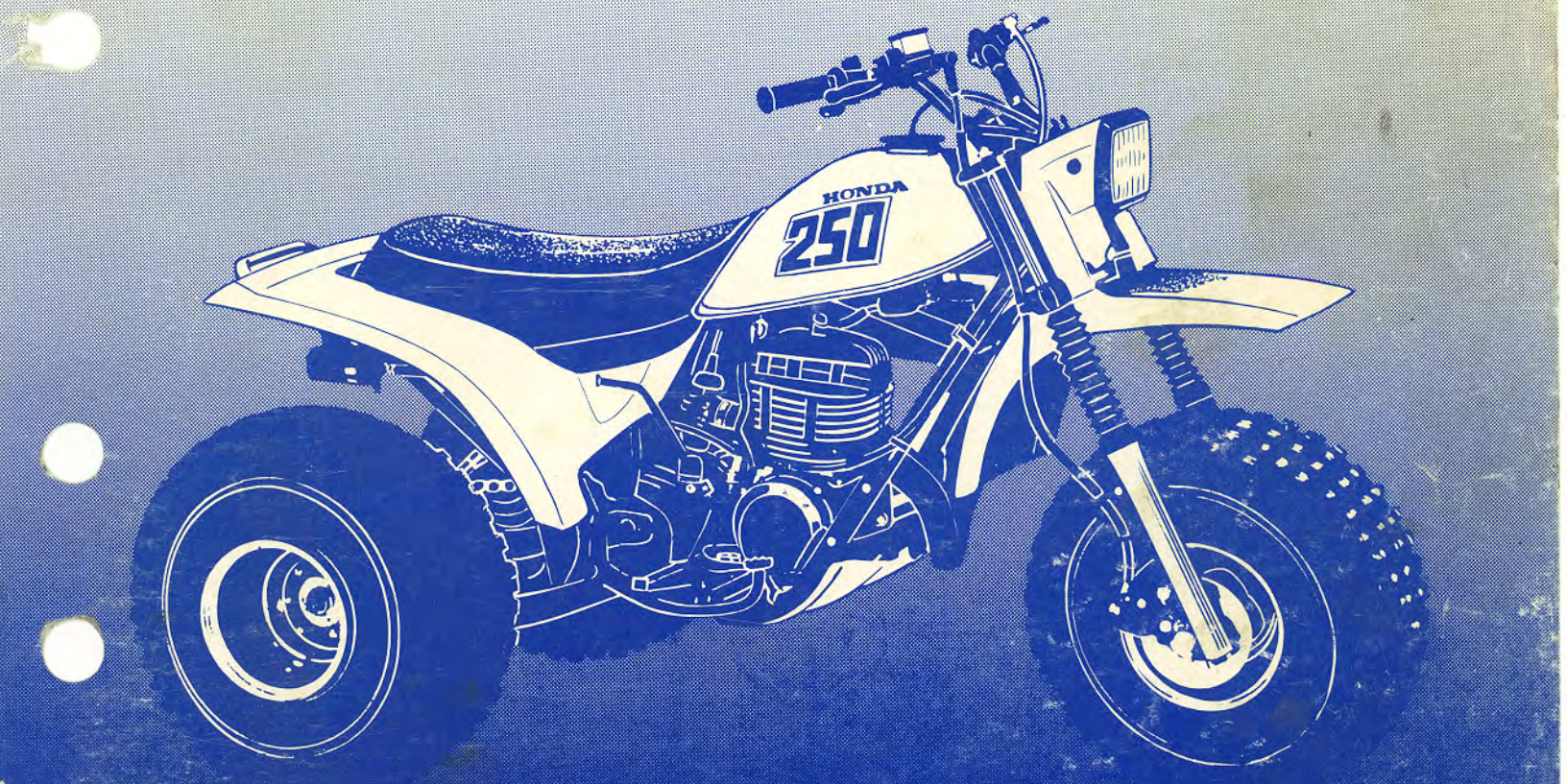
Official

HONDA

SHOP MANUAL

ATC250R



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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 methods or tools selected.

HONDA ATC 250R

HOW TO USE THIS MANUAL

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

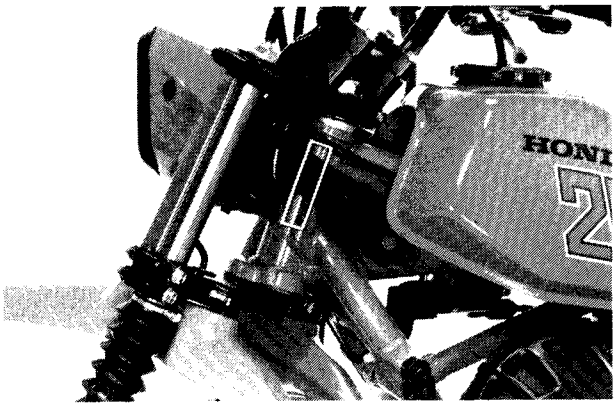
If you don't know the source of a problem, see section 16, TROUBLESHOOTING.

Refer to section 17 for 1982 service information and section 18 for 1983 service information.

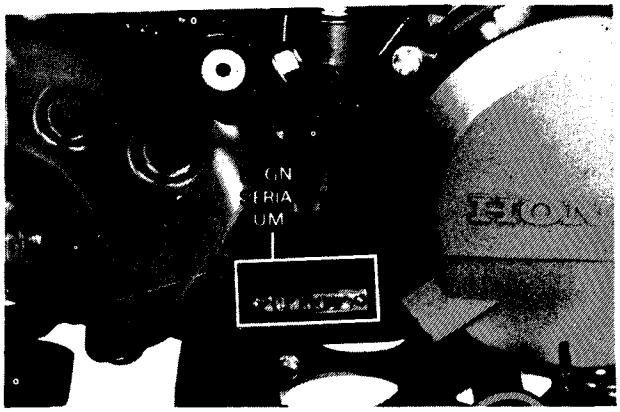
CONTENTS

Date of Issue: August 1983

MODEL IDENTIFICATION



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



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

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

HONDA ATC 250R 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.

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 (SAE) fasteners.
4. Install new gaskets, O-rings, cotter pins, and lock plates when reassembling.
5. When tightening bolts or nuts, begin with the larger-diameter or inner 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.

SPECIFICATIONS

Dimensions	Overall length	1,795 mm (70.7 in)
	Overall width	1,075 mm (42.3 in)
	Overall height	1,040 mm (40.9 in)
	Wheelbase	1,197 mm (47.1 in)
	Seat height	710 mm (28.0 in)
	Foot peg height	295 mm (11.6 in)
	Ground clearance	115 mm (4.5 in)
	Dry weight	137 kg (302 lb)
	Weight distribution Front	53 kg (117 lb)
	Rear	84 kg (185 lb)
Frame	Type	Double cradle
	Front suspension and travel	Telescopic fork, 170 mm (6.7 in)
	Rear suspension and travel	Swingarm, Pro-link, 110 mm (4.3 in)
	Front tire size type	22 x 11.0–8 ATV tire
	Front tire pressure	15 kPa (0.15 kg/cm^2, 2.2 psi)
	Rear tire size type	22 x 11.0–8 ATV tire
	Rear tire pressure	15 kPa (0.15 kg/cm^2, 2.2 psi)
	Front brake	Single disc
	Rear brake	Internal expanding shoe
	Fuel capacity	8.4 lit (2.2 US gal, 1.9 Imp gal)
	Fuel reserve capacity	1.9 lit (0.50 US gal, 0.42 Imp gal)
	Caster angle	69°
	Trail length	45 mm (1.8 in)
	Front fork oil	174 cc (5.88 US ozs, 4.90 Imp ozs)
Engine	Type	Air cooled 2 stroke engine
	Cylinder arrangement	Single cylinder 3° inclined from vertical
	Bore x stroke	70 x 64.4 mm (2.756 x 2.353 in)
	Displacement	248 cm^3 (15.07 cu. in)
	Compression ratio	6.6 : 1
	Transmission oil capacity	1.1 lit (1.2 US qt. 1.0 Imp qt)
	Lubrication sytem	Gasoline/oil mixture
	Fuel required	Gasoline 20 : oil 1 (pre-mixed) (R.O.N. 92–100)
	Air filtration	Oiled polyurethane form

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Carburetor	Type	Piston valve
	Venturi dia	27 mm (1.06 in)
	Setting mark	PE23A
	Float level	18.5 mm (7.3 in)
	Air screw opening	1-3/8
	Idle speed	1,300 ± 150 rpm
	Jet needle	3rd STAGE
	Throttle lever free play	5 – 10 mm (3/16–3/8 in)
Drive train	Clutch	Wet multi-plate type
	Transmission	5-Speed, constant mesh
	Primary reduction ratio	3.250
	Gear ratio I	1.900
	II	1.591
	III	1.240
	IV	1.000
	V	0.839
	Final reduction ratio	3.385 (44 T/13 T)
	Gear shift pattern	Left foot operated return system 1-N-2-3-4-5
Electrical	Ignition system	CDI
	Ignition timing "F" mark	17° BTDC/2,000 rpm
	Full retard	14° BTDC/9,000 rpm
	Starting system	Primary kickstarter
	Alternator	12V 0.073 kW/7,600 rpm
	Spark plug USA model	B8ES (NGK)
		N–3 (CHAMPION)
	Canada model	BR8ES (NGK)
		QN–3 (CHAMPION)
	Spark plug gap	0.7–0.8 mm (0.028–0.031 in)
	Headlight	12V 60W/60W
	Taillight	12V 3.4W

TORQUE VALUES

ENGINE

ITEM	THREAD DIA. mm	TORQUE VALUES		
		N·m	kg-m	ft-lb
Cylinder head	8	24 – 29	2.4 – 2.9	17 – 21
Cylinder	10	38 – 48	3.8 – 4.8	27 – 35
AC generator rotor	12	65 – 75	6.5 – 7.5	47 – 54
Clutch center lock nut	20	40 – 50	4.0 – 5.0	29 – 36
Clutch spring bolt	6	8 – 12	0.8 – 1.2	6 – 9
Drive/balancer gear	10	40 – 50	4.0 – 5.0	29 – 36
Drive sprocket	6	8 – 12	0.8 – 1.2	6 – 9
Crankcase/crankcase cover	6	8 – 12	0.8 – 1.2	6 – 9
Carburetor intake pipe	6	8 – 12	0.8 – 1.2	6 – 9

FRAME

ITEM	THREAD DIA. mm	TORQUE VALUES		
		N·m	kg-m	ft-lb
Handlebar upper holder	8	18 – 25	1.8 – 2.5	13 – 18
Steering stem nut	—	70 – 100	7.0 – 10.0	51 – 72
Pinch bolts	8	18 – 25	1.8 – 2.5	13 – 18
Front/rear rim nut	8	18 – 25	1.8 – 2.5	13 – 18
Front/rear wheel nut	8	18 – 25	1.8 – 2.5	13 – 18
Front axle nut	14	70 – 110	7.0 – 11.0	51 – 80
Brake disc	8	18 – 25	1.8 – 2.5	13 – 18
Brake caliper pin bolt	8	15 – 20	1.5 – 2.0	11 – 14
Brake caliper flange bolt	8	18 – 25	1.8 – 2.5	13 – 18
Brake caliper hex bolt	8	20 – 25	2.0 – 2.5	14 – 18
Brake hose	—	30 – 40	3.0 – 4.0	22 – 29
Engine hanger bolt	10	38 – 48	3.8 – 4.8	27 – 35
Swingarm pivot bolt	14	70 – 110	7.0 – 11.0	51 - 80
Rear axle nut (inner)	32	35 – 45	3.5 – 4.5	25 – 33
(outer)	32	120 – 140	12.0 – 14.0	87 – 101
Rear hub nut	14	80 – 100	8.0 – 10.0	58 – 72
Final driven sprocket	8	18 – 25	1.8 – 2.5	13 – 18
Rear brake arm bolt	6	8 – 12	0.8 – 1.2	6 – 9
Rear shock absorber (upper and lower)	8	38 – 48	3.8 – 4.8	27 – 35

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 Value N·m (kg-m) (ft-lb)	Item	Torque Value N·m (kg-m) (ft-lb)
5 mm bolt and nut	4.5–6.0 (0.45–0.6) (3–4)	5 mm screw	3.5–5.0 (0.35–0.5) (3–4)
6 mm bolt and nut	8–12 (0.8–1.2) (6–9)	6 mm screw	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	20–30 (2.0–3.0) (14–22)
12 mm bolt and nut	50–60 (5.0–6.0) (36–43)	10 mm flange bolt and but	30–40 (3.0–4.0) (22–29)

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TOOLS

SPECIAL

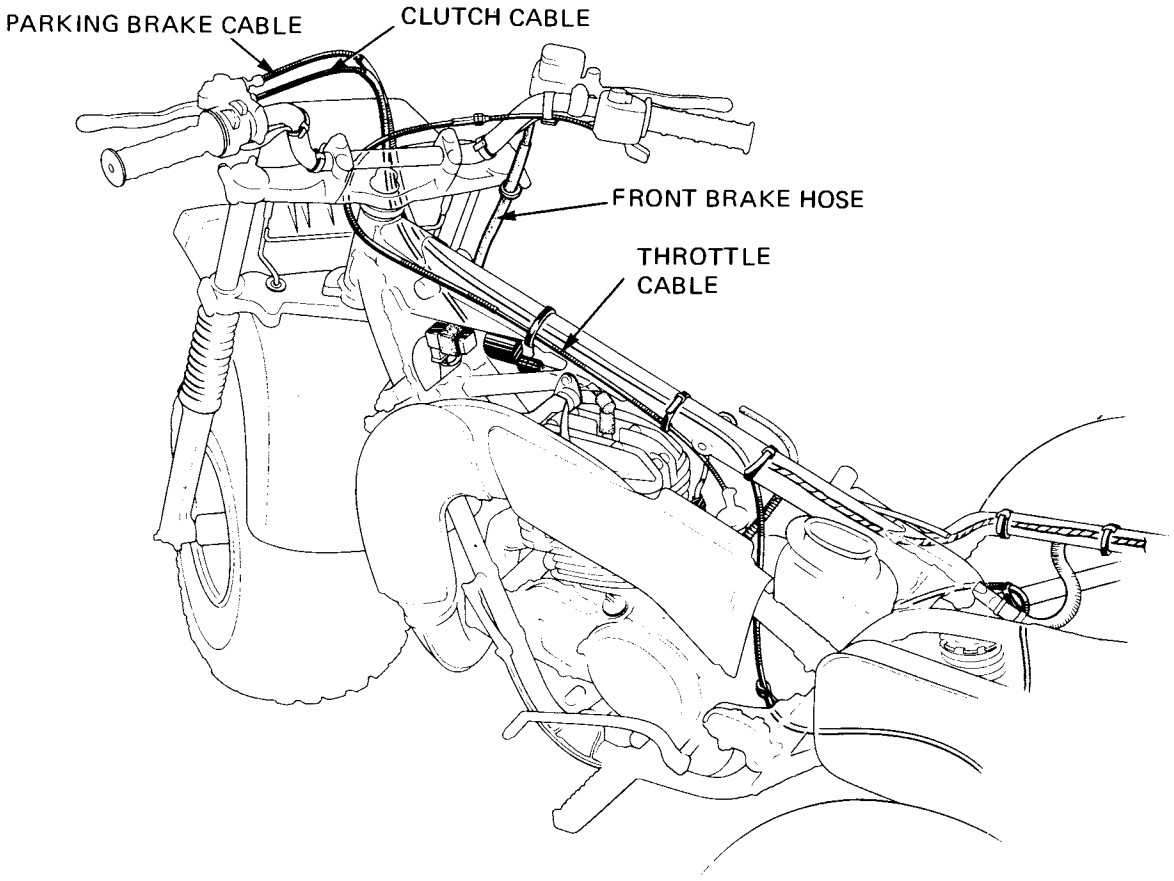
TOOL NAME	NUMBER	ALTERNATE	NUMBER	REF. PAGE
Crankcase disassembler	07935–9610000	Right/left crankcase separation		9 – 4
*Tire disassembling tool	07722–0010000	Bead braker	M987X–350–XXXXX	10 – 12
*Lock nut socket 17 x 27mm	07907–4150000			7 – 4
Snap ring pliers (internal)	07914–3230001	Master cylinder snap ring		11 – 9
*Lock nut wrench 41mm	07916–9180000	Rear axle nut		12 – 9
*Hollow set wrench 6mm	07917–3230000	Front fork (lower)		10 – 19
*Primary gear holder	07924–KA50000	Crankshaft holder		8 – 6
*Steering stem driver	07946–4300100	Steering stem driver Attachment (Available in U.S.A.)	07946–3710600	10 – 30
Steering stem driver	07946–3710600		GN HT-54	10 – 30
*Needle bearing remover installer (swingarm)	07946–KA50000		M967–038–XXXXX	13 – 12
Ball race driver	07953–3330000			10 – 28

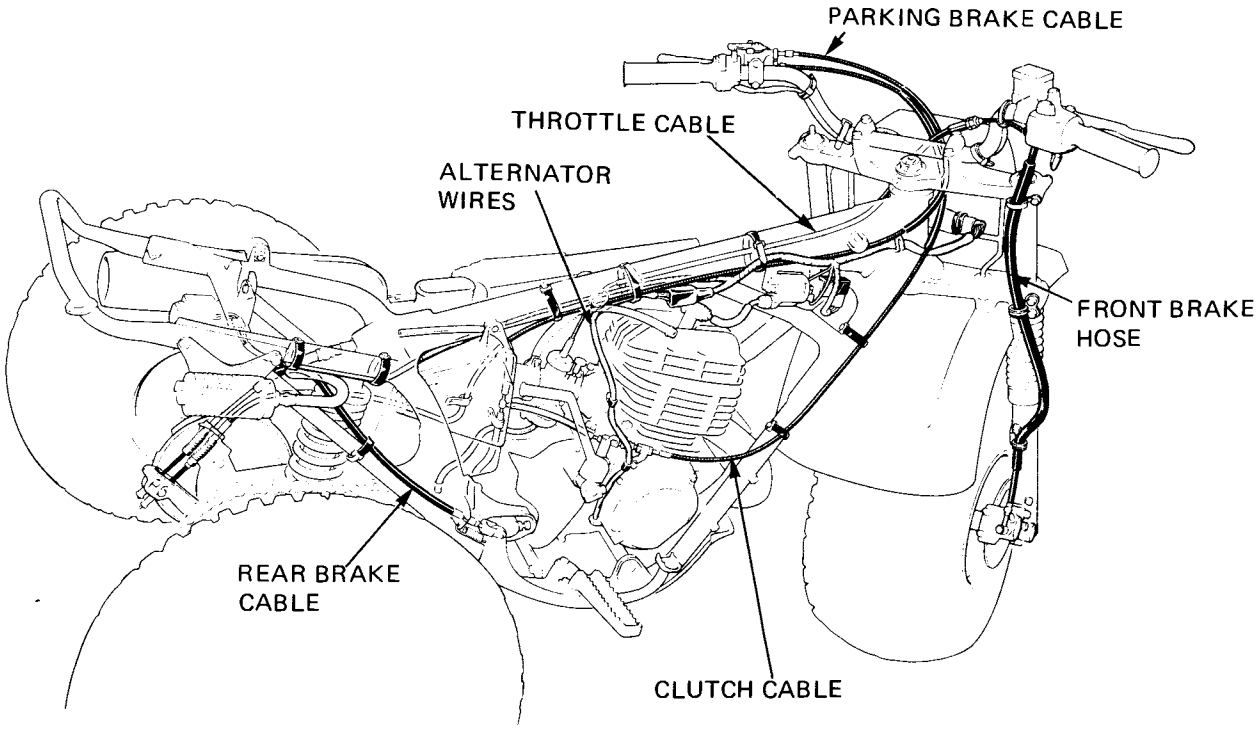
COMMON

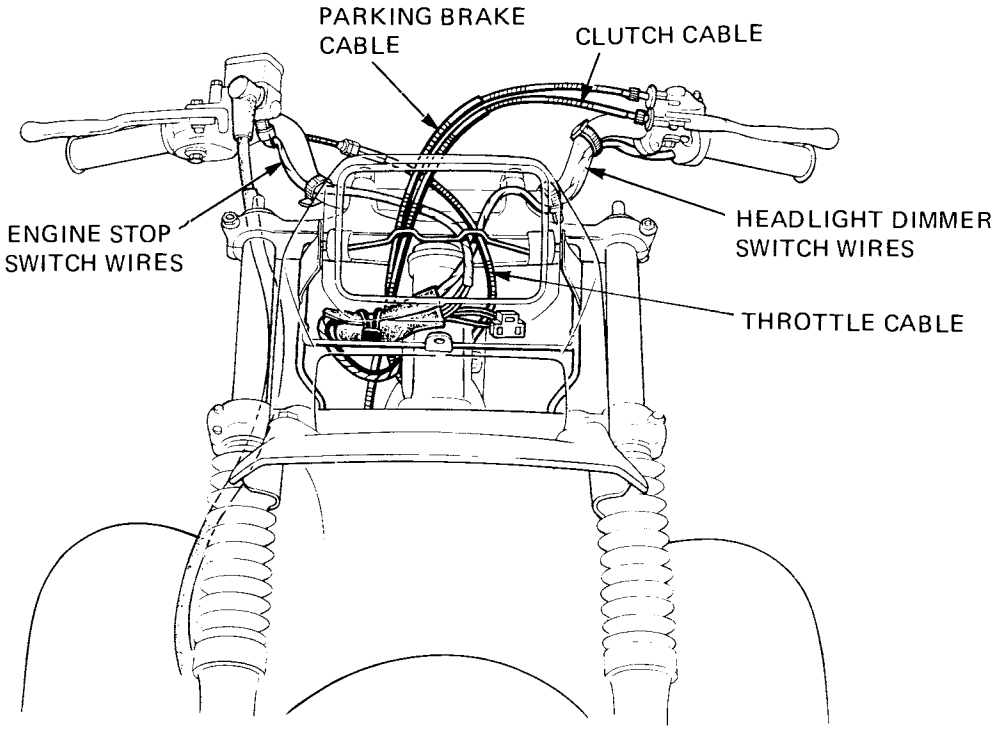
TOOL NAME	NUMBER	ALTERNATE	NUMBER	REF. PAGE
Float level gauge	07401–0010000			3 – 9
*Pin spanner	07702–0010000	Adjustable pin spanner (Available in U.S.A.)	M9361–412–099788	10 – 27
*Lock nut socket 30 x 32mm	07716–0020400			10 – 27
*Extension	07716–0020500			10 – 27
*Universal holder	07725–0030000			6 – 2
*Flywheel puller	07733–0010000	Flywheel puller	07933–0010000	6 – 2
Attachment 32 x 35mm	07746–0010100			9 – 2
Pilot 25 mm	07746–0040600			
Attachment 52 x 55mm	07746–0010400			
Pilot 22mm	07746–0041000			
*Attachment 37 x 40mm	07746–0010200	Attachment	07946–3640000	
Pilot 17mm	07746–0040400			
Pilot 15mm	07746–0040300			10 – 16
*Attachment 42 x 47mm	07746–0010300	Attachment	07946–3290000	10 – 16
Pilot 20mm	07746–0040500			13 – 13
Attachment 62 x 68mm	07746–0010500			12 – 6
Pilot 35mm	07746–0040800			13 – 13
Fork seal driver body	07747–0010100			10 – 23
*Fork seal attachment (C)	07747–0010400	Fork seal driver	07947–1180001	10 – 23
*Driver handle	07749–0010000	Driver handle	07749–6110000	10 – 16
Pin spanner	89201–KA4–8100			2 – 16
Pin spanner	89202–KA4–8100			2 – 16

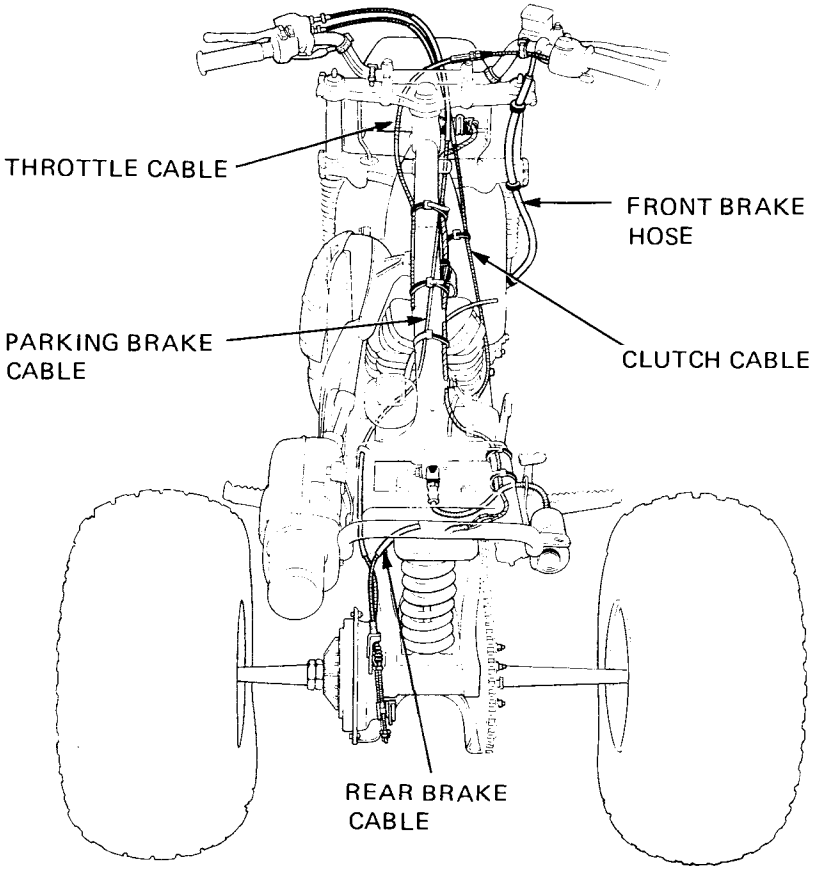
* Equivalent tools are available in the U.S.A. for these tools identified by asterisk (*).

CABLE & HARNESS ROUTING









2. MAINTENANCE

SERVICE INFORMATION

SPECIFICATIONS

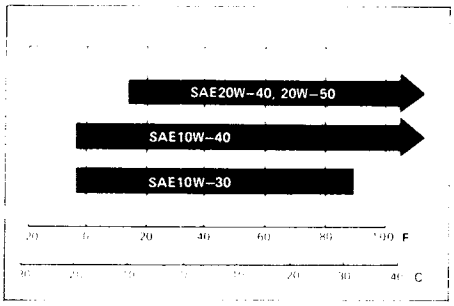
Transmission oil capacity

Oil capacity
1.1 lit (1.17 US qt, 0.97 Imp qt) at disassembly
0.9 lit (0.95 US qt, 0.79 Imp qt) at draining

Transmission oil recommendation
Use HONDA 4-STROKE OIL or equivalent.
(SAE 10W–40, Type "SE")

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

OIL VISCOSITY



<ENGINE>

Spark plug gap		0.7 – 0.8mm (0.028 – 0.031 in)
Spark plug type:	USA model	B8ES (NGK), N-3 (CHAMPION)
	Canada model	BR8ES (NGK), QN-3 (CHAMPION)
Clutch lever free play		10 – 20mm
Cylinder compression		1,100 ± 100 kPa (11 ± 1 kg/cm^2, 156 ± 14 psi)
Ignition timing:	Initial	17 ± 3° BTDC at 2,000 rpm
	Full retard	14 ± 3° BTDC at 9,000 rpm
Throttle lever free play		5 – 10mm (3/16 – 3/8 in)
Idle speed		1,300 ± 150 rpm

<CHASSIS>

Drive chain free play		10 – 20mm (3/8 – 3/4 in)
Drive chain length (16 pins):	Standard	254.5mm (10.02 in)
	Service limit	255.7mm (10.07 in)
Front/rear rim size		8.27 mm x 8.0 mm (0.326 in x 0.315 in)

Rim runout: Axial	4.0mm (0.15 in)
Radial	4.0mm (0.15 in)
Front/rear tire size	22 x 11 – 8.0 DUNLOP ATV tire
Front/rear tire pressure	15 kPa (0.15 kg/m^2, 2.2 psi)
Front/rear tire circumference	1,760mm (69.3 in)
Front suspension air pressure	10 – 50 kPa (0.1 – 0.5 kg/cm^2, 1.4 – 7.0 psi)
Rear suspension preload	10mm (0.47 in)

TORQUE VALUE

Oil drain plug 20 – 25 N-m (2.0 – 2.5 kg-m, 14 – 18 ft-lb)

MAINTENANCE SCHEDULE

The maintenance intervals shown in the following schedule are based upon average riding conditions. Machines subjected to severe use, or ridden in unusually dusty areas, require more frequent servicing.

I: Inspect and Clean, Adjust, Lubricate or Replace, if necessary C: Clean R: Replace A: Adjust L: Lubricate		INITIAL SERVICE PERIOD (First week of operation)	REGULAR SERVICE PERIOD (Every 30 operation days)	Refer to page
TRANSMISSION	NOTE (1), (2)	R	R	
AIR CLEANER ELEMENT	NOTE (2)		C	2 – 4
SPARK PLUG			I	2 – 5
CARBURETOR		I	I	2 – 8
FUEL LINE		I: (EVERY YEAR)		2 – 8
FUEL STRAINER		C: (EVERY YEAR)		2 – 8
THROTTLE OPERATION		I	I	2 – 7
DRIVE CHAIN		I.L	I.L	2 – 9
BRAKE SHOES/PADS	NOTE (3)	I: (EVERY YEAR)		2 – 12
CHAIN SLIDER		I	I	2 – 11
FRONT FORK OIL/AIR			R: (EVERY YEAR)	2 – 15
FRONT BRAKE FLUID		I	IR: (EVERY YEAR)	2 – 12
SUSPENSION			I	2 – 16
SWINGARM BEARING		I.L	I.L	13 – 12
BRAKE CONTROL LINKAGE		I	I	2 – 12
CLUTCH		A	A	2 – 6
SPARK ARRESTER			C	14 – 2
ALL NUTS, BOLTS, FASTENERS		I	I	
LIGHTING EQUIPMENT		I	I	2 – 16
TIRES		I	I	2 – 14
STEERING HEAD BEARING		A: (EVERY YEAR)		2 – 15

NOTE: (1) Replace every 30 operating days or every 3 months, whichever comes first.
(2) Service more frequently when riding in dusty areas
(3) Service more frequently after riding in very wet or muddy conditions.

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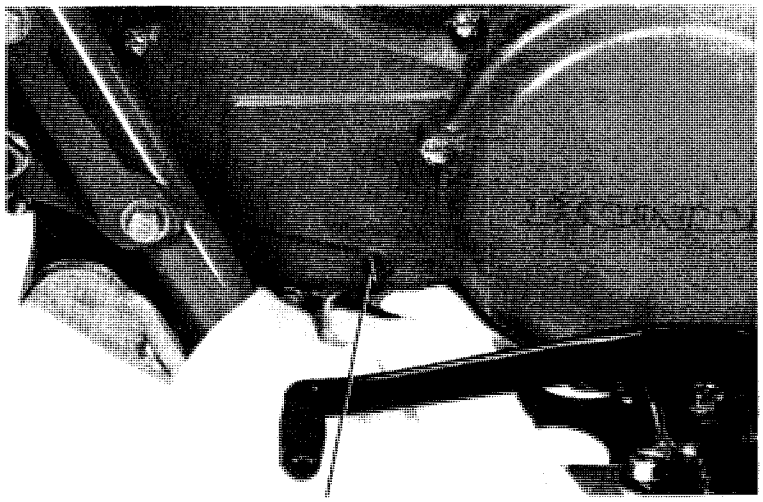
TRANSMISSION OIL

OIL LEVEL CHECK

Stop the engine and remove the oil level check bolt from the left crankcase cover.

A small amount of oil should flow out of the oil level check bolt hole.



OIL CHECK BOLT HOLE

OIL CHANGE

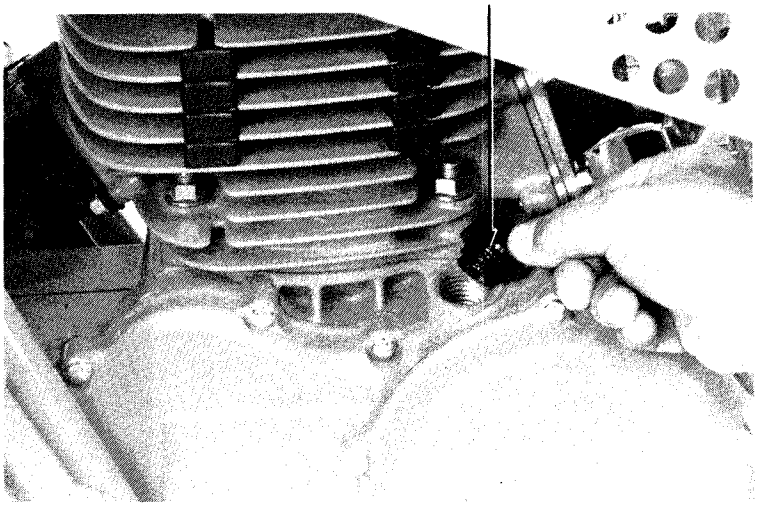
Remove the oil filler cap.
Remove the oil drain plug and drain the oil.

Reinstall the drain plug.
TORQUE: 20–25 N-m (2.0–2.5 kg-m, 14–18 ft-lb)

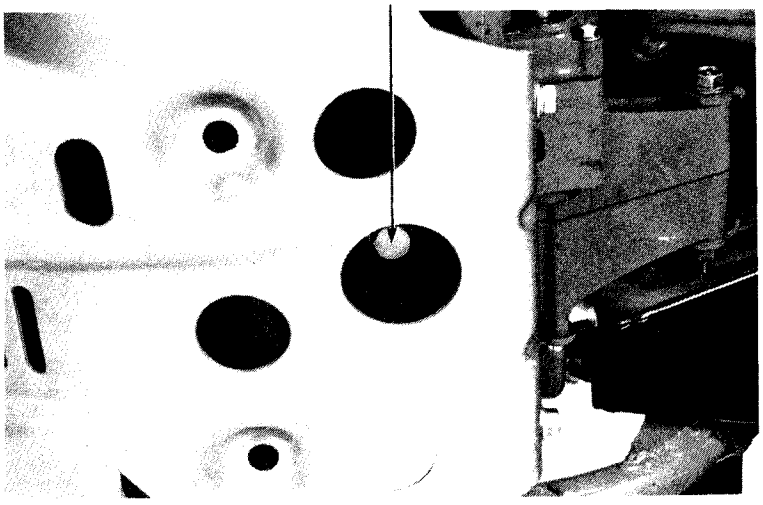
CAUTION:

Make sure that the sealing washer on the drain plug is in good condition.

OIL FILLER CAP



DRAIN PLUG

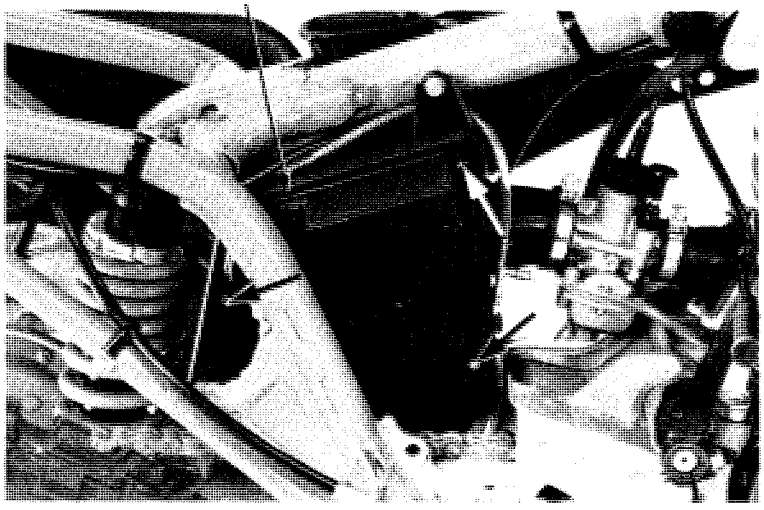


Refill the transmission up to the proper level.
OIL CAPACITY: 1.1 ltr (0.9 ltr at change)
SPECIFIED OIL: 10W–40 or equivalent

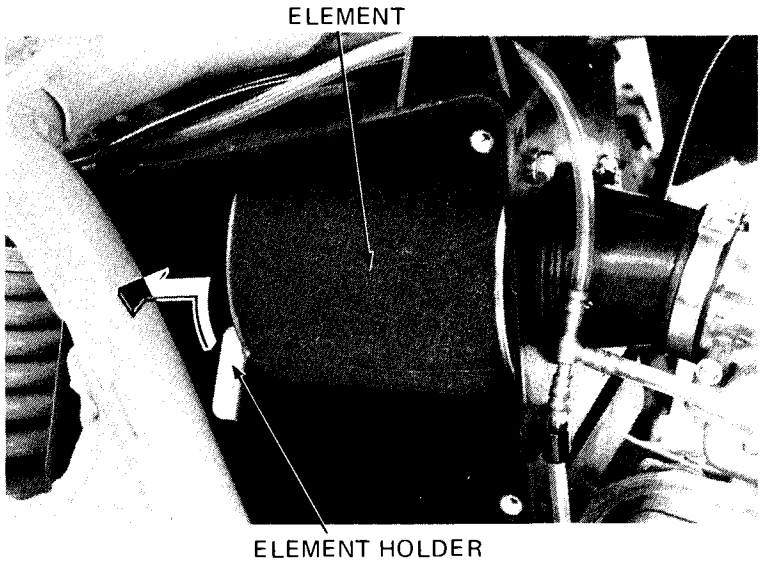
Start the engine and check for leaks. Stop the engine and recheck the oil level.

AIR CLEANER CLEANING

Remove the seat.
Remove the screws attaching the air cleaner case cover and the cover.



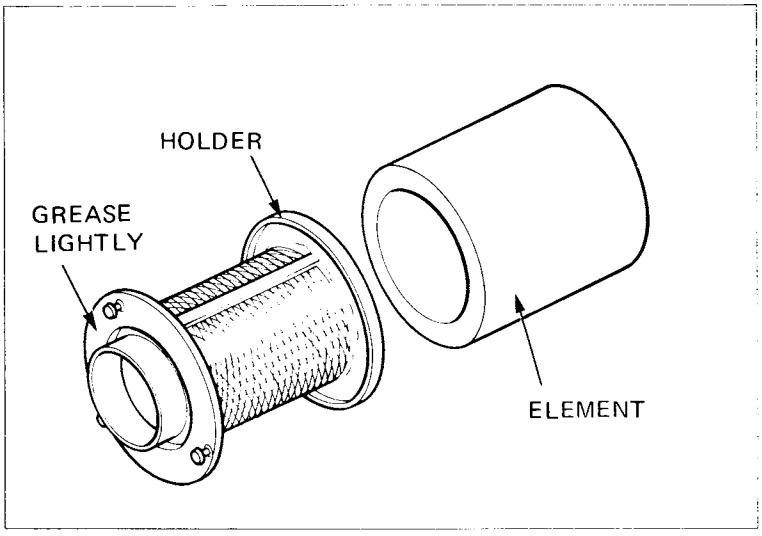
Remove the air cleaner holder and air cleaner element.



Remove the element from the holder.

NOTE

When reassembling the air cleaner, lightly grease the sealing edge of the holder, as shown.



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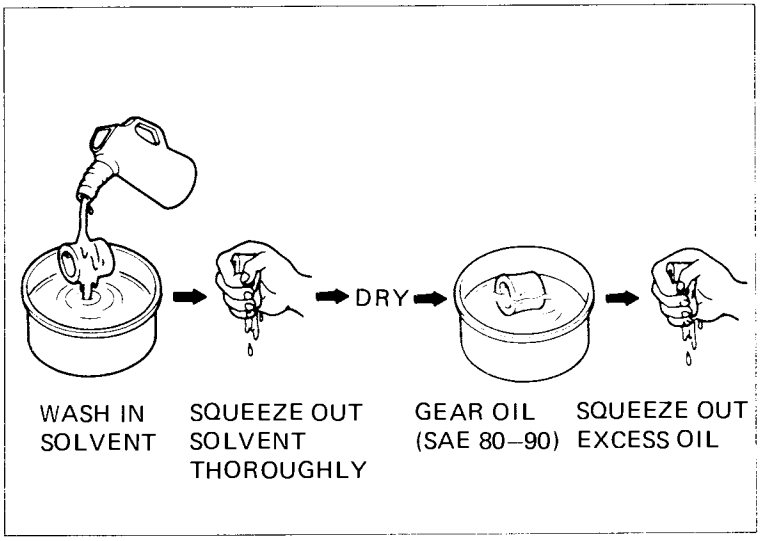
Wash the element in non-flammable or high flash point solvent, squeeze out the solvent throughly, and allow to dry.

Soak the element in gear oil (SAE 80–90) and squeeze out excess.
Place the element onto the element holder.
Grease the sealing edge of the holder.
Install the element holder into the air cleaner case.
Install the air cleaner case cover.



SPARK PLUG

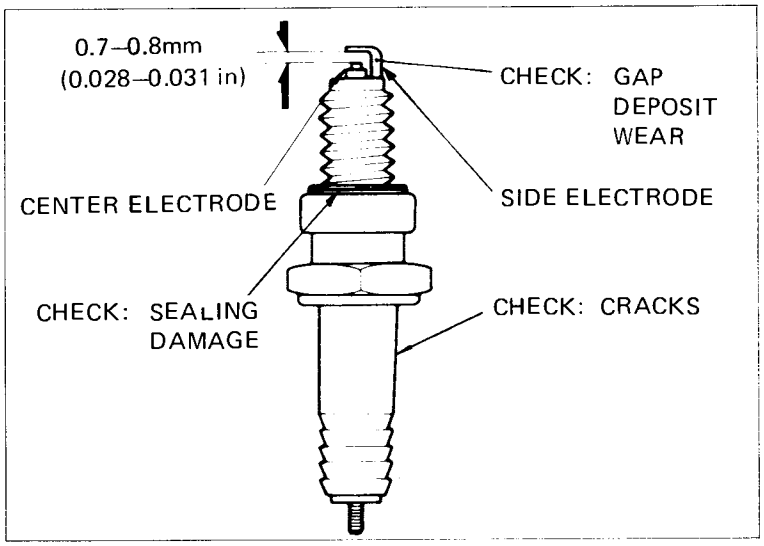
Disconnect the spark plug cap and remove the spark plug.

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.

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

RECOMMENDED REPLACEMENT PLUG:

	NGK	CHAMPION
USA model	B8ES	N-3
Canada model	BR8ES	QN-3



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

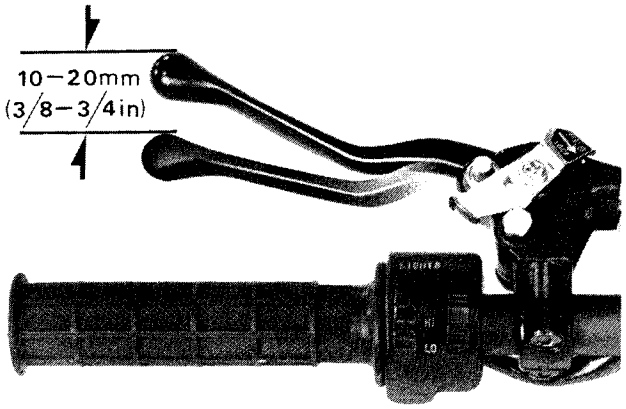
With the sealing washer attached, thread the spark plug in by hand to prevent cross-threading.

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.

CLUTCH ADJUSTMENT

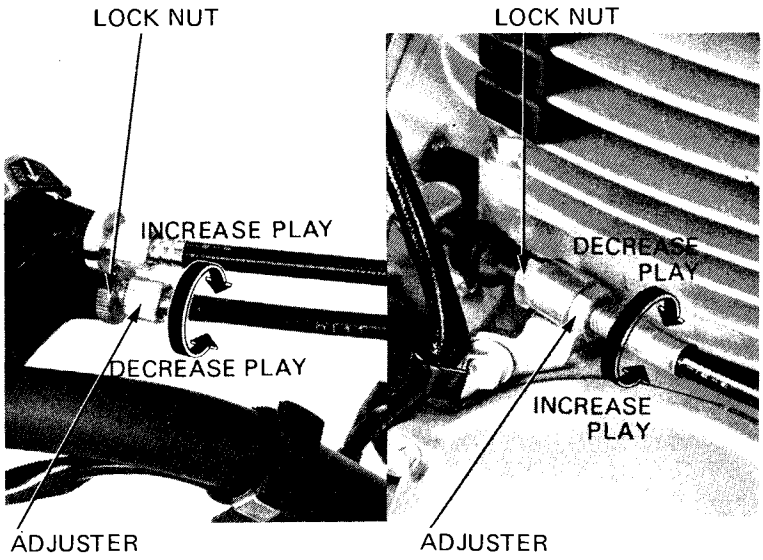
Measure the clutch lever free play:
FREE PLAY: 10–20 mm (3/8–3/4 in)



Perform minor adjustments with the upper adjuster.
Loosen the lock nut and turn the adjuster.
Tighten the lock nut.

Perform major adjustments with the lower adjuster.
Loosen the lock nut and turn the adjuster.
Tighten the lock nut.

Check the clutch operation.



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.
Operate the starter pedal several times.

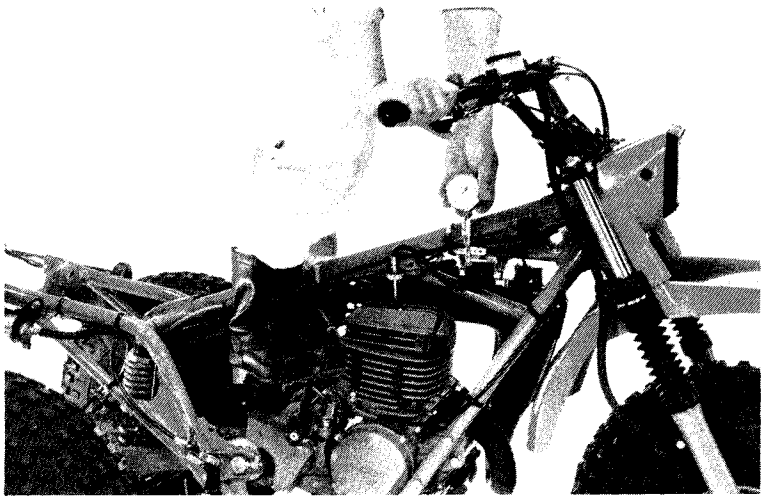
NOTE

Watch for compression leaking at the gauge connection. A soap solution is useful for this.

COMPRESSION: 980–1,183 kPa (10.0–11.6 kg/cm^2, 142–165 psi)
SERVICE LIMIT: 883 kPa (9.0 kg/cm^2, 128 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.



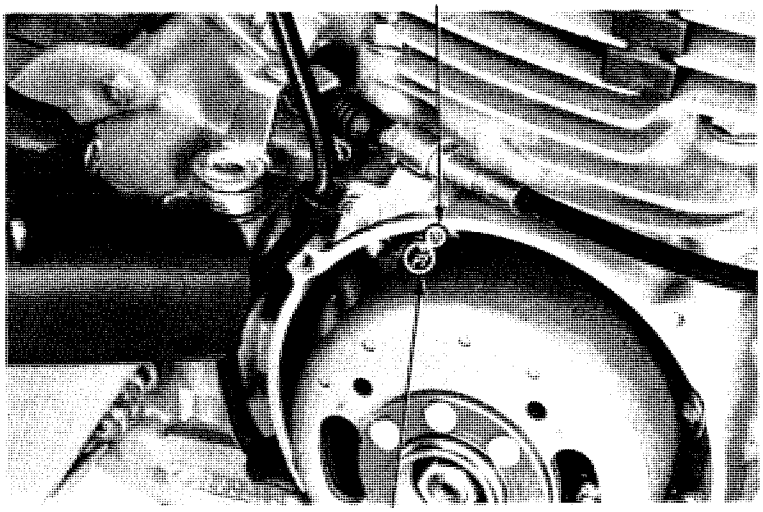
IGNITION TIMING

NOTE

The C D I ignition timing is not adjustable. If the ignition timing is incorrect, check the C D I unit and A C generator and replace any faulty parts.

IGNITION TIMING CHECK

Remove the generator cover.
Timing is correct if the index mark aligns with the "F" mark at 2,000 rpm
IGNITION TIMING: 17 ± 3° BTDC/2,000 rpm



THROTTLE OPERATION

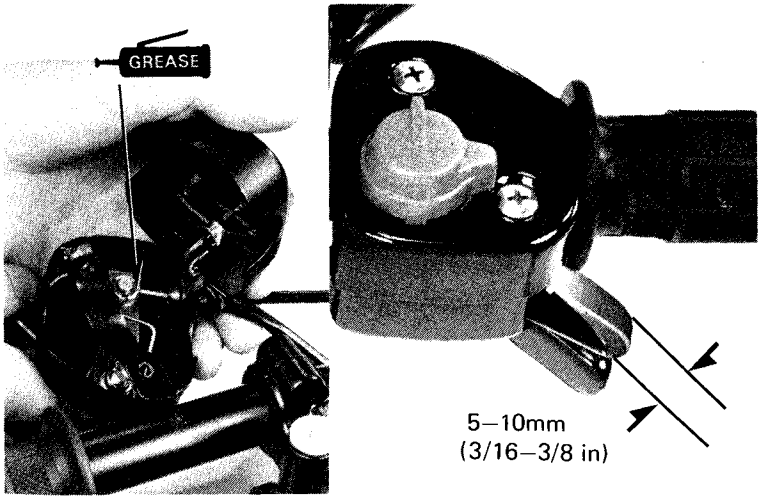
Check for smooth throttle lever full opening and automatic full closing in all steering positions.
Make sure there is no deterioration, damage or kinking in the throttle cable.
Replace any damaged parts.

Disconnect the throttle cable at the upper end.
Throughly lubricate the cable and pivot point with a commercially available cable lubricant to prevent premature wear.

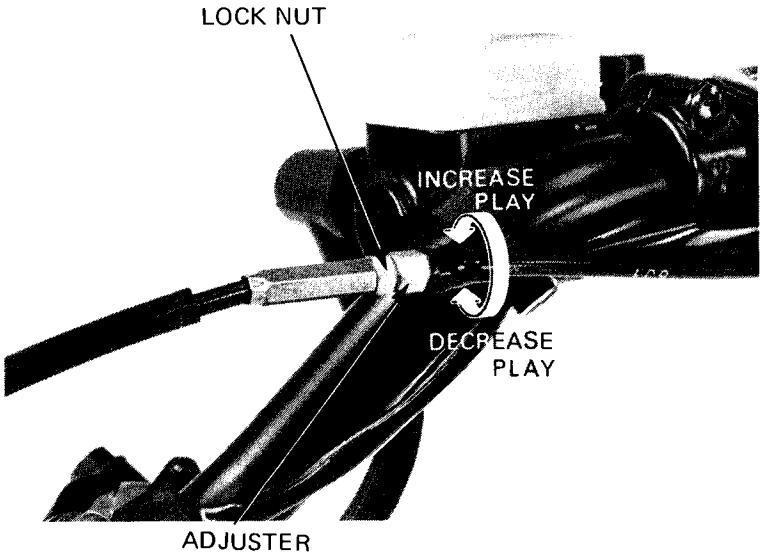
Install the throttle cable in the reverse order of removal.

Make sure the throttle lever free play is 5–10mm (3/16–1/8 in) at the tip of the throttle lever.

Adjust as follows:



Adjust the throttle lever free play by loosening the lock nut and turning the adjuster.
When adjustment is satisfactory, tighten the lock nut.



IDLE SPEED ADJUSTMENT

NOTE

The engine must be warm for accurate idle adjustment.

Attach an engine tachometer.

Turn the throttle stop screw to obtain the specified idle speed (Page 3–1).

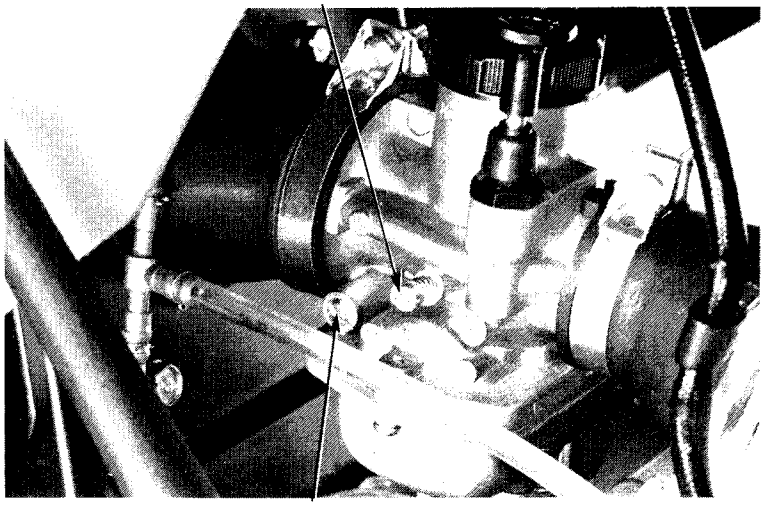
When the engine misses or runs erratically, proceed as follows:

Screw in the air screw until it lightly seats, then turn it out as specified (1-3/8 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 on run erratically. If necessary, repeat the above steps.

THROTTLE STOP SCREW



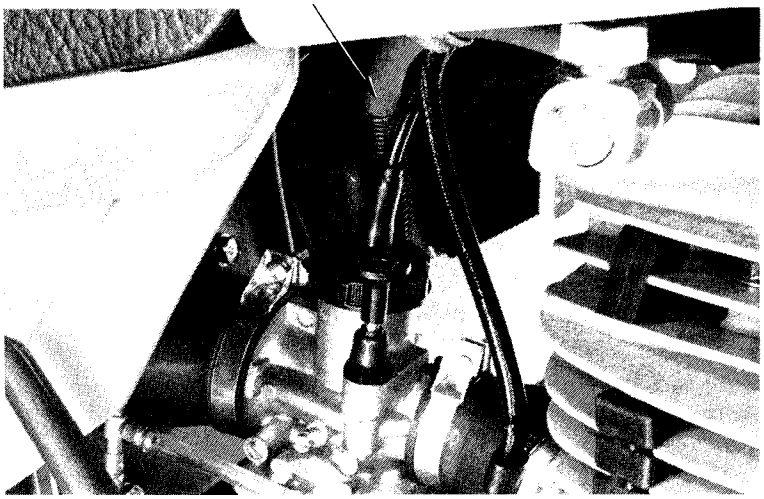
AIR SCREW

FUEL LINE AND FUEL VALVE

Inspect the fuel valve in all positions.
Check that the fuel line is intact and has clamps at each connection.

Replace any parts that are damaged, leaking or show signs of deterioration.

FUEL LINE



FUEL STRAINER

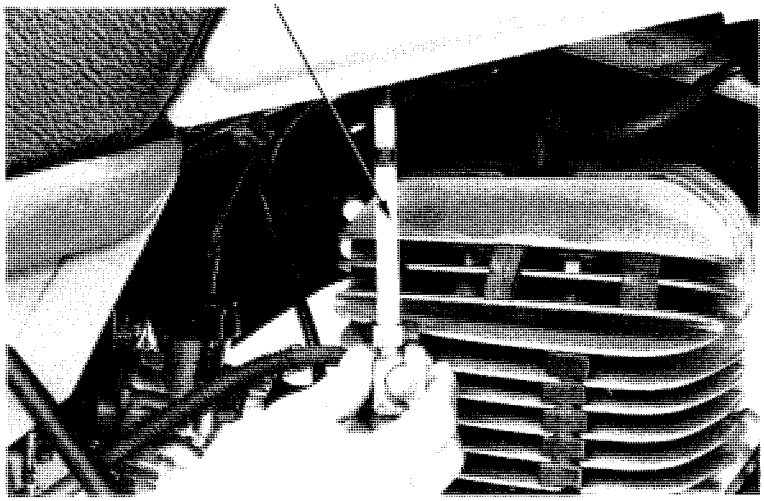
Disconnect the fuel tube.
Drain fuel from the fuel tank.

WARNING

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

Remove the fuel valve by loosening the valve nut.
Remove and clean the strainer.
Install the strainer and valve.
Attach the fuel line.
Fill the fuel tank and turn the fuel valve to "ON" and check for leaks.

FUEL STRAINER



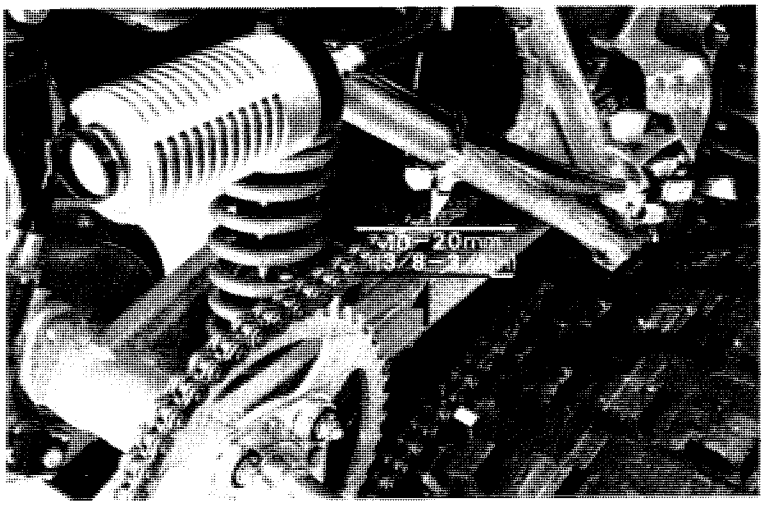
DRIVE CHAIN

INSPECTION

Shift the transmission into neutral.

Measure the drive chain slack midway between the sprockets.

CHAIN SLACK: 10–20mm (3/8–3/4 in)



DRIVE CHAIN ADJUSTMENT

To adjust the drive chain, remove the cotter pin from the swing arm pivot bolt, and loosen the pivot bolt nut.

Loosen the drive chain adjuster lock nuts and turn the adjusting bolts.

CAUTION:

Be sure that the index mark aligns with the same reference marks on the scale on both sides. Tighten the pivot nut and install a new cotter pin.

TORQUE: 70–110 N·m (7.0–11.0 kg-m, 51–80 ft-lb)

Retighten both lock nuts.

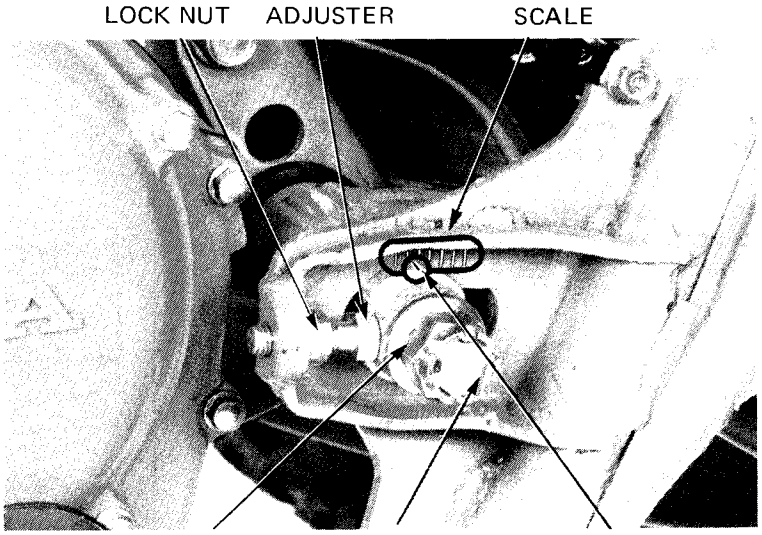
WARNING

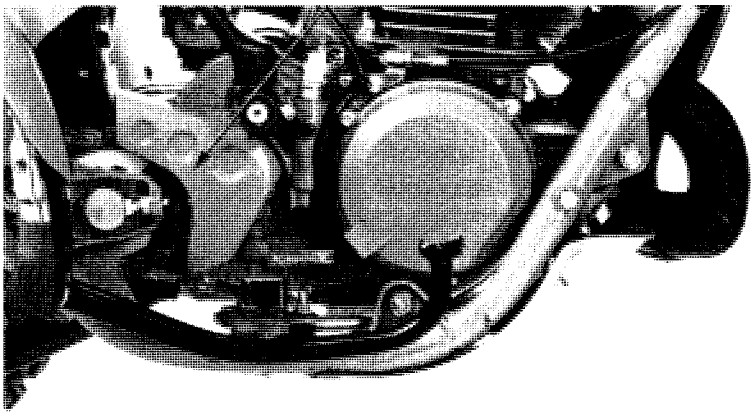
Check the rear brake pedal play after the drive chain tension has been adjusted.

When the drive chain becomes extremely dirty, it should be removed and cleaned prior to lubrication .

Remove the drive sprocket cover.

Remove the drive chain.





Clean the drive chain with kerosene or a non-flammable or high flash point solvent that will not damage the O-rings, and wipe dry.

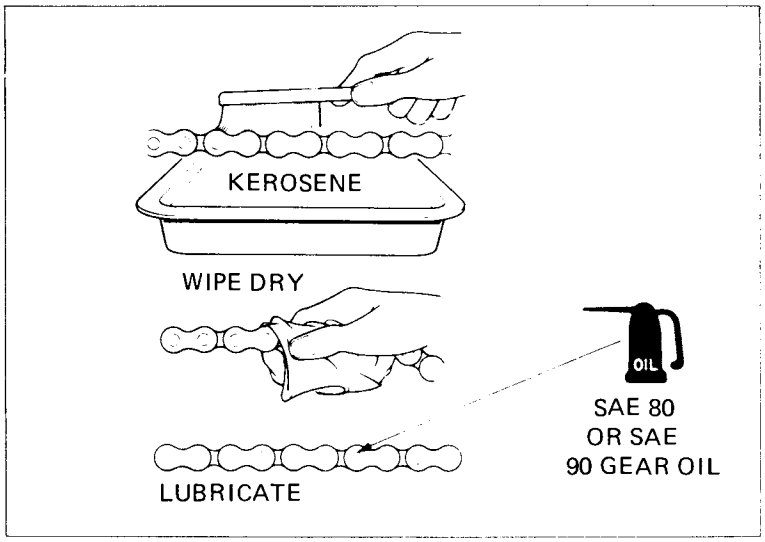
CAUTION:

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

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

CAUTION:

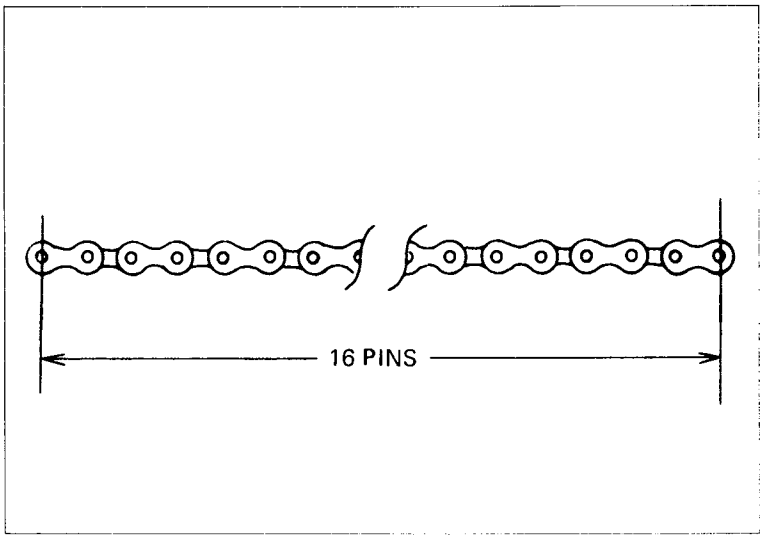
Do not use commercial aerosol chain lubricants. They contain solvents which could damage the O-rings.



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

Measure the drive chain length with the chain held so that all links are straight.

16 PINS LENGTH:
STANDARD: 254.5 mm (10.02 in)
SERVICE LIMIT: 255.7 mm (10.07 in)



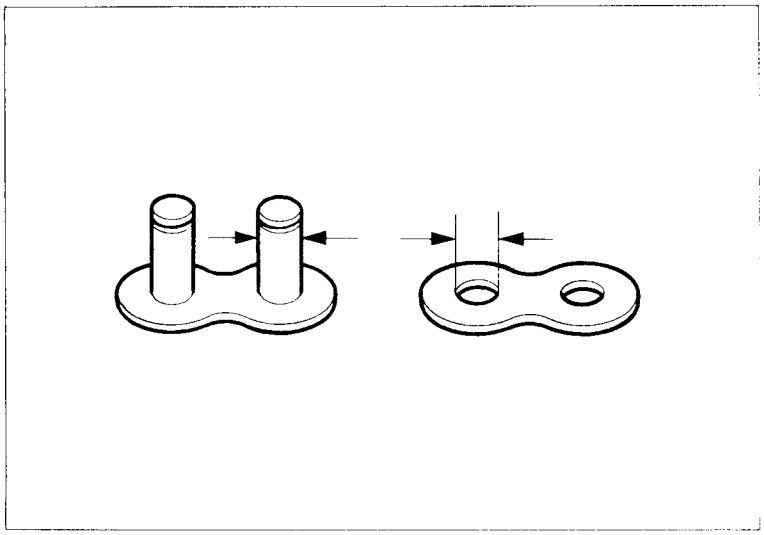
Measure the drive chain master link pin diameter.

STANDARD: 5.18 mm (0.204 in)
SERVICE LIMIT: 5.0 mm (0.197 in)

Measure the drive chain master link plate I.D.

STANDARD: 5.13 mm (0.202 in)
SERVICE LIMIT: 5.40 mm (0.213 in)

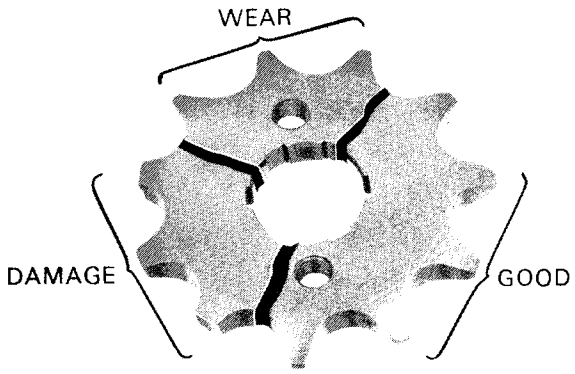
Replace the master link if beyond the service limits.



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.

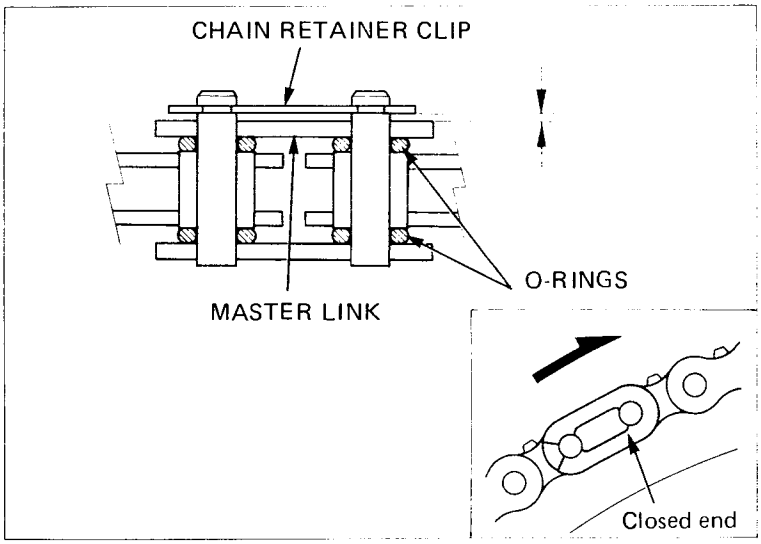
NOTE

The closed end of the clip should face the direction of drive chain travel.

Install the drive sprocket cover.
Adjust the drive chain.

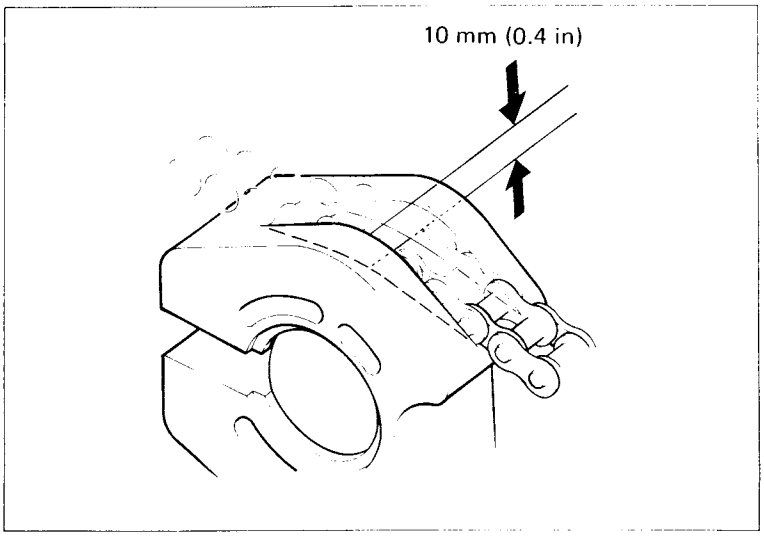
CAUTION:

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.



CHAIN SLIDER INSPECTION

Check the drive chain slider.
Replace the slider if the depth of the groove exceeds 10 mm (0.4 in) (Page 13–10).



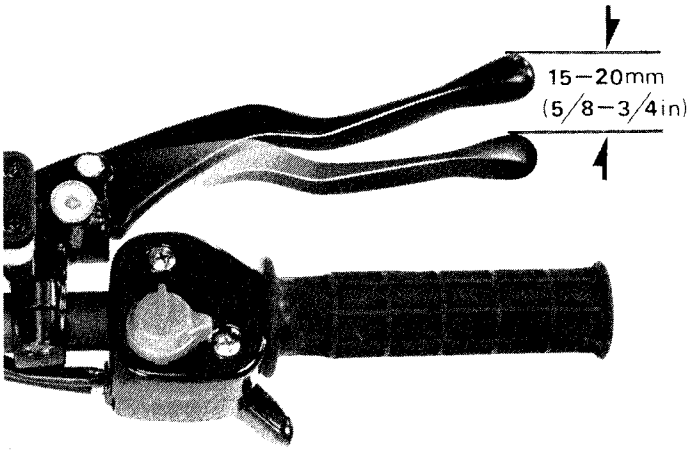
FRONT BRAKE

BRAKE LEVER FREE PLAY

Measure the brake lever free play.

FREE PLAY: 15–20 mm (5/8–3/4 in)

If free play is excessive, refer to page 11–2.



BRAKE FLUID INSPECTION

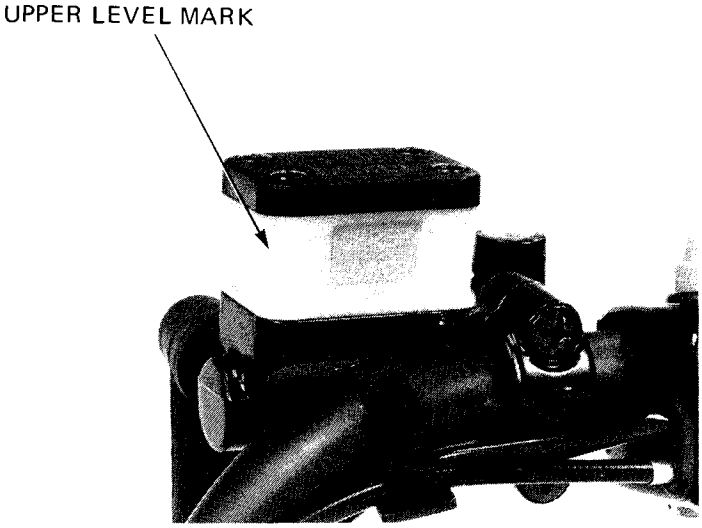
Check that the brake fluid reservoir is filled to the upper level mark on the reservoir.

If the level is lower than the upper level mark, fill the reservoir with DOT-3 brake fluid up to the level mark.

Check the entire system for leaks, if the level is low.

CAUTION:

Do not mix different types of fluid in the reservoir. Mixing different types may not provide optimum braking performance.



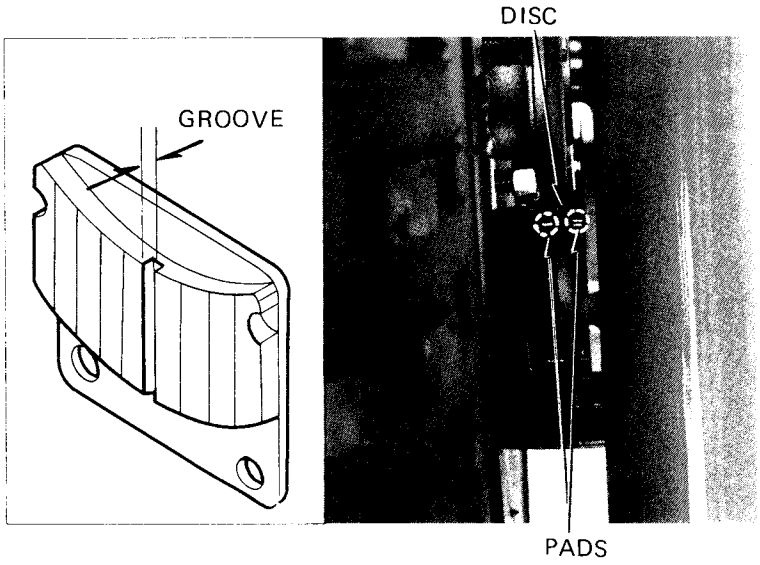
BRAKE PAD WEAR

Check each brake pad for wear.

SERVICE LIMIT: If either pad wears to the bottom of the groove, both pads must be replaced.

NOTE

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



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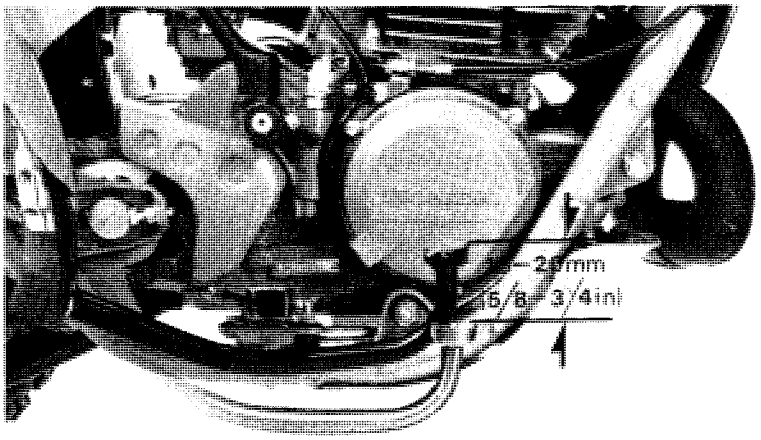
REAR BRAKE

BRAKE PEDAL FREE PLAY

Measure the brake pedal free play.

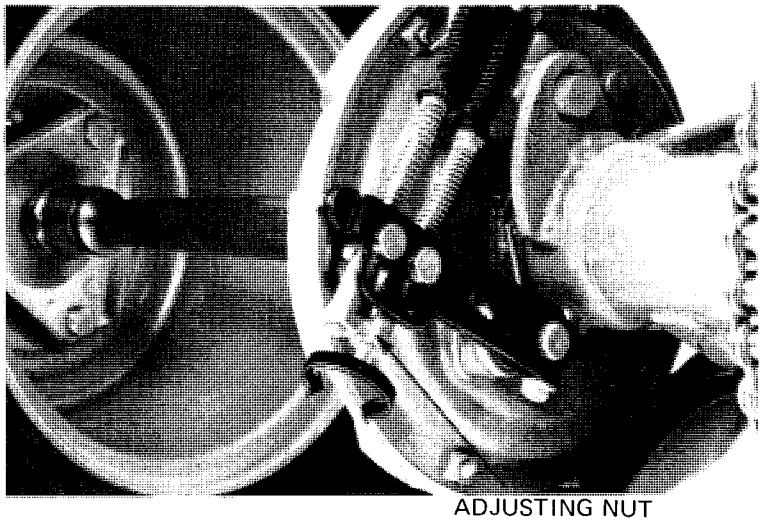
FREE PLAY: 15–20mm (5/8–3/4 in)



If adjustment is necessary, turn the rear brake cable adjusting nut.

NOTE

Make sure the cut-out on the adjusting nut is seated on the brake arm pin.

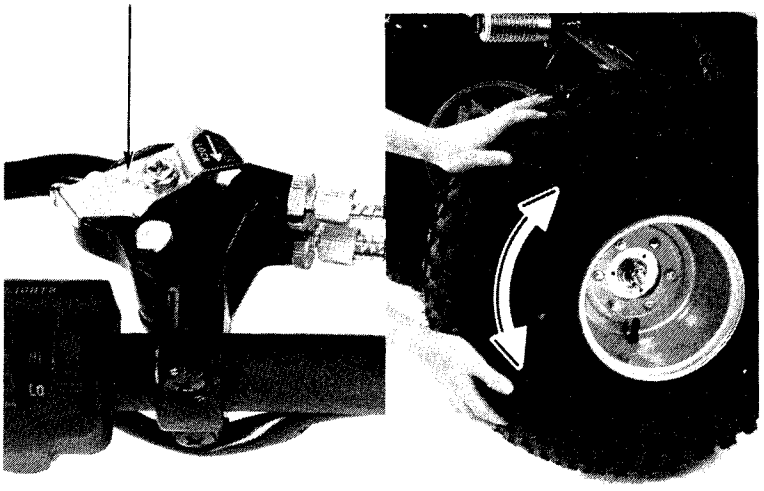


ADJUSTING NUT

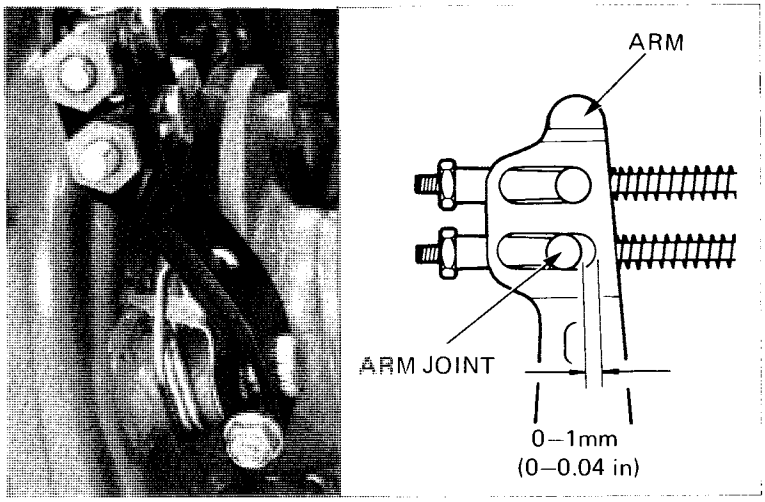
PARKING BRAKE

Apply the parking brake to lock the rear wheels.

PARKING BRAKE LEVER

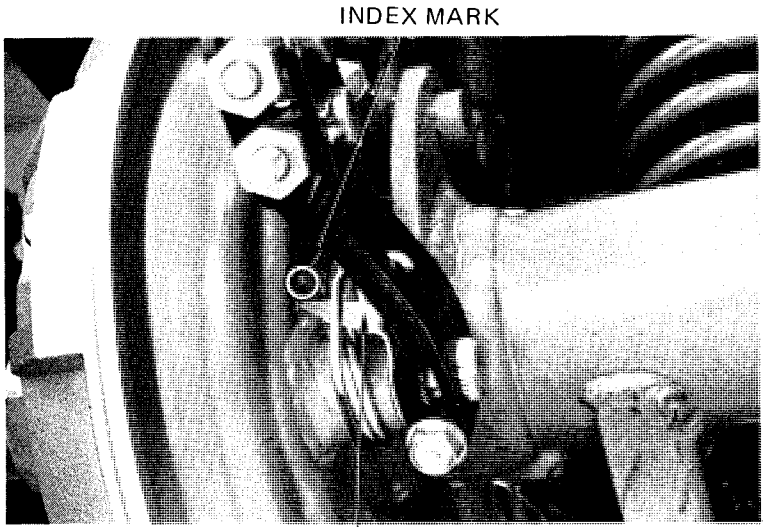


Be sure the brake pedal is properly adjusted (page 2-13). Turn the adjusting nut at the brake cable end until the clearance between the arm joint and arm is 0–1.0 mm (0–0.04 in).
Minor adjustments can be made by loosening the lock nut at the lever and turning the adjusting bolt.



BRAKE WEAR

Replace the brake shoes if the indicator plate aligns with the brake panel index mark when the rear brake pedal is applied.



TIRES

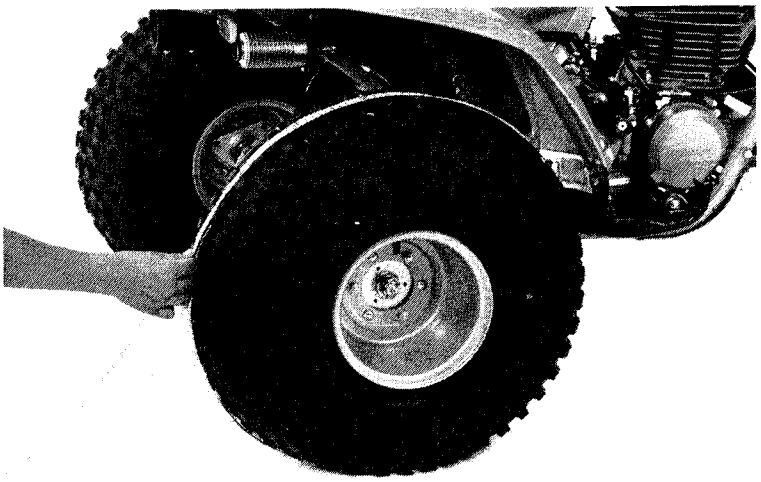
Check the tire for cuts, imbedded nails, or other sharp objects.

NOTE

Tire pressure should be checked when the tires are COLD.

Check the tire pressure and measure the tire circumference.

TIRE PRESSURES:
Recommended pressure:
15 kPa (0.15 kg/cm^2, 2.2 psi)
Minimum pressure:
12 kPa (0.12 kg/cm^2, 1.7 psi)
Maximum pressure:
18 kPa (0.18 kg/cm^2, 2.6 psi)
STANDARD TIRE CIRCUMFERENCE:
1,760 mm (69.3 in)



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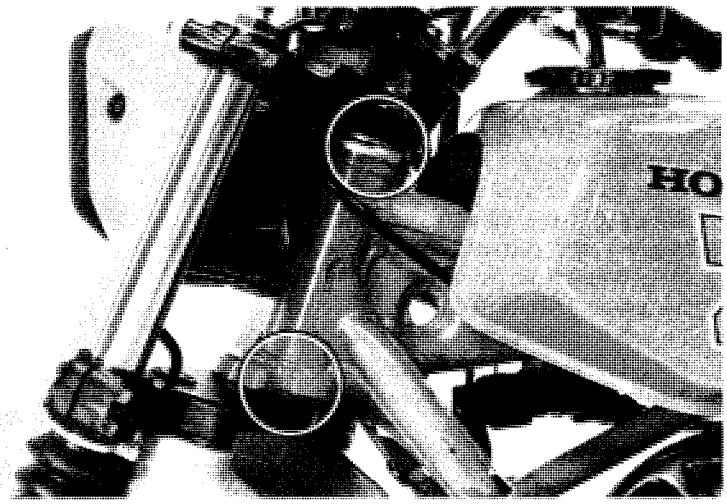
STEERING HEAD BEARINGS

NOTE

Make sure the cables do not interfere with the rotation of the handlebar.

Raise the front wheel off the ground and make sure that the handlebar rotates freely.

If the handlebar moves unevenly, binds or has vertical play adjust the steering head bearing by turning the steering head adjusting nut with a pin spanner (Page 10-31).



SUSPENSION

FRONT SUSPENSION

Check the action of the front forks by compressing them several times.

Check the entire fork assembly for signs of leaks or damage.

Replace damaged components which cannot be repaired.

NOTE

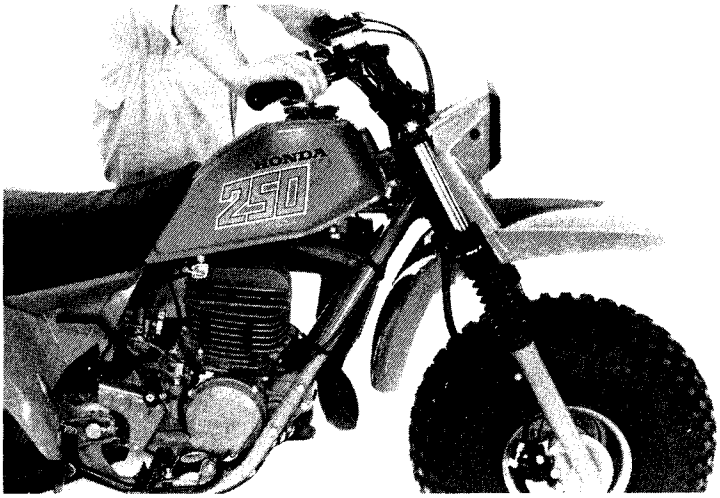
Do not repair bent fork tubes. They must be replaced.

Tighten all nuts and bolts to the specified torque values.

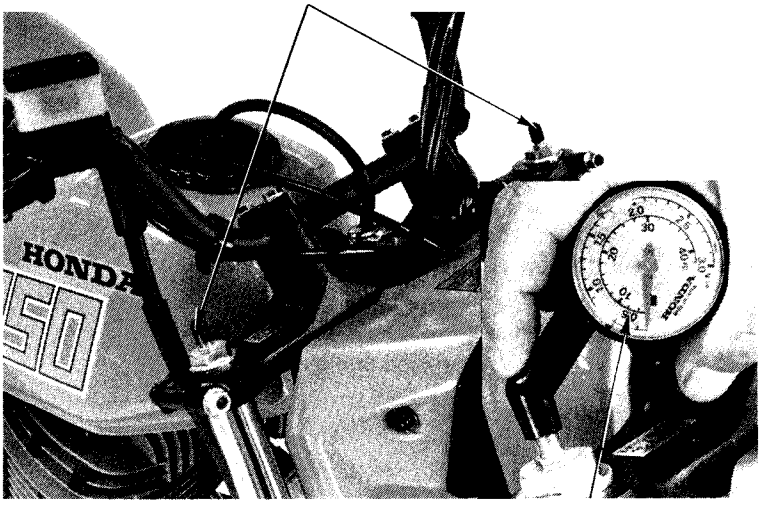
Raise the front of the vehicle so that there is no weight on the front wheel.

Check air pressure in each fork tube (Page 10-25)

AIR PRESSURE: 10–50 kPa (0.1–0.5 kg/cm^2, 1.4–7.0 psi)



AIR VALVE CAPS



PRESSURE GAUGE

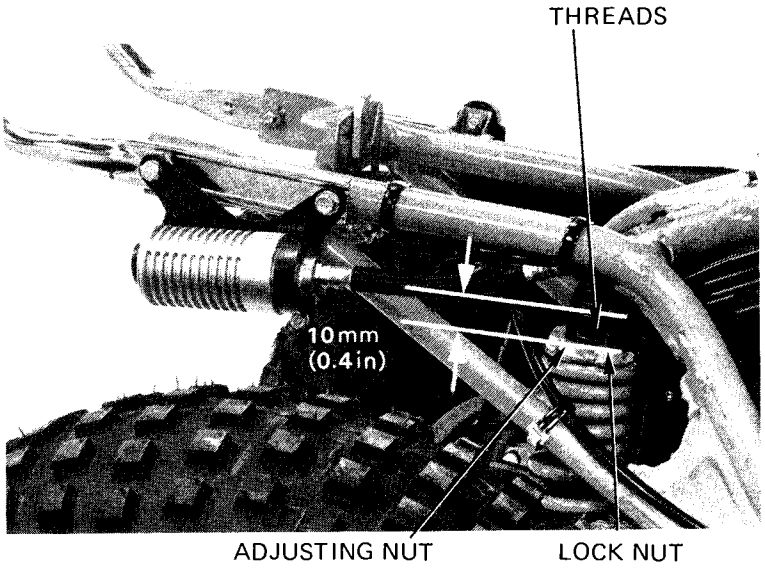
REAR SUSPENSION

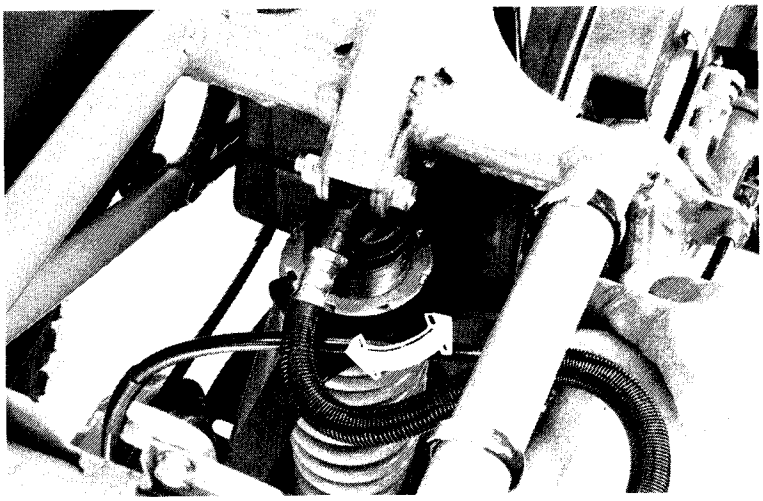
SPRING PRELOAD ADJUSTMENT

The rear shock spring preload can be adjusted for the rider's weight and riding conditions.

1. Remove the seat/rear fender.
2. Place a support under the engine to raise the rear wheels off the ground.
3. Measure the distance between the top of the threads and adjuster lock nut.
   Distance: 10 mm (0.4 in)
4. To adjust preload, loosen the lock nut with a pin spanner and turn the adjusting nut.
5. Tighten the lock nut and reinstall the seat unit.

See section 13 for shock disassembly.





LIGHTING EQUIPMENT

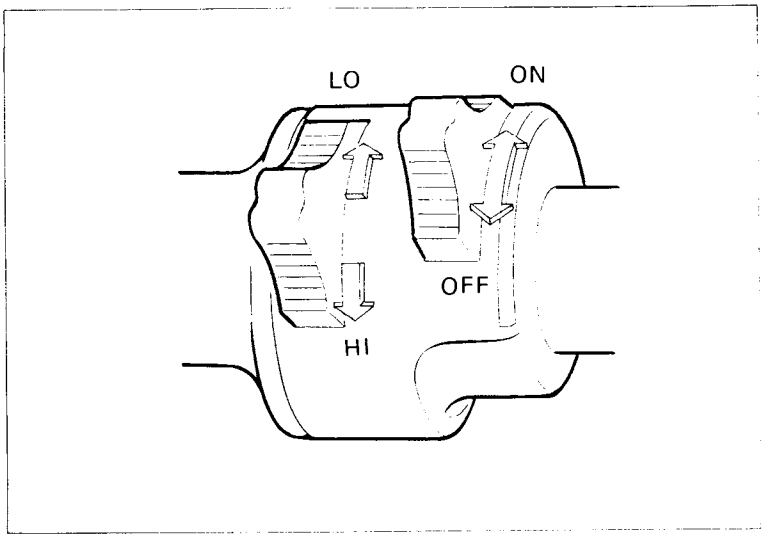
Apply the parking brake.
Start the engine.

Check the headlight and taillight by operating the headlight ON-OFF switch and dimmer switch:

Headlight ON-OFF switch:
OFF : Lights are OFF
ON : Headlight and taillight are ON

Headlight dimmer switch:
HI : Headlight high beam and taillight are ON.
LO : Headlight low beam and taillight are ON.

Replace the bulb or switch as necessary.



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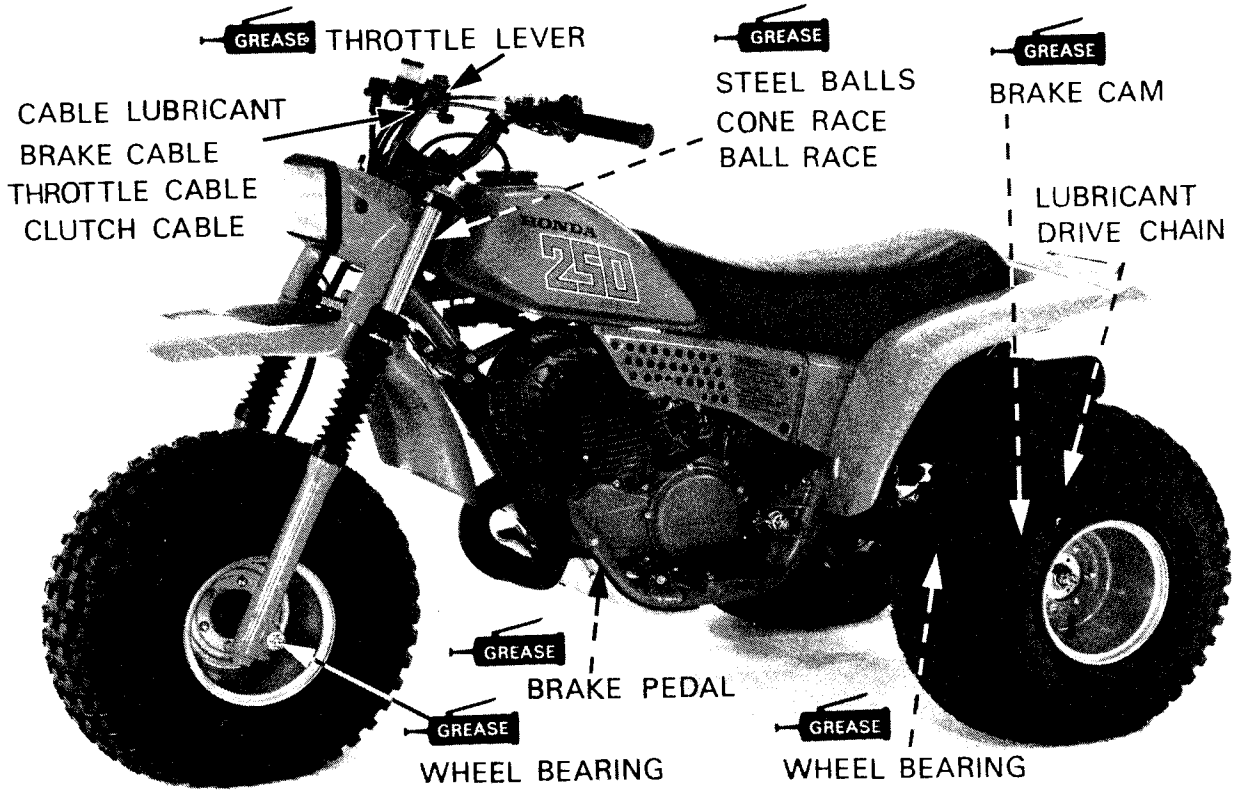
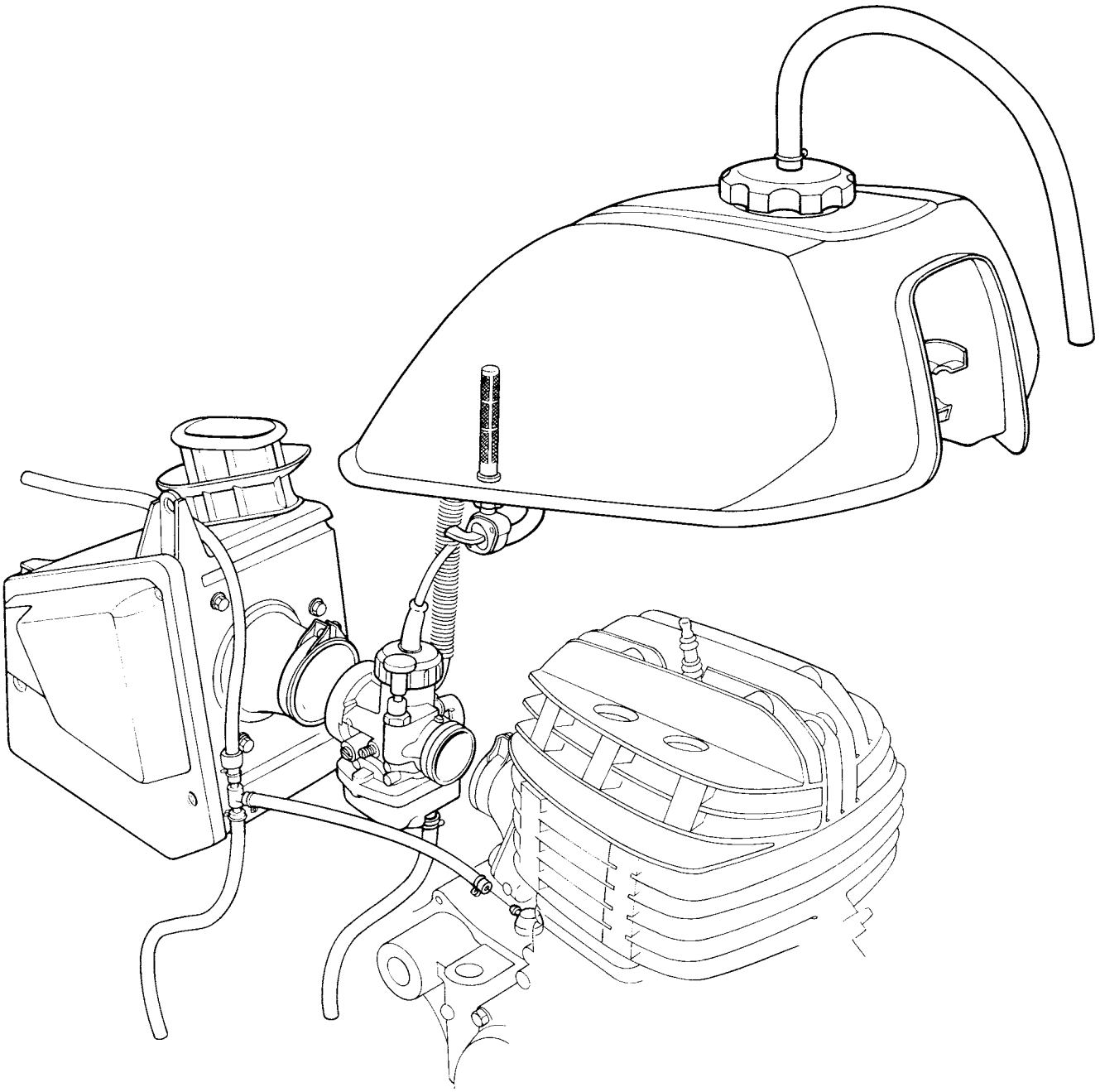
LUBRICATION POINTS

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





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3. FUEL SYSTEM

SERVICE INFORMATION

GENERAL INSTRUCTIONS

- 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.

TOOL

Common

Float Level Gauge	07401–0010000

SPECIFICATIONS

Fuel tank capacity	8.4 lit (2.2 US gal, 1.9 Imp gal)
Fuel reserve capacity	1.9 lit (0.50 US gal, 0.42 Imp gal)

Carburetor

Identification mark	PE23A
Type	Piston valve
Venturi dia	27 mm (1.1 in)
Float level	18.5 mm (0.7 in)
Air screw opening	1-3/8
Idle speed	1,300 ± 150 rpm
Main jet	# 158
Jet needle	3rd STAGE
Throttle lever free play	5–10 mm (3/16–3/8 in)

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

Lean mixture

1. Carburetor fuel jets clogged
2. Fuel cap vent clogged or blocked
3. Fuel filter clogged
4. Fuel line kinked or restricted
5. Float valve faulty
6. Float level too low
7. Air vent tube clogged

Rich mixture

1. Choke stuck closed
2. Faulty float valve
3. Float level too high
4. Carburetor air jets clogged
5. Air cleaner dirty