		'86, '87:	775 mm (30.5 in)
			After '87:	790 mm (31.1 in)
	Foot peg height		'86, '87:	330 mm (13.0 in)
			After '87:	340 mm (13.4 in)
	Ground clearance			110 mm (4.3 in)
	Dry weight	Front	'86, '87:	75 kg (165.3 lb)
			After '87:	73 kg (160.9 lb)
		Rear		74 kg (163.1 lb)
	Weight distribution	Front	'86, '87:	106 kg (233.7 lb)
			After '87:	101 kg (222.7 lb)
		Rear	'86, '87:	131 kg (288.8 lb)
			After '87:	133 kg (293.2 lb)
FRAME	Type			Cradle
	Front suspension, travel			Double wish-bone, 200 mm (7.9 in)
	Rear suspension, travel			Swingarm, Pro-link, 230 mm (9.1 in)
	Rim size	Front		10 x 5.5
		Rear		9 x 8.0 AT
	Tire size	Front	'86, '87:	21 x 7.00-10
			After '87:	AT22 x 7.00-10☆☆
		Rear	'86, '87:	20 x 10.00-9
			After '87:	AT20 X 10.00-9☆
	Tire pressure	Front		4.0 psi (0.275 kg/cm², 27.5 kPa)
		Rear	'86, '87:	2.9 psi (0.2 kg/cm², 20 kPa)
			After '87:	3.3 psi (0.225 kg/cm², 22.5 kPa)
	Front brake, lining swept area			Single disc (twin piston), 392.9 cm² (60.9 sq-in) x 2
	Rear brake, lining swept area			Single disc (twin piston), 259.8 cm² (40.3 sq-in)
	Fuel capacity			10.0 ℓ (2.64 U.S. gal., 2.20 Imp. gal.)
	Fuel reserve capacity			2.0 ℓ (0.53 U.S. gal., 0.44 Imp. gal.)
	Toe-in			10 mm (0.4 in)
	Caster angle		'86, '87:	6°
			After '87:	4°40'
	Camber			0°
	Trail length		'86, '87:	27 mm (1.06 in)
			After '87:	21 mm (0.83 in)
	Tread	Front		910 mm (35.8 in)
		Rear	'86, '87:	870 mm (34.3 in)
			After '87:	900 mm (35.4 in)
ENGINE	Type			Liquid cooled 2-stroke
	Cylinder arrangement			7° inclined from vertical, single
	Engine dry weight			26.0 kg (57.3 lb)
	Bore x stroke			66.0 x 72.0 mm (2.60 x 2.83 in)
	Displacement			246 cm³ (15.01 cu-in)
	Compression ratio		'86:	7.5 : 1
			After '86:	7.7 : 1
	Transmission oil capacity			0.7 ℓ (0.74 U.S. qt., 0.62 Imp. qt.) at disassembly
				0.6 ℓ (0.63 U.S. qt., 0.53 Imp. qt.) after draining
	Lubrication system			Gasoline/oil mixture
	Fuel required			Gasoline-oil ratio 20 : 1 (pre-mixed) (RON, 92-100)
	Air filtration			Oiled polyurethane foam
	Idle speed			1,500 ± 150 rpm

CARBURETOR	Type		Piston valve
	Identification number	'86:	PJ 05A
		'87:	PJ 07A
		'88:	PJ07B
		After '88:	PJ07C
	Main Jet	'86:	#150
		'87:	#152
		'88:	#158
		After '88:	#155
	Venturi diameter		34 mm (1.3 in)
	Slow jet	'86, '87:	#48
		'88:	#45
		After '88:	#42
	Float level		16 mm (0.63 in)
	Air screw initial opening	'86, 87:	1-7/8 turns out
		'88:	1-3/4 turns out
		After '88:	1-1/2 turns out
	Jet needle	'86, After 88:	4th groove
		'87, '88:	3rd groove
DRIVE TRAIN	Clutch		Wet multi-plate type
	Transmission		6-speed, constant mesh
	Primary reduction ratio		2.652 (61/23)
	Gear ratios I		2.570 (36/14)
	II		2.062 (33/16)
	III		1.667 (30/18)
	IV		1.333 (28/21)
	V	'86:	1.083 (26/24)
		After '86:	1.087 (25/23)
	VI	'86:	0.884 (23/26)
		After '86:	0.920 (23/25)
	Final reduction ratio	'86, '87:	3.000 (39/13)
		After '87:	2.923 (38/13)
	Gearshift pattern		Left foot operated return system, 1-N-2-3-4-5-6
ELECTRICAL	Ignition system		CDI
	Ignition timing "F" mark	'86, '87:	19° BTDC/1,500±150 rpm
		After '87:	21° BTDC/1,500±150 rpm
	Starting system		Primary kick starter
	Alternator	'86-'88:	0.159 kW/5,000 rpm
		After '88:	0.154 kW/5,000 rpm
	Spark plug	'86, After '88: (STD)	BR8ES (NGK) RN3C (CHAMPION)
		'87, '88: (STD)	BR9ES (NGK) RN2C (CHAMPION)
	Spark plug		0.7—0.8 mm (0.028—0.031 in)
	Tailight	'86:	12 V—8 W
		After '86:	12 V—5 W
		Headlight	12 V—55/60 W

TORQUE VALUES

ENGINE

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kg-m, ft-lb)	REMARKS
Cylinder head nut	6	8	24–29 (2.4–2.9, 17–21)	
Cylinder base nut	4	10	38–48 (3.8–4.8, 27–35)	
Clutch center lock nut	1	18	55–65 (5.5–6.5, 40–47)	
Primary drive gear bolt	1	10	40–50 (4.0–5.0, 29–36)	
Shift drum center pin	1	8	20–24 (2.0–2.4, 14–17)	
Transmission drain bolt	1	12	25–35 (2.5–3.5, 18–25)	
Countershaft bearing holder screw	2	6	8–12 (0.8–1.2, 6–9)	
Shift drum stopper arm bolt	1	6	10–14 (1.0–1.4, 7–10)	
Alternator rotor nut	1	12	65–75 (6.5–7.5, 47–54)	
Drive sprocket bolt	1	8	30–34 (3.0–3.4, 22–24)	
Water pump impeller nut '86–'88:	1	6	8–12 (0.8–1.2, 6–9)	
Water pump impeller After '88:	1	6	10–14 (1.0–1.4, 7–10)	
Spark plug	1	14	15–20 (1.5–2.0, 11–14)	
Coolant drain bolt	2	6	8–12 (0.8–1.2, 6–9)	

CHASSIS

ITEM	Q'TY	THREAD DIA. (mm)	TORQUE N·m (kg-m, ft-lb)	REMARKS
Gearshift pedal bolt	1	6	10–14 (1.0–1.4, 7–10)	
Kick starter pedal pinch bolt	1	8	20–35 (2.0–3.5, 14–25)	
Parking brake adjust bolt lock nut	1	8	15–20 (1.5–2.0, 11–14)	
Front wheel hub nut '86, '87:	2	18	80–120 (8.0–12.0, 58–72)	
After '87:	2	14	60–80 (6.0–8.0, 43–58)	
Tie-rod ball joint nut	4	10	40–50 (4.0–5.0, 29–36)	
Tie-rod lock nut	4	12	50–60 (5.0–6.0, 36–43)	
Front arm ball joint nut ('86, '87 only:)	2	14	60–80 (6.0–8.0, 43–58)	
Knuckle arm nut ('86, '87 only:)	4	10	60–70 (6.0–7.0, 43–51)	
Front arm nut	4	12	50–60 (5.0–6.0, 36–43)	
Front arm mounting bolt '86, After '87:	8	10	35–45 (3.5–4.5, 25–33)	
'87:	8	10	50–60 (5.0–6.0, 36–43)	
Front shock absorber mounting bolt	4	10	40–50 (4.0–5.0, 29–36)	
Steering shaft nut	1	14	60–80 (6.0–8.0, 43–58)	
Handlebar lower holder mounting nut	2	10	40–50 (4.0–5.0, 29–36)	
Steering shaft holder bolt	4	8	25–30 (2.5–3.0, 18–22)	
Rear axle outer lock nut	1	48	80–100 (8.0–10.0, 58–72)	left hand threads
Rear axle inner lock nut	1	48	120–140 (12.0–14.0, 87–101)	left hand threads
Rear wheel hub nut	2	20	120–170 (12.0–17.0, 87–123)	apply oil or grease to threads
Front, rear wheel nut	16	10	60–70 (6.0–7.0, 43–51)	tapered nut
Handlebar upper holder bolt	4	8	24–30 (2.4–3.0, 17–22)	

ITEM	Q'TY (After '87)	THREAD DIA. (mm)	TORQUE N·m (kg-m, ft-lb)	REMARKS
Front disc socket bolt	8(6)	6	14–16 (1.4–1.6, 10–12)	
Front brake caliper mounting bolt	4	8	20–30 (2.0–3.0, 14–22)	
Brake hose oil bolt	5	10	25–35 (2.5–3.5, 18–25)	
Bleed valve	3	7	4–7 (0.4–0.7, 3–5)	
Rear disc socket bolt	4	8	35–40 (3.5–4.0, 25–29)	
Pad pin bolt	4	8	15–20 (1.5–2.0, 10–14)	
Pad pin bolt plug	4	8	10–20 (1.0–2.0, 7–14)	
Rear caliper bracket mounting bolt	2	8	28–34 (2.8–3.4, 20–25)	
Rear caliper mounting bolt	1	8	20–25 (2.0–2.5, 14–18)	
Front brake pipe nut	2	10	15–20 (1.5–2.0, 11–14)	
Brake hose joint				
(hose side) ('86, '87 only:)	2	10	12–15 (1.2–1.5, 9–11)	
(joint side) ('86, '87 only:)	2	10	30–40 (3.0–4.0, 22–29)	
Three-way joint mounting bolt	2 (1)	6	10–14 (1.0–1.4, 7–10 ft-lb)	
Front master cylinder holder	2	6	10–14 (1.0–1.4, 7–10 ft-lb)	
Master cylinder cover screw	4	4	1–2 (0.1–0.2, 0.7–1.4)	
Parking brake attaching bolt	2	8	20–25 (2.0–2.5, 14–18)	
Shock absorber hose oil bolt	2	10	28–32 (2.8–3.2, 20–23)	
Compression damping valve	1	——	15–20 (1.5–2.0, 11–14)	
Rear shock absorber mounting bolt				
(upper)	1	10	45–55 (4.5–5.5, 33–40)	
(lower)	1	12	70–80 (7.0–8.0, 51–58)	
Shock arm pivot bolt	1	12	70–80 (7.0–8.0, 51–58)	
Shock link pivot bolt	1	12	70–80 (7.0–8.0, 51–58)	
Swingarm pivot nut	1	14	70–110 (7.0–11.0, 51–80)	
Swingarm bearing holder socket bolt	2 (4)	8	19–23 (1.9–2.3, 14–17)	Apply oil or grease to threads
Driven sprocket bolt	4	10	47–55 (4.7–5.5, 34–40)	Apply locking agent to threads
Engine hanger plate and pipe bolt	8	8	25–35 (2.5–3.5, 18–25)	
Engine mounting bolt	5 (4)	10	50–60 (5.0–6.0, 36–43)	
Foot peg mounting bolt				
('86, '87 only:)	4	10	50–60 (5.0–6.0, 36–43)	
Shock absorber spring lock nut	1	——	80–100 (8.0–10.0, 58–72)	
Skid plate	4	8	28–34 (2.8–3.4, 20–25)	
Radiator hose band	6	——	0.7–1.0 (0.07–0.1, 0.5–0.7)	
Rear brake torque bolt (After '87:)	1	12	50–60 (5.0–6.0, 36–43)	Apply locking agent

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

STANDARD TORQUE VALUES

ITEM	TORQUE N·m (kg-m, ft-lb)	ITEM	TORQUE N·m (kg-m, ft-lb)
5 mm bolt and nut	4.5–6 (0.45–0.6, 3–4)	5 mm screw	3.5–5 (0.35–0.5, 2–4)
6 mm bolt and nut	8–12 (0.8–1.2, 6–9)	6 mm screw and 6mm bolt with 8 mm head	7–11 (0.7–1.1, 5–8)
8 mm bolt and nut	18–25 (1.8–2.5, 13–18)	6 mm flange bolt and nut	10–14 (1.0–1.4, 7–10)
10 mm bolt and nut	30–40 (3.0–4.0, 22–29)	8 mm flange bolt and nut	24–30 (2.4–3.0, 17–22)
12 mm bolt and nut	50–60 (5.0–6.0, 36–43)	10 mm flange bolt and nut	35–45 (3.5–4.5, 25–33)

TOOLS

SPECIAL

DESCRIPTION	TOOL NUMBER	ALTERNATE TOOL	TOOL NUMBER	REF. SECT.
Camber/caster gauge attachment	07910—MJ30100	Not available in U.S.A.		3
Crankcase puller	07973—4300000			8
Bearing remover, 17mm	07936—3710300			6, 8
Remover handle	07936—3710100			6, 8
Remover weight	07741—0010201	Remover weight	07936—3710200	6, 8
Assembly bolt	07965—1660200			8
Thread adapter	07965—KA30000			8
Driveshaft dis/assembly tool (B)	07964—MB00200			8
Mechanical seal driver attachment	07945—4150400	Mechanical seal installer	GH—AH—065—415 (U.S.A. only)	9
Attachment, 28 x 30 mm	07946—1870100			9 12 (After '87:)
Bearing remover set, 12 mm	07936—1660001	Not available in U.S.A.		9
—Remover weight	07741—0010201	Remover weight	07936—3710200	9
—Bearing spindle assy, 12 mm	07936—1660100			9
Universal bead breaker	GN—AH—958—BB1	(U.S.A only)		10
Ball joint remover	07941—6920003			10
Shock absorber compressor attachment	07959—MB10000			10
Shock absorber compressor attachment	07967—KC10100	Not available in U.S.A.		10
Lock nut wrench, 56mm	07916—HA20000	Lock nut wrench, 56 mm	07916—HA2010A (U.S.A. only)	11
Lock nut wrench, 45 mm	07916—1870101	Equivalent commercially available in U.S.A.		11
Valve wrench	07920—KA30001	Not available in U.S.A.		12
Needle bearing remover	07946—KA50000			12
Snap ring pliers	07914—3230001			13
Circuit tester (SANWA)	07308—0020000	Circuit tester (KOWA)	TH—5H	15
Digital multimeter	07411—0020000	Digital multimeter	KS—AHM—32—002 (U.S.A. only)	15
Spherical bearing driver	07HMF—HC00100			10
Bearing remover (After '87:)	07931—MA70000			12

COMMON

DESCRIPTION	TOOL NUMBER	ALTERNATE TOOL	TOOL NUMBER	REF. SECT.
Float level gauge	07401—0010000			3
Rotor puller	07733—0010000	Rotor puller	07933—0010000	6
Universal holder	07725—0030000			6
Clutch center holder	07724—0050001	Equivalent commercially available in U.S.A.		7
Gear holder	07724—0010100	Not available in U.S.A.		7
Driver	07749—0010000			6,8,9,10,11,12
Attachment, 37 x 40 mm	07746—0010200			6,8,10
Pilot, 17 mm	07746—0040400			6,10
Attachment, 62 x 68 mm	07746—0010500			8,11
Pilot, 28 mm	07746—0041100			8
Attachment, 52 x 55 mm	07746—0010400			8
Pilot, 25 mm	07746—0040600			8
Pilot, 22 mm	07746—0041000			8
Pilot, 12 mm	07746—0040200			9
Bearing remover shaft	07746—0050100	Equivalent commercially		10
Bearing remover head, 20 mm	07746—0050600	available in U.S.A.		10
				12 (After '87)
Attachment, 42 x 47 mm	07746—0010300			10
Pilot, 20 mm	07746—0040500			10
				12 (After '87)
Bearing remover shaft (After '87:)	07GGD—0010100			12
Tire bead breaker set	07772—0050001	Not available in U.S.A.		10
—Breaker arm	07772—0050200			
—Breaker arm compressor	07772—0050101			
Shock absorber compressor	07959—3290001	Shock absorber compressor	07GME—0010000	10
		-Compressor screw assebly	07GME—0010100	10
Pilot, 40 mm	07746—0040900			11
Attachment, 32 x 35 mm (After '87:)	07746—0010100			10
Pilot, 15 mm (After '87:)	07746—0040300			10

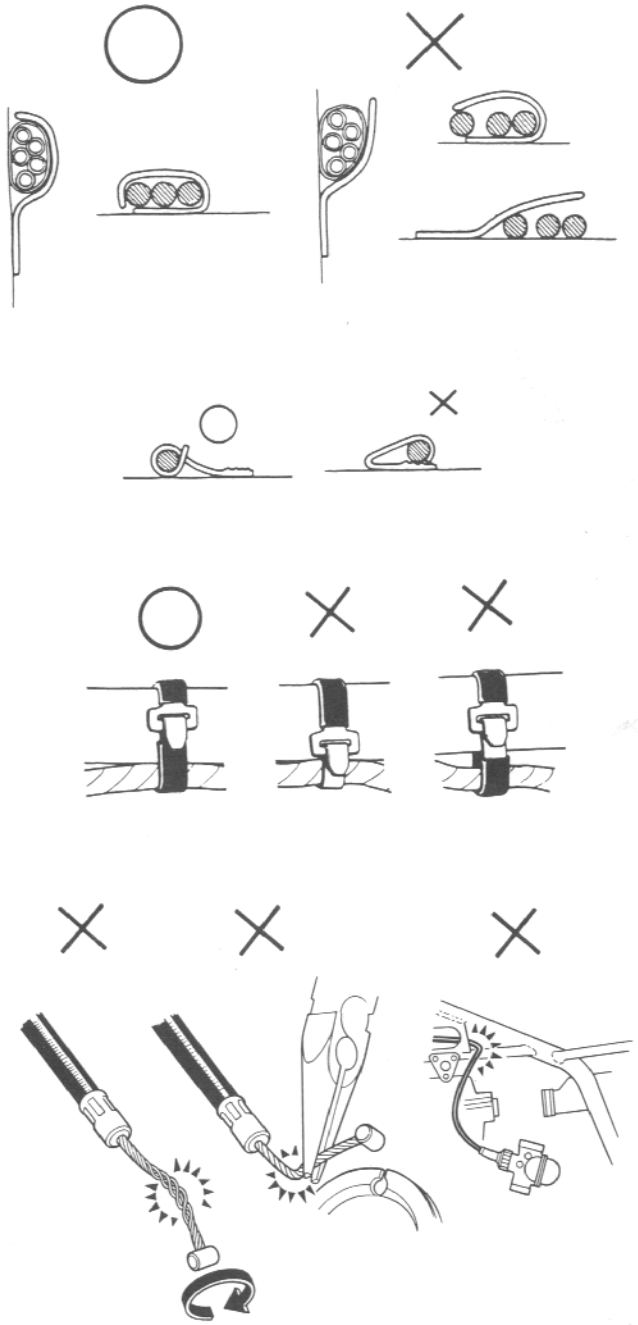
OPTIONAL TOOLS

DESCRIPTION	TOOL NUMBER	ALTERNATE TOOL	TOOL NUMBER	REF. SECT.
Pin spanner	89201—KA4—810			12
Pin spanner	89202—KA4—810			12

CABLE & HARNESS ROUTING

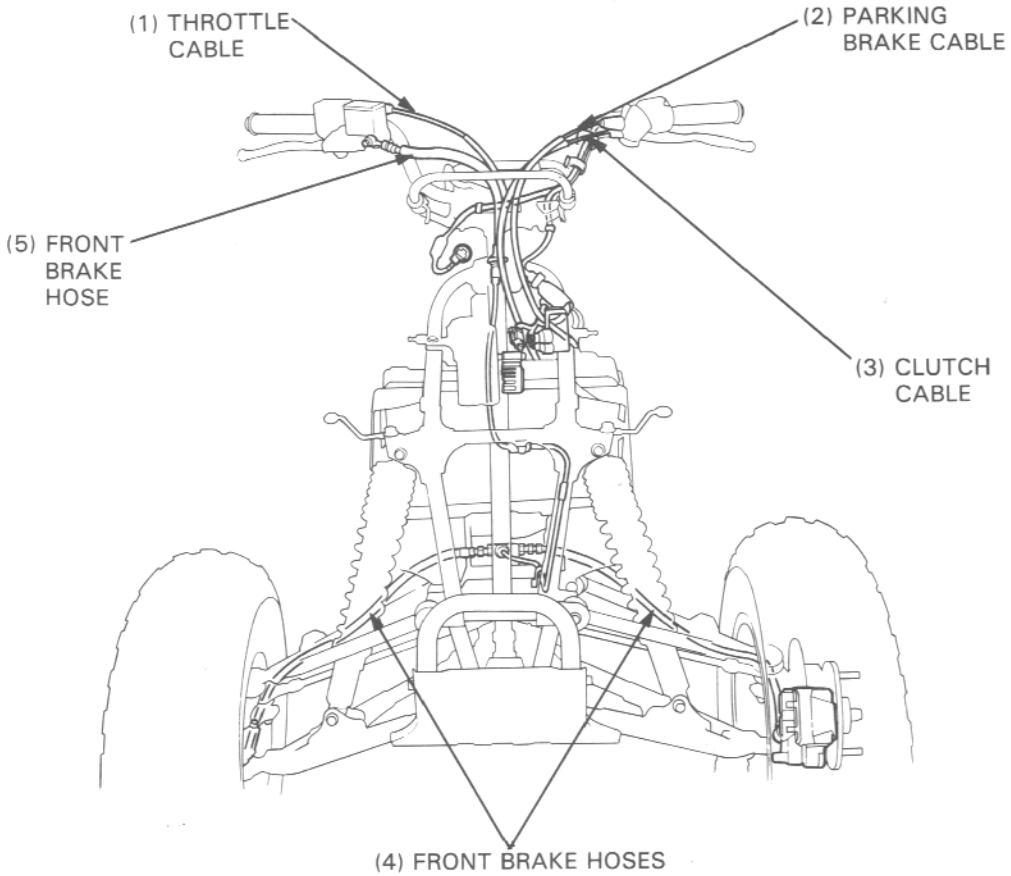
Note the following when routing cable and wire harness.

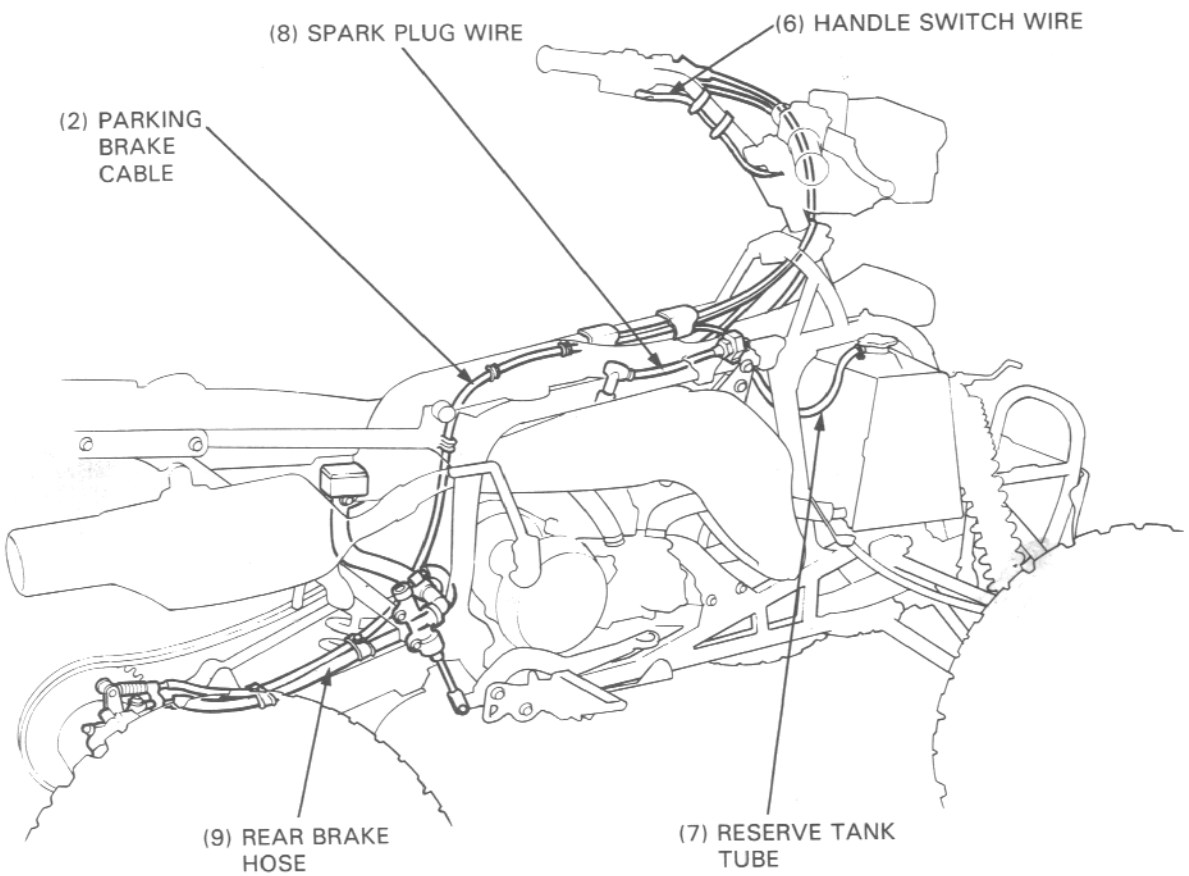
- A loose wire, harness or cable can be a safety hazard. After clamping, check each wire to be sure it is secure.
- Do not squeeze wires against the weld or end of its clamp.
- Secure wires and wire harness to the frame with their respective wire bands at the designated locations. Tighten the bands so that only the insulated surfaces contact the wire 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 harnesses with a 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.
- Do not bend or twist control cables. Damaged control cables will not operate smoothly and may stick or bind.



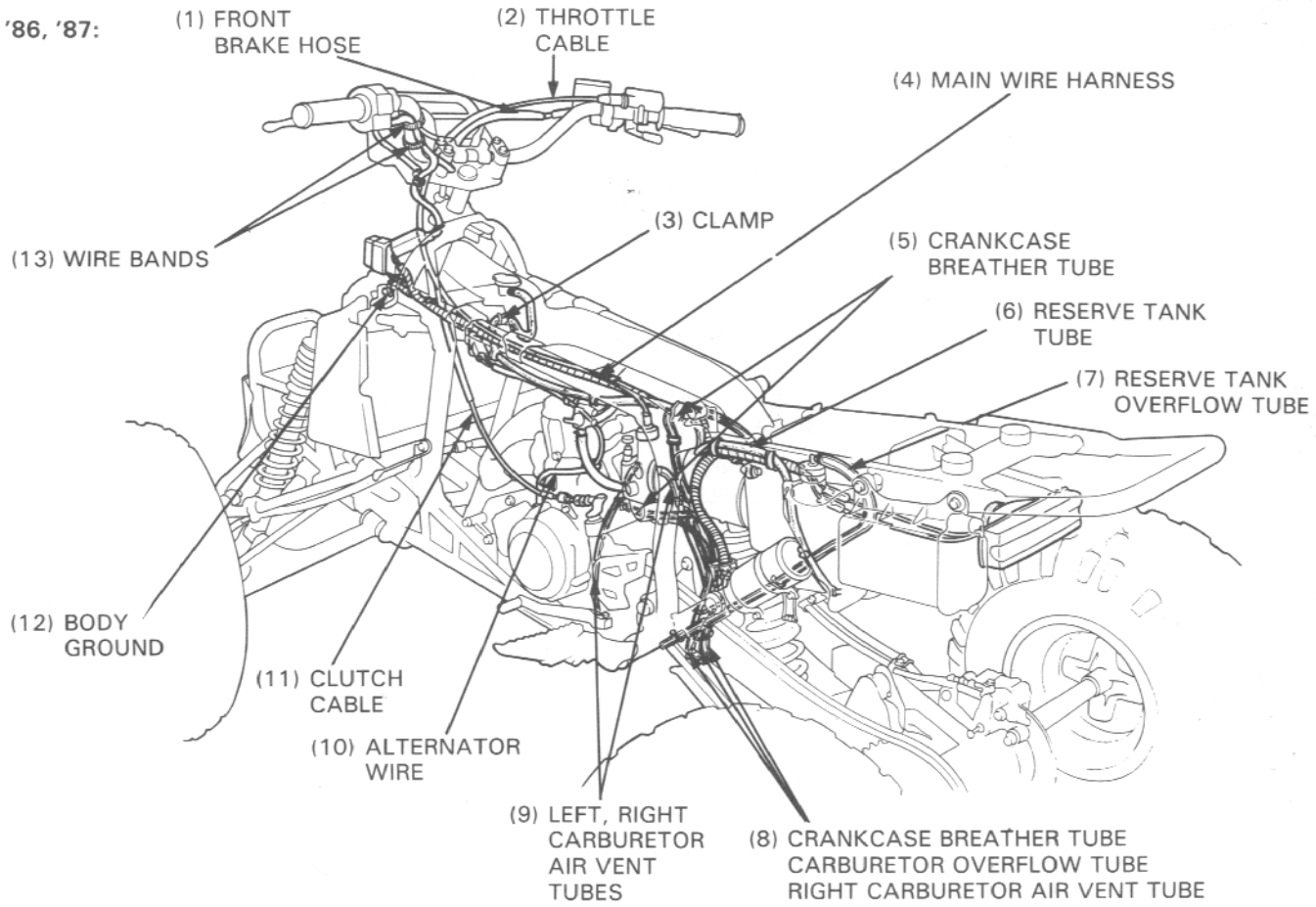
○: CORRECT
×: INCORRECT

'86, '87

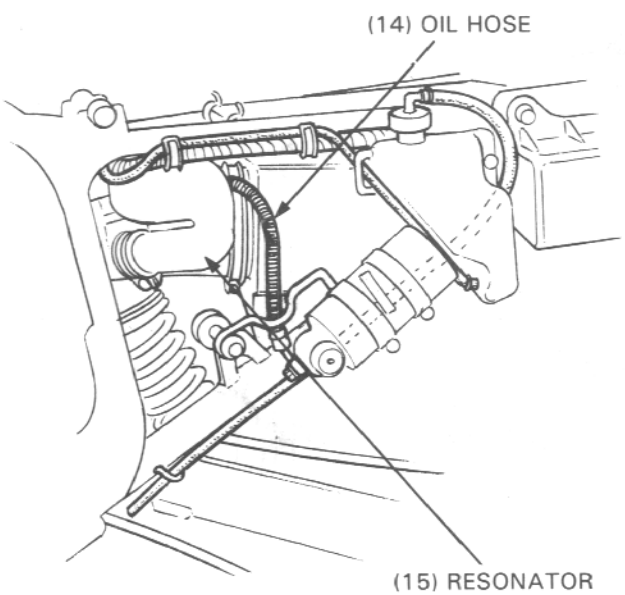

(1) THROTTLE CABLE
(2) PARKING BRAKE CABLE
(5) FRONT BRAKE HOSE
(3) CLUTCH CABLE
(4) FRONT BRAKE HOSES


(8) SPARK PLUG WIRE
(6) HANDLE SWITCH WIRE
(2) PARKING BRAKE CABLE
(9) REAR BRAKE HOSE
(7) RESERVE TANK TUBE

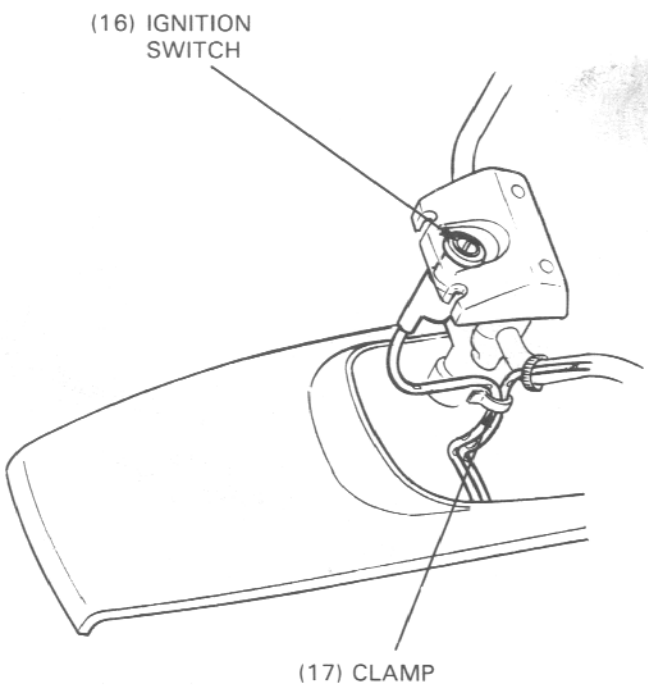
'86, '87:



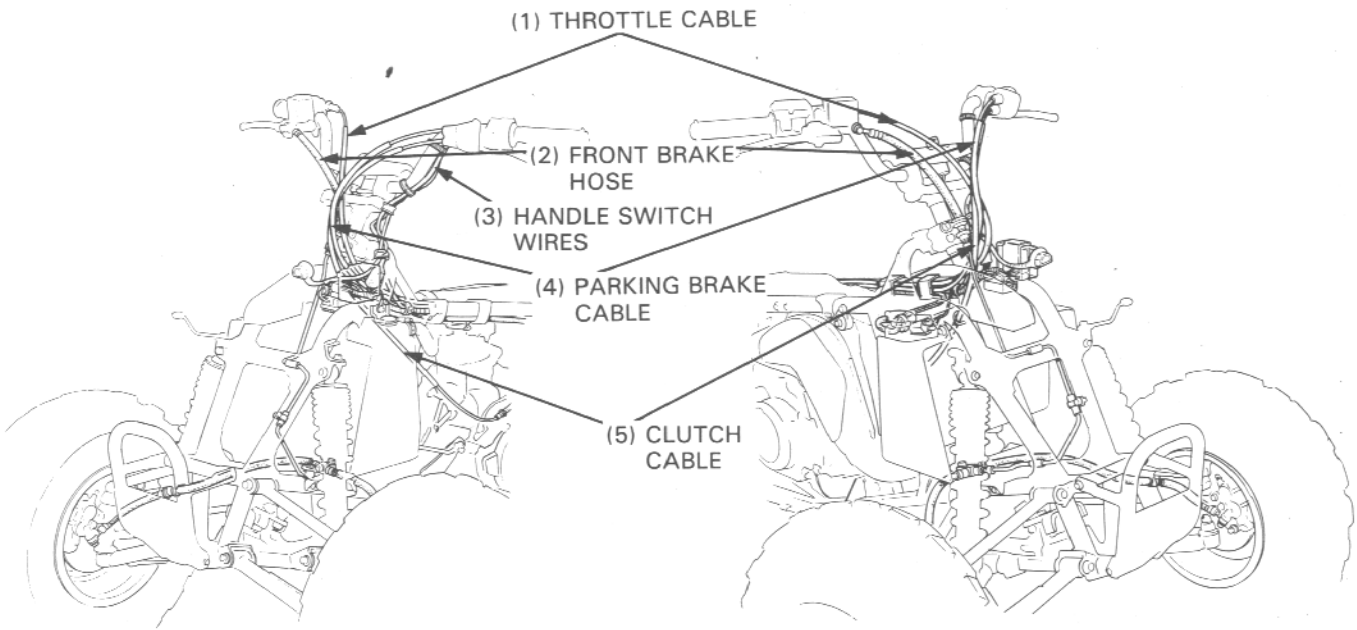
After '86:

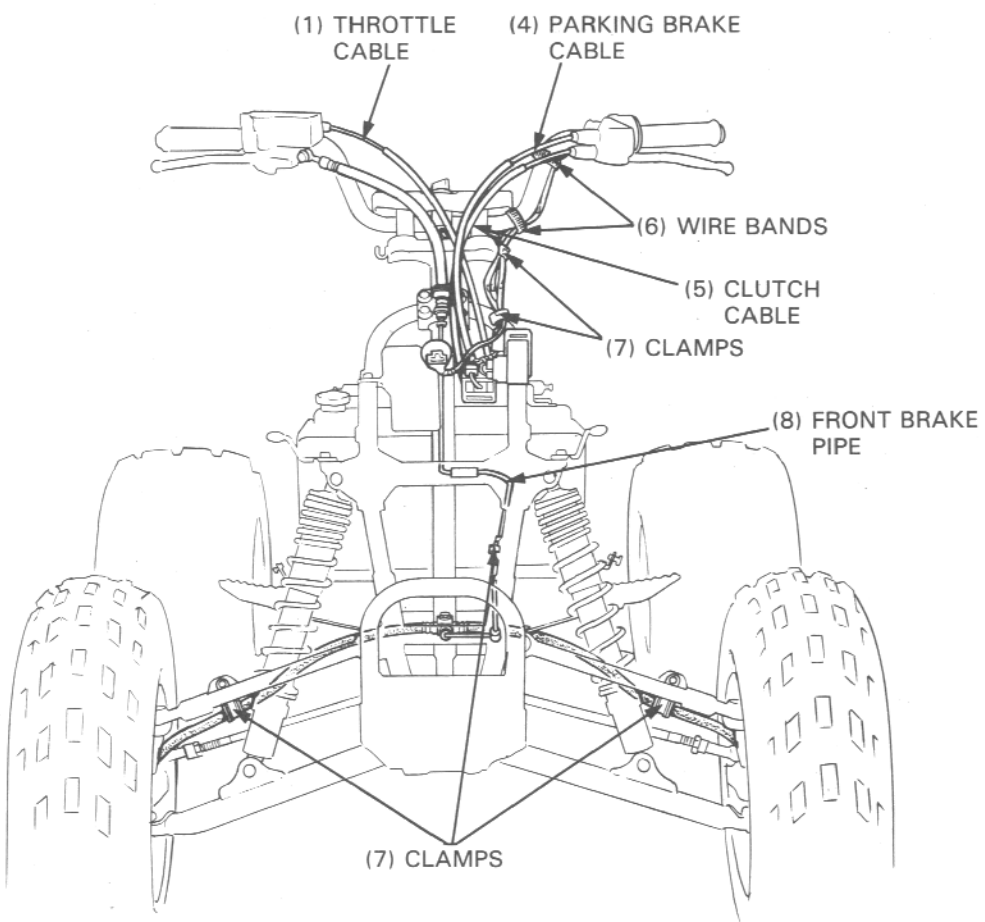


'87:

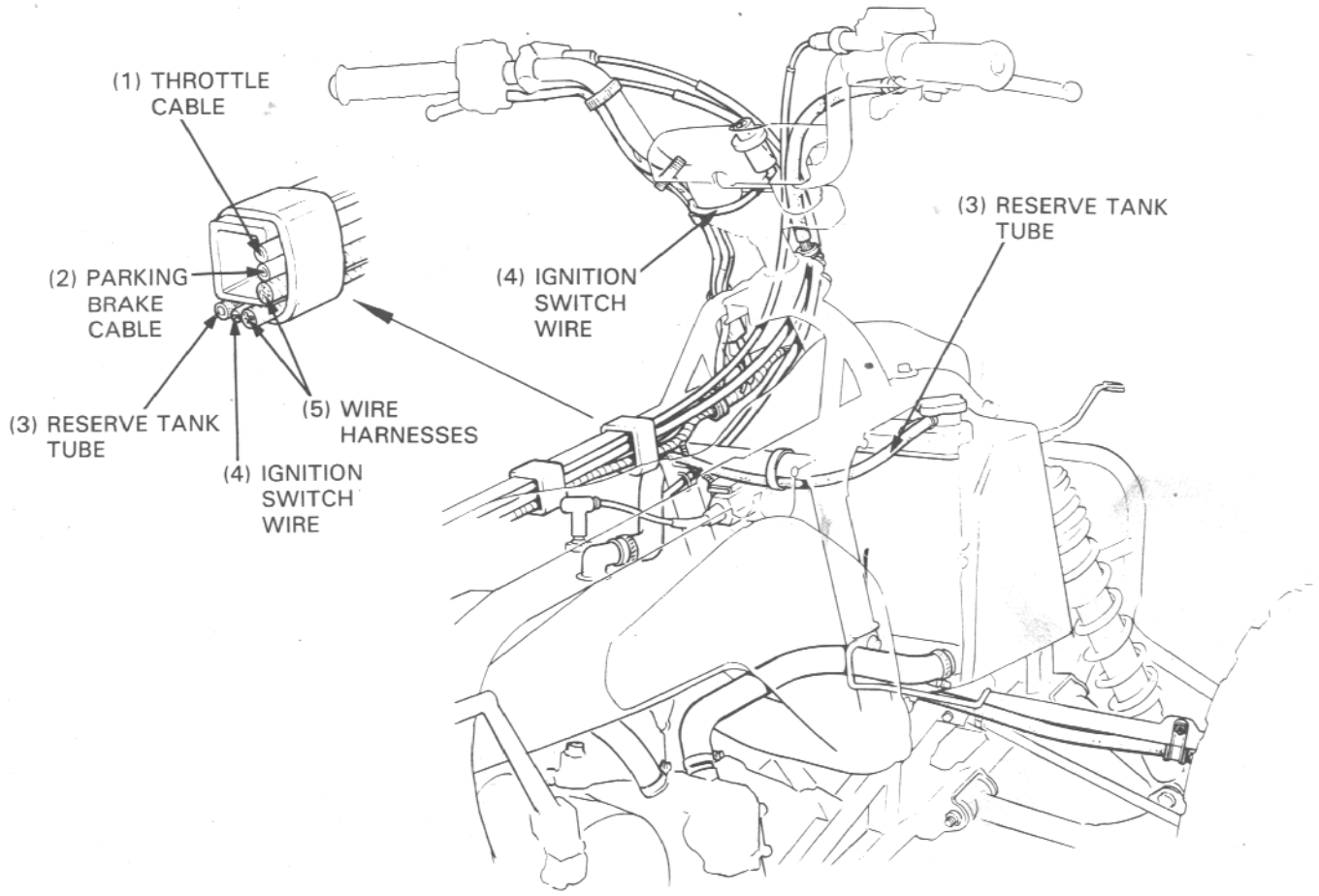


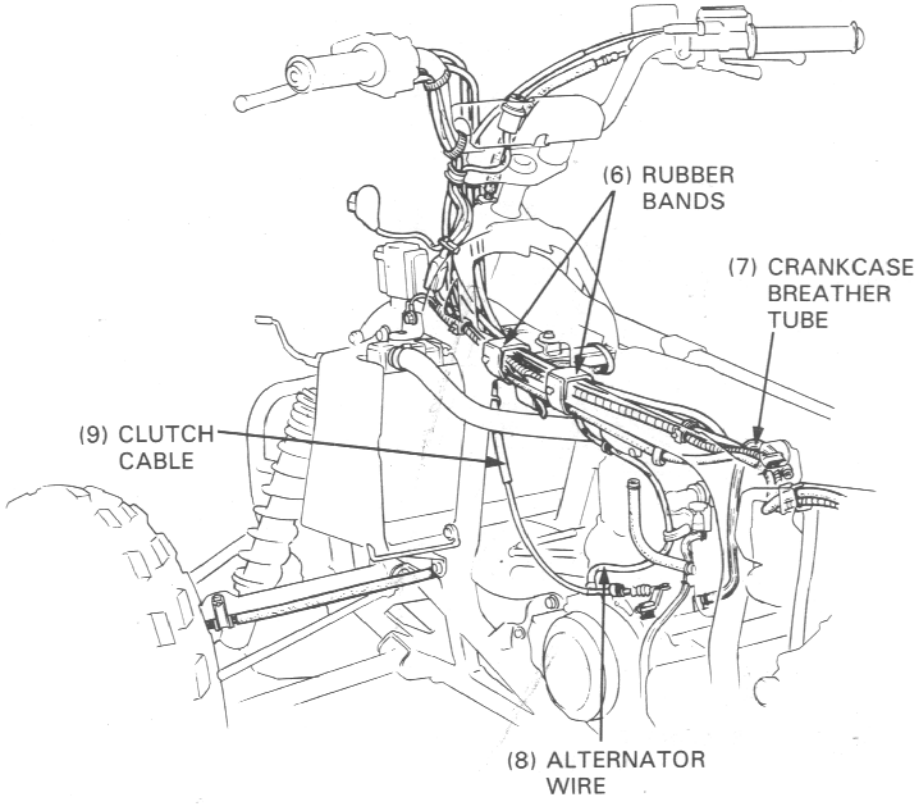
After '87:


(1) THROTTLE CABLE
(2) FRONT BRAKE HOSE
(3) HANDLE SWITCH WIRES
(4) PARKING BRAKE CABLE
(5) CLUTCH CABLE

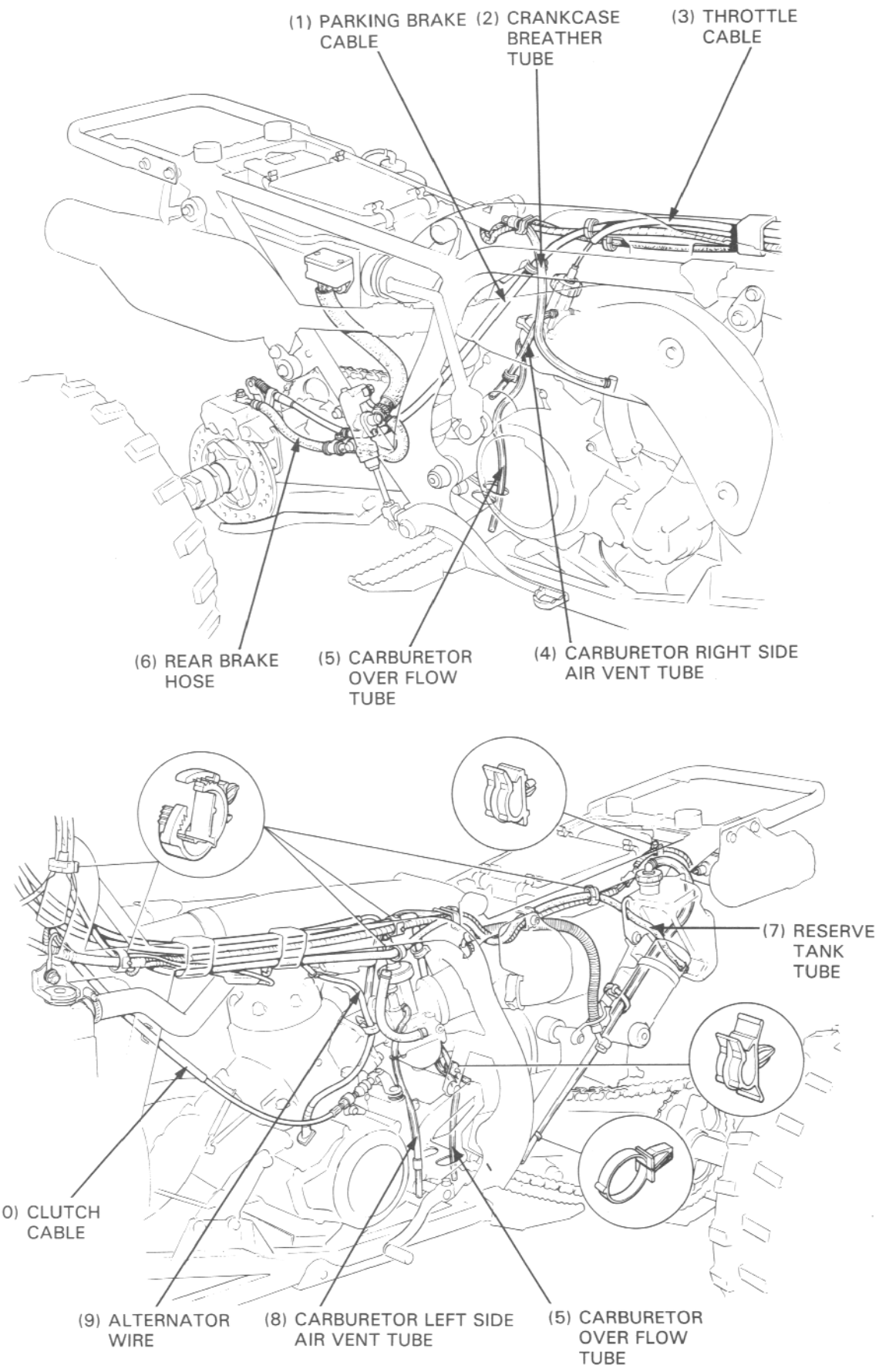

(1) THROTTLE CABLE
(4) PARKING BRAKE CABLE
(6) WIRE BANDS
(5) CLUTCH CABLE
(7) CLAMPS
(8) FRONT BRAKE PIPE
(7) CLAMPS

After '87:


(1) THROTTLE CABLE
(2) PARKING BRAKE CABLE
(3) RESERVE TANK TUBE
(4) IGNITION SWITCH WIRE
(5) WIRE HARNESSES
(3) RESERVE TANK TUBE
(4) IGNITION SWITCH WIRE


(6) RUBBER BANDS
(7) CRANKCASE BREATHER TUBE
(9) CLUTCH CABLE
(8) ALTERNATOR WIRE

After '87:


(1) PARKING BRAKE CABLE
(2) CRANKCASE BREATHER TUBE
(3) THROTTLE CABLE
(6) REAR BRAKE HOSE
(5) CARBURETOR OVER FLOW TUBE
(4) CARBURETOR RIGHT SIDE AIR VENT TUBE
(7) RESERVE TANK TUBE
(10) CLUTCH CABLE
(9) ALTERNATOR WIRE
(8) CARBURETOR LEFT SIDE AIR VENT TUBE
(5) CARBURETOR OVER FLOW TUBE

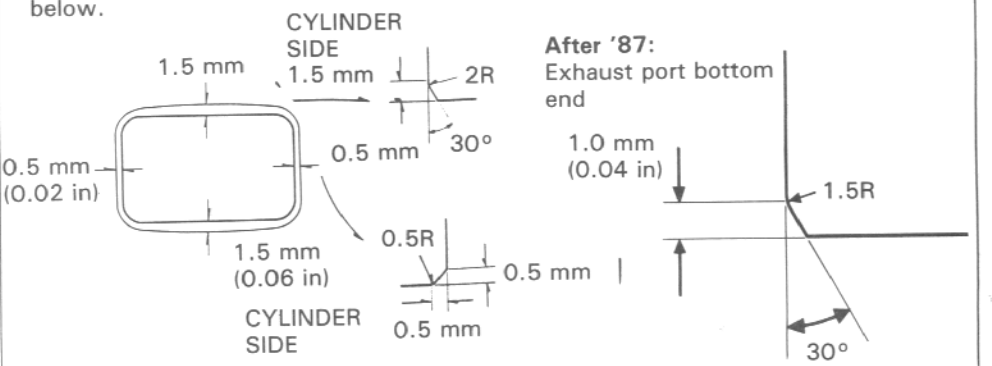
OPTIONAL PARTS LIST

ITEM	REMARKS
ENGINE ● Oversize pistons	0.25 mm, 0.50 mm (2 sizes) The cylinder must be rebored, and an oversize piston and piston rings fitted if worn or seized. Use the correct oversize piston rings with an oversize piston. Oversize rings 0.25 mm, 0.50 mm (2 sizes)

Oversize	Piston manufacturing tolerance mm (in)
0.25 mm (0.01 in)	66.20—66.22 (2.606—2.607)
0.50 mm (0.02 in)	66.45—66.47 (2.616—2.617)

Piston oversize	Cylinder I.D. Service limit mm (in)
0.25 mm (0.01 in)	66.32 (2.611)
0.50 mm (0.02 in)	66.57 (2.621)

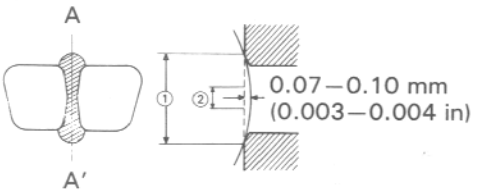
NOTE:
After reboring, remove all burrs from each port edge and chamber as indicated below.



Before reboring the cylinder, follow the contour of the exhaust port bridge with your fingers so that the original radius can be restored after boring. Radius the bridge with a stone or file.

CAUTION

- *Frailure to radius this bridge could cause a seized piston.*
- *Be careful not to damage the cylinder wall.*



'86, '87:
① 32.0—34.0 mm (1.26—1.34 in)
② Bridge width:
a straight 5.0 mm (0.20 in)

After '87:
① 38.0—44.0 mm (1.50—1.73 in)
② Bridge width:
a straight 5.0 mm (0.20 in)

CARBURETOR		
● Main jet	'86:	#145, #148, #152, #155
	'87:	#148, #150, #155, #158
	'88:	#152, #155, #160
	After '88:	#150, #152, #158
		(See page 3-12 for altitude and temperature adjustment)

MEMO

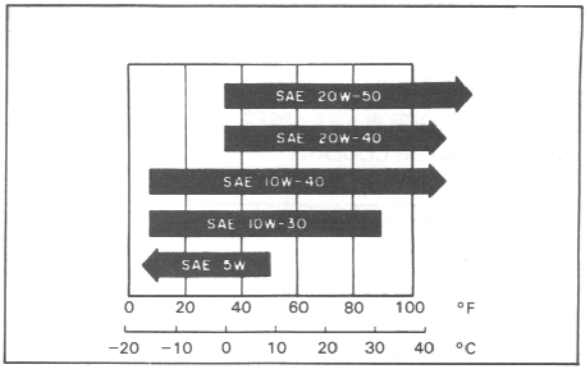
SERVICE INFORMATION

SPECIFICATIONS

Throttle lever free play:		3—8 mm (1/8—5/16 in)
Spark plug gap:		0.7—0.8 mm (0.028—0.031 in)
Recommended spark plug:	'86,After'88:	BR8ES (NGK) RN3C (CHAMPION)
	'87, '88:	BR9ES (NGK) RN2C (CHAMPION)
Carburetor idle speed:		1,500 ± 150 rpm
Recommended transmission oil:		Honda 4-stroke oil or equivalent
API Service Classification:		SE or SF
Viscosity:		10 W—40

NOTE

- Viscosity selection should be based on the average atmospheric temperature in your riding area. Change to the proper viscosity oil whenever the average atmospheric temperature changes substantially.



Oil capacity:		0.6 lit (0.63 U.S. qt., 0.53 Imp qt.) after draining 0.7 lit (0.74 U.S. qt., 0.62 Imp qt.) at disassembly
Drive chain slack:		30—40 mm (1-1/4—1-1/2 in)
Drive chain length ('86, '87: 95 pins, After '87: 91 pins)		Standard: '86, '87: 1,508 mm (59.4 in) After '87: 1,445 mm (56.9 in) Service limit: '86, '87: 1,515 mm (59.6 in) After '87: 1,452 mm (57.2 in)
Parking brake lever free play:	'86:	31—39 mm (1-1/4—1-1/2 in)
	After '86:	25—30 mm (1—1-1/4 in)
Clutch lever free play:		10—20 mm (3/8—3/4 in)
Tire size:	Front '86, '87:	21 x 7.00—10
	After '87:	AT 22 x 7.00—10 ☆☆
	Rear '86, '87:	20 x 10.00—9
	After '87:	AT 20 x 10.00—9 ☆
Recommended tire pressure:	Front	4.0 psi (0.275 kg/cm², 27.5 kPa)
	Rear: '86, '87:	2.9 psi (0.2 kg/cm², 20 kPa)
	After'87:	3.3 psi (0.225 kg/cm², 22.5 kPa)

Toe-in:		10 ± 10 mm (0.4 ± 0.4 in)
Camber:		0°
Caster:	'86, '87:	6°
	After '87:	4°40'
Cylinder compression:		1,177 ± 98 kPa (12.0 ± 1.0 kg/cm², 170 ± 15 psi)

TORQUE VALUES

Tie-rod lock nut	50—60 N·m (5.0—6.0 kg-m, 36—43 ft-lb)
Spark plug	15—20 N·m (1.5—2.0 kg-m, 11—14 ft-lb)
Transmission oil drain bolt	25—35 N·m (2.5—3.5 kg-m, 18—25 ft-lb)
Bearing holder socket bolt	19—23 N·m (1.9—2.3 kg-m, 14—17 ft-lb)
Parking brake adjust bolt lock nut	15—20 N·m (1.5—2.0 kg-m, 11—14 ft-lb)
Radiator hose band	0.7—1.0 N·m (0.07—0.1 kg-m, 0.5—0.7 ft-lb)

TOOL

Special

Camber/caster gauge attachment	07910—MJ30100 Not available in U.S.A.

MAINTENANCE SCHEDULE

The maintenance intervals shown in the following schedule are based on average riding conditions. FOURTRAX's subjected to severe use, or ridden in unusually wet or dusty areas, require more frequent servicing. Perform the Pre-ride Inspection at each scheduled maintenance period.

'86-'88:

I: Inspect and Clean, Adjust, Lubricate or Replace, if necessary
C: Clean R: Replace
A: Adjust L: Lubricate

			EVERY	INITIAL SERVICE PERIOD (First week of operation)	REGULAR SERVICE PERIOD (Every 30 operating days)	Refer to page
*	FUEL LINE		YEAR: I			2-4
*	THROTTLE OPERATION			I	I	2-4
	AIR CLEANER	'86, '87:	NOTE (1)		C	2-4
		After '87:	MONTH: C, NOTE (1)			
	AIR CLEANER CASE DRAIN TUBE		NOTE (2)		I	2-5
	SPARK PLUG				I	2-6
*	CARBURETOR IDLE SPEED			I	I	2-6
	RADIATOR COOLANT		2 YEARS: *R		I	2-6
*	COOLING SYSTEM				I	2-7
	TRANSMISSION OIL		2 YEARS: R		I	2-8
	DRIVE CHAIN		NOTE (1, 2)	I, L	I, L	2-9
	DRIVE CHAIN SLIDER				I	2-11
	BRAKE FLUID		2 YEARS: R		I	2-11
*	BRAKE PAD WEAR		YEAR: I, NOTE (1, 2)			2-12
	BRAKE SYSTEM			I	I	2-12
	SKID PLATE, GUARD PLATE (After '86)				I	2-13
*	CLUTCH SYSTEM			I	I	2-14
*	SUSPENSION				I	2-14
*	SPARK ARRESTER		NOTE (3)		C	2-15
*	NUTS, BOLTS, FASTENERS			I	I	2-16
**	WHEELS/TIRES			I	I	2-16
**	STEERING SHAFT HOLDER BEARINGS		YEAR: I			2-16
**	STEERING SYSTEM		YEAR: I			2-16

* SHOULD BE SERVICED BY AUTHORIZED HONDA DEALER, UNLESS THE OWNER HAS PROPER TOOLS AND SERVICE DATA AND IS MECHANICALLY QUALIFIED.

** IN THE INTEREST OF SAFETY, WE RECOMMEND THESE ITEMS BE SERVICED ONLY BY AN AUTHORIZED HONDA DEALER.

NOTES: (1) Service more frequently when riding in dusty areas, sand or snow.
(2) Service more frequently after riding in very wet or muddy conditions.
(3) U.S.A. only.

After '88:

	I: Inspect and Clean, Adjust, Lubricate or Replace, if necessary C: Clean R: Replace A: Adjust L: Lubricate	EVERY	INITIAL SERVICE PERIOD (First week of operation)	REGULAR SERVICE PERIOD (Every 30 operating days)	Refer to page
*	FUEL LINE	YEAR: I			2-4
*	THROTTLE OPERATION		I	I	2-4
	AIR CLEANER	NOTE (1)		C	2-4
	AIR CLEANER CASE DRAIN TUBE	NOTE (2)		I	2-5
	SPARK PLUG			I	2-6
*	CARBURETOR IDLE SPEED		I	I	2-6
	RADIATOR COOLANT	NOTE (3)		I	2-6
*	COOLING SYSTEM			I	2-7
	TRANSMISSION OIL	2 YEARS: R		I	2-8
	DRIVE CHAIN	NOTE (1, 2)	I, L	I, L	2-9
	DRIVE CHAIN SLIDER			I	2-11
	BRAKE FLUID	NOTE (3)		I	2-11
*	BRAKE PAD WEAR	YEAR: I NOTE (1, 2)			2-12
	BRAKE SYSTEM		I	I	2-12
	SKID PLATE, GUARD PLATE			I	2-13
*	CLUTCH SYSTEM		I	I	2-14
*	SUSPENSION			I	2-14
*	SPARK ARRESTER	NOTE (4)		C	2-15
*	NUTS, BOLTS, FASTENERS		I	I	2-16
**	WHEELS/TIRES		I	I	2-16
**	STEERING SHAFT HOLDER BEARINGS	YEAR: I			2-16
**	STEERING SYSTEM	YEAR: I			2-16

* SHOULD BE SERVICED BY AUTHORIZED HONDA DEALER, UNLESS THE OWNER HAS PROPER TOOLS AND SERVICE DATA AND IS MECHANICALLY QUALIFIED.

** IN THE INTEREST OF SAFETY, WE RECOMMEND THESE ITEMS BE SERVICED ONLY BY AN AUTHORIZED HONDA DEALER.

NOTES: (1) Service more frequently when riding in dusty areas, sand or snow.
(2) Service more frequently after riding in very wet or muddy conditions.
(3) Replace every 2 years. Replacement requires mechanical skill.
(4) U.S.A. only.

PERIODIC REPLACEMENT PARTS

The following table serves as a guide in replacing parts when machines are used for competition.

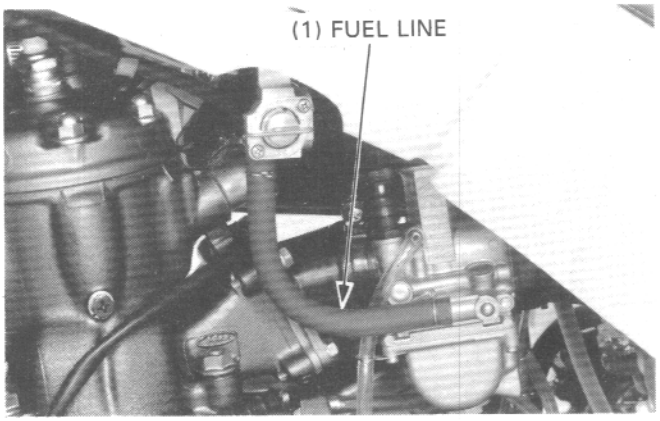
Part Name	Replace	Items to be checked
Piston	Every 30 Hours	Damage at skirt, wear
Piston pin	Every 30 Hours	Seizure, damage, wear
Piston rings	Every 30 Hours	Chipped end, wear
Connecting rod small end bearing	Every 30 Hours	Wear, damage
Spark plug	Every 20 Hours	Worn electrode, improper gap, cracked insulator
Transmission oil	Every 30 Hours	Contamination
* Sprockets	Every 20 Hours	Wear, damage
Chain slider	Every 30 Hours	Amount of recess: 2.0 mm max
* Drive chain	——	
* Chain master link	Every 30 Hours	Wear
Front brake pads	——	Wear indicator
Rear brake pads	——	Wear indicator
Front and rear brake fluid	Every year	Contamination
Master cylinder oil cap diagram	Every 2 years	Damage
Front brake hose	Every 4 years	Cracks, damage
Rear brake hose	Every 4 years	Cracks, damage
Fuel hose	Every 4 years	Cracks, leaks, damage
Cylinder head gasket	Every 30 Hours	Leakage
Clutch disc	——	Discoloration, wear
Exhaust chamber spring	——	Wear on hook
Skid plate	——	Damage
Guard plate	——	Damage

Machines subject to severe use, or ridden in unusually dusty or muddy areas, require more frequent servicing.

* If you are riding under extreme circumstances (sand, water, mud), the chain and sprockets will require more frequent replacement.

FUEL LINE

Inspect the fuel lines (fuel tank-to-fuel valve, fuel valve-to-carburetor) for damage or deterioration.
Check that the fuel lines are intact and have clamps at each connection.
Replace any parts that are damaged, leaking or show signs of deterioration.

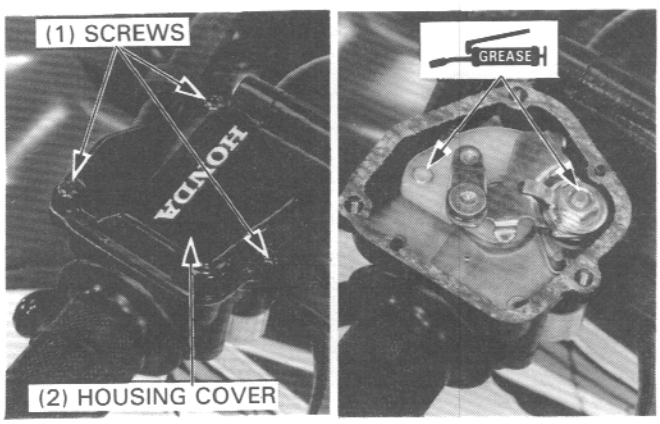


THROTTLE OPERATION

Check for smooth throttle lever operation at full opening and automatic full closing in all steering positions. Make sure there is no deterioration, damage or kinking in the throttle cable.
Replace any damaged parts.

LUBRICATION

Disassemble the throttle housing (page 10-6).
Disconnect the throttle cable at the upper end.
Thoroughly lubricate the cable and pivot point with a commercially available cable lubricant or grease.
Install the cable end and assemble the throttle housing (page 10-6).



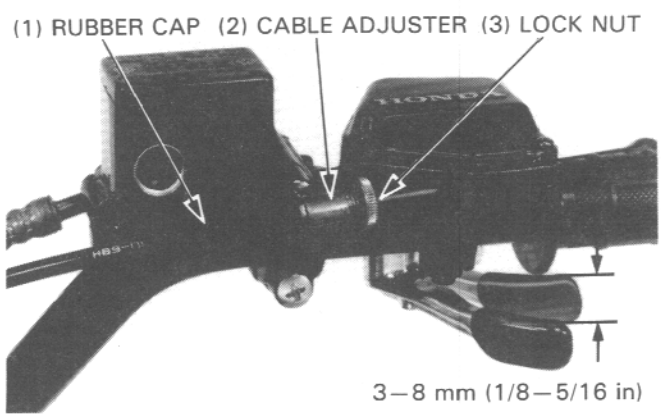
ADJUSTMENT

Measure the throttle lever free play at the tip of the throttle lever.

THROTTLE LEVER FREE PLAY: 3–8 mm (1/8–5/16 in)

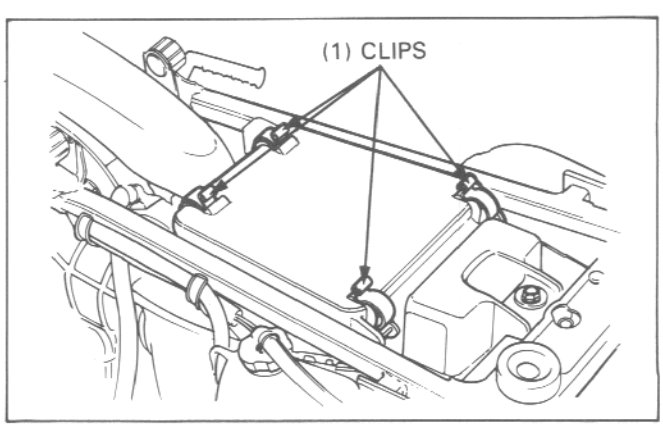
Pull the rubber cap off.
Adjustments can be made by loosening the lock nut, then turning the cable adjuster. Tighten the lock nut.

Tighten the lock nut and reinstall the rubber cap.
Check that the throttle lever moves smoothly and returns completely.

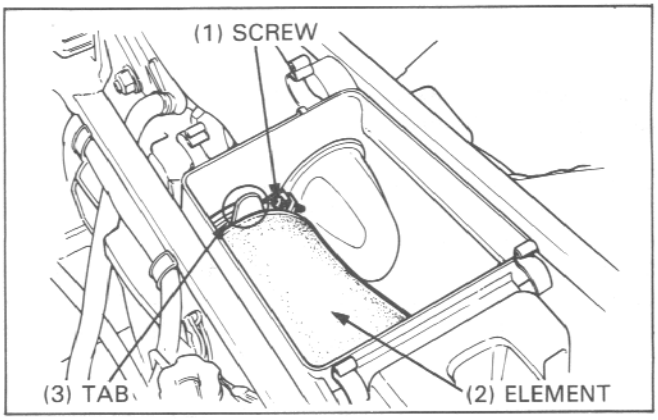


AIR CLEANER

Remove the seat/rear fender.
Remove the clips attaching the air cleaner cover and remove the cover.



Loosen the air cleaner element connecting band and remove the element.
Remove the element from the base.



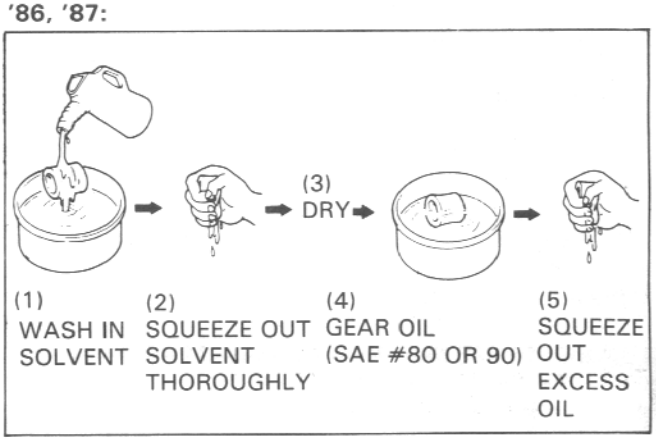
Wash the element in non-flammable or high flash point solvent, squeeze out the solvent thoroughly, and allow to dry.

CAUTION

- *The element is made of several different materials bonded together; to prevent damaging the element, handle it gently.*

'86, '87:
Soak the element in gear oil (SAE #80 or 90) and squeeze out excess.

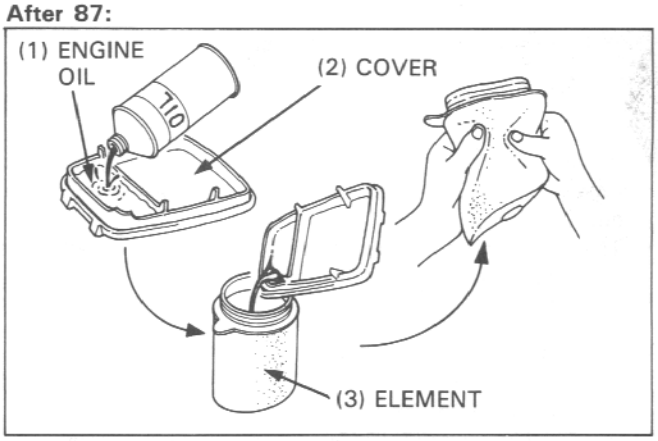
'86, '87:



After '87:
Fill the measuring cap provided in the back of the air cleaner cover with Honda 4-Stroke oil or equivalent.
Pour the measured oil on the air cleaner element. Then rub the air cleaner element until it is saturated with the oil.

Install the element on the base and apply a light coat of grease to the sealing edge of the element.
Install the element into the case with the tab facing up.
Install the air cleaner case cover.
Install the seat/rear fender.

After '87:

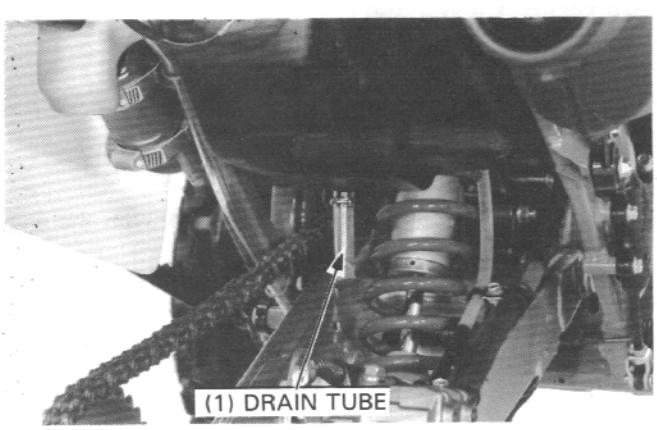


AIR CLEANER CASE DRAIN TUBE

Remove the drain tube and drain the deposits.
Reinstall the drain tube.

NOTE

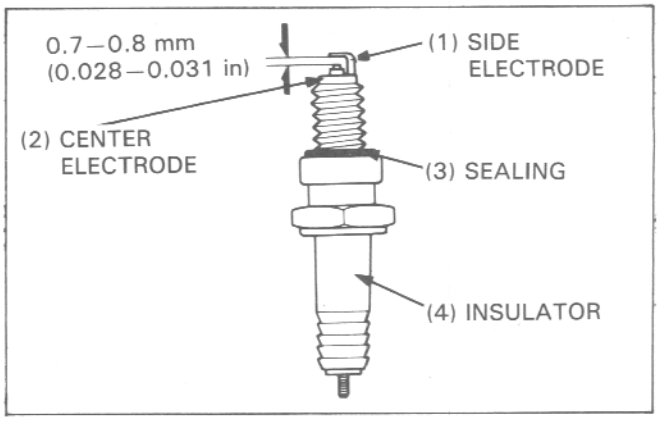
- Service more frequently when riding in very wet, muddy condition or deposits are seen in the drain tube.



SPARK PLUG

Disconnect the spark plug cap and remove the spark plug using the wrench provided in the tool kit.

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.



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

	NGK	CHAMPION
'86, After '88: (STD)	BR8ES	RN3C
'87, '88: (STD)	BR9ES	RN2C

Check the sealing washer and replace the spark plug if the washer is damaged.
With the sealing washer attached, thread the spark plug in by hand to prevent cross-threading.
Tighten the spark plug.

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

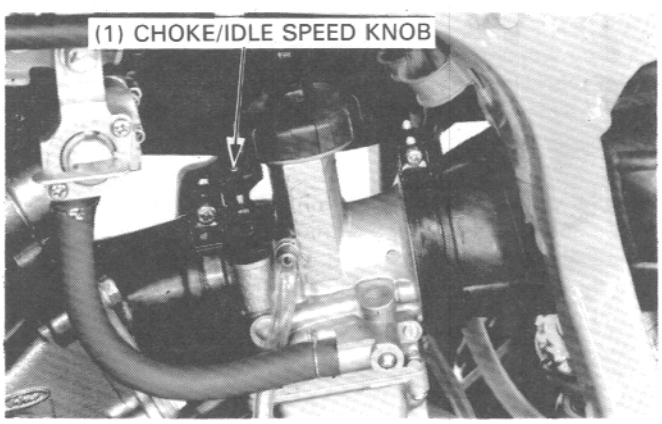
Connect the spark plug cap.

CARBURETOR IDLE SPEED

NOTE

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

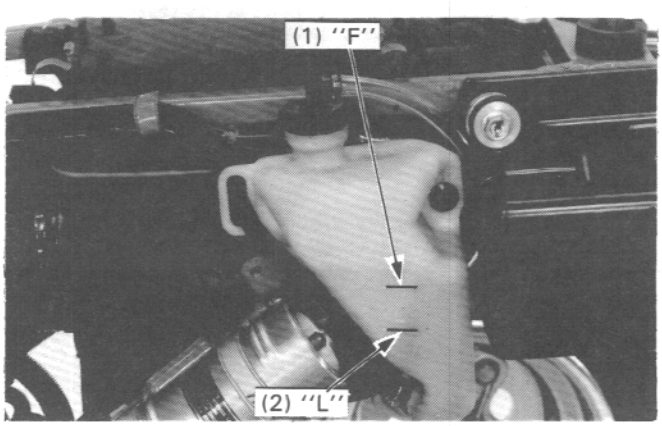
Warm up the engine.
Place the FOURTRAX on level ground and shift it into neutral.
Attach an engine tachometer.
Adjust the idle speed with the choke/idle speed knob.



IDLE SPEED: 1,500 ± 150 rpm

RADIATOR COOLANT

Place the FOURTRAX on level ground.
Remove seat/rear fender.
Check the coolant level of the reserve tank with the engine running at normal operating temperature.
The level should be between the "F" and "L" level lines.

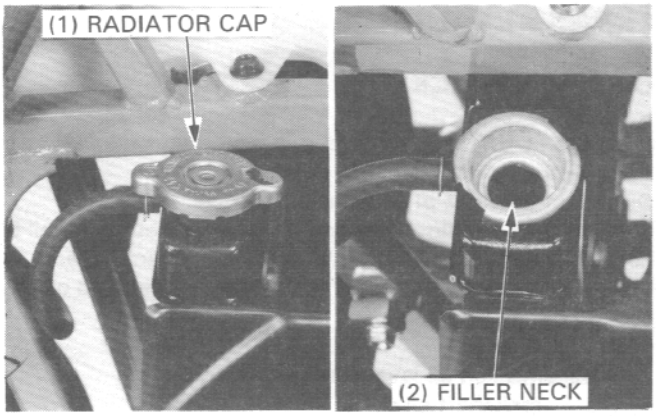


If necessary, fill the tank to the "F" level line with a 50/50 mixture of distilled water and anti-freeze.

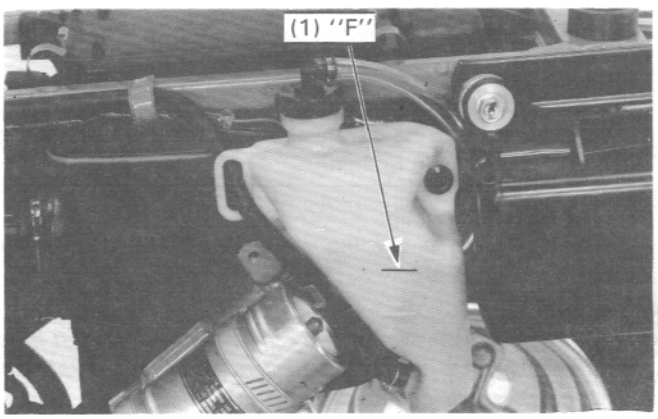
WARNING

- ***To avoid scalding, never remove the radiator cap when the engine is hot. The coolant is under pressure.***

If the reserve tank is empty, remove the front fender (page 14-2).
Remove the radiator cap and fill the radiator with recommended coolant (page 9-1) up to the filler neck.
Run the engine 2 or 3 minutes to allow air to escape.



Fill the radiator with coolant and install the cap.
Fill the reserve tank to the "F" level line and install the cap.

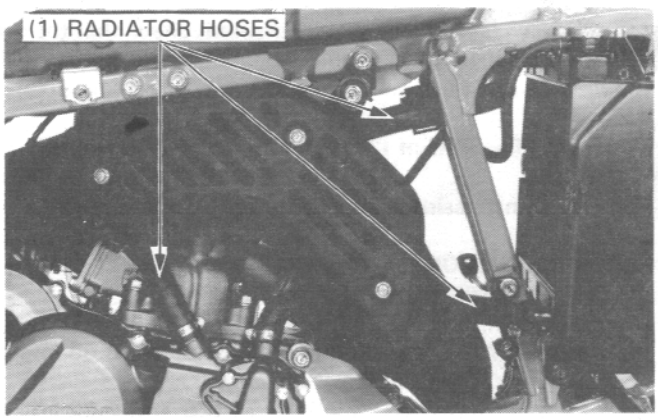


COOLING SYSTEM

RADIATOR HOSE

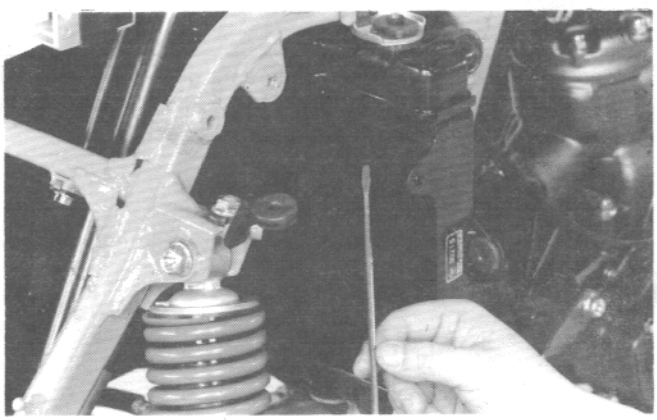
Remove the seat/rear fender and front fender (section 14).
Inspect the radiator hoses for cracks and deterioration. Replace if necessary.
Check the tightness of the hose bands and radiator mounting bolts.

TORQUE:
Radiator hose band: 0.7—1.0 N·m (0.07—0.1 kg-m, 0.5—0.7 ft-lb)



RADIATOR CORE

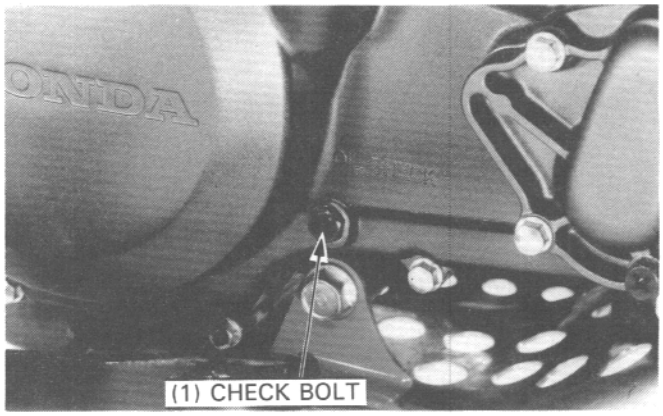
Remove the radiator screen.
Check the air passages for clogging or damage.
Straighten bent fins or collapsed core tubes.
Remove insects, mud or any obstructions with compressed air or low water pressure.
Replace the radiator if the air flow is restricted over more than 20% of the radiating surface.



TRANSMISSION OIL

OIL LEVEL CHECK

Place the FOURTRAX on level ground.
Remove the oil filler cap and check bolt.
Oil should flow out of the check bolt hole.
If the oil does not flow out; add oil slowly through the oil filler hole untill the oil starts to flow out of the check hole.
Stop adding the oil and install the sealing washer and oil check bolt.



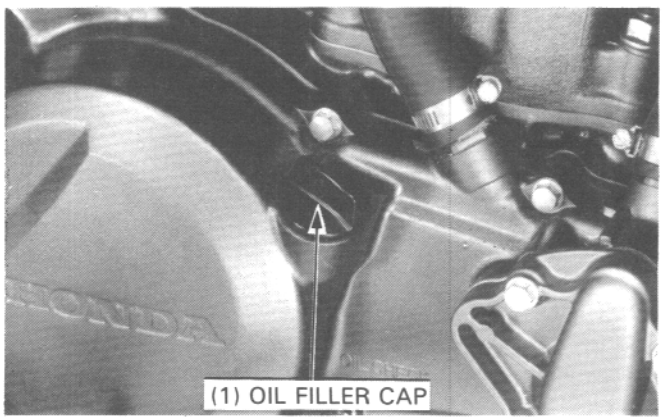
Low transmission oil level can be caused by:
- Worn crankshaft oil seals
- External oil leaks

OIL CHANGE

NOTE

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

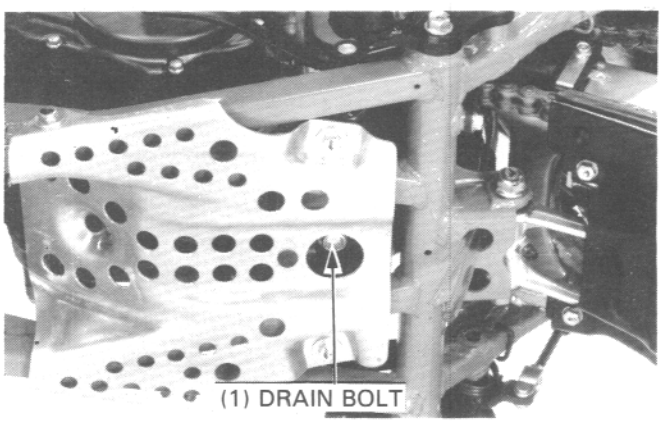
Remove the oil filler cap.
Place a drain pan under the engine to catch the oil, then remove the drain bolt.



CAUTION:

- *Used engine oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still adviseable to throughly wash your hands with soap and water as soon as possible after handling used oil.*

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



TORQUE: 20—30 N·m (2.0—3.0 kg-m, 14—22 ft-lb)

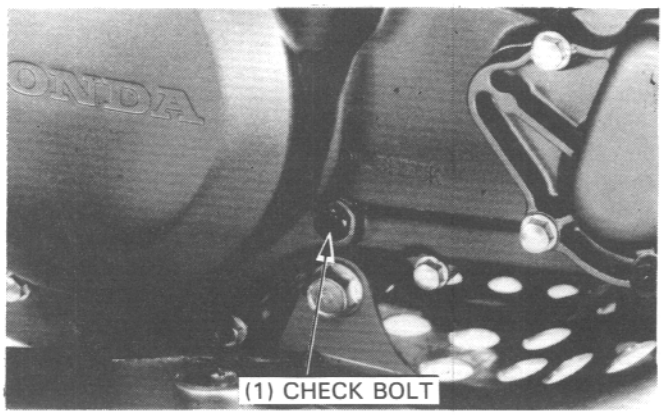
Refill the transmission gradually up to the proper level.

RECOMMENDED OIL:	**Honda 4-Stroke oil or equivalent**
API Service Clasification:	**SE or SF**
Viscosity:	**10 W—40**
OIL CAPACITY:	**0.6 lit (0.63 U.S. qt., 0.53 Imp qt.) after draining**
	0.7 lit (0.74 U.S. qt., 0.62 Imp qt.) at disassembly

NOTE

- Use this specified capacity only as a guide: add oil until it flows out of the oil check bolt hole, allow it stop flowing out, then reinstall and tighten the oil check bolt.

Reinstall the oil filler cap.
Start the engine and check for leaks. Stop the engine and recheck the oil level.



DRIVE CHAIN

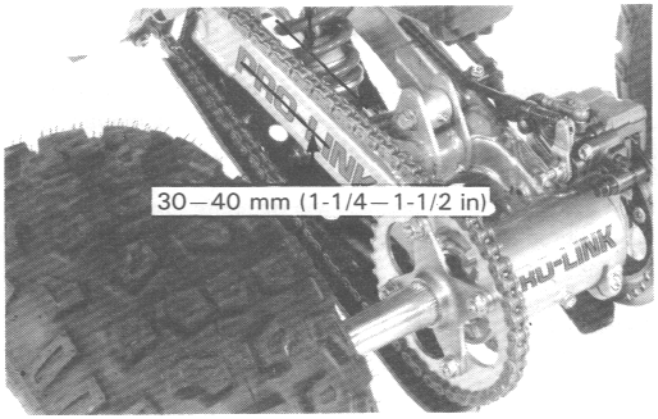
CHAIN SLACK INSPECTION

WARNING

- ***Never inspect or lubricate the drive chain while the engine is running.***

Stop the engine and shift the transmission into neutral.
Measure the drive chain slack midway between the sprockets.

CHAIN SLACK: 30—40 mm (1-1/4—1-1/2 in)

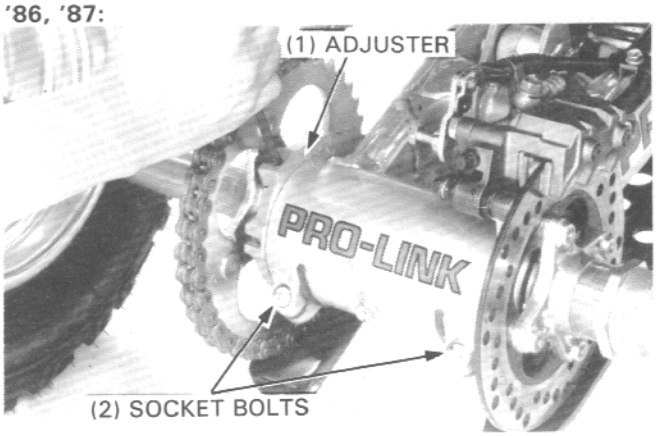


CHAIN SLACK ADJUSTMENT

Loosen the socket bolts: ('86, '87: 2 pieces, After '87: 4 pieces).
Turn the adjuster to decrease or increase.
Adjust the chain slack.

INCREASE: Turn the adjuster clockwise
DECREASE: Turn the adjuster counterclockwise

'86, '87:



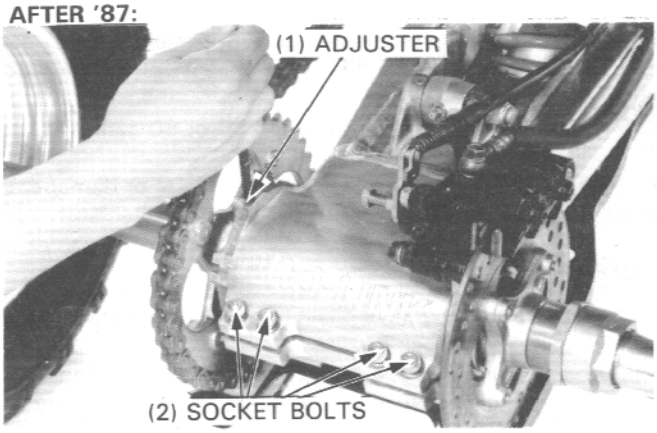
NOTE

- Viewed from left side of sprocket.

Tighten the socket bolts to the specified torque in 2-3 progressive steps.

TORQUE: 19—23 N·m (1.9—2.3 kg-m, 14—17 ft-lb)

AFTER '87:



NOTE

- If drive chain slack is excessive when the adjuster is moved to the limit of adjustment, the drive chain is worn and must be replaced.

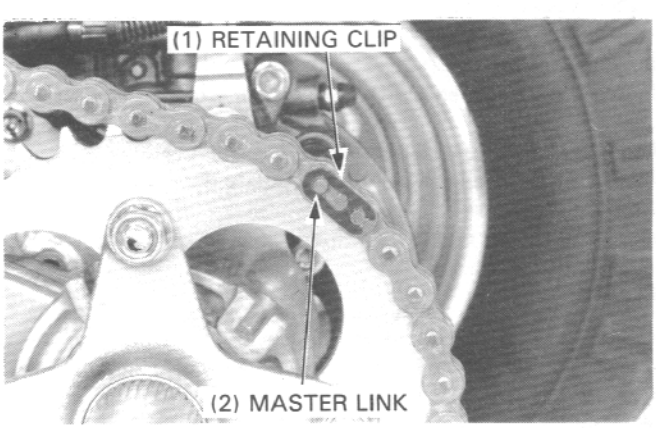
Recheck the drive chain slack.

REMOVAL AND INSPECTION

When the drive chain becomes extremely dirty, it should be removed and cleaned with soapy water prior to lubrication.
Remove the drive sprocket cover.
Remove the chain retaining clip carefully.
Remove the master link, O-rings and the drive chain.

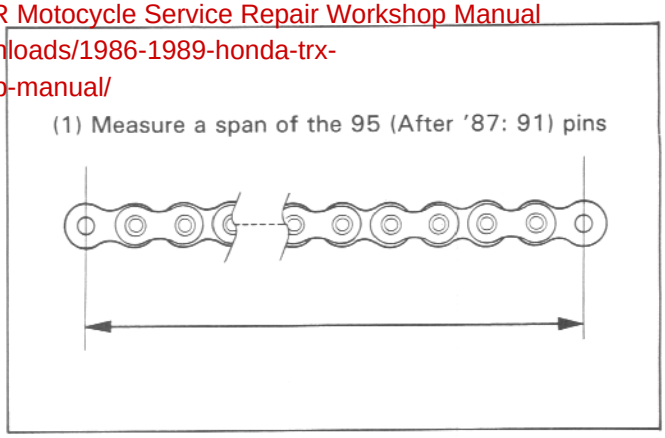
CAUTION

- ***Be careful not to lose the O-rings when the clip and master link are removed.***



Visually inspect the drive chain for kinks or damage.

Measure a section of the drive chain to determine whether the drive chain is worn beyond its service limit. Remove the drive chain and measure the distance between a span of 95 (After '87: 91) pins from pin center to pin center.
In a new chain, this distance will measure standard length. If the distance exceeds service limit, the drive chain is worn out and should be replaced.



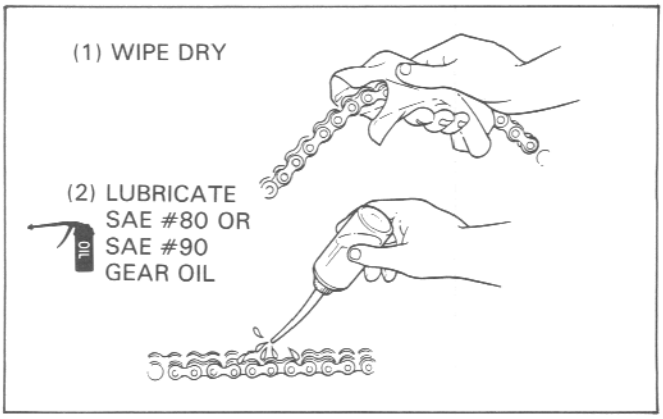
DRIVE CHAIN LENGTH:

Standard:	**'86, '87:**	**1,508 mm (59.4 in)**
	After '87:	**1,429 mm (56.3 in)**
Service limit:	**'86, '87:**	**1,515 mm (59.6 in)**
	After '87:	**1,436 mm (56.5 in)**

REPLACEMENT DRIVE CHAIN:

D.I.D.:	**'86, '87:**	**D.I.D.520V4**
	After '87:	**D.I.D.520V6**
RK:	**RK520HMO**	

Clean the drive chain with a small amount of kerosene or soapy water and wipe dry.



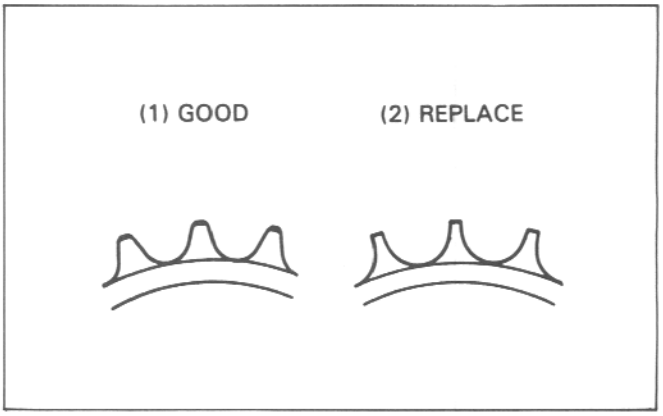
CAUTION

- *Do not use a steam cleaner, high pressure washers or aerosol chain lubricants as these will damage the O-rings.*

Inspect the drive chain and O-rings for possible wear or damage. Replace the chain, if it is worn excessively or damaged.

Lubricate the drive chain with SAE #80 or 90 gear oil.

Inspect the sprocket teeth for excessive wear or damage. Replace if necessary.

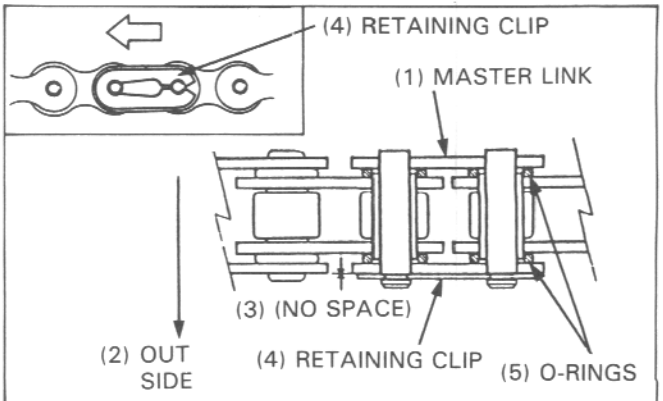


NOTE

- Never install a new drive chain on worn sprockets or a worn chain on new sprockets.
  Both chain and sprockets must be in good condition, or the new replacement chain or sprockets will wear rapidly.

INSTALLATION

Install the drive chain.
Install the master link with O-rings and chain retaining clip.



Note the installation direction of the chain retaining clip.
Its open end should face in the opposite direction of the wheel rotation as shown.
Adjust the drive chain slack (page 2-9).

CAUTION

- *Do not assemble the drive chain without the four O-rings. Be sure that there is no space between the master link and chain retaining clip.*