

# HONDA

## SHOP MANUAL CB/CM400's



PART NO-HM1018

1978-81

## CB/CM400's

**HONDA****CB400T·400A/CM400T·400A·400E·400C****INTRODUCTION**

This Shop Manual is for these models:

'78: CB400T, CB400A

'79: CB400T, CM400T, CM400A

'80: CB400T, CM400T, CM400A, CM400E

'81: CB400T, CM400T, CM400A, CM400E, CM400C

**HOW TO USE THIS MANUAL**

The first part of this shop manual contains all information and procedures common to the CB/CM-400'S. After section 19, part two begins and it contains information and procedures for the Honda-matic models.

A 78½ Emissions Addendum follows the second part and it applies to all CB and CM400 models manufactured after December 31, 1977 (USA only).

Sections 1 through 3 apply to the whole motorcycle, while sections 4 through 17 describe parts of the motorcycle, 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 all the specifications, torque values, working practices, tools and materials required for the section. The subsequent pages give detailed procedures.

If you are not familiar with this motorcycle, read **TECHNICAL FEATURES**, section 18.

If you don't know the source of the trouble, see section 19, **TROUBLESHOOTING**.

Refer to the addendums at the back of the shop manual for 1978½ and subsequent years service information.

ALL PHOTOGRAPHS ARE BASED ON THE TYPE II MODEL.

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. HONDA MOTOR CO., LTD. RESERVES THE RIGHT TO MAKE CHANGES AT ANY TIME WITHOUT NOTICE AND WITHOUT INCURRING ANY OBLIGATION WHATEVER.

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Service Publications Office

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CHASSIS  
ELECTRICAL**PART II CB400A ONLY**

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ADDENDUMS

# PART 1



**HONDA**  
**CB400T**

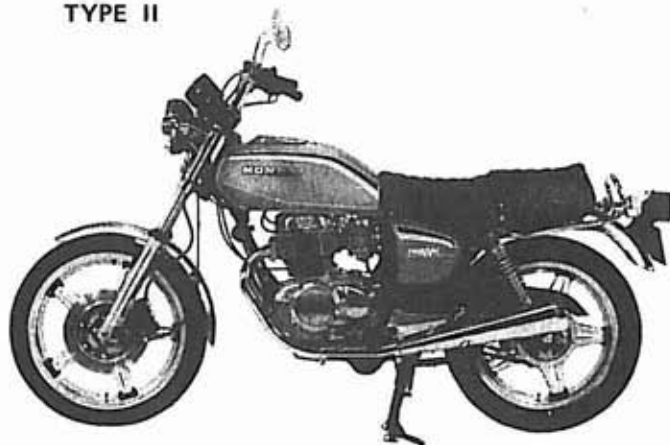
## MODEL IDENTIFICATION

TYPE I



CB400T (I) BEGINNING F/N 2000001

TYPE II

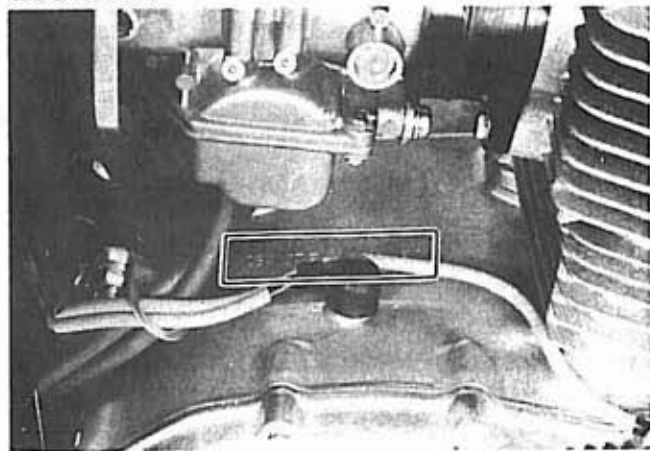


CB400T (II) BEGINNING F/N 4000032

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



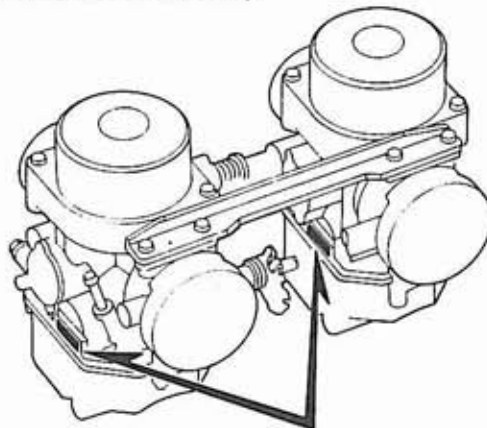
The engine serial number is stamped on the top of the crankcase.



The legal vehicle identification number (VIN) is on the left side of the steering head.



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



IDENTIFICATION NUMBER



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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 working 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 your eyes were exposed.*
- *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 do not meet HONDA's design specifications may damage the motorcycle.
2. Use the special tools designed for this product.
3. Install new gaskets, O-rings, cotter pins, lock plates, etc. when reassembling.
4. When torquing bolts or nuts, begin with larger-diameter or inner bolt first, and tighten to the specified torque diagonally, unless a particular sequence is specified.
5. Clean parts in cleaning solvent upon disassembly. Lubricate any sliding surfaces before reassembly.
6. After reassembly, check all parts for proper installation and operation.
7. Use only metric tools when servicing this motorcycle. Metric bolts, nuts, and screws are not interchangeable with English fasteners. The use of incorrect tools and fasteners may damage the motorcycle.





## SPECIFICATIONS

	Item		Metric	English
Dimensions	Overall length		2,130 mm	83.9 in.
	Overall width	Type I	830 mm	32.7 in.
		Type II	840 mm	33.1 in.
	Overall height	Type I	1,150 mm	45.3 in.
		Type II	1,180 mm	46.5 in.
	Wheel base		1,390 mm	54.7 in.
	Seat height		800 mm	31.5 in.
	Foot peg height	Right	315 mm	12.4 in.
		Left	325 mm	12.8 in.
	Ground clearance		165 mm	6.5 in.
Frame	Dry weight	Type I	159 kg	351 lbs.
		Type II	168 kg	370 lbs.
	Type		Diamond Type	
	F. suspension and travel		Telescopic fork, 139.5 mm (5.5 in.)	
	R. suspension and travel		Swing arm, 96 mm (3.8 in.)	
	F. tire size		3.60S19-4PR	
	R. tire size		4.10S18-4PR	
	Cold tire pressures	Up to 90 kg (206 lbs.) load	Front	1.75 kg/cm <sup>2</sup> 24 psi
			Rear	2.25 kg/cm <sup>2</sup> 32 psi
		Up to vehicle capacity load	Front	1.75 kg/cm <sup>2</sup> 24 psi
			Rear	2.5 kg/cm <sup>2</sup> 36 psi
	F. brake	Type I	Internal expanding shoes	
		Type II	Disk brake	
	R. brake		Internal expanding shoes	
	Fuel capacity	Type I	14 lit.	3.7 U.S. gal., 3.1 Imp. gal.
		Type II	13 lit.	3.4 U.S. gal., 2.9 Imp. gal.
	Fuel reserve capacity	Type I	3.2 lit.	0.8 U.S. gal., 0.7 Imp. gal.
		Type II	3.0 lit.	0.8 U.S. gal., 0.6 Imp. gal.
	Caster angle		63 degrees	
	Trail length		100 mm	3.9 in.
	Front fork oil capacity		140 ± 3 cc	4.9 ± 0.1 ozs.
Engine	Type		Air cooled 4 stroke O.H.C. engine	
	Cylinder arrangement		Vertical twin parallel	
	Bore and stroke		70.5 x 50.6 mm	2.776 x 1.992 in.
	Displacement		395 cc	24.1 cu-in.
	Compression ratio		9.3 : 1	
	Valve train		Chain driven over head camshaft	
	Oil capacity		3.0 lit.	3.2 U.S. qt., 2.6 Imp. qt.
	Lubrication system		Forced pressure and wet sump	
	Cylinder head compression pressure		13 ± 1.0 kg/cm <sup>2</sup>	185 ± 14 psi



	Item		Metric	English
Engine	Intake valve	Opens	57° BTDC (At 0 lift), 5° BTDC (At 1.0 mm lift)	
		Closes	87° ABDC (At 0 lift), 35° ABDC (At 1.0 mm lift)	
	Exhaust valve	Opens	90° BBDC (At 0 lift), 40° BBDC (At 1.0 mm lift)	
		Closes	55° ATDC (At 0 lift), 5° ATDC (At 1.0 mm lift)	
	Valve clearance	IN	0.10 mm ± 0.02 mm	0.004 ± 0.0008 in.
		EX	0.14 mm ± 0.02 mm	0.006 ± 0.0008 in.
	Idle speed		1,200 ± 100 rpm	
Carburetion	Carburetor type		CV type, 32 mm (1.26 in.) venturi bore	
	Setting number		VB21A	
	Pilot screw		1-1/2 turns out	
	Float level		15.5 mm	0.61 in.
Drive train	Clutch		Wet multi plate type	
	Transmission		5-speed constant mesh	
	Primary reduction ratio		3.125	
	Gear ratio I		2.733	
	Gear ratio II		1.850	
	Gear ratio III		1.416	
	Gear ratio IV		1.148	
	Gear ratio V		0.965	
	Final reduction ratio		2.312	
	Gear shift pattern		Left foot operated return system	
Electrical	Ignition		Capacitive discharge ignition	
	Ignition timing	"F" mark	15° BTDC at 1,200 rpm idle speed	
		Full advance	43° BTDC ± 2° at 4,500 to 5,350 engine rpm	
	Starting system	Type I	Kick starter	
		Type II	Starting motor and kick starter	
	Alternator		A.C. generator, 0.17 kw/5,000 rpm	
	Battery capacity	Type I	12V, 9 ampere-hours	
		Type II	12V, 12 ampere-hours	
	Spark plug		NGK-D8EA, ND-X24ES-U	
	Spark plug gap		0.6 ~ 0.7 mm	0.024 ~ 0.028 in.
Lights	Headlight (low/high beam)		35/50 W	
	Tail/stoplight		3/32 cp	SAE NO. 1157
	Turn signallight (front/rear)		32/32 cp	SAE NO. F. 1034, R. 1073
	Speedometer light		2 cp	SAE NO. 57
	Tachometer light (Type II only)		2 cp	SAE NO. 57
	Neutral indicator light		2 cp	SAE NO. 57
	Turn signal indicator light		2 cp	SAE NO. 57
	High beam indicator light		2 cp	SAE NO. 57
	Position light		3 cp	SAE NO. 1034



## TORQUE VALUES

### • ENGINE

	Item	Q'ty	Torque Values	
			kg-m	lbs-ft
1.	Cylinder head cover bolt	2	0.8-1.2	6-9
2.	Tappet adjusting nut	6	1.2-1.7	9-12
3.	Cylinder head bolt	8	3.0-3.3	22-24
4.	Cam sprocket knock bolt, 7 x 12 hex. bolt	2	1.8-2.2	13-16
5.	Spark plug	2	1.5-2.0	11-14
6.	Drive gear fixing bolt, 12 x 25 flange bolt	1	4.5-5.0	33-36
7.	Clutch center lock nut 20 mm	1	4.5-5.0	33-36
8.	Balancer, 8 mm nut	1	2.0-2.5	15-18
9.	Balancer, 10 mm nut	1	3.0-3.5	22-25
10.	A.C. generator rotor set bolt, 12 x 40 flange bolt	1	10.0-12.0	70-90
11.	Crankshaft holder bolt, 10 mm bolt	6	3.3-3.7	24-27
12.	Connecting rod nut	4	2.5-2.9	18-21
13.	Starting clutch bolt, TORX bolt	3	1.2-1.4	9-10
14.	Oil filter center bolt	1	2.8-3.2	20-23
15.	Oil drain plug	1	2.5-3.5	18-25
16.	Exhaust pipe flange nut, 6 mm	4	0.8-1.2	6-9
17.	Muffler chamber clamp bolt, 8 x 35 flange bolt	4	1.8-2.5	13-18
18.	Gear shift pedal, 6 x 32 flange bolt	1	0.8-1.2	6-9

### • CHASSIS

	Item	Q'ty	Torque Values	
			kg-m	lbs-ft
1.	Steering upper holder bolt, 8 x 36 flange bolt	4	1.8-2.5	13-18
2.	Steering lower holder bolt	4	2.3-3.0	17-22
3.	Steering stem nut	1	9.0-12.0	65-87
4.	Front fork bolt	2	7.0-9.0	51-65
5.	Front fork bottom bridge bolt, 8 x 40 hex. bolt	2	1.8-2.5	13-18
6.	Front brake disc bolt, 8 x 33 UBS bolt	5	2.7-3.3	20-24
7.	Caliper set bolt, 10 x 32 flange bolt	2	3.0-4.0	22-29
8.	Front brake caliper bleeder valve	1	0.7-0.9	5-7
9.	Rear brake stopper arm nut, 8 mm nut	2	1.5-2.3	11-17
10.	Front axle nut	1	5.0-8.0	36-58
11.	Front axle holder nut, 8 mm nut	4	1.8-2.5	13-18
12.	Rear axle nut	1	7.0-10.0	51-72
13.	Final driven sprocket, 10 mm nut	4	6.0-7.0	43-51
14.	Rear fork pivot nut, 14 mm nut	1	5.5-7.0	40-51
15.	Rear shock absorber upper bolt, 10 x 45 flange bolt	2	3.0-4.0	22-29
16.	Rear shock absorber lower bolt, 10 x 32 hex. bolt	2	3.0-4.0	22-29
17.	Foot peg bolt, 10 mm flange bolt	4	5.5-6.5	40-47
18.	Drive chain adjusting nut	2	0.8-1.2	6-9
19.	Fuel tank set bolt, 8 x 28 flange bolt	1	1.5-2.3	11-17
20.	Rear brake pedal pivot bolt, 8 x 65 flange bolt	1	1.8-2.5	13-18
21.	Engine hanger, 10 mm flange nut	5	4.5-6.0	33-43



## • STANDARD TORQUE SPECIFICATIONS

	Bolts and Nuts	Torque Values	
		kg-m	lbs-ft
1.	5 mm bolt and nut	0.45-0.6	3-4
2.	6 mm bolt and nut	0.8-1.2	6-9
3.	8 mm bolt and nut	1.8-2.5	13-18
4.	10 mm bolt and nut	3.0-4.0	22-29
5.	12 mm bolt and nut	5.0-6.0	36-43
6.	5 mm screw	0.35-0.5	3-4
7.	6 mm screw	0.7-1.1	5-8
8.	6 mm flange bolt and nut	1.0-1.4	7-10
9.	8 mm flange bolt and nut	2.0-3.0	14-22
10.	10 mm flange bolt and nut	3.0-4.0	22-29





## SPECIAL TOOLS/COMMON TOOLS

### • SPECIAL TOOLS

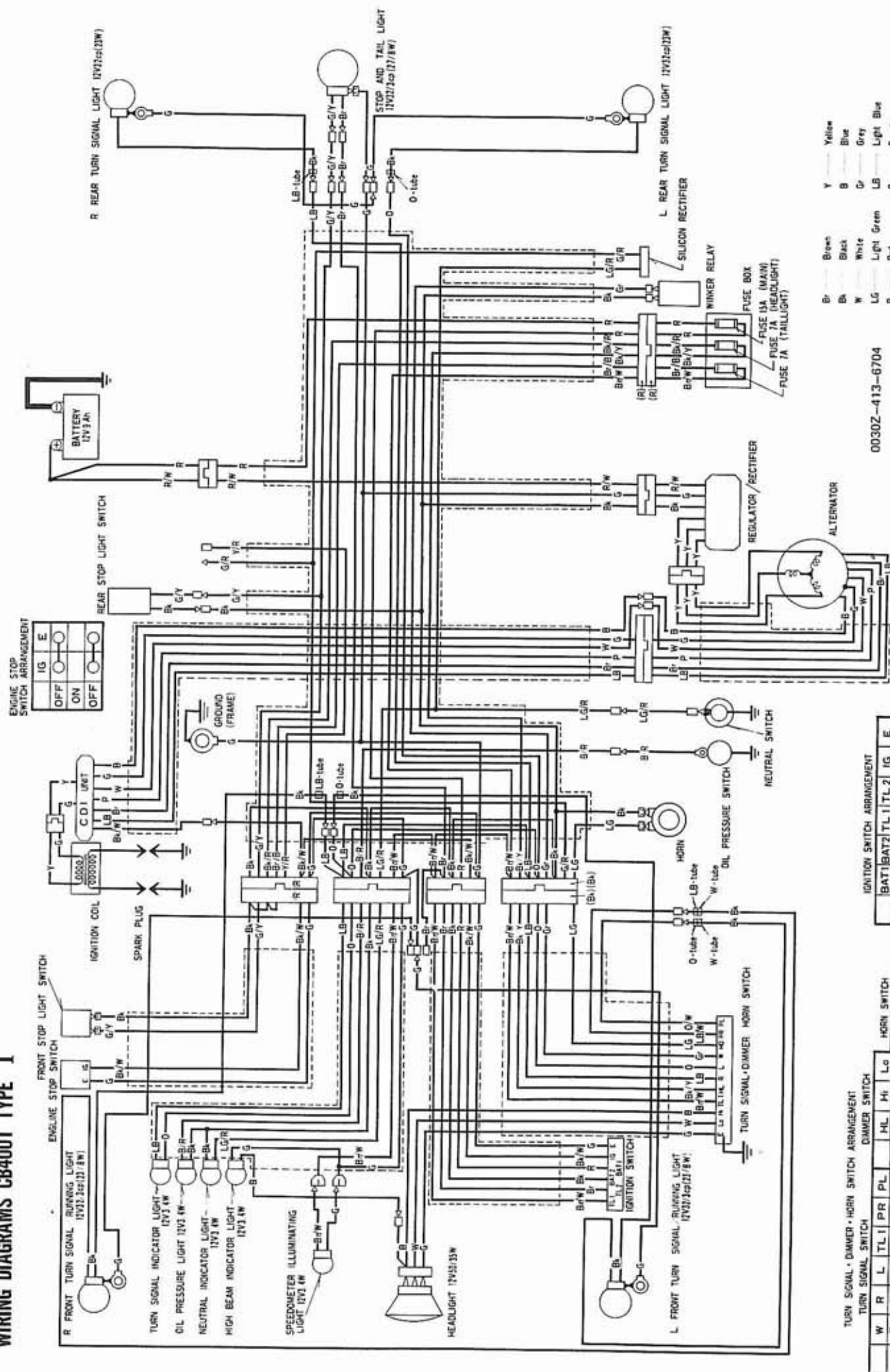
Tool Name	Part No.
Snap ring pliers	07914-3230001
Hollow set wrench (6 mm)	07917-3230000
Ball race driver — Bottom Steering Race*	07945-3330300
Ball race driver — Top steering Race*	07946-3290000
Ball race remover	07953-3330000
Valve guide reamer (IN)	07984-2000000
Valve guide reamer (EX)	07984-6110000
TORX driver bit (T-30)	07703-0010200
Piston ring compressor (2)	07954-2830000
Piston base (2)	07958-2500000
Tool case	07797-2920300

### • COMMON TOOLS

Tool Name	Part No.	Appropriation List (Common tool → Special tool)	
Float level gauge	07401-0010000	←	
Lock nut wrench socket (30 x 32 mm)	07716-0020400		
Pin spanner	07702-0010000		
Lock nut wrench socket (26 x 29 mm)	07716-0020201	Pin spanner	07902-2400000
Extension bar	07716-0020500		
Universal holder	07725-0010101	Flywheel holder	07923-0400000
Rotor puller	07733-0020000	Flywheel puller	07933-3950000
Valve guide remover (5.5 mm) (IN)	07742-0010100	Valve guide driver	07942-3290100
Valve guide remover (6.6 mm) (EX)	07742-0010200	Valve guide driver	07942-6110000
*Bearing driver outer (42 x 47 mm)	07746-0010300	*Bearing driver	07945-3330100
Bearing driver pilot (15 mm)	07746-0040300		
Bearing driver pilot (17 mm)	07746-0040400		
*Bearing driver outer (52 x 55 mm)	07746-0010400	*Bearing driver	{ 07946-3710200 07946-3290000
Bearing driver pilot (20 mm)	07746-0040500		
Front fork oil seal driver body	07747-0010100	} Fork seal driver	07947-3330000
Front fork oil seal attachment (D)	07747-0010500		
Bearing driver handle (A)	07749-0010000	Driver handle attachment	07949-6110000
Valve spring compressor	07757-0010000	Valve spring compressor	07957-3290001
Rear shock absorber compressor	07959-3290001	←	

The tools asterisked (\*) are to be used with the Handle—P/N 07749-0010000 or 07949-6110000 (also listed above).

## WIRING DIAGRAMS CB400T TYPE I



Gr	Brown	Y	Yellow
BA	Black	B	Blue
W	White	Gr	Gray
LG	Light Green	LB	Light Blue
R	Red	O	Orange
G	Green	P	Pink

0030Z--413-6704

IGNITION SWITCH ARRANGEMENT									
	BATT	BAT2	TL1	TL2	IG	E			
OFF									
ON									
P									
color									

TURN SIGNAL - DIMMER - HORN SWITCH ARRANGEMENT									
TURN SIGNAL SWITCH					DIMMER SWITCH				
	W	R	L		TL	PL	HL	Hi	Lo
R	○					○	○	○	○
N					○	○	○	○	○
L			○				○	○	○

HORN SWITCH

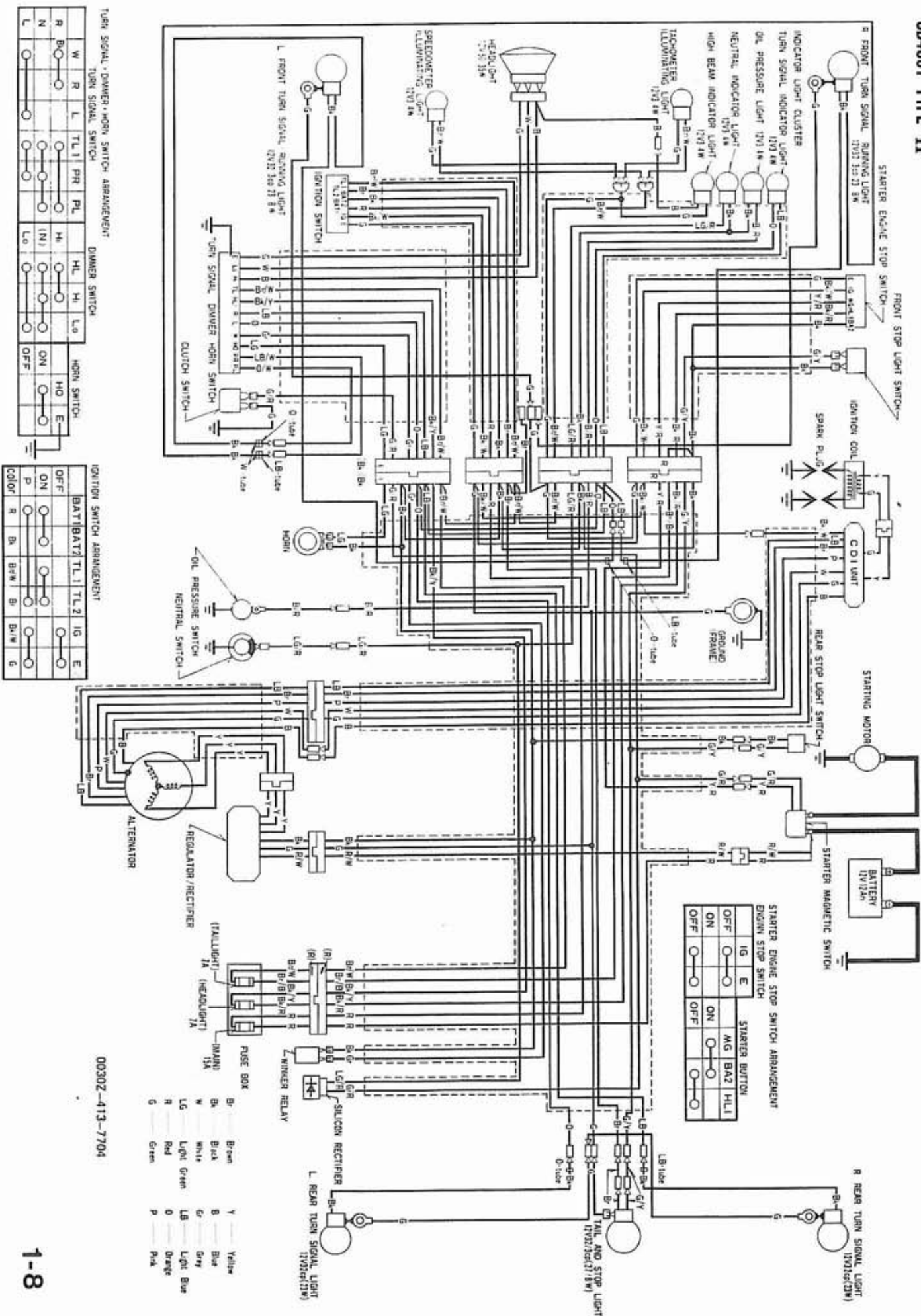
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ON

OFF

E

# CB400T TYPE II

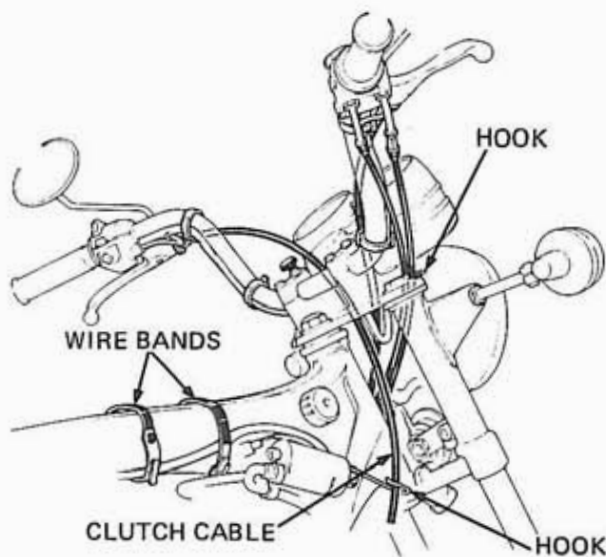
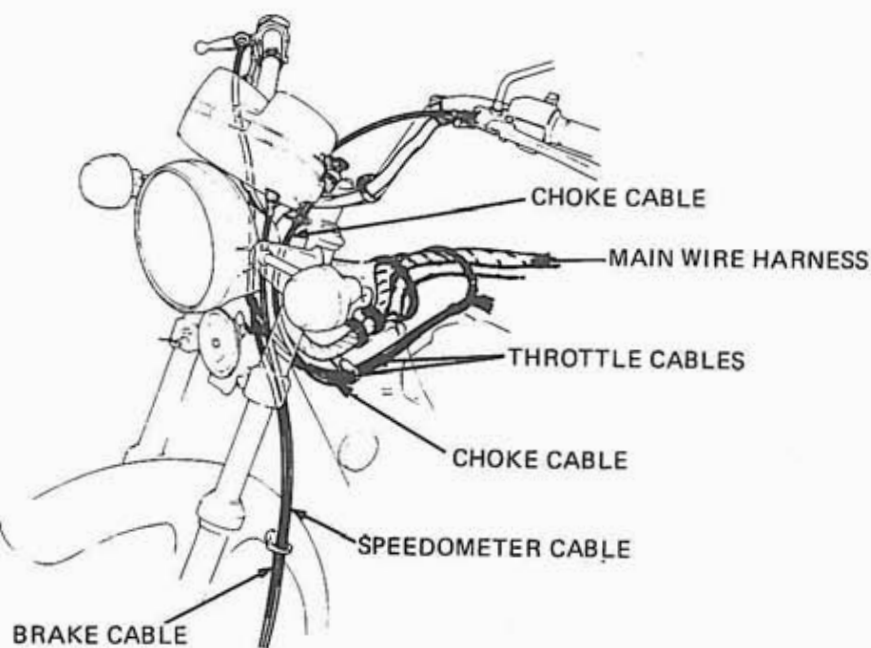
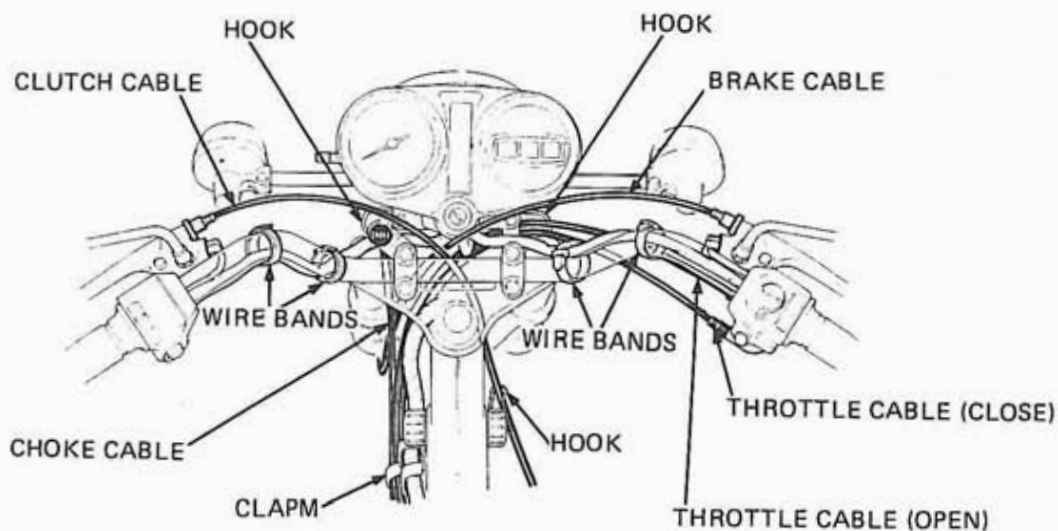


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## CABLE AND HARNESS ROUTING

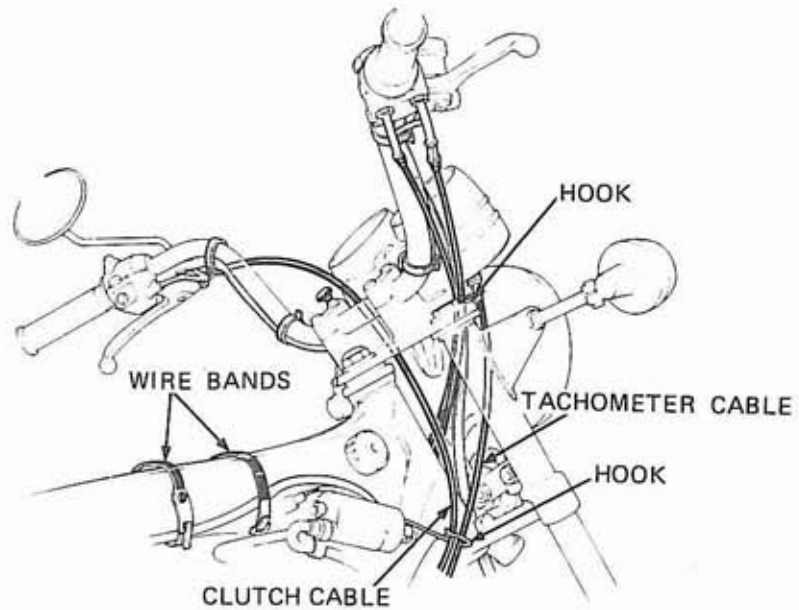
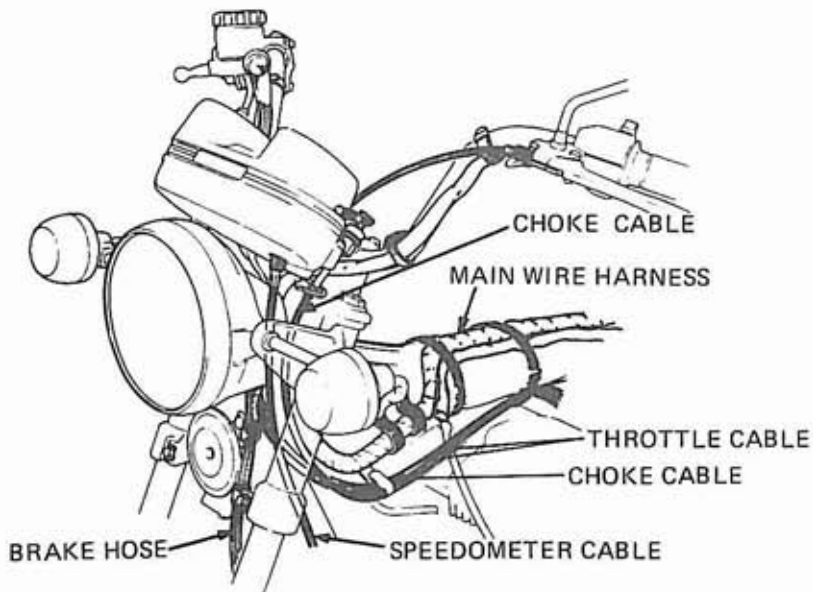
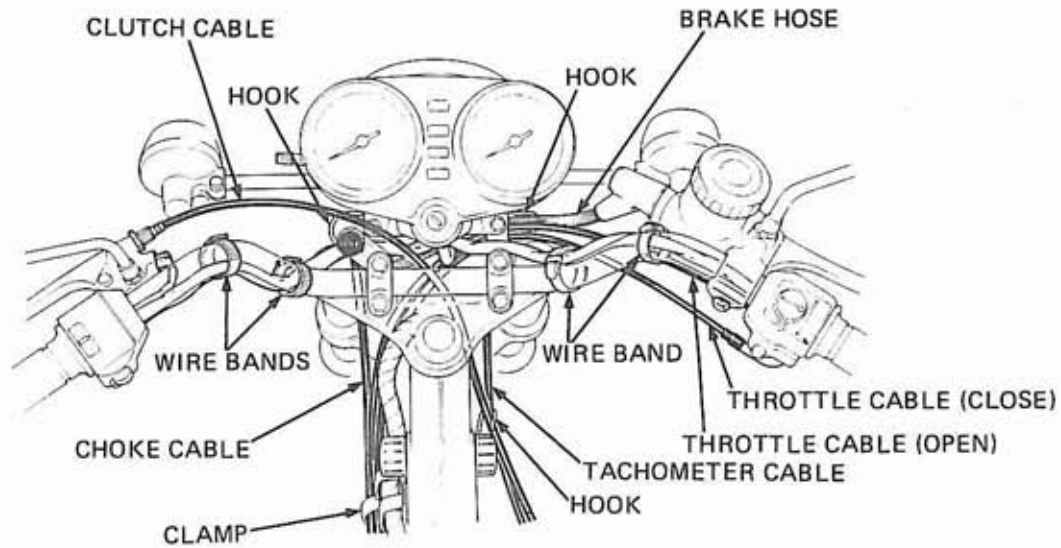
TYPE-I

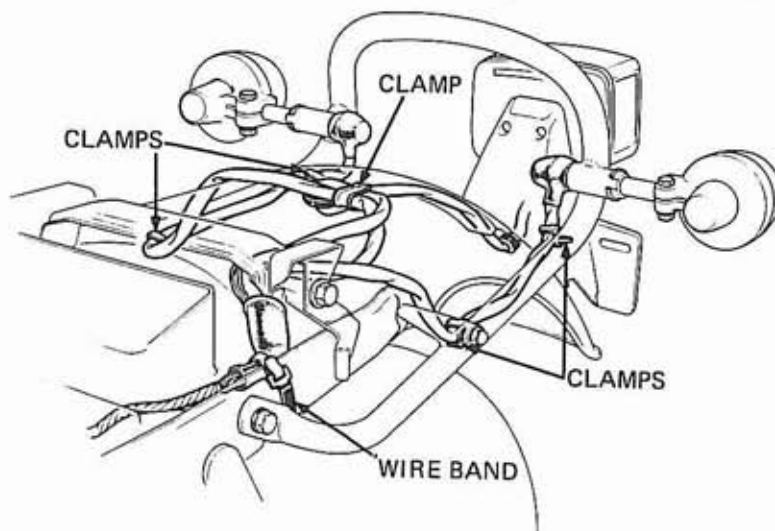
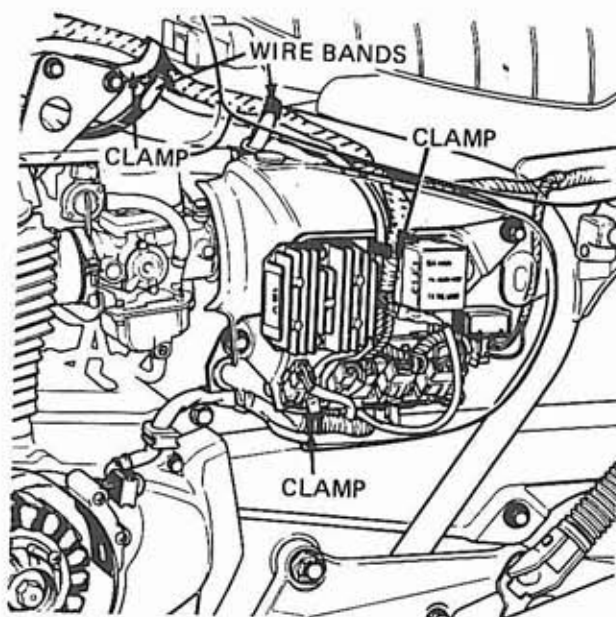
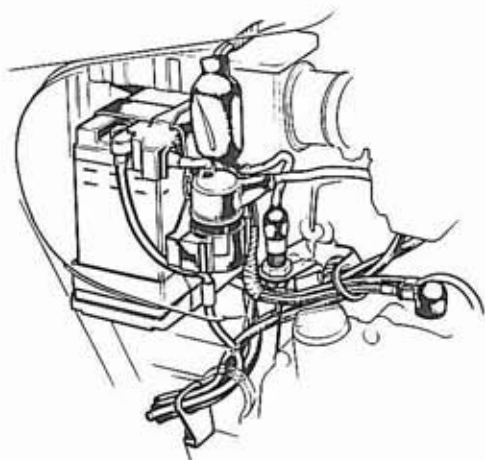
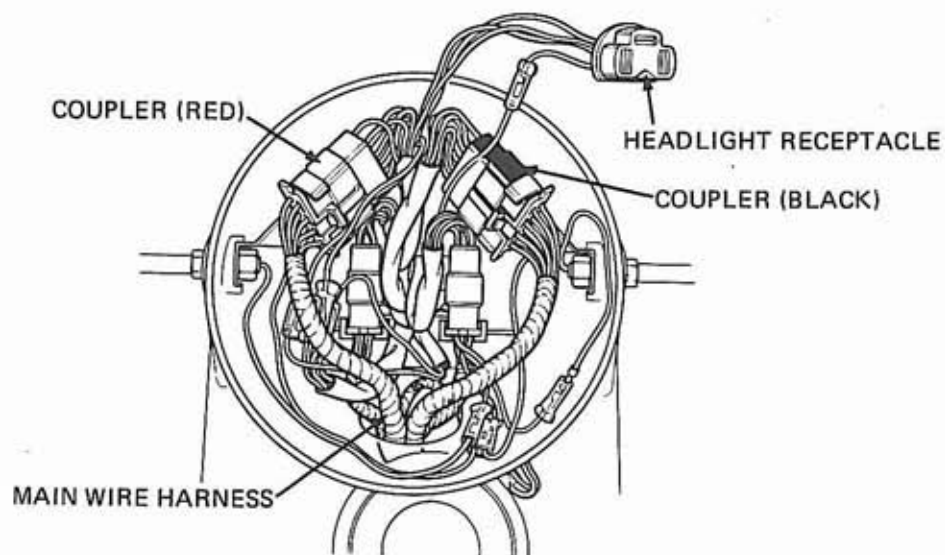






**TYPE-II**







## MAINTENANCE SCHEDULE

Perform the PRE-RIDE INSPECTION in the Owner's Manual at every maintenance period.

I: INSPECT, CLEAN, ADJUST, OR REPLACE IF NECESSARY.

C: CLEAN

R: REPLACE      A: ADJUST

ITEM	FREQUENCY	WHICHEVER COMES FIRST ↓	ODOMETER READING [NOTE (2)]						Refer to
	EVERY		600 mi (1,000 km)	3,600 mi (6,000 km)	7,200 mi (12,000 km)	10,800 mi (18,000 km)	14,400 mi (24,000 km)	18,000 mi (30,000 km)	
ENGINE OIL	YEAR	R	REPLACE EVERY 1,800 mi (3,000 km)						Page 2-2
ENGINE OIL FILTER	YEAR	R	R	R	R	R	R	R	Page 2-2
AIR CLEANER	NOTE (1)			C	C	C	C	C	Page 3-7
FUEL LINES			I	I	I	I	I	I	Page 3-7
SPARK PLUGS			I	R	I	R	I	I	Page 3-2
VALVE CLEARANCE			I	I	I	I	I	I	Page 3-3
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THROTTLE OPERATION			I	I	I	I	I	I	Page 3-4
CARBURETORS IDLE SPEED			I	I	I	I	I	I	Page 3-4
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CARBURETORS-SYNCHRONIZE			I	I	I	I	I	I	Page 3-5
BALANCER CHAIN TENSION						A			Page 3-7
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BATTERY ELECTROLYTE	MONTH		I	I	I	I	I	I	Page 3-14
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BRAKE FLUID	2 YEARS					R			Page 14-2
BRAKE SHOE/PAD WEAR				I	I	I	I	I	Page 3-10
BRAKE SYSTEM			I	I	I	I	I	I	Page 3-10 ~12
BRAKE LIGHT SWITCH			I	I	I	I	I	I	Page 3-12
HEADLIGHT AIM			I	I	I	I	I	I	
CLUTCH FREE PLAY			I	I	I	I	I	I	Page 3-9
SIDE STAND				I	I	I	I	I	Page 3-13
SUSPENSION			I	I	I	I	I	I	
NUTS, BOLTS, FASTENERS			I	I	I	I	I	I	
WHEELS/SPOKES			I	I	I	I	I	I	Page 3-14
STEERING HEAD BEARING			I	I	I	I	I	I	

- NOTES: (1) More frequent service may be required when riding in dusty areas.  
 (2) For higher odometer readings, repeat at the frequency interval established here.  
 (3) Initial service period: 200 miles.



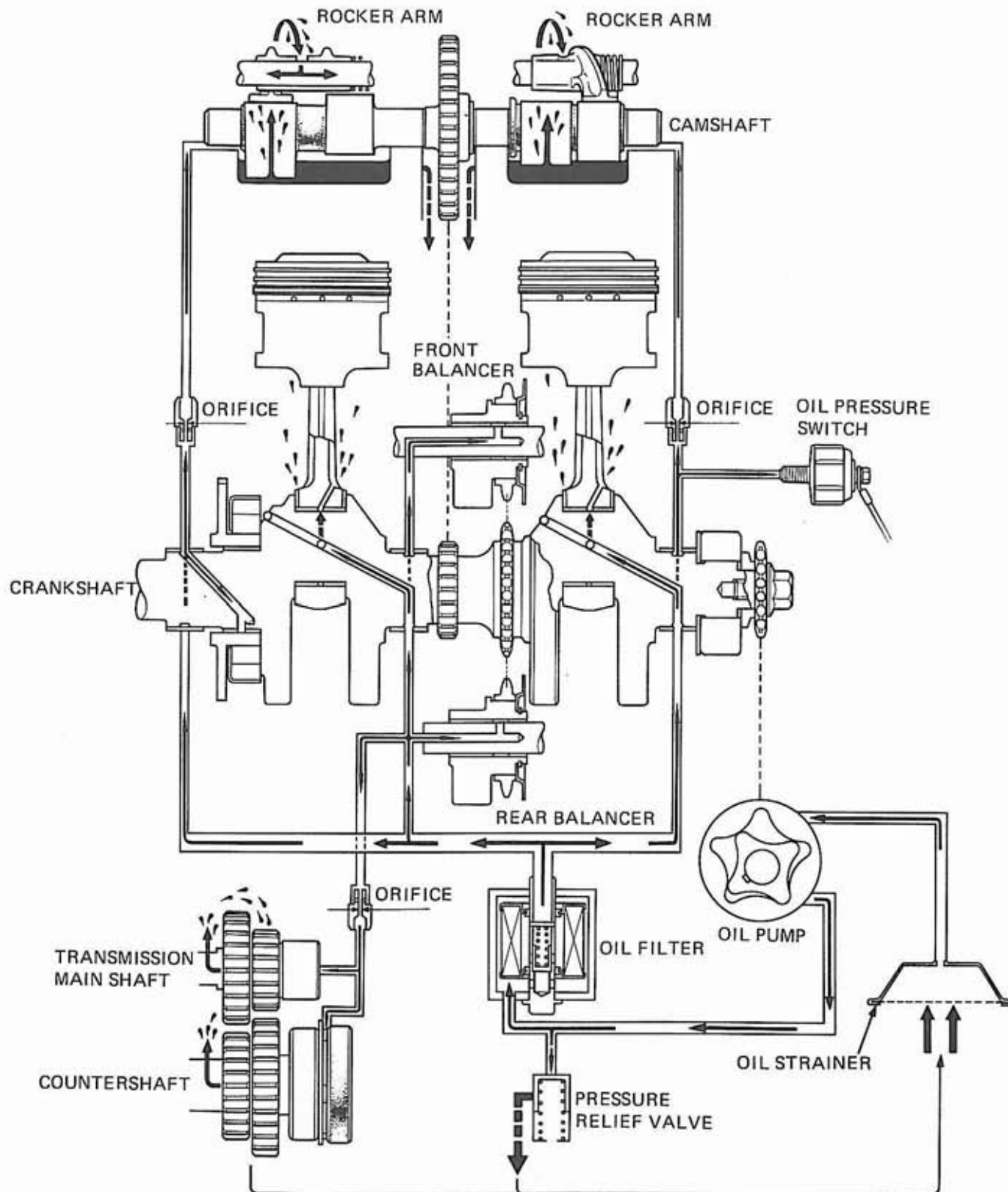
**HONDA**  
**CB400T**

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M E M O

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**LUBRICATION DIAGRAM**



SERVICE INFORMATION	2-1	ENGINE OIL & FILTER CHANGE	2-2
TROUBLESHOOTING	2-1	SWINGARM PIVOT	2-3
ENGINE OIL LEVEL	2-2	DRIVE CHAIN	2-3

## SERVICE INFORMATION

### • WORKING PRACTICE

Oil pump: Refer to Section 8.  
Oil pressure relief valve: Refer to Section 8.  
Oil filter screen: Refer to Section 10.

### • SPECIFICATION

Oil Capacity	3.0 liters (3.2 qt.) at engine assembly, 2.5 liters (2.6 qt.) at oil change.
Oil	HONDA 4-stroke oil or equivalent rated SE 10W-40
Oil Pump Delivery	11 ± 1 liters/4,000 rpm

## TROUBLESHOOTING

### Oil Level Too Low:

1. Normal oil consumption
2. External oil leaks
3. Worn piston rings

### Oil Contamination

1. Oil or filter not changed often enough
2. Faulty head gasket

### Low Oil Pressure

1. Faulty warning light switch
2. Pressure relief valve stuck open
3. Plugged oil pick-up screen
4. Oil pump worn

### High Oil Pressure:

1. Pressure relief valve stuck closed
2. Plugged oil filter, gallery, or metering orifice
3. Incorrect oil being used

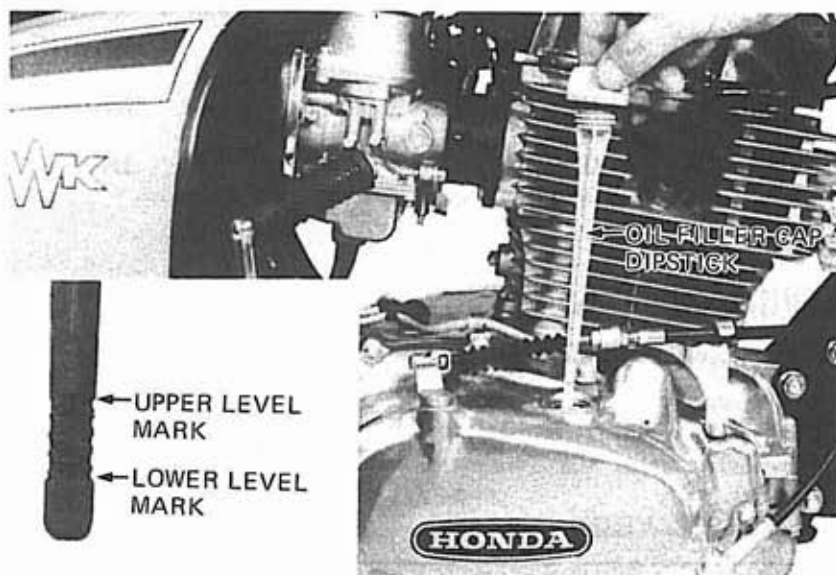
### No Oil Pressure

1. Oil level too low
2. Oil pump drive chain broken
3. Faulty oil pump



## ENGINE OIL LEVEL

Stop the engine and support the motorcycle on the center stand or hold it upright. Check the oil level with the filler cap dipstick after 2–3 minutes. Do not screw in the cap when making this check. If the level is below the lower level mark on the dipstick, fill to the upper level mark.



## ENGINE OIL & FILTER CHANGE

### NOTE

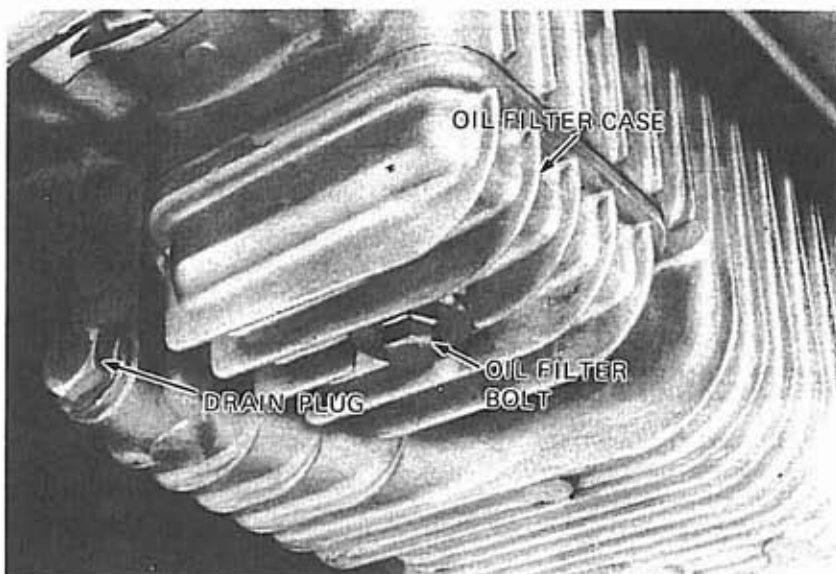
Engine oil change is performed with engine at normal operating temperature and vehicle upright or on center stand to assure complete and rapid draining.

Remove the oil filler cap after the engine is warm.

Remove the drain plug and oil filter case to drain oil from the engine.

Operate the kick starter several times to drain any oil which may be left in the recesses of the engine.

Check operation of the bypass valve in the oil filter bolt.



Make sure that the sealing washer on the drain plug and the O-rings on the oil filter bolt and the oil filter case are in good condition.

Tighten the oil filter bolt securely.

### TIGHTENING TORQUE:

2.8–3.2 kg-m (20–23 lbs-ft)

Reinstall the drain plug.

### TIGHTENING TORQUE

2.5–3.5 kg-m (18–25 lbs-ft)

Fill the crankcase with the recommended oil.

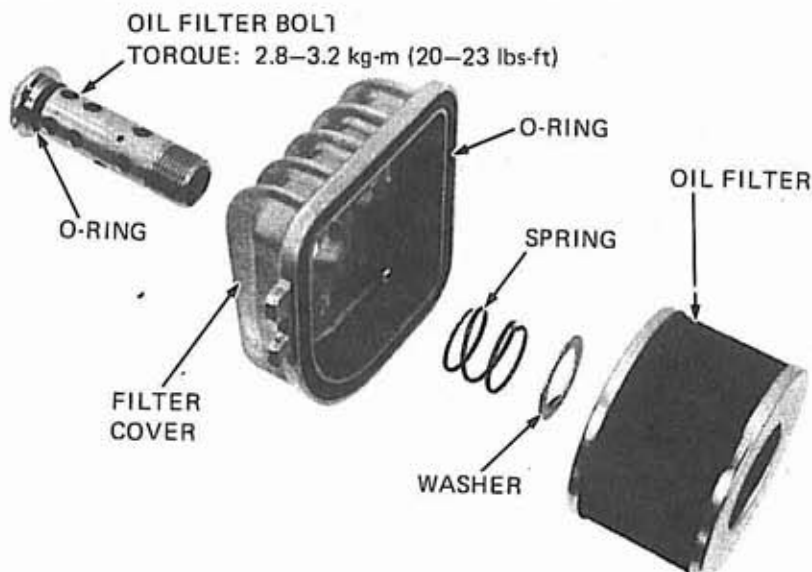
**OIL CAPACITY: APPROXIMATELY**  
2.5 liters (2.6 U.S.qt.)

**SPECIFIED OIL: HONDA 4-STROKE OIL**  
**OR AN EQUIVALENT**

Reinstall the oil filler cap.

Start the engine and allow to idle for a few minutes.

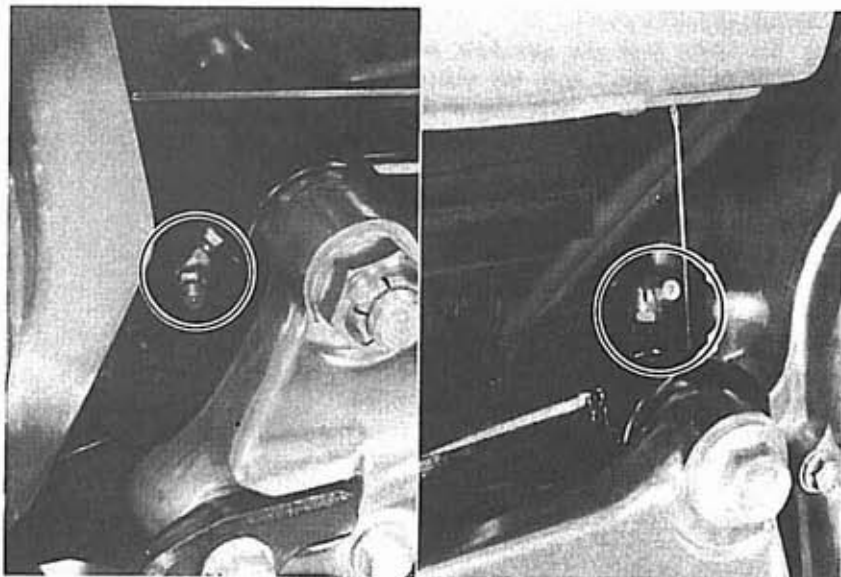
Stop the engine, make sure that oil level is at the upper level mark with the motorcycle upright, and there are no oil leaks.





## SWINGARM PIVOT

Two lubrication points are located as shown. Use multipurpose grease, Type NLGI No. 2.

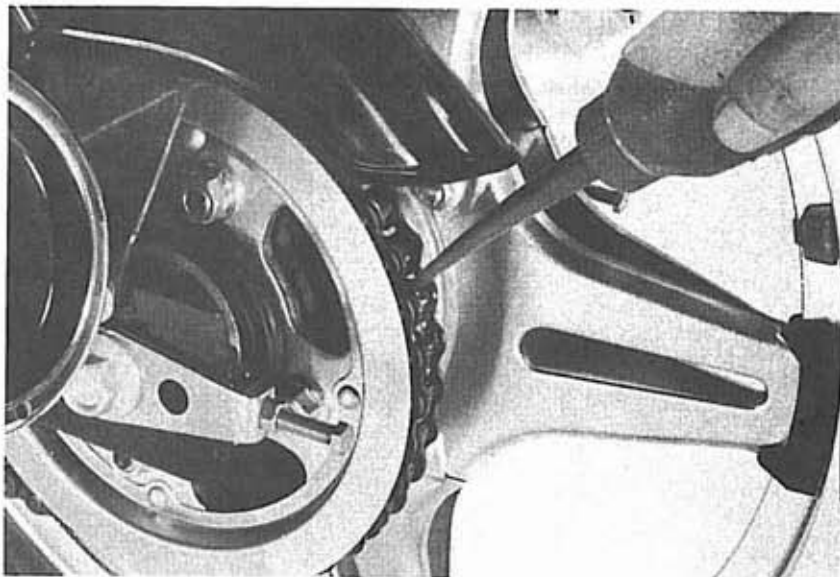


## DRIVE CHAIN

Commercially prepared drive chain lubricants should be used in preference to motor oil or other lubricants.

Normally drive chain lubrication is performed without removing the chain, at the time of chain adjustment.

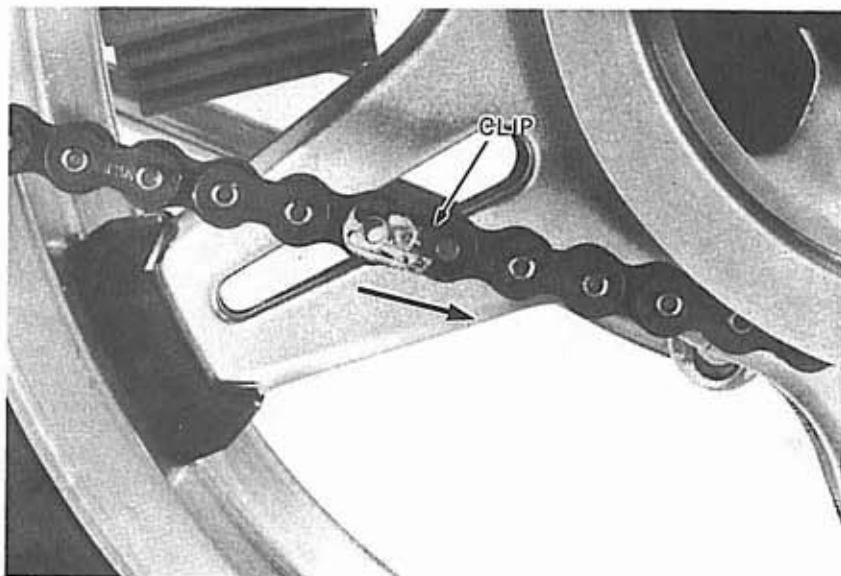
Saturate each chain link joint so that the lubricant penetrates between the link plates, pins, bushings and rollers.



When the drive chain becomes extremely dirty, it should be removed and cleaned prior to lubrication. Carefully remove the master link retaining clip with pliers. Do not bend or twist the clip. Remove the master link. Remove the drive chain from the motorcycle. Clean the drive chain in solvent and allow to dry. Inspect the drive chain for possible wear or damage. Replace any chain that has damaged rollers, loose fitting links, or otherwise appears unserviceable. Inspect the sprocket teeth for possible wear or damage. Replace if necessary.

### CAUTION

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







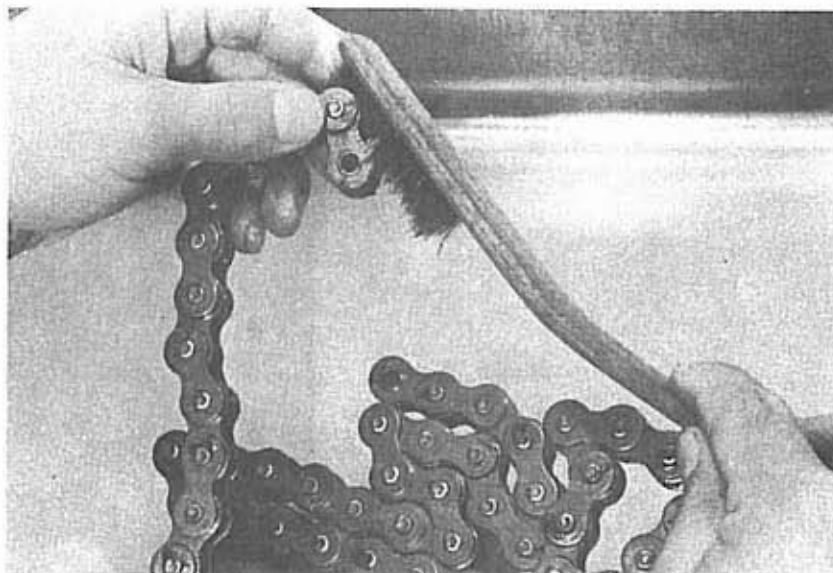
Lubricate the drive chain.

Pass the chain over the sprockets and join the ends of the chain with the master link. For ease of assembly, hold the chain ends against adjacent rear sprocket teeth while inserting the master link.

Install the master link retaining clip so that the closed end of the clip will face the direction of forward wheel rotation.

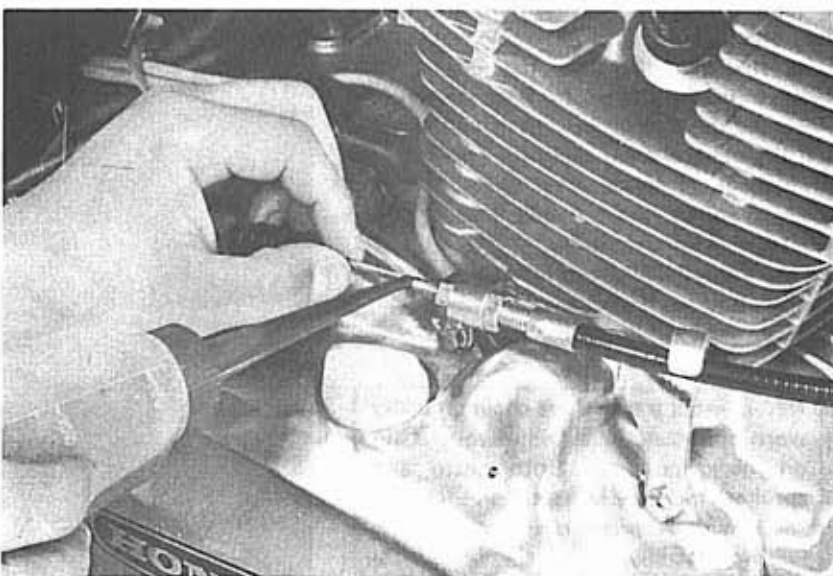
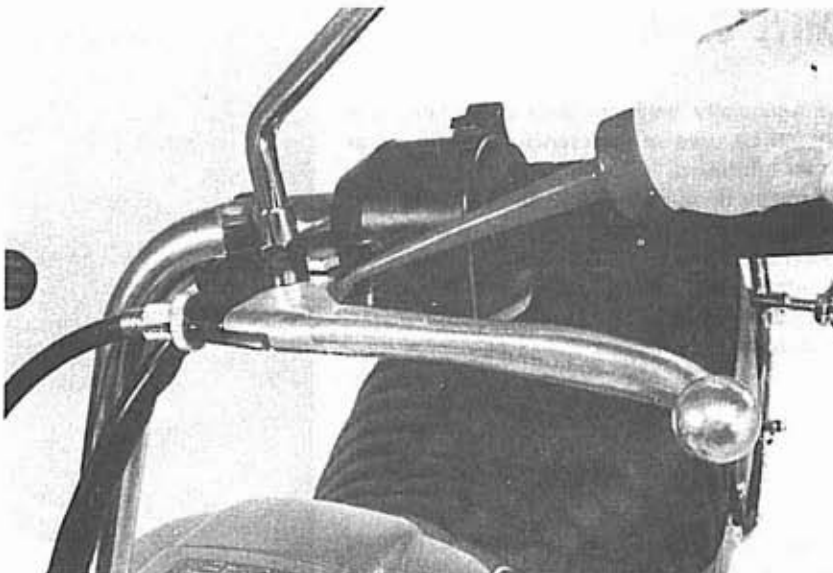
The master link is the most critical part affecting the security of the drive chain. Master links are reusable, if they remain in excellent condition, but it is recommended that a new master link be installed whenever the drive chain is reassembled.

Adjust the drive chain to the proper tension.



#### • MISCELLANEOUS LUBE POINTS

Lubricate the control cables, levers, and pedal pivots.





<b>&lt;ENGINE&gt;</b>		<b>AIR CLEANER MAINTENANCE</b>	<b>3-7</b>
SPARK PLUG ADJUSTMENT	3-2	FUEL LINE INSPECTION	3-7
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VALVE CLEARANCE ADJUSTMENT	3-3	CLUTCH ADJUSTMENT	3-9
CAM CHAIN ADJUSTMENT	3-3	<b>&lt;CHASSIS&gt;</b>	
THROTTLE OPERATION	3-4	FRONT BRAKE (DISC)	3-10
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		WHEELS/SPOKES	3-14

## • SPECIFICATIONS

### <ENGINE>

Spark plug gap, type: 0.6-0.7 mm (0.024-0.028 in.)  
 ND X24ES-U, NGK D8EA  
 Ignition timing "F" mark: 15° BTDC at 1,200 rpm  
 Full advance: 43° BTDC at 4,500-5,350 rpm  
 Valve clearance IN: 0.10 ± 0.02 mm (0.004 ± 0.0008 in.)  
 EX: 0.14 ± 0.02 mm (0.006 ± 0.0008 in.)  
 Throttle free play: 2-6 mm (0.08-0.24 in.)  
 Idle speed: 1,200 ± 100 rpm  
 Synchronization vacuum: 200-240 mmHg  
 Fast idle speed: 2,500 ± 500 rpm  
 Compression: 13 ± 1 kg/cm<sup>2</sup> (185 ± 14 psi)  
 Clutch free play: 10-20 mm (3/8-3/4 in.)

## • TORQUE VALUES

Balancer adjuster nut (8 mm): 2.0-2.5 kg-m (15-18 lbs-ft)  
 Balancer pivot nut (10 mm): 3.0-2.5 kg-m (22-25 lbs-ft)  
 Front axle nut: 5.0-8.0 kg-m (36-58 lbs-ft)  
 Front axle holder nut: 1.8-2.5 kg-m (13-18 lbs-ft)  
 Rear axle nut: 7.0-10.0 kg-m (51-72 lbs-ft)  
 Spoke nipples: 0.2-0.35 kg-m (1.4-2.5 lbs-ft)

### <CHASSIS>

Front brake (drum) free play: 20-30 mm (3/4-1-1/4 in.)  
 Rear brake free play: 20-30 mm (3/4-1-1/4 in.)  
 Drive chain play: 20 mm (3/4 in.)  
 Tire pressures:  
 Up to 90 kg (200 lbs) load  
 Front 1.75 kg/cm<sup>2</sup> (24 psi)  
 Rear 2.25 kg/cm<sup>2</sup> (32 psi)  
 Up to vehicle capacity load  
 Front 1.75 kg/cm<sup>2</sup> (24 psi)  
 Rear 2.5 kg/cm<sup>2</sup> (36 psi)

**(ENGINE)****SPARK PLUGS**

Disconnect the spark plug caps and remove the spark plugs.

Visually inspect the spark plug electrodes for wear. The center electrode should have square edges and the side electrodes should have a constant thickness. Discard the spark plug if there is apparent wear or if the insulator is cracked or chipped. If the spark plug deposits can be removed by sandblasting, the spark plug can be reused.

Adjust the spark plug gap by bending the side electrode.

**SPARK PLUG GAP:** 0.6–0.7 mm  
(0.024–0.028 in.)

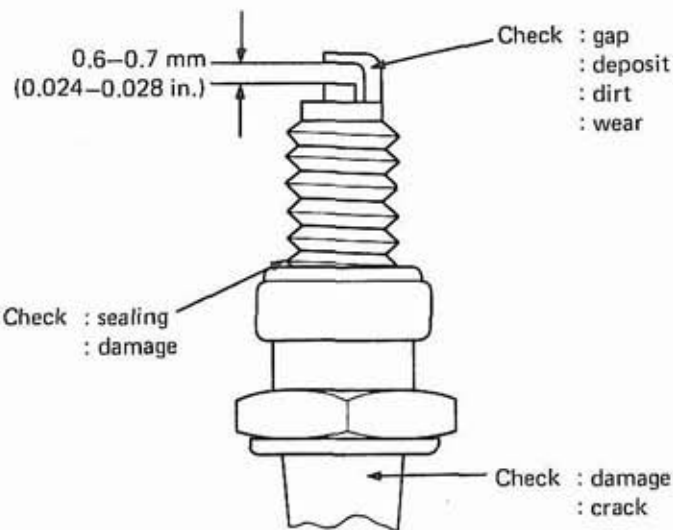
**RECOMMENDED SPARK PLUG:**

NGK D8EA  
ND X24ES-U

Reinstall the spark plugs and reconnect the spark plug caps.

**NOTE**

First tighten the spark plug finger tight, then tighten with a spark plug wrench.

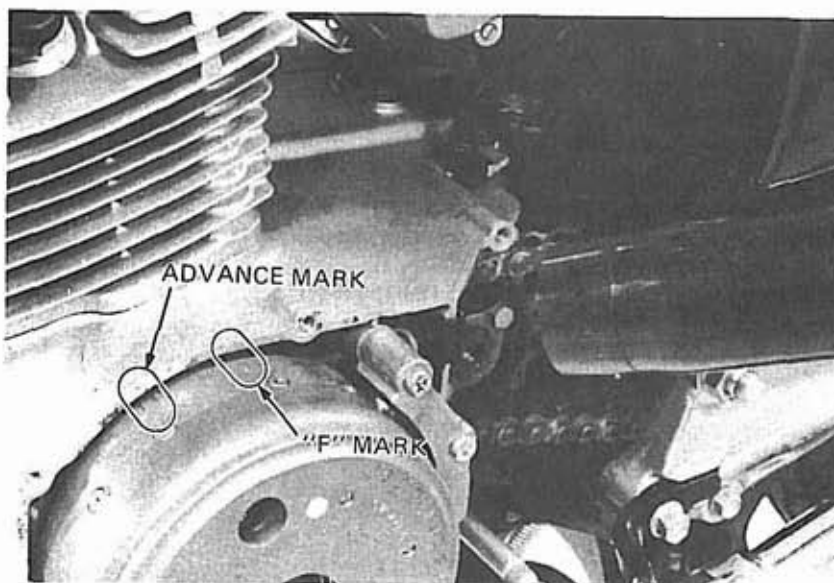
**IGNITION TIMING CHECK****NOTE**

The C.D.I. (Capacitive Discharge Ignition) ignition timing is not adjustable. If the ignition timing is incorrect, check the C.D.I. unit and A.C. generator and replace any defective parts. See Section 16.

Remove the left crankcase cover. Check the ignition timing using a strobe light (07308–0070000).

Timing is correct if the index mark aligns with the "F" mark at idle.

Also check that the index mark is between the advance marks at 5,350 rpm.





### VALVE CLEARANCE ADJUSTMENT

#### NOTE

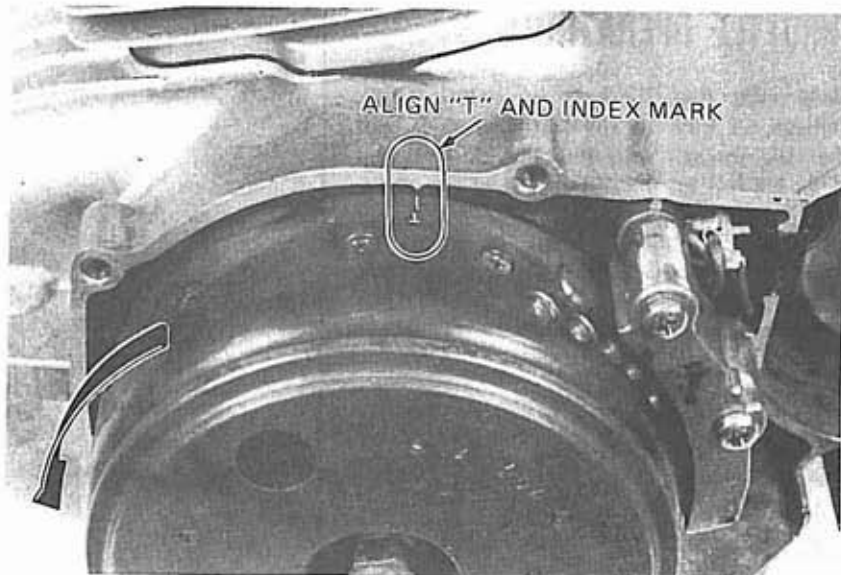
Inspect and adjust valve clearance while the engine is cold. (Below 35°C, 95°F)

Remove the seat.

Turn the fuel valve "OFF" and remove the fuel tube and fuel tank.

Remove the left crankcase cover and cylinder head cover.

Rotate the flywheel counterclockwise and align the rotor "T" mark with the crankcase index mark.



Check the intake and exhaust valve clearance by inserting the feeler gauge between the clearance adjusting screw and the valve stem. Before checking, make sure that the piston is at TDC on the compression stroke. (The rockers should be loose.)

#### VALVE CLEARANCE:

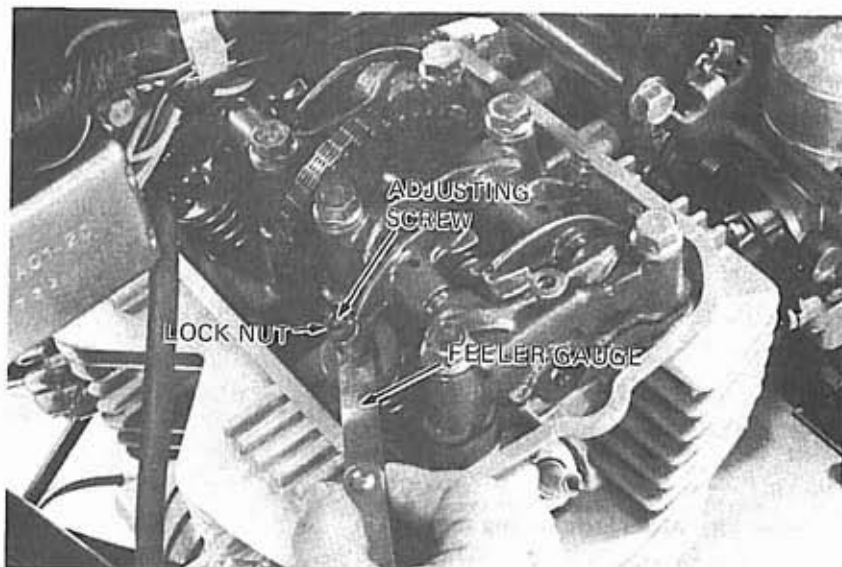
IN:  $0.10 \pm 0.02$  mm ( $0.004 \pm 0.0008$  in.)

EX:  $0.14 \pm 0.02$  mm ( $0.006 \pm 0.0008$  in.)

Adjust by loosening the lock nut and turning the screw until there is a slight drag on the feeler gauge.

Tighten the locknut and recheck clearance. Rotate the flywheel counterclockwise one full turn and align the "T" mark with the index mark.

Check the intake and exhaust valve clearance for the opposite cylinder.

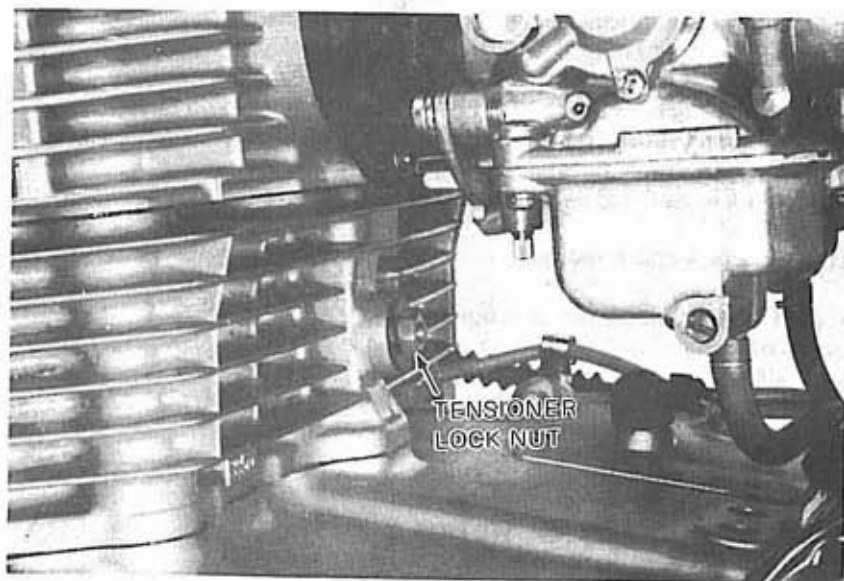


### CAM CHAIN ADJUSTMENT

Start the engine and allow it to idle.

Loosen the cam chain tensioner lock nut.

When the cam chain tensioner lock nut is loosened, the tensioner will automatically position itself to provide the correct tension. Retighten the lock nut.





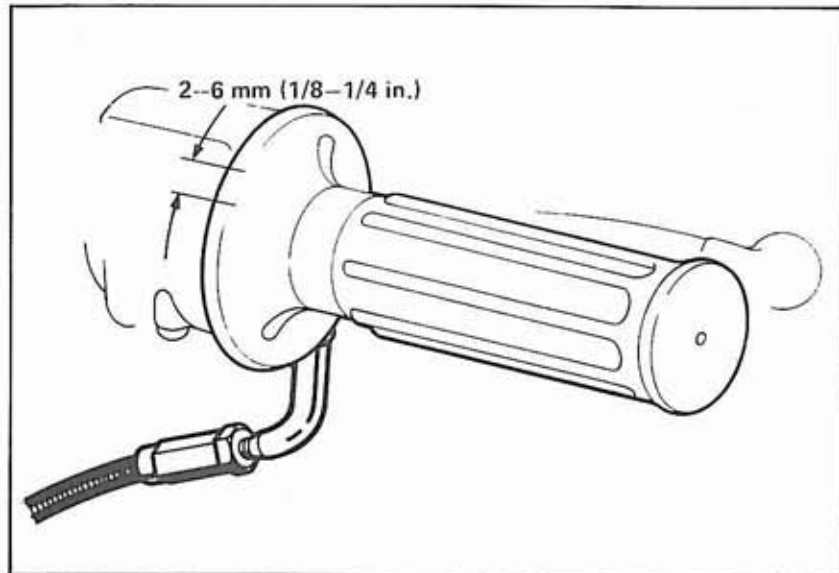


## THROTTLE OPERATION

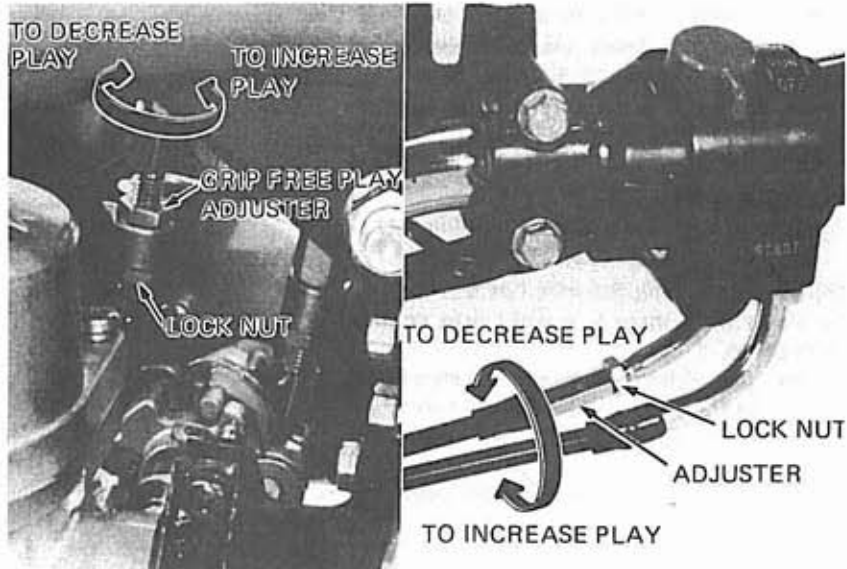
Make sure that there is no deterioration, damage, or kink in the throttle cables, and that the throttle grip free play is 2–6 mm (1/8–1/4 in.) on the outer edge of the throttle grip flange.

Check for smooth throttle grip rotation from fully closed to fully opened positions at all steering positions.

Adjust or replace, if necessary.



Throttle grip free play can be adjusted at either end of the throttle cable. Major adjustments must be made at the lower adjuster. To adjust, loosen the grip play adjuster lock nut and turn the adjuster in either direction. Minor adjustments must be performed at the upper adjuster.



## IDLE SPEED ADJUSTMENT

### NOTE

Adjust idle after synchronizing carburetors. The engine must be warm for accurate idle adjustment. Ten minutes of stop-and-go driving should be sufficient.

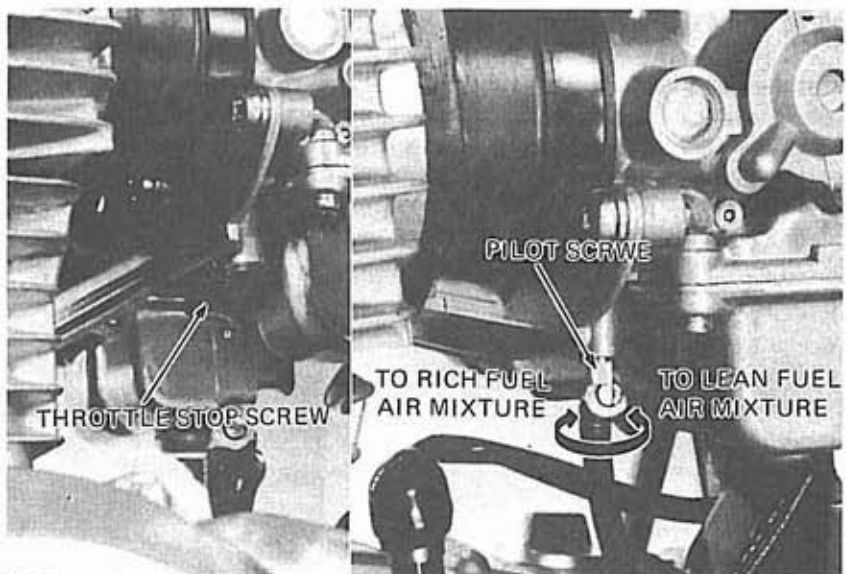
Warm up the engine, shift to NEUTRAL, and put the motorcycle on its centerstand or hold it upright. Turn the throttle stop screw as required to obtain the specified idle speed.

**IDLE SPEED: 1,200 ± 100 rpm**

If pilot screw adjustment is required, turn each pilot screw to find the highest idle speed. Reset idle speed with the throttle stop screw. Repeat this sequence once.

### NOTE

Turning pilot screw in produces lean fuel mixture; turning out produces a rich fuel mixture.





## CARBURETOR SYNCHRONIZATION

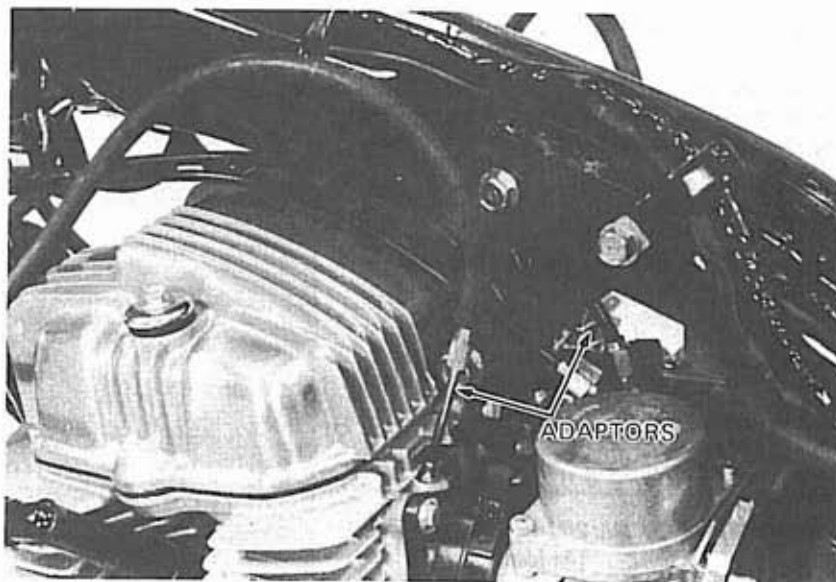
### NOTE

Perform carburetor synchronization with engine at normal operating temperature and motorcycle on the center stand or upright.

Remove the seat.

Turn the fuel valve OFF and remove the fuel tube and fuel tank.

Prepare a longer fuel tube and reconnect it to the fuel tank and carburetor.

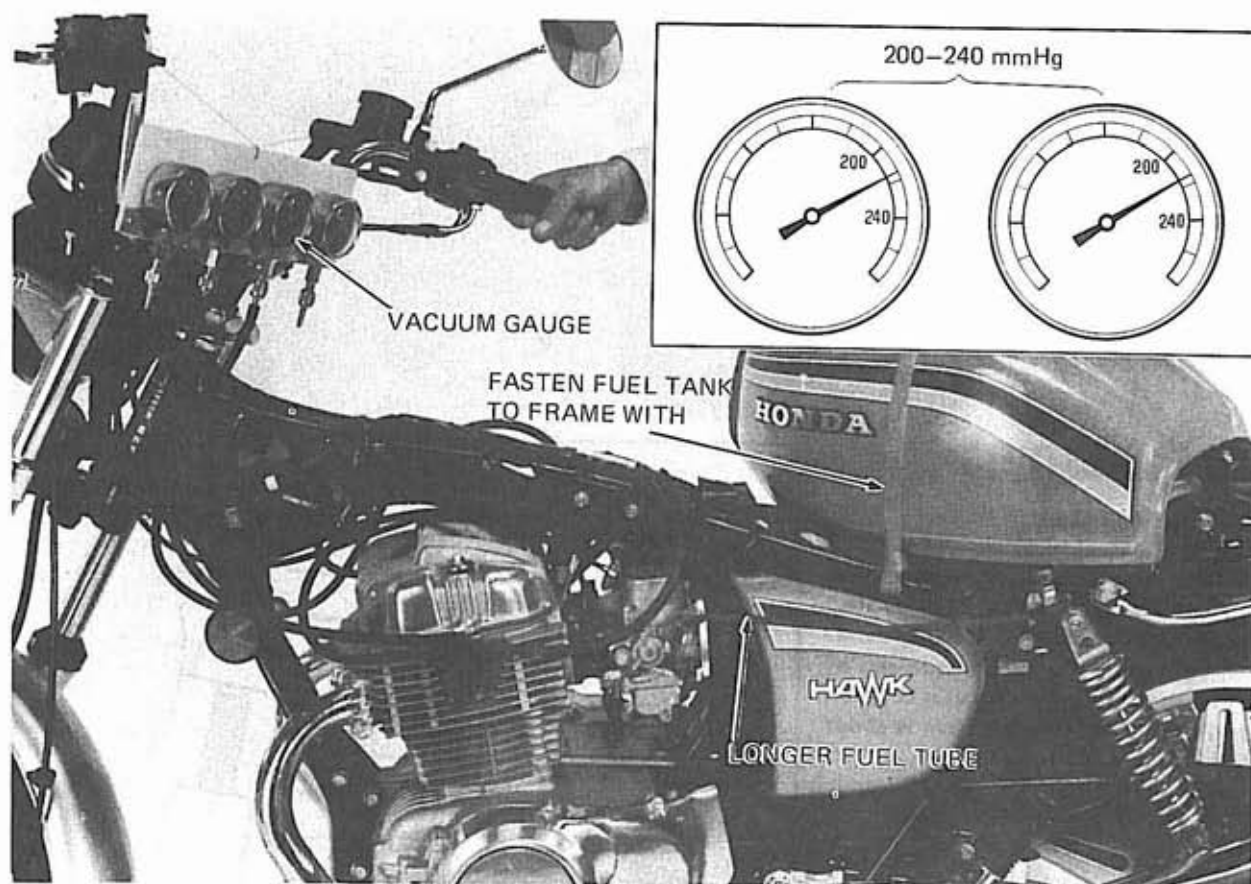


Position the tank higher than the carburetors.

Remove the plugs from cylinder head and install the adapters.

Connect vacuum gauges to the adapters.

Start the engine and set the idle speed at  $1,200 \pm 100$  rpm.







## • ADJUSTMENT

Loosen the lock nut.

Check the vacuum balance between the left and right cylinders and adjust with the adjusting screw.

Turning adjusting screw to right: Vacuum on right carburetor decreases.

Turning adjusting screw to left: Vacuum on right carburetor increases.

### NOTE

- There will be slight changes in speed and vacuum on left carburetor.
- Make sure that the difference in vacuum readings is within 40 mmHg.

**SPECIFIED VACUUM: 200–240 mmHg**  
(At idle)

Retighten the lock nut securely.

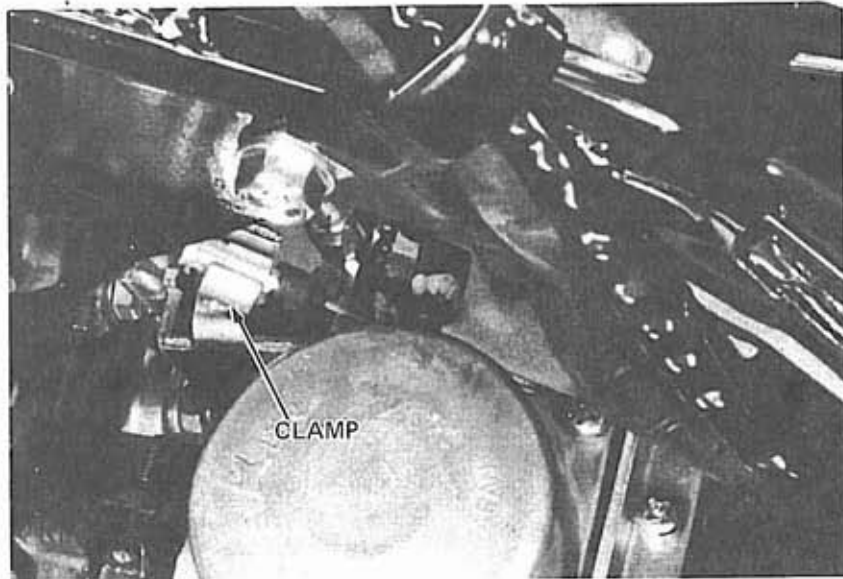
Recheck synchronization and idle speed.

Reinstall the fuel tank and seat.

## CHOKE MECHANISM MAINTENANCE

Check for smooth choke knob operation.

Pull the choke knob to "fully closed" and make sure that the choke is fully closed. When adjustment is necessary, loosen the choke wire clamp and adjust the choke wire. Retighten the clamp, holding the choke lever fully closed.

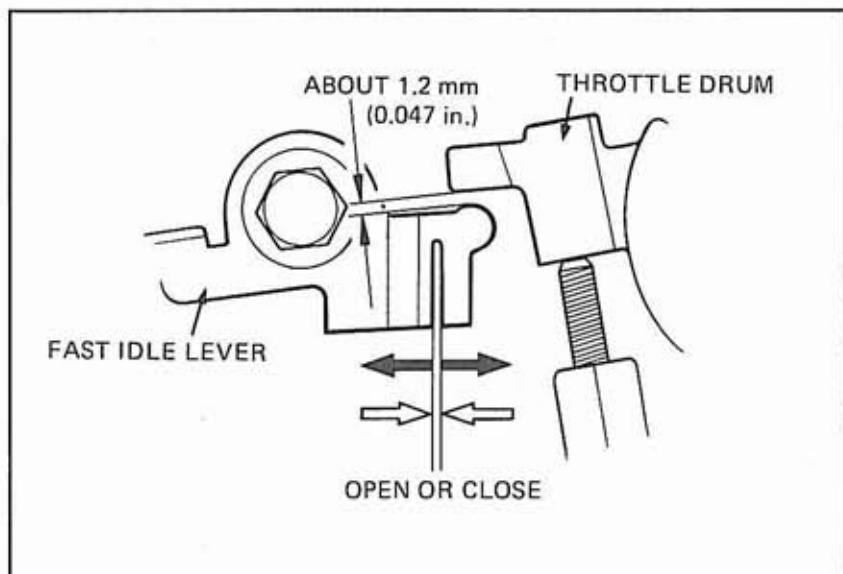


## FAST IDLE ADJUSTMENT

**SPECIFIED FAST IDLE:**

**2,500 ± 500 rpm**

If adjustment of the fast idle is necessary, remove the carburetor, return the throttle stop screw, and close the throttle valve. Adjust by opening or closing the fork end of the fast idle lever until the clearance between the fast idle lever and throttle drum is about 1.2 mm (0.047 in.)





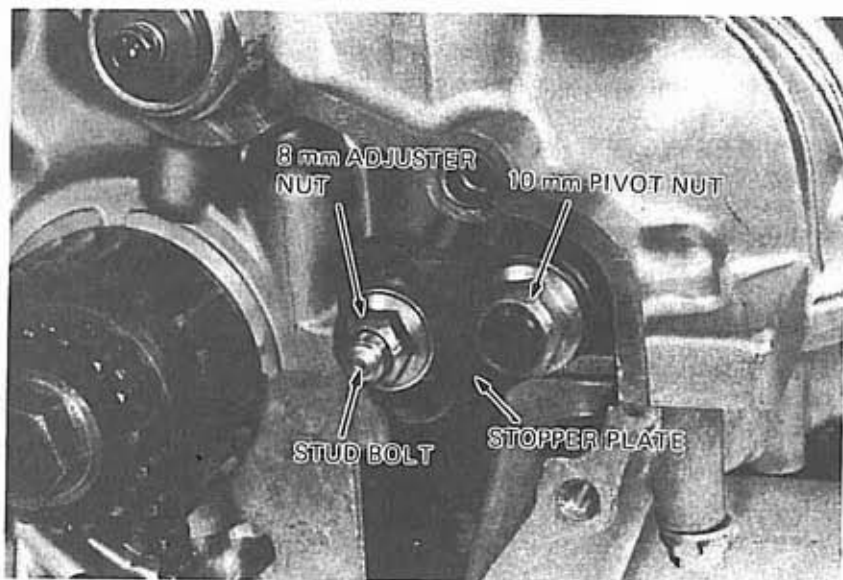
### BALANCER CHAIN ADJUSTMENT

Drain oil from the engine.  
Remove the tachometer and clutch cables.  
Remove the right foot peg and kick starter arm.  
Remove the right crankcase cover.  
Loosen the 8 mm adjuster nut.

#### NOTE

When this nut is loosened, the balancer will position itself to provide proper chain tension.

Retighten the 8 mm nut.  
**TORQUE: 2.0–2.5 kg-m (15–18 lbs-ft)**



#### CAUTION

Readjust as follows if the stopper plate is lowered so that the groove contacts the stud bolt.

Remove the 10 mm and 8 mm nuts; remove the stopper plate.  
Install the stopper plate with different spline engagement.  
Reinstall 8 mm and 10 mm nuts and tighten to specified torques:

#### TORQUE:

8 mm: 2.0–2.5 kg-m (15–18 lbs-ft)

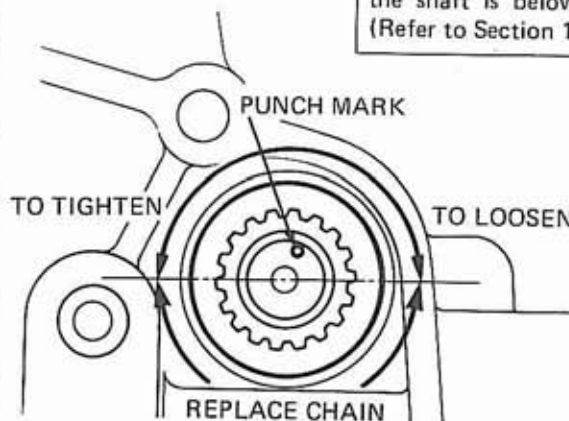
10 mm: 3.0–3.5 kg-m (22–25 lbs-ft)

#### NOTE

Install the 8 mm nut first.

#### CAUTION

Replace the chain if the punch mark on the shaft is below the horizontal line. (Refer to Section 10.)



### AIR CLEANER MAINTENANCE

Remove the seat.  
Remove the air cleaner cover by removing the attaching screws.

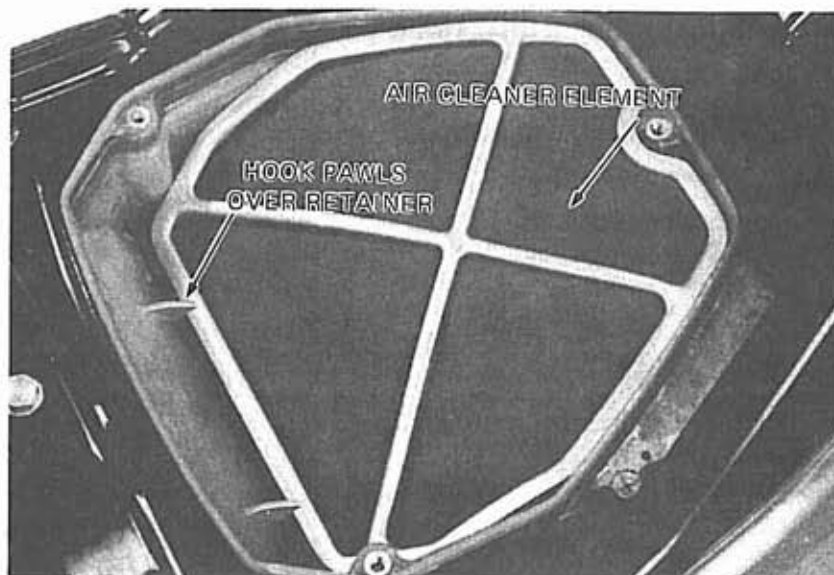




Remove the air cleaner element.  
Wash the element in non-flammable or high flashpoint solvent and allow the element to dry.

Submerge the air cleaner element in clean gear oil (SAE80-90) or engine oil. Squeeze out excess oil.

Reinstall the element and air cleaner cover.



## FUEL LINE INSPECTION

Make sure that there is no deterioration, damage, or leaks in fuel tube and joints.

If there is any deterioration, damage or leakage, install new parts.

## COMPRESSION TEST

Warm up the engine.

Remove the spark plugs.

Insert the compression gauge.

Open the choke and throttle valves fully.

Crank the engine electrically or operate the kick starter.

### NOTE

Crank the engine until the gauge reading stops rising. The maximum reading is usually reached in five or six revolutions (kick pedal) or several seconds (electric starter).

COMPRESSION PRESSURE:  $13 \pm 1 \text{ kg/cm}^2$   
( $185 \pm 14 \text{ psi}$ )

If the compression pressure is low, check the following items:

- Leaky valves
- Improper valve tappet clearance
- Blown cylinder head gasket
- Worn piston/cylinder

If the compression is high, it indicates that carbon deposits have accumulated on the combustion chamber wall or on the piston top.



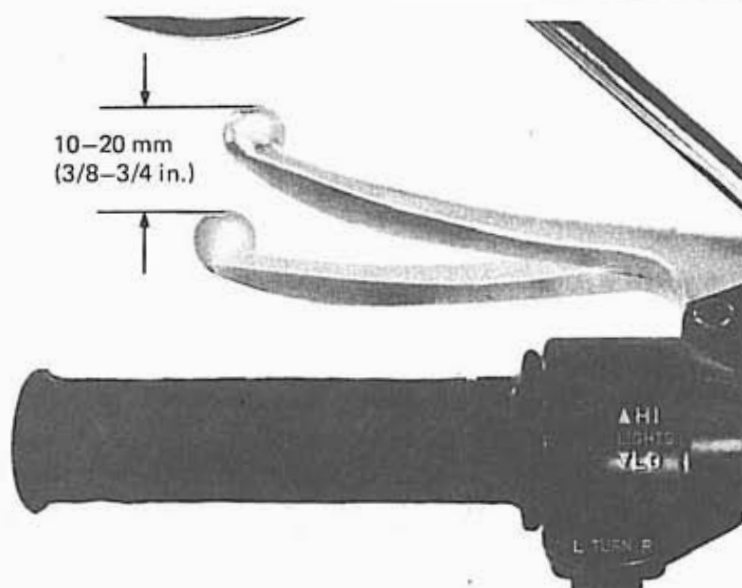


## CLUTCH ADJUSTMENT

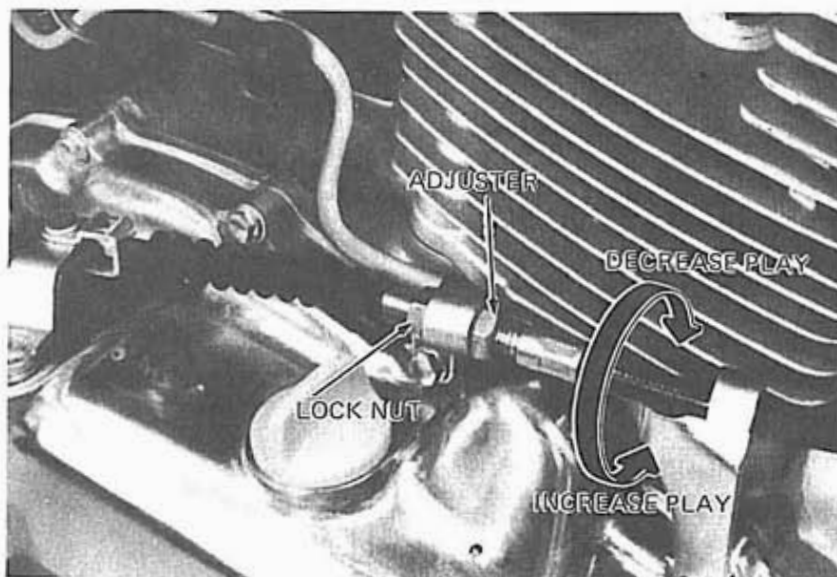
Measure the clutch lever free play.

**CLUTCH LEVER FREE PLAY:**

10–20 mm (3/8–3/4 in.)



Major adjustments should be made using the adjuster located at the clutch housing. Loosen the lock nut and turn the clutch cable adjuster nut.

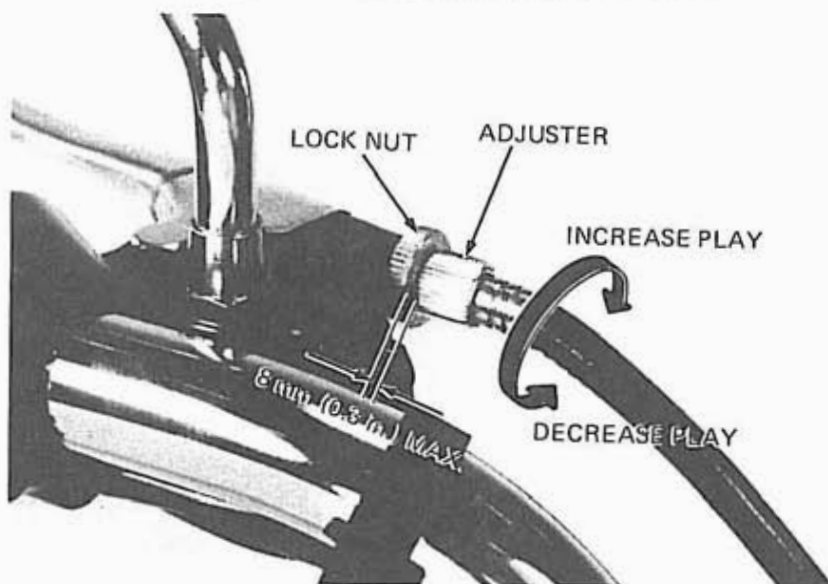


Minor adjustments can be made with the clutch cable adjuster located on the clutch lever. Loosen the lock nut and turn the adjuster.

### NOTE

Do not allow the threads at the adjuster to come out by more than 8 mm (0.3 in.).

Recheck the clutch operation.







## (CHASSIS) FRONT BRAKE(DISC)

### • BRAKE FLUID INSPECTION

Check that the brake fluid reservoir is filled to the level mark engraved inside the reservoir.

If the level is lower than the 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 brands of fluid in the reservoir. Stay with one fluid as they are not compatible.
- Do not remove the cap until the handlebar has been turned full right so that the reservoir is level.
- Avoid operating the brake lever with the cap removed. Brake fluid will flow out if the lever is pulled.

### • BRAKE PAD

Remove the cap from the caliper and check for brake pad wear.

Replace the brake pads if the red line on the top of the pads reaches the edge of the brake disc. (Refer to Section 12).

#### CAUTION

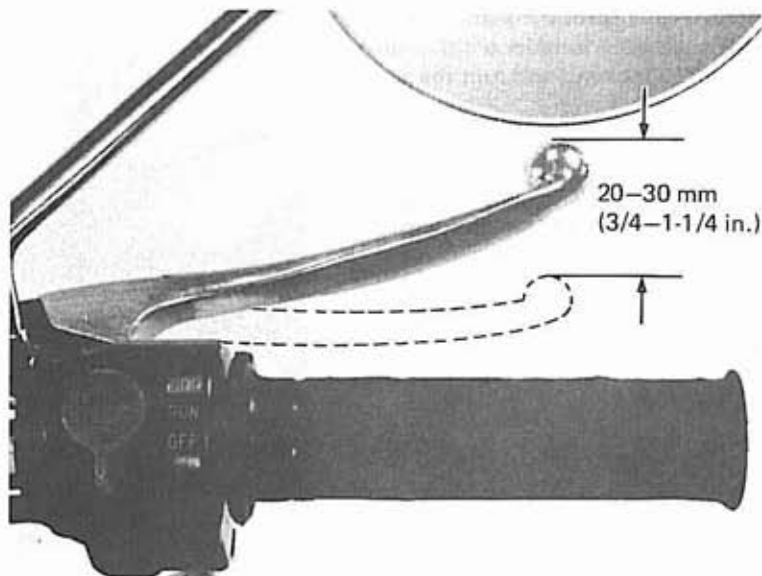
Always replace the brake pads in pair to assure even disc pressure.

## FRONT BRAKE(DRUM)

Measure the brake lever free play.

**BRAKE LEVER FREE PLAY:**

20–30 mm (3/4–1-1/4 in.)



UPPER LEVEL MARK

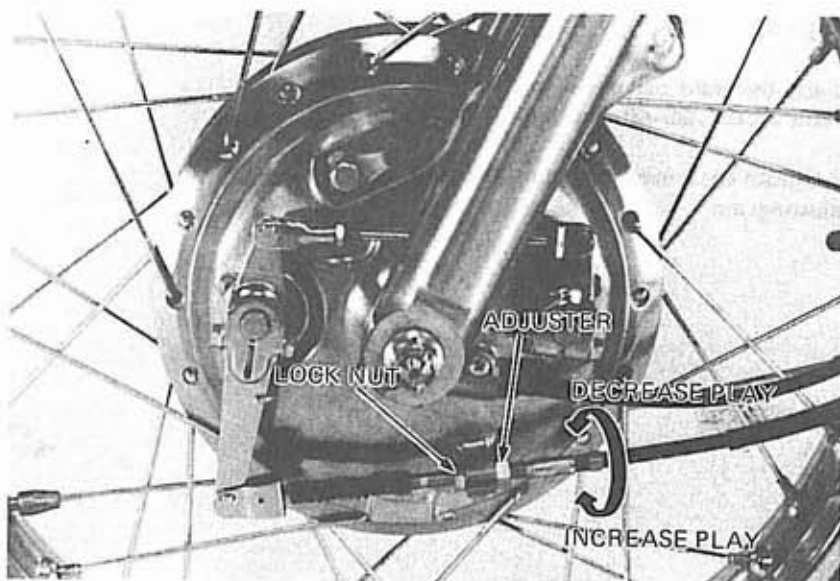
BRAKE DISC

RED LINES  
(WEAR LIMIT)

20–30 mm  
(3/4–1-1/4 in.)

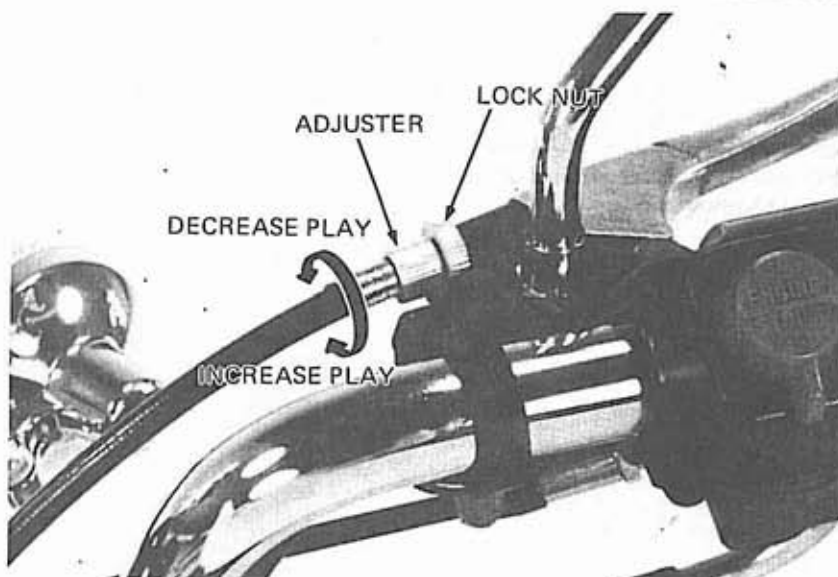


Major adjustments should be made using the adjuster located at the front wheel hub. Loosen the lock nut and turn the adjusting nut.



Minor adjustments can be made with the brake cable adjuster located on the brake lever.

Loosen the lock nut and turn the adjuster. Recheck the brake operation.



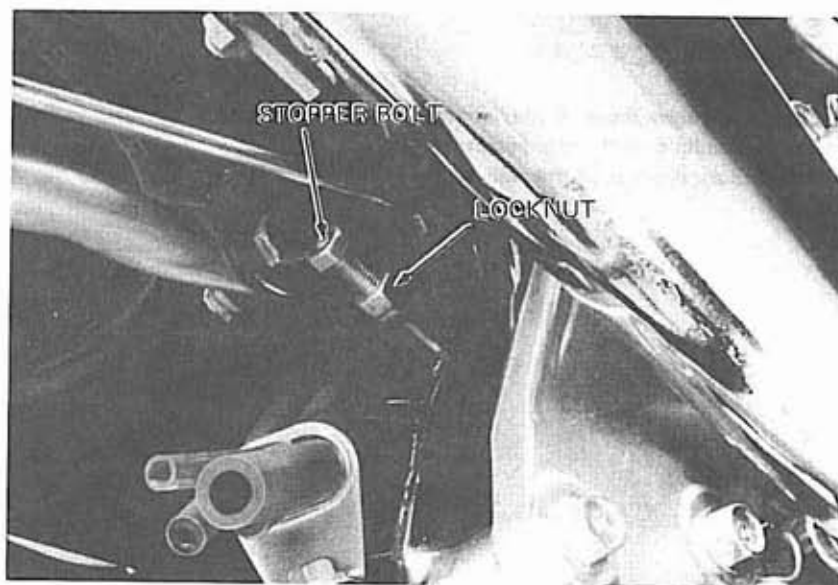
## REAR BRAKE

### • BRAKE PEDAL HEIGHT

Loosen the lock nut.

Adjust the brake pedal height by turning the stopper bolt.

Tighten the lock nut.



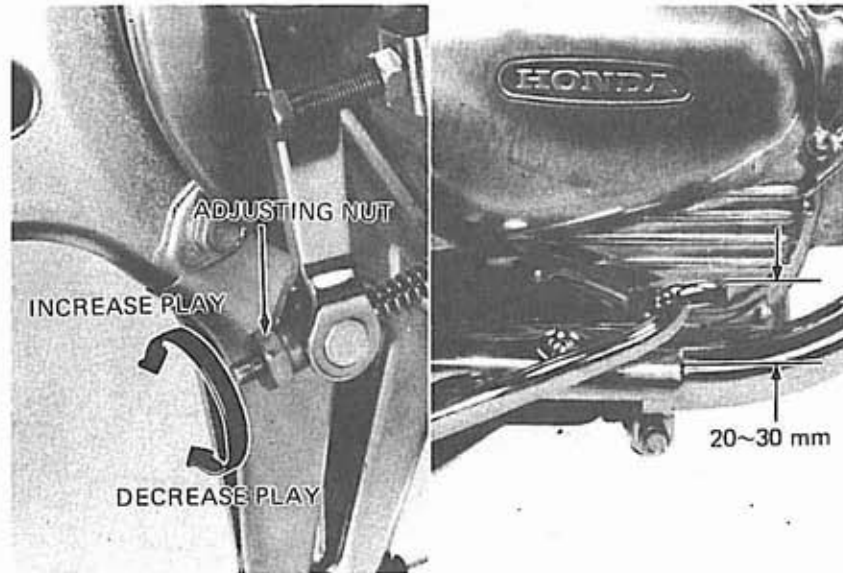




### • BRAKE PEDAL FREE PLAY

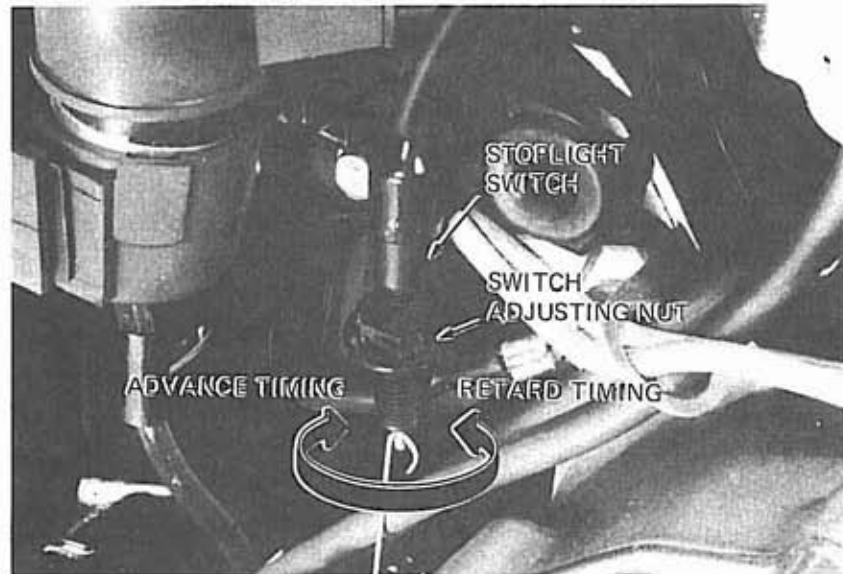
Check the brake pedal free play.  
FREE PLAY: 20–30 mm (3/4–1-1/4 in.)

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



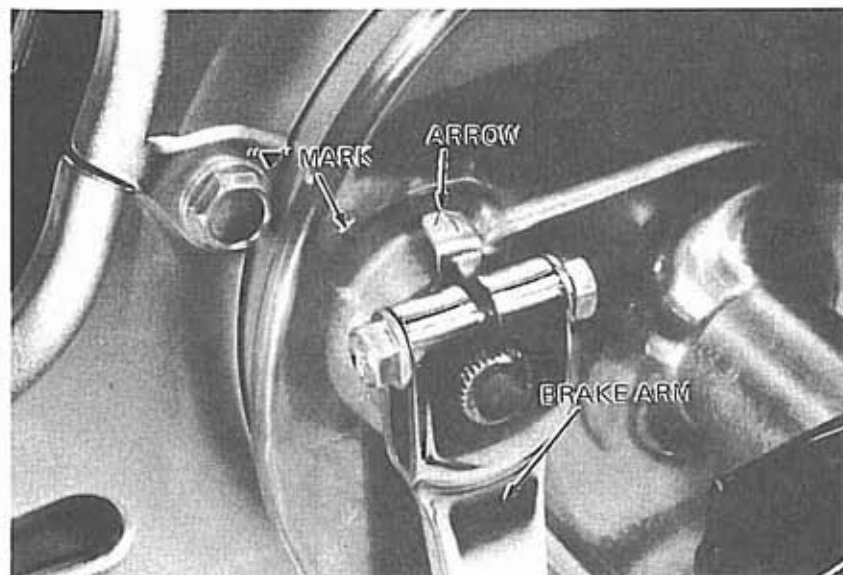
### • STOPLIGHT SWITCH

Adjust the stoplight switch so that the stoplight will come on when the brake pedal is depressed 20 mm (3/4 in.) where the brake just starts to engage. Adjust by turning the switch adjusting nut.



### • BRAKE SHOE INSPECTION (WEAR INDICATOR)

Replace the brake shoes if the arrow on the brake arm aligns with the reference mark "▲" on full application of the rear brake.



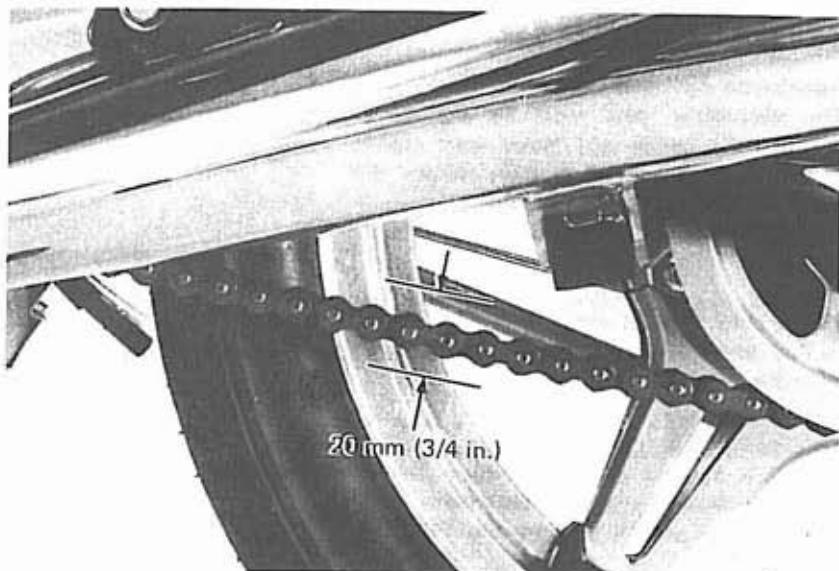


## DRIVE CHAIN

Place the motorcycle on its center stand (or a support block) and shift the transmission into neutral.

Check the drive chain tension.

**PLAY: APPROXIMATELY 20 mm (3/4 in.)**



Adjust as follows:

Remove the cotter pin from the rear axle nut, and loosen the nut.

Loosen the lock nuts on both adjusting bolts. Turn both adjusting bolts an equal number of turns until the correct drive chain tension is obtained.

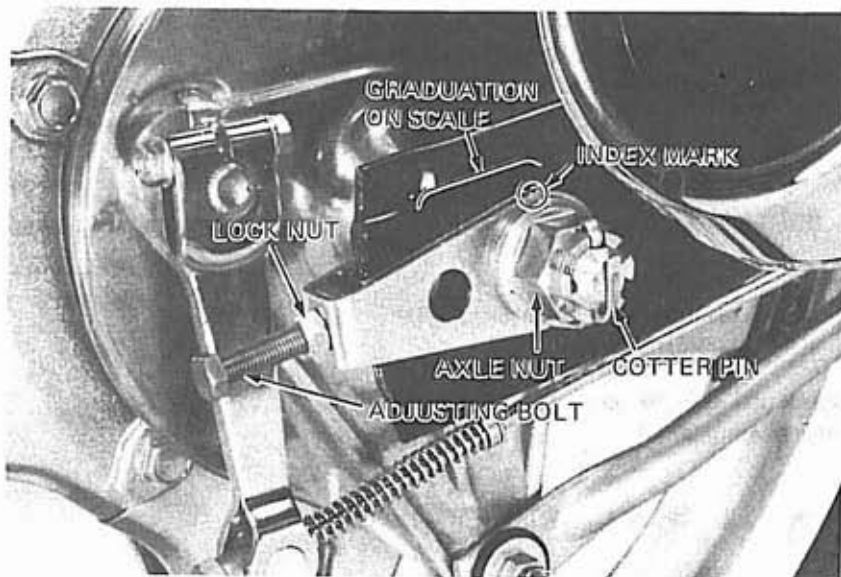
### NOTE

Be sure that the index mark aligns with the same graduation on the scale on both sides.

Tighten the axle nut and install a new cotter pin.

**TORQUE: 8–10 kg-m (58–72 lbs-ft)**

Tighten both adjusting bolt lock nuts.  
Lubricate the drive chain.

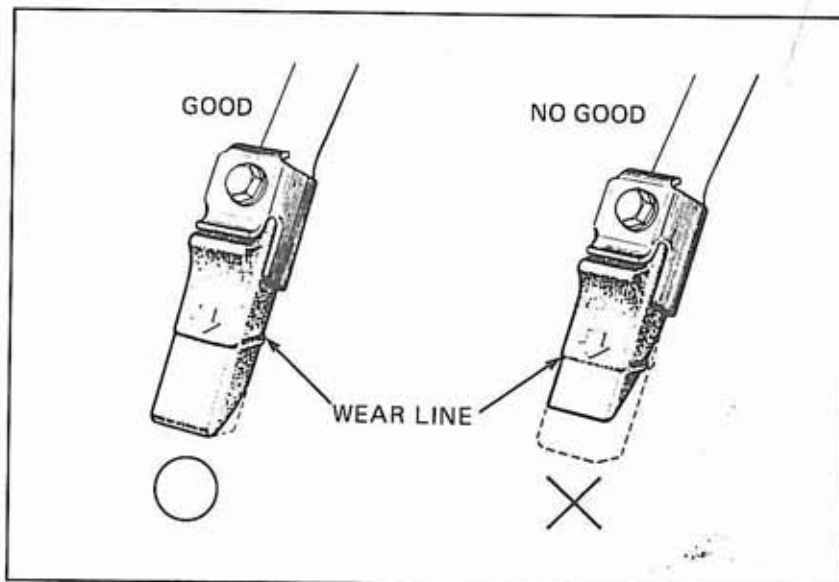


## SIDE STAND

Check the rubber pad for deterioration or wear.

Replace if any wear extends to wear line as shown.

Check the side stand spring for damage and loss of tension, and the side stand assembly for freedom of movement.





## BATTERY ELECTROLYTE

Remove the right side cover.

The electrolyte level must be maintained between the upper and lower level marks. If the electrolyte level is low, remove the battery filler caps.

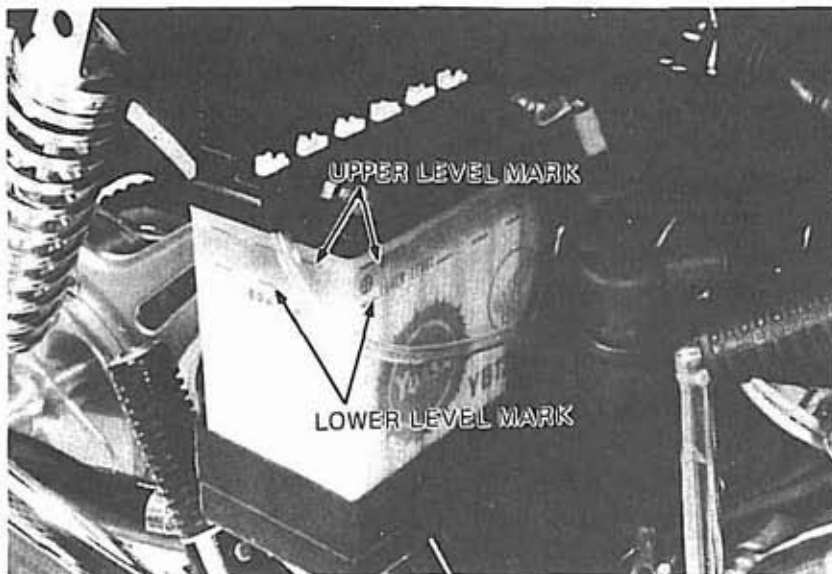
Add distilled water.

### NOTE

Use only distilled water in the battery. Tap water will shorten the service life of the battery.

### WARNING

- The battery contains sulfuric acid and should be handled with care.
- Do not overfill beyond the UPPER level.
- Avoid contact with skin, eyes or clothing. Flush with water and get prompt medical attention when in contact with skin or eyes.



## WHEELS/SPOKES

### • TIRE PRESSURE

#### NOTE

Tire pressure should be checked when the tires are COLD.

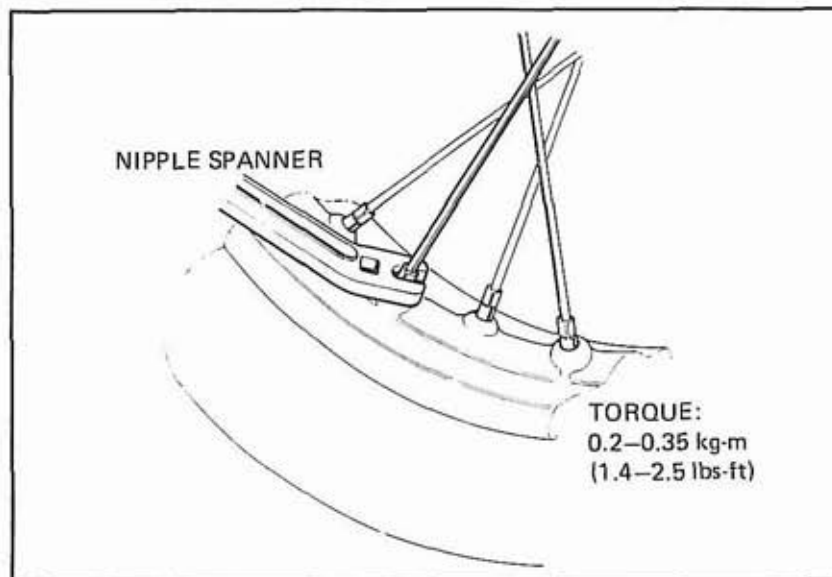
Check the tires for cuts, imbedded nails, or other sharp objects.

### • WHEEL SPOKE RETIGHTENING (TYPE I)

Retighten the wheel spokes periodically.

**TIGHTNING TORQUE:** 0.2–0.35 kg-m  
(1.4–2.5 lbs-ft)

Cold tire pressures kg/cm <sup>2</sup> (psi)	Up to 90 kg (200 lb) load	Front: 1.75 (24) Rear: 2.25 (32)
	Up to vehicle capacity load	Front: 1.75 (24) Rear: 2.5 (36)
Vehicle capacity load limit	150 kg (330 lbs)	
Tire size	Front: 3.60S19-4PR Rear: 4.10S18-4PR	
Tire brand	Front: YOKOHAMA Y-992 BRIDGESTONE S702	
	Rear: YOKOHAMA Y-983 BRIDGESTONE S302	



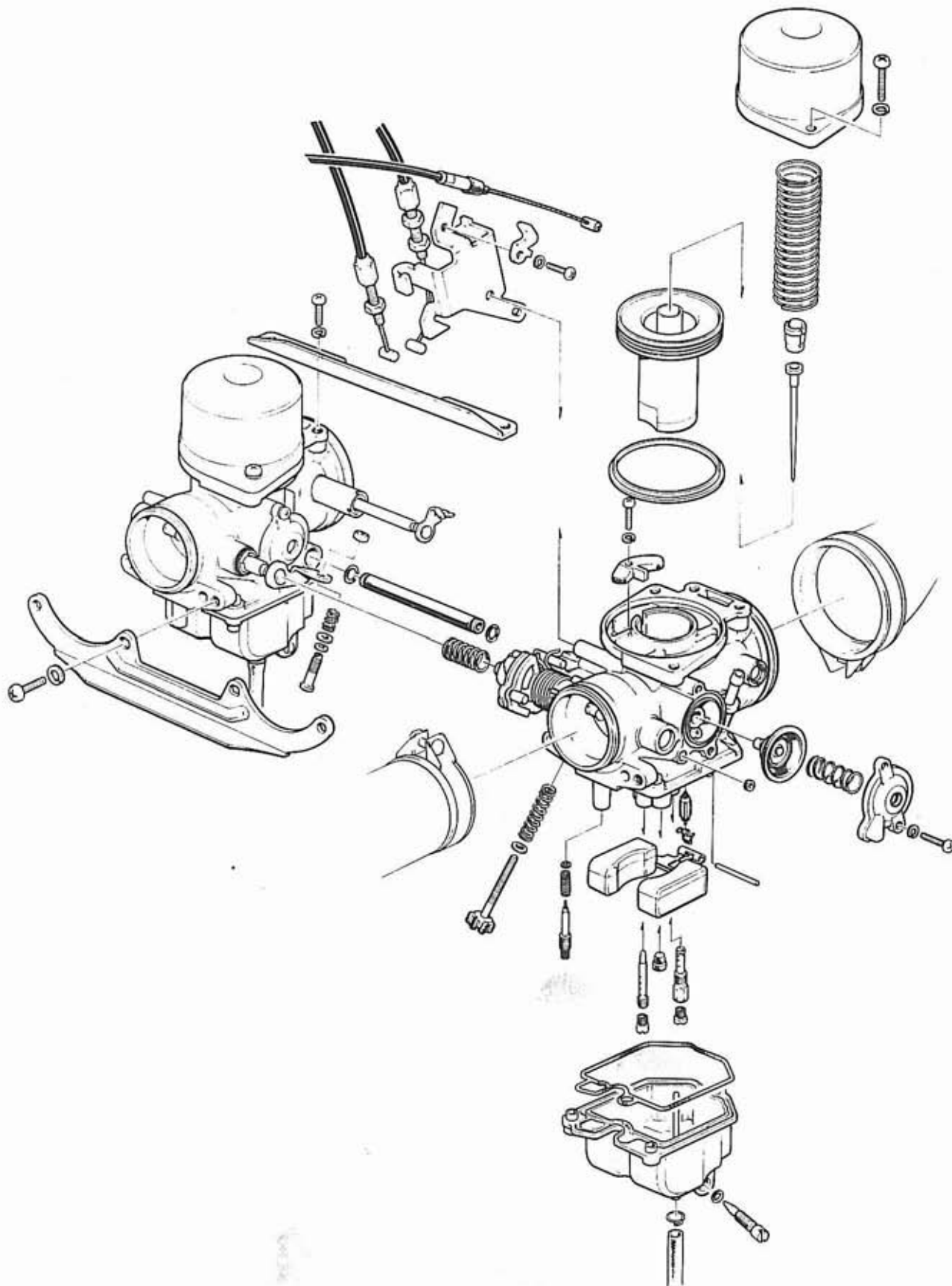


**HONDA**  
**CB400T**

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M E M O

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SERVICE INFORMATION	4-1	AIR CUTOFF VALVE DISASSEMBLY	4-6
TROUBLESHOOTING	4-1	COMPONENT ASSEMBLY	4-7
CARBURETOR REMOVAL	4-2	FLOAT LEVEL ADJUSTMENT	4-7
CARBURETOR SEPARATION	4-2	CARBURETOR ASSEMBLY	4-7
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FLOAT CHAMBER DISASSEMBLY	4-5	FUEL TANK/AIR CLEANER CASE	4-9

## SERVICE INFORMATION

### • WORKING PRACTICE

Use caution when working with gasoline. Always work in a well-ventilated area and away from sparks or open flames. When disassembling fuel system parts, note the locations of the O-rings. Replace them with new ones on reassembly. The float bowls have drain plugs that can be loosened to drain residual gasoline.

### • SPECIAL TOOL

Common Tool

FLOAT GAUGE 07401-0010000

### • SPECIFICATIONS

Venturi dia.	32 mm
Setting mark	VB21A
Float level	15.5 mm (0.61 in.)
Pilot screw opening	1-1/2
Idle speed	1,200 ± 100 rpm
Fast idle	2,500 ± 500 rpm
Vacuum (at idle speed)	200~240 mmHg
Throttle grip free play	2~6 mm (0.08~0.24 in.)

## TROUBLESHOOTING

### Engine Cranks But Won't Start

1. No fuel in tank
2. No fuel to cylinders
3. Too much fuel getting to cylinders
4. No spark at plugs (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 manifold
8. Fuel contaminated
9. Carburetors not synchronized

### Lean Mixture

1. Carburetor fuel jets clogged
2. Vacuum piston stuck closed
3. Fuel cap vent blocked
4. Fuel filter clogged
5. Fuel line kinked or restricted
6. Float valve defective
7. Float level too low

### Rich Mixture

1. Choke stuck closed
2. Float valve defective
3. Float level too high
4. Carburetor air jets clogged





## CARBURETOR REMOVAL

Remove the fuel tank.

### NOTE

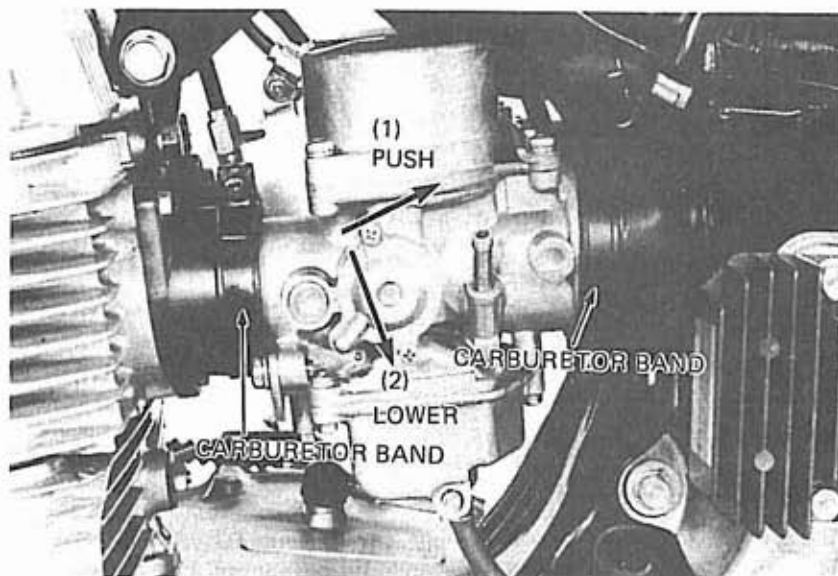
Turn the fuel valve to OFF.

Loosen the screws securing the carburetor bands.

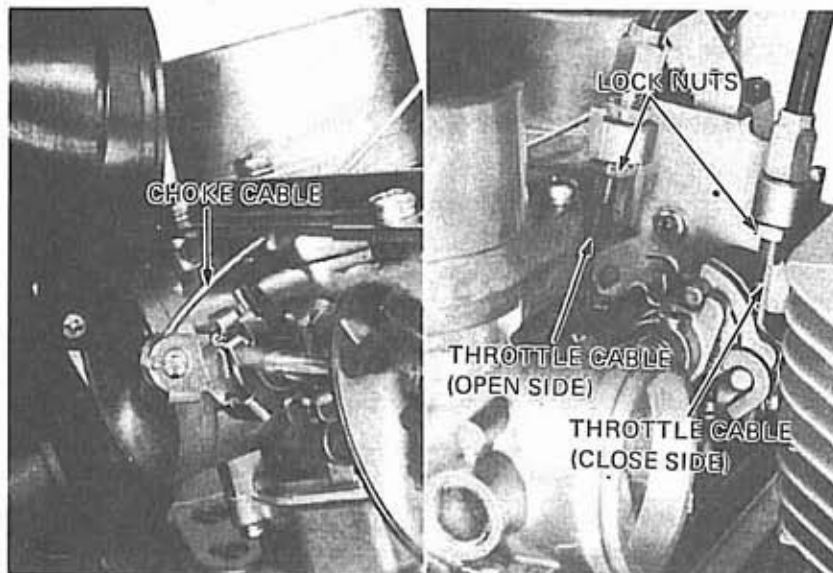
Remove the carburetor.

### CAUTION

Do not pry the carburetors off the engine. Push down on the carburetors while carefully pulling them back evenly.

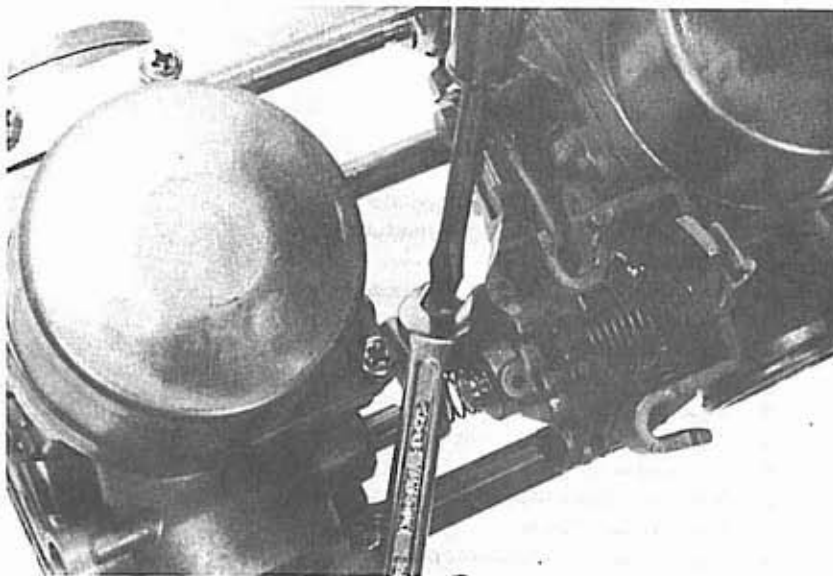


Unscrew the lock nuts and disconnect the throttle cables at the carburetors. Remove the clamp holding the choke cable and disconnect the choke cable.



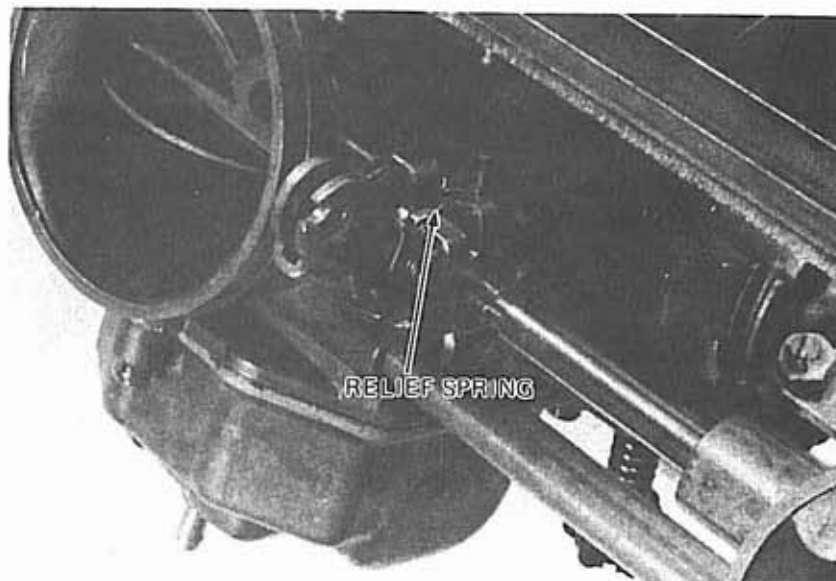
## CARBURETOR SEPARATION

Loosen the synchronize adjust screw.

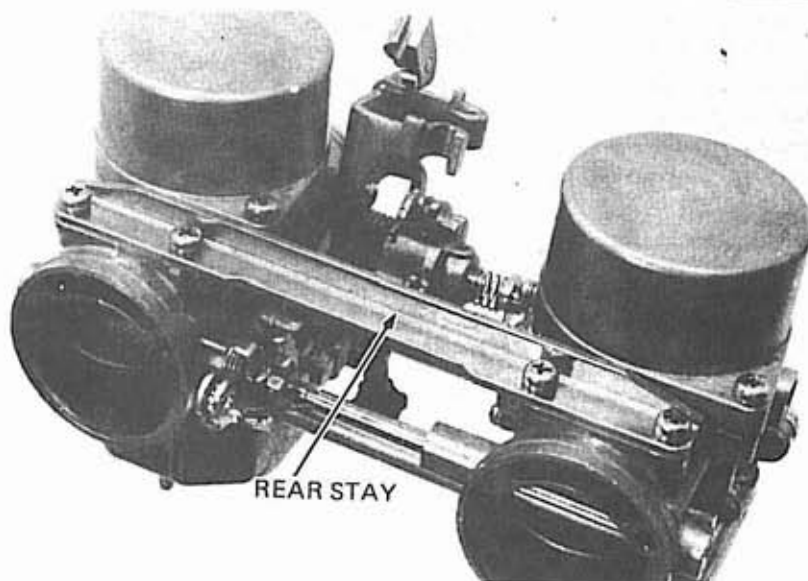




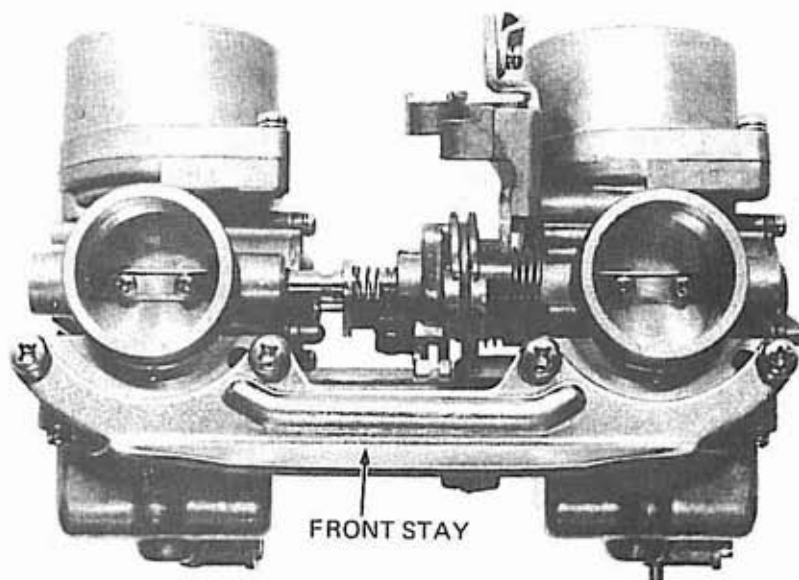
Disconnect the choke relief spring from the choke lever.



Unscrew the four screws attaching the rear stay to the carburetors, and remove the rear stay.

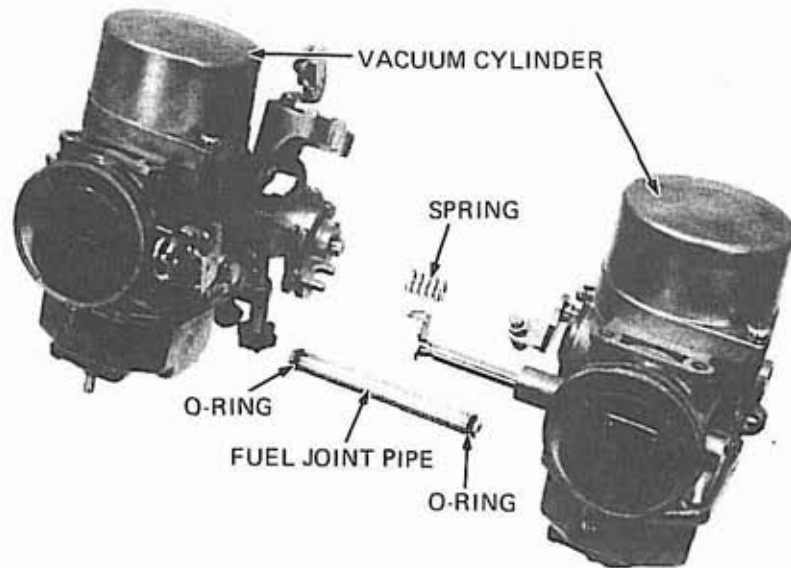


Remove the four screws attaching the front stay to the carburetors, and remove the front stay.





Separate the carburetors.



## VACUUM CYLINDER DISASSEMBLY

Remove the vacuum cylinders from the carburetor bodies.  
Carefully lift the vacuum piston out with its needle and compression spring.

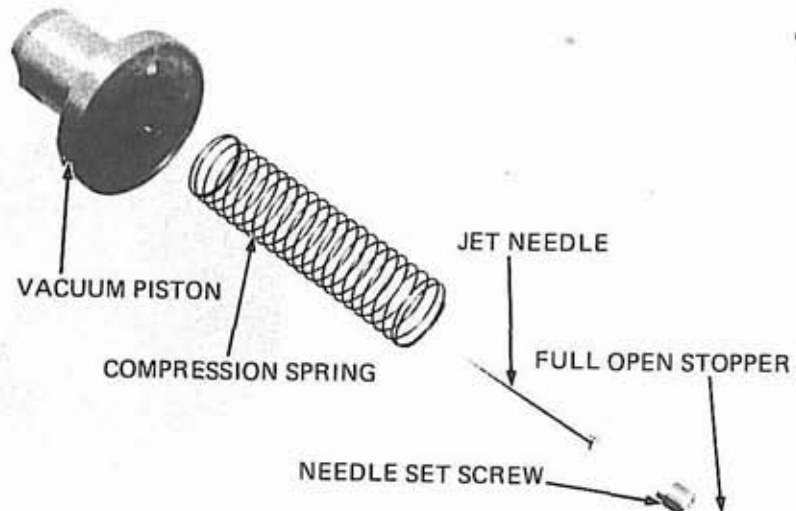
### NOTE

Inspect the vacuum piston and cylinder for wear, nicks, scratches or other damage. Make sure that the piston moves up and down freely in the cylinder.

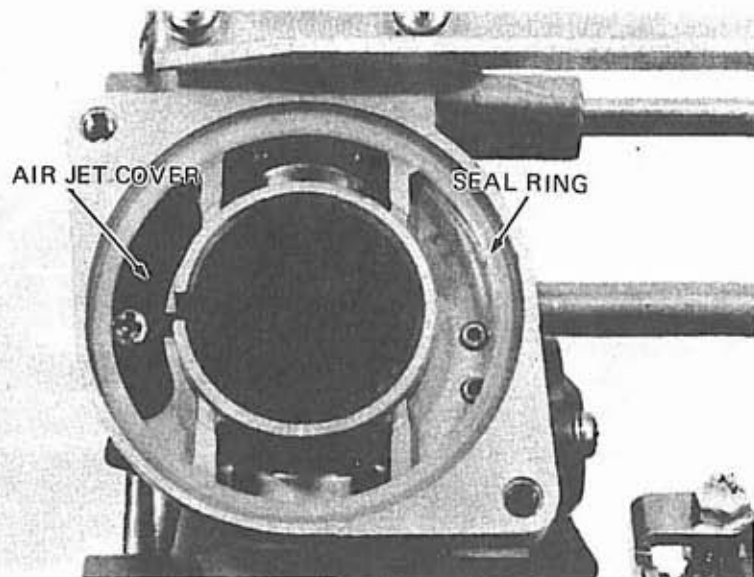
Remove the full open stopper.  
Remove the needle set screw.  
Separate the jet needle from the piston.

### NOTE

Inspect the needle and seat for deposits, grooves, or other damage.



Carefully lift the seal ring off the carburetor body.  
Remove the air jet cover.

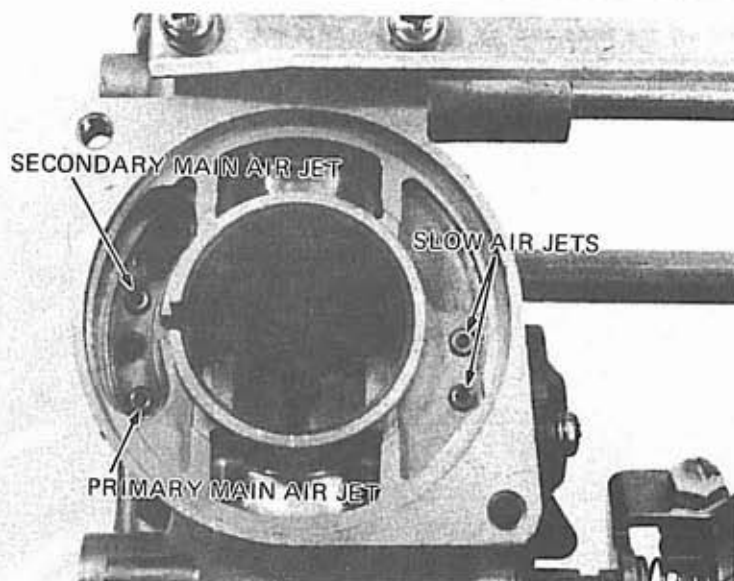




Blow open the primary main air jet, secondary main air jet and slow air jet with compressed air.

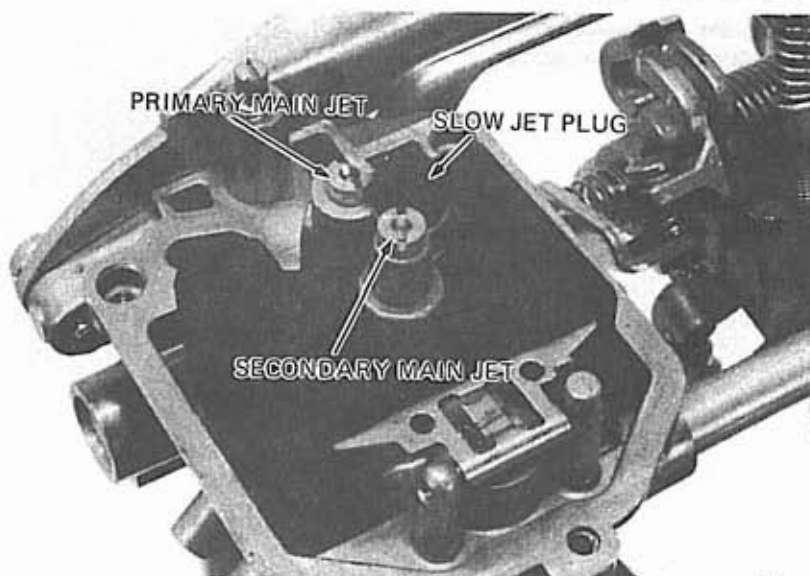
### NOTE

Never clean carburetor jets with wire or drills. This will enlarge the openings and result in excessive fuel consumption.



## FLOAT CHAMBER DISASSEMBLY

Remove the float chamber body.  
Remove the secondary main jet.  
Remove the primary main jet.  
Remove the slow jet plug.



### NOTE

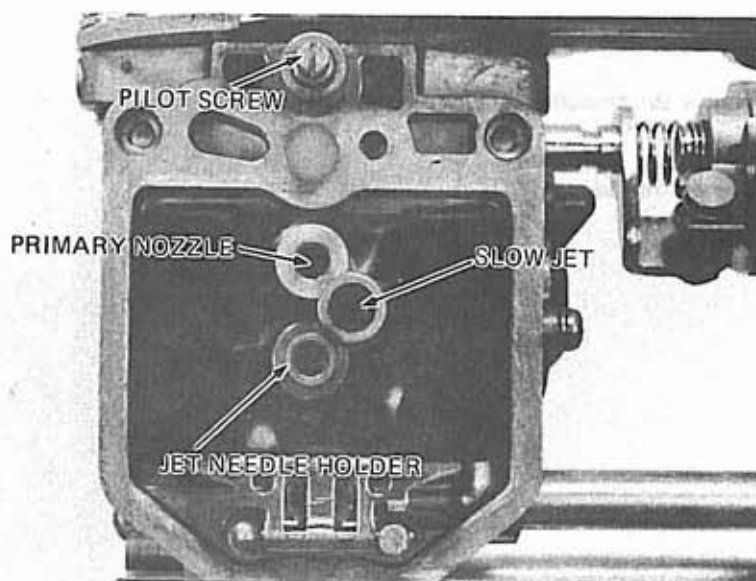
The slow air jet cannot be removed since it is a tight press fit in the carburetor.

Take out the primary nozzle.

Remove the jet needle holder.  
Blow open all jets and body openings with compressed air.

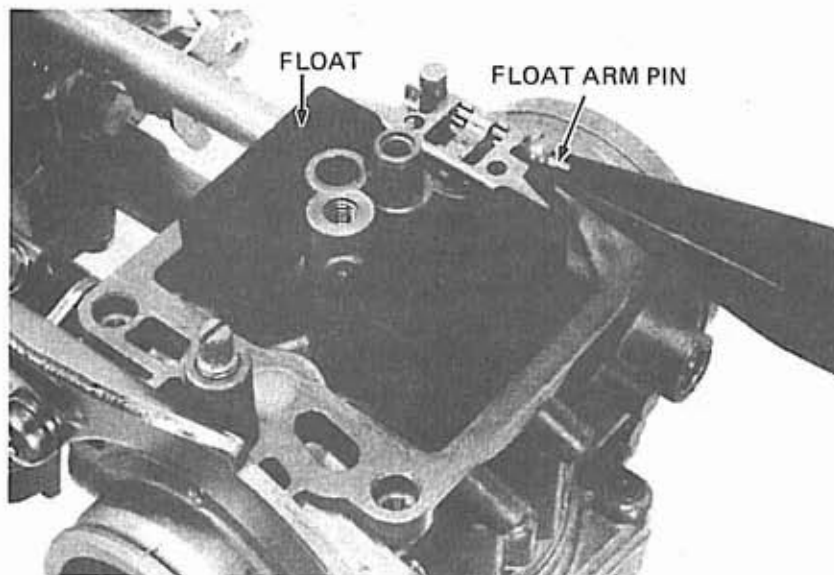
### NOTE

Before removing the pilot screw, record the number of rotations until it seats.

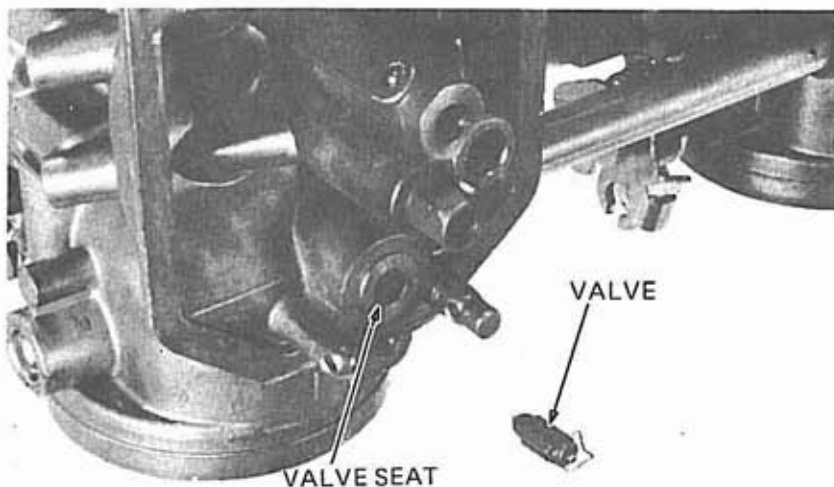




Pry off the float arm pin with a pair of pliers. Remove the float and float valve.

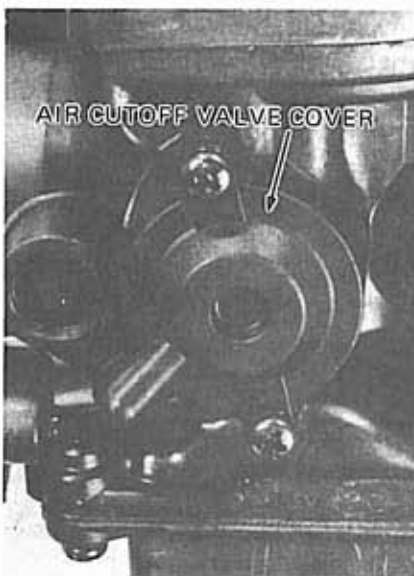


Inspect the float valve and seat for grooves, nicks, deposits or other defects.



## AIR CUTOFF VALVE DISASSEMBLY

Remove the air cutoff valve cover and pull out the spring.  
Remove the diaphragm.  
Take out the O-ring.



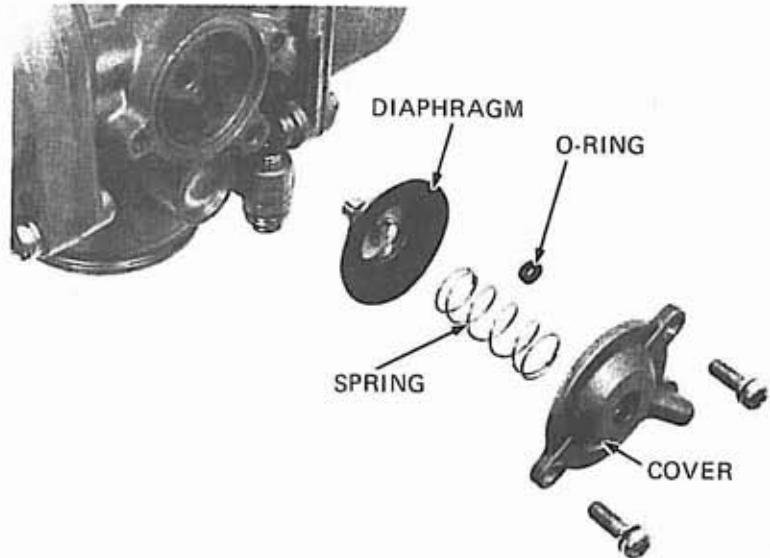




Inspect the diaphragm and valve for cracks and brittleness.

### COMPONENT ASSEMBLY

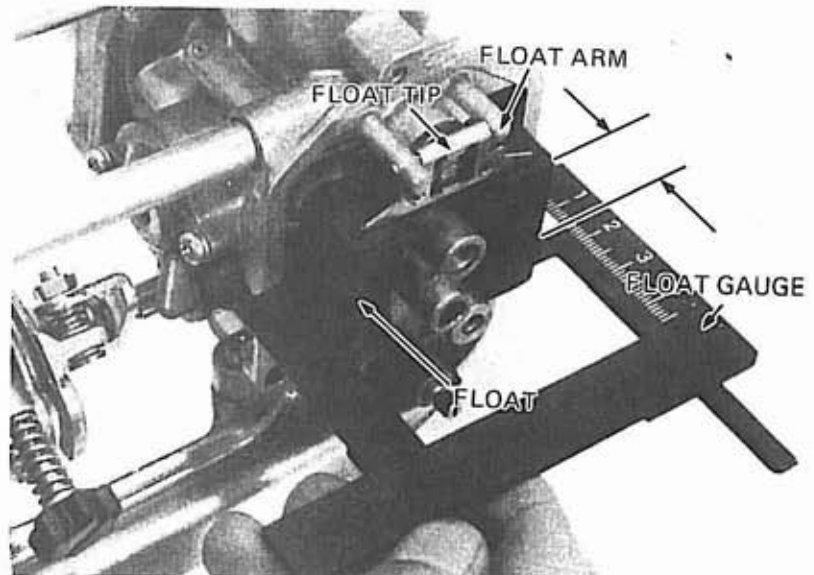
To assemble the air cutoff valve, float chamber and vacuum cylinder, reverse the disassembly procedure.



### FLOAT LEVEL ADJUSTMENT

To adjust the float level, bend the float arm carefully until the float tip just contacts the float valve.

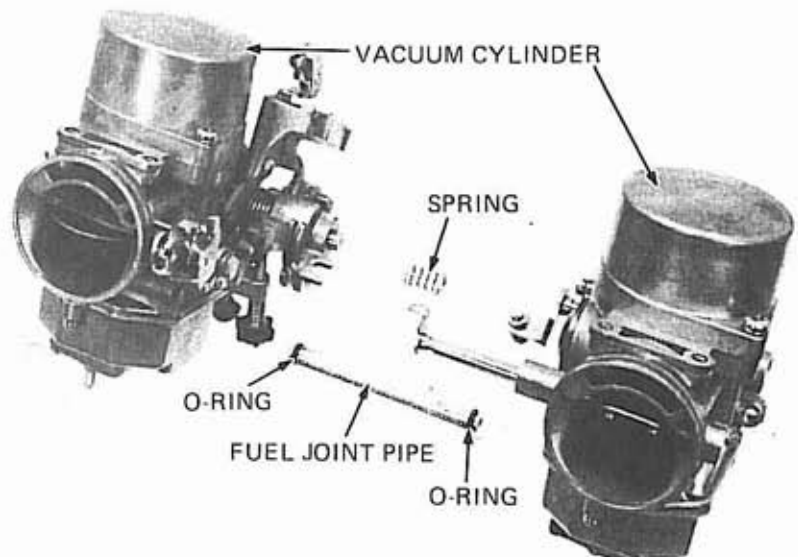
**FLOAT LEVEL: 15.5 mm (0.61 in.)**



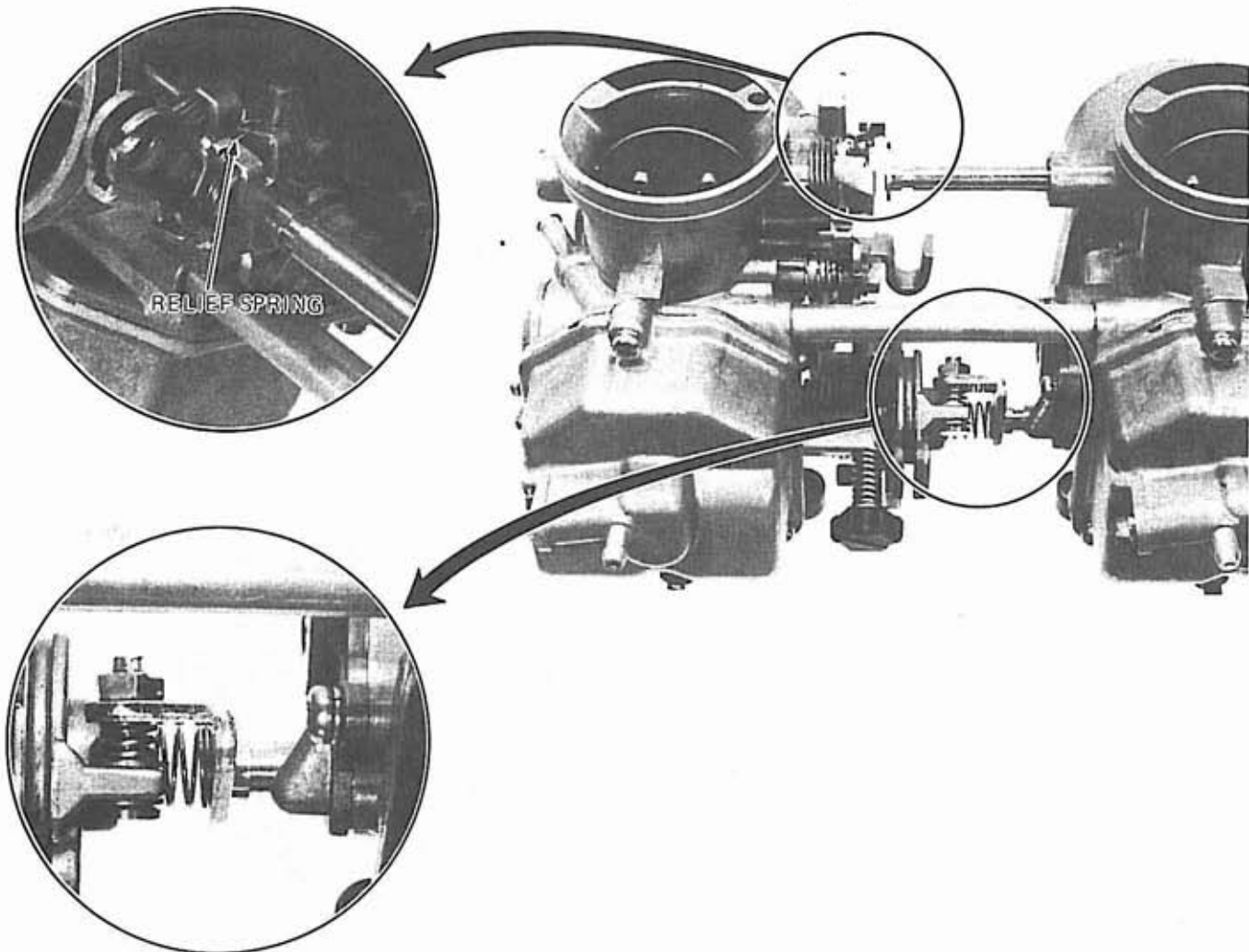
### CARBURETOR ASSEMBLY

Slip an O-ring over each end of the fuel joint pipe as shown.

Assemble the right and left carburetors through the spring.





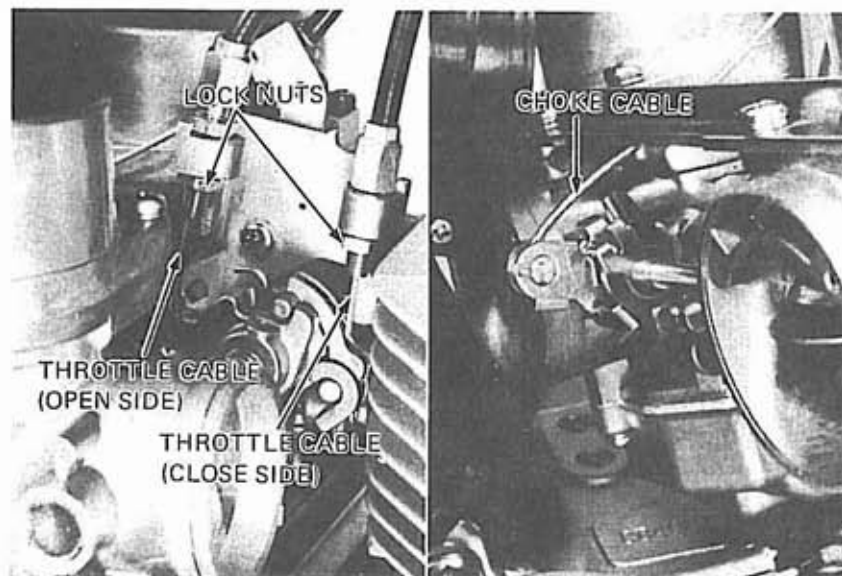


## CARBURETOR INSTALLATION

Carburetor installation is the reverse of the removal.

### NOTE

- Do not interchange the PULL and PUSH cables.
- After assembly, perform the following adjustments:  
Throttle grip free play (Section 3).  
Carburetor synchronization (Section 3).  
Idle adjustment (Section 3).  
Fast idle adjustment (Section 3).





### FUEL TANK

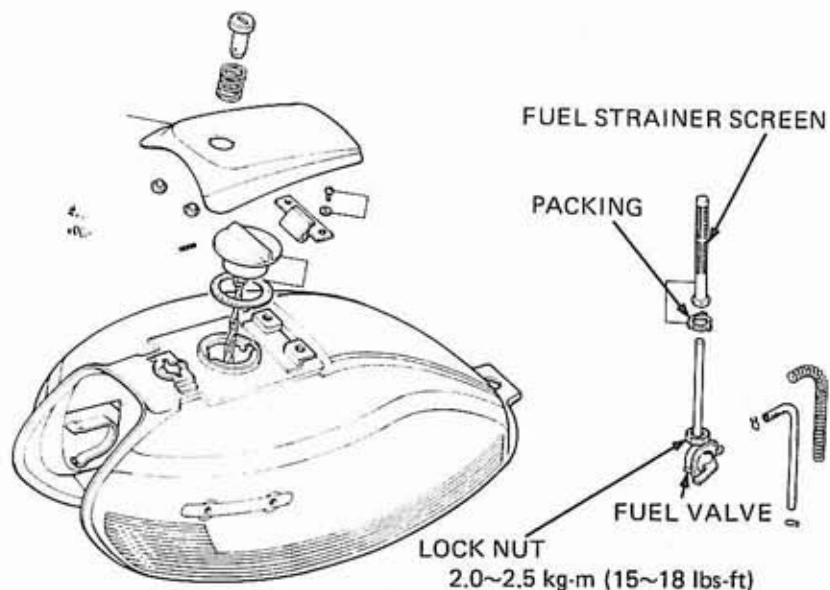
#### WARNING

*Never bring open flames or sparks near gasoline.  
Wipe up spilled gasoline at once.*

Check that fuel is flowing out of the fuel valve freely. If the fuel flow is restricted, clean the fuel strainer.

#### NOTE

Do not overtighten the fuel valve lock nut.  
Make sure there are no fuel leaks.



### AIR CLEANER CASE

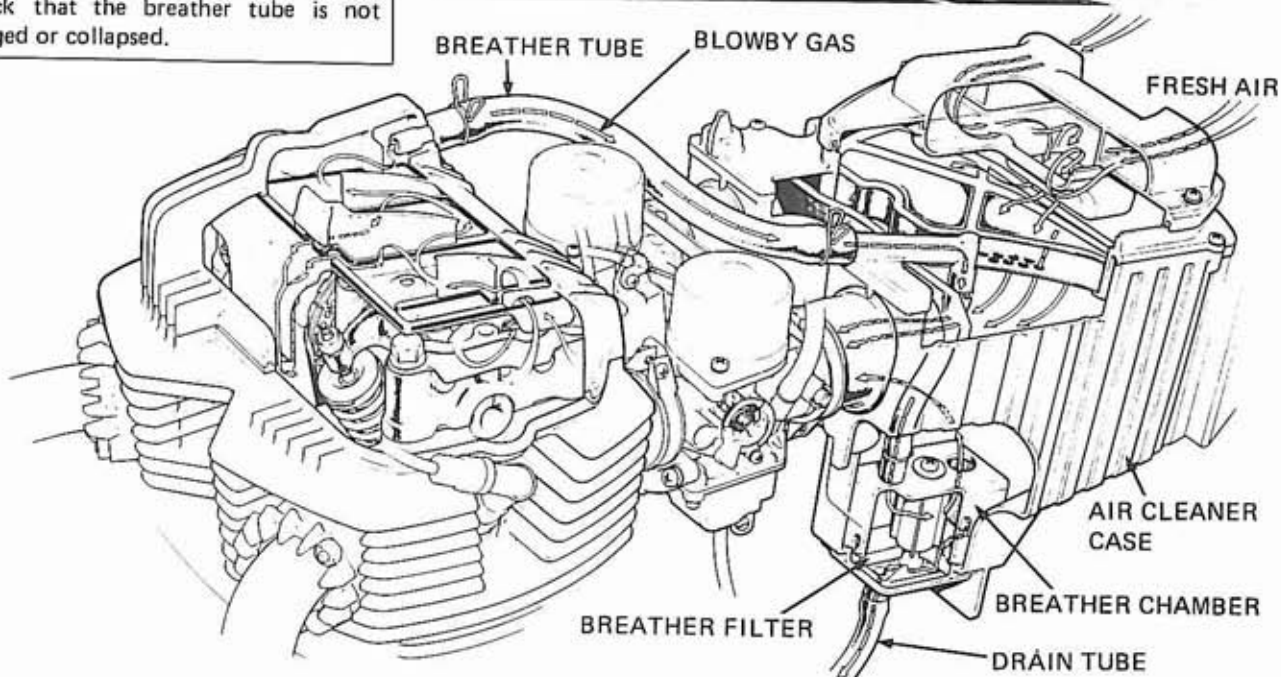
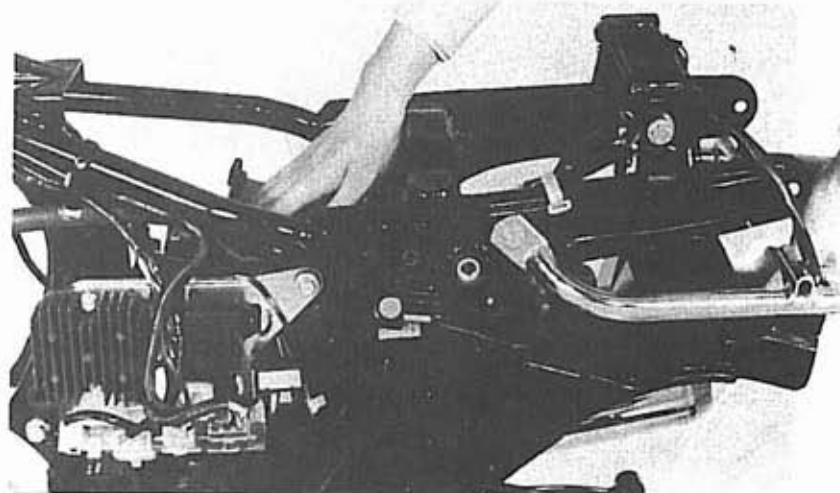
#### • REMOVAL/INSTALLATION

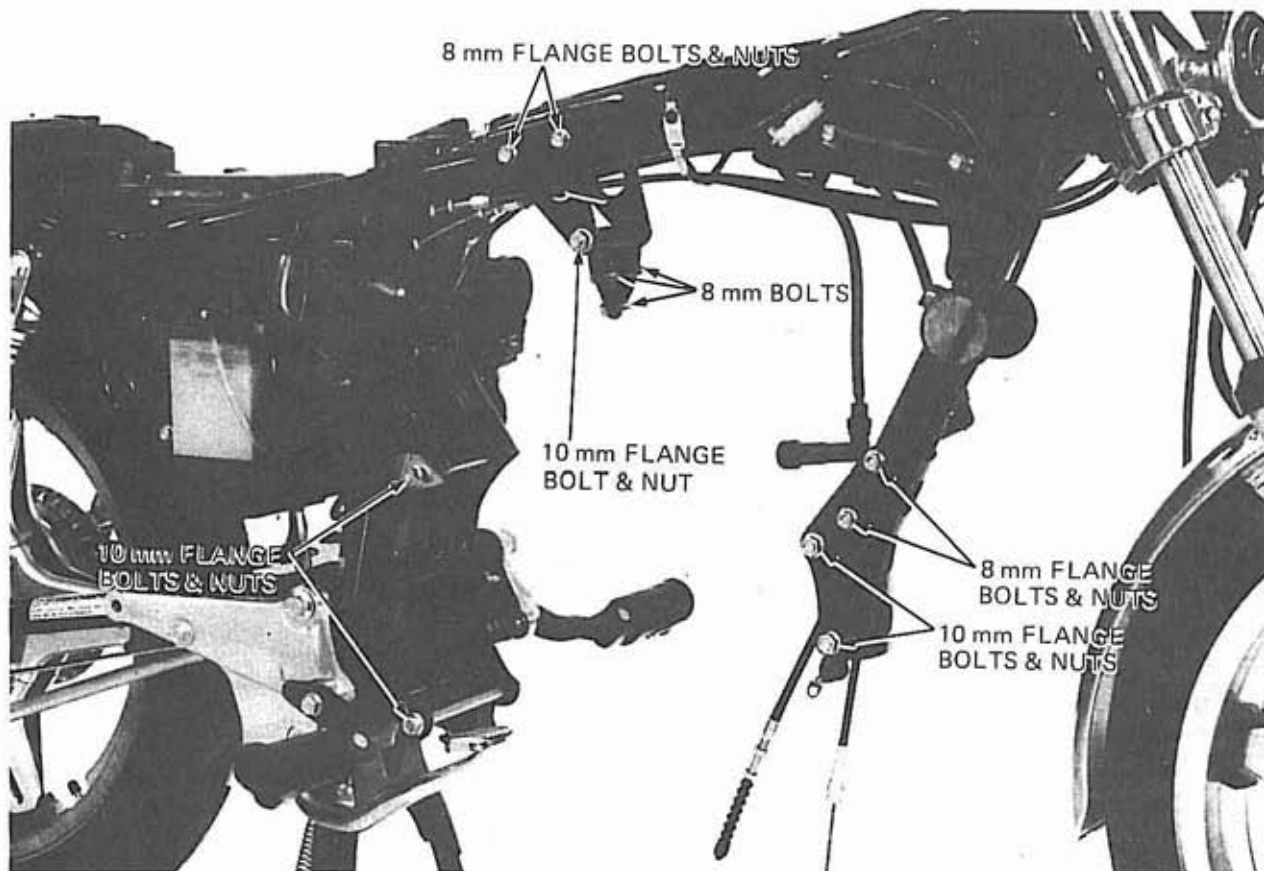
Remove the rear wheel.  
Remove the right and left rear cushions.  
Take out the rear fender.  
Dismount the battery.  
Loosen the carburetor intake pipe ring.  
Back off the three air cleaner mounting bolts.

#### • CRANKCASE VENTILATION SYSTEM

#### NOTE

Check that the breather tube is not clogged or collapsed.





TIGHTENING TORQUES:	10 mm FLANGE BOLT AND NUT	4.5–6.0 kg-m (33–43 lbs-ft)
	8 mm FLANGE BOLT AND NUT	2.0–3.0 kg-m (15–22 lbs-ft)
	8 mm BOLT	1.8–2.5 kg-m (13–18 lbs-ft)



SERVICE INFORMATION	5-1
ENGINE REMOVAL	5-1
ENGINE INSTALLATION	5-5

## SERVICE INFORMATION

### • WORKING PRACTICE

Parts requiring engine removal for servicing:

- Balancer
- Crankshaft
- Connecting rod
- Transmission
- Shift drum and shift fork
- Kick starter
- Starter gear

To remove and install the engine, place a jack under the engine to support its weight.

Engine weight: 60 kg (132 lbs) approx.

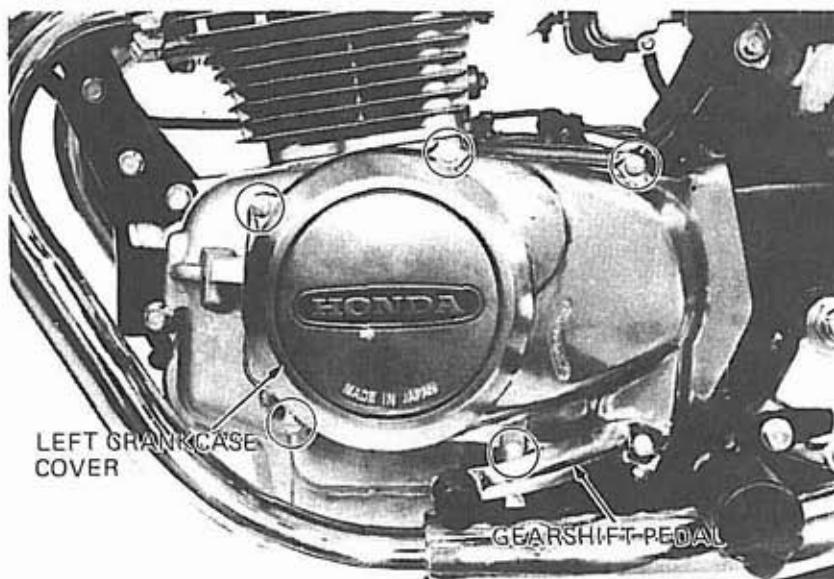
## ENGINE REMOVAL

Remove the battery ground cable.

Remove the drain plug to drain the engine oil pan.

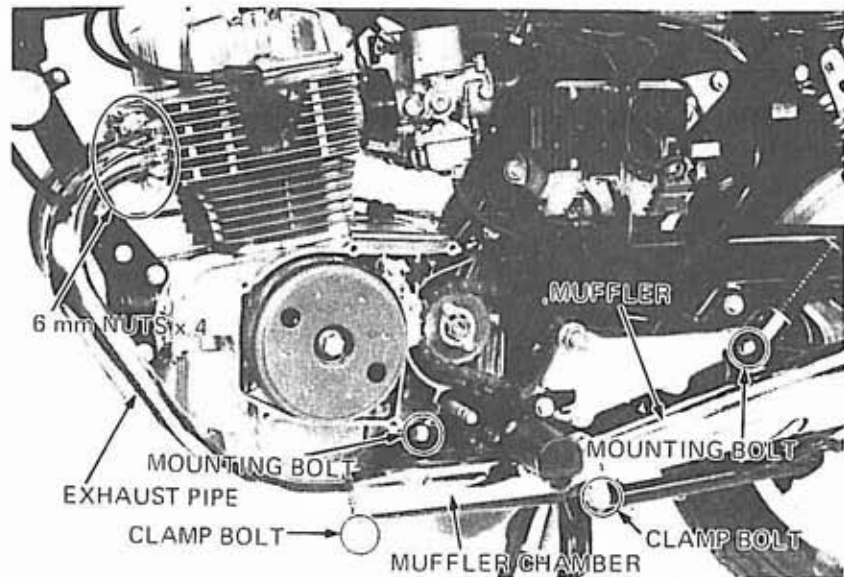
Remove the seat, fuel tank and side covers.

Remove the gearshift pedal and left crankcase cover.

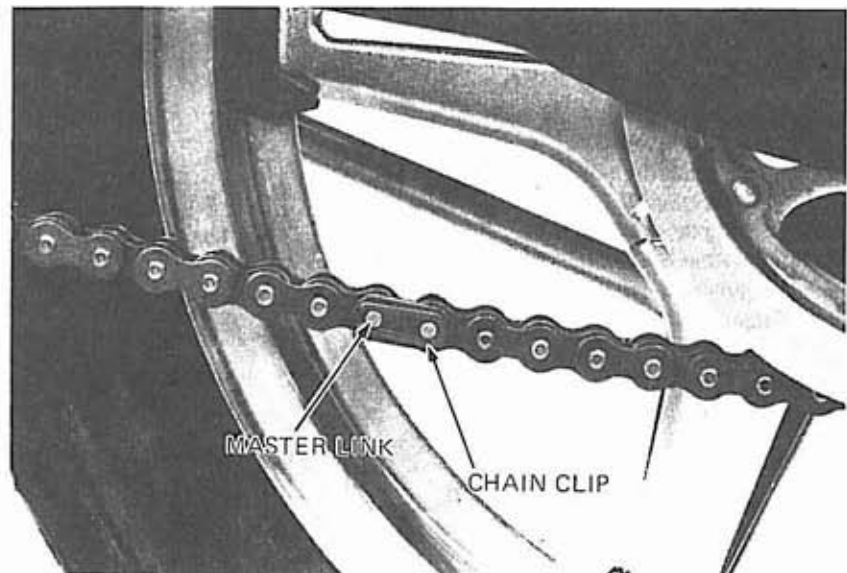




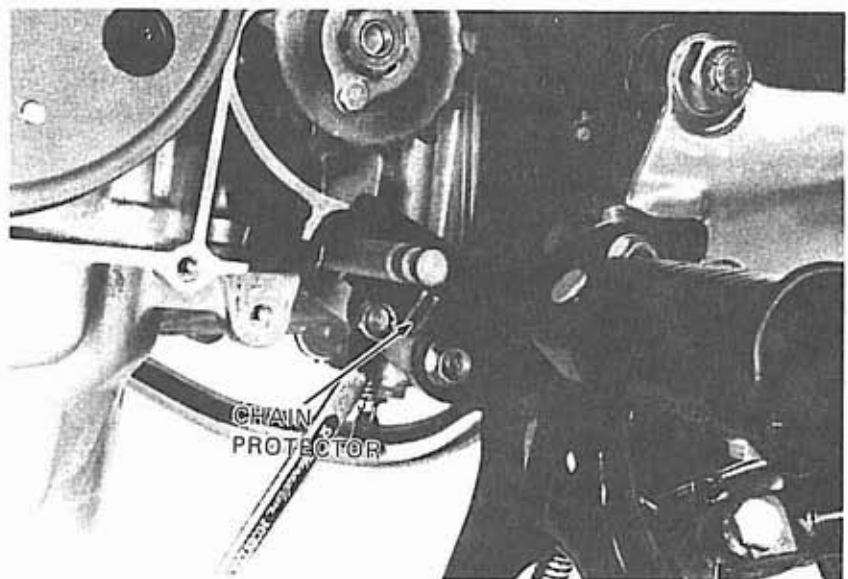
Remove the L and R exhaust pipe nuts.  
Loosen the L and R exhaust pipe clamp bolts.  
Remove the L and R muffler chamber and  
muffler mounting bolts.  
Remove the L and R exhaust pipes, muffler  
chamber and mufflers.



Remove the chain clip.  
Remove the master link.  
Remove the drive chain.



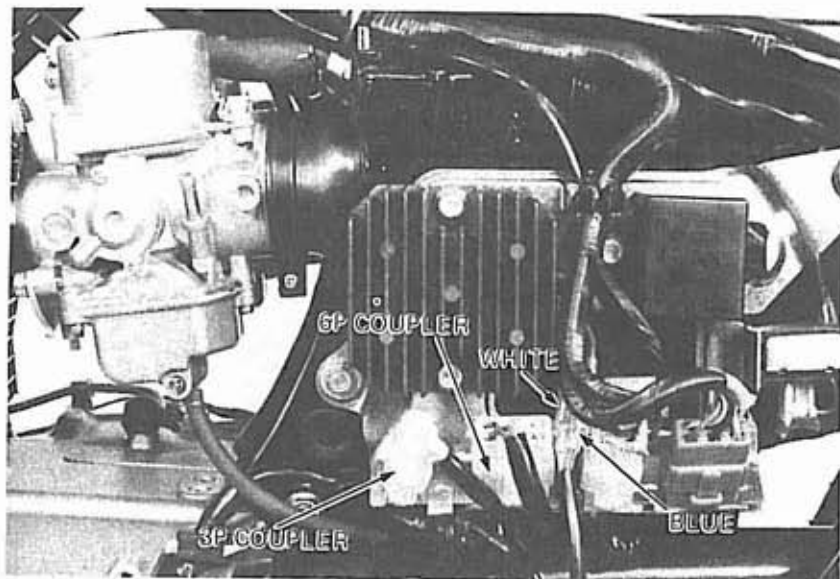
Remove the chain protector.



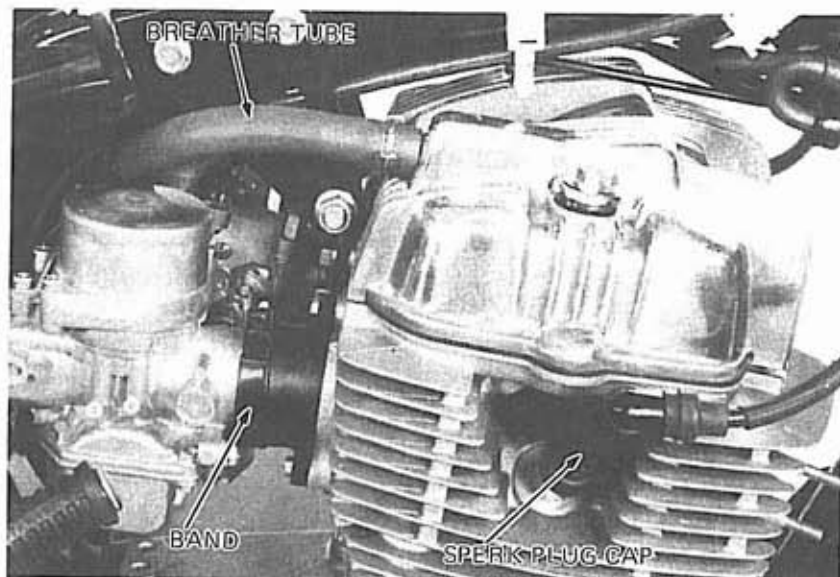




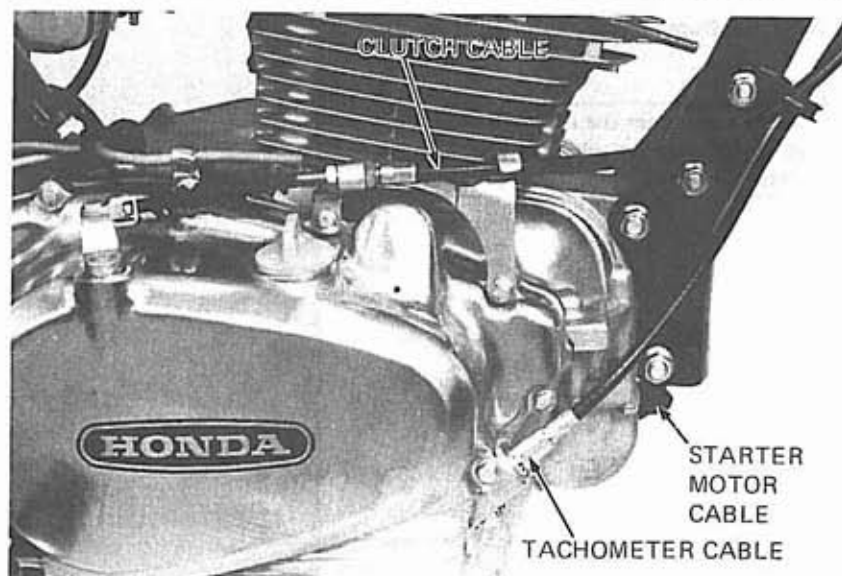
Remove the A.C. generator coupler.



Disconnect the breather tube.  
Remove the spark plug caps.  
Loosen the carburetor bands.

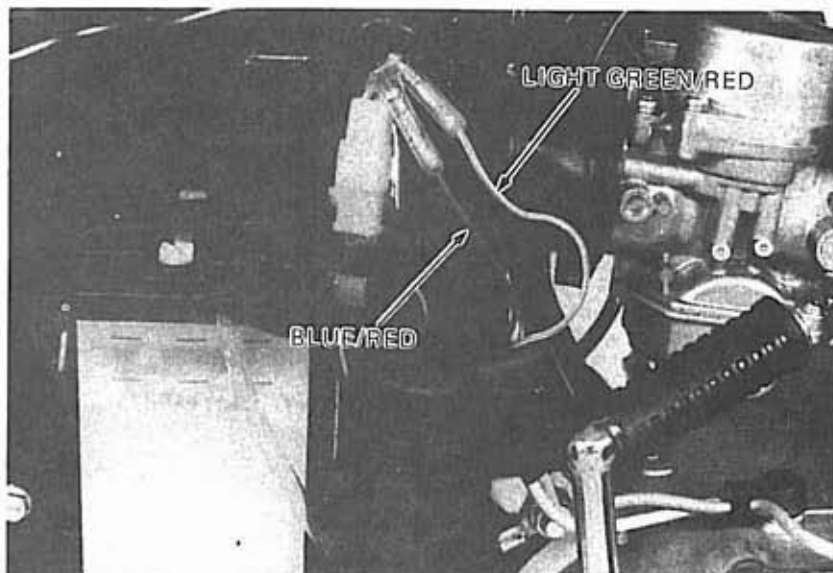


Disconnect the clutch cable at the lower adjuster.  
Disconnect the tachometer cable (type II).  
Disconnect the starter motor cable (type II).





Disconnect the oil pressure switch and neutral switch wires.



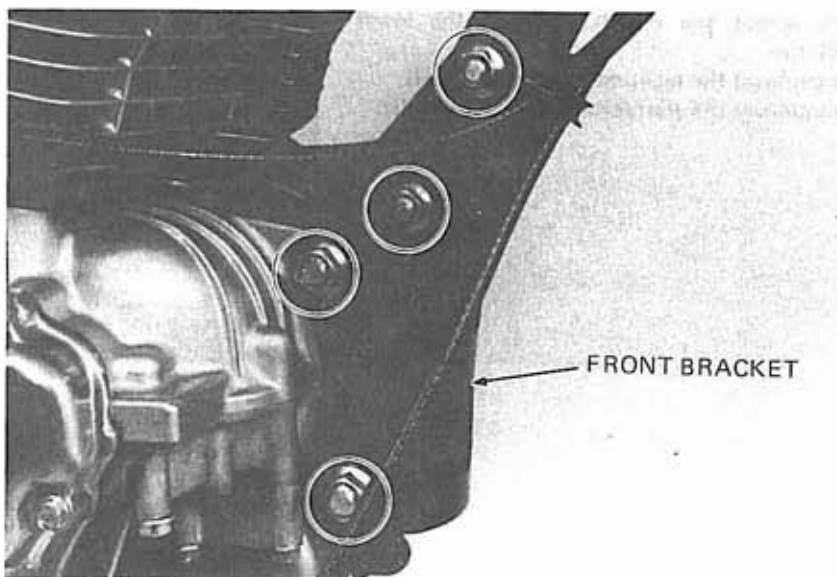
Remove the right foot peg.  
Remove the kick starter pedal.



Remove the front engine mounting bracket.

**NOTE**

Place a jack under the engine to support the engine weight while removing the bolts.

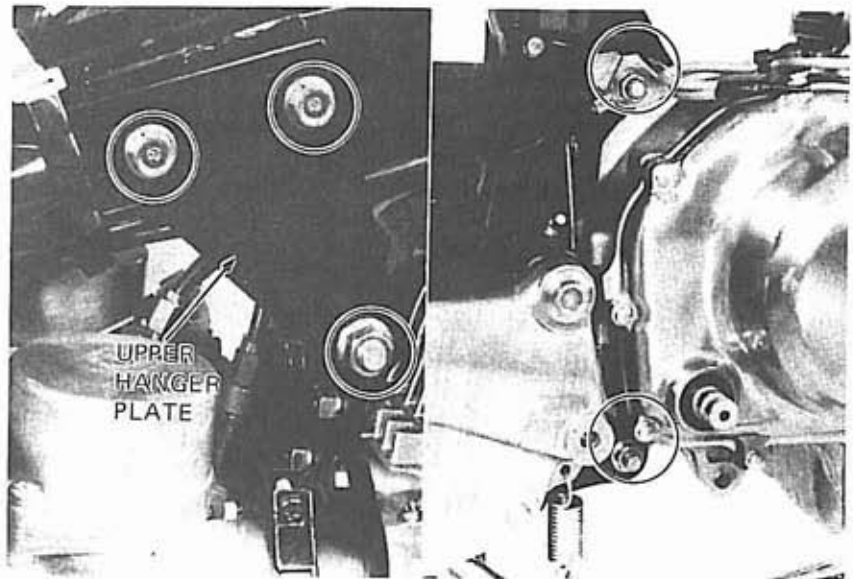




Remove the upper engine hanger plates.  
Remove the two rear mount bolts.  
Lower the jack and remove the engine.

### NOTE

Jack height must be continuously adjusted during engine removal and installation to prevent damage to mounting bolt threads, wire harnesses and cables.



## ENGINE INSTALLATION

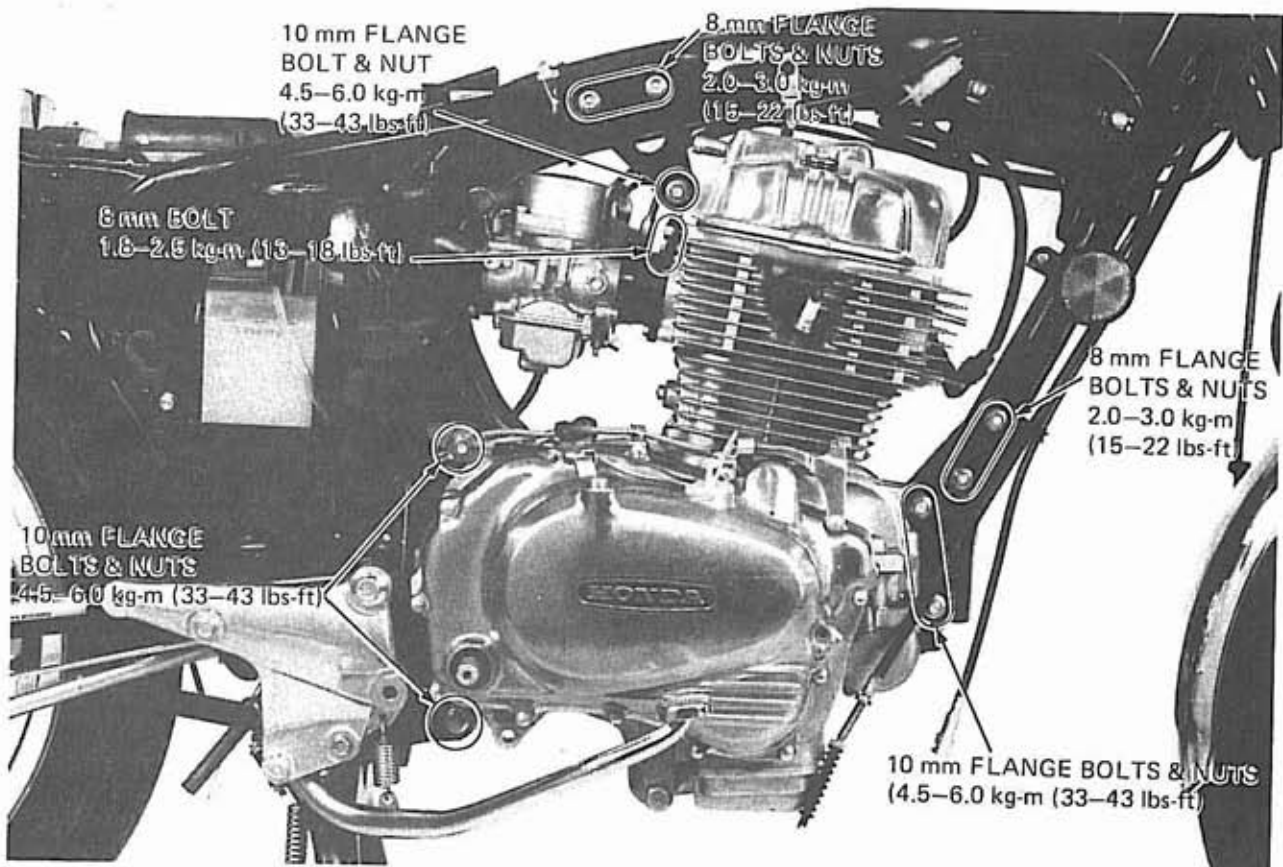
The installation sequence is essentially the reverse of removal.

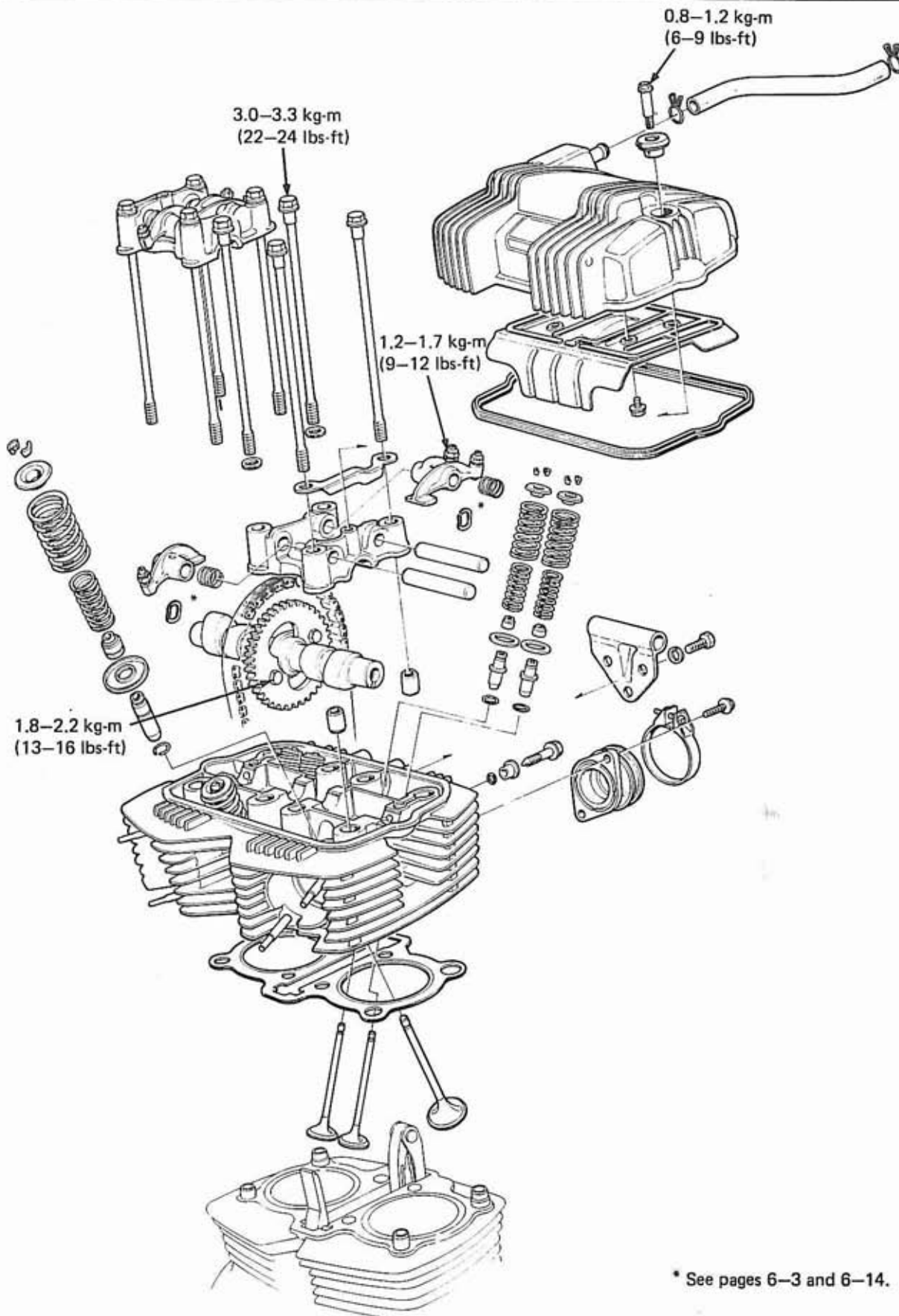
### NOTE

- Do not damage parts during installation.
- Route the wires and cables properly. (Section 1).
- Fill the crankcase to the proper level. (Section 3).
- Perform the following inspections and adjustments:  
Throttle cable free play (Section 3).  
Clutch lever free play (Section 3).  
Drive chain tension. (Section 3).

Exhaust Pipe Nuts (6 mm x 4) 0.8–1.2 kg-m (6–9 lbs-ft)

Power Chamber Clamp Bolts (8 mm x 4) 1.8–2.5 kg-m (13–18 lbs-ft)





\* See pages 6-3 and 6-14.





### ROCKER ARM AND CAMSHAFT REMOVAL

Remove the fuel tank if the engine is serviced in the frame.

Remove the L crankcase cover and cylinder head cover.

Loosen the cylinder head hold-down bolts.

#### CAUTION

- Perform this operation while the engine is cold to prevent warpage due to heat.
- Loosen the cylinder head hold-down bolts in the sequence shown in 2-3 steps.

Remove the cylinder head hold-down bolts.

#### NOTE

Some of the bolts at the center of the head are exposed. When removing them, use care to keep dirt from entering the cylinder head.

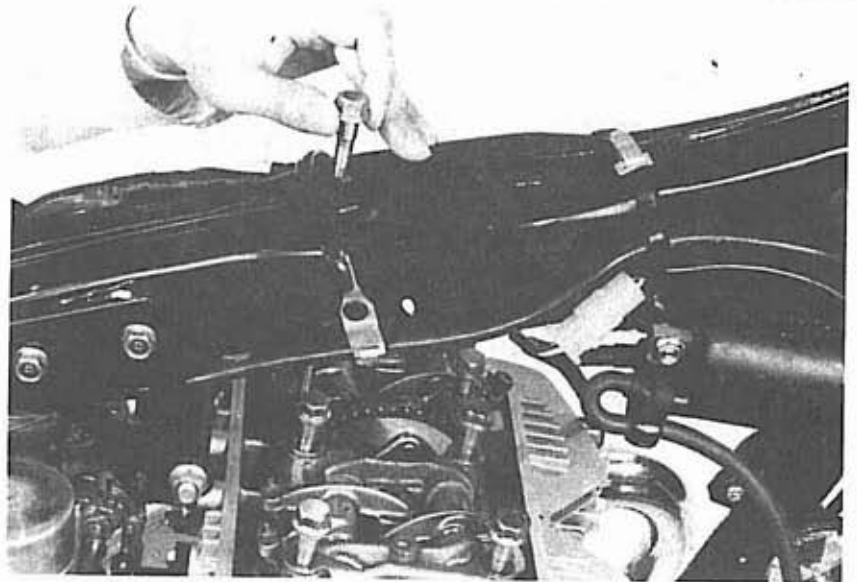
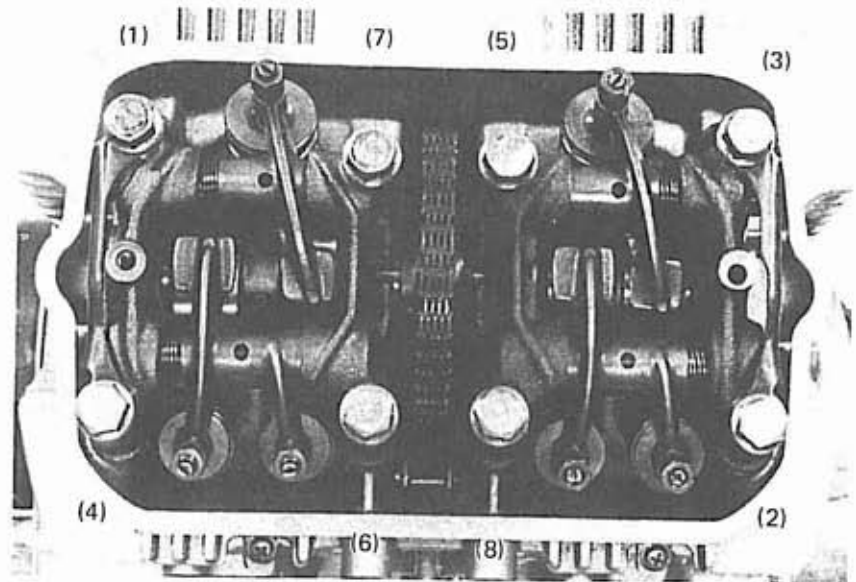
Remove the camshaft holders.

Remove the springs and rocker arms by pulling out the rocker arm shafts.

#### NOTE

- Mark each part to insure original assembly.
- Wave washers replace springs at indicated locations on the engine with the frame number starting with the following.

CB400T	CB400TE-2101116 ~
	CB400TE-4070346 ~
	NC03E-2000001 ~
CM400T	NC01E-2000001 ~
CM400A	NC02E-2000001 ~



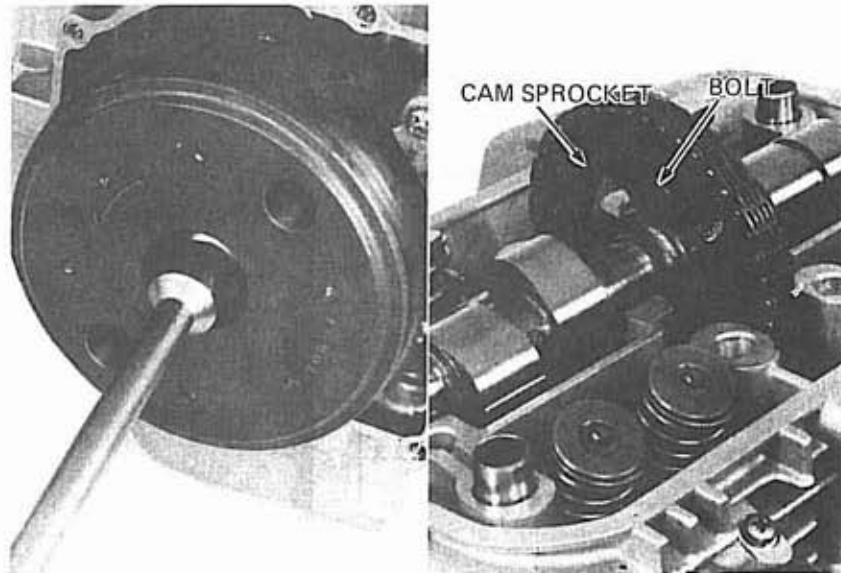




Remove the cam sprocket from the camshaft.

**NOTE**

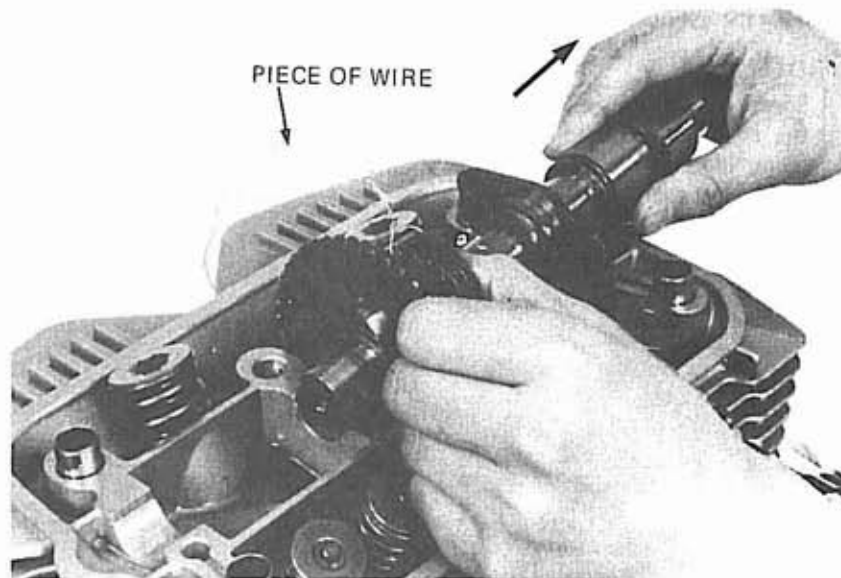
Do not drop the mounting bolts into the cylinder.



Remove the cam chain from the sprocket.  
Remove the camshaft from the right side.

**NOTE**

Suspend the cam chain with a piece of wire to keep it from falling into the cylinder.



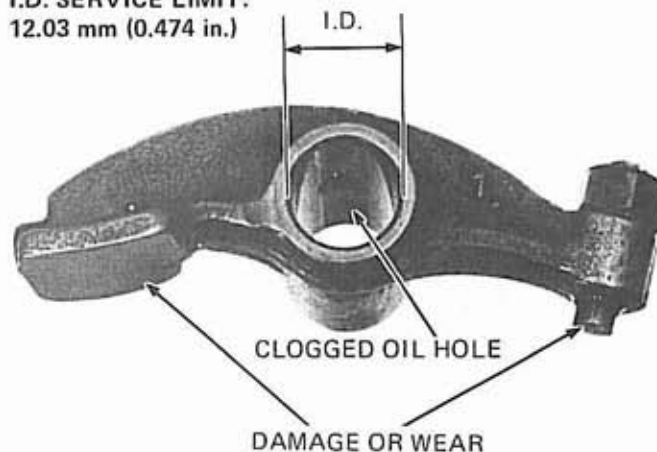
• **ROCKER ARM INSPECTION**

Inspect the rocker arms for damage, wear or clogged oil holes. Measure the I.D. of each rocker arm.

**NOTE**

If any rocker arms require servicing or replacement, inspect the camshaft lobes for scoring, chipping, or flat spots.

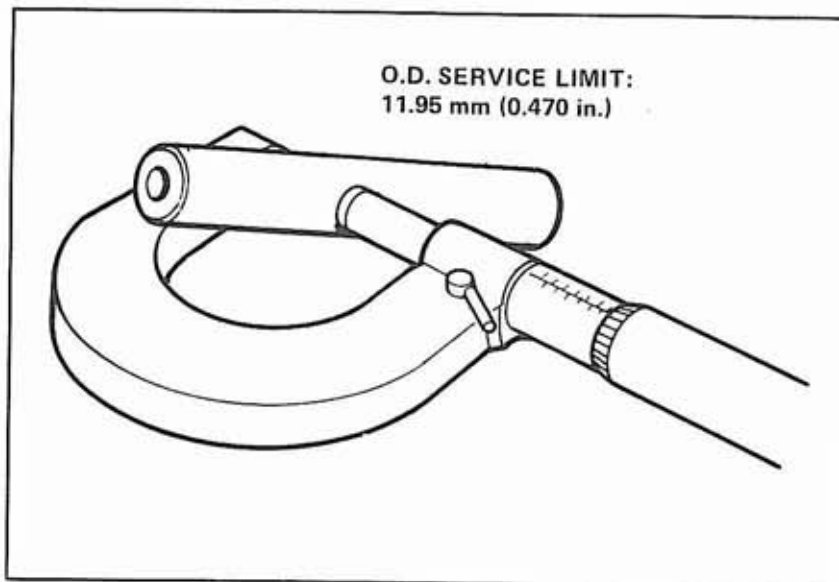
**I.D. SERVICE LIMIT:**  
12.03 mm (0.474 in.)





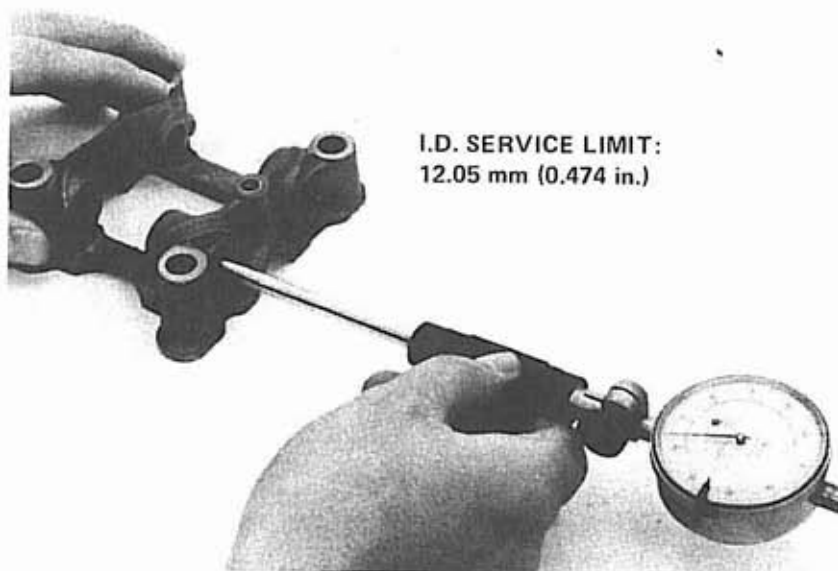
- **ROCKER ARM SHAFT INSPECTION**

Inspect the rocker arm shafts for wear or damage. Measure the O.D.



- **CAMSHAFT HOLDER ROCKER ARM SHAFT HOLE INSPECTION**

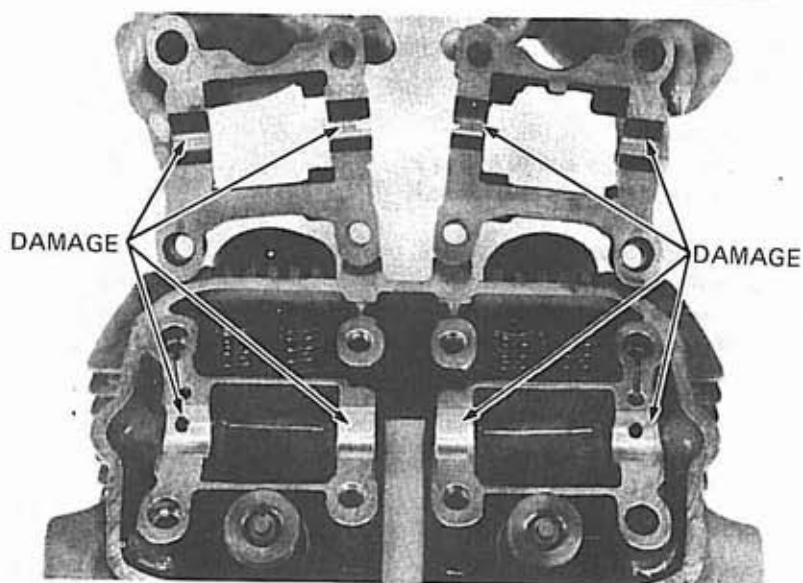
Measure the I.D. of the rocker arm shaft hole of the camshaft holders.



- **CAM BEARING SURFACE INSPECTION**

Inspect the cam bearing surfaces for scoring, scratches, or evidence of insufficient lubrication.

Make sure the oil passages are clear.



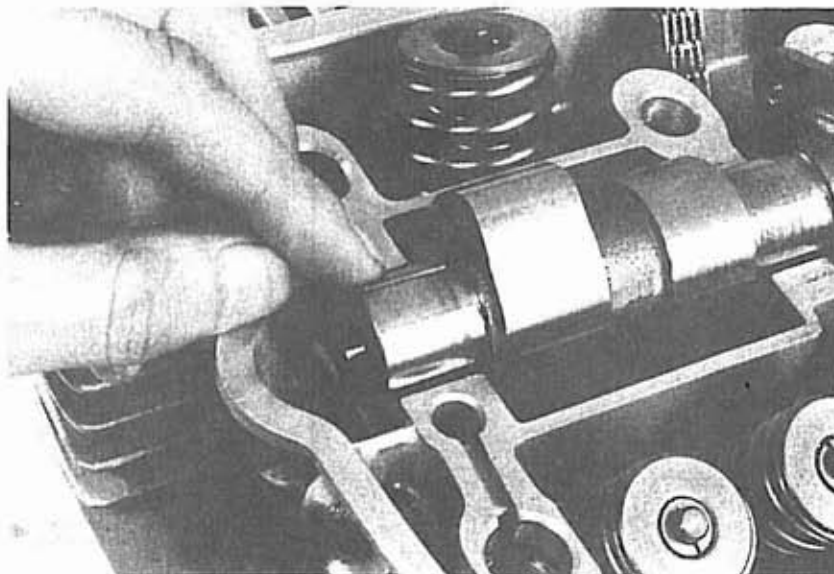


### • CAMSHAFT OIL CLEARANCE

Lay a strip of Plastigage lengthwise on top of each camshaft journal.

#### NOTE

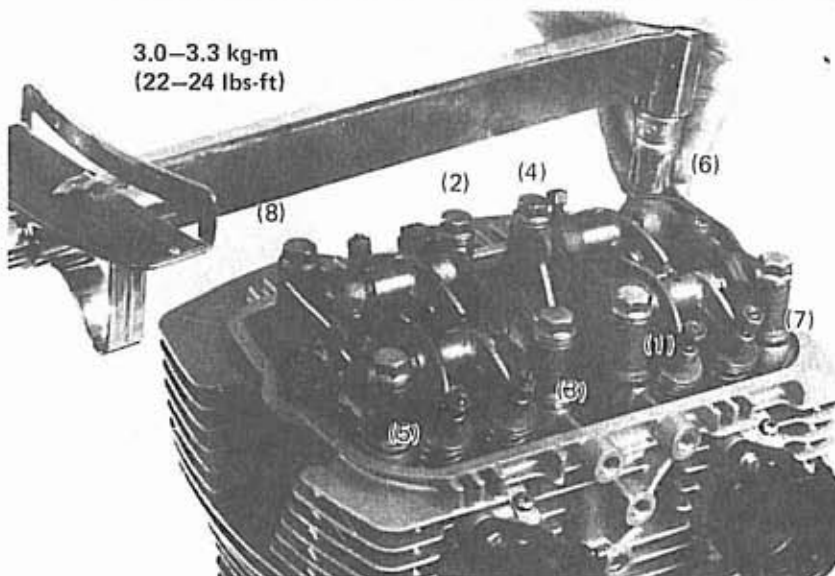
Wipe any oil from the journals before using Plastigage.



Loosen all the valve adjusters, then install the camshaft holders and tighten to the specified torque in the sequence shown.

#### NOTE

Do not rotate the camshaft when using Plastigage.



3.0–3.3 kg-m  
(22–24 lbs-ft)

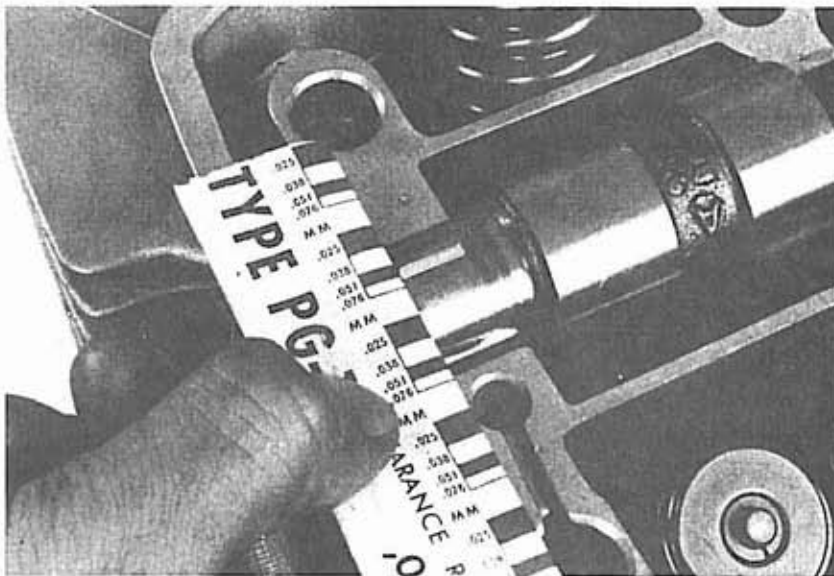
Remove the camshaft holders and measure the width of each Plastigage. The widest thickness determines the oil clearance.

#### SERVICE LIMIT:

ENDS: 0.20 mm (0.008 in.)

CENTER: 0.23 mm (0.009 in.)

When the service limits are exceeded, replace the camshaft and recheck the oil clearance. Replace the cylinder head and camshaft holders if the clearance still exceeds service limits.

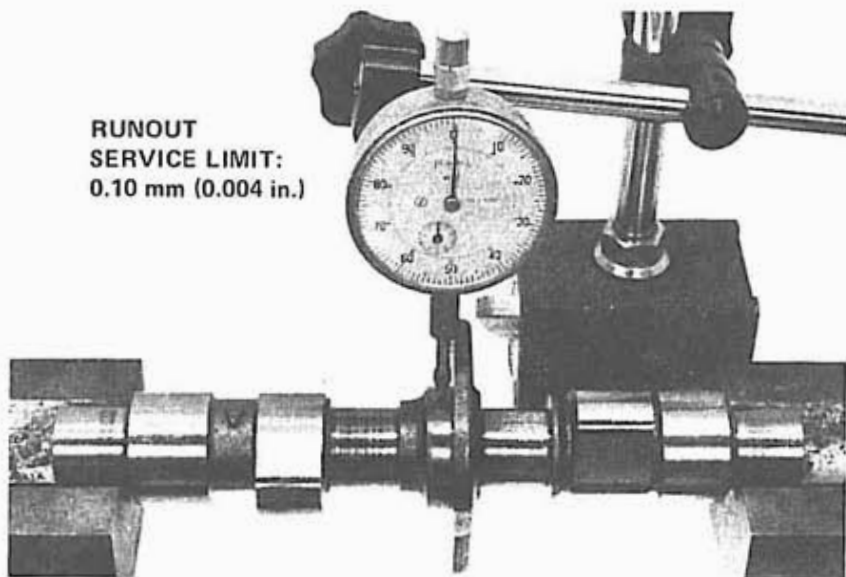




• CAMSHAFT RUNOUT

Check the camshaft runout with a micrometer.  
Support both ends of the camshaft with V-blocks.

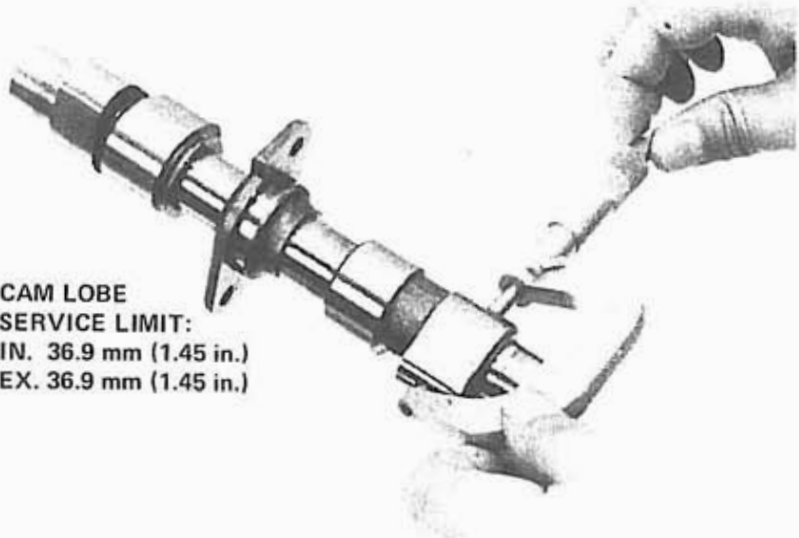
**RUNOUT**  
**SERVICE LIMIT:**  
0.10 mm (0.004 in.)



• CAM LOBE INSPECTION

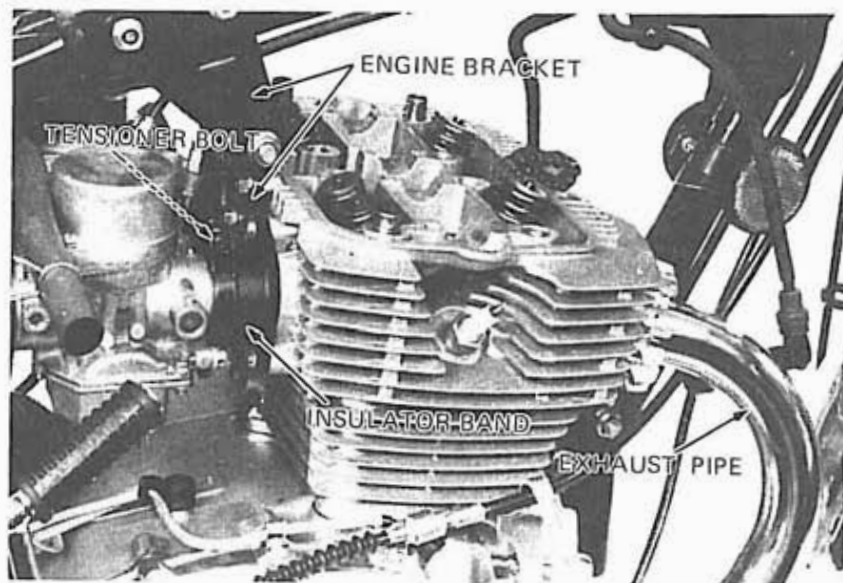
Using a micrometer check each cam lobe for wear or damage.

**CAM LOBE**  
**SERVICE LIMIT:**  
IN. 36.9 mm (1.45 in.)  
EX. 36.9 mm (1.45 in.)



**CYLINDER HEAD REMOVAL**

Remove the upper engine brackets, cam chain tensioner bolt and exhaust pipes.  
Disconnect the carburetors from the insulators.

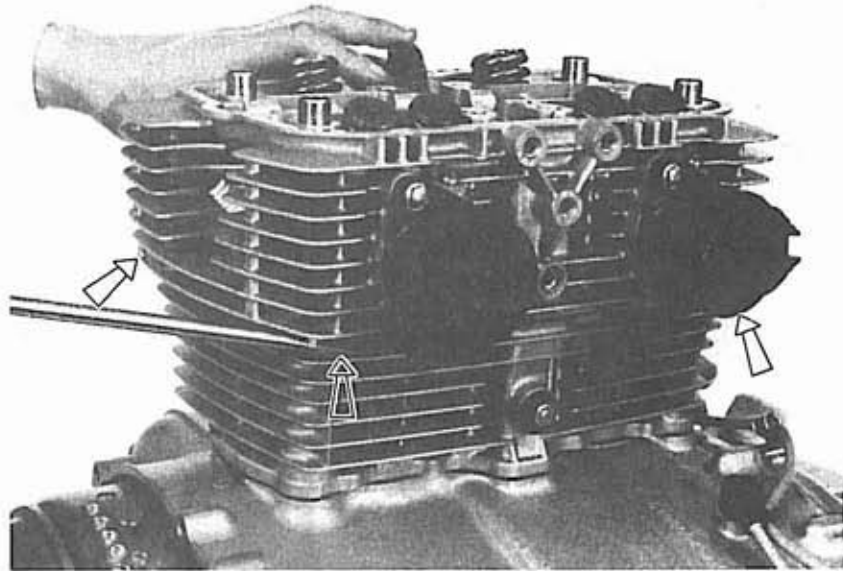




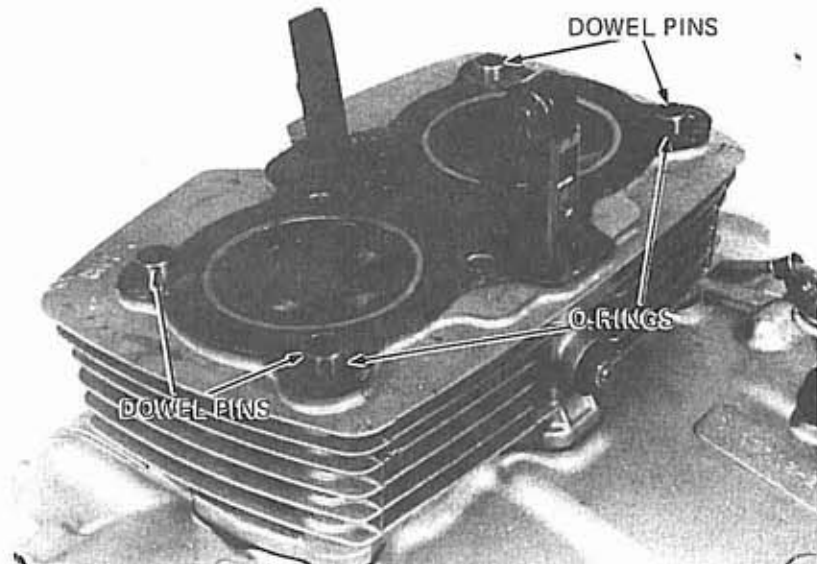
Remove the cylinder head.

**CAUTION**

To prevent damage to the fins, pry only at the ribbed areas.



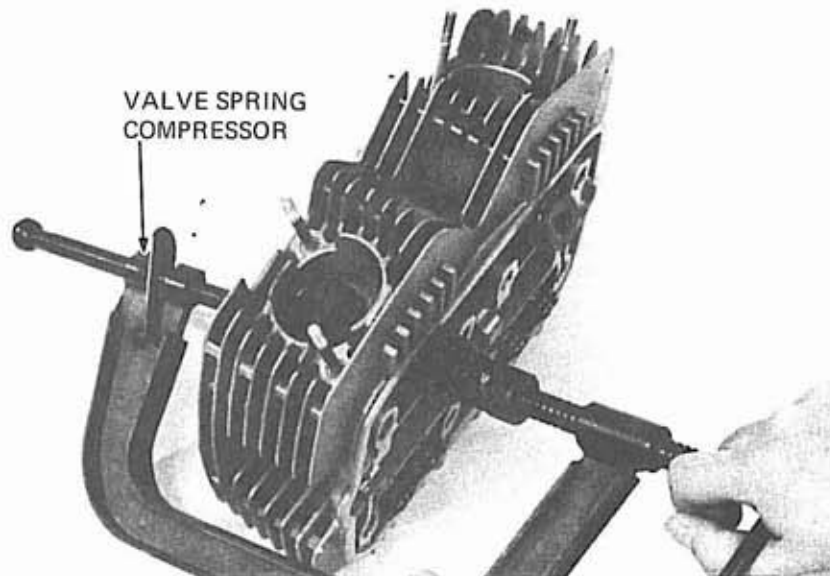
Remove the cylinder head gasket, dowel pins and O-rings.

**CYLINDER HEAD DISASSEMBLY**

Remove the valve spring cotters, retainers, springs and valves.

**NOTE**

- Do not compress the valve springs more than necessary to remove the valve spring cotters.
- Mark all disassembled parts to insure original assembly.





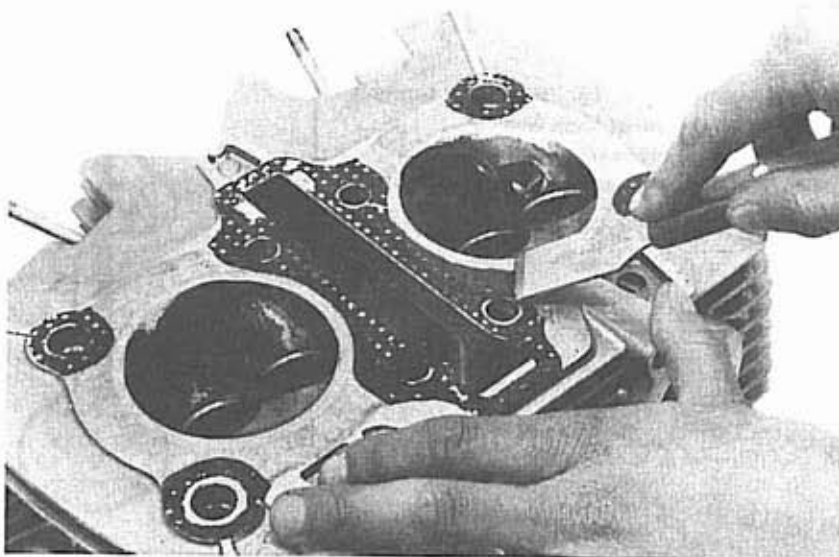


Remove carbon deposits from the combustion chamber.

Clean off the head gasket surfaces.

### NOTE

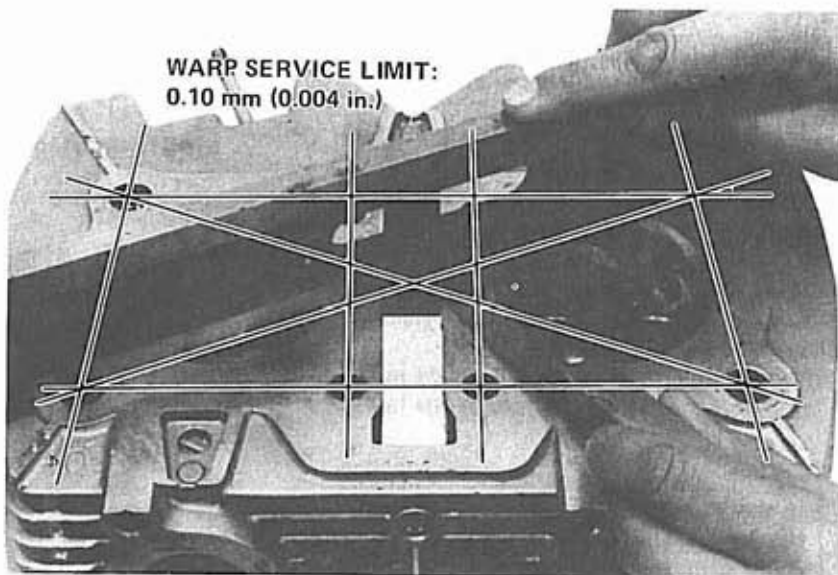
- Avoid damaging the gasket surfaces.
- Gasket will come off easier if soaked in solvent.



### • CYLINDER HEAD INSPECTION

Check the spark plug hole and valve areas for cracks.

Check the cylinder head for warpage with a straight edge and a feeler gauge.

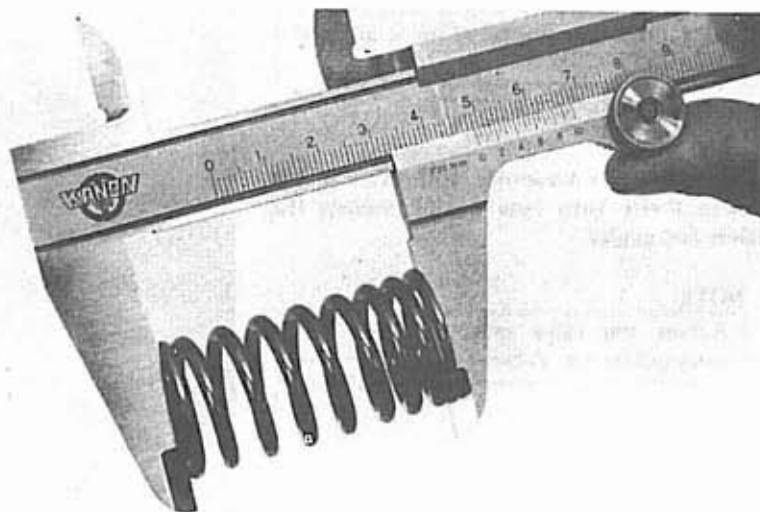


### • VALVE SPRING FREE LENGTH INSPECTION

Measure the free length of the inner and outer valve springs.

#### SERVICE LIMITS:

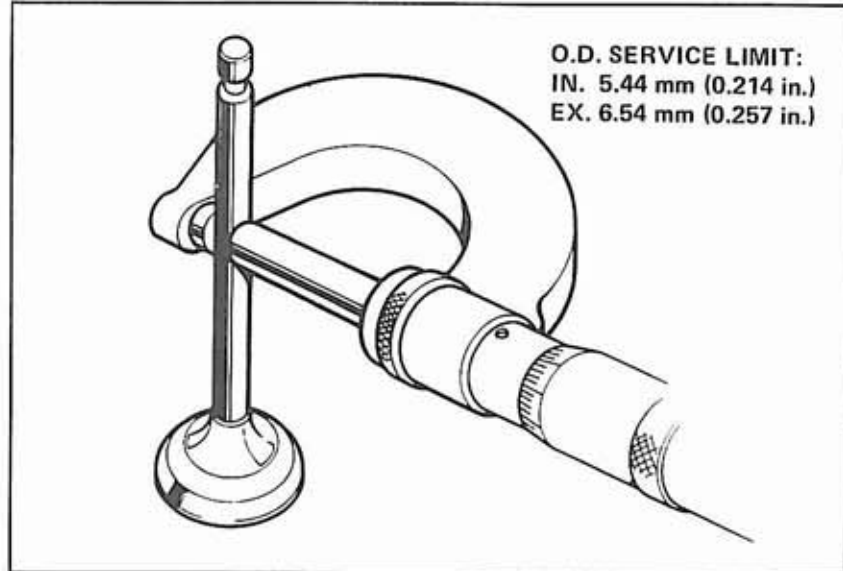
- INNER: IN. 35.5 mm (1.40 in.)  
EX. 39.5 mm (1.56 in.)
- OUTER: IN. 49.0 mm (1.93 in.)  
EX. 49.5 mm (1.95 in.)





# • VALVE STEM-TO-GUIDE CLEARANCE

Inspect each valve for bending, burning, scratches or abnormal stem wear.  
 Check the valve movement in the guide.  
 Measure and record each valve stem O.D.



## NOTE

Ream the guides to remove any carbon build-up before checking clearance.

Measure and record each valve guide I.D. using a ball gauge or inside micrometer.

SERVICE LIMIT: IN. 5.60 mm (0.220 in.)  
 EX. 6.70 mm (0.264 in.)

Subtract each valve stem O.D. from the corresponding guide I.D. to obtain the stem to guide clearance.

SERVICE LIMIT: IN. 0.10 mm (0.004 in.)  
 EX. 0.10 mm (0.004 in.)

## NOTE

If the stem-to-guide clearance exceeds the service limits, determine if a new guide with standard dimensions would bring the clearance within tolerance. If so, replace any guides as necessary and ream to fit.

If stem-to-guide clearance still exceeds the service limits with new guides, replace the valves and guides.

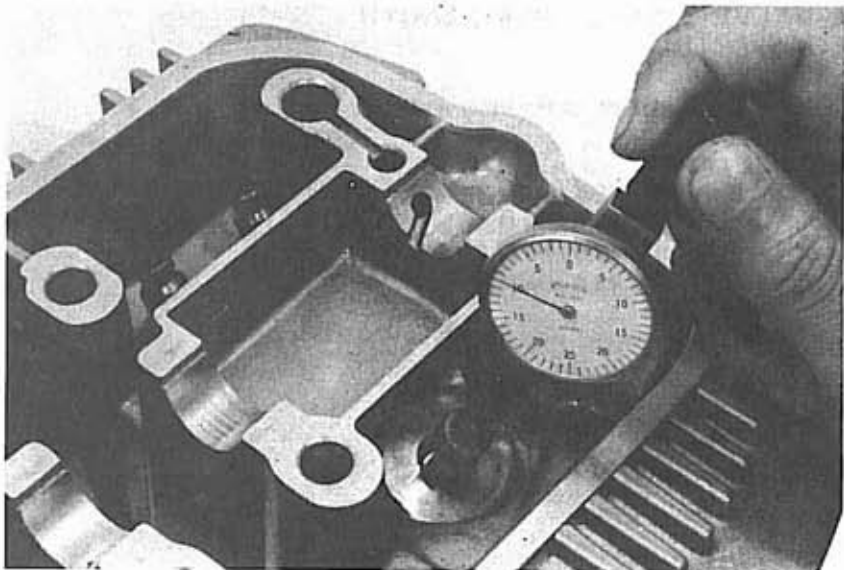
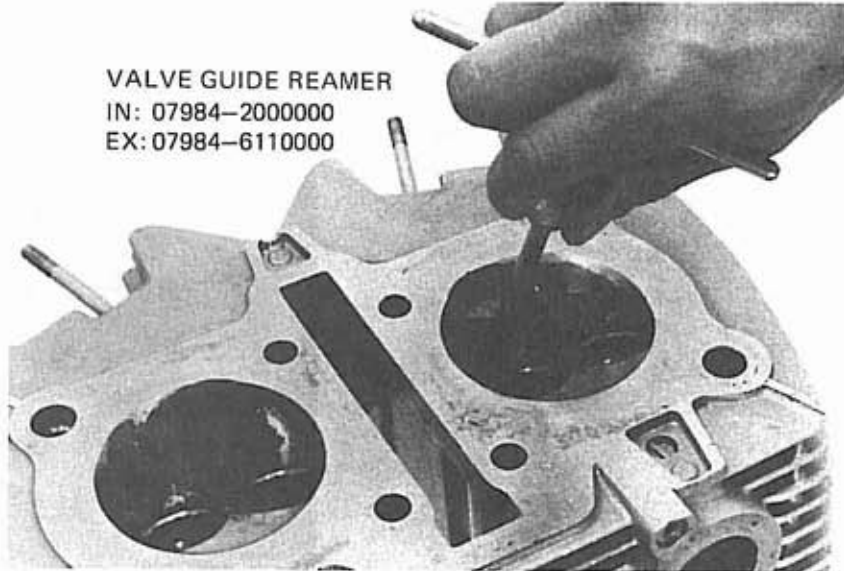
## NOTE

Reface the valve seats whenever the valve guides are replaced.

## VALVE GUIDE REAMER

IN: 07984-2000000

EX: 07984-6110000





## VALVE GUIDE REPLACEMENT

Support the cylinder head and drive out the guide from the valve port.

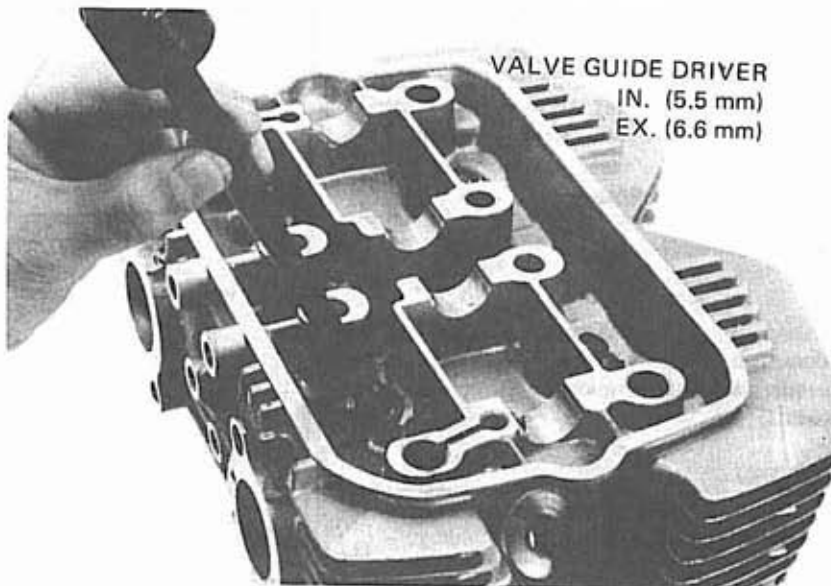
### NOTE

When driving out the valve guide, do not damage the head.



VALVE GUIDE REMOVER  
IN. (5.5 mm)  
EX. (6.6 mm)

Install a new oversize valve guide from the top of the head.



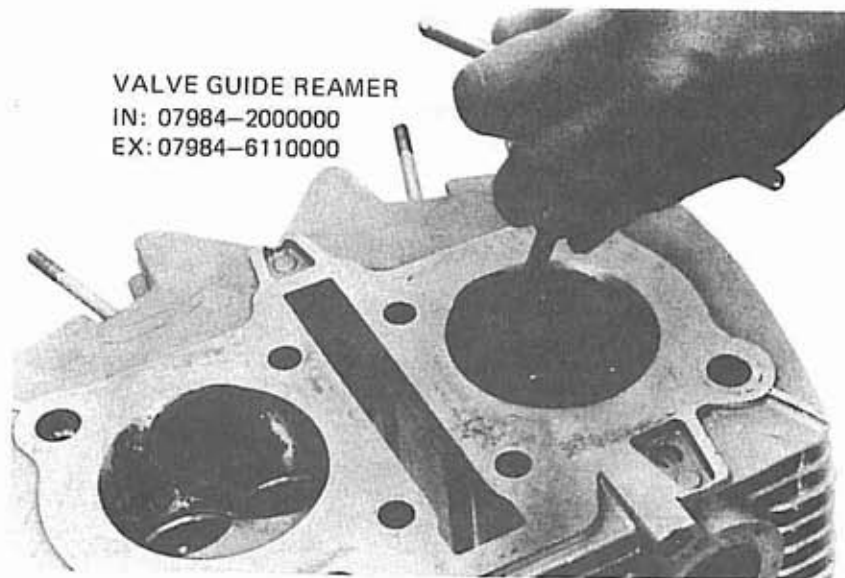
VALVE GUIDE DRIVER  
IN. (5.5 mm)  
EX. (6.6 mm)

Ream the new valve guide after installation.

### NOTE

Use cutting oil on the reamer during this operation.

Clean the cylinder head thoroughly to remove any metal particles.



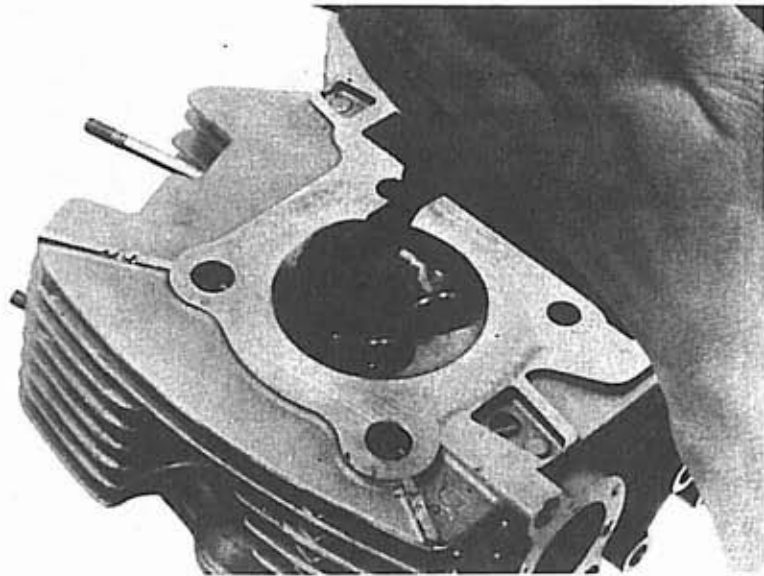
VALVE GUIDE REAMER  
IN: 07984-2000000  
EX: 07984-6110000



## VALVE SEAT INSPECTION AND GRINDING

Clean all intake and exhaust valves thoroughly to remove carbon deposits.

Apply a light coating of valve lapping compound to each valve face. Lap each valve and seat using a rubber hose or other hand-lapping tool.



Remove the valve and inspect the face.

### NOTE

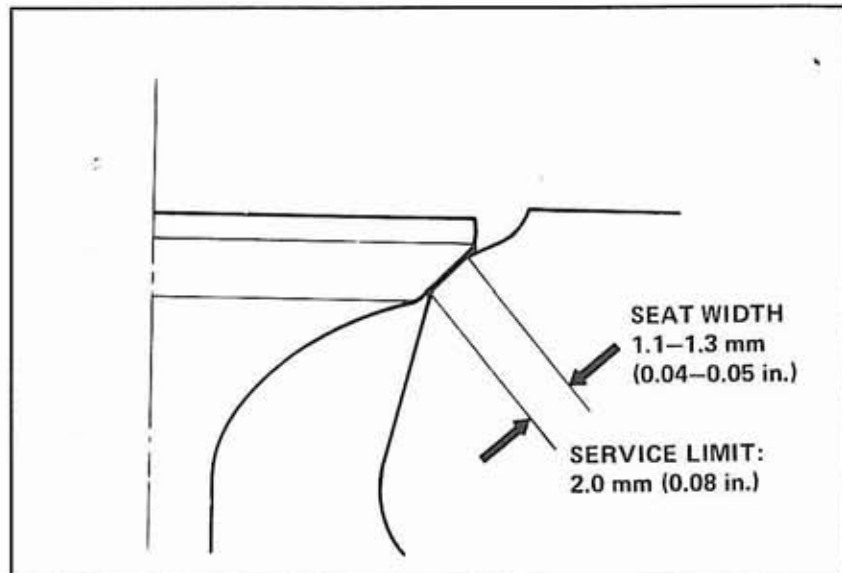
The valves cannot be ground. If the valve face is rough, worn unevenly, or contacts the seat improperly, the valve must be replaced.

Inspect the valve seats.

If the seat is too wide, too narrow, or has low spots, the seat must be ground. (a power grinder is recommended for good valve sealing).

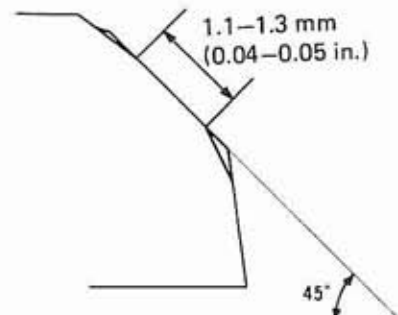
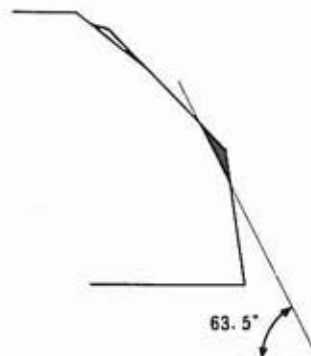
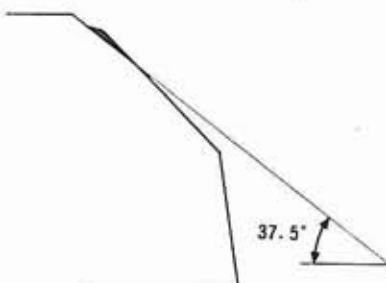
### NOTE

Follow the refacer manufacturer operating instructions.



After cutting the seat, apply lapping compound to valve face, and lap the valve using light pressure.

After lapping, wash any residual compound off the cylinder head and valve.





## CYLINDER HEAD ASSEMBLY

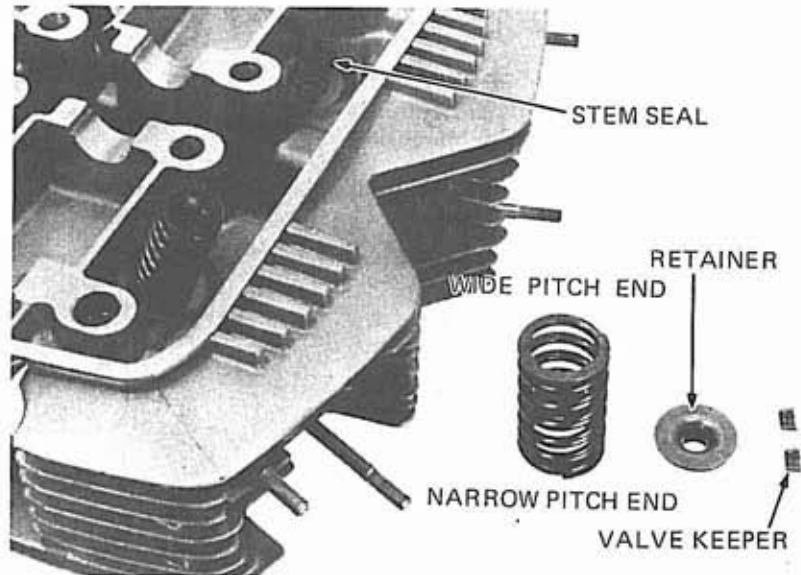
### NOTE

Replace the valve stem seals when disassembling.

Lubricate each valve stem with oil and insert the valve into the valve guide.  
Install the valve springs and retainers.

### NOTE

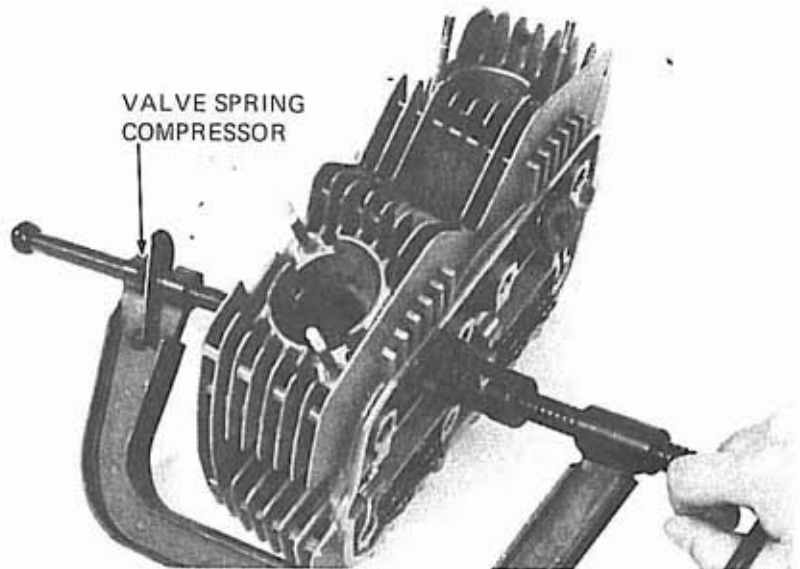
Install the valve springs with the tightly wound coils facing the cylinder head.



Install the valve keepers.

### CAUTION

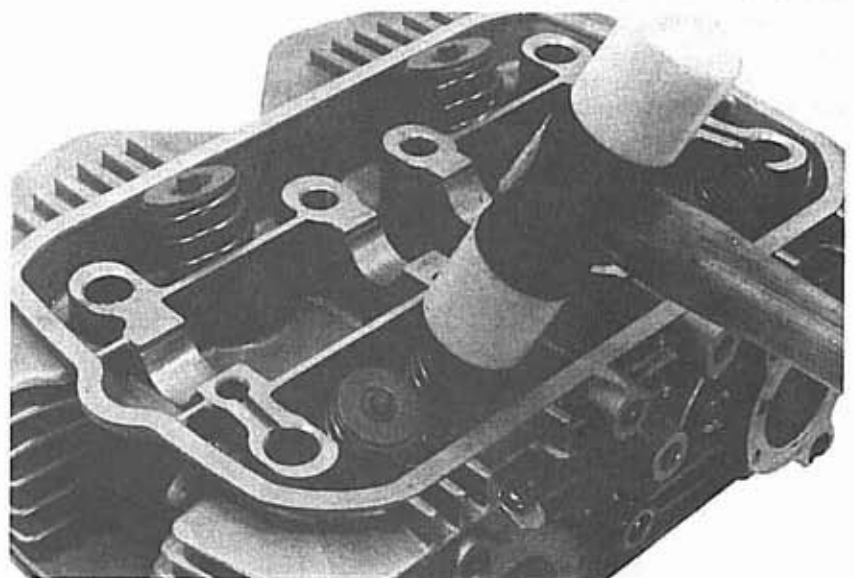
To prevent loss of tension do not compress the valve spring more than necessary to install the valve keepers.



Tap the valve stems gently with a soft hammer to firmly seat the keepers.

### NOTE

Support the cylinder head above the work bench surface to prevent possible valve damage.







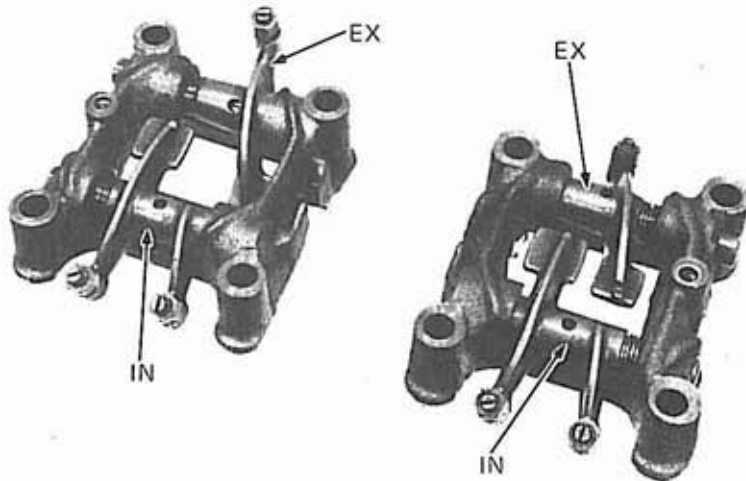
## ROCKER ARM ASSEMBLY

Assemble the rocker arms, springs and shafts. Be sure that the rocker arms are correctly located and the cam holders are on the correct sides.

### NOTE

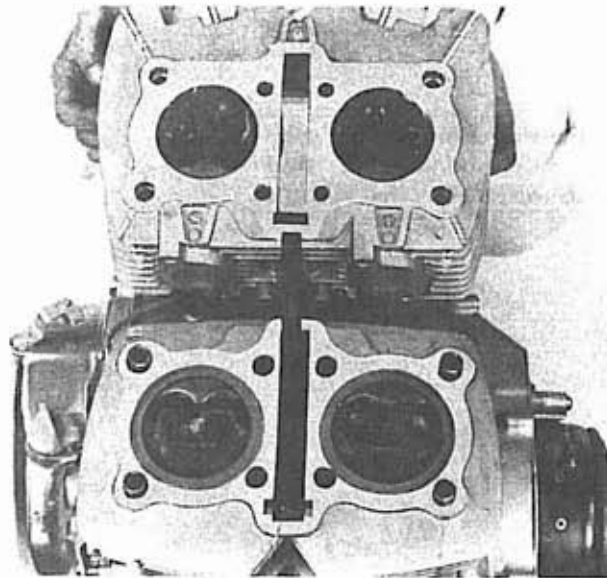
- Apply a thin coat of oil to the shafts before assembling.
- Wave washers replace springs at indicated locations on the engine with the frame number starting with the following:

CB400T	CB400TE-2101116 ~ CB400TE-4070346 ~ NC03E-2000001 ~
CM400T	NC01E-2000001 ~
CM400A	NC02E-2000001 ~



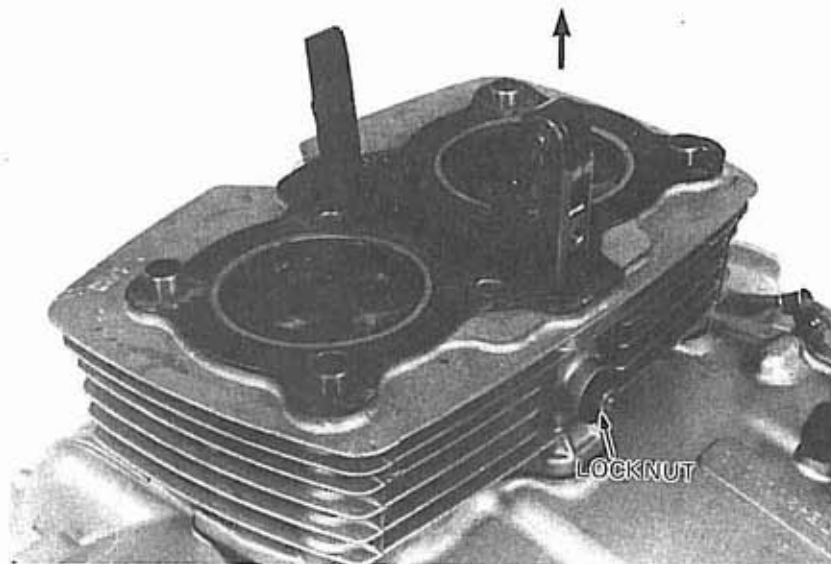
## CYLINDER HEAD INSTALLATION

Clean the cylinder head gasket surfaces of any gasket material.



Install the O-rings, dowel pins and a new gasket.

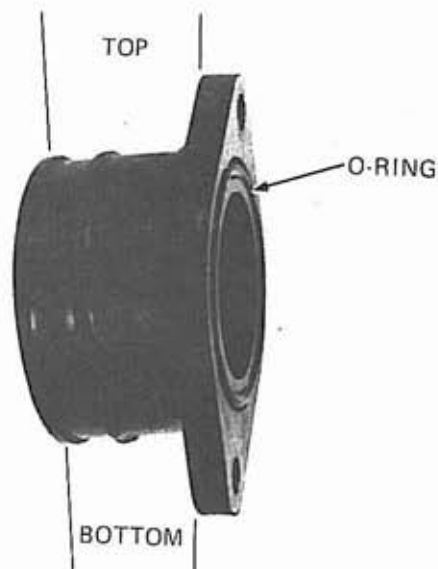
Loosen the cam chain tensioner lock nut and pull the tensioner up fully. Retighten the lock nut.



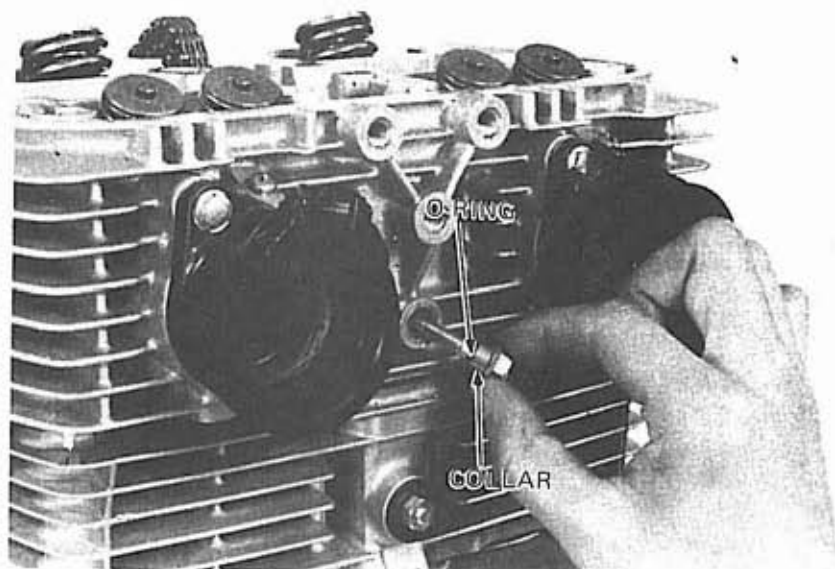


Install the cylinder head.

Install the carburetor insulator with the narrow end down.



Install the cam chain tensioner bolt, collar and O-ring.



## CAMSHAFT/ROCKER ARM INSTALLATION

Lubricate the camshaft bearings with molybdenum disulfide grease.

Install the camshaft and camshaft sprocket.

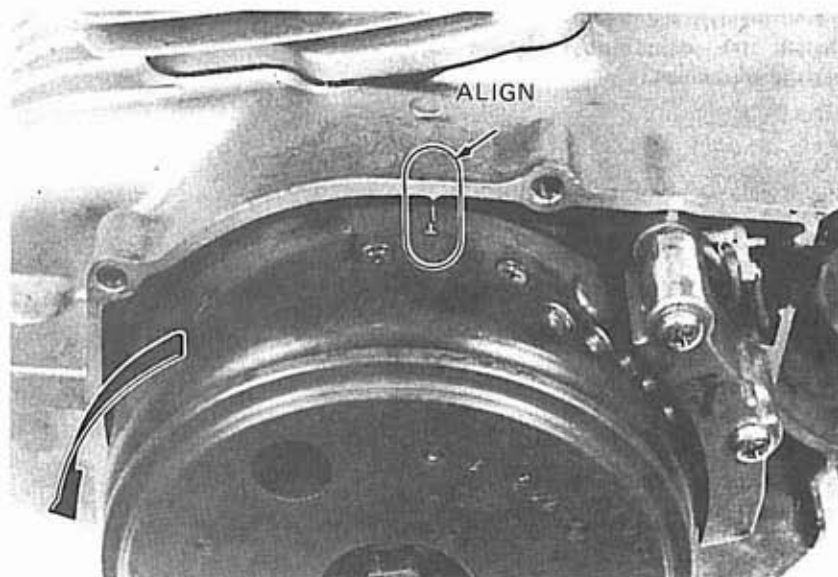
### NOTE

Install the camshaft sprocket with the timing mark to the left side of the engine.





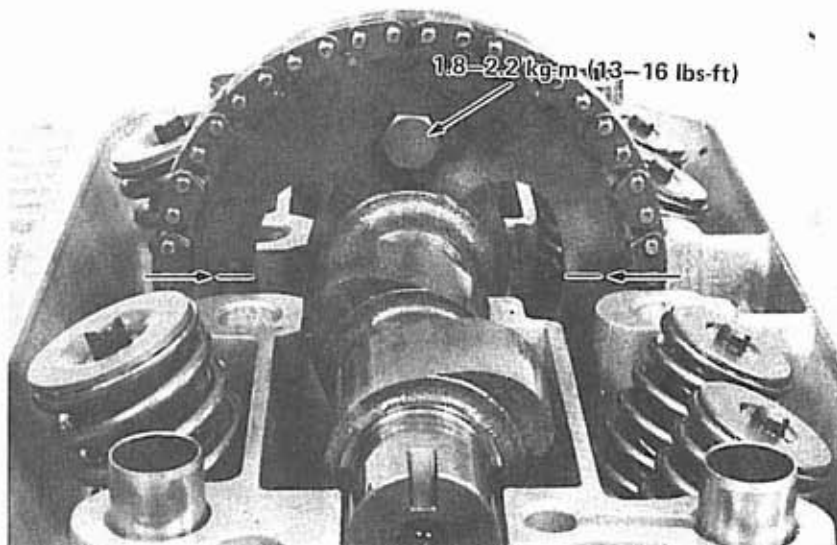
Align the "T" mark on the A.C. generator rotor with the index mark.



Align the timing marks on the sprocket with the head cover mating surface.  
Place the timing chain on the sprocket while holding the sprocket.  
Tighten the sprocket mounting bolts to specified torque.

#### NOTE

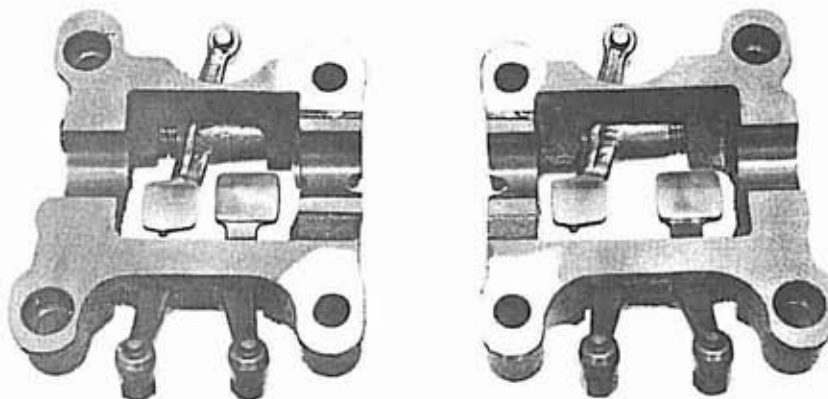
Do not allow the bolts to fall into the crankcase.



Apply liquid sealant to the head contacting faces of the camshaft holders.

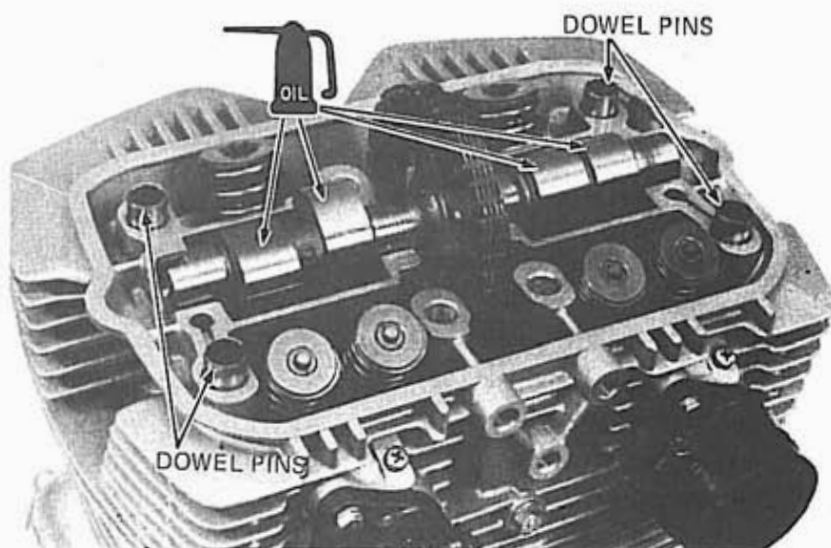
#### CAUTION

Do not apply an excessive amount of liquid sealer which could enter the camshaft bearings.





Check that the dowel pins are in place.



Loosen each tappet adjusting screw fully, and install the camshaft holders.

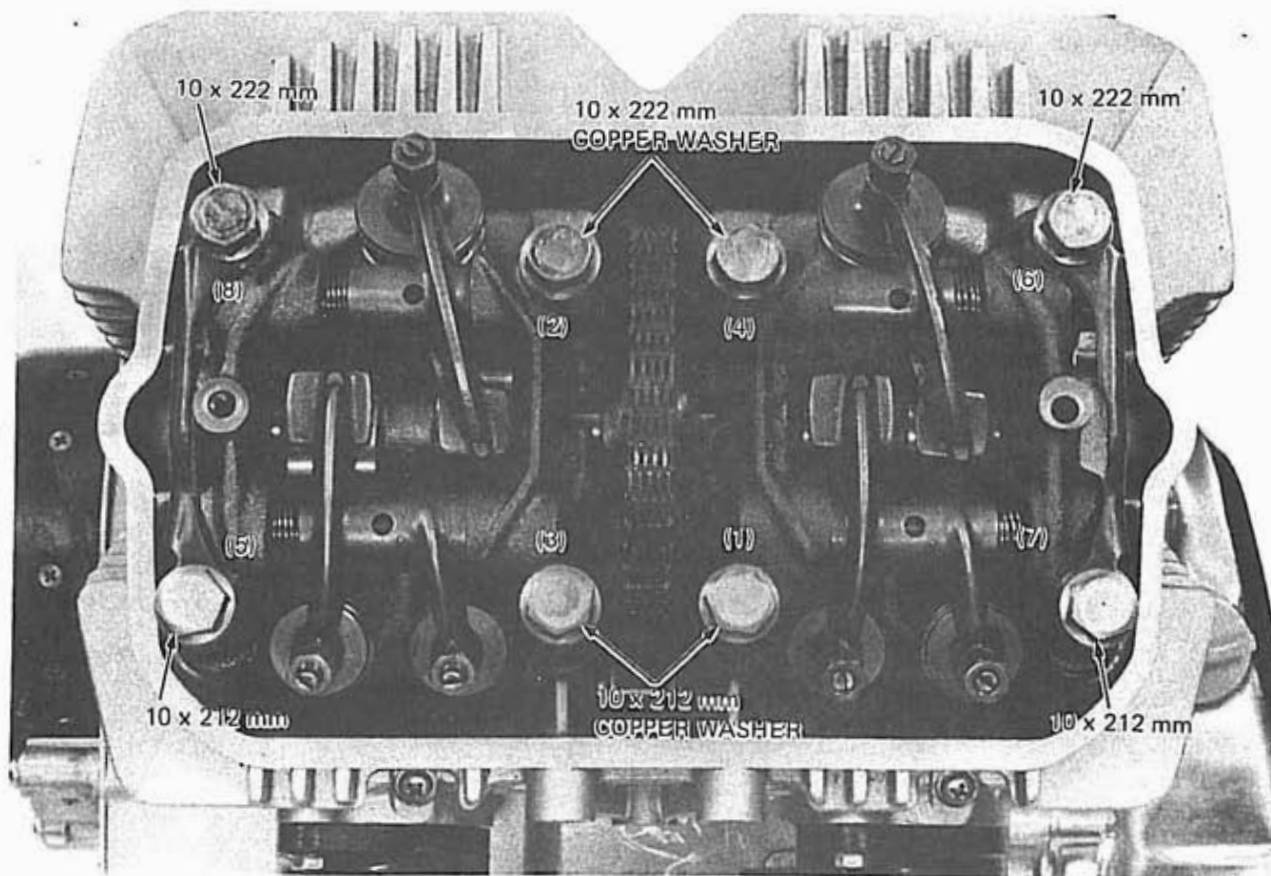
Torque in the sequence shown.

**TIGHTENING TORQUE:**

3.0–3.3 kg-m (22–24 lbs-ft)

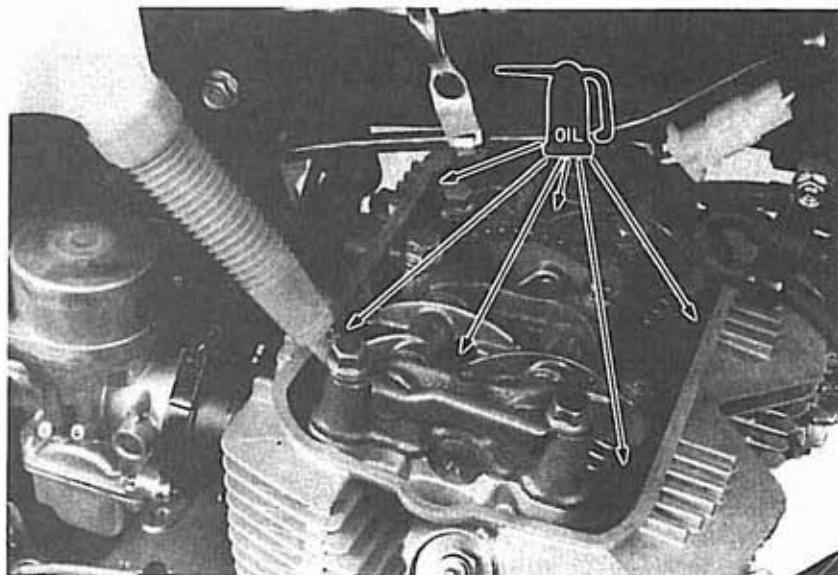
**NOTE**

- Torque in 2-3 steps.
- Clean excessive sealant from the head.





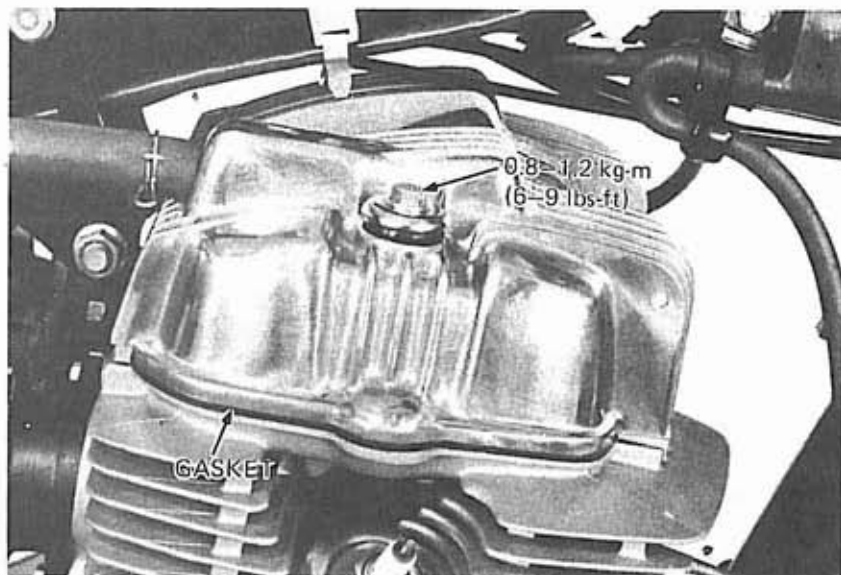
Fill the oil pockets in the head with oil so that the cam lobes are submerged.



Adjust cam chain tension . . . . .(Section 3)  
Adjust valve tappet clearance. . . . .(Section 3)  
Inspect the cylinder head cover gasket for damage or deterioration. Install the cover. Tighten the bolts.

Install the right and left exhaust pipes and upper hanger brackets, after the cylinder head is removed.

Connect the carburetor insulators to the carburetors.





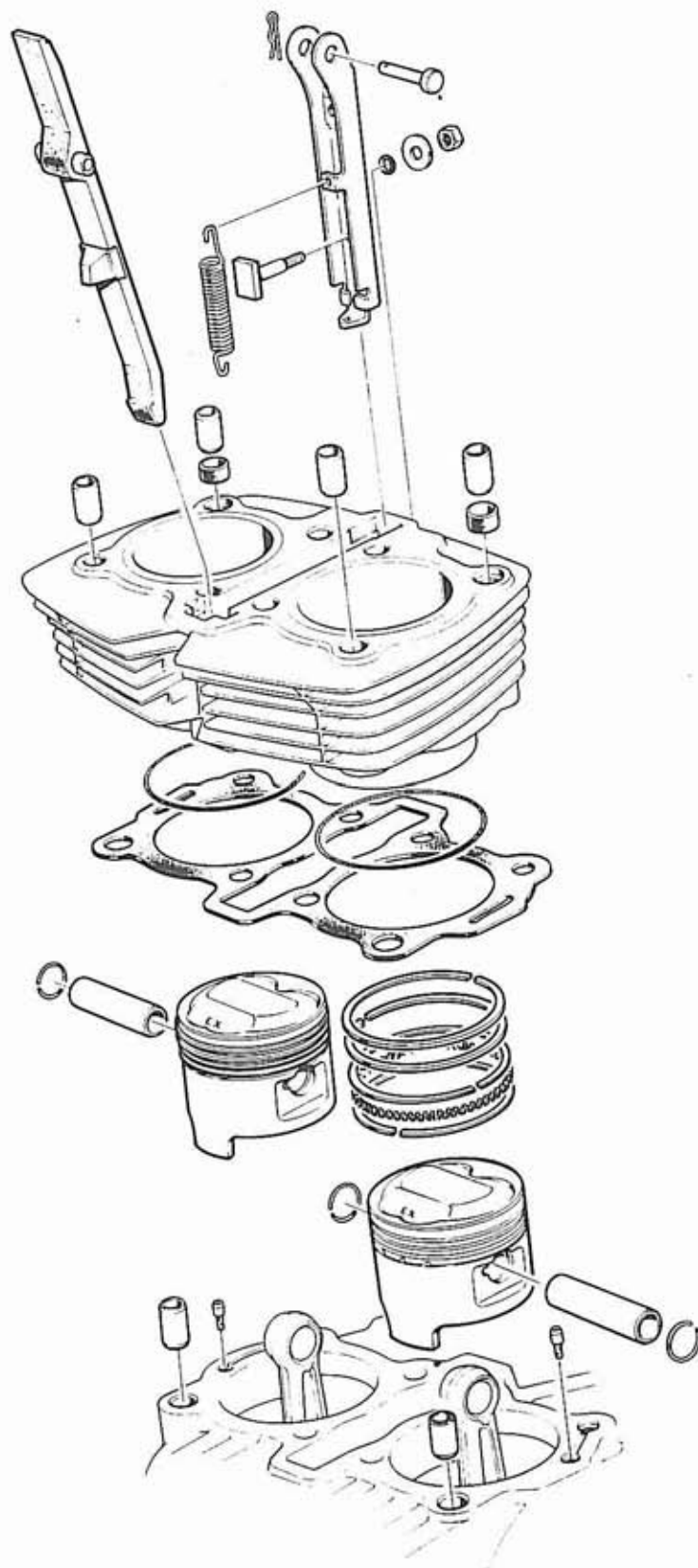


**HONDA**  
**CB400T**

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M E M O

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SERVICE INFORMATION	7-1	PISTON REMOVAL	7-3
TROUBLESHOOTING	7-1	PISTON INSTALLATION	7-7
CYLINDER REMOVAL	7-2	CYLINDER INSTALLATION	7-7

## SERVICE INFORMATION

### • WORKING PRACTICE

All cylinder and piston maintenance and inspection can be accomplished with the engine in the frame. Camshaft lubricating oil is fed to the cylinder head through an orifice in the engine case. Be sure this orifice is not clogged and that the O-rings and dowel pins are in place before installing the cylinder head.

### • SPECIAL TOOLS

Piston Base                      07958-2500000  
Piston Ring Compressor      07954-2830000

### • SPECIFICATIONS

			STANDARD	SERVICE LIMIT
Cylinder	I.D.		70.50-70.51 mm (2.775-2.776 in.)	70.60 mm (2.78 in.)
	Warpage			0.10 mm (0.004 in.)
Piston, piston rings and piston pin	Piston ring-to-ring groove clearance	TOP	0.03-0.06 mm (0.001-0.002 in.)	0.10 mm (0.004 in.)
		SECOND	0.025-0.055 mm (0.0009-0.0022 in.)	0.10 mm (0.004 in.)
	Ring end gap	TOP	0.2-0.4 mm (0.008-0.016 in.)	0.60 mm (0.024 in.)
		SECOND	0.2-0.4 mm (0.008-0.016 in.)	0.60 mm (0.024 in.)
		OIL (SIDE RAIL)	0.2-0.9 mm (0.008-0.035 in.)	1.10 mm (0.043 in.)
	Piston O.D.		70.47-70.49 mm (2.774-2.775 in.)	70.40 mm (2.772 in.)
	Piston pin bore		17.002-17.008 mm (0.6694-0.6696 in.)	17.04 mm (0.671 in.)
	Connecting rod small end I.D.		17.016-17.034 mm (0.6699-0.6706 in.)	17.06 mm (0.672 in.)
	Piston pin O.D.		16.994-17.000 mm (0.6690-0.6693 in.)	16.98 mm (0.669 in.)
	Piston-to-piston pin clearance		—————	0.04 mm (0.0016 in.)
	Cylinder-to-piston clearance		—————	0.10 mm (0.004 in.)

## TROUBLESHOOTING

### Compression Too Low or Unstable

1. Worn cylinder or piston rings

### Excessive Smoke

1. Worn cylinder or piston
2. Improper installation of piston rings
3. Scored or scratched piston or cylinder wall

### Overheating

1. Excessive carbon build-up on the piston or combustion chamber wall.

### Knocking or Abnormal Noise

1. Worn piston and cylinder
2. Excessive carbon build-up



## CYLINDER REMOVAL

Remove the cylinder head. (Refer to Section 6)

Remove the cam chain tensioner clip and pin.

### NOTE

Do not drop the clip and pin into the crankcase.

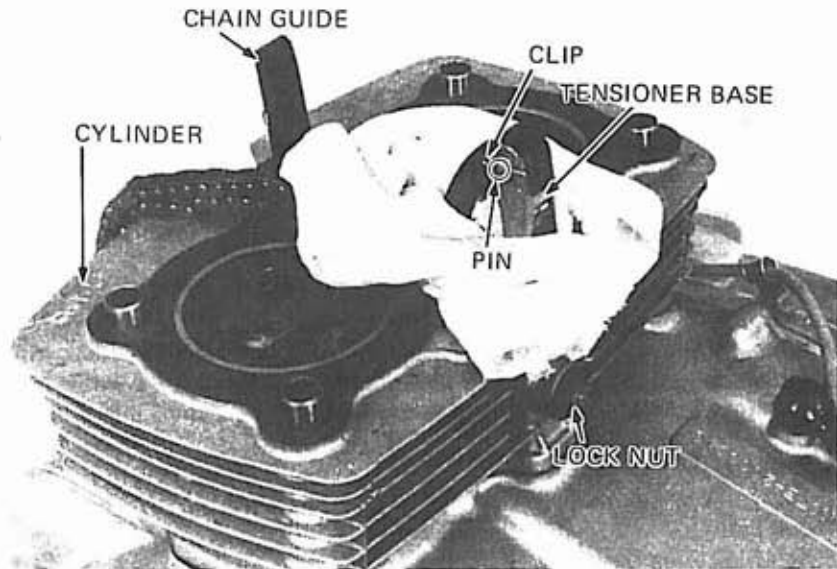
Remove the tensioner lock nut, washer and O-ring.

Remove the tensioner base.

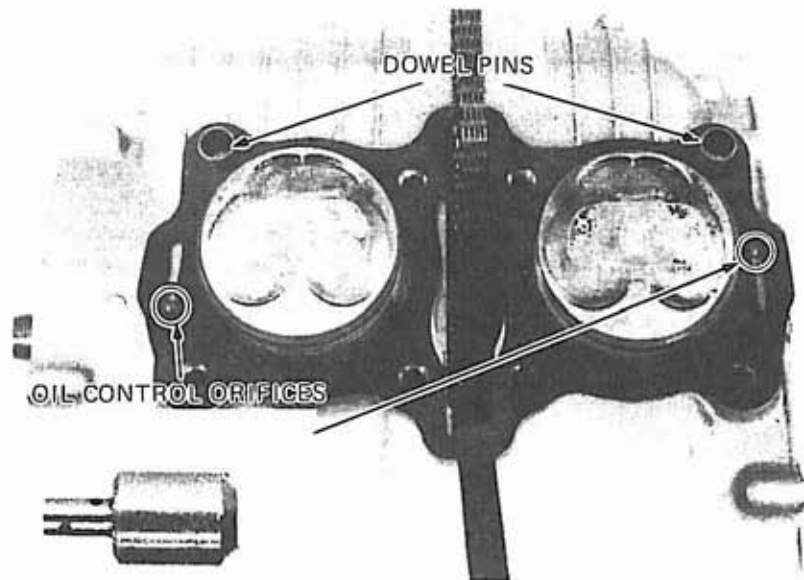
Remove the cam chain guide.

Remove the cylinder.

Clean the base of the cylinder head.

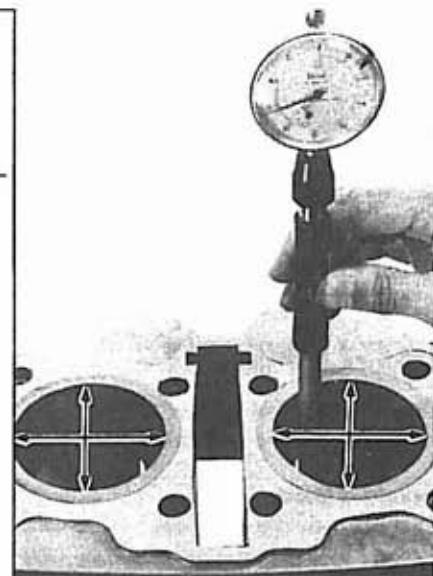
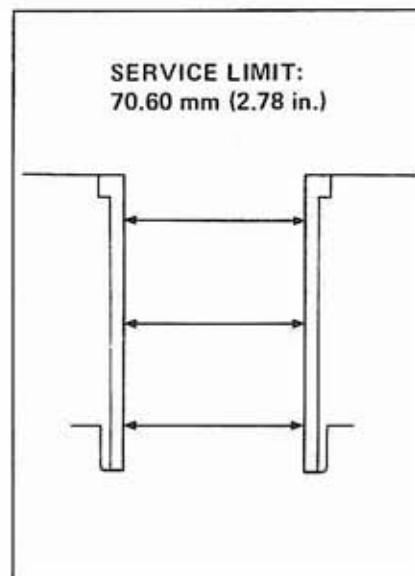


Remove the cylinder gasket, dowel pins and oil control orifices.



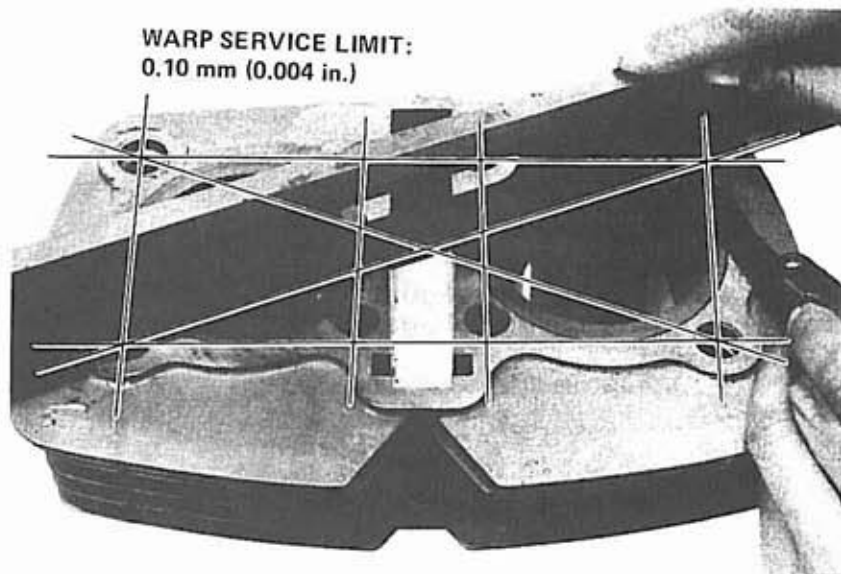
## • CYLINDER INSPECTION

Inspect the cylinder bores for wear.





Inspect the top of the cylinders for warpage.  
Check in an X pattern as shown



## PISTON REMOVAL

Remove each piston pin clip with pliers.

### NOTE

Be careful when removing clips to keep them from falling into the crankcase.

Press the piston pin out of the piston.

### NOTE

Mark the pistons to indicate the cylinder positions.



## • PISTON/PISTON RING INSPECTION

Inspect the piston ring-to groove clearance.

Remove the piston rings.

### NOTE

Mark the rings so that they can be returned to their original locations.

Inspect the pistons for damage and cracks; ring grooves for wear.







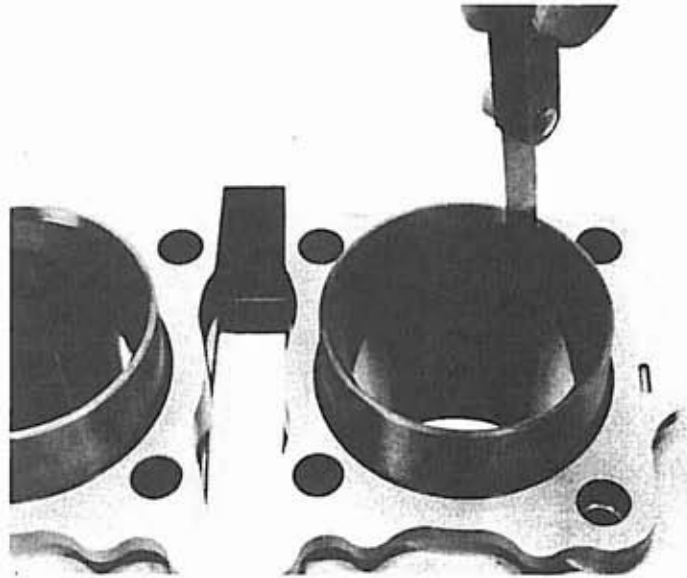
Insert each piston ring into the cylinder and inspect the end gap.

**SERVICE LIMIT:**

TOP: 0.60 mm (0.024 in.)  
 SECOND: 0.60 mm (0.024 in.)  
 OIL (Side rail): 1.10 mm (0.043 in.)

**STANDARD END GAP:**

TOP: 0.2–0.4 mm (0.008–0.016 in.)  
 SECOND: 0.2–0.4 mm (0.008–0.016 in.)  
 OIL (Side rail): 0.2–0.9 mm (0.008–0.035 in.)



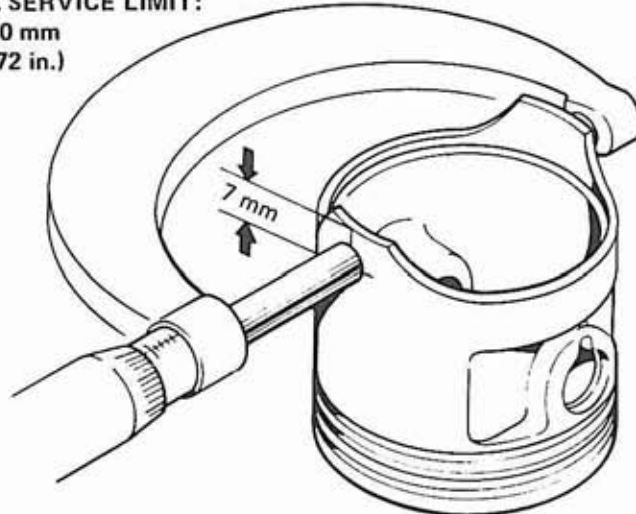
Measure the piston O.D. at the skirt.

**NOTE**

Measurements should be taken 7 mm (0.28 in.) from the bottom.

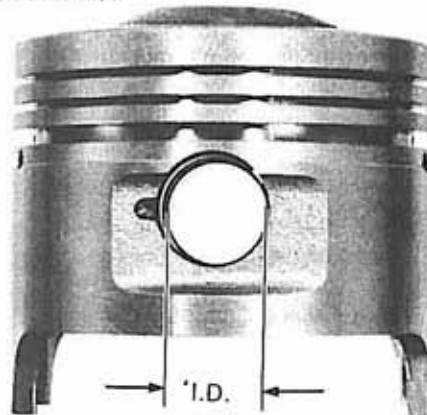
Calculate the cylinder-to-piston clearance.  
**SERVICE LIMIT: 0.1 mm (0.004 in.)**

**O.D. SERVICE LIMIT:**  
 70.40 mm  
 (2.772 in.)



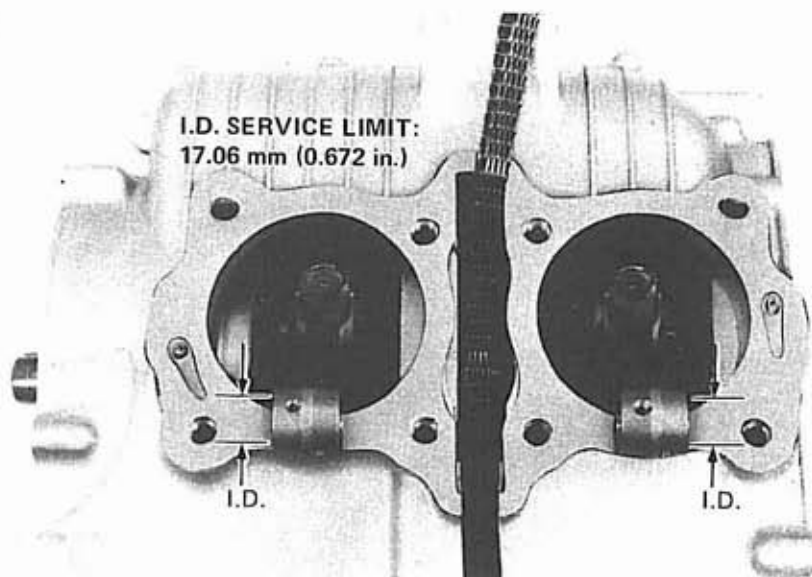
Inspect the piston pin hole I.D.

**I.D. SERVICE LIMIT:**  
 17.04 mm  
 (0.671 in.)



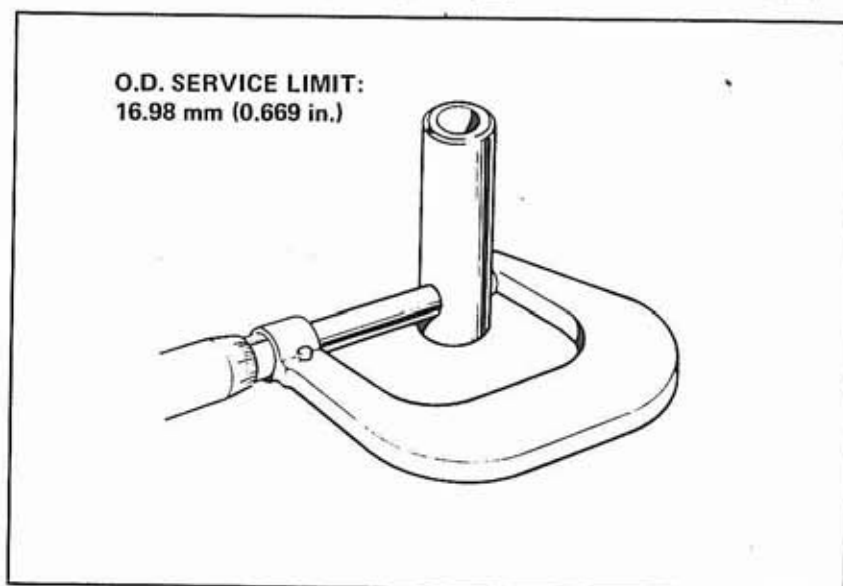


Measure the connecting rod small end I.D..  
(See Section 9 for replacement procedure)



Measure the piston pin O.D..

Determine the piston-to-piston pin clearance.  
SERVICE LIMIT: 0.04 mm (0.0016 in.)

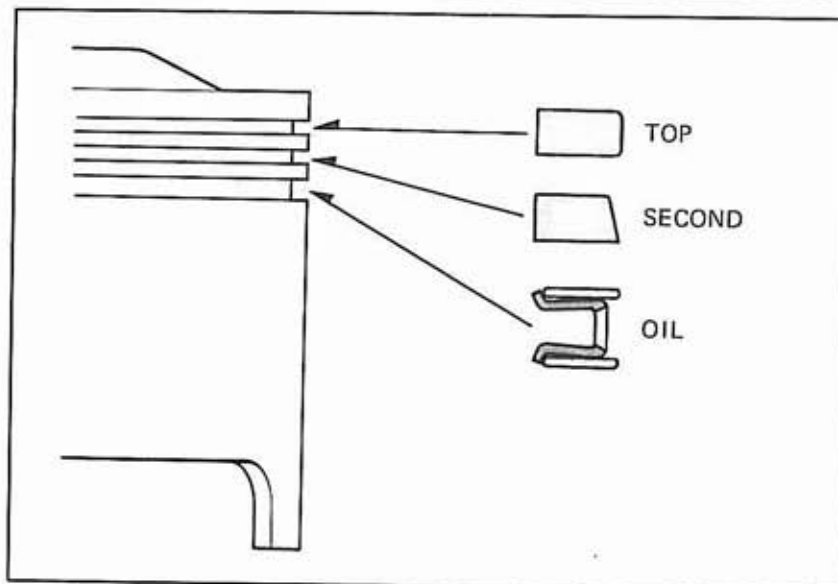


### • PISTON RING INSTALATION

Install the piston rings.

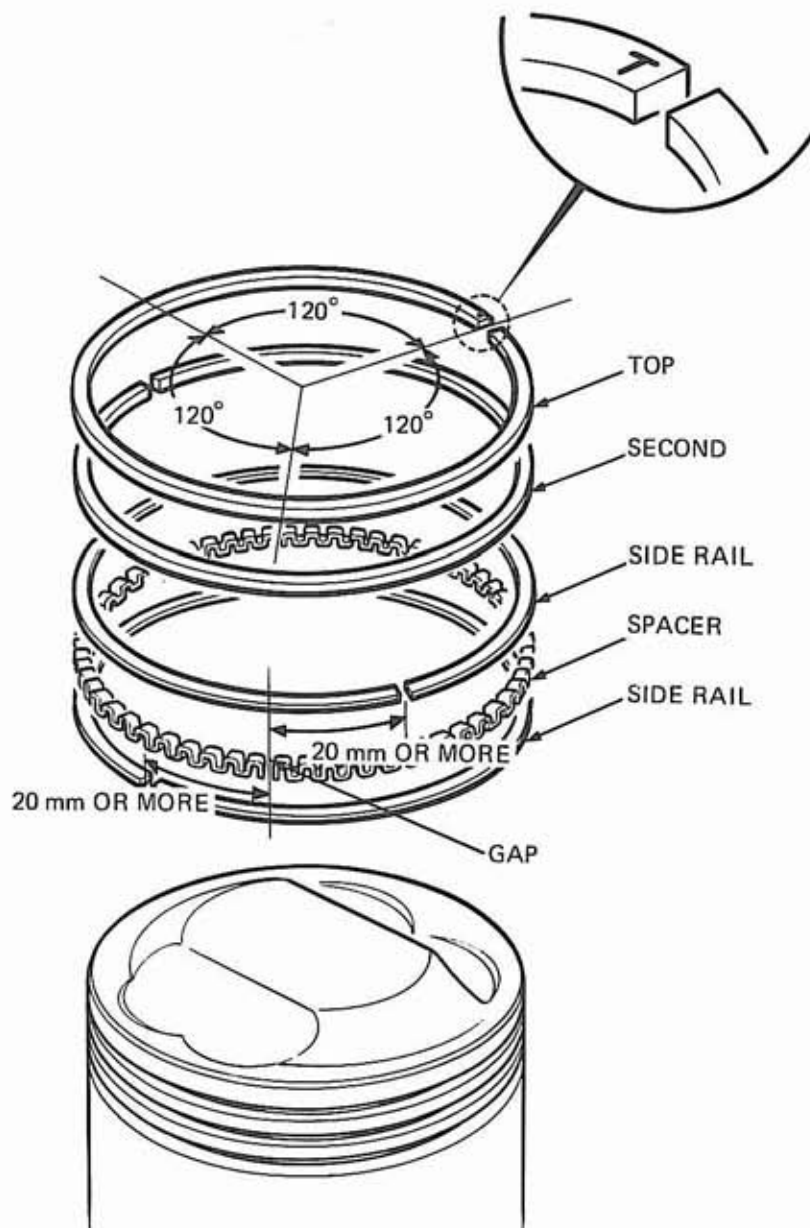
#### NOTE

- Avoid piston and piston ring damage during installation.
- All rings should be installed with the markings facing up.
- After installation the rings should be free to rotate in the lands.





Space the piston ring end gaps 120 degrees apart.  
Do not align the gaps in the oil rings.



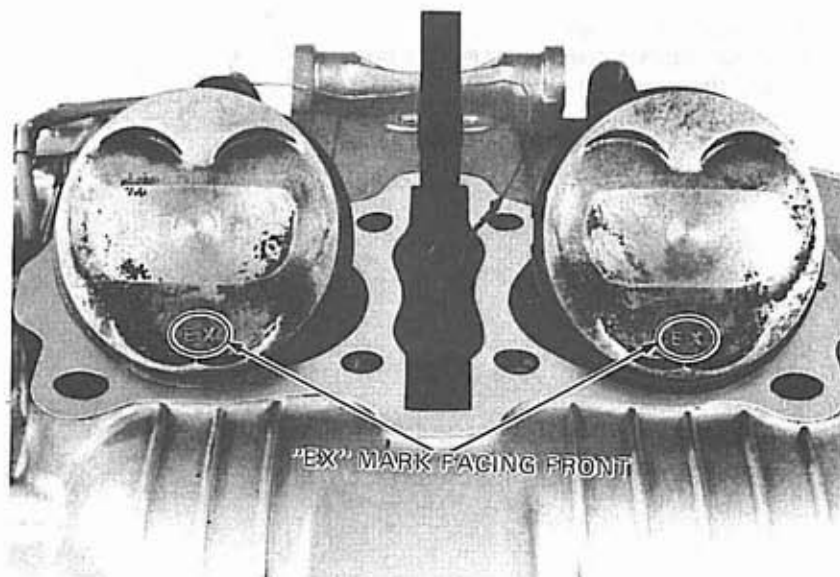


## PISTON INSTALLATION

Install the pistons, piston pins and clips.

### NOTE

- Position the mark "EX" on the piston on the exhaust valve side as for the piston marked with "EX".  
Position the mark "IN" on the piston on the intake valve side as for the piston marked with "IN".
- Install the pistons in their original locations.

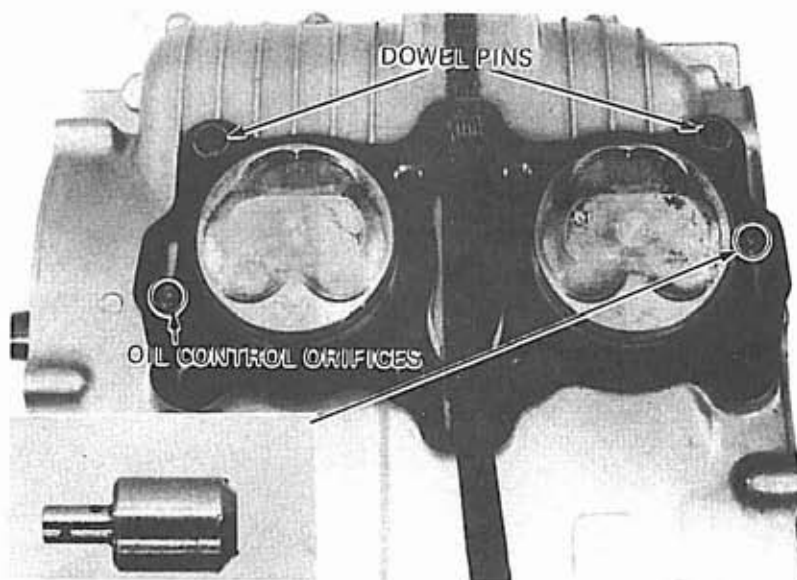


## CYLINDER INSTALLATION

Install the oil control orifices, dowel pins and cylinder gasket.

### NOTE

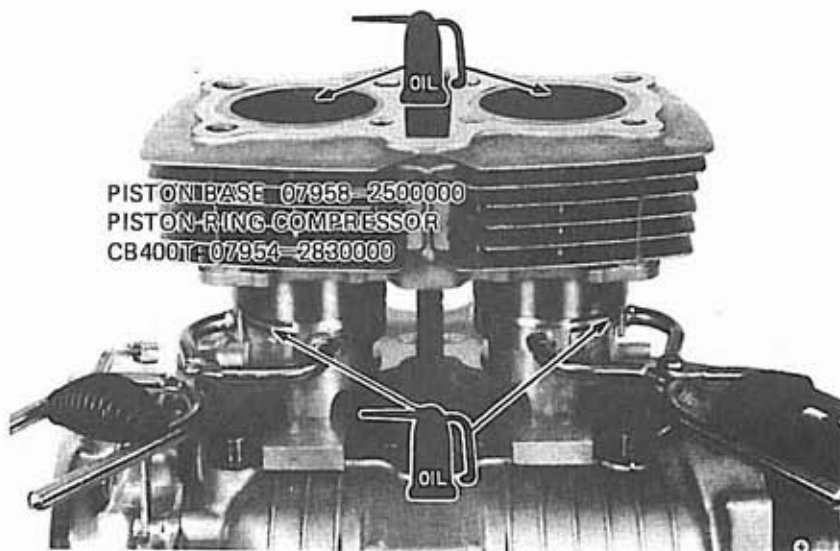
- Check that the oil control orifices are not clogged.



Install the cylinder.

### NOTE

- Avoid damaging the pistons and piston rings when installing the cylinders.





Install the cam chain guide.

Slide the O-ring over the tensioner base bolt and install the base on the cylinder with plain washer and lock nut.

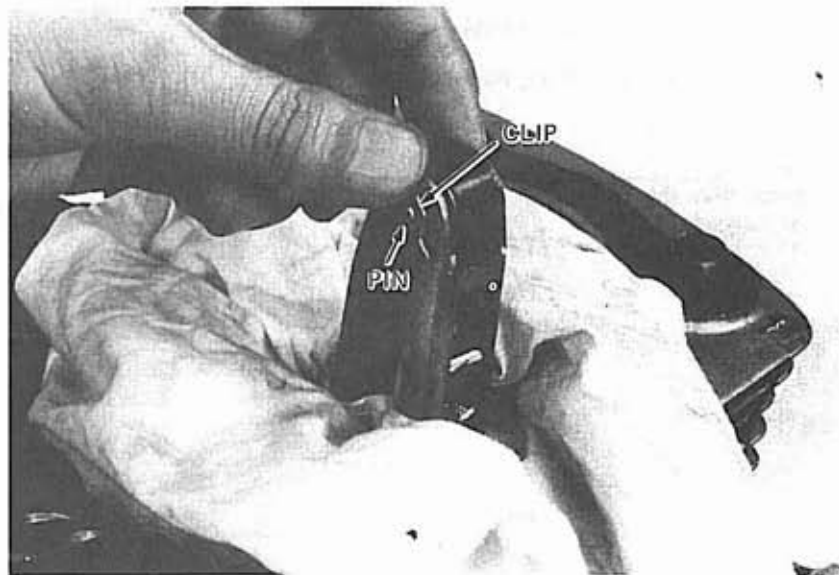
Tighten the lock nut with the tensioner base pulled up fully.



Install the tensioner on the tensioner base with the pin and clip.

**NOTE**

Do not drop the pin or clip into the cylinder.



Install the cylinder head. (Refer to Section 6)

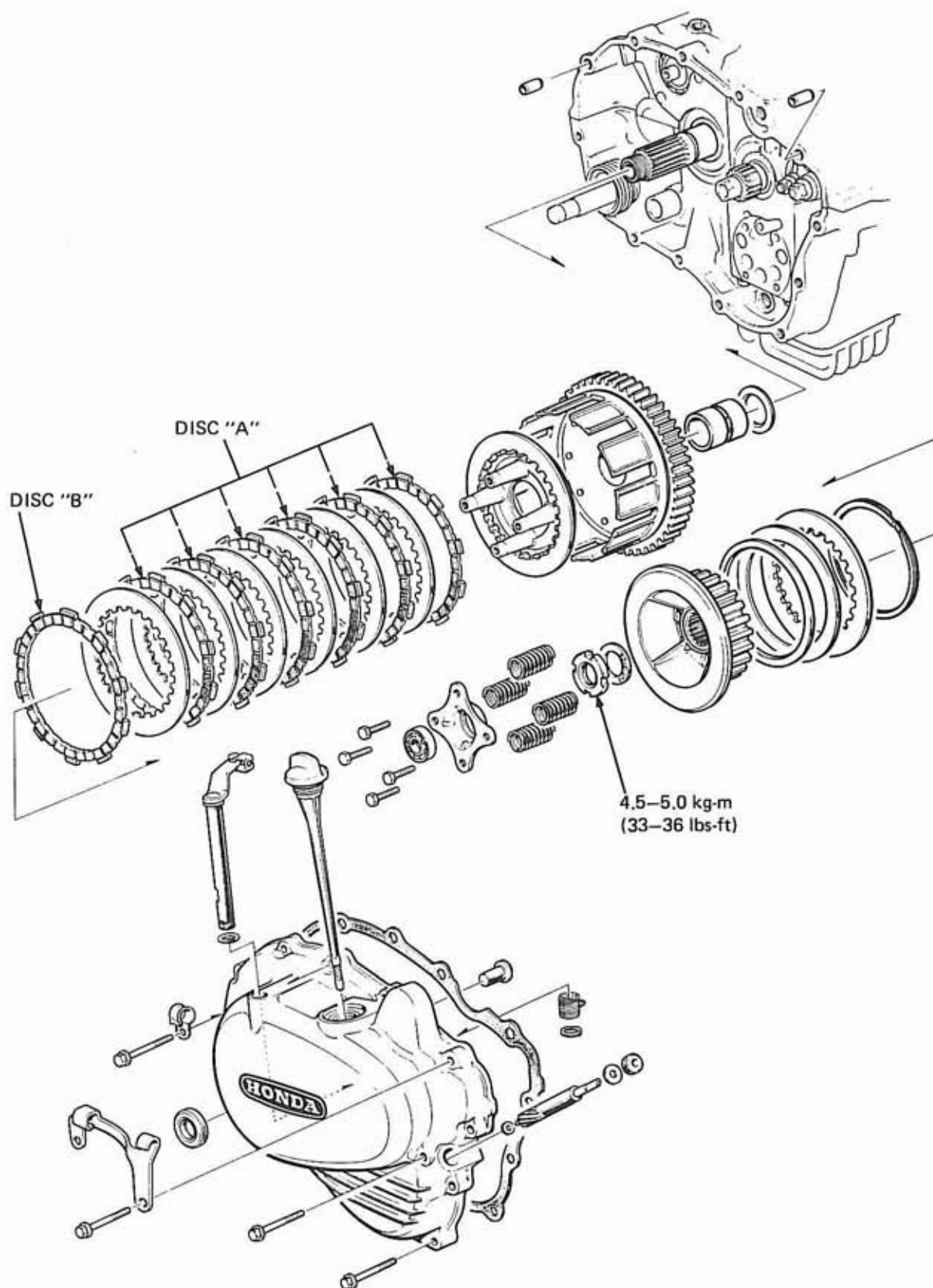




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M E M O





SERVICE INFORMATION	8-1
TROUBLESHOOTING	8-2
RIGHT CRANKCASE COVER REMOVAL	8-3
CLUTCH	8-3
OIL PUMP	8-11
OIL PRESSURE RELIEF VALVE	8-14
RIGHT CRANKCASE COVER INSTALLATION	8-15

## SERVICE INFORMATION

### • WORKING PRACTICE

This section covers removal and installation of the clutch, oil pump and pressure relief valve, starting with the right crankcase cover. Removal and installation of the gearshift linkage (Section 11), adjustment of the crankshaft balancer, and removal and installation of the oil pressure switch should also be performed by first removing the right crankcase cover. All these operations can be accomplished with the engine in the frame.

### • SPECIAL TOOLS

#### COMMON TOOLS

UNIVERSAL HOLDER	07725-0010101
LOCK NUT SOCKET WRENCH	07716-0020201

### • SPECIFICATIONS

		STANDARD	SERVICE LIMIT
Clutch	Lever free play (at lever end)	10-20 mm (3/8-3/4 in.)	_____
	Disc spring-to-clutch center clearance	0.1-0.5 mm (0.004-0.020 in.)	_____
	Spring free length	42.75 mm (1.683 in.)	41.25 mm (1.624 in.)
	Spring preload/length	26.1-28.9 kg/28.75-29.25 mm (57.6-63.7 lbs/1.13-1.15 in.)	24 kg/29 mm (52.9 lbs/1.14 in.)
	Disc thickness	A	2.7 mm (0.106 in.)
		B	3.0 mm (0.118 in.)
	Plate warpage	A	_____
		B	_____
	Clutch outer I.D.	33.000-33.025 mm (1.299-1.300 in.)	33.07 mm (1.302 in.)
	Clutch outer guide O.D.	32.950-32.975 mm (1.297-1.298 in.)	32.90 mm (1.295 in.)
Oil pump	Inner rotor-to-outer rotor clearance	_____	0.10 mm (0.004 in.)
	Outer rotor-to-body clearance	_____	0.35 mm (0.014 in.)
	Rotor-to-body clearance	_____	0.10 mm (0.004 in.)
Oil pressure relief valve	Relief pressure	4.0-5.3 kg/cm <sup>2</sup> (56.9-75.4 psi)	_____



## TROUBLESHOOTING

Refer to Section 2 for oil pump troubleshooting.

### Clutch

Faulty clutch operation can usually be corrected by adjusting the free play.

#### Clutch slips When Accelerating

1. No free play
2. Discs worn
3. Springs weak

#### Clutch Will Not Disengage

1. Too much free play
2. Plates warped

#### Motorcycle Creeps With Clutch Disengaged

1. Too much free play
2. Plates warped

#### Excessive Lever Pressure

1. Clutch cable kinked, damaged or dirty
2. Lifter mechanism damaged

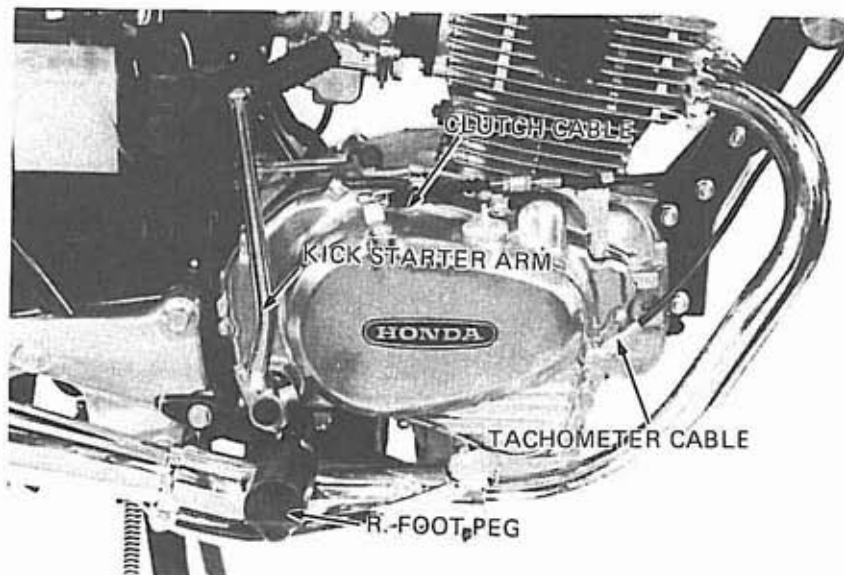
#### Clutch Operation Feels Rough

1. Outer drum slots rough



## R-CRANKCASE COVER REMOVAL

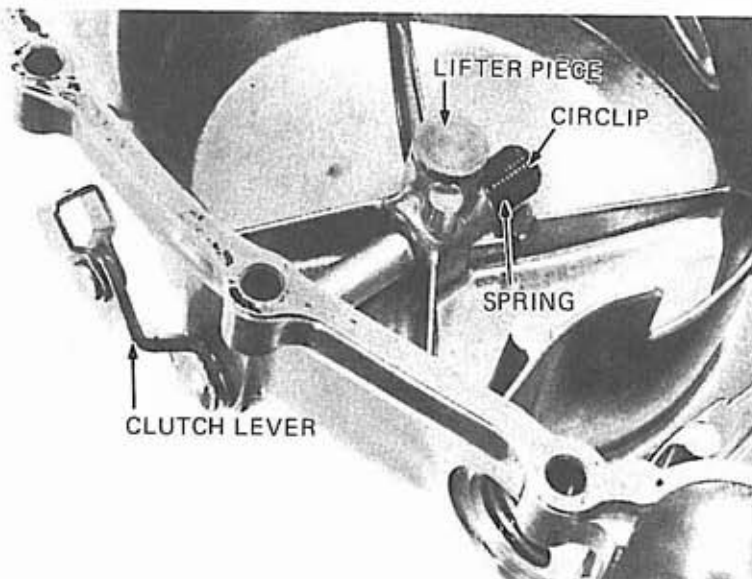
Drain all oil from the engine.  
Disconnect the tachometer at the engine.  
(Type II)  
Free the clutch cable at the lower adjuster.  
Remove the right foot peg.  
Remove the kick starter arm.  
Remove the right crankcase cover.



## CLUTCH

### • CLUTCH LIFTER REMOVAL

Remove the lifter piece, circlip, spring, clutch lever and O-ring.

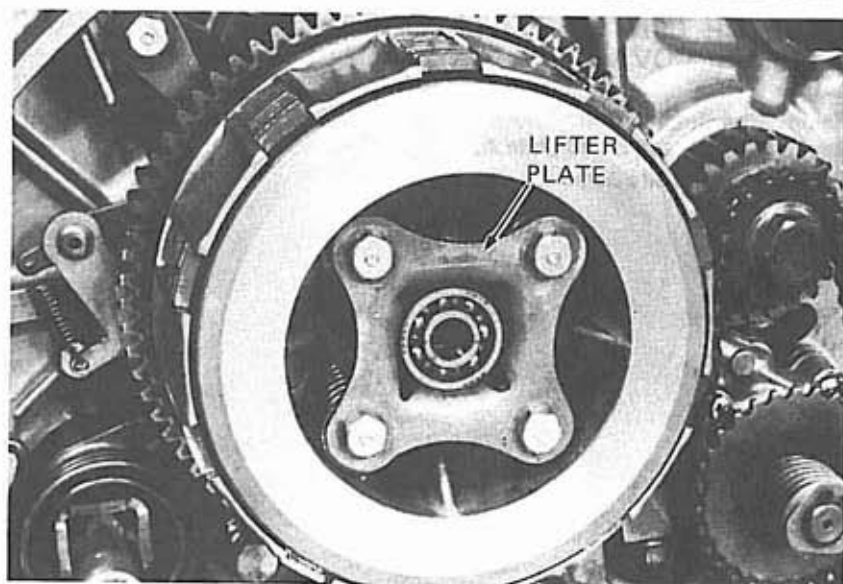


### • CLUTCH LIFTER PLATE REMOVAL

Remove the bolts, lifter plate and clutch springs.

#### NOTE

Loosen the bolts in an X pattern in two or more steps.





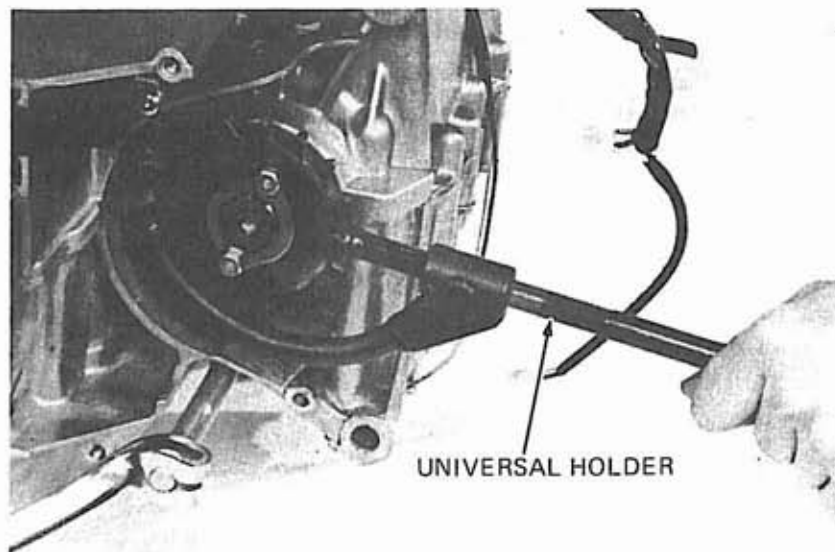


- CLUTCH REMOVAL

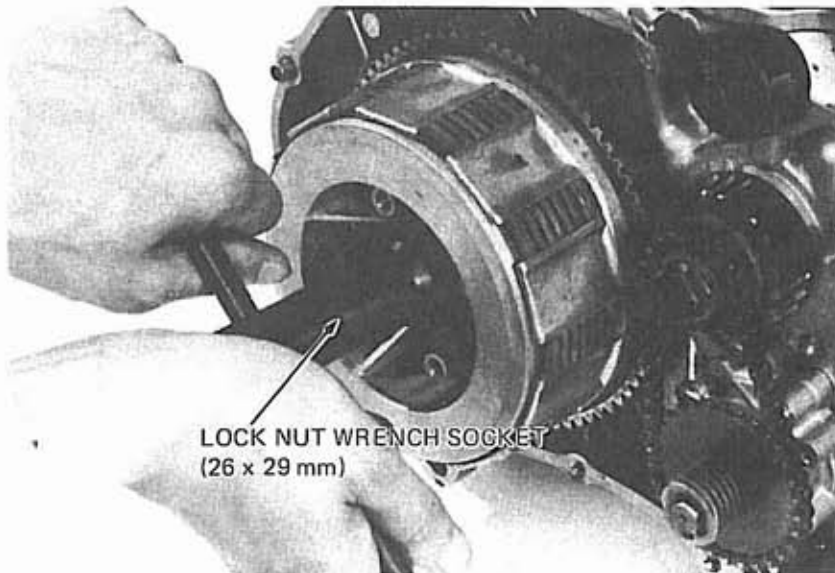
Remove the drive chain if the engine is still in the frame.

Shift the transmission into gear.

Block the drive sprocket to prevent it from turning.



Remove the lock nut and washer. The clutch can then be taken out as a unit.

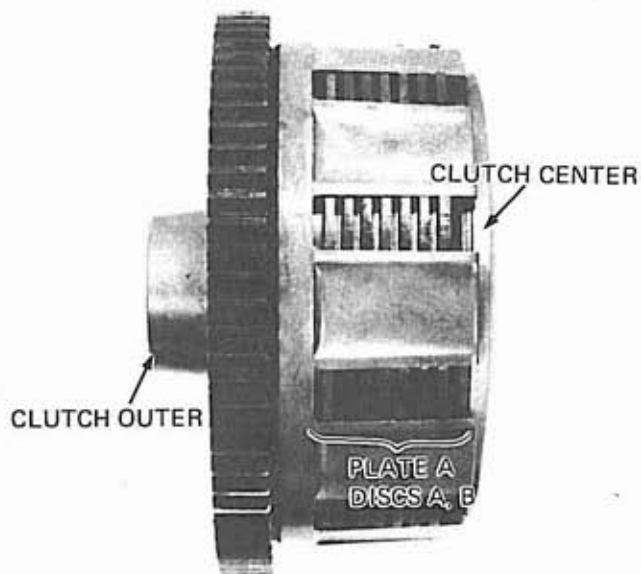


- CLUTCH CENTER, PLATE AND DISC REMOVAL

Remove the clutch center.

Remove discs A and B and plate A.

Remove the pressure plate.





• **DISC SPRING INSPECTION**

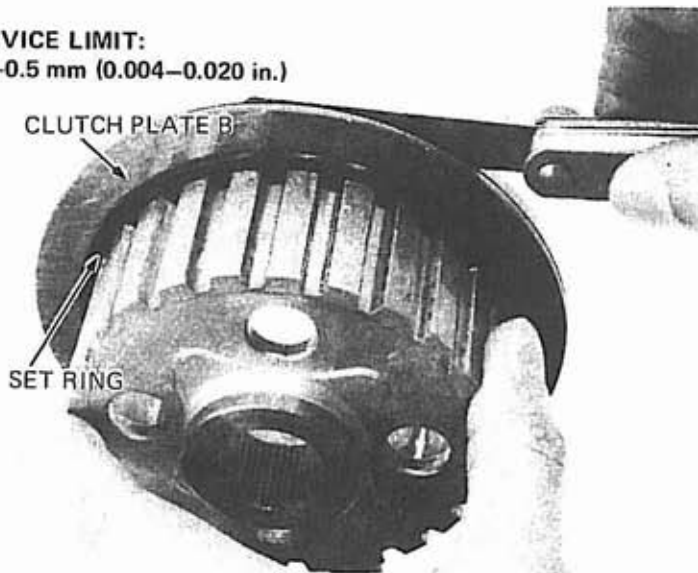
Measure clearance between the clutch center and plate B.

After measuring, remove the set ring, clutch plate B, clutch disc spring and spring seats.

**SERVICE LIMIT:**  
0.1–0.5 mm (0.004–0.020 in.)

CLUTCH PLATE B

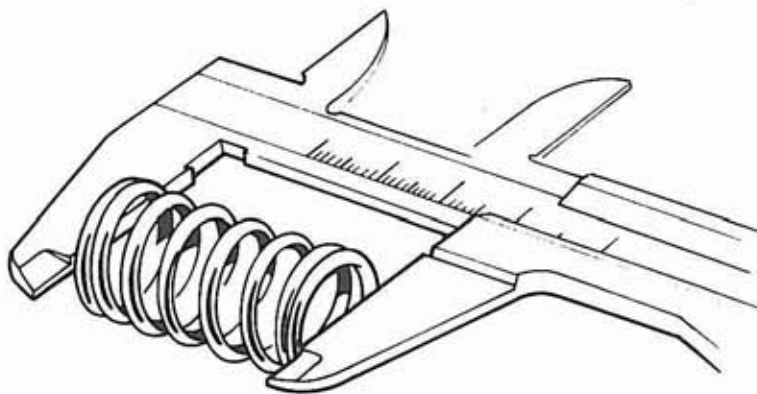
SET RING



• **CLUTCH SPRING INSPECTION**

Check spring free length.

**SERVICE LIMIT: 41.25 mm (1.624 in.)**



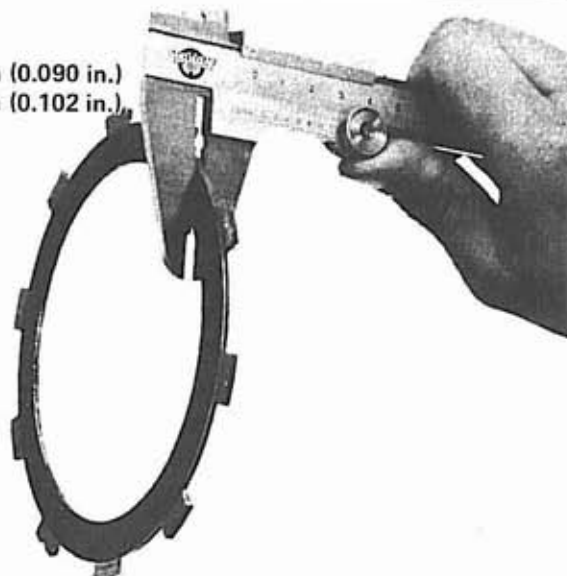
• **CLUTCH DISC INSPECTION**

Replace the clutch discs if they show signs of scoring or discoloration.  
Measure disc thickness.

**SERVICE LIMITS:**

DISC A: 2.30 mm (0.090 in.)

DISC B: 2.60 mm (0.102 in.)



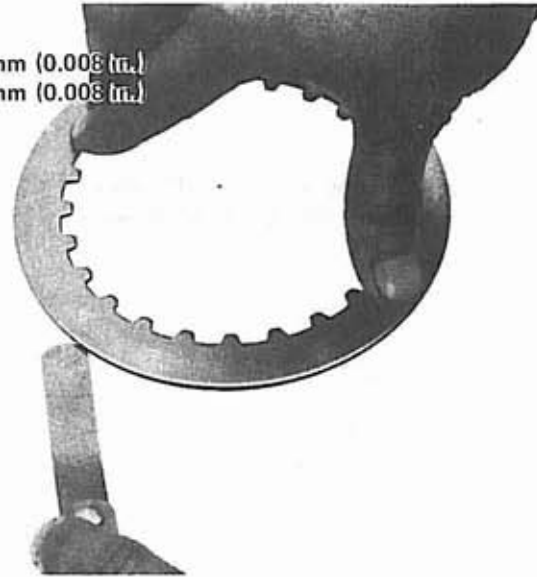


### • PLATE INSPECTION

Check for plate warpage on a surface plate, using a feeler gauge.

#### SERVICE LIMITS:

PLATE A: 0.20 mm (0.008 in.)  
 PLATE B: 0.20 mm (0.008 in.)



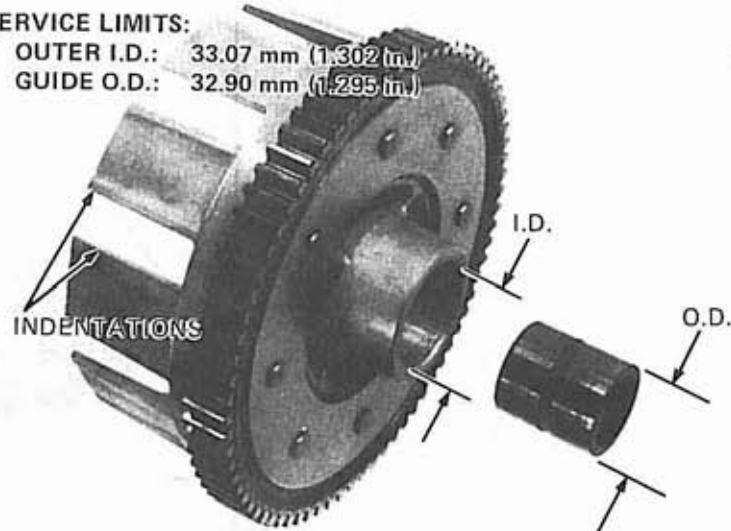
### • CLUTCH OUTER AND OUTER GUIDE INSPECTION

Check the slots in the outer drum for nicks, cuts or indentations made by the friction discs.

Measure the I.D. of the clutch outer and the O.D. of the outer guide.

#### SERVICE LIMITS:

OUTER I.D.: 33.07 mm (1.302 in.)  
 GUIDE O.D.: 32.90 mm (1.295 in.)

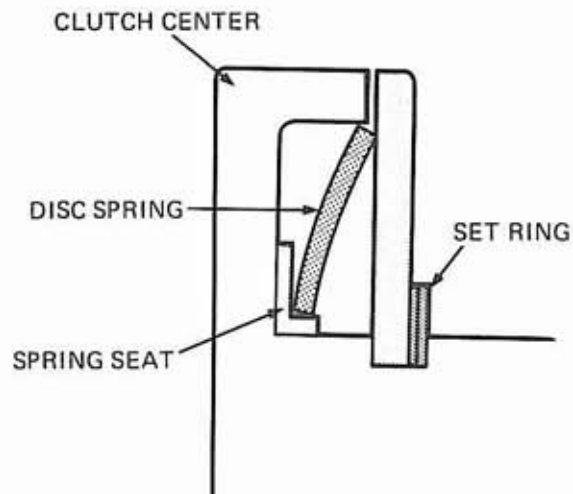


### • CLUTCH INSTALLATION

Install the spring seat, disc spring, clutch plate B and set ring in the clutch center.

#### NOTE

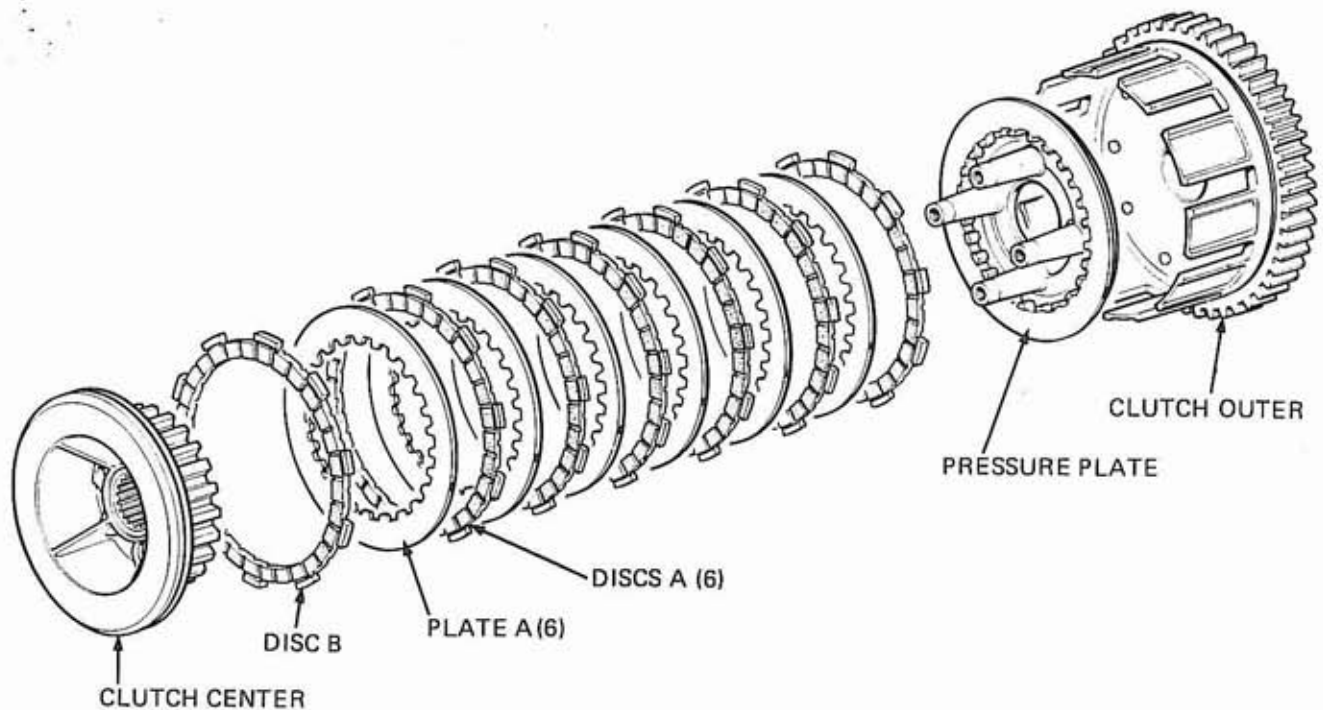
- Note direction of the spring seat, spring and plate B.
- Make sure that the set ring is securely seated in the clutch center groove.





Install the following parts in the clutch outer in the order listed.

- Pressure plate
- Discs A and plates A (6 each) alternately one after the other
- Disc B
- Clutch center

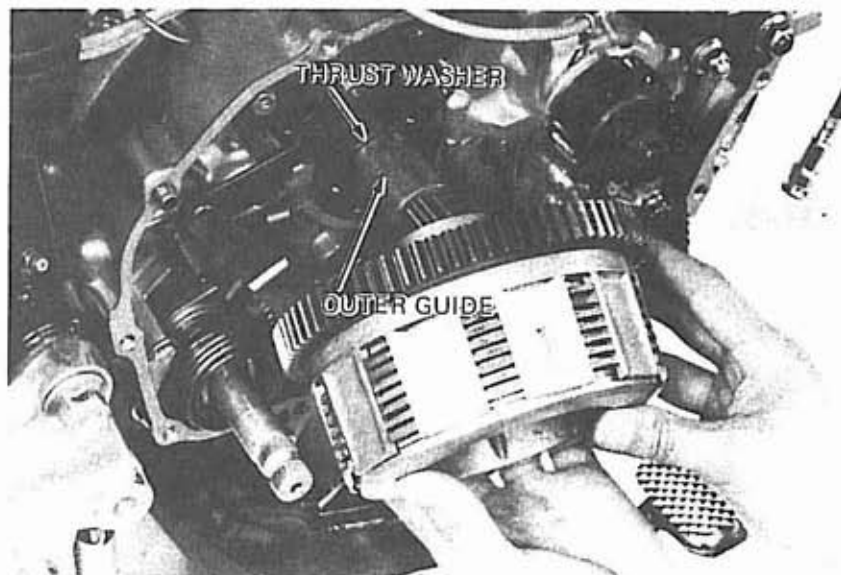


Align the splines by rotating the clutch center.

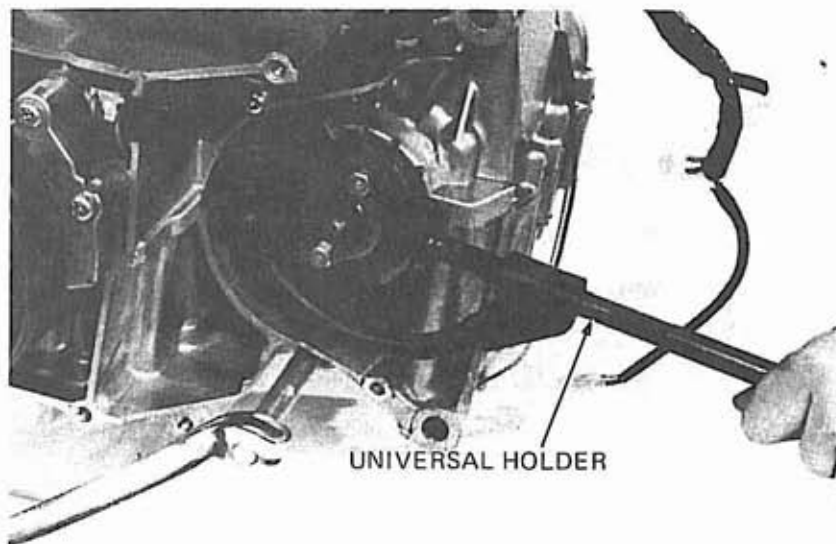




Install the thrust washer and outer guide on the transmission main shaft.  
Install the clutch on the transmission as a unit.

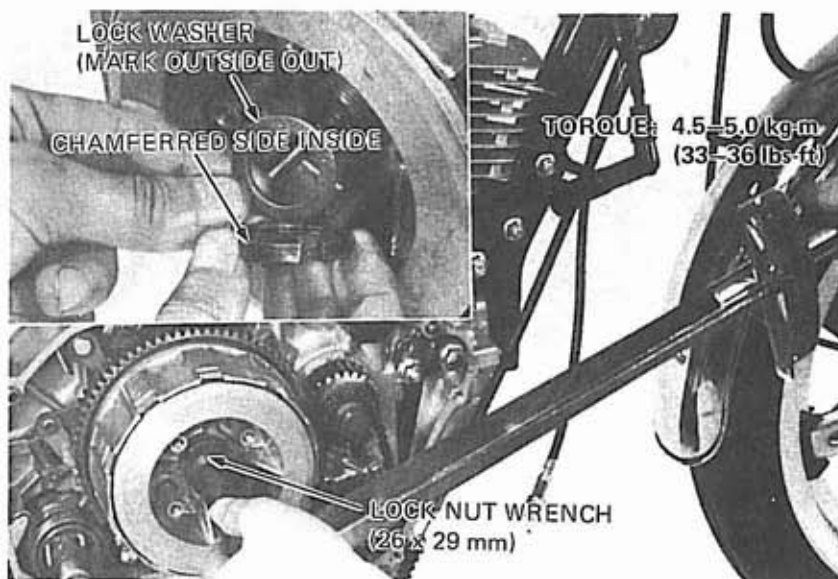


Apply the universal holder to the drive sprocket.



Install the lock washer and lock nut.

Torque the lock nut to specified tension.



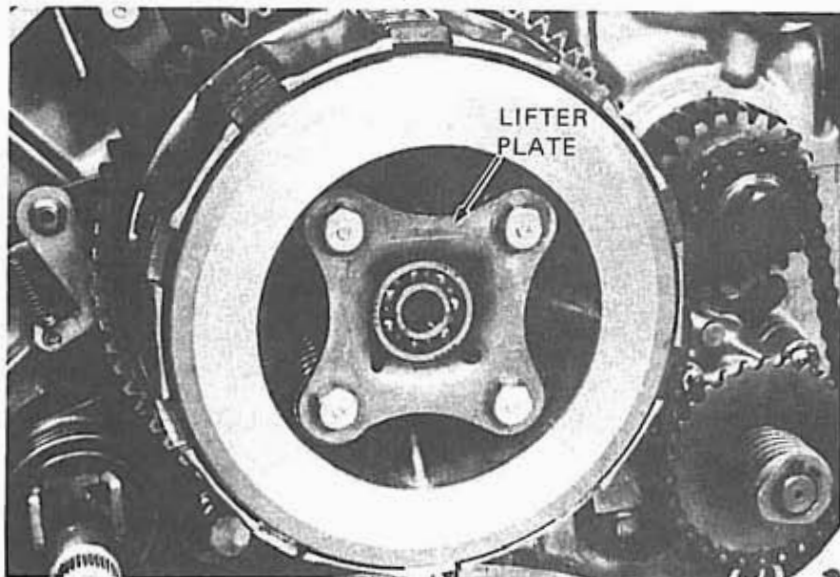




Install the clutch springs, lifter plate and lifter plate bolts.

**NOTE**

Tighten the bolts in two or more steps and in a criss cross pattern.

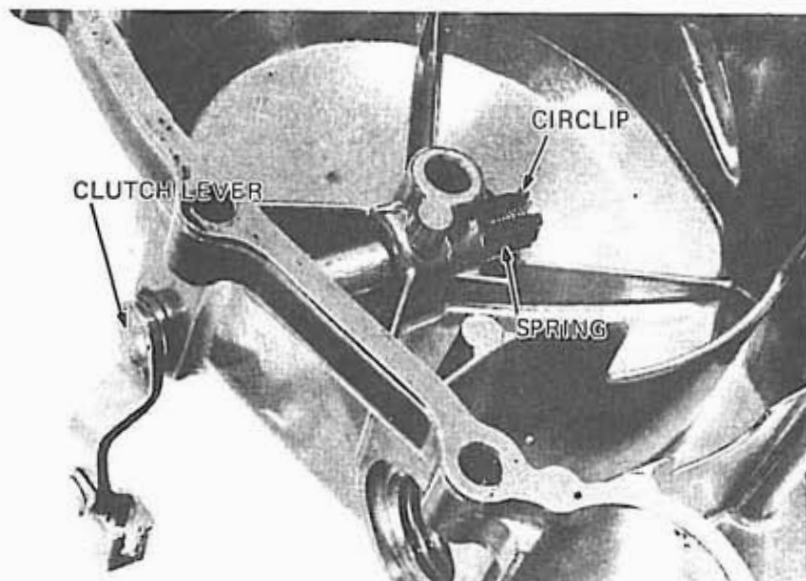


• **CLUTCH LIFTER AND RIGHT CRANKCASE COVER INSTALLATION**

Install the O-ring on the clutch lever.

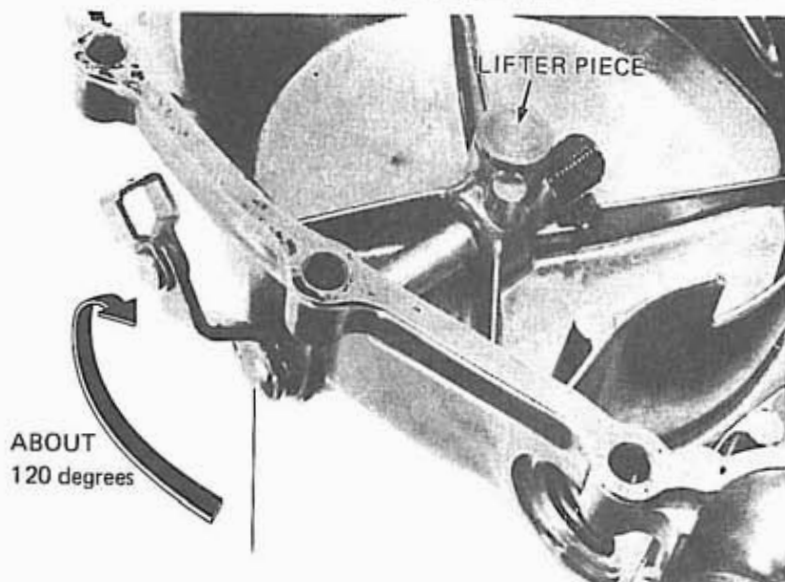
Install the clutch lever on the crankcase.

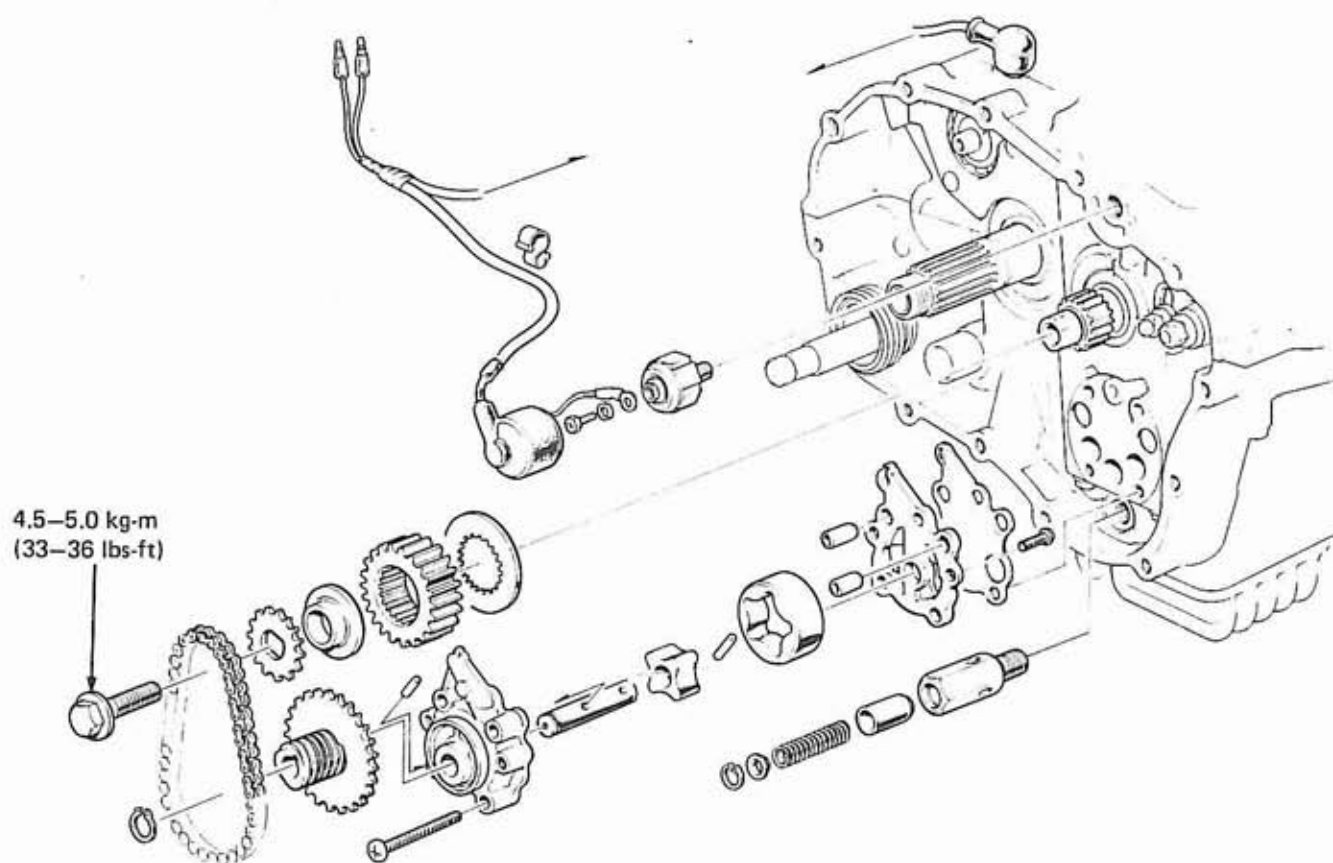
Secure the lever with the spring and circlip.



Rotate the lever about 120 degrees.

Install the lifter piece by aligning the holes.



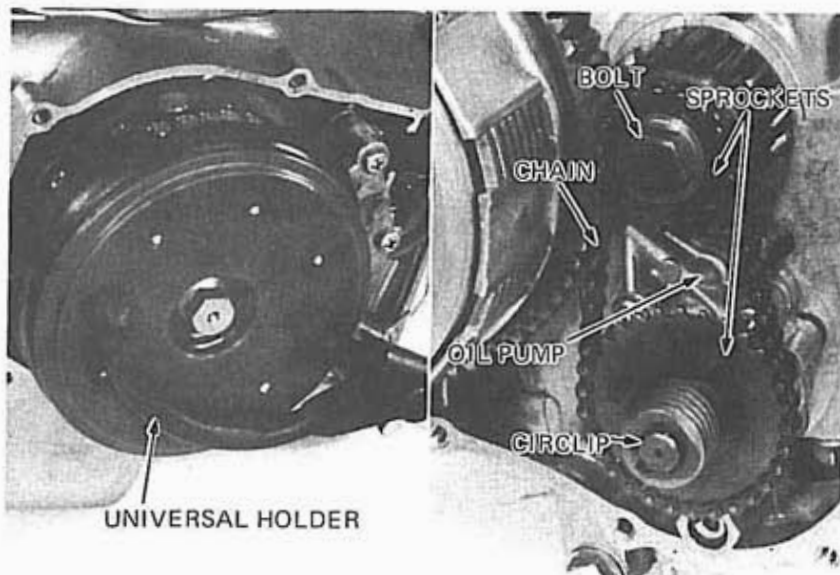




### OIL PUMP

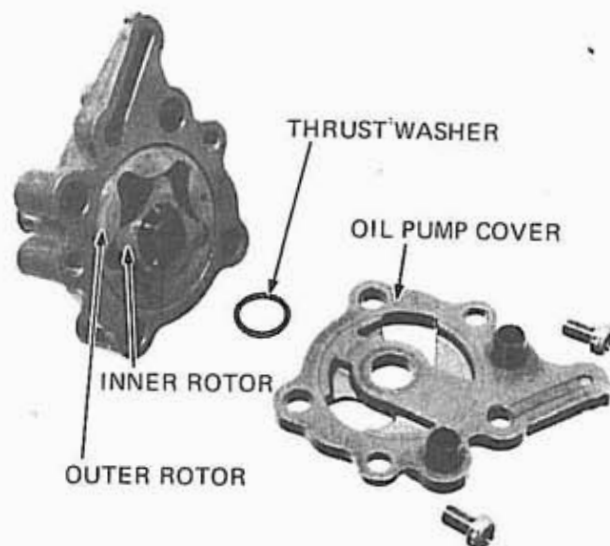
#### • OIL PUMP REMOVAL

Remove the left crankcase cover.  
Hold the A.C. generator rotor with the universal holder.  
Remove the primary drive gear bolt.  
Remove the circlip.  
Remove the sprockets and chain.  
Remove the oil pump.

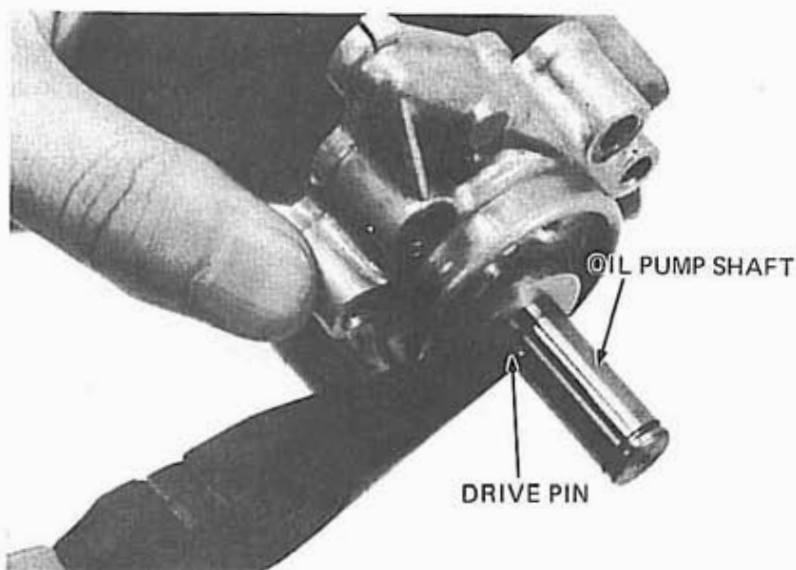


#### • OIL PUMP DISASSEMBLY

Remove the oil pump cover and thrust washer.



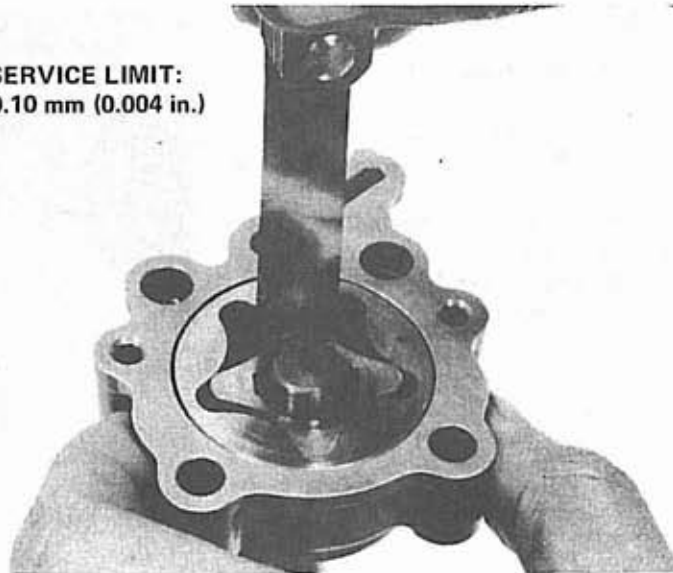
Pull out the drive pin.  
Withdraw the oil pump shaft.  
Remove the inner and outer rotors from the pump body.



**OIL PUMP INSPECTION**

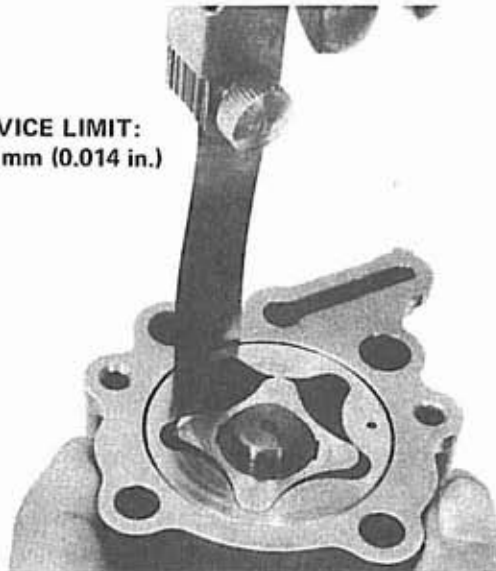
Measure pump tip clearance.

**SERVICE LIMIT:**  
0.10 mm (0.004 in.)



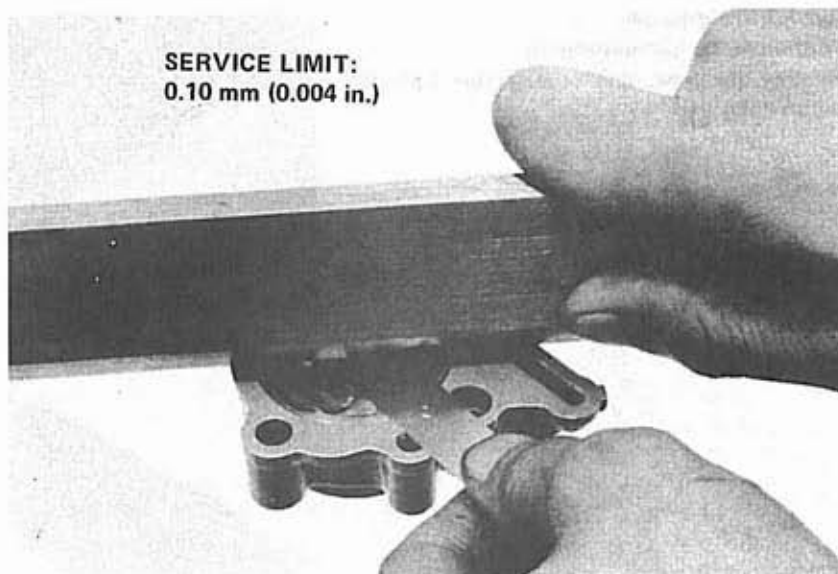
Measure pump body clearance.

**SERVICE LIMIT:**  
0.35 mm (0.014 in.)



Measure pump end clearance.

**SERVICE LIMIT:**  
0.10 mm (0.004 in.)

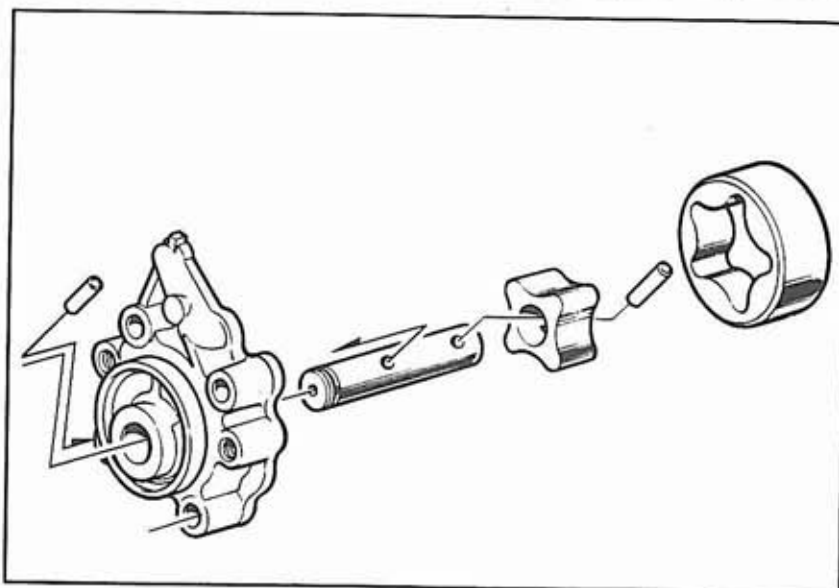




## OIL PUMP ASSEMBLY

Slide the drive pin into the pump shaft.  
Insert the outer and inner rotors and pump shaft into the pump body.

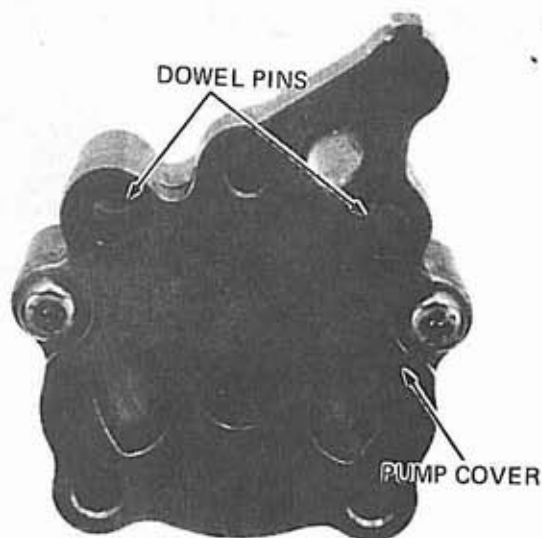
Install the pump shaft.



Install the thrust washer and pump cover.

### NOTE

Install the pump cover after installing the dowel pins.

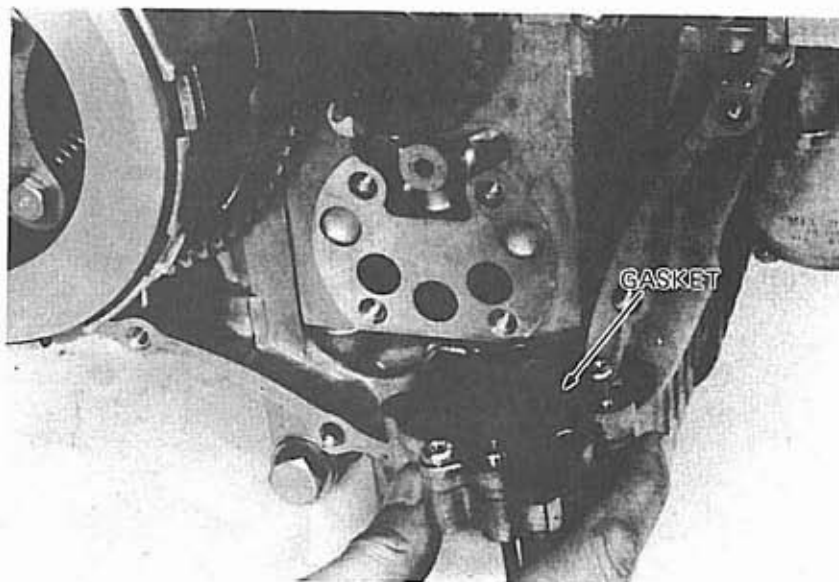


## OIL PUMP INSTALLATION

Install the oil pump with the gasket under it.

### NOTE

Make sure that the pump rotates freely without binding.

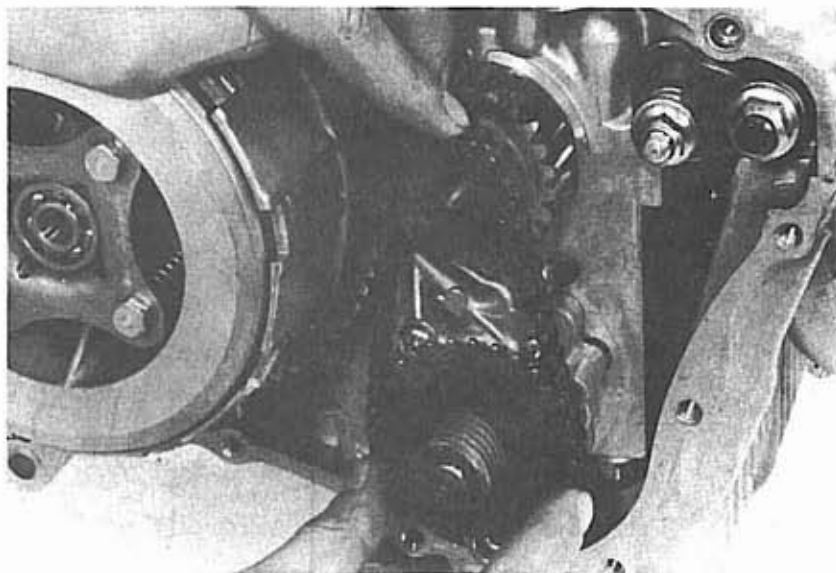






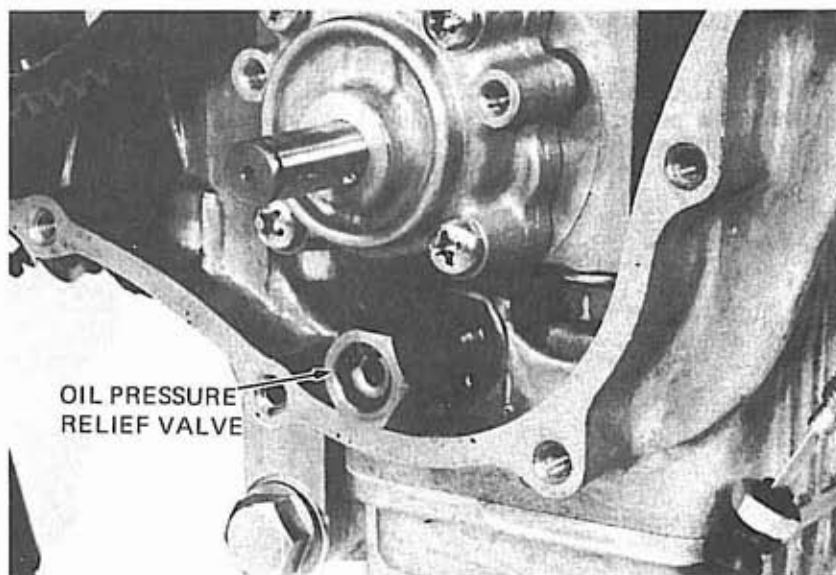
Install the drive and driven sprockets with the chain placed over the sprockets as shown. Install bolt and circlip.

**TORQUE: 4.5–5.0 kg-m (33–36 lbs-ft)**



## OIL PRESSURE RELIEF VALVE

Remove the valve as an assembly and check operation.



### NOTE.

Beginning with the following engine numbers, the location of the pressure relief valve has been changed:

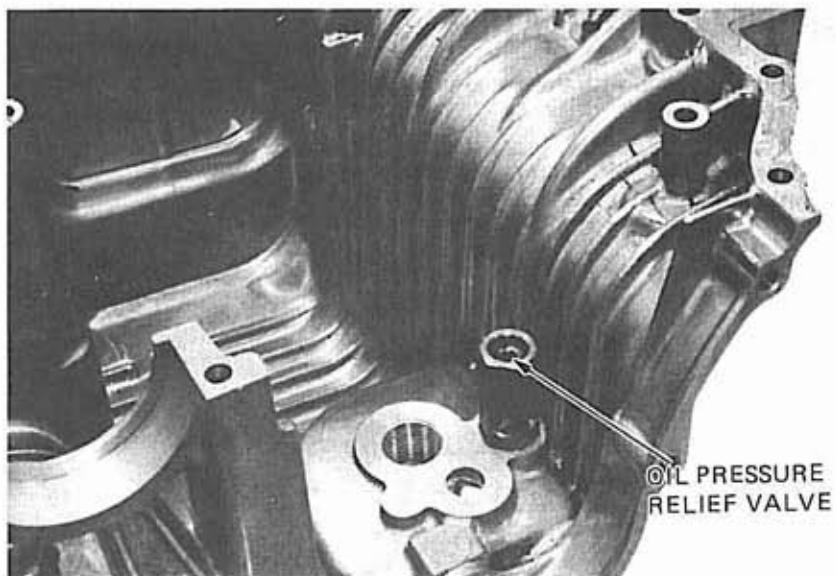
CB400TE-2050501~

CB400TE-4067096~

CB400AE-2057123~

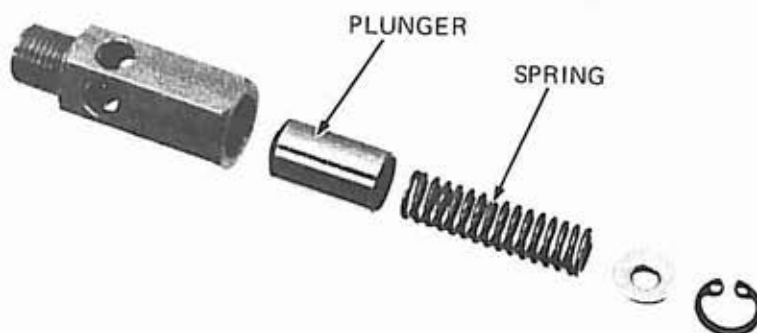
NC01E-2000001~

NC02E-2000001~





If the pump does not operate properly, disassemble it and check for a stuck valve or damaged or weak spring. Replace the relief valve as a unit if the spring is broken.

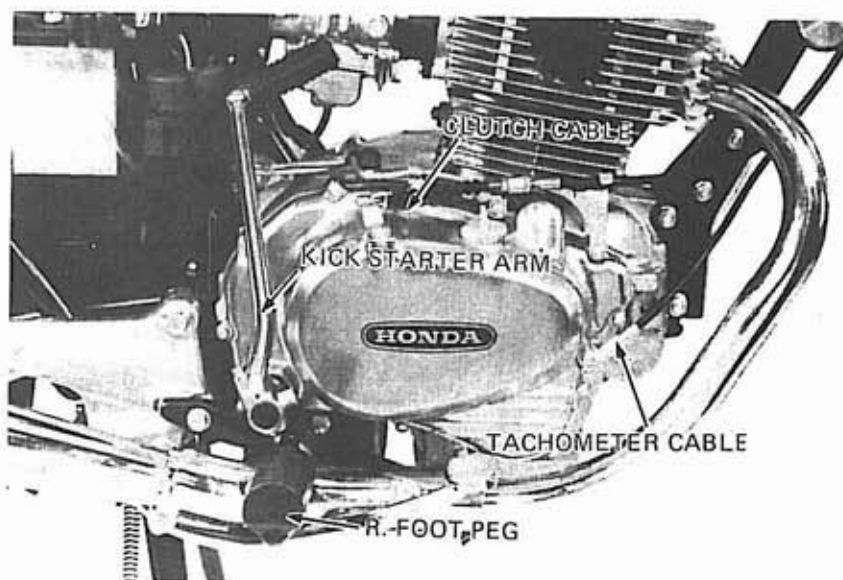


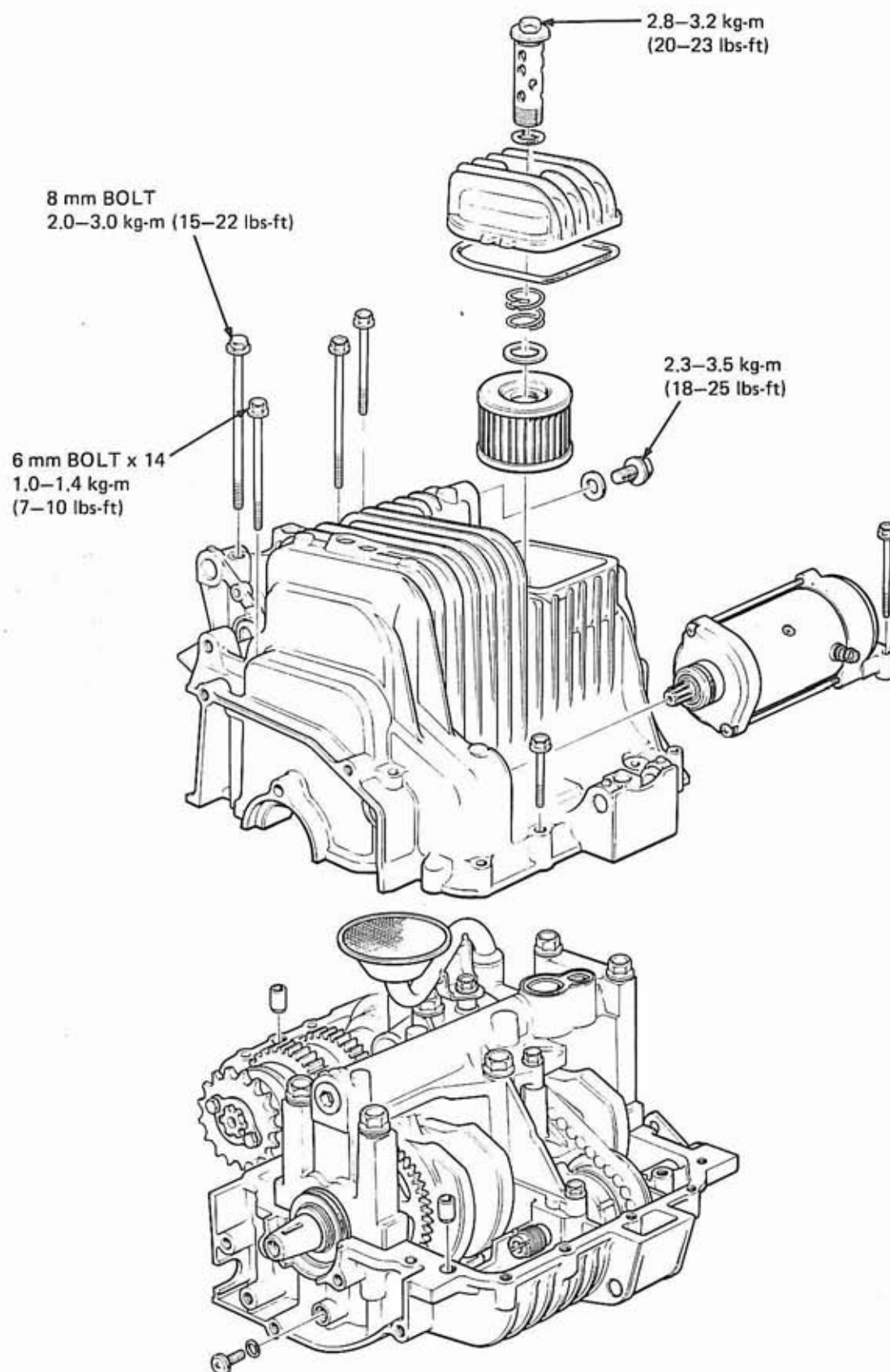
## **RIGHT-CRANKCASE COVER INSTALLATION**

Install the right crankcase cover, clutch cable, tachometer cable, kick starter arm and right foot peg.

Adjust the clutch. (Refer to page 3-9)

Fill the crankcase with recommended oil up to the proper level. (Refer to page 2-2)







SERVICE INFORMATION	9-1
DISASSEMBLY OF PARTS	9-2
A.C. GENERATOR REMOVAL	9-2
CRANKCASE DISASSEMBLY	9-3
CRANKCASE ASSEMBLY	9-3
A.C. GENERATOR INSTALLATION	9-5
INSTALLATION OF PARTS	9-5

## SERVICE INFORMATION

### • WORKING PRACTICE

To repair the crankshaft, connecting rod, transmission and kick starter, it is necessary to split the crankcase into two halves. Although the following parts must be removed before disassembling the crankcase, all photos, illustrations and step-by-step procedures for these parts are described as single parts or units for simplicity.

Items to be serviced	Items to be removed
Crankshaft and connecting rod	Cylinder head, cylinders, pistons, oil pump drive chain and A.C. generator
Balancer	Oil pump drive chain and A.C. generator
Transmission	Clutch, oil pump drive chain and A.C. generator
Kick starter and starter idle gear	A.C. generator

### • SPECIAL TOOLS

#### Common Tools

UNIVERSAL HOLDER 07725-0010101  
ROTOR PULLER 07733-0020000



## REMOVAL OF PARTS

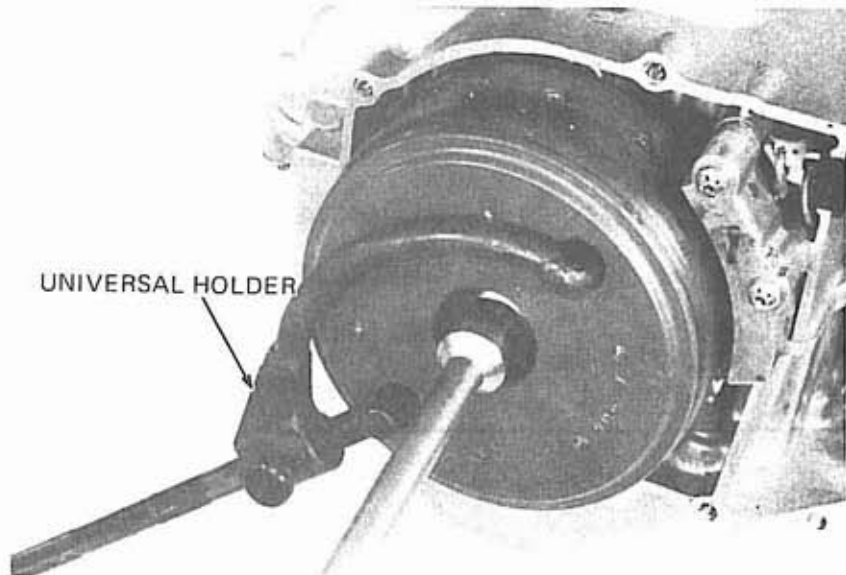
Drain the engine oil.

Remove the engine from the frame. (Section 5).

Remove the cylinder head, cylinders and pistons (Sections 6 and 7).

Remove the clutch and oil pump drive chain (Section 8).

Remove the gearshift spindle (Section 11).



## A.C. GENERATOR REMOVAL

### NOTE

A.C. generator can be removed and installed without removing the engine from the frame.

Remove the A.C. generator rotor bolt.

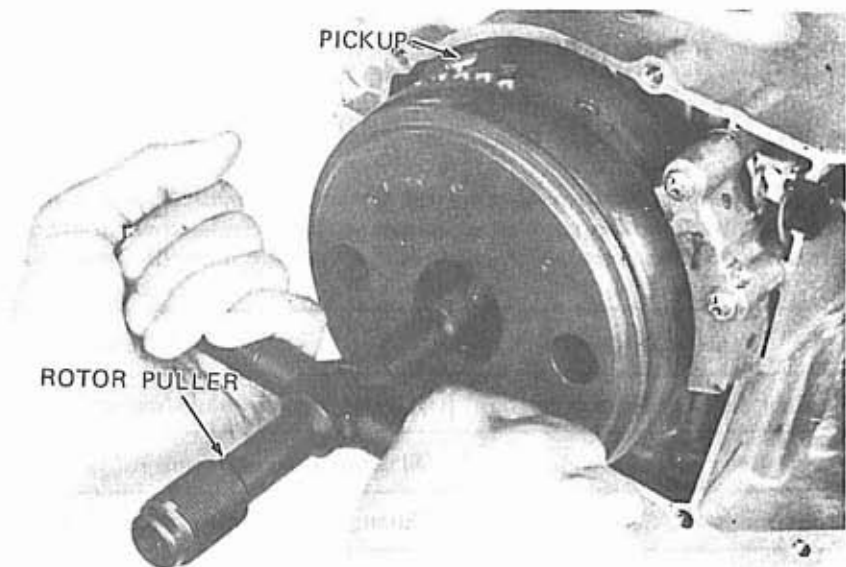
### CAUTION

If the cylinder head is off, be careful not to pinch the cam chain while removing the rotor bolt.

Remove the A.C. generator rotor.

### NOTE

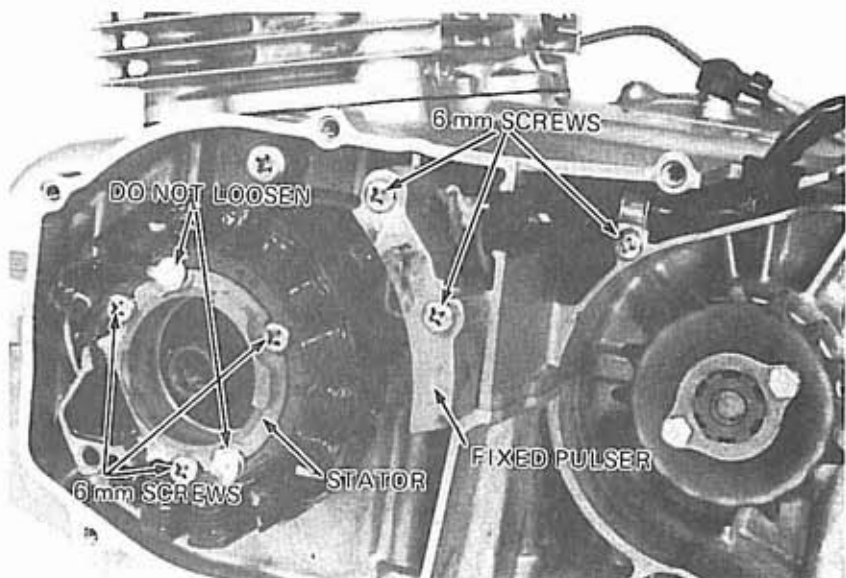
Avoid damaging the pickup on the outside of the rotor.



Remove the stator and fixed pulser.

### CAUTION

Never loosen the two painted screws at the stator to prevent the ignition timing from becoming out of time.







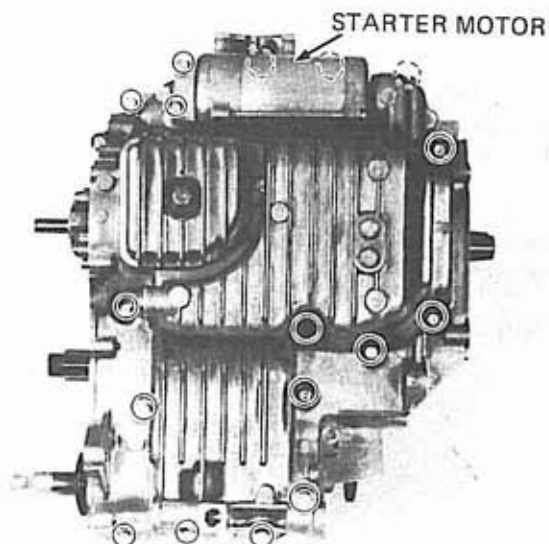
## CRANKCASE DISASSEMBLY

Turn the engine upside down.  
Remove the starter motor.  
Remove the 8 mm bolt and the fourteen  
6 mm bolts.

### NOTE

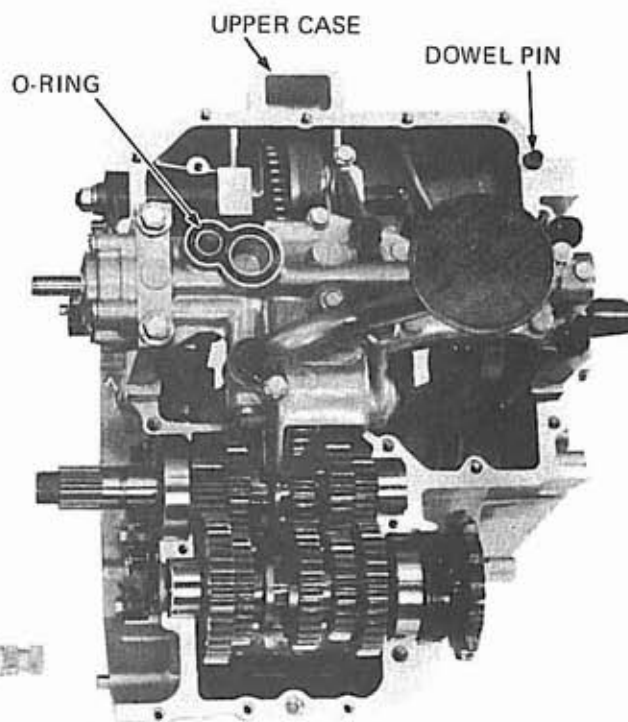
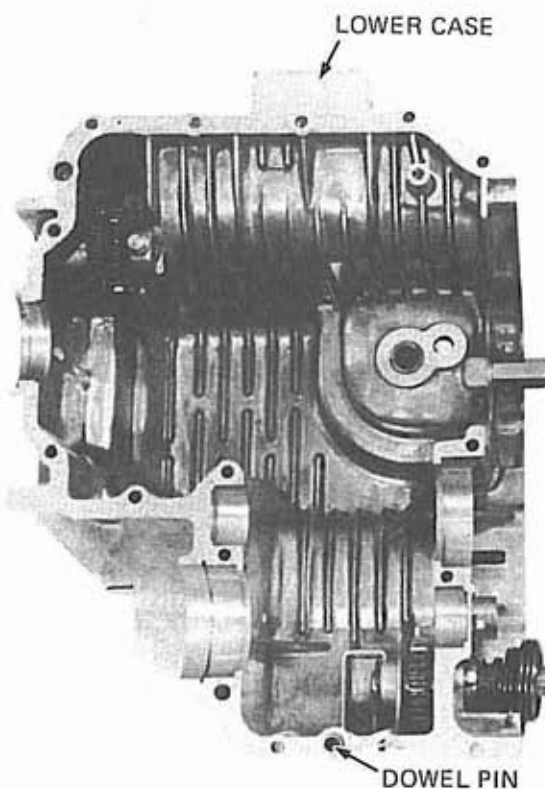
Remove the bolts in two or more steps  
and in a cross pattern to prevent war-  
page.

Remove the lower case.



## CRANKCASE ASSEMBLY

Before assembling, apply liquid sealant to the  
mating surfaces.





Install the lower case on the upper case and tighten the bolts to the specified torques.

**TORQUE SPECIFICATION:**

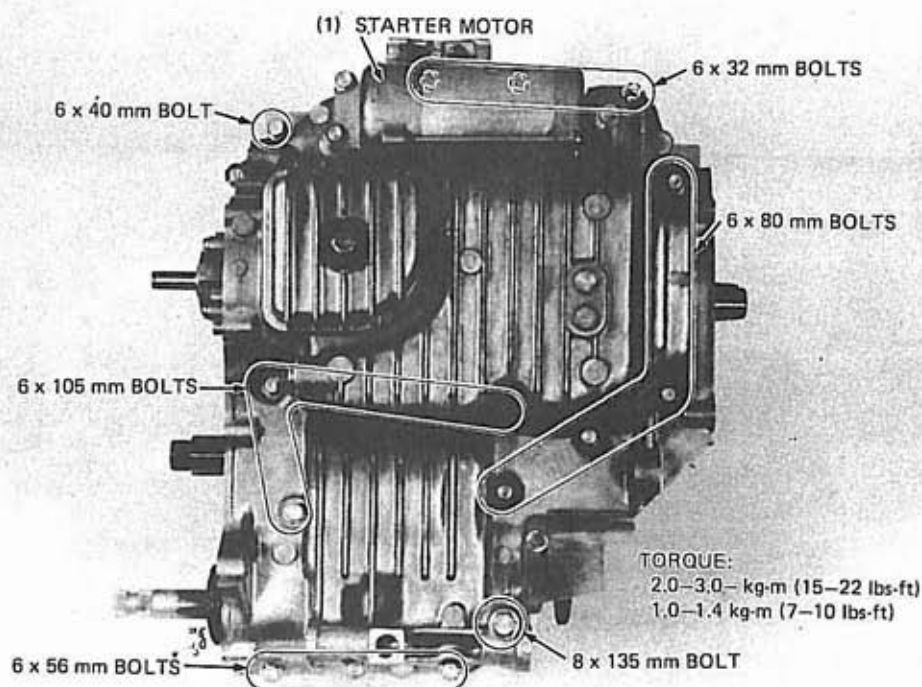
8 mm bolt: 2.0–3.0 kg-m (15–22 lbs-ft)

6 mm bolt: 1.0–1.4 kg-m (7–10 lbs-ft)

**NOTE**

Tighten the bolts in two or more steps and in a cross pattern.

Reinstall the starter motor.





## A.C. GENERATOR INSTALLATION

Install the stator and fixed pulser.

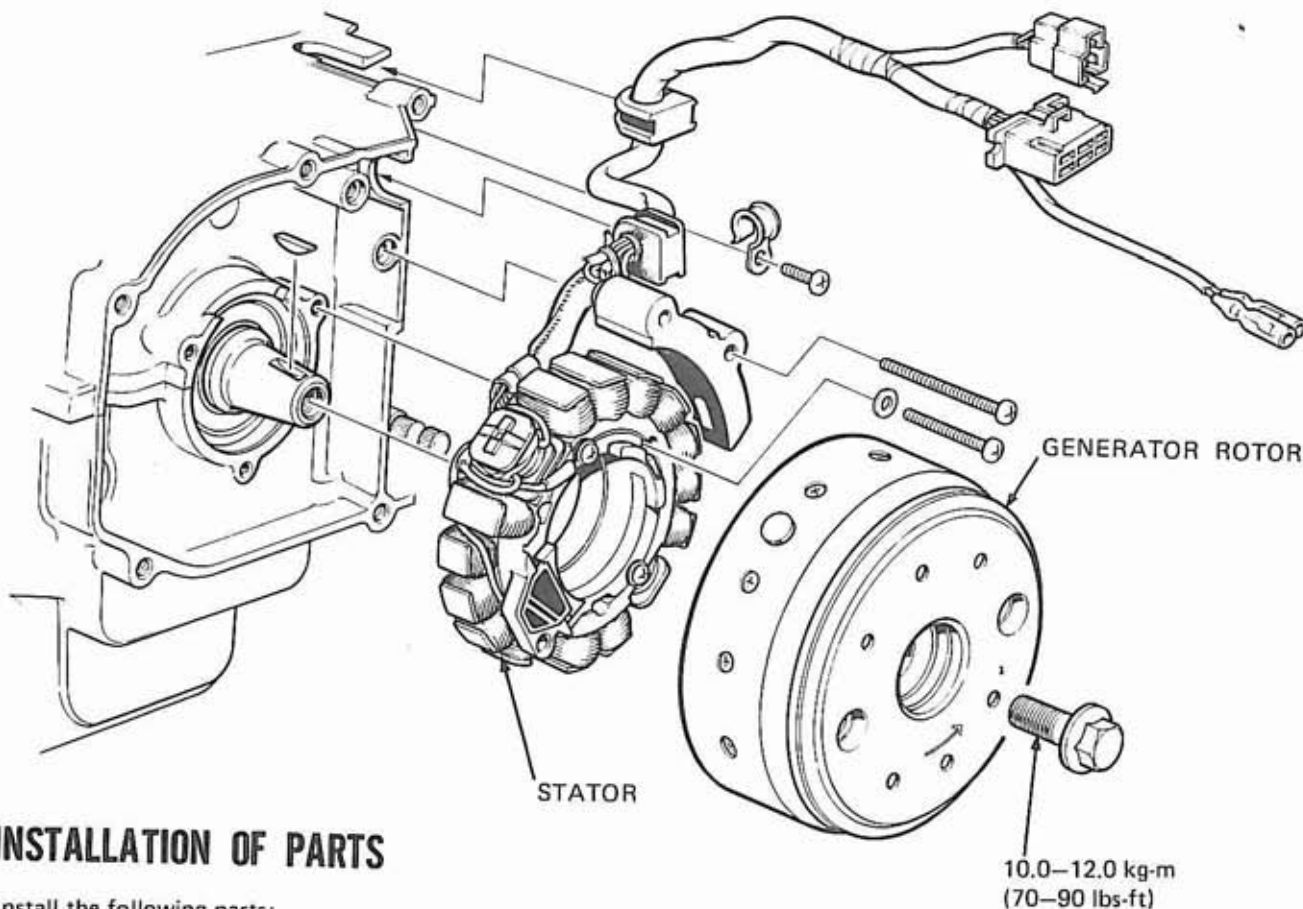
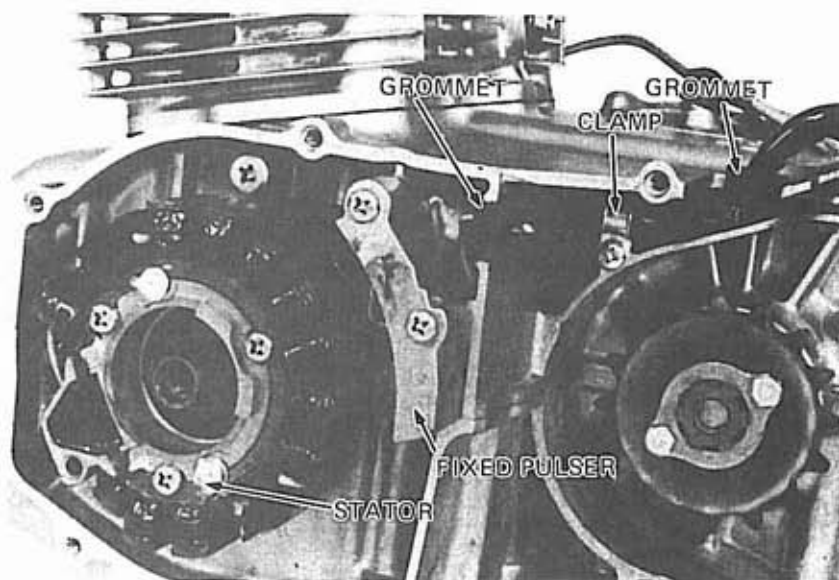
### NOTE

- Be sure the wires are routed properly. Secure with the cable clamp as shown.
- Check that the wires do not interfere with the A.C. generator rotor.

Install the A.C. generator rotor.

### TORQUE SPECIFICATION:

10.0–12.0 kg-m (70–90 lbs-ft)



## INSTALLATION OF PARTS

Install the following parts:

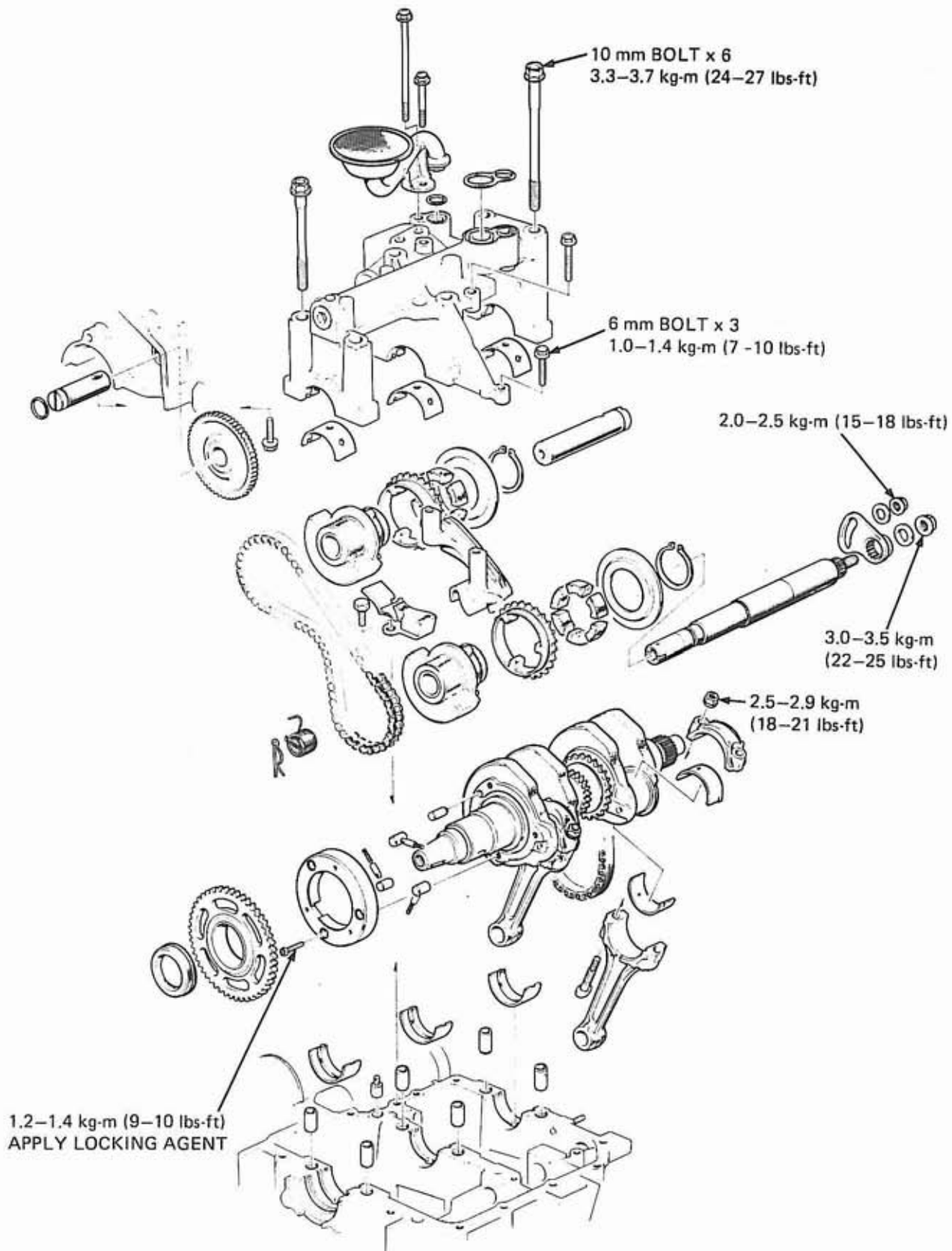
Gearshift spindle. (Section 11)

Clutch and oil pump drive chain. (Section 8)

Cylinder head, cylinders and pistons. (Sections 6 and 7)

Engine. (in frame) (Section 5)

Fill crankcase with recommended oil. (pages 3 and 4)





SERVICE INFORMATION	10-1
TROUBLESHOOTING	10-2
BALANCER REMOVAL	10-3
CONNECTING ROD REMOVAL	10-6
CRANKSHAFT/STARTER CLUTCH REMOVAL	10-7
ELECTRIC STARTER IDLE GEAR REMOVAL	10-8
BEARING INSPECTION	10-9
BEARING SELECTION	10-11
ELECTRIC STARTER IDLE GEAR INSTALLATION	10-13
ELECTRIC STARTER CLUTCH/CRANKSHAFT INSTALLATION	10-13
CONNECTING ROD INSTALLATION	10-14
BALANCER INSTALLATION	10-15

## SERVICE INFORMATION

### • WORKING PRACTICE

All bearing inserts are a selective fit and are identified by color code. Select replacement bearings from the color code table. After installing new bearings, recheck them with plastigauge to verify clearance.

After installing the balancer, check the timing and adjust balancer chain tension.

Apply molybdenum disulfide grease to the main journals and crankpins during assembly.

### • SPECIAL TOOL

Special Tool

TORX DRIVER BIT (T-30) 07703-0010200





• SPECIFICATIONS

		STANDARD	SERVICE LIMIT
Balancer	I.D.	18.010~18.028 mm (0.7090~0.7098 in.)	18.04 mm (0.710 in.)
	Shaft O.D.	17.966~17.984 mm (0.7073~0.7080 in.)	17.95 mm (0.707 in.)
	Balancer-to-shaft clearance	—————	0.08 mm (0.003 in.)
Crankshaft	Connecting rod big end side clearance	0.05~0.25 mm (0.002~0.010 in.)	0.35 mm (0.014 in.)
	Crankpin oil clearance	0.020~0.044 mm (0.0008~0.0017 in.)	0.08 mm (0.003 in.)
	Main journal oil clearance	0.020~0.044 mm (0.0008~0.0017 in.)	0.08 mm (0.003 in.)
	Runout	—————	0.05 mm (0.002 in.)
Electric starter gear	Drive gear O.D.	54.170~54.200 mm (2.1327~2.1339 in.)	54.15 mm (2.132 in.)
	Idle gear-to-shaft clearance	—————	0.10 mm (0.004 in.)

## TROUBLESHOOTING

### Excessive Noise

#### 1. Crankshaft

- Worn main journal bearing
- Worn crankpin bearing

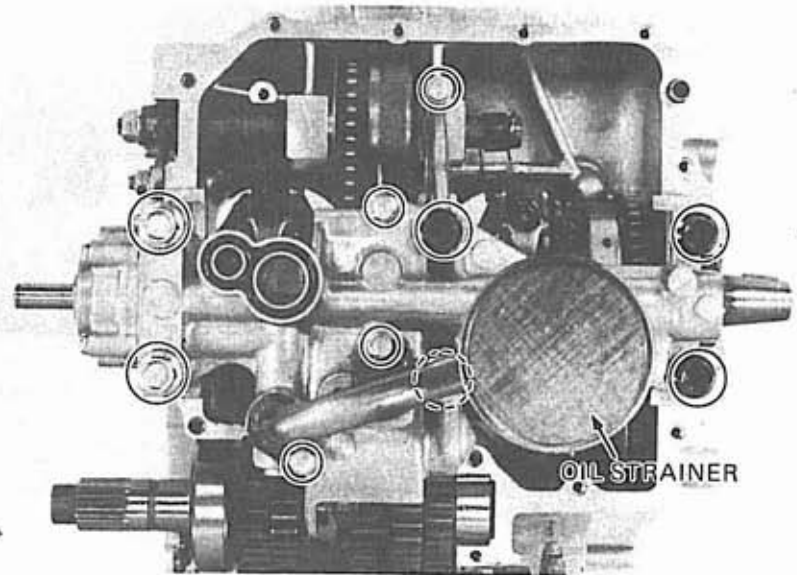
#### 2. Balancer

- Improper timing adjustment
- Improper chain adjustment
- Damaged chain

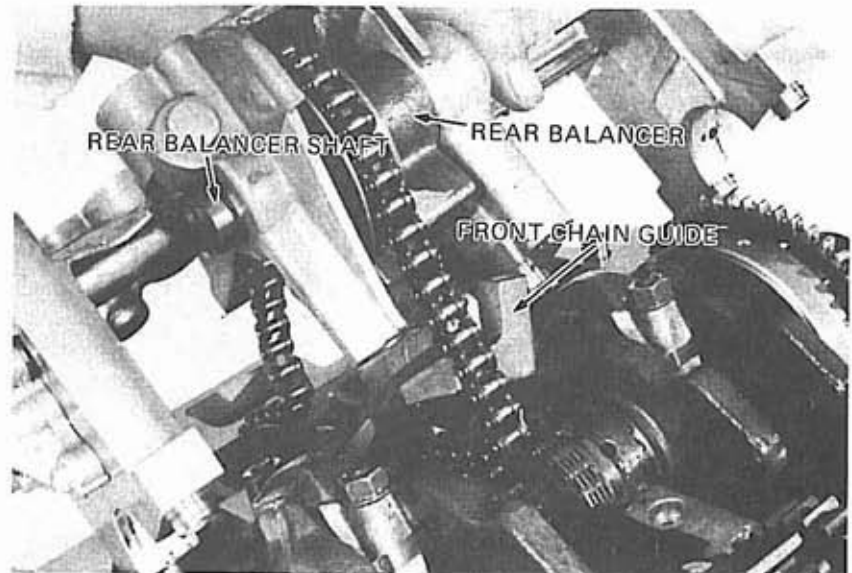


## BALANCER REMOVAL

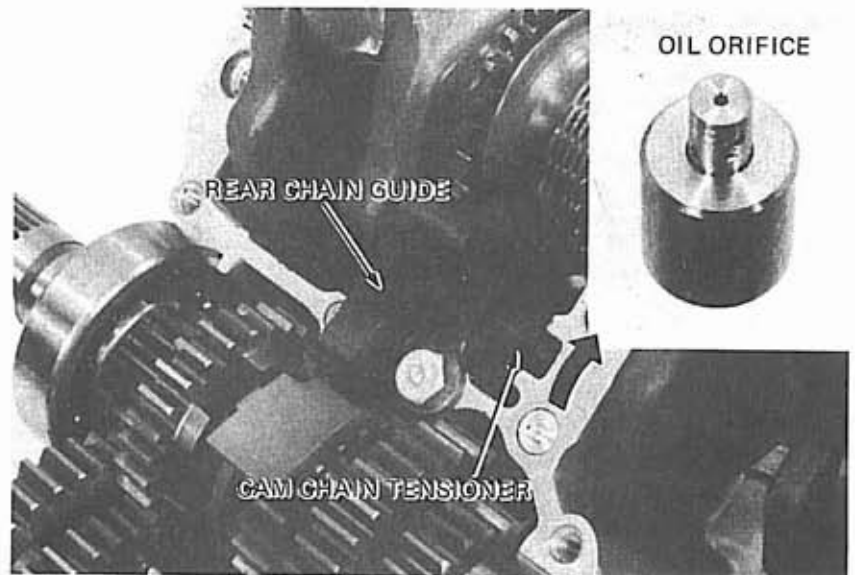
Split the crankcase. (Section 9)  
Remove the oil strainer.  
Remove the bearing holder bolts.



Remove the front chain guide.  
Remove the rear balancer shaft and rear balancer.



Remove the oil orifice and rear chain guide.  
Remove the cam chain tensioner.

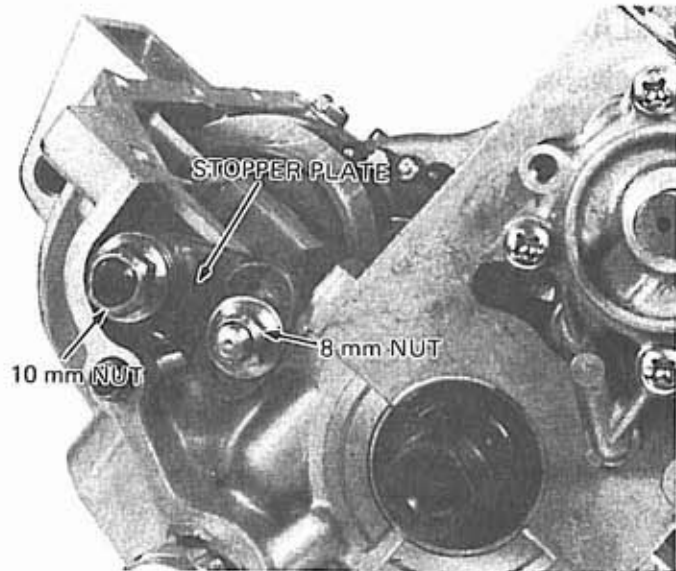


OIL ORIFICE

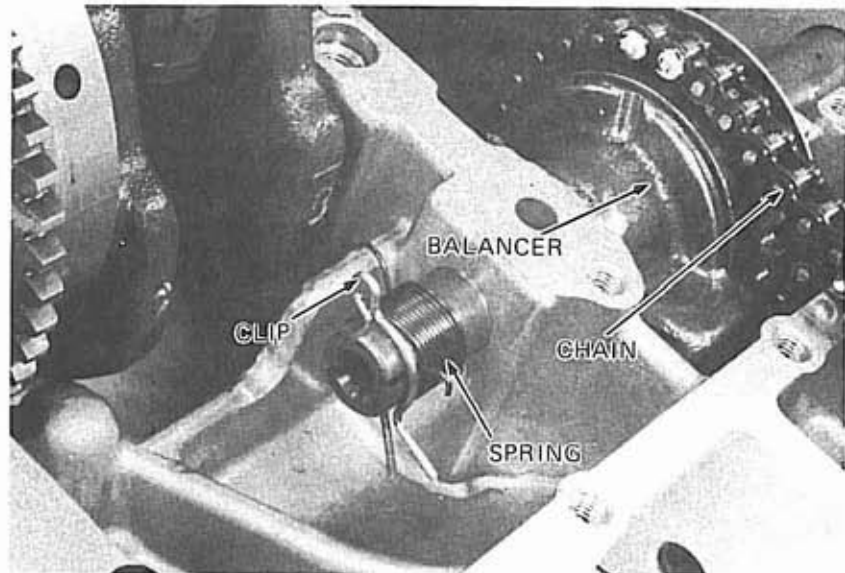




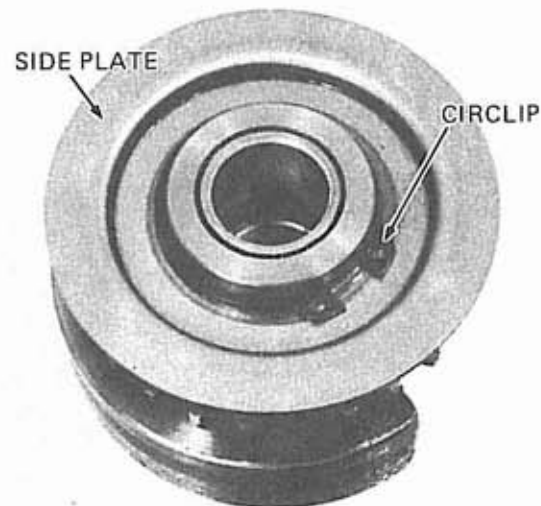
Remove the 10 mm nut, 8 mm nut and balancer stopper plate.



Remove the clip and spring.  
Remove the front balancer shaft and balancer chain.



Remove the circlip and side plate.

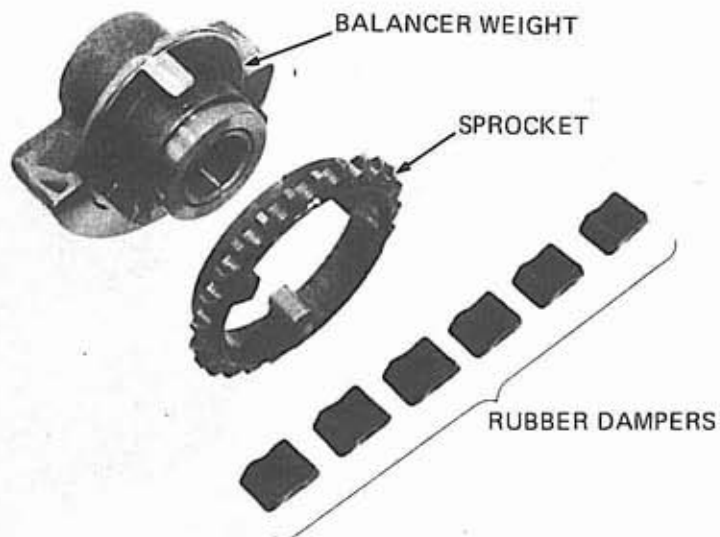




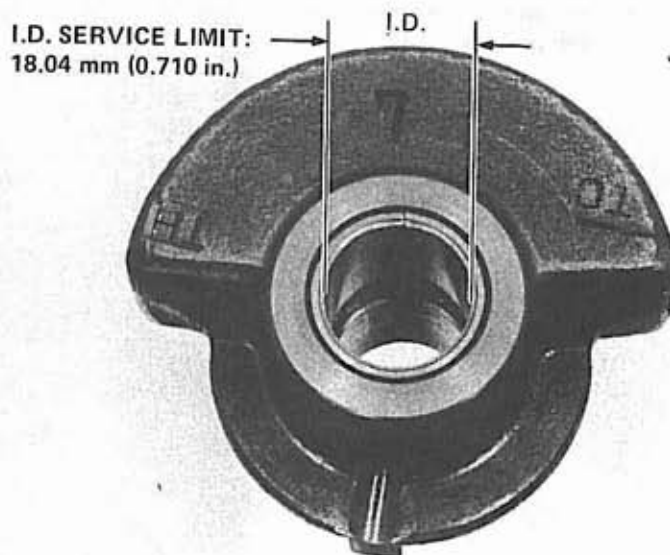
Remove the sprockets and damper rubbers.

• **BALANCER INSPECTION**

Check the damper rubbers for weakness or damage. Replace rubbers as a set.



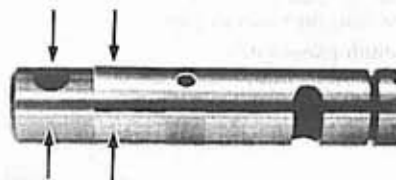
Measure the balancer I.D.



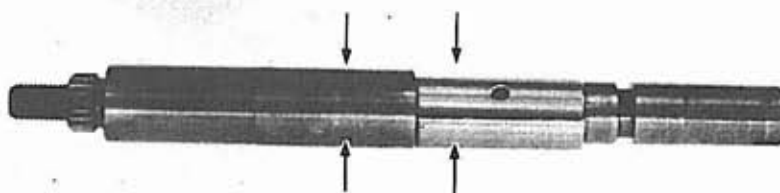
Measure the balancer shaft O.D.

Measure the clearance between the balancer and balancer shaft.

**SERVICE LIMIT: 0.08 mm (0.003 in.)**



**O.D. SERVICE LIMIT:**  
**17.95 mm (0.707 in.)**

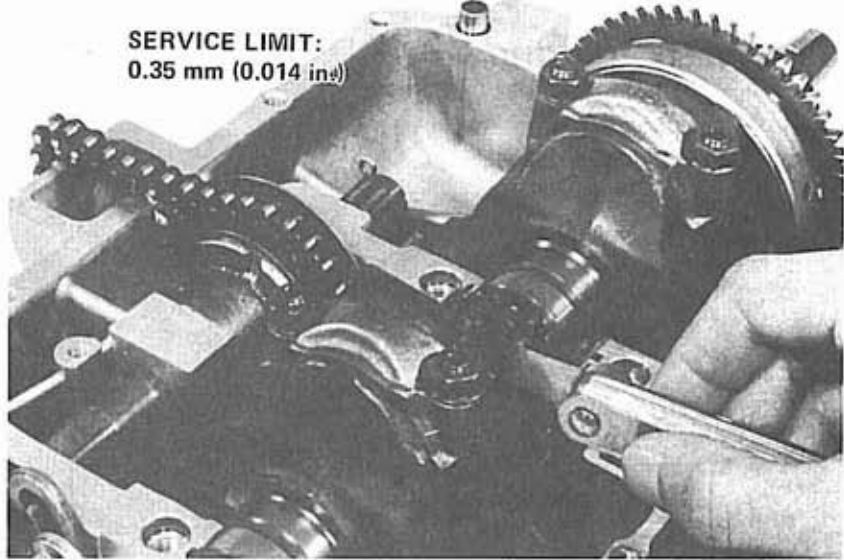




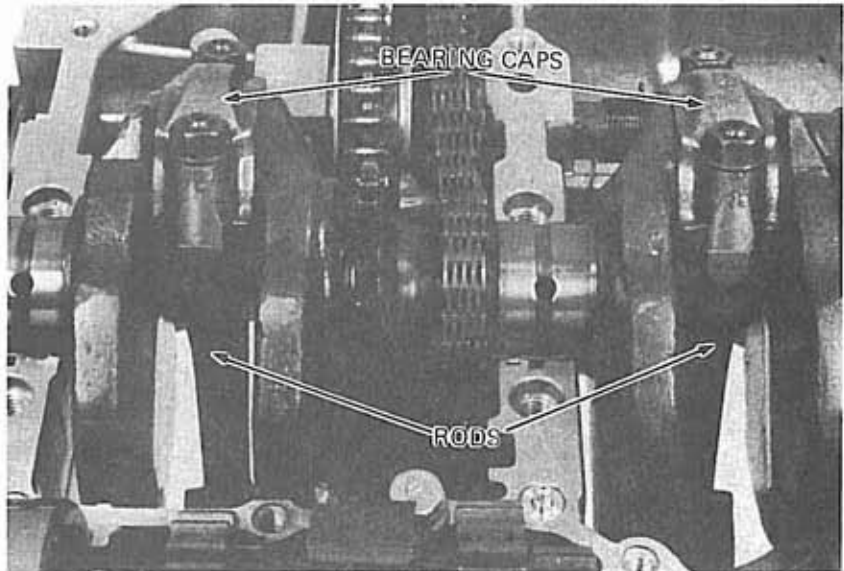
## CONNECTING ROD REMOVAL

Check the connecting rod side clearance.

SERVICE LIMIT:  
0.35 mm (0.014 in.)

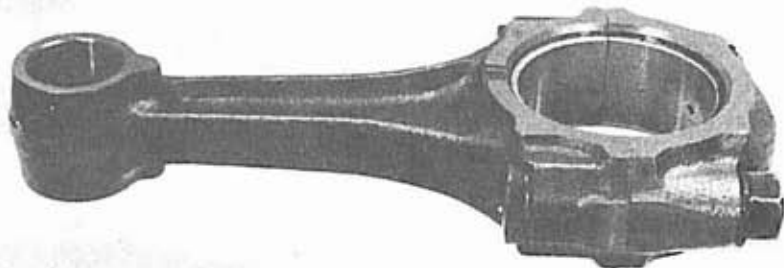


Remove the rods and pistons, and mark them to indicate the cylinder position.



### NOTE

Mark the rods, bearings and bearing caps to indicate the cylinder position.

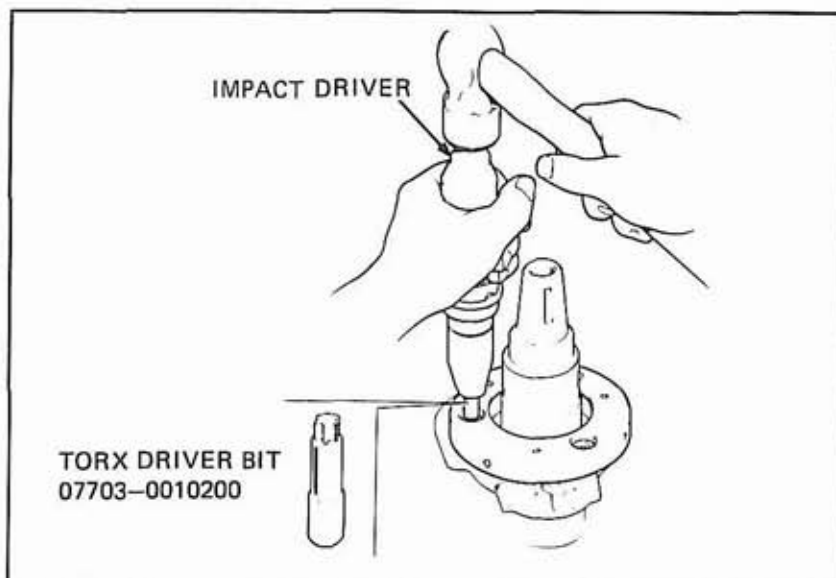






## CRANKSHAFT/STARTER CLUTCH REMOVAL

Remove the oil seal.  
Remove the starter drive gear.  
Remove the "torx" bolts.  
Remove the starter clutch.

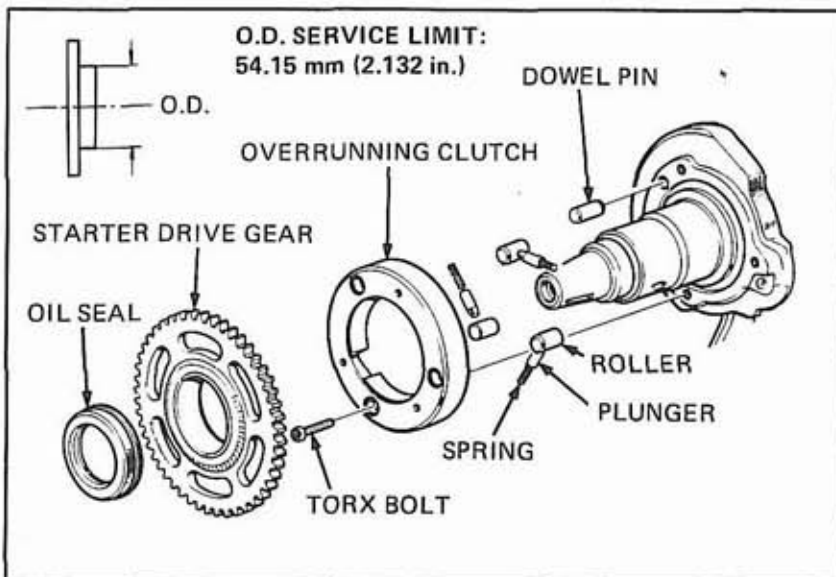


### • STARTER CLUTCH INSPECTION

Inspect the roller for smooth rotation.  
Remove the roller and check for excessive or local wear.

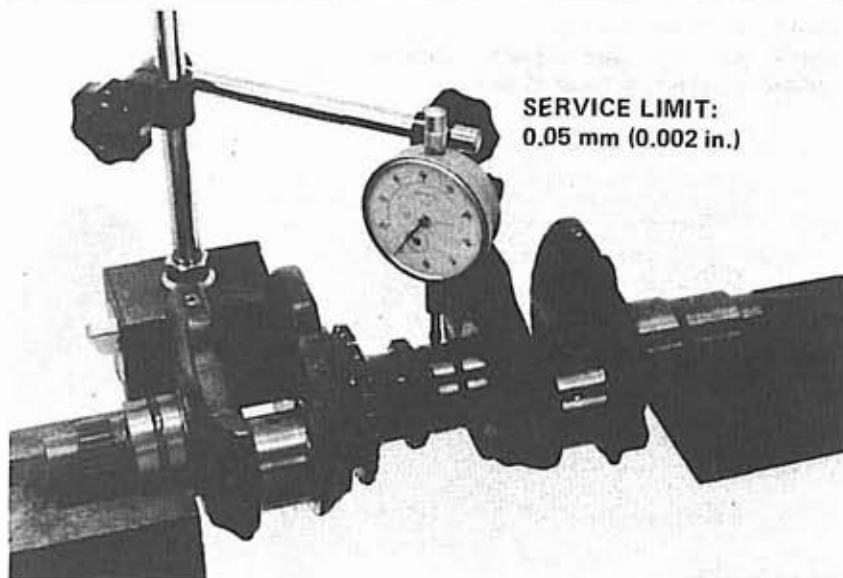
### • STARTER DRIVE GEAR INSPECTION

Inspect the starter drive gear for damage or local or excessive wear.



### • CRANKSHAFT INSPECTION

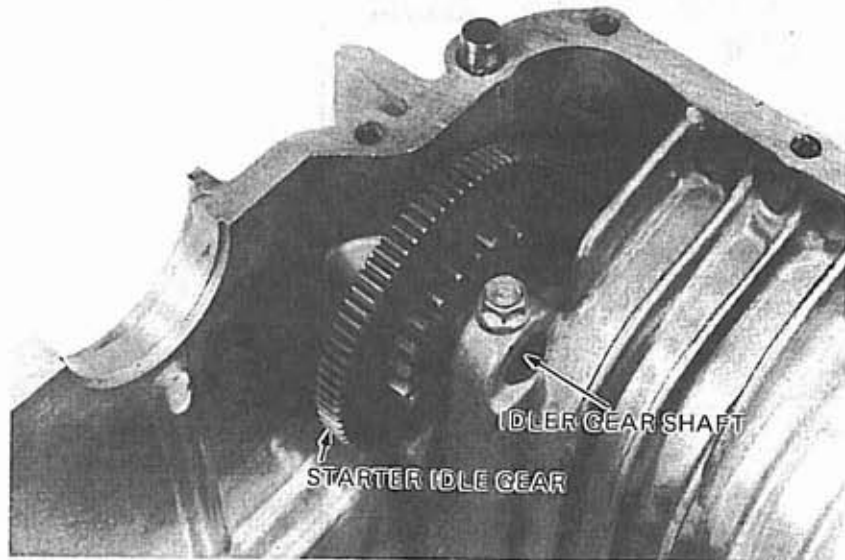
Set the crankshaft on a stand or V blocks.  
Set a dial gauge into the center main journal.  
Rotate the crankshaft two revolutions and read runout at the center journal.





## ELECTRIC STARTER IDLE GEAR REMOVAL

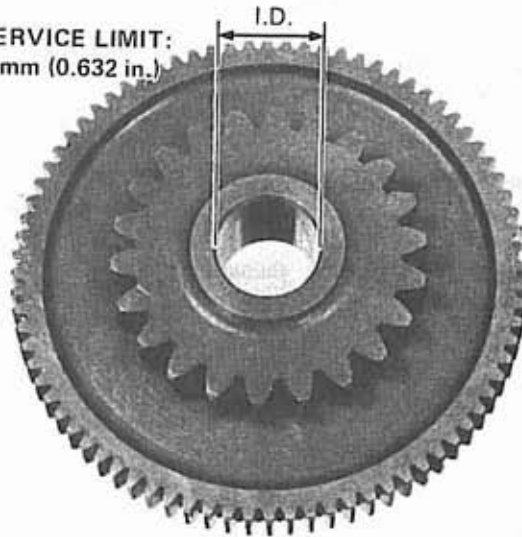
Remove the bolt, pull out the idler gear shaft, and take out the idle gear.



### • INSPECTION

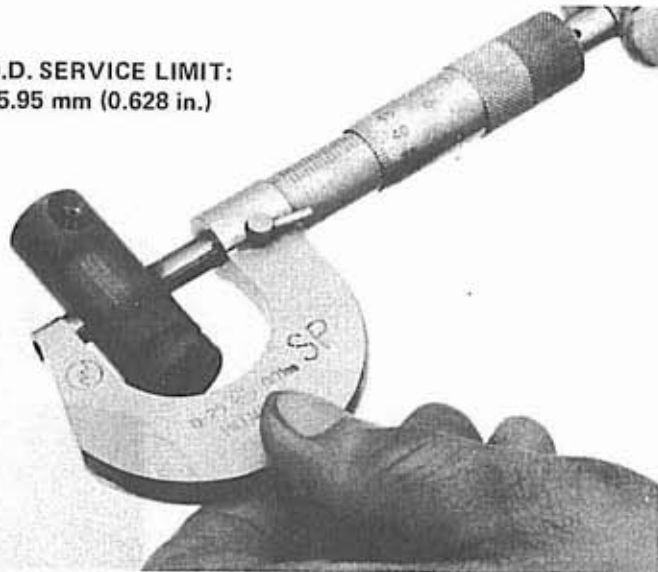
Inspect the idle gear for tooth damage.  
Measure the idle gear I.D..

I.D. SERVICE LIMIT:  
16.05 mm (0.632 in.)



Measure the idle gear shaft O.D..  
Measure the idle gear-to-shaft clearance.  
**SERVICE LIMIT: 0.1 mm (0.004 in.)**

O.D. SERVICE LIMIT:  
15.95 mm (0.628 in.)



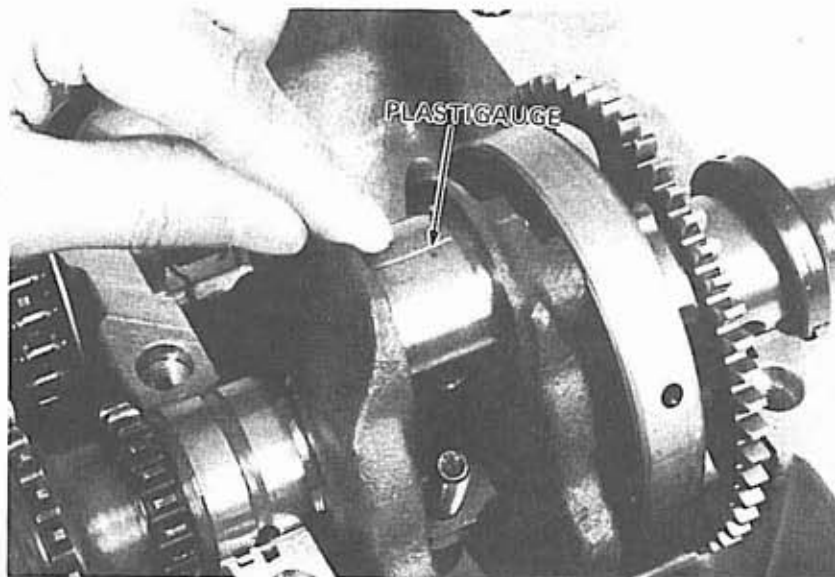


## BEARING INSPECTION

### • CONNECTING RODS

Inspect the bearing inserts for damage, separation, or other defects.

Put a piece of plastigauge on each crankpin, avoiding the oil hole.



Install the bearing caps on the correct crankpins, and torque them evenly.

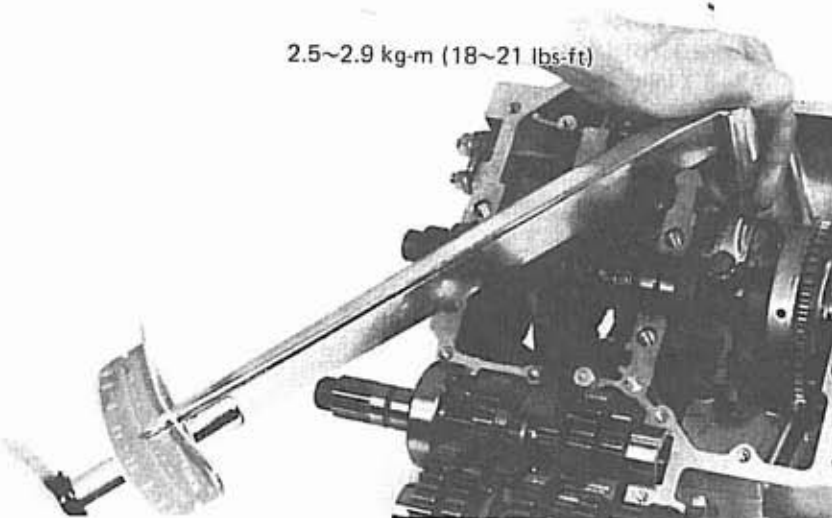
#### SPECIFIED TORQUE:

2.5~2.9 kg-m (18~21 lbs-ft)

#### NOTE

Do not rotate crankshaft during inspection.

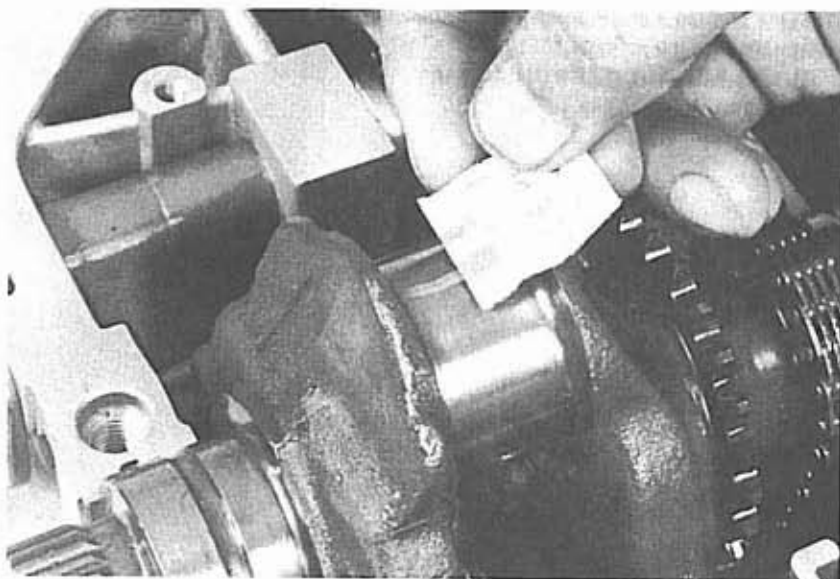
2.5~2.9 kg-m (18~21 lbs-ft)



Remove the caps and measure the compressed plastigauge on each crankpin.

#### OIL CLEARANCE SERVICE LIMIT:

0.08 mm (0.003 in.)

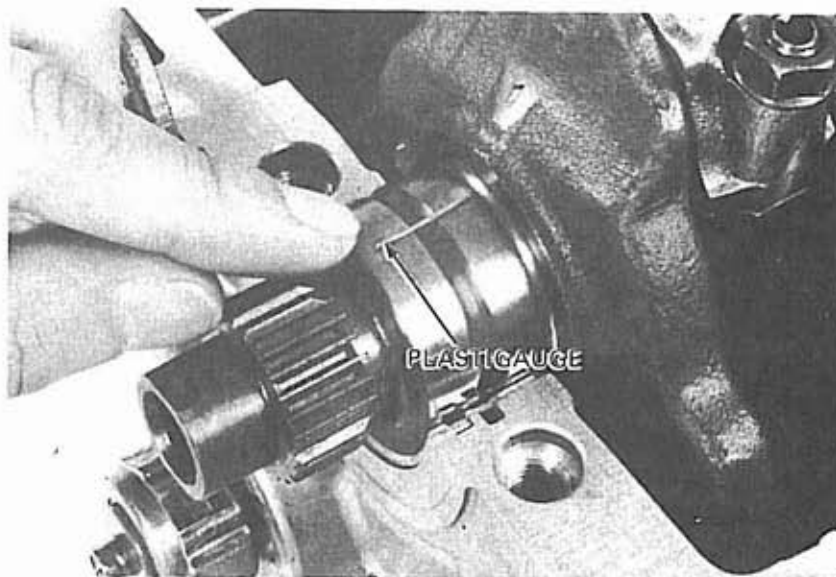




# • MAIN BEARINGS

Inspect the bearing inserts for damage, separation, or other defects.

Put a piece of plastigauge on each journal, avoiding the oil holes.



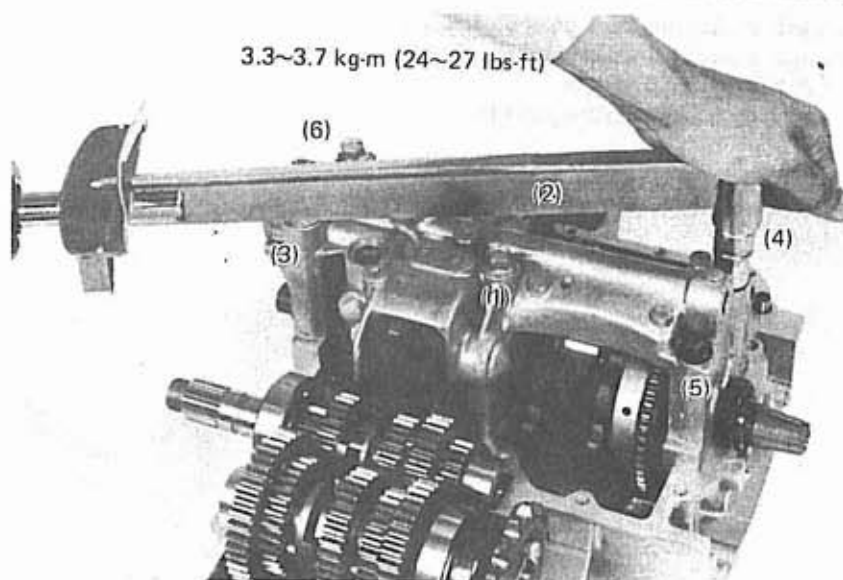
Install the main bearings on the correct journals, and torque them evenly in a cross pattern and in two or more steps.

## SPECIFIED TORQUE:

3.3~3.7 kg-m (24~27 lbs-ft)

## NOTE

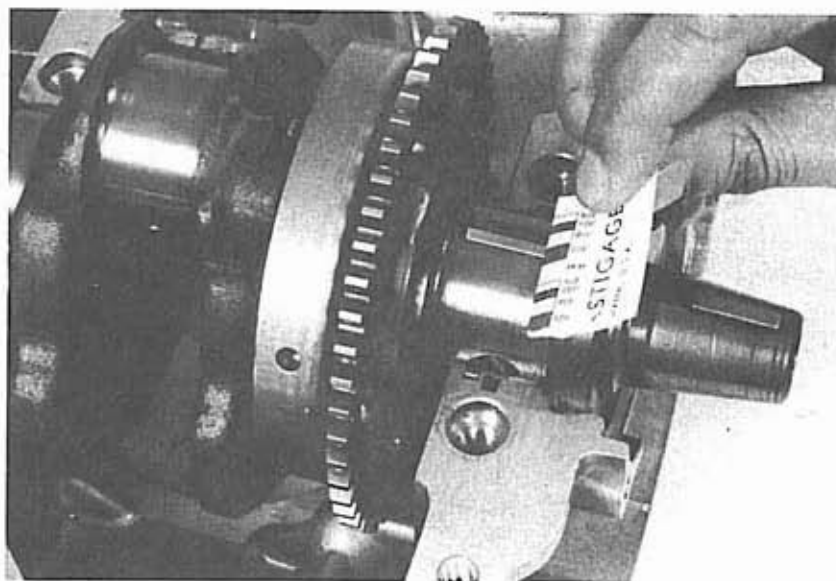
Do not rotate the crankshaft during inspection.



Remove the caps and measure the compressed plastigauge on each journal.

## OIL CLEARANCE SERVICE LIMIT:

0.08 mm (0.003 in.)



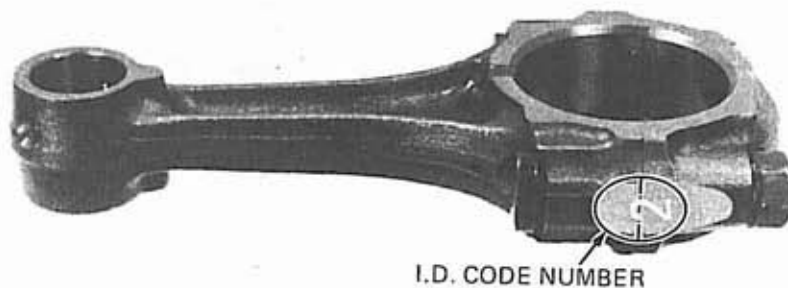


### BEARING SELECTION

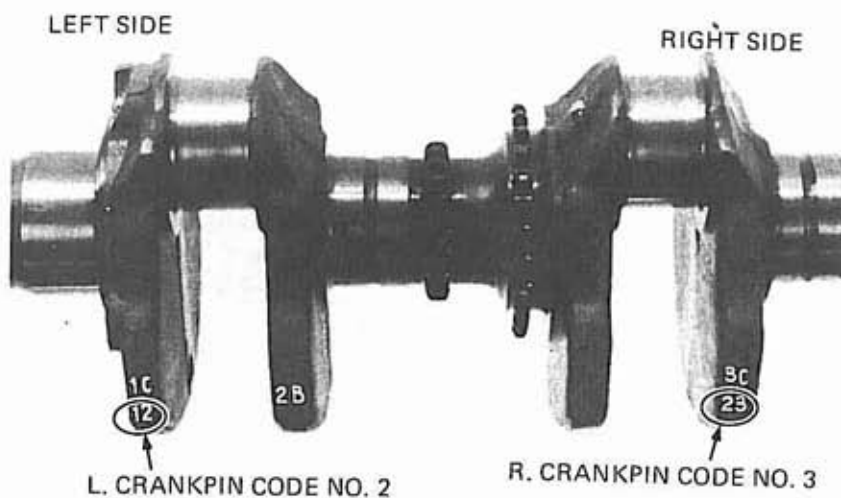
If rod bearing clearance is beyond tolerance, select replacement bearings as follows:

- CONNECTING ROD BEARING INSERTS

Determine and record the corresponding rod I.D. code number.

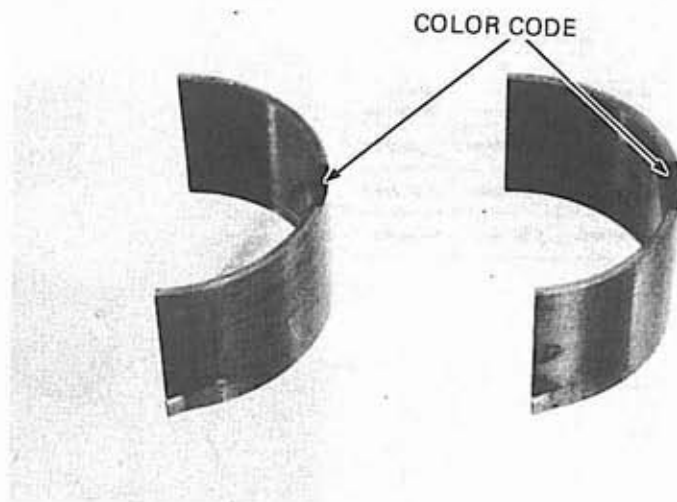


Determine and record the corresponding crankpin O.D. code number.



Cross reference the crankpin and rod codes to determine the replacement bearing color.

			CRANKPIN O.D. CODE NUMBERS		
			1	2	3
			35.992~ 36.000 mm	35.984~ 35.992 mm	35.976~ 35.984 mm
CONNECTING ROD I.D. CODE NUMBERS	1	39.000~ 39.008 mm	E (YELLOW)	D (GREEN)	C (BROWN)
	2	39.005~ 39.016 mm	D (GREEN)	C (BROWN)	B (BLACK)
	3	39.016~ 39.024 mm	C (BROWN)	B (BLACK)	A (BLUE)

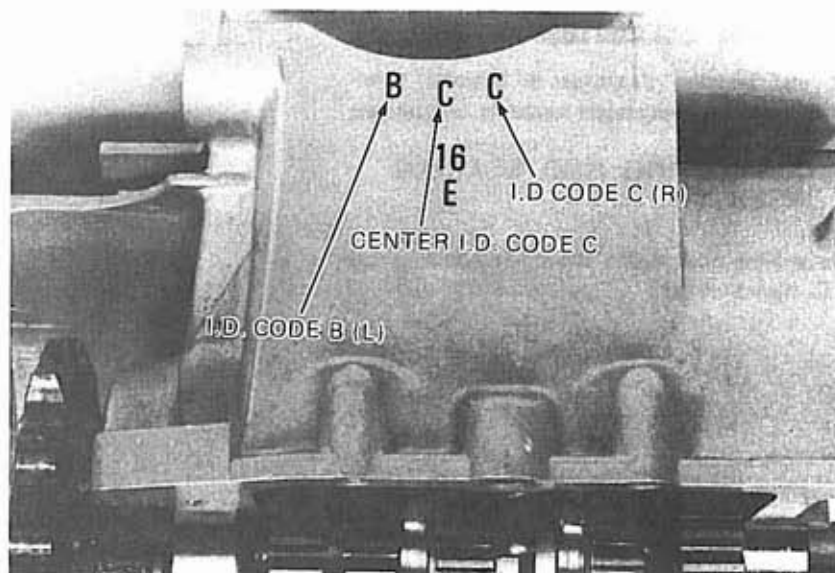




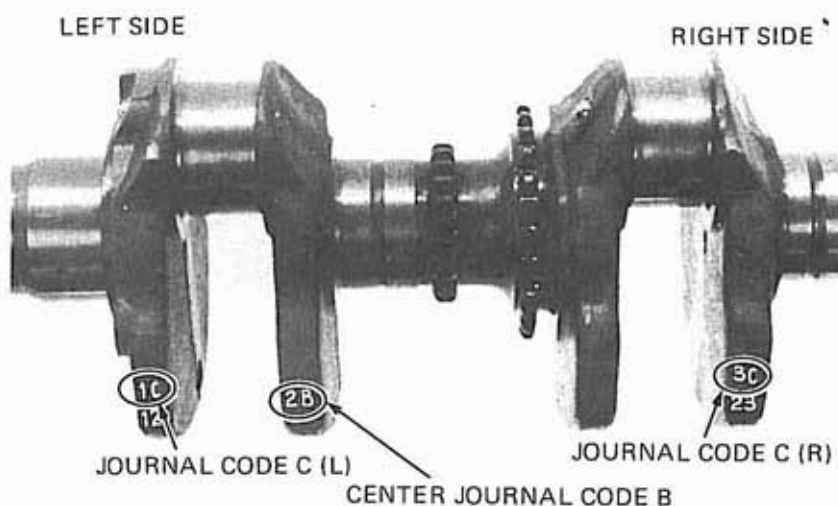


# • MAIN BEARING

Determine and record each bearing holder and case I.D. code numbers.

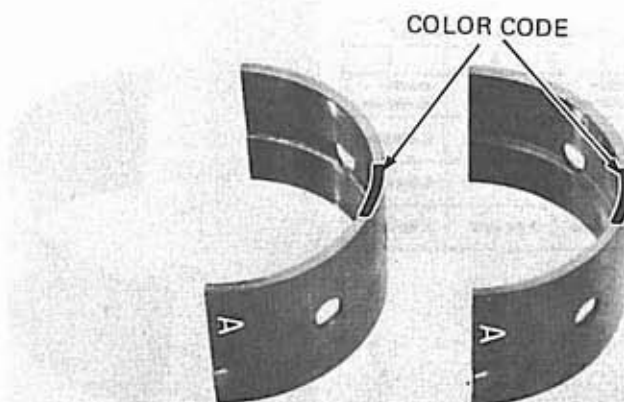


Determine and record the corresponding main journal O.D. code letters.



Cross reference the case and journal codes to determine the replacement bearing color.

		MAIN JOURNAL O.D. CODES			
		A	B	C	
		35.992~ 36.000 mm	35.984~ 35.992 mm	35.976~ 35.984 mm	
CASE I.D. CODE NUMBERS	A	39.000~ 39.008 mm	E (YELLOW)	D (GREEN)	C (BROWN)
	B	39.008~ 39.016 mm	D (GREEN)	C (BROWN)	B (BLACK)
	C	39.016~ 39.025 mm	C (BROWN)	B (BLACK)	A (BLUE)







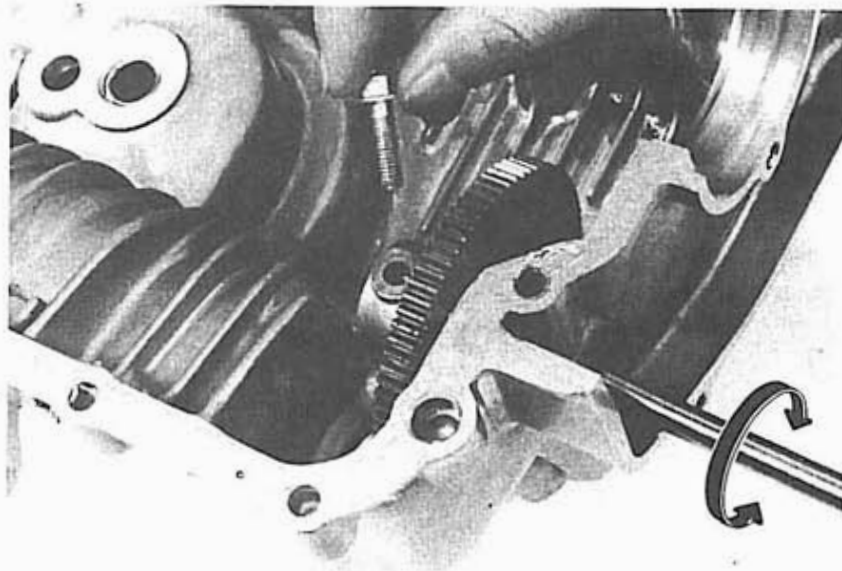
## STARTER IDLE GEAR INSTALLATION

Install the O-ring on the idle gear shaft.  
Install the shaft and gear in the case.

### NOTE

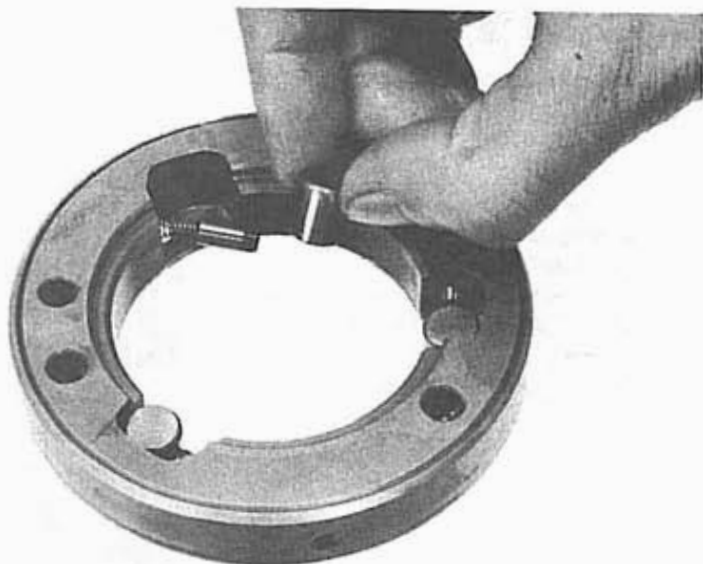
Align the bolt hole in the shaft with the hole in the case by rotating the shaft with a screwdriver.

Install the bolt and tighten securely.



## STARTER CLUTCH/CRANKSHAFT INSTALLATION

Install the springs, plungers and rollers.



Align the hole in the starter clutch with the dowel pin on the crankweight, and install the starter clutch.

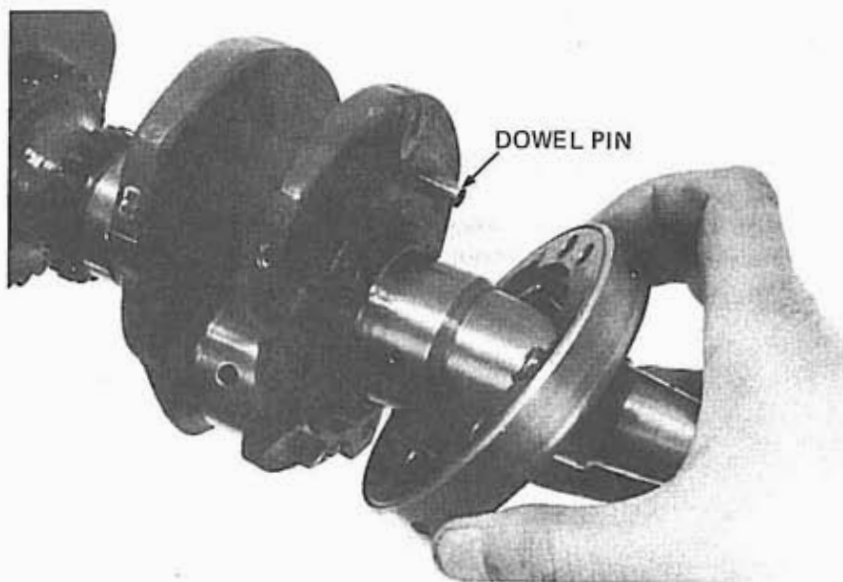
Tighten the "torx" bolts.

**TORQUE SPECIFICATION:**  
1.2~1.4 kg-m (9~10 lbs-ft)

**SPECIAL TOOL**  
TORX DRIVER BIT 07703-0010200

### NOTE

Apply a locking agent to the bolt threads.

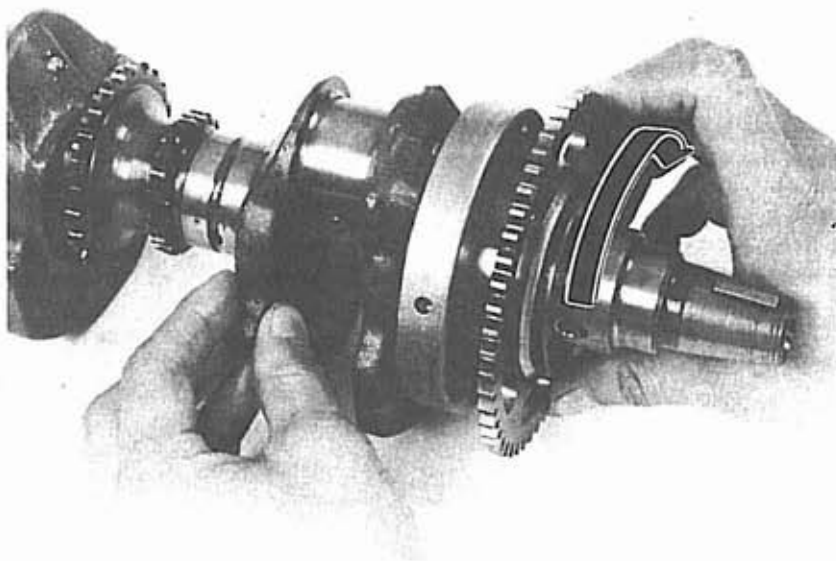




Install the starter gear while rotating it by hand.  
Install the oil seal on the crankshaft.  
Install the cam chain on the crankshaft.  
Lay the crankshaft in the crankcase.

**NOTE**

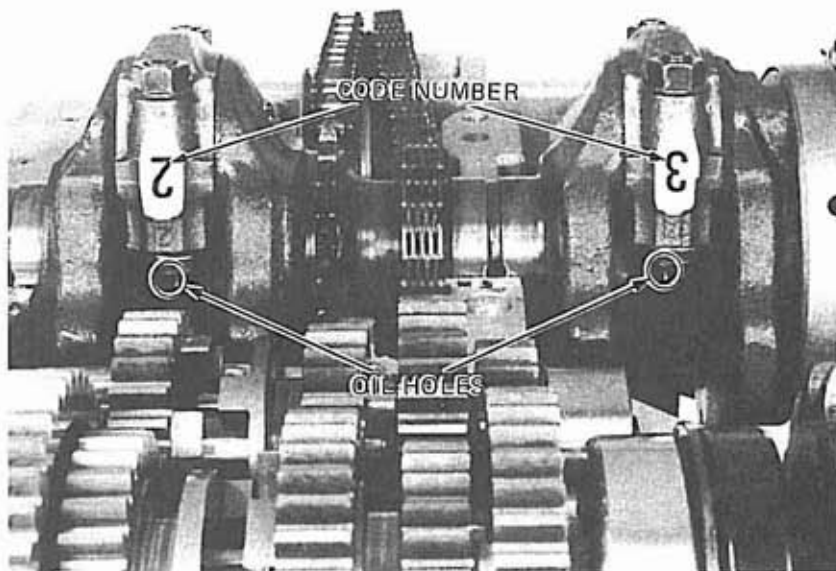
Lubricate each journal and crankpin with molybdenum disulfide grease.

**CONNECTING ROD INSTALLATION**

Install the connecting rods and bearing caps.

**NOTE**

- Be sure connecting rods are installed in their correct position and the oil holes point to the rear.
- Cross reference the rod and cap I.D. codes to insure the original assembly.
- Do not mix the right and left parts.



Torque the connecting rod bearing cap bolts.

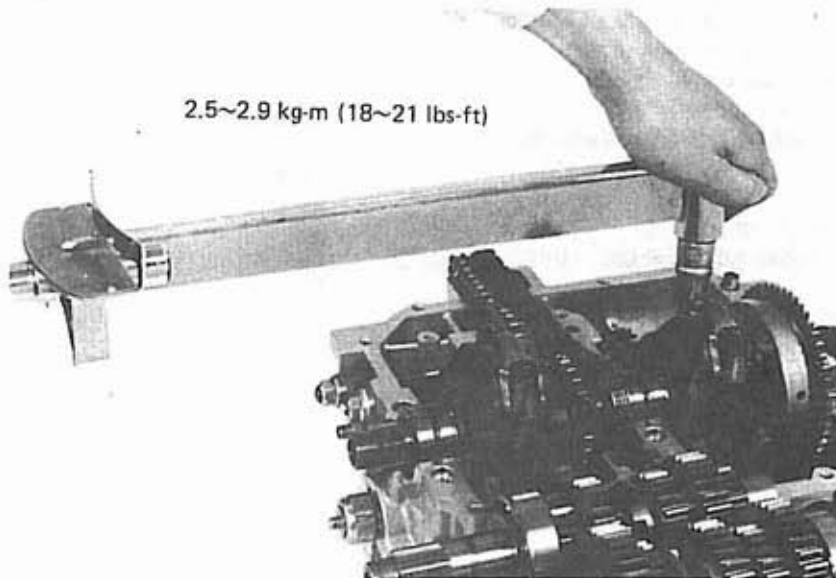
**SPECIFIED TORQUE:**

2.5~2.9 kg-m (18~21 lbs-ft)

**NOTE**

- Tighten the rod bearing cap bolts in two or more steps.
- After tightening the bolts, check that the rod moves freely without binding.

2.5~2.9 kg-m (18~21 lbs-ft)



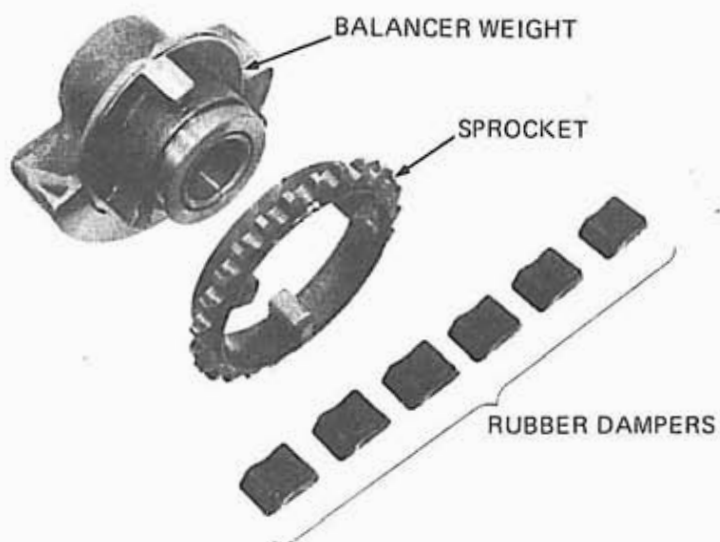


## BALANCER INSTALLATION

Install the sprocket and damper rubbers on the balancer.

### CAUTION

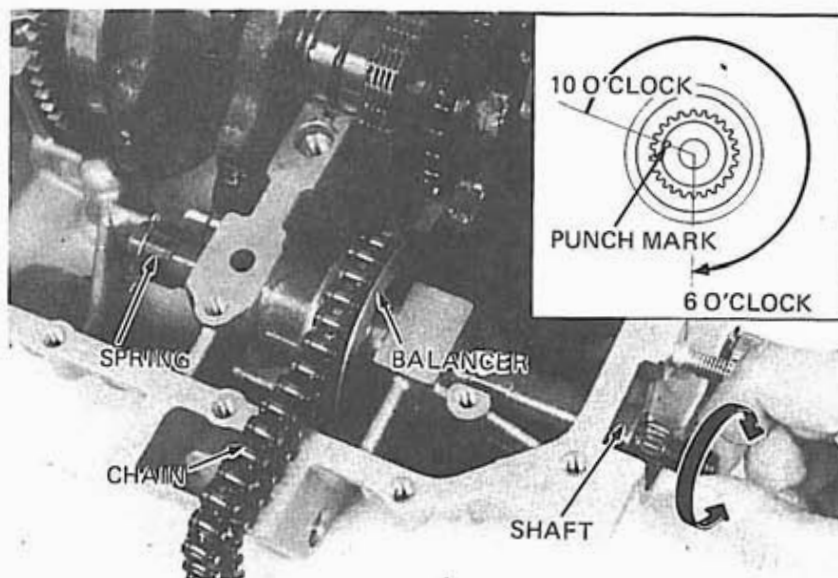
- Note the sprocket direction.
- Align the marks on the balancer and sprocket.



Assemble the front balancer, balancer chain and front balancer shaft.

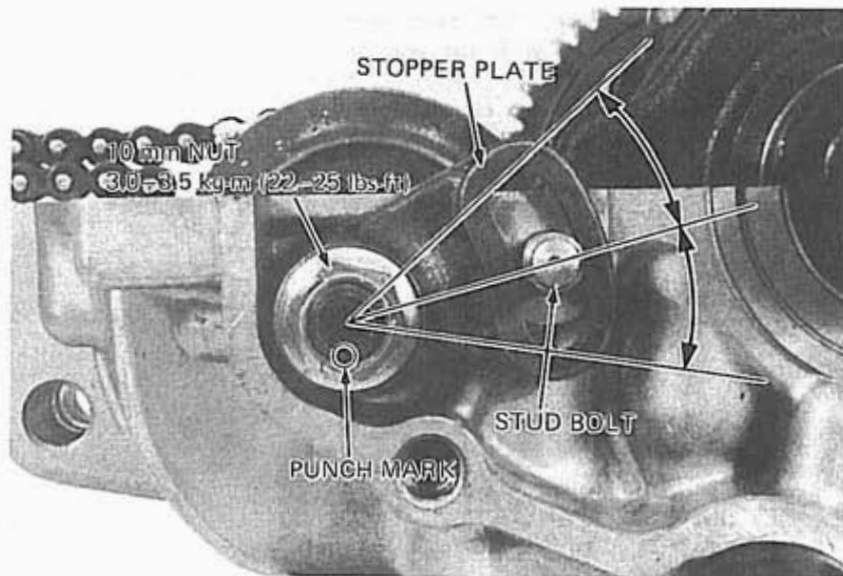
Position the punch mark on the end of the shaft at about 10 o'clock as shown, and install the spring.

Rotate the shaft clockwise to 6 o'clock.



Install the stopper plate with the stud bolt centered in the plate groove.

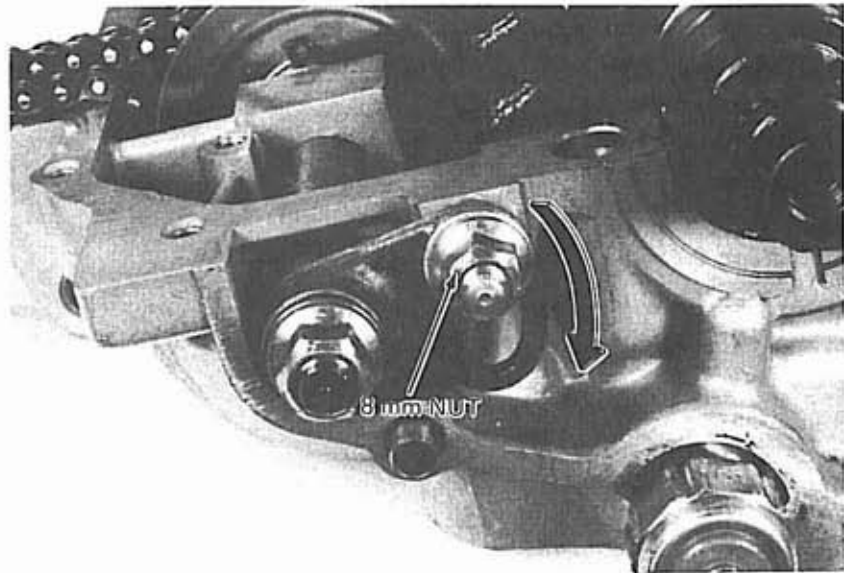
Temporarily tighten the 10 mm nut.



**NOTE**

Rotate the stopper plate clockwise fully.

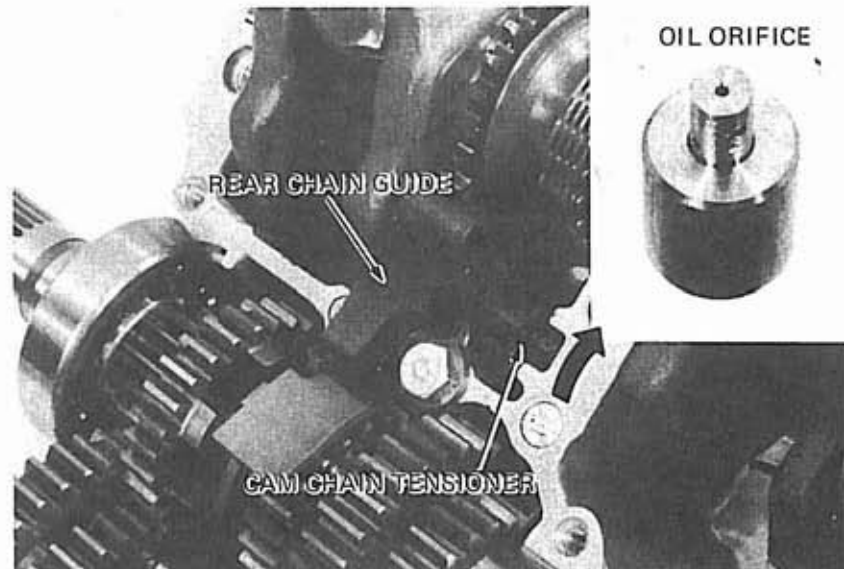
Torque the 8 mm nut.



Install the cam chain tensioner.  
Assemble the rear chain guide and oil orifice.

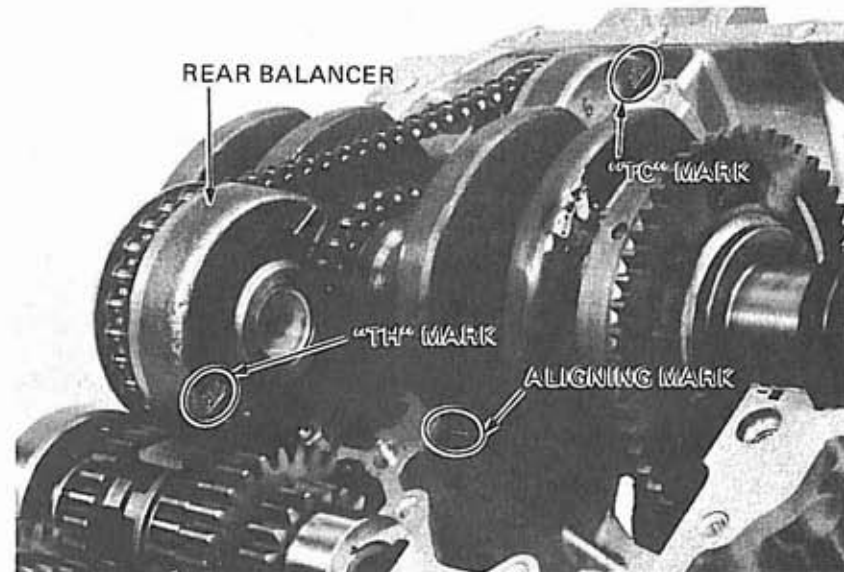
**NOTE**

Be sure the oil orifice is not clogged.



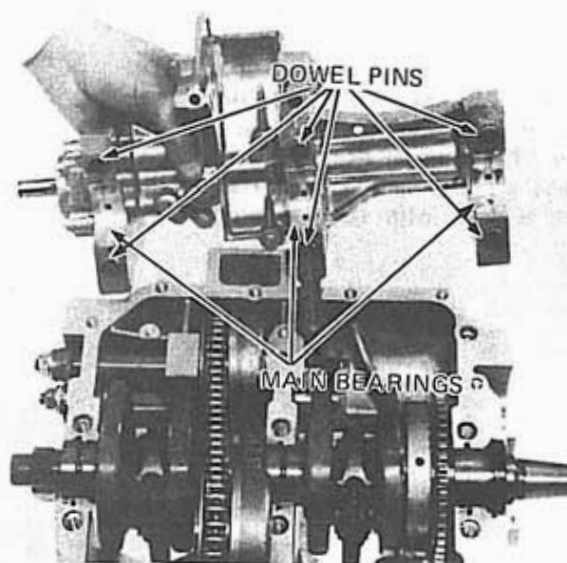
Align the front balancer "TC" mark and crankshaft aligning mark with the end of the crankcase.

Install the chain so that the rear balancer "TH" mark is flush with the end of the crankcase.





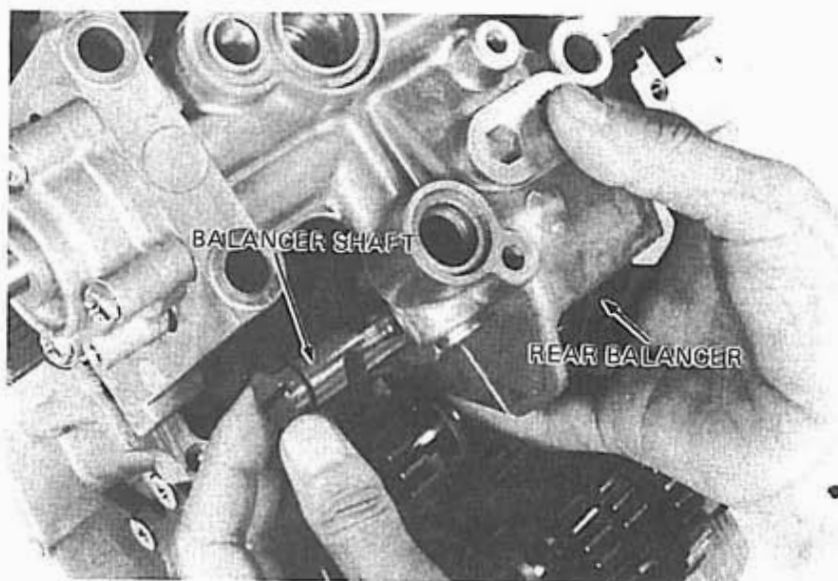
Be sure the dowel pins and bearing inserts are in place in the holder.



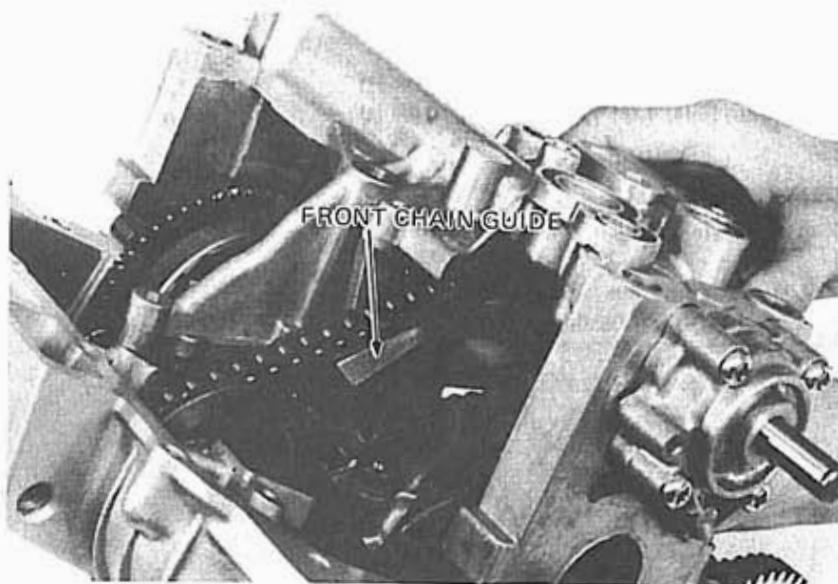
Install the rear balancer on the bearing holder with the shaft.

### NOTE

Do not disturb the installation of the balancer chain on the sprocket during this operation.



Install the front chain guide.

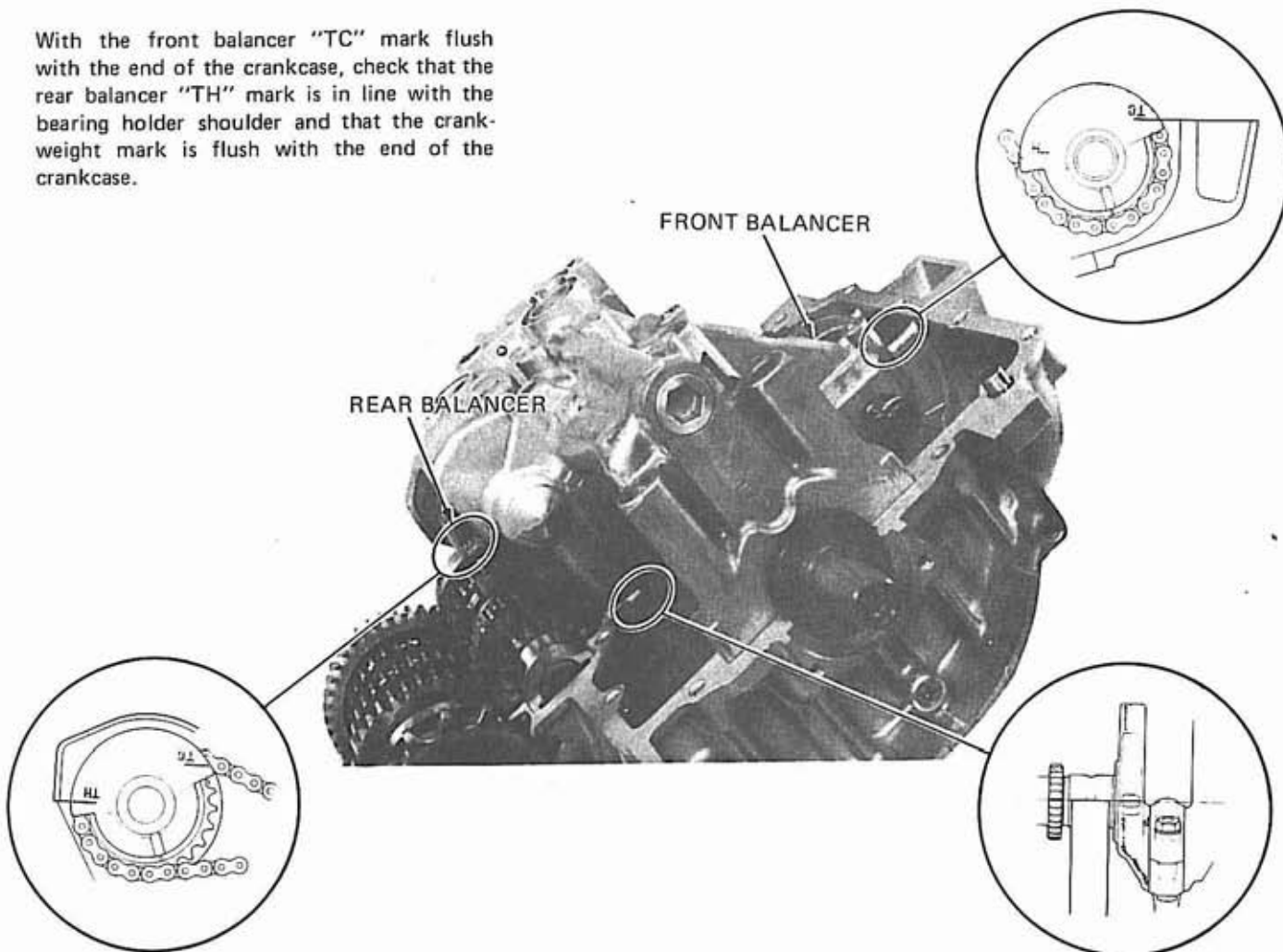






Lay the bearing holders over the crankshaft main journals.

With the front balancer "TC" mark flush with the end of the crankcase, check that the rear balancer "TH" mark is in line with the bearing holder shoulder and that the crank-weight mark is flush with the end of the crankcase.



Torque bearing holder bolts:

**TORQUE SPECIFICATIONS:**

10 mm bolt: 3.3~3.7 kg-m (24~27 lbs-ft)

6 mm bolt: 1.0~1.4 kg-m ( 7~10 lbs-ft)

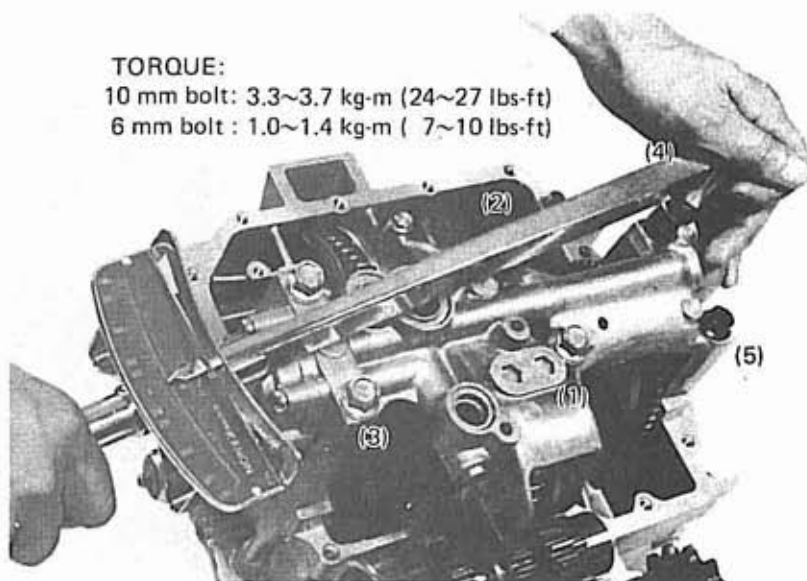
**TORQUE:**

10 mm bolt: 3.3~3.7 kg-m (24~27 lbs-ft)

6 mm bolt : 1.0~1.4 kg-m ( 7~10 lbs-ft)

**NOTE**

- Torque the holder bolts in two or more steps and in the cross pattern shown.
- Make sure the crankshaft rotates freely without binding.

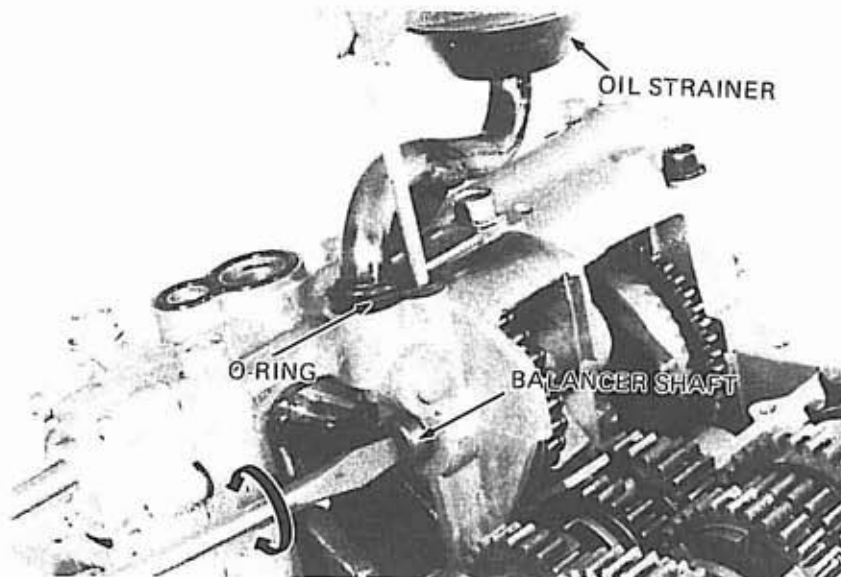






Slide the O-ring over the oil strainer pipe.

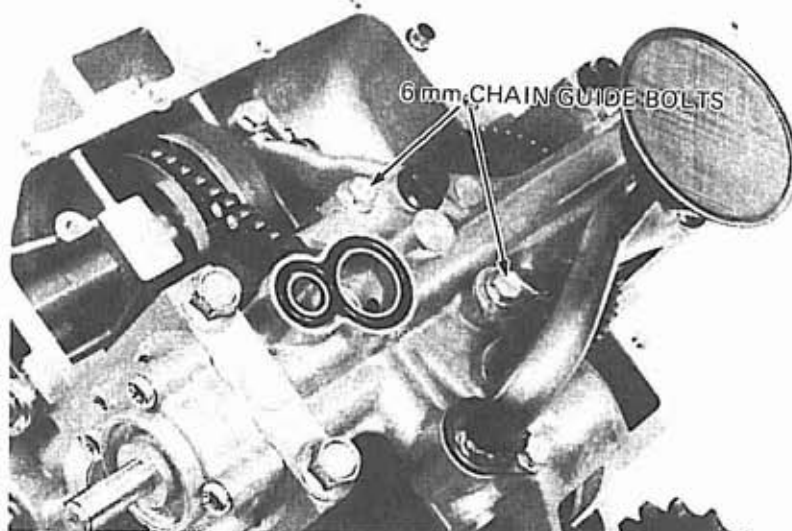
Align with the bolt hole by rotating the rear balancer shaft.



Torque the front chain guide bolts.

**NOTE**

The rear bolt should be tightened with the oil strainer installed.



Loosen the 8 mm nut.

**NOTE**

- The balancer chain tension will be adjusted automatically by loosening the 8 mm nut.
- If the balancer chain slack is excessive so that no further adjustment is possible, follow the steps on page 3-7.

Torque the 8 mm nut first.

**TORQUE SPECIFICATION:**

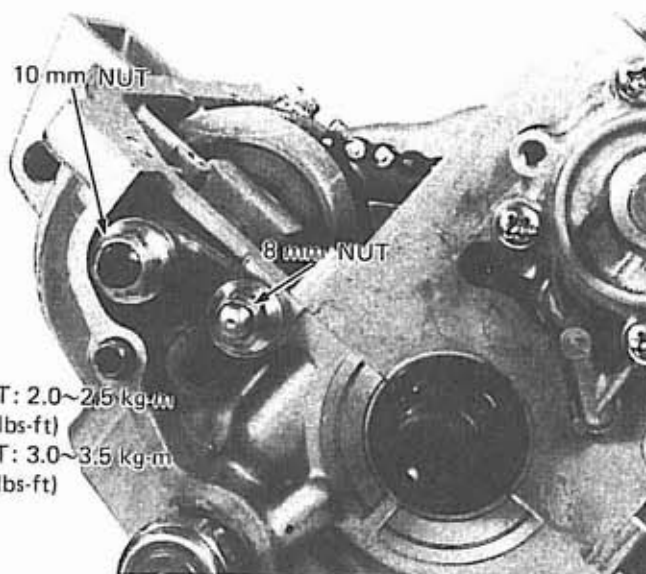
2.0~2.5 kg-m (15~18 lbs-ft)

Torque the 10 mm nut last.

**TORQUE SPECIFICATION:**

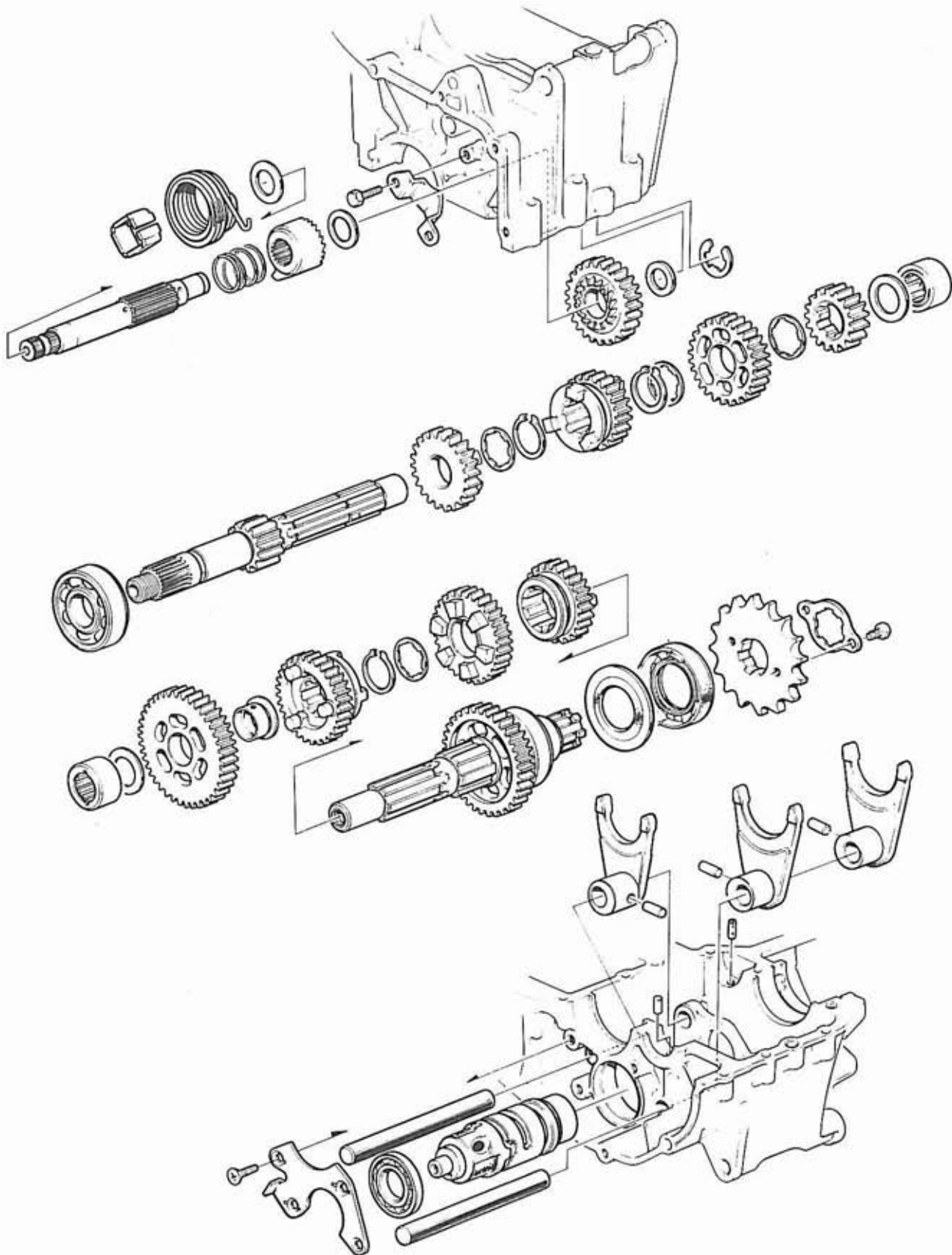
3.0~3.5 kg-m (22~25 lbs-ft)

Install the lower case. (Section 9)



8 mm NUT: 2.0~2.5 kg-m  
(15~18 lbs-ft)

10 mm NUT: 3.0~3.5 kg-m  
(22~25 lbs-ft)





SERVICE INFORMATION	11-1
TROUBLESHOOTING	11-2
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TRANSMISSION DISASSEMBLY	11-3
GEARSHIFT DRUM/SHIFT FORK REMOVAL	11-6
KICK STARTER DISASSEMBLY	11-8
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GEARSHIFT DRUM/SHIFT FORK INSTALLATION	11-10
TRANSMISSION ASSEMBLY	11-11
GEARSHIFT LINKAGE ASSEMBLY	11-13

## SERVICE INFORMATION

### • WORKING PRACTICE

The gear shift linkage can be serviced with the engine in the frame. For internal transmission repairs, the engine cases must be separated. (See Section 9)

### • SPECIFICATIONS

			STANDARD	SERVICE LIMIT
Transmission	Backlash		0.045~0.140 mm (0.0018~0.0055 in.)	0.20 mm (0.008 in.)
	Gear I.D.	M4,M5,C3 gears	25.020~25.041 mm (0.9850~0.9859 in.)	25.10 mm (0.988 in.)
		C1 gear	24.020~24.041 mm (0.9457~0.9465 in.)	24.10 mm (0.949 in.)
	C1 Gear bushing	I.D.	20.020~20.041 mm (0.7882~0.7890 in.)	20.06 mm (0.790 in.)
		O.D.	23.984~24.005 mm (0.9443~0.9451 in.)	23.95 mm (0.943 in.)
	Main shaft O.D.		24.959~24.980 mm (0.9826~0.9835 in.)	24.93 mm (0.981 in.)
	Countershaft O.D.		24.959~24.980 mm (0.9826~0.9835 in.)	24.93 mm (0.981 in.)
			19.987~20.000 mm (0.7869~0.7874 in.)	19.96 mm (0.786 in.)
	Gear to shaft or bushing clearance		_____	0.15 mm (0.006 in.)
	Gear dog minimum clearance (Neutral)		_____	0.3 mm (0.012 in.)



		STANDARD	SERVICE LIMIT
Shift drum	O.D.	34.950~34.975 mm (1.3760~1.3770 in.)	34.90 mm (1.374 in.)
	Case I.D.	35.000~35.025 mm (1.3780~1.3789 in.)	35.05 mm (1.380 in.)
Shift fork	Claw thickness	5.93~6.00 mm (0.233~0.236 in.)	5.50 mm (0.217 in.)
	I.D.	13.000~13.018 mm (0.5118~0.5125 in.)	13.05 mm (0.514 in.)
Fork shaft	O.D.	12.966~12.984 mm (0.5105~0.5112 in.)	12.95 mm (0.510 in.)
Kick starter	Pinion I.D.	18.500~18.521 mm (0.7283~0.7292 in.)	18.54 mm (0.730 in.)
	Shaft O.D.	18.459~18.480 mm (0.7267~0.7276 in.)	18.44 mm (0.726 in.)

## TROUBLESHOOTING

### Hard to Shift

1. Improper clutch adjustment: too much free play
2. Shift forks bent
3. Shift shaft bent
4. Shift fork claw bent
5. Shift drum cam grooves damaged

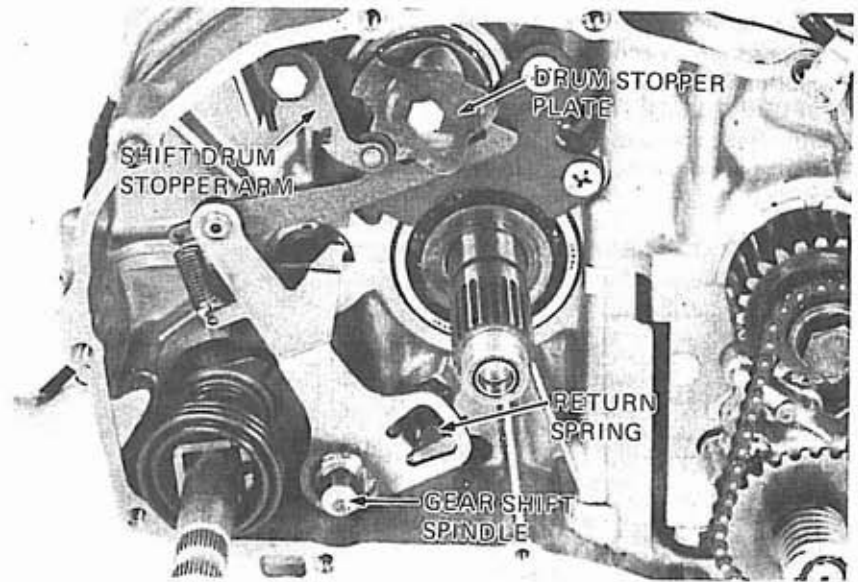
### Transmission Jumps Out of Gear

1. Gear dogs worn
2. Shift shaft bent
3. Shift drum stopper broken
4. Shift forks bent

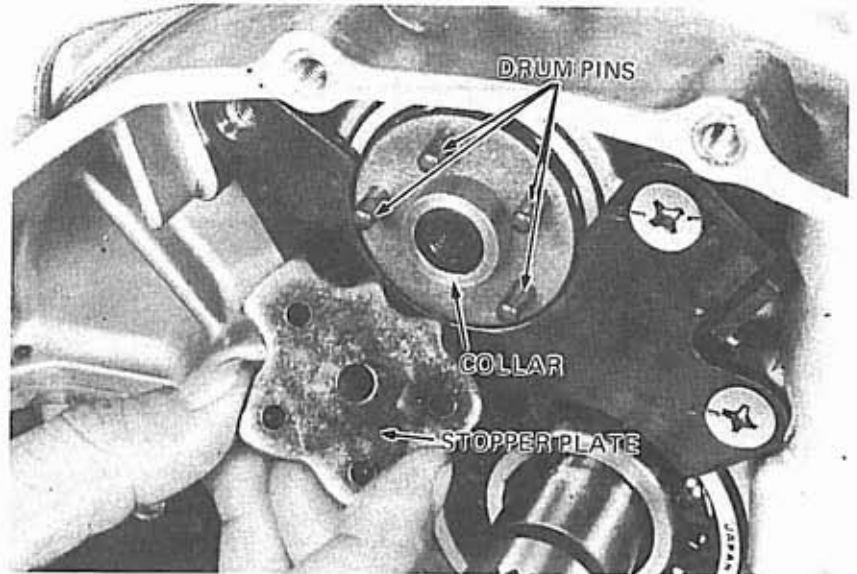


## GEARSHIFT LINKAGE DISASSEMBLY

Remove the gearshift pedal.  
Remove the clutch. (Section 8)  
Remove the gearshift spindle and gearshift return spring.  
Remove the shift drum stopper arm.  
Remove the stopper plate bolt.

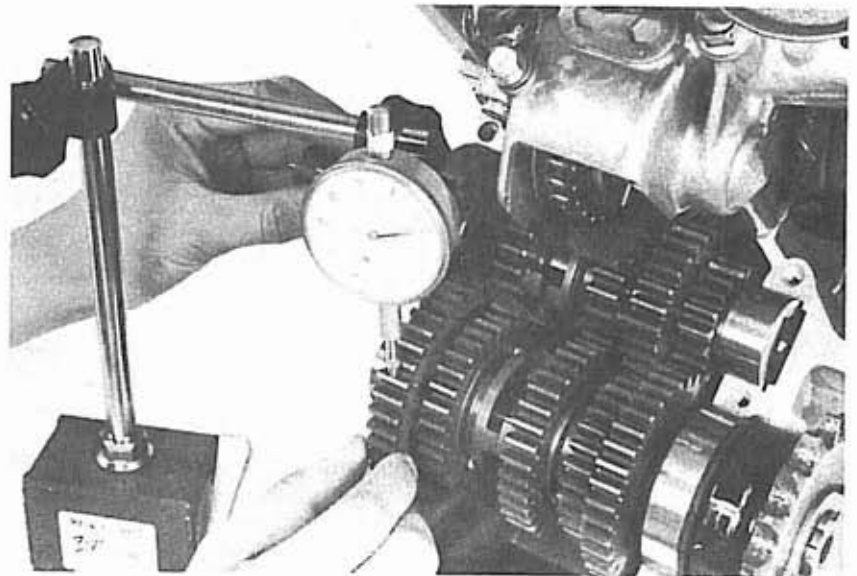


Remove the drum stopper plate, gearshift drum pins and collar.  
Remove the drum plate and dowel pins.  
Inspect all parts for wear or damage.



## TRANSMISSION DISASSEMBLY

Separate the crankcases. (Section 9)  
Inspect each gear for backlash.  
**SERVICE LIMIT: 0.02 mm (0.008 in.)**  
Remove the crankshaft bearing holders. (Section 10)



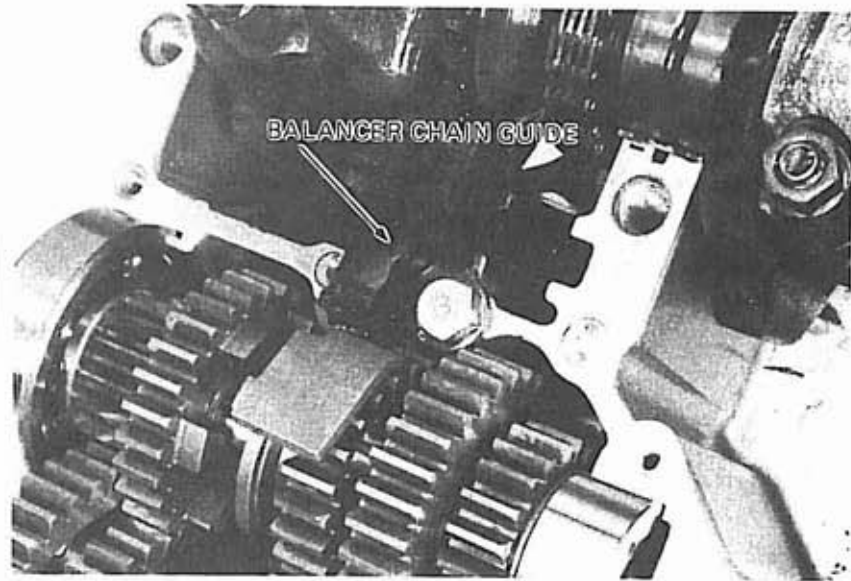




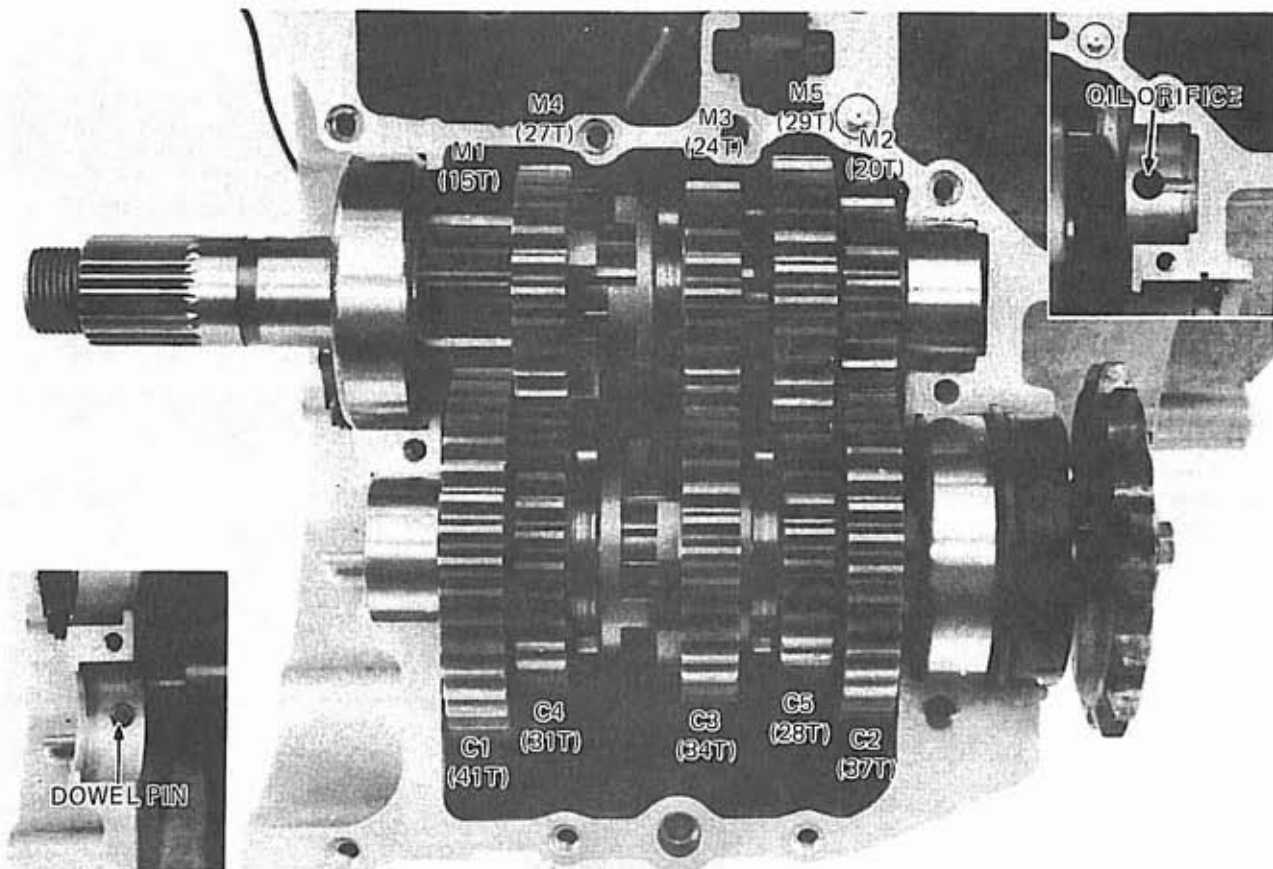
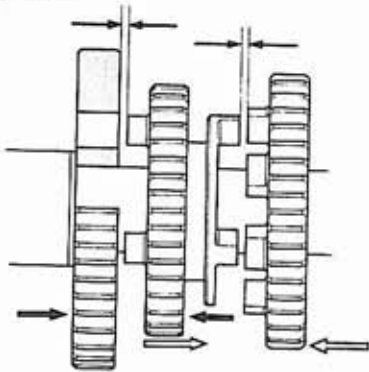
Remove the rear balancer chain guide.  
Place gears into neutral, and check each gear dog for minimum clearance at end.

**SERVICE LIMIT: 0.30 mm (0.012 in.)**

Remove the main- and countershafts.  
Lift out the oil orifice and dowel pin.



GEAR DOG MINIMUM CLEARANCE  
AT END





### • TRANSMISSION INSPECTION

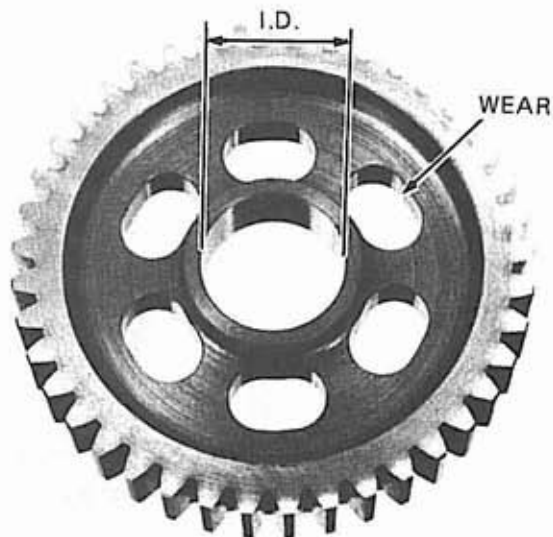
Check gear dogs for excessive or abnormal wear.

Inspect the I.D. of each gear.

**SERVICE LIMIT:**

M4, M5 and C3 gears: 25.10 mm (0.988 in.)

C1 gear : 24.10 mm (0.949 in.)

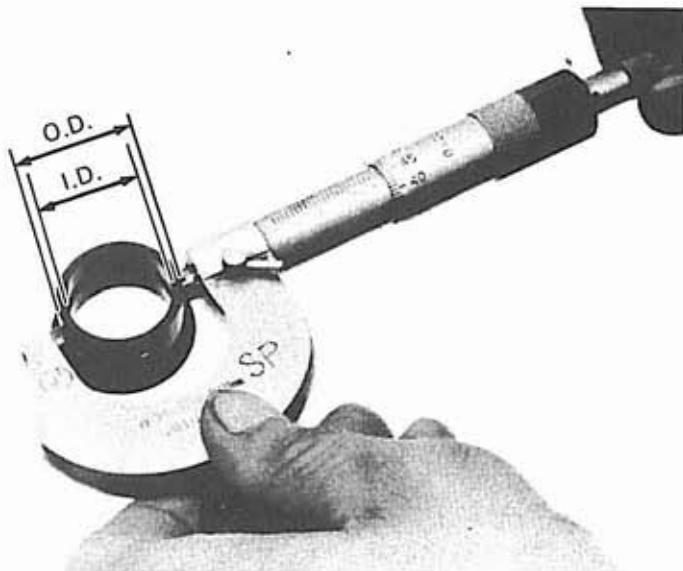


Measure the I.D. and O.D. of the countershaft low gear (C1) bushing.

**SERVICE LIMITS :**

I.D. : 20.06 mm (0.790 in.)

O.D. : 23.95 mm (0.943 in.)



Measure the O.D. of the main- and countershafts.

**SERVICE LIMITS:**

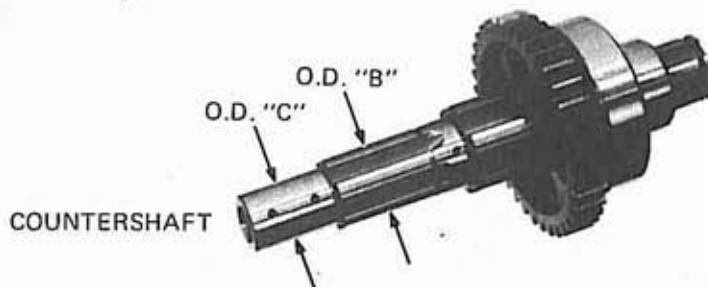
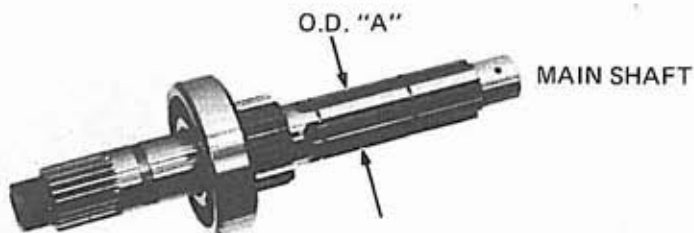
A: 24.93 mm (0.981 in.)

B: 24.93 mm (0.981 in.)

C: 19.96 mm (0.786 in.)

Calculate the clearance between the gear and gear shaft or bushing.

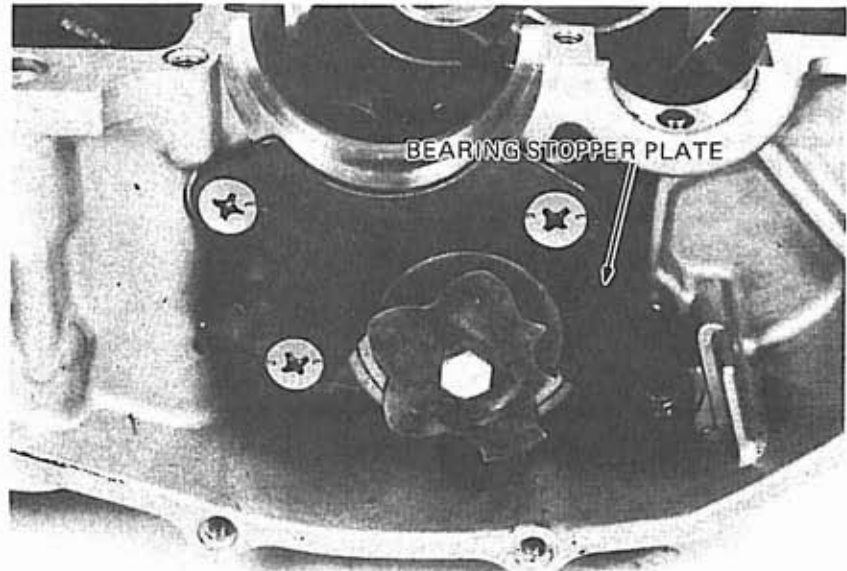
**SERVICE LIMIT: 0.15 mm (0.006 in.)**



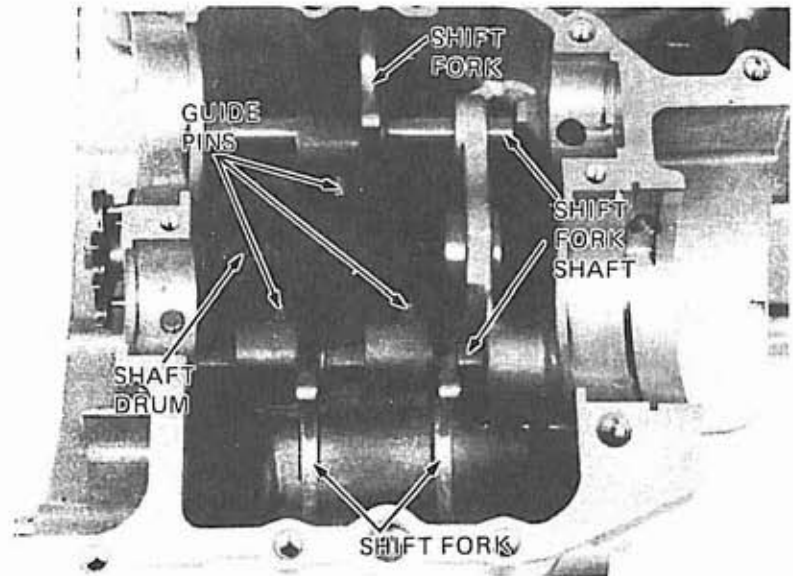


## GEARSHIFT DRUM/SHIFT FORK REMOVAL

Remove the bearing stopper plate.



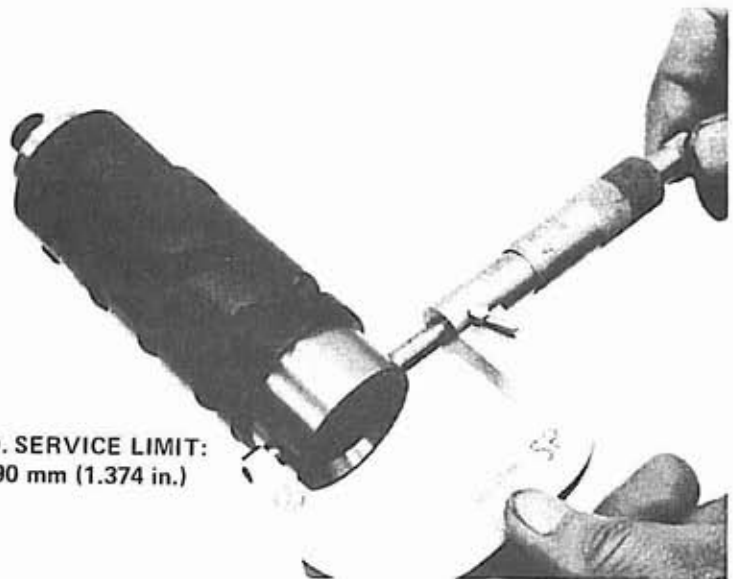
Pull the gearshift drum out of the case. Remove the shift fork shafts, shift forks and guide pins.



## • GEARSHIFT DRUM AND SHIFT FORK INSPECTION

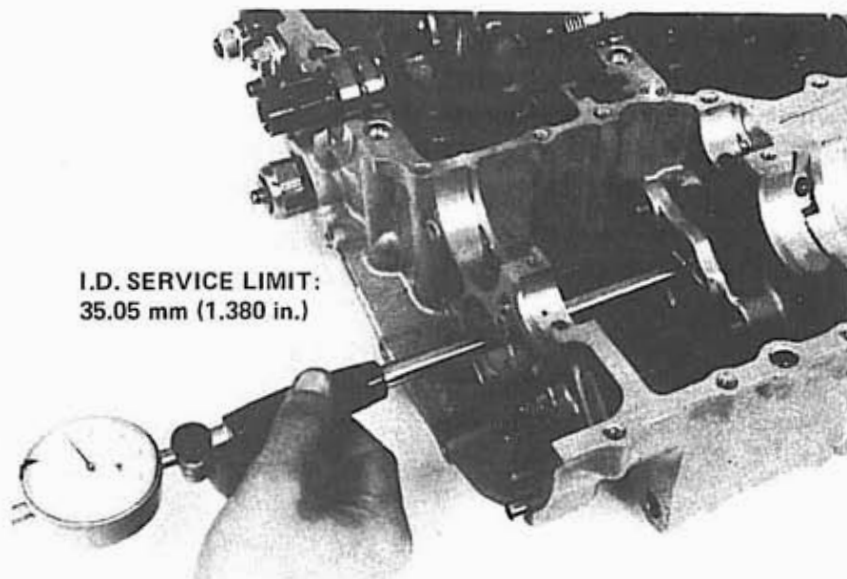
Measure the shift drum O.D..

O.D. SERVICE LIMIT:  
34.90 mm (1.374 in.)

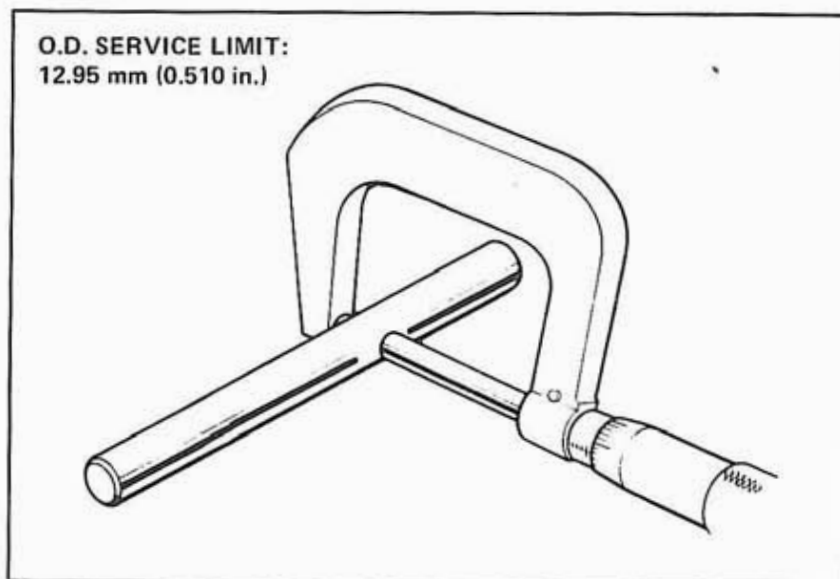




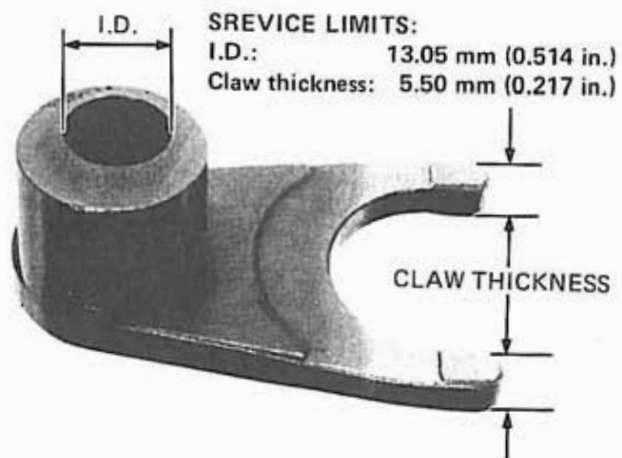
Measure the case I.D..



Measure the shift fork shaft O.D..



Measure the shift fork I.D. and claw thickness.

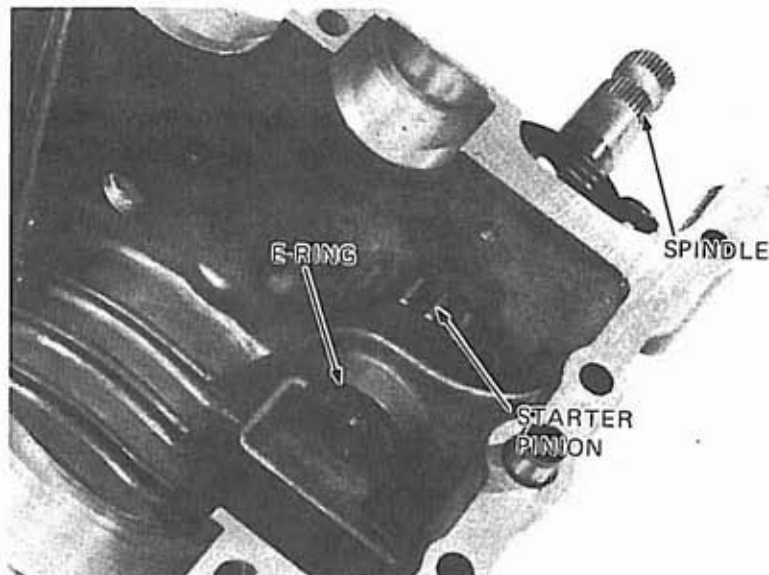




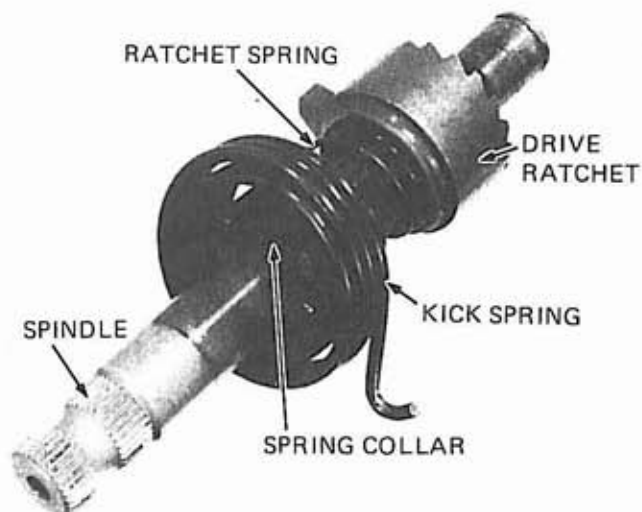
## KICK STARTER DISASSEMBLY

Remove the E-ring

Remove the kick starter spindle and kick starter pinion.



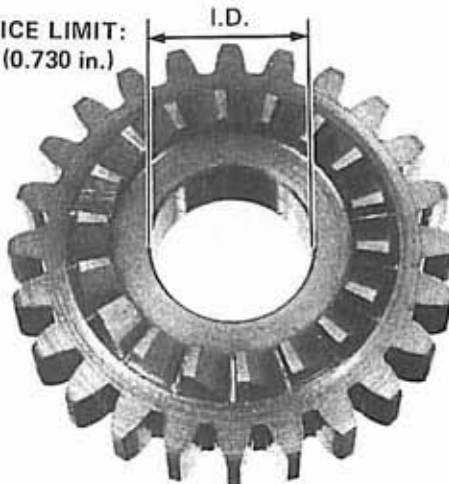
Remove the kick spring collar, kick spring, drive ratchet and washer off the spindle.



### • KICK STARTER INSPECTION

Measure the pinion gear I.D..

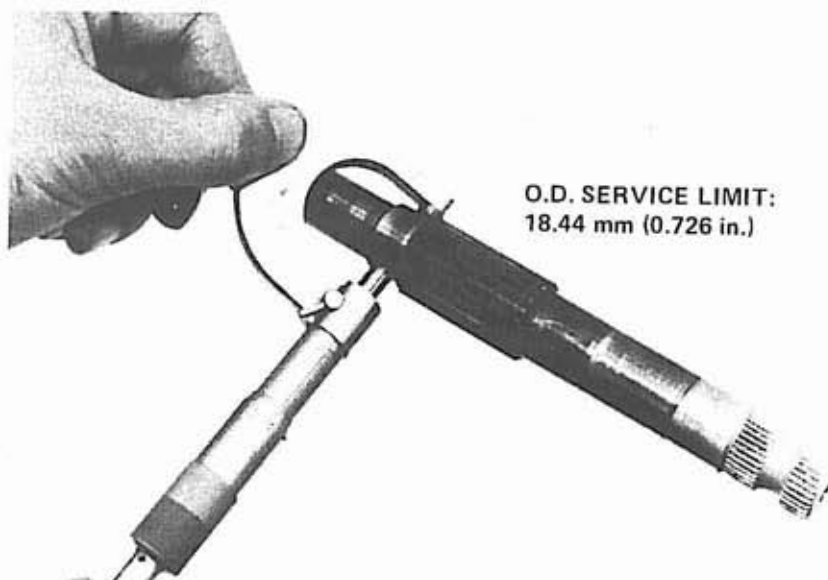
I.D. SERVICE LIMIT:  
18.54 mm (0.730 in.)







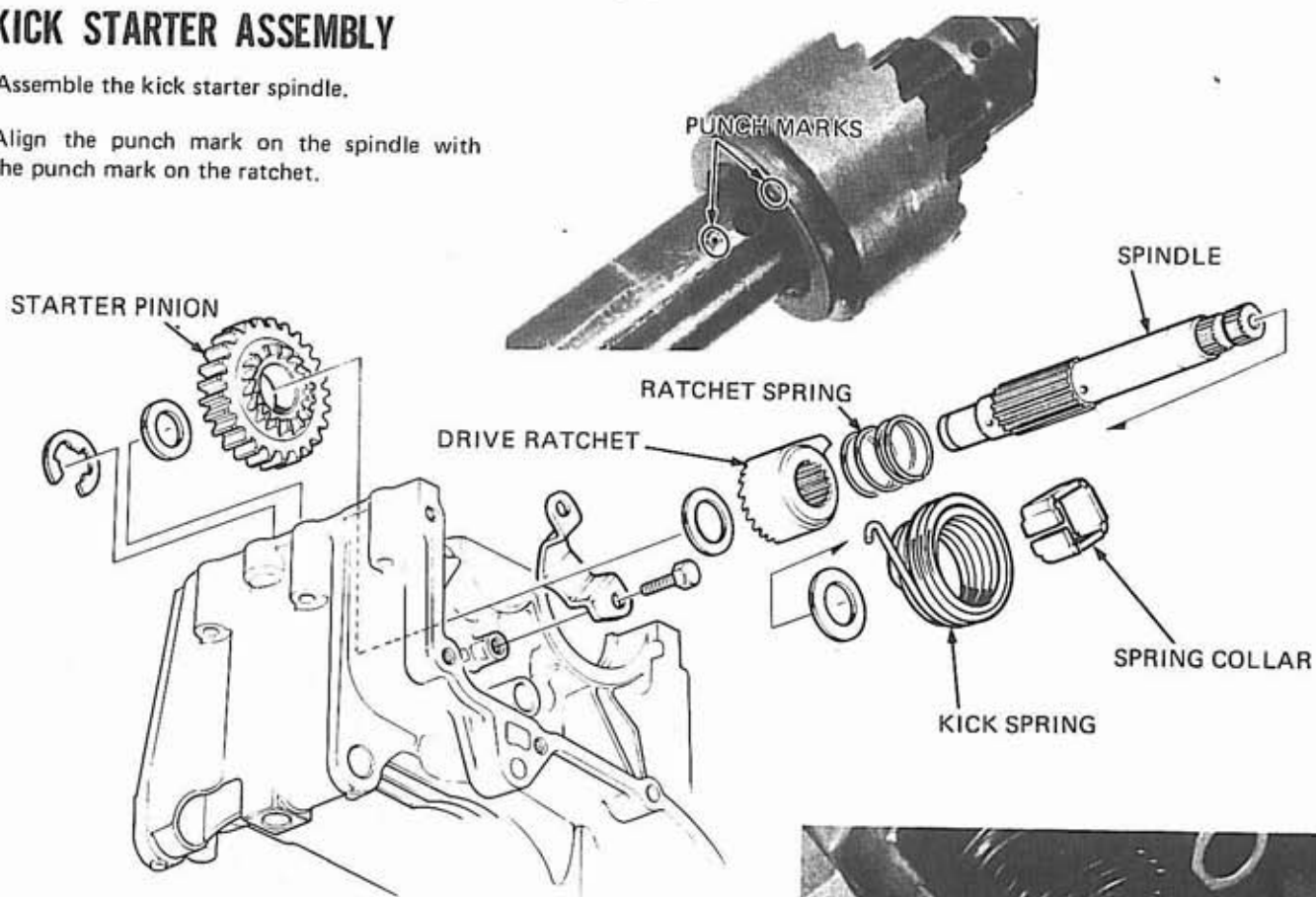
Measure the kick starter spindle O.D..



## KICK STARTER ASSEMBLY

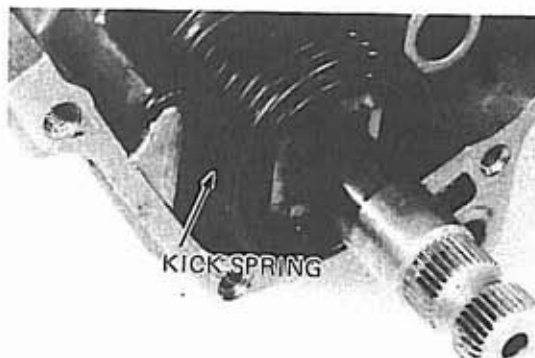
Assemble the kick starter spindle.

Align the punch mark on the spindle with the punch mark on the ratchet.



Install the spindle and pinion gear.

Hook the end of the kick spring over the abutment on the case.

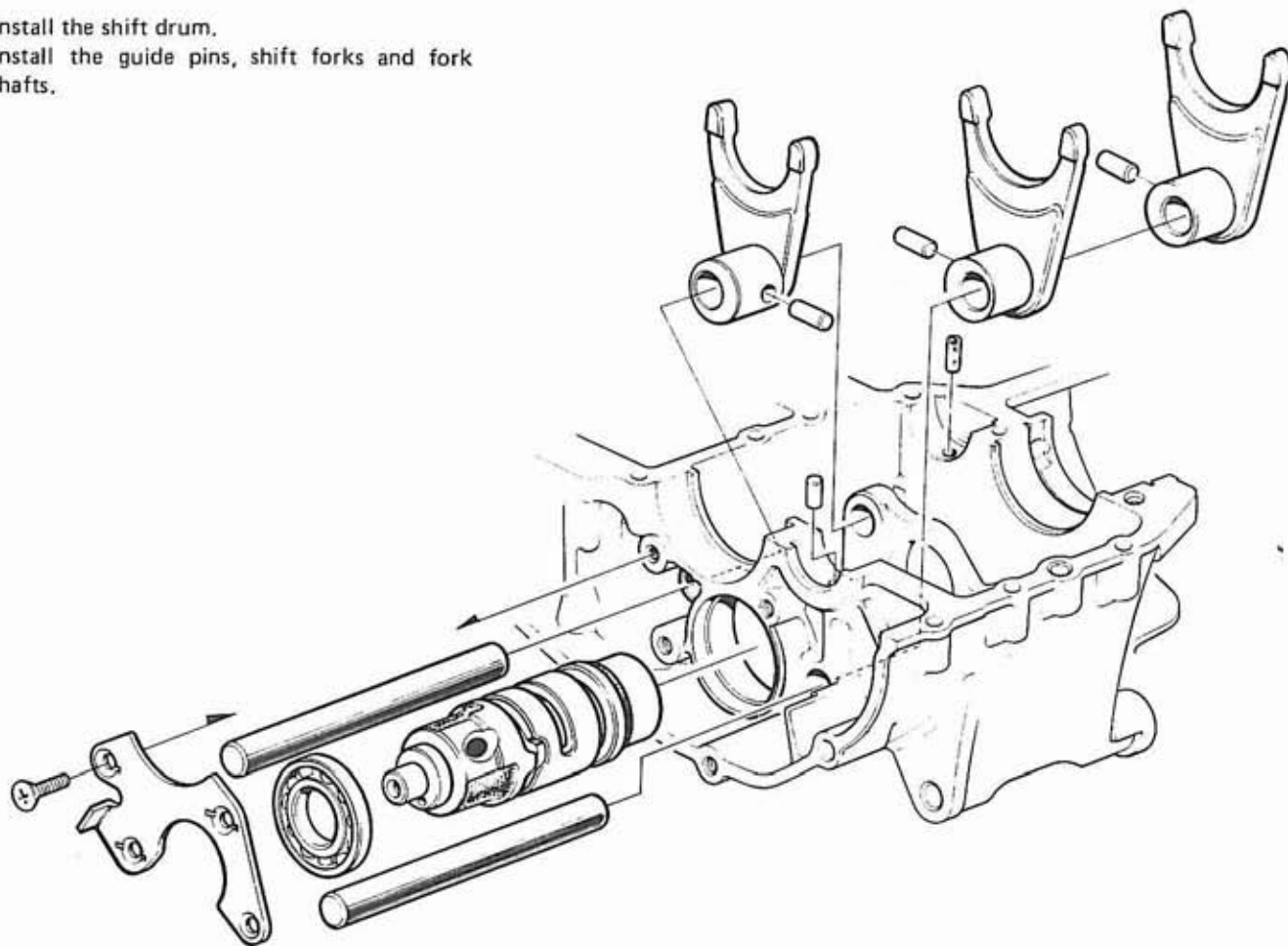




## GEARSHIFT DRUM/SHIFT FORK INSTALLATION

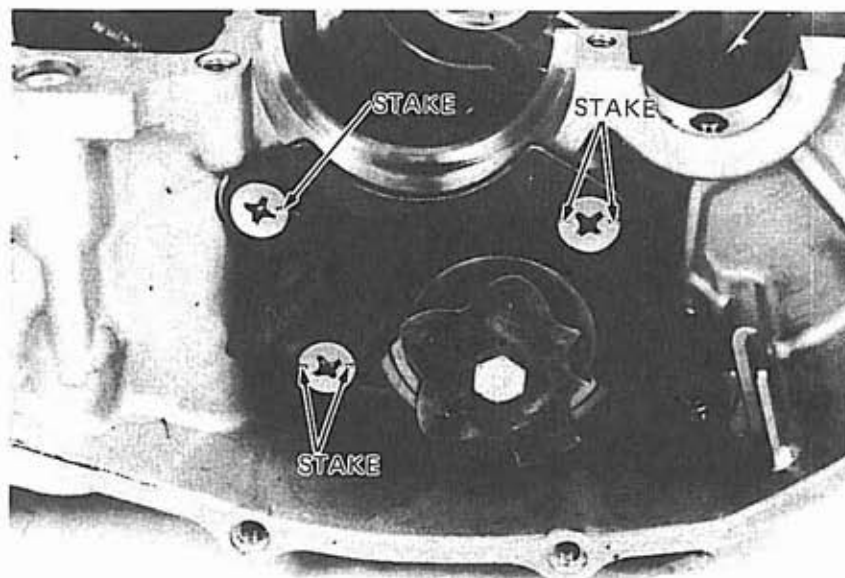
Install the shift drum.

Install the guide pins, shift forks and fork shafts.



Install the bearing stopper plate.

Stake the end of each screw against the groove in the stopper plate.



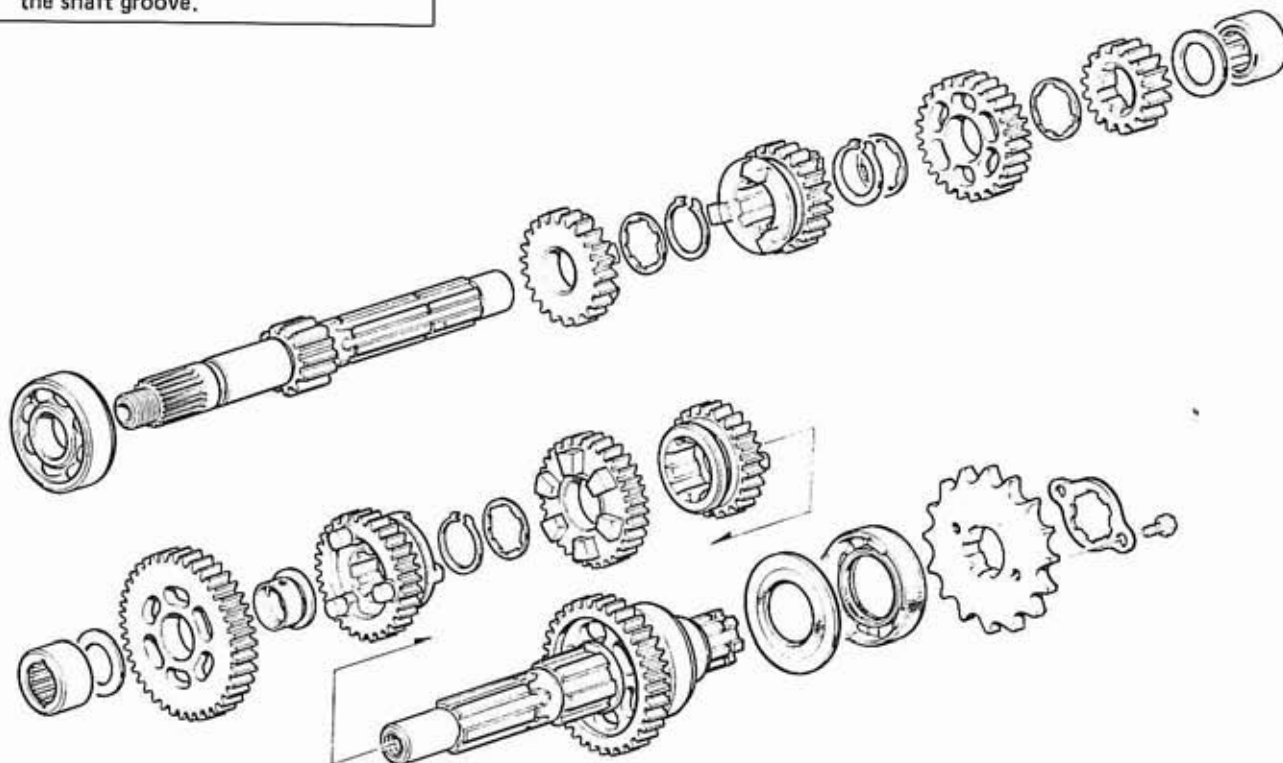


## TRANSMISSION ASSEMBLY

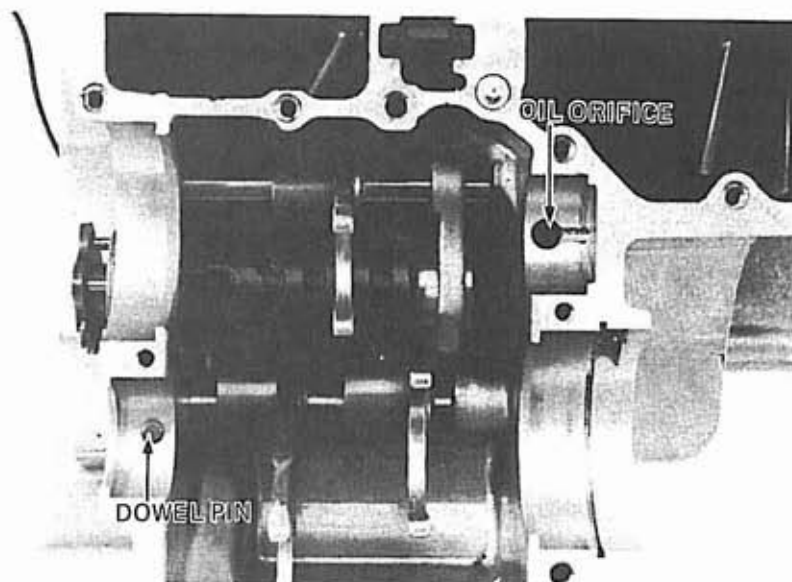
Assemble the main- and countershafts.

### NOTE

- Check the gears for freedom of movement or rotation on the shaft.
- Examine that the circlip is seated in the shaft groove.



Install the dowel pin and oil control orifice.

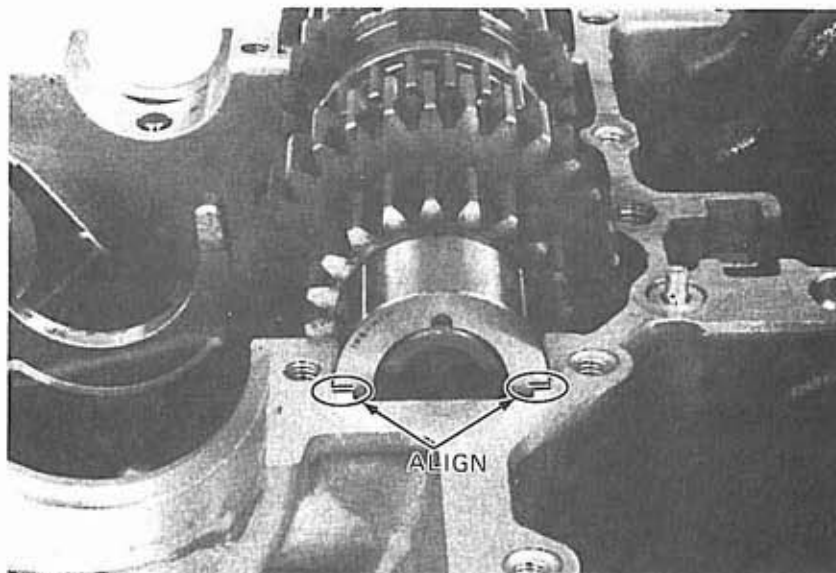




Assemble the main shaft.  
Install the shaft with the needle bearing hole facing down.

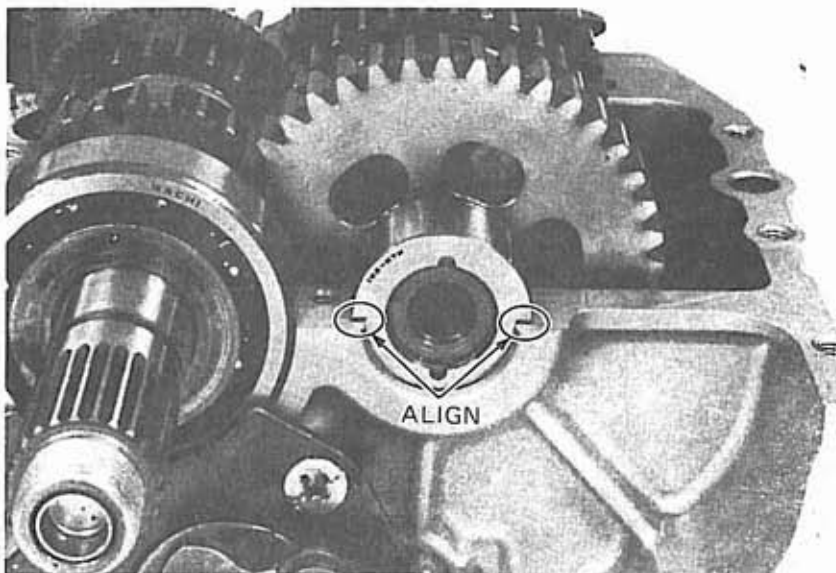
**NOTE**

Check that the aligning marks on the bearing are flush with the end of the crankcase.

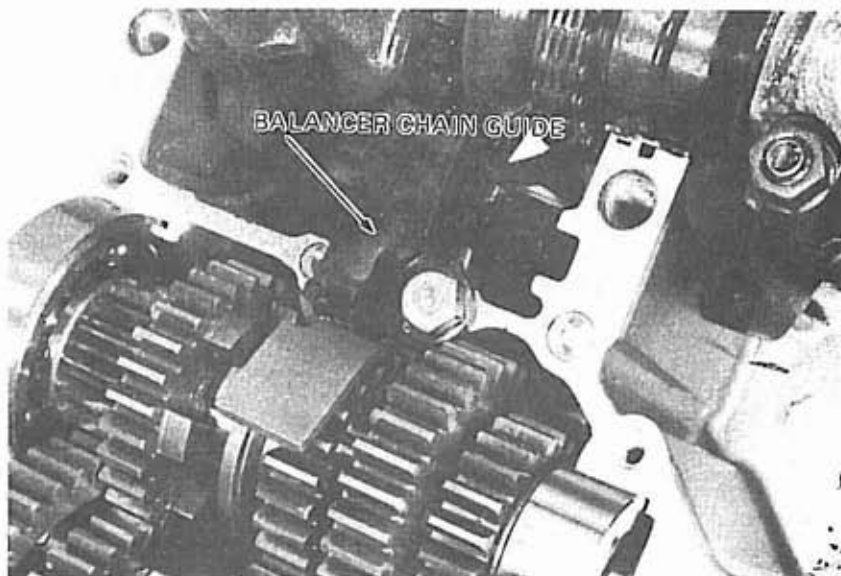


Install the countershaft.

Align the marks on the needle roller bearing with the end of the case, and then fit the hole in the bearing over the dowel pin.



Assemble balancer chain guide.  
Install the bearing holder (Section 10).  
Install the lower crankcase (Section 9).





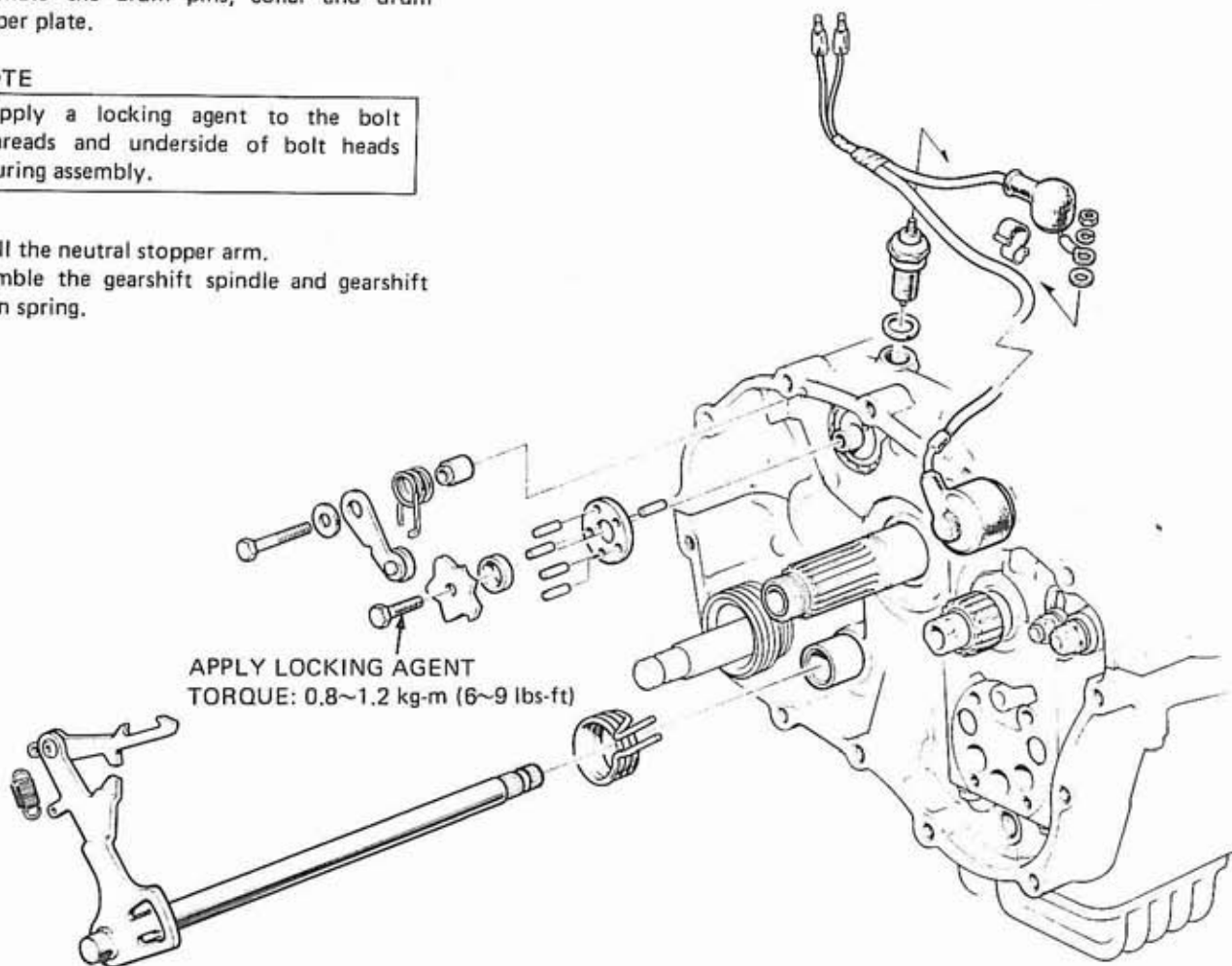
## GEARSHIFT LINKAGE ASSEMBLY

Install the drum plate and dowel pin.  
Assemble the drum pins, collar and drum stopper plate.

### NOTE

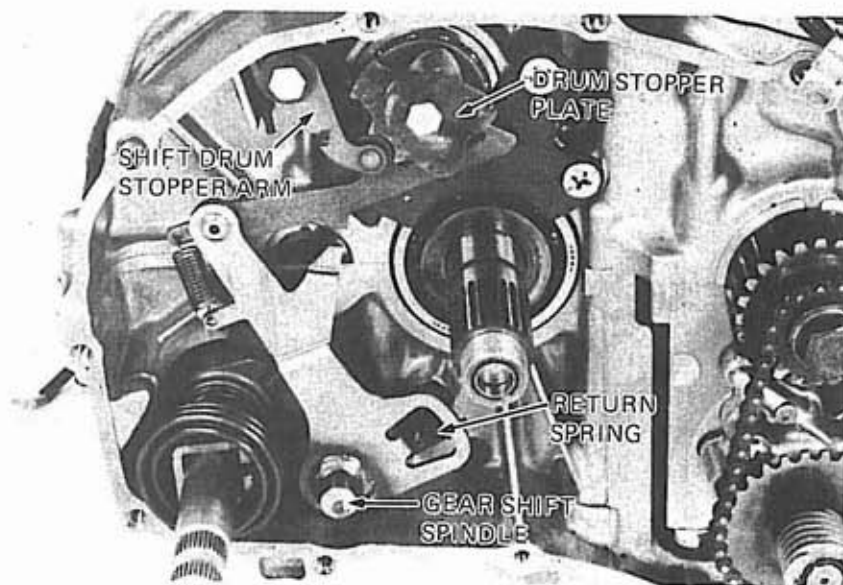
Apply a locking agent to the bolt threads and underside of bolt heads during assembly.

Install the neutral stopper arm.  
Assemble the gearshift spindle and gearshift return spring.

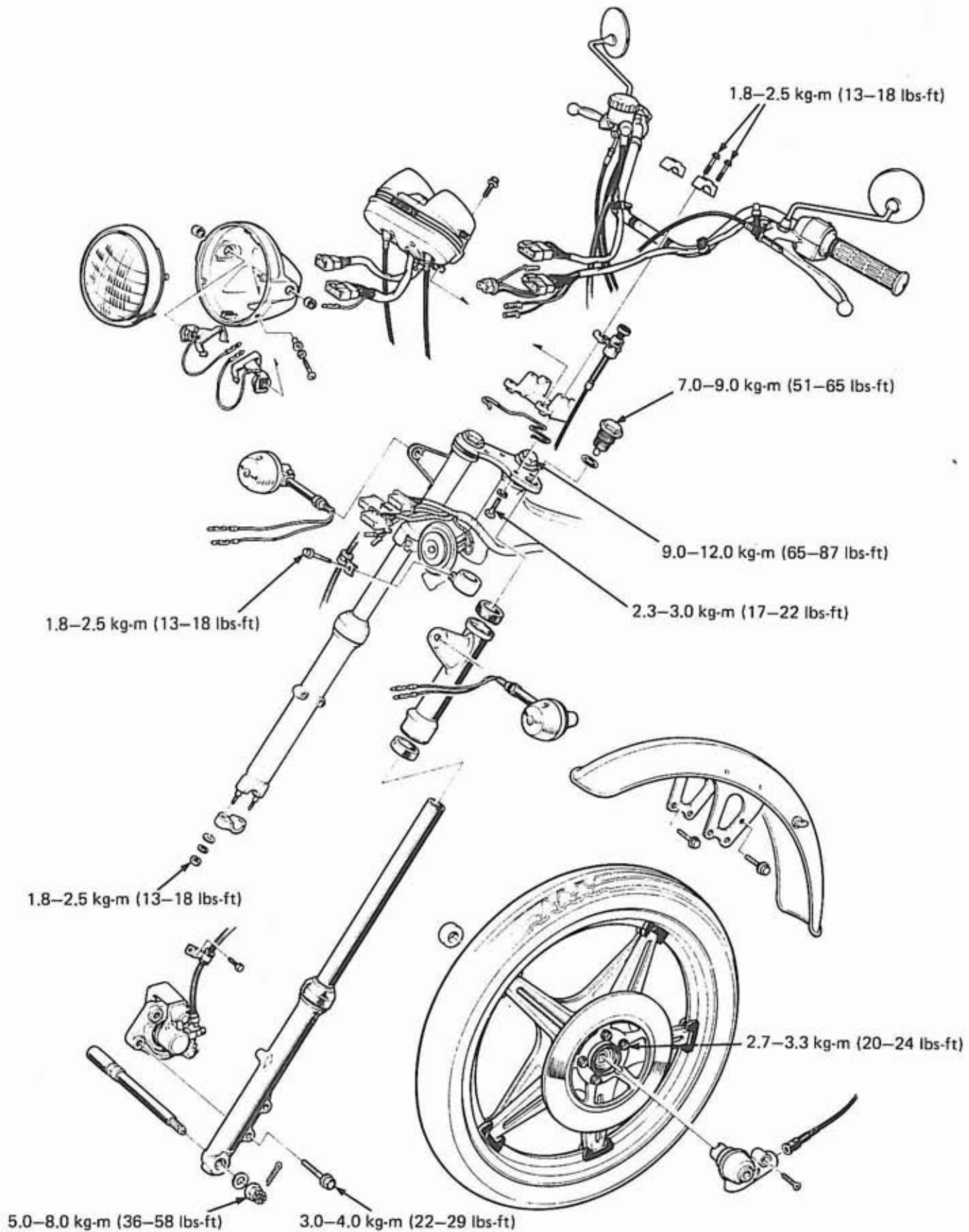


After installing, check the linkage for smooth operation by rotating the gearshift spindle.

Install the clutch (Section 8).









SERVICE INFORMATION	12-1	FRONT WHEEL REMOVAL/ DISASSEMBLY/ASSEMBLY	12-6
TROUBLESHOOTING	12-2	FRONT BRAKE PANEL	12-10
HEADLIGHT	12-3	FRONT WHEEL INSTALLATION	12-11
INSTRUMENTS	12-4	FRONT FORK	12-12
HANDLEBAR	12-5	STEERING STEM	12-18

## SERVICE INFORMATION

### • WORKING PRACTICE

Do not remove rivets, nuts and pins from the rim, spoke plate and hub, since they cannot be disassembled.  
Never ride on the spokes or try to bend the wheel.  
Avoid damaging the aluminum alloy rim.

### • SPECIAL TOOLS/COMMON TOOLS

#### Special Tools

HOLLOW SET WRENCH (6 mm)	07917-3230000
BALL RACE DRIVER (BOTTOM)	07945-3330300
BALL RACE DRIVER (TOP)	07946-3290000
BALL RACE REMOVER	07953-3330000

#### Common Tools

PIN SPANNER	07702-0010000
LOCK NUT WRENCH SOCKET (32 x 30 cm)	07716-0020400
EXTENSION BAR	07716-0020500
BEARING DRIVER HANDLE (A)	07749-0010000
BEARING DRIVER OUTER (42 x 47 mm)	07746-0010300
BEARING DRIVER PILOT (15 mm)	07746-0040300
FRONT FORK OIL SEAL DRIVER BODY	07747-0010100
FRONT FORK OIL SEAL ATTACHMENT (D)	07747-0010500

### • SPECIFICATIONS

		STANDARD	SERVICE LIMIT
Axle shaft runout		_____	0.2 mm ( 0.008 in.)
Front wheel rim runout	Radial	_____	2.0 mm ( 0.08 in.)
	Axial	_____	2.0 mm ( 0.08 in.)
Front brake shoe thickness		4.9~ 5.0 mm (0.19~0.20 in.)	2.0 mm ( 0.08 in.)
Front brake drum I.D.		180.0~180.3 mm (7.09~7.10 in.)	181.0 mm ( 7.13 in.)
Front cushion spring free length		490.9 mm (19.33 in.)	480.0 mm (18.90 in.)
Front fork tube bend		_____	0.2 mm ( 0.008 in.)

**TROUBLESHOOTING****Head Steering**

1. Steering stem nut too tight
2. Faulty steering stem bearings
3. Damaged steering stem ball race and/or cone race
4. Insufficient tire pressure

**Steers to One Side or Does Not Track Straight**

1. Unbalanced right and left shock absorbers
2. Bent front forks
3. Bent front axle; wheel installed incorrectly

**Front Wheel Wobbling**

1. Distorted rim
2. Worn front wheel bearing
3. Distorted spokes
4. Faulty tire
5. Axle not tightened properly

**Soft Suspension**

1. Weak fork spring
2. Insufficient fluid in front forks

**Hard Suspension**

1. Incorrect fluid weight in front forks

**Front Suspension Noise**

1. Slider binding
2. Insufficient fluid in forks
3. Loose front shocks or springs



### HEADLIGHT

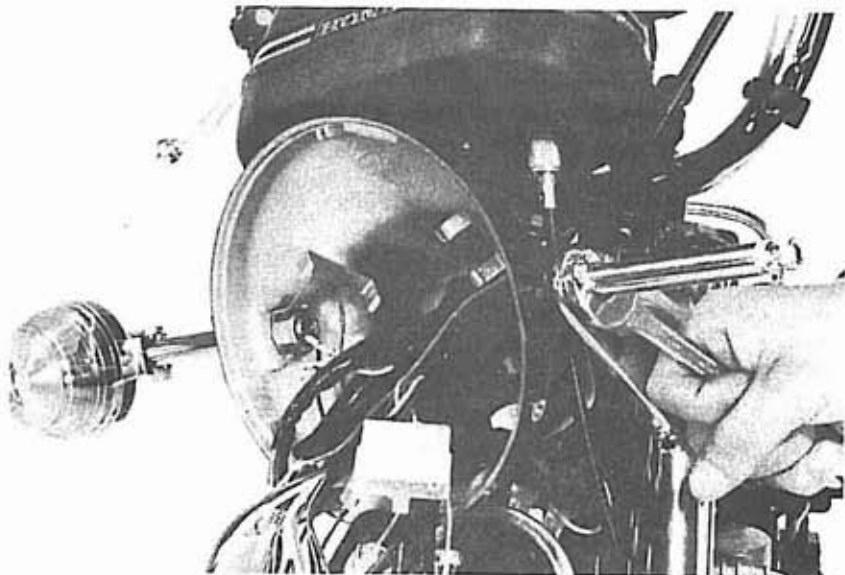
#### • HEADLIGHT CASE REMOVAL

Remove the headlight and disconnect all wires at their couplers and connectors.

#### NOTE

Hold the connectors with pliers to prevent the wires from being cut.

To remove the headlight case, unscrew the right and left turn signal mounts.



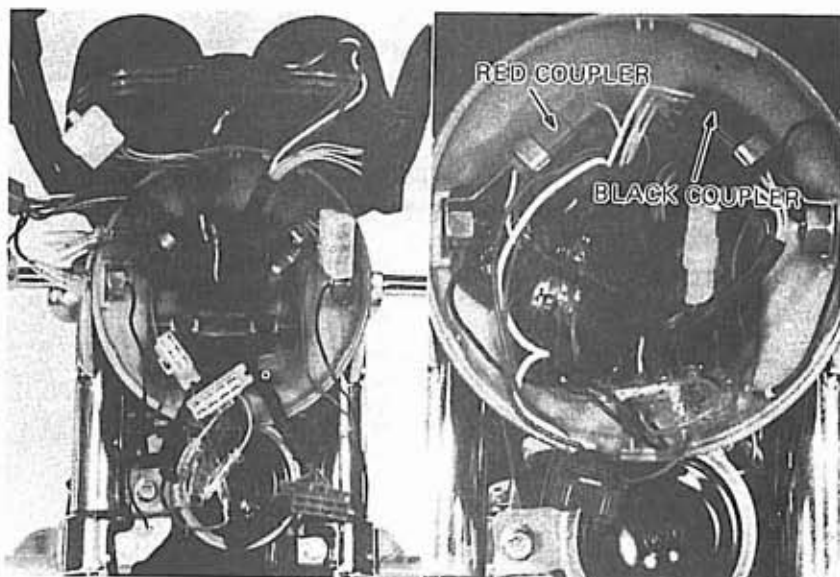
#### • WIRING CONNECTION IN HEADLIGHT CASE

Route the wires into the headlight case through the headlight case hole.

Route the wire harness into the headlight case through the headlight case lower hole. Connect the wires color-to-color.

Set each coupler in its correct holder in the headlight case.

For wiring procedure, see page 1-9.



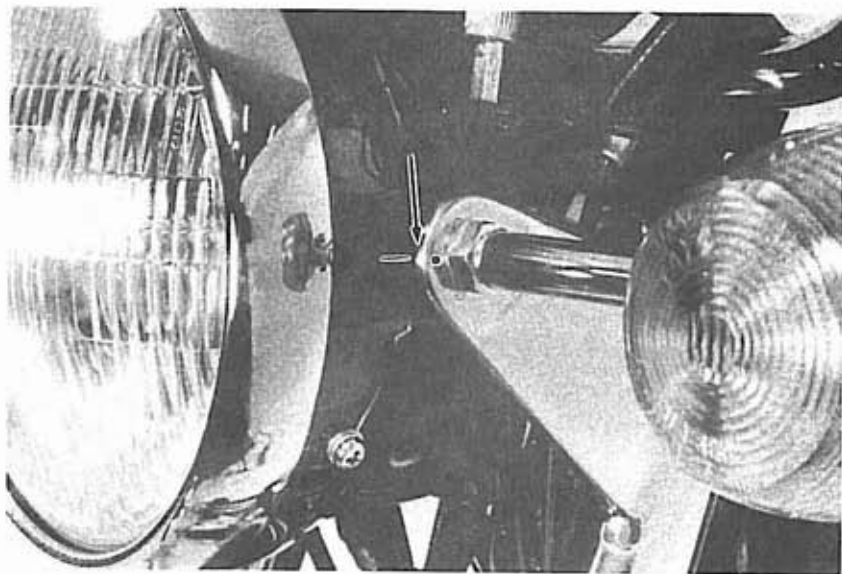
#### • HEADLIGHT INSTALLATION

Align the punch marks on the headlight case with the punch marks on the headlight case brackets.

Position the turn signals parallel to the ground.

#### NOTE

Check each component for operation after assembling.



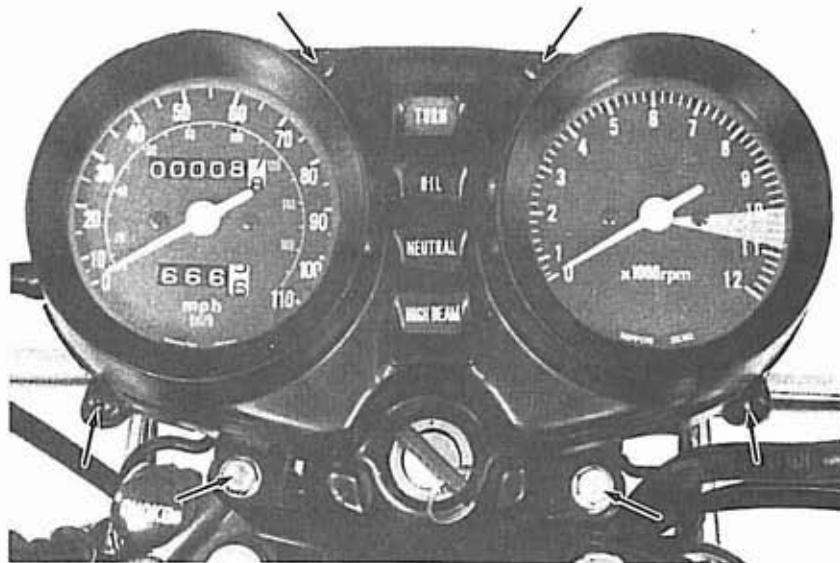


## INSTRUMENTS

### • CLUSTER DISASSEMBLY

Separate the instrument cluster by removing the four screws.

Remove the instrument set plate by removing the two bolts.



### • INDICATOR LAMP/COMBINATION SWITCH REPLACEMENT

After installing a new bulb, check for continuity. If the bulb does not light, inspect the wiring for open or short circuits. The ignition switch wire is connected to the wiring harness inside the headlight case.



### • METER LAMP/METER REPLACEMENT

To replace a meter lamp or meter, it is necessary to separate the cluster.

Remove the set plate and cable.

Check the meter cable if the needle swings abnormally.







### HANDLEBAR

#### • HANDLEBAR REMOVAL

Disconnect the front brake stoplight switch wires and remove the master cylinder.

##### NOTE

Do not loosen the brake hose unless necessary.

Loosen the two screws attaching the throttle grip switch housing.

Remove the two screws holding the left grip switch housing.

Remove the four switch wire bands.

Remove the handlebar upper holders and take out the handlebar with the throttle grip and switch housing.



#### • HANDLEBAR INSTALLATION

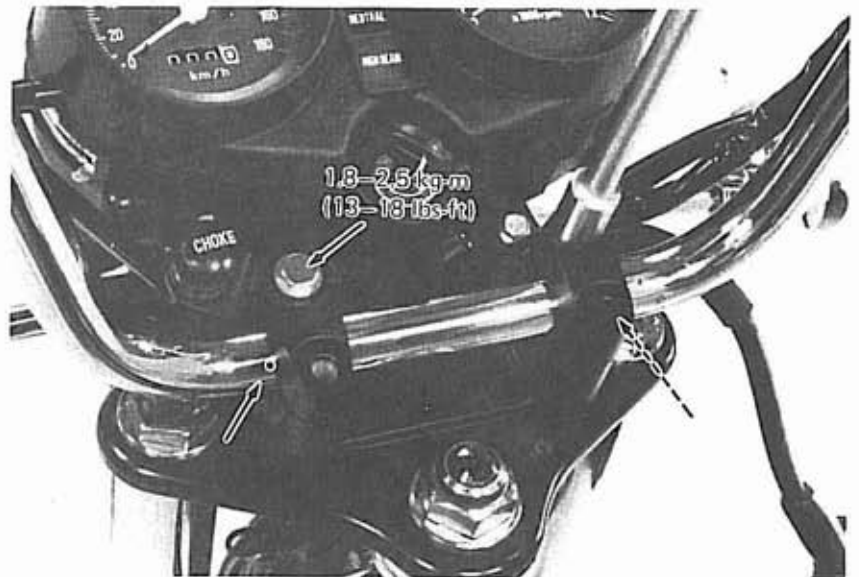
Coat the throttle grip area of handlebar with clean grease.

Position the handlebar on the lower holders with the punch marks on the handlebar in line with the top of the holders.

Place the upper holders on the handlebar with the punch marks facing the front.

Align the punch marks on the handlebar with the split in the switch housings.

Tighten the forward bolts first, then tighten the rear bolts to the same torque.



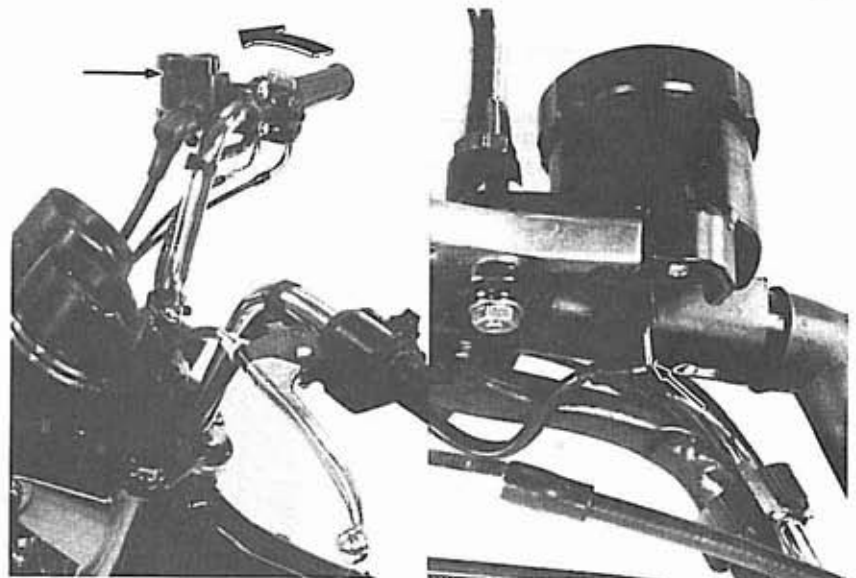
Turn the handlebar fully left, then install the master cylinder so that the fluid level of oil in the reservoir is parallel to the upper level line inside the reservoir.

Connect the front brake stoplight switch wires.

Install the four switch wire bands on the handlebar.

##### NOTE

Bleed the brake system if the hose was disconnected.







## FRONT WHEEL REMOVAL/ DISASSEMBLY/ASSEMBLY

### • FRONT WHEEL REMOVAL

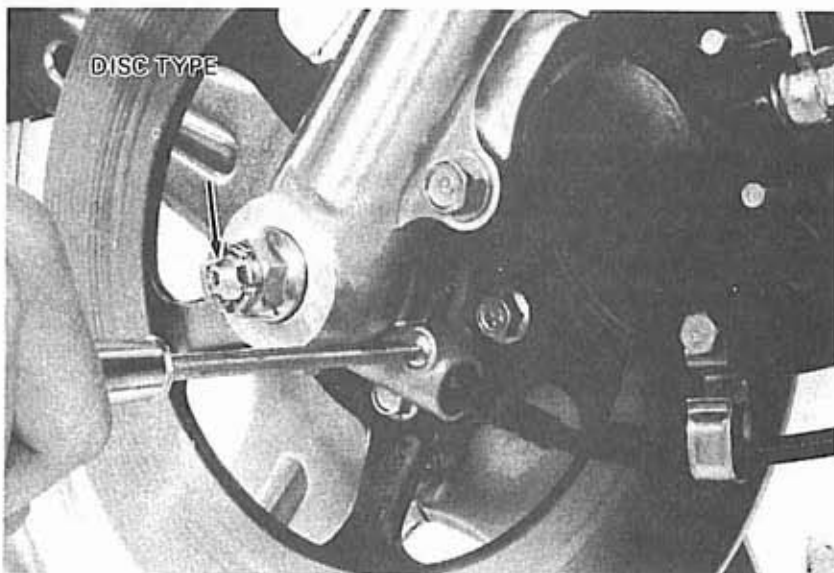
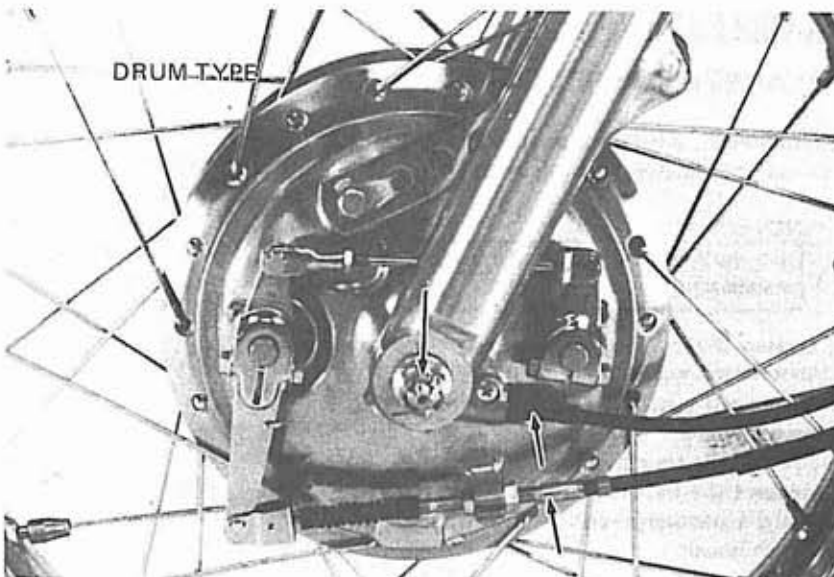
Raise the front wheel off the ground by placing a block or safety stand under the engine.

Disconnect the speedometer cable from the speedometer gearbox.

Disconnect the front brake cable. (Drum type only)

Remove the front brake torque link. (Drum type only).

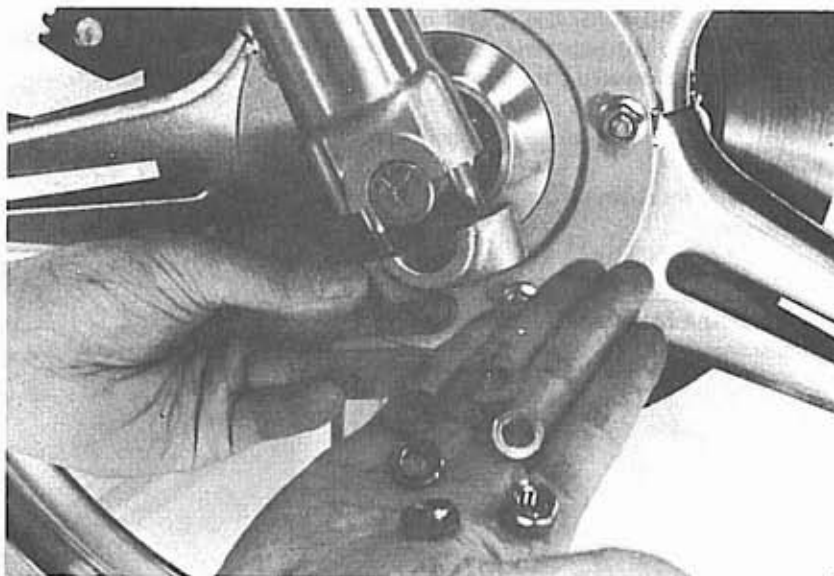
Remove the cotter pin and loosen the axle nut.



Remove the axle holder from the fork end. Withdraw the axle and remove the wheel.

#### NOTE

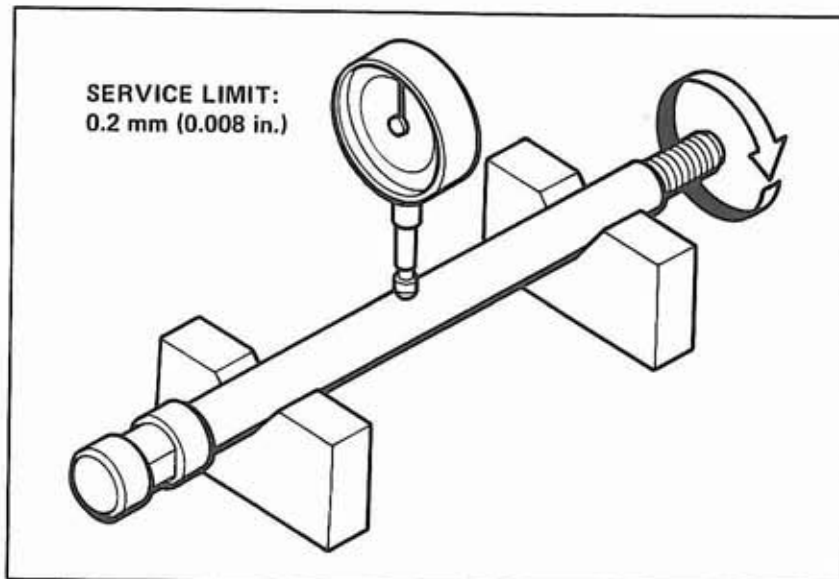
Do not operate the front brake lever after removing the front wheel. To do so will cause difficulty in fitting the brake disc between the brake pads.





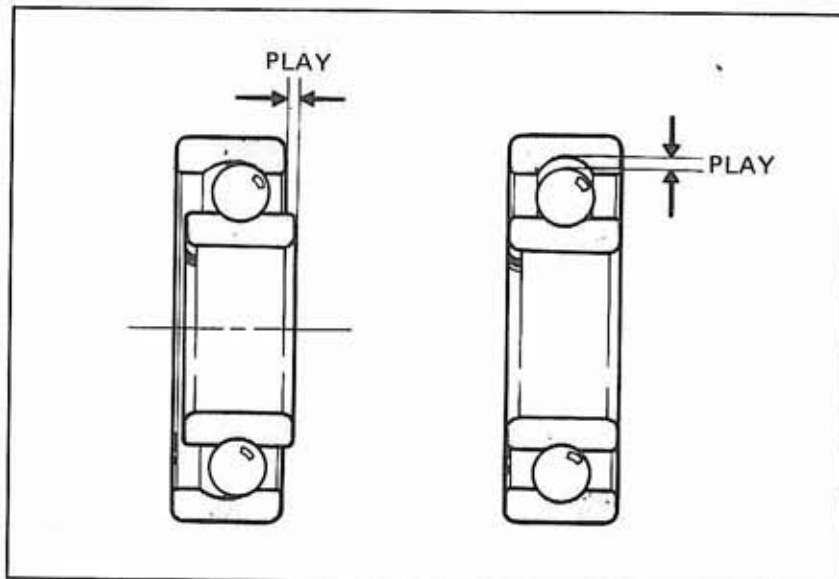
• **AXLE INSPECTION**

Set the axle in V blocks and measure the runout. The actual runout is 1/2 of TIR (Total Indicator Reading).



• **WHEEL BEARING INSPECTION**

Check the wheel bearing play by placing the wheel in a truing stand and spinning the wheel by hand. Replace the bearings with new ones if they are noisy or have excessive play.

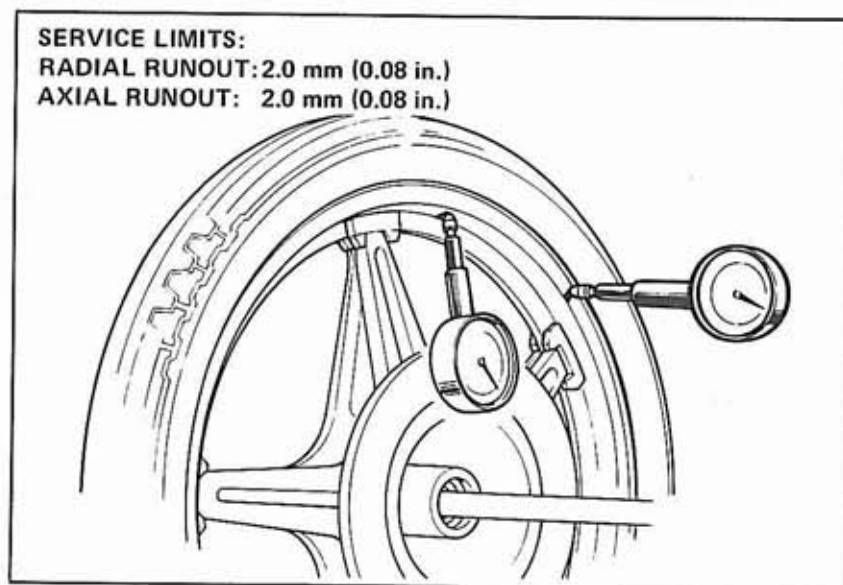


• **WHEEL INSPECTION**

Check the rim runout by placing the wheel in a truing stand. Then spin the wheel by hand, and read the runout using a dial indicator.

**NOTE**

The COMSTAR WHEEL cannot be repaired and must be replaced with a new one if the service limits are exceeded.

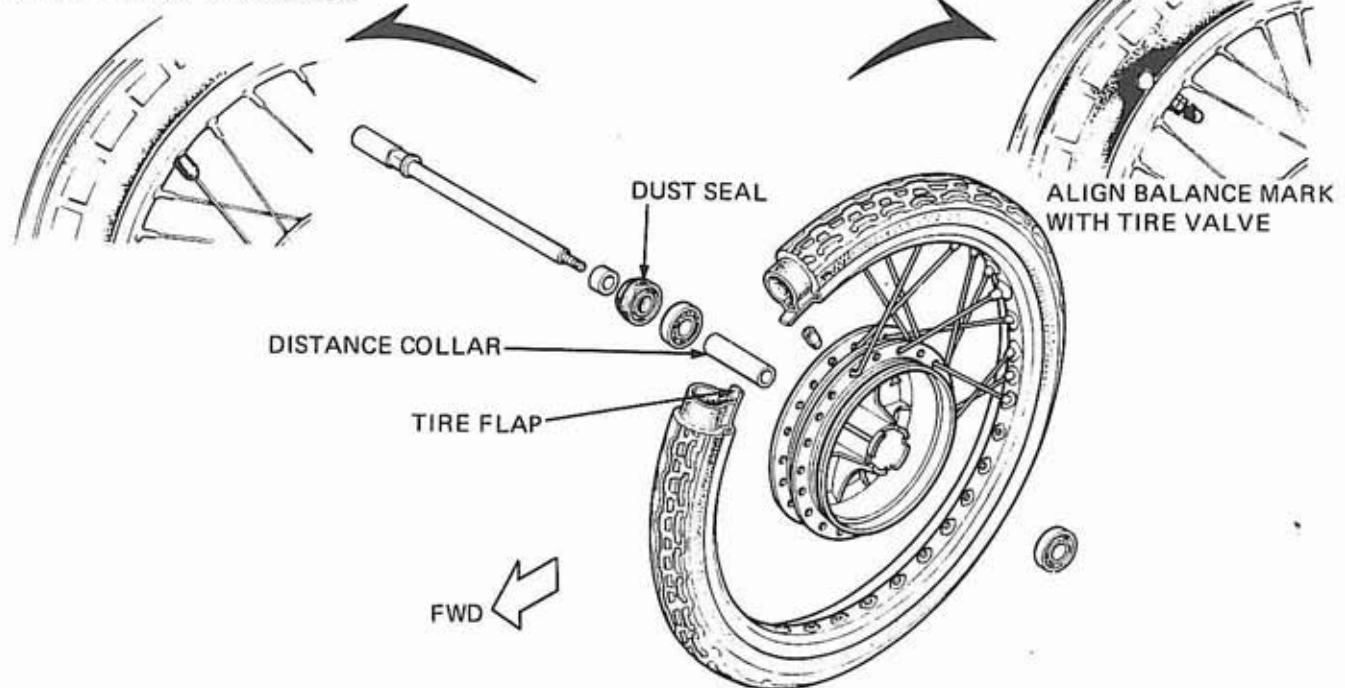




• WHEEL DISASSEMBLY  
<DRUM BRAKE TYPE>

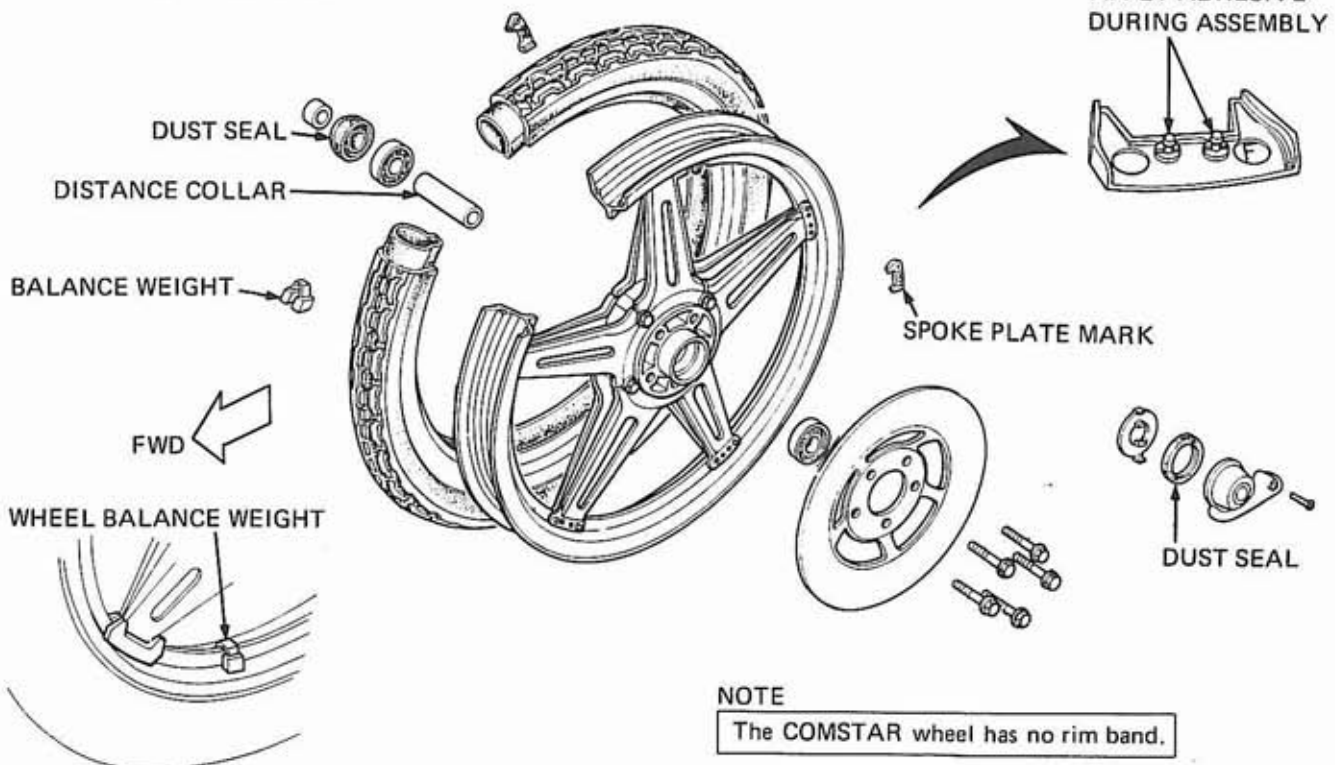
TIRE BALANCE MARK LOCATION

BALANCE WEIGHT LOCATION



<DISC BRAKE TYPE>

Remove the right bearing first.



NOTE

The COMSTAR wheel has no rim band.



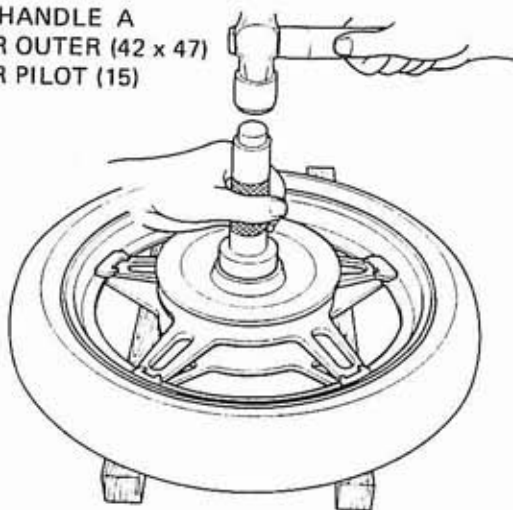
• **FRONT WHEEL ASSEMBLY**

Pack all bearing cavities with grease.  
Drive in the right bearing first.  
Press the distance collar into place.  
Drive in the left bearing.

**NOTE**

- Drive the bearing squarely.
- Drive the bearing into position, making sure that it is fully seated and that the sealed side is facing out.

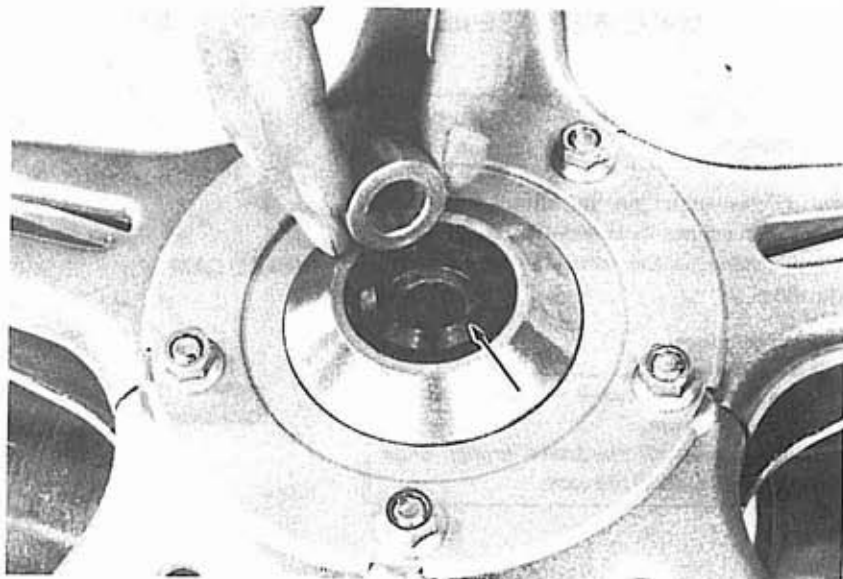
BEARING DRIVE HANDLE A  
BEARING DRIVER OUTER (42 x 47)  
BEARING DRIVER PILOT (15)



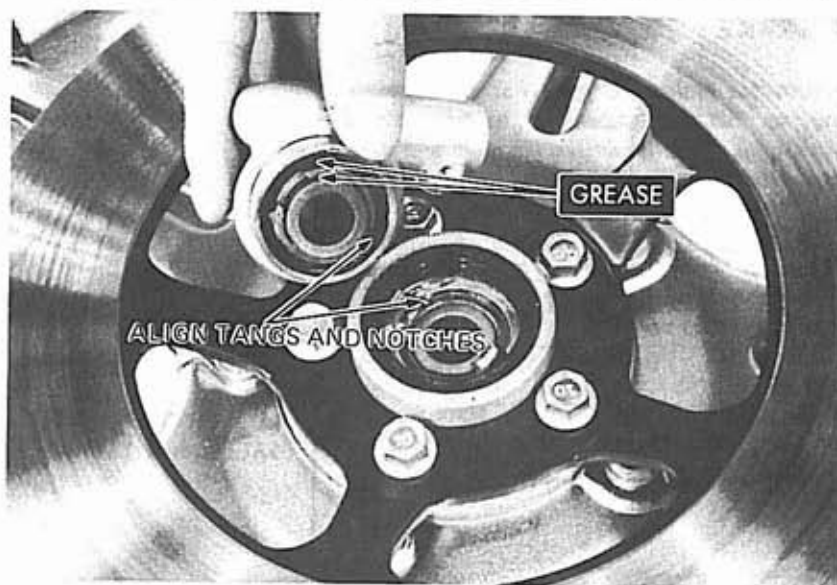
Lubricate the inside of the dust seal with grease.  
Install the dust seal and collar in the hub on the right side.

**NOTE**

The spoke plate bolts and nuts require no retightening since they are secured with lock pins. Do not remove these lock pins.



Install the speedometer gear retainer in the hub from the left side.  
Lubricate the inside of the oil seal and install.  
Disassemble the speedometer gear box and lubricate the gears and sliding faces.  
Install the speedometer gear in the wheel hub, aligning the speedometer gear box tangs with the notches in the retainer.



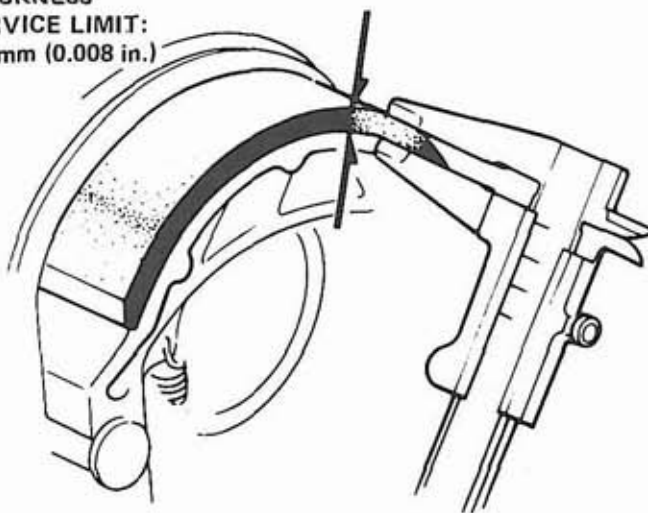


## FRONT BRAKE PANEL (Type I)

## • FRONT BRAKE LINING THICKNESS

Measure the brake lining thickness.

THICKNESS  
SERVICE LIMIT:  
2.0 mm (0.008 in.)



## • BRAKE SHOE REPLACEMENT

## NOTE

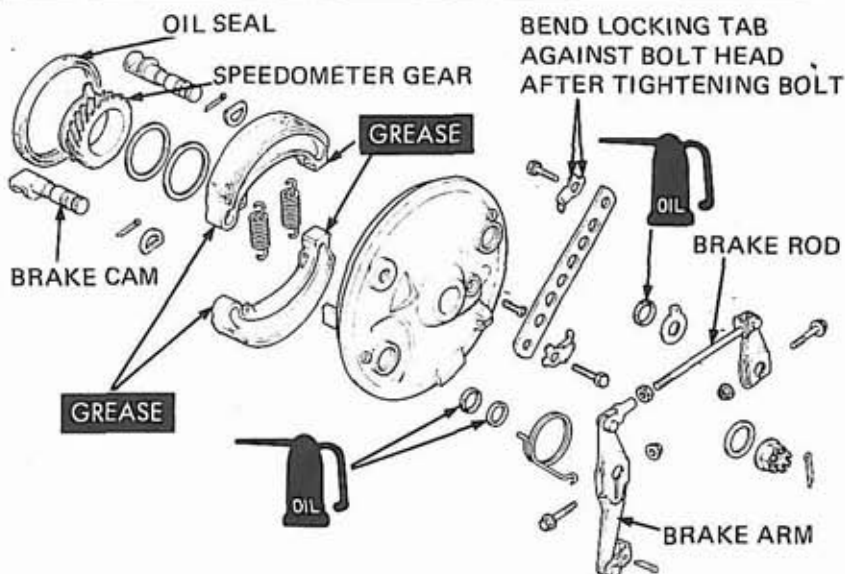
Do not loosen the brake rod unless necessary.

Pry off the cotter pin and remove the washer. Replace the shoes with new ones.

Apply grease to the cam contacting faces of the shoes.

## WARNING

Contaminated brake linings reduce stopping power.  
Keep grease off the brake linings. Wipe excess grease off the cam.



## • BRAKE ROD ADJUSTMENT

Adjust the brake rod length at its threaded ends so that both shoes start to hold at the same time, while observing the cam and shoe movement.

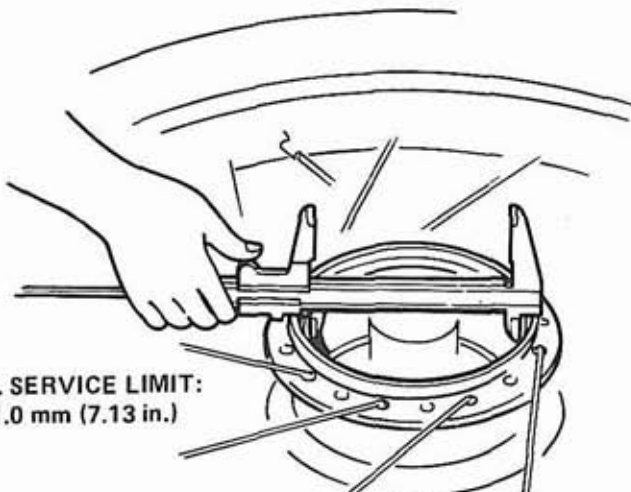
## NOTE

Ensure that the punch mark on the brake arm aligns with the punch mark on the brake cam.

## • BRAKE DRUM INSPECTION

Measure the brake drum I.D..

I.D. SERVICE LIMIT:  
181.0 mm (7.13 in.)







## FRONT WHEEL INSTALLATION

Insert the axle through the wheel hub from the right side.

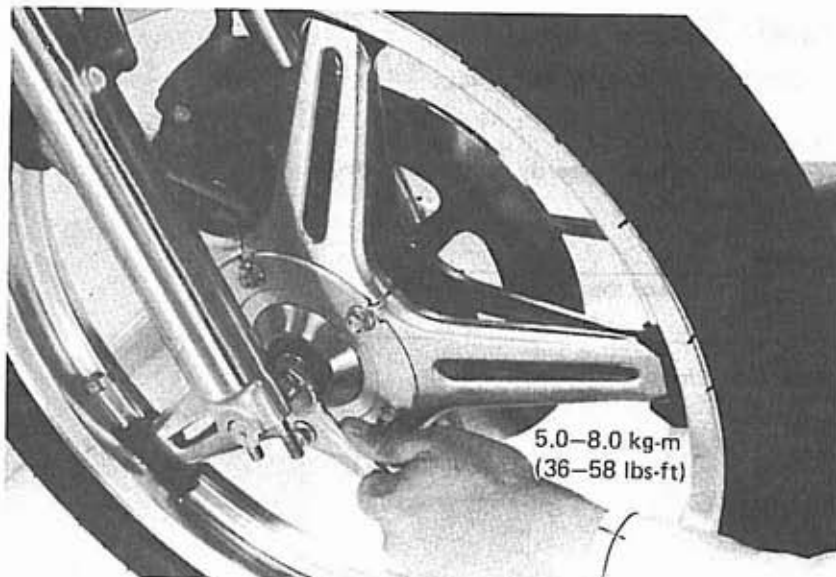
Torque the axle nut, noting the installation direction of the speedometer gearbox.

### TORQUE SPECIFICATION:

5.0–8.0 kg-m (36–58 lbs-ft)

### NOTE

Install the speedometer gearbox horizontally, being careful not to bend the speedometer cable.



Position the axle holder on the fork end with the arrow mark facing the front.

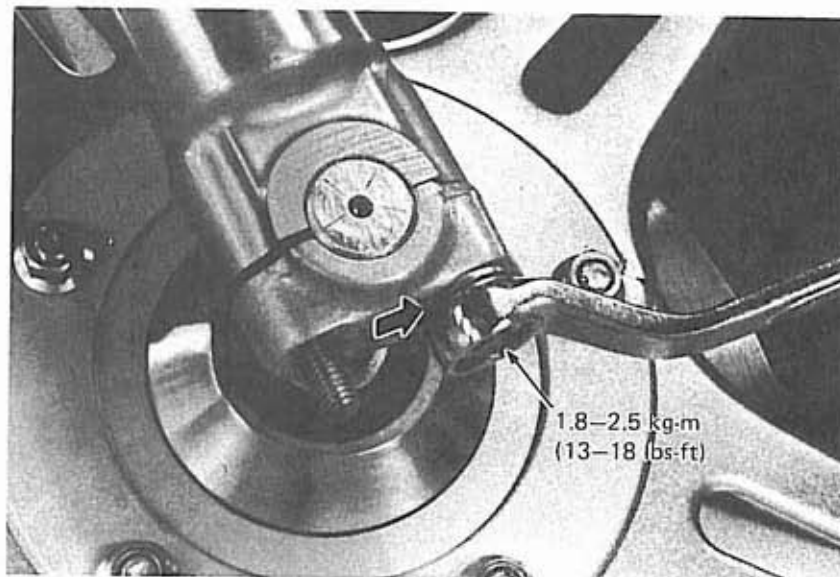
Tighten the forward nut to the specified torque first, then tighten the rear nut to the same torque.

### TORQUE SPECIFICATION:

1.8–2.5 kg-m (13–18 lbs-ft)

### NOTE

Place a stand under the engine to remove load from the front fork. Keep the handlebar straight forward.

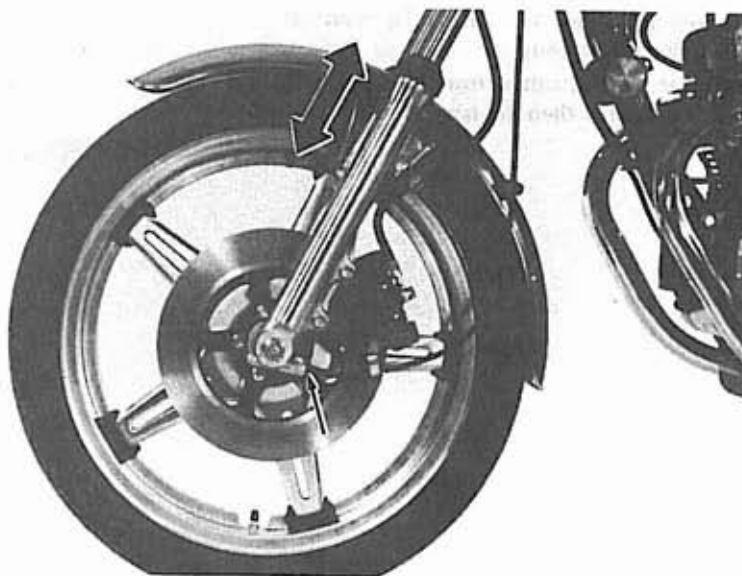


Connect the speedometer cable to the speedometer gearbox while rotating the wheel by hand.

Install the brake cable and adjust the brake (Drum type only).

With the front brake applied, pump the front fork up and down several times to check for proper operation.

Recheck the installation of the axle holder and adjust, if necessary.





## FRONT FORK

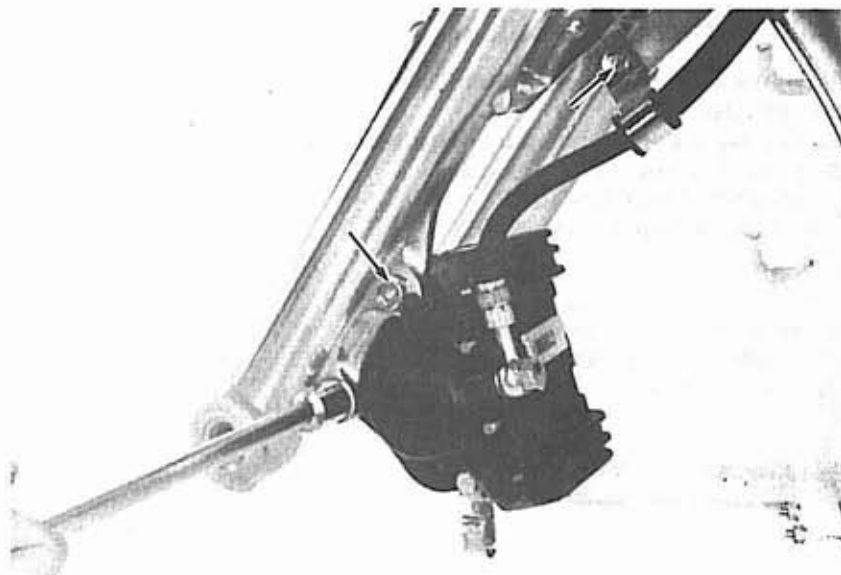
### • FRONT FORK REMOVAL

Remove the front wheel.  
Remove the brake caliper by unscrewing the attaching bolts.

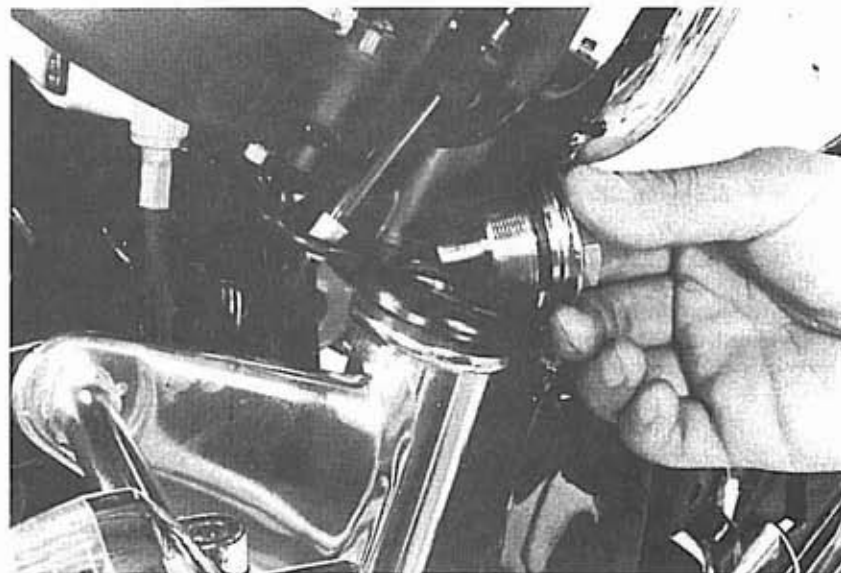
#### NOTE

Do not loosen the brake hose unless necessary.

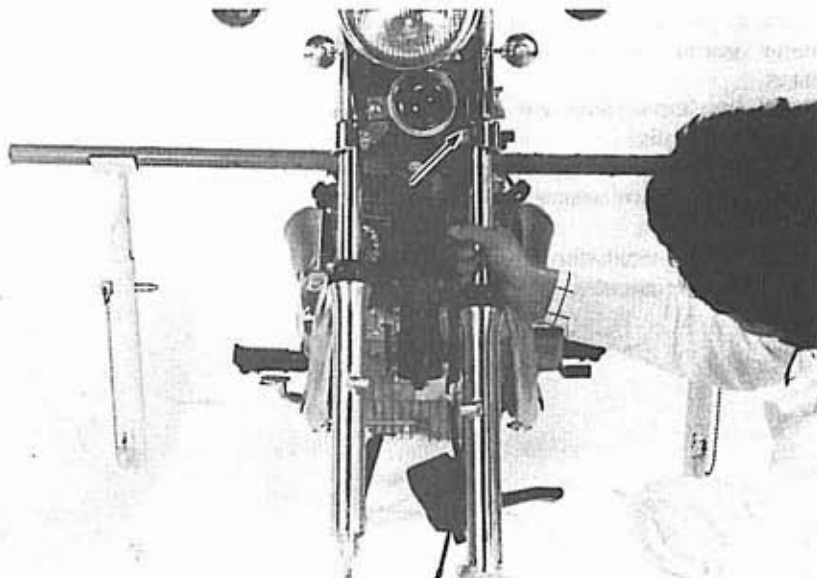
Remove the front fender.



Unscrew the right and left fork bolts.



Loosen the front fork attaching bolts at the bottom fork bridge.  
Remove the fork tubes from the bottom fork bridge, rotating them by hand if necessary.





• **FRONT FORK DISASSEMBLY**

Hold the fork tube in a vise  
Loosen the cushion spring inner bolt.

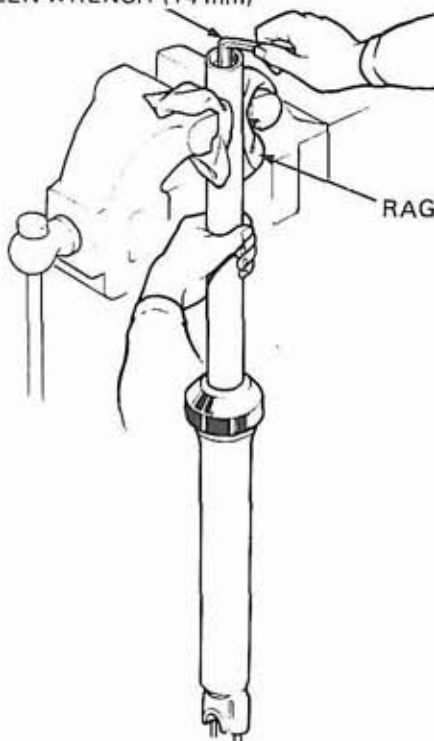
**CAUTION**

Do not damage or bend the sliding surface.

**WARNING**

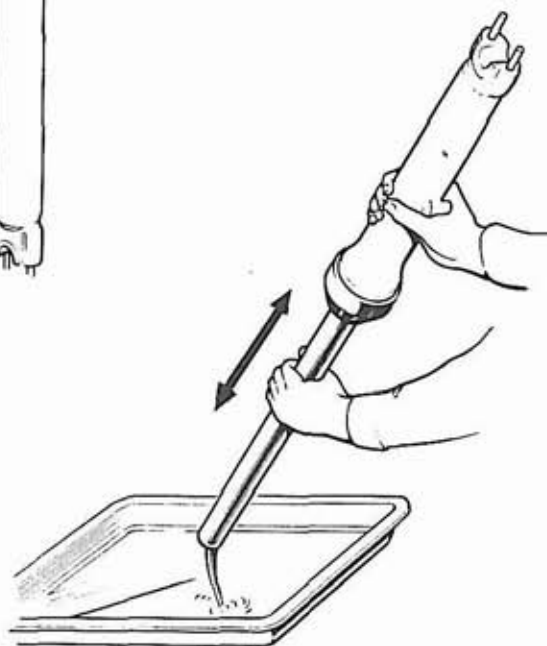
*Use care when loosening the bolt or the spring will pop out.*

ALLEN WRENCH (14 mm)



RAG OR SOFT JAWS

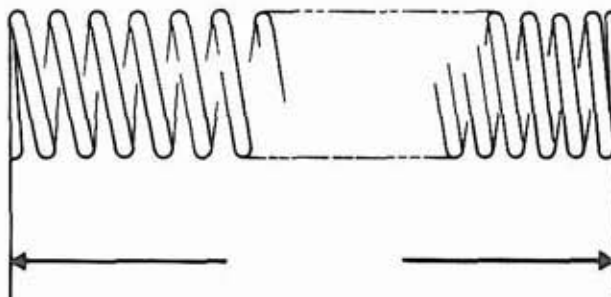
Pour out any remaining fork fluid by pumping the fork up and down several times.



• **FRONT DAMPER SPRING  
FREE LENGTH INSPECTION**

Measure the front damper spring free length.

**FREE LENGTH SERVICE LIMIT:**  
480.0 mm (18.90 in.)





Remove the socket from the bottom of the fork leg.  
Remove the fork tubes and piston.

**NOTE**

- Hold the fork slider in a vice, being careful not to tighten excessively.
- Temporarily install the spring and fork bolt should difficulty be encountered in removing the bolt.

• **OIL SEAL REMOVAL**

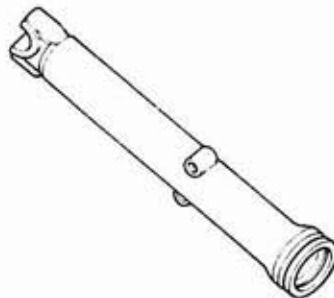
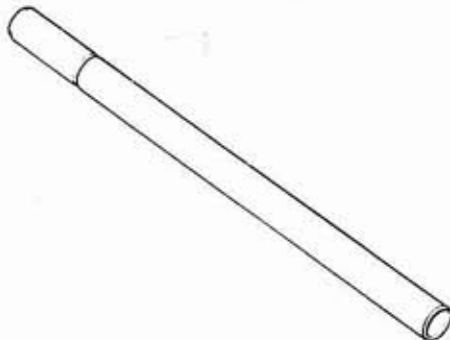
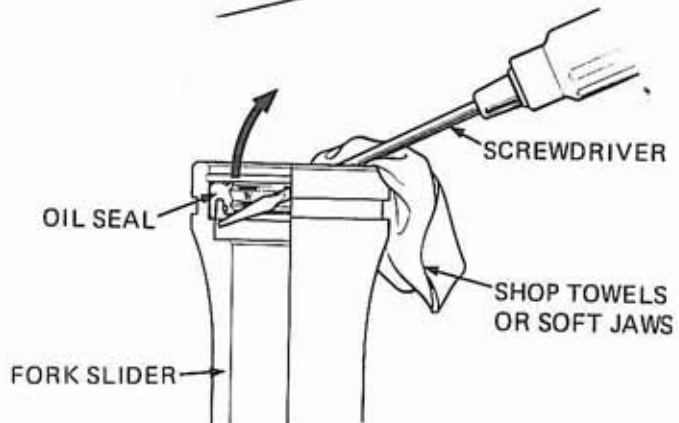
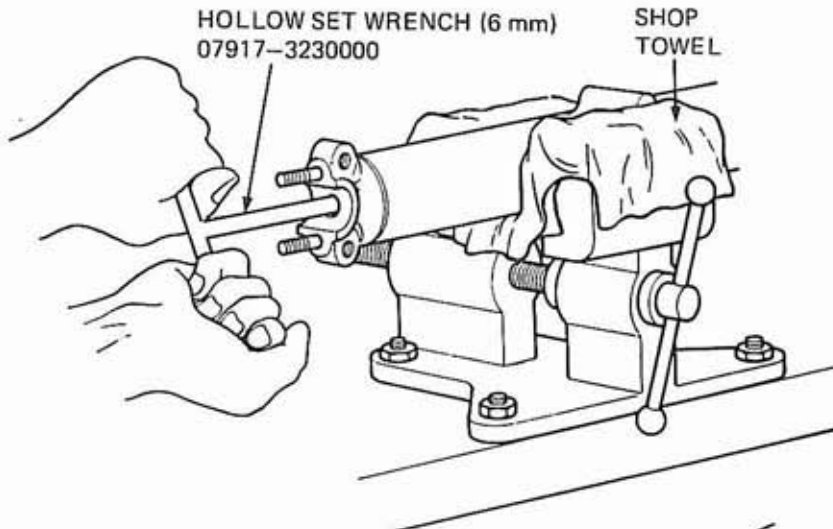
Carefully lift out the oil seal with a screwdriver.

**NOTE**

Avoid damaging the inner and outer surfaces of the slider when removing the seal.

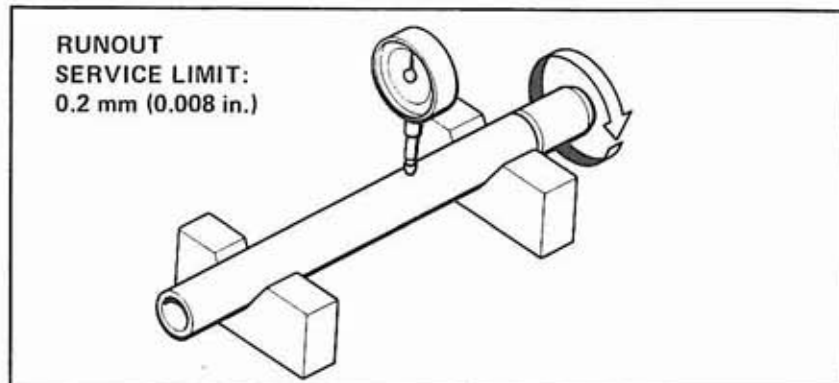
• **FORK TUBE/FORK SLIDER/PISTON INSPECTION**

Check the fork tubes, fork sliders and pistons for score marks, scratches, or excessive or abnormal wear, replacing those which are damaged.



• **FORK TUBE INSPECTION**

Set the fork tube in V blocks and read the runout. Take 1/2 TIR to determine the actual runout.

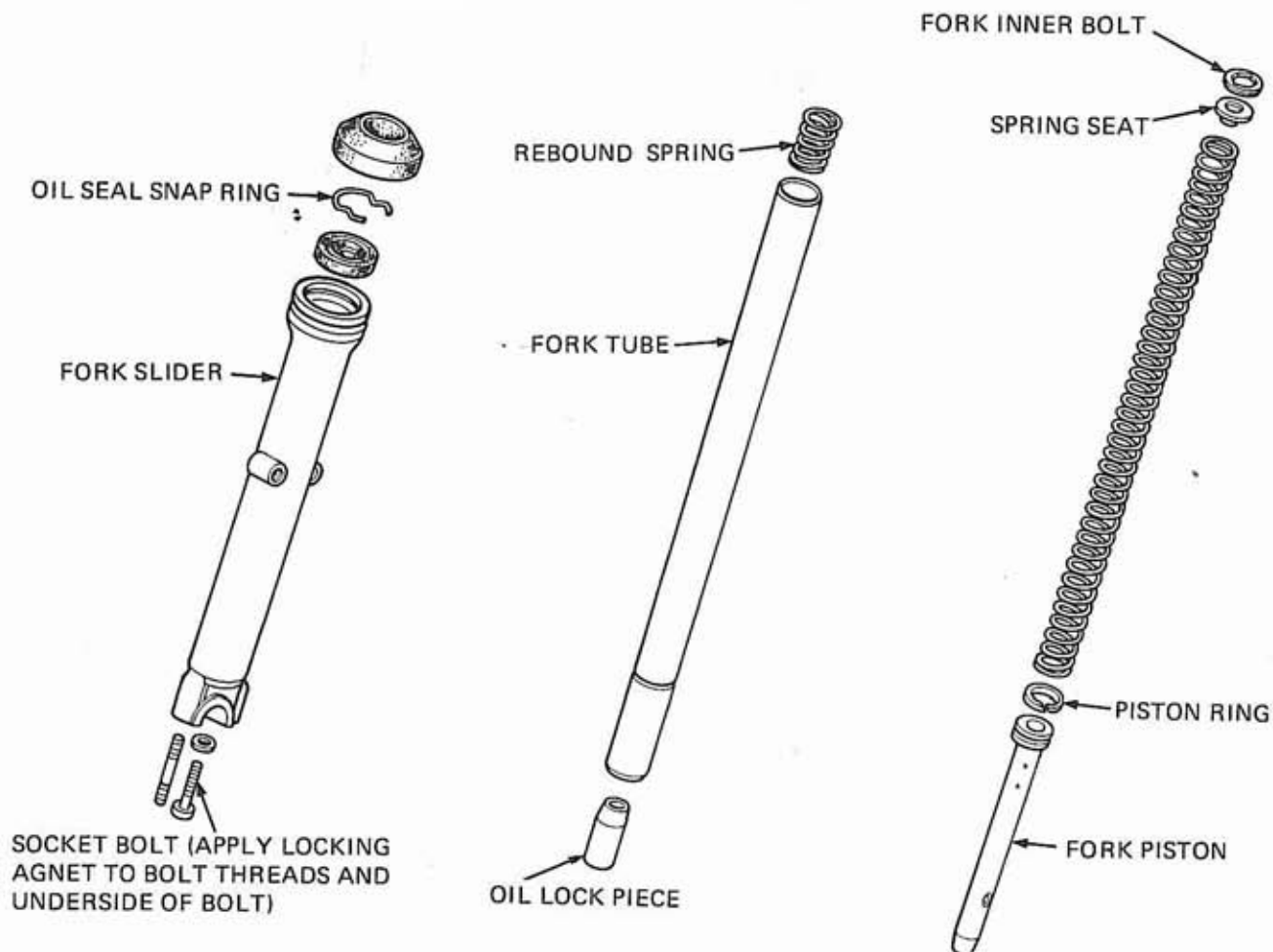




### • FRONT FORK ASSEMBLY

#### NOTE

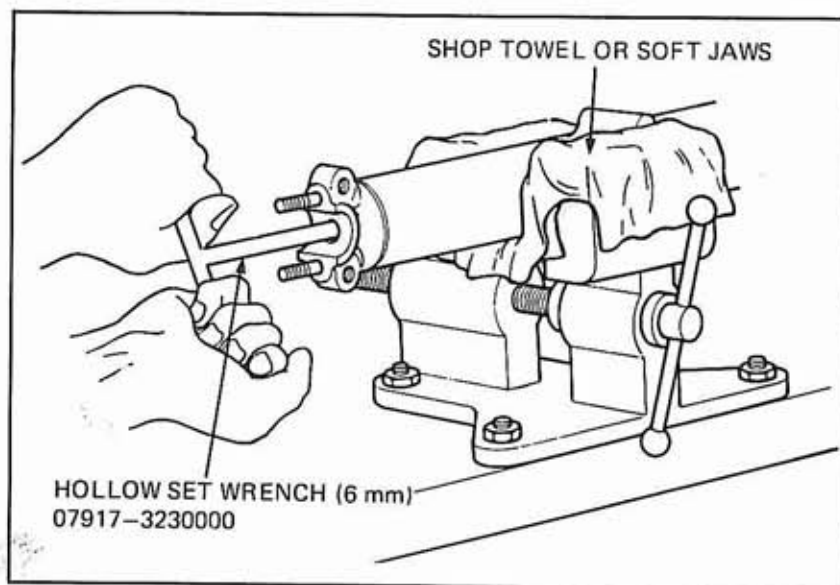
Clean all parts with solvent and wipe off.



Install the piston and fork tube.  
Apply a locking agent to the bolt threads and underside of the bolt, then torque to specified tension.

#### NOTE

Do not tighten the fork slider excessively in a vise.

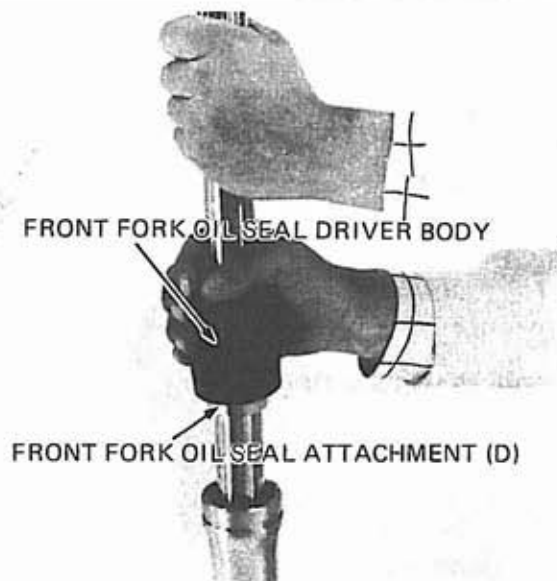
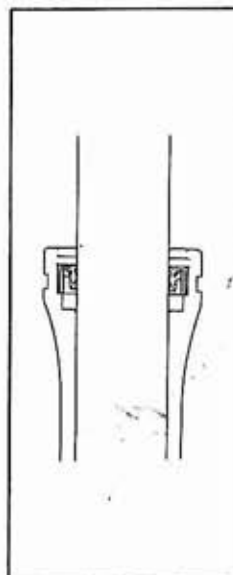






### • OIL SEAL INSTALLATION

Drive the oil seal into position until the snap ring groove appears.  
Install the snap ring and dust cover.



### • FILLING WITH FORK OIL

Use ATF (Automatic Transmission Fluid) to fill the front fork.

#### NOTE

Pour the specified amount of ATF. Do not overfill.

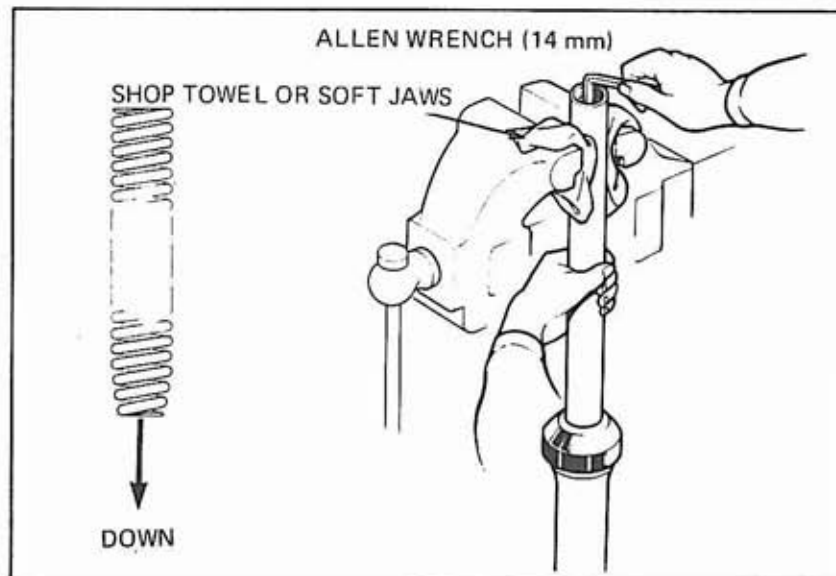
OIL CAPACITY:  
137~143 cc (4.6~4.8 ozs.)



Slide the front cushion spring and spring seat into position and tighten with the inner bolt.

#### NOTE

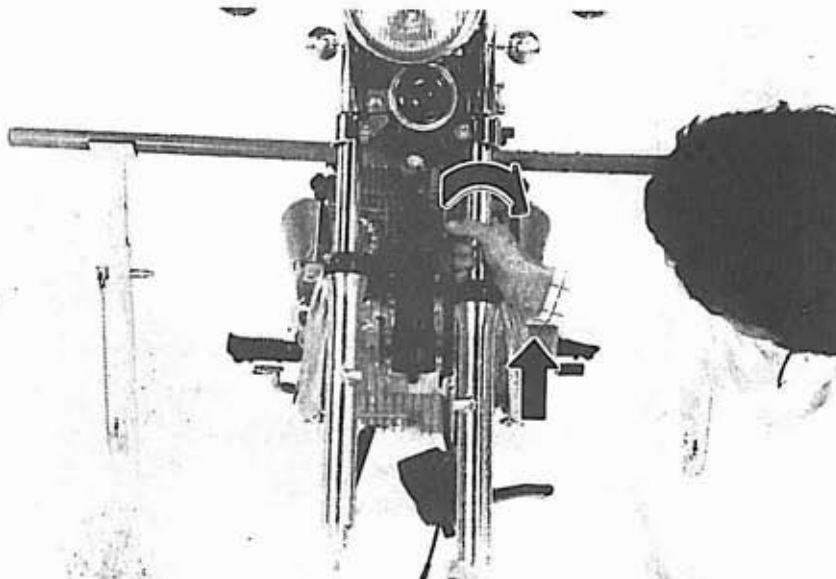
- Place the fork tube in soft jaws, avoiding the sliding surface.
- Note the spring direction.





• **FRONT FORK INSTALLATION**

Install the fork tubes in the fork top and bottom bridges while rotating them by hand. Ensure that each tube bears against the fork top bridge.



Tighten the right and left fork bolts to the specified torque.

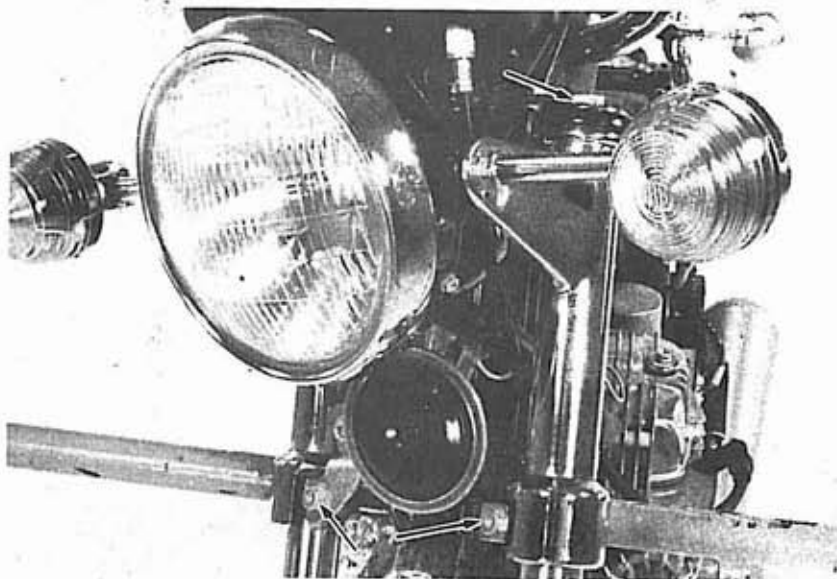
**TORQUE SPECIFICATION:**

7.0~9.0 kg-m (51~65 lbs-ft)

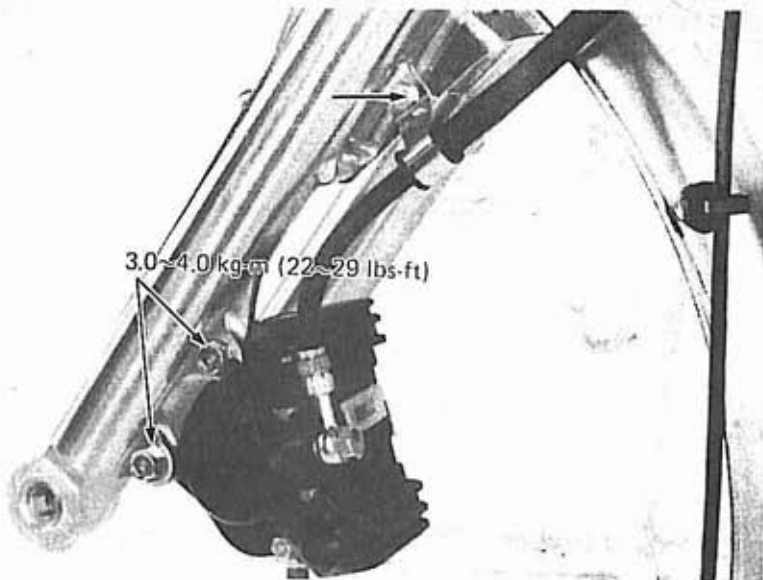
Torque the front fork bolts at the fork bottom bridge.

**TORQUE SPECIFICATION:**

1.8~2.5 kg-m (13~18 lbs-ft)



Install the fender.  
Install the brake caliper.  
Secure the brake hose.  
Install the front wheel.

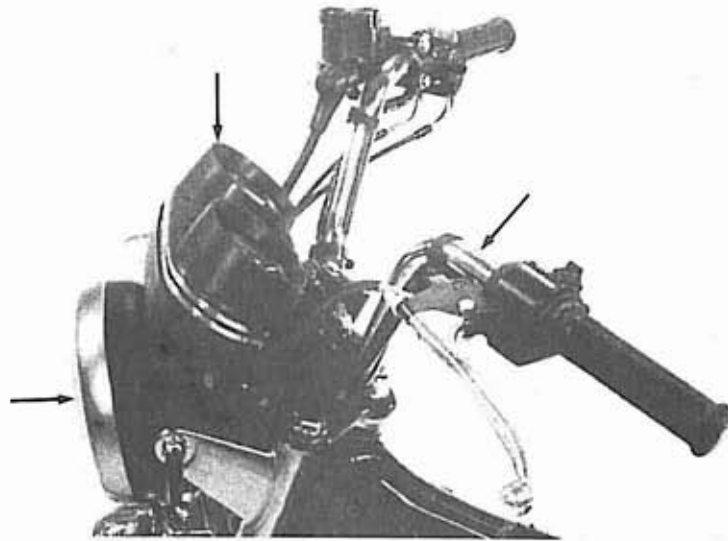




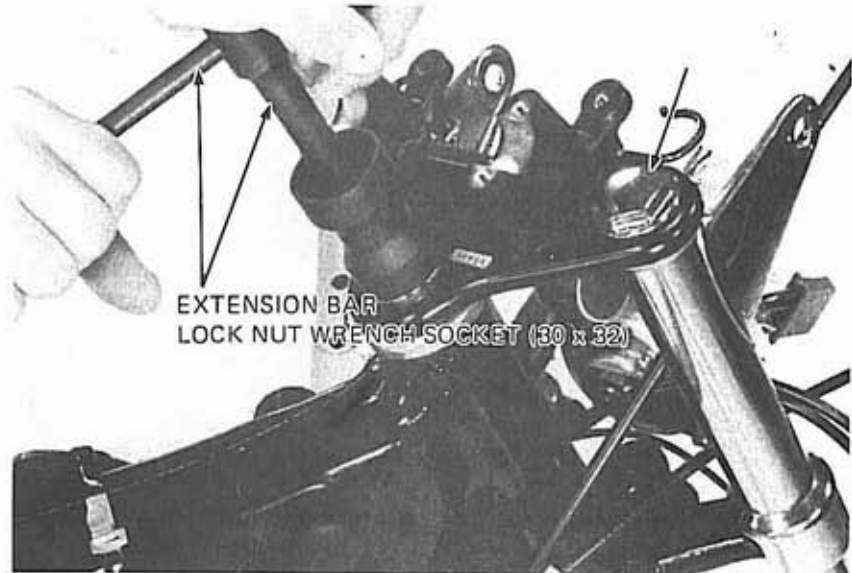
## STEERING STEM

### • FORK TOP BRIDGE REMOVAL

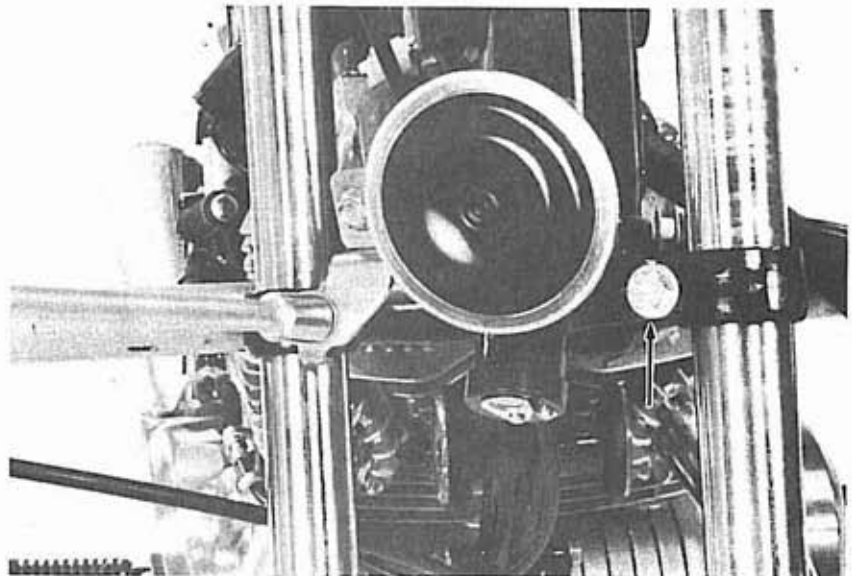
Remove the headlight.  
Remove the instruments.  
Remove the handlebars.



Unscrew the steering stem nut.  
Loosen the right and left fork bolts.  
Remove the fork cover.



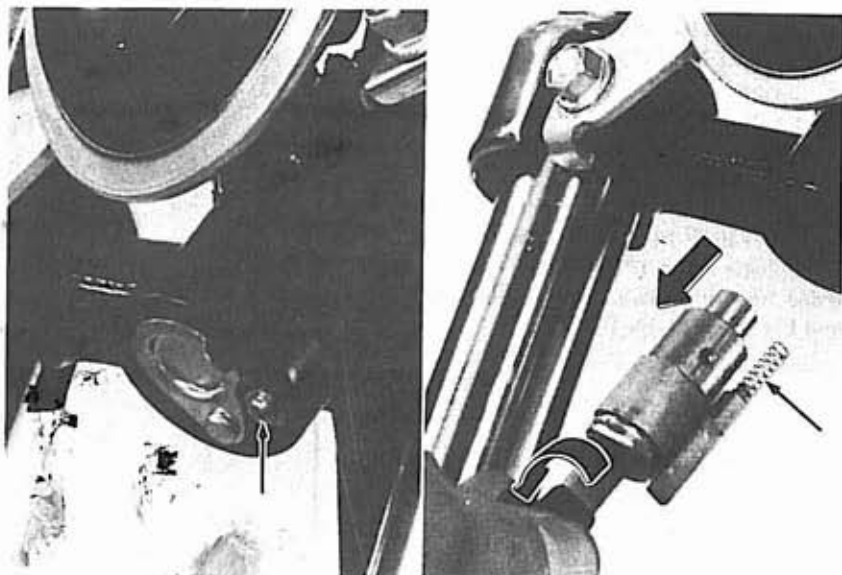
Loosen the bottom bridge fork bolts.  
Pull off the front fork.





### • STEERING LOCK REMOVAL/ INSTALLATION

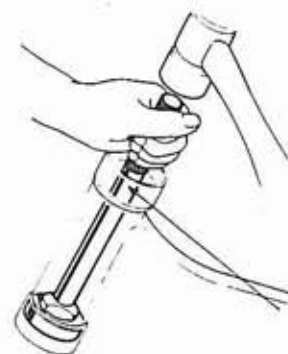
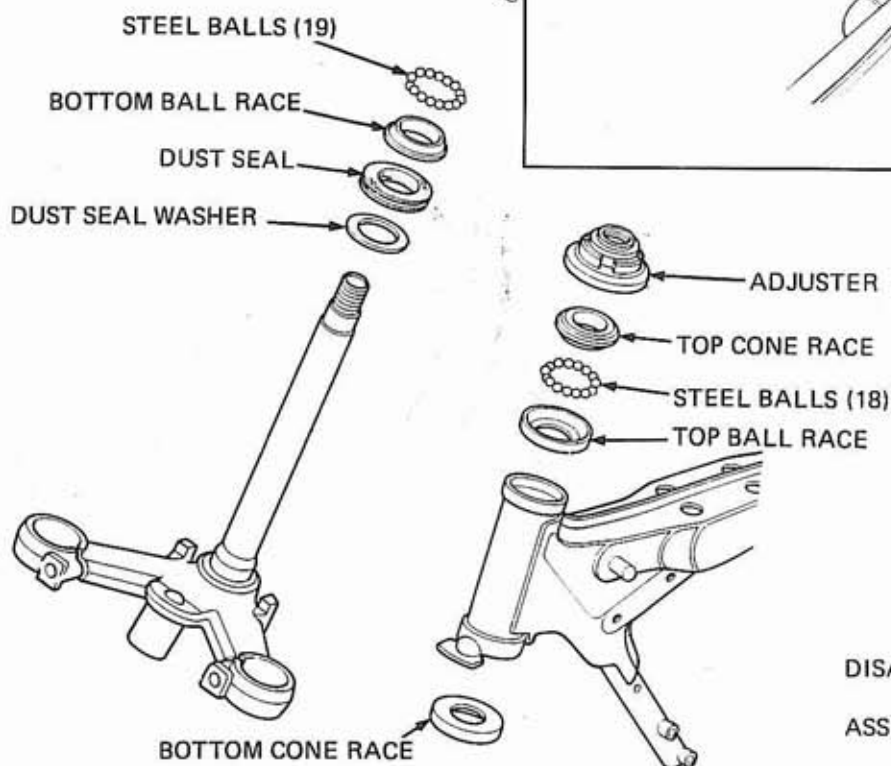
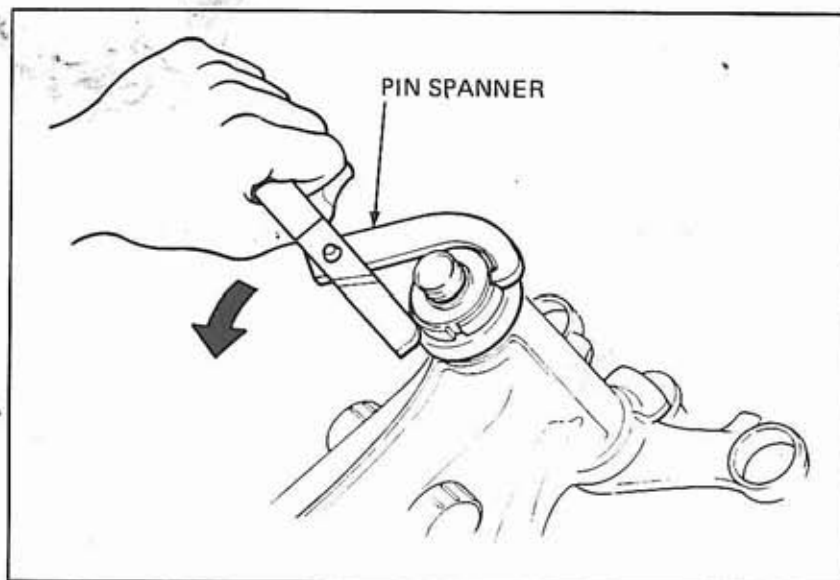
Remove the steering lock cover.  
Insert the key, turn counterclockwise, and  
remove the lock.



### • STEERING HEAD ADJUSTER REMOVAL

#### NOTE

Do not allow the steel balls to fall.

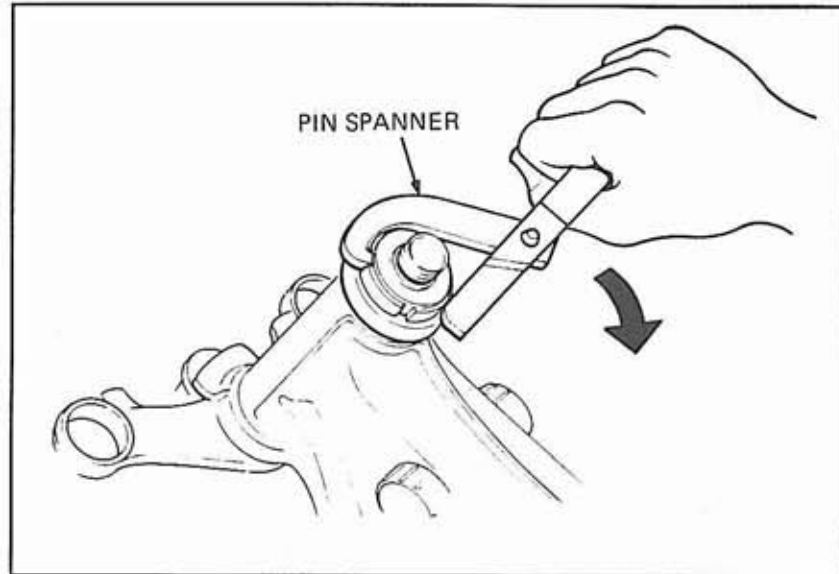


DISASSEMBLY: BALL RACE REMOVER  
07953-3330000  
ASSEMBLY: BALL RACE DRIVER  
07945-3330300  
07946-3290000



### • STEERING HEAD ADJUSTER INSTALLATION

Grease the top race and install 18 ball bearings. Grease the lower cone race and install the 19 ball bearings on the race. Install the adjuster in the frame neck and tighten it until snug against the top cone race. Then, back it out 1/8 turn. Make sure that there is no vertical movement and the stem rotates freely.



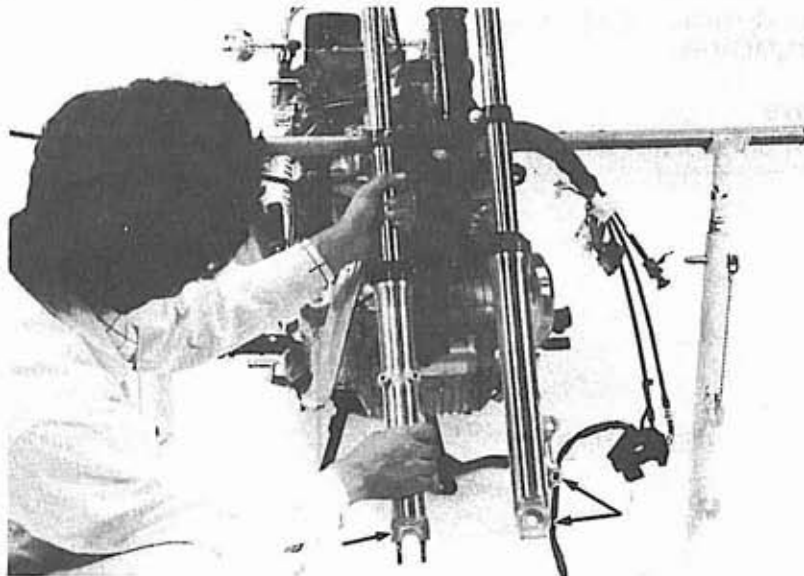
### • TOP BRIDGE INSTALLATION

Install the front fork legs.

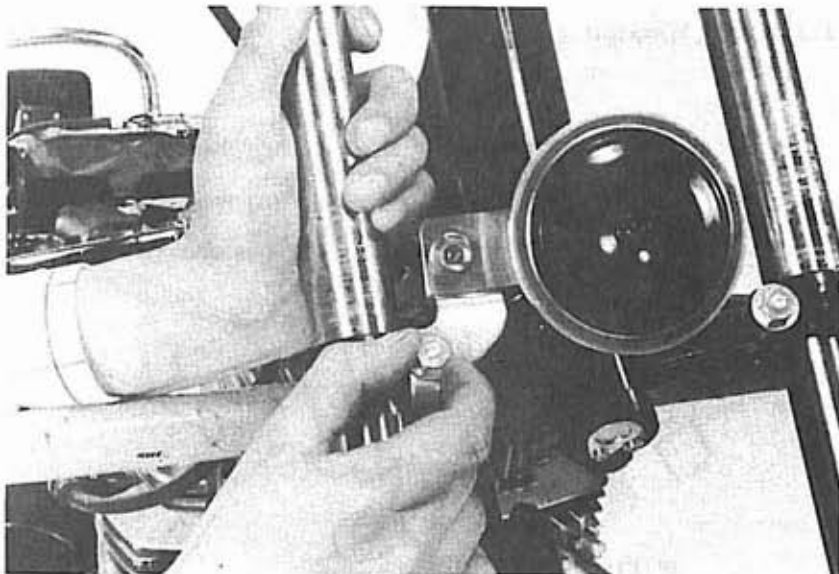
#### NOTE

Do not mix the right and left fork legs.

Position the fork tubes so that the upper ends are even with the steering head adjuster.



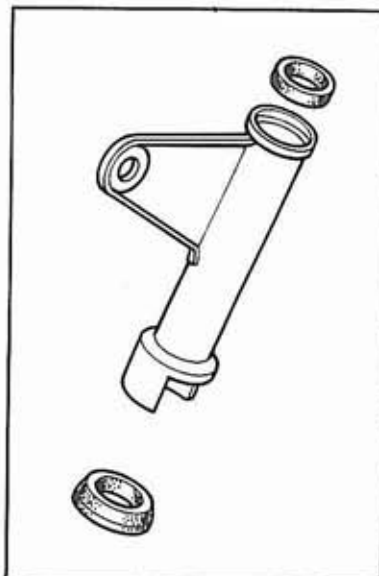
Temporarily hold the front fork legs by tightening the bottom bridge fork bolts.







Install the fork covers and fork cover cushions.



Install the right and left fork bolts, but do not tighten at this time.

Torque the steering stem nut.

**TORQUE SPECIFICATION:**

9.0~12.0 kg-m (65~87 lbs-ft)

Tighten the fork bolts to the specified torque.

**TORQUE SPECIFICATION:**

7.0~9.0 kg-m (51~65 lbs-ft)



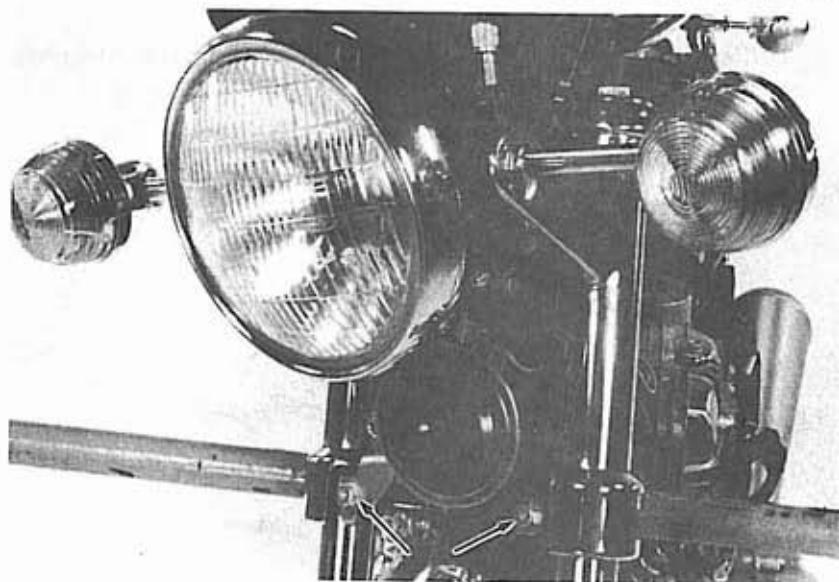
Torque the bottom bridge fork bolts.

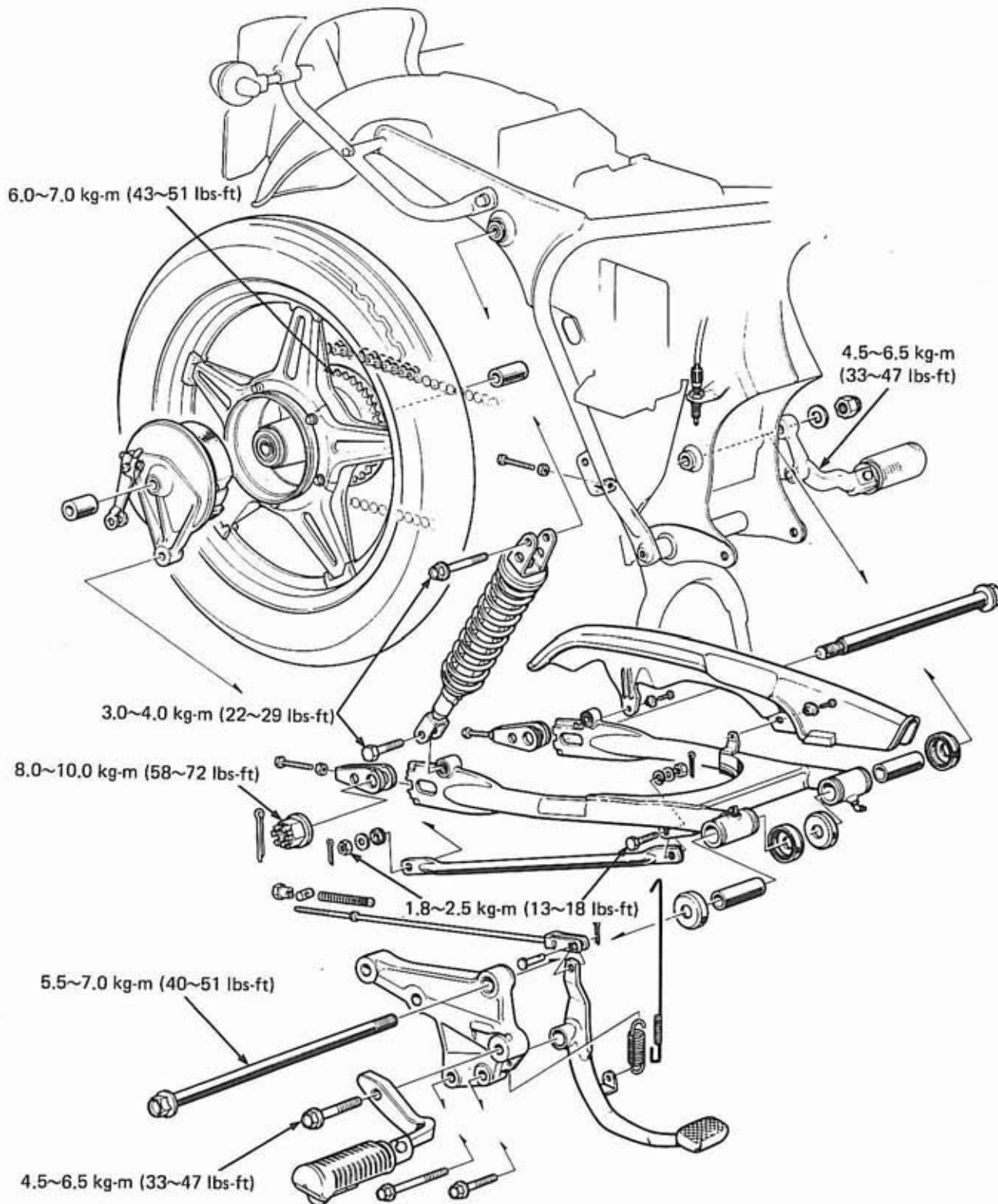
**TORQUE SPECIFICATION:**

1.8~2.5 kg-m (13~18 lbs-ft)

Install the following:

HANDLEBARS  
INSTRUMENTS  
HEADLIGHT  
FRONT FENDER  
FRONT WHEEL







SERVICE INFORMATION	14-1
TROUBLESHOOTING	14-2
REAR WHEEL REMOVAL/ DISASSEMBLY/ASSEMBLY	14-4
FINAL DRIVEN SPROCKET	14-6
REAR BRAKE PANEL	14-7
REAR WHEEL INSTALLATION	14-8
SHOCK ABSORBER	14-10
SWINGARM	14-11
BRAKE PEDAL	14-12

## SERVICE INFORMATION

### • WORKING PRACTICE

Do not remove the rivets, nuts and pins from the rim, spoke plates and hub, since they cannot be disassembled.  
Do not ride on the rim or try to bend the wheel.  
Handle with care since the rim is made of aluminum alloy.

### • SPECIAL TOOLS

#### Common Tools

BEARING DRIVER HANDLE (A)	07749-0010000
BEARING DRIVER OUTER (42 x 47 mm)	07746-0010300
BEARING DRIVER OUTER (52 x 55 mm)	07746-0010400
BEARING DRIVER PILOT (20 mm)	07746-0040500
BEARING DRIVER PILOT (17 mm)	07746-0040400
REAR CUSHION COMPRESSOR	07959-3290001



• SPECIFICATIONS

		STANDARD	SERVICE LIMIT
Axle bend		_____	0.2 mm (0.008 in.)
Rear wheel runout	Radial	_____	2.0 mm (0.08 in.)
	Axial	_____	2.0 mm (0.08 in.)
Final driven sprocket I.D.		65.00~ 65.09 mm (2.560~2.563 in.)	65.16 mm (0.565 in.)
Rear wheel hub O.D. (L)		64.94~ 64.97 mm (2.557~2.558 in.)	64.87 mm (2.554 in.)
Brake lining thickness		4.9 ~ 5.0 mm (0.19 ~0.20 in.)	2.0 mm (0.08 in.)
Rear brake drum I.D.		140.0 ~140.3 mm (5.51 ~5.52 in.)	141.0 mm (5.55 in.)
Rear cushion spring free length		208.3 mm (8.20 in.)	198.0 mm (7.80 in.)

## TROUBLESHOOTING

### Wobble or Vibration in Motorcycle

1. Distorted rim
2. Loose wheel bearing
3. Loose or distorted spokes
4. Faulty tire
5. Loose axle

### Soft Suspension

1. Weak spring
2. Shock absorbers improperly adjusted
3. Weak rear damper

### Hard Suspension

1. Shock absorbers improperly adjusted

### Suspension Noise

1. Shock case binding
2. Loose fasteners

### Poor Brake Performance

1. Improper brake adjustment
2. Fouled brake linings
3. Worn brake shoes
4. Worn brake shoe cam contacting faces
5. Worn brake drum
6. Improper engagement between brake arm and shaft serrations



### REAR WHEEL REMOVAL/ DISASSEMBLY/ASSEMBLY

#### • REAR WHEEL REMOVAL

Support the motorcycle on the main stand or a stand placed under the engine.

Disconnect the brake rod.

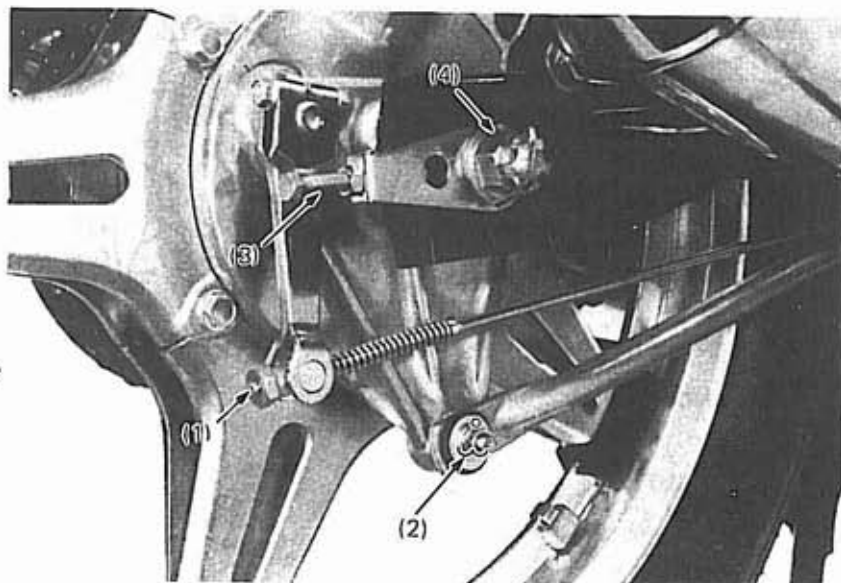
Pry off the cotter pin and separate the brake torque link.

Loosen the drive chain adjusting bolts.

Remove the cotter pin and loosen the axle nut.

Remove the drive chain retaining clip.

Withdraw the axle and remove the rear wheel.

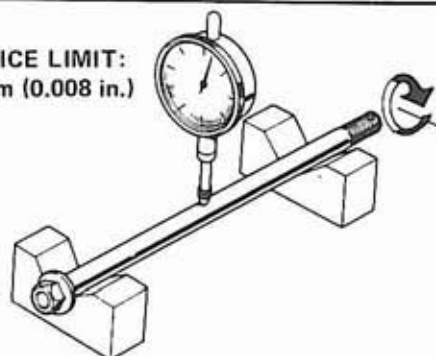


#### • AXLE SHAFT BEND INSPECTION

Set the axle in V blocks and read the axle bend.

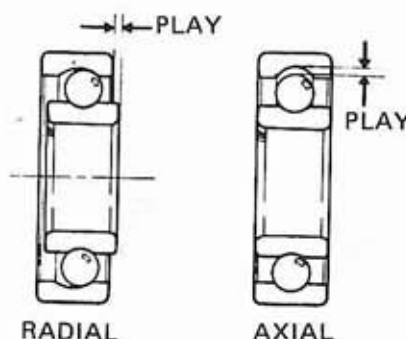
The actual axle bend is 1/2 of TIR. (total indicator reading).

**SERVICE LIMIT:**  
0.2 mm (0.008 in.)



#### • REAR WHEEL BEARING PLAY INSPECTION

Check the wheel bearing play by rotating the wheel by hand. Replace the bearings with new ones if they are noisy or have excessive play.



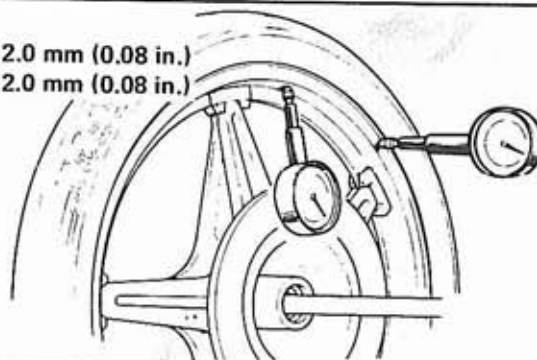
#### • REAR WHEEL RIM RUNOUT INSPECTION

Check the rim for runout by placing the wheel in a truing stand. Spin the wheel by hand, and read the runout using a dial indicator gauge.

**SERVICE LIMITS:**

**RADIAL RUNOUT:** 2.0 mm (0.08 in.)

**AXIAL RUNOUT:** 2.0 mm (0.08 in.)



#### NOTE

The COMSTAR WHEEL cannot be serviced and must be replaced if the above limits are exceeded.





## • REAR WHEEL DISASSEMBLY <TYPE-I>

Remove the right bearing first.



BALANCE WEIGHT

BALANCER MARK



ALIGN BALANCE MARK  
WITH TIRE VALVE

<TYPE-II>

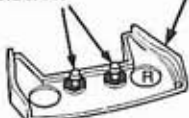
Remove the right bearing first.

BALANCE WEIGHT



SPOKE PLATE MARK

Apply adhesive during  
installation

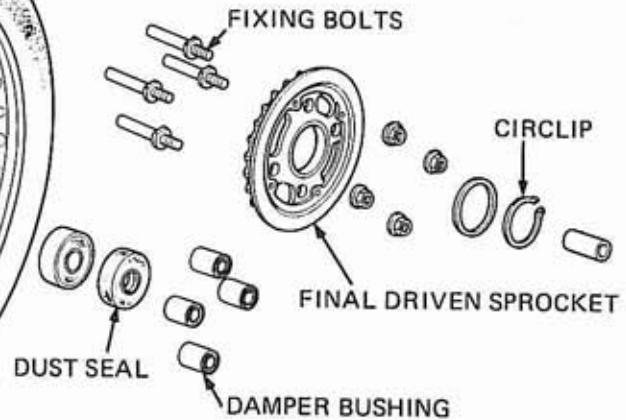


DISTANCE  
COLLAR



FWD

BEARING DRIVER HANDLE (A)  
BEARING DRIVER PILOT (20 mm)



FIXING BOLTS

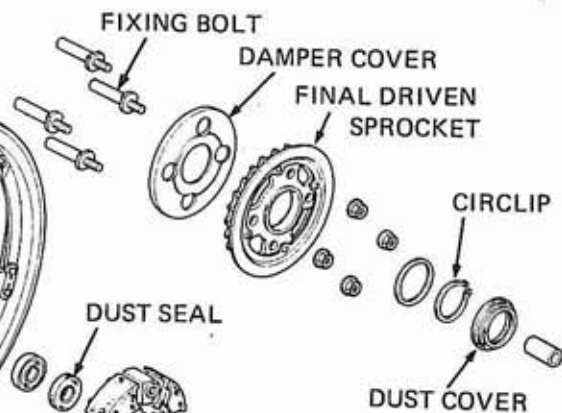
CIRCLIP

FINAL DRIVEN SPROCKET

DUST SEAL

DAMPER BUSHING

BEARING DRIVER HANDLE (A)  
BEARING DRIVER PILOT (20 mm)



FIXING BOLT

DAMPER COVER

FINAL DRIVEN  
SPROCKET

CIRCLIP

DUST COVER

DAMPER COLLAR DAMPER RUBBER

### NOTE

The COMSTAR WHEEL has no rim  
band.

## • REAR WHEEL ASSEMBLY

Pack all bearing cavities with grease.  
Press the distance collar into place from the  
left side.  
Drive the right ball bearing first.  
Drive the left ball bearing last.

### CAUTION

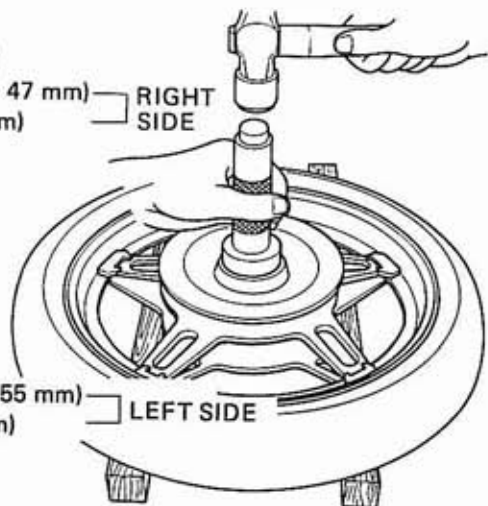
Drive the bearings squarely.  
Install the bearings with the sealed end  
facing out.

BEARING DRIVER HANDLE (A)  
BEARING DRIVER OUTER (42 x 47 mm)  
BEARING DRIVER PILOT (17 mm)

RIGHT  
SIDE

BEARING DRIVER OUTER (52 x 55 mm)  
BEARING DRIVER PILOT (20 mm)

LEFT SIDE





### FINAL DRIVEN SPROCKET

#### • FINAL DRIVEN SPROCKET

Remove the dust cover.  
Pry off the snap ring.

#### NOTE

Install the snap ring and dust cover properly during assembly.  
Coat the inside diameter of the sprocket bushing with grease.

#### NOTE

Make certain that the fixing bolts are seated snugly on the sprocket.

#### • FINAL DRIVEN SPROCKET INSPECTION

Measure the final driven sprocket I.D..

**SERVICE LIMIT: 65.16 mm (2.565 in.)**

Check the condition of the final driven sprocket teeth.

Replace the sprocket if worn or distorted.

#### NOTE

The drive chain and drive sprocket must also be inspected if the driven sprocket is worn or distorted.

#### • REAR WHEEL HUB INSPECTION

Measure the rear wheel hub O.D. on the left side.

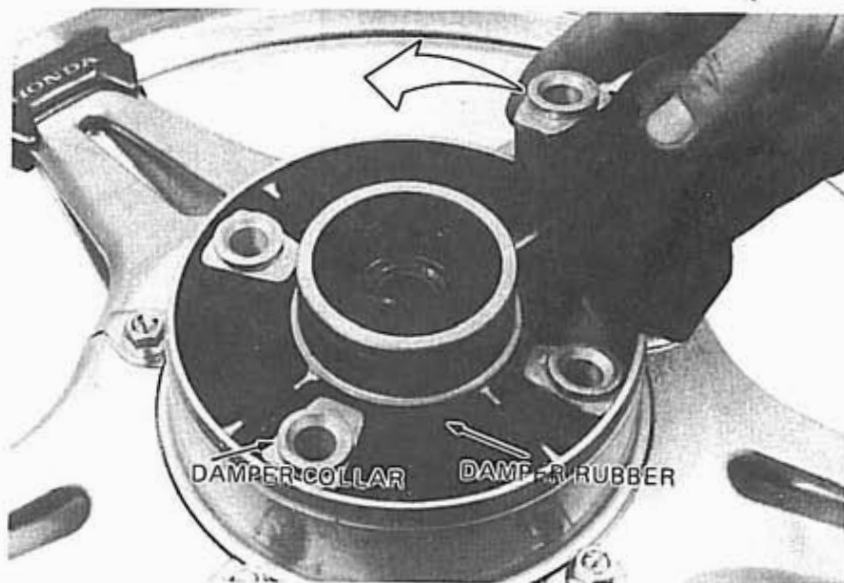
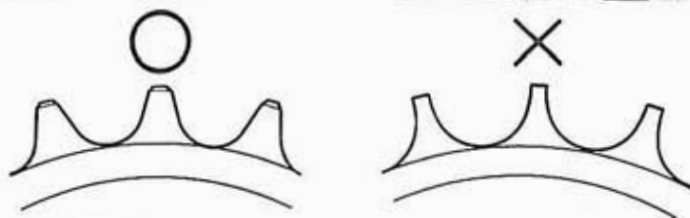
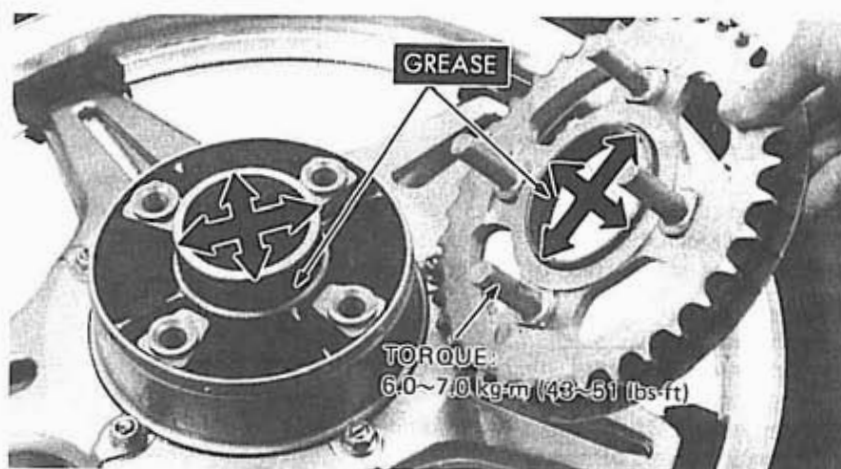
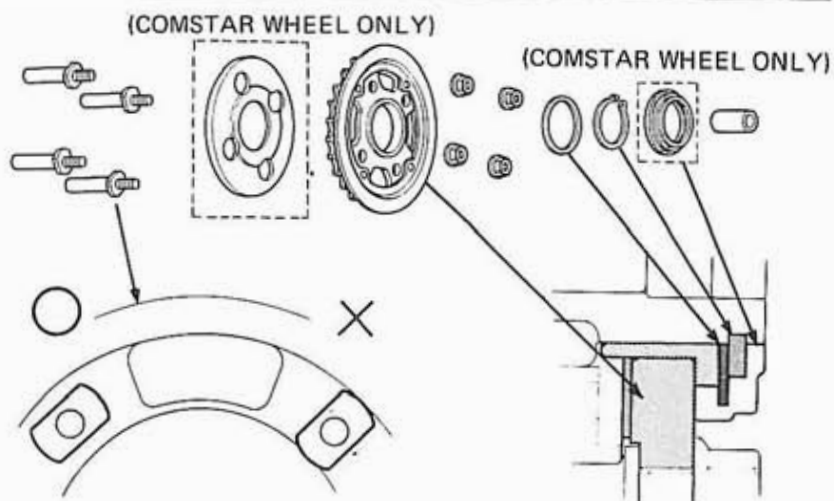
**SERVICE LIMIT: 64.87 mm (2.554 in.)**

#### • DAMPER RUBBER INSPECTION

Replace the damper rubbers if they are damaged or deteriorated.

#### NOTE

Note the damper collar location.



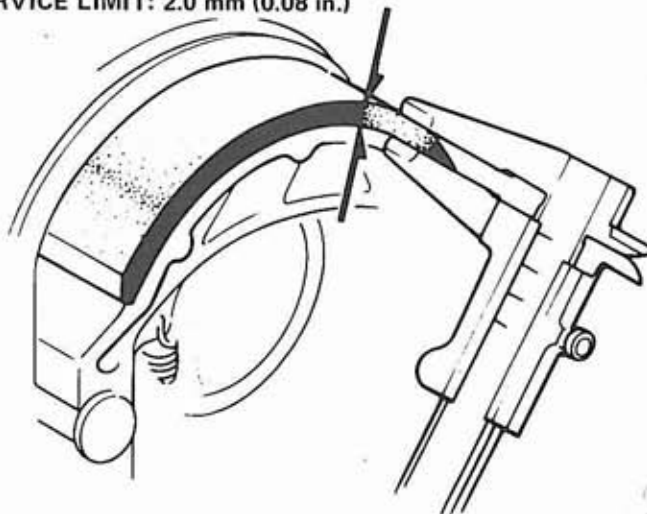


## REAR BRAKE PANEL

### • REAR BRAKE LINING THICKNESS

Measure the rear brake lining thickness.

SERVICE LIMIT: 2.0 mm (0.08 in.)



### • REAR BRAKE SHOE REPLACEMENT

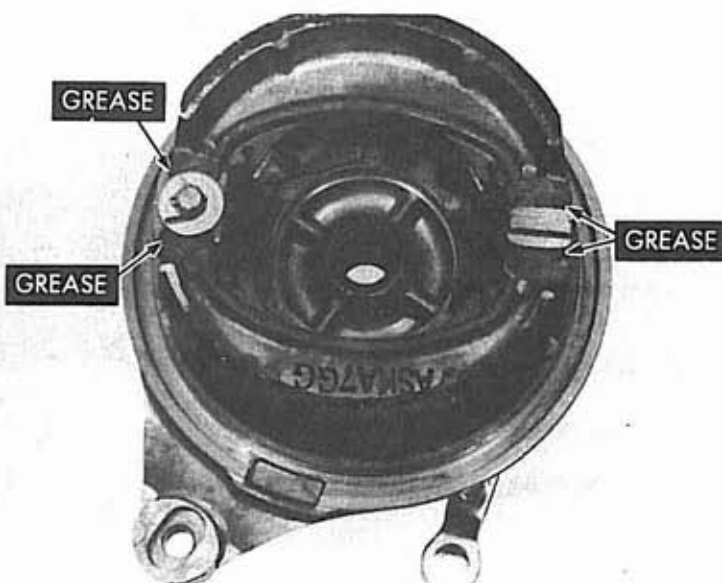
Pry off the cotter pin.  
 Install new brake shoes.  
 Apply grease to the face of the brake cam.

#### WARNING

Contaminated brake linings reduce stopping power.  
 Keep grease off the brake linings. Wipe the excess grease off the cam.

#### NOTE

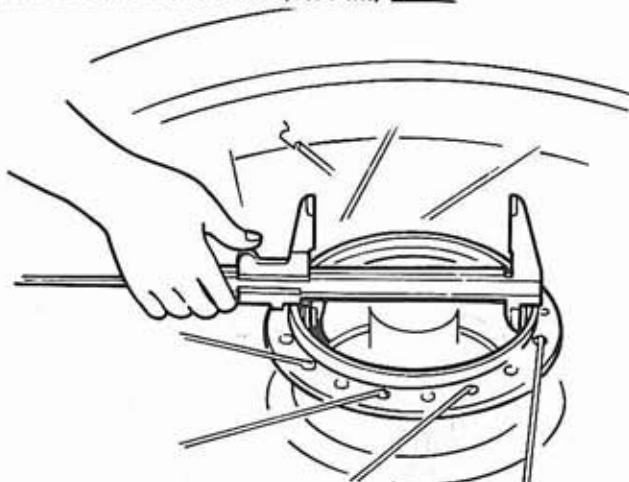
Make sure the the punch mark on the brake arm aligns with the punch mark on the shoe.



### • BRAKE DRUM I.D. INSPECTION

Measure the brake drum I.D..

SERVICE LIMIT: 141.0 mm (5.55 in.)





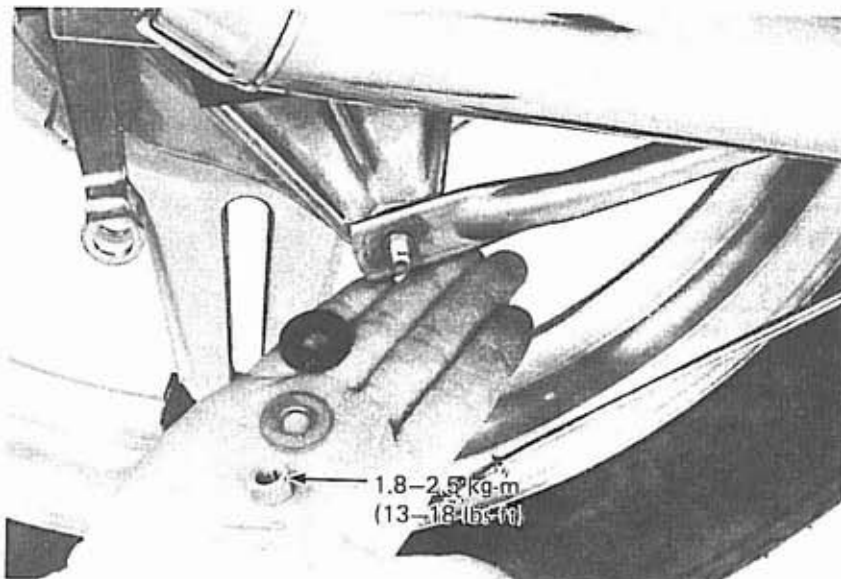
## REAR WHEEL INSTALLATION

Insert the axle through the wheel hub.

### NOTE

Install the long axle collar on the right side.

Install the brake torque link.  
Connect the brake rod.



Install the drive chain retaining clip.

### NOTE

Note the retaining clip direction.



Adjust the drive chain tension.

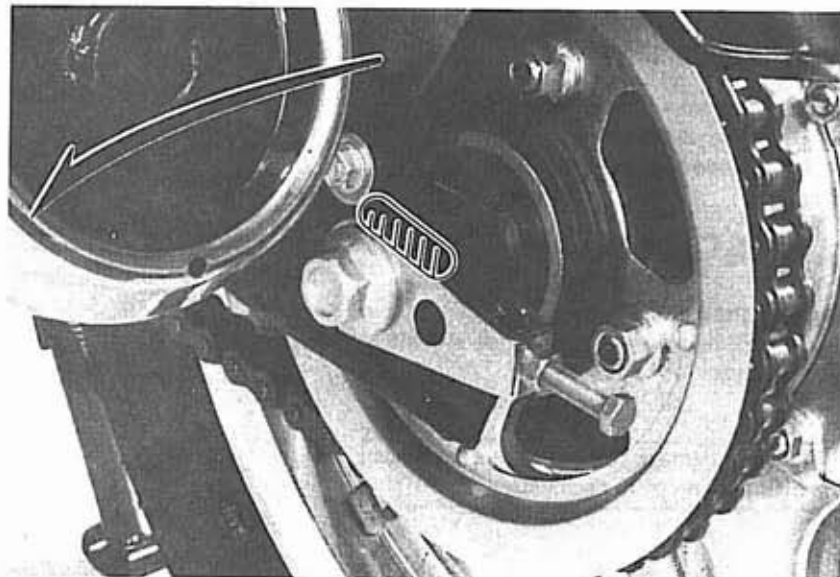
**CHAIN SLACK: 10~20 mm (0.4~0.8 in.)**

### NOTE

Rotate the adjusters so that the index marks are aligned with the same scale number on both sides. Torque the axle nut, and install the cotter pin. Spread the ends of the cotter pin.

#### **TORQUE SPECIFICATION:**

**8.0~10.0 kg-m (58~72 lbs-ft)**



Lubricate the drive chain with engine oil or grease.



## SHOCK ABSORBER

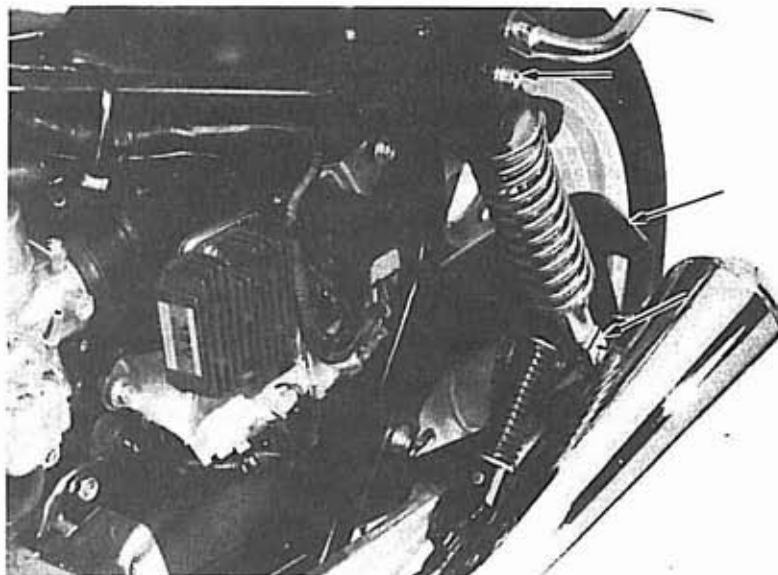
### • SHOCK ABSORBER REMOVAL

To remove the left shock absorber, remove the chain cover.

Remove the upper bolt first, then remove the lower bolt.

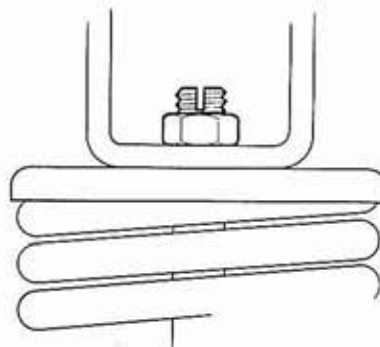
#### NOTE

Before removing the shock absorbers rotate the adjuster to the weakest position.



### • SHOCK ABSORBER DISASSEMBLY

Using a hacksaw blade, cut a groove in the head of the damper bolt to receive the flat end of a screwdriver as shown.



#### NOTE

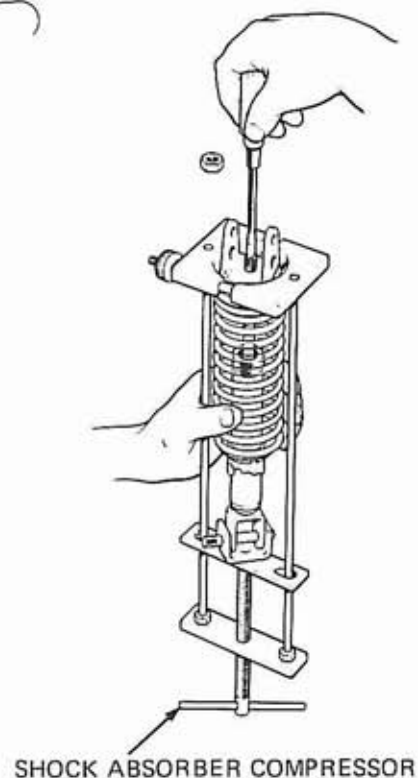
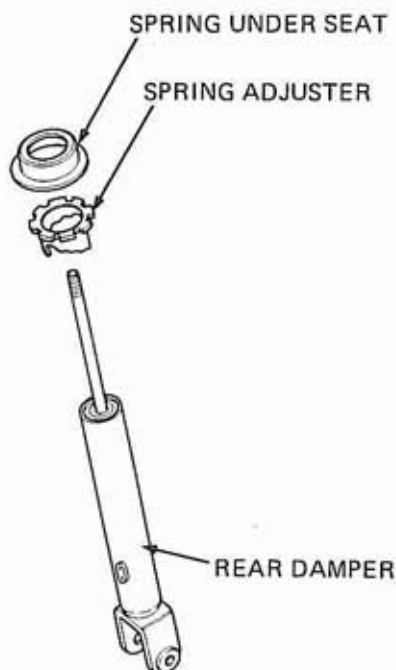
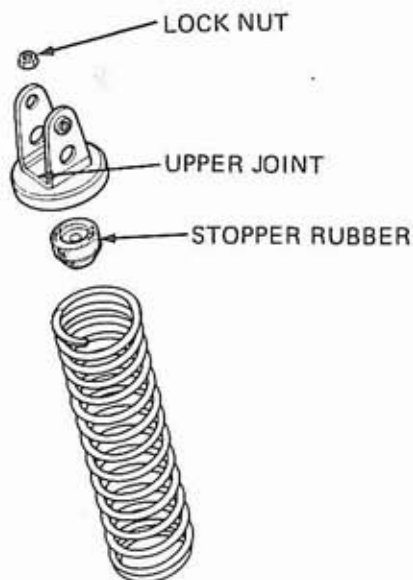
Remove burrs thoroughly.

Remove the lock nut.

Screw in the rod by applying a screwdriver to the groove in the rod end.

#### NOTE

Do not damage the upper joint threads with the end of the screwdriver.

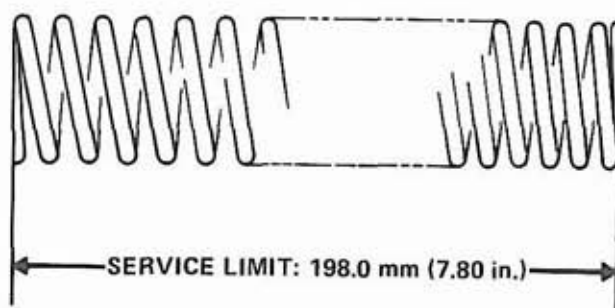






### • SHOCK ABSORBER SPRING FREE LENGTH

SERVICE LIMIT: 198.0 mm (7.80 in.)



### • SHOCK ABSORBER ASSEMBLY

When the damper is to be replaced with a new one, it is necessary to cut a slot in the top end of the rod.

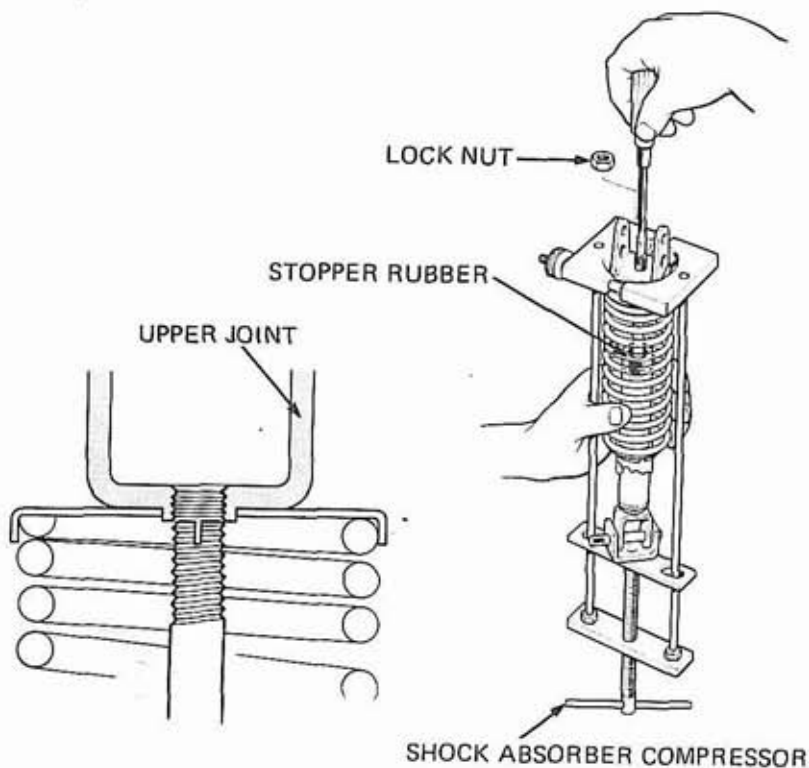
#### NOTE

Avoid damaging the rod threads.

Extend the rod fully so that the stopper rubber is at the bottom of the rod. Compress the spring until the slotted end of the rod contacts the upper joint. Applying the end of a screwdriver to the rod slot, turn the rod into the upper joint fully. Install the lock nut on the end of the rod and tighten securely.

#### NOTE

Replace the lock nut if it is cross threaded.



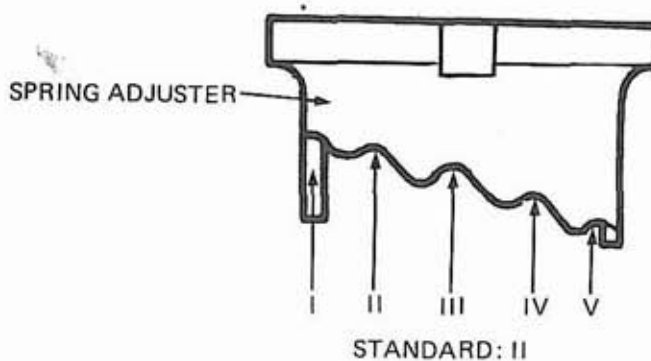
### • SHOCK ABSORBER INSTALLATION

Torque the bolts.

#### TORQUE SPECIFICATION:

3.0–4.0 kg-m (22–29 lbs-ft)

Adjust the cushion springs with the spring adjuster.

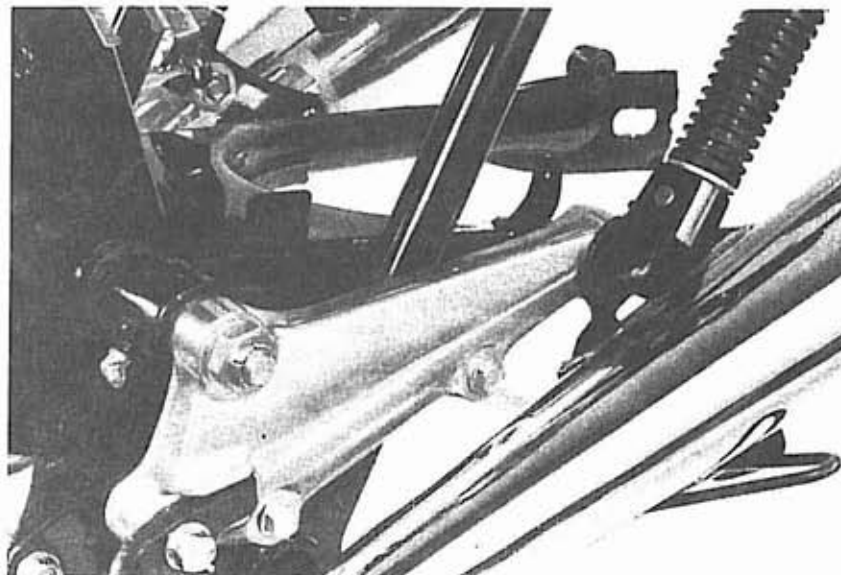




## SWING ARM

### • REMOVAL

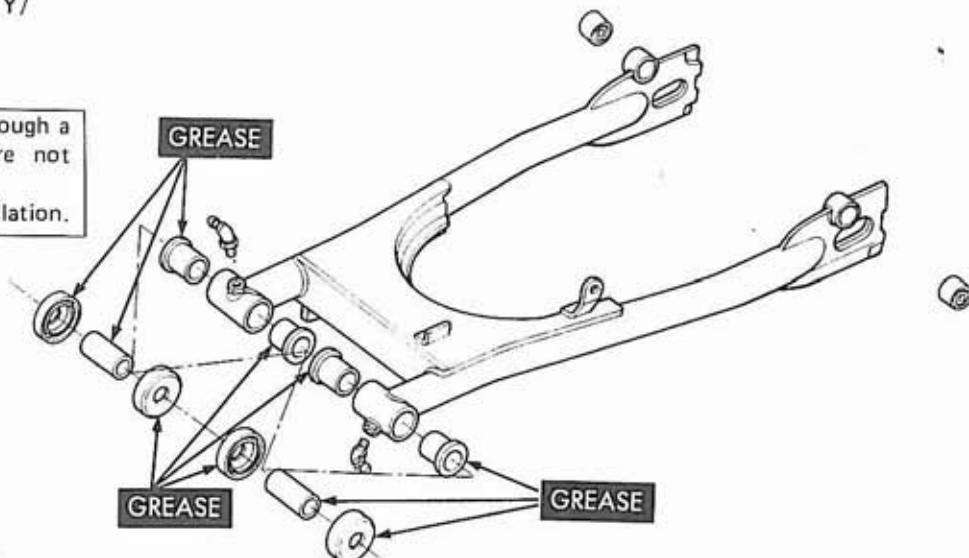
Remove the rear wheel.  
Remove the right and left shock absorbers.  
Withdraw the rear fork pivot bolt.



### • SWINGARM DISASSEMBLY/ASSEMBLY

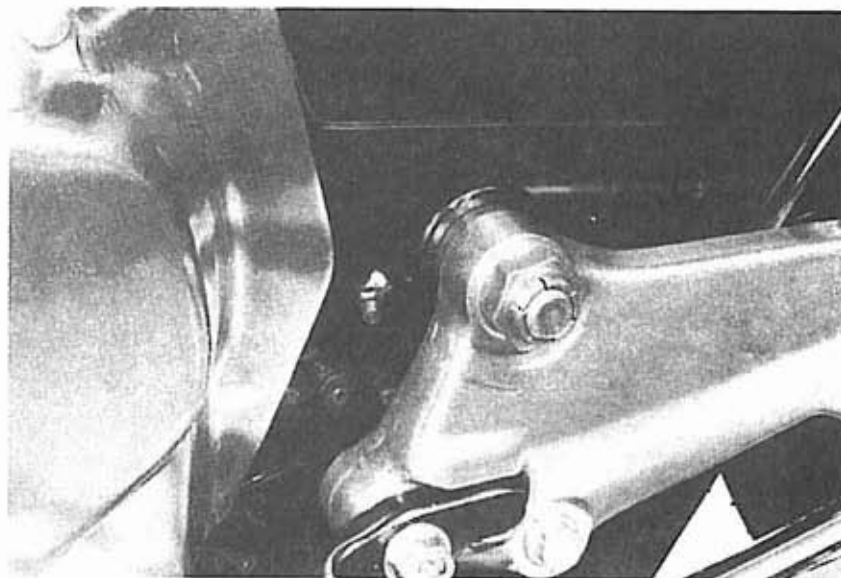
#### NOTE

Drive the bushings into place through a pad making sure that they are not damaged.  
Lubricate with grease after installation.



### • SWINGARM INSTALLATION

Torque the swingarm pivot bolt.  
**TORQUE SPECIFICATION:**  
5.5–7.0 kg-m (40–51 lbs-ft)  
Install the shock absorbers.  
Install the rear wheel.





### REAR BRAKE PEDAL

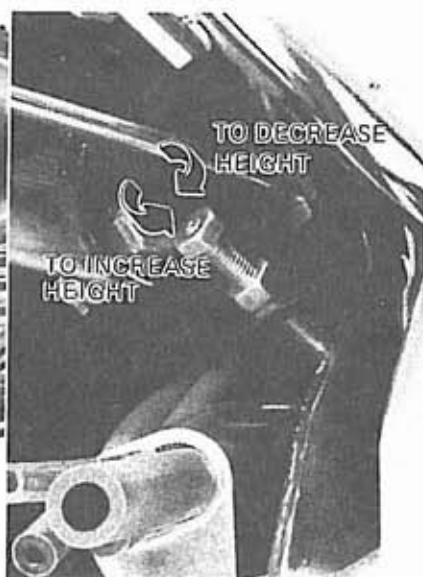
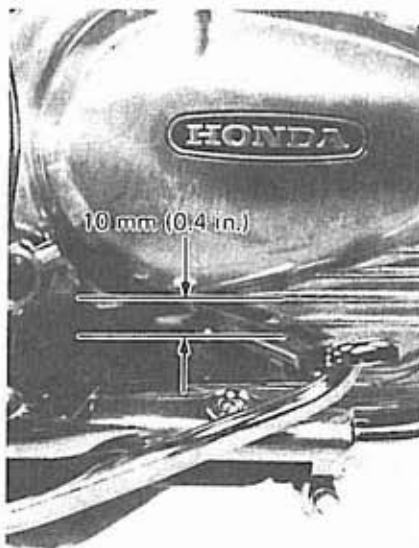
#### • REAR BRAKE PEDAL HEIGHT

Adjust the pedal height so that the distance between the pedal and upper face of the footpeg is 10 mm.

Turning the adjusting bolt until the correct pedal height is obtained.

#### NOTE

After adjusting the pedal height, adjust the pedal free play and stoplight switch.



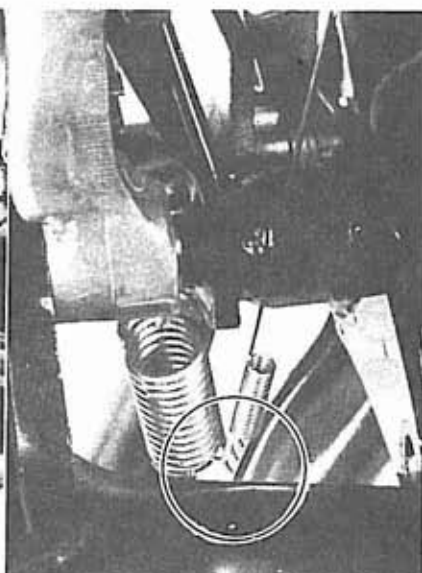
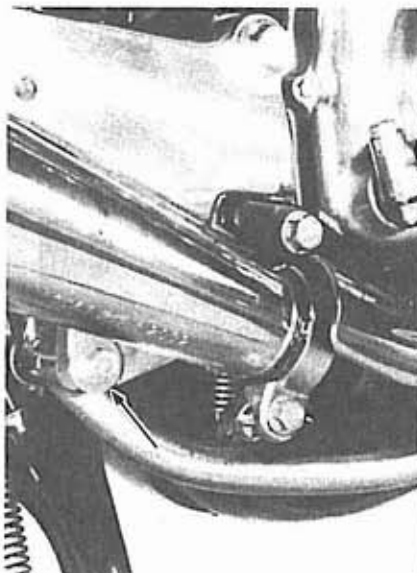
#### • BRAKE PEDAL REMOVAL/ INSTALLATION

Disconnect the brake rod and loosen the brake pedal bolt.

Remove the brake return spring.

#### NOTE

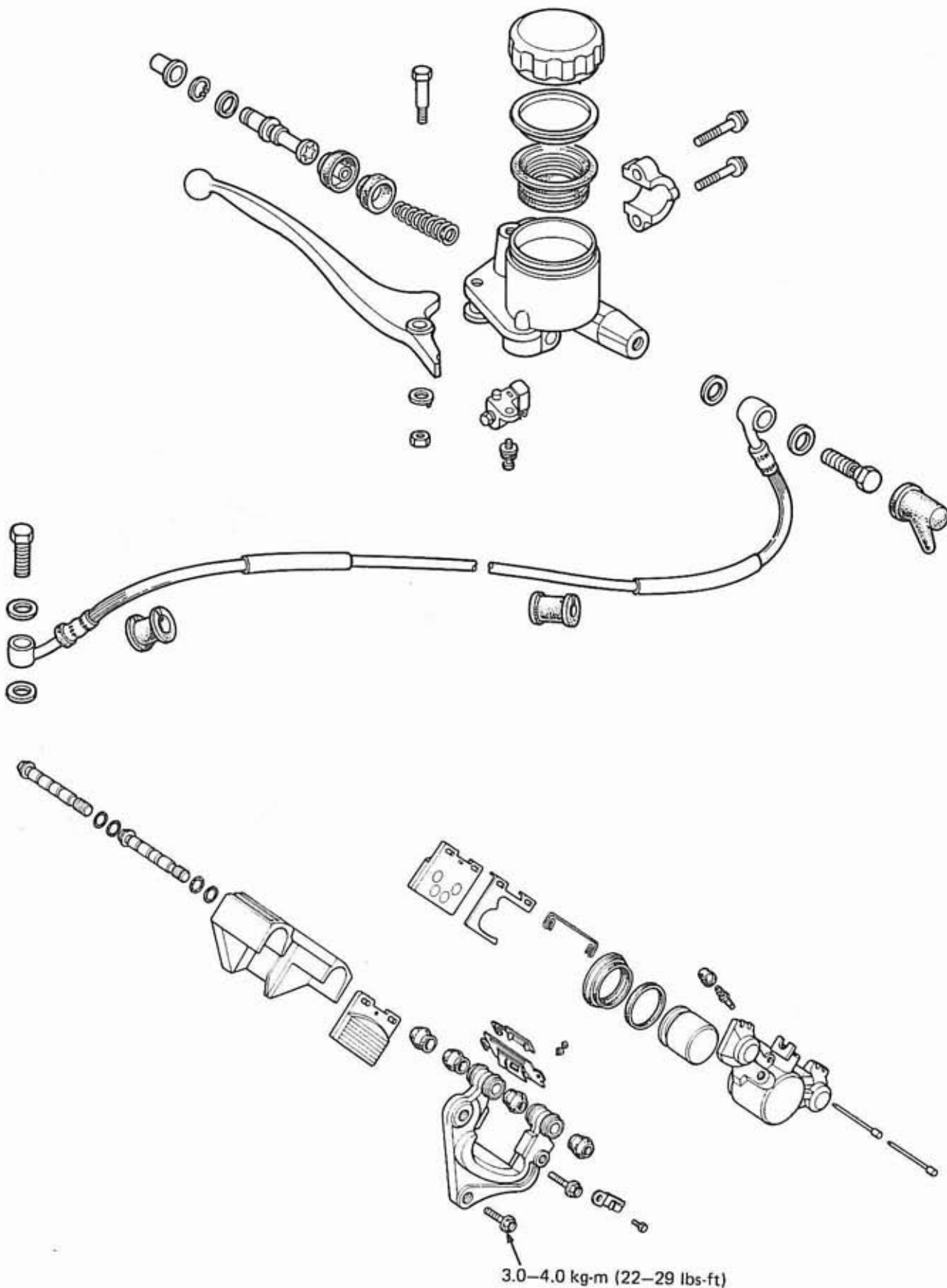
Note the location of the stoplight switch spring.



# HYDRAULIC DISC BRAKE



**HONDA**  
**CB400T**





SERVICE INFORMATION	14-1
TROUBLESHOOTING	14-1
BRAKE FLUID REPLACEMENT/ AIR BLEEDING	14-2
BRAKE PADS/DISC PLATE	14-3
BRAKE MASTER CYLINDER	14-6
BRAKE CALIPER	14-8

## SERVICE INFORMATION

### • SPECIAL TOOL

SNAP RING PLIERS                      07914-3230001

### • SPECIFICATIONS

	STANDARDS	SERVICE LIMIT
Disc thickness	4.9~5.1 mm (0.19~0.20 in.)	4.0 mm (0.16 in.)
Disc runout	_____	0.3 mm (0.012 in.)
Master cylinder I.D.	14.000~14.043 mm (0.5512~0.5529 in.)	14.055 mm (0.5533 in.)
Master piston O.D.	13.957~13.984 mm (0.5495~0.5506 in.)	13.940 mm (0.5488 in.)
Caliper piston O.D.	38.115~38.180 mm (1.5006~1.5031 in.)	38.105 mm (1.5002 in.)
Caliper cylinder I.D.	38.180~38.200 mm (1.5031~1.5039 in.)	38.215 mm (1.5045 in.)

## TROUBLESHOOTING

### Poor Brake Performance

- Air bubbles in hydraulic system
- Worn brake pads
- Pads fouled or glazed
- Hydraulic system leaking





## BRAKE FLUID REPLACEMENT/AIR BLEEDING

Check the fluid level with the fluid reservoir parallel with the ground.

### CAUTION

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

### • BRAKE FLUID DRAINING

Loosen the caliper bleeder valve and pump the brake lever.

Stop operating the lever when no fluid flows out of the bleeder valve.

### • BRAKE FLUID FILLING

#### CAUTION

Do not mix different brands of fluid since they are not compatible.

Close the bleeder valve, fill the reservoir, and install the diaphragm.

To prevent piston overtravel and brake fluid seepage, keep a 20 mm space to the handlebar grip when bleeding the front brake system. Pump up the system pressure with the lever until there are no air bubbles in the fluid flowing out of the reservoir small hole (until lever resistance is felt).

### • AIR BLEEDING

#### NOTE

Check the fluid level often while bleeding the brake, to prevent air from being pumped into the system.

Pull the brake lever all the way back to the handlebar grip. Loosen the bleeder valve about 1/2 turn, and retighten.

#### NOTE

Do not release the lever until the bleeder valve has been closed.

Release the lever gradually and wait several seconds after it reaches the end of its travel.

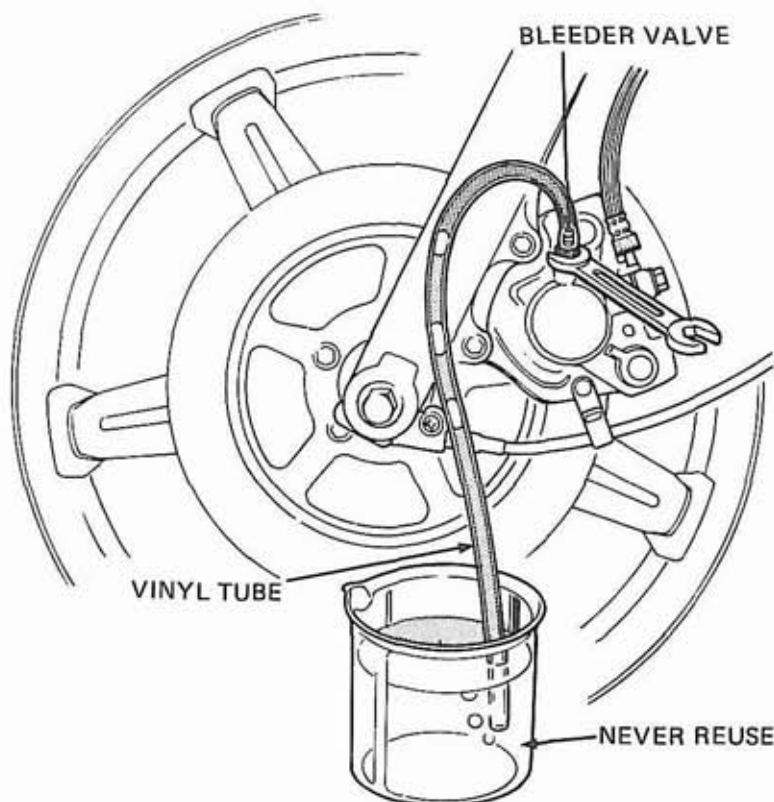
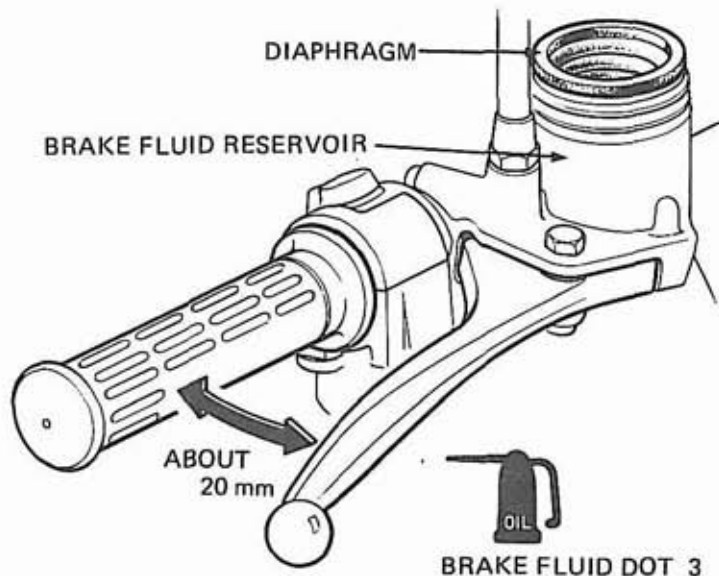
Repeat the above steps until there are no air bubbles in the fluid flowing out of the bleeder valve.

Fill the reservoir to the UPPER FLUID LEVEL.

Check the entire system for leaks by operating the lever.

### WARNING

A contaminated brake disc or pads reduces stopping power. Replace contaminated pads, and clean a contaminated disc with a good quality degreasing agent.

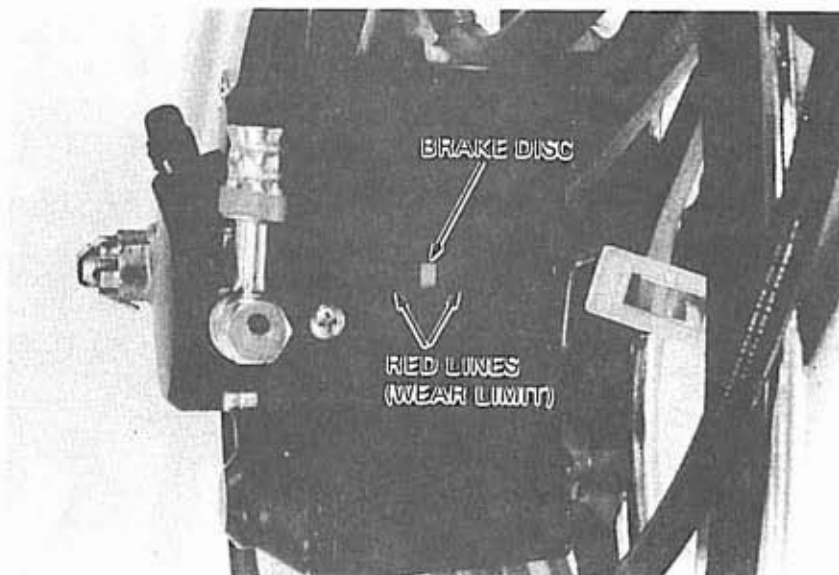




## BRAKE PADS/DISC PLATE

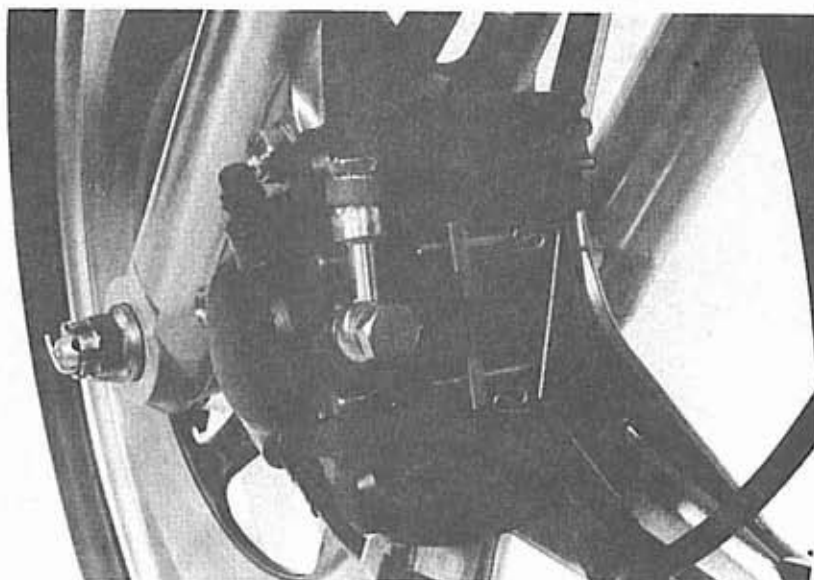
### • BRAKE PAD WEAR CHECK

The front brake pads require replacement if the red line on the top of the pads reaches the edges of the brake disc.

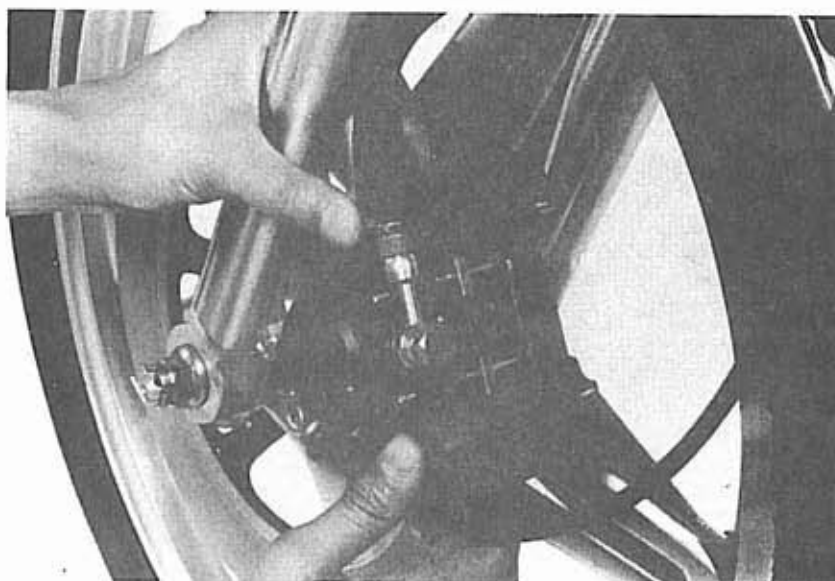


### • BRAKE PAD REPLACEMENT

Remove the caliper cover.  
Pull off the clip.

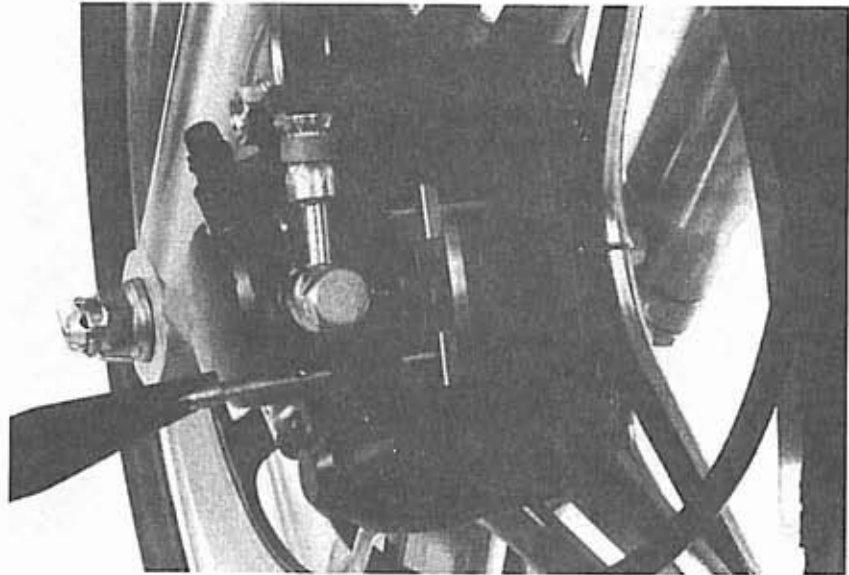


Push the caliper toward the right and push the piston all the way in to allow installation of new brake pads.

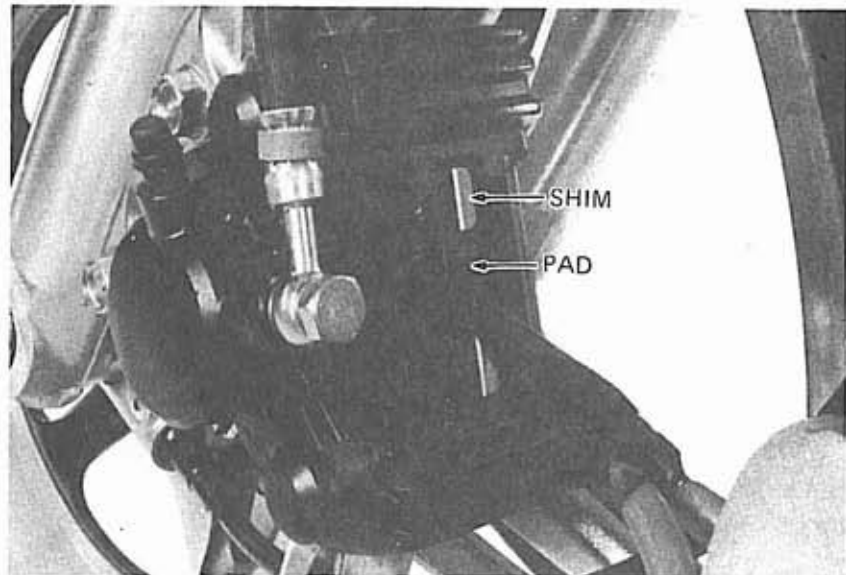




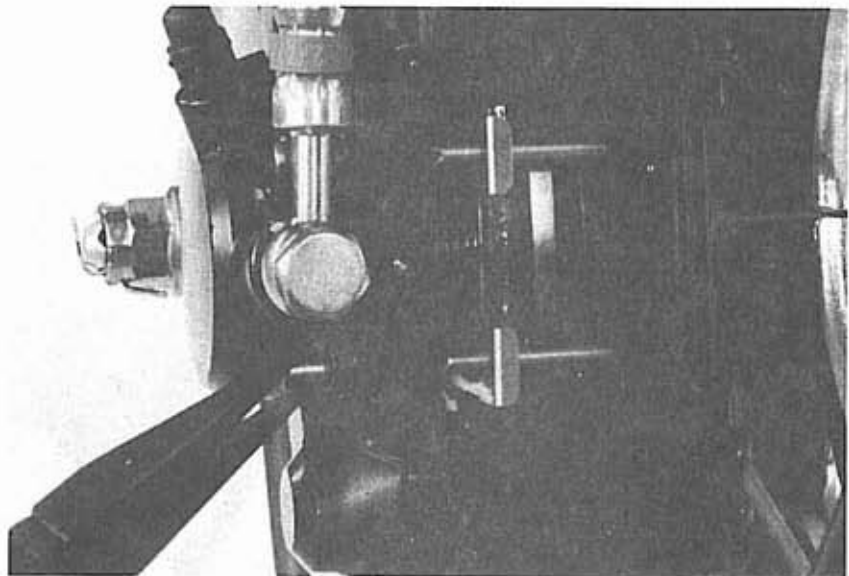
Remove the pin with a pair of pliers.



Install the new brake pads and the shim on the piston side pad.

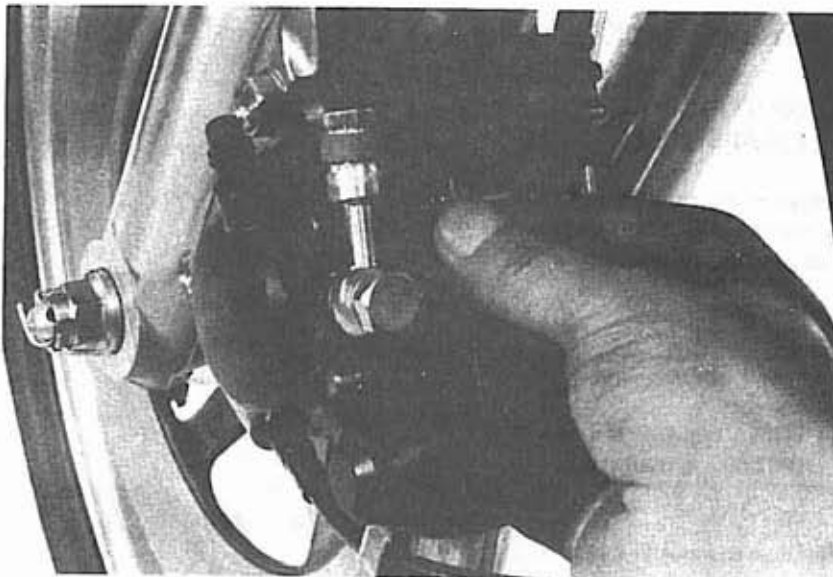


Insert the pin with the pin hole facing out as shown.



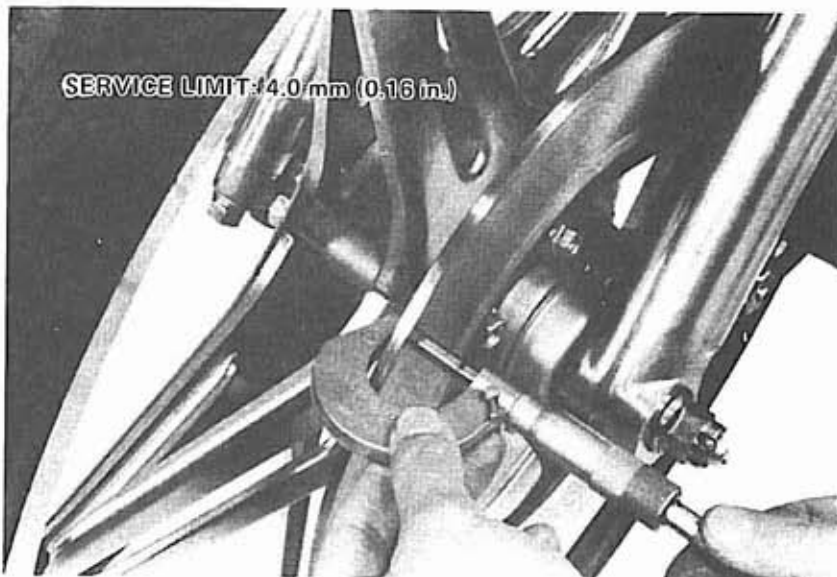


Insert the clip into place in the pin hole.  
Install the caliper cover.



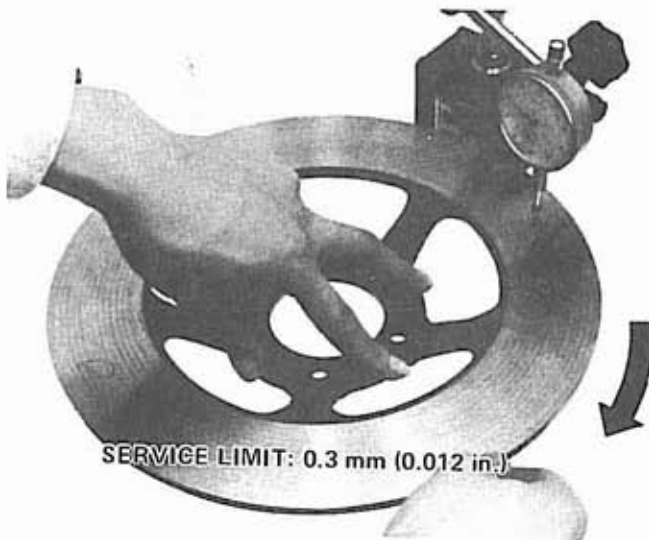
- **DISC THICKNESS**

Measure the disc thickness.



- **BRAKE DISC WARPAGE**

Measure the brake disc warpage.





## BRAKE MASTER CYLINDER

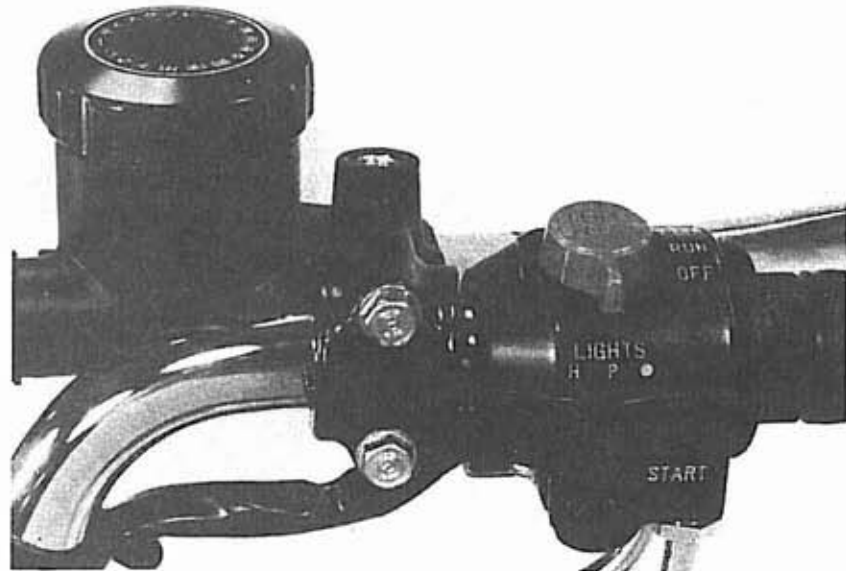
### • MASTER CYLINDER DISASSEMBLY

Drain brake fluid from the hydraulic system. Remove the brake lever from the master cylinder. Disconnect the brake hose.

#### CAUTION

Avoid spilling brake fluid on painted surfaces.

Place a rag over the fuel tank whenever the brake system is serviced.



Remove the master cylinder.

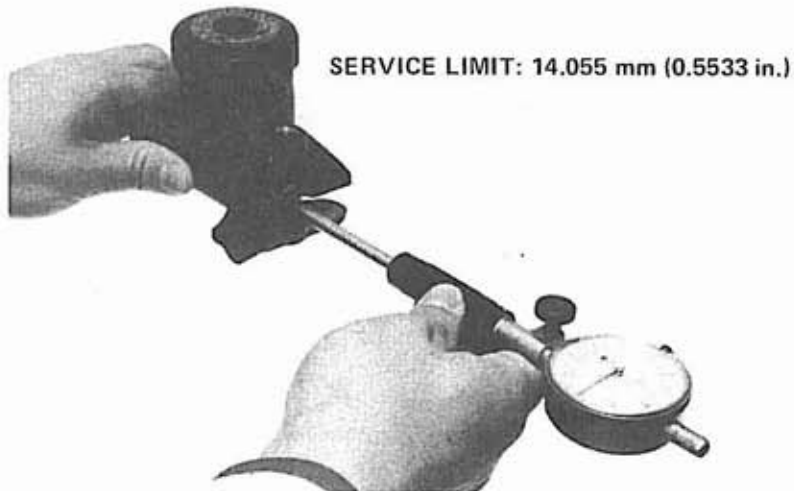
Remove the snap ring.



### • MASTER CYLINDER I.D. INSPECTION

Measure the master cylinder I.D..

Check the master cylinder for scores, scratches, nicks or other defects.



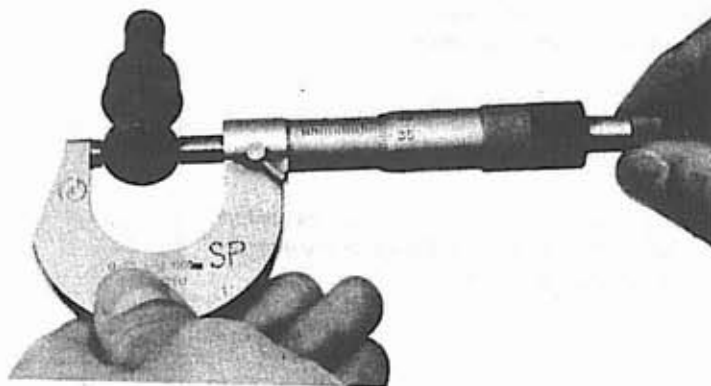




- **MASTER PISTON O.D. INSPECTION**

Measure the master piston O.D..

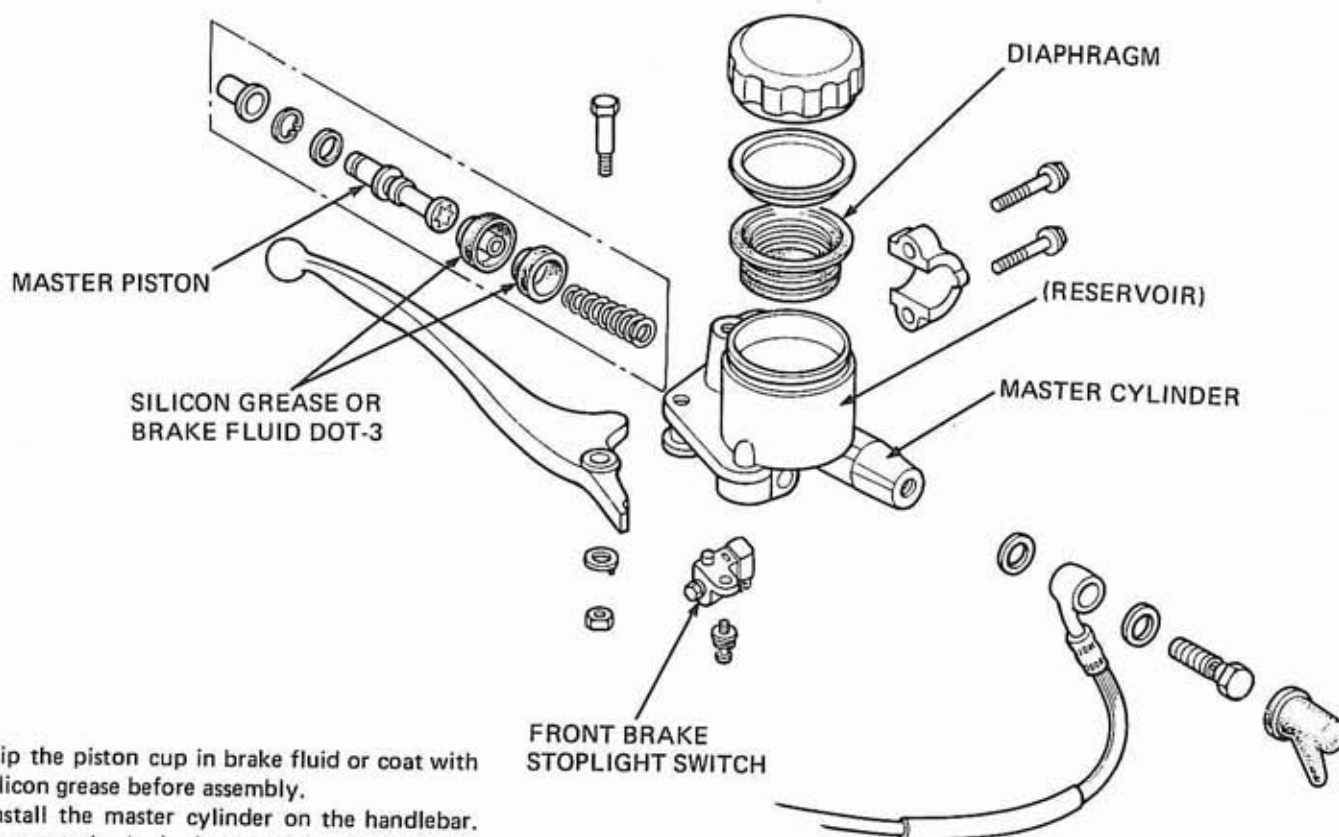
**SERVICE LIMIT: 13.940 mm (0.5488 in.)**



- **MASTER CYLINDER ASSEMBLY**

**CAUTION**

Handle the master cylinder piston, cylinder and spring as a set.



Dip the piston cup in brake fluid or coat with silicon grease before assembly.  
Install the master cylinder on the handlebar.  
Connect the brake hose and install the brake lever.  
Bleed the front brake system.





## BRAKE CALIPER

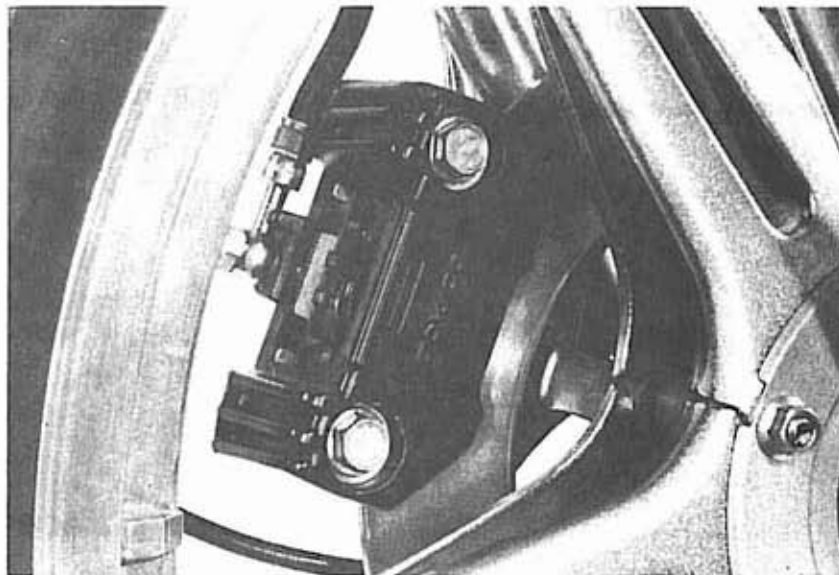
### • CALIPER A REMOVAL

Drain the brake hydraulic system.  
Disconnect the brake hose.  
Remove the inspection cover.

#### NOTE

Avoid spilling brake fluid on painted surfaces.

To remove caliper A, loosen the two caliper shafts gradually in several steps while pressing them against the caliper.



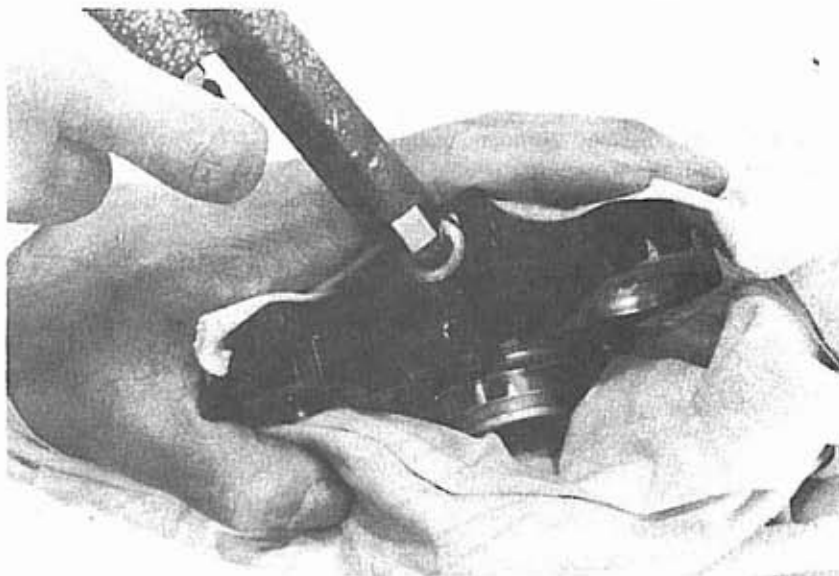
### • BRAKE CALIPER A DISASSEMBLY

Place a shop towel or rag over the piston to prevent the piston from coming out, and position the caliper with the piston down. Apply a small amount of air pressure to the fluid inlet.

#### WARNING

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

Examine the piston and cylinder for scoring, scratches or other defects and replace if necessary.



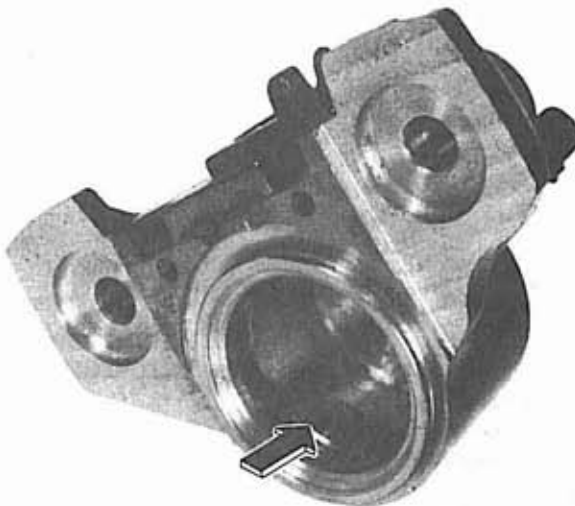
Lift out the oil seal by first pushing it into the cylinder as shown.

Clean the caliper grooves with brake fluid.

### • CALIPER A ASSEMBLY

The oil seal must be replaced with a new one whenever disassembled.

Coat the oil seal with silicon grease or brake fluid before assembly. Install the caliper A with the dished end of the piston on the brake pad side.





### • CALIPER PISTON O.D.

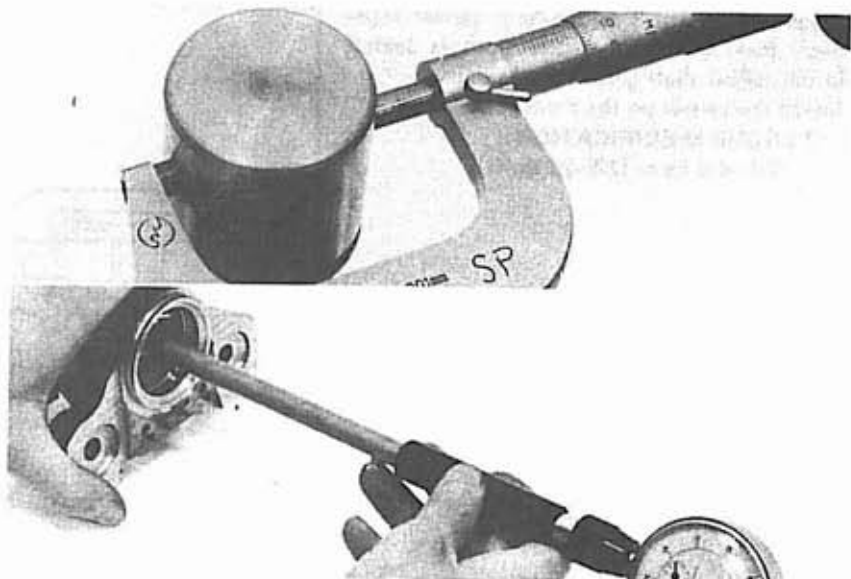
Check the piston for scoring, scratches or other defects. Measure the piston diameter with a micrometer.

**SERVICE LIMIT: 38.105 mm (1.5002 in.)**

### • CALIPER CYLINDER I.D.

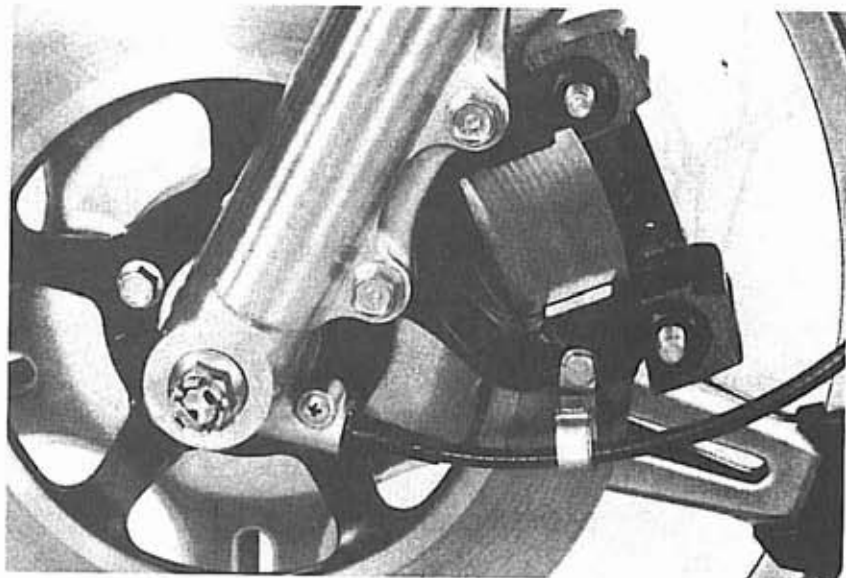
Check the caliper cylinder for scoring, scratches or other defects. Measure the inside diameter of the caliper cylinder bore.

**SERVICE LIMIT: 38.215 mm (1.5045 in.)**



### • CALIPER CARRIER/CARRIER B DISASSEMBLY

Remove the speedometer cable clamp.  
Remove the carrier with caliper B.



Remove the caliper shafts off the carrier and caliper B while rotating them by hand. Avoid damaging the boots.

### • CALIPER CARRIER/CALIPER B ASSEMBLY

Wash all the removed parts. Coat the O-rings with silicon grease or brake fluid and install into place in the shaft center grooves.

#### NOTE

Replace the O-rings with new ones whenever disassembled. Replace the boots with new ones if damaged.

Install the boots on the carrier.

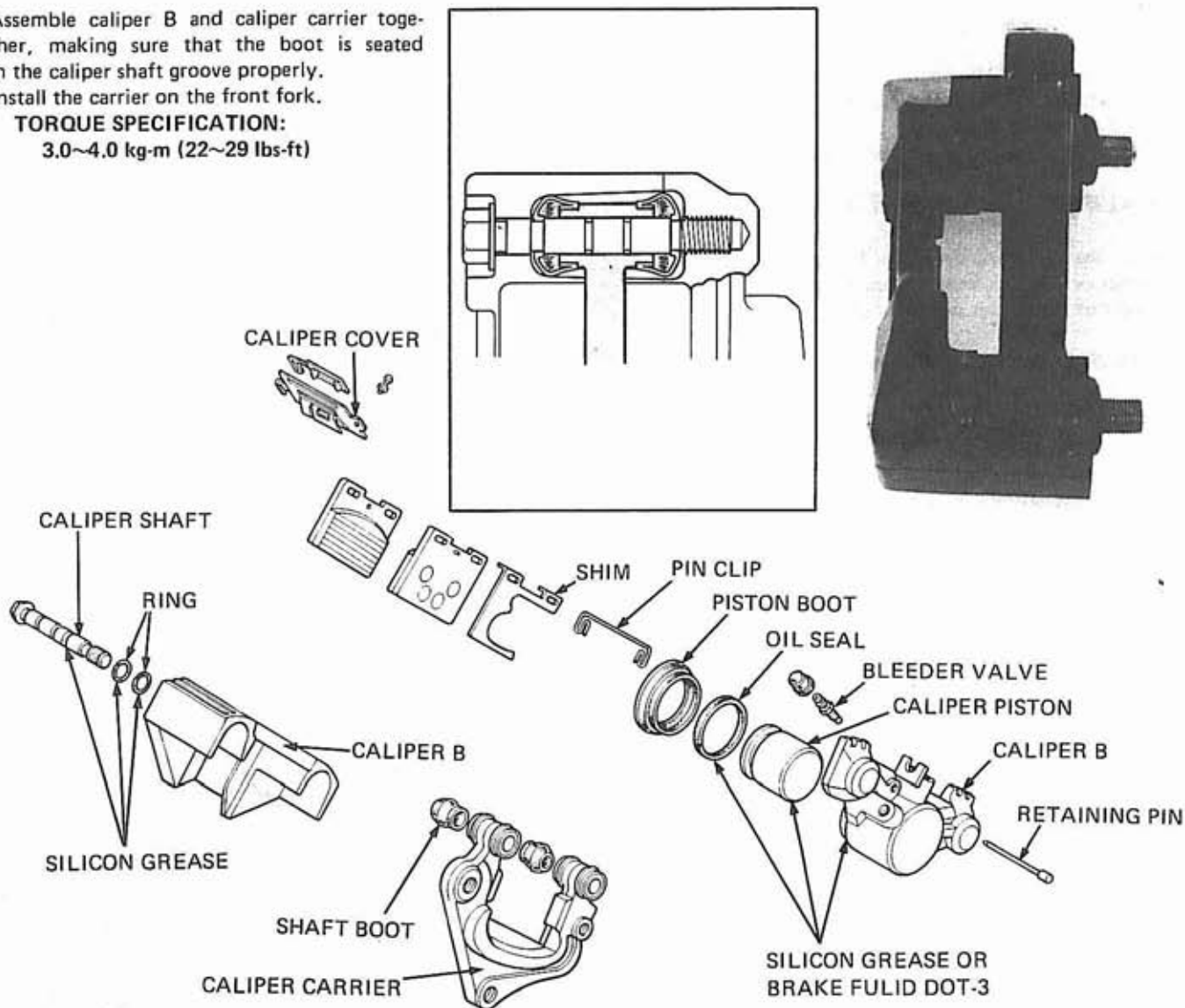




Assemble caliper B and caliper carrier together, making sure that the boot is seated in the caliper shaft groove properly. Install the carrier on the front fork.

**TORQUE SPECIFICATION:**

3.0~4.0 kg-m (22~29 lbs-ft)



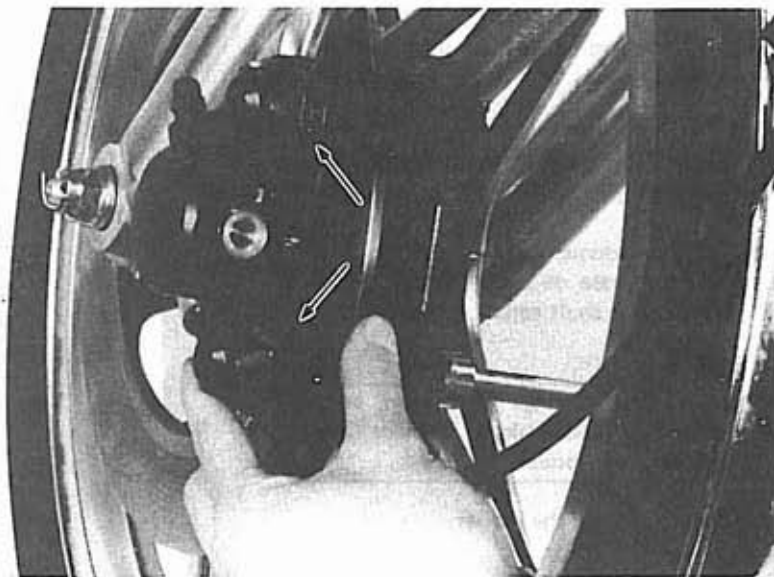
• CALIPER A INSTALLATION

Tighten the caliper shafts evenly while pushing them against caliper B.

**NOTE**

Tighten the shafts carefully, noting the mating faces of calipers A and B.

Connect the brake hose.  
Install the inspection cover.  
Bleed the brake system.





SERVICE INFORMATION	15-1
TROUBLESHOOTING	15-2
BATTERY	15-3
CHARGING SYSTEM	15-5
A.C. GENERATOR REMOVAL/ INSTALLATION	15-6

## SERVICE INFORMATION

### • WORKING PRACTICE

Battery acid level should be checked regularly and filled with distilled water when necessary.

When charging the battery, quick-charging should only be done in an emergency; slow-charging is preferred.

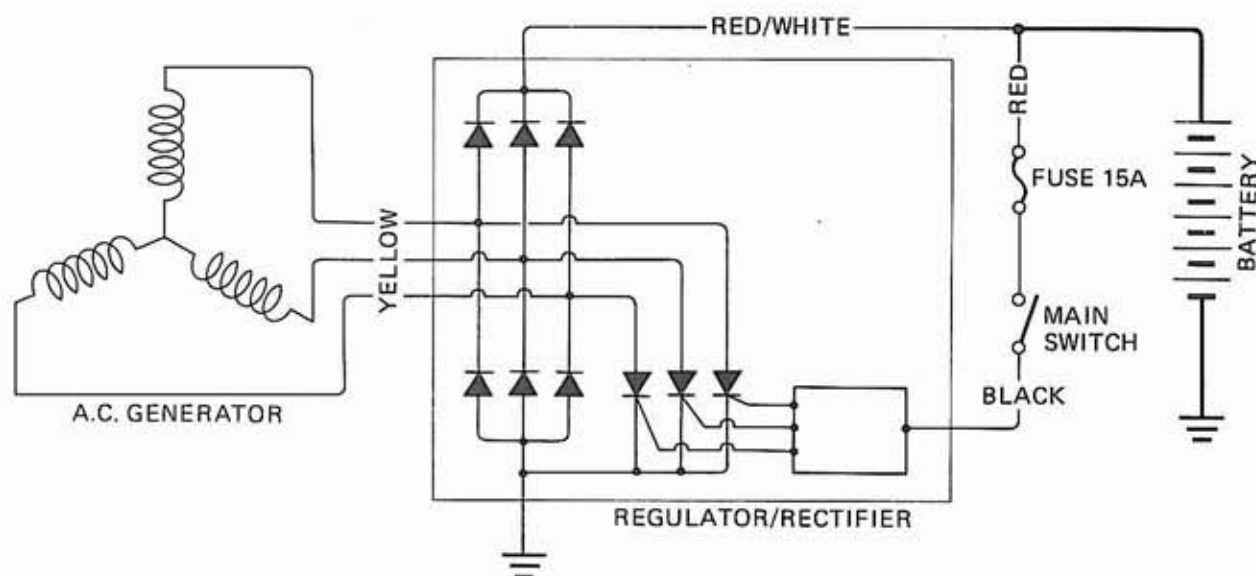
Remove the battery from the motorcycle for charging whenever possible. If battery must be charged on the motorcycle, disconnect the battery cables.

Keep fire or sparks away from a charging battery because it produces hydrogen.

All charging system components can be tested on the motorcycle.

### • SPECIFICATIONS

Battery	Capacity	12V, 12 ampere-hours (TYPE 1 : 12V, 9 ampere-hours)
	Specific gravity	TYPE II: 1.28, TYPE I: 1.27/20°C (68°F)
	Charging rate	1.2 amperes maximum (0.9 amperes maximum)
AC generator	Capacity	NIGHT: 5 amperes minimum/5,000 rpm (14.5 volts)
Voltage regulator		Transistorized non-adjustable regulator



## TROUBLESHOOTING

### No Power — Key Turned On:

1. Dead battery
  - Battery not charged
  - Battery electrolyte evaporated
  - Battery run down
  - Charging system failure
2. Disconnected battery cable
3. Main fuse burned out
4. Faulty ignition switch

### Low Power — Key Turned On:

1. Weak battery
  - Low battery electrolyte level
  - Battery run down
  - Charging system failure
2. Loose battery connection

### Low Power — Engine Running:

1. Battery undercharged
  - Low battery electrolyte level
  - One or more dead cells
2. Charging system failure

### Intermittent Power:

1. Loose battery connection
2. Loose charging system connection
3. Loose starting system connection
4. Loose connection or short circuit in ignition system
5. Loose connection or short circuit in lighting system

### Charging System Failure:

1. Loose, broken, or shorted wire or connection
2. Faulty voltage regulator
3. Faulty silicon rectifier
4. Faulty AC generator

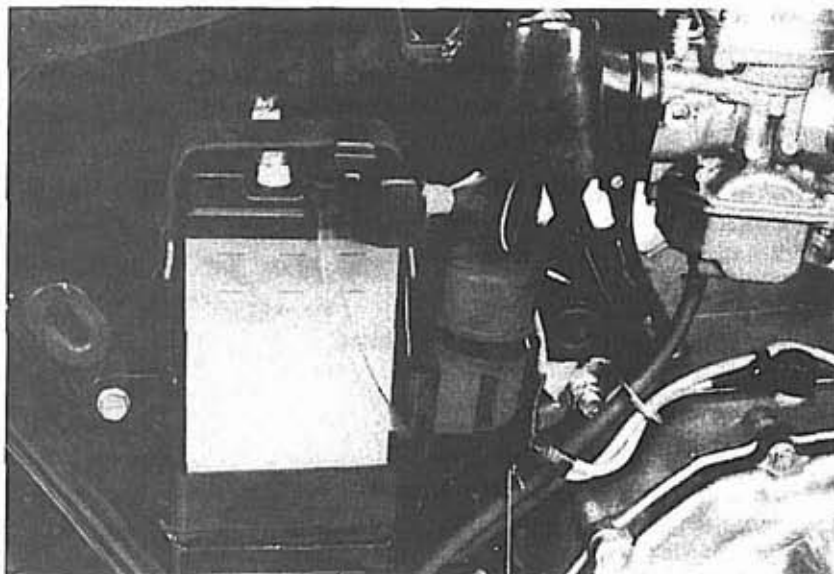




### BATTERY

#### • REMOVAL

Disconnect the ground cable at the frame.  
Remove the battery strap.  
Disconnect the positive (+) cable at the battery.  
Remove the battery.

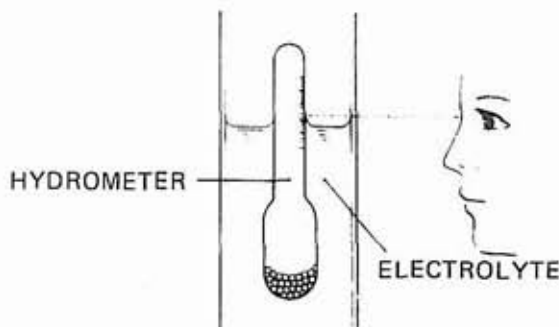


#### • TESTING SPECIFIC GRAVITY

Test each cell by drawing electrolyte into the hydrometer.

SPECIFIC GRAVITY (20°C, 68°F)

TYPE I	TYPE II	
1.26–1.28	1.27–1.29	Fully charged
1.25	1.26	Undercharged



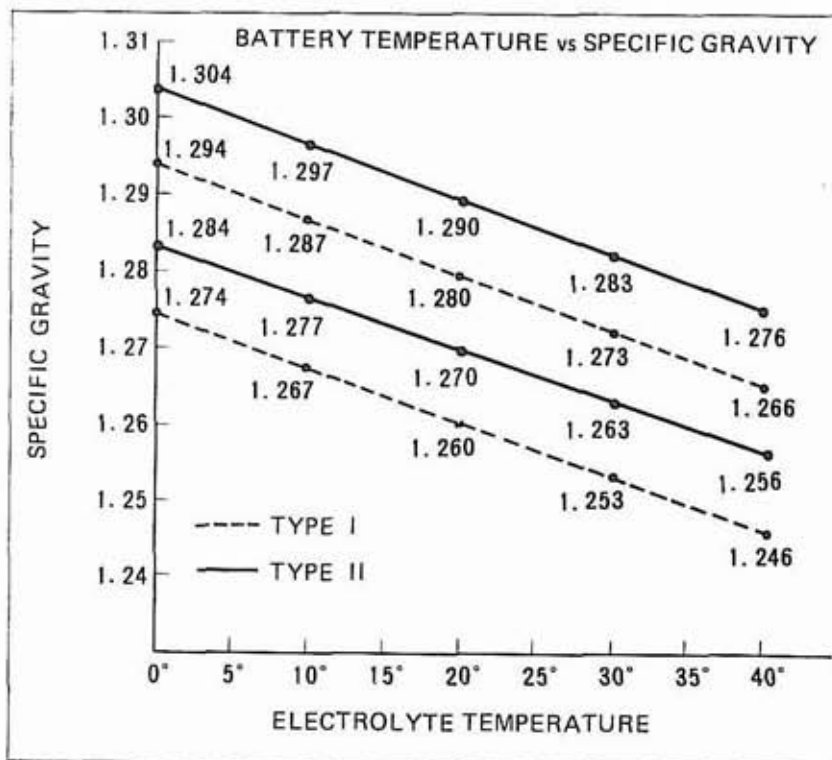
#### NOTE

- The battery must be recharged if the specific gravity is below 1.23 (TYPE I : 1.22).
- The specific gravity varies with the temperature as shown in the accompanying table.
- Replace the battery if sulfation is evident.
- The battery must be replaced if there are pastes settled on the bottom of each cell.

#### WARNING

*The battery contains sulfuric acid. Avoid contact with skin, eyes, or clothing.*

*Antidote: Flush with water and get prompt medical attention.*



Specific gravity changes by 0.007 for every 10°C



## • BATTERY CHARGING

### Hookup instruction:

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

Connect the charger negative (−) cable to the battery negative (−) terminal.

### Charging current:

1.2 amperes maximum

(TYPE I : 0.9 amperes maximum)

### Charging:

Charge the battery until specific gravity is 1.27~1.29 at 20°C (68°F)

(TYPE I: 1.26~1.28)

### WARNING

- Before charging a battery, remove the cap from each cell.
- Keep fire and sparks away from a charging battery.
- Turn power ON/OFF at the charger, not at the battery terminals.
- Discontinue charging if the electrolyte temperature exceeds 45°C (117°F).

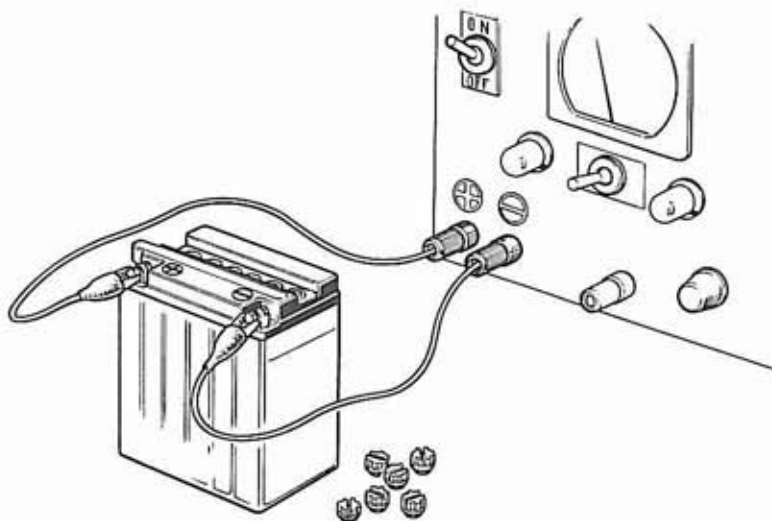
### CAUTION

- Quick-charging should only be done in an emergency; slow-charging is preferred.

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

### CAUTION

Route the breather tube as shown on the battery caution label.

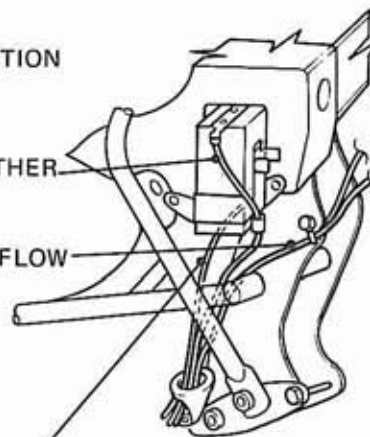


### CAUTION

BATTERY BREATH-  
ER TUBE

CARBURETOR OVERFLOW  
TUBE

CATCH TANK DRAIN TUBE



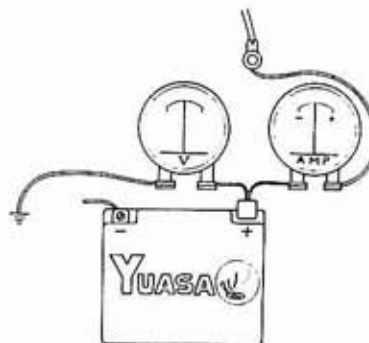
## CHARGING SYSTEM

### • CHARGING OUTPUT TEST

Warm up the engine before taking readings. Disconnect the regulator/rectifier black wire. Connect a voltmeter and an ammeter to check charging system output.

### NOTE

Use a fully charged battery to check the charging system output.



### TECHNICAL DATA:

MAIN SWITCH	LIGHTING SWITCH	CHARGING RPM	5,000 rpm
ON	ON (High beam)	1,200 rpm	5 amperes minimum/14.5 volts)

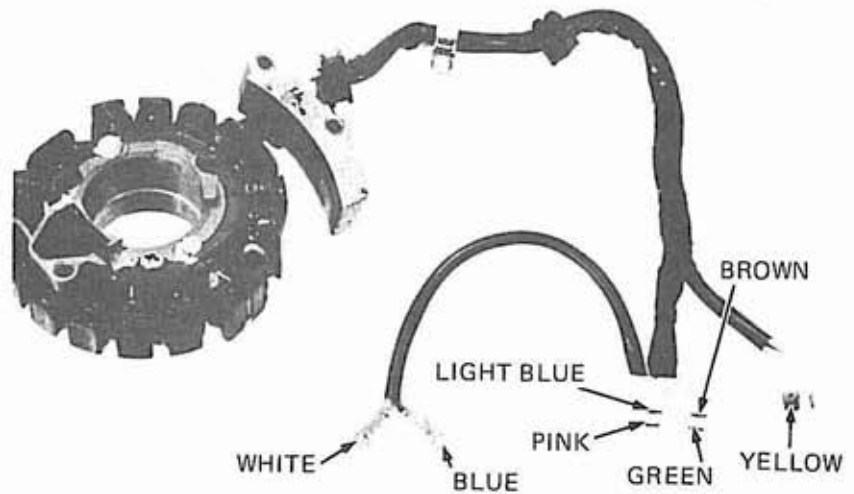


### • STATOR COIL CONTINUITY TEST

#### NOTE

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

Check the yellow leads to the AC generator stator for continuity with each other. Replace the stator if any yellow lead is not continuous with the others, or if any lead has continuity to ground.



### • VOLTAGE REGULATOR/RECTIFIER TEST

Check the resistances between the leads with an ohmmeter.

#### WARNING

*Do not use a high voltage source such as insulation resistance tester since it may damage the rectifier and give you a shock.*

#### RESISTANCES IN NORMAL DIRECTION

GREEN LEAD AND ANY

YELLOW LEAD: 5~40  $\Omega$

RED/WHITE LEAD AND ANY

YELLOW LEAD: 5~40  $\Omega$

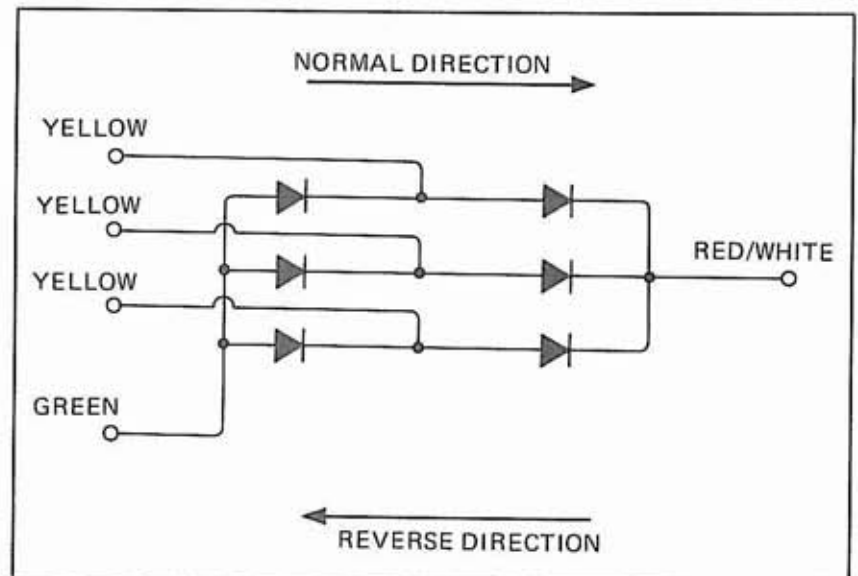
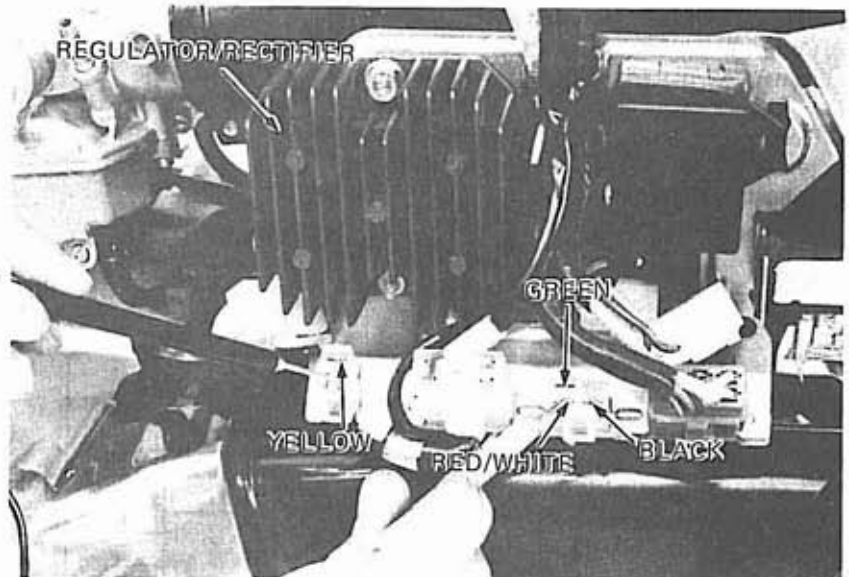
#### RESISTANCES IN REVERSE DIRECTION

RED/WHITE LEAD AND ANY

YELLOW LEAD: 2000 $\Omega$  minimum

GREEN LEAD AND ANY

YELLOW LEAD: 2000 $\Omega$  minimum



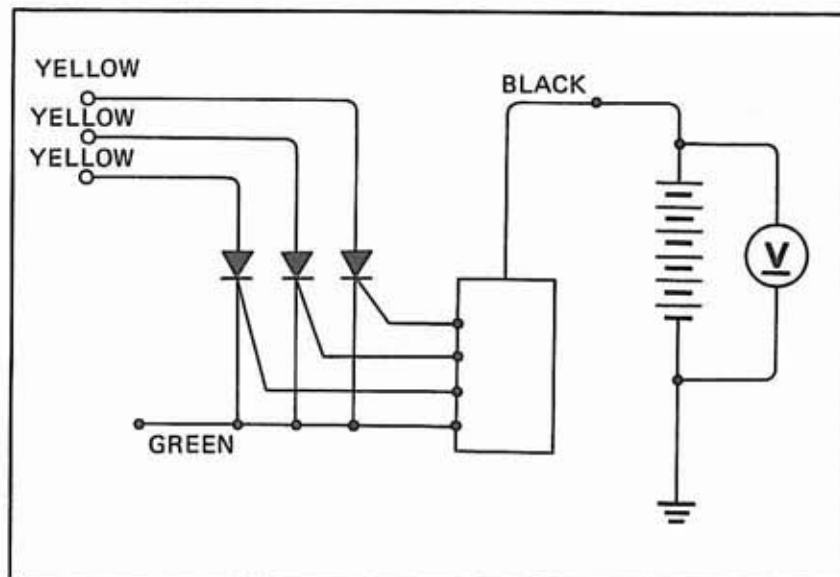


### • VOLTAGE REGULATOR PERFORMANCE TEST

#### a. Testing with a voltmeter

Connect a voltmeter across the battery. Check regulator performance with the engine running.

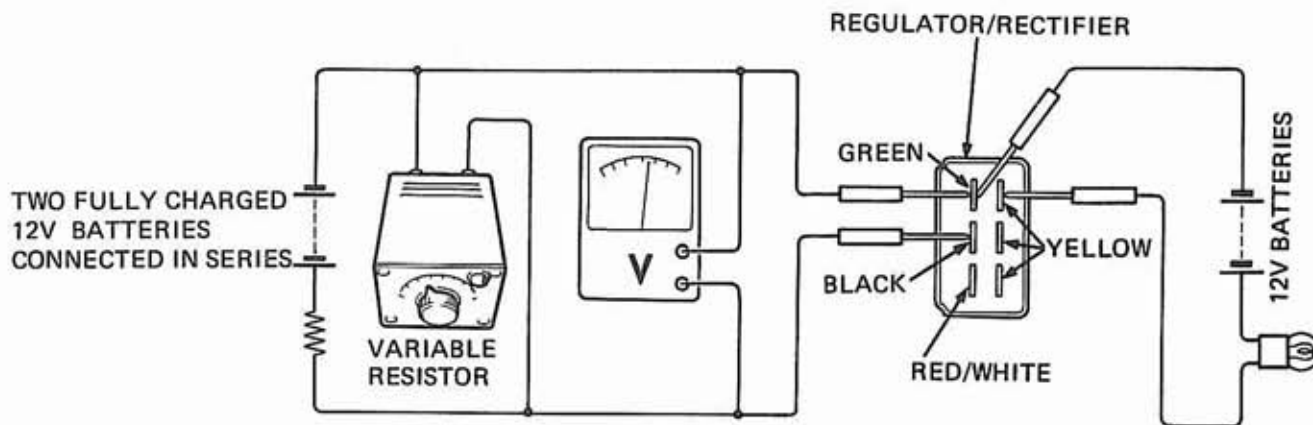
Regulator must divert current to ground when battery voltage reaches 14.0~15.0 V.



#### b. Testing with a variable resistor

Connect a variable resistor (0~100Ω) across the battery with a 50Ω resistor in between.

Test lamp must come on when voltage reads 14 to 15 V on the voltmeter by adjusting the variable resistor.



## A. C. GENERATOR REMOVAL/ INSTALLATION

For removal and installation procedure, see Section 9.



SERVICE INFORMATION	16-1
TROUBLESHOOTING	16-2
SPARK PLUG	16-3
IGNITION COIL	16-3
C.D.I. UNIT	16-4
A.C. GENERATOR	16-4

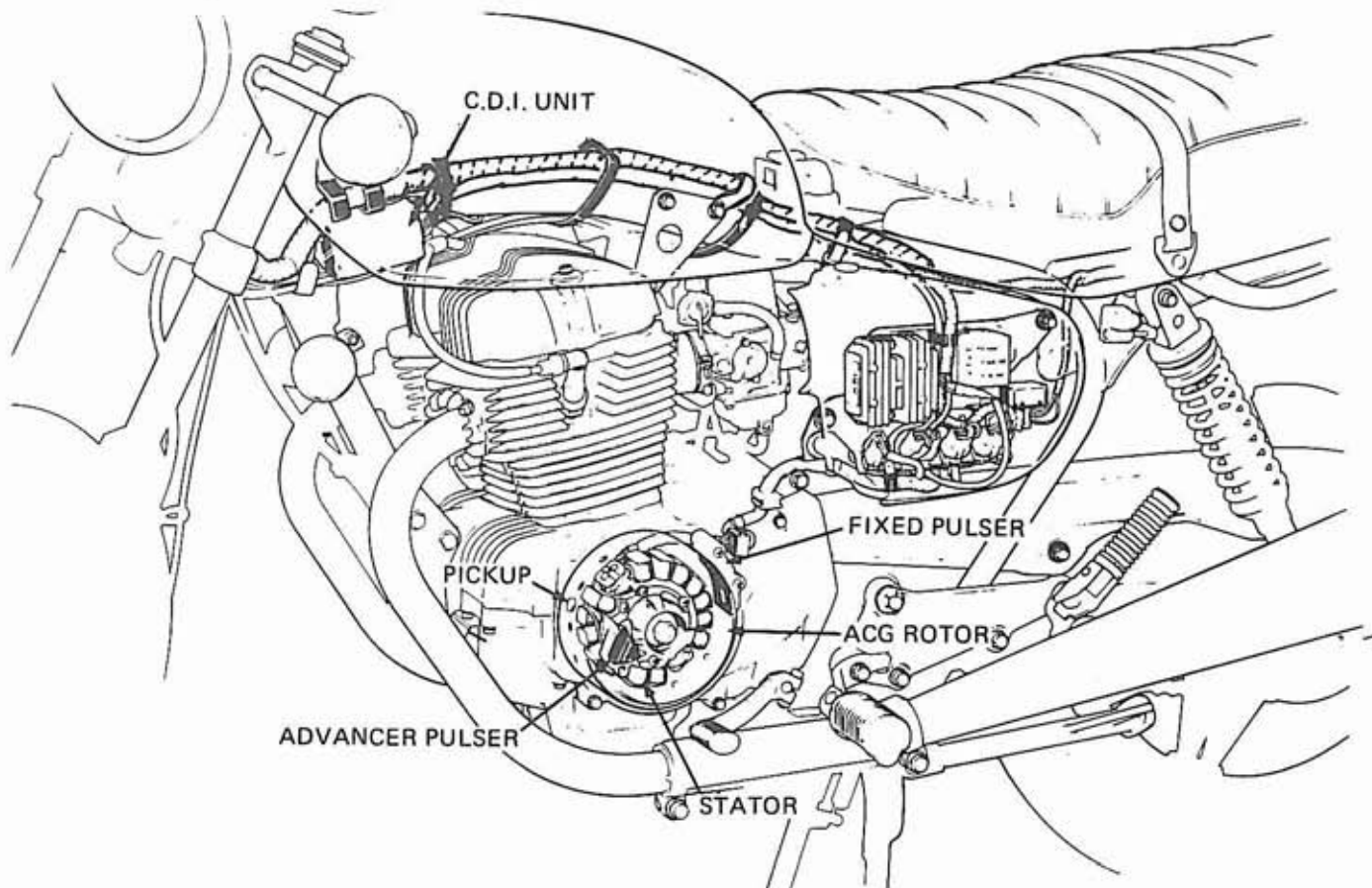
## SERVICE INFORMATION

### • WORKING PRACTICE

Ignition timing cannot be adjusted since the C.D.I. (Capacitive Discharge Ignition) unit is non-adjustable. If ignition timing is incorrect, check the C.D.I. unit and AC generator and replace any defective part.

### • SPECIFICATIONS

Spark plug		ND X24ES-U NGK D8EA
Spark plug gap		0.6~0.7 mm (0.024~0.028 in.)
Ignition timing	Initial	15°
	Full advance	43°
	Engine speed (initial)	1,600~2,000 rpm
	Engine speed (full advance)	4,500~5,350 rpm
Ignition coil	3-point spark test	6 mm (0.24 in.) minimum



## TROUBLESHOOTING

### Engine Cranks but Will Not Start:

- Engine stop switch OFF
- No spark at plugs
- Defective C.D.I. unit
- AC generator faulty

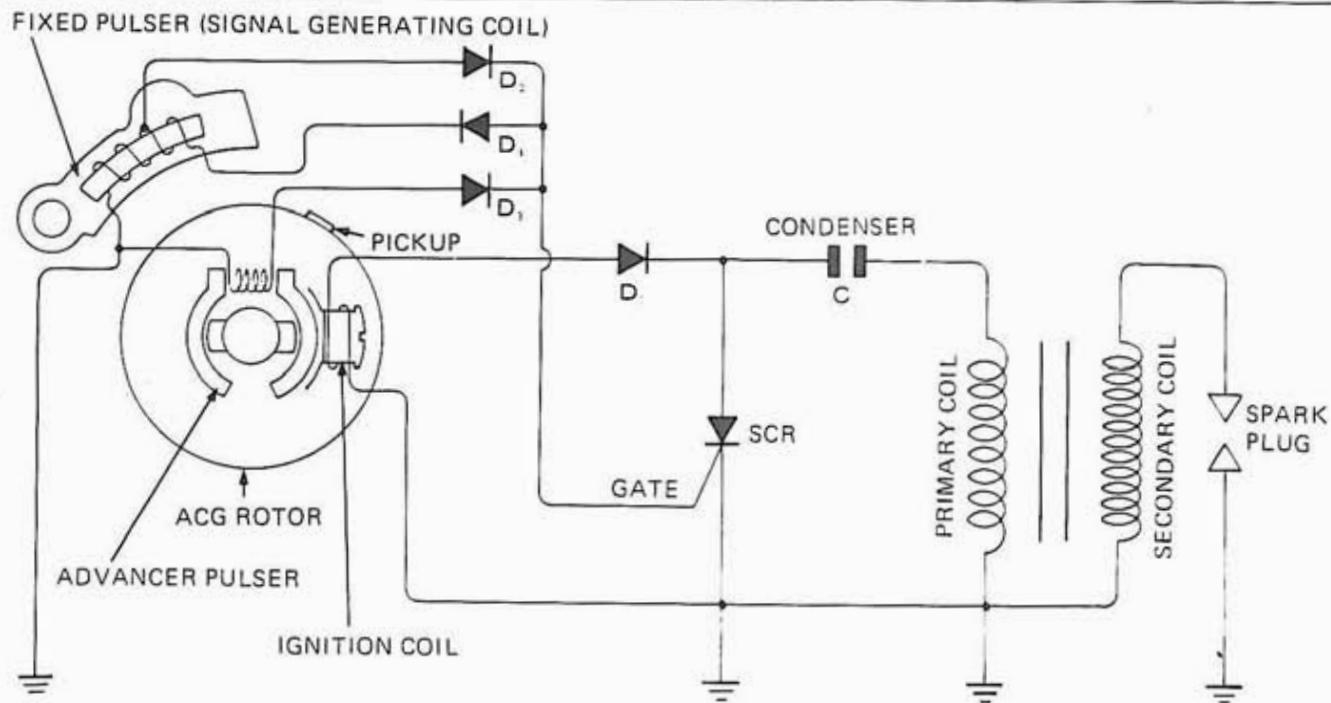
### No Spark at Plugs

- Engine stop switch OFF
- Poorly connected, broken or shorted wires
  - . Between AC generator and ignition coil
  - . Between C.D.I. unit and engine stop switch
  - . Between C.D.I. unit and ignition coil
  - . Between C.D.I. unit and ignition switch
  - . Between ignition coil and plug
- Defective ignition switch
- Defective ignition coil
- C.D.I. unit faulty
- Defective AC generator

### Engine Starts but Runs Poorly

- Ignition primary circuit
  - . Defective ignition coil
  - . Loose or bare wire
  - . Intermittent short-circuit in a switch
- Secondary circuit
  - . Defective plug
  - . Defective high tension cord
- Secondary circuit
  - . Defective AC generator
  - . Defective C.D.I. unit





SCHEMATIC DIAGRAM OF C.D.I. SYSTEM

## SPARK PLUG

For spark plug gap inspection and adjustment procedure, see Section 3.

## IGNITION COIL

### • REMOVAL

Remove the fuel tank.  
Disconnect the wire leads.  
Remove the coil attaching bolts and coil.

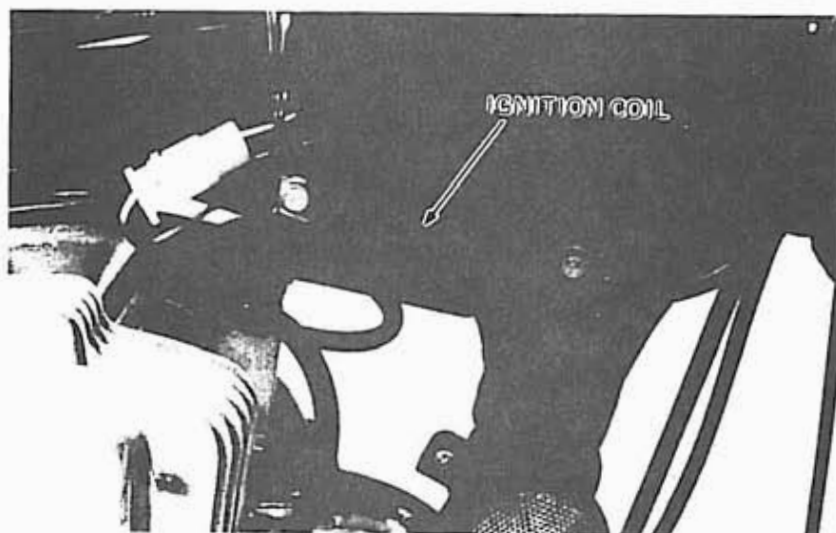
### • PERFORMANCE TEST

Perform the 3-point spark test with a coil tester.

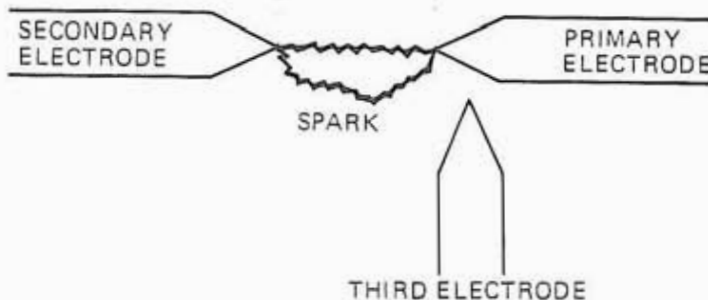
**SERVICE LIMIT:**  
6 mm (0.24 in.) minimum

#### NOTE

For wire connections, follow the instructions supplied with the coil tester.



6 mm (0.24 in.) MINIMUM





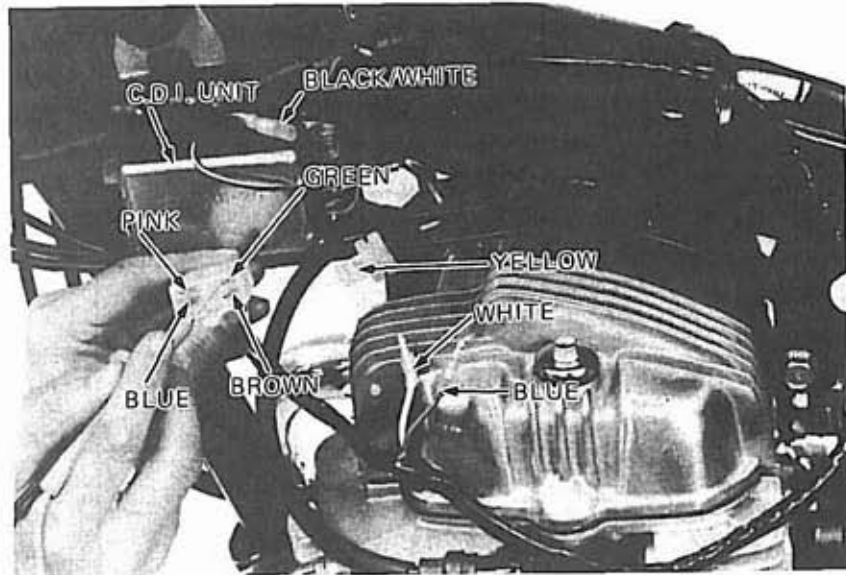
## C. D. I. UNIT

### • INSPECTION

Disconnect wiring. Set the tester at  $xk\Omega$  or  $x100\Omega$  and check continuity of C.D.I. terminals. Replace the C.D.I. unit if the readings do not fall within the limits shown in the table.

#### NOTE

- The C.D.I. unit is fully transistorized. For accurate testing, it is necessary to use a specified electrical tester.
- Use of an improper tester or measurements in improper range may give false readings.
- Use SANWA ELECTRICAL TESTER (SP-10D) P/N 07308-0020000 or KOWA ELECTRICAL TESTER (TH-5H).
- Discharge the capacitor before testing.
- "NEEDLE SWINGS AND RETURNS" indicates that a capacitor is being charged with the tester. The tester needle will stay at infinity in subsequent tests unless the capacitor is discharged.



UPPER ROW: MEASURING RANGE  
(SANWA TESTER)  $xk\Omega$

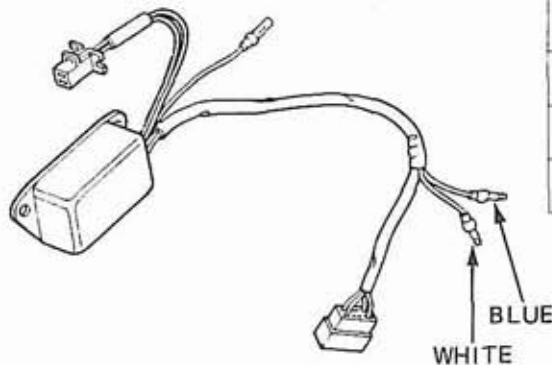
LOWER ROW: MEASURING RANGE  
(KOWA TESTER)  $x100\Omega$

The resistances shown in the table indicate those to be read on the tester, not of specific circuits or parts.

The Specifications in Fig. 1 are applicable to the C.D.I. unit (connectors on the blue and white wires) used on following models:

< CB400T >

F.No. CB400T-20XXXXX  
F.No. CB400T-21XXXXX  
F.No. CB400T-40XXXXX  
F.No. CB400T-41XXXXX  
F.No. ~NC03-2001781



(Fig. 1)

⊖ probe ⊕ probe	Brown	Light Blue	White	Green	Pink	Blue	Black/White	Yellow
Brown		10-20 30-80	500-∞ 1-∞	3-8 10-20	7-11 20-50	500-∞ 1K-∞	500-∞ 1K-∞	500-∞ 1K-∞
Light Blue	1M-∞ 1K-∞		1M-∞ 1K-∞	1M-∞ 1K-∞	1M-∞ 1K-∞	1M-∞ 1K-∞	1M-∞ 1K-∞	1M-∞ 1K-∞
White	1M-∞ 1K-∞	10-20 30-80		3-7 5-20	5-20 15-40	1M-∞ 1K-∞	1M-∞ 1K-∞	1M-∞ 1K-∞
Green	1M-∞ 1K-∞	3-8 10-20	500-∞ 1K-∞		0.5-3 5-20	500-∞ 1K-∞	500-∞ 1K-∞	500-∞ 1K-∞
Pink	1M-∞ 1K-∞	7-12 20-50	500-∞ 1K-∞	0.5-3 5-20		500-∞ 1K-∞	500-∞ 1K-∞	500-∞ 1K-∞
Blue	1M-∞ 1K-∞	1M-∞ 1K-∞	1M-∞ 1K-∞	1M-∞ 1K-∞	1M-∞ 1K-∞		1M-∞ 1K-∞	1M-∞ 1K-∞
Black/White	1M-∞ 1K-∞	10-30 30-80	1M-∞ 1K-∞	3-8 5-20	7-15 15-40	30-100 100-500		∞
Yellow	1M-∞ 1K-∞	∞	∞	∞	∞	∞	∞	

∞: Needle swings and back to ∞.



# HONDA CB400T

## IGNITION SYSTEM

The Specifications in Fig. 2 are applicable to the C.D.I. unit (Coupler on blue and white wire ends) used on the following models;

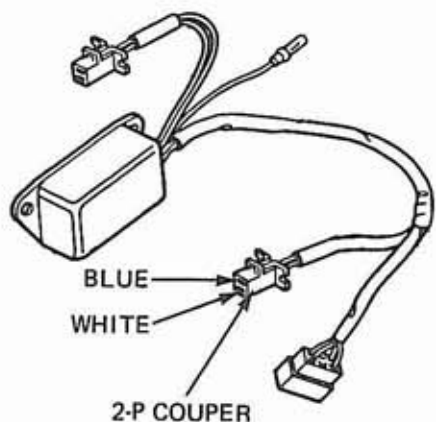
< CB400T >

F.No. ~ NC03-2001782

< CM400T >

F.No. NC01-20XXXXX

F.No. ~ NC01-2110251



(Fig. 2)

Probe (-)		Brown	Light Blue	White	Green	Pink	Blue	Black/White	Yellow
Probe (+)									
Brown			10 ~ 20 30 ~ 80	500 ~ ∞ 1K ~ ∞	3 ~ 8 10 ~ 20	4 ~ 11 15 ~ 50	500 ~ ∞ 1K ~ ∞	500 ~ ∞ 1K ~ ∞	500 ~ ∞ 1K ~ ∞
Light Blue		1M ~ ∞ 1K ~ ∞		1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞
White		1M ~ ∞ 1K ~ ∞	10 ~ 20 20 ~ 60		3 ~ 7 5 ~ 20	2 ~ 20 15 ~ 40	1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞
Green		1M ~ ∞ 1K ~ ∞	3 ~ 8 5 ~ 20	500 ~ ∞ 1K ~ ∞		0.5 ~ 3 5 ~ 20	500 ~ ∞ 1K ~ ∞	500 ~ ∞ 1K ~ ∞	500 ~ ∞ 1K ~ ∞
Pink		1M ~ ∞ 1K ~ ∞	3 ~ 12 10 ~ 40	500 ~ ∞ 1K ~ ∞	0.5 ~ 3 5 ~ 20		500 ~ ∞ 1K ~ ∞	500 ~ ∞ 1K ~ ∞	500 ~ ∞ 1K ~ ∞
Blue		1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞		1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞
Black/White		1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	5 ~ 50 15 ~ 60		1M ~ ∞ 1K ~ ∞
Yellow		1M ~ ∞ 1K ~ ∞	∇	1M ~ ∞ 1K ~ ∞	∇	∇	∇	∇	

∇ : Needle swings and back to ∞.

The Specifications in Fig. 3 are applicable to the C.D.I. unit ("C" mark stamped on the cover) used on the following models;

< CB400T >

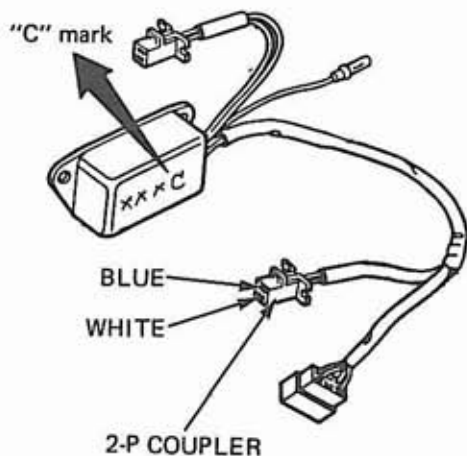
F.No. NC03-2001783~

< CM400T >

F.No. NC01-2110252~

< CM400E >

F.No. NC01-4000009~



(Fig. 3)

Probe (-)		Brown	Light Blue	White	Green	Pink	Blue	Black/White	Yellow
Probe (+)									
Brown			10 ~ 20 30 ~ 80	500 ~ ∞ 1K ~ ∞	3 ~ 8 10 ~ 20	4 ~ 11 15 ~ 50	500 ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	500 ~ ∞ 1K ~ ∞
Light Blue		1M ~ ∞ 1K ~ ∞		1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞
White		1M ~ ∞ 1K ~ ∞	10 ~ 20 20 ~ 60		3 ~ 7 5 ~ 20	2 ~ 20 15 ~ 40	1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞
Green		1M ~ ∞ 1K ~ ∞	3 ~ 8 5 ~ 20	500 ~ ∞ 1K ~ ∞		0.5 ~ 3 5 ~ 20	500 ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	500 ~ ∞ 1K ~ ∞
Pink		1M ~ ∞ 1K ~ ∞	3 ~ 12 10 ~ 40	500 ~ ∞ 1K ~ ∞	0.5 ~ 3 5 ~ 20		500 ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	500 ~ ∞ 1K ~ ∞
Blue		1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞		1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞
Black/White		1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	1M ~ ∞ 1K ~ ∞	20 ~ 100 100 ~ 500		1M ~ ∞ 1K ~ ∞
Yellow		1M ~ ∞ 1K ~ ∞	∇	1M ~ ∞ 1K ~ ∞	∇	∇	∇	1M ~ ∞ 1K ~ ∞	

∇ : Needle swings and back to ∞.



## A. C. GENERATOR

### • INSPECTION

Disconnect the stator wires at their connections.

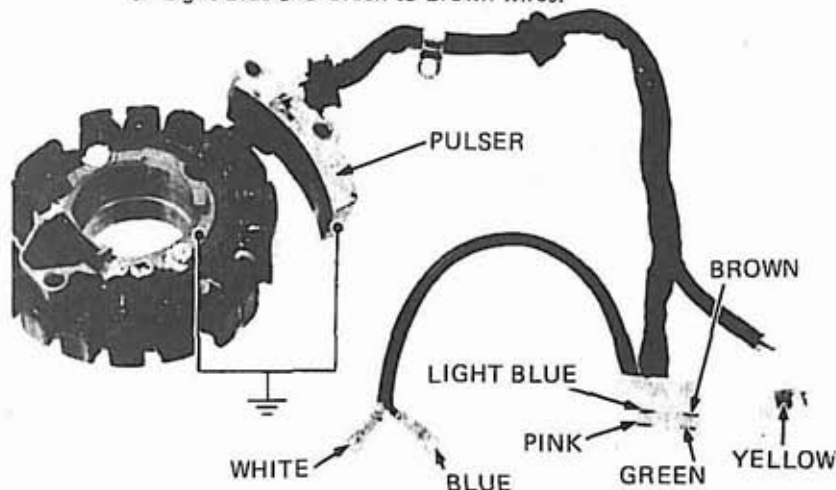
Measure resistances between the terminals.

#### NOTE

- TESTER MEASURING RANGE:  
 $\times 10\Omega$
- Use the HONDA SERVICE TESTER (07308-0020000) to perform this test.

For generator removal and installation procedure, refer to Section 9.

NOTE: Ground the pulser to the stator when bench checking the Green to Light Blue and Green to Brown wires.



WIRE COLOR	RESISTANCE
GREEN-WHITE	400~500 $\Omega$
BLUE-WHITE	75~130 $\Omega$
GREEN-BROWN	75~130 $\Omega$
GREEN-LIGHT BLUE	75~130 $\Omega$
GREEN-PINK	120~180 $\Omega$

The specifications are applicable to the A.C. generator used on the following models;

< CB400T >

E.No. CB400TE-20XXXXX

E.No. CB400TE-40XXXXX

WIRE COLOR	RESISTANCE
GREEN-WHITE	315~385 $\Omega$
BLUE-WHITE	77~95 $\Omega$
GREEN-BROWN	76~92 $\Omega$
GREEN-LIGHT BLUE	95~116 $\Omega$
GREEN-PINK	126~154 $\Omega$

The specifications are applicable to the A.C. generator (Screws painted with yellow) used on the following models;

< CB400T >

E.No. CB400TE-2105940~

E.No. CB400TE-4103395~

E.No. NC03E-20XXXXX

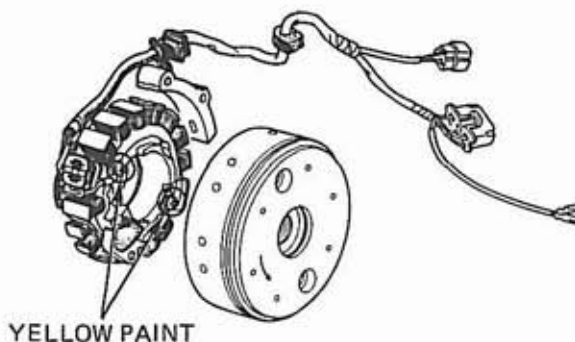
E.No. NC03E-2100001~

< CM400T >

E.No. NC01E-20XXXXX

E.No. NC01E-21XXXXX

E.No. NC01E-2200001~





# 17. STARTER MOTOR

SERVICE INFORMATION	17-1
TROUBLESHOOTING	17-1
STARTER MOTOR	17-2
MAGNETIC SWITCH	17-4
STARTER CLUTCH	17-4

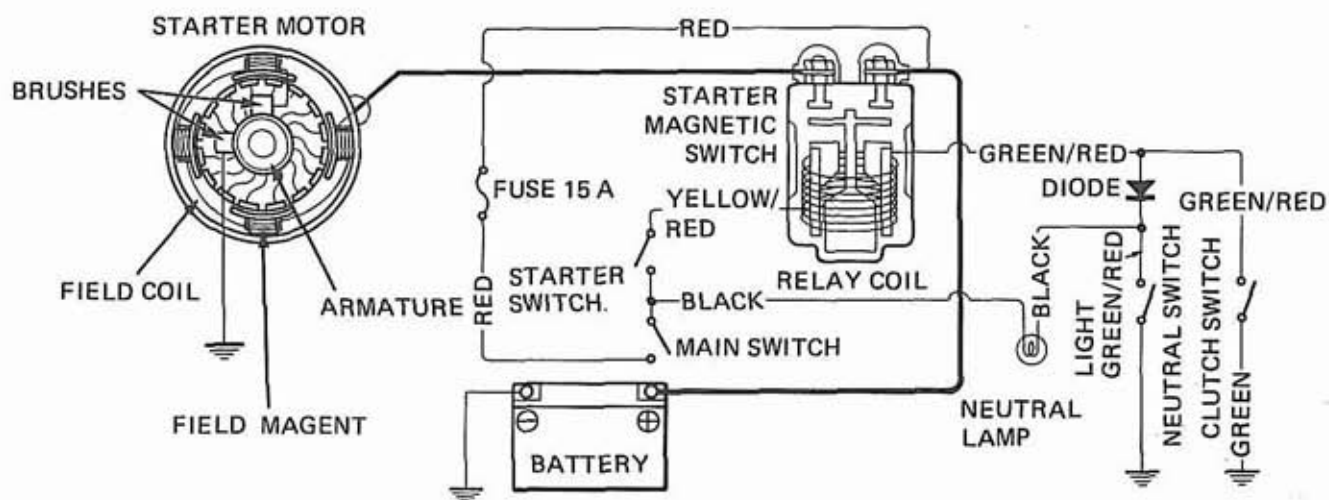
## SERVICE INFORMATION

### • WORKING PRACTICE

The starter motor can be removed with the engine in the frame.  
See Section 10 for starter clutch repairs.

### • SPECIFICATIONS

		STANDARD	SERVICE LIMIT
Starter motor	Brush spring tension	0.495~0.605 kg	400 g
	Brush length	11.0~12.5 mm (0.43~0.49 in.)	5.5 mm (0.21 in.)



## TROUBLESHOOTING

### Starter Motor Will Not Turn:

- Dead battery
- Faulty ignition switch
- Faulty start switch
- Faulty neutral switch
- Faulty starter magnetic switch
- Loose or disconnected wire or cable
- Neutral diode open
- Faulty clutch switch

### Starter Motor Turns Engine Slowly:

- Low battery
- Excessive resistance in circuit
- Binding in starter motor.

### Starter Motor Turns, But Engine Does Not Turn:

- Faulty starter clutch
- Faulty starter motor gears
- Faulty starter motor or idle gear

### Starter Motor and Engine Turn, But Engine Does Not Start:

- Faulty ignition system
- Engine problems





## STARTER MOTOR

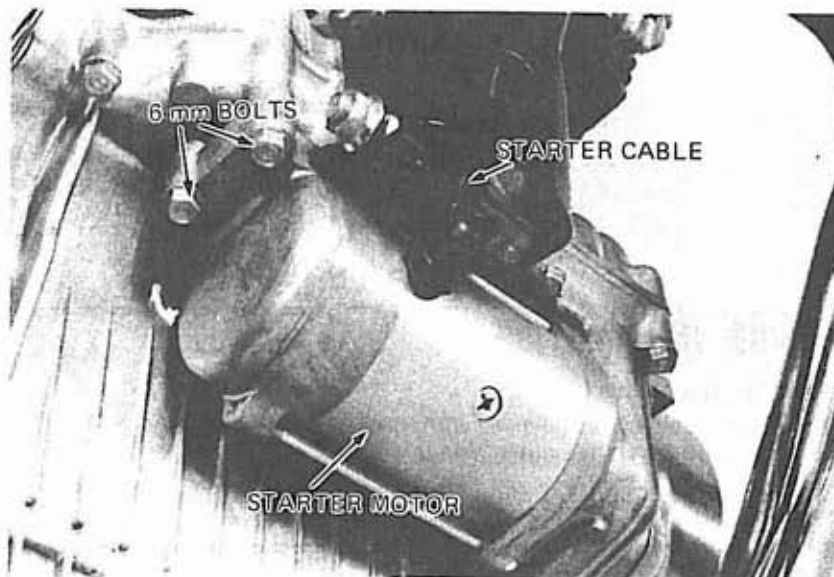
## • REMOVAL

**WARNING**

With the ignition switch OFF, remove the negative cable at the battery before servicing the starter motor.

Disconnect the starter cable.

Remove the starter mounting bolts and pull the motor out of the engine case.



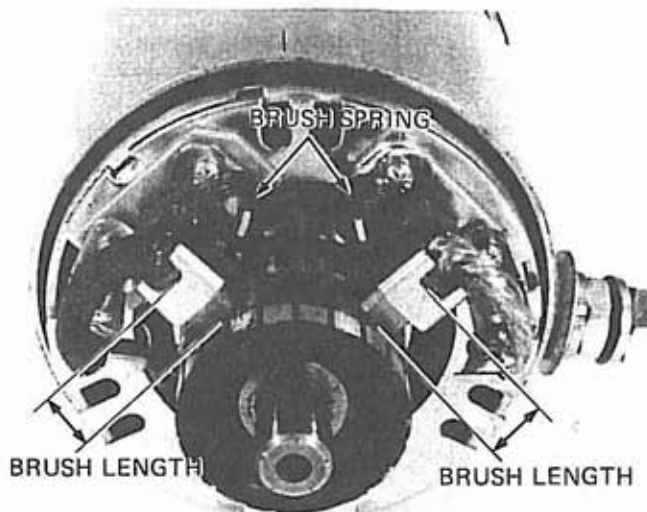
## • BRUSH INSPECTION

Remove the starter motor case screws. Inspect the brushes and measure brush length. Measure brush spring tension with a spring scale.

**SERVICE LIMITS:**

Brush length: 5.5 mm (0.21 in.)

Brush spring tension: 400g



## • COMMUTATOR INSPECTION

Remove the case.

**NOTE**

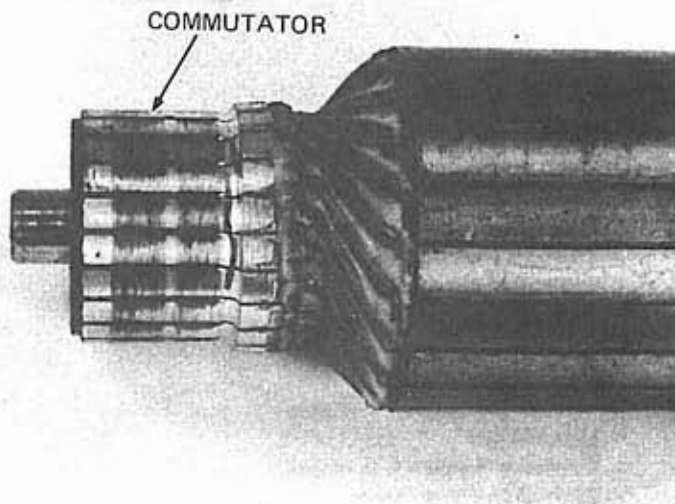
Record the location and number of the thrust washers.

Inspect the commutator bars for discoloration.

Bars discolored in pairs indicate grounded armature coils.

**NOTE**

Do not use emery or sand paper on the commutator.







Check for continuity between pairs of commutator bars, and also between commutator bars and armature shaft. Replace starter motor if armature coils are open, or shorted to armature shaft.



COMMUTATOR BAR PAIRS  
CONTINUITY: Normal  
COMMUTATOR BARS  
ARMATURE SHAFT  
NO CONTINUITY: Normal



### • FIELD COIL INSPECTION

Check for continuity from the cable terminal to the motor case and from the cable terminal to the brush wire.

Replace the starter motor if the field coil is not continuous or if it is shorted to the motor case.



CABLE TERMINAL-MOTOR  
CASE  
NO CONTINUITY: Normal  
CABLE TERMINAL-BRUSH  
WIRE  
CONTINUITY: Normal



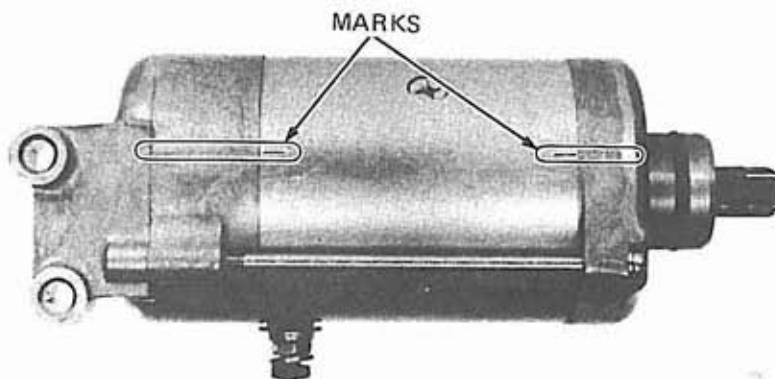
### • ASSEMBLY/INSTALLATION

Assemble the starter motor.

#### NOTE

Align the punch mark on the case to the punch mark on the cover.

Install the starter motor on the engine.  
Connect the starter motor cable.

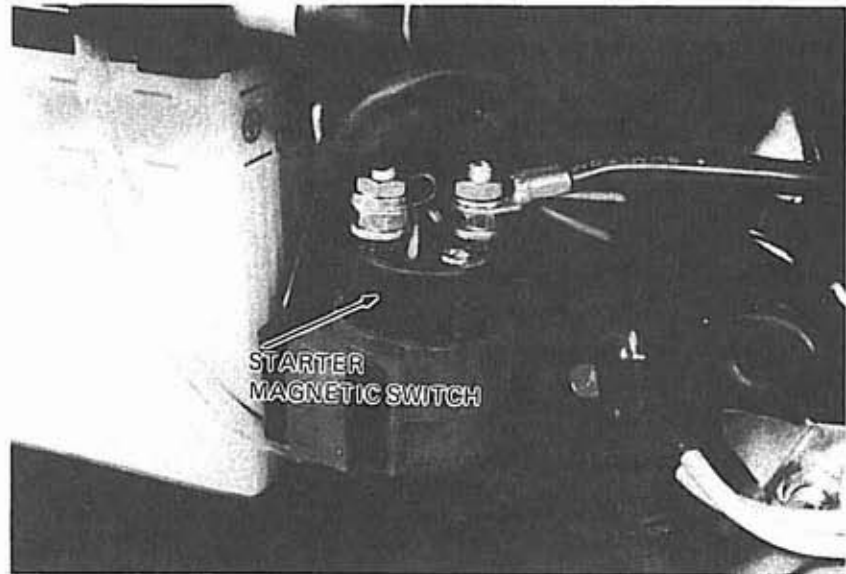




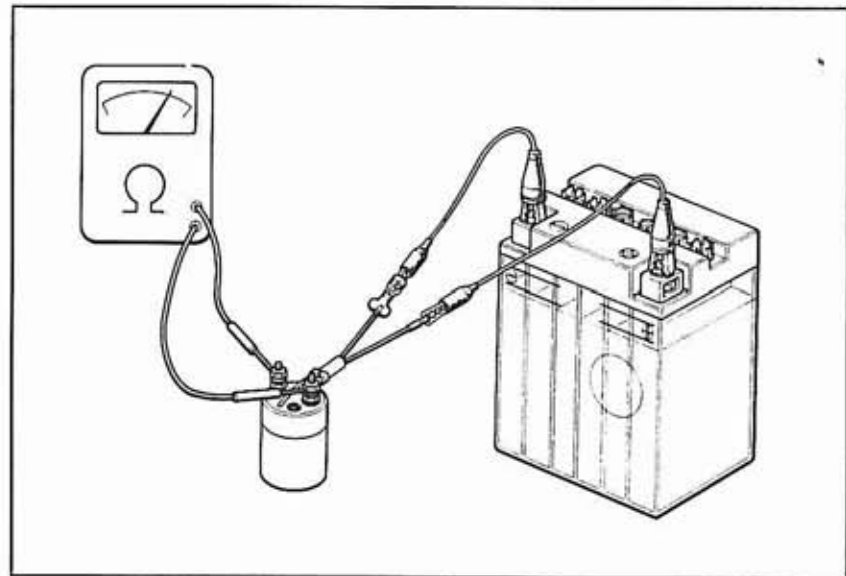
## MAGNETIC SWITCH

### • INSPECTION

To test if the switch primary coil is normal, depress the switch button. The coil is normal if the switch clicks into position.



Connect an ohmmeter to the switch terminals. Connect a 12V battery to the switch cable terminals. The switch is normal if there is continuity.



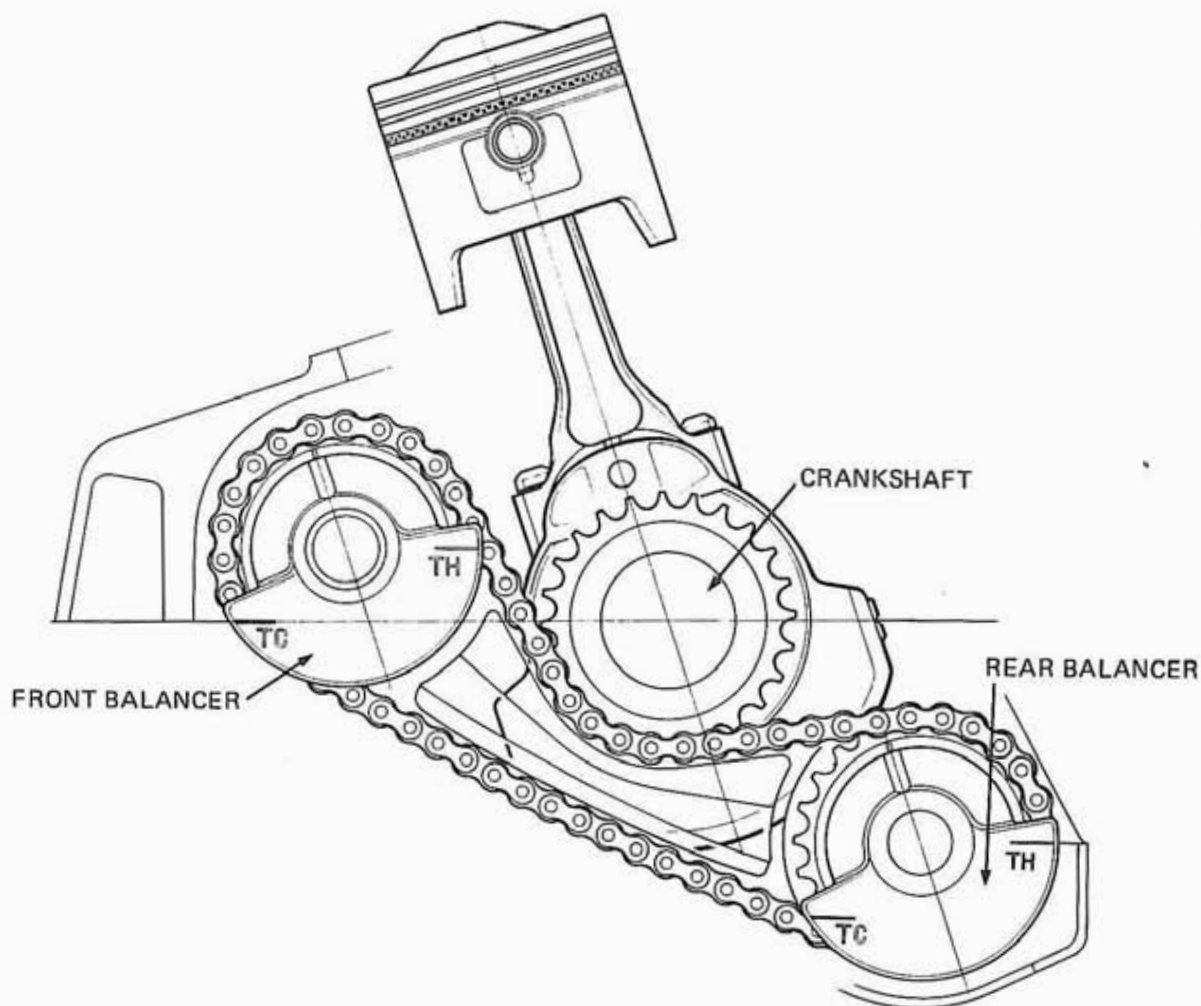
## STARTER CLUTCH

See Section 10.



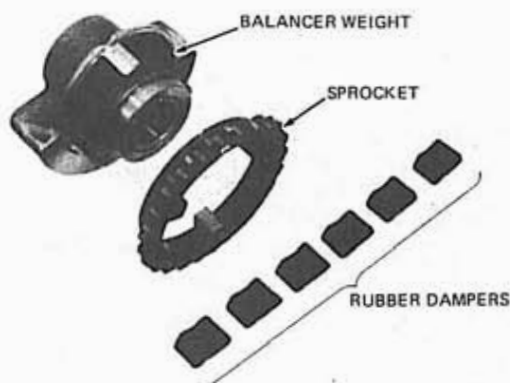
## 1. BALANCER MECHANISM

The front and rear balancers counteract large inertia forces inherent in the 2-cylinder, in-line, 360-degree crank engine, allowing it to produce smooth power.



### FRONT BALANCER SHAFT

The eccentric shaft allows balancer chain tension adjustment.

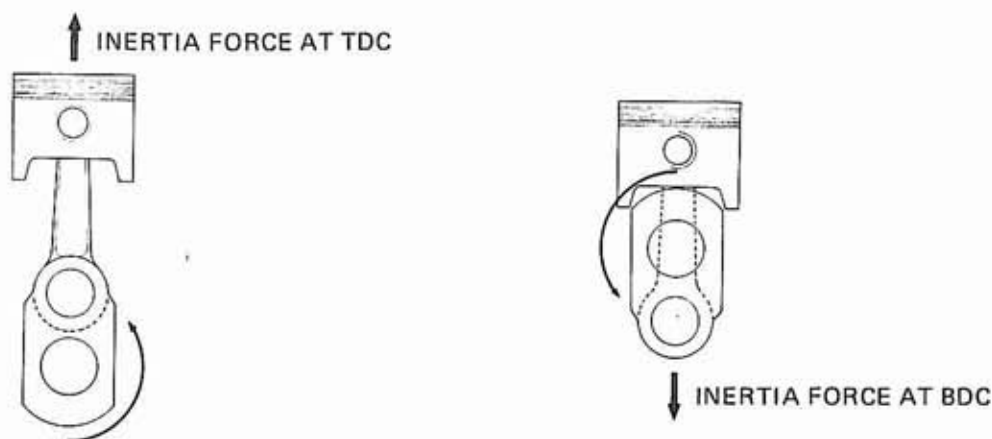


### RUBBER DAMPERS

The sprockets are connected to their respective balancers through rubber dampers to absorb shocks for longer chain life.

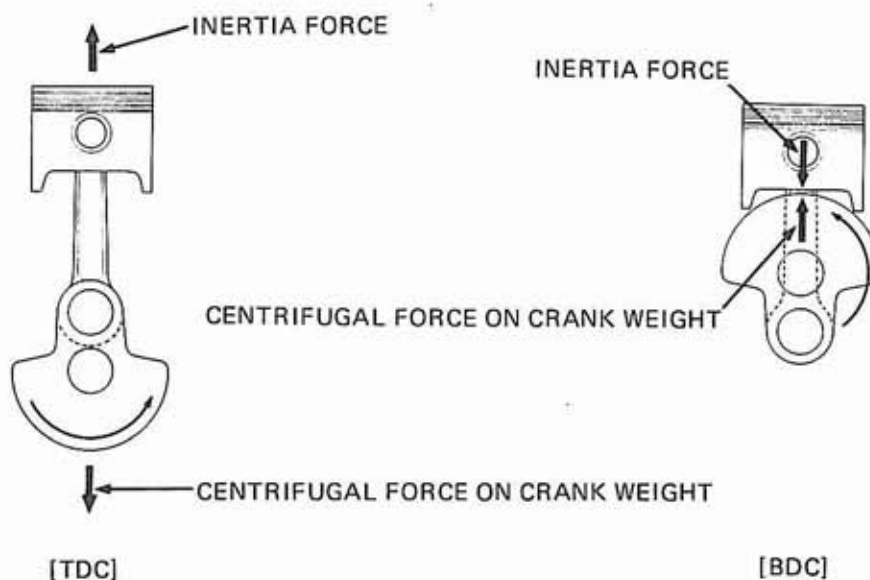


• OPERATING PRINCIPLE OF BALANCER



The source of vibration in a reciprocating engine is the "inertia" force created by the rotating or reciprocating masses. For example, the inertia force which acts on the main bearings of a single cylinder, 4-cycle, 200 cc engine at TDC will be:

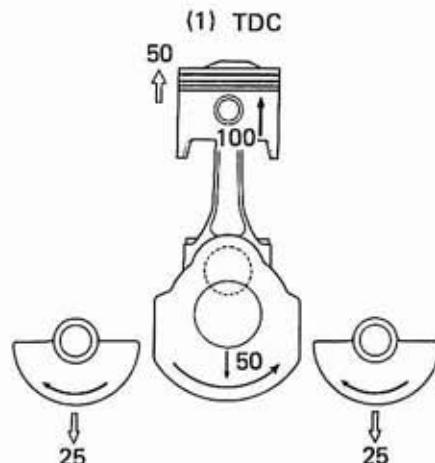
400 kg ( 882 lbs) approx. .... at 6,000 rpm  
1000 kg (2,205 lbs) approx. .... at 10,000 rpm



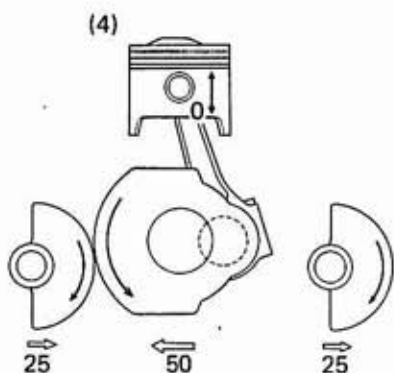
Inertia force created by the rotating mass is general canceled by counterweights. Their use will reduce vibration caused by the primary inertia force which occurs once every crankshaft revolution.  
(Hereafter, inertia force refers to this primary inertia force).



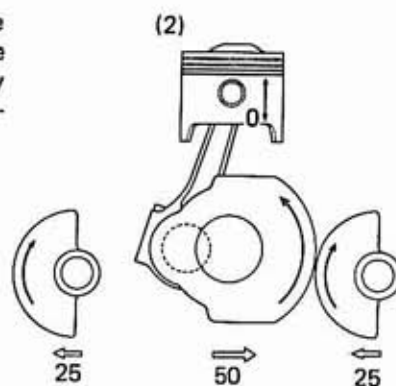
Although the counterweights will balance the inertia force at T.D.C. and B.D.C., they will create a corresponding horizontal imbalance of their own at  $90^\circ$  BTDC and  $90^\circ$  ATDC due to centrifugal force. The balancers are designed to counteract this force including the inertia force created by the reciprocating.



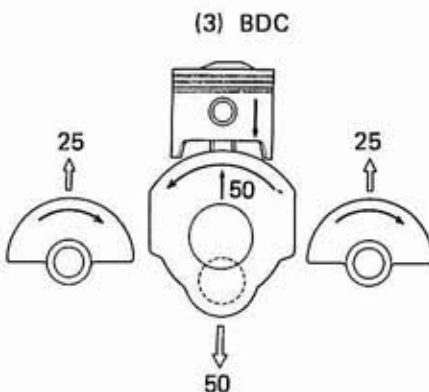
The counterweight creates a centrifugal force to neutralize one-half of the inertia force. The remaining inertia will be totally balanced by two balancers. Each balancer counteracts one-fourth of the total inertia.



The centrifugal force on the counterweight is balanced by the balancers.



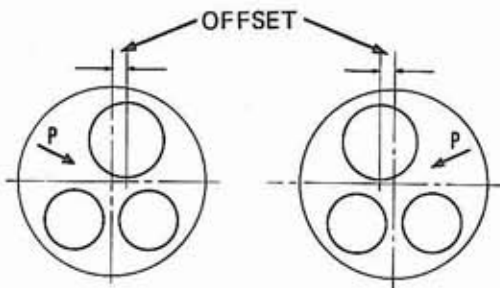
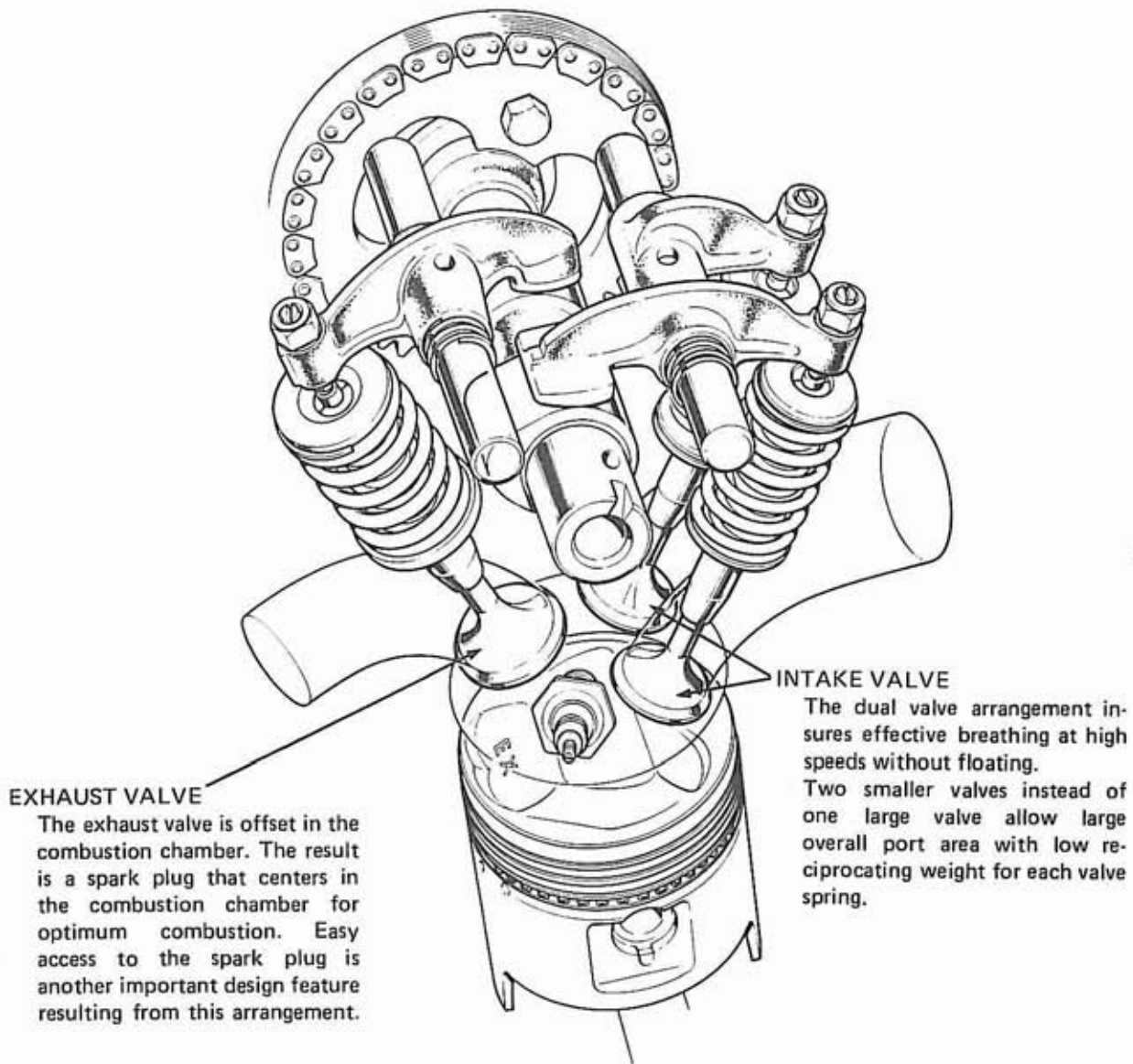
The inertia force is balanced by the counterweight as in (1). However, the centrifugal force acting on the counterweight is still present. The centrifugal force on the balancers cancels this remaining force.



The centrifugal force on the counterweight neutralizes one-half of the downward inertia force. The balancers counteract the remainder.



## 2. 3-VALVE, SHORT-STROKE ENGINE



### • SHORT-STROKE ENGINE

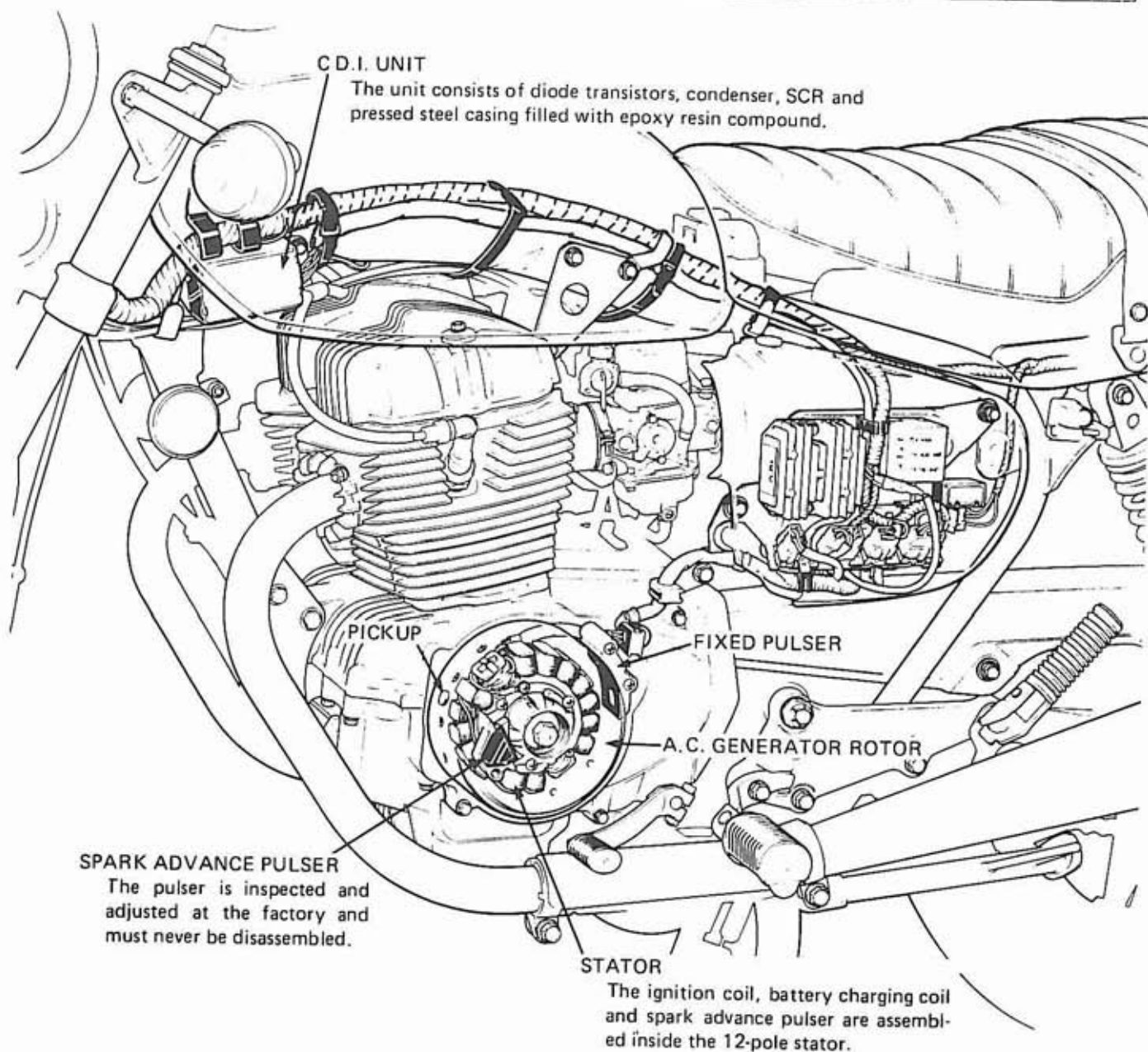
The 0.72 oversquare design reduces piston speed and minimizes friction. The bore is large enough to install three valves in one combustion chamber. The power chamber adds extra torque at low and medium speeds. It is located at the most ideal position without sacrificing space between the engine and the ground due to reduced engine height. The exhaust gases from one cylinder expand in the power chamber and have an extraction effect on the other cylinder.





### 3. C.D.I. SYSTEM

The C.D.I. (capacitive discharge ignition) electronic ignition system is designed to provide a powerful spark, especially at high rpm, with no scheduled maintenance.

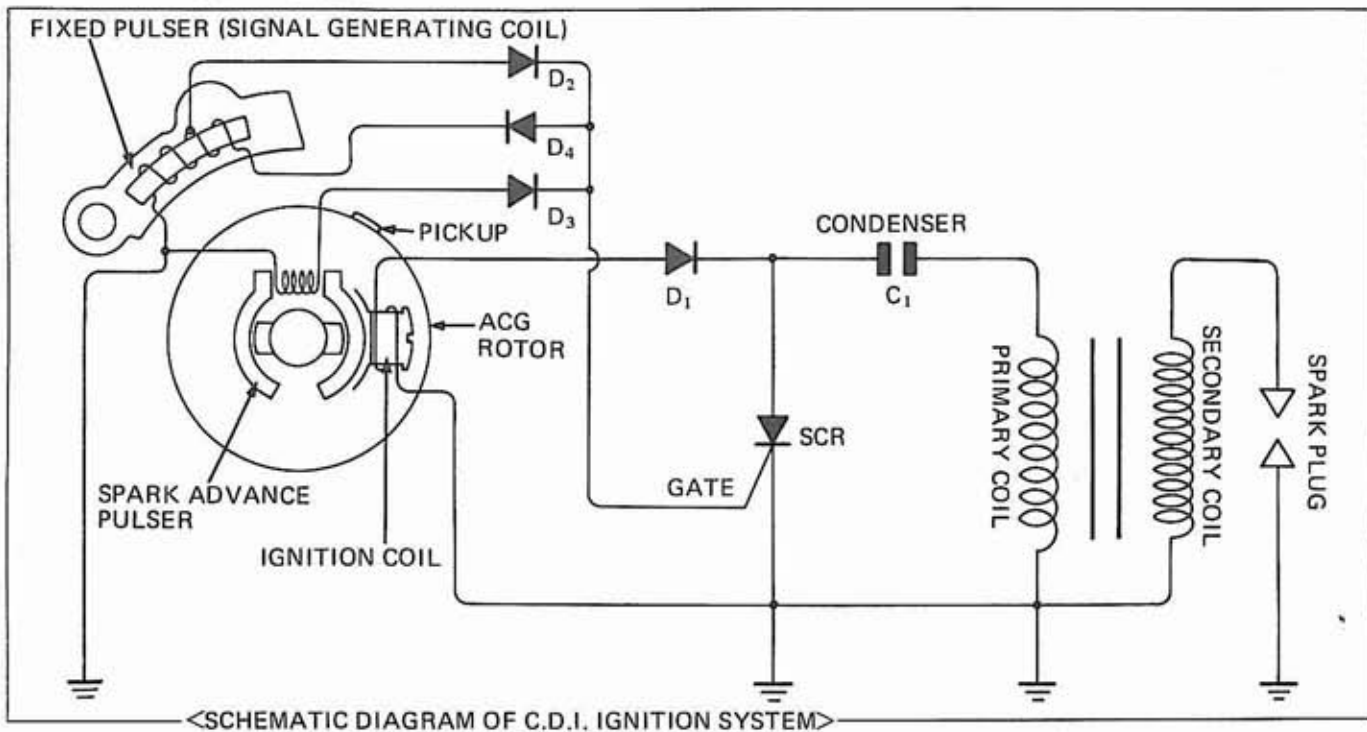


#### • FEATURES

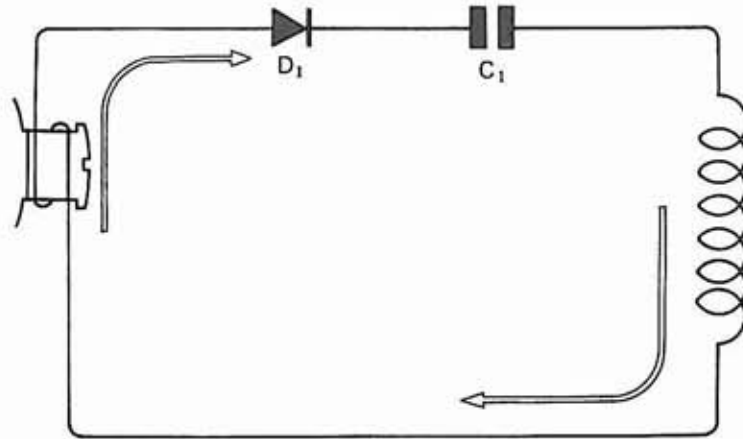
- There are no contact points since the C.D.I. system employs an inductive buildup by capacitive discharge.
- The C.D.I. can develop greater voltage at the spark plugs than conventional systems and is less sensitive to spark plug fouling.
- Working on AC, the secondary energy produced to fire the spark plugs is stable regardless of the battery's charge.
- The electronic timing advance is virtually free from troubles which occur in mechanical advancers.
- The overall design eliminates initial and periodic adjustments and maintenance services.



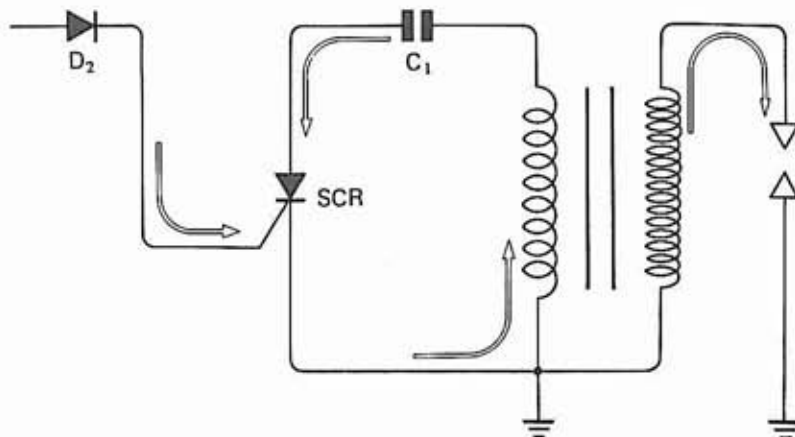
• OPERATING PRINCIPLE



1. As the AC generator rotor turns, current is induced in the AC generator (AC generating coil). This current is rectified as it passes through the diode D<sub>1</sub> and is stored in the condenser C<sub>1</sub>. During this process, the SCR is kept OFF.

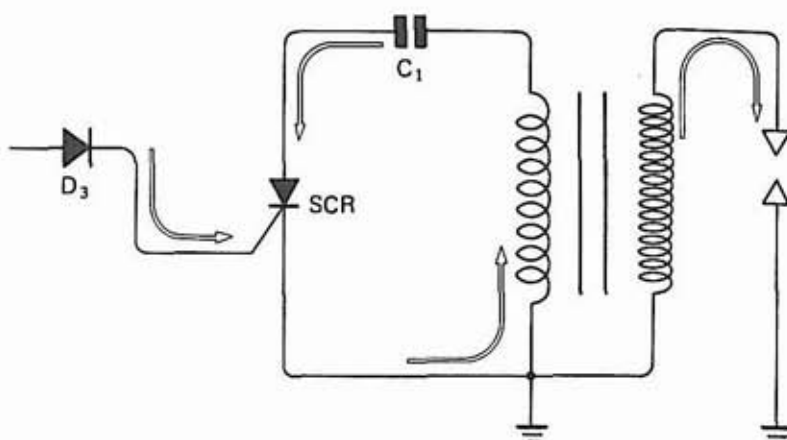


2. An electric pulse is generated by the fixed pulser when the pickup reaches the point where ignition must start. This is due to changes in the flux. The pulse is rectified by the diode 2 and is applied to the gate of SCR. As this happens, SCR turns ON which in turn discharges the energy stored in the condenser through the primary coil. Sufficient potential is then developed at the spark plug to ignite air-fuel mixture in the combustion chamber.

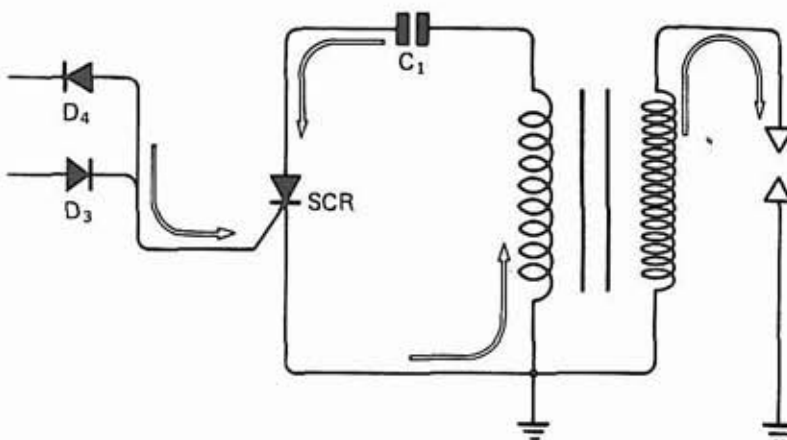




3. To advance timing, the signal from the fixed pulser is replaced by the output signal from the spark advance pulser. The output signal applies to SCR gate through diode 3 and fires the spark plug, performing the same function as the conventional system. The faster the engine speed, the faster the SCR is triggered to advance the timing.

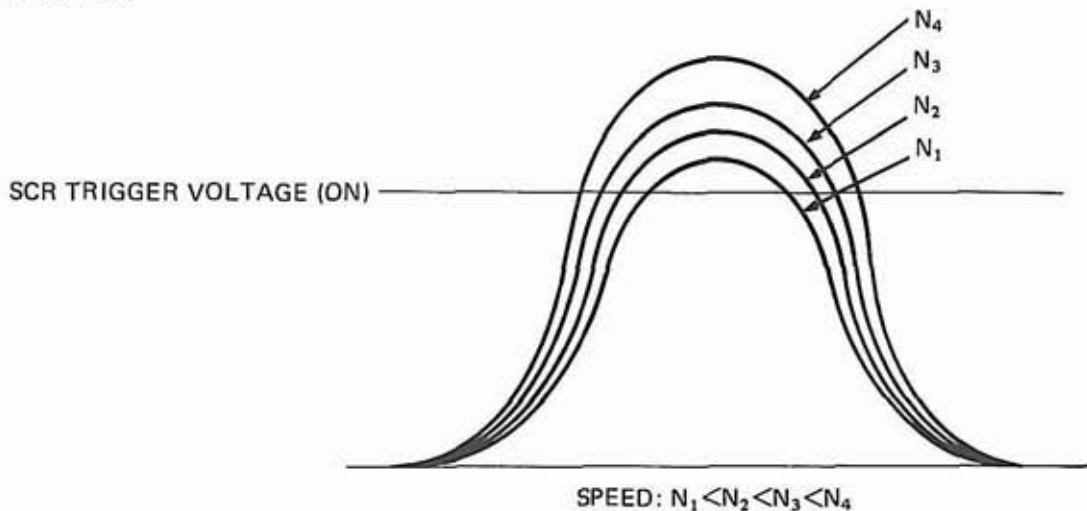


4. The negative pulse from the fixed pulser balances the positive pulse from the spark advance pulser when the maximum advance is reached. This limits timing advance.



### • ADVANCER OPERATION

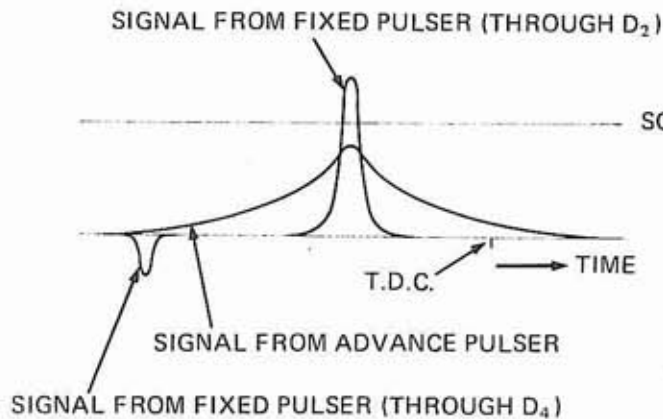
In C.D.I. ignition, timing advance depends on the buildup time of voltage on the advance pulser, which becomes faster as the engine speed increases. The SCR acts like a switching device, but there is a definite voltage at which it turns on. The overall operation of the C.D.I. system stems from these two facts. The faster the voltage buildup, the earlier the SCR is triggered, allowing the system to perform the same function as the conventional system. The fixed pulser controls timing until the advance pulser comes into operation.





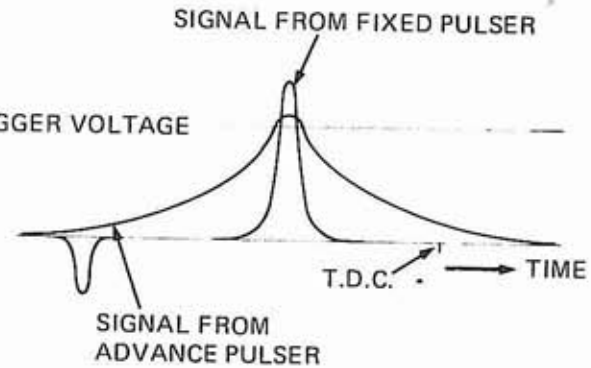
**1. PULSER WAVE FORMS AND SCR TRIGGER VOLTAGE BEFORE ADVANCE**

Before advance starts, only the signal from the fixed pulser is applied to SCR gate through the diode 2.



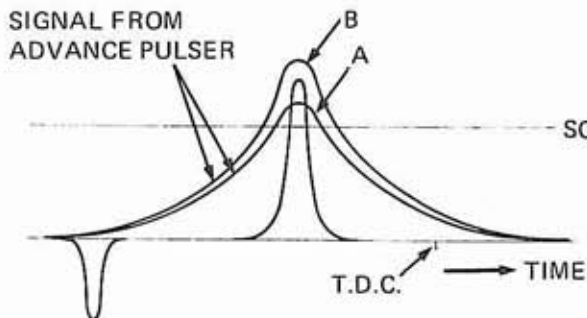
**2. PULSER WAVE FORMS WHEN ADVANCE STARTS**

The voltage on the advance pulser rises to SCR trigger voltage faster than that of the fixed pulser. If there is an increase in engine speed, there will be a corresponding advance in timing.



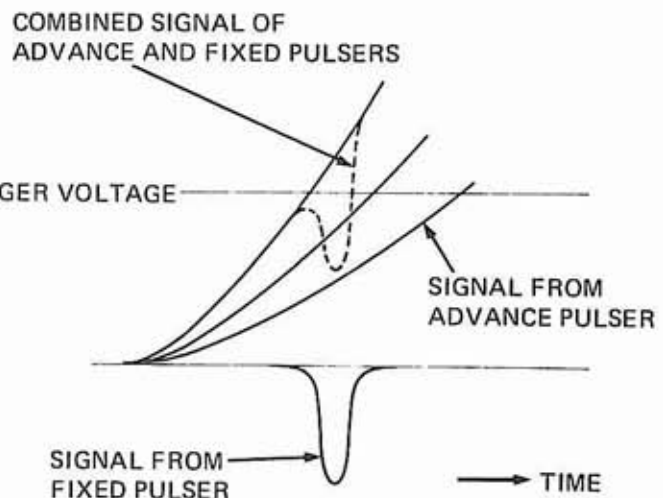
**3. PULSER WAVE FORMS DURING TIMING ADVANCE**

With further increases in engine speed, a transition occurs in the wave form, such as from A to B. That is, SCR is triggered faster to advance the ignition timing.



**4. PULSER WAVE FORMS AT END OF ADVANCE**

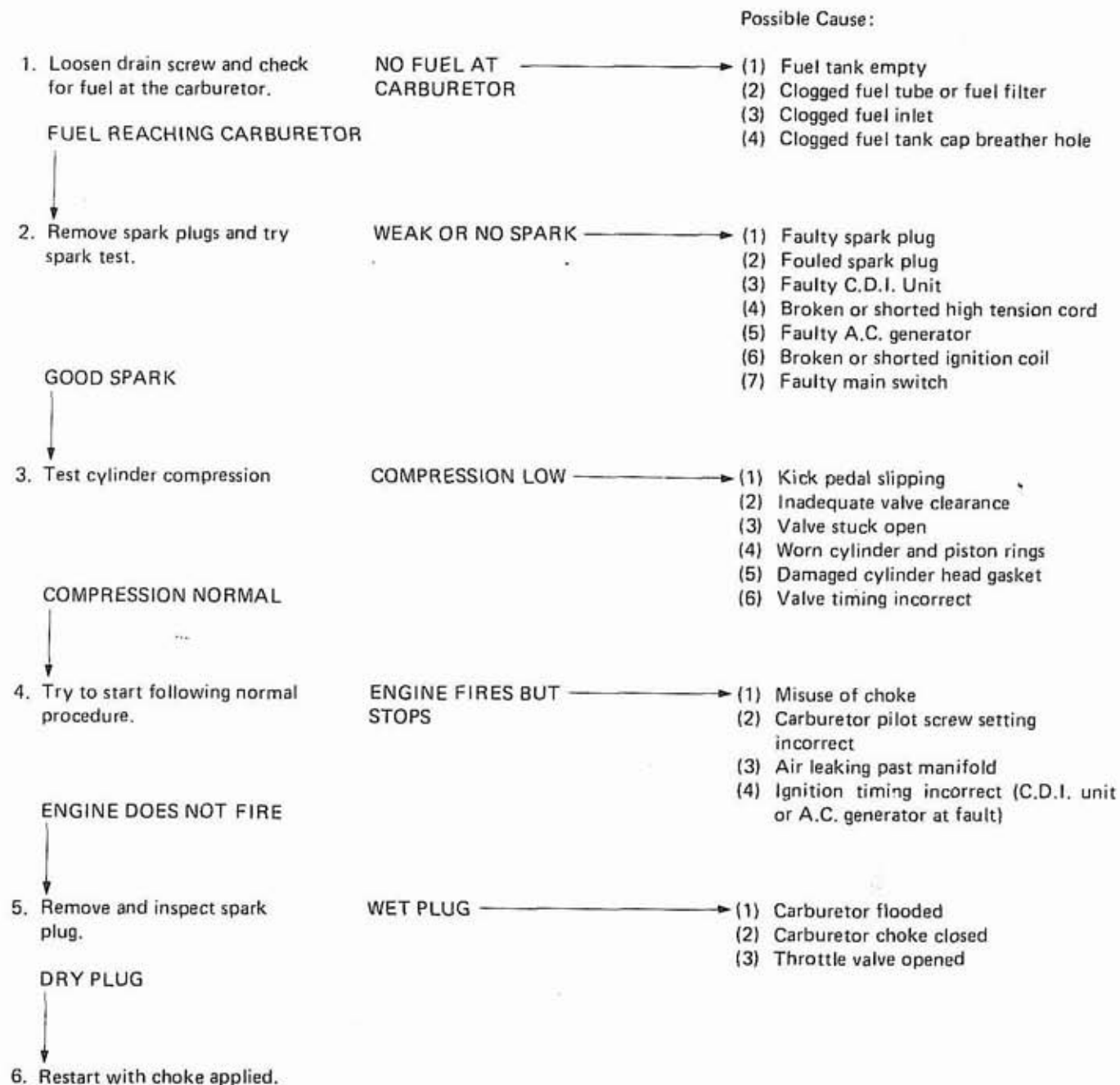
The negative pulse from the fixed pulser balances the positive pulse from the advance pulser, causing the system to stop advancing timing.

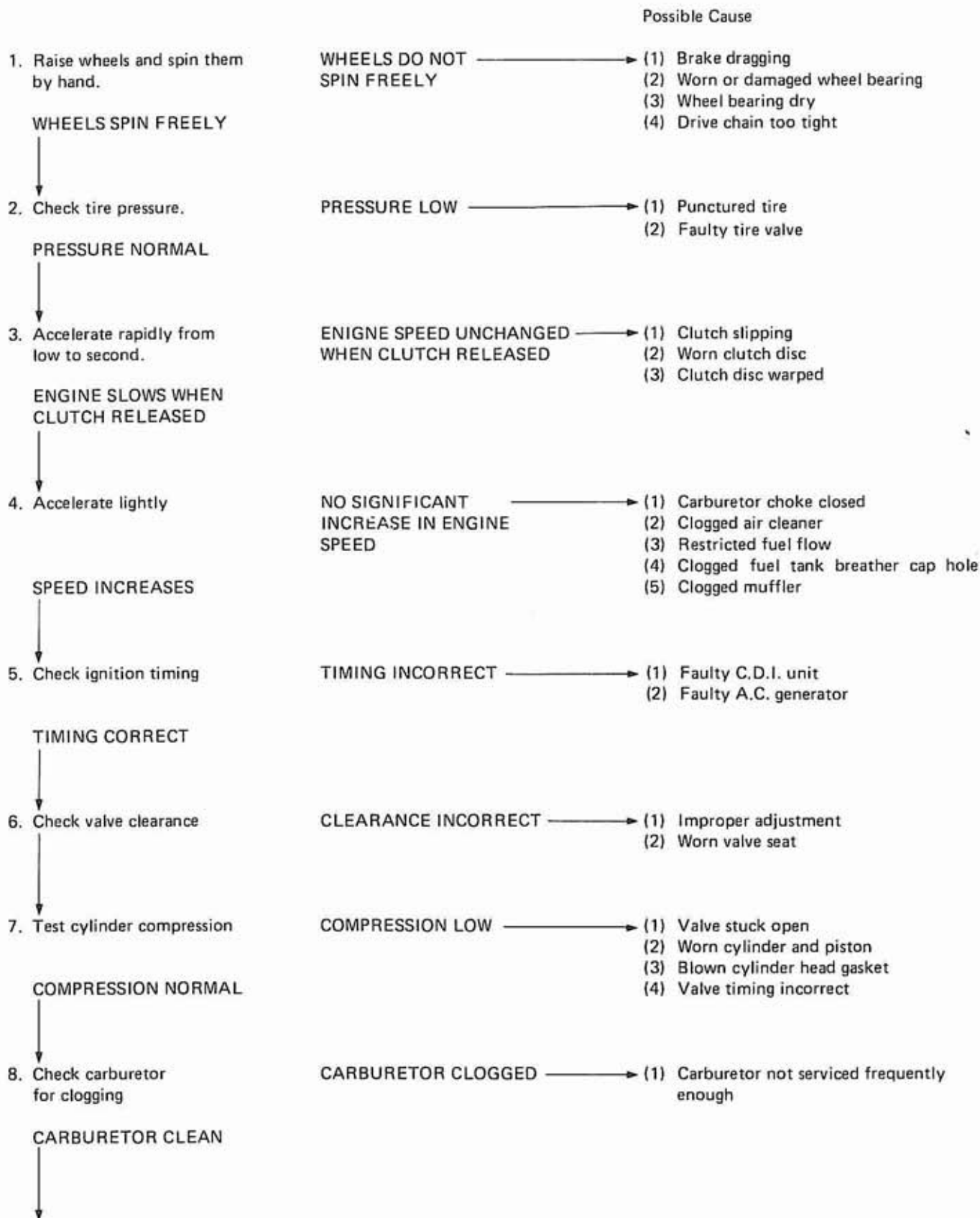




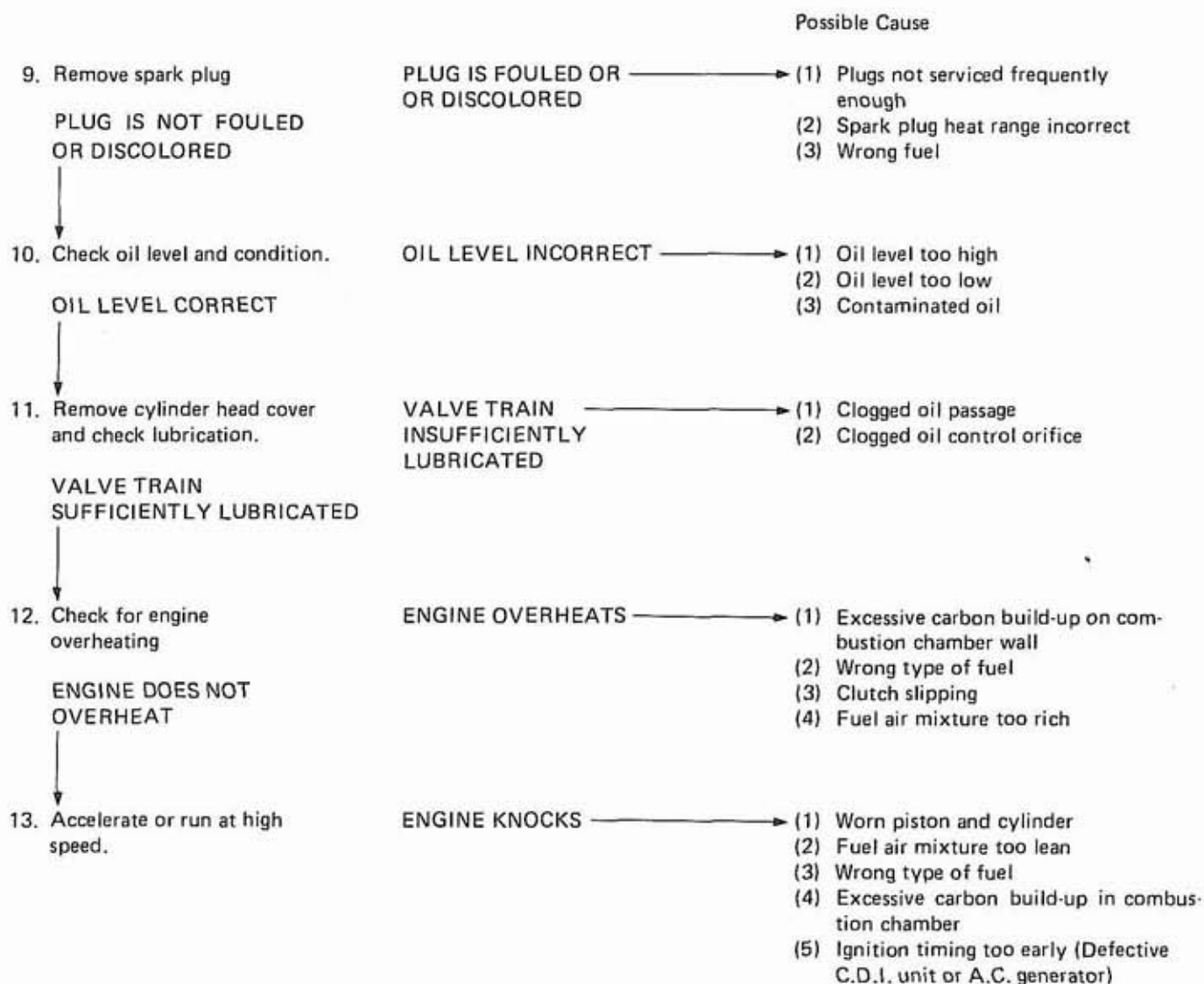
# 19. TROUBLESHOOTING

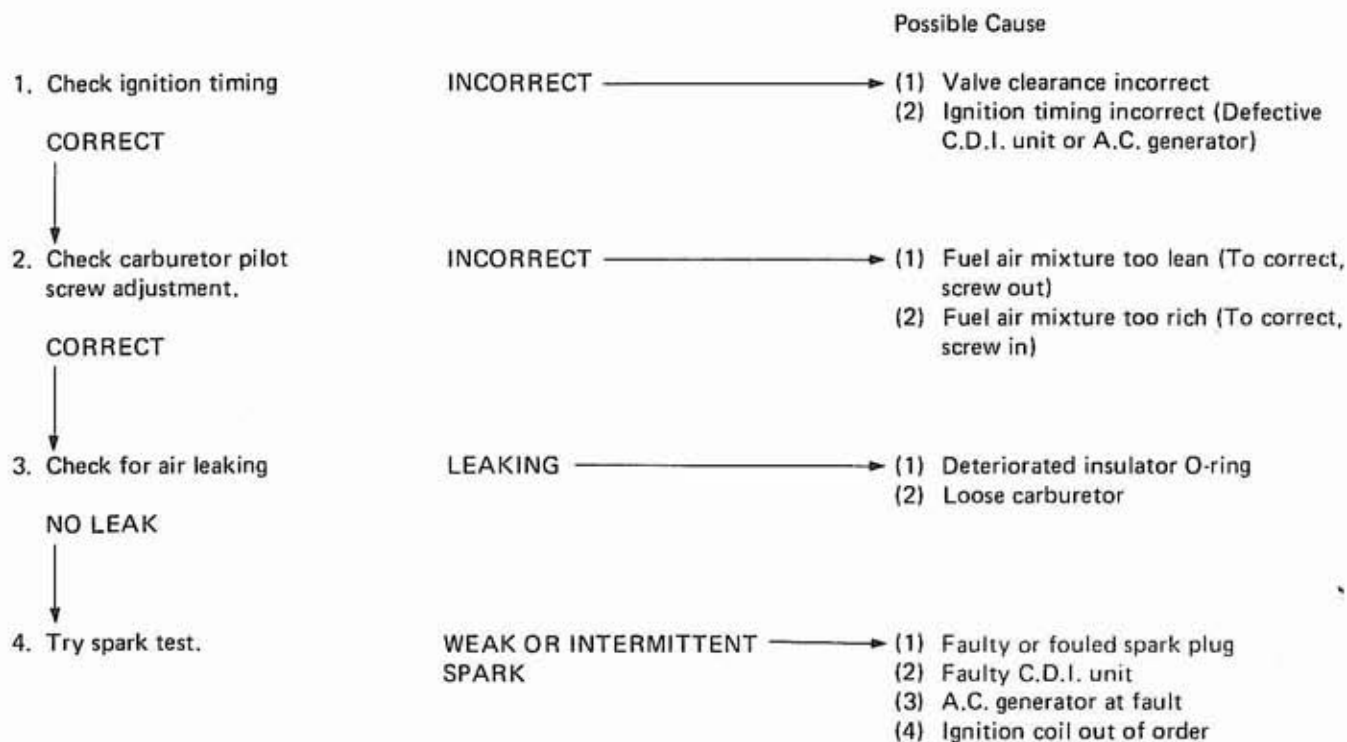
## ENGINE DOES NOT START OR IS HARD TO START




**ENGINE LACKS POWER**


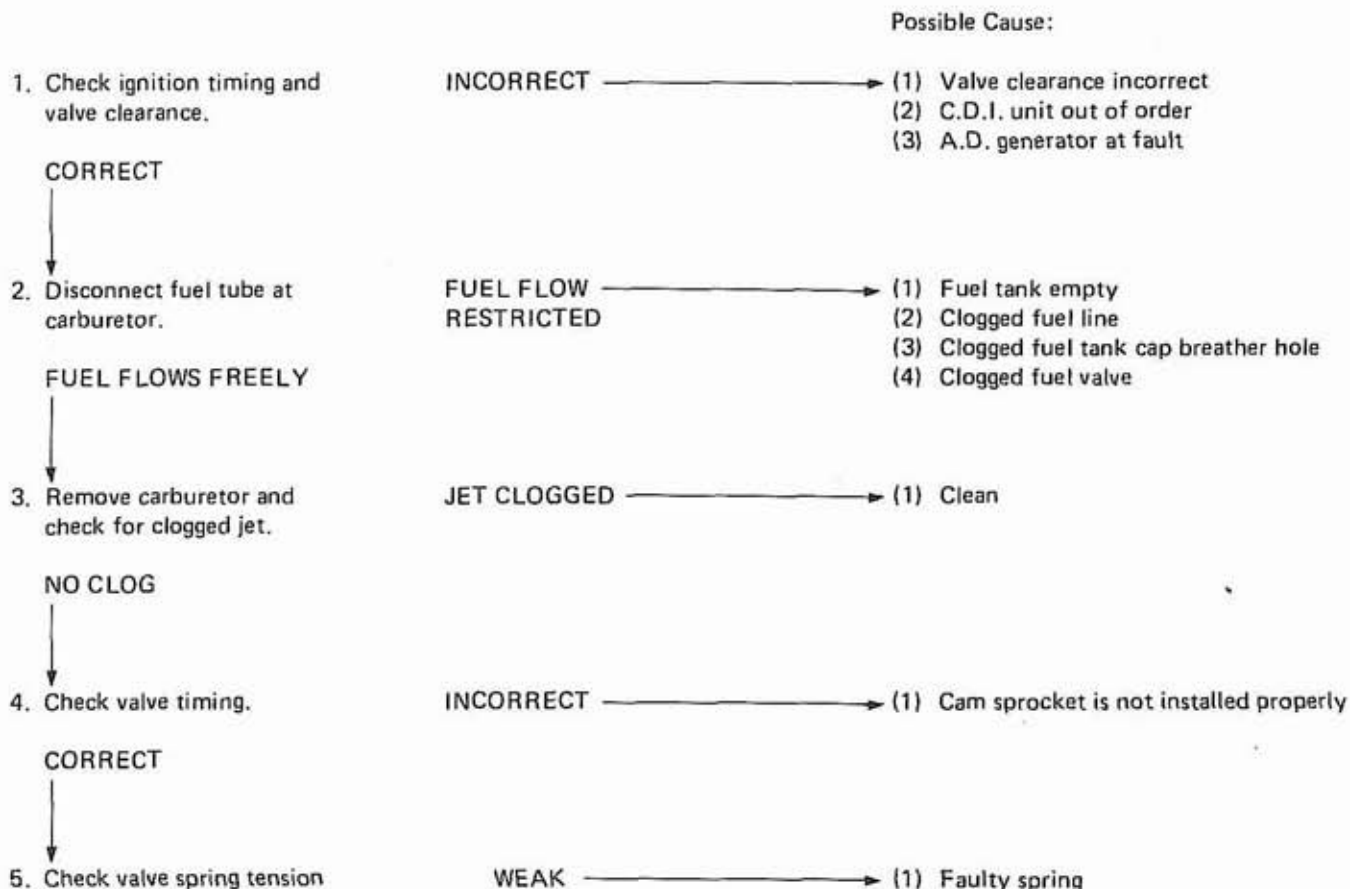




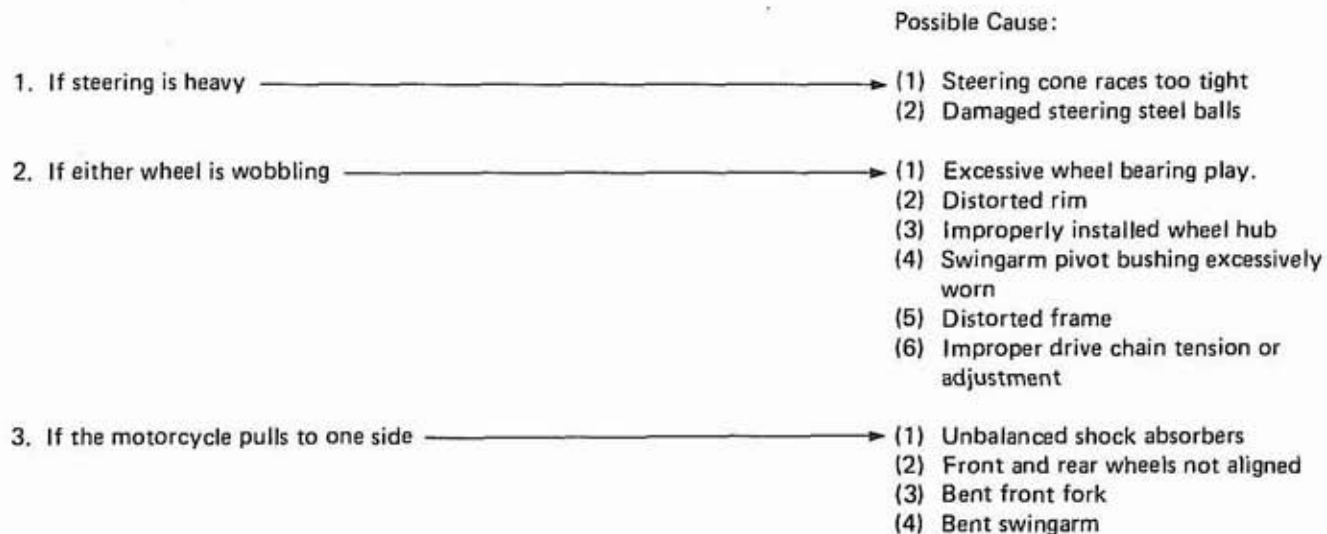
**POOR PERFORMANCE AT LOW AND IDLE SPEEDS**



**POOR PERFORMANCE AT HIGH SPEED**



**POOR HANDLING → Check tire pressures.**





**HONDA**  
**CB400T**

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**M E M O**

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M E M O

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M E M O

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## INTRODUCTION

This HONDA 1979 CB400T Shop Manual Addendum contains information pertinent to the 1979 CB400T. Refer to the base shop manual for service procedures and data not included in this addendum.

ALL PHOTOGRAPHS ARE BASED ON THE TYPE II MODEL.

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# I. MAINTENANCE SCHEDULE

## • CB400T

Perform the Pre-ride Inspection in the Owner's Manual at each scheduled maintenance period.

I: INSPECT, CLEAN, ADJUST, LUBRICATE OR REPLACE IF NECESSARY.

C: CLEAN

R: REPLACE    A: ADJUST    L: LUBRICATE

FREQUENCY			WHICHEVER COMES FIRST ↓	ODOMETER READING [NOTE (3)]						Refer to 78½ Emissions Addendum.
ITEM		EVERY		600 mi. (1,000 km)	3,750 mi. (6,000 km)	7,500 mi. (12,000 km)	11,250 mi. (18,000 km)	15,000 mi. (24,000 km)	18,750 mi. (30,000 km)	
EMISSION RELATED ITEMS	ENGINE OIL	YEAR	R	REPLACE EVERY 1,875 mi. (3,000 km)					Page 10	
	ENGINE OIL FILTER	YEAR	R	R	R	R	R	R	Page 10	
	CRANKCASE BREATHER	NOTE (1)		C	C	C	C	C	Page 11	
	AIR CLEANER	NOTE (2)		C	C	C	C	C	Page 12	
	* FUEL LINES			I	I	I	I	I	Page 12	
	SPARK PLUGS			I	R	I	R	I	Page 12	
	* VALVE CLEARANCE		I	I	I	I	I	I	Page 13	
	* CAM CHAIN TENSION		A	A	A	A	A	A	Page 13	
	* THROTTLE OPERATION		I	I	I	I	I	I	Page 14	
	* CARBURETOR IDLE SPEED		I	I	I	I	I	I	Page 14	
	* CARBURETOR CHOKE			I	I	I	I	I	Page 15	
	* CARBURETOR SYNCHRONIZE		I	I	I	I	I	I	Page 15	
	** BALANCER CHAIN TENSION					A			Page 17	
NON-EMISSION RELATED ITEMS	DRIVE CHAIN		I, L EVERY 300 mi. (500 km)						Page 18	
	BATTERY	MONTH	I	I	I	I	I	I	Page 20	
	BRAKE FLUID (Front)	MONTH I 2 YEARS R	I	I	I	*R	I	I	Page 20	
	BRAKE SHOE/PAD WEAR			I	I	I	I	I	Page 22	
	BRAKE SYSTEM (Rear)		I	I	I	I	I	I	Page 22	
	* BRAKE LIGHT SWITCH		I	I	I	I	I	I	Page 26	
	* HEADLIGHT AIM		I	I	I	I	I	I	Page 26	
	CLUTCH FREE PLAY		I	I	I	I	I	I	Page 26	
	SIDE STAND			I	I	I	I	I	Page 27	
	* SUSPENSION		I	I	I	I	I	I	Page 29	
	* NUTS, BOLTS, FASTENERS		I	I	I	I	I	I	Page 30	
	** WHEELS/SPOKES		I	I	I	I	I	I	Page 30	
	** STEERING HEAD BEARING		I		I		I		Page 30	

\* Should be serviced by an 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.

NOTE: (1) Service more frequently when riding in rain or at full throttle, or after being washed or overturned. (USA only)

(2) Service more frequently when riding in dusty areas.

(3) For higher odometer readings, repeat at the frequency interval established here.



## II. INSPECTION AND ADJUSTMENT BALANCER CHAIN TENSION

Perform the following if the balancer chain is noisy.

Remove the adjuster cap on the right crankcase cover.

Loosen the 8 mm adjuster nut.

When this nut is loosened, the balancer will position itself to provide proper chain tension.

Retighten the 8 mm nut.

**TORQUE: 2.0–2.5 kg-m (15–18 ft-lbs)**

### CAUTION

Readjust as follows if the end of the stopper plate groove contacts the stud bolt.

Drain the engine oil.

Remove the tachometer and clutch cables.  
Remove the right footpeg and kickstarter lever.

Remove the right crankcase cover.

Remove the 10 mm and 8 mm nuts; remove the stopper plate.

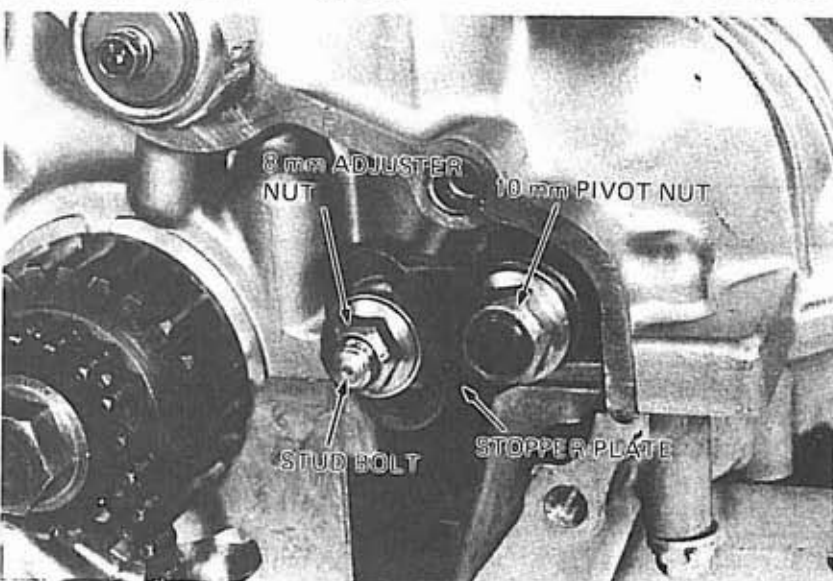
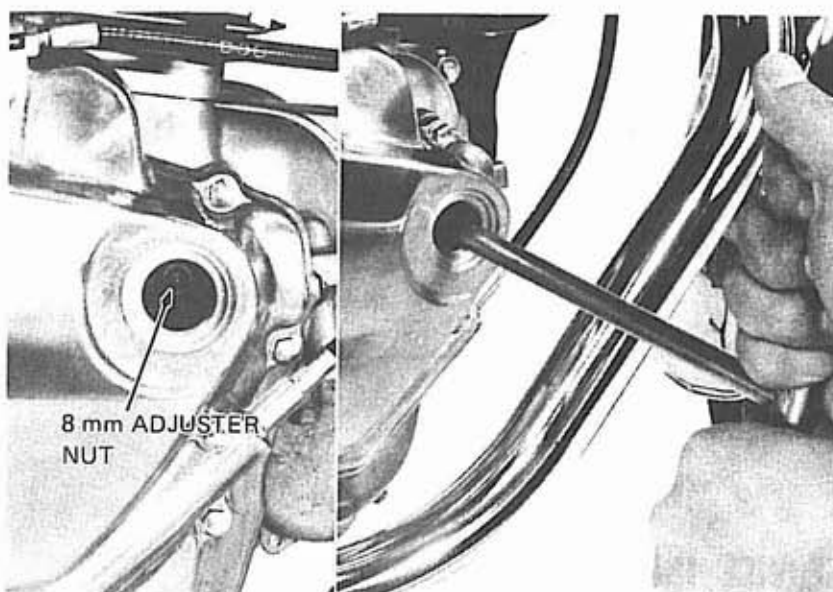
Install the stopper plate, moving it over one spline to move the end of the stopper plate groove away from the stud bolt.

Reinstall the 8 mm nut first and then the 10 mm nut and tighten to the specified torques:

**TORQUE:**

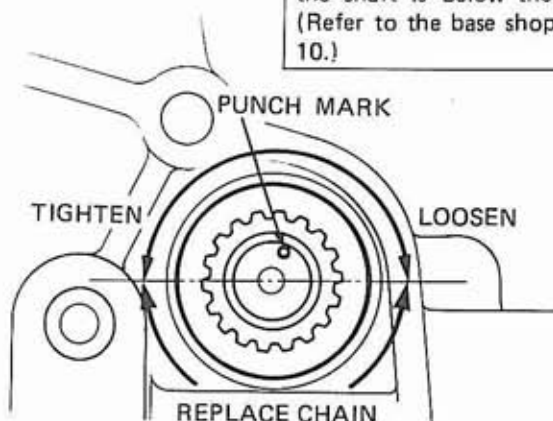
8 mm: 2.0–2.5 kg-m (15–18 ft-lbs)

10 mm: 3.0–3.5 kg-m (22–25 ft-lbs)



### CAUTION

Replace the chain if the punch mark on the shaft is below the horizontal line. (Refer to the base shop manual Section 10.)





### III. HYDRAULIC DISC BRAKE

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TROUBLESHOOTING	21-4
BRAKE FLUID	21-5
BRAKE MASTER CYLINDER	21-6

### SERVICE INFORMATION

#### • SPECIAL TOOL

SNAP RING PLIERS      07914-3230001

#### • SPECIFICATIONS

	STANDARDS	SERVICE LIMIT
Disc thickness	4.9~5.1 mm (0.19~0.20 in)	4.0 mm (0.16 in)
Disc runout	_____	0.3 mm (0.012 in)
Master cylinder I.D.	14.000~14.043 mm (0.5512~0.5529 in)	14.055 mm (0.5533 in)
Master piston O.D.	13.957~13.984 mm (0.5495~0.5506 in)	13.945 mm (0.5490 in)
Caliper piston O.D.	38.115~38.180 mm (1.5006~1.5031 in)	38.105 mm (1.5002 in)
Caliper cylinder I.D.	38.180~38.200 mm (1.5031~1.5039 in)	38.215 mm (1.5045 in)

### TROUBLESHOOTING

#### Poor Brake Performance

- Air bubbles in hydraulic system
- Worn brake pads
- Pads fouled or glazed
- Hydraulic system leaking



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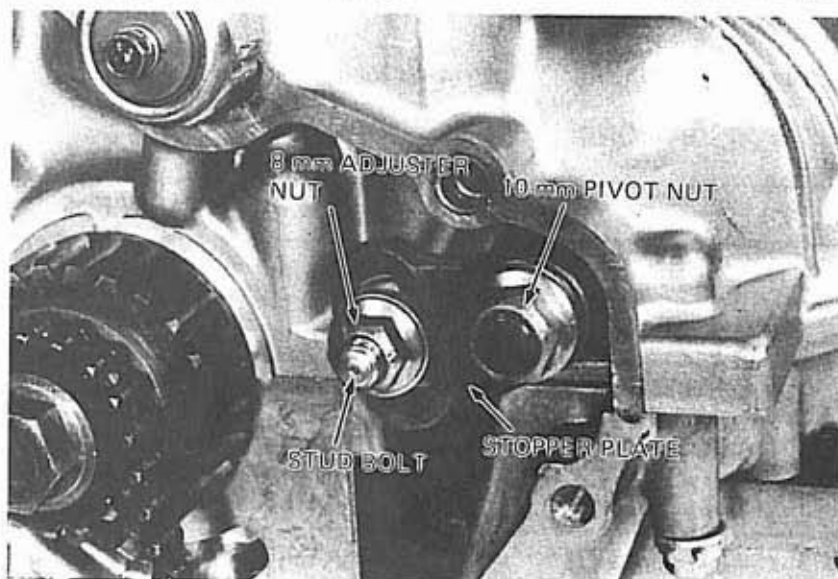
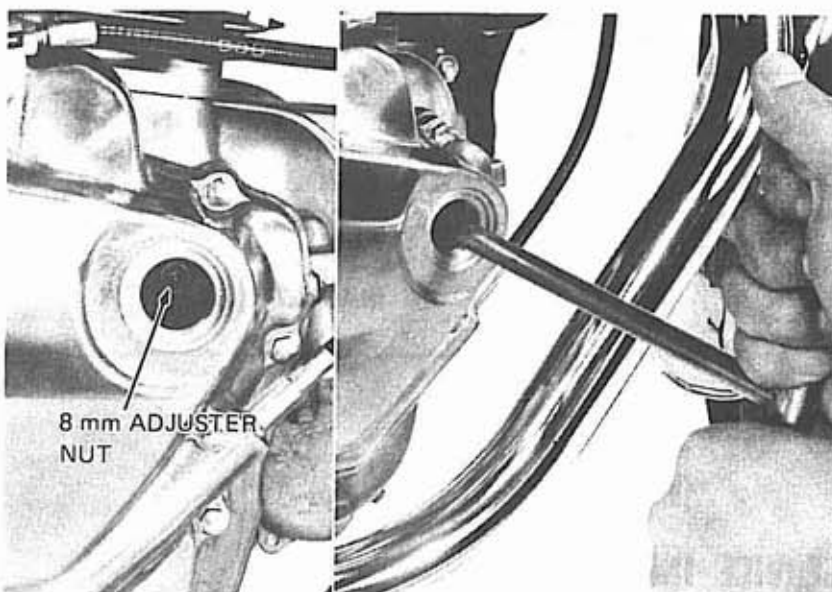
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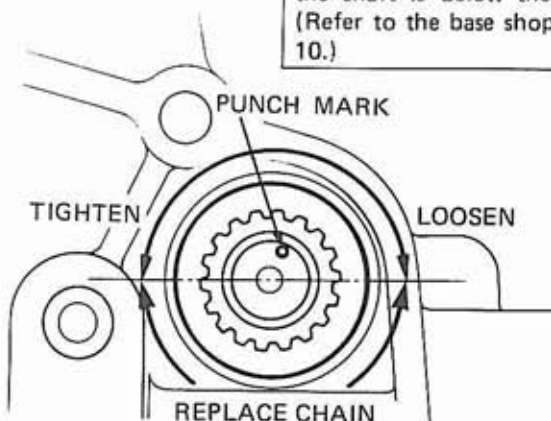
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### III. HYDRAULIC DISC BRAKE

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TROUBLESHOOTING	21-4
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### SERVICE INFORMATION

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Caliper piston O.D.	38.115~38.180 mm (1.5006~1.5031 in)	38.105 mm (1.5002 in)
Caliper cylinder I.D.	38.180~38.200 mm (1.5031~1.5039 in)	38.215 mm (1.5045 in)

### TROUBLESHOOTING

#### Poor Brake Performance

- Air bubbles in hydraulic system
- Worn brake pads
- Pads fouled or glazed
- Hydraulic system leaking





## BRAKE FLUID (TYPE-II)

### • FLUID LEVEL

Check the fluid level with the reservoir level. If the level is below the upper level mark, add DOT-3 BRAKE FLUID up to the upper level mark.

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

#### CAUTION

- Do not mix different brands of fluid in the reservoir as they may not be compatible.
- Do not remove the cap until the handlebar has been turned full right so that the reservoir is level.
- Avoid operating the brake lever with the cap removed.  
Brake fluid will flow out if the lever is pulled.

### • BRAKE FLUID REPLACEMENT

#### CAUTION

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

### • BRAKE SYSTEM DRAINING

Loosen the caliper bleeder valve and pump the brake lever.

Stop operating the lever when no fluid flows out of the bleeder valve.

To prevent piston overtravel and brake fluid seepage, maintain a 20 mm (3/4 in.) distance from the handlebar grip when bleeding the front brake system.

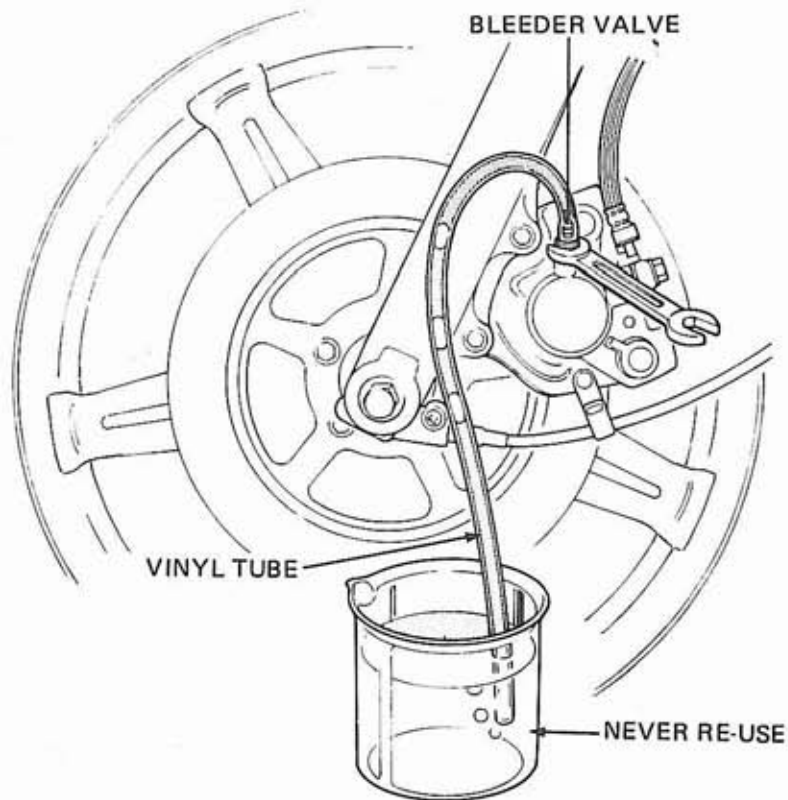
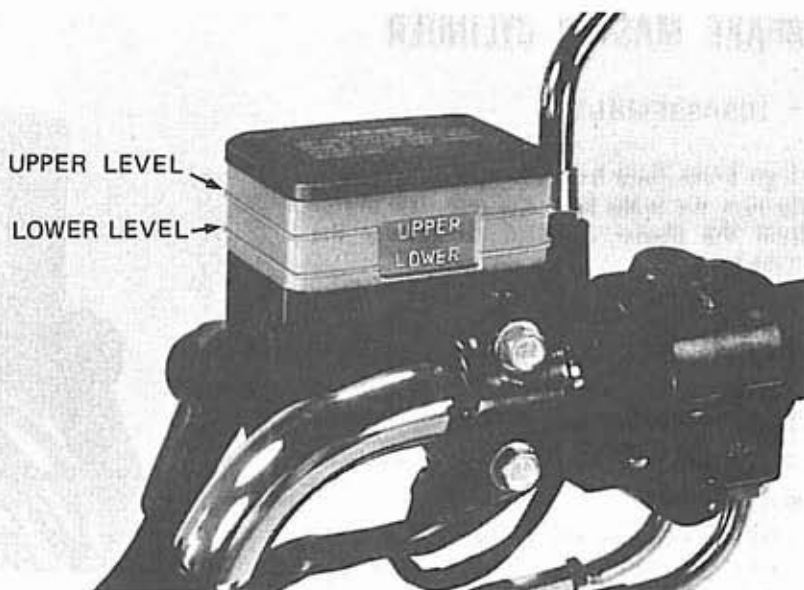
### • BRAKE SYSTEM FILLING

#### CAUTION

Do not mix brands of fluid since they may not be compatible.

Close the bleeder valve, fill the reservoir, and install the diaphragm.

Pump up the system pressure with the lever until there are no air bubbles in the fluid flowing out of the small hole in the reservoir (until lever resistance is felt).





## BRAKE MASTER CYLINDER

### • DISASSEMBLY

Drain brake fluid from the hydraulic system. Remove the brake lever and rear view mirror from the master cylinder. Disconnect the brake hose.

#### CAUTION

Avoid spilling brake fluid on painted surfaces.  
Place a rag over the fuel tank whenever the brake system is serviced.

#### NOTE

When removing the brake hose bolt, cover the end of the hose to prevent contamination and secure the hose.

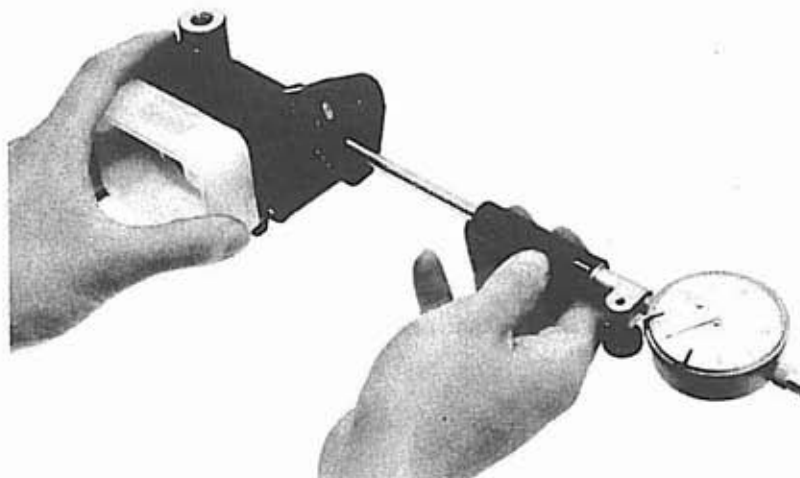
Remove the master cylinder.  
Remove the snap ring.



### • I.D. INSPECTION

Measure the master cylinder I.D..  
Check the cylinder for scores, scratches, nicks or other damage.

**SERVICE LIMIT: 14.055 mm (0.5533 in)**

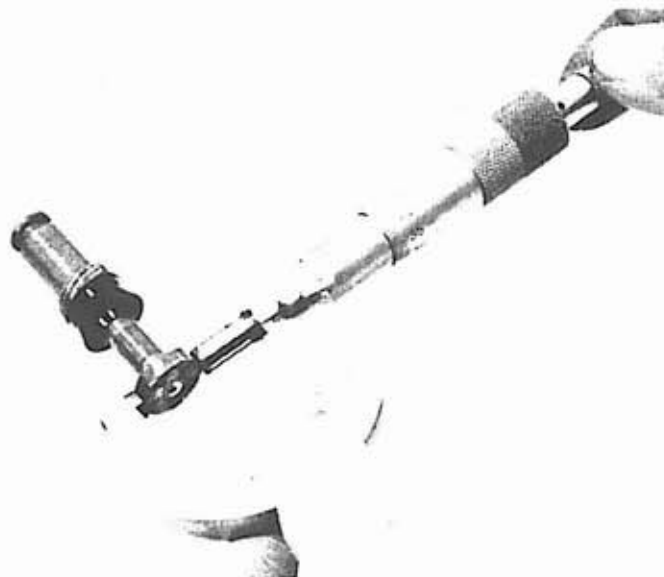




- MASTER PISTON O.D. INSPECTION

Measure the master cylinder piston O.D..

**SERVICE LIMIT: 13.945 mm (0.549 in)**



- MASTER CYLINDER ASSEMBLY

**CAUTION**

Handle the master cylinder piston, cylinder and spring as a set.

Assemble the master cylinder. Coat all parts with clean brake fluid before assembly. Place the spring on the check valve. Install the spring and valve together.

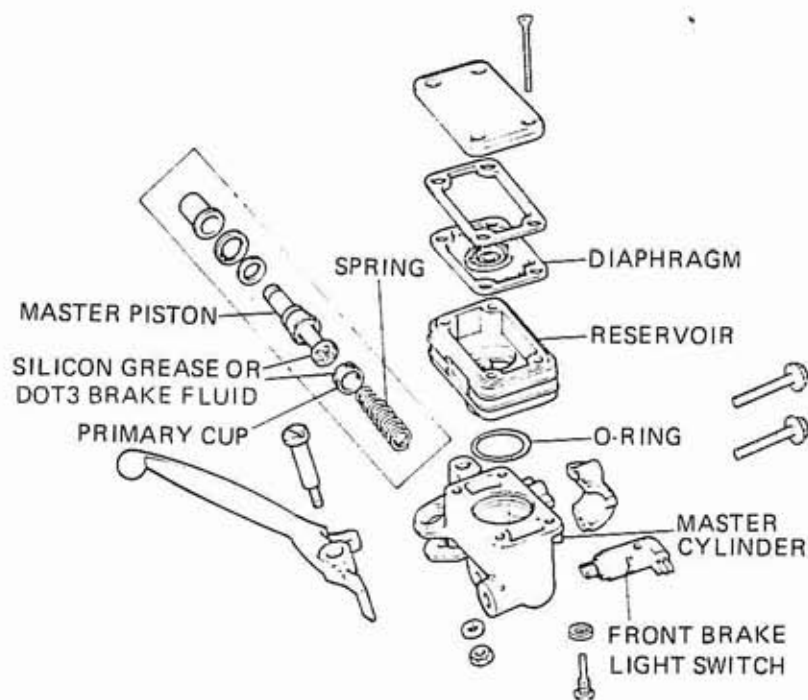
Dip the piston cup in brake fluid before assembly.

**CAUTION**

When installing the cups, do not allow the lips to turn inside out. Be certain the circlip is seated firmly in the groove.

Install the boot, washer and clip.

Install the reservoir on the master cylinder making sure that the O-ring is in good condition.



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## INTRODUCTION

This HONDA 1979 CM400T·CM400A Shop Manual Addendum contains information pertinent to the 1979 CM400T·CM400A.

Refer to the base shop manual for service procedures and data not included in this addendum.

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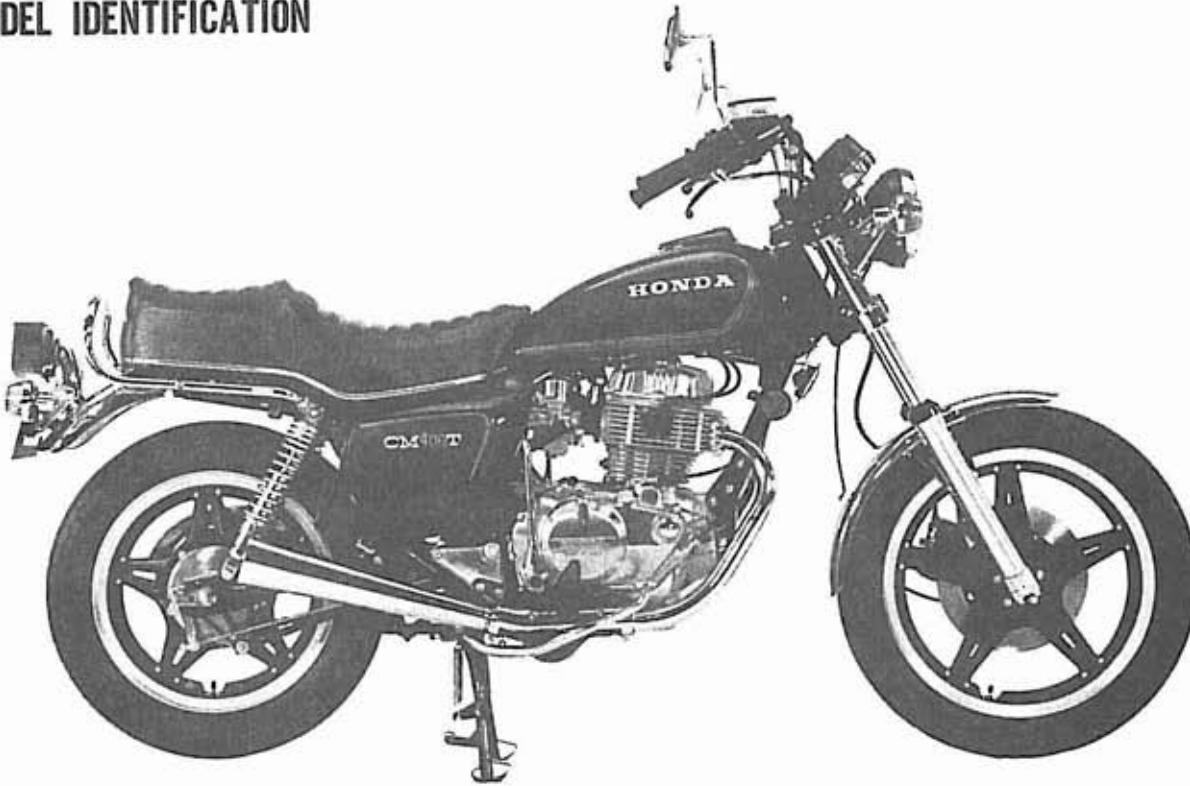
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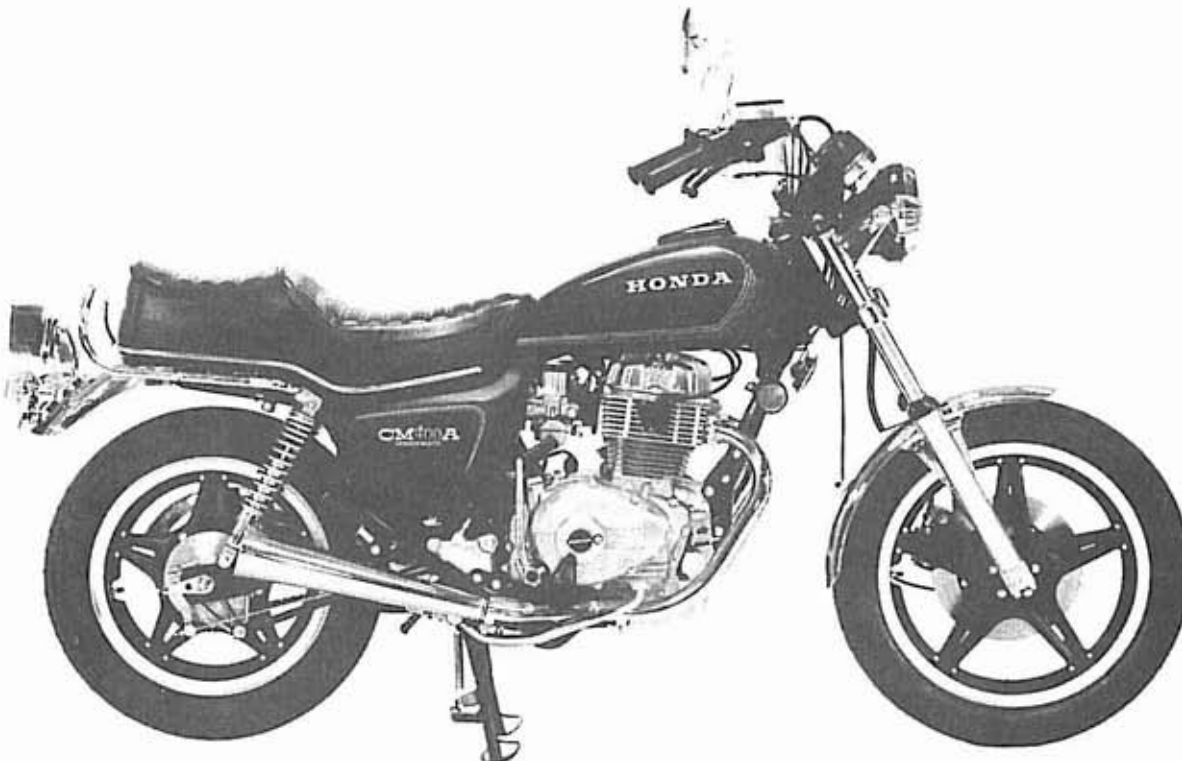
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	CM400A MAINTENANCE SCHEDULE	22-17
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## I. MODEL IDENTIFICATION



CM400T BEGINNING F/N 2000001



CM400A BEGINNING F/N 2000001





## II. SPECIFICATIONS

- Specifications listed are for both T and A models unless otherwise noted.

	Item		Metric		English	
Dimensions	Overall length		2,110 mm		83.1 in.	
	Overall width		870 mm		34.3 in.	
	Overall height		1,150 mm		45.3 in.	
	Wheel base		1,425 mm		56.1 in.	
	Seat height		750 mm		29.5 in.	
	Foot peg height		310 mm		12.2 in.	
	Ground clearance		140 mm		5.5 in.	
	Dry weight		CM400T: 172 kg CM400A: 178 kg		379.2 lbs. 392.4 lbs.	
Frame	Type		Diamond			
	F. suspension and travel		Telescopic fork, 139.5 mm (5.5 in.)			
	R. suspension and travel		Swing arm, 75.9 mm (3 in.)			
	F. tire size		350S18-4PR			
	R. tire size		460S16-4PR			
	Cold tire pressures	Up to 90 kg (200 lbs.) load	Front	1.75 kg/cm <sup>2</sup>	24 psi	
			Rear	2.0 kg/cm <sup>2</sup>	28 psi	
		Up to vehicle capacity load	Front	1.75 kg/cm <sup>2</sup>	24 psi	
			Rear	2.5 kg/cm <sup>2</sup>	36 psi	
	F. brake		Disk brake			
	R. brake		Internal expanding shoes			
	Fuel capacity		10 lit.	2.6 U.S. gal., 2.2 Imp. gal.		
	Fuel reserve capacity		3.0 lit.	0.8 U.S. gal., 0.7 Imp. gal.		
	Caster angle		60°30' from horizontal			
	Trail length		108 mm	4.3 in.		
	Front fork oil capacity		140 cc	4.9 oz.		
Engine	Type		Air cooled 4 stroke O.H.C. engine			
	Cylinder arrangement		Vertical twin parallel			
	Bore and stroke		70.5 x 50.6 mm	2.776 x 1.992 in.		
	Displacement		395 cc	24.1 cu-in.		
	Compression ratio		9.3 : 1			
	Valve train		Chain driven over head camshaft			
	Oil capacity		CM400T: 3.0 lit. CM400A: 3.3 lit.	3.2 U.S. qt., 2.6 Imp. qt. 3.5 U.S. qt., 2.9 Imp. qt.		
	Lubrication system		Forced pressure and wet sump			
	Cylinder head compression pressure		13 ± 1.0 kg/cm <sup>2</sup>	185 ± 14 psi		



	Item		Metric	English
Engine	Intake valve	Opens	5° BTDC (At 1.0 mm lift), 57° BTDC (At 0 lift)	
		Closes	35° ABDC (At 1.0 mm lift), 87° ABDC (At 0 lift)	
	Exhaust valve	Opens	40° BBDC (At 1.0 mm lift), 90° BBDC (At 0 lift)	
		Closes	5° ATDC (At 1.0 mm lift), 55° ATDC (At 0 lift)	
	Valve clearance	IN	0.10 mm	0.004 in.
		EX	0.14 mm	0.006 in.
	Idle speed		CM400T: 1,200 ± 100 rpm (in neutral) CM400A: 1,250 ± 100 rpm (in neutral)	
CM400T: Carburation	Carburetor type		CV type, 32 mm (1.26 in.) venturi bore	
	Identification number		VB 21C	
	Pilot screw		2 turns out (see Emissions Addendum page 31)	
	Float level		15.5 mm	0.61 in.
CM400A: Carburation	Carburetor type		CV type, 28 mm (1.10 in.) venturi bore	
	Identification number		VB24B	
	Pilot screw initial setting		2 turns out (see Emissions Addendum page 31)	
	Float level		15.5 mm	0.61 in.
CM400T: Drive train	Clutch		Wet multi-plate type	
	Transmission		5-speed constant mesh	
	Primary reduction ratio		3.125	
	Gear ratio I		2.733	
	Gear ratio II		1.850	
	Gear ratio III		1.417	
	Gear ratio IV		1.148	
	Gear ratio V		0.966	
	Final reduction ratio		2.188	
	Gear shift pattern		Left foot operated return system	
CM400A: Drive train	Transmission		2-speed semi-automatic transmission with torque converter	
	Primary reduction ratio		1.463	
	Gear ratio I		2.923	
	Gear ratio II		2.059	
	Final reduction ratio		2.188	
	Gear shift pattern		Left foot operated return system	
Electrical	Ignition		Capacitive discharge ignition	
	CM400T: Ignition timing	"F" mark	15° BTDC at 1,200 rpm idle speed	
		Full advance	43° BTDC ± 2° at 4,500 to 5,350 engine rpm	
	CM400A: Ignition timing	"FN" mark	7.5° BTDC at 1,250 rpm idle speed (Transmission in neutral)	
		"F" mark	15° BTDC at 1,250 rpm idle speed (Transmission in gear)	
Full advance		43° BTDC ± 2° at 4,500 to 5,350 rpm		



	Item		Metric	English
Electrical	Starting system		Starting motor and kick starter	
	Alternator		A.C. generator, 0.17 kw/5,000 rpm	
	Battery capacity		12V, 12 ampere-hours	
	Spark plug	U.S.A. model	For cold climate (Below 5°C, 41°F)	ND X22ES-U or NGK D7EA
			Standard	ND X24ES-U or NGK D8EA
			For extended high speed riding	ND X27ES-U or NGK D9EA
		Canadian model	ND X24ESR-U or NGK DR8ES-L	
	Spark plug gap		0.6~0.7 mm	0.024~0.028 in.
Lights	Headlight (low/high beam)		35/50W	
	Tail/stoplight		3/32 cp	SAE NO. 1157
	Turn signal light (Front/Rear)		32/32 cp	SAE NO. F.1034 R.1073
	Speedometer light		2 cp	SAE NO. 57
	CM400A: Parking brake warning light		2 cp	SAE NO. 57
	Turn signal indicator light		2 cp	SAE NO. 57
	High beam indicator light		2 cp	SAE NO. 57
	Position light		3 cp	SAE NO. 1034
	CM400A: Shift position light (3)		2 cp	SAE NO. 57
	Oil pressure light		2 cp	SAE NO. 57
	CM400T: Tachometer light		2 cp	SAE NO. 57



### III. TORQUE VALUES

#### • ENGINE

	Item	Q'ty	Torque Values	
			kg-m	ft-lb
1.	Cylinder head cover bolt	2	0.8-1.2	6-9
2.	Valve adjusting nut	6	1.2-1.7	9-12
3.	Cylinder head bolt	8	3.0-3.3	22-24
4.	Cam sprocket knock bolt, 7 x 12 hex. bolt	2	1.8-2.2	13-16
5.	Spark plug	2	1.5-2.0	11-14
6.	Drive gear fixing bolt, 12 x 25 flange bolt	1	4.5-5.0	33-36
7.	Clutch center lock nut 20 mm	1	4.5-5.0	33-36
8.	Balancer, 8 mm nut	1	2.0-2.5	14-18
9.	Balancer, 10 mm nut	1	3.0-3.5	22-25
10.	A.C. generator rotor set bolt, 12 x 40 flange bolt	1	10.0-12.0	72-87
11.	Crankshaft holder bolt, 10 mm bolt	6	3.3-3.7	24-27
12.	Connecting rod nut	4	2.5-2.9	18-21
13.	Starting clutch bolt, TORX bolt	3	1.2-1.6	9-12
14.	Oil filter center bolt	1	2.8-3.2	20-23
15.	Oil drain plug	1	2.5-3.5	18-25
16.	Exhaust pipe flange nut, 6 mm	4	0.8-1.2	6-9
17.	Muffler chamber clamp bolt, 8 x 35 flange bolt	4	1.8-2.5	13-18
18.	Gear shift pedal, 6 x 32 flange bolt	1	0.8-1.2	6-9

#### • CHASSIS

	Item	Q'ty	Torque Values	
			kg-m	ft-lb
1.	Steering upper holder bolt, 8 x 36 flange bolt	4	1.8-3.0	13-22
2.	Steering lower holder nut	4	2.0-3.0	14-22
3.	Steering stem nut	1	9.0-12.0	65-87
4.	Front fork bolt	2	7.0-9.0	51-65
5.	Front fork bottom bridge bolt, 8 x 40 hex. bolt	2	1.8-3.0	13-22
6.	Front brake disc bolt, 8 x 33 UBS bolt	5	2.7-3.8	20-27
7.	Caliper set bolt, 10 x 32 flange bolt	2	3.0-4.5	22-33
8.	Front brake caliper bleeder valve	1	0.7-0.9	5-7
9.	Rear brake stopper arm nut, 8 mm nut	2	1.5-2.5	11-18
10.	Front axle nut	1	5.0-8.0	36-58
11.	Front axle holder nut, 8 mm nut	2	1.8-3.0	13-22
12.	Rear axle nut	1	7.0-10.0	51-72
13.	Final driven sprocket, 10 mm nut	4	6.0-7.0	43-51
14.	Swing arm pivot nut	1	6.0-8.0	43-58
15.	Rear shock absorber upper bolt, 10 x 45 flange bolt	2	3.0-4.0	22-29
16.	Rear shock absorber lower bolt, 10 x 32 hex. bolt	2	3.0-4.0	22-29
17.	Foot peg bolt, 10 mm flange bolt	4	5.5-6.5	40-47
18.	Drive chain adjusting nut	2	0.8-1.2	6-9
19.	Fuel tank set bolt, 8 x 28 flange bolt	1	1.5-2.5	11-18
20.	Rear brake pedal pivot bolt, 8 x 65 flange bolt	1	1.8-2.5	13-18
21.	Engine hanger, 10 mm flange nut	5	4.5-7.0	33-51
22.	Muffler band	4	1.8-2.8	13-20
23.	Rear brake pedal	1	1.8-2.8	13-20

**• STANDARD TORQUE SPECIFICATIONS**

	Bolts and Nuts	Torque Values	
		kg-m	ft-lb
1.	5 mm bolt and nut	0.45-0.6	3-4
2.	6 mm bolt and nut	0.8-1.2	6-9
3.	8 mm bolt and nut	1.8-2.5	13-18
4.	10 mm bolt and nut	3.0-4.0	22-29
5.	12 mm bolt and nut	5.0-6.0	36-43
6.	5 mm screw	0.35-0.5	3-4
7.	6 mm screw	0.7-1.1	5-8
8.	6 mm flange bolt and nut	1.0-1.4	7-10
9.	8 mm flange bolt and nut	2.0-3.0	14-22
10.	10 mm flange bolt and nut	3.0-4.0	22-29



**HONDA**  
**CM400T·400A**

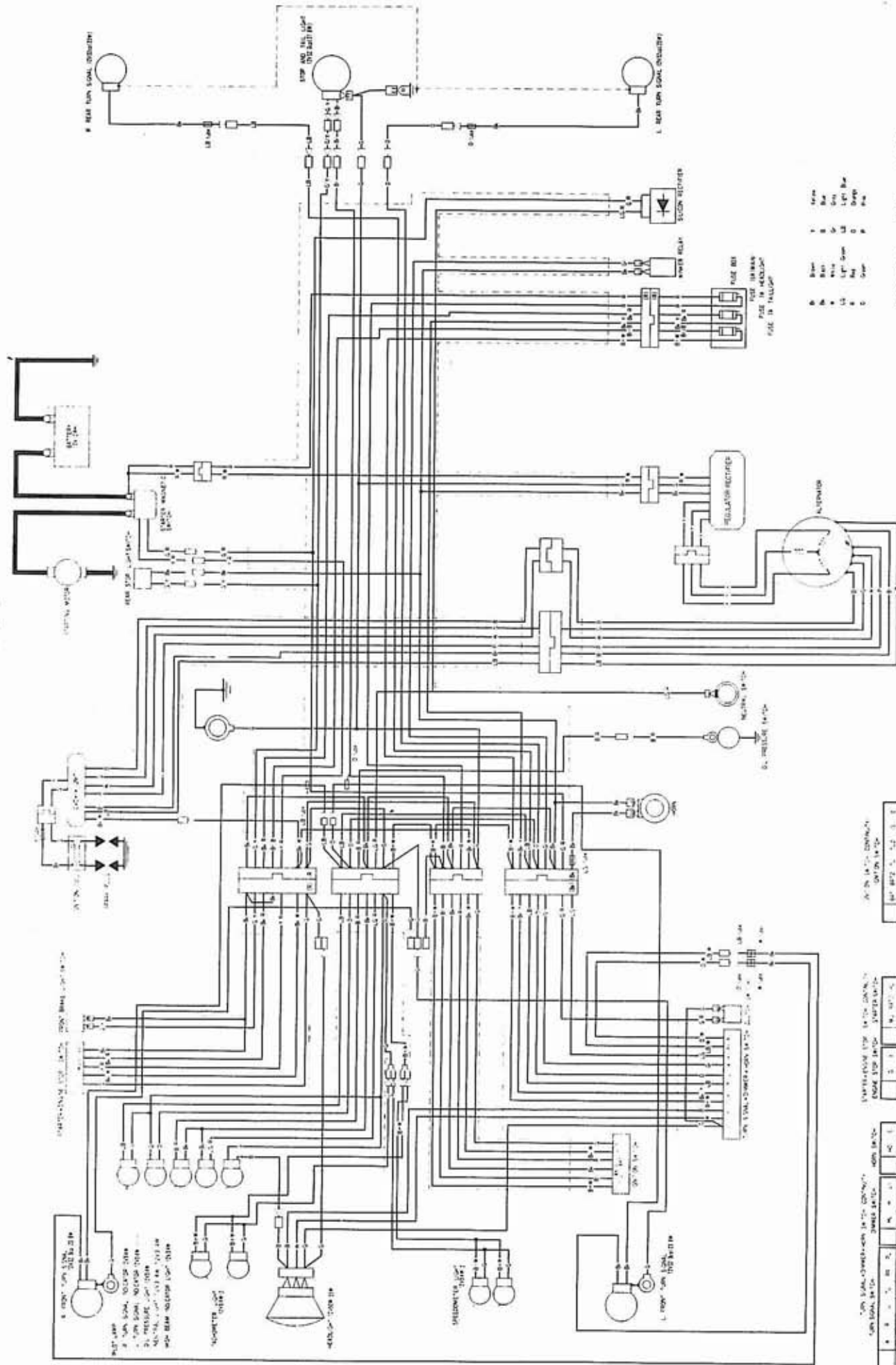
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M E M O



#### IV. WIRING DIAGRAMS

# CM 400T



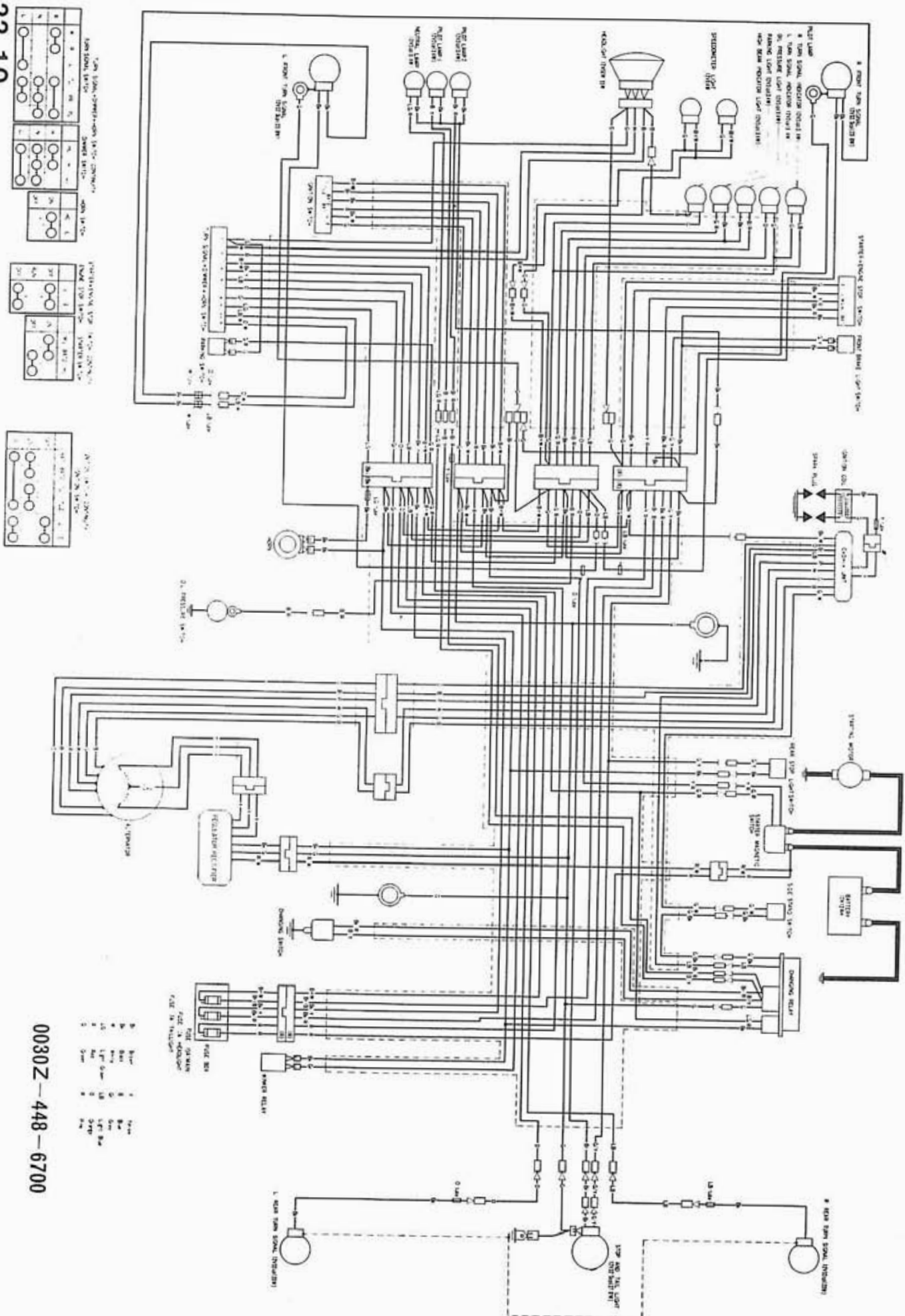
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Q	Q	Q	Q
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20	20	20	20

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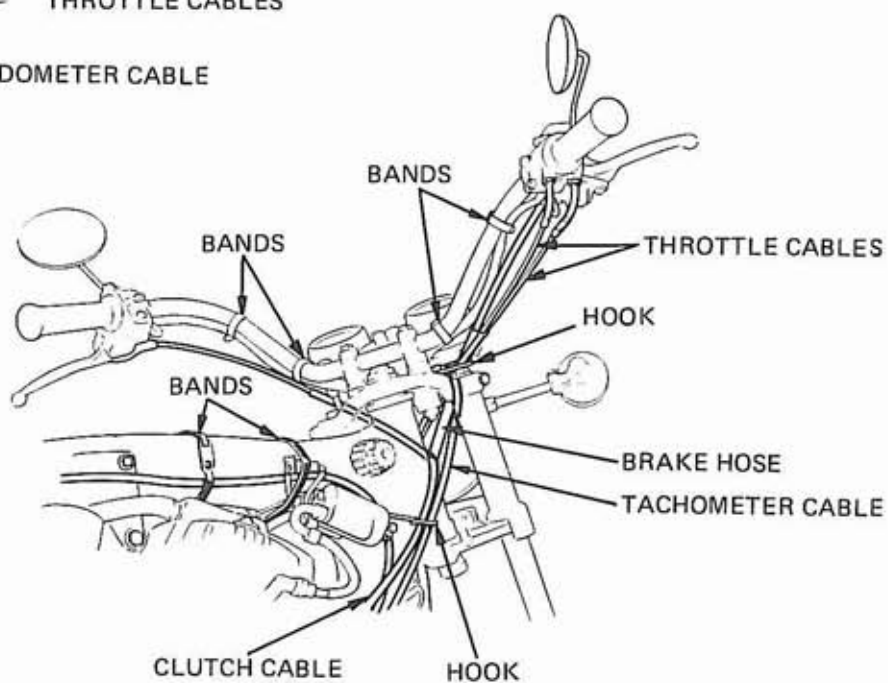
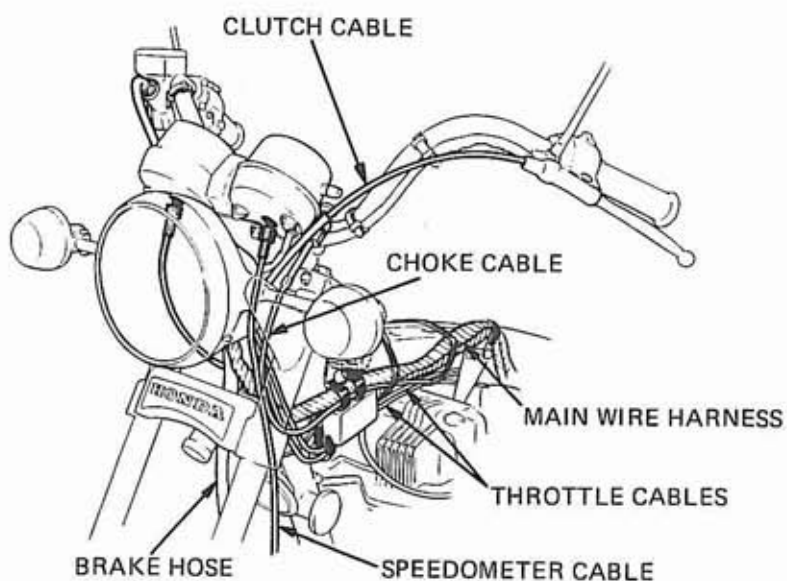
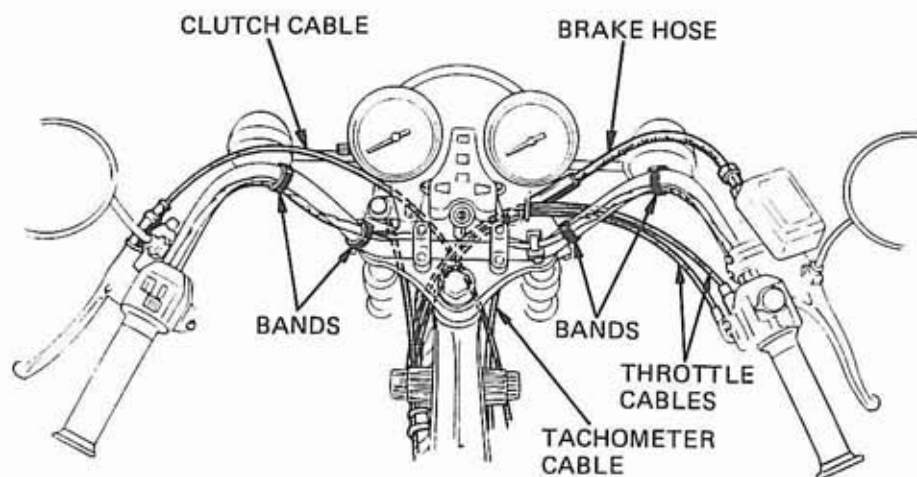
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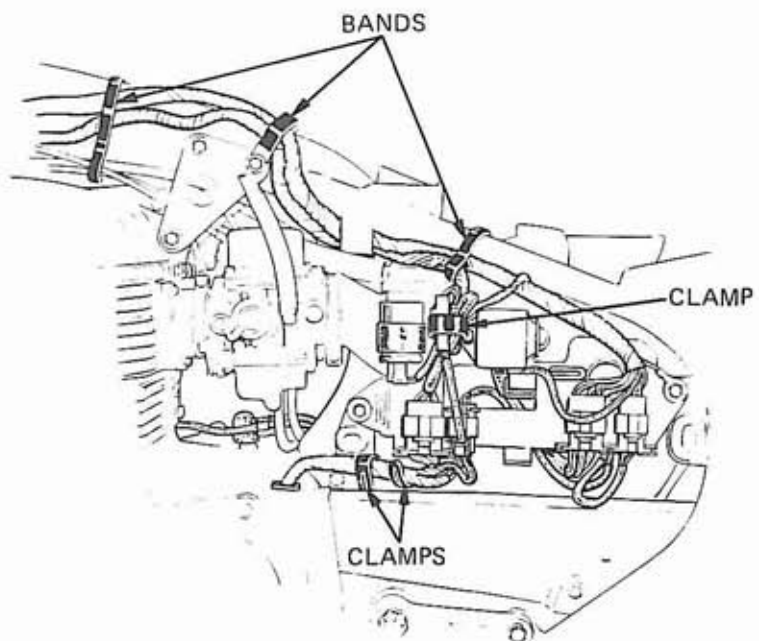
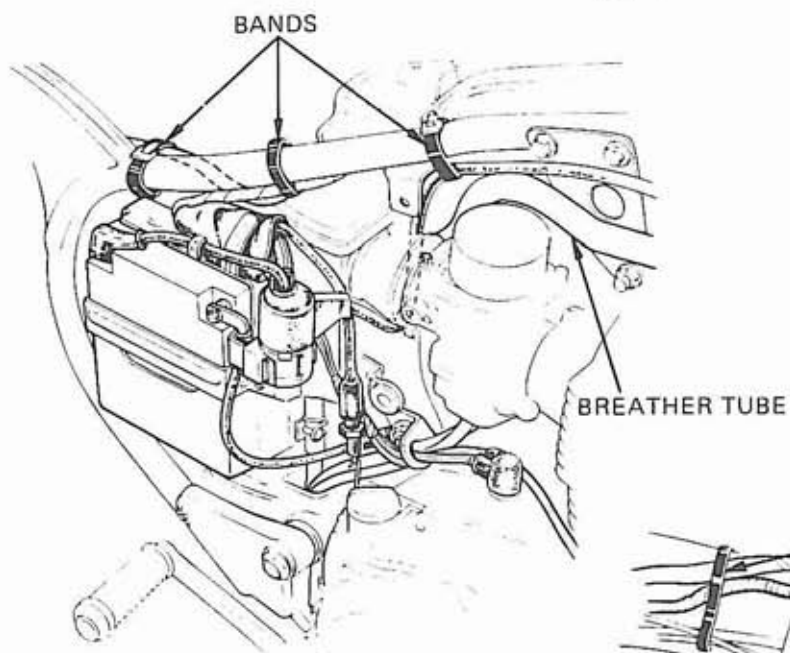
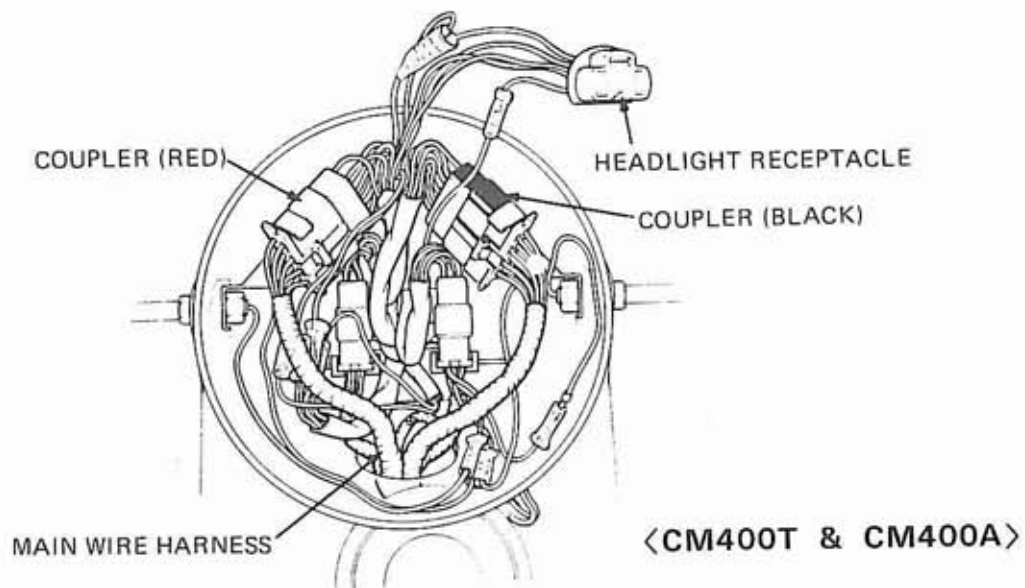




## V. CABLE AND HARNESS ROUTING

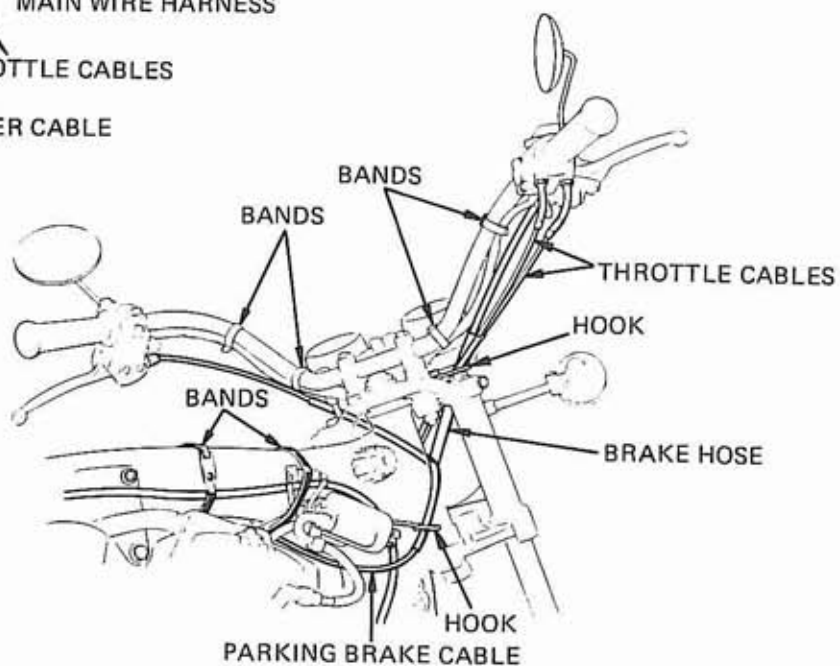
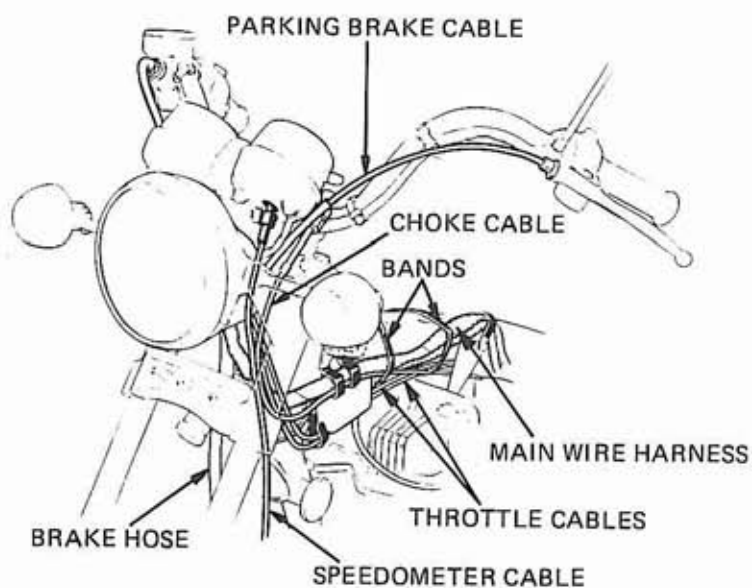
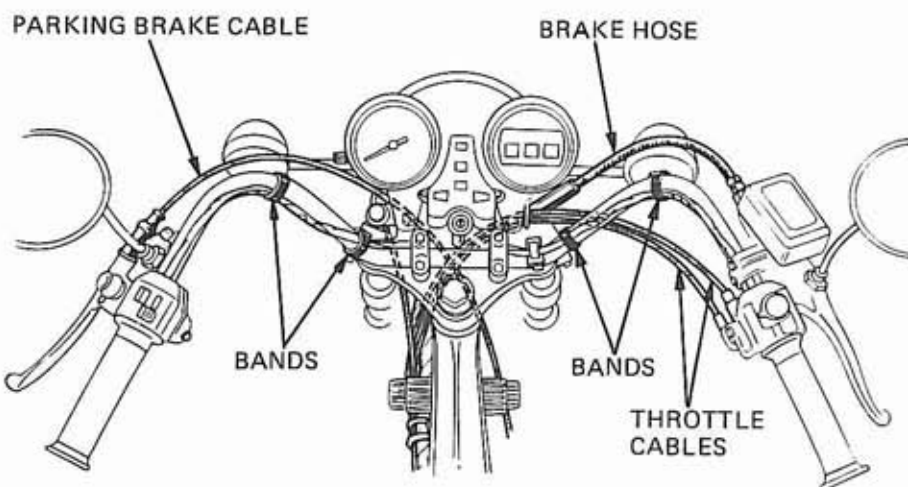
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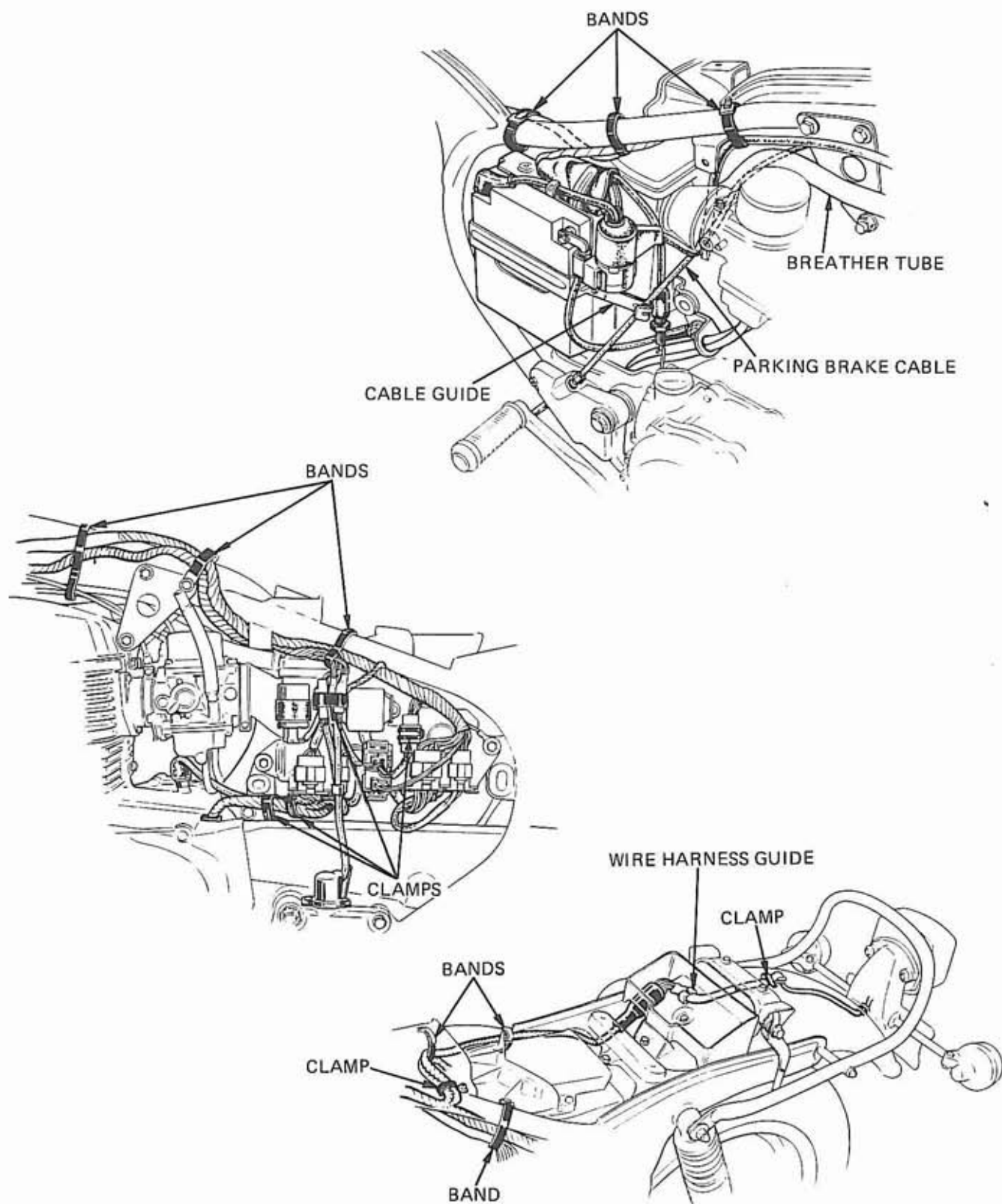






• CM400A





〈CM400T & CM400A〉

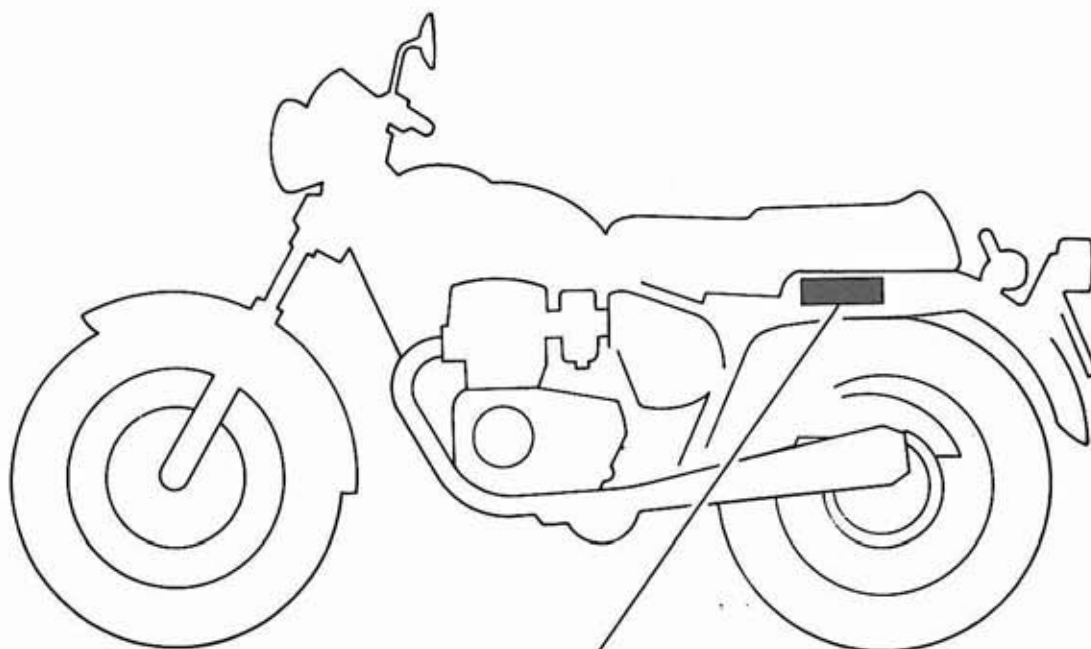




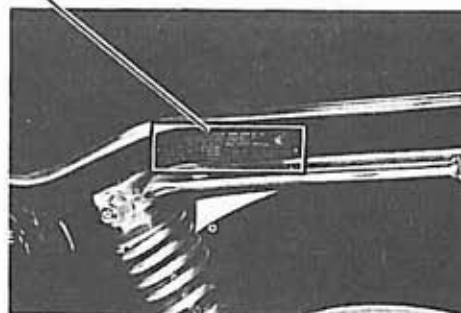
## VI. EMISSION CONTROL LABEL

CM400T's and CM400A's have an Emission Control Information Label attached to the frame on the left side below the seat as shown.

It contains basic tune-up specifications for CM400T's and CM400A's. Refer to the Shop Manual 78½ Emissions Addendum for details.



Vehicle Emission Control Information Label





## VII. MAINTENANCE SCHEDULE

### • CM400T

Perform the Pre-ride Inspection in the Owner's Manual at each scheduled maintenance period.

I: INSPECT, CLEAN, ADJUST, LUBRICATE OR REPLACE IF NECESSARY.

C: CLEAN

R: REPLACE

A: ADJUST

L: LUBRICATE

FREQUENCY		WHICHEVER COMES FIRST ↓	ODOMETER READING [NOTE 3]							Refer to
			600 mi. (1,000 km)	3,750 mi. (6,000 km)	7,500 mi. (12,000 km)	11,250 mi. (18,000 km)	15,000 mi. (24,000 km)	18,750 mi. (30,000 km)		
ITEM		EVERY								
EMISSION RELATED ITEMS	ENGINE OIL	YEAR	R	REPLACE EVERY 1,875 mi (3,000 km)					Page 20–10	
	ENGINE OIL FILTER	YEAR	R	R	R	R	R	R	Page 20–10	
	CRANKCASE BREATHER	NOTE 1		C	C	C	C	C	Page 20–11	
	AIR CLEANER	NOTE 2		C	R	C	R	C	Page 22–18	
	* FUEL LINES			I	I	I	I	I	Page 20–12	
	SPARK PLUGS			I	R	I	R	I	Page 20–12	
	* VALVE CLEARANCE		I	I	I	I	I	I	Page 20–13	
	* CAM CHAIN TENSION		A	A	A	A	A	A	Page 20–13	
	* THROTTLE OPERATION		I	I	I	I	I	I	Page 20–14	
	* CARBURETOR-IDLE SPEED		I	I	I	I	I	I	Page 20–14	
	* CARBURETOR-CHOKE			I	I	I	I	I	Page 20–15	
	* CARBURETOR-SYNCHRONIZE		I	I	I	I	I	I	Page 20–15	
	** BALANCER CHAIN TENSION					A			Page 20–17	
NON-EMISSION RELATED ITEMS	DRIVE CHAIN		I, L EVERY 300 mi (500 km)						Page 20–18	
	BATTERY	MONTH	I	I	I	I	I	I	Page 20–20	
	BRAKE FLUID (Front)	MONTH I 2 YEARS R	I	I	I	*R	I	I	Page 20–20	
	BRAKE SHOE/PAD WEAR			I	I	I	I	I	Page 20–22	
	BRAKE SYSTEM (Rear)		I	I	I	I	I	I	Page 20–22	
	* BRAKE LIGHT SWITCH		I	I	I	I	I	I	Page 20–26	
	* HEADLIGHT AIM		I	I	I	I	I	I	Page 20–26	
	CLUTCH FREE PLAY		I	I	I	I	I	I	Page 20–26	
	SIDE STAND			I	I	I	I	I	Page 20–27	
	* SUSPENSION		I	I	I	I	I	I	Page 20–29	
	* NUTS, BOLTS, FASTENERS		I	I	I	I	I	I	Page 20–30	
	** WHEELS		I	I	I	I	I	I	Page 20–30	
	** STEERING HEAD BEARING		I		I		I		Page 20–30	

\* Should be serviced by an 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.

NOTE: 1. Service more frequently when ridden in rain or at full throttle or after the motorcycle is washed or overturned.

2. Service more frequently when ridden in dusty areas.

3. For higher odometer readings, repeat at the frequency interval established here.



#### • CM400A

Perform the Pre-ride Inspection in the Owner's Manual at each scheduled maintenance period.

I: INSPECT, CLEAN, ADJUST, LUBRICATE OR REPLACE IF NECESSARY.

C: CLEAN

R: REPLACE

A: ADJUST

L: LUBRICATE

	FREQUENCY	WHICHEVER COMES FIRST  ↓	ODOMETER READING [NOTE 3]							Refer to
			600 mi. (1,000 km)	3,750 mi. (6,000 km)	7,500 mi. (12,000 km)	11,250 mi. (18,000 km)	15,000 mi. (24,000 km)	18,750 mi. (30,000 km)		
ITEM	EVERY									
EMISSION RELATED ITEMS	ENGINE OIL	YEAR	R	REPLACE EVERY 1,875 mi. (3,000 km)					Page 20–10	
	ENGINE OIL FILTER	YEAR	R	R	R	R	R	R	Page 20–10	
	CRANKCASE BREATHER	NOTE 1		C	C	C	C	C	Page 20–11	
	AIR CLEANER	NOTE 2		C	R	C	R	C	Page 22–18	
	* FUEL LINES			I	I	I	I	I	Page 20–12	
	SPARK PLUGS			I	R	I	R	I	Page 20–12	
	* VALVE CLEARANCE		I	I	I	I	I	I	Page 20–13	
	* CAM CHAIN TENSION		A	A	A	A	A	A	Page 20–13	
	* THROTTLE OPERATION		I	I	I	I	I	I	Page 20–14	
	* CARBURETOR-IDLE SPEED		I	I	I	I	I	I	Page 20–14	
	* CARBURETOR-CHOKE			I	I	I	I	I	Page 20–15	
	* CARBURETOR-SYNCHRONIZE		I	I	I	I	I	I	Page 20–15	
** BALANCER CHAIN TENSION					A			Page 20–17		
NON-EMISSION RELATED ITEMS	DRIVE CHAIN		I, L EVERY 300 mi (500 km)						Page 20–18	
	BATTERY	MONTH	I	I	I	I	I	I	Page 20–20	
	BRAKE FLUID (Front)	MONTH I 2 YEARS R	I	I	I	*R	I	I	Page 20–20	
	BRAKE SHOE/PAD WEAR			I	I	I	I	I	Page 20–22	
	BRAKE SYSTEM (Rear)		I	I	I	I	I	I	Page 20–22	
	* BRAKE LIGHT SWITCH		I	I	I	I	I	I	Page 20–26	
	* HEADLIGHT AIM		I	I	I	I	I	I	Page 20–26	
	SIDE STAND			I	I	I	I	I	Page 20–27	
	* SUSPENSION		I	I	I	I	I	I	Page 20–29	
	* NUTS, BOLTS, FASTENERS		I	I	I	I	I	I	Page 20–30	
	** WHEELS		I	I	I	I	I	I	Page 20–30	
	** STEERING HEAD BEARING		I		I		I		Page 20–30	

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NOTE: 1. Service more frequently when ridden in rain or at full throttle or after the motorcycle is washed or overturned.

2. Service more frequently when ridden in dusty areas.

3. For higher odometer readings, repeat at the frequency interval established here.

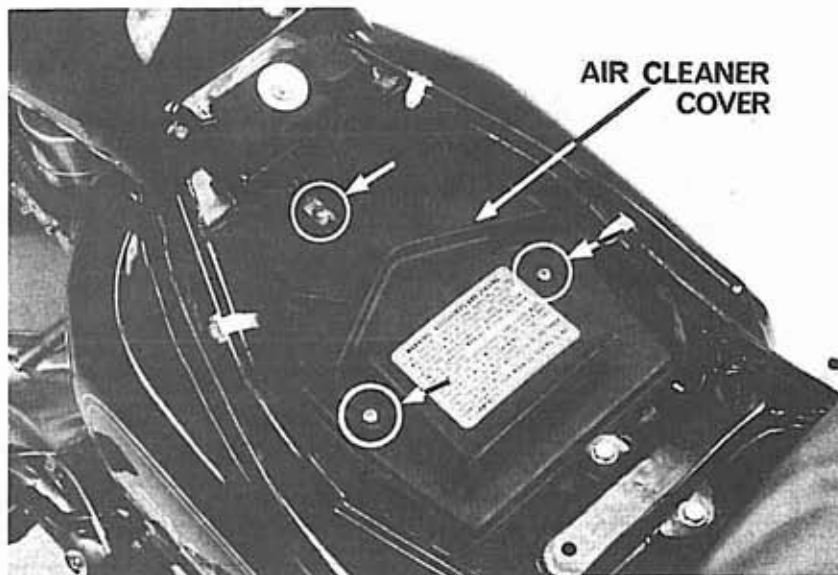


## VIII. INSPECTION AND ADJUSTMENT

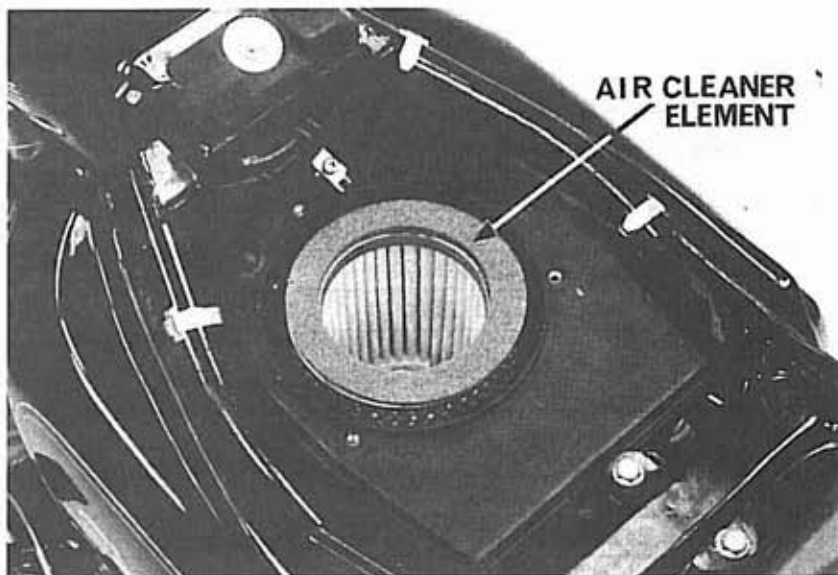
### • AIR CLEANER

Remove the seat.

Remove the air cleaner cover by removing the attaching screws.



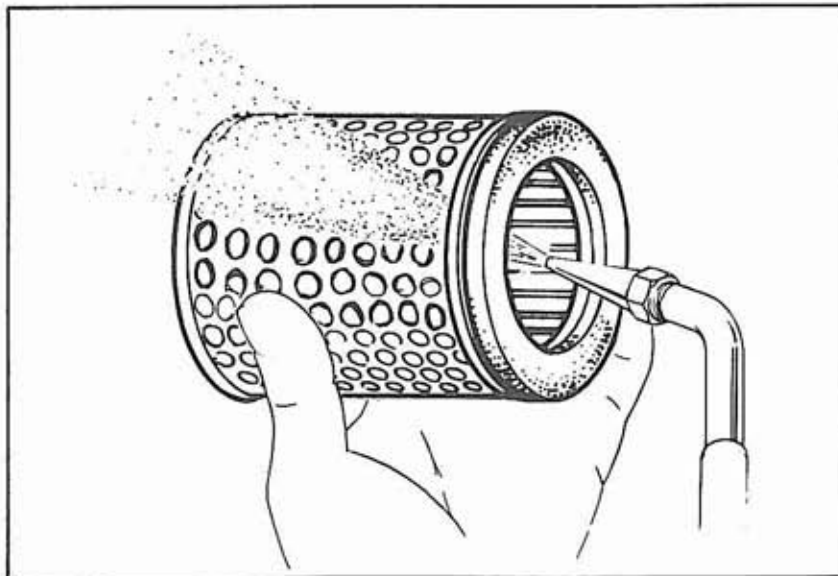
Remove the air cleaner element.



Clean the element by tapping it lightly to loosen dust. Blow away the remaining dust by applying compressed air from inside the element.

Replace the element if it is excessively dirty, broken or damaged.

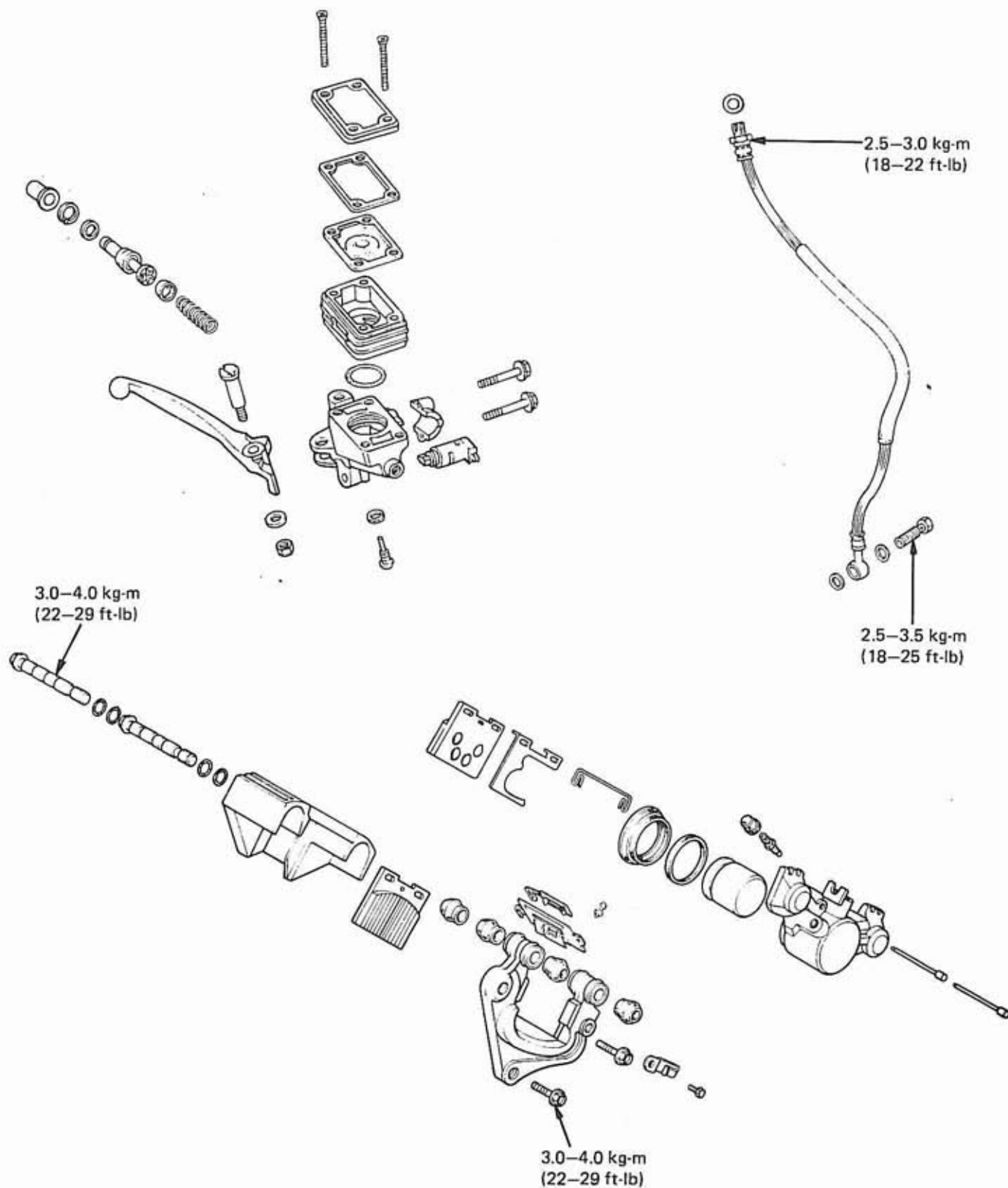
Install the element, air cleaner cover and seat.





## IX. HYDRAULIC DISC BRAKE

- Refer to pages 14-3 through 14-10 for caliper and pad disassembly and inspection.
- Refer to pages 21-6 and 21-7 for master cylinder disassembly and inspection.





## X. FUEL SYSTEM

### • HIGH ALTITUDE ADJUSTMENT

Adjust the carburetors for riding above 2,000 m (6,500 ft) to improve high altitude driveability.

#### HIGH ALTITUDE (ABOVE 2,000 m/6,500 ft) CARBURETOR SPECIFICATIONS

	CM400T	CM400A
Secondary Main Jet	#108	_____
Pilot Screw	1/2 turn in	1/2 turn in
Idle speed	1,200 ± 100 rpm	1,250 ± 100 rpm

#### CAUTION

Sustained operation at altitudes lower than 1,500 meters (5,000 ft) with the high altitude carburetor specifications may cause engine overheating and damage.

Adjust as follows:

#### CM400T:

- Remove the float chambers and secondary main jets. (page 4–5).
- Install #108 secondary main jets.
- Install the float chambers.
- Turn each pilot screw in 1/2 turn.
- Adjust the idle speed with the throttle stop screw.

#### CM400A:

- Turn each pilot screw in 1/2 turn.
- Adjust the idle speed with the throttle stop screw.

When either model motorcycle is to be ridden below 1,500 m (5,000 ft), do the following:

- Install the standard size secondary main jets for the CM400T.
- Turn the pilot screws 1/2 turn out.
- Adjust the idle speed with the throttle stop screw.





## INTRODUCTION

This HONDA Shop Manual Addendum contains information for the 1980 CM400T·CM400A.

Refer to the base shop manual for service procedures and data not included in this addendum.

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. HONDA MOTOR CO., LTD RESERVES THE RIGHT TO MAKE CHANGES AT ANY TIME WITHOUT NOTICE AND WITHOUT INCURRING ANY OBLIGATION WHATEVER.

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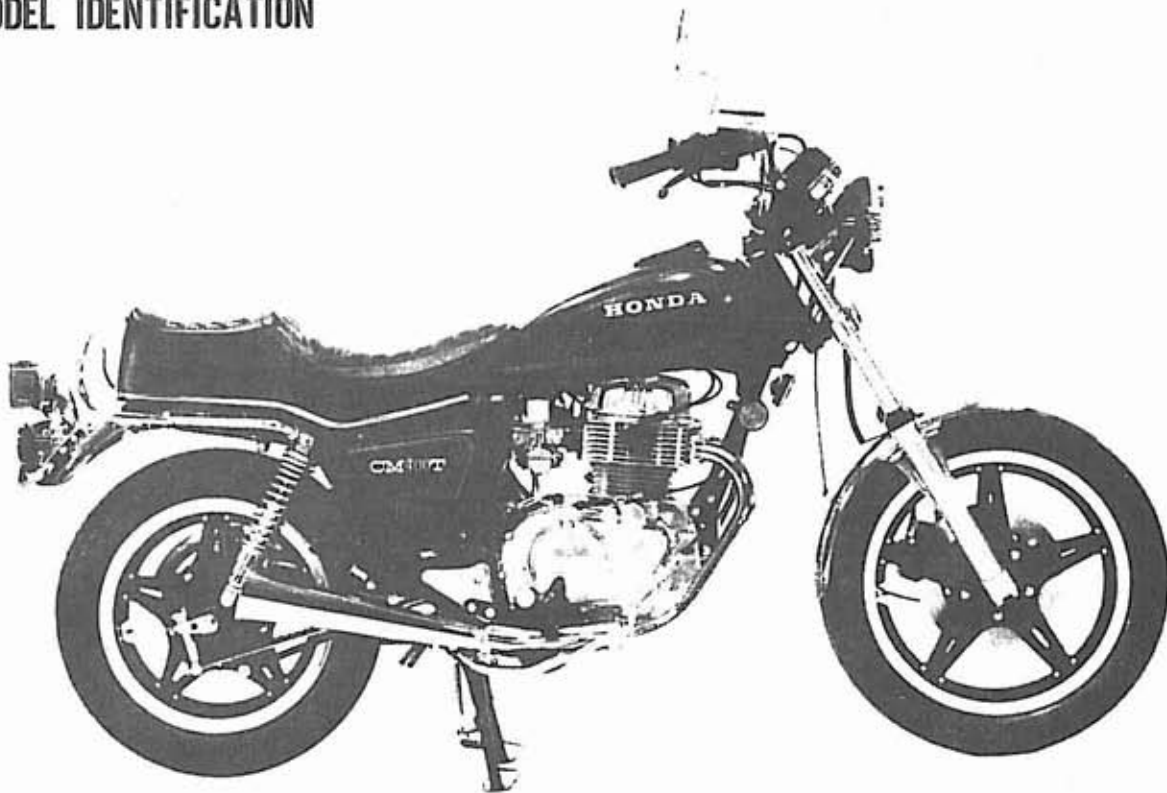
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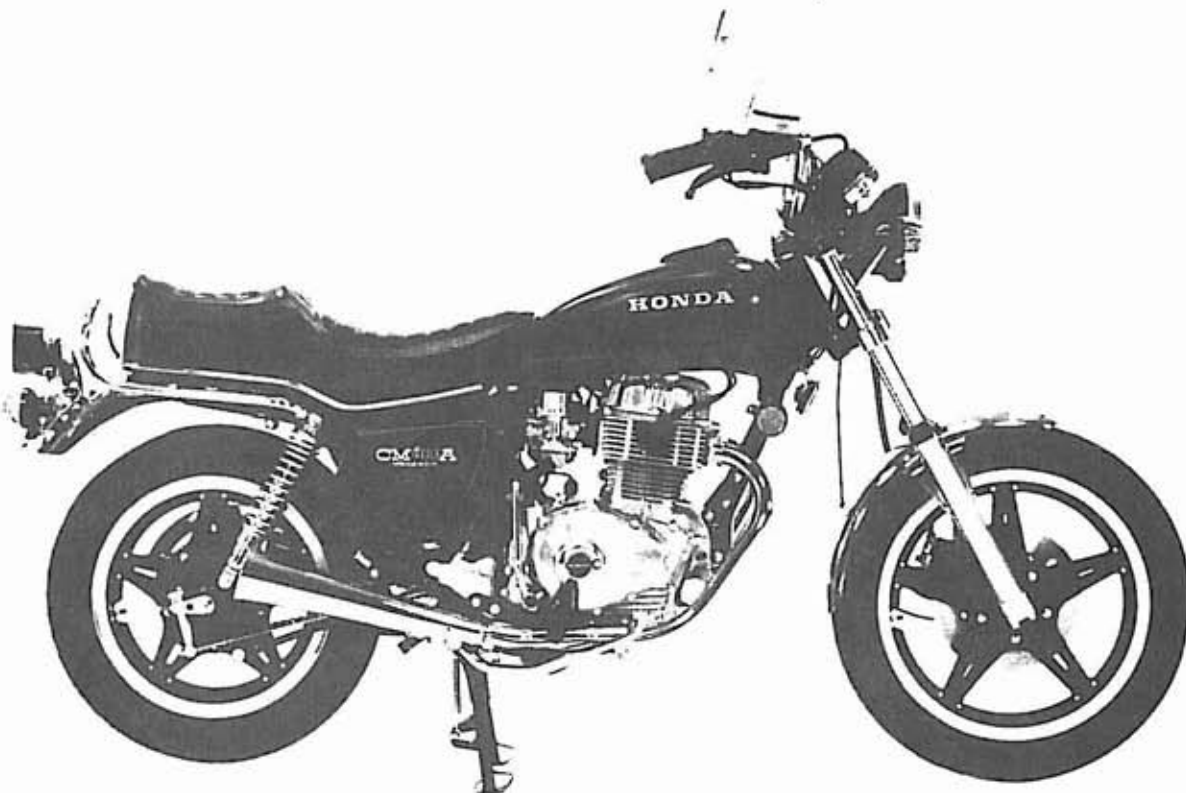
I.	MODEL IDENTIFICATION	23-2
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## I. MODEL IDENTIFICATION



CM 400T BEGINNING F/N 2100001



CM 400A BEGINNING F/N 2100001



## II. SPECIFICATIONS

- Specifications listed are for both T and A models unless otherwise noted.

	Item		Metric	English	
Dimensions	Overall length		2,110 mm	83.1 in.	
	Overall width		855 mm	33.7 in.	
	Overall height		1,155 mm	45.5 in.	
	Wheel base		1,425 mm	56.1 in.	
	Seat height		750 mm	29.5 in.	
	Foot peg height		310 mm	12.2 in.	
	Ground clearance		140 mm	5.5 in.	
	Dry weight		CM400T: 171 kg CM400A: 178 kg	377.1 lbs. 392.5 lbs.	
Frame	Type		Diamond		
	F. suspension and travel		Telescopic fork, 139.5 mm (5.5 in.)		
	R. suspension and travel		Swing arm, 75.9 mm (3 in.)		
	F. tire size		3.50S18-4PR		
	R. tire size		4.60S16-4PR		
	Cold tire pressures	Up to 90 kg (200 lbs.) load	Front	1.75 kg/cm <sup>2</sup>	24 psi
			Rear	2.0 kg/cm <sup>2</sup>	28 psi
		Up to vehicle capacity load	Front	1.75 kg/cm <sup>2</sup>	24 psi
			Rear	2.5 kg/cm <sup>2</sup>	36 psi
	F. brake		Disk brake		
	R. brake		Internal expanding shoes		
	Fuel capacity		10 lit.	2.6 U.S. gal., 2.2 Imp. gal.	
	Fuel reserve capacity		3.0 lit.	0.8 U.S. gal., 0.7 Imp. gal.	
	Caster angle		60°30' from horizontal		
	Trail length		108 mm	4.3 in.	
	Front fork oil capacity		140 cc	4.9 oz.	
Engine	Type		Air cooled 4 stroke O.H.C. engine		
	Cylinder arrangement		Vertical twin parallel		
	Bore and stroke		70.5 x 50.6 mm	2.776 x 1.992 in.	
	Displacement		395 cc	24.1 cu-in.	
	Compression ratio		9.3 : 1		
	Valve train		Chain driven over head camshaft		
	Oil capacity		CM400T: 3.0 lit. CM400A: 3.3 lit.	3.2 U.S. qt., 2.6 Imp. qt. 3.5 U.S. qt., 2.9 Imp. qt.	
	Lubrication system		Forced pressure and wet sump		
	Cylinder head compression pressure		13 ± 1.0 kg/cm <sup>2</sup>	185 ± 14 psi	



Item		Metric	English
Engine	CM400T: Intake valve	Opens	5° BTDC (At 1.0 mm lift), 57° BTDC (At 0 lift)
		Closes	35° ABDC (At 1.0 mm lift), 87° ABDC (At 0 lift)
	CM400T: Exhaust valve	Opens	40° BBDC (At 1.0 mm lift), 90° BBDC (At 0 lift)
		Closes	5° ATDC (At 1.0 mm lift), 55° ATDC (At 0 lift)
	CM400A: Intake valve	Opens	5° ATDC (At 1.0 mm lift), 39° BTDC (At 0 lift)
		Closes	30° ABDC (At 1.0 mm lift), 74° ABDC (At 0 lift)
	CM400A: Exhaust valve	Opens	40° BBDC (At 1.0 mm lift), 94° BBDC (At 0 lift)
		Closes	5° BTDC (At 1.0 mm lift), 49° ATDC (At 0 lift)
	Valve clearance	IN	0.10 mm 0.004 in.
		EX	0.14 mm 0.006 in.
	Idle speed		CM400T: 1,200 ± 100 rpm (in neutral) CM400A: 1,250 ± 100 rpm (in neutral)
CM400T: Carburetion	Carburetor type		CV type, 30 mm (1.18 in.) venturi bore
	Identification number		VB22A
	Pilot screw initial setting		See page 23-11
	Float level		15.5 mm 0.61 in.
CM400A: Carburetion	Carburetor type		CV type, 28 mm (1.10 in.) venturi bore
	Identification number		VB24C
	Pilot screw initial setting		See page 23-11
	Float level		15.5 mm 0.61 in.
CM400T: Drive train	Clutch		Wet multi-plate type
	Transmission		5-speed constant mesh
	Primary reduction ratio		3.125
	Gear ratio I		2.733
	Gear ratio II		1.850
	Gear ratio III		1.417
	Gear ratio IV		1.148
	Gear ratio V		0.966
	Final reduction ratio		2.188
	Gear shift pattern		Left foot operated return system
CM400A: Drive train	Transmission		2-speed semi-automatic transmission with torque converter
	Primary reduction ratio		1.463
	Gear ratio I		2.923
	Gear ratio II		2.059
	Final reduction ratio		2.188
	Gear shift pattern		Left foot operated return system



	Item		Metric	English
Electrical	Ignition		Capacitive discharge ignition	
	CM400T: Ignition timing	"F" mark	15° BTDC at 1,200 rpm idle speed	
		Full advance	43° BTDC ± 2° at 4,500 to 5,350 engine rpm	
	CM400A: Ignition timing	"FN" mark	7.5° BTDC at 1,250 rpm idle speed (Transmission in neutral)	
		"F" mark	15° BTDC at 1,250 rpm idle speed (Transmission in gear)	
		Full advance	43° BTDC ± 2° at 4,500 to 5,350 rpm	
	CM400T: Starting system		Starting motor	
	CM400A: Starting system		Starting motor and kick starter	
	Alternator		A.C. generator, 0.17 kw/5,000 rpm	
	Battery capacity		12 V, 12 AH	
	Spark plug	U.S.A. model	For cold climate (Below 5°C, 41°F)	ND X22ES-U or NGK D7EA
			Standard	ND X24ES-U or NGK D8EA
			For extended high speed driving	ND X27ES-U or NGK D9EA
		CANADA model	For cold climate (Below 5°C, 41°F)	ND X22ESR-U or NGK DR7ES
			Standard	ND X24ESR-U or NGK DR8ES-L
			For extended high speed driving	ND X27ESR-U or NGK DR8ES
Spark plug gap		0.6 ~ 0.7 mm	0.024 ~ 0.028 in.	
Lights	Headlight (low/high beam)		35/50 W	
	Tail/stoplight		3/32 cp	SAE NO. 1157
	Turn signal light (Front/Rear)		32/32 cp	SAE NO. F. 1034 R. 1073
	Speedometer light		2 cp	SAE NO. 57
	CM400A: Parking brake warning light		2 cp	SAE NO. 57
	Turn signal indicator light		2 cp	SAE NO. 57
	High beam indicator light		2 cp	SAE NO. 57
	Position light		3 cp	SAE NO. 1034
	Neutral Indicator Light		2 cp	SAE NO. 57
	CM400A: Shift position light (3)		2 cp	SAE NO. 57
	Oil pressure light		2 cp	SAE NO. 57
	CM400T: Tachometer light		2 cp	SAE NO. 57



### III. MAINTENANCE SCHEDULES

#### • CM400T

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

FREQUENCY		WHICHEVER COMES FIRST ↓	ODOMETER READING [NOTE 3]							Refer to
			600 mi. (1,000 km)	3,750 mi. (6,000 km)	7,500 mi. (12,000 km)	11,250 mi. (18,000 km)	15,000 mi. (24,000 km)	18,750 mi. (30,000 km)		
ITEM	EVERY									
EMISSION RELATED ITEMS	* FUEL LINES			I	I	I	I	I	Page 20-12	
	* THROTTLE OPERATION		I	I	I	I	I	I	Page 20-14	
	* CARBURETOR-CHOKE			I	I	I	I	I	Page 20-15	
	AIR CLEANER	NOTE 1		C	R	C	R	C	Page 22-18	
	CRANKCASE BREATHER	NOTE 2		C	C	C	C	C	Page 20-11	
	SPARK PLUGS			R	R	R	R	R	Page 23-8	
	* VALVE CLEARANCE		I	I	I	I	I	I	Page 20-13	
	ENGINE OIL	YEAR	R	REPLACE EVERY 1,875 mi (3,000 km)					Page 20-10	
	ENGINE OIL FILTER	YEAR	R	R	R	R	R	R	Page 20-10	
	** BALANCER CHAIN TENSION					A			Page 20-17	
	* CAM CHAIN TENSION		A	A	A	A	A	A	Page 20-13	
	* CARBURETOR-SYNCHRONIZE		I	I	I	I	I	I	Page 20-15	
NON-EMISSION RELATED ITEMS	* CARBURETOR-IDLE SPEED		I	I	I	I	I	I	Page 20-14	
	DRIVE CHAIN		I, L EVERY 300 mi (500 km)						Page 20-18	
	BATTERY	MONTH	I	I	I	I	I	I	Page 20-20	
	BRAKE FLUID (Front)	MONTH 1 2 YEARS*R	I	I	I	*R	I	I	Page 20-20	
	BRAKE SHOE/PAD WEAR			I	I	I	I	I	Page 20-22	
	BRAKE SYSTEM (Rear)		I	I	I	I	I	I	Page 20-22	
	* BRAKE LIGHT SWITCH		I	I	I	I	I	I	Page 20-26	
	* HEADLIGHT AIM		I	I	I	I	I	I	Page 20-26	
	CLUTCH		I	I	I	I	I	I	Page 20-26 Page 23-8	
	SIDE STAND			I	I	I	I	I	Page 20-27	
	* SUSPENSION		I	I	I	I	I	I	Page 20-29	
	* NUTS, BOLTS, FASTENERS		I	I	I	I	I	I	Page 20-30	
	** WHEELS		I	I	I	I	I	I	Page 20-30	
	** STEERING HEAD BEARING		I		I		I		Page 20-30	

\* Should be serviced by an 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.

NOTE: 1. Service more frequently when ridden in dusty areas.

2. Service more frequently when ridden in rain or at full throttle or after the motorcycle is washed or overturned.

3. For higher odometer readings, repeat at the frequency interval established here.





#### • CM400A

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

	FREQUENCY	WHICHEVER COMES FIRST ↓	ODOMETER READING [NOTE 3]						Refer to
			600 mi. (1,000 km)	3,750 mi. (6,000 km)	7,500 mi. (12,000 km)	11,250 mi. (18,000 km)	15,000 mi. (24,000 km)	18,750 mi. (30,000 km)	
EMISSION RELATED ITEMS	* FUEL LINES			I	I	I	I	I	Page 20-12
	* THROTTLE OPERATION		I	I	I	I	I	I	Page 20-14
	* CARBURETOR-CHOKE			I	I	I	I	I	Page 20-15
	AIR CLEANER	NOTE 1		C	R	C	R	C	Page 22-18
	CRANKCASE BREATHER	NOTE 2		C	C	C	C	C	Page 20-11
	SPARK PLUGS			R	R	R	R	R	Page 23-8
	* VALVE CLEARANCE		I	I	I	I	I	I	Page 20-13
	ENGINE OIL	YEAR	R	REPLACE EVERY 1,875 mi (3,000 km)					Page 20-10
	ENGINE OIL FILTER	YEAR	R	R	R	R	R	R	Page 20-10
	** BALANCER CHAIN TENSION					A			Page 20-17
	* CAM CHAIN TENSION		A	A	A	A	A	A	Page 20-13
	* CARBURETOR-SYNCHRONIZE		I	I	I	I	I	I	Page 20-15
NON-EMISSION RELATED ITEMS	* CARBURETOR-IDLE SPEED		I	I	I	I	I	I	Page 20-14
	DRIVE CHAIN		I, L EVERY 300 mi (500 km)						Page 20-18
	BATTERY	MONTH	I	I	I	I	I	I	Page 20-20
	BRAKE FLUID (Front)	MONTH I 2 YEARS*R	I	I	I	*R	I	I	Page 20-20
	BRAKE SHOE/PAD WEAR			I	I	I	I	I	Page 20-22
	BRAKE SYSTEM (Rear)		I	I	I	I	I	I	Page 20-22
	* BRAKE LIGHT SWITCH		I	I	I	I	I	I	Page 20-26
	* HEADLIGHT AIM		I	I	I	I	I	I	Page 20-26
	SIDE STAND			I	I	I	I	I	Page 20-27
	* SUSPENSION		I	I	I	I	I	I	Page 20-29
	* NUTS, BOLTS, FASTENERS		I	I	I	I	I	I	Page 20-30
	** WHEELS		I	I	I	I	I	I	Page 20-30
	** STEERING HEAD BEARING		I		I		I		Page 20-30

\* Should be serviced by an 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.

NOTE: 1. Service more frequently when ridden in dusty areas.

2. Service more frequently when ridden in rain or at full throttle or after the motorcycle is washed or overturned.

3. For higher odometer readings, repeat at the frequency interval established here.



## IV. INSPECTION AND ADJUSTMENT

### SPARK PLUG

Clean any dirt from around the spark plug base.

Disconnect the spark plug caps. Remove and discard the spark plugs.

Measure the new spark plug gaps using a wire type feeler gauge.

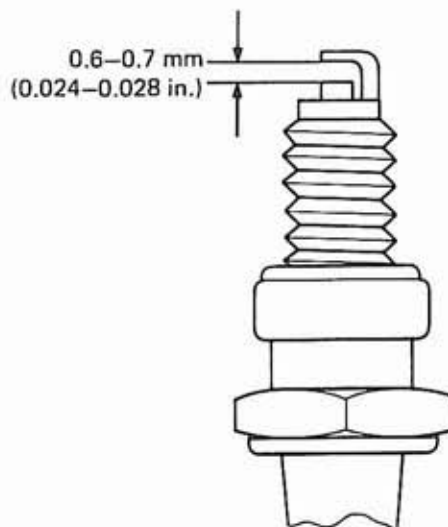
**SPARK PLUG GAP:** 0.6–0.7 mm  
(0.024–0.028 in.)

Adjust by bending the side electrode carefully.

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

Tighten the spark plugs 1/2 turn with a spark plug wrench to compress the washer.

Connect the spark plug caps.



### RECOMMENDED SPARK PLUG

	Usage Manufacturer	For cold climate (below 5°C, 41°F)	Standard	For extended high speed driving
USA model	ND	X22ES-U	X24ES-U	X27ES-U
	NGK	D7EA	D8EA	D9EA
CANADA model	ND	X22ESR-U	X24ESR-U	X27ESR-U
	NGK	DR7ES	DR8ES-L	DR8ES

### CONTROL CABLE LUBRICATION

Disconnect the throttle and clutch (CM400T) control cables at their upper ends. Thoroughly lubricate the cables and their pivot points with a commercially available cable lubricant.

### ENGINE OIL RECOMMENDATION

Use HONDA 4-STROKE OIL or equivalent

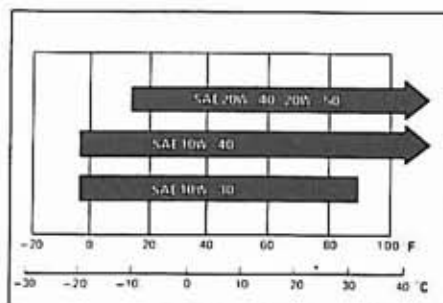
API SERVICE CLASSIFICATION: SE

VISCOSITY:

SAE 10W-40

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

### OIL VISCOSITY



## V. FUEL SYSTEM

### GENERAL INFORMATION

- The CM400T carburetor venturi size has been changed to 30 mm (1.18 in.).
- An accelerator pump circuit has been added.
- Pilot screw limiter caps are used to prevent tampering and Pilot screws cannot be removed without removing the float chambers (USA only).  
See Caution and Notes under Pilot Screw Removal and Pilot Screw Adjustment (page 23-11).
- Refer to section 20 for carburetor adjustment procedures not described in this section.

### CARBURETOR SPECIFICATIONS

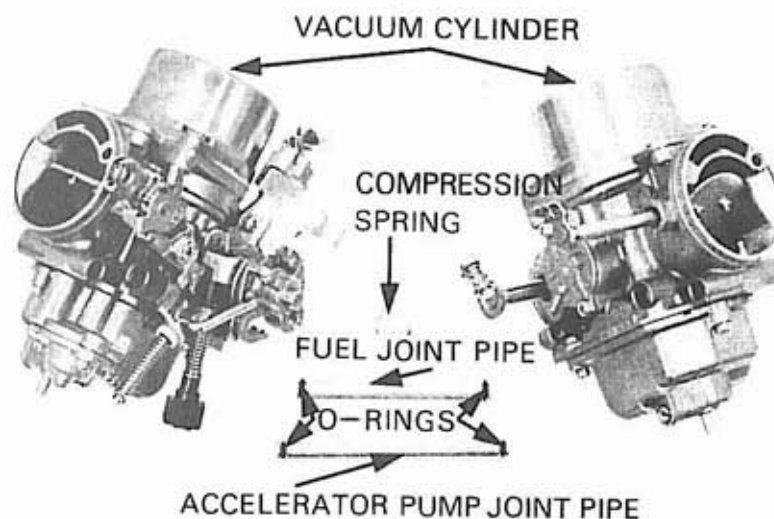
Item	CM400T	CM400A
Identification mark	VB22A	VB24C
Idle speed	1,200 $\pm$ 100 rpm	1,250 $\pm$ 100 rpm
Fast idle speed	2,500 $\pm$ 500 rpm	2,000 $\pm$ 500 rpm
Vacuum difference (at idle)	40 mm (1.6 in.) Hg	←
Float level	15.5 mm (0.61 in.)	←
Pilot screw	See page 23-11	See page 23-11
Venturi size	30 mm (1.18 in.)	28 mm (1.10 in.)

### CARBURETOR SEPARATION

Remove the carburetors (page 4-2).  
Separate the carburetors (page 4-2) noting that the accelerator pump joint pipe must be removed.

### CARBURETOR ASSEMBLY

Install a new O-ring on each end of the accelerator pump and fuel joint pipes.  
Assemble the right and left carburetors noting the compression spring location.  
Install the front and rear stays.  
Refer to page 4-8 for carburetor installation.

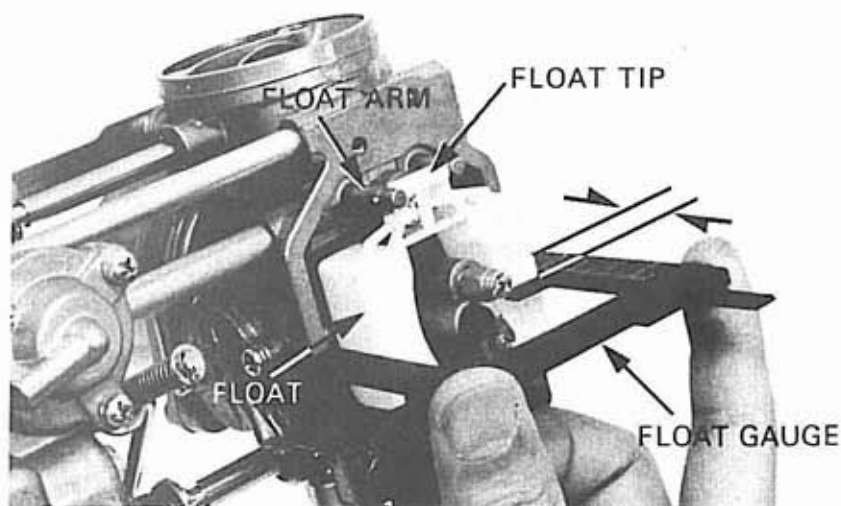


### FLOAT LEVEL INSPECTION

Remove the float chamber.  
Using the float level gauge, measure the float level with the float tip lightly contacting the float valve and the carburetor inclined 15°-45° from vertical.

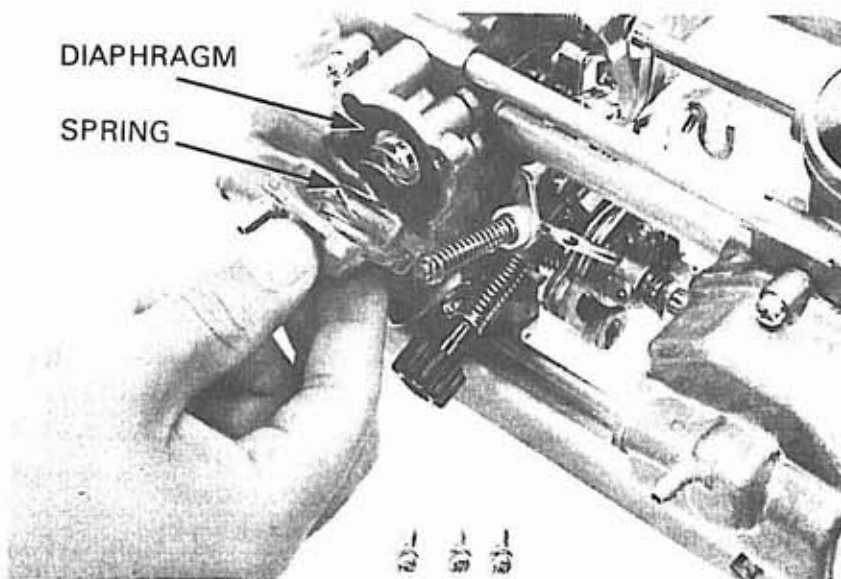
**FLOAT LEVEL:** 15.5 mm  $\pm$  0.5 mm  
(0.61  $\pm$  0.02 in.)

Replace if necessary.  
Install the float chamber.



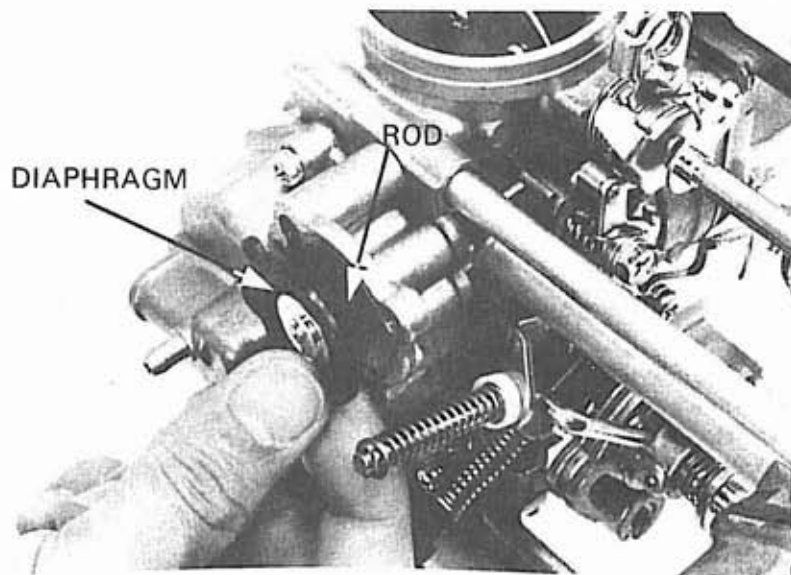
**ACCELERATOR PUMP INSPECTION**

Remove the accelerator pump cover and spring.



Remove the diaphragm.  
Inspect the diaphragm for cracks and brittleness. Replace if necessary.  
Be sure the accelerator pump rod is not bent.

Assemble the accelerator pump in the reverse order of removal.

**ACCELERATOR PUMP  
ADJUSTMENT**

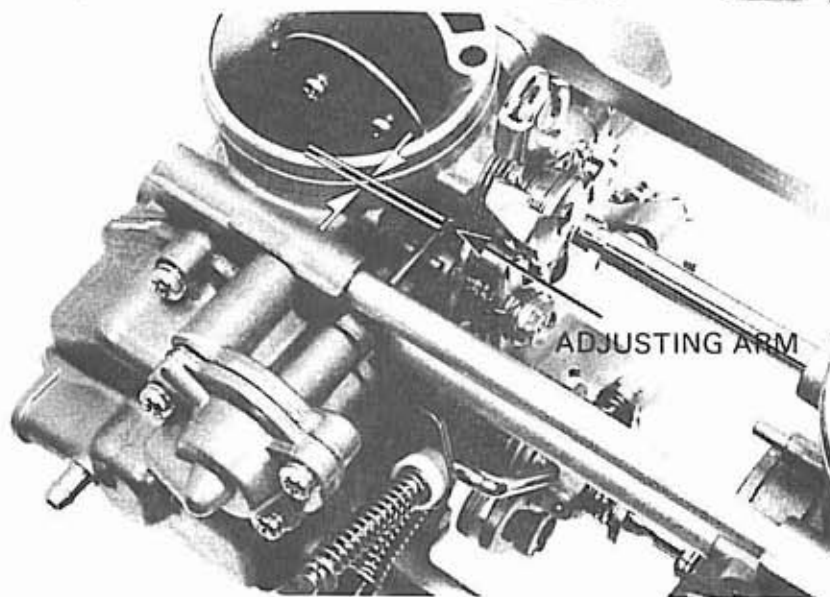
Loosen the throttle stop screw, so the throttle valve is closed.

Measure the clearance between the accelerator pump rod and adjusting arm with the throttle valve closed.

**CLEARANCE:**

0-0.04 mm (0-0.0016 in.)

Adjust by bending the adjusting arm.







Measure the clearance between the adjusting arm and stopper on the carburetor body.

#### CLEARANCE:

CM400T: 7.0 mm (1/4 in.)

CM400A: 8.9 mm (3/8 in.)

Adjust by bending the adjusting arm.

### PILOT SCREW REMOVAL/ INSTALLATION

#### NOTE

The pilot screws are factory pre-set and should not be removed unless the carburetor is overhauled.

Remove the carburetors (page 4-2).

Remove the float chamber (page 4-5).

Turn the pilot screw in and carefully count the number of turns before it seats lightly. Make a note of this to use as a reference when reinstalling the pilot screw.

#### CAUTION

Damage to the pilot screw seat will occur if the pilot screw is tightened against the seat.

Remove the pilot screw.

Inspect the pilot screw for wear and replace if necessary.

Install the pilot screw and return it to its original position as noted during removal. Perform pilot screw adjustment if a new pilot screw is installed.

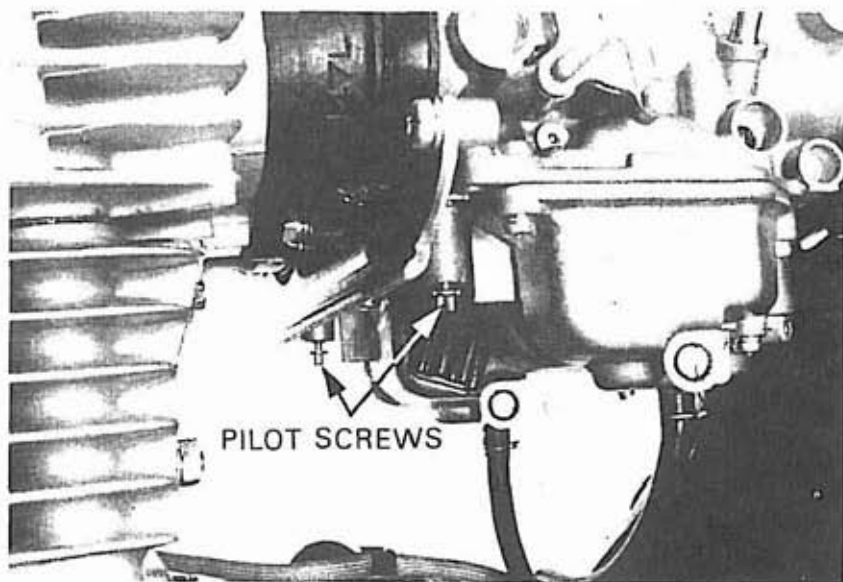
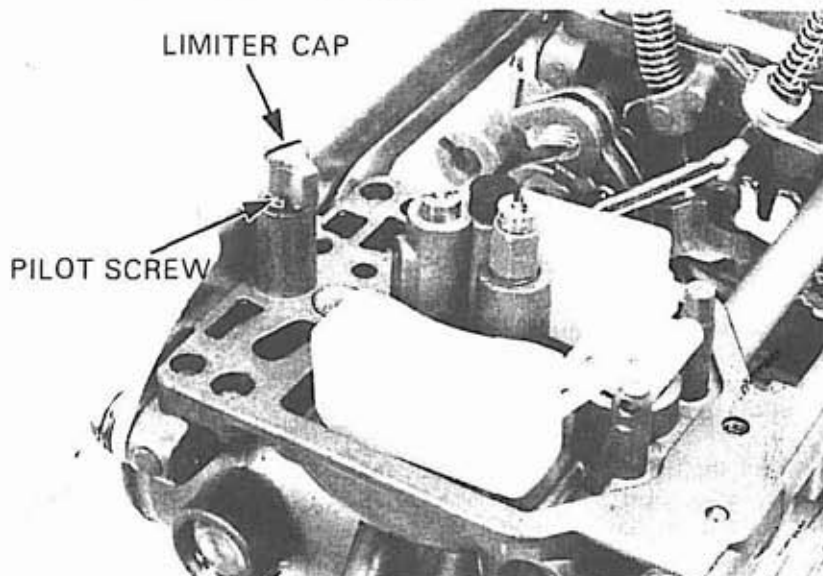
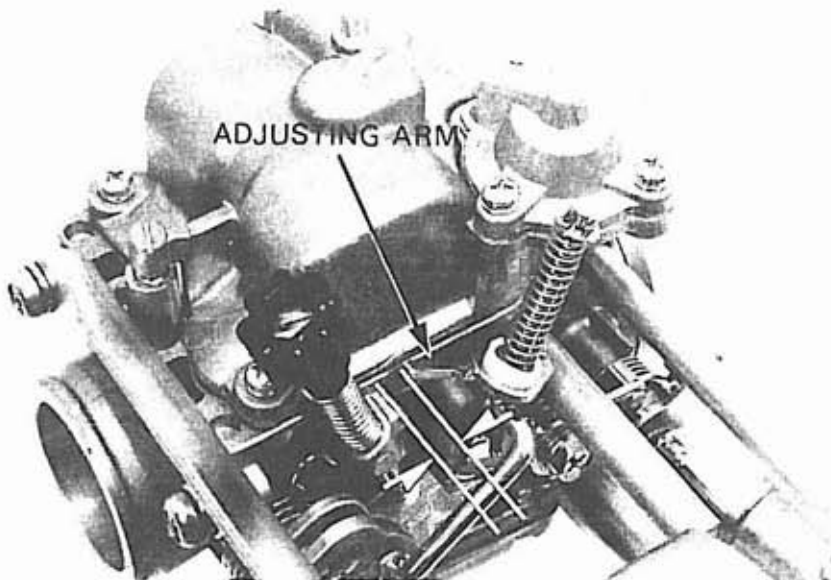
#### NOTE

Do not install limiter caps on new pilot screws until after adjustment has been made (See Below).

### PILOT SCREW ADJUSTMENT IDLE DROP PROCEDURE

#### NOTE

- The pilot screws are factory pre-set and no adjustment is necessary unless the pilot screw is replaced (see removal above).
- Limiter caps restrict adjustment to 7/8 turn necessitating pilot screw replacement if more adjustment is required.
- Use a tachometer with graduations of 100 rpm or smaller and that will accurately indicate a 100 rpm change.



**CAUTION**

Any forcible attempt to remove the pilot screw limiter caps will cause screw breakage.

1. Turn each pilot screw clockwise until it seats lightly and back it out to the specification given.

This is an initial setting prior to the final pilot screw adjustment.

**INITIAL OPENING:**

**CM400T 2 TURNS OUT**

**CM400A 2-1/4 TURNS OUT**

**CAUTION**

Damage to the pilot screw seat will occur if the pilot screw is tightened against the seat.

2. Start the engine and warm it up to operating temperature. Stop and go driving for 10 minutes is sufficient.

3. Connect a tachometer.

4. Adjust the idle speed with the throttle stop screw.

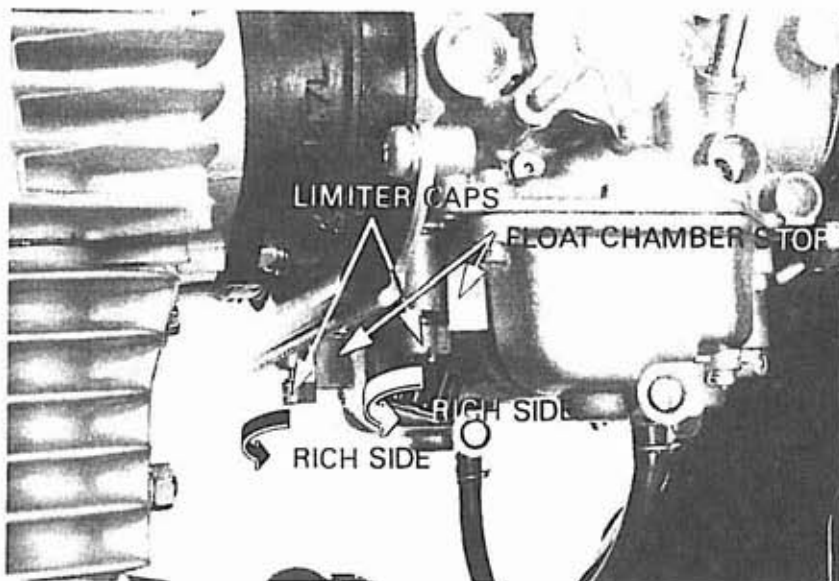
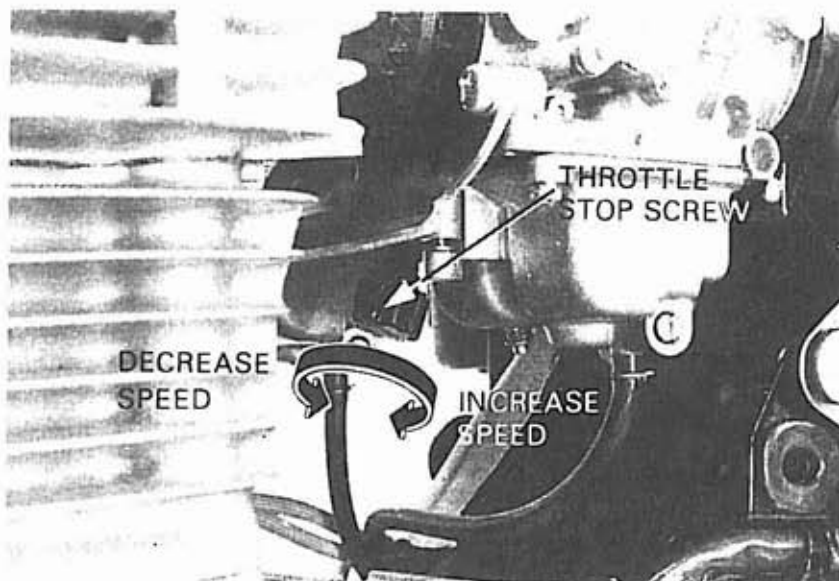
**IDLE SPEED: CM400T -1,200 ± 100 rpm**  
(in neutral)

**CM400A -1,250 ± 100 rpm**  
(in neutral)

5. Turn each pilot screw in or out to obtain the highest engine speed.
6. Readjust the idle speed.
7. Turn one of the pilot screws in gradually until the engine speed is lowered by 100 rpm.
8. Turn the pilot screw 3/8 turn out from the above position.
9. Readjust the idle speed with the throttle stop screw.
10. Repeat steps 7 through 9 for the remaining carburetor.
11. Apply Loctite® 601 or equivalent to the inside of the limiter caps. Place the caps over the pilot screws so that their tongues rest against the float chamber stop (Rich side), preventing further adjustment that would enrich the fuel mixture (No counterclockwise rotation is permitted.).

**NOTE**

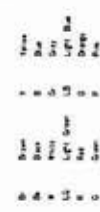
Do not turn the pilot screw when installing the limiter caps.



The U.S. Environmental Protection Agency requires that pilot screw limiter caps be installed.

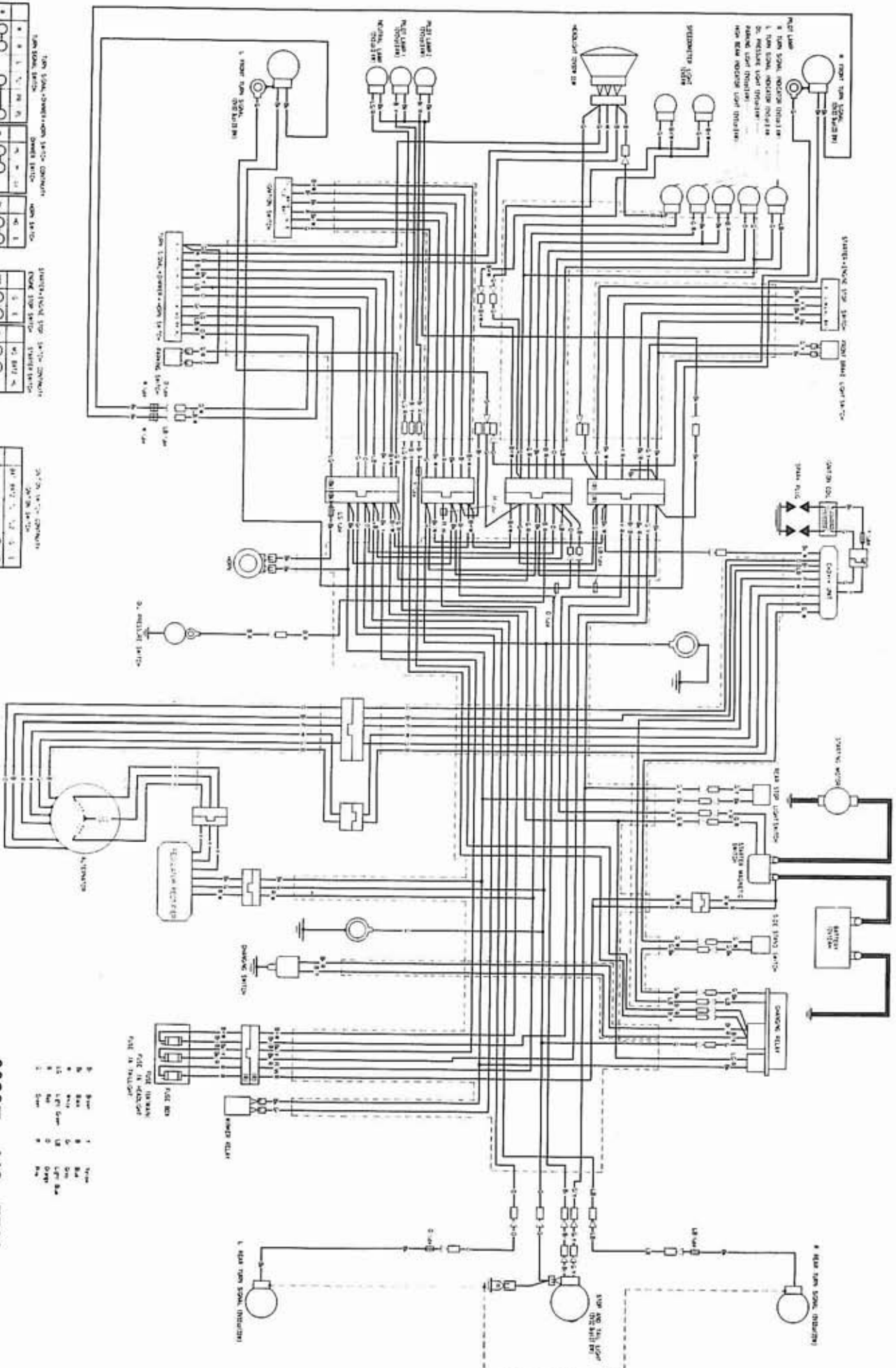


# CM 400T



	A	B	C <sub>1</sub>	C <sub>2</sub>	D
I.	( )	( )	( )	( )	( )
II.	( )	( )	( )	( )	( )
III.	( )	( )	( )	( )	( )

# CM400A





## INTRODUCTION

This Addendum contains information for the 1980 CB400T.

Refer to the base shop manual for service procedures and data not included in this addendum.

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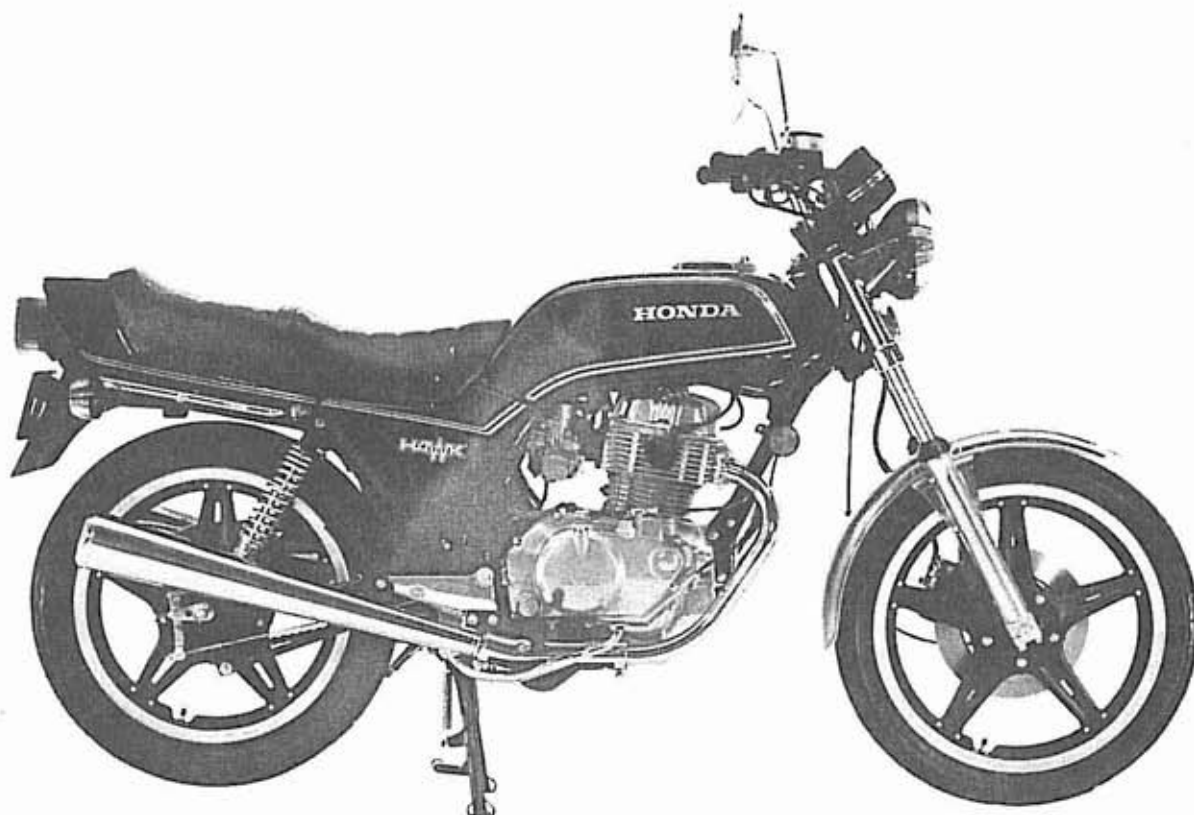
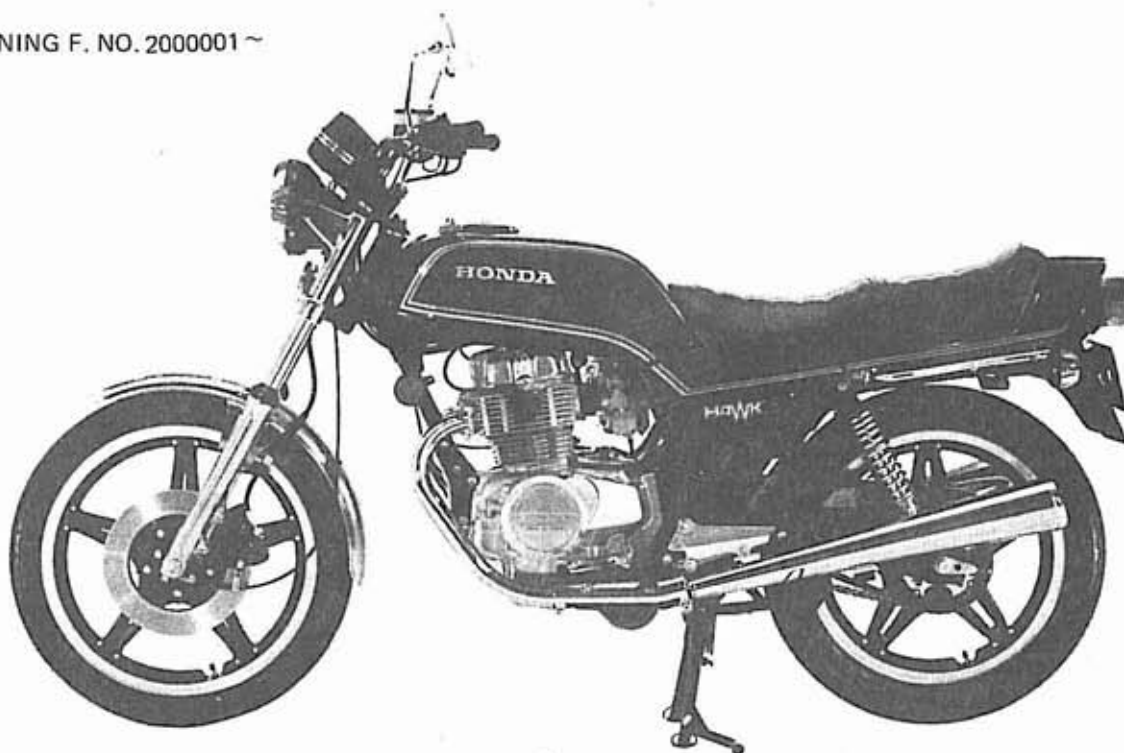
## TABLE OF CONTENTS

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## I. MODEL IDENTIFICATION

BEGINNING F. NO. 2000001 ~





## II. SPECIFICATIONS

	Item		Metric	English	
Dimensions	Overall length		2,085 mm	82.1 in.	
	Overall width		805 mm	31.7 in.	
	Overall height		1,130 mm	44.5 in.	
	Wheel base		1,390 mm	54.7 in.	
	Seat height		790 mm	31.1 in.	
	Foot peg height	Right	315 mm	12.4 in.	
		Left	325 mm	12.8 in.	
	Ground clearance		165 mm	6.5 in.	
Dry weight		170 kg	375 lbs.		
Frame	Type		Diamond		
	F. suspension and travel		Telescopic fork, 139.5 mm (5.5 in.)		
	R. suspension and travel		Swing arm, 96 mm (3.8 in.)		
	F. tire size		3.60S19-4PR		
	R. tire size		4.10S18-4PR		
	Cold tire pressures	Up to 90 kg (200 lbs.) load	Front	1.75 kg/cm <sup>2</sup>	24 psi
			Rear	2.25 kg/cm <sup>2</sup>	32 psi
		Up to vehicle capacity load	Front	1.75 kg/cm <sup>2</sup>	24 psi
			Rear	2.5 kg/cm <sup>2</sup>	36 psi
	F. brake		Disk brake		
	R. brake		Internal expanding shoes		
	Fuel capacity		13 lit.	3.4 U.S. gal., 2.9 Imp. gal.	
	Fuel reserve capacity		3.0 lit.	0.8 U.S. gal., 0.6 Imp. gal.	
	Caster angle		63 degrees		
	Trail length		100 mm	3.9 in.	
	Front fork oil capacity		135 ± 2.5 cc	4.6 ± 0.1 ozs.	
Engine	Type		Air cooled 4-stroke O.H.C. engine		
	Cylinder arrangement		Vertical twin, parallel		
	Bore and stroke		70.5 x 50.6 mm	2.776 x 1.992 in.	
	Displacement		395 cc	24.1 cu-in.	
	Compression ratio		9.3 : 1		
	Valve train		Chain driven over head camshaft		
	Oil capacity		3.0 lit.	3.2 U.S. qt., 2.6 Imp. qt.	
	Lubrication system		Forced pressure		
	Cylinder compression		13 ± 1.0 kg/cm <sup>2</sup>	185 ± 14 psi	

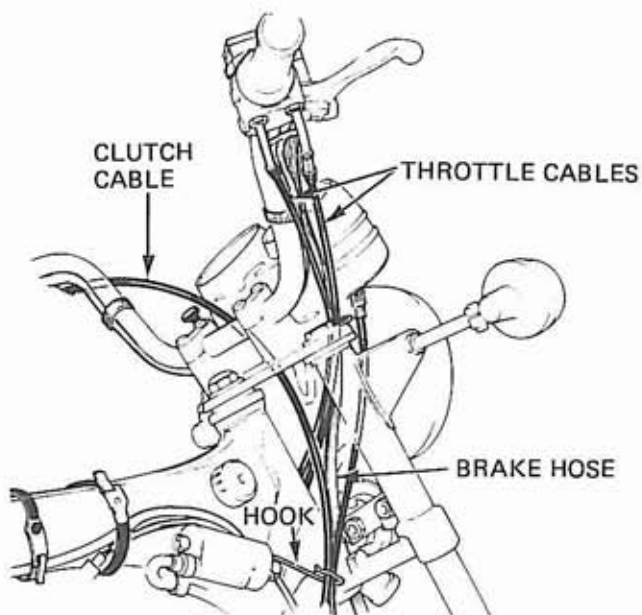
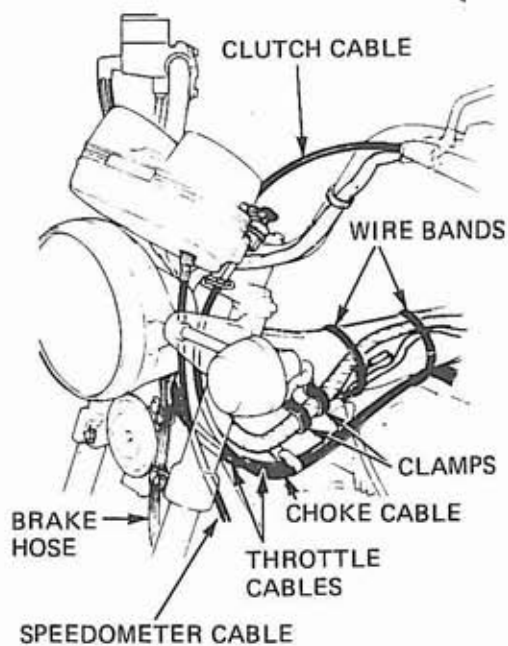
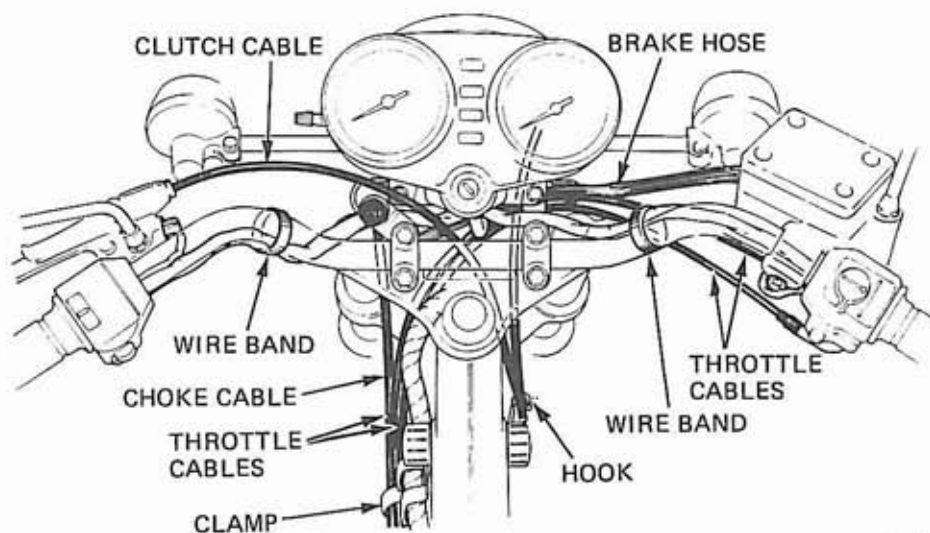


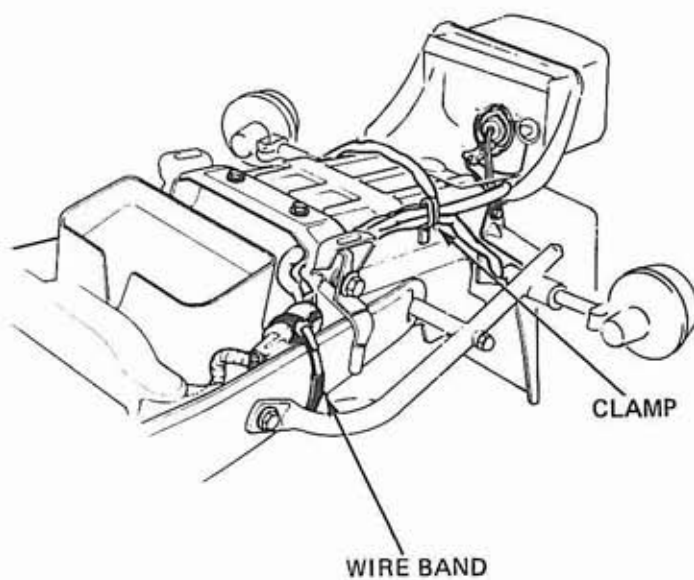
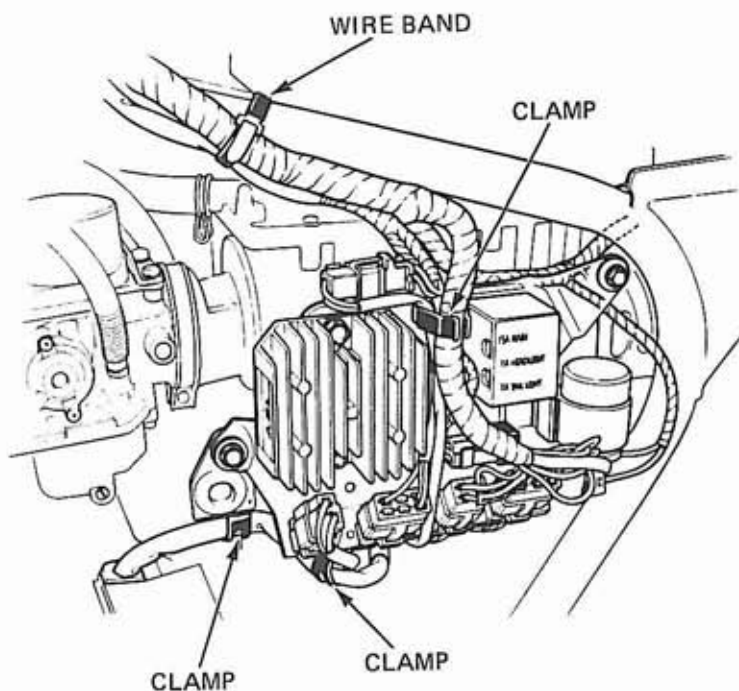
	Item		Metric	English
Engine	Intake valve	Opens	57° BTDC (At 0 lift), 5° BTDC (At 1.0 mm lift)	
		Closes	87° ABDC (At 0 lift), 35° ABDC (At 1.0 mm lift)	
	Exhaust valve	Opens	90° BBDC (At 0 lift), 40° BBDC (At 1.0 mm lift)	
		Closes	55° ATDC (At 0 lift), 5° ATDC (At 1.0 mm lift)	
	Valve clearance (cold)	IN	0.10 mm	0.004 in.
		EX	0.14 mm	0.006 in.
	Idle speed		1,200 ± 100 rpm	
Carburetion	Carburetor type		CV type, 30 mm (1.18 in.) venturi bore	
	Setting number		VB22B	
	Pilot screw initial opening		See page 24-11	
	Float level		15.5 ± 0.5 mm	0.61 ± 0.02 in.
Drive train	Clutch		Wet multi-plate	
	Transmission		6-speed constant mesh	
	Primary reduction ratio		3.125	
	Gear ratio I		2.733	
	Gear ratio II		1.947	
	Gear ratio III		1.545	
	Gear ratio IV		1.280	
	Gear ratio V		1.074	
	Gear ratio VI		0.931	
	Final reduction ratio		2.312, 37/16	
	Gear shift pattern		Left foot operated return system 1-N-2-3-4-5-6	
Electrical	Ignition		Capacitive discharge ignition	
	Ignition timing	"F" mark	15° BTDC at 1,200 rpm idle	
		Full advance	43° BTDC ± 2° at 4,500 to 5,350 rpm	
	Starting system		Starting motor	
	Alternator		A.C. generator, 170 W/5,000 rpm	
	Battery capacity		12 V, 12 AH	
	Spark plug		USA model	Canada model
			Standard	X24ES-U (ND) D8EA (NGK)
			For cold climate (Below 5°C, 41°F)	X22ES-U (ND) D7EA (NGK)
			For extended high speed riding	X27ES-U (ND) D9EA (NGK)
	Spark plug gap		0.6 – 0.7 mm	0.024 – 0.028 in.
Lights	Headlight (low/high beam)		35/50 W	
	Tail/stoplight		3/32 cp	SAE NO. 1157
	Turn signal (front/rear)		32/32 cp	SAE NO. F. 1034, R. 1073
	Speedometer light		2 cp	SAE NO. 57
	Tachometer light (Type II only)		2 cp	SAE NO. 57
	Neutral indicator		2 cp	SAE NO. 57
	Turn signal indicator		2 cp	SAE NO. 57
	High beam indicator		2 cp	SAE NO. 57
	Position light		3 cp	SAE NO. 1034





### III. CABLE ROUTING







### IV. MAINTENANCE SCHEDULE

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

A: ADJUST

R: REPLACE

L: LUBRICATE

ITEM	FREQUENCY	WHICHEVER COMES FIRST ↓	ODOMETER READING (NOTE 3)						
			600 mi (1,000 km)	3,750 mi (6,000 km)	7,500 mi (12,000 km)	11,250 mi (18,000 km)	15,000 mi (24,000 km)	18,750 mi (30,000 km)	Refer to
EMISSION RELATED ITEMS	* FUEL LINES			I	I	I	I	I	Page 20-12
	* THROTTLE OPERATION		I	I	I	I	I	I	Page 20-14
	* CARBURETOR-CHOKE			I	I	I	I	I	Page 20-15
	AIR CLEANER	NOTE 1		C	C	C	C	C	Page 20-12
	CRANKCASE BREATHER (USA only)	NOTE 2		C	C	C	C	C	Page 20-11
	SPARK PLUGS			R	R	R	R	R	Page 24-8
	* VALVE CLEARANCE		I	I	I	I	I	I	Page 20-13
	ENGINE OIL	YEAR	R	REPLACE EVERY 1,875 mi (3,000 km)					Page 20-11 and 24-8
	ENGINE OIL FILTER	YEAR	R	R	R	R	R	R	Page 20-11
	** BALANCER CHAIN TENSION					A			Page 20-17
	* CAM CHAIN TENSION		A	A	A	A	A	A	Page 20-13
	* CARBURETOR-SYNCHRONIZE		I	I	I	I	I	I	Page 20-15
NON-EMISSION RELATED ITEMS	* CARBURETOR-IDLE SPEED		I	I	I	I	I	I	Page 20-14
	DRIVE CHAIN		I, L EVERY 300 mi (500 km)						Page 20-18
	BATTERY	MONTH	I	I	I	I	I	I	Page 20-20
	BRAKE FLUID (FRONT)	MONTH I 2 YEARS*R	I	I	I	*R	I	I	Page 20-20
	BRAKE SHOE/PAD WEAR			I	I	I	I	I	Page 20-22
	BRAKE SYSTEM (REAR)		I	I	I	I	I	I	Page 20-22
	* BRAKE LIGHT SWITCH		I	I	I	I	I	I	Page 20-26
	* HEADLIGHT AIM		I	I	I	I	I	I	Page 20-26
	CLUTCH		I	I	I	I	I	I	Page 20-26
	SIDE STAND			I	I	I	I	I	Page 20-27
	* SUSPENSION		I	I	I	I	I	I	Page 20-29
	* NUTS, BOLTS, FASTENERS		I	I	I	I	I	I	Page 20-30
	** WHEELS		I	I	I	I	I	I	Page 20-30
	** STEERING HEAD BEARING		I		I		I		Page 20-30

\* SHOULD BE SERVICED BY AN AUTHORIZED HONDA DEALER, UNLESS THE OWNER HAS PROPER TOOLS, SERVICE DATA 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 riding in dusty areas.

2. Service more frequently when riding in rain, at full throttle or after the motorcycle is washed or overturned.  
(USA ONLY)

3. For higher odometer readings, repeat at the frequency interval established here.



## V. INSPECTION AND ADJUSTMENT

### SPARK PLUG

#### RECOMMENDED SPARK PLUG

	USA model	Canada model
Standard	X24ES-U (ND) D8EA (NGK)	X24ESR-U (ND) DR8ES-L (NGK)
For cold climate (Below 5°C, 41°F)	X22ES-U (ND) D7EA (NGK)	X22ESR-U (ND) DR7ES (NGK)
For extended high speed riding	X27ES-U (ND) D9EA (NGK)	X27ESR-U (ND) DR8ES (NGK)

### REPLACEMENT

Clean any dirt from around the spark plug bases.

Disconnect the spark plug caps.

Remove and discard the spark plugs.

Check the new spark plug gaps with a wire type feeler gauge.

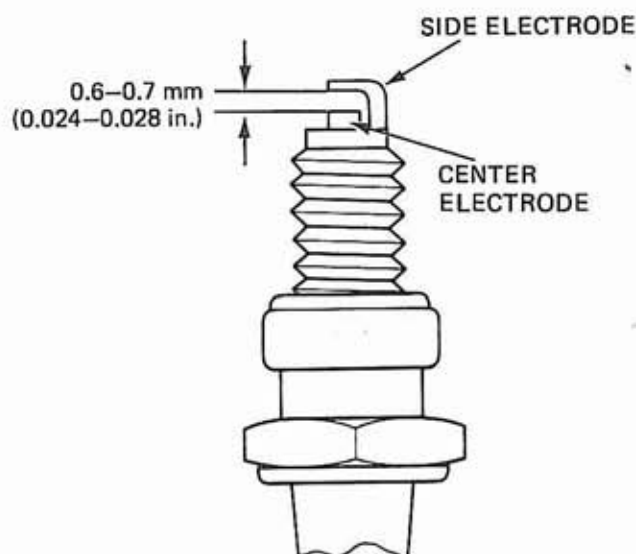
If adjustment is necessary, bend the side electrode carefully.

**SPARK PLUG GAP:** 0.6–0.7 mm  
(0.024–0.028 in.)

With the plug washers attached, thread the new spark plugs in by hand to prevent cross-threading.

Tighten the spark plugs ½ turn with a spark plug wrench.

Connect the spark plug caps.



### CONTROL CABLE LUBRICATION

Periodically disconnect the throttle and clutch control cables at their upper ends.

Thoroughly lubricate the cables and their pivot points with a commercially available cable lubricant.

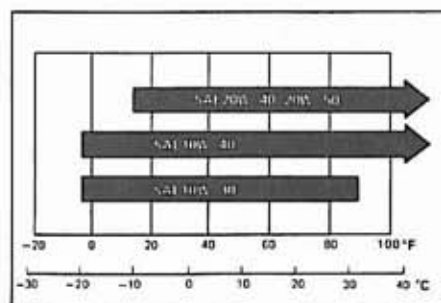
### ENGINE OIL RECOMMENDATION

Use HONDA 4-STROKE OIL or equivalent.

API SERVICE CLASSIFICATION: SE  
VISCOSITY: SAE 10W-40

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

#### OIL VISCOSITIES





### VI. FUEL SYSTEM

#### GENERAL INFORMATION

- The CB400T carburetor bore size has been changed to 30 mm (1.18 in).
- An accelerator pump circuit has been added.
- See Caution and Notes under Pilot Screw Removal and Pilot Screw Adjustment (Page 24-11).
- Refer to section 20 for carburetor adjustment procedures not described in this section.

#### CARBURETOR SPECIFICATIONS

Item		
Identification mark		VB22B
Idle speed		1,200 $\pm$ 100 rpm
Vacuum difference (at idle)		40 mmHg (1.6 inHg)
Float level		15.5 $\pm$ 0.5 mm (0.61 $\pm$ 0.02 in)
Pilot screw initial opening		See page 24-11
Venturi bore	Primary	13 mm (0.5 in)
	Secondary	30 mm (1.2 in)

#### CARBURETOR SEPARATION

Remove the carburetors (page 4-2).

Separate the carburetors (page 4-2) noting that the accelerator pump joint pipe must be removed.

#### CARBURETOR ASSEMBLY

Install a new O-ring on each end of the accelerator pump and fuel joint pipes.

Assemble the right and left carburetors noting the compression spring location.

Install the front and rear stays.

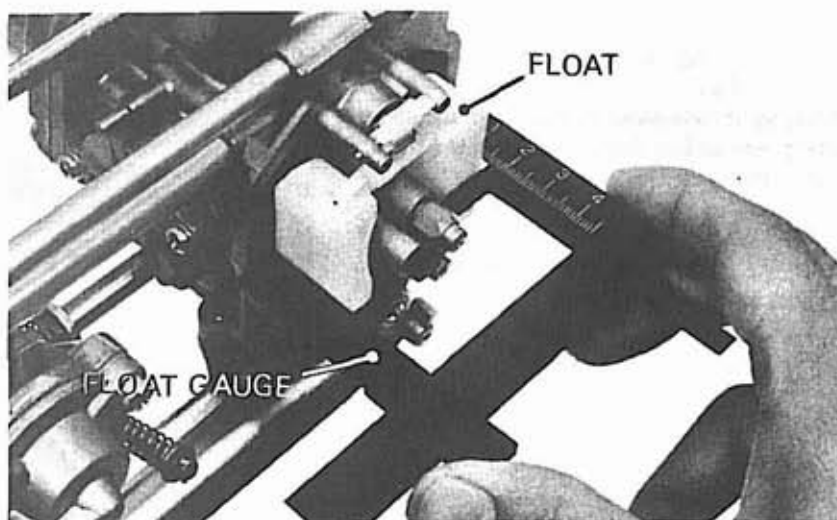
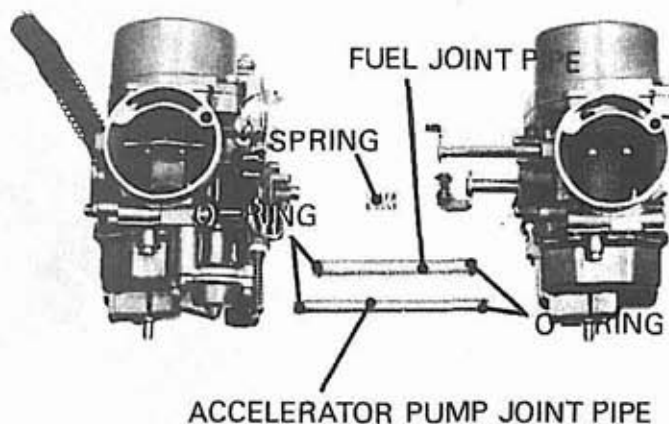
Refer to page 4-8 for carburetor installation.

#### FLOAT LEVEL INSPECTION

Measure the float level with the float tip just contacting the float valve and the carburetor inclined 15° - 45° from vertical.

FLOAT LEVEL: 15.5 mm  $\pm$  0.5 mm  
(0.61  $\pm$  0.02 in)

Replace the float if necessary.

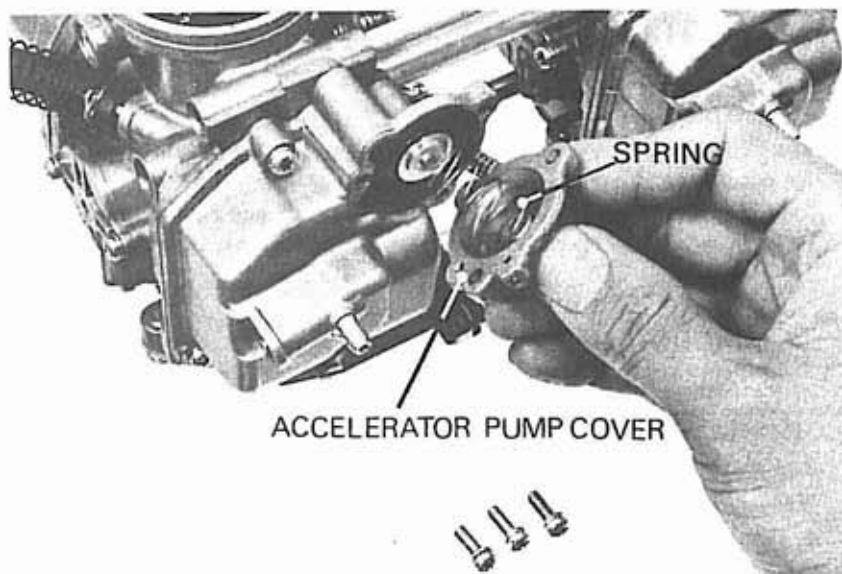






## ACCELERATOR PUMP INSPECTION

Remove the accelerator pump cover and spring.

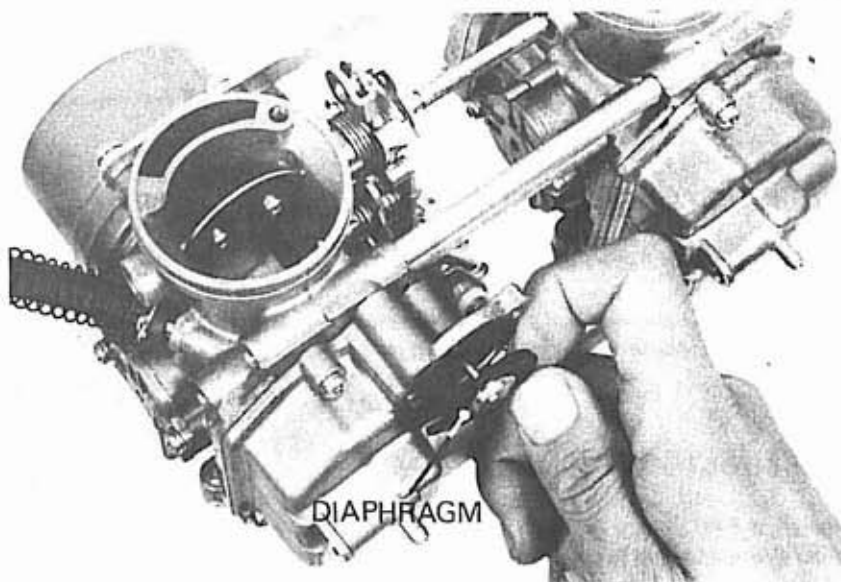


Remove the diaphragm.  
Inspect the diaphragm for cracks and brittleness.  
Replace if necessary.

### NOTE

Be sure the accelerator pump rod is not bent.

Assemble the accelerator pump in the reverse order of removal.

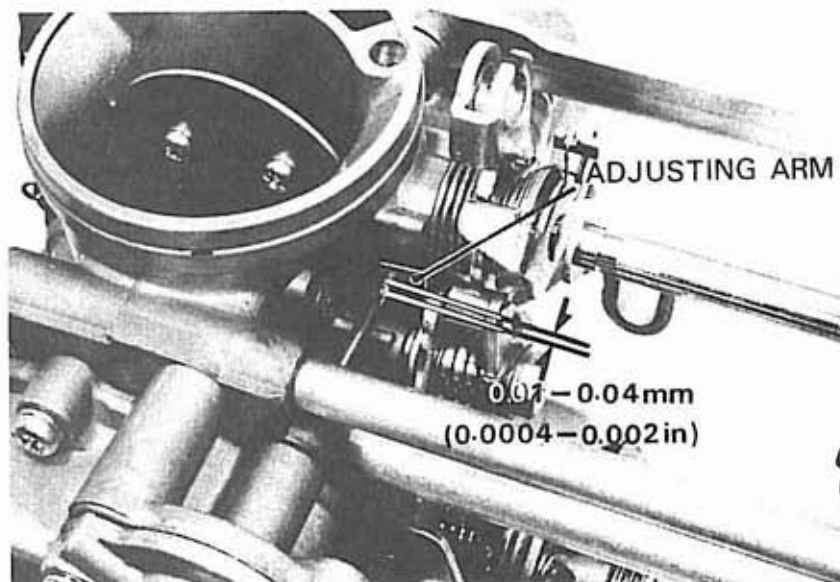


## ACCELERATOR PUMP ADJUSTMENT

Loosen the throttle stop screw, so the throttle valve is closed.  
Measure the clearance between the accelerator pump rod and adjusting arm with the throttle valve closed.

CLEARANCE: 0.01–0.04 mm  
(0.0004–0.002 in)

Adjust by bending the adjusting arm.







Measure the clearance between the adjusting arm and stopper on the carburetor body.

**CLEARANCE:** 7.0 mm (1/4 in)

Adjust by bending the adjusting arm.

### PILOT SCREW REMOVAL/INSTALLATION

#### NOTE

The pilot screws are factory pre-set and should not be removed unless the carburetor is overhauled.

Removed the carburetors (page 4-2).  
Remove the float chamber (page 4-5).  
Turn the pilot screw in and carefully count the exact number of turns before it seats lightly.

Make a note of this to use as a reference when reinstalling the pilot screw.

#### CAUTION

Damage to the pilot screw seat will occur if the pilot screw is tightened against the seat.

Remove the pilot screw.  
Inspect the pilot screw for wear and replace if necessary.

Install the pilot screw and return it to its original position as noted during removal.  
Perform pilot screw adjustment if a new pilot screw is installed.

#### NOTE

Do not install limiter caps on new pilot screws until after adjustment has been made (See below).

### PILOT SCREW ADJUSTMENT

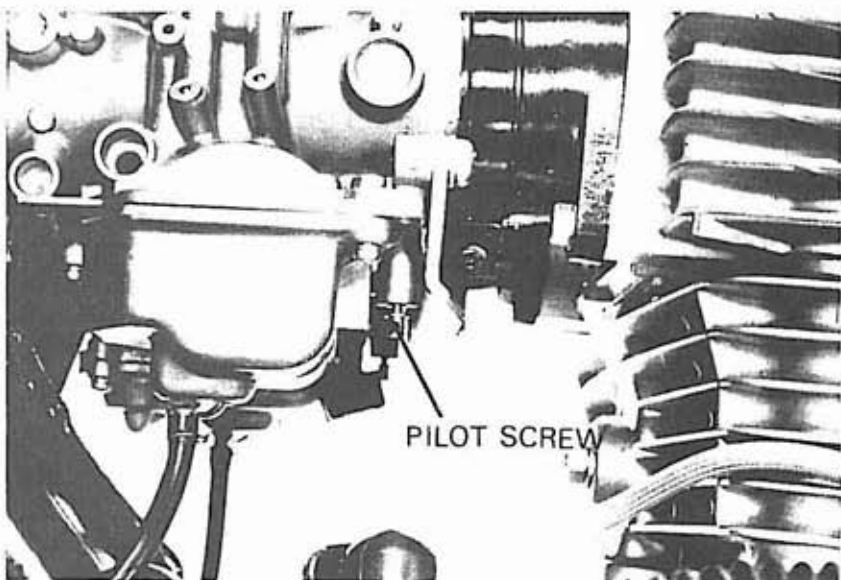
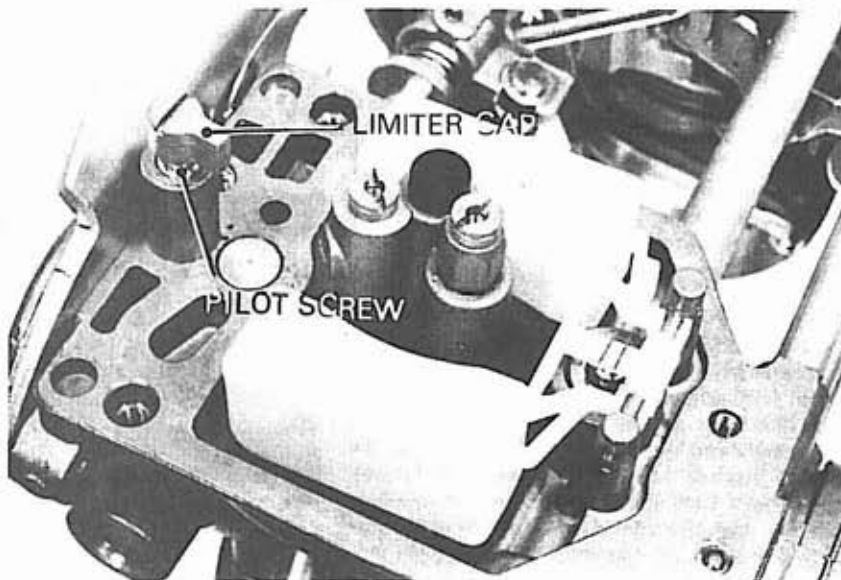
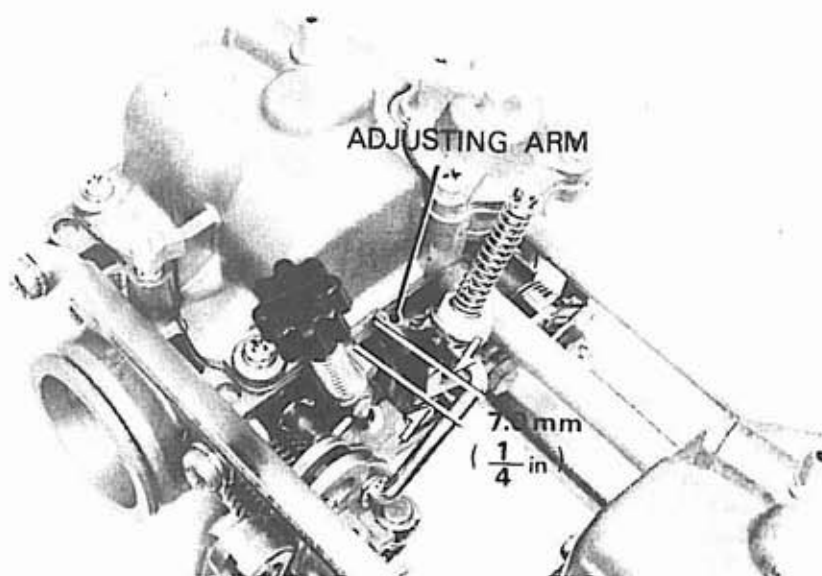
#### IDLE DROP PROCEDURE

#### NOTE

- The pilot screws are factory pre-set and no adjustment is necessary unless the pilot screw is replaced (see removal above).
- Use a tachometer with graduations of 100 rpm or smaller that will accurately indicate a 100 rpm change.

#### CAUTION

Any forcible attempt to remove the pilot screw limiter caps will cause screw breakage.





1. Turn each pilot screw clockwise until it seats lightly and back it out to the specified initial opening.  
This is an initial setting prior to the final pilot screw adjustment.

INITIAL OPENING:

2 TURNS OUT

#### CAUTION

Damage to the pilot screw seat will occur if the pilot screw is tightened against the seat.

2. Start the engine and warm it up to operating temperature. Stop and go driving for 10 minutes is sufficient.
3. Connect a tachometer.
4. Adjust the idle speed with the throttle stop screw.  
IDLE SPEED: 1,200 rpm
5. Turn each pilot screw in or out to obtain the highest engine speed.
6. Readjust the idle speed.
7. Turn one of the pilot screws in gradually until the engine speed is lowered by 100 rpm.
8. Turn the pilot screw 3/8 turn out from the above position.
9. Readjust the idle speed with the throttle stop screw.
10. Repeat steps 7 through 9 for remaining carburetor.

#### LIMITER CAP INSTALLATION

If a pilot screw is replaced, a new limiter cap must be installed after pilot screw adjustment is completed.

After final adjustment, cement the limiter cap over the pilot screw, using LOCTITE® #601 or equivalent. The limiter cap should be placed against its stop, preventing further adjustment that would enrich the fuel mixture (limiter cap position permits clockwise rotation and prevents counterclockwise rotation).

#### NOTE

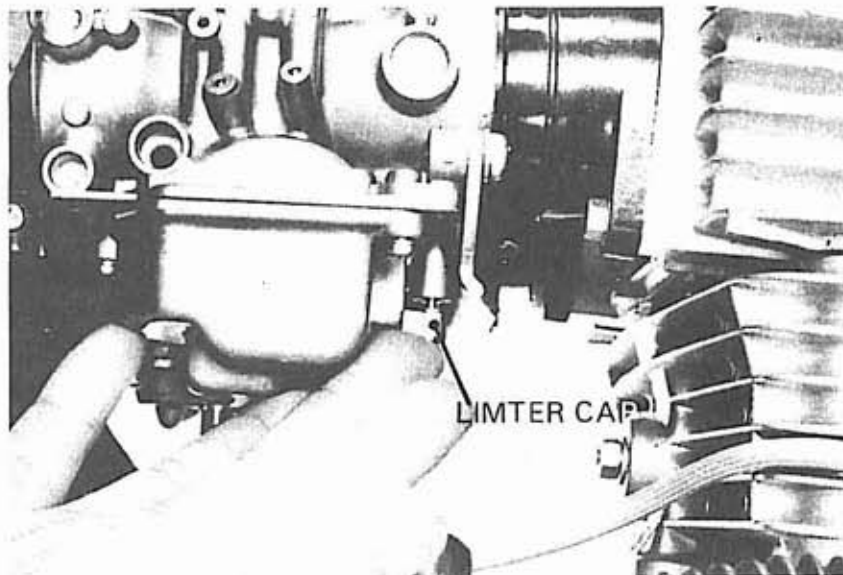
Pilot screw limiter caps must be installed. They prevent misadjustment that could cause poor performance and increase exhaust emissions.

#### HIGH ALTITUDE ADJUSTMENT

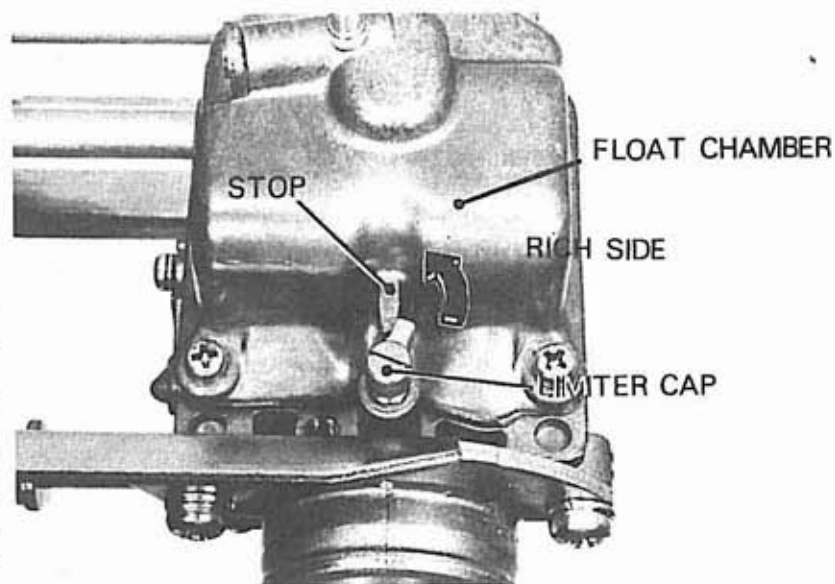
Adjust the carburetors for riding above 2,000 m (6,500 ft) to improve high altitude driveability.

#### CAUTION

Sustained operation at altitudes lower than 1,500 meters (5,000 ft) with the high altitude carburetor specifications may cause engine overheating and damage.



LIMITER CAP



#### HIGH ALTITUDE (ABOVE 2,000 m/6,500 ft) CARBURETOR SPECIFICATIONS

Secondary Main jet	#105
Accelerator Pump-Arm-to-Stopper Clearance	4 mm (1/8 in)
Pilot Screw	1/2 turn in
Idle Speed	1,200 ± 100 rpm



Adjust as follows:

Remove the carburetors (page 4-2).

Remove the float chambers and secondary main jets (page 4-5).

Install the #105 secondary main jets.

Install the float chambers.

Adjust the clearance between the accelerator pump adjusting arm and stopper to 4 mm (1/8 in), page 24-11.

Install the carburetors.

Turn each pilot screw 1/2 turn in.

Adjust the idle speed with the throttle stop screw.

When the motorcycle is to be ridden below 1,500 m (5,000 ft), do the following:

- Install the standard size secondary main jets.
- Adjust the accelerator pump adjusting arm and stopper clearance to 7 mm (1/4 in).
- Turn the pilot screws 1/2 turn out.
- Adjust the idle speed with the throttle stop screw.

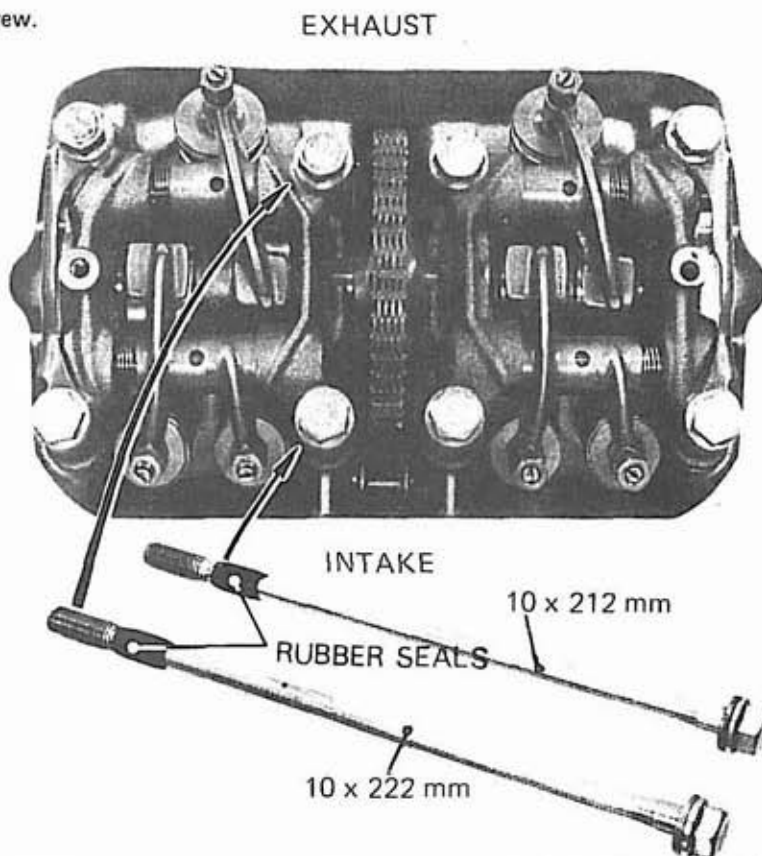
## VII. CYLINDER HEAD / VALVES

### CYLINDER HEAD INSTALLATION

For details, refer to page 6-17.

#### NOTE

Note the positions of the rubber sealed bolts.

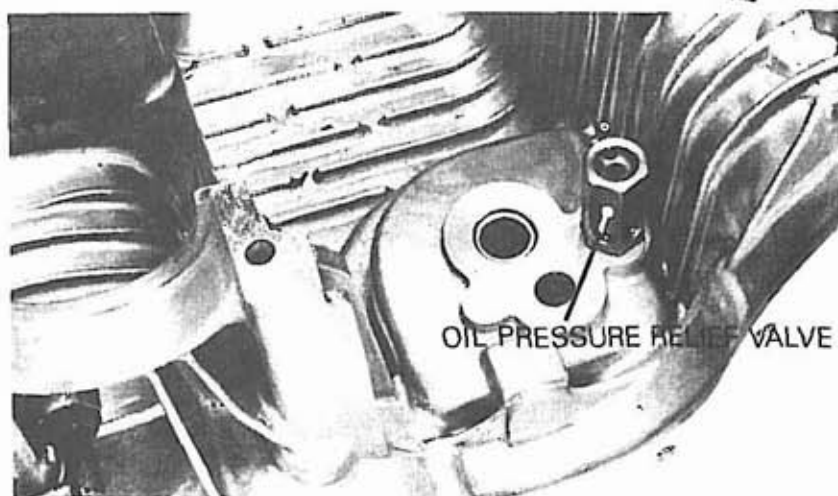


## VIII. CLUTCH / OIL PUMP

### OIL PRESSURE RELIEF VALVE REMOVAL

Separate the crankcase. (section 9)

Remove the valve from the lower crankcase as an assembly.



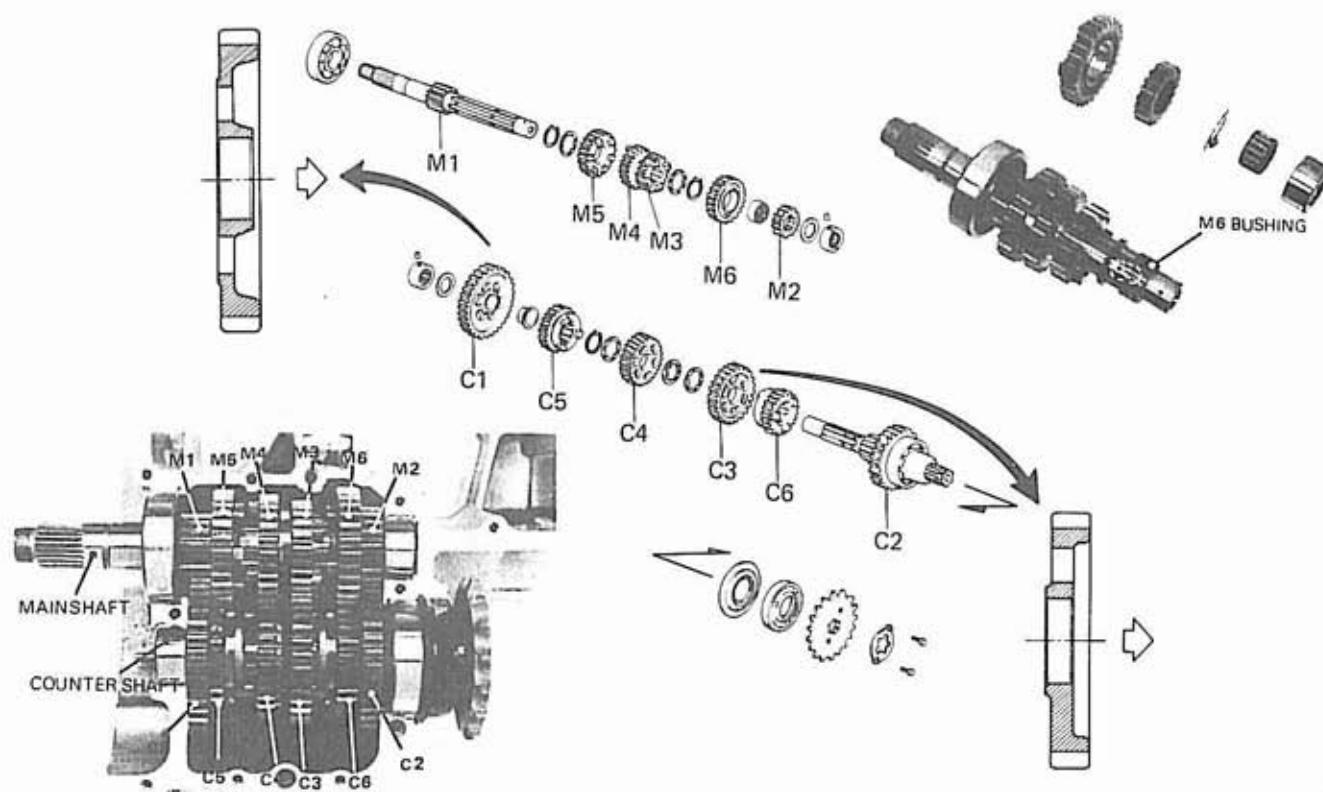


## IX. TRANSMISSION

### SPECIFICATIONS

			STANDARD	SERVICE LIMIT
Transmission	Backlash	Low, 2nd, 3rd, 4th	0.047–0.142 mm (0.0019–0.0056 in)	0.20 mm (0.008 in)
		5th, Top	0.050–0.150 mm (0.0020–0.0059 in)	0.20 mm (0.008 in)
	Gear I.D.	M5, C3, C4	25.020–25.041 mm (0.9850–0.9859 in)	25.10 mm (0.988 in)
		M6	28.020–28.041 mm (1.1031–1.1040 in)	28.10 mm (1.106 in)
		C1	24.020–24.041 mm (0.9457–0.9465 in)	24.10 mm (0.949 in)
	Gear bushing O.D.	M6	27.959–27.980 mm (1.1007–1.1016 in)	27.93 mm (1.100 in)
		C1	23.984–24.005 mm (0.9443–0.9451 in)	23.95 mm (0.943 in)
	Gear bushing I.D.	C1	20.020–20.041 mm (0.7882–0.7890 in)	20.10 mm (0.791 in)
	Main shaft O.D.		24.959–24.980 mm (0.9826–0.9835 in)	24.93 mm (0.981 in)
	Countershaft O.D.	C3, C4	24.959–24.980 mm (0.9826–0.9835 in)	24.93 mm (0.981 in)
		C1	19.987–20.000 mm (0.7869–0.7874 in)	19.95 mm (0.785 in)
	Gear to shaft clearance	M5, C3, C4	0.040–0.082 mm (0.0016–0.0032 in)	0.10 mm (0.004 in)
Shift fork	Claw thickness	M6	0.040–0.082 mm (0.0016–0.0032 in)	0.10 mm (0.004 in)
		C1	0.015–0.047 mm (0.0006–0.0019 in)	0.07 mm (0.003 in)
		M3	5.93–6.00 mm (0.234–0.236 in)	5.85 mm (0.230 in)
	Shift fork I.D.	C5, C6	4.93–5.00 mm (0.194–0.197 in)	4.85 mm (0.191 in)
			13.000–13.018 mm (0.5118–0.5125 in)	13.05 mm (0.514 in)

Refer to Section 11 for disassembly, inspection and installation procedures.



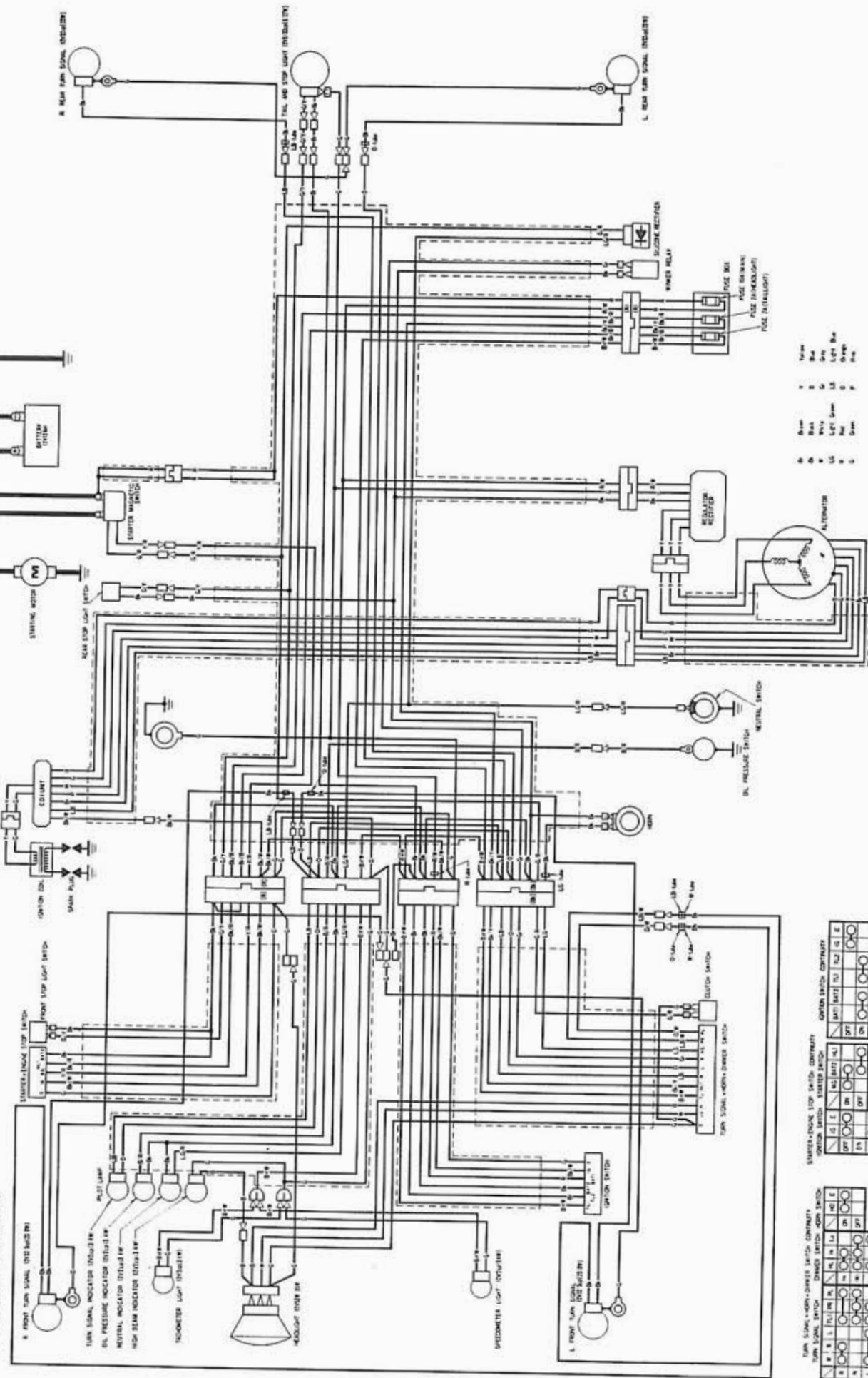




**HONDA**  
**CB400T**

**'80 CB400T ADDENDUM**

**X. WIRING DIAGRAM**



TURN SIGNAL - HIGH-BEAM SWITCH CONTINUED	STARTER-ENGINE STOP SWITCH CONTINUED	IGNITION SWITCH CONTINUED

0030Z-413-7500

(381 PAGES)







## INTRODUCTION

This HONDA Shop Manual Addendum contains information for the 1980 CM400E.

Refer to the base shop manual and other addendums for service procedures and data not included in this addendum.

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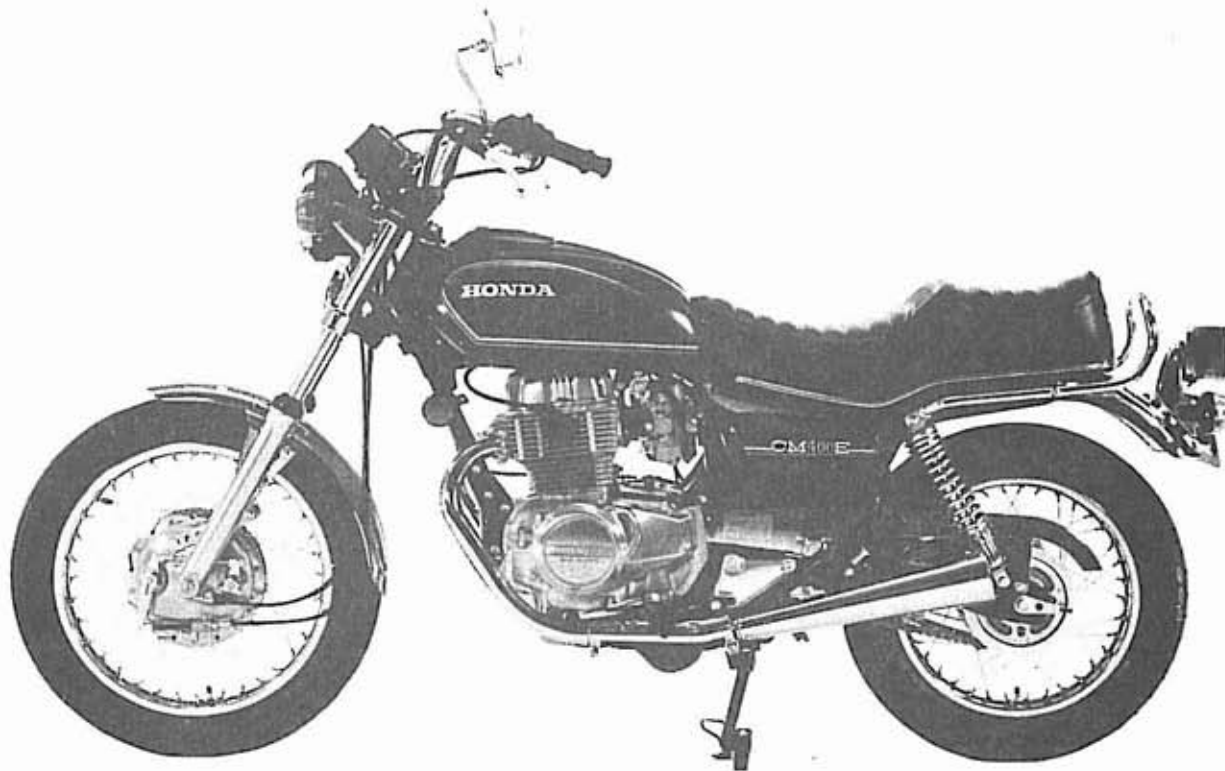
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Service Publications Office

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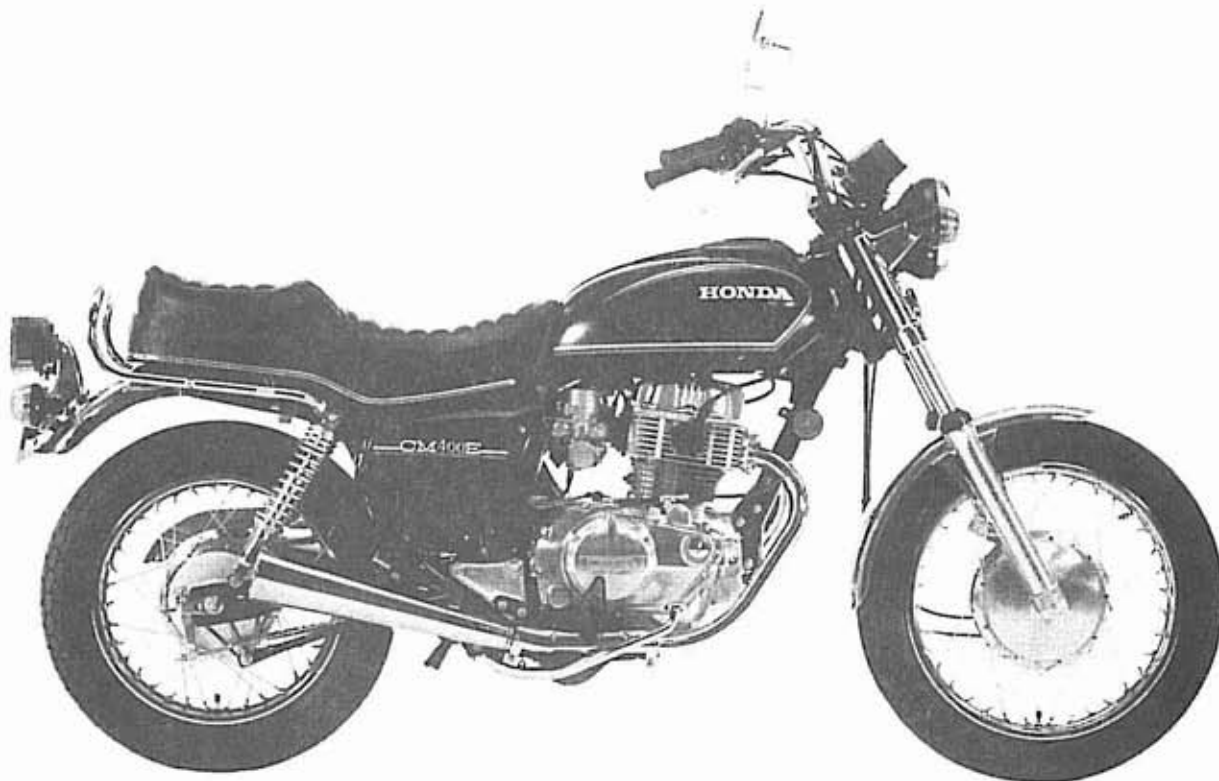
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## I. MODEL IDENTIFICATION



CM400E BEGINNING F/N 4000009





## II. SPECIFICATIONS

	Item			Metric	English
Dimensions	Overall length			2,110 mm	83.1 in.
	Overall width			855 mm	33.7 in.
	Overall height			1,155 mm	45.5 in.
	Wheelbase			1,425 mm	56.1 in.
	Seat height			750 mm	29.5 in.
	Foot peg height			310 mm	12.2 in.
	Ground clearance			140 mm	5.5 in.
	Dry weight			168 kg	370 lbs
Frame	Type			Diamond	
	F. suspension and travel			Telescopic fork, 139.5 mm (5.5 in.)	
	R. suspension and travel			Swing arm, 75.9 mm (3 in.)	
	F. tire size			3.50S18-4PR	
	R. tire size			4.60S16-4PR	
	Cold tire pressures	Up to 90 kg (200 lbs.) load	Front	1.75 kg/cm <sup>2</sup>	24 psi
			Rear	2.0 kg/cm <sup>2</sup>	28 psi
		Up to vehicle capacity load	Front	1.75 kg/cm <sup>2</sup>	24 psi
			Rear	2.5 kg/cm <sup>2</sup>	36 psi
	F. brake			Internal expanding shoes	
	R. brake			Internal expanding shoes	
	Fuel capacity			14 ℓ	3.7 U.S. gal., 3.1 Imp. gal.
	Fuel reserve capacity			3.5 ℓ	0.9 U.S. gal., 0.8 Imp. gal.
	Caster angle			61°00' from horizontal	
	Trail length			107 mm	4.2 in.
	Front fork oil capacity			135 cc	4.6 oz.
Engine	Type			Air cooled 4-stroke OHC engine	
	Cylinder arrangement			Vertical twin parallel	
	Bore and stroke			70.5 x 50.6 mm	2.776 x 1.992 in.
	Displacement			395 cc	24.1 cu-in.
	Compression ratio			9.3 : 1	
	Valve train			Chain driven OHC	
	Oil capacity			3.0 ℓ	3.2 U.S. qt., 2.6 Imp. qt.
	Lubrication system			Forced pressure and wet sump	
	Cylinder head compression pressure			13 ± 1.0 kg/cm <sup>2</sup>	185 ± 14 psi
	Intake valve	Opens	5° BTDC (At 1.0 mm lift), 57° BTDC (At 0 lift)		
		Closes	35° ABDC (At 1.0 mm lift), 87° ABDC (At 0 lift)		
	Exhaust valve	Opens	40° BBDC (At 1.0 mm lift), 90° BBDC (At 0 lift)		
		Closes	5° ATDC (At 1.0 mm lift), 55° ATDC (At 0 lift)		
	Valve clearance (cold)	IN	0.10 mm	0.004 in.	
		EX	0.14 mm	0.006 in.	
	Idle speed			1,200 ± 100 rpm (in neutral)	



	Item		Metric	English
Carburetion	Carburetor type		CV, 30 mm (1.18 in.) venturi bore	
	Identification number		VB22E [VB22F: CM]	
	Pilot screw initial setting		See page 23—11	
	Float level		15.5 mm	0.61 in.
Drive Train	Clutch		Wet multi-plate	
	Transmission		5-speed constant mesh	
	Primary reduction ratio		3.125 : 1	
	Gear ratio I		2.733 : 1	
	Gear ratio II		1.850 : 1	
	Gear ratio III		1.417 : 1	
	Gear ratio IV		1.148 : 1	
	Gear ratio V		0.966 : 1	
	Final reduction ratio		2.188 : 1	
	Gearshift pattern		Left foot operated return system, 1-N-2-3-4-5	
Electrical	Ignition		Capacitive discharge ignition	
	Ignition timing	"F" mark	15° BTDC at 1,200 rpm idle speed	
		Full advance	43° BTDC ± 2° at 4,500 to 5,350 engine rpm	
	Starting system		Starting motor	
	Alternator		A.C. generator, 170 W/5,000 rpm	
	Battery capacity		12 V, 12 AH	
	Spark plug	U.S.A. model	For cold climate (Below 5°C, 41°F)	ND:X22ES-U or NGK:D7EA
			Standard	ND:X24ES-U or NGK:D8EA
			For extended high speed riding	ND:X27ES-U or NGK:D9EA
		CANADA model	For cold climate (Below 5°C, 41°F)	ND:X22ESR-U or NGK:DR7ES
			Standard	ND:X24ESR-U or NGK:DR8ES-L
			For extended high speed riding	ND:X27ESR-U or NGK:DR8ES
	Spark plug gap		0.6 ~ 0.7 mm	0.024 ~ 0.028 in.
Lights	Headlight (High/Low)		50/35 W	
	Tail/stoplight		3/32 cp	SAE NO. 1157
	Turn signal (Front/Rear)		32/32 cp	SAE NO. F. 1034/R. 1073
	Speedometer		2 cp	SAE NO. 57
	Turn signal indicator		2 cp	SAE NO. 57
	High beam indicator		2 cp	SAE NO. 57
	Position light		3 cp	SAE NO. 1034
	Neutral indicator		2 cp	SAE NO. 57
	Oil pressure indicator		2 cp	SAE NO. 57



### III. MAINTENANCE SCHEDULE

#### • CM400E

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

FREQUENCY  ITEM		WHICHEVER COMES FIRST ↓	ODOMETER READING [NOTE 3]						Refer to
			600 mi (1,000 km)	3,750 mi (6,000 km)	7,500 mi (12,000 km)	11,250 mi (18,000 km)	15,000 mi (24,000 km)	18,750 mi (30,000 km)	
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	* VALVE CLEARANCE		I	I	I	I	I	I	Page 20-13
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	ENGINE OIL FILTER	YEAR	R	R	R	R	R	R	Page 20-10
	** BALANCER CHAIN TENSION					A			Page 20-17
	* CAM CHAIN TENSION		A	A	A	A	A	A	Page 20-13
	* CARBURETOR-SYNCHRONIZE		I	I	I	I	I	I	Page 20-15
NON-EMISSION RELATED ITEMS	* CARBURETOR-IDLE SPEED		I	I	I	I	I	I	Page 20-14
	DRIVE CHAIN		I, L EVERY 300 mi (500 km)						Page 20-18
	BATTERY	MONTH	I	I	I	I	I	I	Pages 20-20 and 25-10
	BRAKE SHOE WEAR			I	I	I	I	I	Page 20-22
	BRAKE SYSTEM		I	I	I	I	I	I	Page 20-22
	* BRAKE LIGHT SWITCH		I	I	I	I	I	I	Page 20-26
	* HEADLIGHT AIM		I	I	I	I	I	I	Page 20-26
	CLUTCH		I	I	I	I	I	I	Page 20-26 Page 23-8
	SIDE STAND			I	I	I	I	I	Page 20-27
	* SUSPENSION		I	I	I	I	I	I	Page 20-29
	* NUTS, BOLTS, FASTENERS		I	I	I	I	I	I	Page 20-30
	** WHEELS/SPOKES		I	I	I	I	I	I	Page 25-10
	** STEERING HEAD BEARING		I		I		I		Page 20-30

\* Should be serviced by an 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.

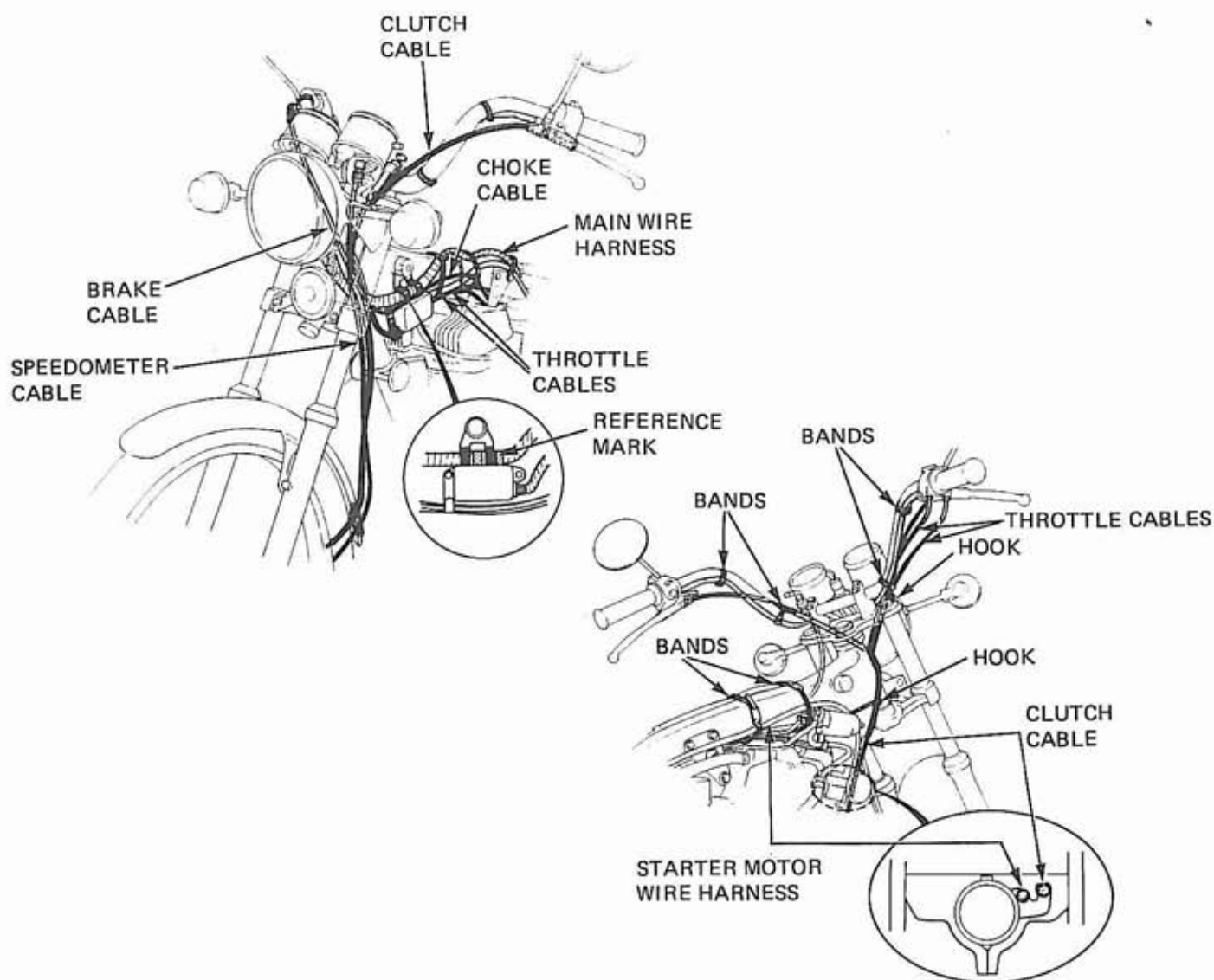
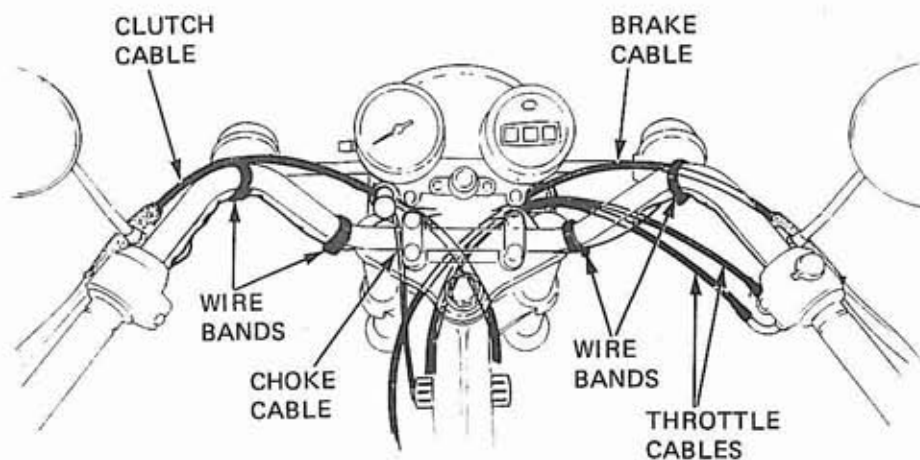
NOTE: 1. Service more frequently when riding in dusty areas.

2. Service more frequently when riding in rain or at full throttle or after the motorcycle is washed or overturned.

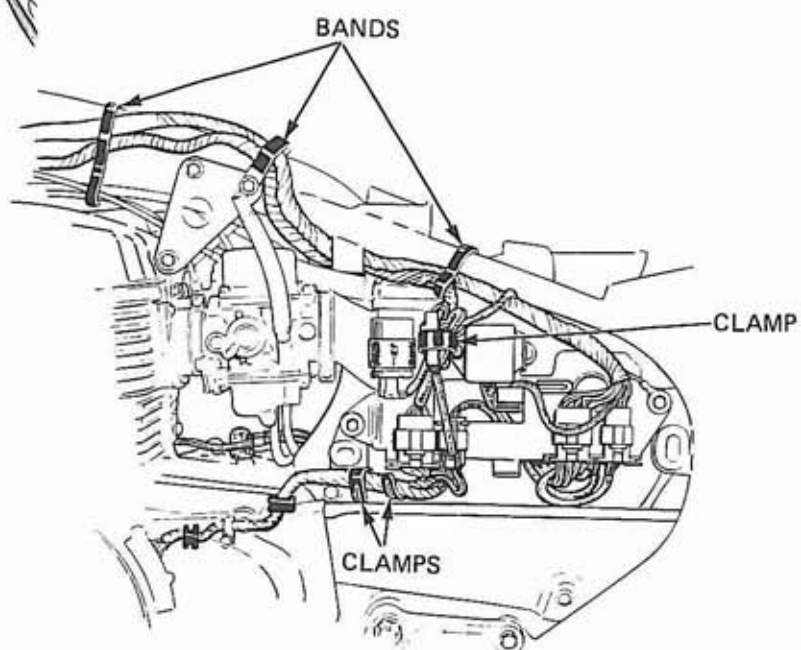
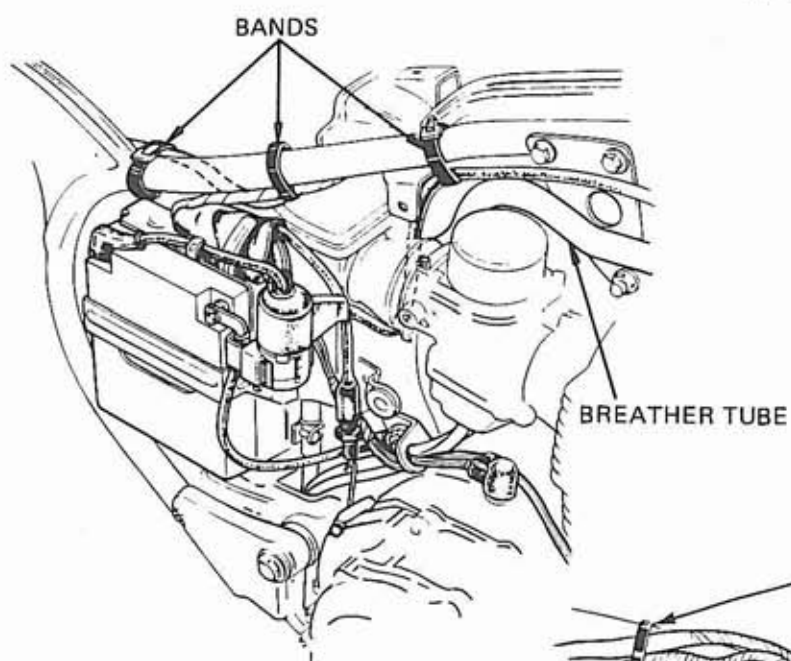
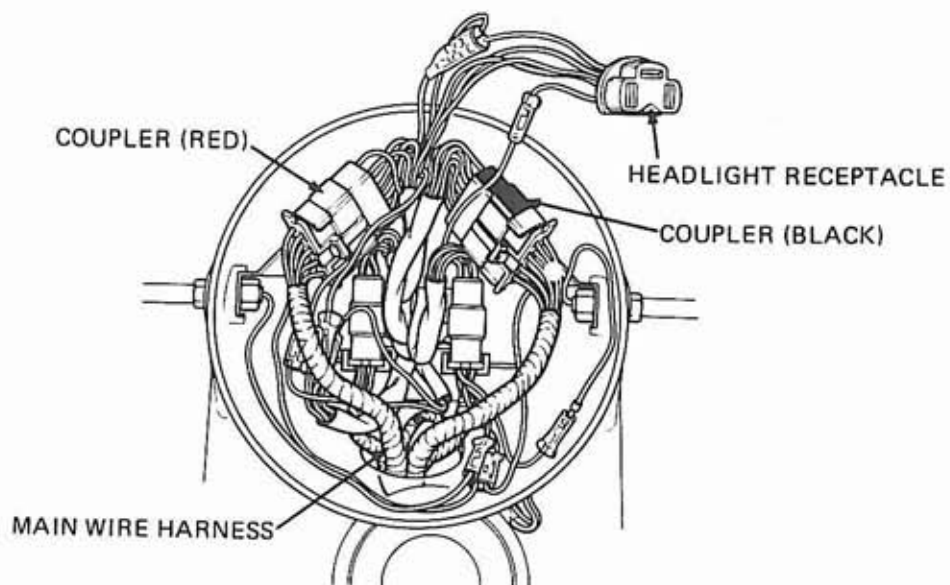
3. For higher odometer readings, repeat at the frequency interval established here.

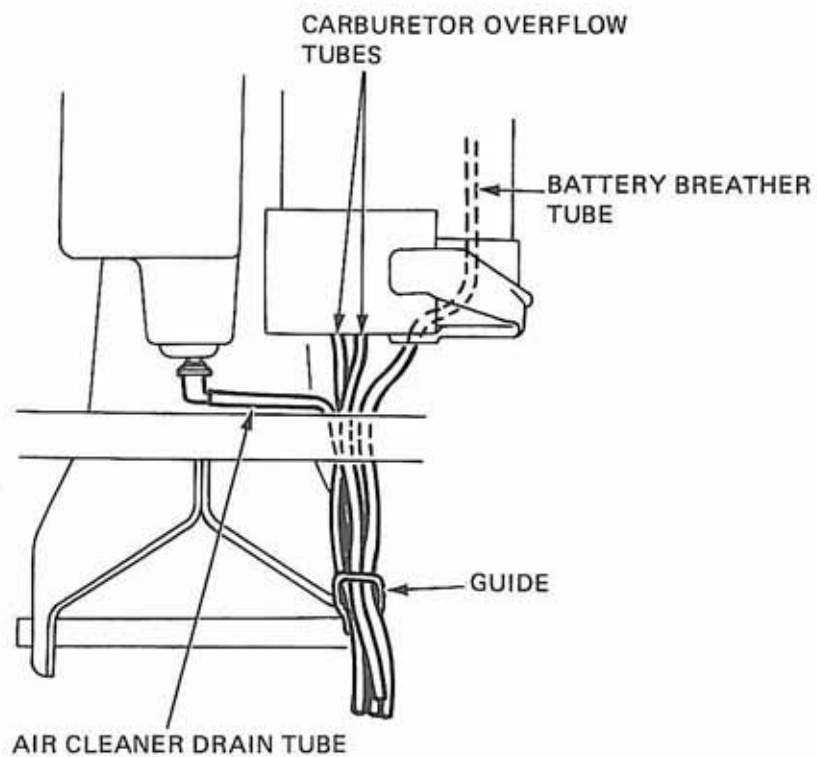
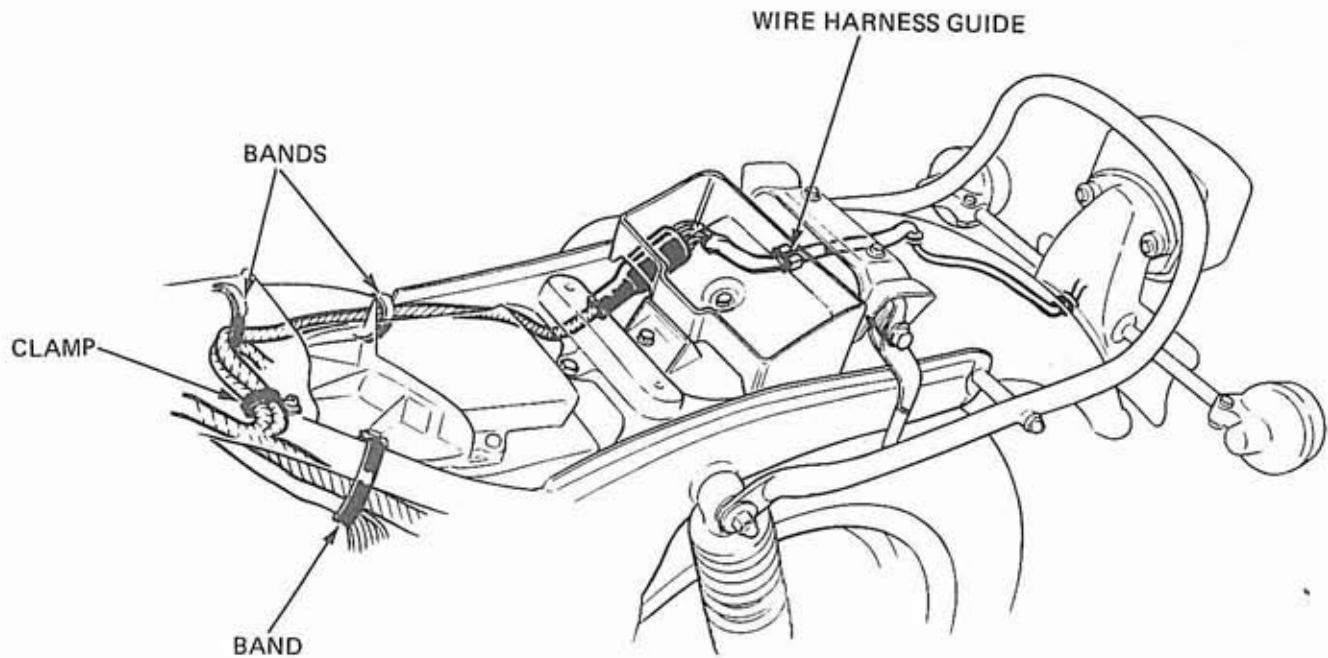


## IV. CABLE AND HARNESS ROUTING











## V. FUEL SYSTEM

### CARBURETOR SPECIFICATIONS

Item	
Identification mark	VB22E
Idle speed	1,200 ± 100 rpm
Fast idle speed	2,500 ± 500 rpm
Vacuum difference (at idle)	40 mm (1.6 in.) HG
Float level	15.5 mm (0.61 in.)
Pilot screw initial setting	See page 23-11
Venturi size	30 mm (1.18 in.)

### HIGH ALTITUDE ADJUSTMENT

Adjust the carburetors for riding above 2,000 m (6,500 ft) to improve high altitude driveability.

**CAUTION**

Sustained operation at altitudes lower than 1,500 meters (5,000 ft) with the high altitude carburetor specifications may cause engine overheating and damage.

### HIGH ALTITUDE (Above 2,000 M/6,500 ft) CARBURETOR SPECIFICATIONS

Secondary Main Jet	#112
Accelerator Pump arm-to-Stopper clearance	4 mm (1/8 in.)
Pilot Screw	1/2 turn in
Idle Speed	1,200 ± 100 rpm

Adjust as follows:

Remove the carburetors (page 4-2).

Remove the float chambers and secondary main jets (page 4-5).

Install #112 secondary main jets.

Install the float chambers.

Adjust the clearance between the accelerator pump adjusting arm and stopper to 4 mm (1/8 in), page 23-11.

Install the carburetors.

Turn each pilot screw 1/2 turn in.

Adjust the idle speed with the throttle stop screw.

When the motorcycle is to be ridden below 1,500 m (5,000 ft), do the following:

Install the standard size secondary main jets for the CM400E.

Adjust the accelerator pump adjusting arm and stopper clearance to the standard setting (page 23-11).

### STANDARD CLEARANCE: 7.0 mm (1/4 in.)

Turn the pilot screws 1/2 turn out.

Adjust the idle speed with the throttle stop screw.

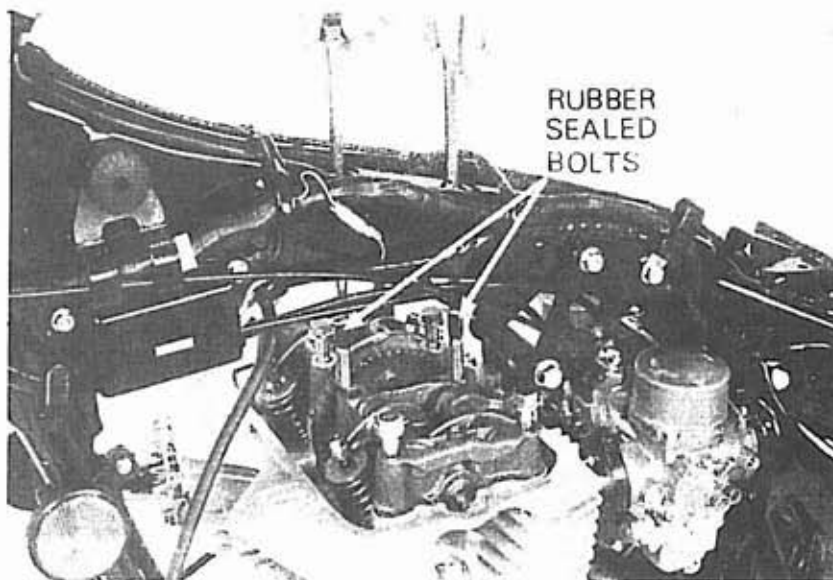


## VI. CYLINDER HEAD/VALVES

### CYLINDER HEAD INSTALLATION

For details, refer to page 6-17.

Install the rubber sealed bolts at the left cylinder inboard location.



## VII. WHEELS

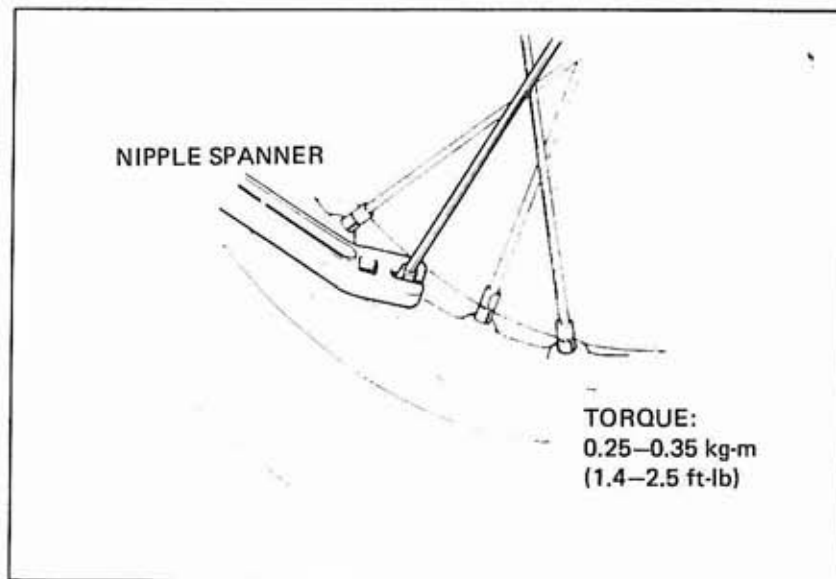
### TIRE PRESSURE

#### NOTE

Tire pressure should be checked when the tires are COLD.

		Front	Rear
Tire size		3.50S18-4PR	4.60S16-4PR
Cold tire pressures kg/cm <sup>2</sup> (psi)	Up to 90 kg (200 lbs) load	1.75 (24)	2.0 (28)
	90 kg (200 lbs) load to vehicle capacity load	1.75 (24)	2.5 (36)
Tire brand	BRIDGE-STONE	S703	L302
	DUNLOP	F11	K127
	YOKO-HAMA	Y-992	Y-987

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



### WHEEL SPOKE TIGHTENING

Check spoke tightness, rim runout and trueness.

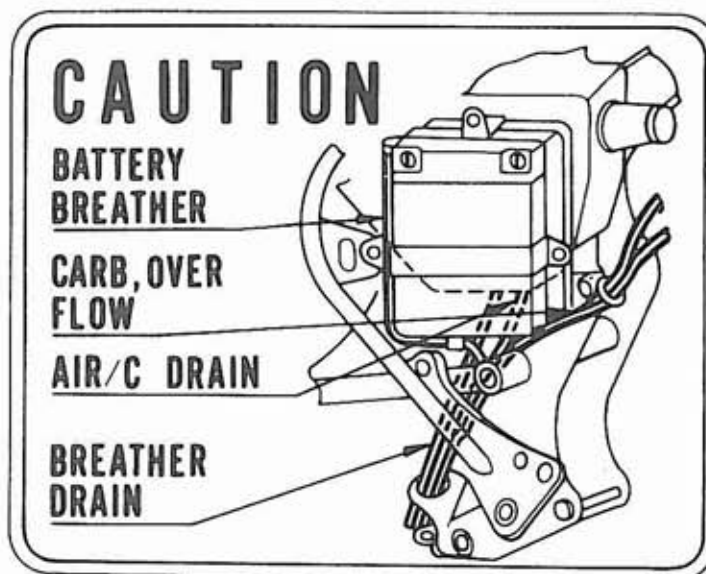
TORQUE: 0.25-0.35 kg-m  
(1.4-2.5 ft-lb)

## VIII. BATTERY

### BATTERY

#### CAUTION

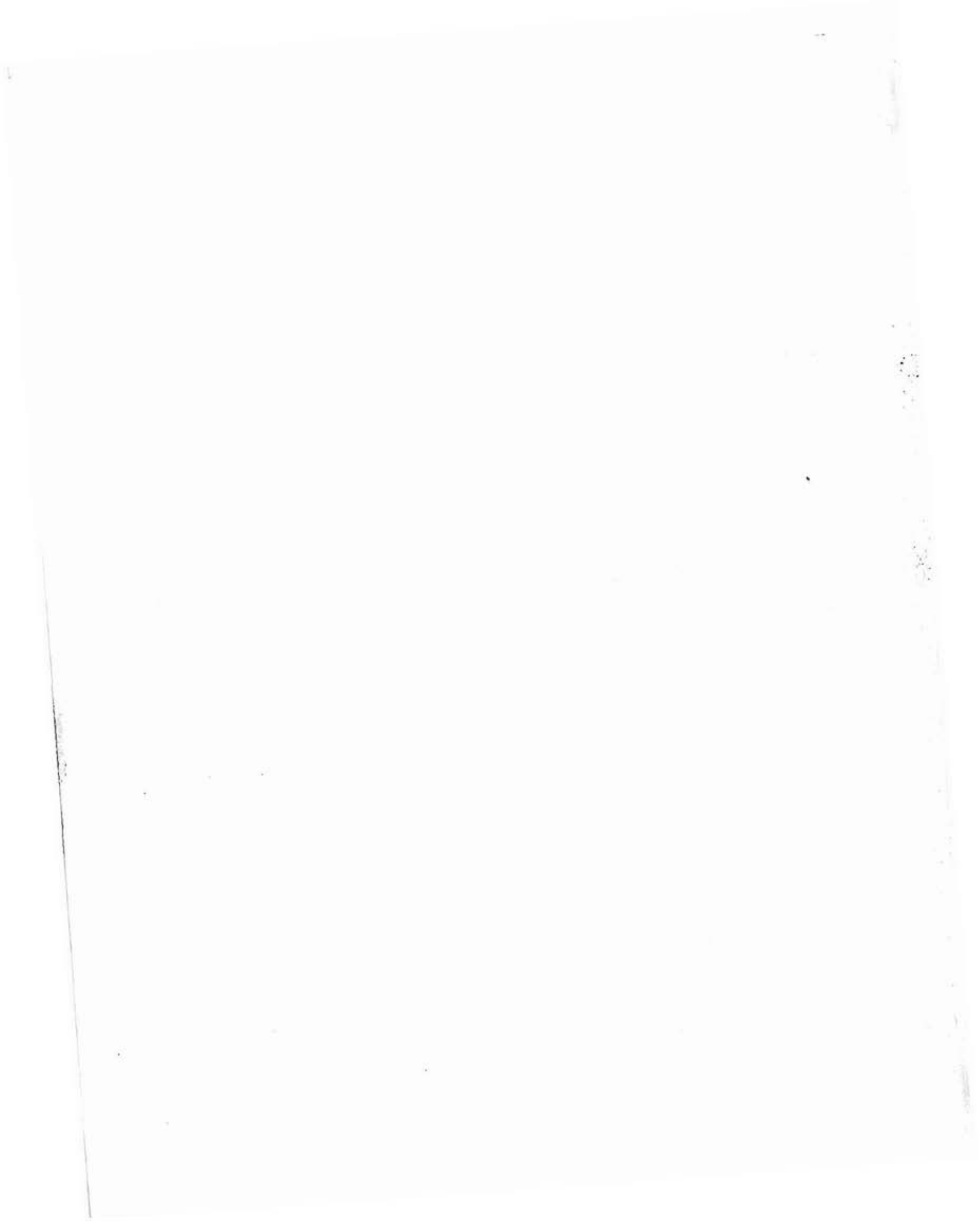
The battery breather tube must be routed as shown on the label. Do not bend or twist the breather tube. A bent or kinked breather tube may pressurize the battery and cause case damage.



## CM400E

[illegible]

0030Z-447-6700







## INTRODUCTION

This HONDA Shop Manual Addendum contains information for the 1981 CB/CM400'S. Refer to the base shop manual and other addendums for service procedures and data not included in this addendum.

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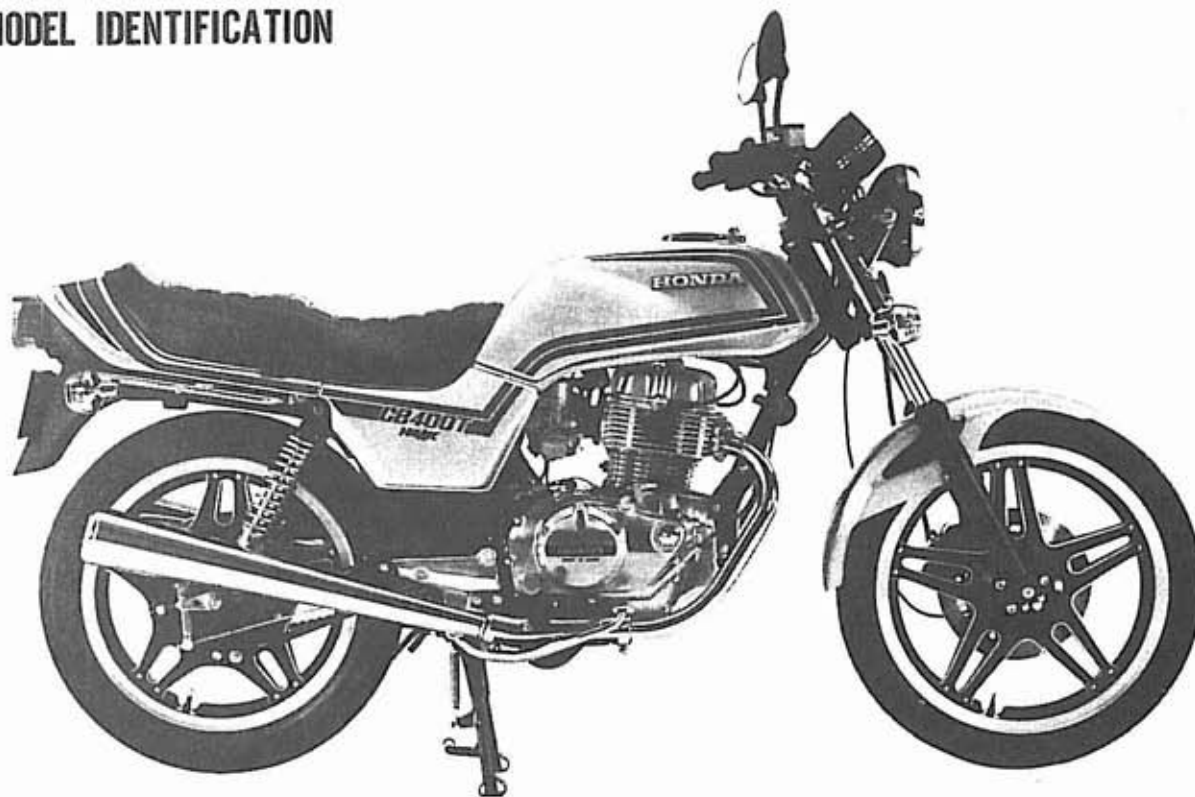
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## I. MODEL IDENTIFICATION



CB400T BEGINNING F/N NC030\*BM100001



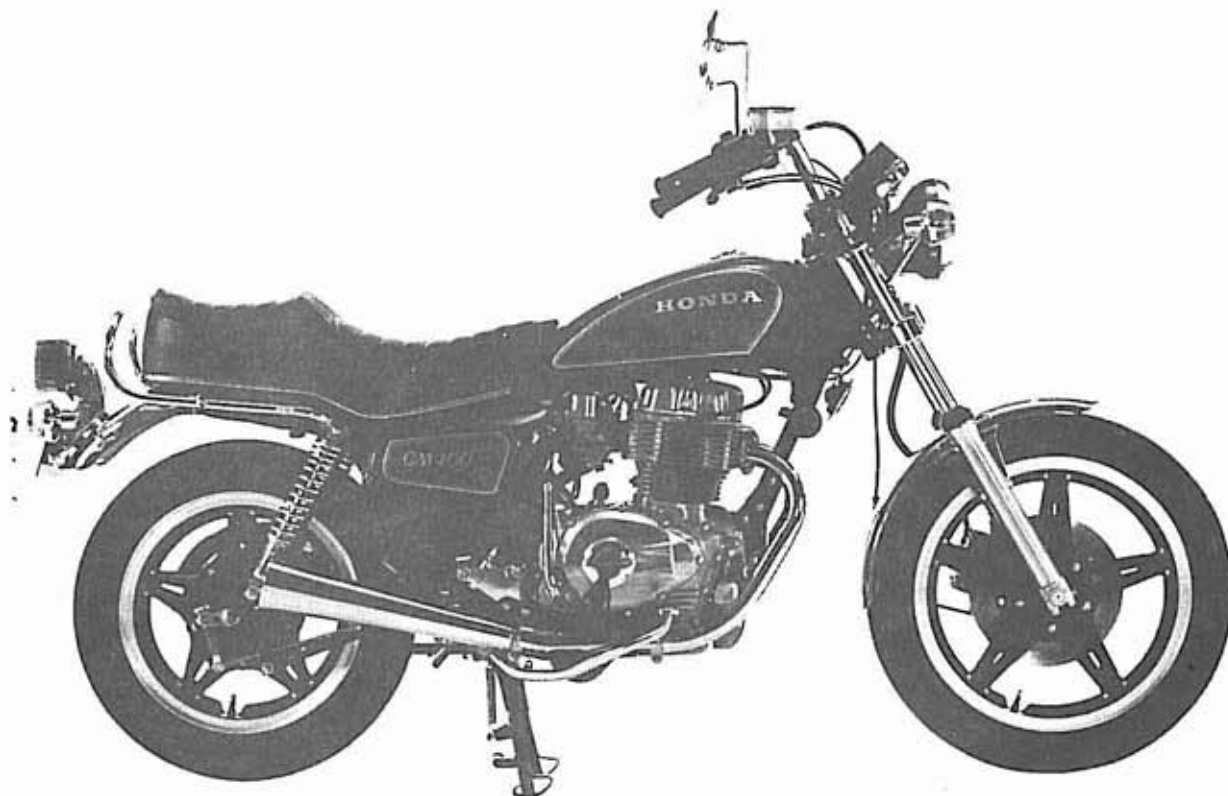
CM400T BEGINNING F/N NC010\*BM200001



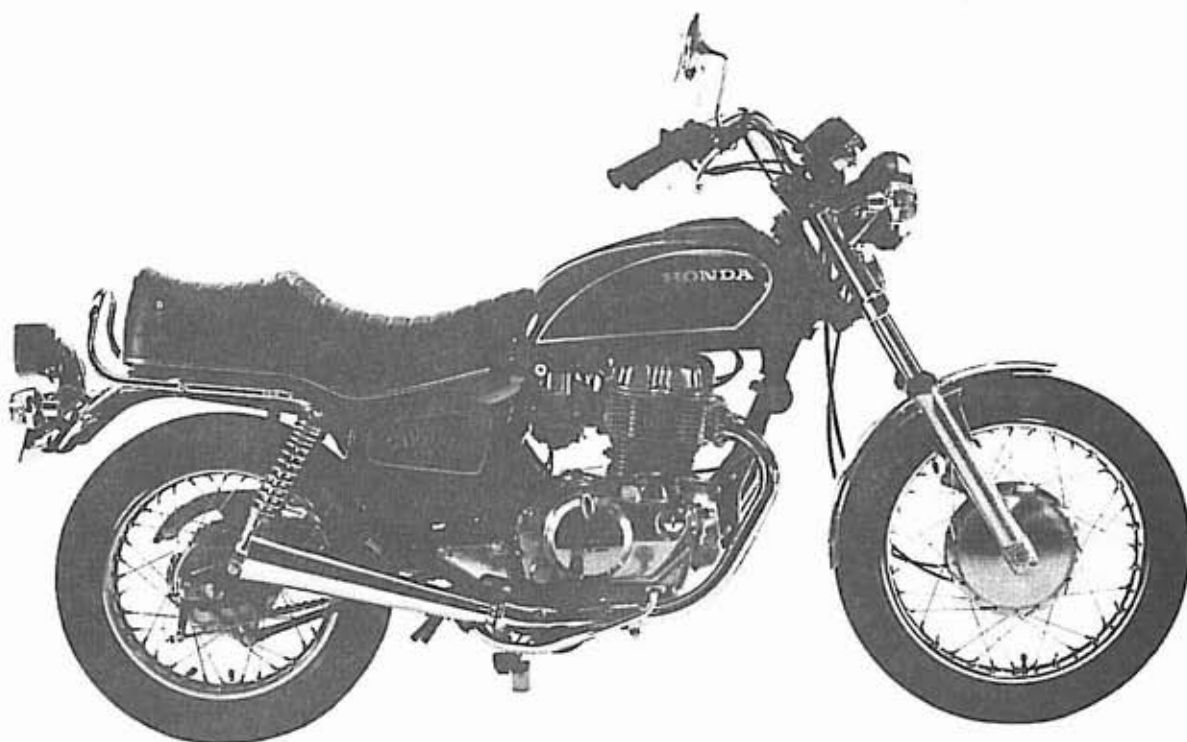
**HONDA**

CB400T/CM400T-A-E-C

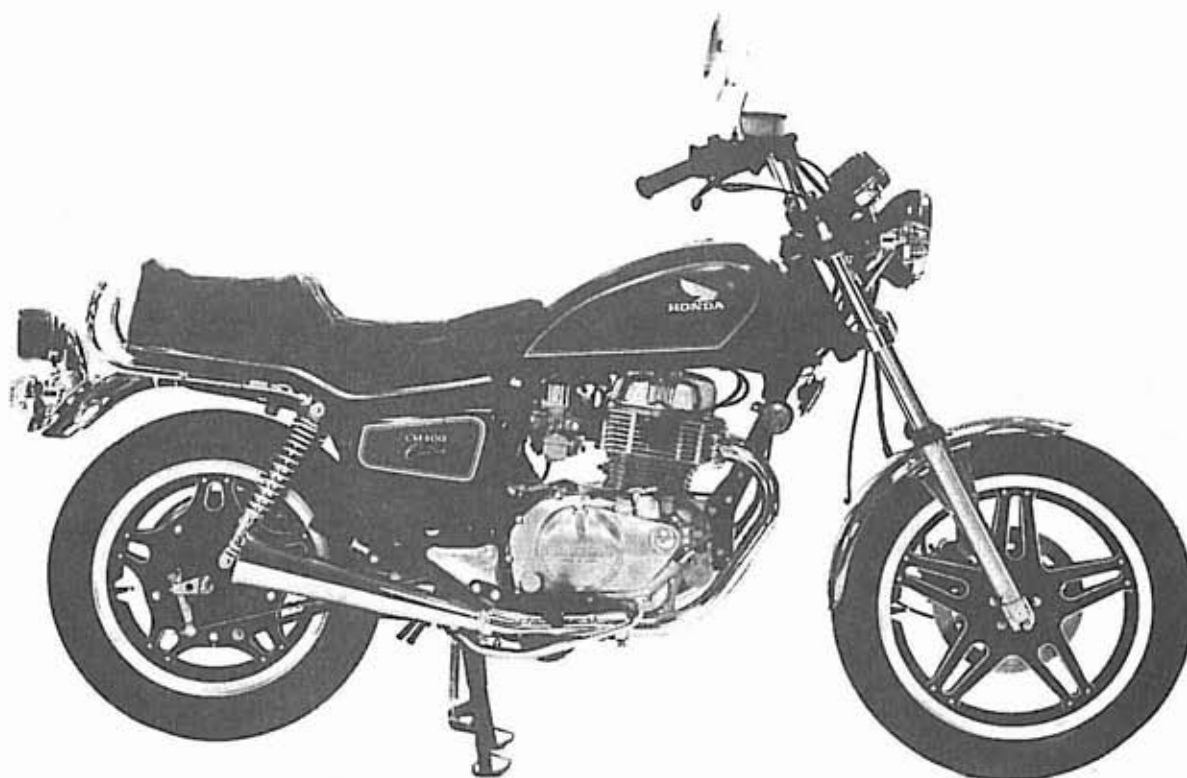
'81 ADDENDUM



CM400A BEGINNING F/N NC020\*BM200001



CM400E BEGINNING F/N NC020\*BM100001



CM400C BEGINNING F/N NC012\*BM000001

**HONDA**

CB400T/CM400T-A-E-C

'81 ADDENDUM

**II. SPECIFICATIONS**

NOTE: CM400A and CM400E Specifications begin on page 26-7.

CM400 CUSTOM Specification begins on page 26-9.

**CB400T/CM400T**

CB400T / CM400T			CB400T		CM400T		
	Item		Metric	English	Metric	English	
Dimensions	Overall length		2,085 mm	82.1 in.	2,110 mm	83.1 in.	
	Overall width		805 mm	31.7 in.	855 mm	33.7 in.	
	Overall height		1,130 mm	44.5 in.	1,155 mm	45.5 in.	
	Wheel base		1,390 mm	54.7 in.	1,425 mm	56.1 in.	
	Seat height		790 mm	31.1 in.	750 mm	29.5 in.	
	Foot peg height	Right	315 mm	12.4 in.	310 mm	12.2 in.	
		Left	325 mm	12.8 in.	310 mm	12.2 in.	
	Ground clearance		165 mm	6.5 in.	140 mm	5.5 in.	
Dry weight		170 kg	375 lbs.	171 kg	377.1 lbs.		
Frame	Type		Diamond		←		
	F. suspension and travel		Telescopic air fork, 140 mm (5.5 in.)		←		
	R. suspension and travel		Swing arm, 96 mm (3.8 in.)		Swing arm, 75.9 mm (3 in.)		
	F. tire size		3.60S19-4PR (Tubeless)		3.50S18-4PR (Tubeless)		
	R. tire size		4.10S18-4PR (Tubeless)		4.60S16-4PR (Tubeless)		
	Cold tire pressures	Up to 90 kg (200 lbs.) load	Front	2.0 kg/cm <sup>2</sup>	28 psi	←	
			Rear	2.0 kg/cm <sup>2</sup>	28 psi	←	
		Up to vehicle capacity load	Front	2.0 kg/cm <sup>2</sup>	28 psi	←	
			Rear	2.5 kg/cm <sup>2</sup>	36 psi	←	
	F. brake		Disc brake		←		
	R. brake		Internal expanding shoes		←		
	Fuel capacity		13 lit.	3.4 U.S. gal., 2.9 Imp. gal.	10 lit.	2.6 U.S. gal., 2.2 Imp. gal.	
	Fuel reserve capacity		3.0 lit.	0.8 U.S. gal., 0.6 Imp. gal.	1.7 lit.	0.45 U.S. gal., 0.37 Imp. gal.	
	Caster angle		63°00'		60°30'		
	Trail length		100 mm	3.9 in.	108 mm	4.3 in.	
Front fork oil capacity (at assembly)		187 cc	6.3 oz.	190 cc	6.4 oz.		
Engine	Type		Air cooled 4-stroke O.H.C. engine		←		
	Cylinder arrangement		Vertical twin, parallel		←		
	Bore and stroke		70.5 x 50.6 mm	(2.776 x 1.992 in.)	←		
	Displacement		395 cc	(24.1 cu-in.)	←		
	Compression ratio		9.3 : 1		←		
	Valve train		Chain driven over head camshaft		←		
	Oil capacity		3.0 lit. (3.2 U.S. qt., 2.6 Imp. qt.)		←		
	Lubrication system		Forced pressure and wet sump		←		
	Cylinder compression		13 ± 1.0 kg/cm <sup>2</sup> (185 ± 14 psi)		←		

## '81 ADDENDUM

**HONDA**

CB400T/CM400T-A·E·C

	Item		CB400T	CM400T
Engine	Intake valve	Opens	57° BTDC (At 0 lift), 5° BTDC (At 1.0 mm lift)	
		Closes	87° ABDC (At 0 lift), 35° ABDC (At 1.0 mm lift)	
	Exhaust valve	Opens	90° BBDC (At 0 lift), 40° BBDC (At 1.0 mm lift)	
		Closes	55° ATDC (At 0 lift), 5° ATDC (At 1.0 mm lift)	
	Valve clearance (cold)	IN	0.10 mm (0.004 in.)	←
		EX	0.14 mm (0.006 in.)	←
	Idle speed		1,200 ± 100 rpm	←
Carburetion	Carburetor type		CV type, 30 mm (1.18 in.)	
	Identification number		VB22B	VB22A
	Pilot screw initial opening		See page 24-11	See page 23-11
	Float level		15.5 mm (0.61 in.)	←
Drive train	Clutch		Wet multi-plate	←
	Transmission		6-speed constant mesh	5-speed constant mesh
	Primary reduction ratio		3.125 : 1	←
	Gear ratio I		2.733 : 1	←
	Gear ratio II		1.947 : 1	1.850 : 1
	Gear ratio III		1.545 : 1	1.417 : 1
	Gear ratio IV		1.280 : 1	1.148 : 1
	Gear ratio V		1.074 : 1	0.966 : 1
	Gear ratio VI		0.931 : 1	—
	Final reduction ratio		2.312 : 1, (37/16)	2.188 : 1, (35/16)
	Gear shift pattern		Left foot operated return system	
Electrical	Ignition		Capacitive discharge ignition	
	Ignition timing	"F" mark	15° BTDC at 1,200 rpm idle	
		Full advance	43° BTDC ± 2° at 4,500 to 5,350 rpm	
	Starting system		Starting motor	
	Alternator		A.C. generator, 170W/5,000 rpm	
	Battery capacity		12 V, 12 AH	←
	Spark plug		USA model	Canada model
		Standard	X24ES-U (ND) D8EA (NGK)	X24ESR-U (ND) DR8ES-L (NGK)
		For cold climate (Below 5°C, 41°F)	X22ES-U (ND) D7EA (NGK)	X22ESR-U (ND) DR7ES (NGK)
For extended high speed riding		X27ES-U (ND) D9EA (NGK)	X27ESR-U (ND) DR8ES (NGK)	
Spark plug gap		0.6–0.7 mm (0.024–0.028 in.)	←	
Lights	Headlight (low/high beam)		35/50 W	←
	Tail/stoplight		3/32 cp	SAE NO. 1157
	Turn signal (front/rear)		32/32 cp	SAE NO. F. 1034, R. 1073
	Speedometer light		2 cp	SAE NO. 57
	Tachometer light		2 cp	SAE NO. 57
	Neutral indicator		2 cp	SAE NO. 57
	Turn signal indicator		2 cp	SAE NO. 57
	High beam indicator		2 cp	SAE NO. 57
	Position light		3 cp	SAE NO. 1034



**HONDA**

CB400T/CM400T·A·E·C

## '81 ADDENDUM

**CM400A/CM400T**

CM400A/CM400T				CM400A		CM400E	
	Item			Metric	English	Metric	English
Dimensions	Overall length			2,110 mm	83.1 in.	←	
	Overall width			855 mm	33.7 in.	←	
	Overall height			1,155 mm	45.5 in.	←	
	Wheelbase			1,425 mm	56.1 in.	←	
	Seat height			750 mm	29.5 in.	←	
	Foot peg height			310 mm	12.2 in.	←	
	Ground clearance			140 mm	5.5 in.	←	
	Dry weight			178 kg	392.4 lbs.	168 kg	370 lbs
Frame	Type			Diamond		←	
	F. suspension and travel			Telescopic air fork, 140 mm (5.5 in.) Semi air suspension		Telescopic fork, 140 mm (5.5 in.)	
	R. suspension and travel			Swing arm, 75.9 mm (3 in.)		←	
	F. tire size			3.50S18-4PR (Tubeless)		3.50S18-4PR (Tube type)	
	R. tire size			4.60S16-4PR (Tubeless)		4.60S16-4PR (Tube type)	
	Cold tire pressures	Up to 90 kg (200 lbs.) load	Front	2.0 kg/cm <sup>2</sup>	28 psi	1.75 kg/cm <sup>2</sup>	24 psi
			Rear	2.0 kg/cm <sup>2</sup>	28 psi	←	
		Up to vehicle capacity load	Front	2.0 kg/cm <sup>2</sup>	28 psi	1.75 kg/cm <sup>2</sup>	24 psi
			Rear	2.5 kg/cm <sup>2</sup>	36 psi	←	
	F. brake			Disc brake		Internal expanding shoes	
	R. brake			Internal expanding shoes		←	
	Fuel capacity			10 lit.	2.6 U.S. gal., 2.2 Imp. gal.	14 lit.	3.7 U.S. gal., 3.1 Imp. gal.
	Fuel reserve capacity			1.7 lit.	0.45 U.S. gal., 0.37 Imp. gal.	3.5 lit.	0.9 U.S. gal., 0.8 Imp. gal.
	Caster angle			60°30'		61°00'	
	Trail length			108 mm	4.3 in.	107 mm	4.2 in.
	Front fork oil capacity (at assembly)			190 cc	6.3 oz.	135 cc	4.6 oz.
Engine	Type			Air cooled 4-stroke OHC engine		←	
	Cylinder arrangement			Vertical twin parallel		←	
	Bore and stroke			70.5 x 50.6 mm	2.776 x 1.992 in.	←	
	Displacement			395 cc	24.1 cu-in.	←	
	Compression ratio			9.3 : 1		←	
	Valve train			Chain driven OHC		←	
	Oil capacity			3.3 lit.	3.5 U.S. qt., 2.9 Imp. qt.	3.0 lit.	3.2 U.S. qt., 2.6 Imp. qt.
	Lubrication system			Forced pressure and wet sump		←	
	Cylinder head compression pressure			13 ± 1.0 kg/cm <sup>2</sup>	185 ± 14 psi	←	
	Intake valve	Opens	5° ATDC (At 1.0 mm lift), 39° BTDC (At 0 lift)		5° BTDC (At 1.0 mm lift), 57° BTDC (At 0 lift)		
		Closes	30° ABDC (At 1.0 mm lift), 74° ABDC (At 0 lift)		35° ABDC (At 1.0 mm lift), 87° ABDC (At 0 lift)		
	Exhaust valve	Opens	40° BBDC (At 1.0 mm lift), 94° BBDC (At 0 lift)		40° BBDC (At 1.0 mm lift), 90° BBDC (At 0 lift)		
		Closes	5° BTDC (At 1.0 mm lift), 49° ATDC (At 0 lift)		5° ATDC (At 1.0 mm lift), 55° ATDC (At 0 lift)		
	Valve clearance (cold)	IN	0.10 mm	0.004 in.	←		
		EX	0.14 mm	0.006 in.	←		
	Idle speed			1,250 ± 100 rpm		1,200 ± 100 rpm	



	Item		CM400A	CM400E
Carburetion	Carburetor type		CV, 28 mm (1.10 in.)	CV, 30 mm (1.18 in.)
	Identification number		VB24C	VB22E
	Pilot screw initial setting		See page 23-11	See page 23-11
	Float level		15.5 mm (0.61 in.)	←
Drive Train	Clutch		—	Wet multi-plate
	Transmission		2-speed semi-automatic transmission with torque converter	5-speed constant mesh
	Primary reduction ratio		1.463 : 1	3.125 : 1
	Gear ratio I		2.923 : 1	2.733 : 1
	Gear ratio II		2.059 : 1	1.850 : 1
	Gear ratio III		—	1.417 : 1
	Gear ratio IV		—	1.148 : 1
	Gear ratio V		—	0.966 : 1
	Final reduction ratio		2.188 : 1	←
	Gearshift pattern		Left foot operated return system	←
Electrical	Ignition		Capacitive discharge ignition	←
	Ignition timing	"FN" mark	7.5° BTDC at 1,250 rpm idle speed (Transmission in neutral)	—
		"F" mark	15° BTDC at 1,250 rpm idle speed (Transmission in gear)	15° BTDC at 1,200 rpm idle speed
		Full advance	43° BTDC ± 2° at 4,500 to 5,350 rpm	43° BTDC ± 2° at 4,500 to 5,350 engine rpm
	Starting system		Starting motor	←
	Alternator		A.C. generator, 170W/5,000 rpm	←
	Battery capacity		12 V, 12 AH	←
	Spark plug		U.S.A. model	Canada model
		Standard	ND: X24ES-U or NGK: D8EA	ND: X24ESR-U or NGK: DR8ES-L
		For cold climate (Below 5°C, 41°F)	ND: X22ES-U or NGK: D7EA	ND: X22ESR-U or NGK: DR7ES
		For extended high speed riding	ND: X27ES-U or NGK: D9EA	ND: X27ESR-U or NGK: DR8ES
	Spark plug gap		0.6 – 0.7 mm (0.024–0.028 in.)	←
Lights	Headlight (low/high beam)		35/50 W	←
	Tail/stoplight		3/32 cp SAE NO. 1157	←
	Turn signal light (Front/Rear)		32/32 cp SAE NO. F. 1034 R. 1073	←
	Speedometer light		2 cp SAE NO. 57	←
	Parking brake warning light		2 cp SAE NO. 57	—
	Turn signal indicator light		2 cp SAE NO. 57	←
	High beam indicator light		2 cp SAE NO. 57	←
	Position light		3 cp SAE NO. 1034	←
	Neutral Indicator Light		2 cp SAE NO. 57	←
	Shift position light (3)		2 cp SAE NO. 57	—
	Oil pressure light		2 cp SAE NO. 57	←


**CM400CUSTOM**

				CM400 CUSTOM	
Item			Metric	English	
Dimensions	Overall length		2,110 mm	83.1 in.	
	Overall width		855 mm	33.7 in.	
	Overall height		1,155 mm	45.5 in.	
	Wheel base		1,425 mm	56.1 in.	
	Seat height		750 mm	29.5 in.	
	Foot peg height	Right	310 mm	12.2 in.	
		Left	310 mm	12.2 in.	
	Ground clearance		140 mm	5.5 in.	
Dry weight		173 kg	381 lbs		
Frame	Type		Diamond		
	F. suspension and travel		Telescopic air fork, 140 mm (5.5 in.)		
	R. suspension and travel		Swing arm, 75.9 mm (3 in.)		
	F. tire size		100/90 - 18	3.50S18-4PR (Tubeless)	
	R. tire size		120/90 - 16	4.60S16-4PR (Tubeless)	
	Cold tire pressures	Up to 90 kg (200 lbs.) load	Front	2.0 kg/cm <sup>2</sup>	28 psi
			Rear	2.0 kg/cm <sup>2</sup>	28 psi
		Up to vehicle capacity load	Front	2.0 kg/cm <sup>2</sup>	28 psi
			Rear	2.5 kg/cm <sup>2</sup>	36 psi
	F. brake		Disc brake		
	R. brake		Internal expanding shoes		
	Fuel capacity		13.0 lit.	3.4 U.S. gal., 2.9 Imp. gal.	
	Fuel reserve capacity		2.0 lit.	0.52 U.S. gal., 0.43 Imp. gal.	
	Caster angle		60°30'		
	Trail length		108 mm	4.3 in.	
	Front fork oil capacity (at assembly)		190 cc	6.4 oz.	
	Engine	Type		Air cooled 4-stroke O.H.C. engine	
Cylinder arrangement		Vertical twin, parallel			
Bore and stroke		70.5 x 50.6 mm	(2.776 x 1.992 in.)		
Displacement		395 cc	(24.1 cu-in.)		
Compression ratio		9.3 : 1			
Valve train		Chain driven over head camshaft			
Oil capacity		3.0 lit. (3.2 U.S. qt., 2.6 Imp. qt.)			
Lubrication system		Forced pressure and wet sump			
Cylinder compression		13 ± 1.0 kg/cm <sup>2</sup> (185 ± 14 psi)			
Intake valve		Opens	57° BTDC (At 0 lift), 5° BTDC (At 1.0 mm lift)		
		Closes	87° ABDC (At 0 lift), 35° ABDC (At 1.0 mm lift)		
Exhaust valve		Opens	90° BBDC (At 0 lift), 40° BBDC (At 1.0 mm lift)		
		Closes	55° ATDC (At 0 lift), 5° ATDC (At 1.0 mm lift)		
Valve clearance (cold)		IN	0.10 mm (0.004 in.)		
		EX	0.14 mm (0.006 in.)		
Idle speed		1,200 ± 100 rpm			



	Item		CM400 CUSTOM		
Carburetion	Carburetor type		CV type, 30 mm (1.18 in.)		
	Identification number		VB22A		
	Pilot screw initial opening		See page 23-11		
	Float level		15.5 mm (0.61 in.)		
Drive train	Clutch		Wet multi-plate		
	Transmission		5-speed constant mesh		
	Primary reduction ratio		3.125 : 1		
	Gear ratio I		2.733 : 1		
	Gear ratio II		1.850 : 1		
	Gear ratio III		1.417 : 1		
	Gear ratio IV		1.148 : 1		
	Gear ratio V		0.966 : 1		
	Gear ratio VI		—		
	Final reduction ratio		2.188 : 1, 35/16		
	Gear shift pattern		Left foot operated return system		
	Electrical	Ignition		Capacitive discharge ignition	
Ignition timing		"F" mark	15° BTDC at 1,200 rpm idle		
		Full advance	43° BTDC ± 2° at 4,500 to 5,350 rpm		
Starting system		Starting motor			
Alternator		A.C. generator, 170 W/5,000 rpm			
Battery capacity		12 V, 12 AH			
Spark plug			USA model	Canada model	
		Standard	X24ES-U (ND) D8EA (NGK)	X24ESR-U (ND) DR8ES-L (NGK)	
		For cold climate (Below 5° C, 41° F)	X22ES-U (ND) D7EA (NGK)	X22ESR-U (ND) DR7ES (NGK)	
		For extended speed riding	X27ES-U (ND) D9EA (NGK)	X27ESR-U (ND) DR8ES (NGK)	
Spark plug gap		0.6 — 0.7 mm (0.024 — 0.028 in.)			
Lights	Headlight (low/high beam)		35/50W		
	Tail/stoplight		3/32 cp	SAE NO. 1157	
	Turn signal (front/rear)		32/32 cp	SAE NO. F. 1034, R. 1073	
	Speedometer light		2 cp	SAE NO. 57	
	Tachometer light		2 cp	SAE NO. 57	
	Neutral indicator		2 cp	SAE NO. 57	
	Turn signal indicator		2 cp	SAE NO. 57	
	High beam indicator		2 cp	SAE NO. 57	
	Position light		3 cp	SAE NO. 1034	



### III. INSPECTION AND ADJUSTMENT

#### CARBURETOR SYNCHRONIZATION

Warm up the engine and check that the idle speed is within specification.

**IDLE SPEED:**  $1,200 \pm 100$  rpm

(Hondamatic:  $1,250 \pm 100$  rpm)

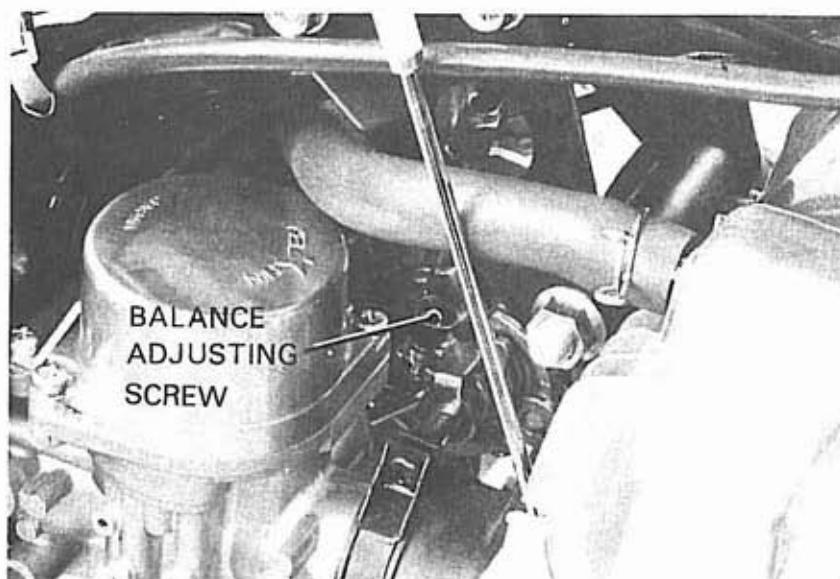
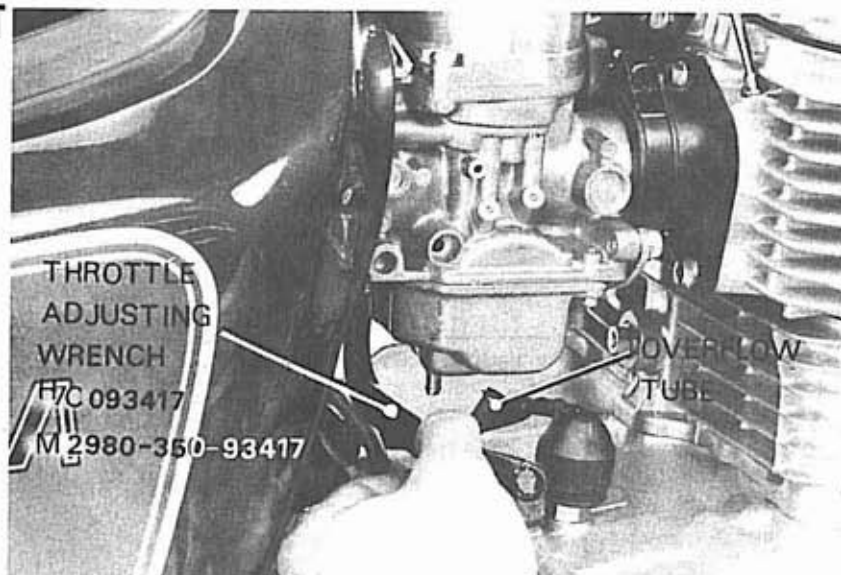
Put the motorcycle upright and remove the fuel tank and seat. Connect an auxiliary fuel supply to the carburetors.

Install vacuum gauge adaptors in the cylinder head and connect the vacuum gauges.

Disconnect the right carburetor overflow tube.

Position the throttle adjusting wrench on the balance adjusting screw lock nut from under the right carburetor.

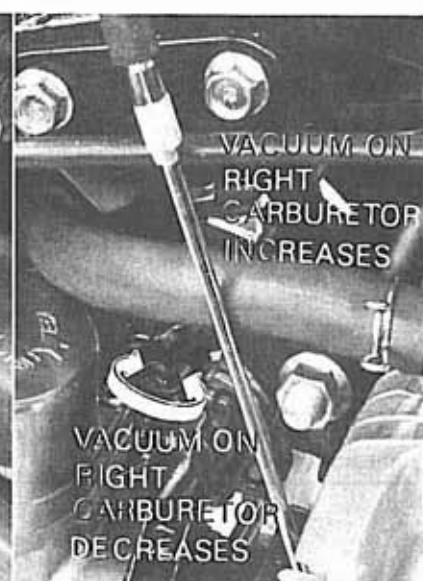
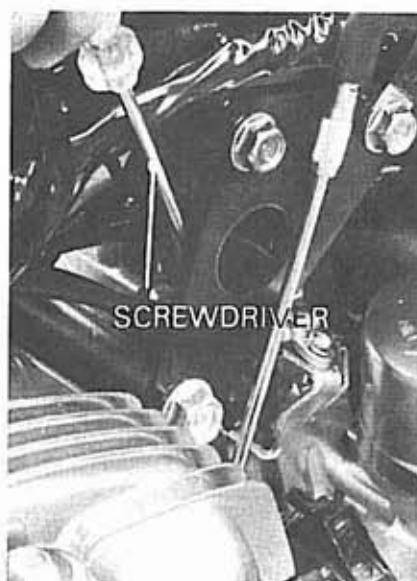
Start the engine. The vacuum gauge readings should be as close as possible to each other with a difference no greater than 40 mm (1.6 in.) Hg.



To adjust, loosen the lock nut and turn the adjusting screw. While holding the adjusting screw, retighten the lock nut.

Readjust idle speed, if necessary.

Remove the vacuum gauge adaptors and install the fuel tank and seat.





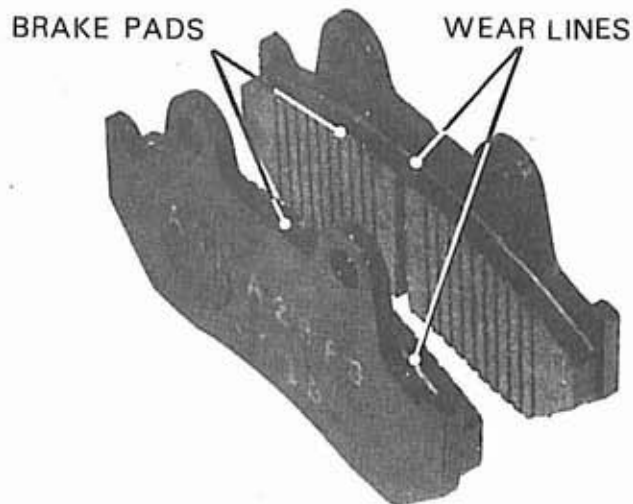
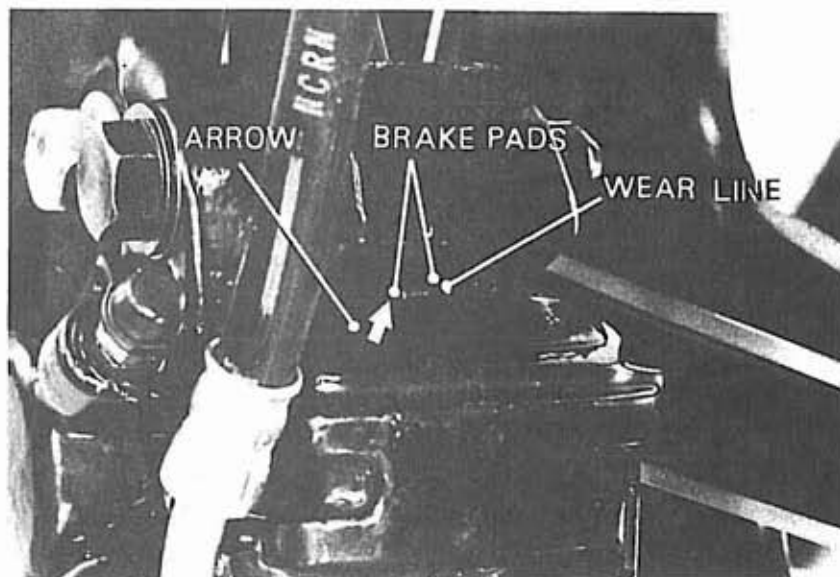

**CB400T, CM400C:  
 FRONT DISC BRAKE PAD**

Check the brake pads for wear by looking through the slot pointed to by the cast arrow on the caliper assembly.

Replace the brake pads if the wear line on the pads reaches the edge of the brake disc. (Refer to page 26-22).

**CAUTION**

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


**FRONT AIR FORKS**
**NOTE**

This does not apply to the CM400E.

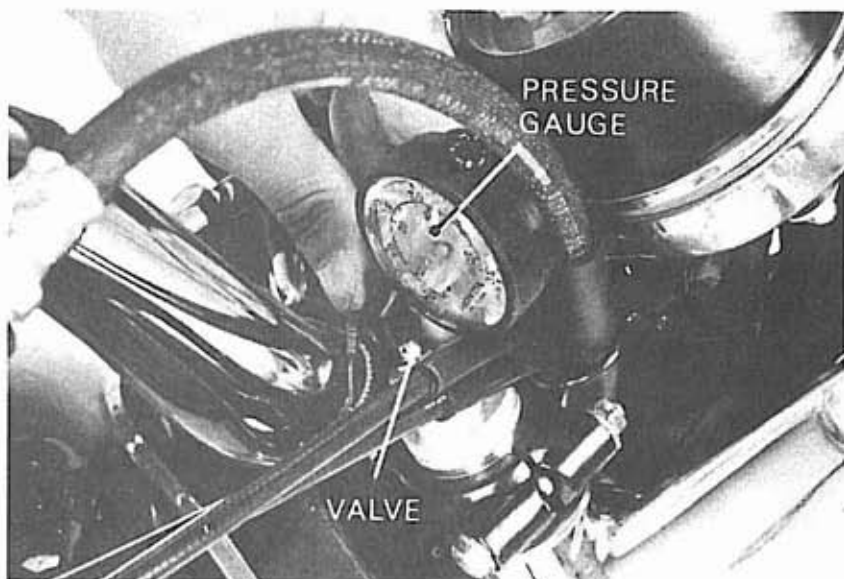
Place the vehicle on its center stand. Remove the valve cap and measure the front fork air pressure.

**FRONT FORK AIR PRESSURE:**

$0.8 \pm 0.2 \text{ kg/cm}^2$  ( $11 \pm 3 \text{ psi}$ )

**NOTE**

Check the front fork air pressure when the front forks are cold.







## IV. WHEELS

### SERVICE INFORMATION GENERAL INSTRUCTIONS

- This wheel section does not apply to the CM400E.
- Do not remove rivets or nuts from the rim, spoke plate and hub since they cannot be disassembled.
- Never stand on the spokes or try to bend the wheel.
- Avoid damaging the aluminum alloy rim.
- Check that the tubeless tire and rim are free from damage or other faults.
- When removing the tire from the rim, use the special tools; "TIRE LEVER" (No. 07772-0020100) and "RIM PROTECTOR" (No. 07772-0020201) or an approved tire changer to prevent damage to the rim.
- For tubeless tire repairs, see the "HONDA MOTORCYCLE TUBELESS TIRE REPAIR MANUAL".

### TIRE PRESSURE

#### NOTE

Tire pressure should be checked when tires are COLD.

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



AIR PRESSURE GAUGE

Recommended tire pressures and sizes:

			CB400T	CM400T/A/C
Cold tire pressure kg/cm <sup>2</sup> (psi)	Up to 90 kg (200 lb) load	Front	2.0 (28)	2.0 (28)
		Rear	2.0 (28)	2.0 (28)
	Up to vehicle capacity load	Front	2.0 (28)	2.0 (28)
		Rear	2.5 (36)	2.5 (36)
Vehicle capacity load limit kg (lb)			181 (400)	181 (400)
Tire size		Front	3.60S19—4PR	3.50S18—4PR
		Rear	4.10S18—4PR	4.60S16—4PR
Tire brand		Front	TUBELESS S702 (Bridgestone) F11 (Dunlop) Y992 (Yokohama)	TUBELESS S703 (Bridgestone) F11 (Dunlop) Y992 (Yokohama)
		Rear	TUBELESS L302 (Bridgestone) K127 (Dunlop) Y983 (Yokohama)	TUBELESS L302 (Bridgestone) K127 (Dunlop) Y987 (Yokohama)



## V. FRONT AIR FORKS

### NOTE:

This does not apply to the CM400E.

### WARNING

The fork tube caps are under air and spring pressure. Front fork air pressure must be relieved and care used before removing the fork tube caps to prevent them from becoming projectiles. Wear eye and face protection.

### REMOVAL

Remove the front wheel. (page 12-6)

Remove the brake caliper attaching bolts and caliper assembly.

### NOTE

Do not loosen the brake hose unless necessary.

Remove the front fender.

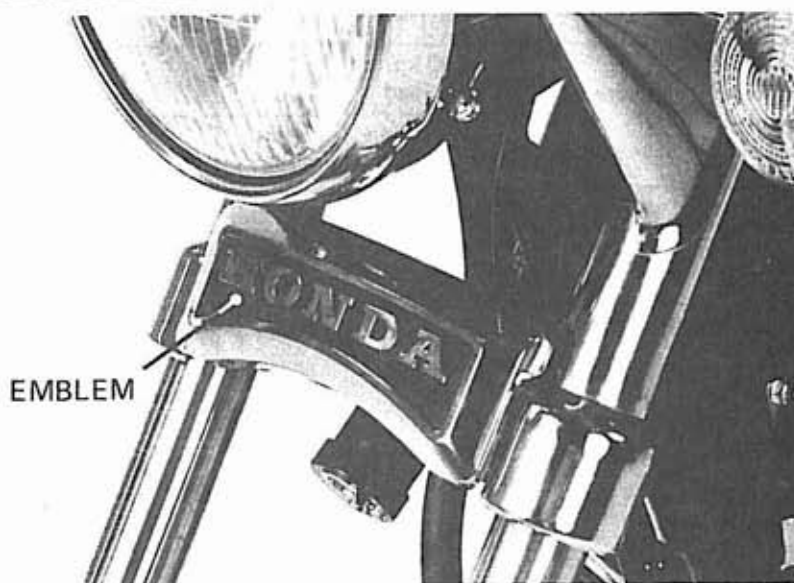
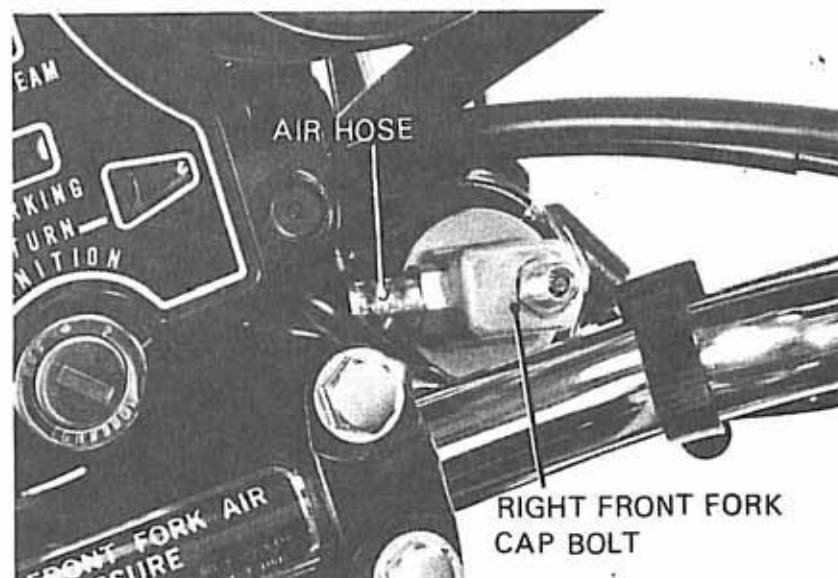
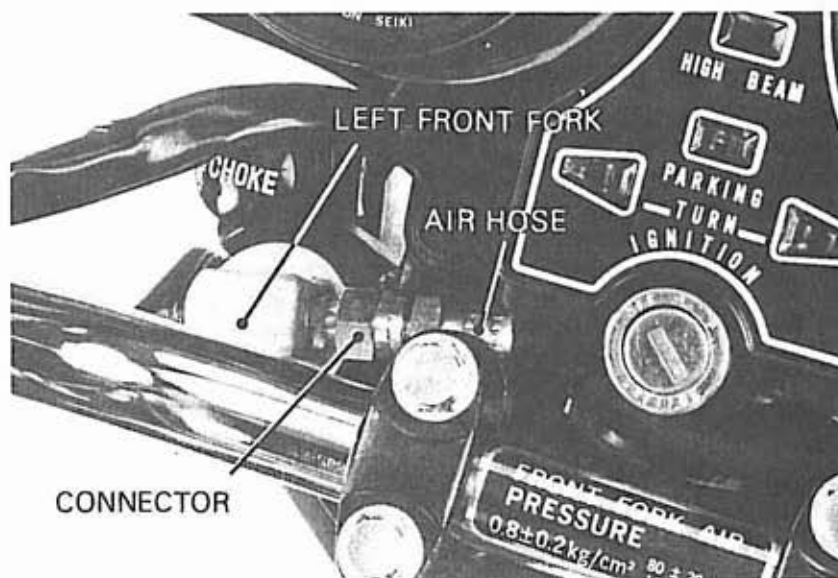
Release air pressure.

Disconnect the air hose and remove the connector from the left fork cap.

Disconnect the air hose from the right fork cap.

Before removing the front forks, loosen the fork cap bolts to ease front fork disassembly.

Remove the front emblem.

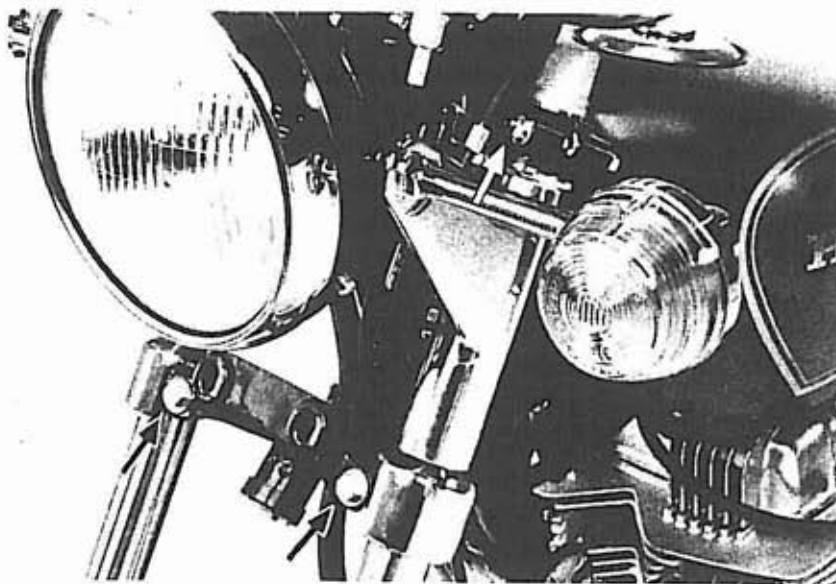


**HONDA**

CB400T/CM400T-A-E-C

**'81 ADDENDUM**

Loosen the front fork pinch bolts and remove the front fork tubes.

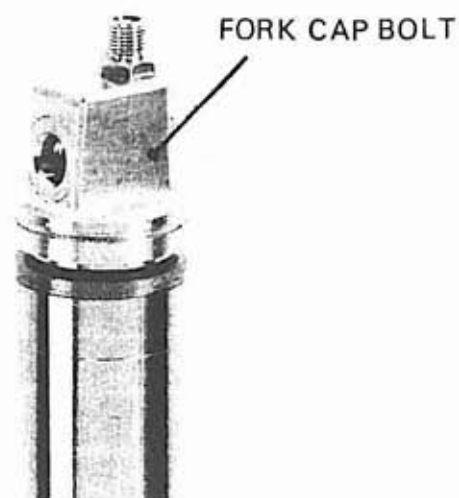
**DISASSEMBLY****WARNING**

The fork tube caps are still under spring pressure. Use care when removing the fork tube caps to prevent them from becoming projectiles. Wear eye and face protection.

Remove the fork cap bolt.

Remove spring A, washer and spring B from the fork tube.

Pour out fork fluid by pumping the fork up and down several times.

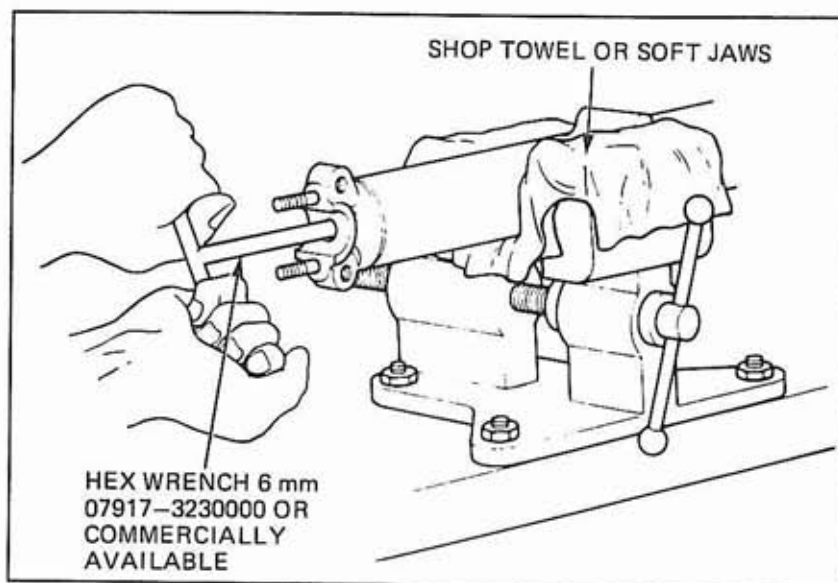


Remove the socket bolt and pump the remaining ATF out through the bolt hole.

**NOTE**

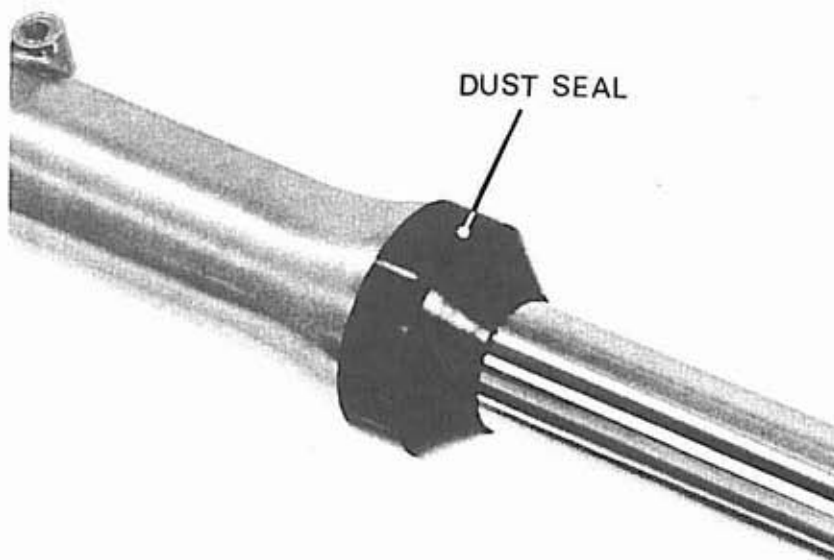
- Hold the fork slider in a vise with soft jaws, being careful not to over-tighten it.
- Temporarily install the springs and fork cap bolt if the socket bolt is difficult to remove.

Remove the piston and rebound spring.

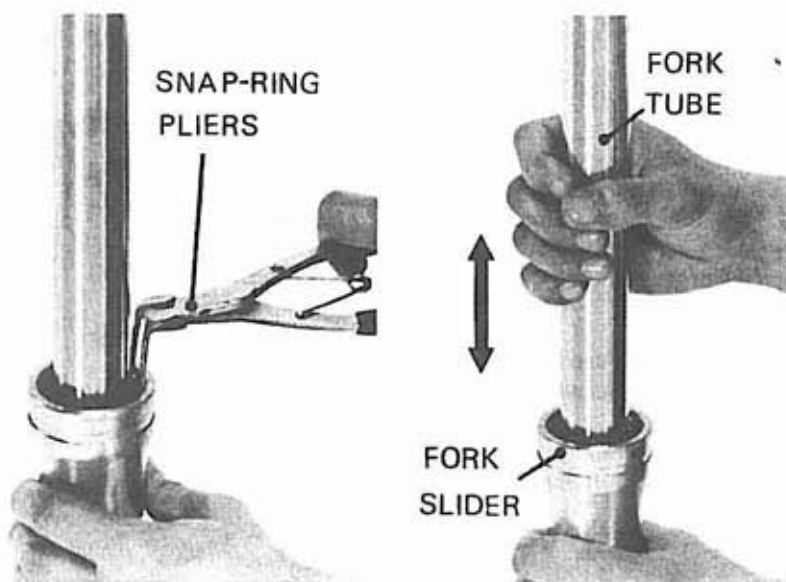




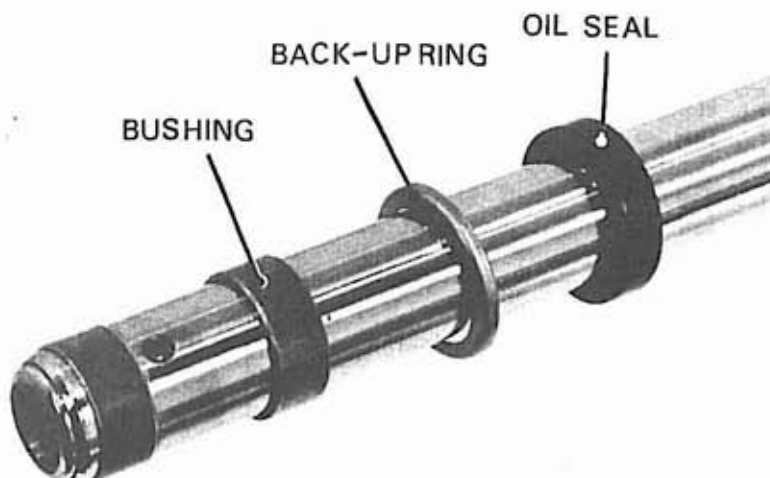
Remove the dust seal.



Remove the snap-ring.  
Remove the back-up plate with a magnet.  
Pull the fork tube out until resistance from the slider bushing is felt.  
Then move it in and out, tapping the bushing lightly until the fork tube separates from the slider. The slider bushing, seal and back-up ring will come out with the fork tube.



Remove the oil seal, back-up ring and bushing from the fork tube.  
Remove the oil lock piece from inside the slider.

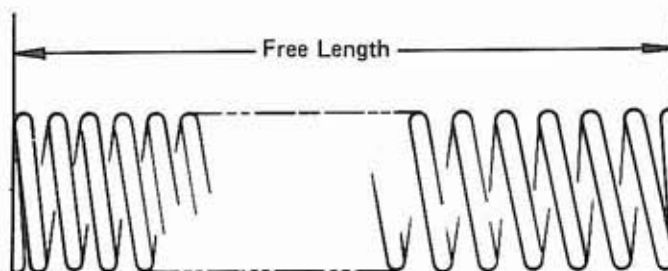




## SPRING INSPECTION

Check the free length of the fork springs.  
Replace the springs if shorter than the service limit.

STANDARD	SPRING A	CB400T:	240.4 mm (9.47 in.)
		• CM400T/A/C:	237.4 mm (9.35 in.)
	SPRING B	CB400T:	341.9 mm (13.46 in.)
		• CM400T/A/C:	312.4 mm (12.30 in.)
SERVICE LIMIT	SPRING A	CB400T:	235 mm (9.25 in.)
		• CM400T/A/C:	232 mm (9.13 in.)
	SPRING B	CB400T:	335 mm (13.19 in.)
		CM400T/A/C:	306 mm (12.06 in.)



## FORK TUBE/PISTON INSPECTION

Check the fork tubes, fork sliders and pistons for score marks, scratches, excessive or abnormal wear, replacing those which can not be reused.

Measure the outside diameter of the fork tube.

**FORK TUBE O.D. SERVICE LIMIT:**  
32.90 mm (1.295 in.)

## BUSHING/BACK-UP RING INSPECTION

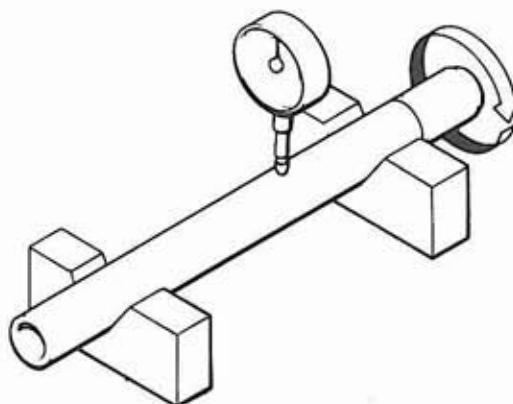
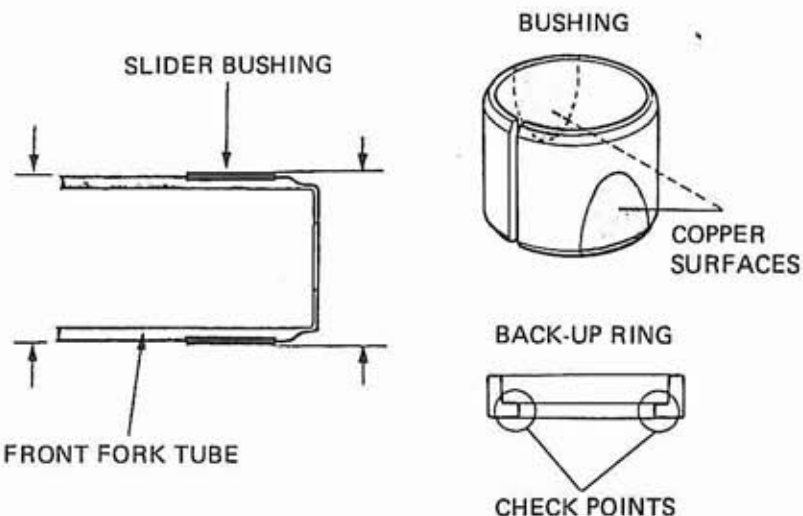
Visually inspect the slider and fork pipe bushings.

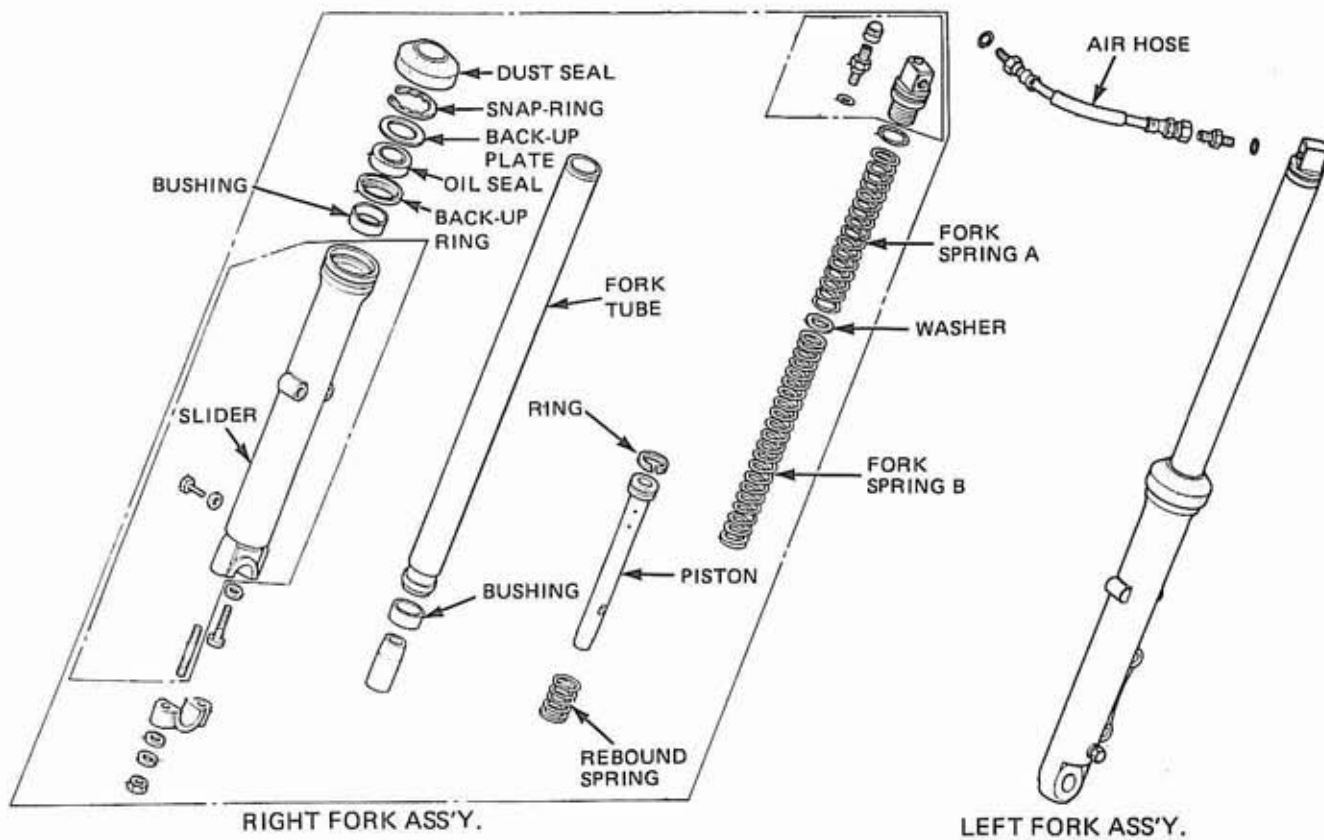
Replace if there are excessive scores or scratches, or if the teflon overlay is worn so that the copper surface appears on more than 3/4 of the entire surface.

Check the back-up ring at the points shown and replace if there is any distortion.  
and Replace if there is any distortion.

Set the fork tube in V-blocks and measure the runout. Take 1/2 total indicator reading to determine to actual runout.

**RUNOUT SERVICE LIMIT:**  
0.2 mm (0.01 in.)





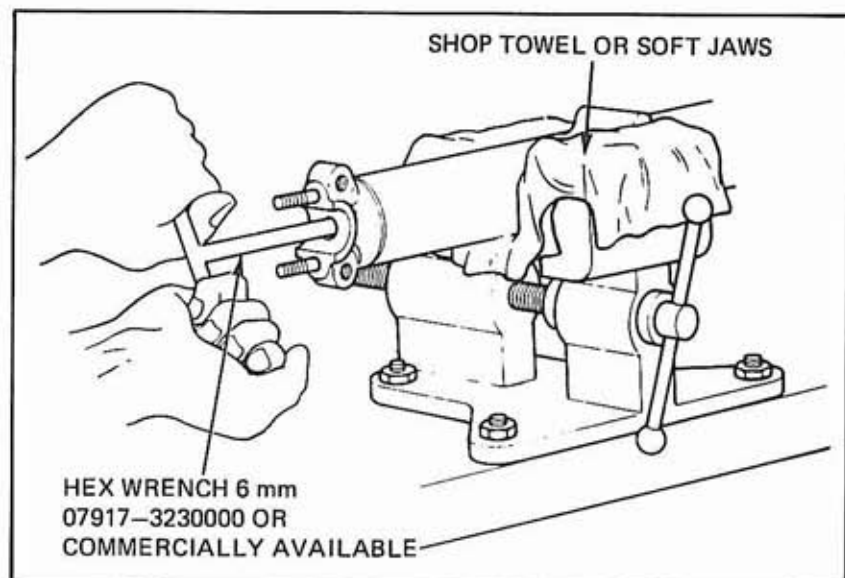
## ASSEMBLY

Clean all disassembled parts.  
 Install the bushing onto the inner tube.  
 Place the oil lock piece into the slider and insert the fork tube.  
 Install the rebound spring and piston into the fork tube.  
 Apply a locking agent to the socket bolt and thread it into the piston. Tighten with a hex wrench.

**TORQUE:** 1.5–2.5 kg-m (11–18 fts-lb)

### CAUTION

Do not overtighten the fork slider in a vise.





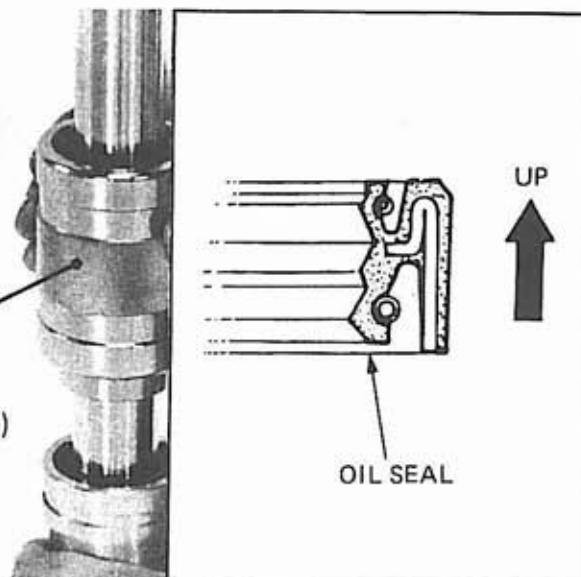
**HONDA**

CB400T/CM400T-A·E·C

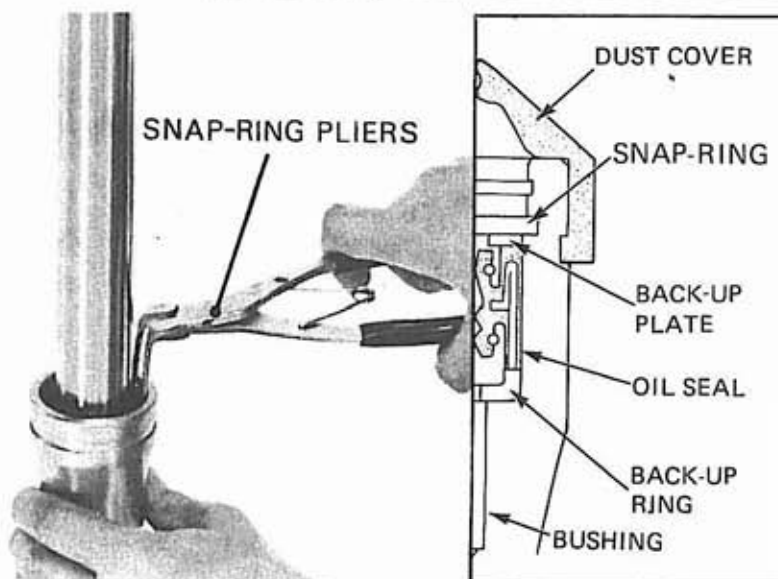
## '81 ADDENDUM

Place the slider bushing over the fork tube and rest it on the slider. Put the back-up ring and old bushing or equivalent tool on top of the new bushing. Drive the bushing into place with the seal driver (P/N 07947-3290000). Dip the new oil seal in ATF and install it over the fork tube with the marks facing up. Drive the oil seal into position until the snap-ring groove appears.

FORK SEAL  
DRIVER  
(07947-3290000)



Install the back-up plate.  
Install the snap-ring and dust cover.



Use ATF (Automatic Transmission Fluid) to fill the forks.

**CAPACITY:**

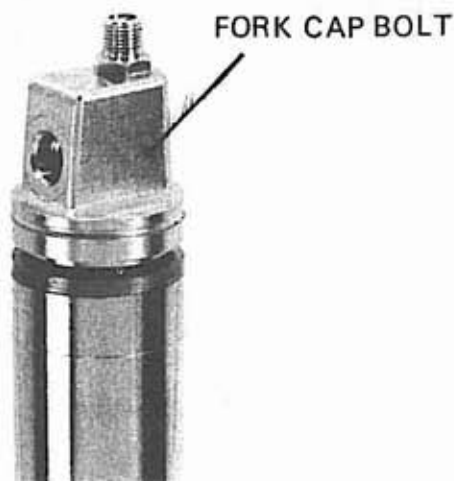
CB400T: 190 cc (6.4 ozs) at assembly  
175 cc (5.9 ozs) at draining

CM400T/A/C: 187 cc (6.3 ozs) at assembly  
172 cc (5.8 ozs) at draining

**NOTE**

Do not overfill.

Insert spring B, washer and spring A into the fork tube and install the fork cap bolt.





## INSTALLATION

Install the front forks.

### CM400T/A/C:

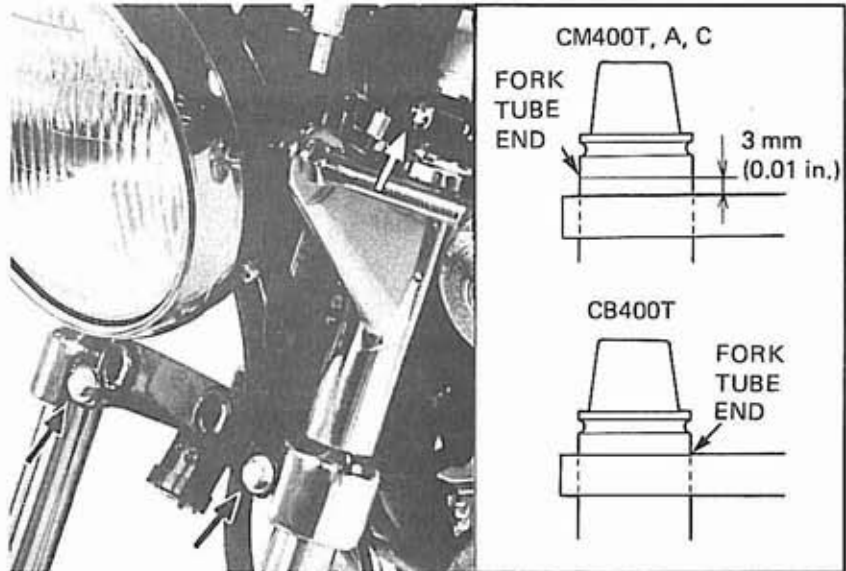
Position the fork tube end 3 mm (0.12 in.) from the upper surface of the fork top bridge.

### CB400T:

Align the fork tube end with the upper surface of the fork top bridge.  
Tighten the fork pinch bolts.

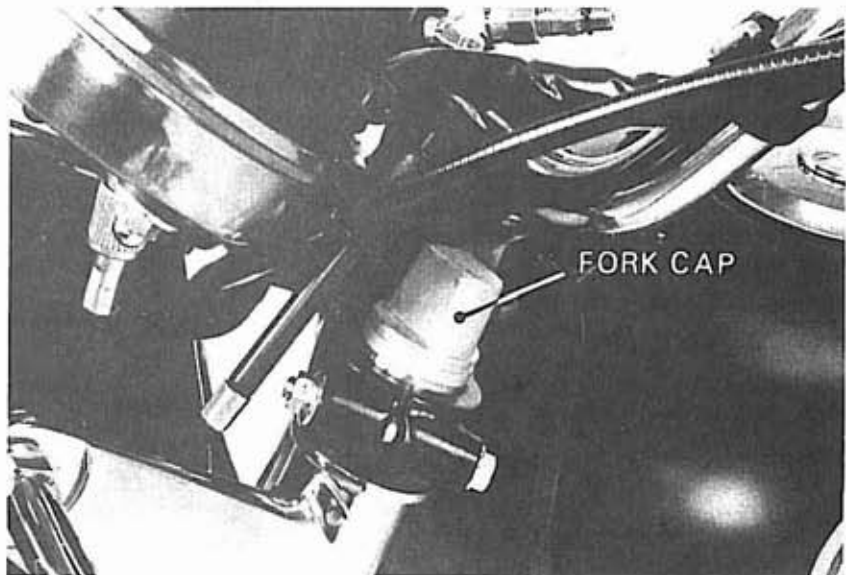
### TORQUE:

UPPER: 0.9–1.3 kg-m (7–9 ft-lb)  
LOWER: 1.8–2.5 kg-m (13–18 ft-lb)



Tighten the fork tube caps.

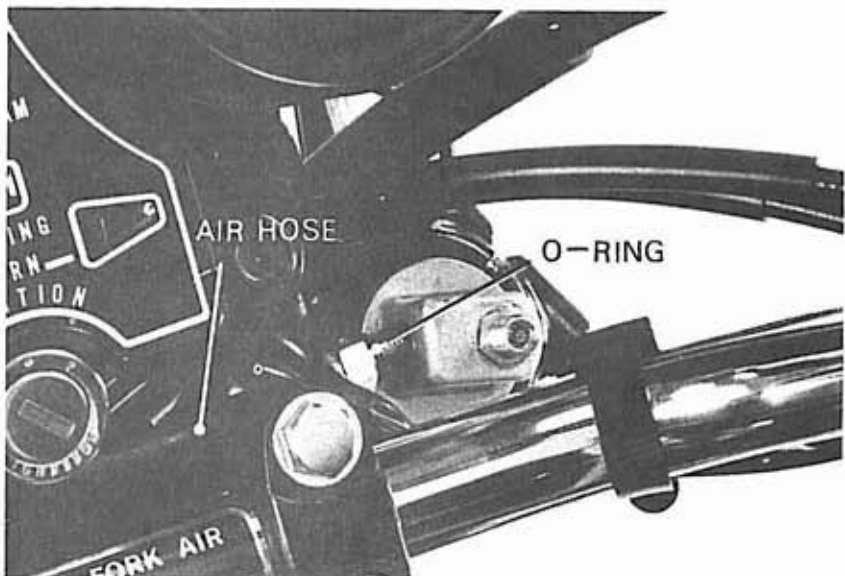
**TORQUE:** 1.5–3.0 kg-m (11–22 ft-lb)



Apply grease to the new O-rings.

Place new O-rings on the air hose connectors.  
Install the air hose to the right fork tube cap.

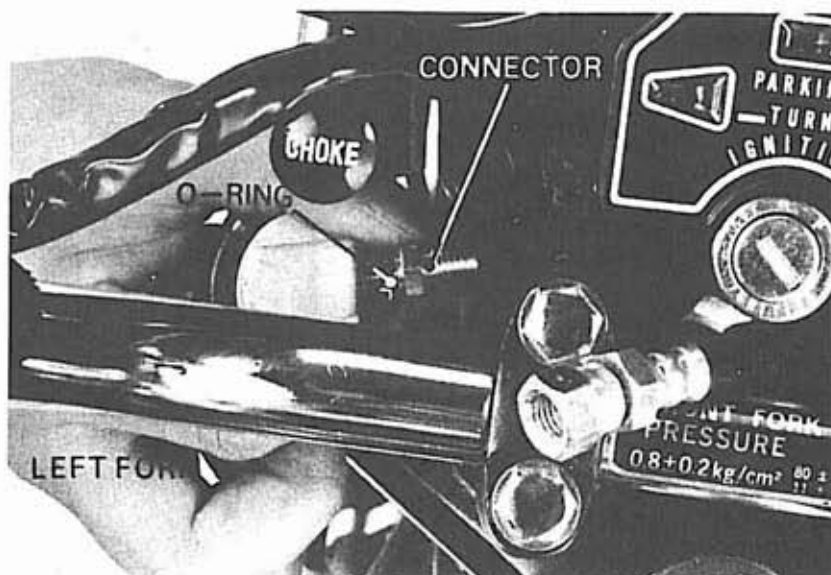
**TORQUE:** 0.4–0.7 kg-m (3–5 ft-lb)





Install the air hose connector to the left for tube cap.

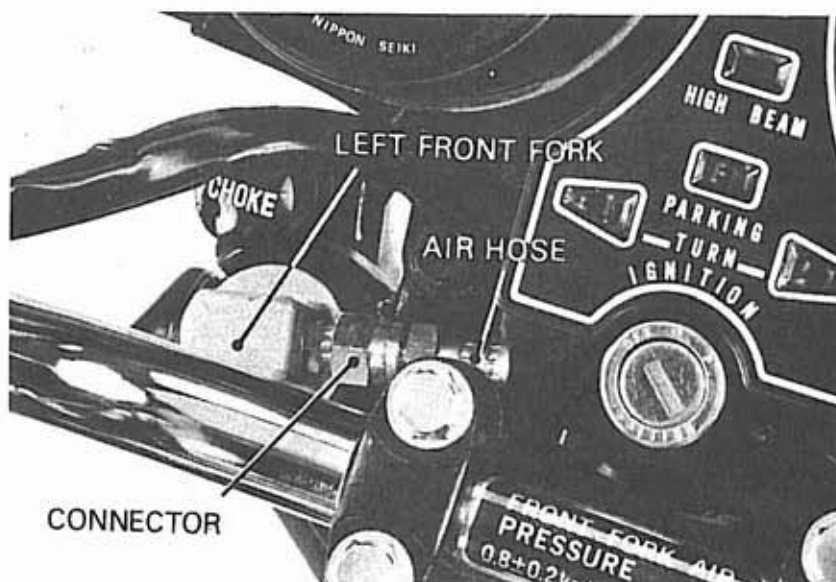
**TORQUE:** 0.4–0.7 kg-m (3–5 ft-lb)



Connect the air hose to the left fork connector.

**TORQUE:** 1.5–2.0 kg-m (11–14 ft-lb)

Install the parts in the reverse order of removal.

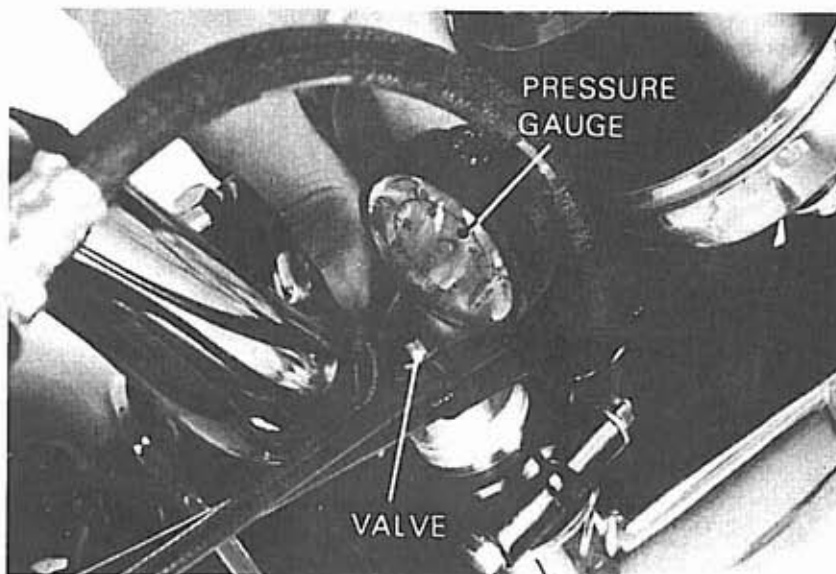


Fill the fork tubes with air to  $0.8 \pm 0.2 \text{ kg/cm}^2$  ( $11 \pm 3 \text{ psi}$ ).

**CAUTION**

- Use only a hand operated air pump to fill the fork tubes. Do not use compressed air.
- Do not exceed the specified air pressure or fork tube component damage may occur.

With the front brake applied, pump the front forks up and down several times. Place the motorcycle on its center stand. Check the air pressure and adjust if necessary.

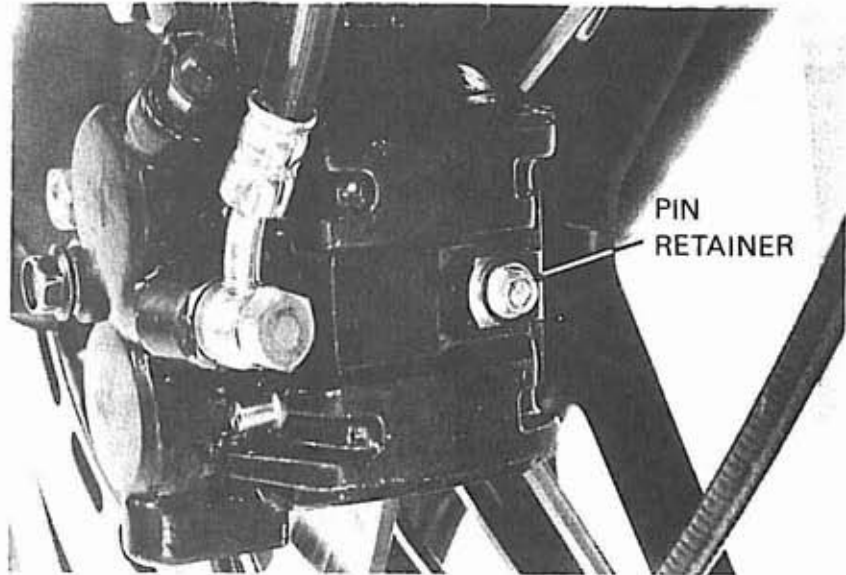




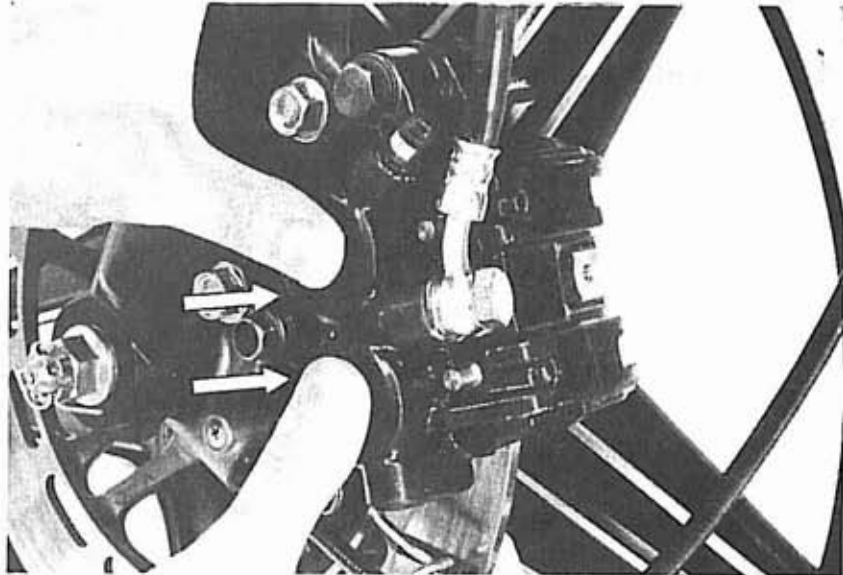
## VI. CB400T/CM400C: HYDRAULIC DISC BRAKE

### BRAKE PAD REPLACEMENT

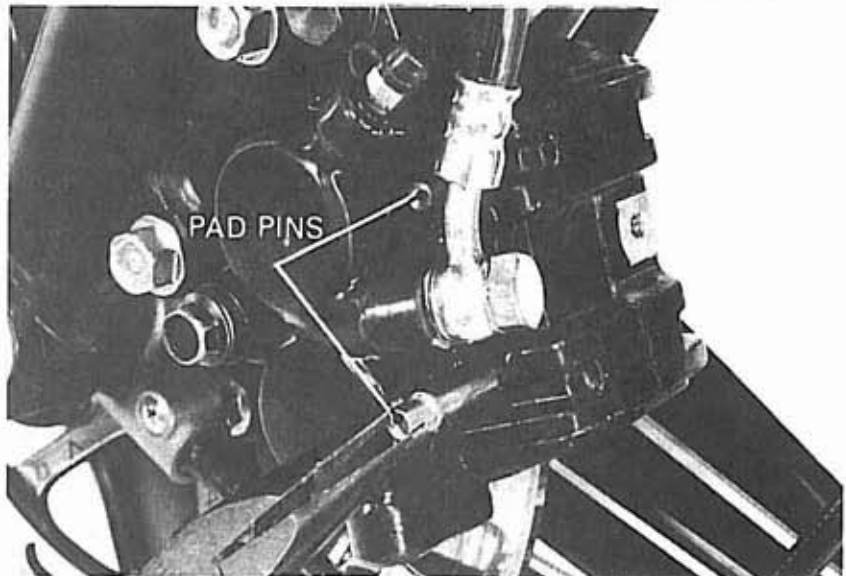
Remove the brake pad pin retainer.  
TORQUE: 0.8–1.3 kg-m (6–9 ft-lb)



Push the caliper against the disc to push the pistons all the way in to facilitate new brake pad installation.

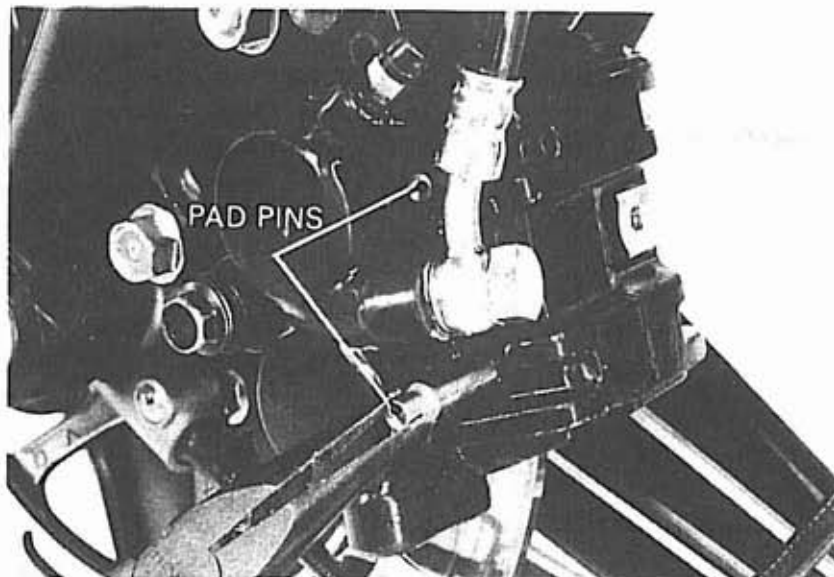


Remove the pad pins with a pair of pliers.  
Remove the pads.

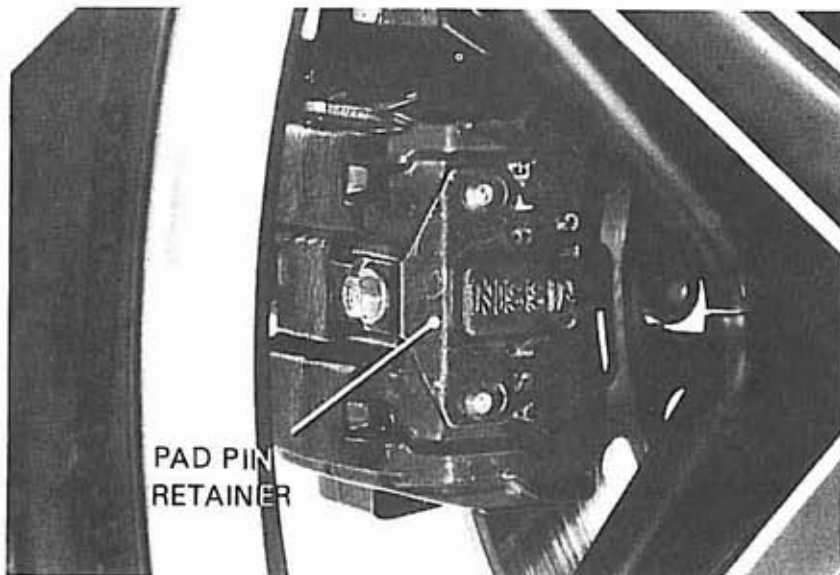




Install new brake pads and insert the pad pins.



Install the pad pin retainer.



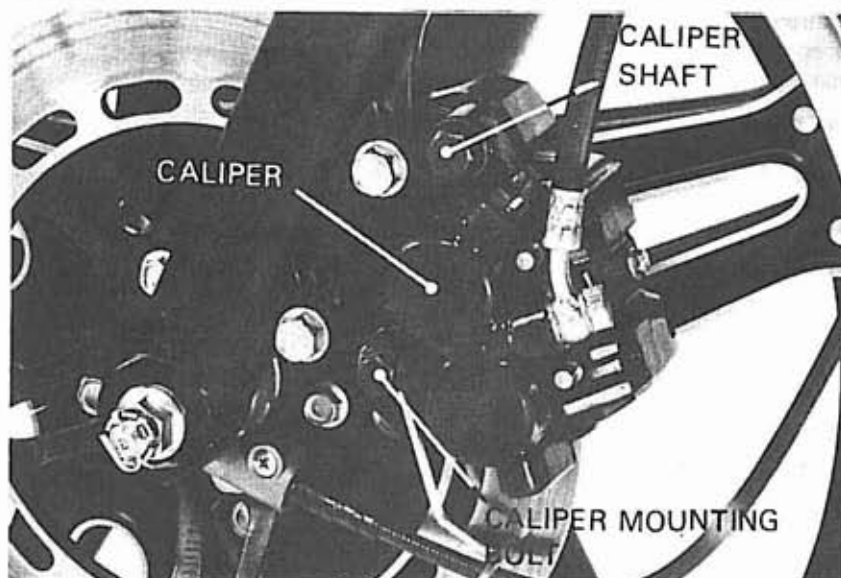
### CALIPER REMOVAL

Drain the brake hydraulic system.  
Disconnect the brake hose.  
Remove the brake pads (see page 26-22).

**NOTE:**

Avoid spilling brake fluid on painted surfaces.

Remove the caliper mounting bolt.

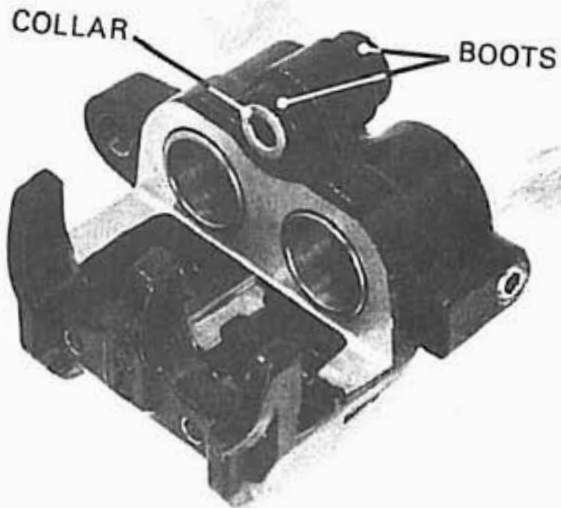




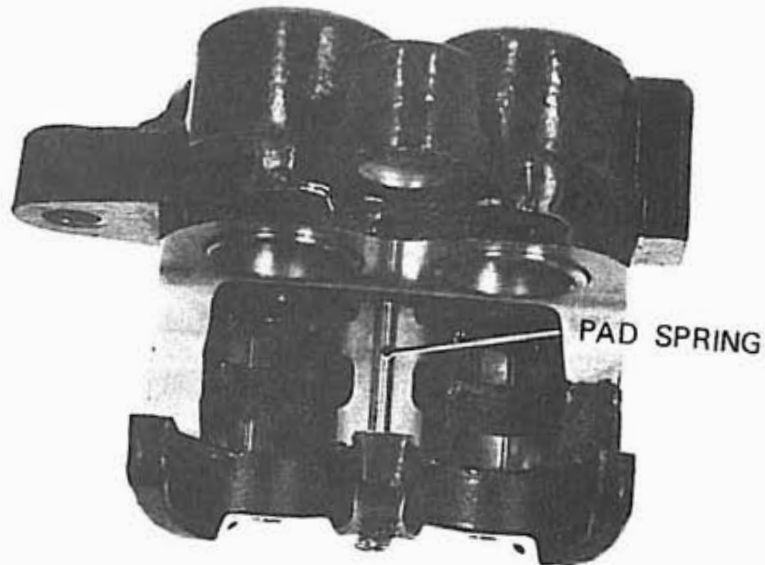


## CALIPER DISASSEMBLY

Remove the boots and collar.



Remove the pad spring.



Position the caliper with the piston down and apply small spurts of air pressure to the fluid inlet.

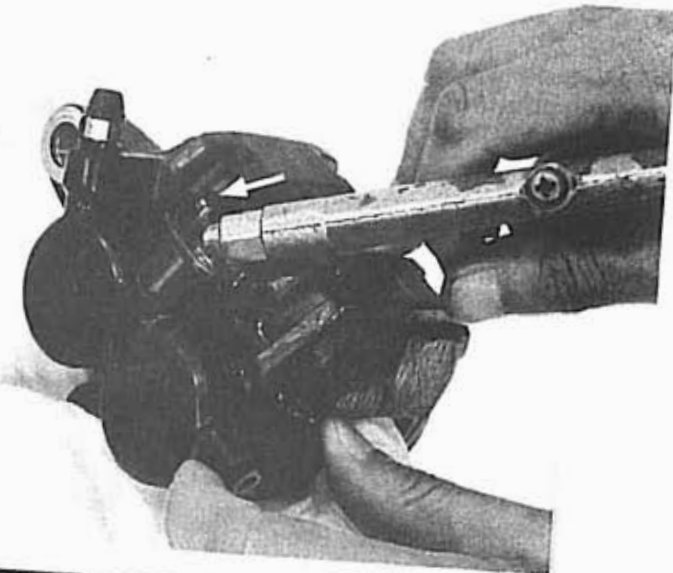
### WARNING

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

### NOTE:

Place a shop towel over the pistons to prevent the pistons from becoming projectiles.

Inspect the pistons and cylinders for scoring, pitting or other damage and replace if necessary.





**HONDA****CB400T/CM400T-A-E-C****'81 ADDENDUM**

Push the oil seals in and then lift them out.  
Clean the caliper grooves with brake fluid.

**CAUTION**

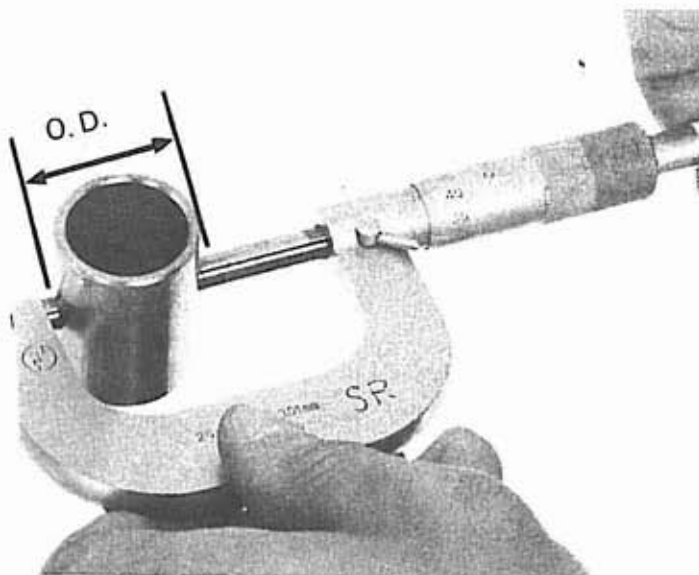
Do not damage the piston sliding surface.

**CALIPER PISTON O.D.**

Check the piston for scoring, scratches or other faults. Measure the piston diameter with a micrometer.

**STANDARD:** 30.20 mm (1.189 in.)

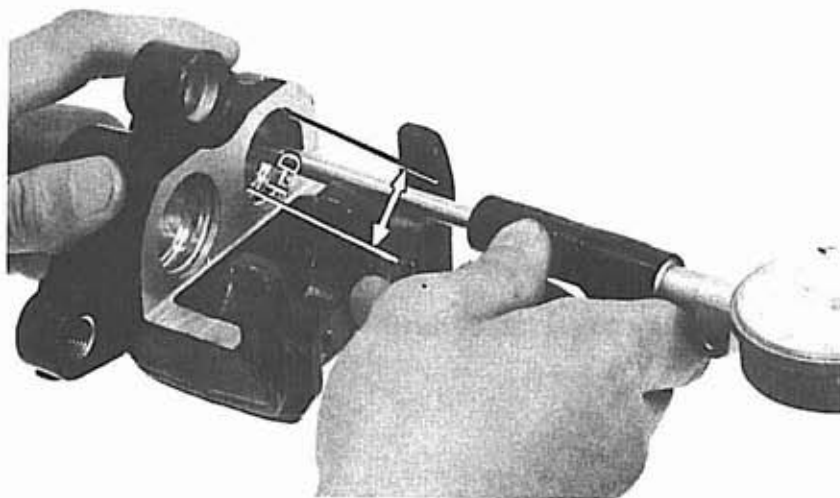
**SERVICE LIMIT:** 30.14 mm (1.187 in.)

**CALIPER CYLINDER I.D.**

Check the caliper cylinder for scoring, scratches or other faults. Measure the caliper I.D.

**STANDARD:** 30.23 mm (1.190 in.)

**SERVICE LIMIT:** 30.29 mm (1.193 in.)



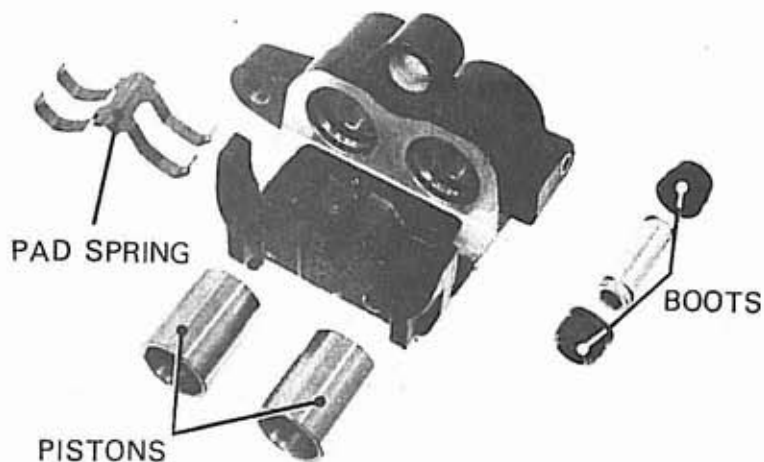


## CALIPER ASSEMBLY

The oil seals must be replaced with new ones whenever disassembled.

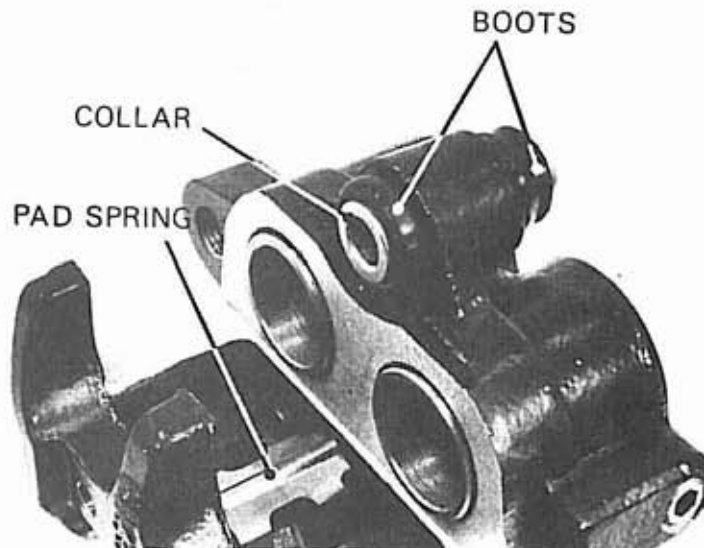
Coat the oil seals with silicon grease or brake fluid before assembly.

Install the pistons with the dished ends on the brake pad side.



Install the boots and collar making sure that the boots are seated in the collar grooves properly.

Install the brake pad spring.



## CALIPER CARRIER DISASSEMBLY

Remove the speedometer clamp.

Remove the caliper carrier.

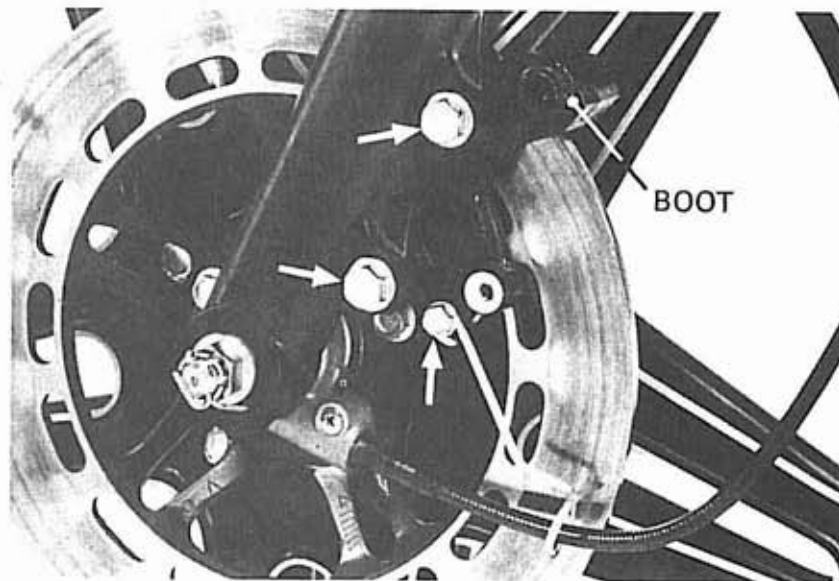
Remove the caliper shaft boot.

## CALIPER CARRIER ASSEMBLY

Coat the boot with silicon grease or brake fluid and install it in the groove of the carrier.

Install the caliper carrier.

**TORQUE: 3.0–4.0 kg-m (22–29 lbs-ft)**





## CALIPER INSTALLATION

Apply silicon grease or brake fluid to the caliper shaft.

Install the caliper onto the front fork.

### TORQUE:

#### CALIPER SHAFT:

2.5–3.0 kg-m (18–22 lbs-ft)

#### CALIPER MOUNTING BOLT:

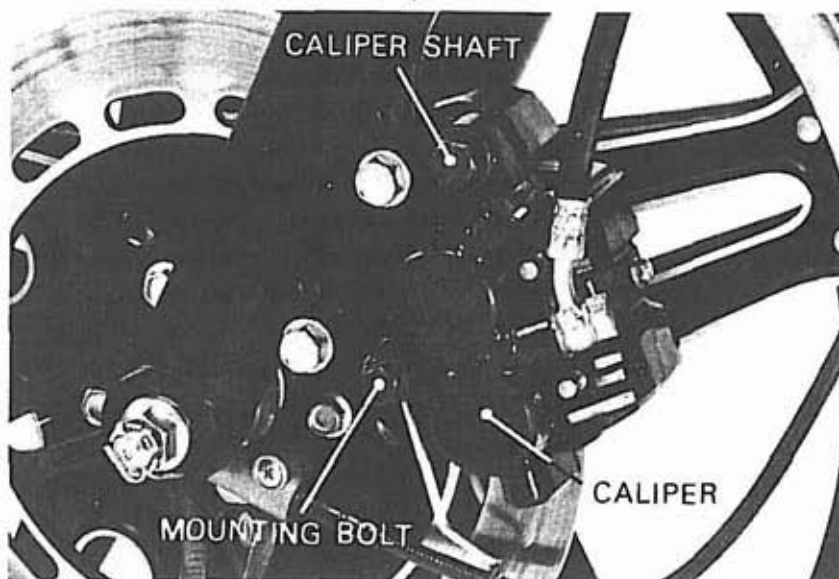
2.0–2.5 kg-m (14–18 lbs-ft)

Make sure that the caliper shaft boot is seated in the shaft groove properly.

Install the brake pads.

Connect the brake hose.

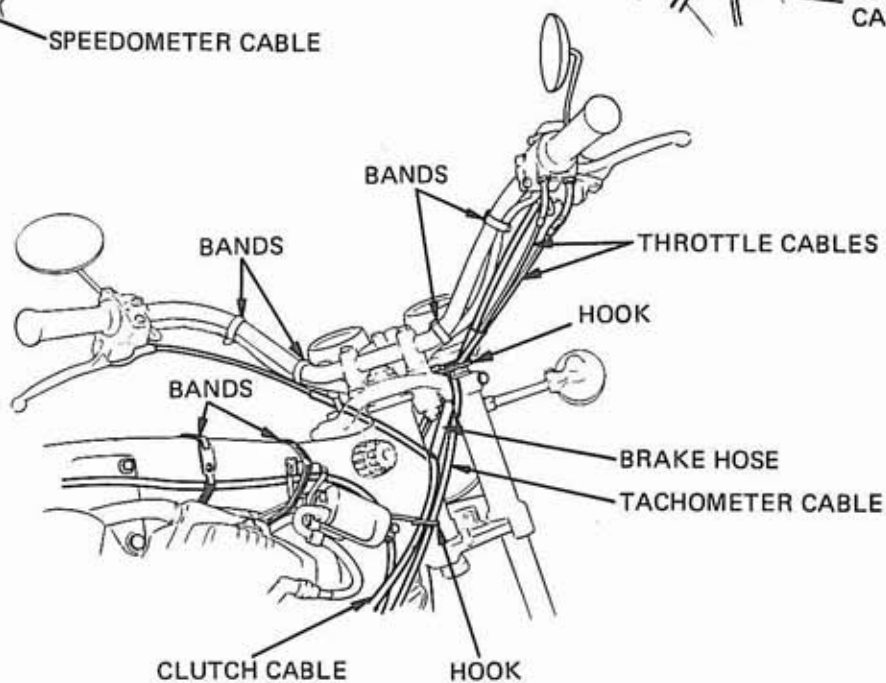
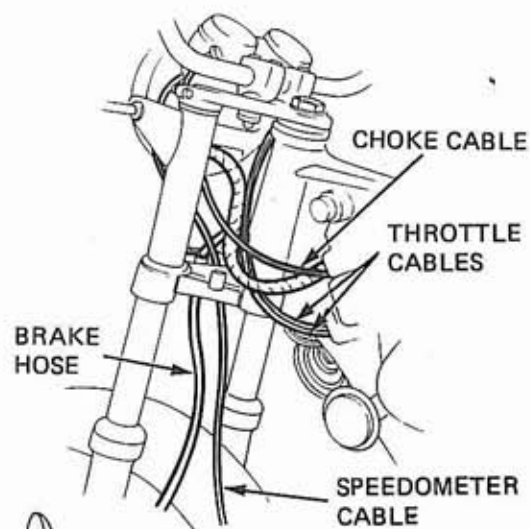
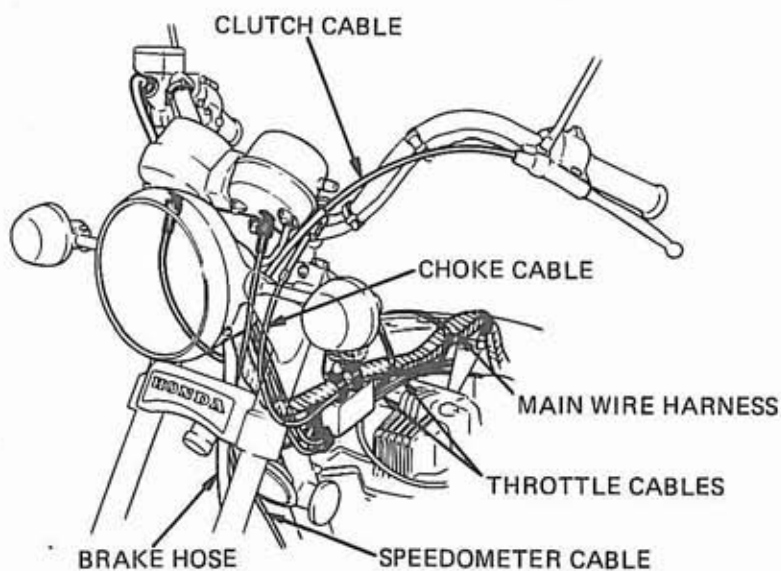
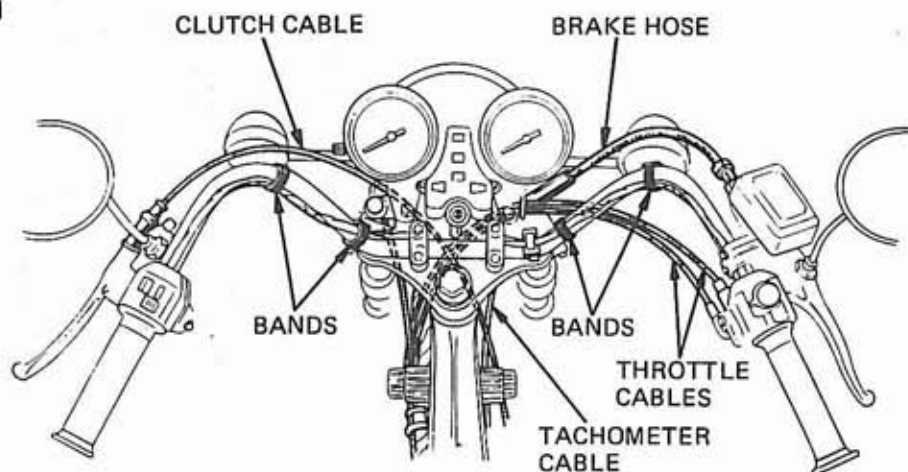
• Bleed the brake system.





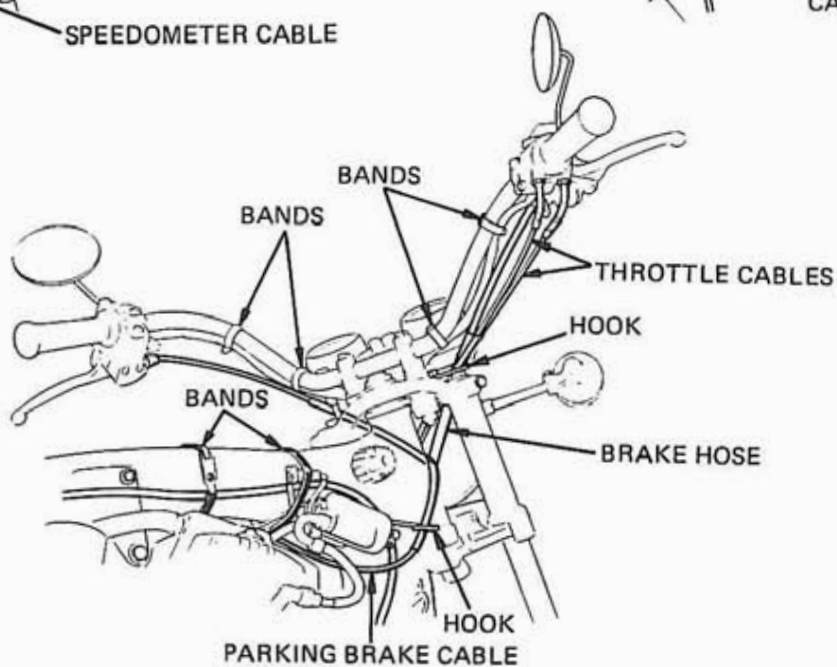
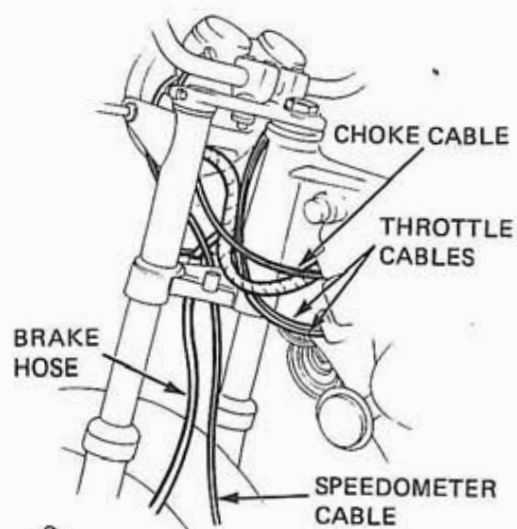
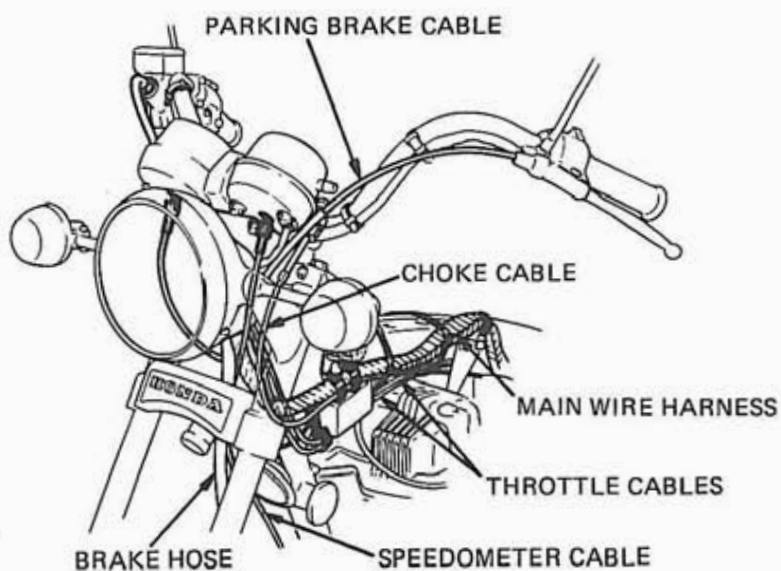
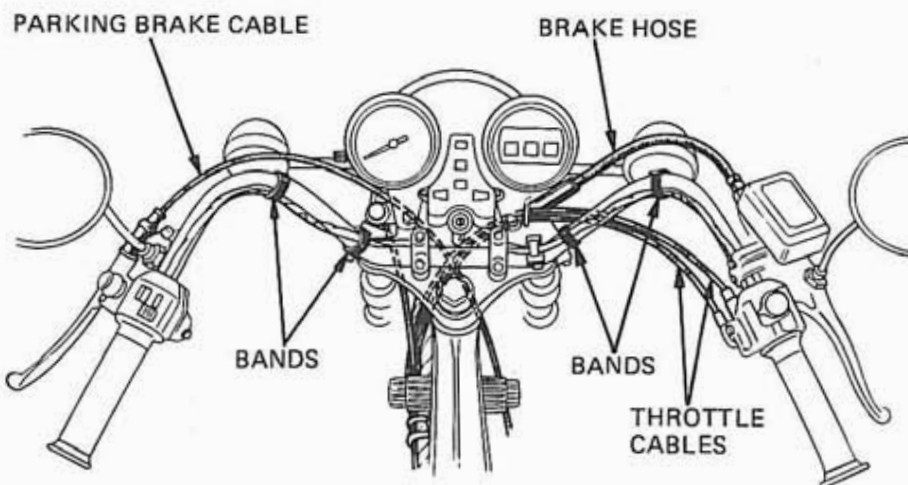
## VII. CABLE AND HARNESS ROUTING

### • CM400T/CM400 CUSTOM



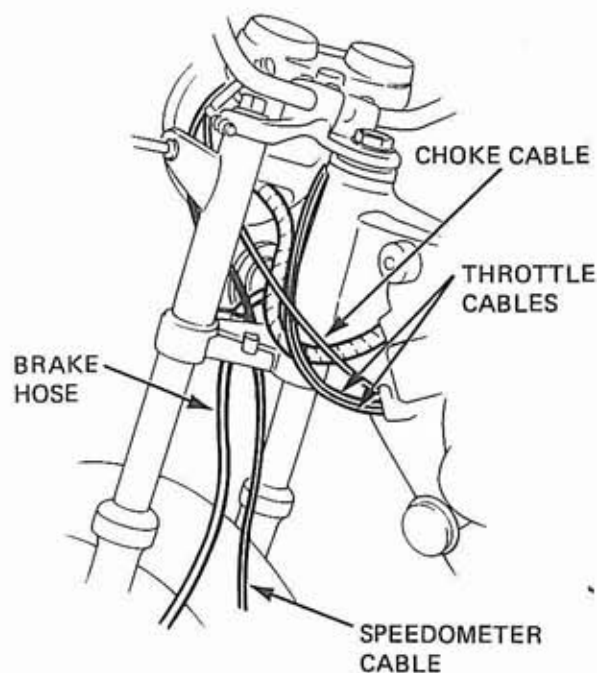
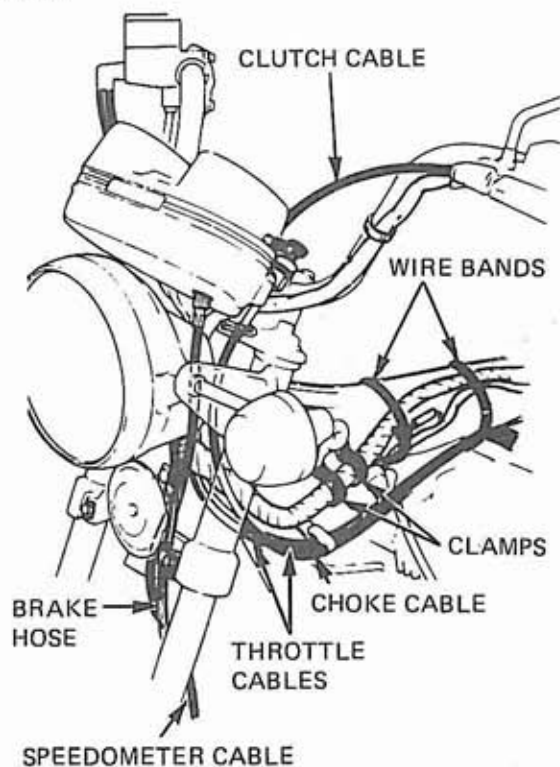


• CM400A

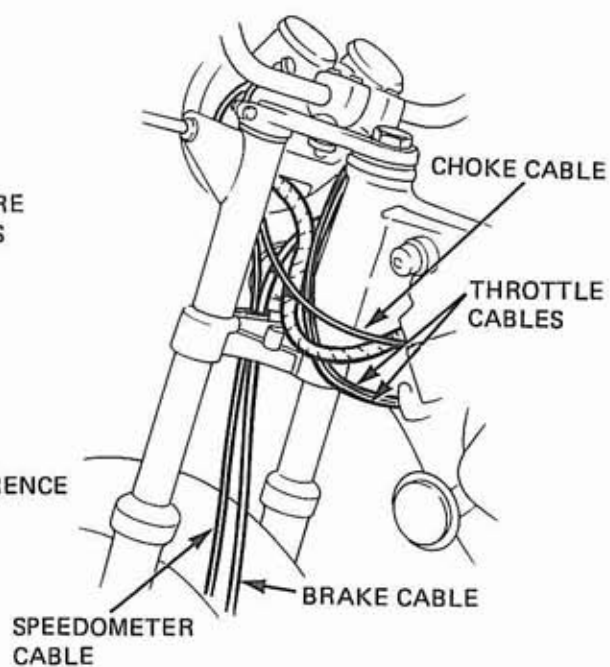
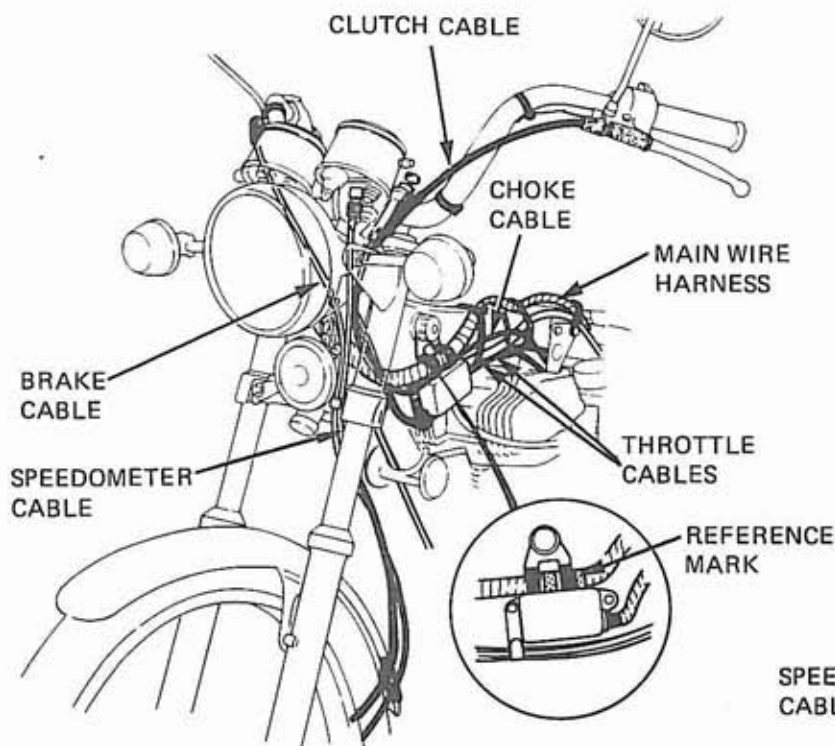




• CB400T



• CM400E

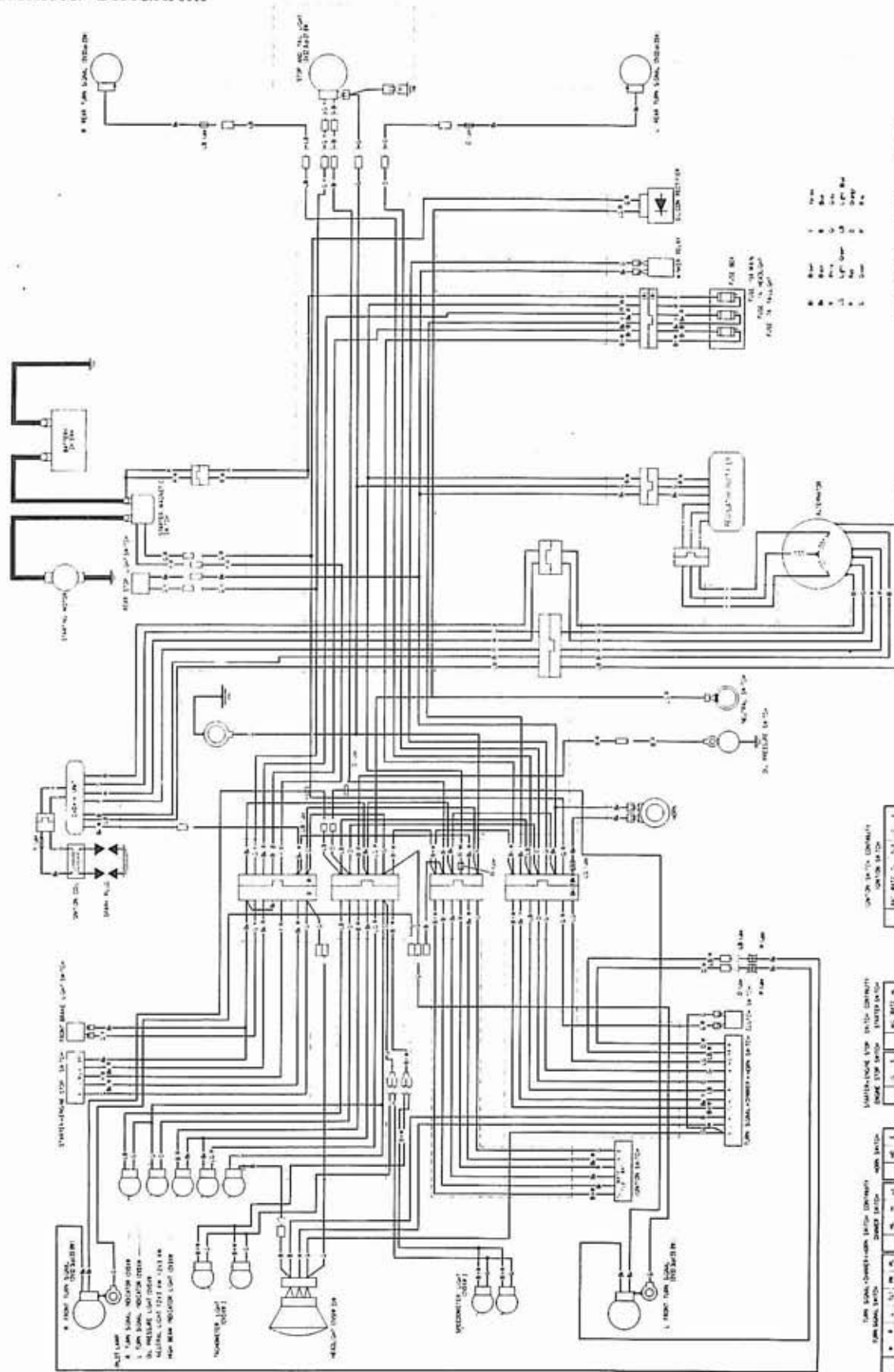






# VIII. WIRING DIAGRAM

CM400T/C



Color	Abbreviation
Red	R
Blue	B
Green	G
Yellow	Y
Black	BLK
White	W
Grey	GRY
Pink	P

0030Z-447-8700

OPTIONAL EQUIPMENT	
Color	Abbreviation
Red	R
Blue	B
Green	G
Yellow	Y
Black	BLK
White	W
Grey	GRY
Pink	P

OPTIONAL EQUIPMENT	
Color	Abbreviation
Red	R
Blue	B
Green	G
Yellow	Y
Black	BLK
White	W
Grey	GRY
Pink	P

OPTIONAL EQUIPMENT	
Color	Abbreviation
Red	R
Blue	B
Green	G
Yellow	Y
Black	BLK
White	W
Grey	GRY
Pink	P

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M E M O

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