SHOP MANUAL

HONDA ODYSSEY FL250

'81

6295002
A25008011

IMPORTANT SAFETY NOTICE

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

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

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

HONDA
FL250

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Date of Issue: November, 1980

GENERAL INFORMATION

A. Frame/Engine Number Identifications and Number Locations

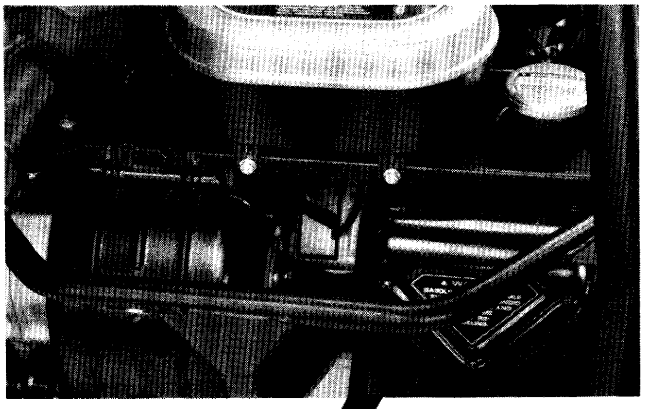
ENGINE SERIAL NUMBER IDENTIFICATION

FL250 E – 1000000

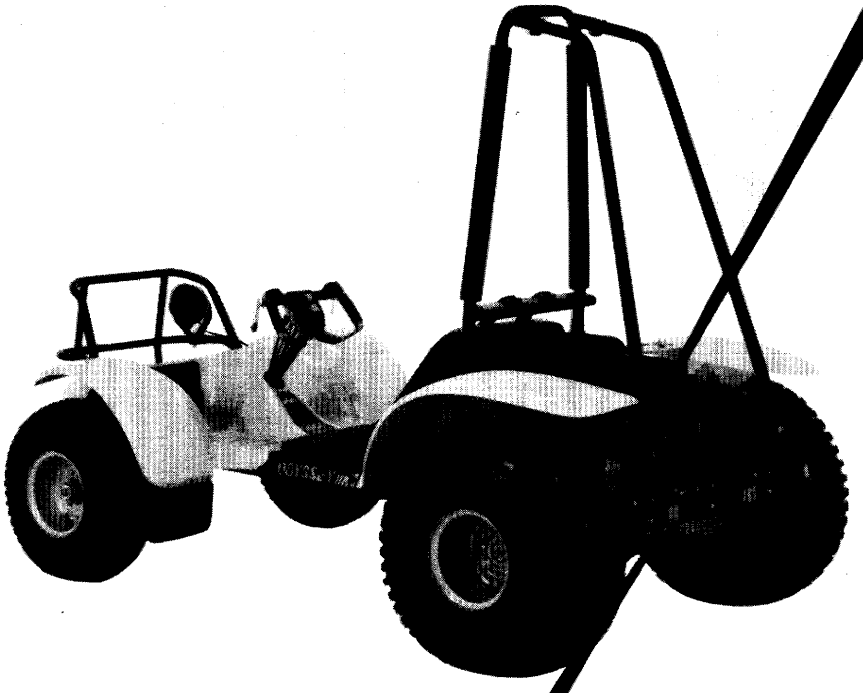
MODEL

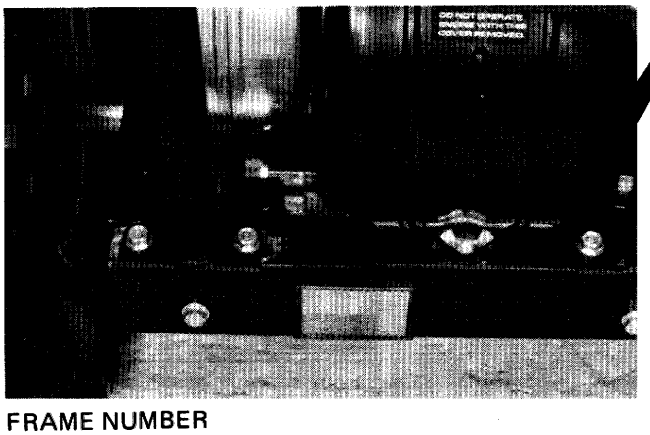
ENGINE

SERIAL NUMBER



ENGINE NUMBER





FRAME NUMBER

FRAME NUMBER IDENTIFICATION

FL250 – 1000000

MODEL

SERIAL NUMBER

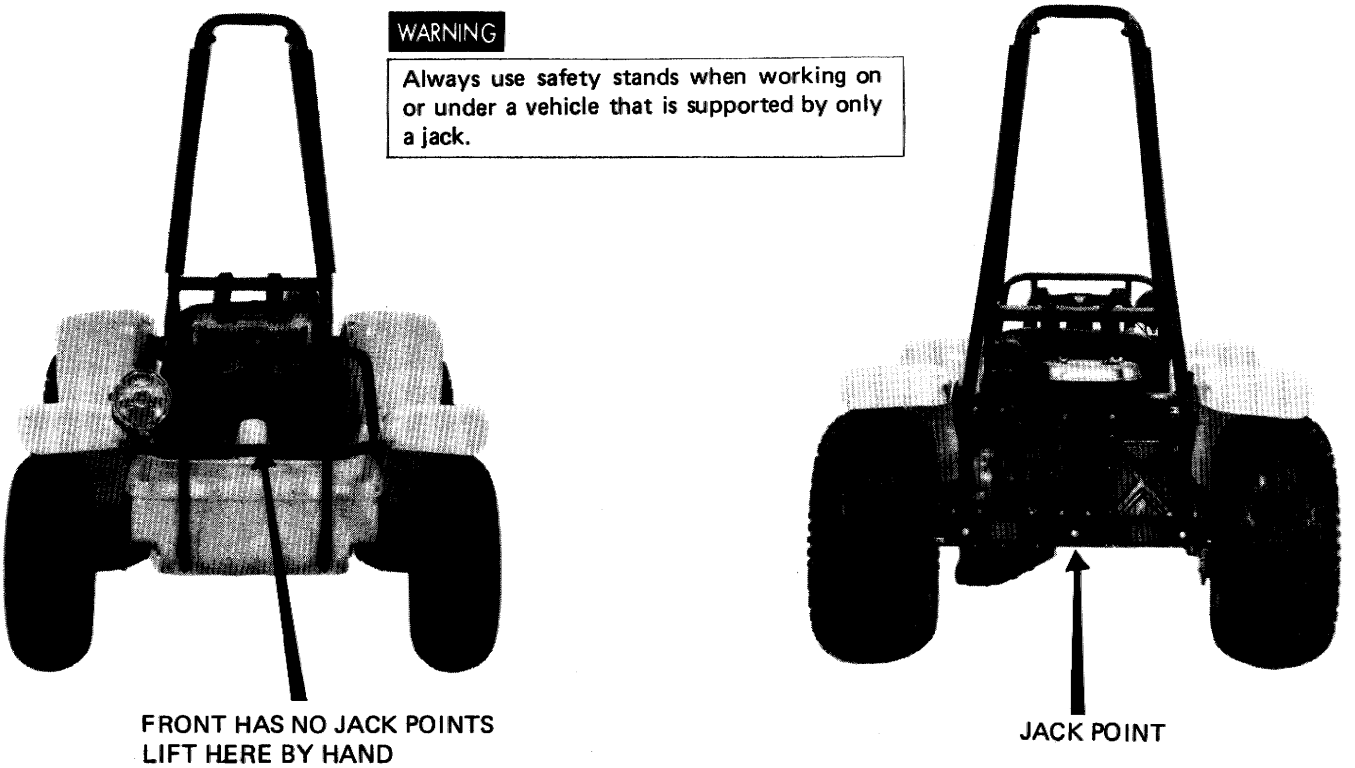
B. Lift and Support Points

FRONT

REAR

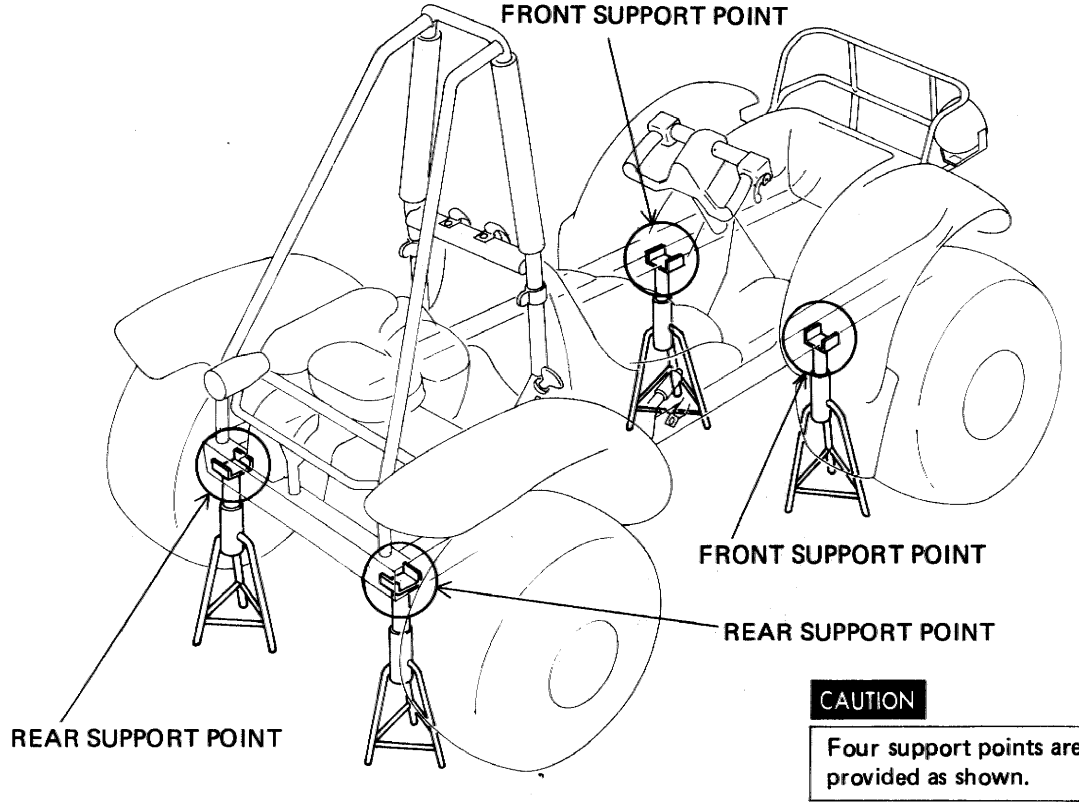
WARNING

Always use safety stands when working on or under a vehicle that is supported by only a jack.



FRONT HAS NO JACK POINTS
LIFT HERE BY HAND

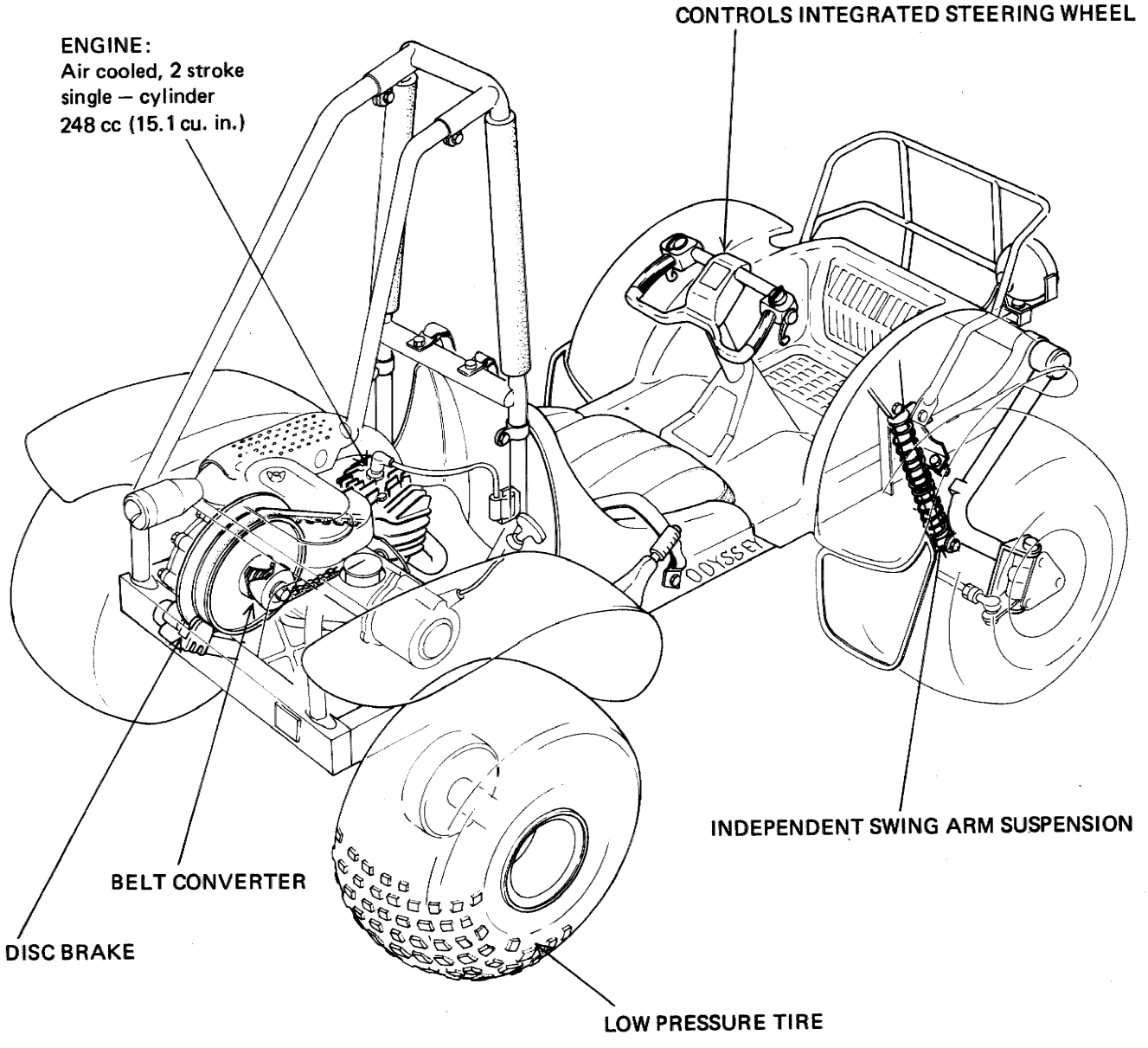
JACK POINT



CAUTION

Four support points are provided as shown.

TECHNICAL FEATURES



SPECIAL TOOLS

Frame

TOOL NUMBER	DESCRIPTION	FIGURE REFERENCE
07946 – 3600000	Driver Attachment	1
07916 – 9180000	Tire Disassembly Tool	2
07944 – 9350300	6 mm Spring Pin Driver	3
07945 – 3330100	Driver Attachment	4
07959 – 3290000	Front Shock Absorber Compressor	5

Engine

TOOL NUMBER	DESCRIPTION	FIGURE REFERENCE
07923 – 0010000	Rotor Holder	6
07933 – 0010000	Rotor Puller	7
07945 – 3330300	Bearing Driver	8
07933 – 9500000	Case Puller	9

Frame and Engine

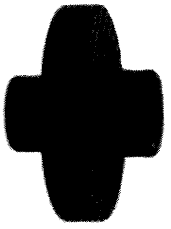
TOOL NUMBER	DESCRIPTION	FIGURE REFERENCE
07949 – 6110000	Driver Attachment Handle	10

SALSBURY's belt converter

TOOL NUMBER	DESCRIPTION	FIGURE REFERENCE
Salsbury #602112	SPANNER	11
#602090	CLUTCH PULLER TOOL	12
#703463	TAPER PLUG	13
#704229	SPIDER INSTALLATION CUP	14
#704233	PULLER PLATE	15
#900403	SCREW (1/4-20 x 2-3/4)	16
#704232	STEP PLUG	17
#901836	SCREW (1/2-20 x 5-1/2)	18
#703446	SPRING SEATING TOOL	19
#602114	SPECIAL SCREW	20
#901840	NUT (1/2-20)	21
#704236	FLAT WASHER	21
#704237	CAM RETAINER	22

Frame

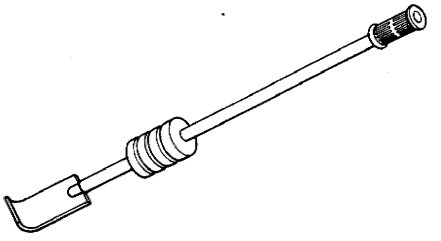
REAR BRAKE



Driver Attachment
07946 – 3600000
[For installation of rear brake bearing and oil seal. Used with 07949 – 6110000 (Fig. 10.)]

Fig. 1.

TIRE



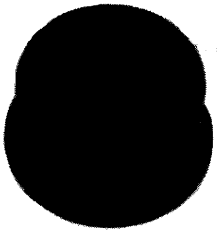
Tire Disassembly Tool
07916 – 9180000
(For disassembly of tire)

Fig. 2.

FRONT SUSPENSION

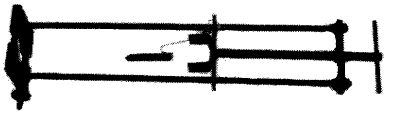
6 mm Spring Pin Driver
07944 – 9350300
(For removal of front arm and pivot pipe.)

Fig. 3.



Driver Attachment
07945 – 3330100
[For installation of front hub bearing and oil seal. Used with 07949 – 6110000 (Fig. 10.)]

Fig. 4.



Front Shock Absorber Compressor
07959 – 3290000
(For disassembly and Installation of front shock absorber.)

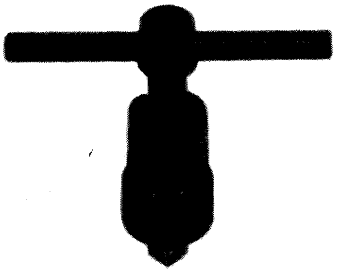
Fig. 5.

Engine

ROTOR

Rotor Holder
07923 – 0010000
(For disassembly and installation of rotor retaining nut)

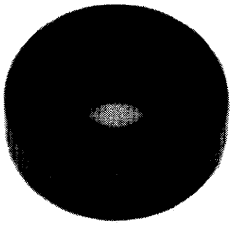
Fig. 6



Rotor Puller
07933 – 0010000
(For removal of rotor)

Fig. 7

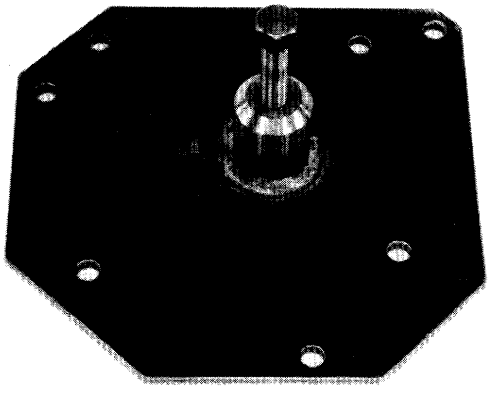
CRANKSHAFT



Bearing Driver
07945 – 3330300
[For installation of crankshaft bearing. Used with 07949-6110000 (Fig. 10)]

Fig. 8

CRANKCASE



Case Puller
07933 – 9500000
(For disassembly of R/L crankcase)

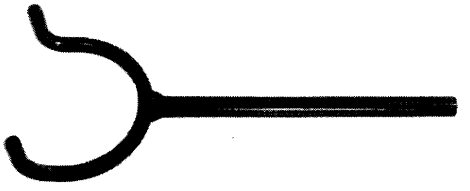
Fig. 9

FRAME AND ENGINE

Driver Attachment Handle
07949 – 6110000 [Used with
07946 – 3600000 (Fig. 1),
07945 – 3330100 (Fig. 4),
07945 – 3330300 (Fig. 8)]

Fig. 10

BELT CONVERTER



Spanner
Salsbury #602112
(For holding drive pulley)

Fig. 11

BELT CONVERTER

Clutch Puller Tool
Salsbury #602090
(For drive pulley dismounting)

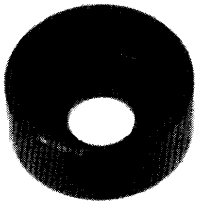
Fig. 12

BELT CONVERTER

Taper Plug
Salsbury #703463
(For securing drive pulley)

Fig. 13

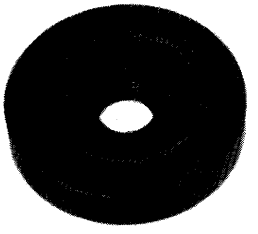
BELT CONVERTER



Spider Installation Cup
Salsbury #704229
(For spider installation)

Fig. 14

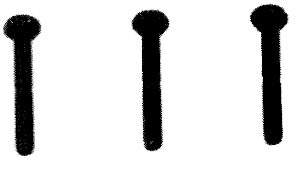
BELT CONVERTER



Puller Plate
Salsbury #704233
(For disassembly of spider and disassembly of driven pulley)

Fig. 15

BELT CONVERTER



Screw (1/4 – 20 x 2 – 3/4)
Salsbury #900403
(For use of puller plate when disassembling spider)

Fig. 16

BELT CONVERTER

Step Plug
Salsbury #704232
(For disassembling of spider)

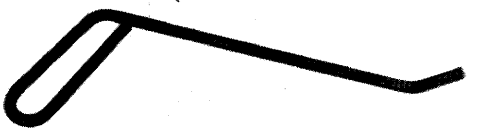
Fig. 17

BELT CONVERTER

Screw (1/2 – 20 x 5-1/2)
Salsbury #901836
(For spider installation)

Fig. 18

BELT CONVERTER



Spring Seating Tool
Salsbury #703446
(For seating of roller arm return spring)

Fig. 19

BELT CONVERTER

Special Screw
Salsbury #602114
(For securing of driven pulley)

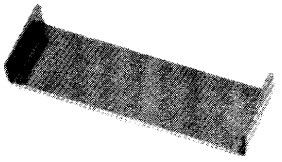
Fig. 20

BELT CONVERTER

Nut Salsbury #901840
Flat Washer Salsbury #704236
(For disassembly and reassembly of driven pulley)

Fig. 21

BELT CONVERTER



Cam Retainer
Salsbury # 704237
(For retaining of driven pulley cam)

Fig. 22

A. REQUIRED MAINTENANCE SCHEDULE

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

Items marked * should be serviced by an authorized Honda dealer, unless the owner has proper tools and a HONDA ODYSSEY shop manual, and is mechanically proficient. Other maintenance items are simple to perform and may be serviced by the owner.

INITIAL SERVICE PERIOD (FIRST WEEK OR 15 HOURS OPERATION WHICHEVER COMES FIRST)

- *CONTACT POINTS AND IGNITION TIMING – Clean, check, and adjust or replace if necessary.
- *CARBURETOR – Check and adjust if necessary.
- *BELT CONVERTER – Check operation.
- POLYURETHANE FOAM AIR FILTER ELEMENT – Clean and oil. Service more frequently if operated in dusty areas.
- BRAKE CONTROL LINKAGE – Check linkage and adjust if necessary.
- TIRES – Inspect and check air pressure or circumference.
- ALL NUTS, BOLTS, AND OTHER FASTENERS – Check security and tighten if necessary.

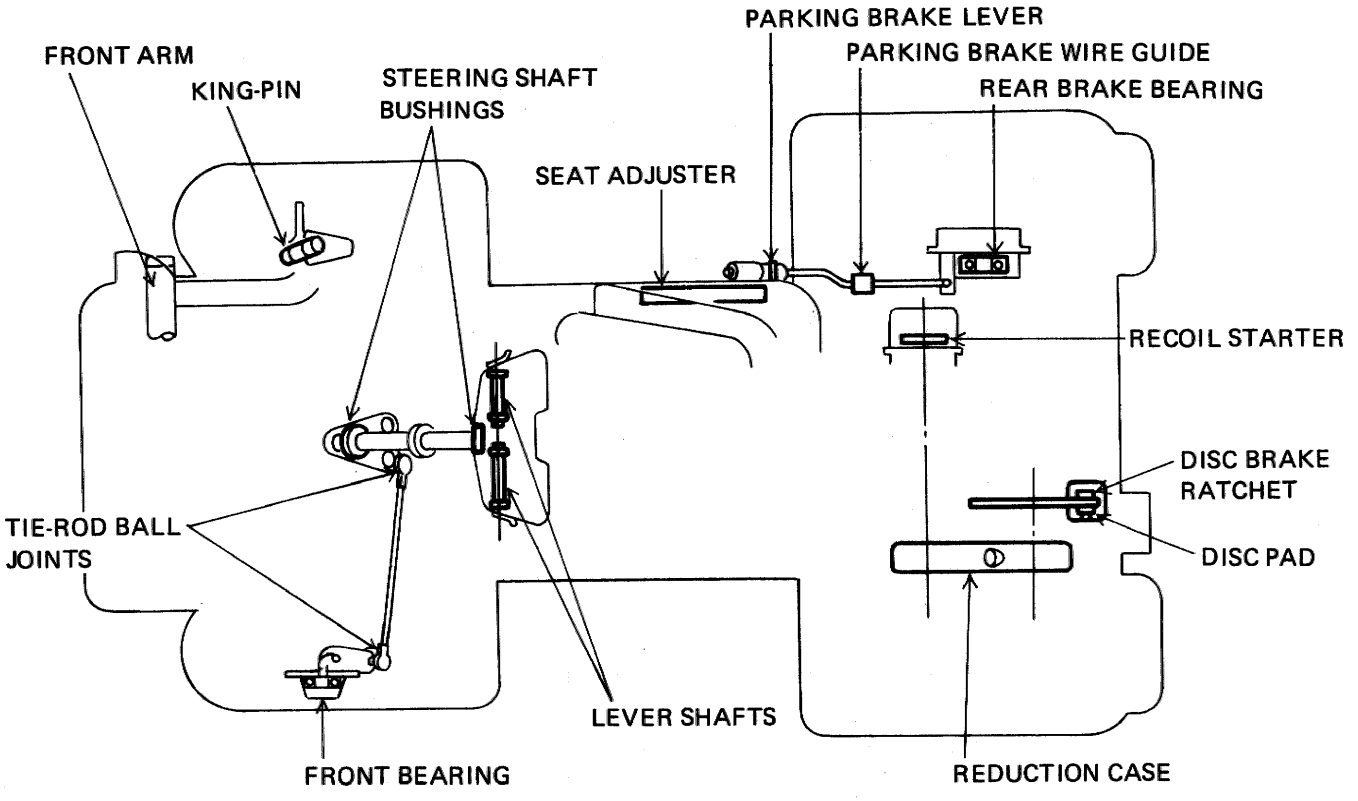
REGULAR SERVICE PERIOD EVERY 3 MONTHS OF OPERATION

- SPARK PLUG – Clean and adjust gap, or replace if necessary.
- *CONTACT POINTS AND IGNITION TIMING – Clean, check, and adjust or replace if necessary.
- POLYURETHANE FOAM AIR FILTER ELEMENT – Clean and oil. Service more frequently if operated in dusty areas.
- *CARBURETOR – Check and adjust if necessary.
- *BELT CONVERTER – Check operation.
- BRAKE CONTROL LINKAGE – Check linkage and adjust if necessary.
- TIRES – Inspect and check air pressure or circumference.
- ALL NUTS, BOLTS, AND OTHER FASTENERS – Check security and tighten if necessary.
- *REDUCTION GEAR CASE – Check oil level and oil leakage.

EVERY YEAR

- FUEL LINE – Check.
- STEERING SYSTEM – Check operation and adjust if necessary.
- *BRAKE SHOES AND PADS – Inspect and replace if worn.
- SPARK ARRESTOR – Check for carbon build-up and clean if necessary.

B. LUBRICATION POINT



LUBRICATION POINT	LUBRICANT	INTERVAL
Reduction case	A.P.I. Service Classification SE SAE 10W - 40 or SAE 10W - 30	
Recoil Starter	Multipurpose Grease	Overhaul
Steering Shaft Bushings		Overhaul
Lever Shafts		As necessary
Front Arms		Overhaul
King-Pins		Overhaul
Front Hub Bearings		Overhaul
Seat Adjusters		As necessary
Parking Brake Lever		As necessary
Parking Brake Wire Guide		As necessary
Rear Brake Bearings		Overhaul
Disc Brake Ratchet		Overhaul
Disc Pads	Silicon Grease KS 62M	Overhaul
Tie-Rod Ball Joints	Texaco Molytex Grease 2	

A. Standard Tolerances and Wear Limit

O.D. = Outside Diameter
I.D. = Inside Diameter
Unit : mm (in.)

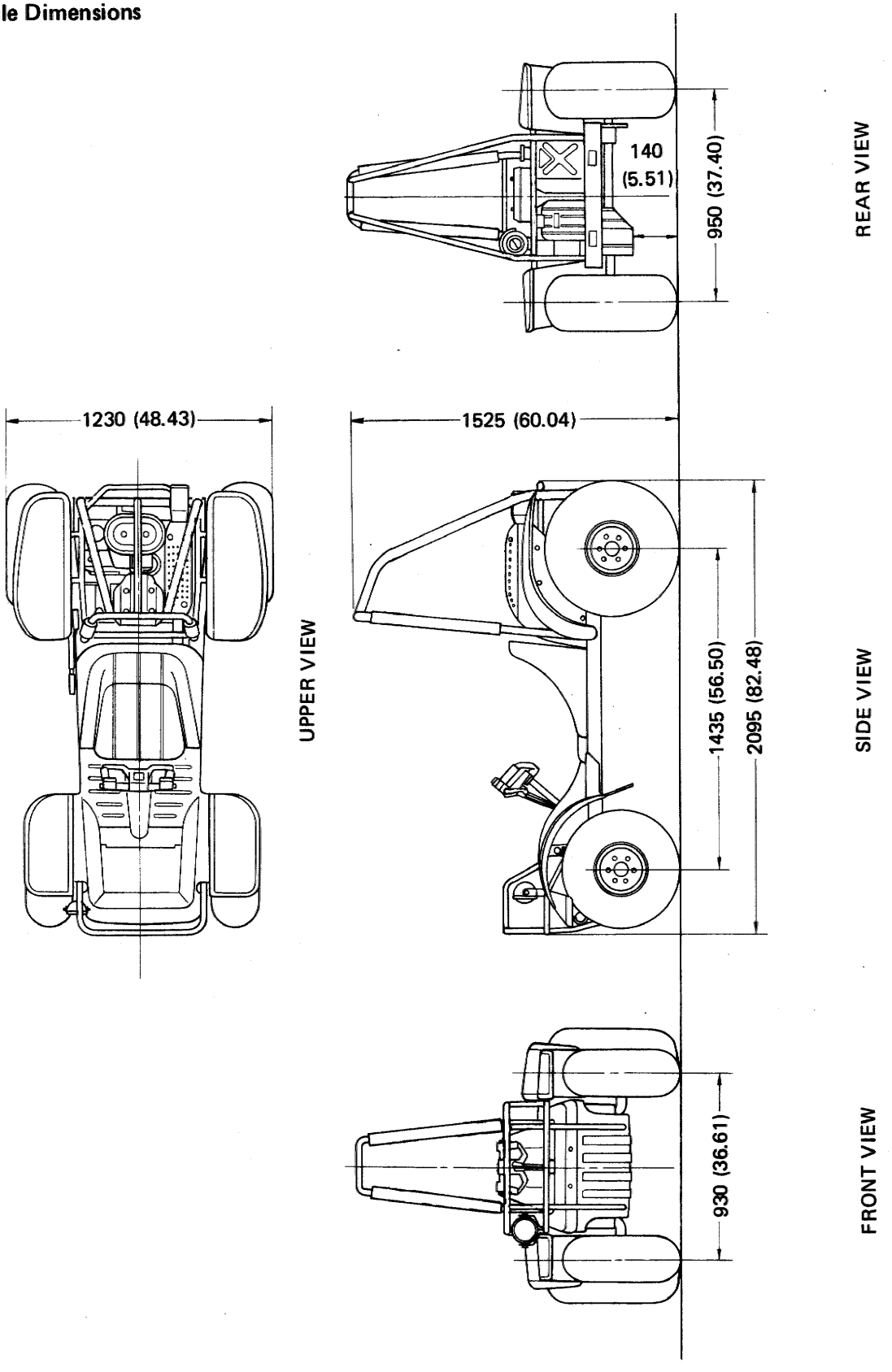
SUBJECT OR ITEM		MEASUREMENT		STANDARD		WEAR LIMIT	
ENGINE	Engine	Cylinder I.D.		70.0 - 70.01	(2.7559 - 2.7563)	70.1	(2.7598)
		Piston O.D.		69.93 - 69.95	(2.7531 - 2.7539)	69.8	(2.7480)
		Piston pin hole I.D.		18.002 - 18.008	(0.7087 - 9.7090)	18.1	(0.7126)
		Piston pin O.D.		17.992 - 18.000	(0.7083 - 0.7087)	17.98	(0.7079)
		Piston ring side clearance	Top	0.045 - 0.075	(0.0018 - 0.0030)	0.09	(0.0035)
			2nd	0.025 - 0.055	(0.0010 - 0.0022)	0.07	(0.0028)
		Piston ring gap	Top	0.2 - 0.4	(0.0079 - 0.0157)	0.5	(0.0197)
			2nd	0.2 - 0.4	(0.0079 - 0.0157)	0.5	(0.0197)
		Connecting rod small end I.D.		21.997 - 22.009	(0.866 - 0.8665)		
		Connecting rod big end axial clearance		0.2 - 0.4	(0.0079 - 0.0157)	0.6	(0.0236)
		Connecting rod big end radial clearance		0.010 - 0.022	(0.0001 - 0.0009)	0.03	(0.0012)
		Crankshaft runout		0.04 max.	(0.00157)		
	Carburetor	Float height		20	(0.79)		
	Electrical	3-point gap		6/3,000 rpm	(0.24)/3,000 rpm	5/500 rpm	(0.20)/500 rpm
		Point gap		0.3 - 0.4	(0.012 - 0.016)	0.2 - 0.6	(0.008 - 0.024)
		Plug gap		0.7 - 0.8	(0.028 - 0.32)		
FRAME	Steering	Throttle lever free play		5	(0.20)	2 - 10	(0.08 - 0.39)
		Throttle lever full travel		36	(0.06)	31 - 41	(1.22 - 1.61)
		Steering wheel force				0.5 - 1.1Kg	(1.10 - 24.26 lb.)
		Shaft O.D.		17.957 - 18.0	(0.7070 - 0.7087)	17.7	(0.6968)
		Column bushing I.D.		17.9 - 18.3	(0.7047 - 0.7205)	18.5	(0.7283)
		Shaft bushing I.D.		18.06 - 18.081	(0.71102-0.7118)	18.2	(0.7165)
	Front suspension	Shock absorber spring free length		229.4	(9.03)	205	(8.07)
		Front arm I.D.: Pivot pipe		42.58 - 42.62	(1.6764 - 1.6780)	42.8	(1.6850)
		King-pin		14.03 - 14.06	(0.5524 - 0.5535)	14.15	(0.5570)
		Toe-in		8	(0.315)	0 - 13	(0 - 0.51)
		Pivot pipe O.D.		42.47 - 42.50	(1.6721 - 1.6732)	42.3	(1.6653)
		King-pin O.D.		13.97 - 13.98	(0.5500 - 0.5504)	13.9	(0.5472)
	Rear wheel axle	Rear wheel axle bend				3.0	(0.1181)
	Brake	Brake lever free play		3	(0.12)	1 – 5	(0.04 - 0.20)
		Brake lever full travel		70	(2.76)	62 – 78	(2.44 - 3.07)
		Brake lever remaining effective travel				above 23 (above 0.90)	
		Parking brake				1 - 5 notches	
		Disc runout				0.3	(0.0118)
		Disc thickness		3.2	(0.1260)	3.0	(0.1181)
		Brake lining thickness		4.25	(0.1673)	1.5	(0.0591)
		Brake drum I.D.		139.9 - 140.1	(5.5079 - 5.5157)	140.6	(5.5354)

B. Torque Specifications

SUBJECT	ITEM	DESCRIPTION	THREAD DIA.	TORQUE	
				Kg – cm	lb – ft
ENGINE	Engine	AC Generator rotor	M12	450 – 500	33 – 36
		Cylinder head flanged nut	M6	100 – 130	7 – 9
		Cylinder head special nut	M8	200 – 250	15 – 18
		Spark plug	M14	150 – 200	11 – 15
		Cylinder head sealing bolt	M14	200 – 300	15 – 22
		Crankcase retaining bolt	M6	80 – 120	6 – 9
		Recoil starter rope guide nut	M14	30 – 40	2 – 3
		Engine hanger bolt	M10	350 – 430	25 – 31
	Carburetor	Insulator band	M5	50 – 70	4 – 5
	Muffler	Retaining nut	M8	150 – 200	11 – 15
		Retaining bolt	M8	190 – 250	14 – 18
	Reduction unit	Reduction cover retaining bolt	M8	190 – 250	14 – 18
		Oil check bolt	M8	70 – 120	5 – 9
		Ramp plate mounting screw		110 – 140	8 – 10
		Roller arm retaining bolt		70 – 100	5 – 7
		Driven pulley retaining bolt	M8	230 – 310	17 – 22
		Drive pulley retaining bolt	M12	500 – 700	35 – 50
FRAME	Steering and front suspension	Lever to shaft	M5	40 – 80	3 – 6
		Lever shaft to arm	M5	40 – 80	3 – 6
		Steering wheel and shaft	M12	350 – 450	25 – 33
		Ball joint and front arm	M10	350 – 430	25 – 31
		Tie-rod lock nut	M10	350 – 430	25 – 31
		Front shock absorber (Top)	M12	400 – 500	29 – 36
		Front shock absorber and front arm (Bottom)	M10	350 – 430	25 – 31
		King-pin lock nut	M8	150 – 200	11 – 15
		Front hub lock nut	M8	190 – 250	14 – 18
		Front rim	M8	190 – 250	14 – 18
		Front tire	M8	190 – 250	14 – 18
		Front hub	M14	600 – 800	43 – 58
		Front arm stopper	M8	190 – 250	14 – 18
	Power Train and brake	Rear rim	M8	190 – 250	14 – 18
		Rear hub lock nut	M8	190 – 250	14 – 18
		Rear hub	M14	600 – 800	43 – 58
		Rear brake bearing holder	M8	190 – 250	14 – 18
		Rear tire	M8	190 – 250	14 – 18
		Brake arm	M6	70 – 120	5 – 9
		Brake caliper pin	M8	190 – 250	14 – 18
		Parking brake	M8	190 – 250	14 – 18
	Fuel system	Fuel tank to guard pipe	M6	70 – 120	5 – 9
		Fuel valve	M6	80 – 100	6 – 7
		Fuel pump	M6	70 – 120	5 – 9

SUBJECT	ITEM	DESCRIPTION	THREAD DIA.	TORQUE	
				Kg – cm	lb – ft
FRAME	Frame Parts	Guard pipe to roll bar	M8	190 – 250	14 – 18
		Guard pipe: Front	M8	190 – 250	14 – 18
		Guard pipe: Rear	M8	190 – 250	14 – 18
		Roll bar to rear roll bar	M8	190 – 250	14 – 18
		Rear roll bar	M8	190 – 250	14 – 18
		Rear roll bar to guard pipe	M8	190 – 250	14 – 18
		Front bumper	M8	190 – 250	14 – 18
		Seat back to adjuster	M8	150 – 200	11 – 15
		Adjuster cover	M6	70 – 120	5 – 9
		Seat cushion stay	M8	190 – 250	14 – 18
		Seat cushion	M6	70 – 120	5 – 9
		Adjuster	M8	190 – 250	14 – 18
		Seat cushion to stay	M6	70 – 120	5 – 9
		Seat belt		300 – 350	22 – 25
		Drive belt cover	M6	70 – 120	5 – 9
		Pulley cover	M6	70 – 120	5 – 9
	Engine mounting	Engine rubber mounting	M6	70 – 120	5 – 9
		Engine rubber mounting to engine bed	M10	350 – 430	25 – 31

A. Overall Vehicle Dimensions



B. General Specifications

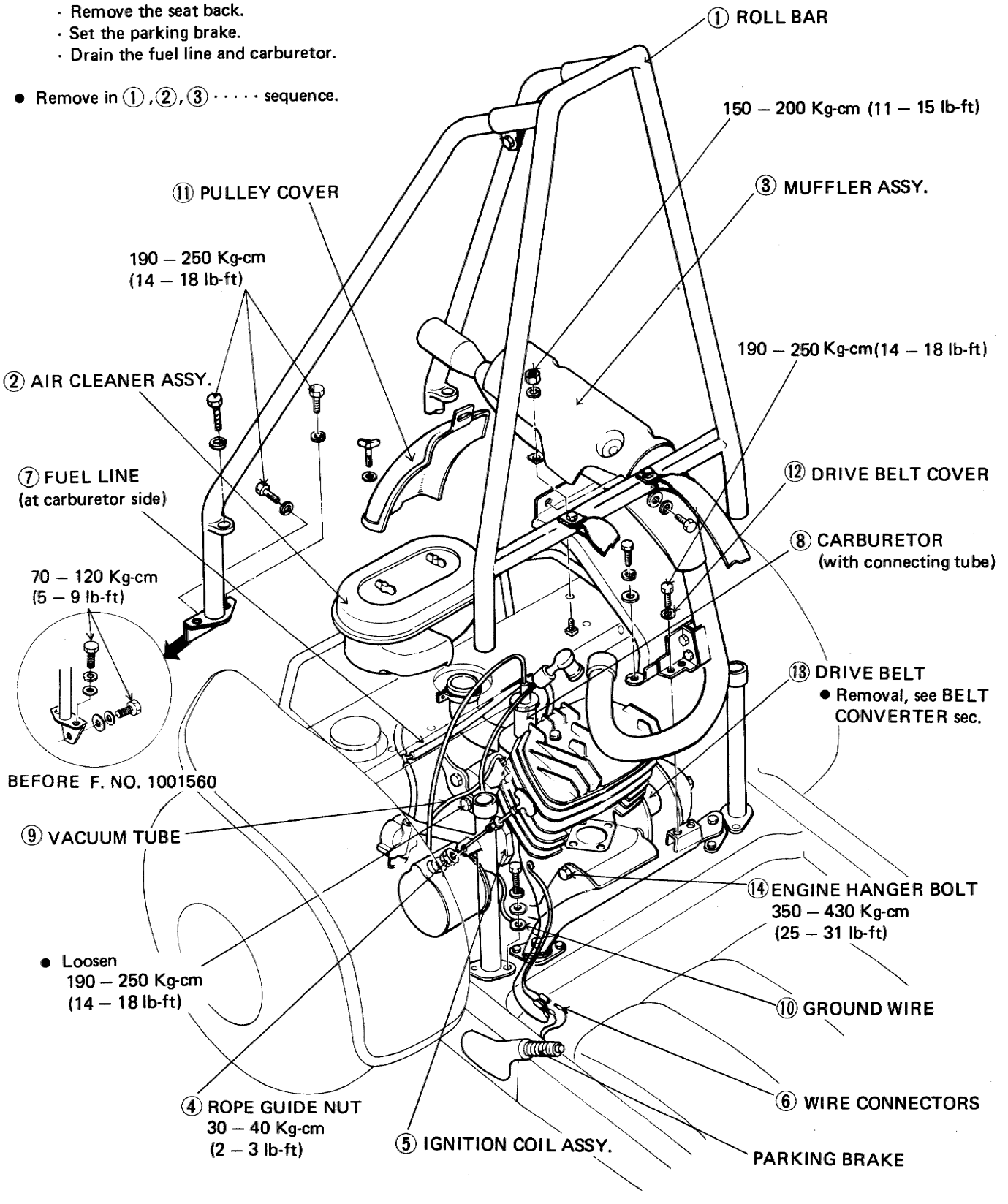
DESCRIPTION			SPECIFICATION
Overall length			2,095 mm (82.48 in.)
Overall width			1,230 mm (48.43 in.)
Overall height			1,525 mm (60.04 in.)
Wheel base			1,435 mm (56.50 in.)
Track	front		930 mm (36.61 in.)
	rear		950 mm (37.40 in.)
Ground clearance			140 mm (5.51 in.)
Min. turning circle radius			4.3 m (17.39 ft.)
WEIGHT	Dry weight distribution	Front	65 Kg (143.4 lbs)
		Rear	115 Kg (253.5 lbs)
	Max. laden weight		265 Kg (584.3 lbs)
EFFICIENCY	Max. stabilized inclination, right/left		53°
	Max. climbing angle		35°
	Stopping distance		20 m (at 50 Km/h)
			32.8 ft (at 31.25 mph)
ENGINE	MODEL		FL 250E
	TYPE		Air-cooled, 2-stroke
	Cylinder arrangement		Single-cylinder 15° inclined from vertical
	Bore and Stroke		70.0 x 64.4 mm (2.756 x 2.535 in.)
	Displacement		248 cc (15.1 cu. in.)
	Compression Ratio		6.6
	Compression Pressure		9 Kg/cm^2 /800 rpm
	Fuel		Gasoline 20 : oil 1 (mixed)
	Ignition timing		5° BTDC
	Port timing	Intake Open	80° BTDC
		Intake Close	80° ATDC
		Exhaust Open	87° BBDC
		Exhaust Close	87° ABDC
		Scavenge Open	60° BBDC
		Scavenge Close	60° ABDC

DESCRIPTION			SPECIFICATION
ENGINE	Idle speed		1,500 rpm
	Valve mechanism		Piston valve type
	Lubrication system		Forced and wet sump
	Carburetor type		PW type
	Choke system		Starter valve system
	Air cleaner type		Semi-dry type
	Fuel pump type		Diaphragm type
	Belt converter		SALSBURY'S Torque sensitive belt converter
	Engine dry weight		22 Kg (48.51 lbs.)
CAPACITIES	Fuel tank		12 lit. (0.317 US gal., 0.264 Imp. gal.)
	Reduction unit		0.5 lit. (1.057 US pt., 0.88 Imp. pt.)
ELECTRICAL	Starting system		Recoil starter
	Stopping system		Ground switch
	Ignition system		Flywheel magneto
	Generator		AC Generator
	Spark plug		NGK B7ES
	Spark plug gap		0.7 – 0.8 mm (0.0276 – 0.0315 in.)
STEERING	Max. turning angle, right/left		45°
	Arm ratio (Knuckle arm length/center arm length)		1.7
	Steering angle	inside	28°
		outside	20°
SUSPENSION	Front		Trailing arm type Coil spring
	Rear		Wheel axial type
	Front shock absorber		Coil spring type
ALIGNMENT	Front	Side slip (ridden)	0 mm (0 in.)
		Toe-in	8 mm (0.315 in.)
		Camber	1°
		Caster	8°
		King pin angle	8°
		Side off set	9 mm (0.354 in.)
		Caster trail	50 mm (1.969 in.)
	Rear	Side slip (ridden)	0 mm (0 in.)
		Toe-in	0 mm (0 in.)
		Camber	0°

DESCRIPTION			SPECIFICATION
BRAKES	Main brake		Self-adjusting cable actuated disc
	Parking brake		Cable actuated leading-trailing shoe and drum
	Disc effective diameter		220 mm (8.661 in.)
	Parking brake drum diameter		140 mm (5.512 in.)
TIRES	Rim, width x diameter,	front	140 x 203 mm (5.51 x 8 in.)
		rear	210 x 203 mm (8.27 x 8 in.)
	Tire, O.D. x width x I.D.,	front	508 x 178 – 203 mm (20 x 7 – 8 in.) (2 ply)
		rear	559 x 280 – 203 mm (22 x 11 – 8 in.) (0 ply)
	Pressure	front	0.35 Kg/cm^2 (5.0 psi.)
		rear	0.21 Kg/cm^2 (3.0 psi.)
LIGHTS	Headlight		6 V – 35 W

ENGINE REMOVAL/ INSTALLATION

- Before removing, make sure to perform the following operations;
  - Remove the seat back.
  - Set the parking brake.
  - Drain the fuel line and carburetor.
- Remove in ①, ②, ③ · · · · · sequence.



A. AIR CLEANER & MUFFLER

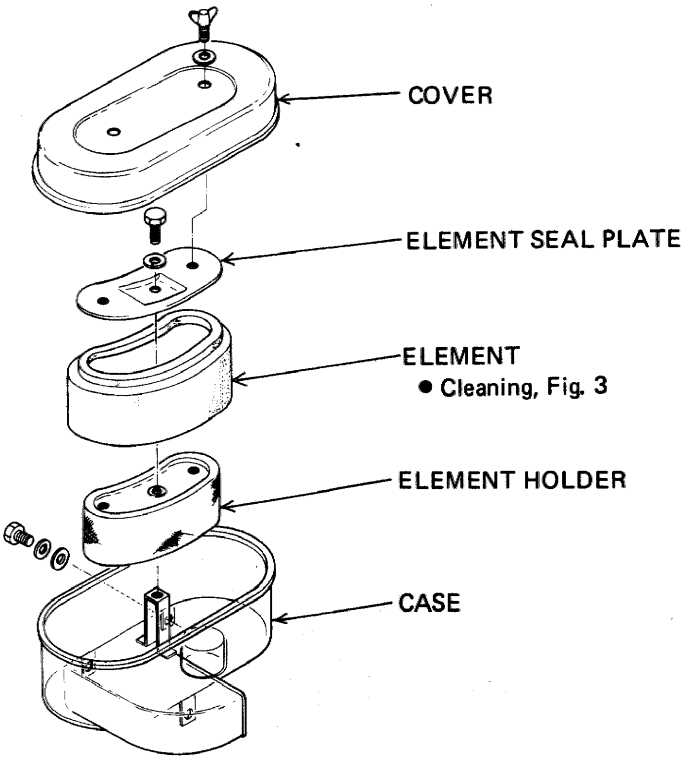


Fig. 1 AIR CLEANER DISASSEMBLY/REASSEMBLY

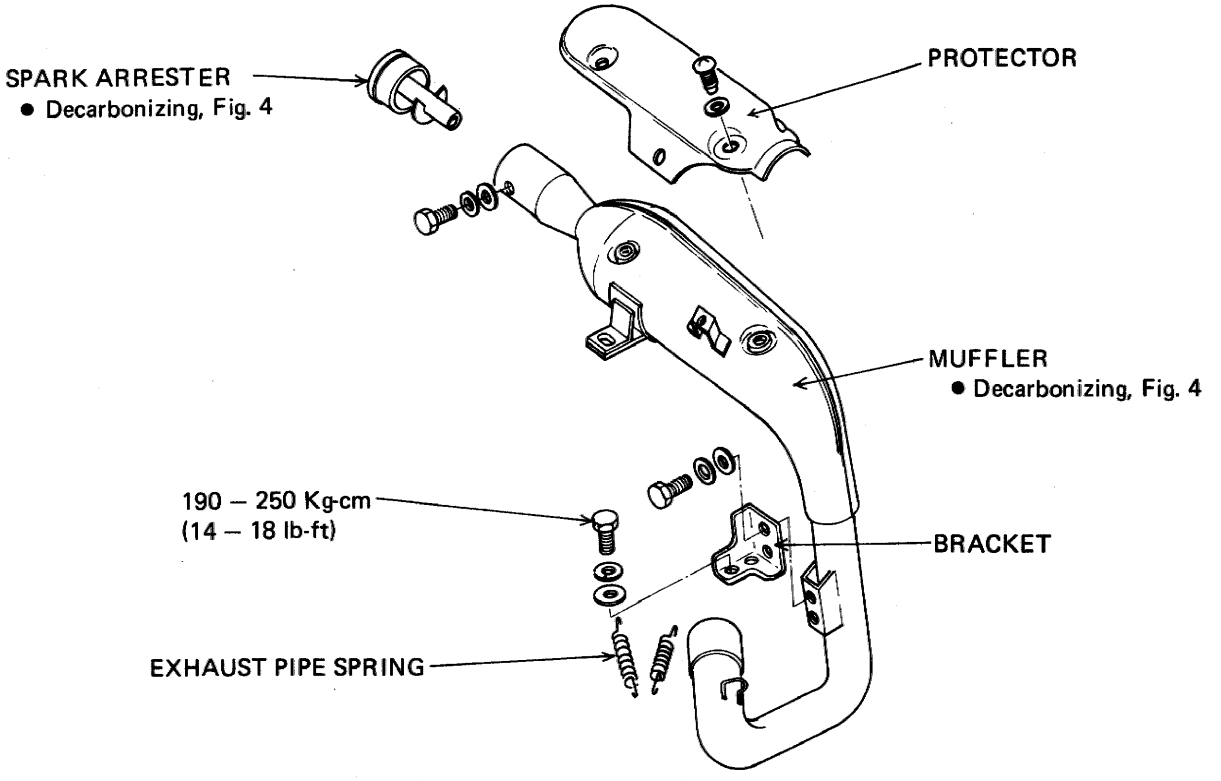
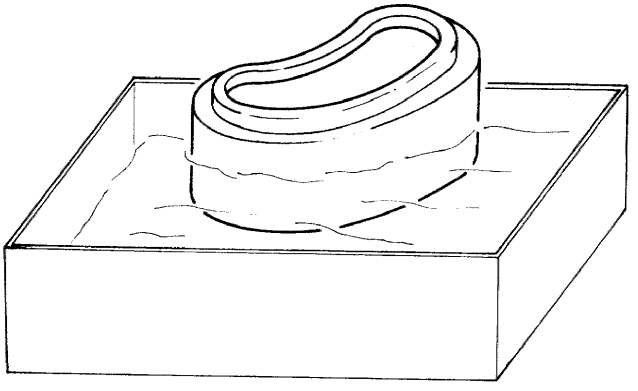


Fig. 2 MUFFLER DISASSEMBLY/REASSEMBLY



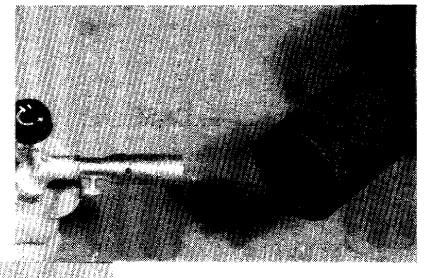
① Wash in clean stoddard solvent.

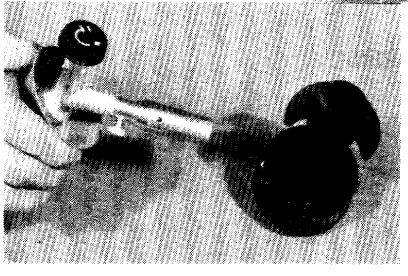
② Dry thoroughly.

③ Soak in clean gear oil (SAE 80 – 90) until saturated.

④ Squeeze out excess oil.

Fig. 3 Air Cleaner Element Cleaning

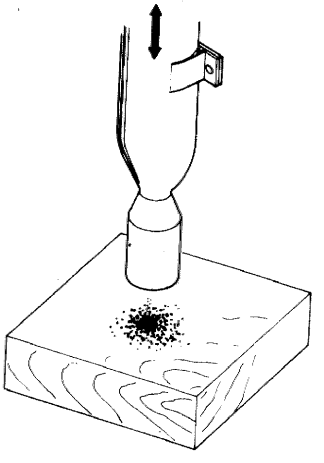




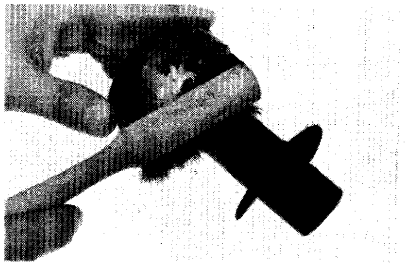
① Use propane torch to burn off oil from carbon deposits.

WARNING Do not use torch near flammable material.

CAUTION Do not use oxyacetylene torch to burn off oil.



② Hold muffler in vertical position and tap it on a wood block to shake out carbon deposits.



③ Clean spark arrester with wire brush.

Fig. 4 Muffler and Spark Arrester Decarbonizing

B. CARBURETOR

NOTE

1. Before disassembly, clean around carburetor and be sure to drain.
2. Before assembly, clean carburetor and related parts using compressed air.

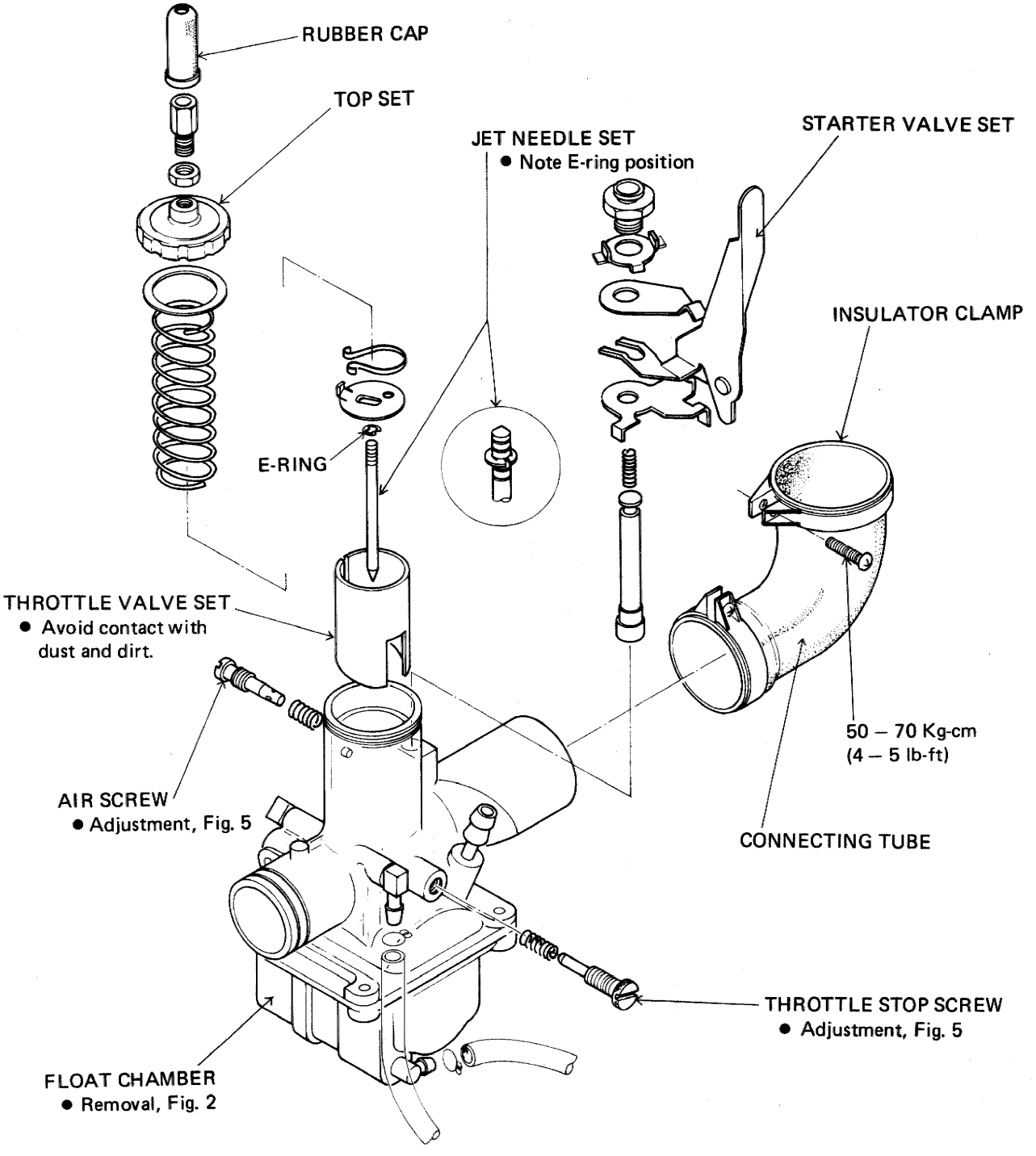
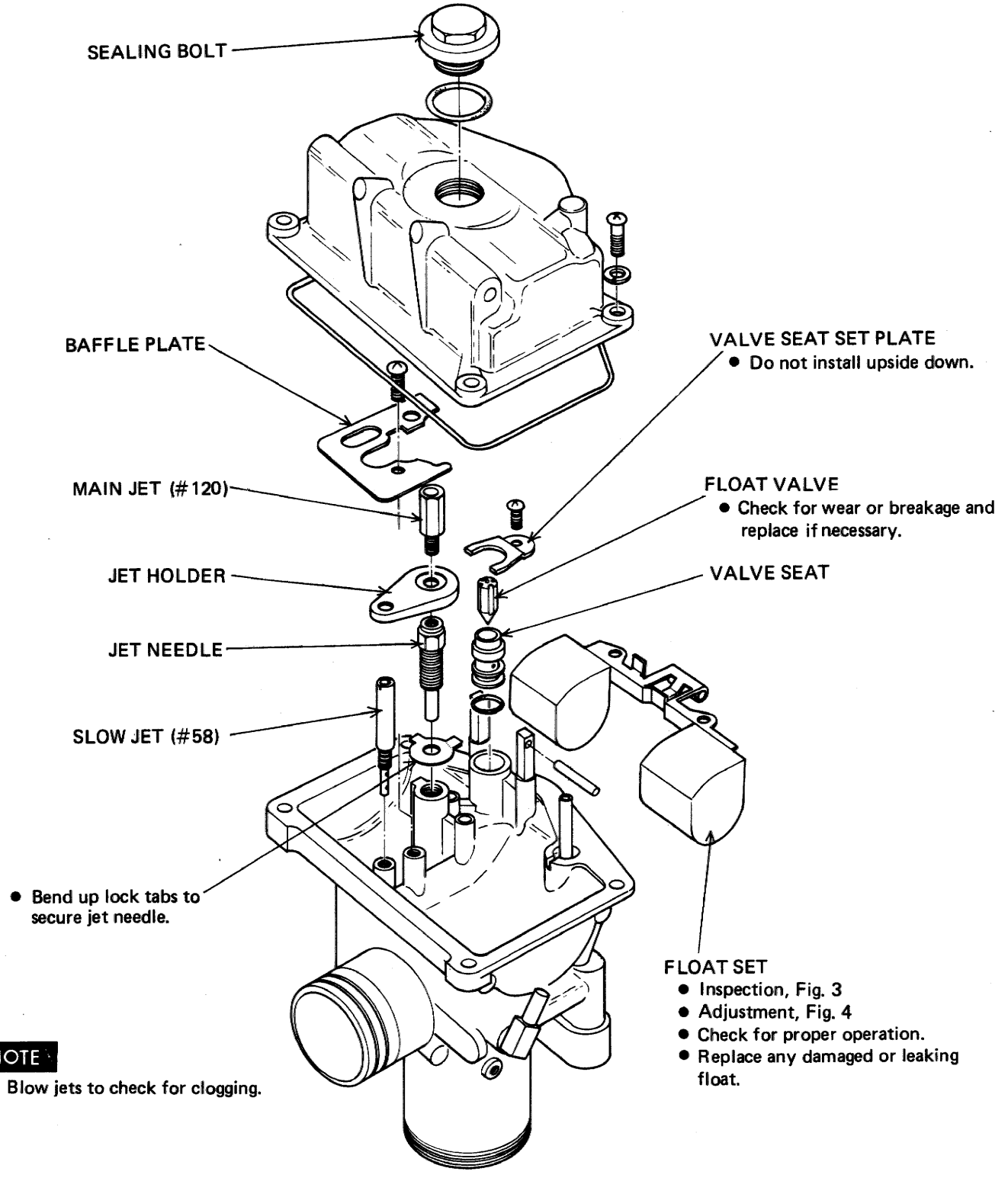


Fig. 1 Carburetor Disassembly/Reassembly

CAUTION

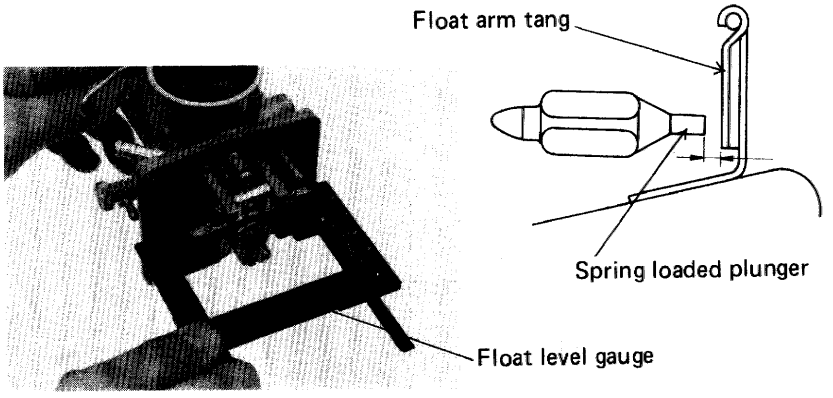
Carefully handle jets, needles and other small parts.



NOTE

Blow jets to check for clogging.

Fig. 2 Float Chamber Disassembly/Reassembly

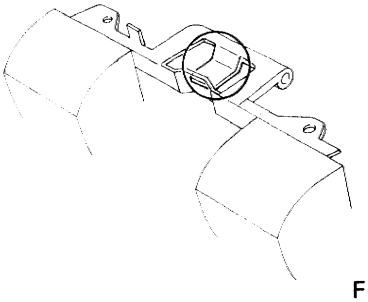


① Place in upright position

② When the float arm tang just closes the float valve, without compressing the spring loaded plunger, measure the float height.

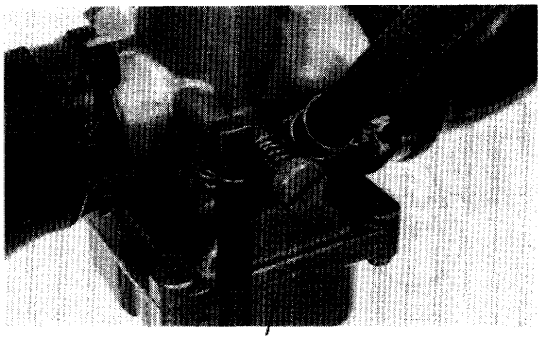
Standard : 20 mm (0.79 in.)

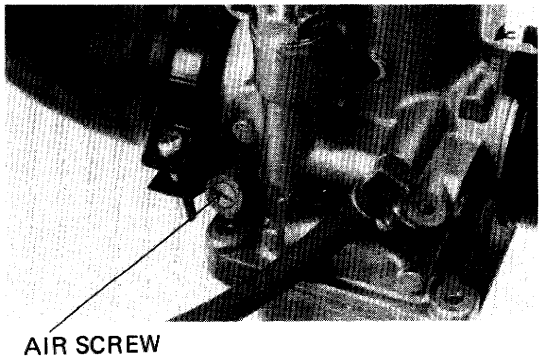
Fig. 3 Float Height Inspection



- Carefully bend the float arm tang to adjust to proper float level.

Fig. 4 Float Height Adjustment





CAUTION

- Before adjusting, perform the following steps.
  - Attach a suitable tachometer.
  - Set the parking brake.
  - Check to see that the ignition system and engine compression are in good condition.
- Do not compensate for other faults by carburetor adjustment.

① Start the engine and allow to idle until operating temperature is reached.
② Adjust the throttle stop screw at approx. 1,500 rpm.
③ Turn the air screw clockwise until the engine begins to miss or decrease in speed.
④ Turn the air screw counterclockwise until the engine begins to miss or decrease in speed.
⑤ Set the air screw exactly between these two extreme positions. The correct setting will be found to be approximately 2 turns open from the fully closed position.
⑥ If the idle speed changes, readjust the throttle stop screw.

Specification : 1,500 rpm ± 150 rpm

Fig. 5 Idle Speed Adjustment

C. RECOIL STARTER

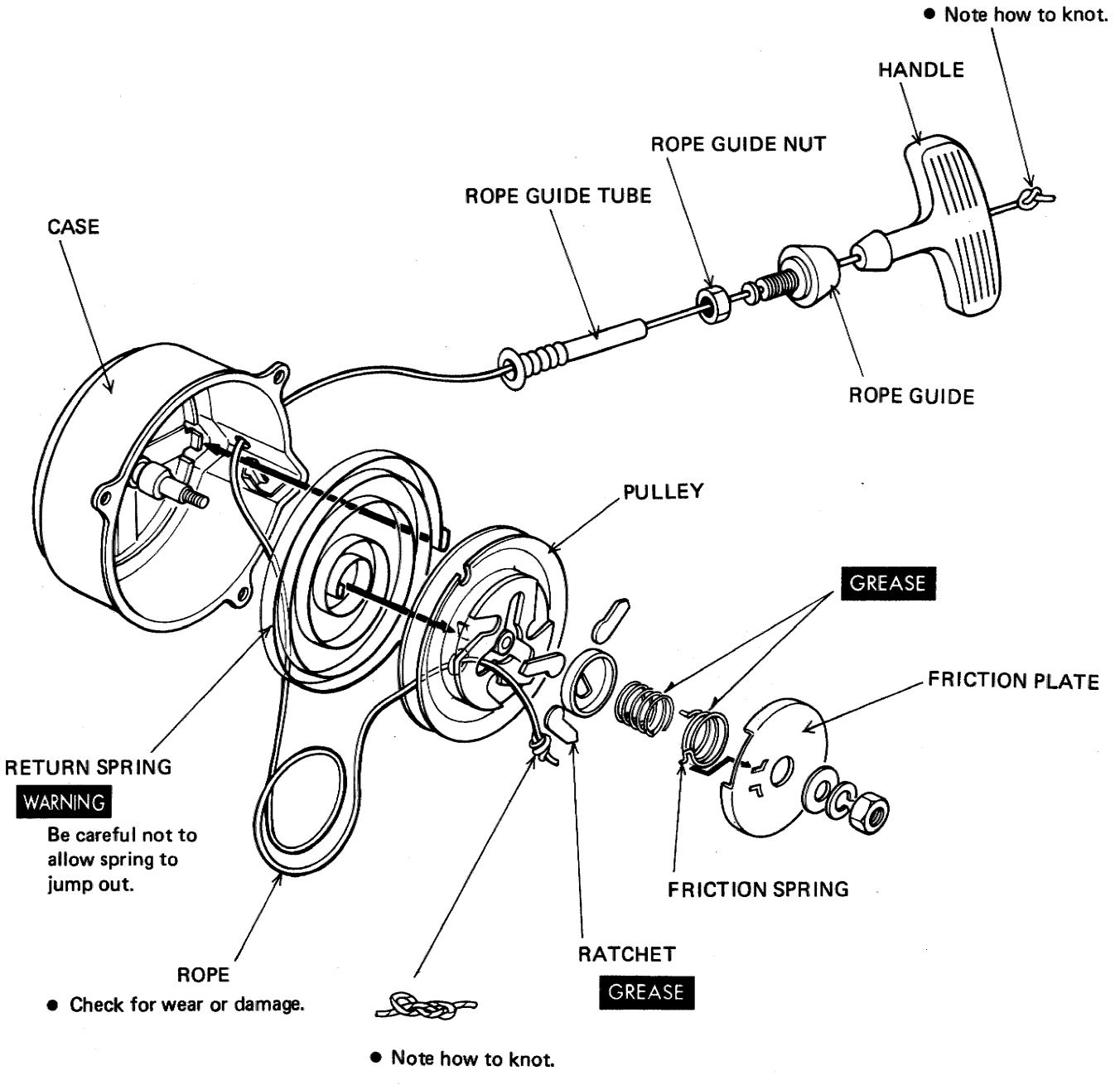
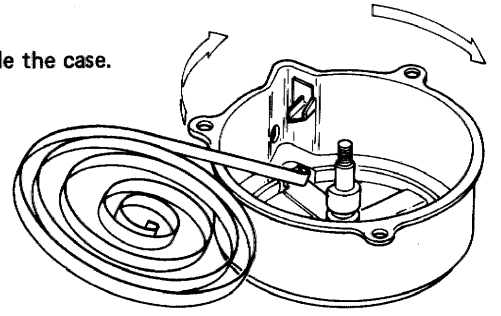


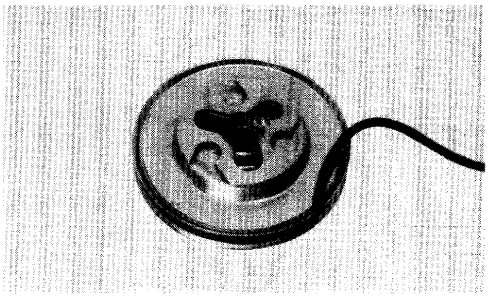
Fig. 1 Recoil Starter Disassembly

WARNING Use gloves to assemble the recoil starter.

NOTE
Turn the case to wind the spring in.

① Set the return spring inside the case.

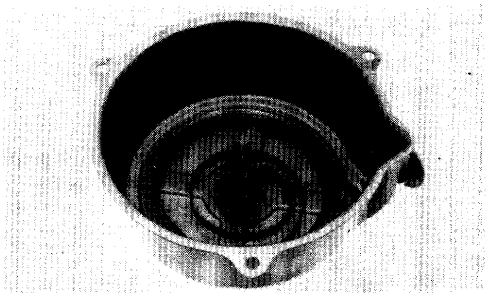




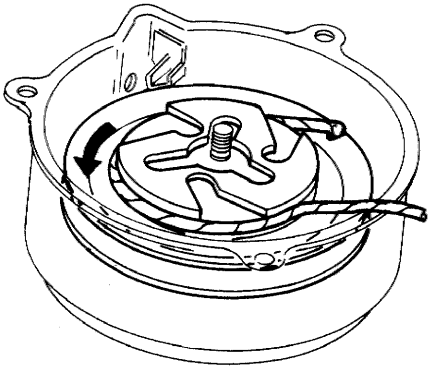
② Wind the starter rope around the pulley.

③ Take the rope end out of the slot.

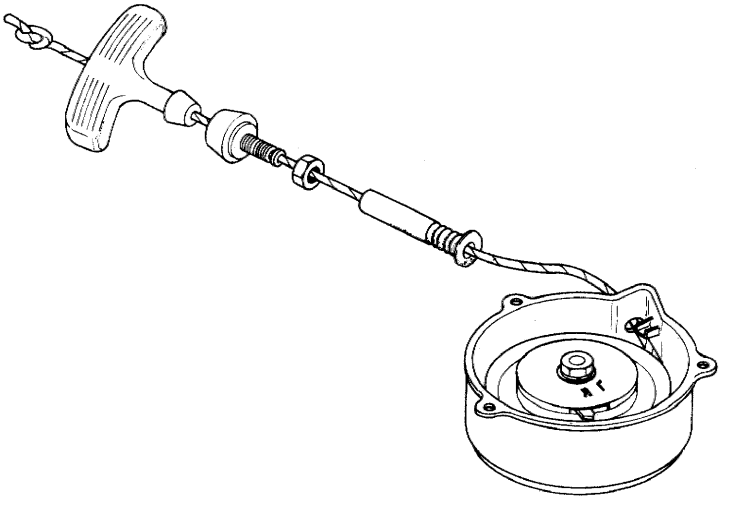
④ Set the pulley inside the case engaging the spring end and projection on the pulley as shown on page 8 - 6.



⑤ Wind pulley 2½ turns.



⑥ Knot rope end as shown on page 8 - 6.



⑦ After assembling, check that the starter works properly.

Fig. 2 Recoil Starter Reassembly

D. GENERATOR & IGNITION SYSTEM

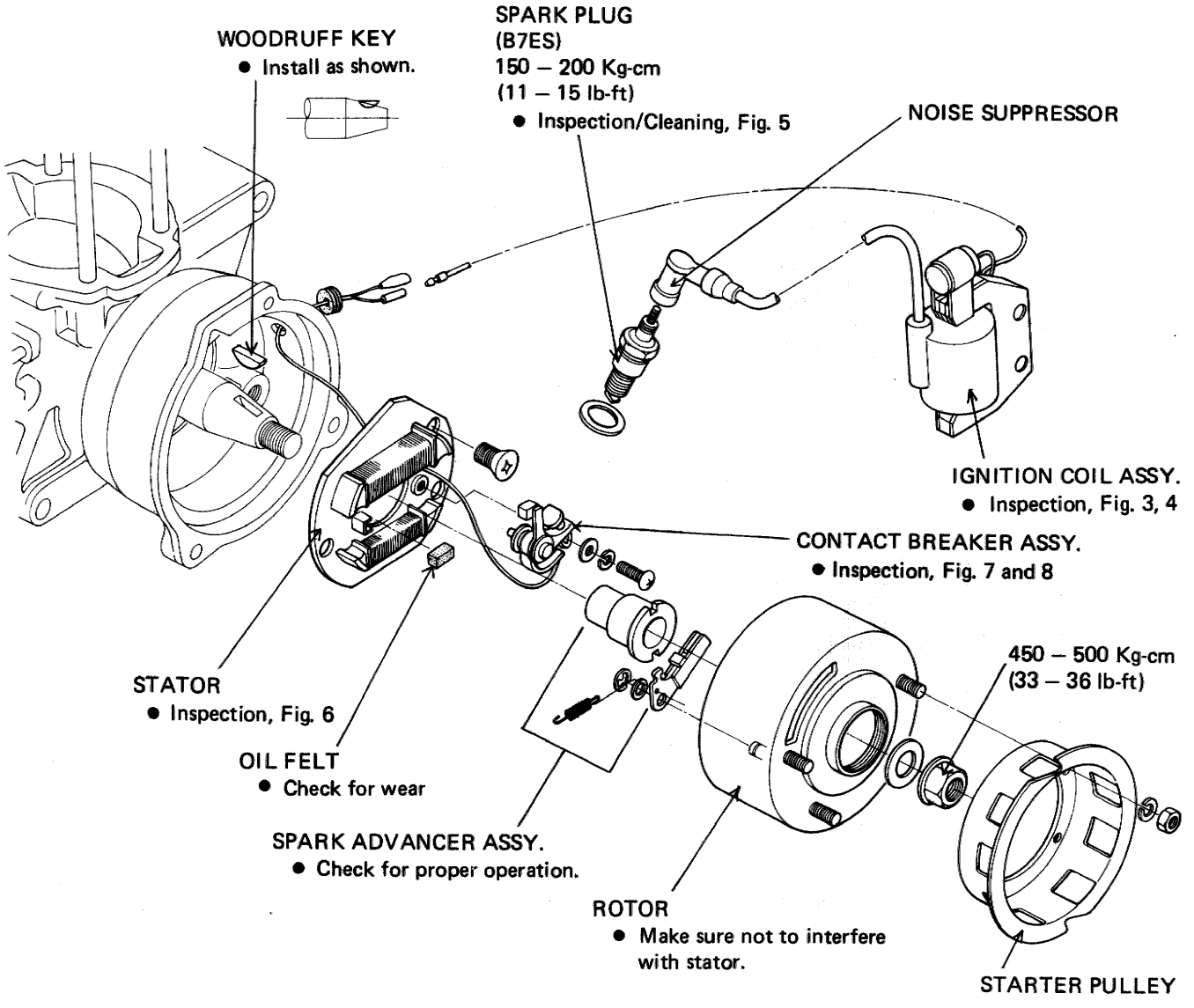
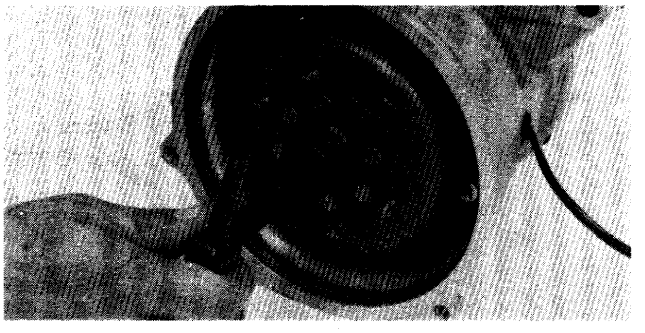


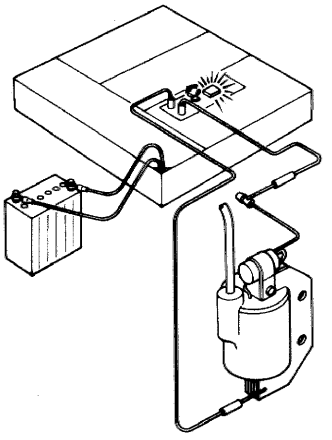
Fig. 1 Generator/Ignition System Disassembly/Reassembly

S. TOOL CLUTCH OUTER HOLDER
(Tool No. 07923 - 0010000)



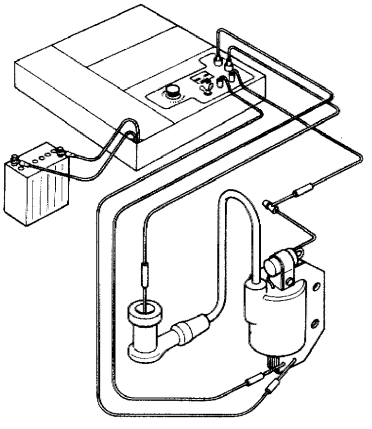
S. TOOL FLYWHEEL PULLER
(Tool No. 07933 - 0010000)

Fig. 2 Rotor Removal



- Connect wires in accordance with instructions provided with the service tester.
- Replace if no continuity.

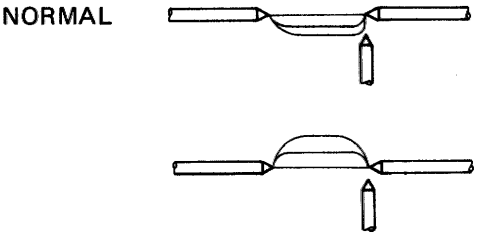
Fig. 3 Ignition Coil Continuity Test



① Connect wires in accordance with instructions provided with the service tester.

② Measure stable max. distance jumping across 3-point spark gap.

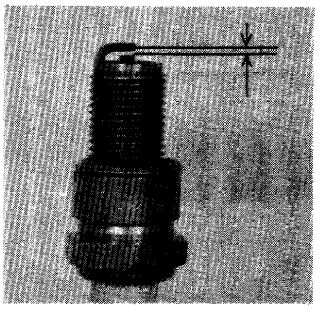
Standard	: 6 mm (0.24 in.) at 3,000 rpm
Service limit	: 5 mm (0.20 in.) at 500 rpm

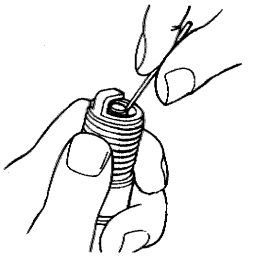


NOTE

Connect high tension cable to tester in reverse direction.

Fig. 4 Ignition Coil Performance Test



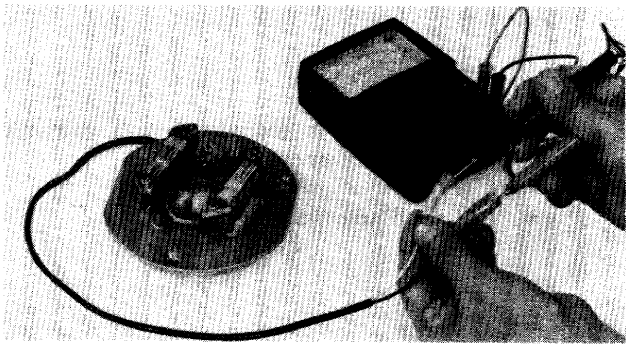


- Measure plug gap.

Standard	: 0.7 – 0.8 mm (0.028 – 0.032 in.)

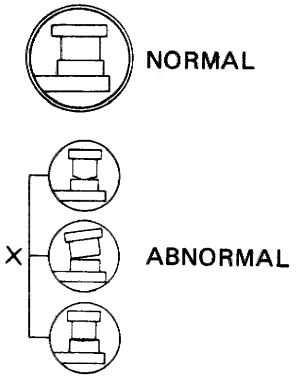
- Clean spark plug with plug cleaner or wire brush.

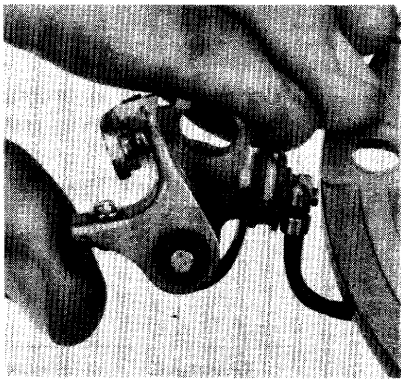
Fig. 5 Spark Plug Inspection/Cleaning



- Check for breakage.

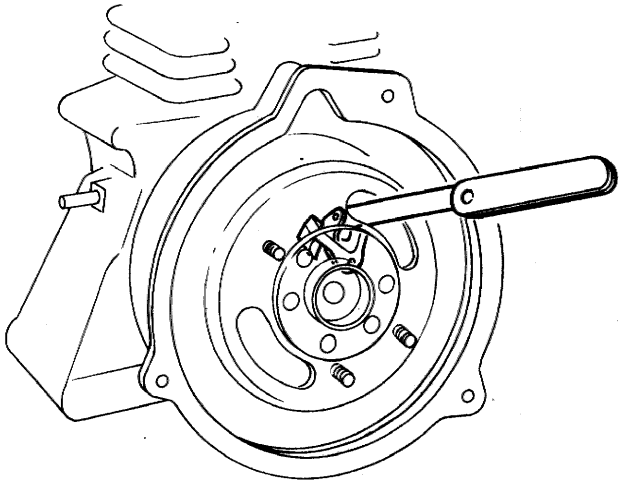
Fig. 6 Stator Cable Continuity Test





- Check for damage or burning.
- Polish with emery cloth or point file if burned, pitted or worn.

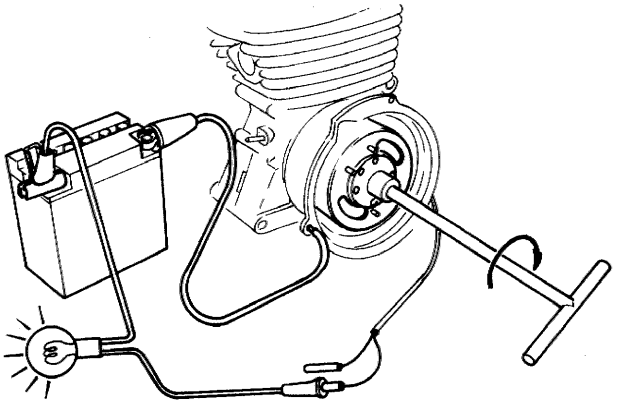
Fig. 7 Contact Breaker Inspection



- Replace if beyond specification.

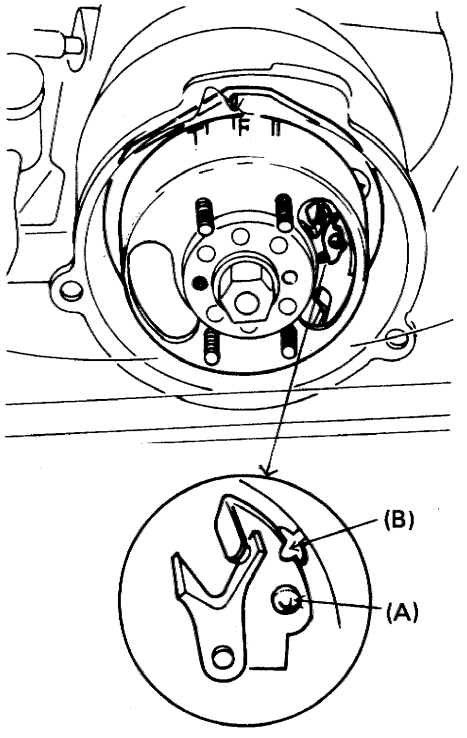
Standard	: 0.3 – 0.4 mm (0.012 – 0.016 in.)
Service limit	: 0.2 – 0.6 mm (0.008 – 0.024 in.)

Fig. 8 Point Gap Inspection



① Remove the recoil starter and the starter pulley.

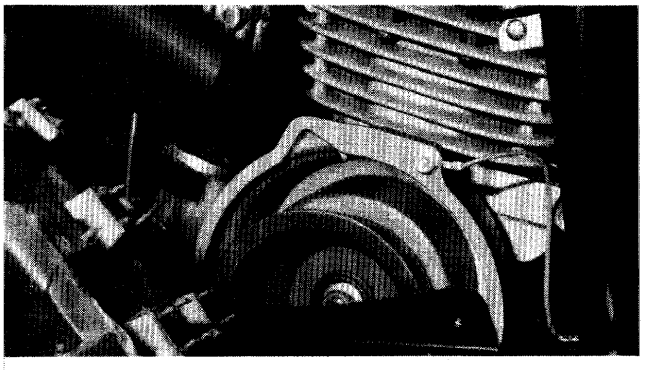
② Connect the black lead to the test light lead and the other test light lead to the positive battery terminal, and ground the negative terminal.



③ Turning the rotor clockwise, the light should become dim when the "F" mark and the matching mark align.

④ To adjust, slightly loosen screw (A), move rotating plate in either direction using a standard screwdriver inserted in the cutout (B) and retighten screw (A) where the test light starts to dim.

Fig. 9 Ignition Timing Static Adjustment



① Remove the recoil starter.

② Connect the wires in accordance with the instructions provided with the service tester.

③ Start the engine by using a rope wound around the starter pulley. Check the ignition timing at idle.

Fig. 10 Ignition Timing Dynamic Inspection

E. CYLINDER & PISTON

NOTE:
Before disassembly, remove dust, dirt and mud from around the engine.

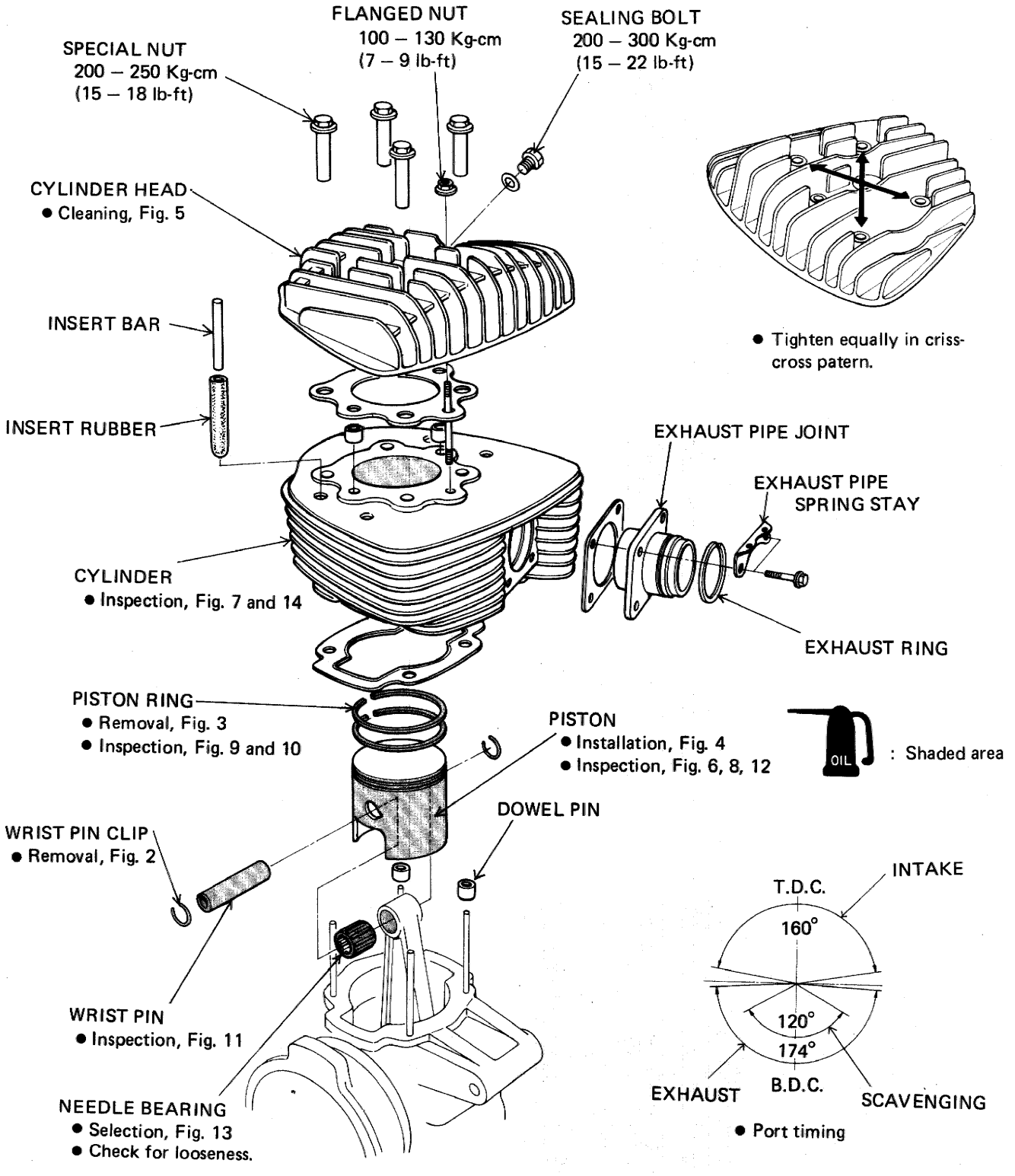
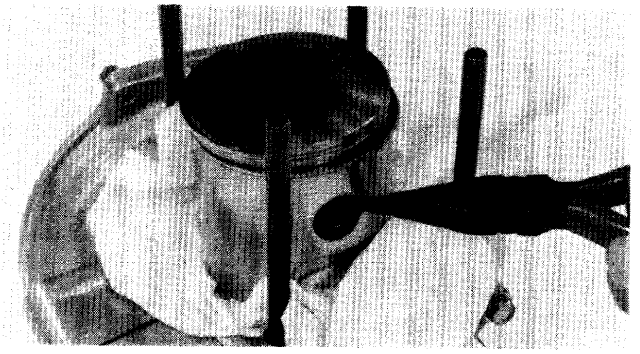


Fig. 1 Cylinder/Piston Disassembly/Reassembly

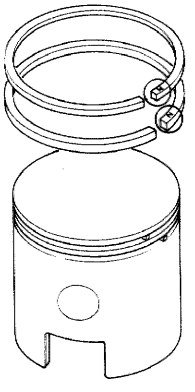


NOTE

Place a rag under the piston to keep the wrist pin clip from dropping into the crankcase.

Fig. 2 Wrist Pin Clip Removal

- Remove from direction opposite of gap.

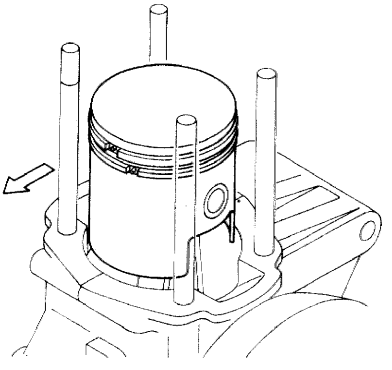


Sectional View

CAUTION

Install marked side up.
Be careful to use the proper rings.
(Note sectional view.)

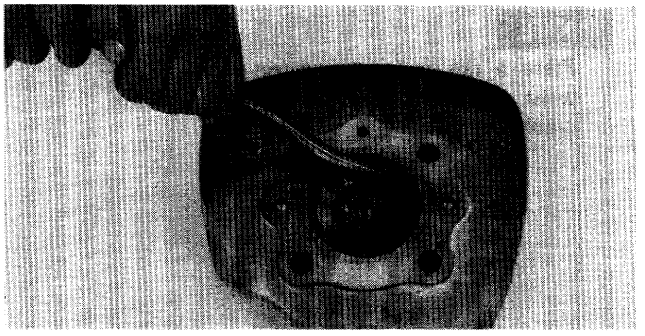
Fig. 3 Piston Ring Disassembly/Reassembly

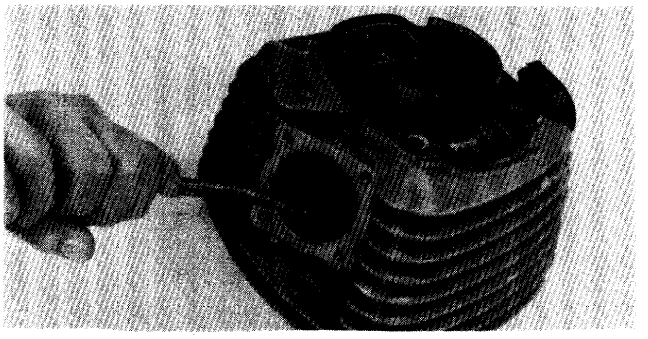


CAUTION

Install the piston with the dowel pins facing toward the intake port.

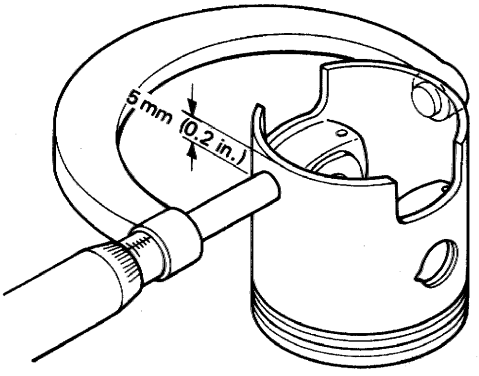
Fig. 4 Piston Installation





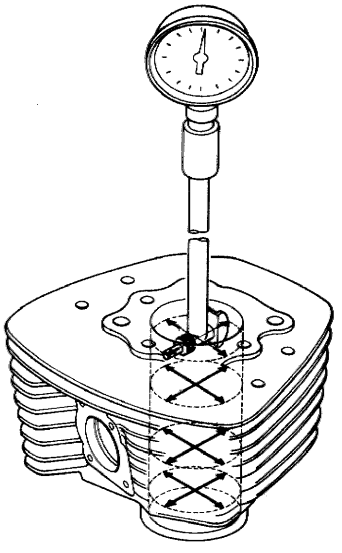
● Decarbonize with a scraper, screwdriver or wire brush taking care not to score or scratch.

Fig. 5 Cylinder Head/Exhaust Port Decarbonizing



Standard	:	69.93 – 69.95 mm	(2.7531 – 2.7539 in.)
Service limit	:	69.8 mm	(2.7480 in.)

Fig. 6 Piston O.D. Inspection



Standard	:	70.0 – 70.01 mm	(2.7559 – 2.7563 in.)
Service limit	:	70.1 mm	(2.7598 in.)

Fig. 7 Cylinder I.D. Inspection

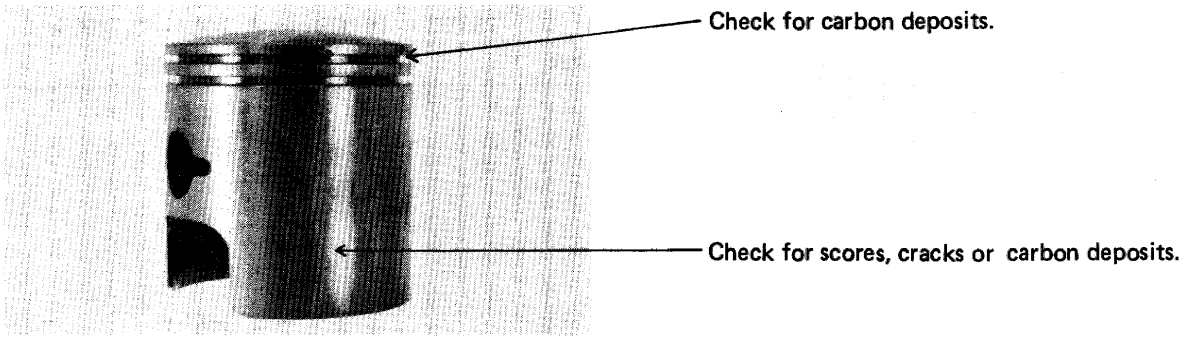


Fig. 8 Piston Inspection

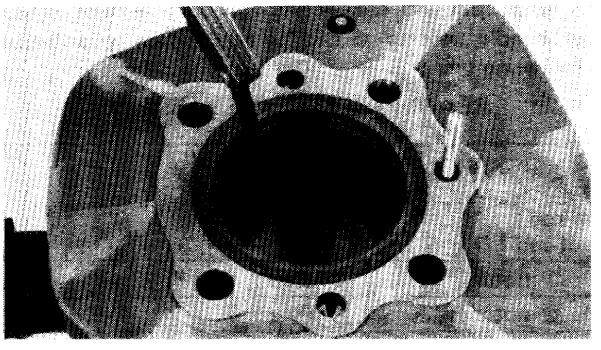


Fig. 9 Piston Ring Gap Inspection

Standard	Top	0.2 – 0.4 mm (0.0079 – 0.0157 in.)
	2nd	0.2 – 0.4 mm (0.0079 – 0.0157 in.)
Service limit	Top	0.5 mm (0.0197 in.)
	2nd	0.5 mm (0.0197 in.)

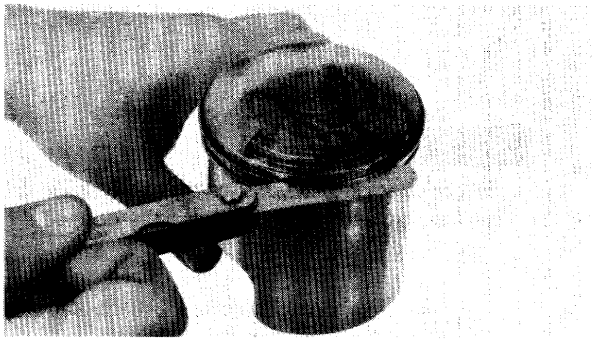


Fig. 10 Piston Ring Side Clearance Inspection

Standard	Top	0.045 – 0.075 mm (0.0018 – 0.0030 in.)
	2nd	0.025 – 0.050 mm (0.0010 – 0.0022 in.)
Service limit	Top	0.09 mm (0.0035 in.)
	2nd	0.07 mm (0.0028 in.)

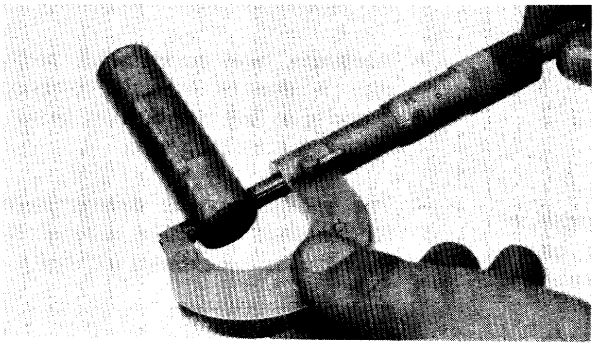
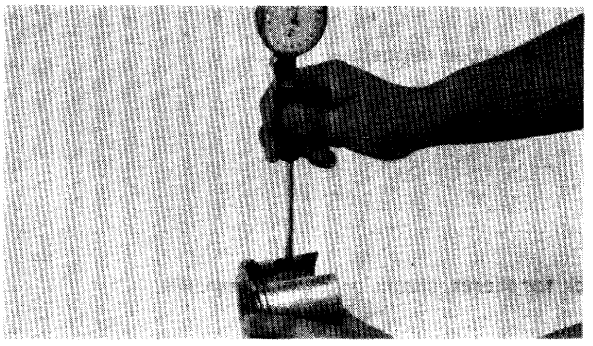


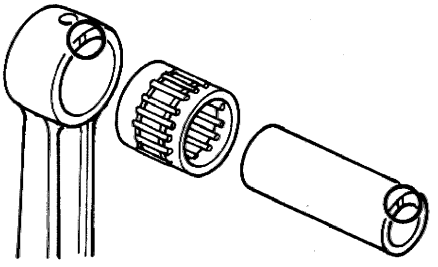
Fig. 11 Wrist Pin O.D. Inspection

Standard	:	17.992 – 18.000 mm (0.7083 – 0.7087 in.)
Service limit	:	17.98 mm (0.7079 in.)



Standard	: 18.002 – 18.008 mm	(0.7087 – 0.7090 in.)
Service limit	: 18.1 mm	(0.7126 in.)

Fig. 12 Wrist Pin Hole I.D. Inspection

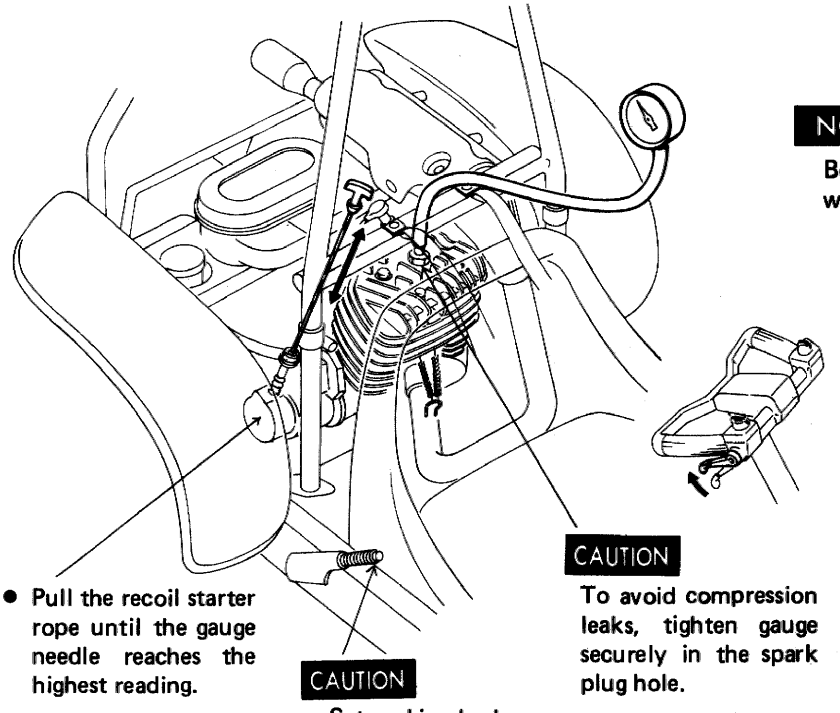


- Since the wrist pin and connecting rod are selective-fitted, the proper needle bearing should be selected in accordance with the following table.

BEARING SELECTION TABLE

Con-rod small end I.D. \ Wrist pin dia.	With notch	Without notch
1 notch	Red	–
2 notches	Blue	Red
3 notches	White	Blue

Fig. 13 Con-Rod Small End Bearing Selection



- Pull the recoil starter rope until the gauge needle reaches the highest reading.

CAUTION

Set parking brake.

CAUTION

To avoid compression leaks, tighten gauge securely in the spark plug hole.

NOTE

Before checking, make sure that the engine is warmed up and the throttle is fully opened.

- Low compression is usually caused by one of the following;
  - Defective or sticking piston ring.
  - A blown cylinder head gasket.
- Unusually high compression pressure is due to excessive carbon deposits in the combustion chamber or on the piston head.
- The engine must be disassembled for complete inspection or repair if the compression exceeds the limit.

Specified pressure:
9 Kg/cm^2 (129 psi.)/800 rpm

Fig. 14 Cylinder Compression Inspection

F. CRANKSHAFT & CRANKCASE

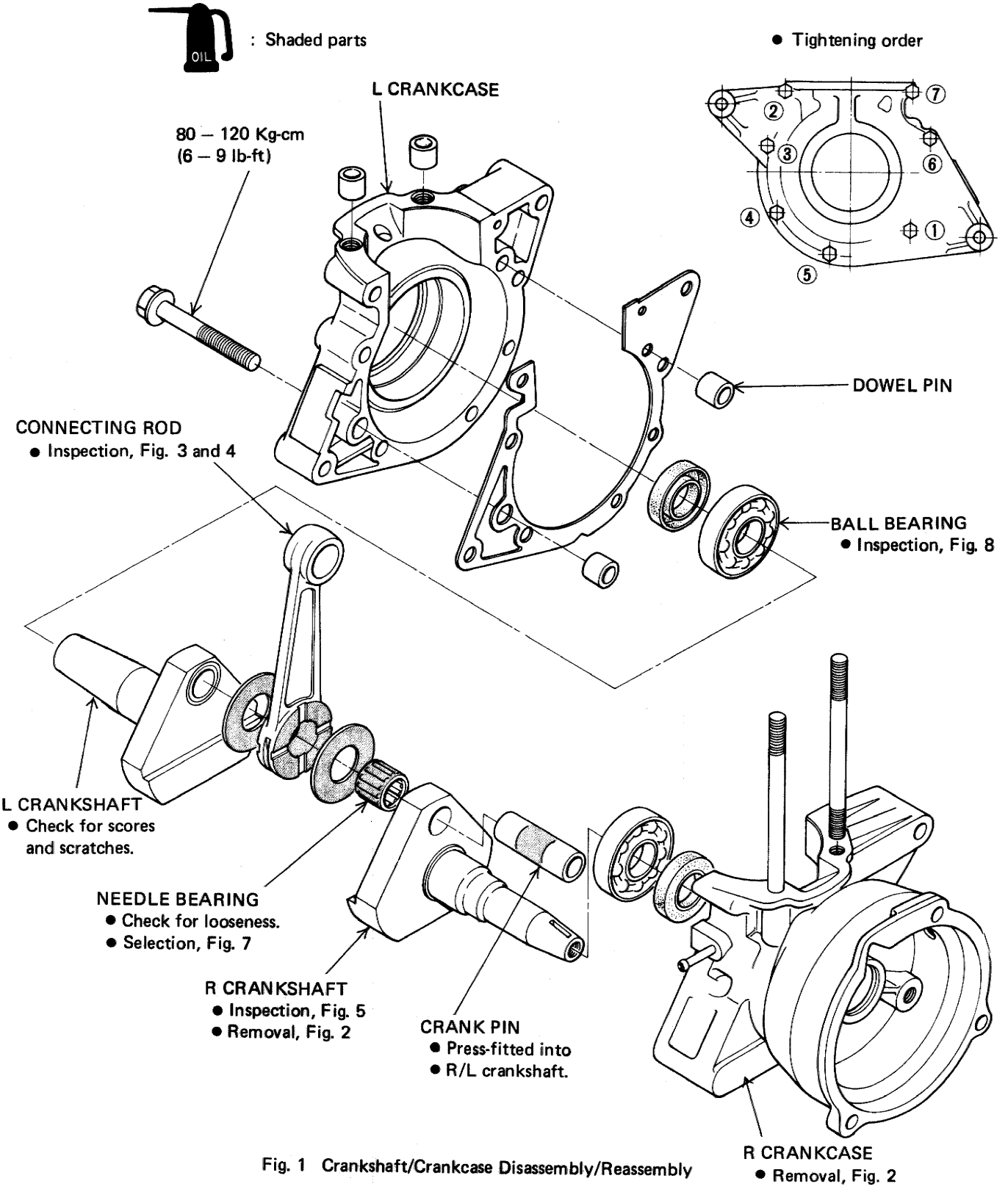
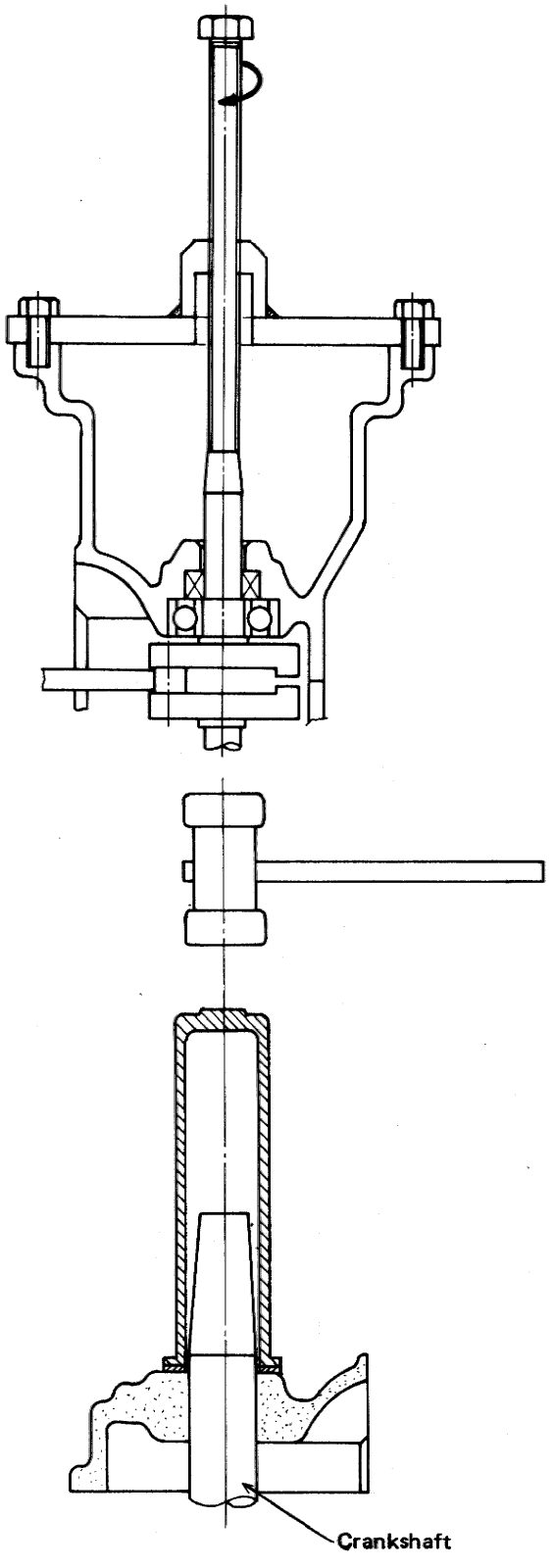


Fig. 1 Crankshaft/Crankcase Disassembly/Reassembly



S. TOOL

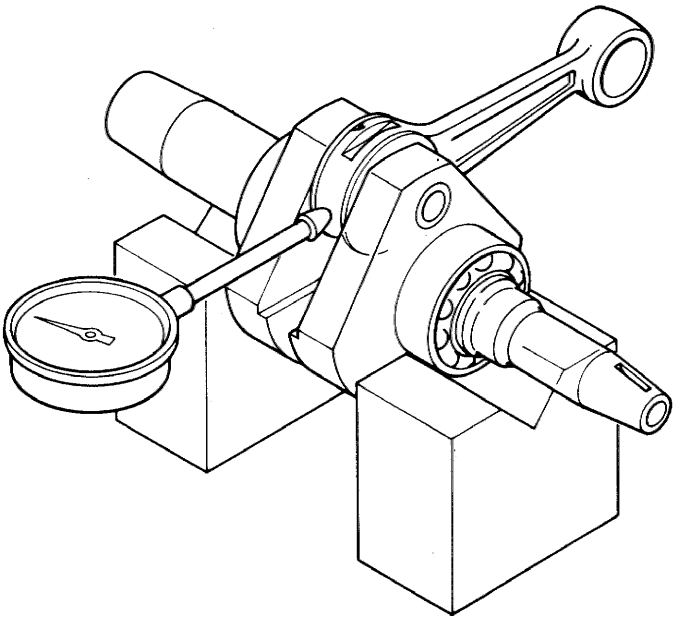
CASE PULLER
(Tool No. 07933 – 9500000)

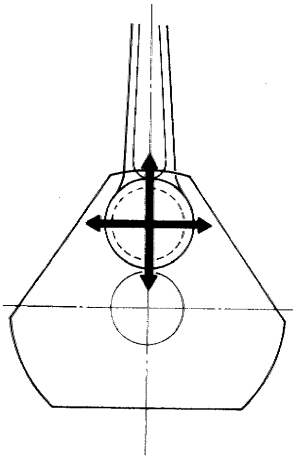
- Used for R/L CRANKCASE pulling.

S. TOOL

BEARING DRIVER
(Tool No. 07946 – 3330300)

Fig. 2 Crankshaft/Crankcase Disassembly/Reassembly

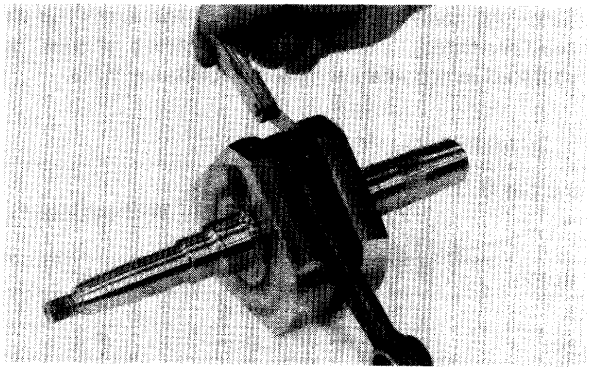




- Measure at two points in directions as shown with arrows.

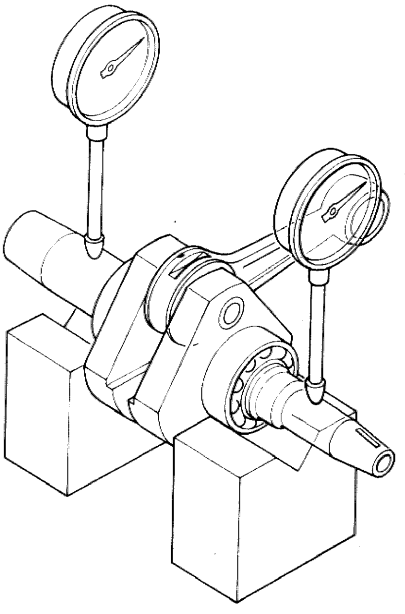
Standard	: 0.010 – 0.022 mm	(0.0004 – 0.0009 in.)
Service limit	: 0.03 mm	(0.0012 in.)

Fig. 3 Connecting Rod Large End Radial Clearance Inspection



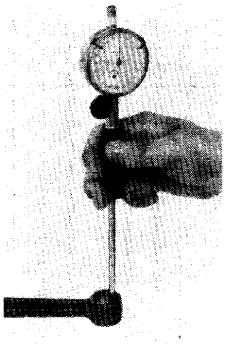
Standard	: 0.2 – 0.4 mm	(0.0079 – 0.0157 in.)
Service limit	: 0.6 mm	(0.0236 in.)

Fig. 4 Connecting Rod Large End Axial Clearance Inspection



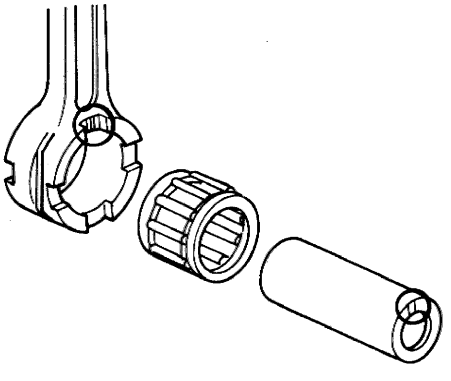
Standard : Less than 0.04 mm (0.00157 in.)

Fig. 5 Crankshaft Runout Inspection



Standard : 21.997 – 22.009 mm (0.8660 – 0.8665 in.)

Fig. 6 Connecting Rod Small End I.D. Inspection

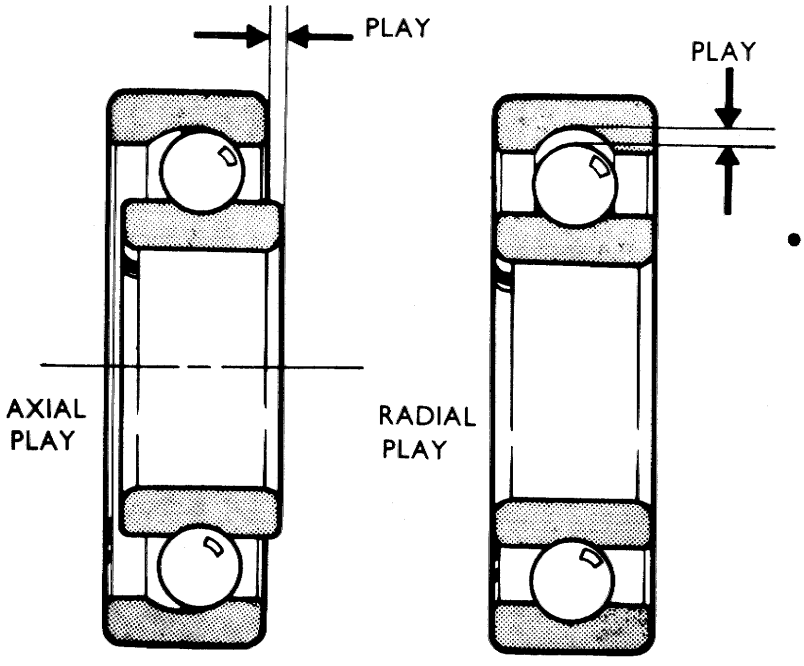


- Since the connecting rod large end and crank pin are selective-fitted, proper needle bearing should be replaced in accordance with the following table.

BEARING SELECTION TABLE

Con-rod large end I.D. \ Crank pin O.D.	2 notches	1 notch	Without notch
Without notch	Red		
1 notch	Blue	Red	
2 notches	White	Blue	Red
3 notches		White	Blue

Fig. 7 Con-Rod Large End Bearing Selection



● Replace if excessively worn.

Fig. 8 Ball Bearing Play Inspection

G. REDUCTION UNIT

NOTE

Refer to FRAME section to remove rear wheels, rear axle, brake drum and disc brake system.

- Before disassembly, drain reduction case.

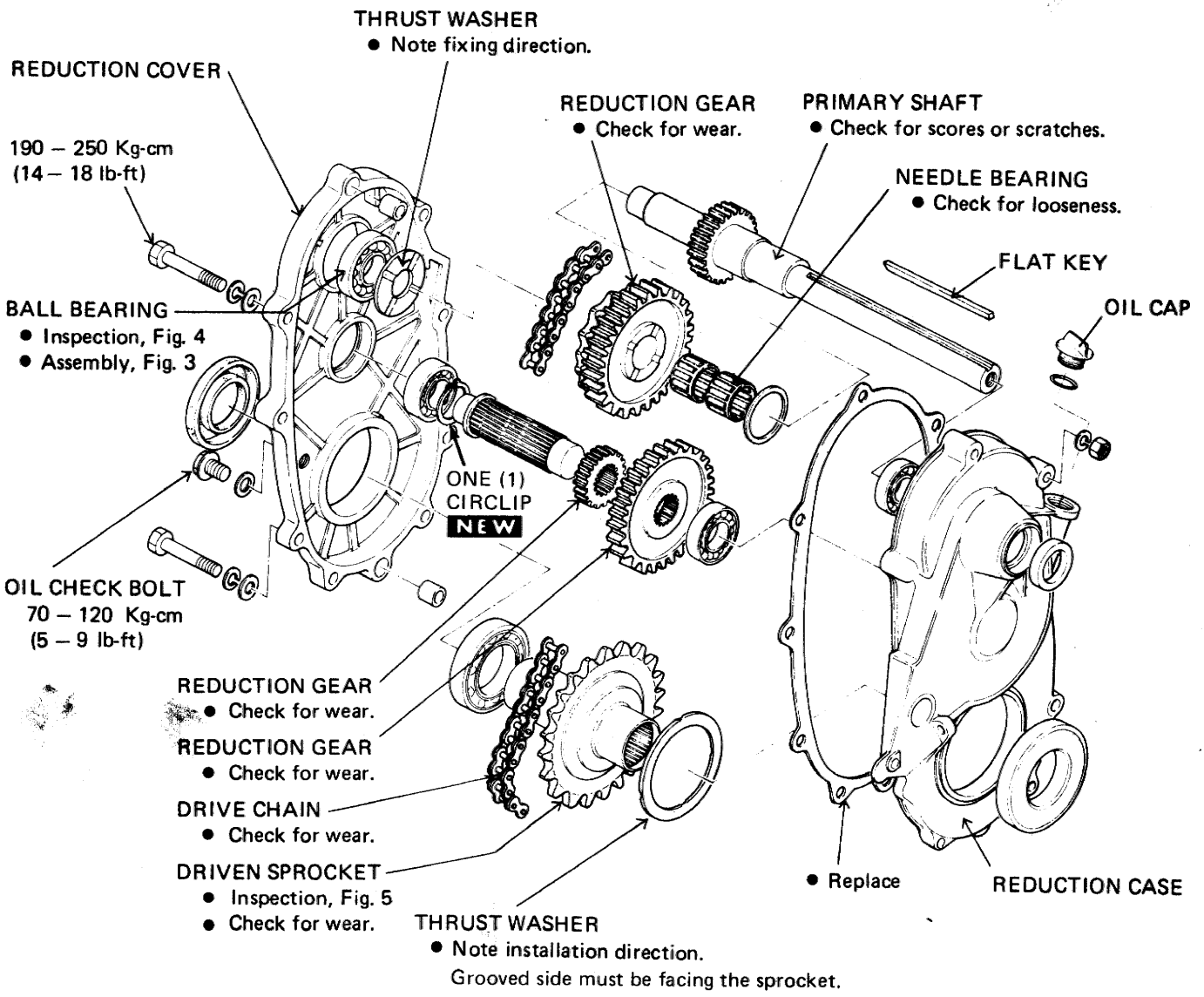


Fig. 1 Reduction Unit Disassembly/Reassembly

Revised February 1979

NOTE

To assemble, follow ①, ②, ③ ····· in this sequence.

- After assembly, be sure that the chain rotates smoothly.

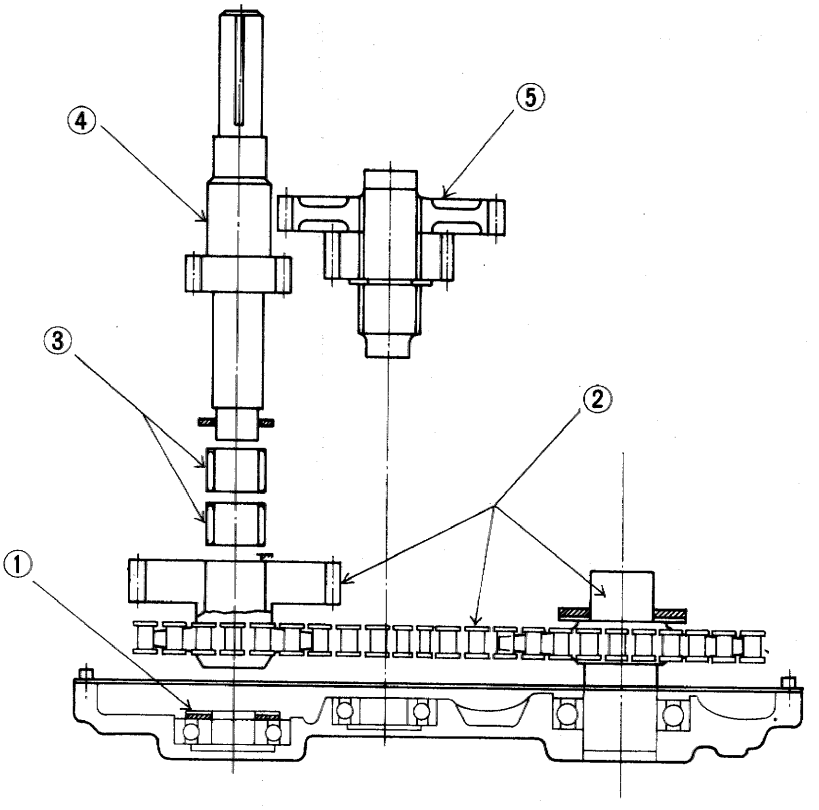
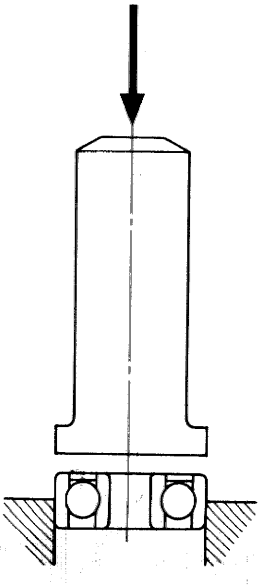


Fig. 2 Reduction Unit Reassembly

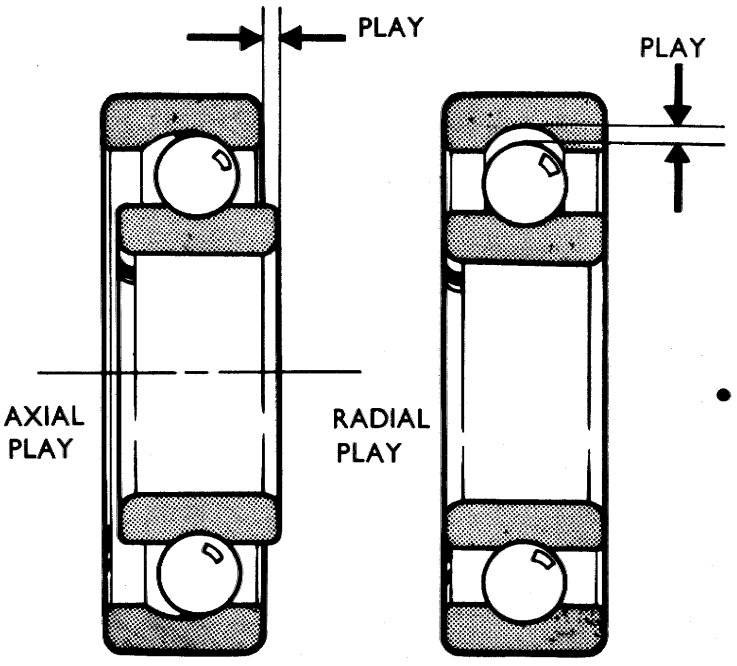


CAUTION

Install bearing equally by driving outer edge.

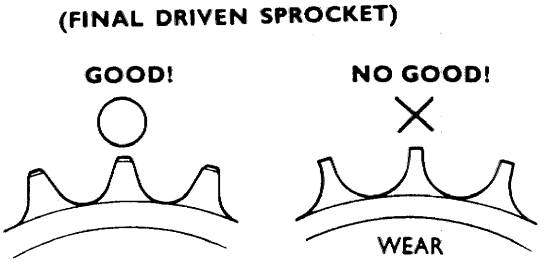
S. TOOL BEARING DRIVER
(Tool No. 07945 – 3330300)

Fig. 3 Ball Bearing Assembly



- Replace if excessively worn.

Fig. 4 Ball Bearing Play Inspection



Check the drive chain for wear or other defects if the sprockets are abnormal.

Fig. 5 Driven Sprocket Inspection

H. BELT CONVERTER

- **For more detailed instructions, refer to SALSBURY's shop manual.**

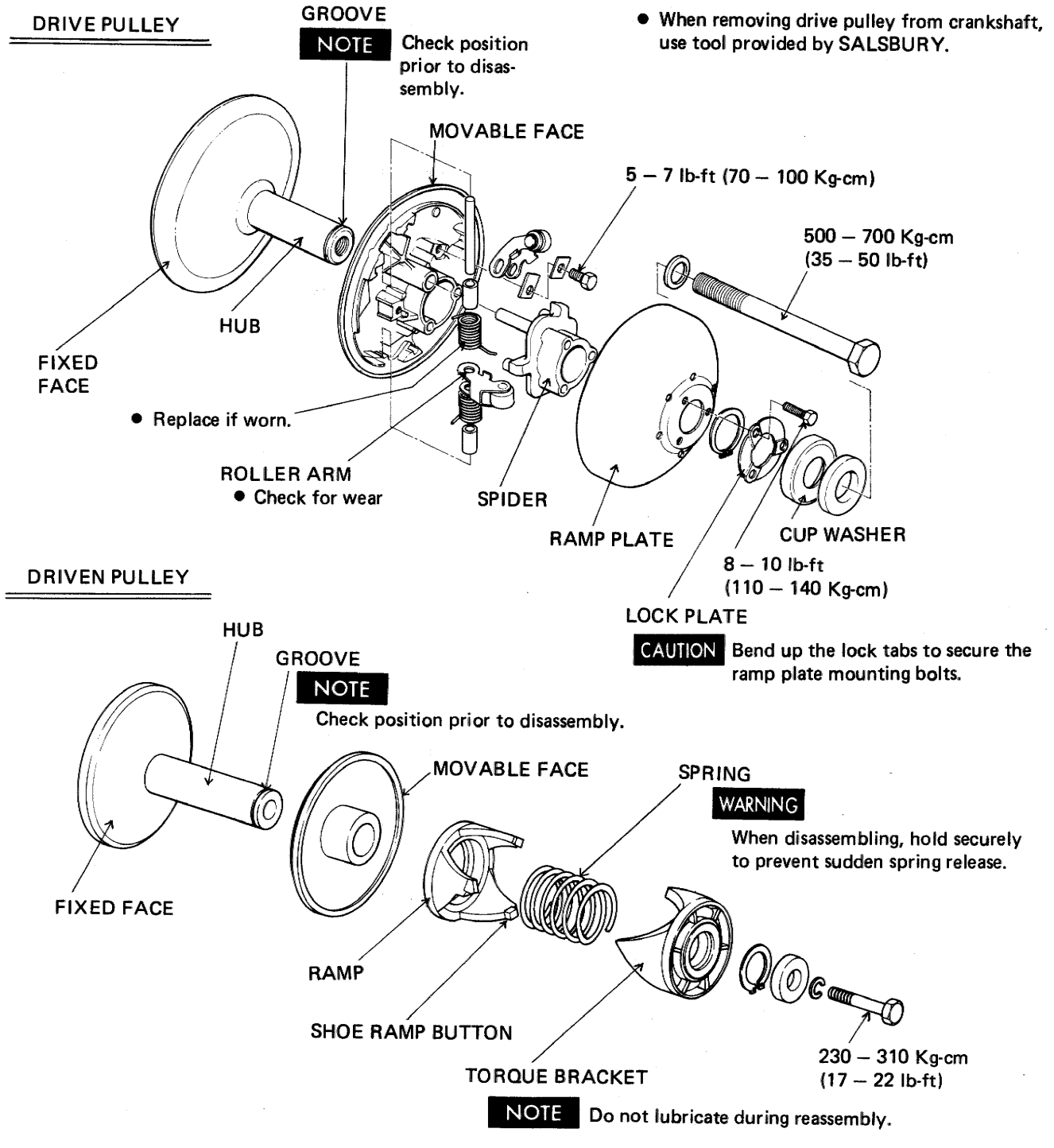
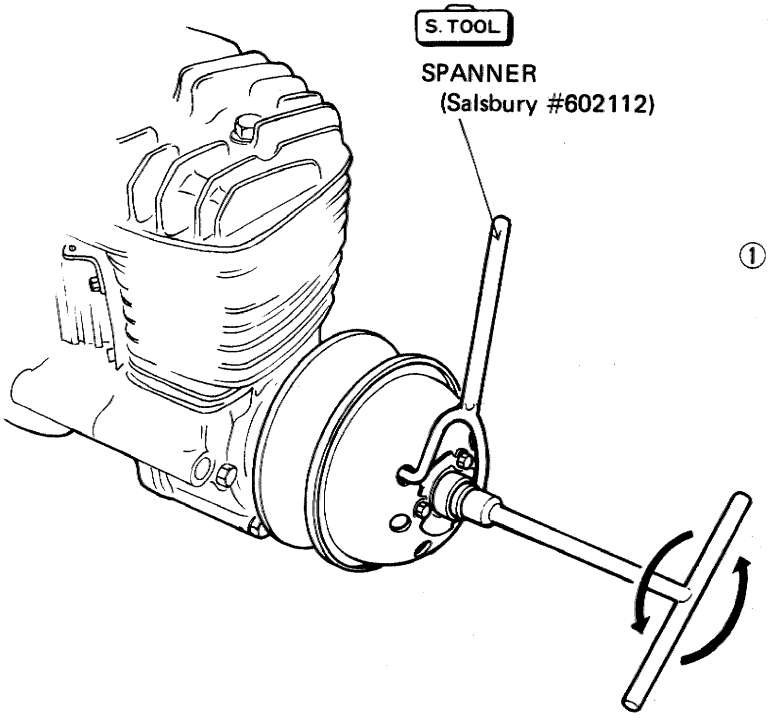
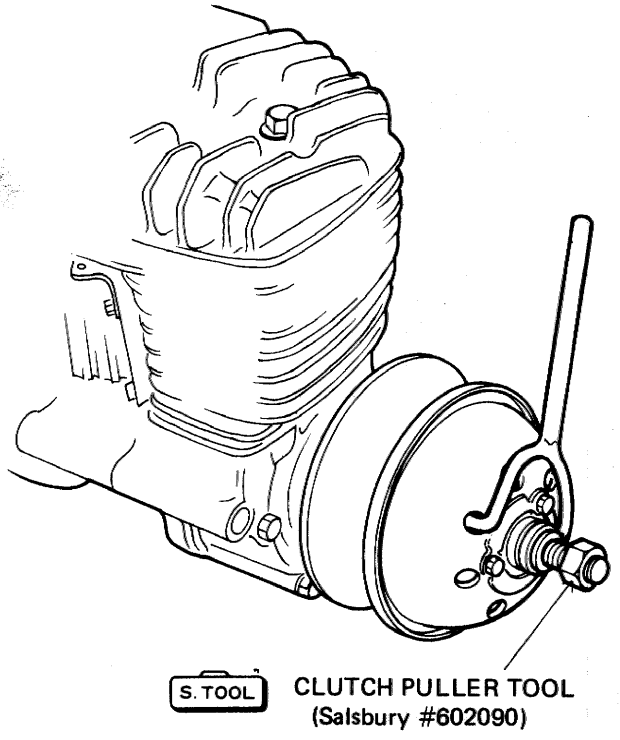


Fig. 1 Belt Converter Disassembly / Reassembly

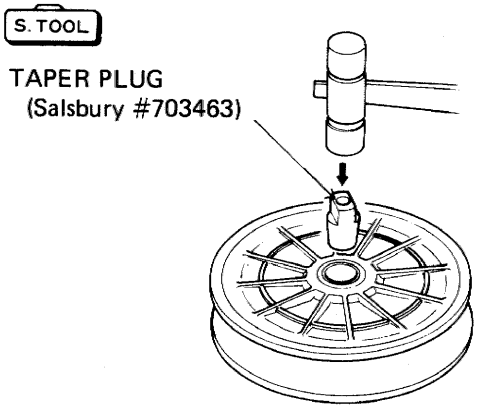


① Remove the mounting bolt, lock washer, flat washer, and safety cup.

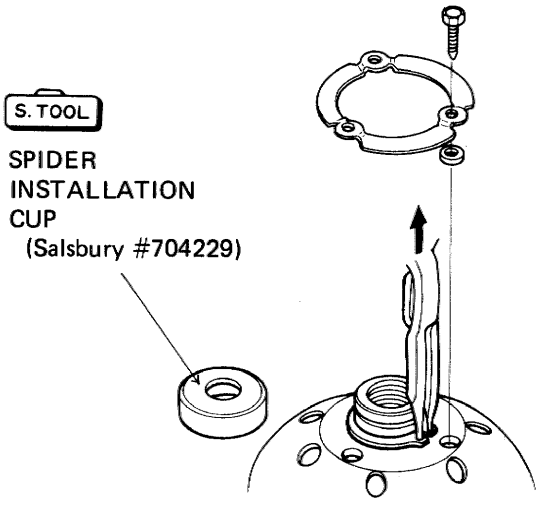


② Apply grease to threads of the clutch puller tool and insert it fully into the drive pulley bore and apply torque with 1-1/4 inch wrench, while holding the drive pulley with the special spanner. It may be necessary to inflict a slight impact on the head of the puller tool with a hammer to unseat the taper and remove the drive pulley.

Fig. 2 DRIVE PULLEY DISMOUNT



① Using a plastic mallet, insert the taper plug into the taper of the drive pulley with a slight impact and place the taper plug flats in a bench vise.

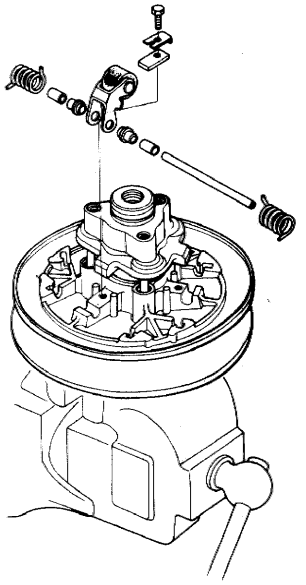


② Bend the tabs of the lock plate away from the heads of the three 1/4-20 self-tapping ramp plate mounting screws with a chisel.

③ Remove the three ramp plate mounting screws with a 3/8 inch wrench. Remove the lock plate and the three flat washers.

④ Remove the snap ring from the hub with snap ring pliers. If the snap ring is tight, place the spider installation cup over the hub and onto the snap ring and hit the ring sharply with a hammer until the snap ring loosens.

⑤ Remove the snap ring and the ramp plate.



⑥ Disengage the six roller arm return springs with a flat blade screwdriver.

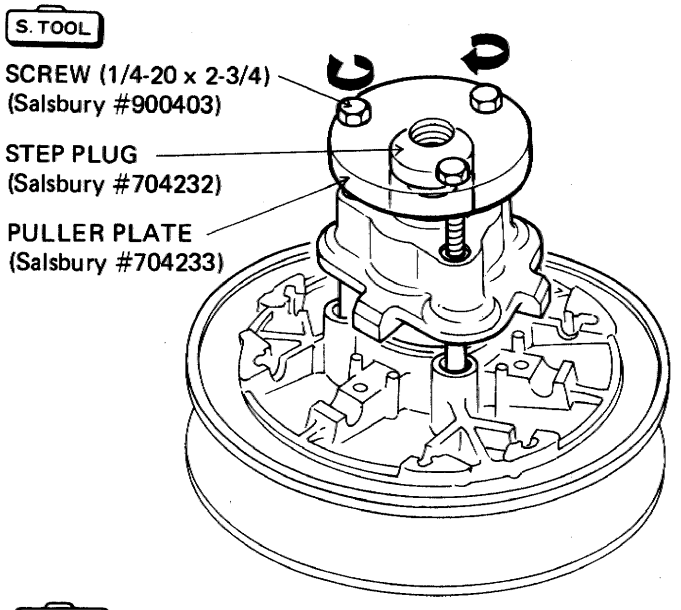
⑦ Bend the lock plate tabs away from the heads of the three 1/4-20 arm clamp mounting bolts with a chisel.

⑧ Remove the arm clamp mounting bolts with a 7/16 inch or 11 mm open end wrench.

⑨ Remove the lock tabs, the three arm pivot pin clamps and the three roller arms/springs/pins and bushing subassemblies. The drive pulley is now fully disassemblied for normal servicing.

Fig. 3 DRIVE PULLEY DISASSEMBLY

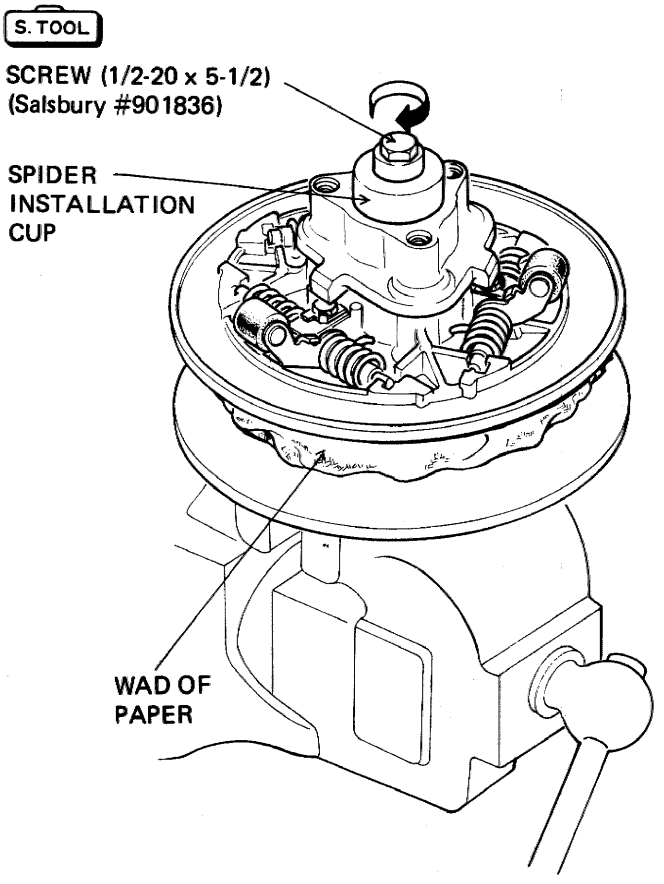
Spider removal for servicing the fixed face and hub, movable face assembly or the spider can be performed as per detailed instructions. However, it is impractical in most cases, i.e. if the movable face is worn, dictating replacement, the fixed face and hub will probably be in the same condition. It is usually less expensive to replace the entire drive pulley when the faces require replacement.



Disassembly:

① Place the stepped thrust block into the threaded end of the drive hub, place the puller assembly into position (cupped side down) and run the three (1/4-20) puller bolts fully into the threaded holes in the spider with a 7/16 inch or 11 mm open end wrench.

② Grease the puller bolts and tighten them in a clockwise direction with a 1-1/8 wrench until the spider is free from the hub.



Reassembly:

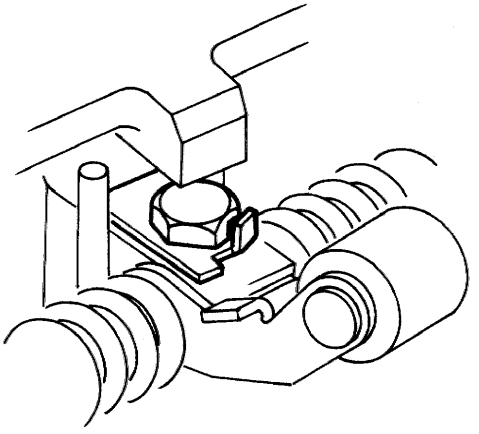
If the spider has been removed for servicing and is to be reused, replace the movable face on the hub, place the spider in position (on the hub) and place the spider installation cup over the spider, cupped side down.

Thread the 1/2-20 x 5-1/2 inch bolt through the flat washer and the cup into the threaded taper plug. Continue tightening with a 3/4 inch open end wrench until the cup bottoms out on the end of the hub. Be sure that, during this pressing operation, the spider pins are aligned with the mating bearing in the movable face. A constant alignment of pins to bearings can be achieved by raising the movable face up against the spider and placing a small wad of paper between the fixed and the movable faces.

Hydraulic Press Installation

Install the movable face on the hub, lay the spider in position and place this assembly on a flat plate under hydraulic ram. Do not use the tapered plug. Center spider installation cup over the spider and carefully apply hydraulic pressure on the cup until it bottoms out on the end of the hub, while maintaining spider pin/bearing alignment.

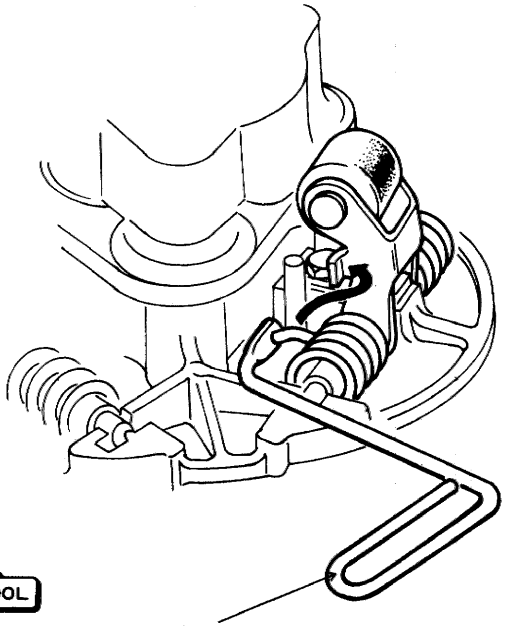
Fig. 4 SPIDER DISASSEMBLY/REASSEMBLY



① Install the tapered plug into the tapered bore of the drive pulley and place the drive pulley assembly in a vise. Install the roller arms, springs, pins and bushing subassemblies into the appropriate nests in the movable face assembly.

② Install the roller arm pivot pin clamps, lock plates and 1/4-20 bolts.

③ Tighten the 1/4-20 bolts to 110-140 Kg-cm (8-10 lb-ft) and bend the lock tabs against the bolt heads.



SPRING SEATING TOOL
(Salsbury #703446)

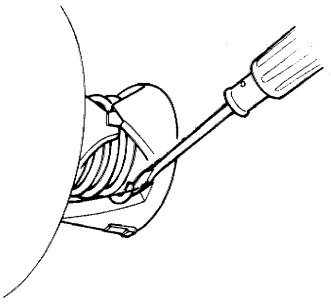
④ Engage the six roller arm return springs with the Spring Installation Tool, while the movable face is positioned against the spider. Placing a wad of paper between the fixed and the movable faces may be helpful in maintaining this position.

⑤ Install the ramp plate and the snap ring (recommended snap ring application is flattest surface up against the load side of the groove), noting that the three holes in the ramp plate are aligned with the holes in the spider.

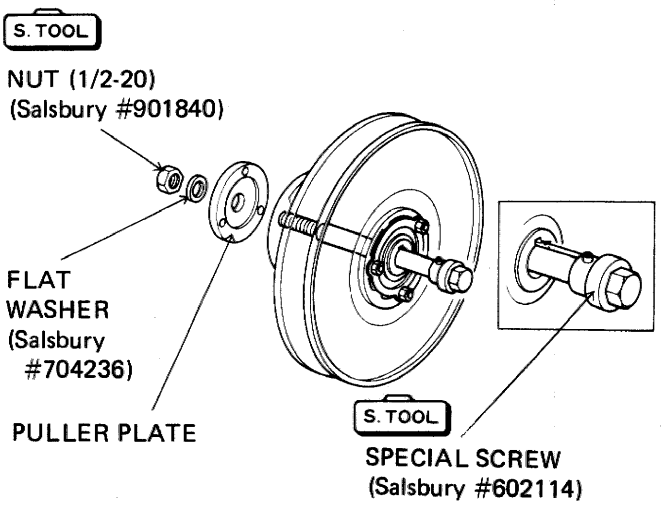
⑥ Install the flat washers, the lock plate and the three 1/4-20 self tapping bolts. Torque the bolts to 110-140 Kg-cm (8-10 lb-ft) and bend the lock tabs against the bolt heads.

⑦ Mount the drive pulley on the crankshaft. Be certain that both tapers are clean and dry.

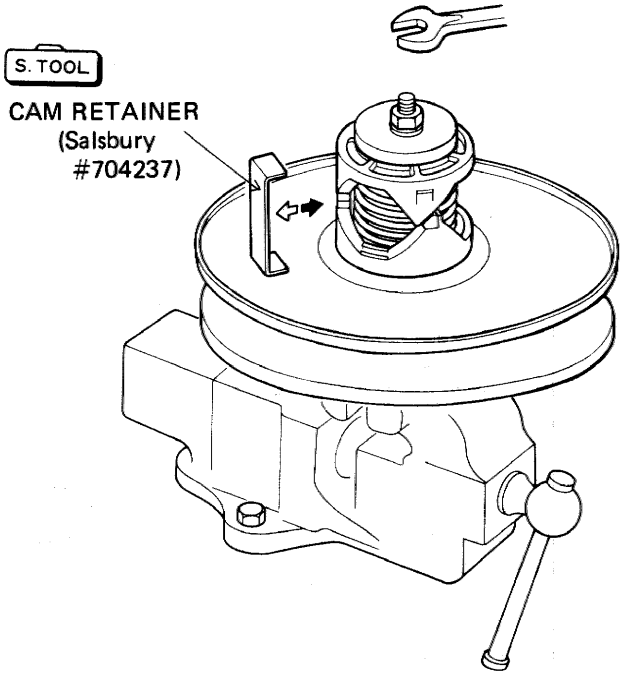
Fig. 5 DRIVE PULLEY REASSEMBLY



① Disengage the torsion/compression spring end from the boss on the underside of the cam with a flat blade screwdriver. For total spring unloading repeat the preceding to disengage the spring from the second boss.



② Place the head of the special screw (1/2-20) in a bench vise. Place the driven pulley on the special screw. Place the puller plate, flat washer and 1/2-20 nut on the special screw over the driven pulley.



③ Tighten 1/2-20 nut until the puller plate bottoms out on the end of the driven pulley hub. Install the cam retainer on the ends of the movable face casting and the cam.

④ Remove the 1/2-20 nut, flat washer and puller plate.

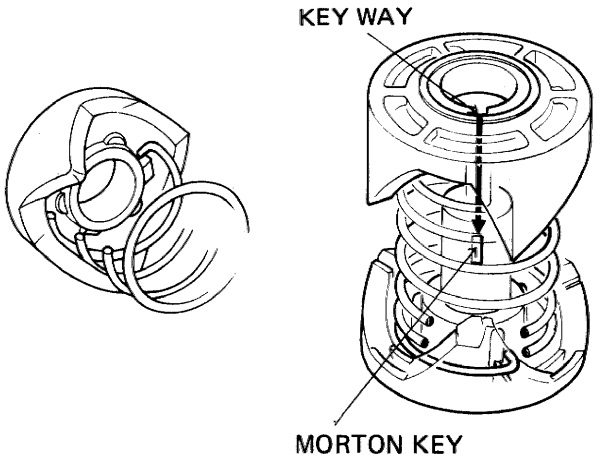
⑤ Remove the snap ring. Check for burrs at the snap ring groove. If present, carefully remove them with a flat file.

⑥ Replace the puller plate, flat washer and 1/2-20 nut (finger tight).

⑦ Remove the cam retainer. Loosen the 1/2-20 nut slowly until the cam is free of the hub. If the cam does not free itself, refer to paragraph ⑤.

⑧ Remove the Morton Key with diagonal pliers. Now all parts are loose and the movable face can be removed.

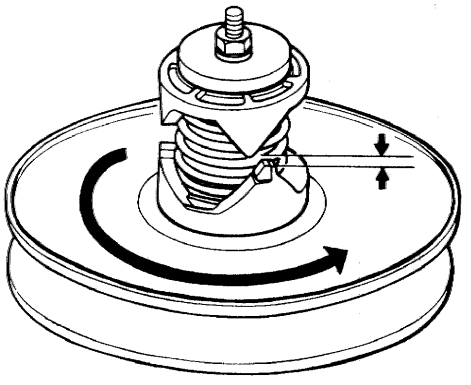
Fig. 6 DRIVEN PULLEY DISASSEMBLY/REASSEMBLY



① Place the movable face over the fixed face hub. Install the Morton Key.

② Place the head of the special 1/2-20 bolt in a bench vise. Place the fixed and the movable face assembly on the screw (fixed face down).

③ Hook the spring end over any one of the round bosses on the internal side of the cam. While holding the cam and spring, attach the other end of the spring to any one of the three spring anchor points in the movable face. Rotate the fixed face and hub until the key and the keyway are aligned.
Place the puller plate, flat washer and 1/2-20 nut over the cam and depress the cam on the hub until it engages with the key, thus allowing the movable face to rotate without cam contact.



④ Rotate the movable face counterclockwise to achieve a full 180° spring preload and hold it in this position.

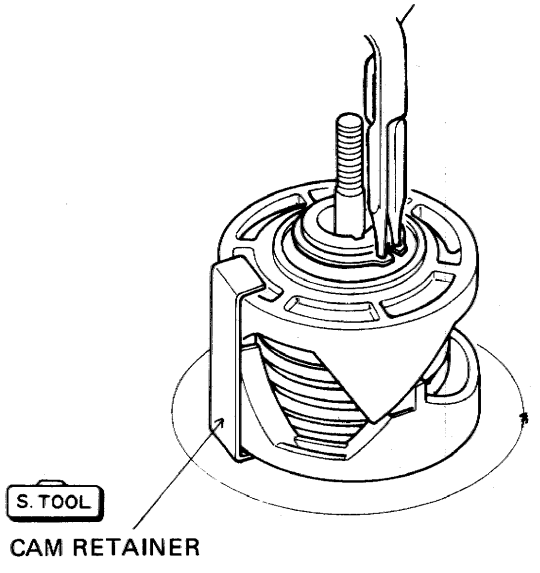
⑤ Continue depressing the cam until the puller plate has bottomed out on the end of the hub. Securely apply the cam retainer over the ends of the movable face casting and the cam.

⑥ Remove the 1/2-20 nut, flat washer and puller plate.

⑦ Install the snap ring (flattest surface up against the load side of the groove).

⑧ Remove the cam retainer. Be certain that the cam is against the snap ring.

⑨ When remounting, no special procedure is required. Do not forget the key.



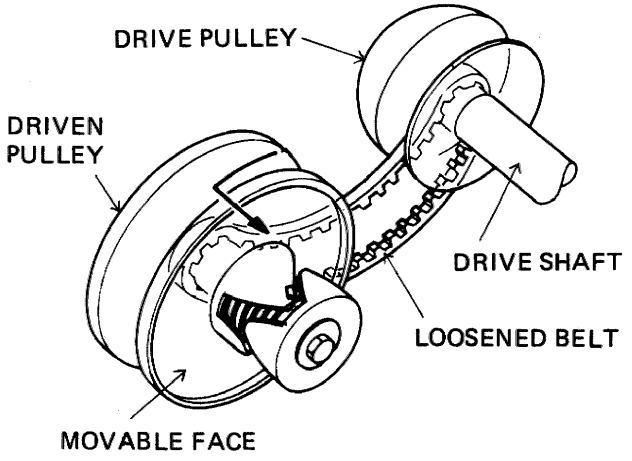
NOTE Keep the pulleys clean.
Never apply grease or oil.

NOTE When using the clutch puller tool or special screw (#602114), grease should be applied to the threads for ease of use and to extend their service life.

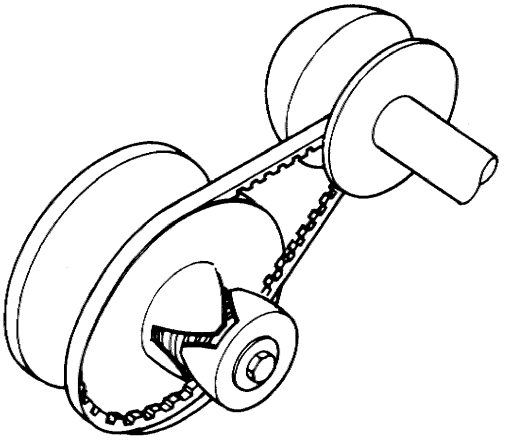
Fig. 7 DRIVEN PULLEY DISASSEMBLY/REASSEMBLY

WARNING

Before removing, set parking brake.



① Turn the movable face 90° counterclockwise, pull it toward you to loosen the drive belt and push the loosened belt down toward the hub center.



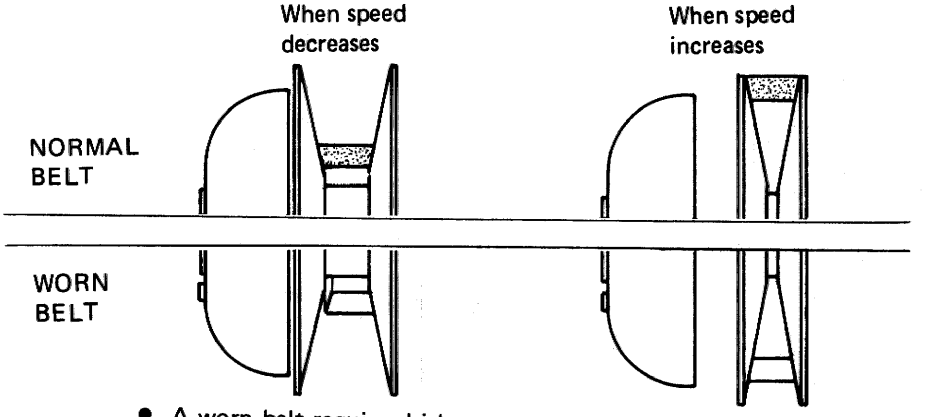
② While holding the movable face on described in step ①, take off the loosened belt from lower side with your other hand.

③ After removing the belt at the driven pulley side, remove the belt completely from the drive pulley.

④ When reassembling, after installing on the drive pulley, install the belt on the driven pulley from the upper side.

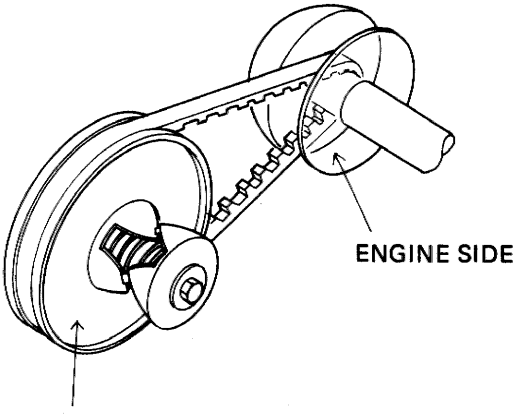
CAUTION

Replace the drive belt if it is excessively worn as shown below.



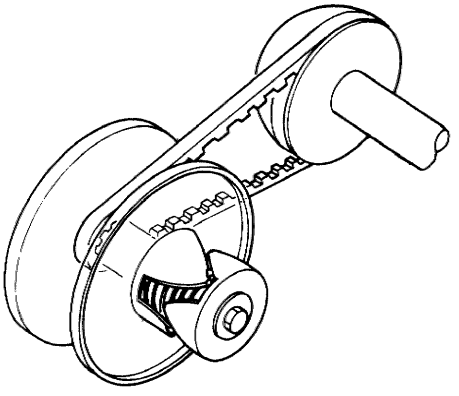
- A worn belt requires higher engine speed for engagement and reduces the vehicle speed.
- A worn belt will not move to the largest section of the drive pulley.

Fig. 8 Drive Belt Removal & Replacement



- At low speeds, the V-belt position of the drive pulley maintains a smaller diameter which with a corresponding larger diameter on the driven pulley, creates a "low gear" ratio.

- As speed increases, centrifugally actuated roller weights follow the contour of a bowl-shaped plate, closing the drive pulley sheaves and creating a "high gear" ratio (note the position of the cam actuator).



- If the load is increased (such as climbing a hill) after the vehicle is up to speed, the cam actuator on the driven pulley takes over and automatically "downshifts" without loss of engine speed.
  Then, the engine remains at power range for all but the most severe loads, at which time it will shift into peak torque range.

Fig. 9 How Salsbury Belt Converters Work

A. Steering

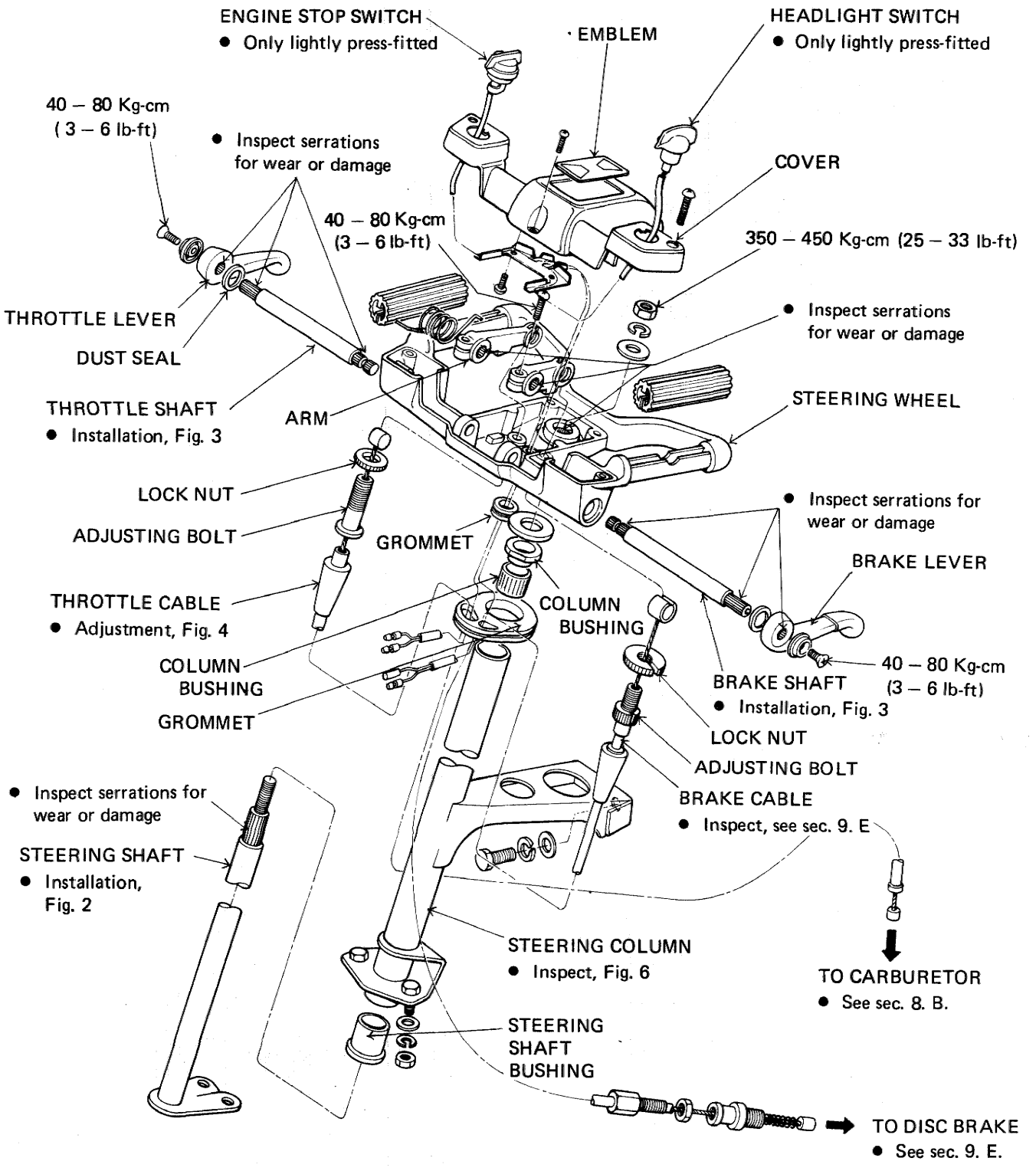
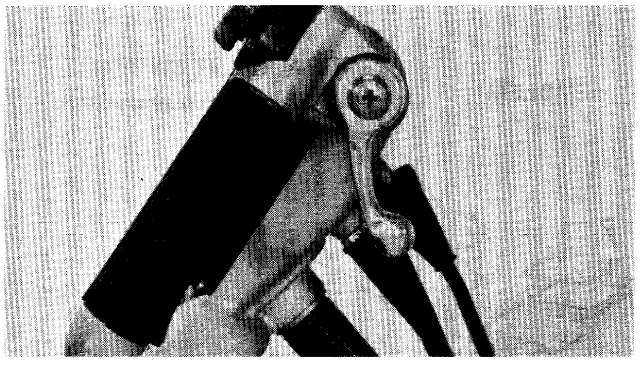


Fig. 1 Steering Wheel and Column Disassembly/Reassembly

- Adjustment, Fig. 4



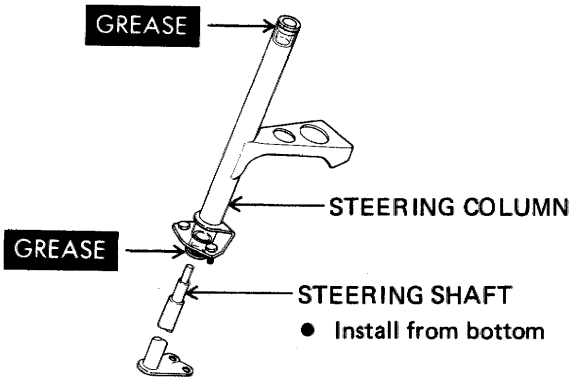


Fig. 2 Steering Shaft Installation

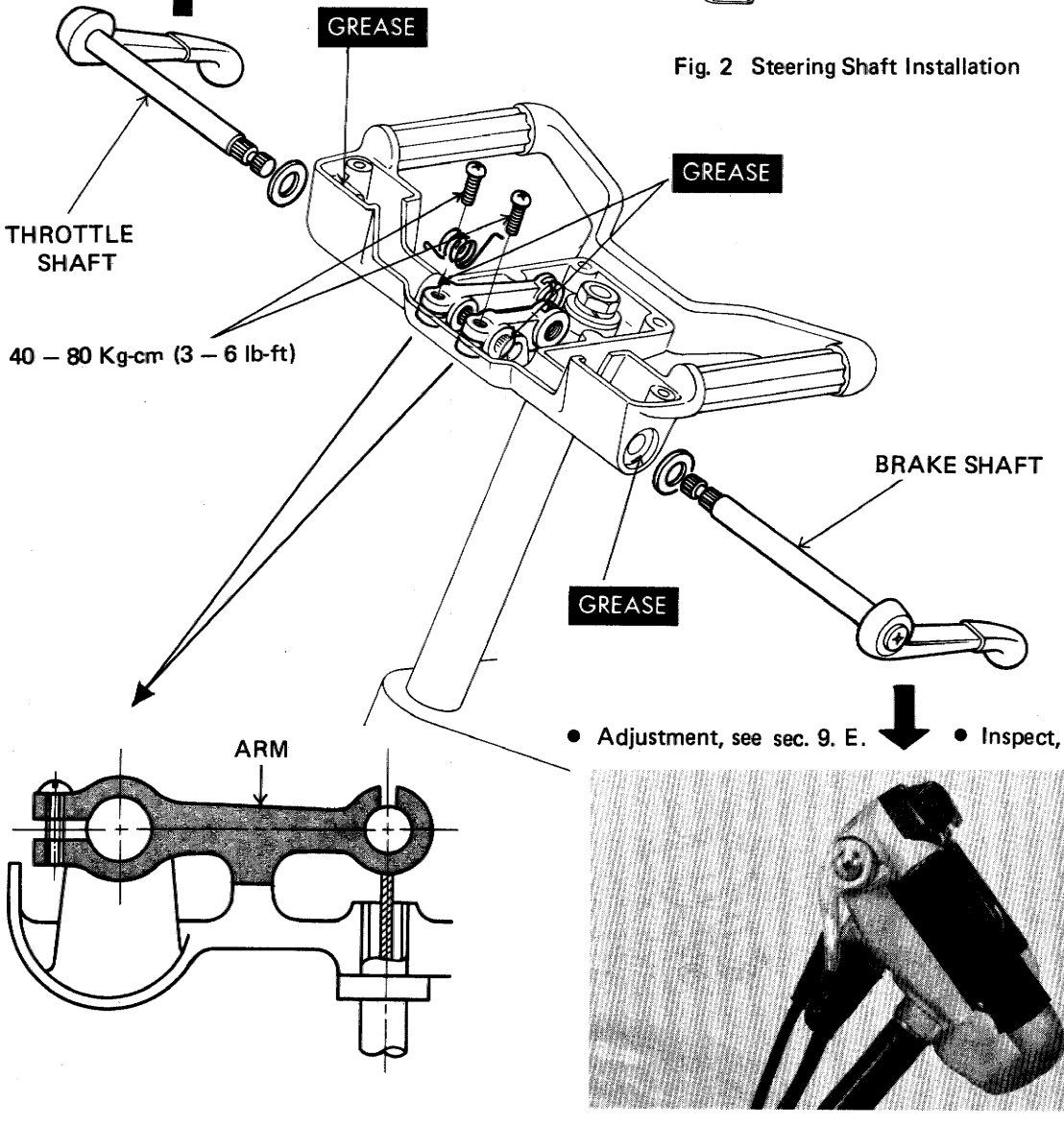
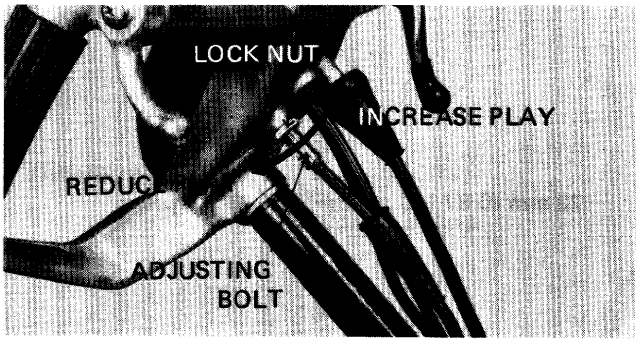
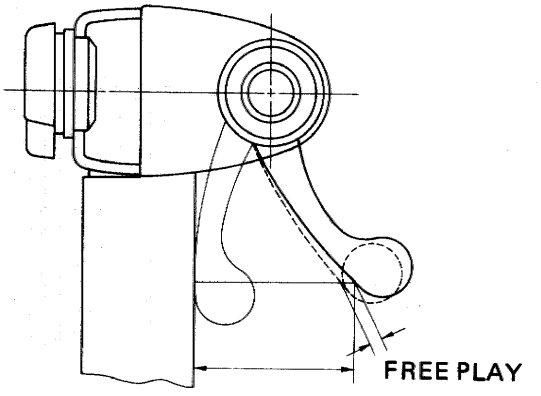


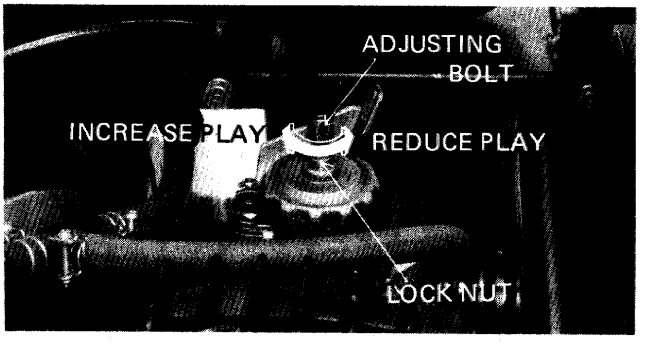
Fig. 3 Lever and Shaft Installation



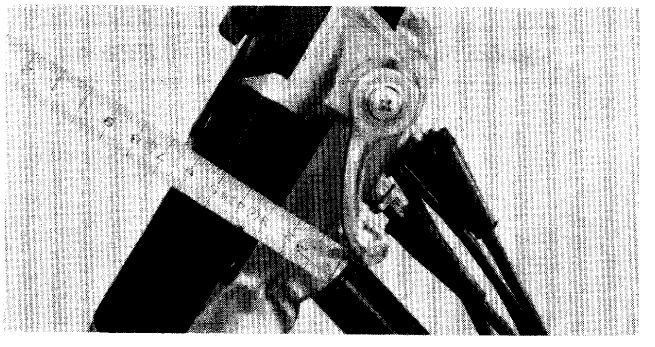
LEVER SIDE



FULL TRAVEL



CARBURETOR SIDE



Lever Free Play

- Adjust the lever with the adjusting bolt.

Service limit : 2 – 10 mm (0.08 – 0.39 in.)

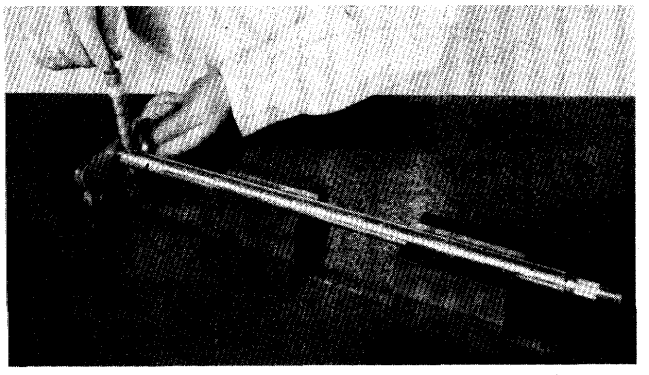
Lever Full Travel

① Measure full travel as shown above.

② To adjust, remove lever and adjust position as required. Then install the lever. See Fig. 3.

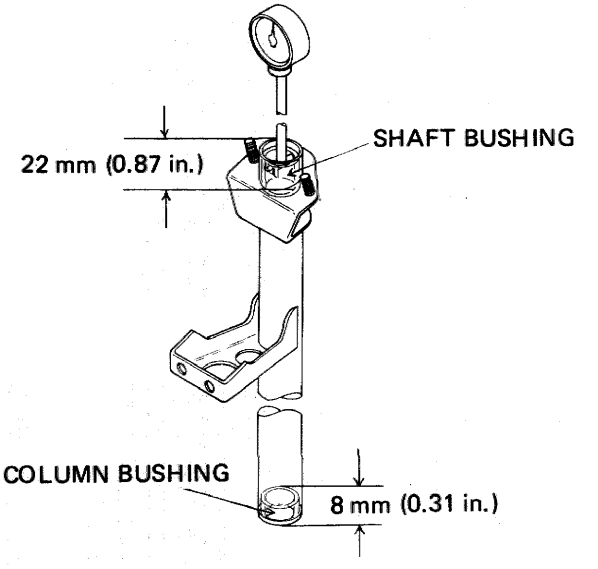
Service limit 31 – 41 mm (1.22 – 1.61 in.)

Fig. 4 Throttle Lever Adjustment



Service limit :	17.7 mm (0.6968 in.)

Fig. 5 Steering Shaft O.D.



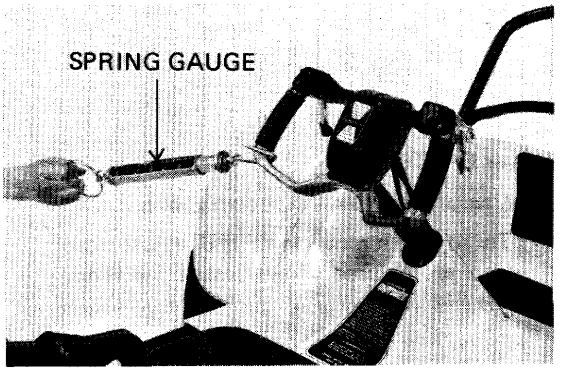
STEERING COLUMN BUSHING

Service limit :	18.5 mm (0.7283 in.)

STEERING SHAFT BUSHING

Service limit :	18.2 mm (0.7165 in.)

Fig. 6 Steering Column I.D.



① Raise the front wheels off the ground.

② Turn the steering wheel with a spring gauge and note the reading.

③ If the reading exceeds the service limit, inspect the steering shaft and the front hub.

Service limit :	0.5 – 1.1 Kg (1.10 – 24.26 lb)

Fig. 7 Steering Wheel Force Check

B. Front Suspension

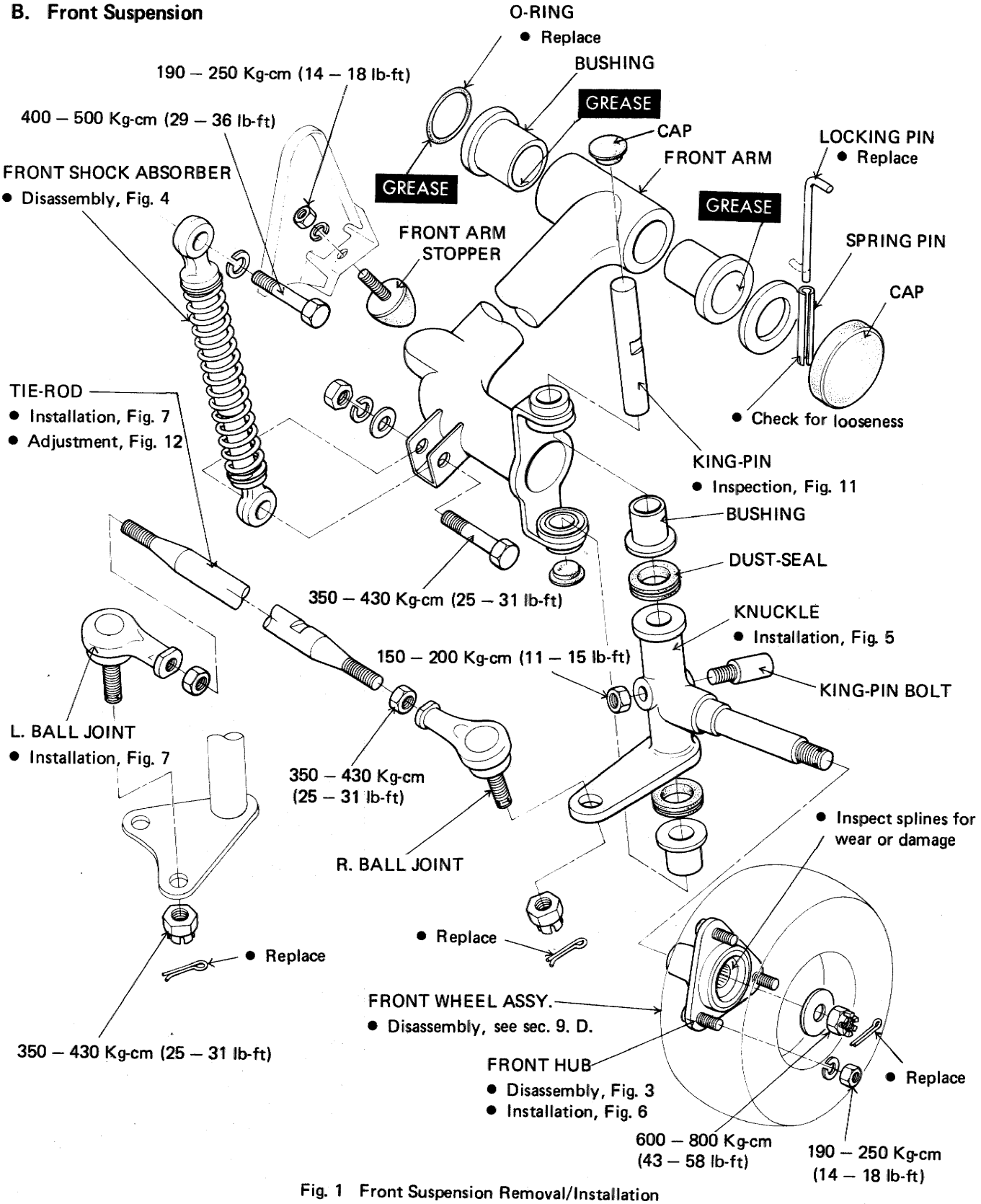


Fig. 1 Front Suspension Removal/Installation

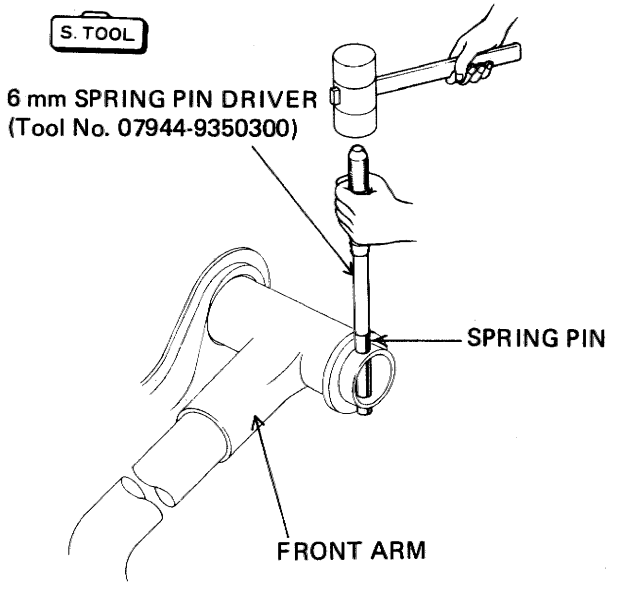


Fig. 2 Spring Pin Removal

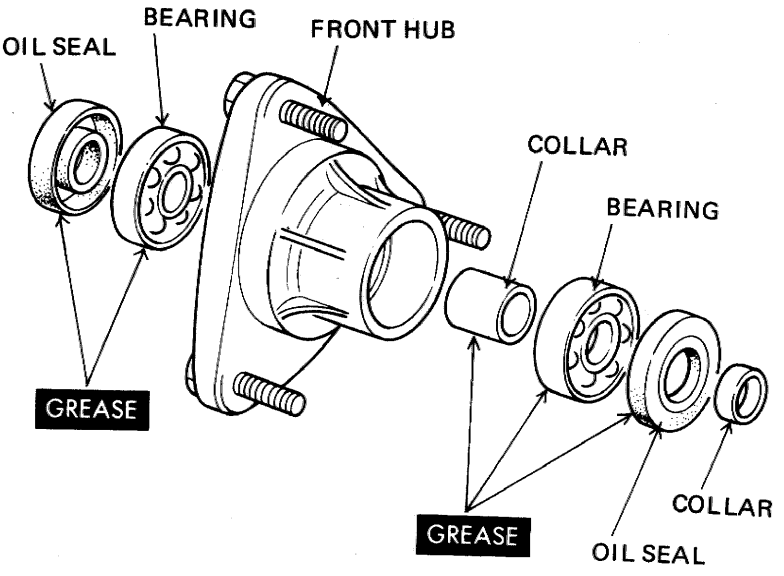
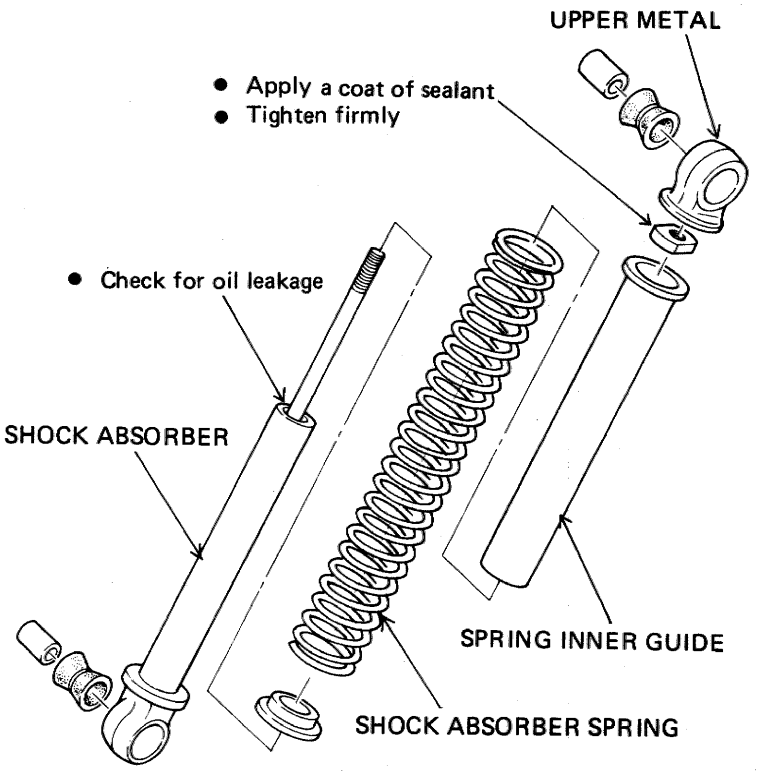


Fig. 3 Front Hub Disassembly



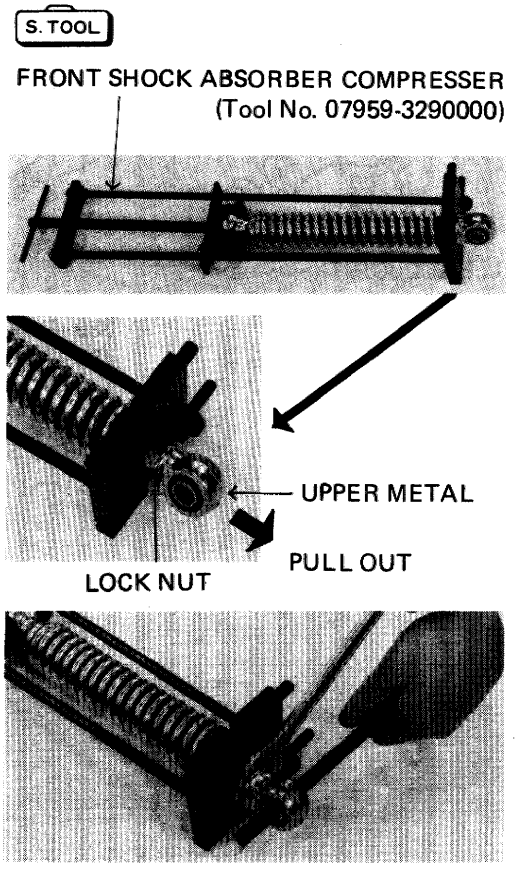


Fig. 4 Front Shock Absorber Disassembly

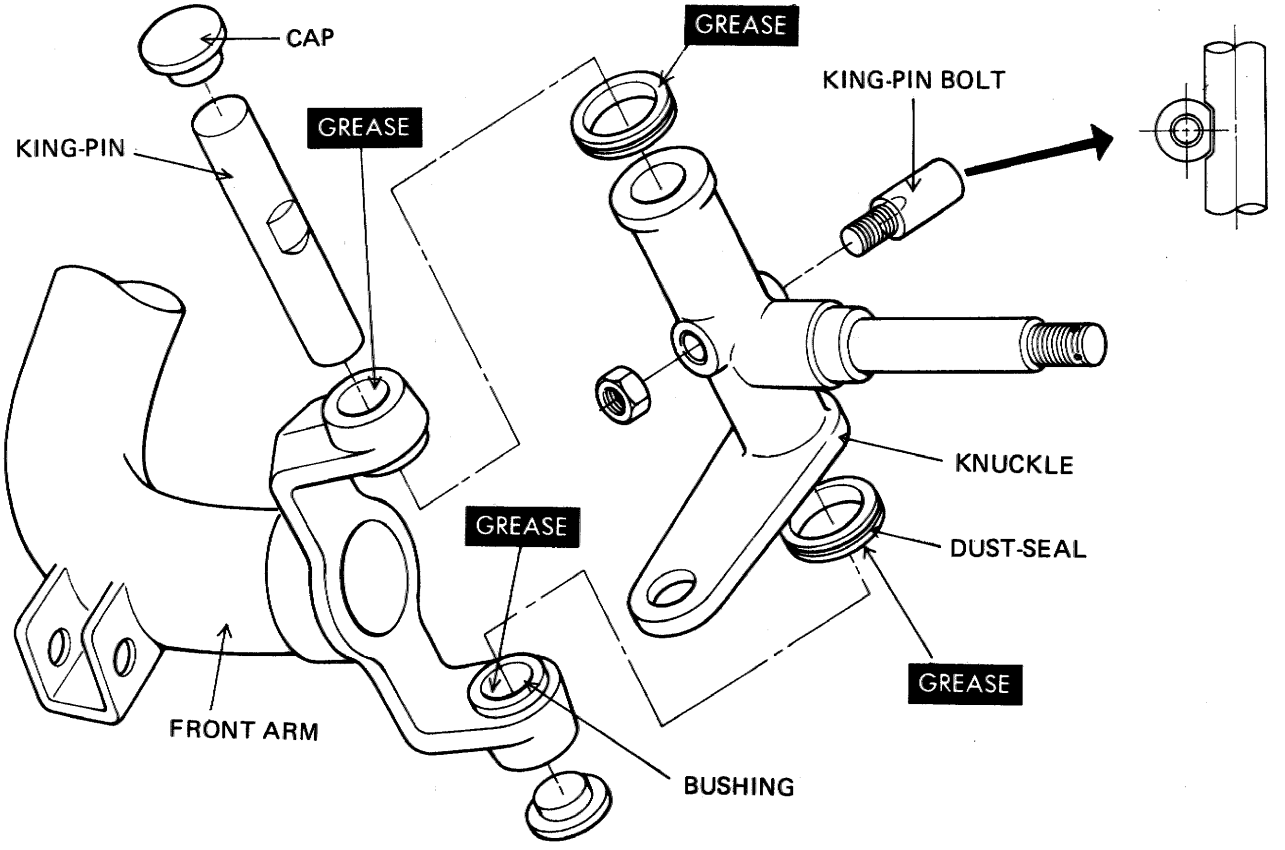


Fig. 5 Knuckle Installation

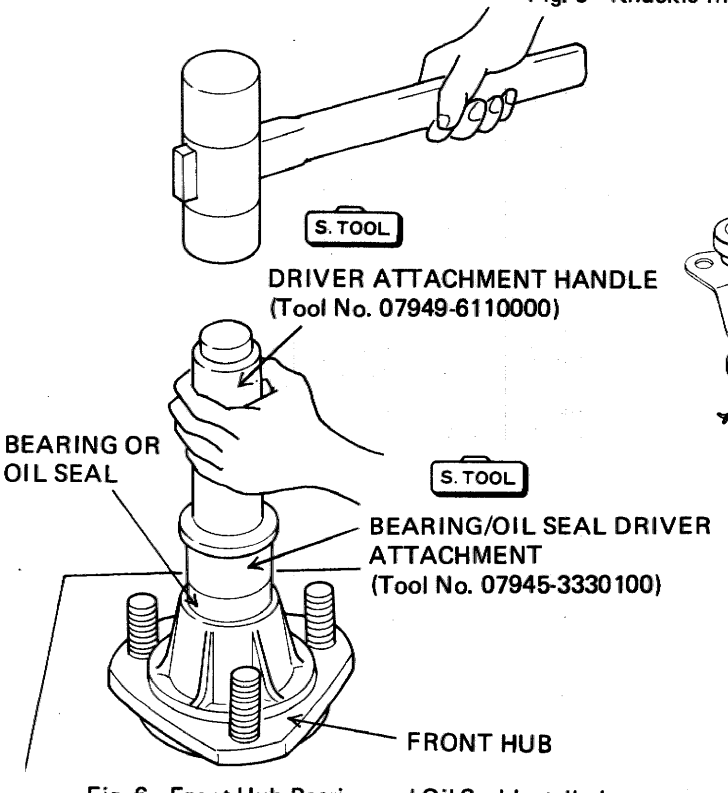
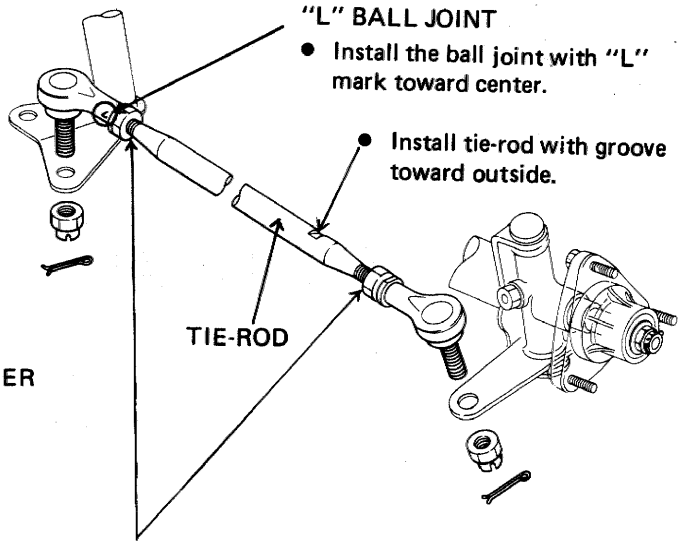
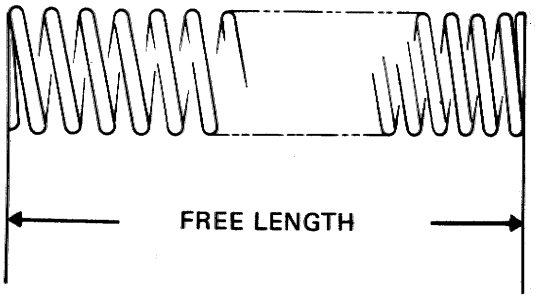


Fig. 6 Front Hub Bearing and Oil Seal Installation



• After tightening the lock nuts, make sure that the ball joints can be operated properly by rotating the tie rod.

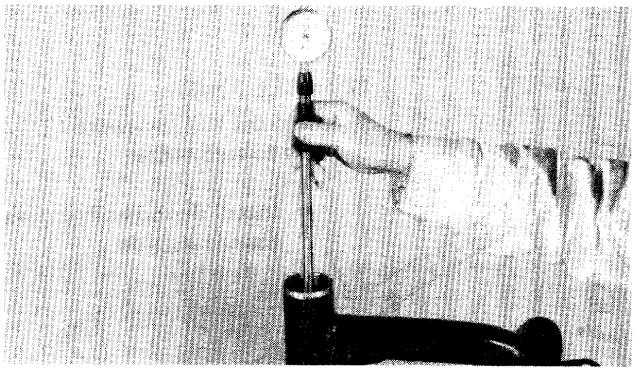
Fig. 7 Tie-Rod Installation



FREE LENGTH

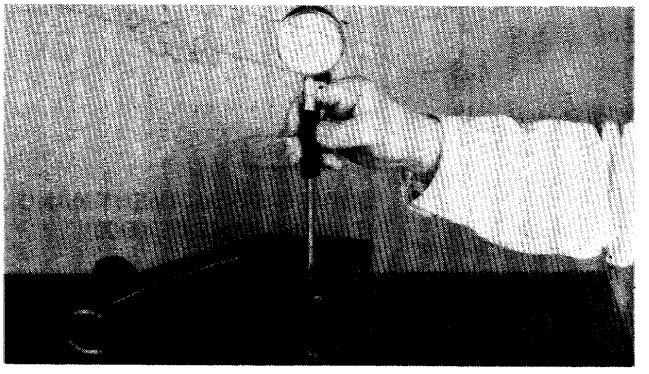
Standard	:	229.4 mm (9.03 in.)
Service limit	:	205 mm (8.07 in.)

Fig. 8 Shock Absorber Spring Free Length



PIVOT PIPE

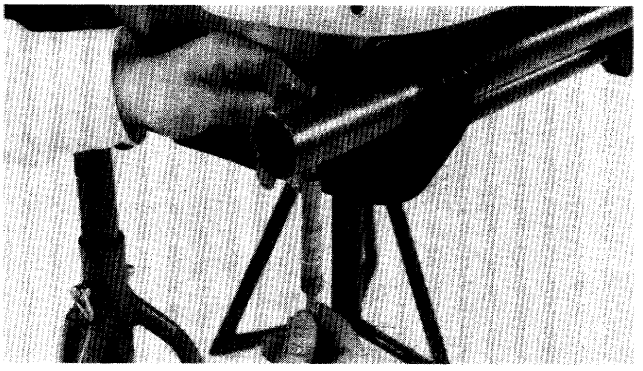
Standard	:	42.58 – 42.62 mm (1.6764 – 1.6780 in.)
Service limit	:	42.8 mm (1.6850 in.)

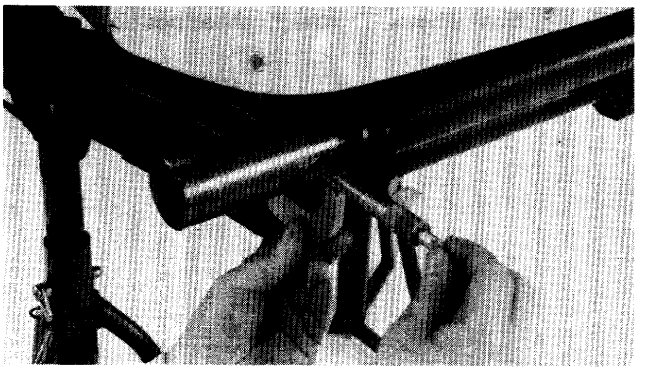


KING-PIN

Standard	:	14.03 – 14.06 mm (0.5524 – 0.5535 in.)
Service limit	:	14.15 mm (0.5570 in.)

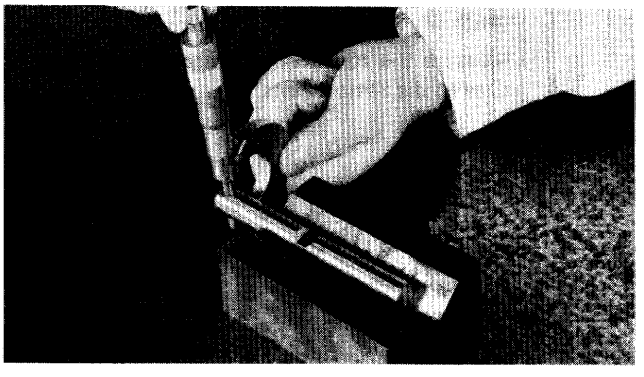
Fig. 9 Front Arm I.D.





Standard	:	42.47 – 42.50 mm (1.6721 – 1.6732 in.)
Service limit	:	42.3 mm (1.6653 in.)

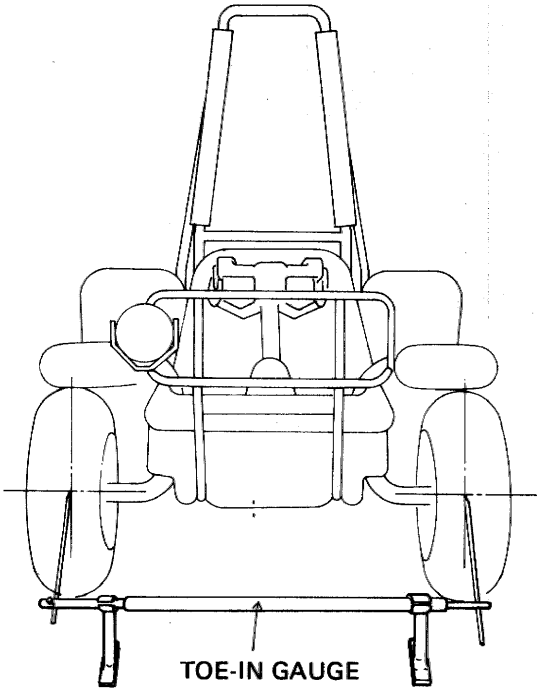
Fig. 10 Pivot Pipe O.D.



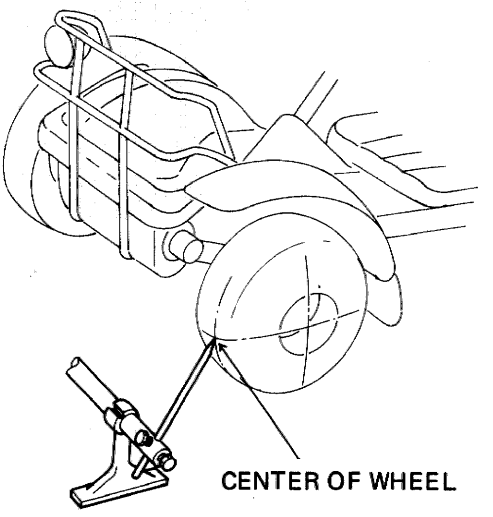
Standard	:	13.97 – 13.98 mm (0.5500 – 0.5504 in.)
Service limit	:	13.9 mm (0.5472 in.)

Fig. 11 King-Pin O.D.

① Place the vehicle on level ground with the front wheels in a straight ahead position.

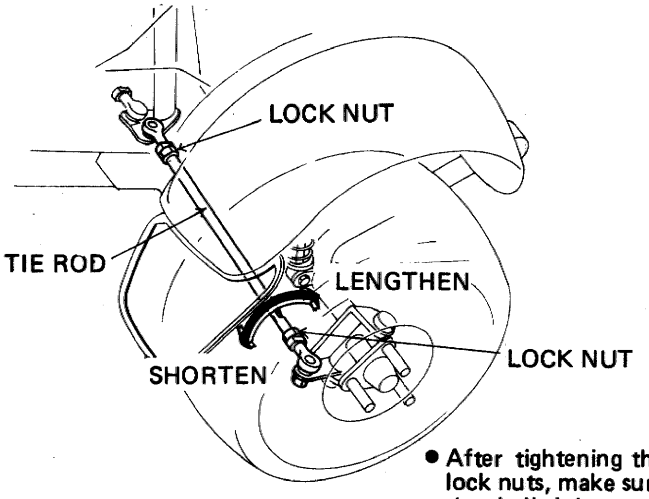


② Mark the centers of the tires with chalk to indicate the center height of an axle.



③ Align the toe-in gauge with the marks on the tires as shown.

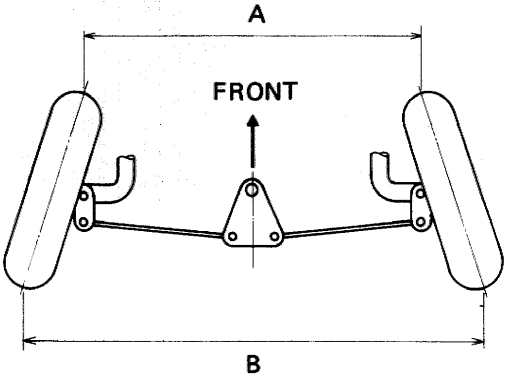
④ Check the readings on the scales of the gauges.



● After tightening the lock nuts, make sure the ball joints can be operated properly by rotating the tie rod.

⑤ Slowly move the vehicle back and rotate the wheels 180° until the marks on the tires are aligned with the height of the gauge on the rear side.

⑥ Measure the toe-in on the rear part of the tires at the same points.



Toe-in : B-A

TOE-IN

Service limit	: 0 – 13 mm (0 – 0.51 in.)

⑦ When the toe-in does not meet the specification, adjust it by changing each length of the tie rods equally while measuring the toe-in.

Fig. 12 Toe-in Adjustment

C. Rear Wheel Axle

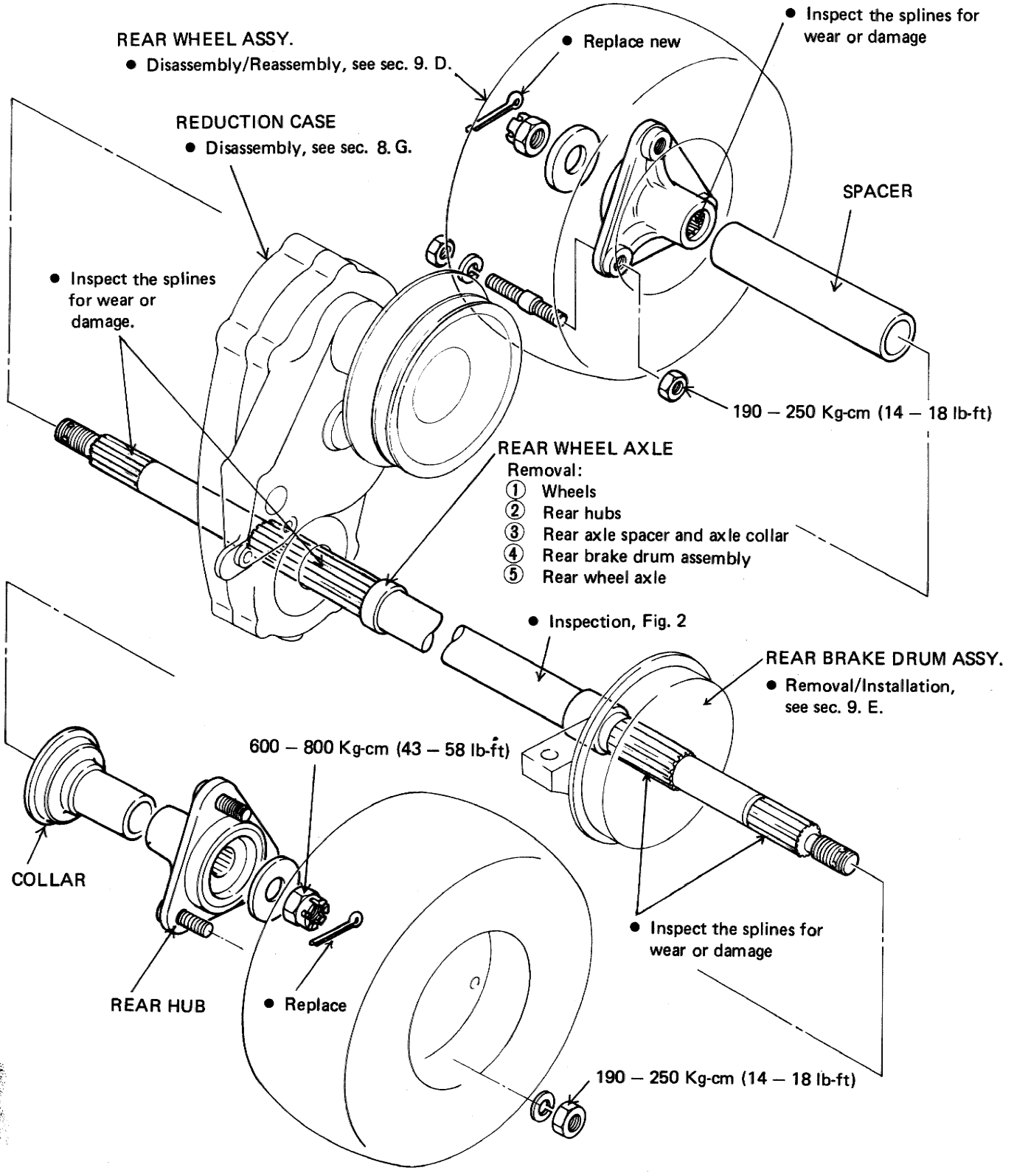
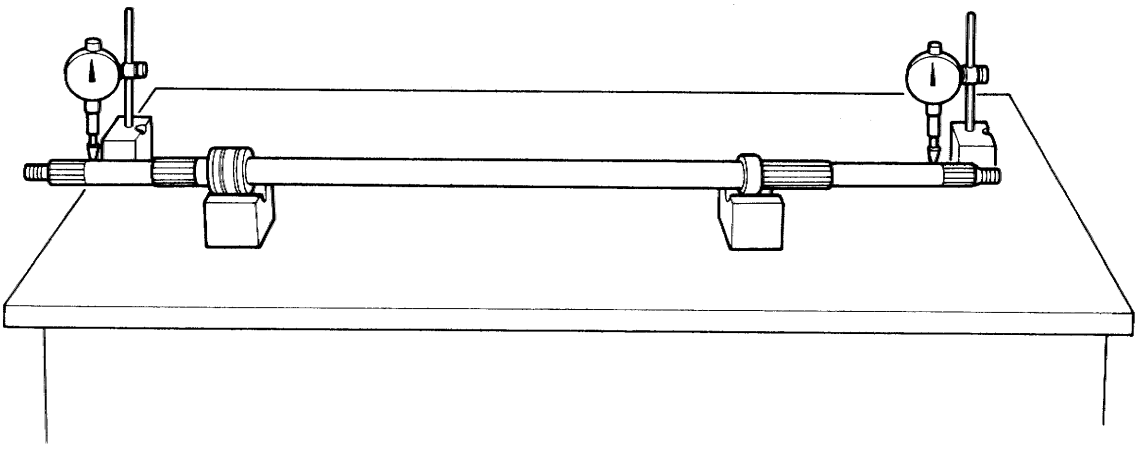


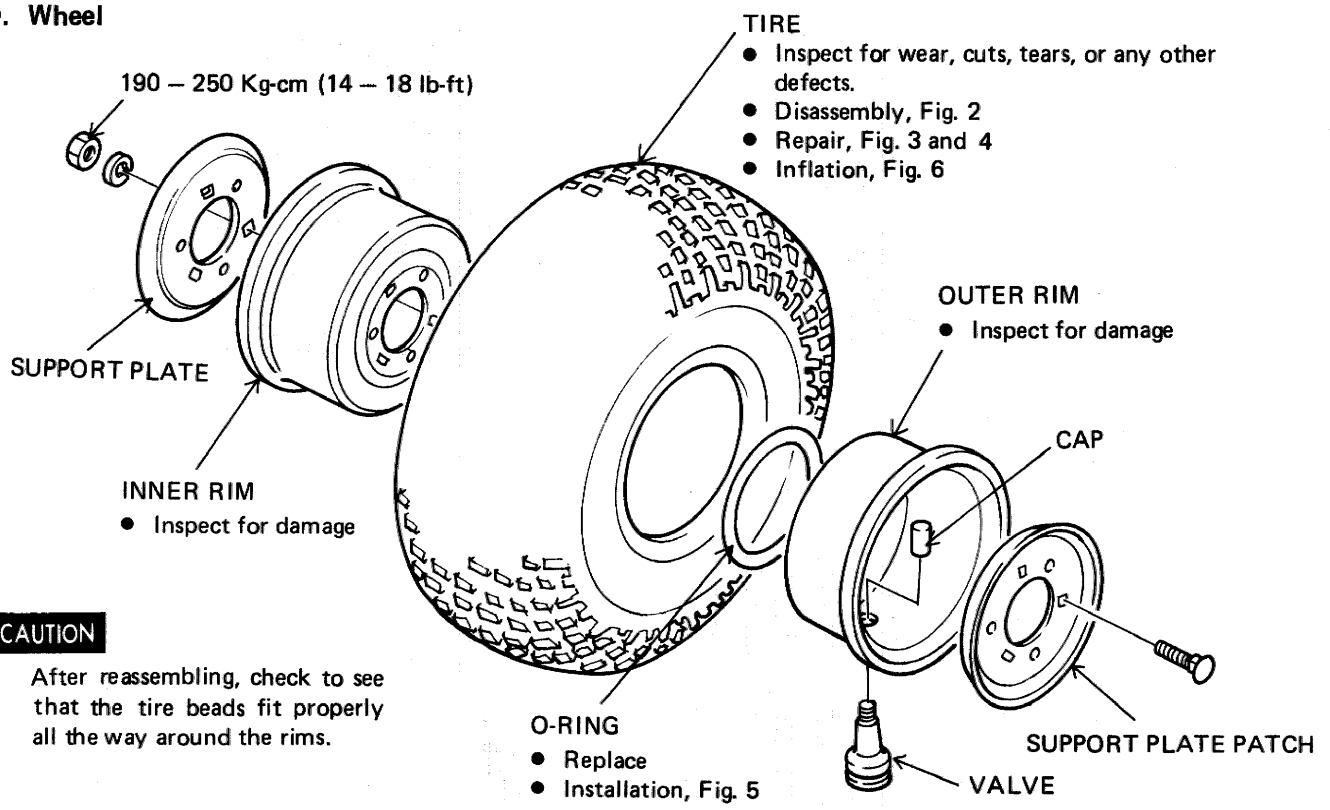
Fig. 1 Rear Wheel Axle Removal/Installation



Service limit :	3.0 mm	(0.1181 in.)

Fig. 2 Rear Wheel Axle Bend

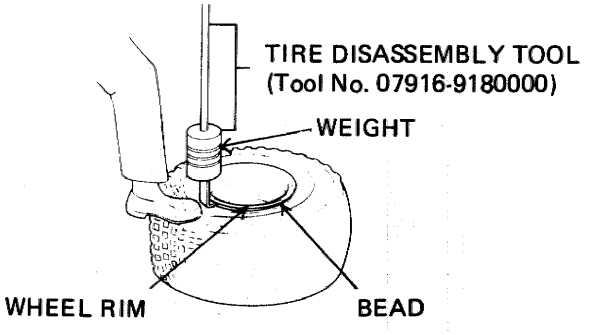
D. Wheel



CAUTION

After reassembling, check to see that the tire beads fit properly all the way around the rims.

Fig. 1 Wheel Disassembly/Reassembly



NOTE

If it is hard to remove the bead or if rust has formed on the bead, apply a coat of lubricant to the periphery of the rim before removing the tire. When reassembling, wipe off oil from the tire and the rim using a cloth.

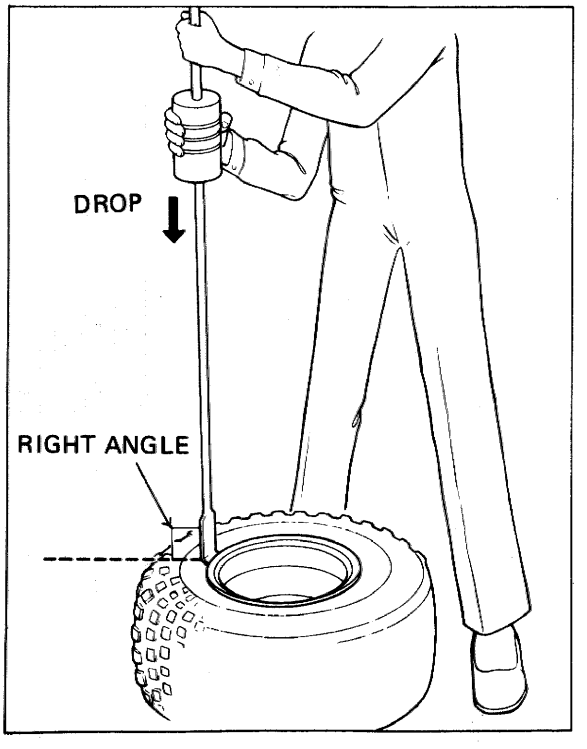
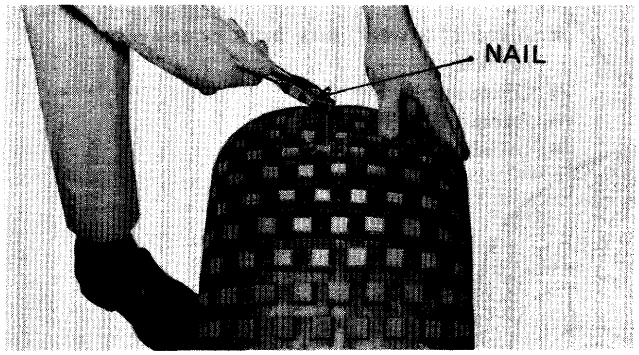
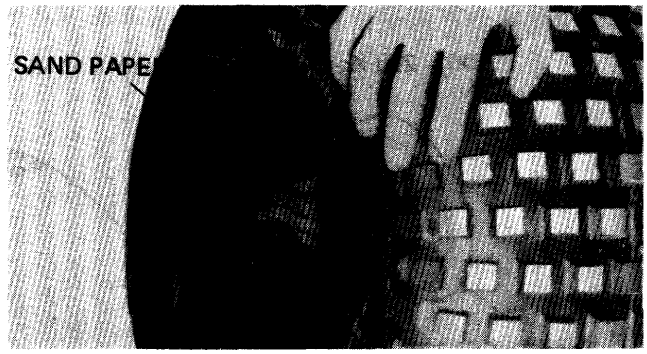


Fig. 2 Tire Disassembly



① Check tire tread for nails or other puncturing objects; chalk mark punctured area. Remove nails or puncturing objects.



② Remove dirt and roughen punctured area with sandpaper or wire brush. Clean area with gasoline.

③ Apply rubber cement around torn area and allow it to dry. Remove the lining from the patch and center it over the puncture. Press the patch against the puncture using a special roller.

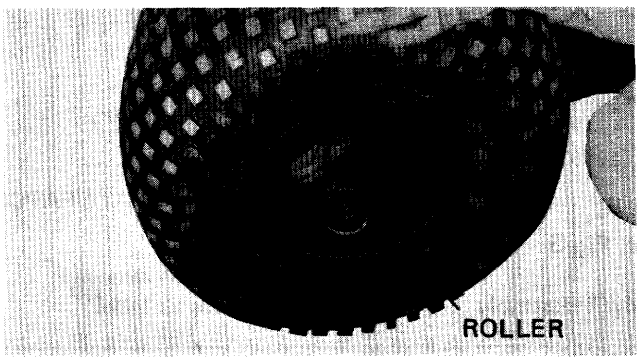
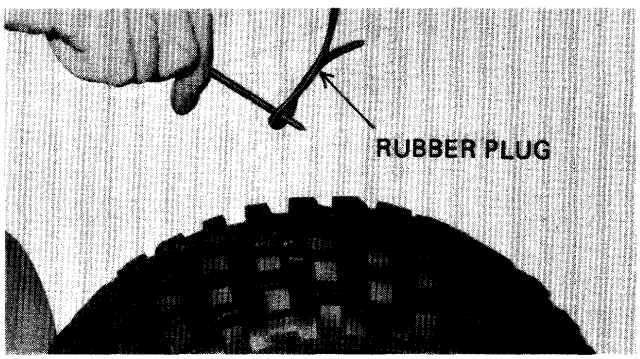
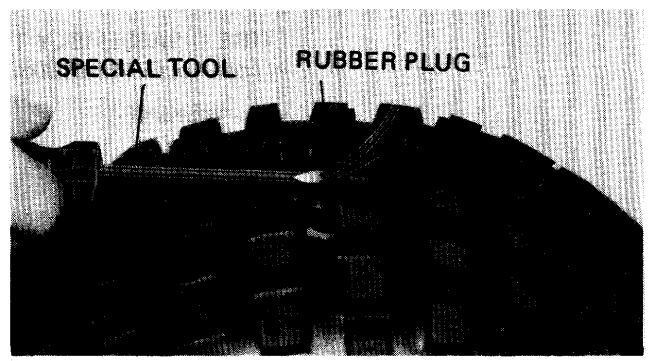


Fig. 3 Cold-Patch Repair



① Remove nails or other puncturing objects.
② Insert a rubber plug through the eye in the inserting needle.
③ Center the needle on the plug and insert until the plug is all the way in the tire; twist the needle several times.

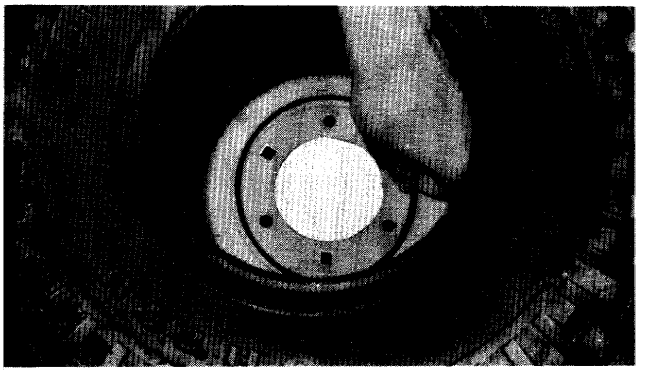


④ Pull the needle straight out so that the plug is about 10 mm (0.394 in.) above tread surface. Trim the plug 2 mm (0.079 in.) above the surface. Repeat the above procedure if the puncture is large.

NOTE

This method is for emergency purposes only. After driving repair injury with cold patch.

Fig. 4 Rubber-Plug Repair

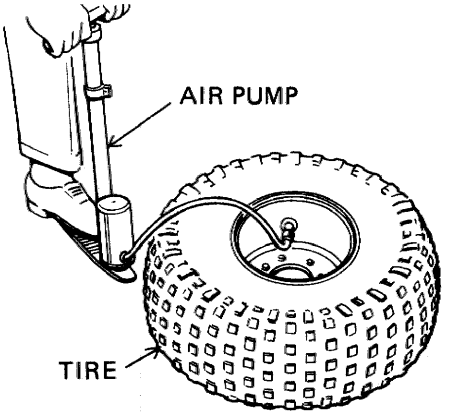


① Position the tire on the rim half which has the valve.

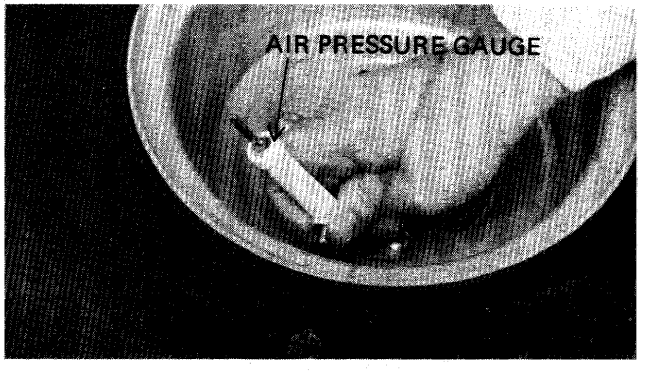
② Press the O-ring into place in the groove in the rim.

③ Install the other rim half. Be sure to align the rim bolt holes.

Fig. 5 O-Ring Installation

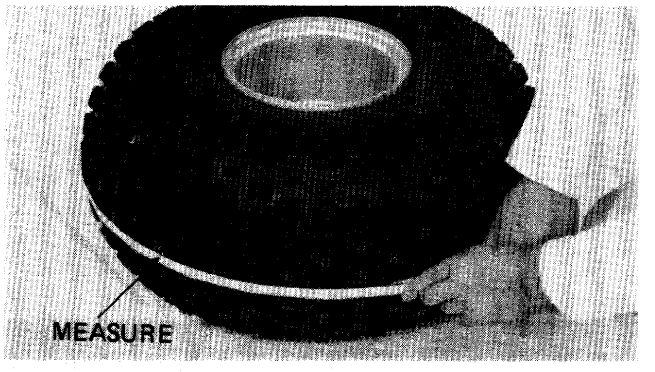


FRONT TIRE



Recommended Pressure
0.35 kg/cm² (5.0 Psi)
Max. Pressure
0.5 kg/cm² (7.0 Psi)
Min. Pressure
0.3 kg/cm² (4.5 Psi)
Standard Tire Circumference
1.57 m (61.8 in.)

REAR TIRE



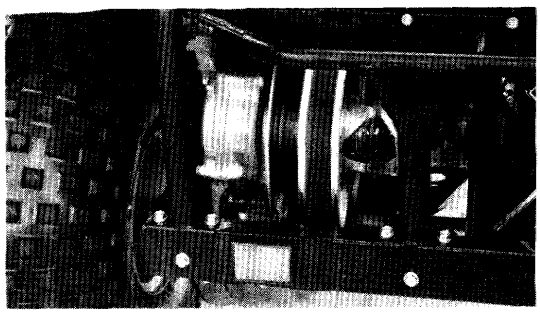
Recommended Pressure
0.21 kg/cm² (3.0 Psi)
Standard Tire Circumference
1.84 m (72.5 in.)
Max. Circumference
2.00 m (78.7 in.)
Min. Circumference
1.80 m (71.0 in.)

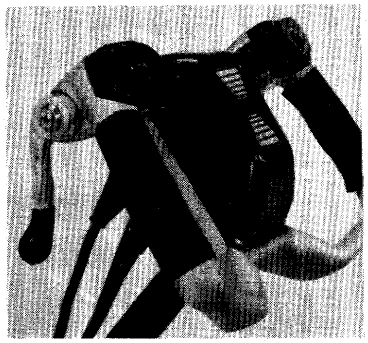
Fig. 6 Tire Inflation

E. Brake

DISC BRAKE

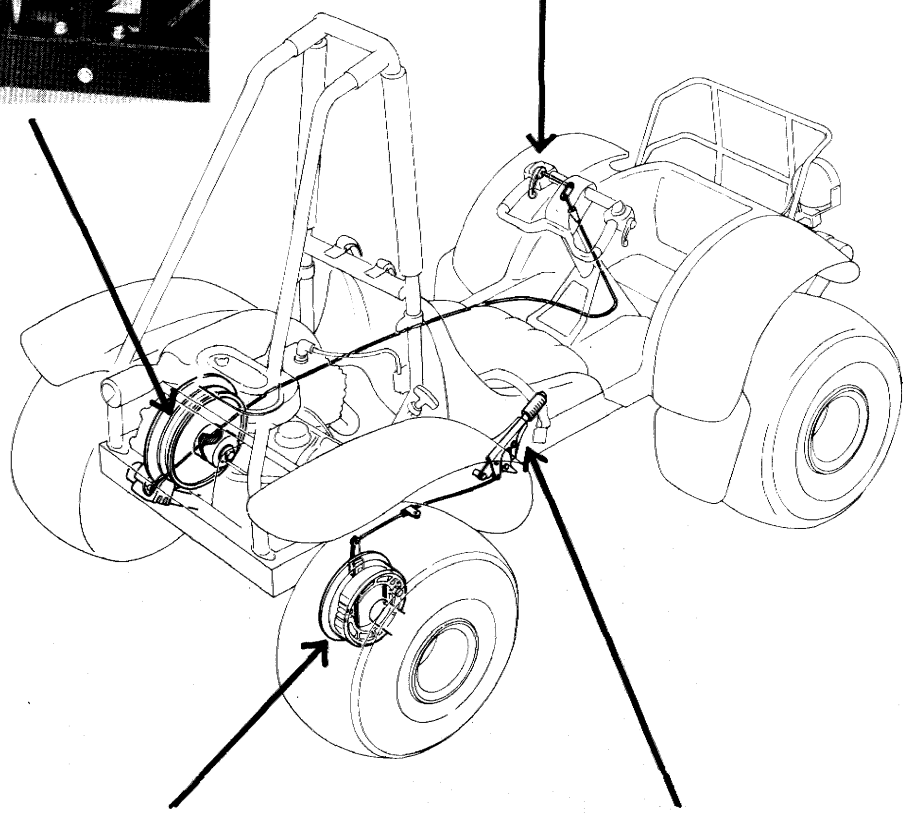
- Removal/Installation, Fig. 1 and 4.
- Inspection, Fig. 7.
- Adjustment, Fig. 6.

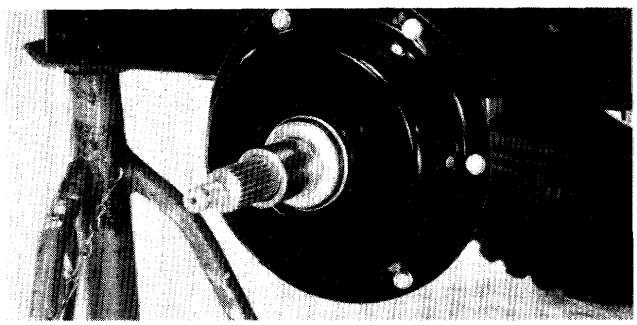




BRAKE LEVER

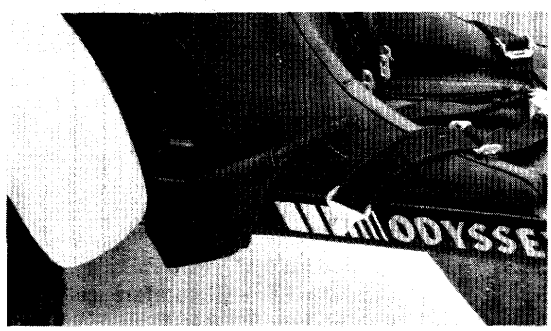
- Inspection, Fig. 9.
- Adjustment, Fig. 11.





BRAKE DRUM

- Removal/Installation, Fig. 3.
- Inspection, Fig. 8.
- Installation, Fig. 5.



PARKING BRAKE

- Removal/Installation, Fig. 2.
- Inspection/Adjustment, Fig. 10

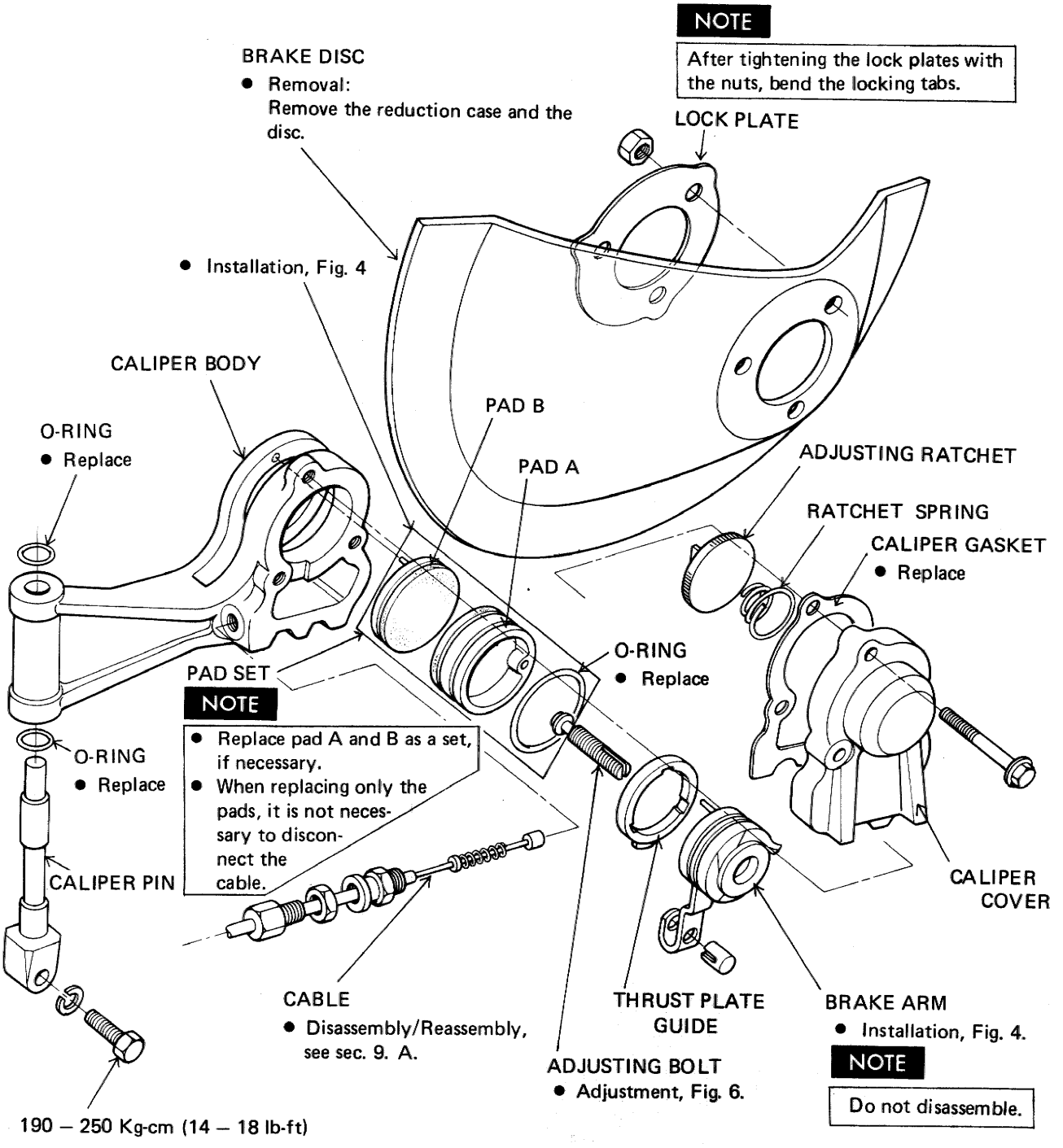
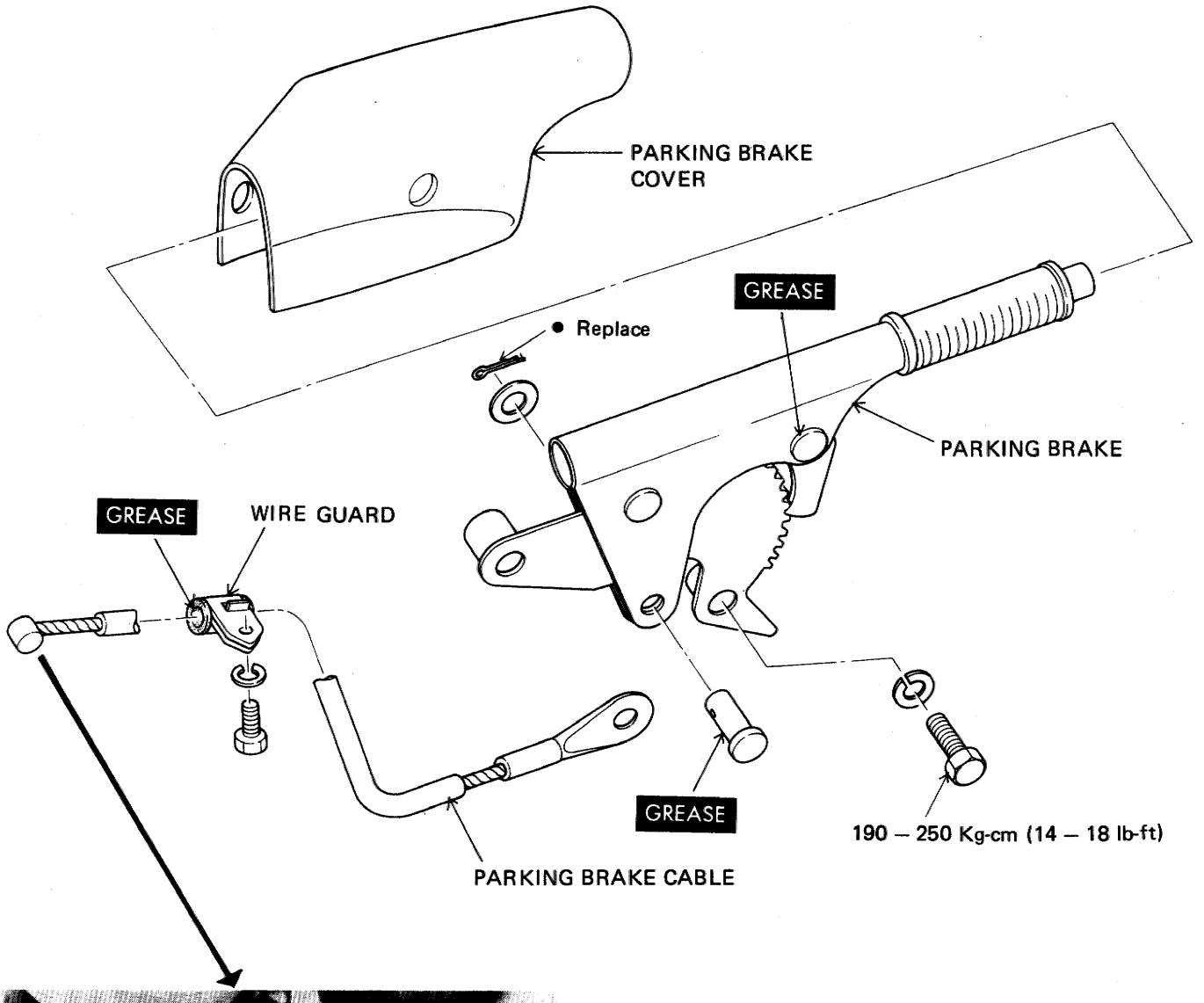


Fig. 1 Disc and Caliper Disassembly/Reassembly



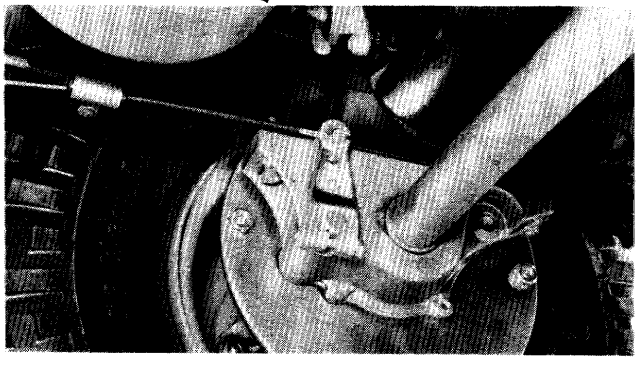


Fig. 2 Parking Brake Removal/Installation

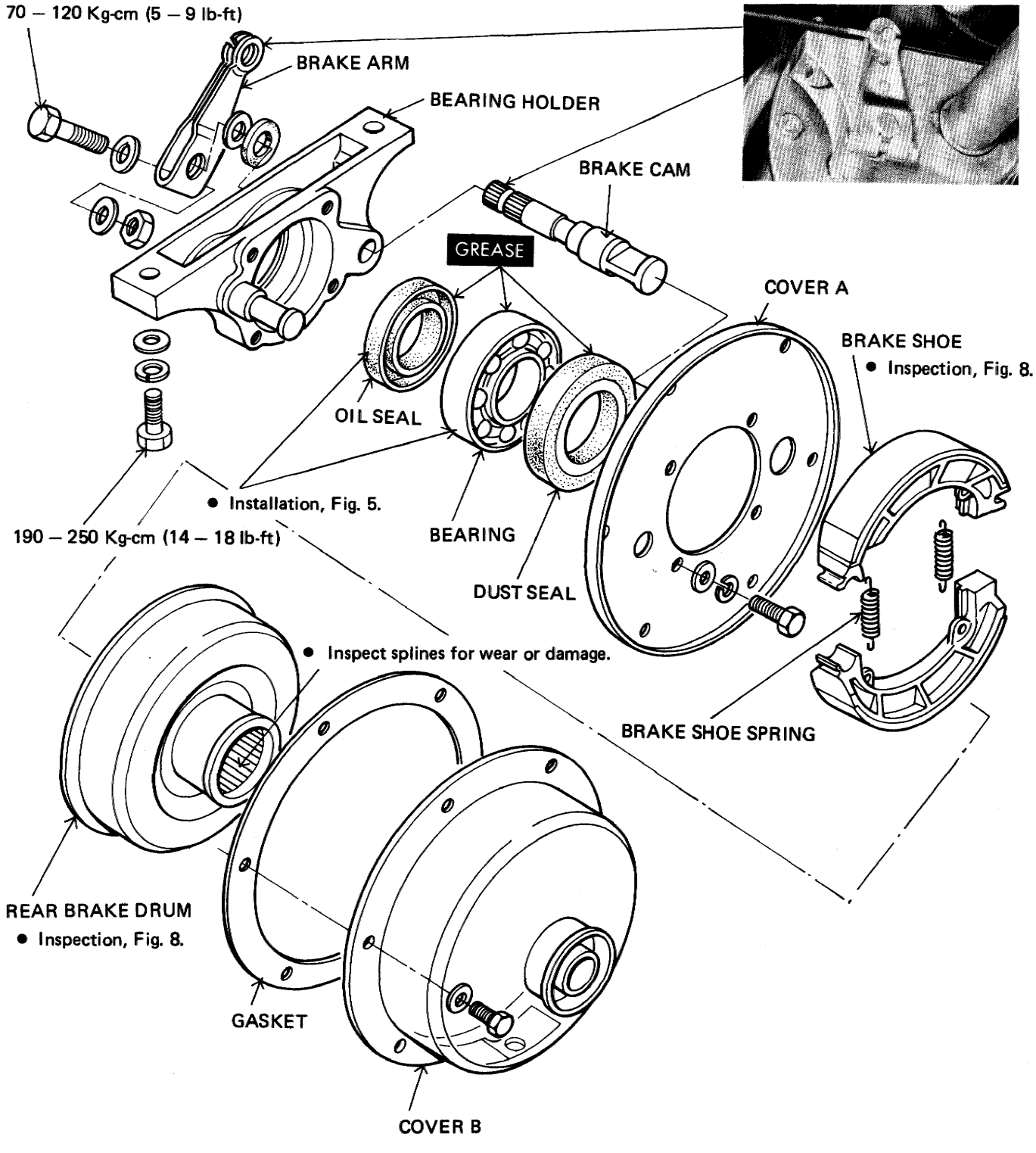


Fig. 3 Rear Brake Removal/Installation

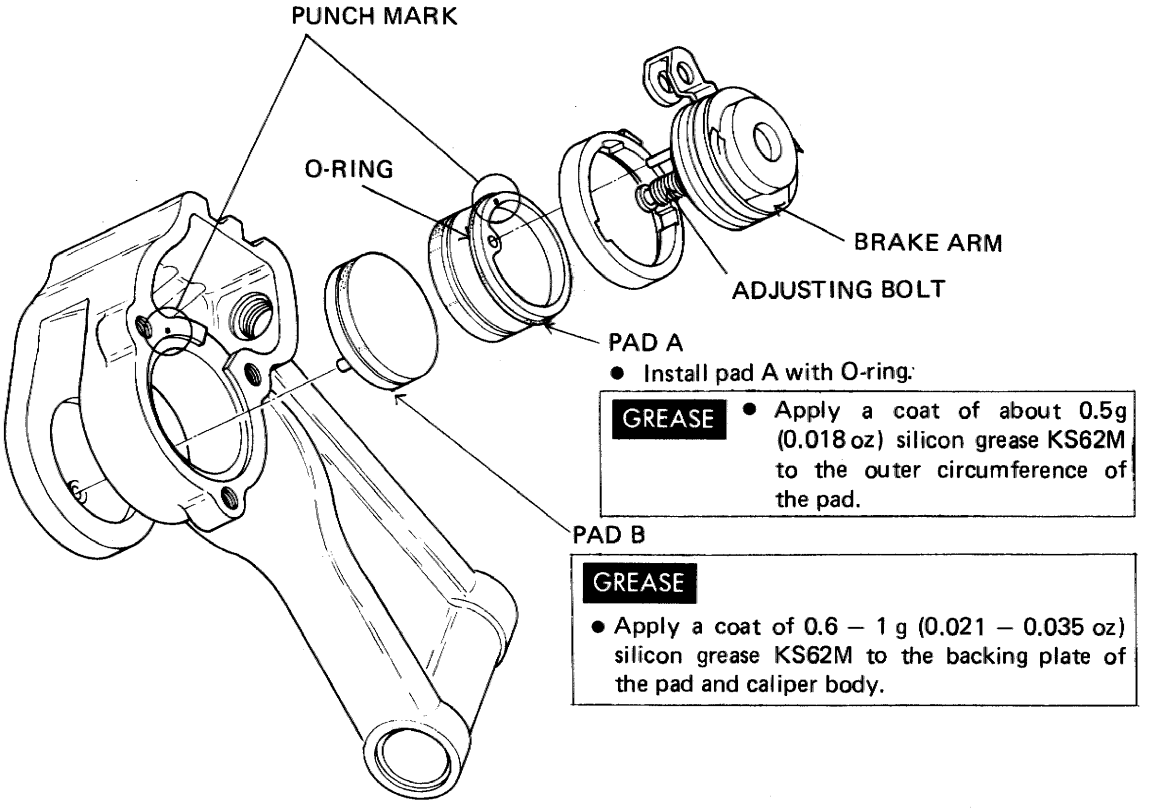


Fig. 4 Pad and Brake Arm Installation

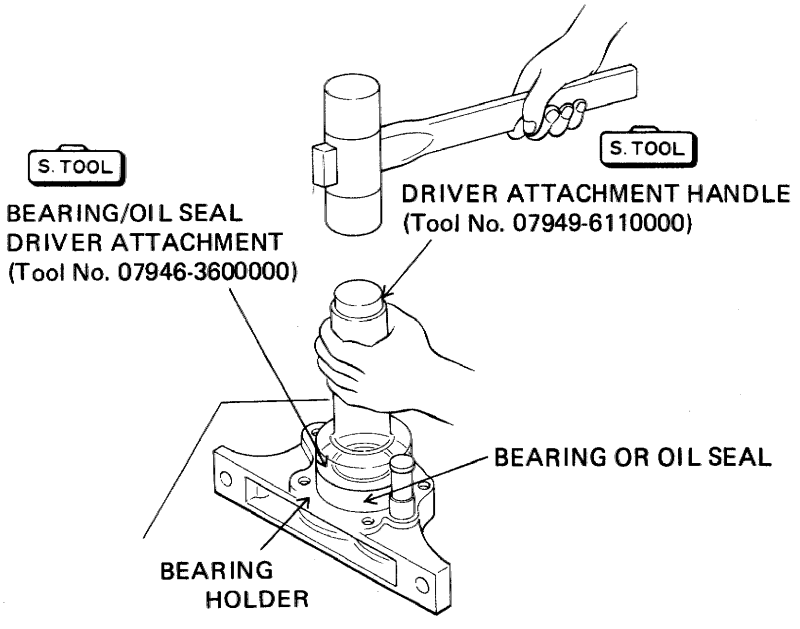


Fig. 5 Rear Brake Bearing and Oil Seal Installation

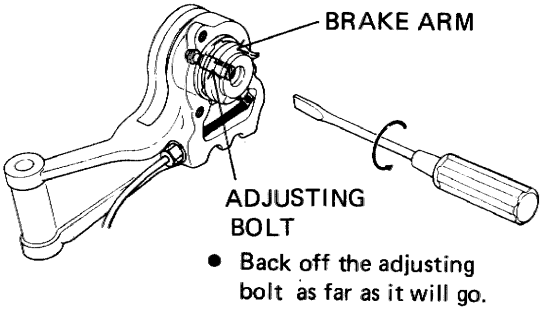
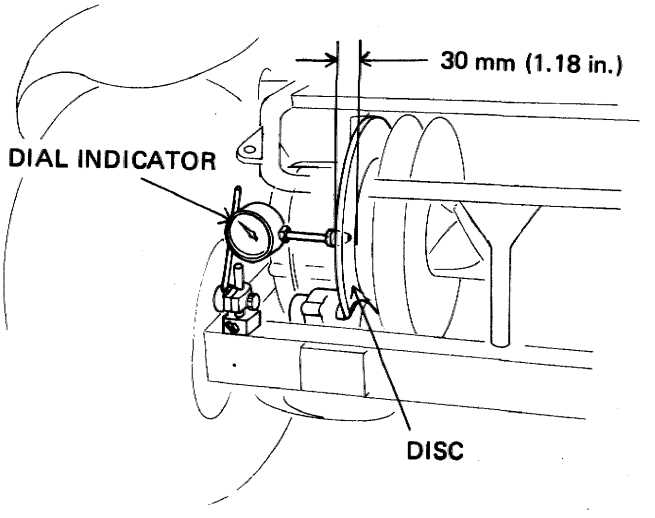


Fig. 6 Brake Arm Adjustment

- Squeeze the brake lever about ten times so that the automatic adjuster can operate properly. At this time slightly squeeze the lever as in bleeding operation. The lever free play is now automatically adjusted. See Fig. 9.

PADS
- Inspect for wear. Replace the pads as a set if they are worn to the red line on each pad.

DISC
- Inspect the disc surface for scores, cracks.



Using a dial indicator mounted as shown, rotate the disc slowly and check the runout.

Service limit :	0.3 mm (0.0118 in.)

- Replace the disc if it is worn beyond the service limit.

Using a micrometer, measure the disc thickness at four points and 30 mm (1.18 in.) from the outer edge of the disc.

DISC THICKNESS

Standard	: 3.2 mm (0.126 in.)
Service limit	: 3.0 mm (0.1181 in.)

- Replace the disc if its thickness is less than the service limit.

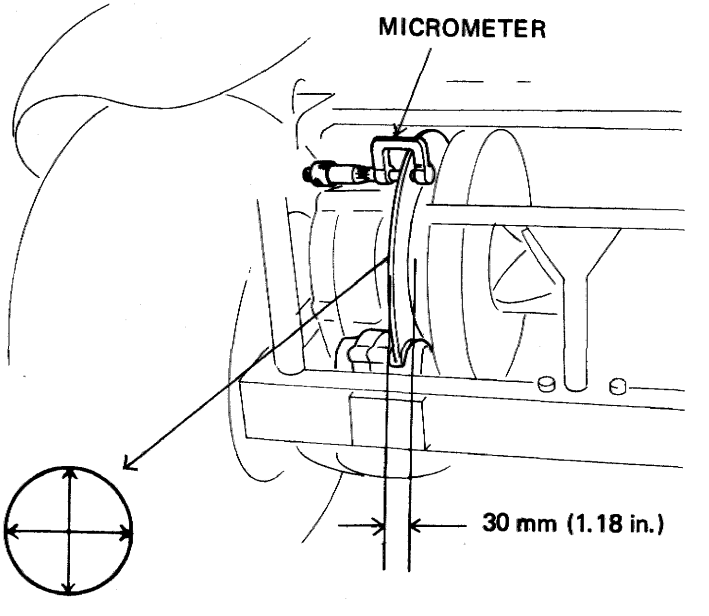
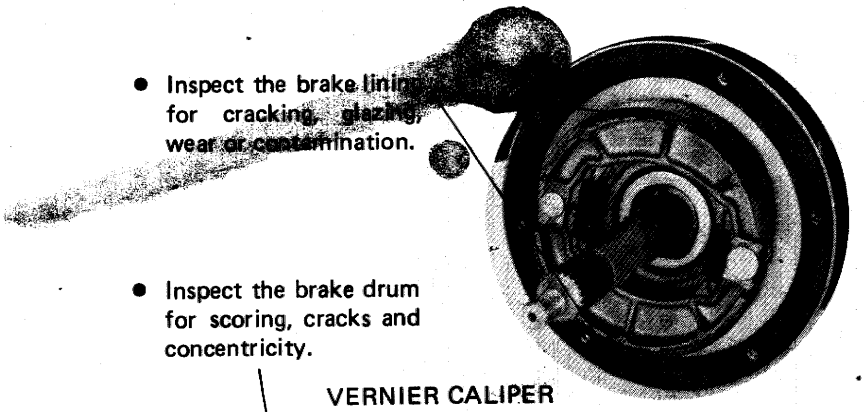
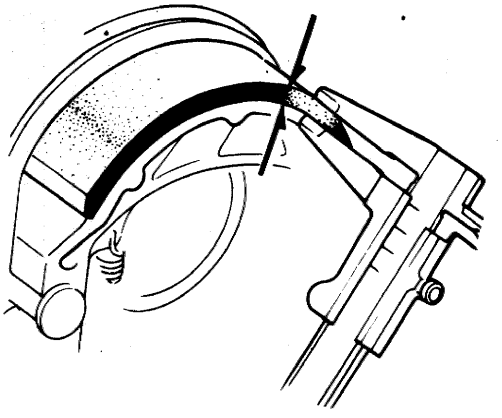


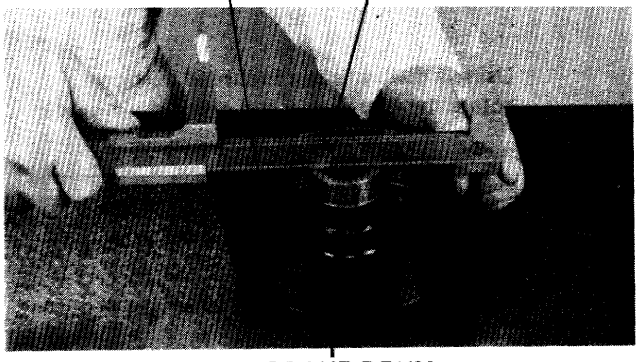
Fig. 7 Pad and Disc Inspection



- Inspect the brake lining for cracking, glazing, wear or contamination.
- Inspect the brake drum for scoring, cracks and concentricity.



VERNIER CALIPER



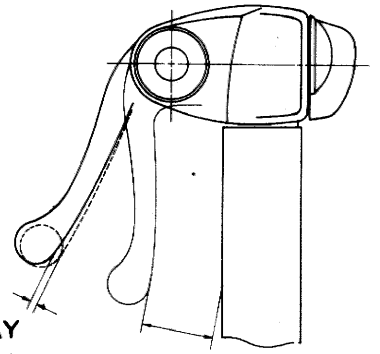
DRUM I.D. BRAKE DRUM

Service limit	:	140.6 mm (5.5354 in.)

LINING THICKNESS

Standard	:	4.25 mm (0.1673 in.)
Service limit	:	1.5 mm (0.0591 in.)

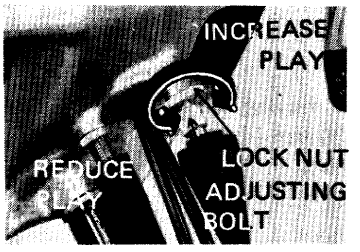
Fig. 8 Brake Drum and Lining Inspection



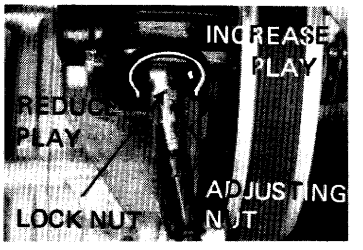
FREE PLAY

REMAINING LEVER EFFECTIVE TRAVEL

BRAKE LEVER SIDE



DISC CALIPER SIDE



Remaining Effective Lever Travel

- Pull the lever until contact is felt. Measure distance as shown above.

Service limit	:	above 23 mm (above 0.90 in.)

- Pad-to-disc clearance is automatically adjusted.

Lever Free Play

① Measure lever free play.

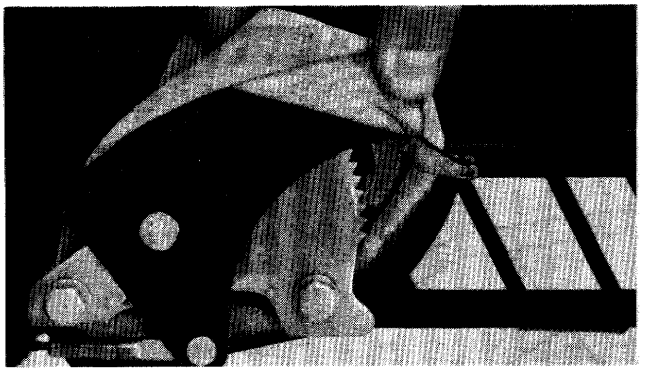
Service limit	:	1 – 5 mm (0.04 – 0.20 in.)

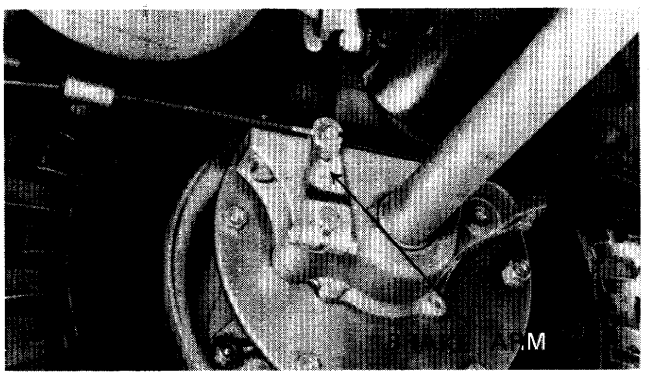
② To adjust, loosen the lock nut of the brake lever and turn the adjusting bolt.

NOTE

If unable to get the correct free play adjustment described above, readjust the cable length at the disc caliper side in the same way.

Fig. 9 Remaining Brake Lever Effective Travel/Free Play Inspection





① Raise the rear wheels off the ground.

② Pull the parking brake lever up 1 – 5 notches so that the rear wheels do not turn.

③ Release the brake lever and check that the rear wheels do not drag when turned.

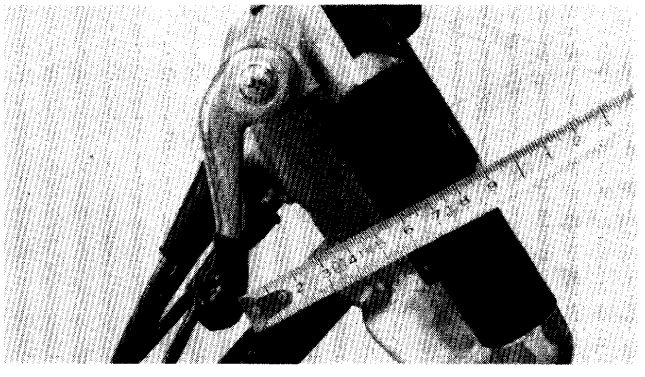
④ If proper operation of the parking brake is not achieved by steps ② and ③ move the brake arm serration only one notch to adjust.

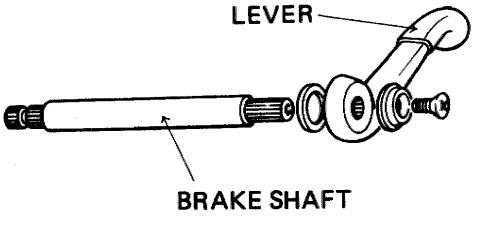
⑤ If the proper adjustment cannot be obtained with the serration moving, inspect the BRAKE DRUM, BRAKE SHOES and replace if necessary.

SPECIFICATIONS

1 – 5 notches. Brakes fully engaged.

Fig. 10 Parking Brake Lever Inspection/Adjustment





① Measure the distance as above when the lever is free.

② To adjust, remove the lever and reinstall so that the proper lever position is achieved.

Service limit : 62 – 78 mm (2.44 – 3.07 in.)

Fig. 11 Brake Lever Full Travel Adjustment

F. Fuel System

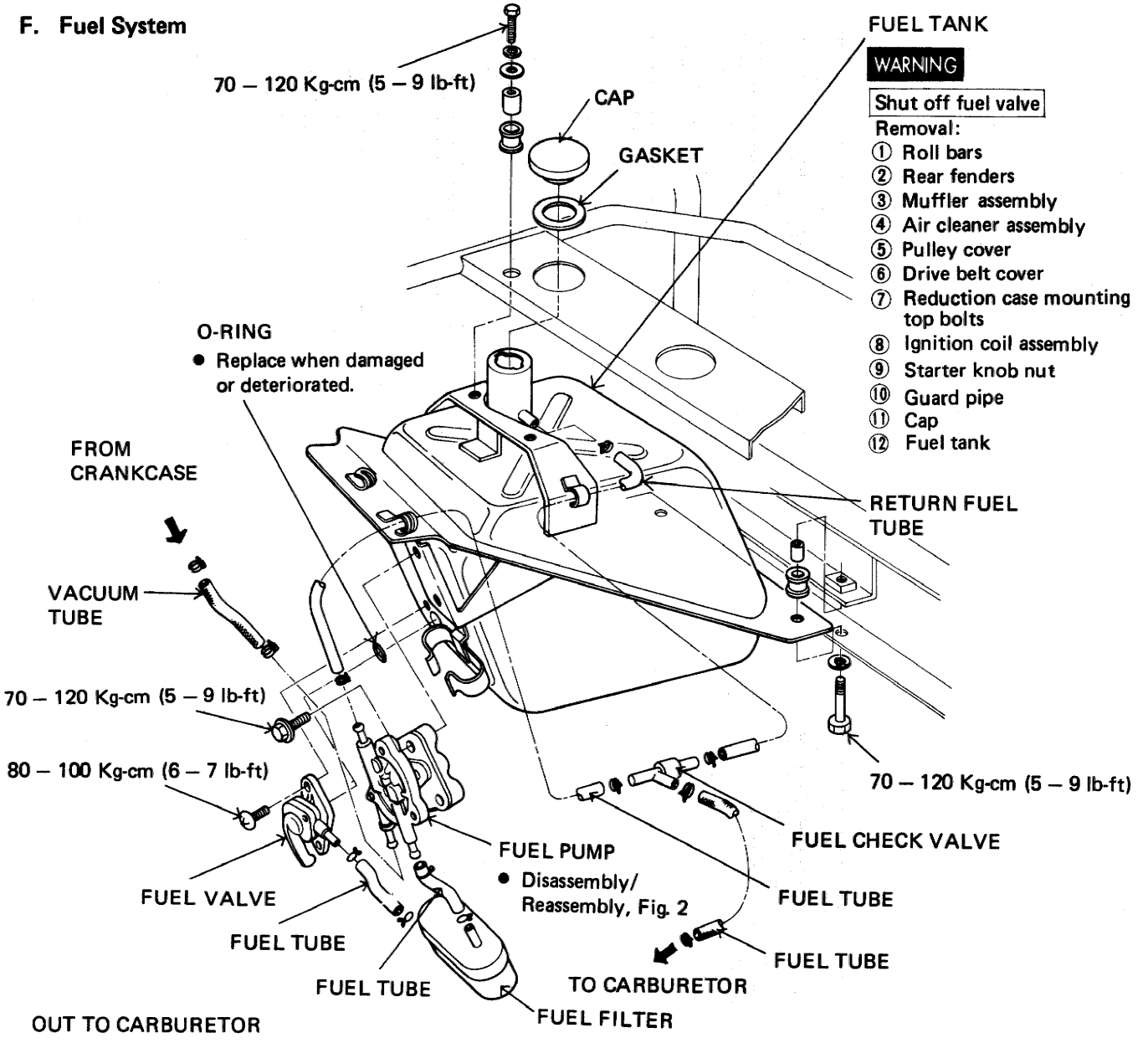


Fig. 1 Fuel Tank Removal/Installation

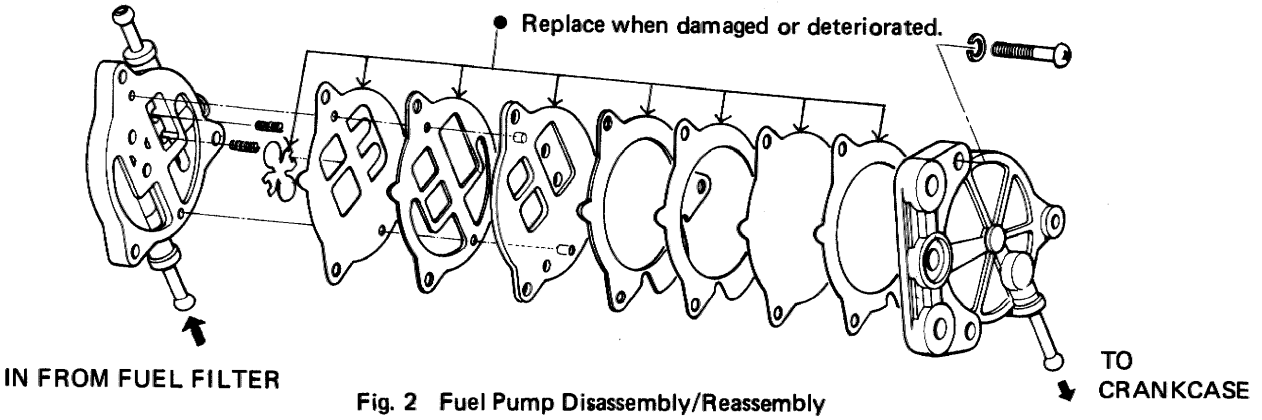


Fig. 2 Fuel Pump Disassembly/Reassembly

G. Frame Parts

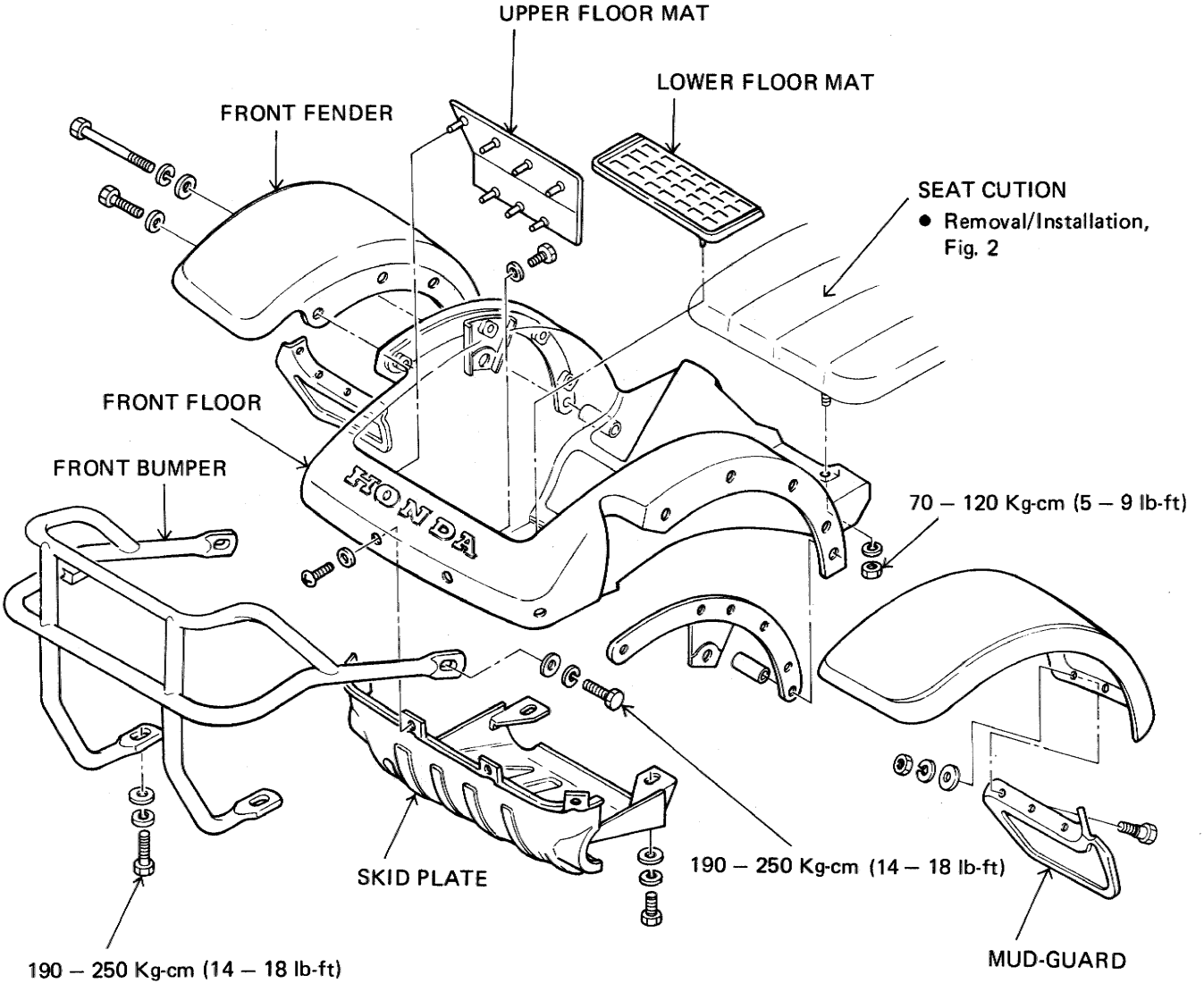


Fig. 1 Front Body Removal/Installation

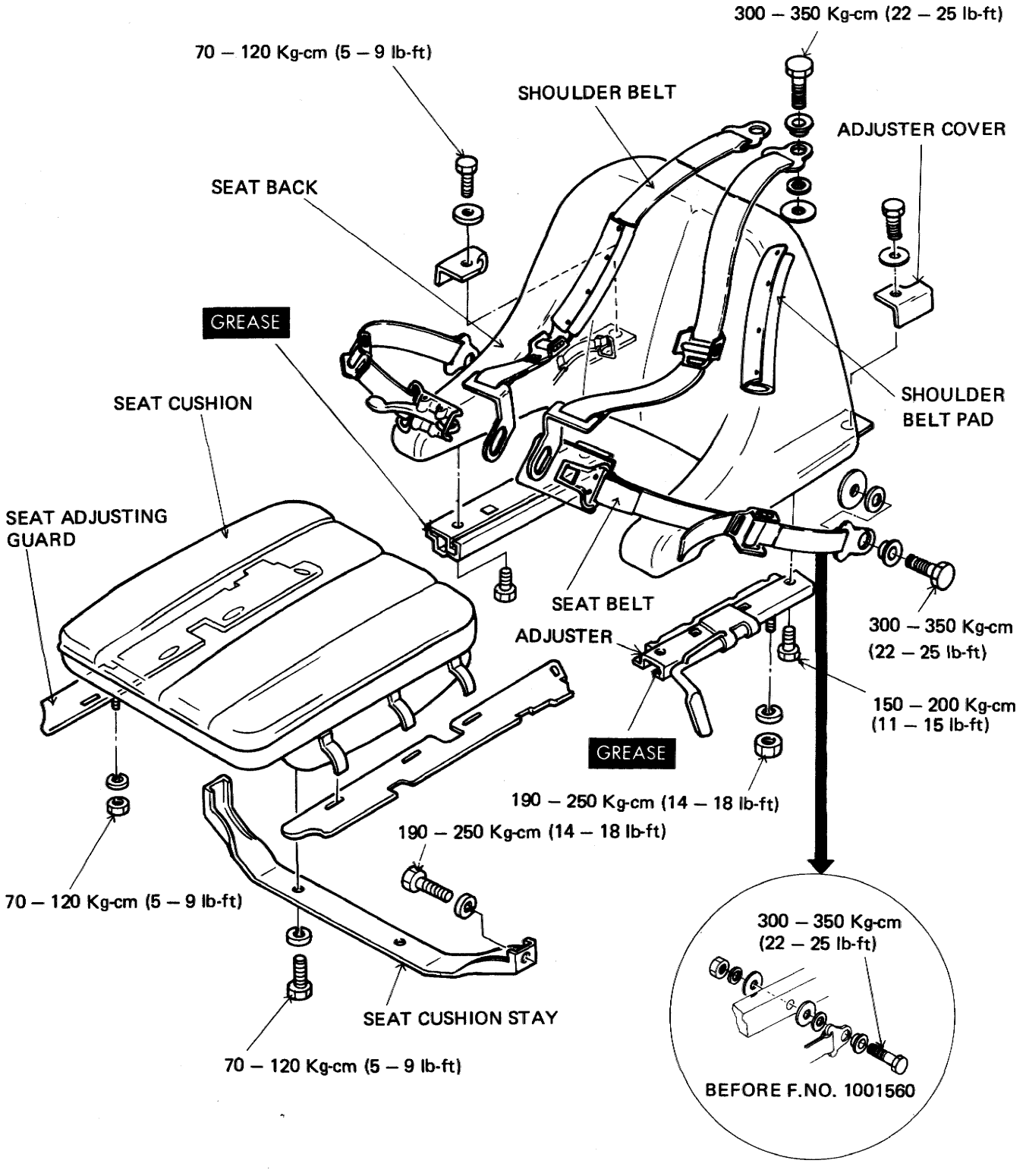


Fig. 2 Seat Back and Cushion Removal/Installation

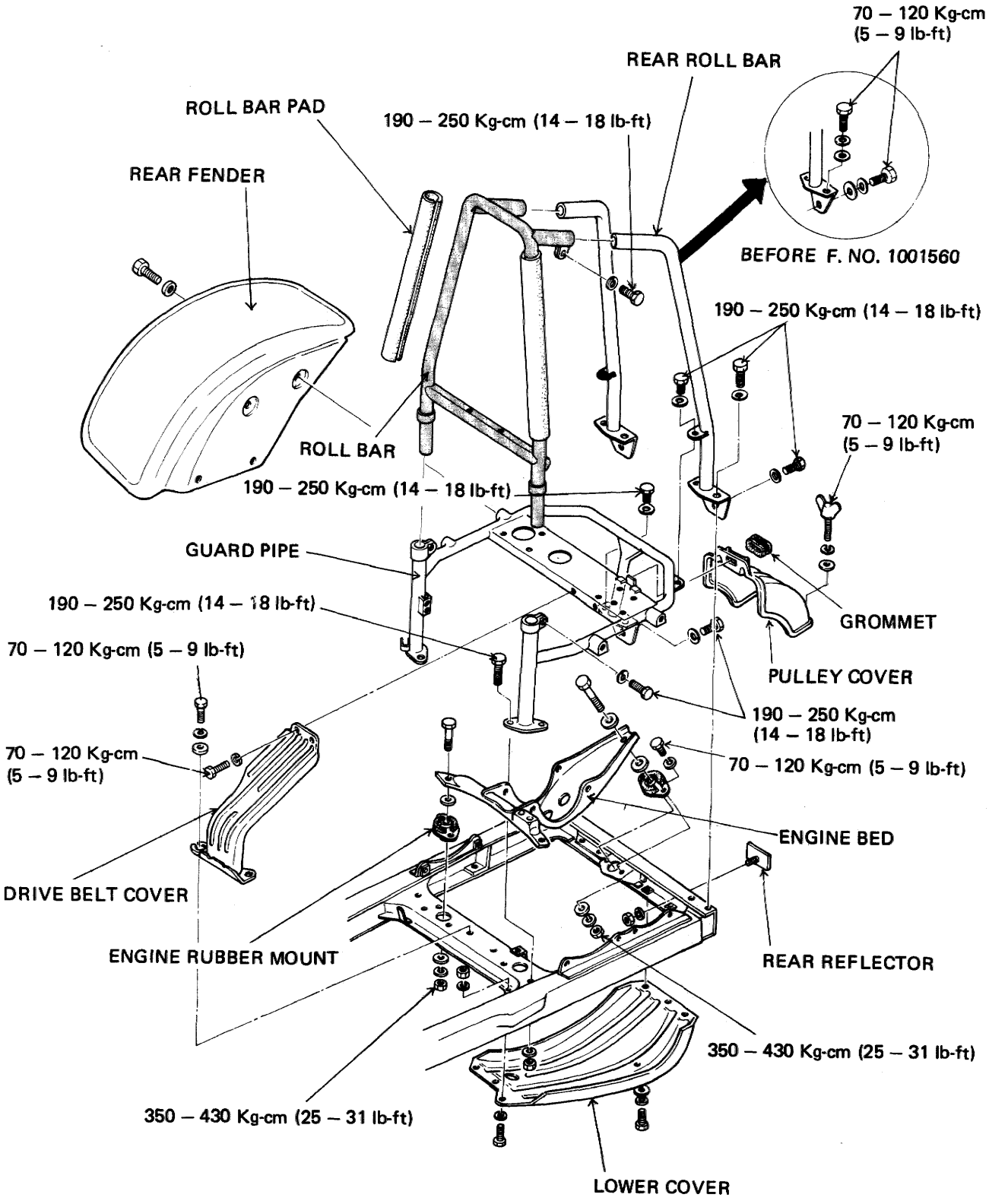


Fig. 3 Rear Frame Parts Removal/Installation

H. Headlight

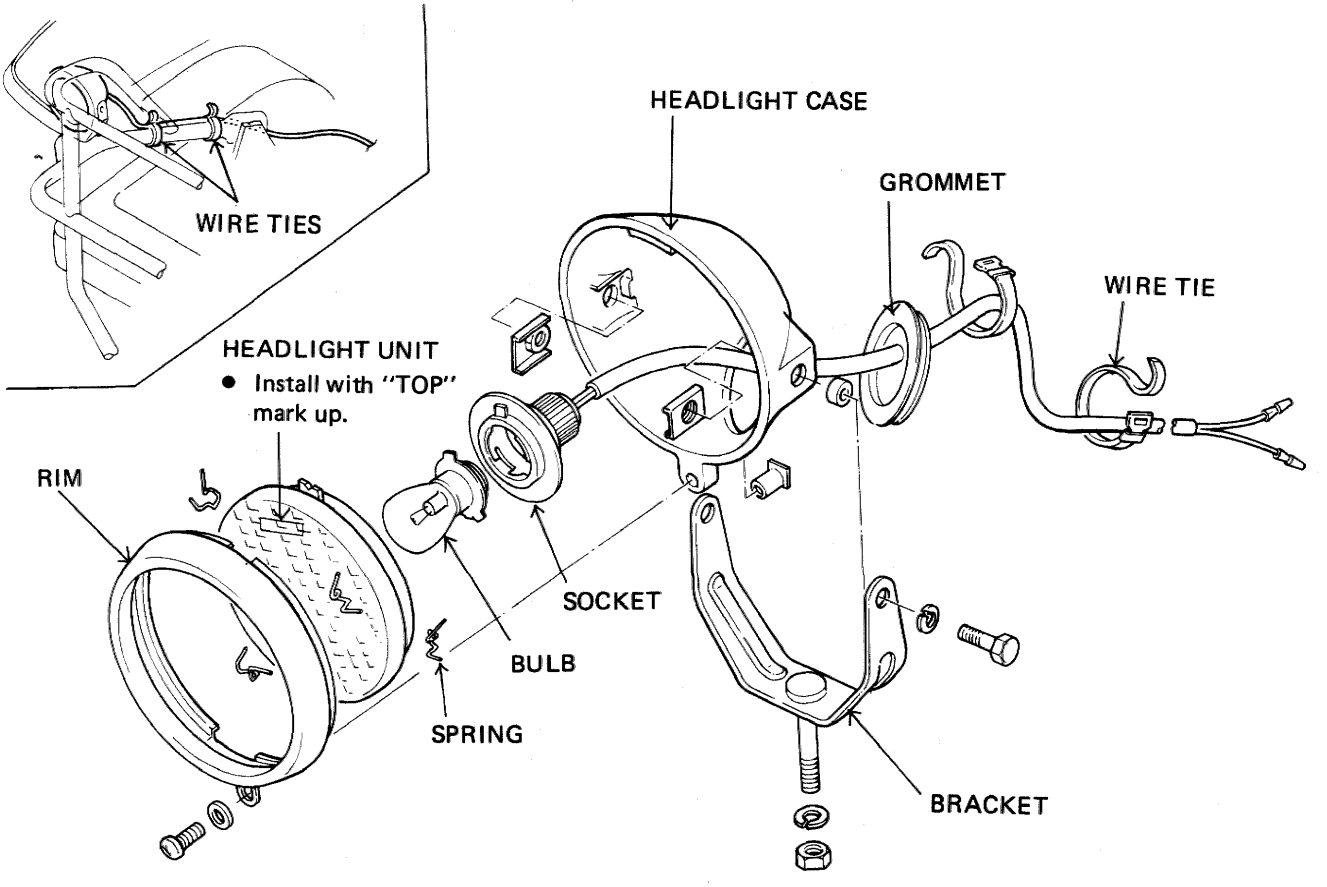
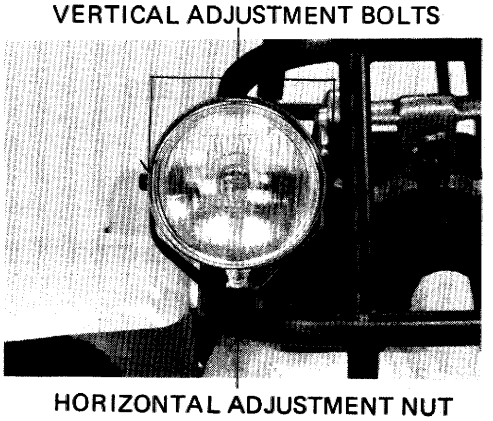
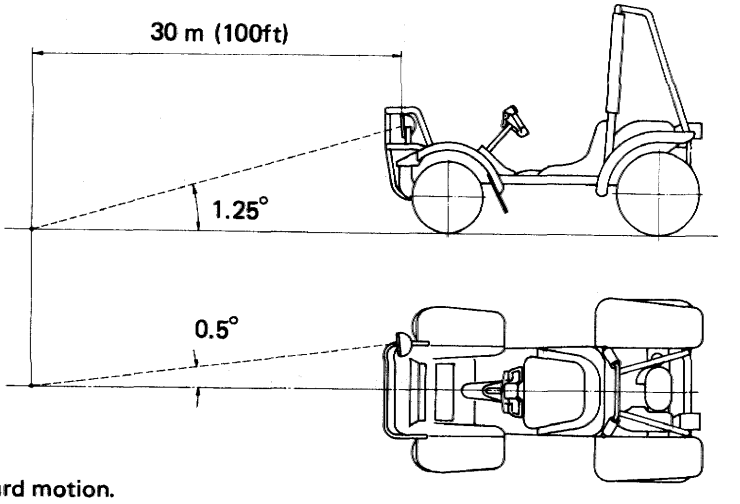


Fig. 1 Headlight Removal/Installation



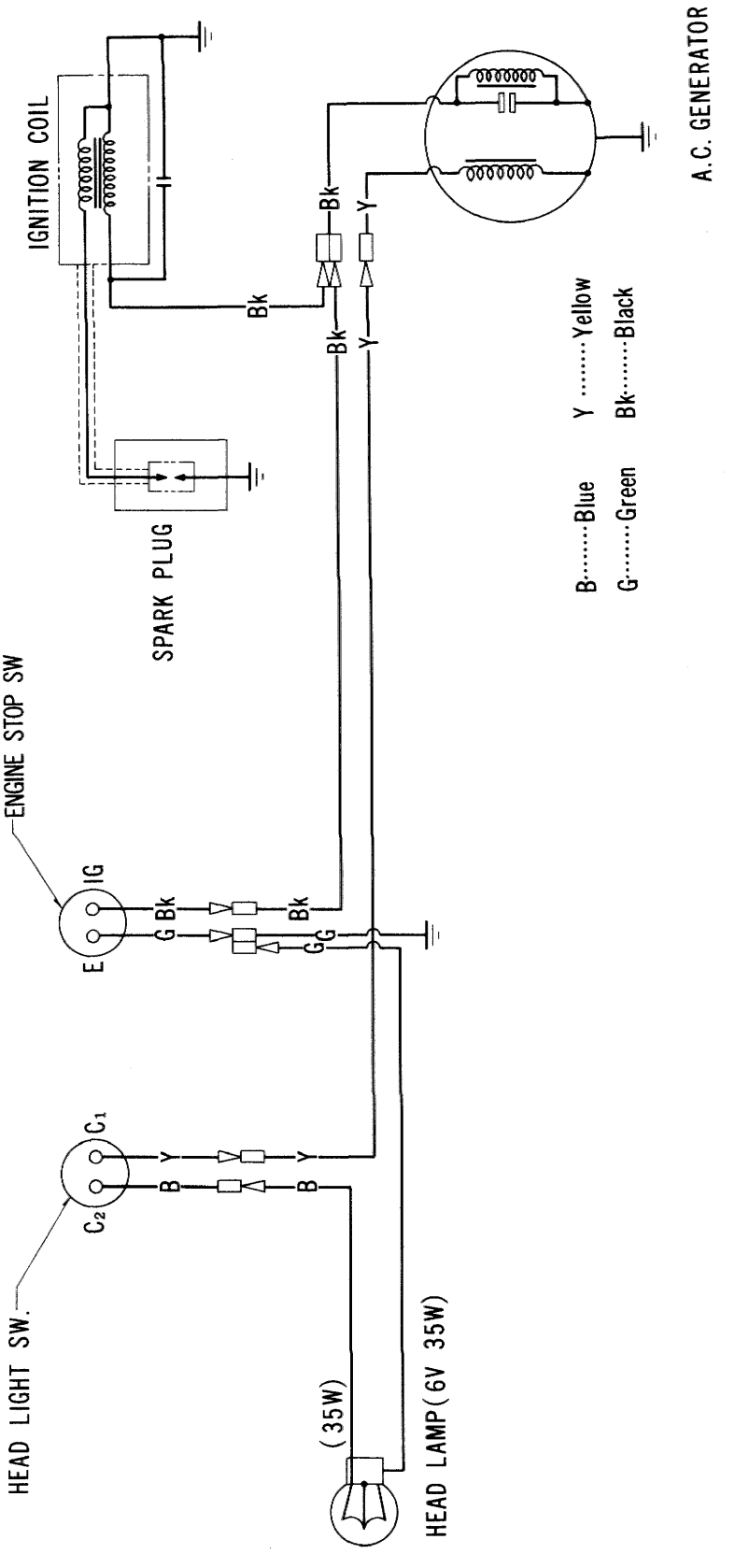


WARNING

Make sure that the parking brake is set to avoid forward motion.

Fig. 2 Headlight Adjustment

ELECTRICAL DIAGRAM



SHOP MANUAL

HONDA ODYSSEY FL250

ADDENDUM

POSTING THE FL250 ADDENDUM

Follow these instructions so that your FL250 Shop Manual is in order when you need to refer to it:

Start at the front of your shop manual ——

1. Remove the old cover. Replace it with the new cover (6295001).
2. Remove the old Table of Contents. Insert the new Table of Contents page (Date of Issue: *Sep. 1979*).

Move to the back of the shop manual ——

1. Insert the 1980 addendum directly behind page 10–1.
2. The FL250 addendum posting is now complete. You may now discard this cover sheet.

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FOREWORD

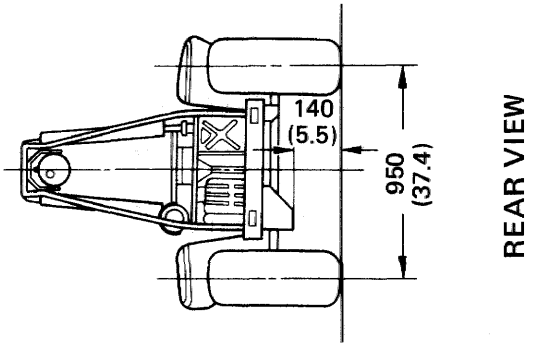
This addendum describes major modifications to the Honda FL250 ODYSSEY starting with Frame No. TB04-2000001 and Engine No. TBOE-2000001.

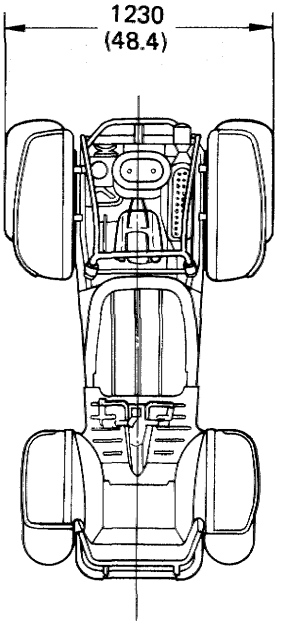
TABLE OF CONTENTS

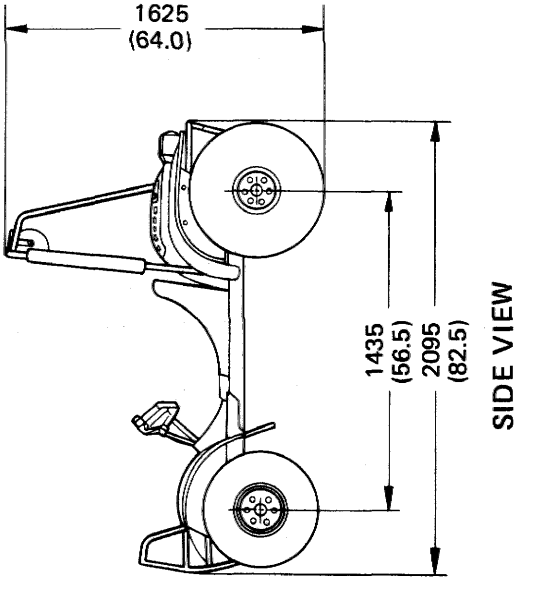
Date of Issue: Sep., 1979

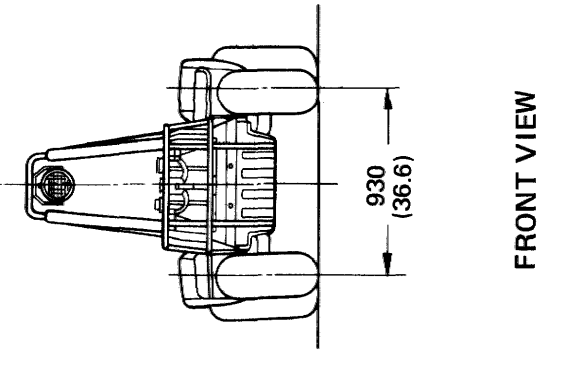
GENERAL DATA

A. Overall Vehicle Dimensions









Date of Issue: Sep., 1979

B. General Specifications

DESCRIPTION				SPECIFICATION	
	Overall length			2,095 mm (82.48 in.)	
	Overall width			1,230 mm (48.43 in.)	
	Overall height			1,625 mm (63.98 in.)	
	Wheel base			1,435 mm (56.50 in.)	
	Track	front		930 mm (36.61 in.)	
		rear		950 mm (37.40 in.)	
	Ground clearance			140 mm (5.51 in.)	
	Min. turning circle radius			4.3 m (17.39 ft.)	
WEIGHT	Dry weight distribution		Front	66kg (145.53 lbs.)	*66kg (145.53 lbs.)
			Rear	119kg (262.40 lbs.)	*120kg (264.60 lbs.)
	Max. laden weight			270kg (595.35 lbs.)	*271kg (597.56 lbs.)
EFFICIENCY	Max. stabilized inclination, right/left			53°	
	Max. climbing angle			35°	
	Stopping distance			20 m (at 50 Km/h)	
				61.0 ft (at 31.25 mph)	
ENGINE	MODEL			FL 250E	
	TYPE			Air-cooled, 2-stroke	
	Cylinder arrangement			Single-cylinder 15° inclined from vertical	
	Bore and Stroke			70.0 x 64.4 mm (2.756 x 2.535 in.)	
	Displacement			248 cc (15.1 cu. in.)	
	Compression Ratio			6.6	
	Compression Pressure			9 Kg/cm^2 /800 rpm	
	Fuel			Gasoline 20 : oil 1 (mixed)	
	Ignition timing			5° BTDC	
	Port timing	Intake	Open	80° BTDC	
			Close	80° ATDC	
		Exhaust	Open	87° BBDC	
			Close	87° ABDC	
		Scavenge	Open	60° BBDC	
			Close	60° ABDC	

*Canada Model

DESCRIPTION			SPECIFICATION
ENGINE	Idle speed		1,500 rpm
	Valve mechanism		Piston controlled
	Lubrication system		Forced
	Carburetor type		PW
	Choke system		Starter valve system
	Air cleaner type		Oiled
	Fuel pump type		Diaphragm
	Belt converter		SALSBURY'S Torque converter
	Engine dry weight		22 Kg (48.51 lbs.)
CAPACITIES	Fuel tank		12 lit. (3.17 US gal., 2.64 Imp. gal.)
	Reduction unit		0.5 lit. (1.057 US pt., 0.88 Imp. pt.)
ELECTRICAL	Starting system		Recoil starter
	Stopping system		Ground switch
	Ignition system		Flywheel magneto
	Generator		AC Generator
	Spark plug		NGK BR7ES DENSO W22ESR
	Spark plug gap		0.7 – 0.8 mm (0.028 – 0.032 in.)
STEERING	Max. turning angle, right/left		45°
	Arm ratio (Knuckle arm length/center arm length)		1.7
	Steering angle	inside	28°
		outside	20°
SUSPENSION	Front		Trailing arm type Coil spring
	Rear		Wheel axial type
	Front shock absorber		Coil spring type
ALIGNMENT	Front	Toe-in	8 mm (0.315 in.)
		Camber	1°
		Caster	8°
		King pin angle	8°
		Side off set	9 mm (0.354 in.)
		Caster trail	50 mm (1.969 in.)
	Rear	Side slip (ridden)	0 mm (0 in.)
		Toe-in	0 mm (0 in.)
		Camber	0°

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DESCRIPTION			SPECIFICATION
BRAKES	Main brake		Self-adjusting cable actuated disc
	Parking brake		Cable actuated leading-trailing shoe and drum
	Disc effective diameter		220 mm (8.661 in.)
	Parking brake drum diameter		140 mm (5.512 in.)
TIRES	Rim, width x diameter,	front	140 x 203 mm (5.51 x 8 in.)
		rear	210 x 203 mm (8.27 x 8 in.)
	Tire, O.D. x width x I.D.,	front	508 x 178 – 203 mm (20 x 7 – 8 in.) (2 ply)
		rear	559 x 280 – 203 mm (22 x 11 – 8 in.) (0 ply)
	Pressure	front	0.35 Kg/cm^2 (5.0 psi.)
		rear	0.21 Kg/cm^2 (3.0 psi.)
LIGHTS	Headlight		12V–45W
	Taillight		12V–3W (Canada Model only)

FRAME

Headlight

Headlight Removal/Installation

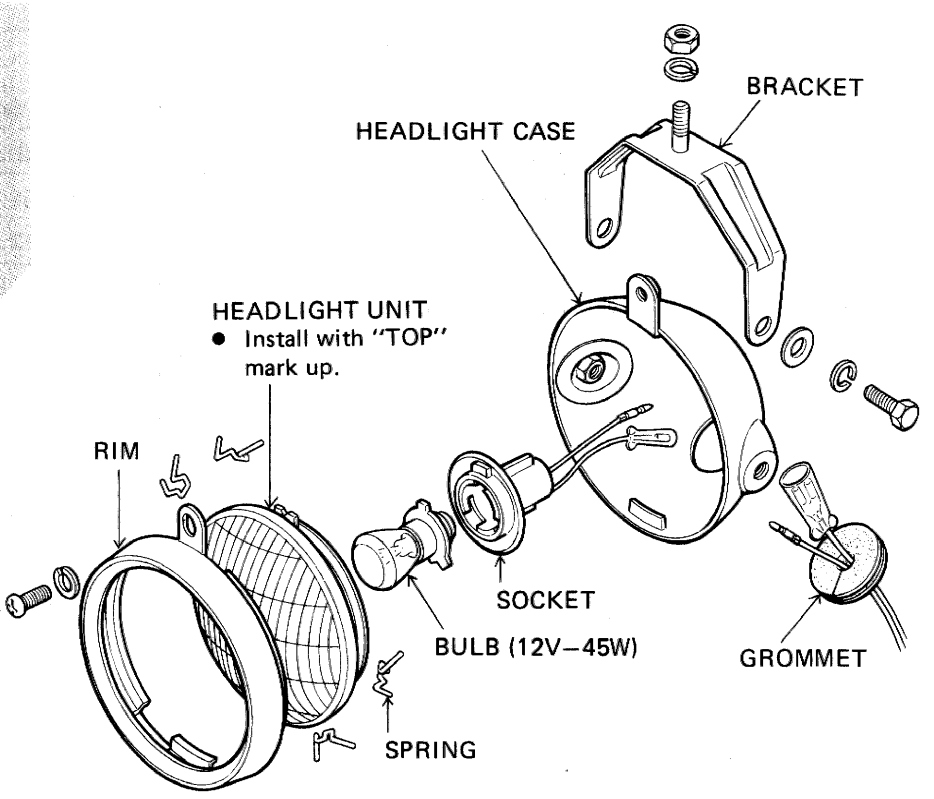
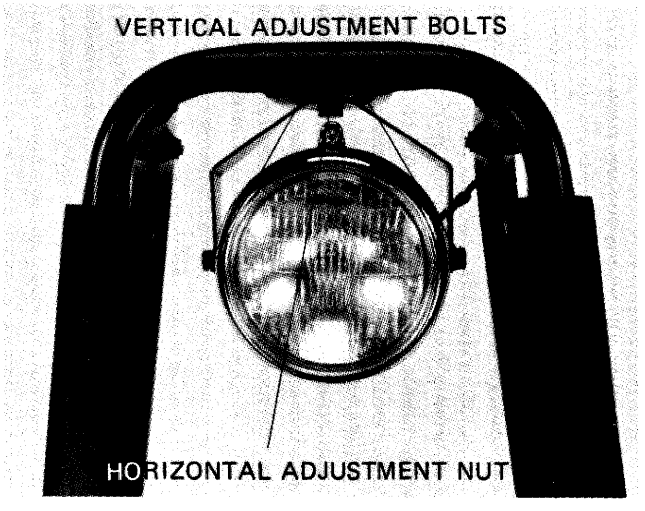
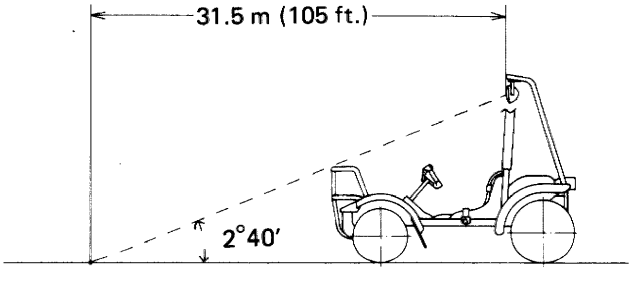


Fig. 1

Headlight Adjustment



Set the parking brake, start the engine.
Turn headlight "ON".
Adjust the headlight beam as shown.



WARNING

To avoid forward movement, make sure the parking brake is set.

Fig. 2

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Taillight Removal/Installation

Taillight (Canada Model only)

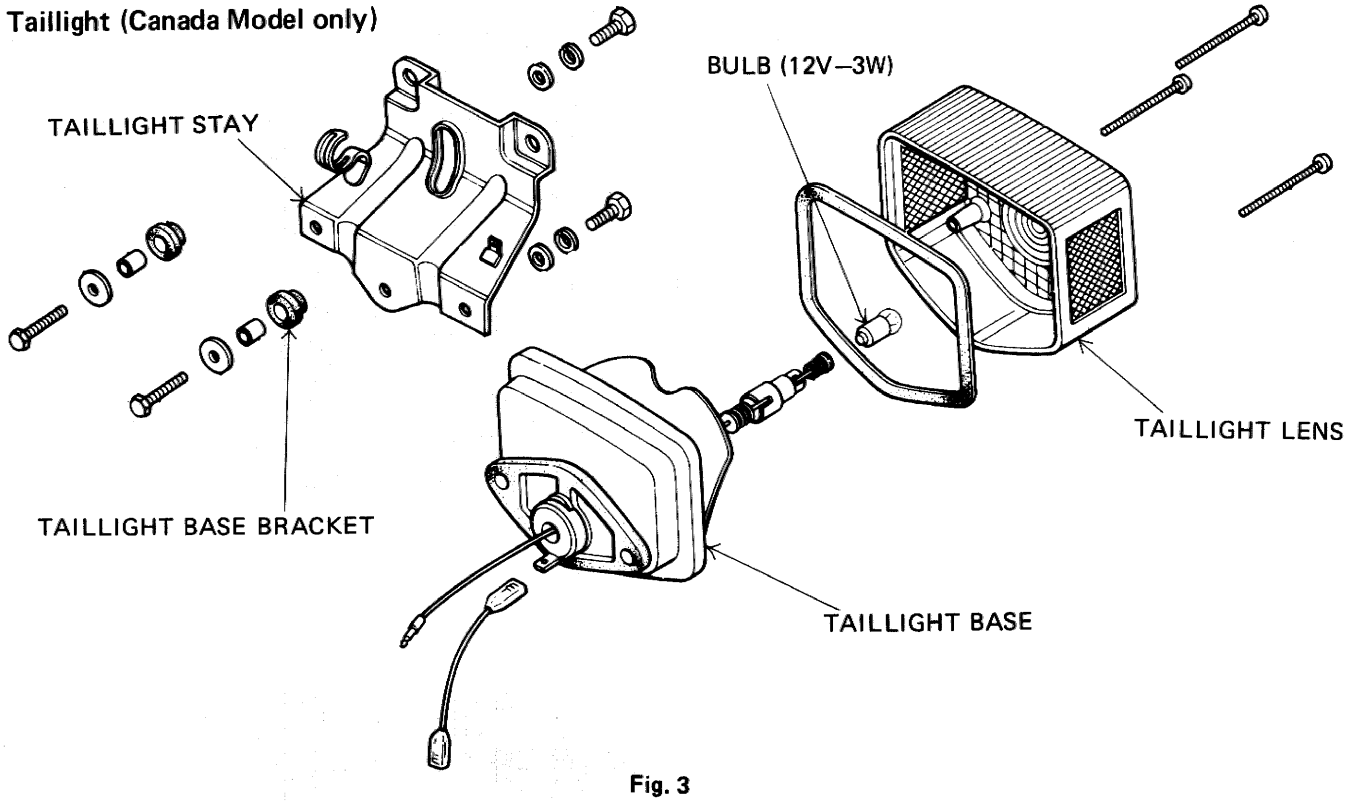


Fig. 3

Seat

The new seat is equipped with a heat shield. The seat also has thicker padding and a covering that is flexible at low temperatures.

Heat Shield Removal/Installation

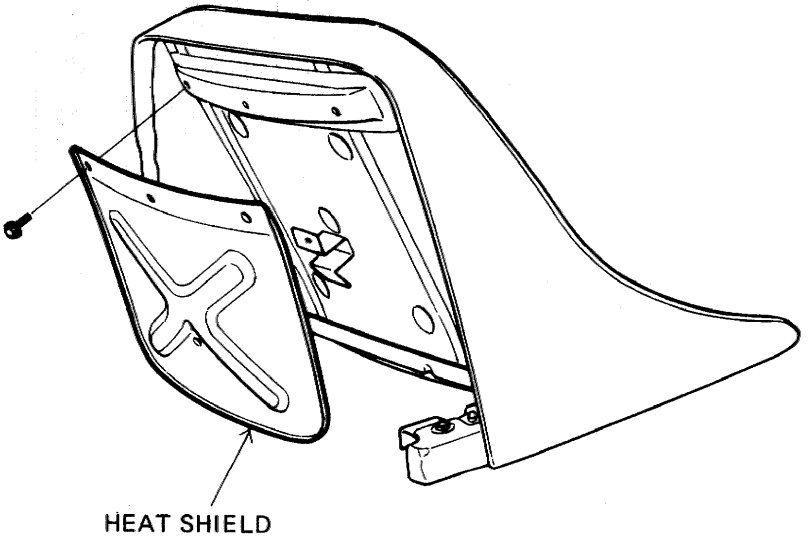
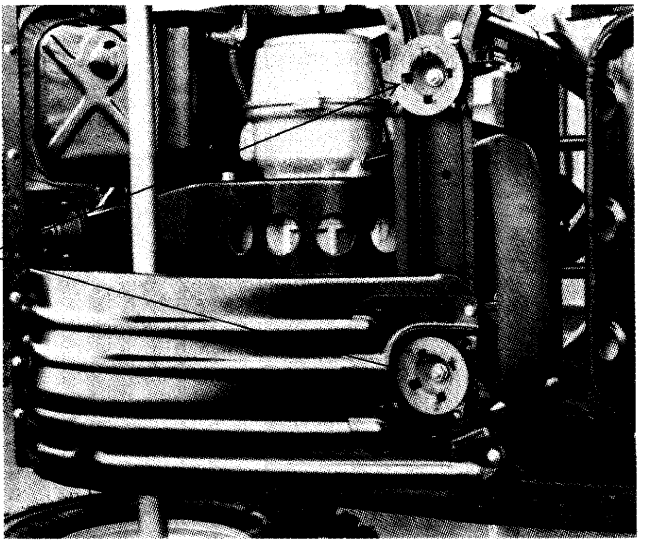


Fig. 4

Engine Mounts

Rebound limiters have been added to the front engine mounts, and the engine protector has been enlarged for rebound limiter clearance.



Rear Tire

The rear tires now have two reinforcing ribs on the side walls for increased rigidity and greater resistance against chafing.

A.C. Generator

The A.C. Generator was changed from a 6V–35W to a new 12V–45W type. Accordingly the taillight (Canada model) was changed from 6V–3W to 12V–3W. The headlight was changed from 6V–35W to 12V–45W.

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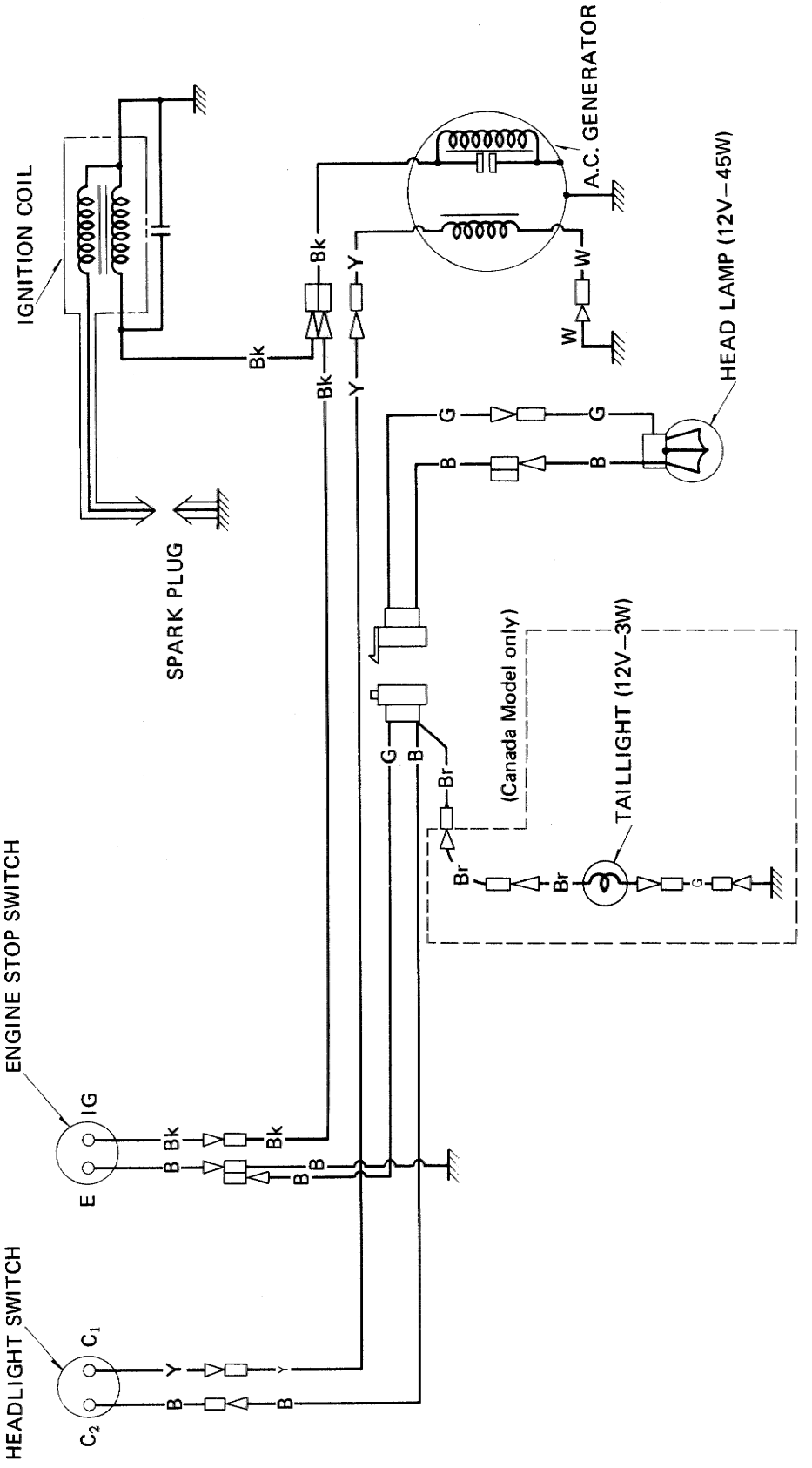
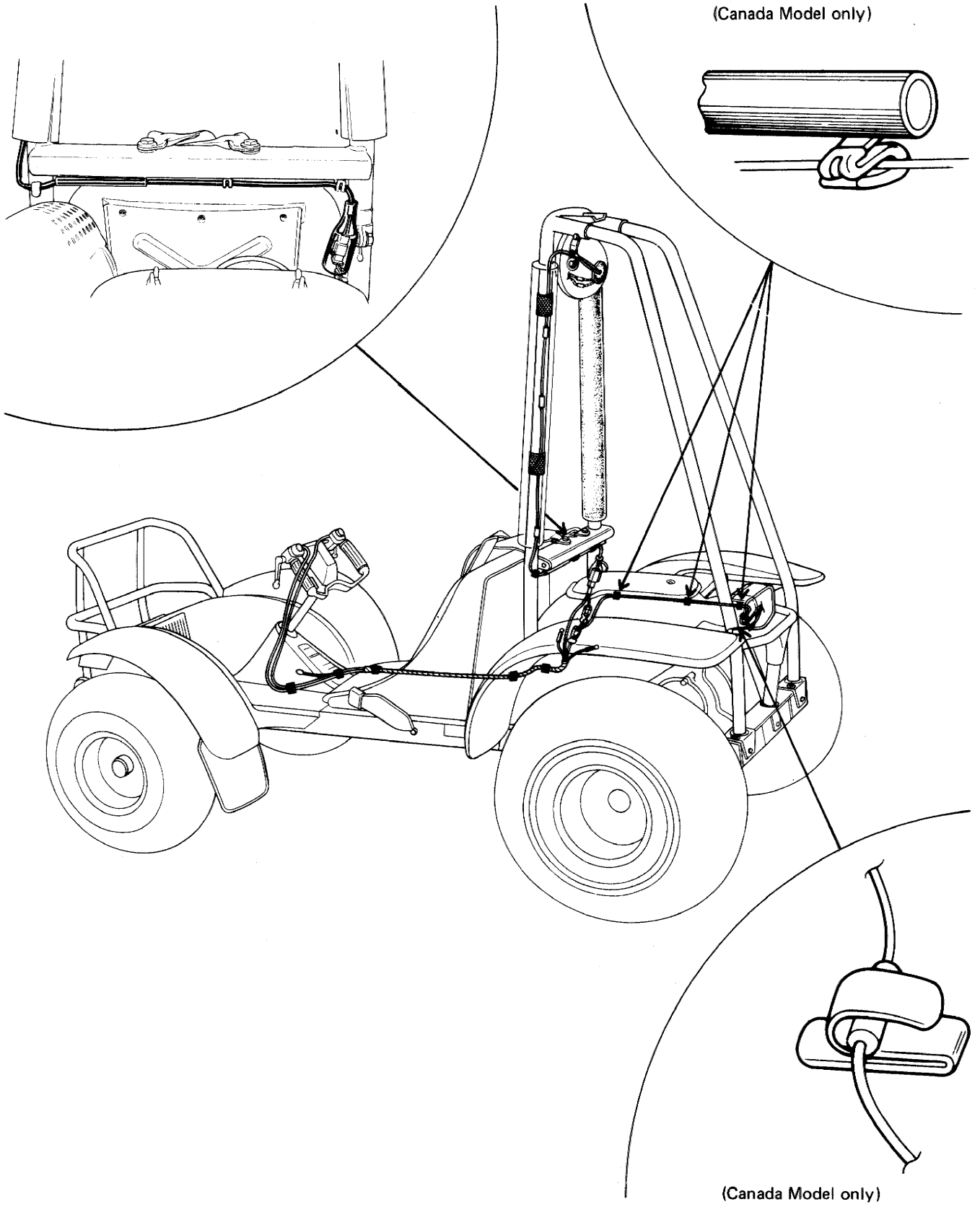
ELECTRICAL DIAGRAM





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INTRODUCTION

This addendum describes major modifications to the Honda FL250 ODYSSEY starting with Frame No. TB0400BC400001 and Engine No. TB04 E-2400001. Refer to the base shop manual and the 1980 Addendum for service procedures and data not included here.

HONDA MOTOR CO., LTD.
SERVICE PUBLICATIONS OFFICE

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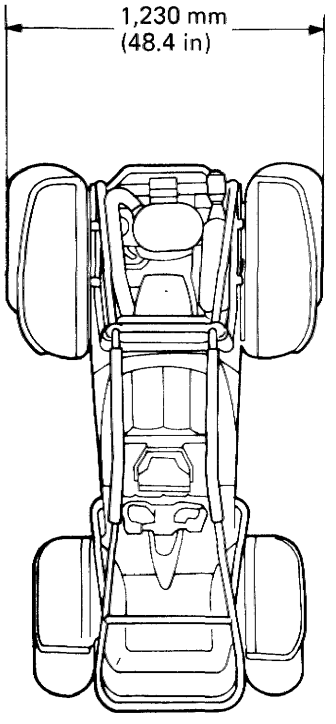
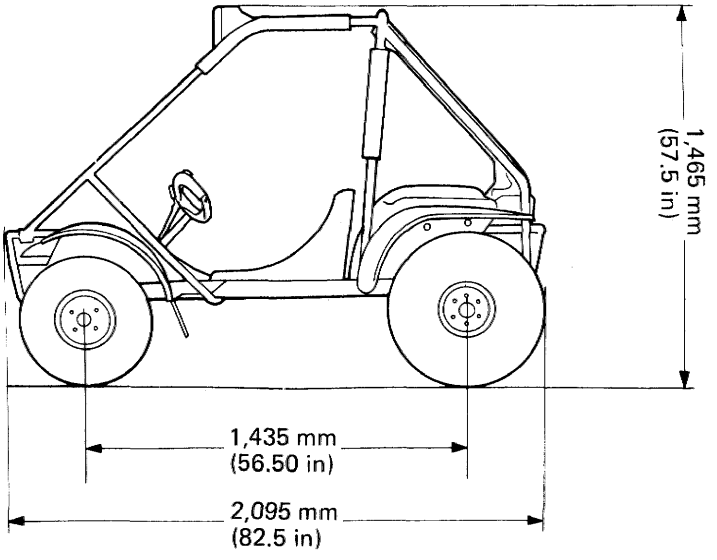
1981 ADDENDUM

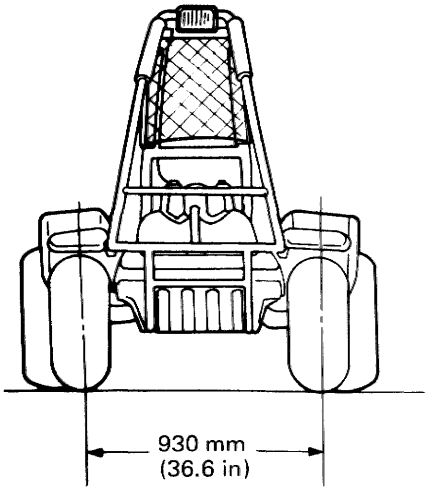
HONDA FL 250

GENERAL INFORMATION

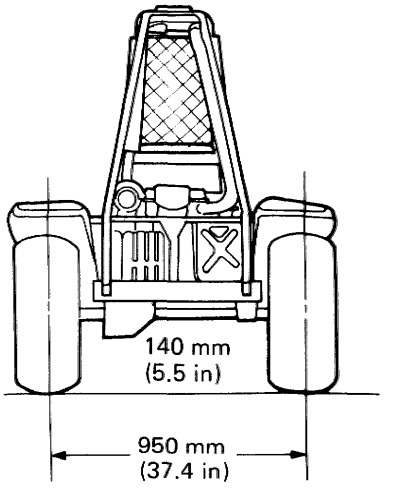
A. Dimensions







FRONT VIEW



REAR VIEW

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B. Specifications

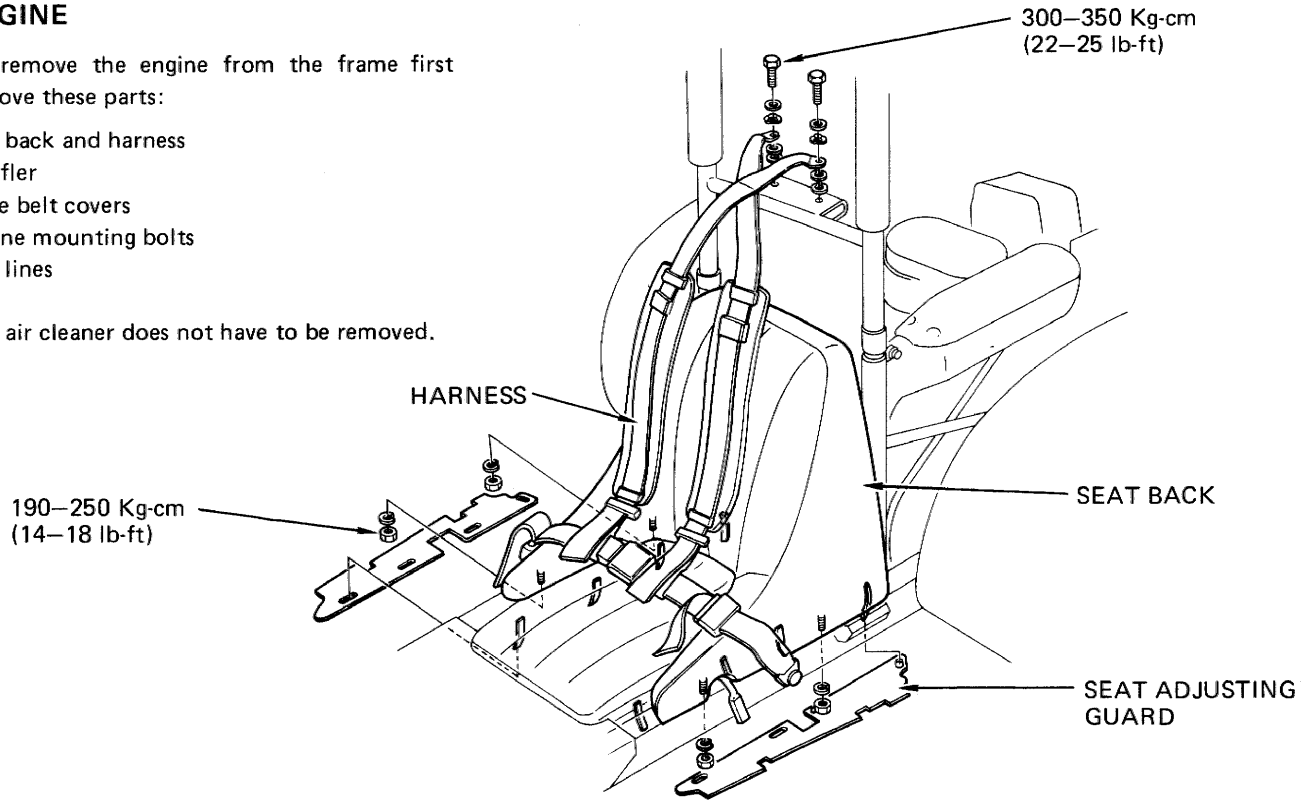
DESCRIPTION			SPECIFICATION
Overall height			1,465 mm (57.7 in.)
Min. turning circle radius			4.3 m (14.11 ft.)
WEIGHT	Dry weight		192 Kg (423 lbs)
	Distribution	Front	71.5 Kg (157.5 lbs)
		Rear	120.5 Kg (265.5 lbs)
ENGINE	Compression Ratio		6.6:1
	Lubrication system		Fuel-oil mix
	Air cleaner		Semi-dry type
ELECTRICAL	Ignition system		C.D.I.
	Spark plug		NGK BR8ES, DENSO W24ESR
LIGHTS	Headlight		12V–60W

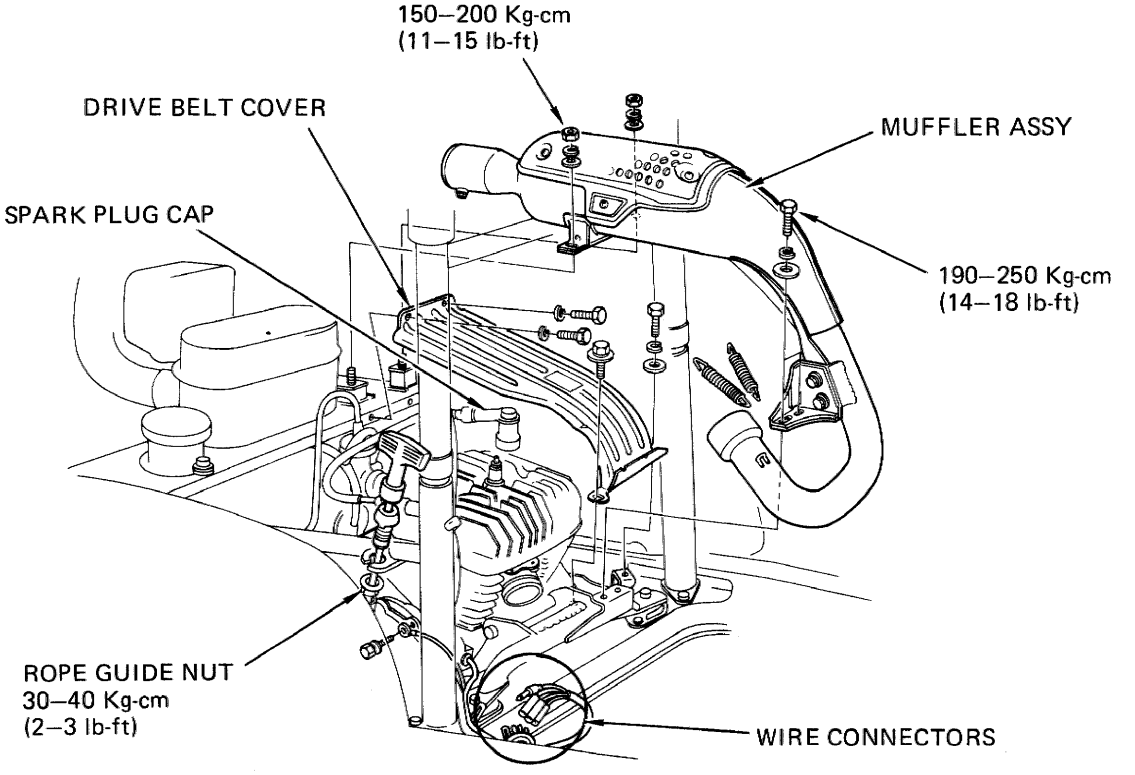
ENGINE

To remove the engine from the frame first remove these parts:

seat back and harness
muffler
drive belt covers
engine mounting bolts
fuel lines

The air cleaner does not have to be removed.





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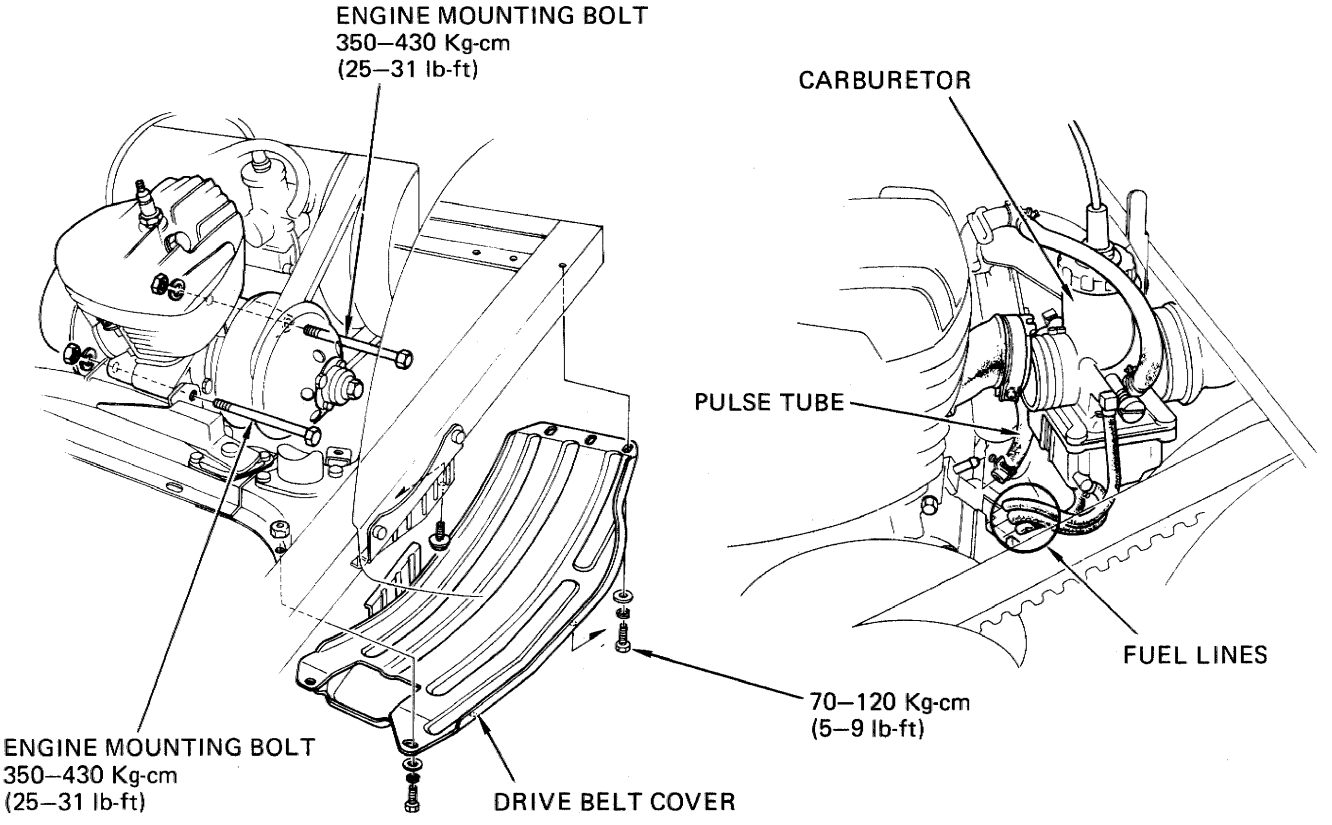
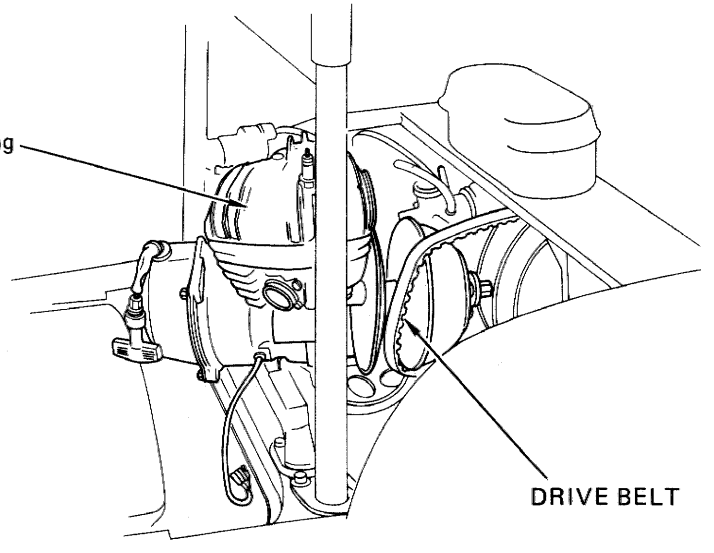
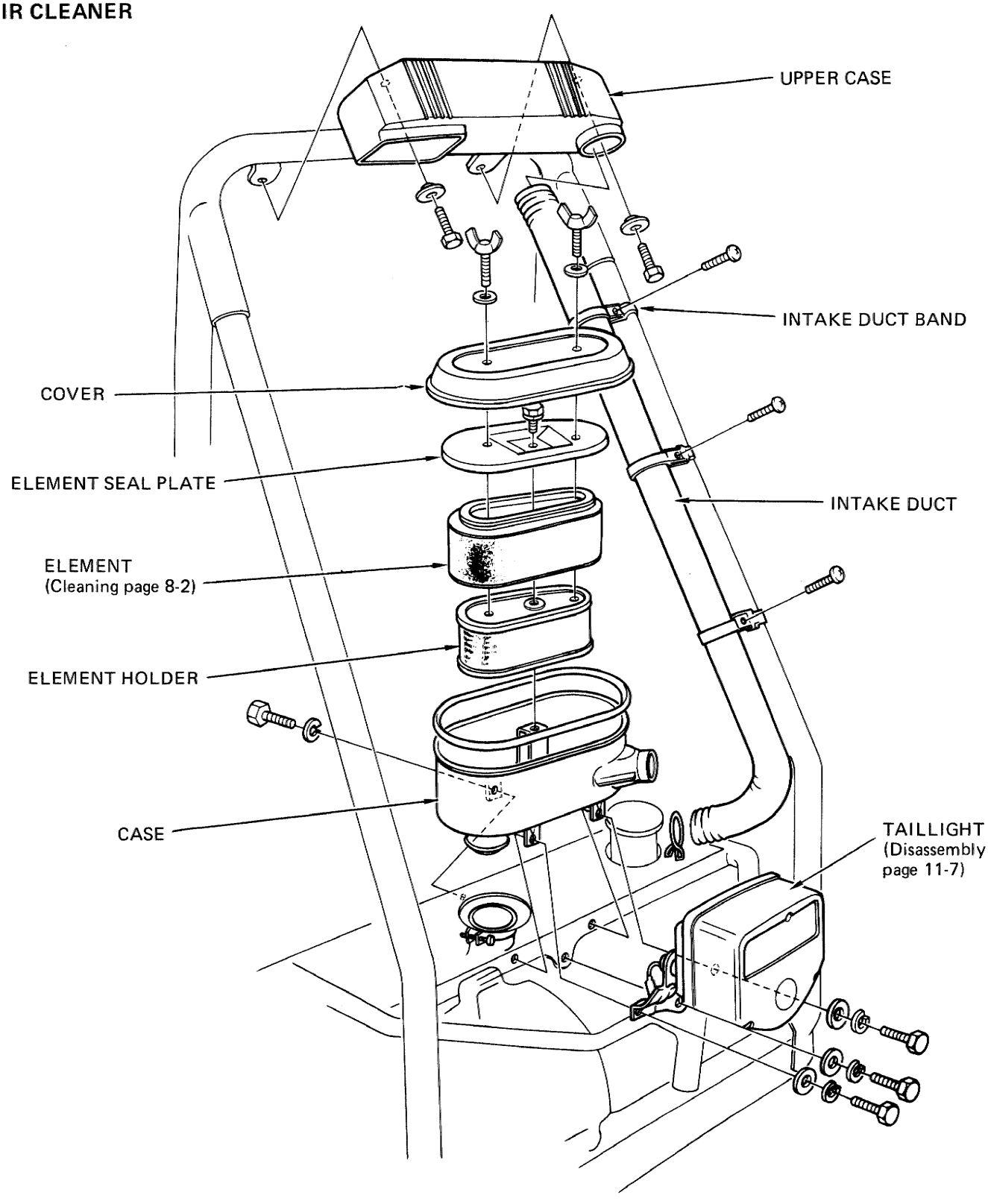


ENGINE REMOVAL

Remove the engine by lifting and turning it as shown.



AIR CLEANER



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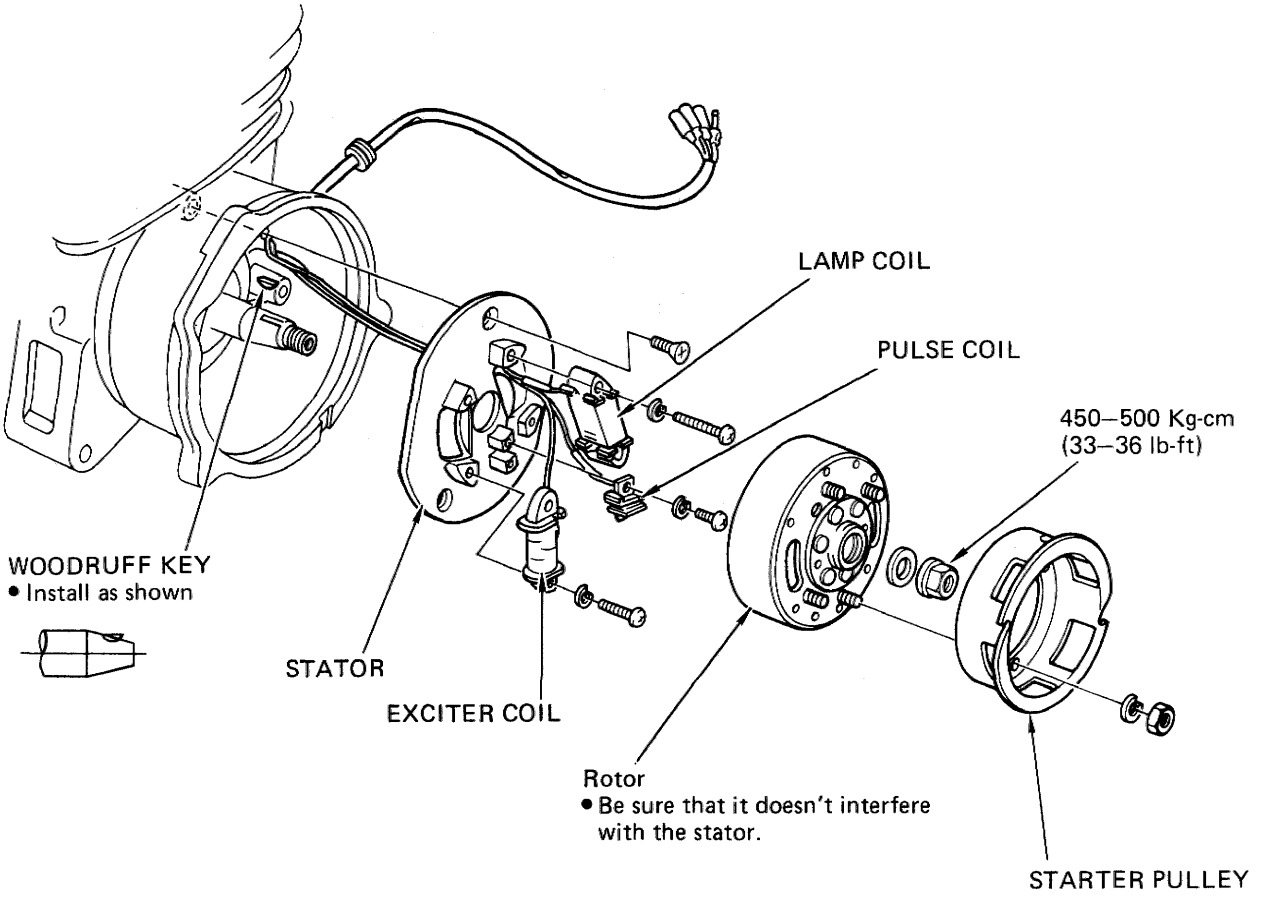
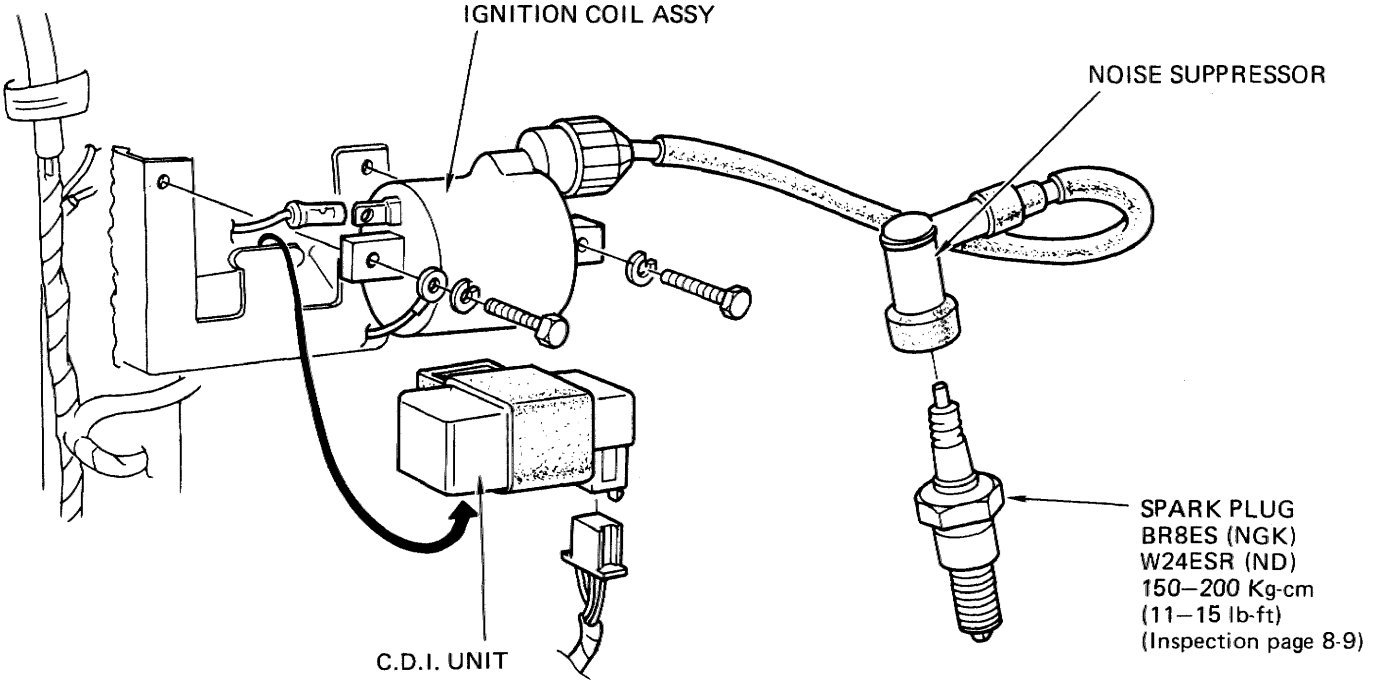
GENERATOR AND IGNITION SYSTEM





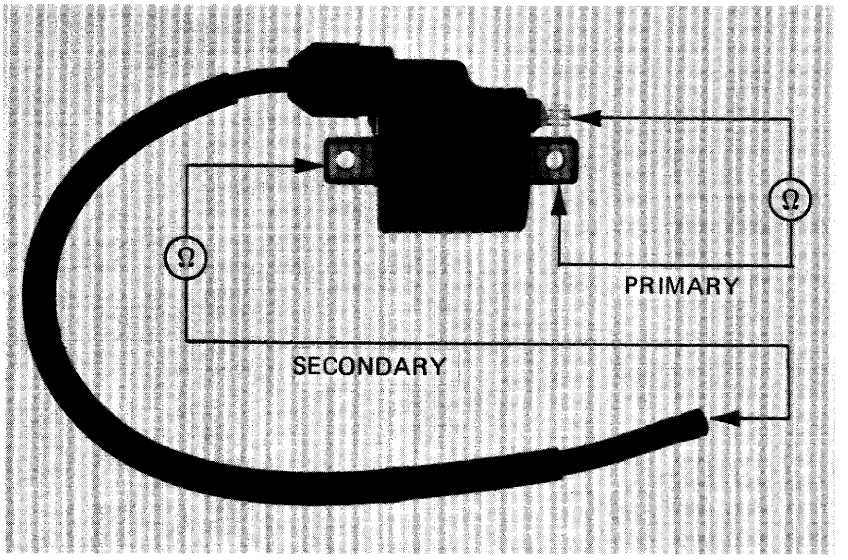
INSPECTION

IGNITION COIL

Check the resistances between the leads of the primary and secondary coils:

Primary coil: 0.2–0.8 Ω

Secondary coil: 8–15 k Ω



EXCITER COIL

Adjust the seat so that it is completely forward.

Disconnect the A.C. generator wire connectors from the main harness clipped to the right side of the frame (see page 12-13).

Use an electrical tester to check continuity between the wires as shown.

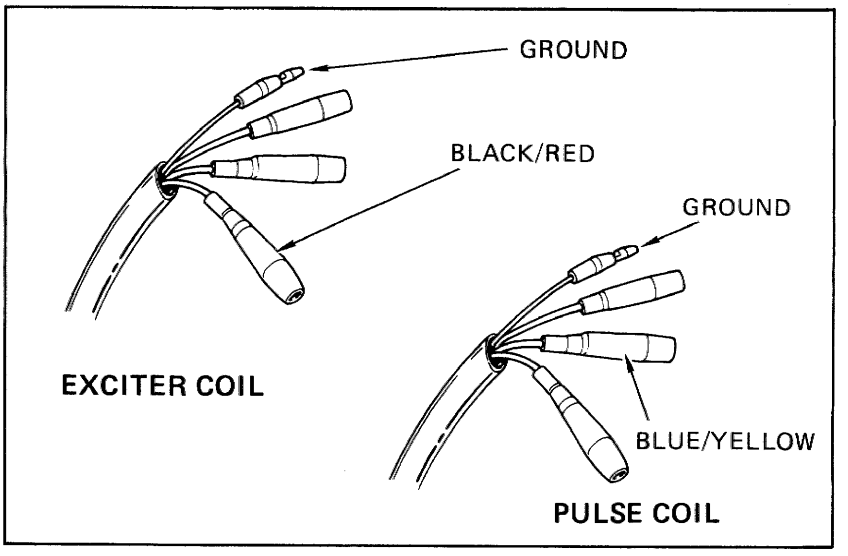
The excitor coil is normal if there is continuity between the black/red wire and ground.

SPECIFIED RESISTANCE: 245 Ω

PULSE COIL

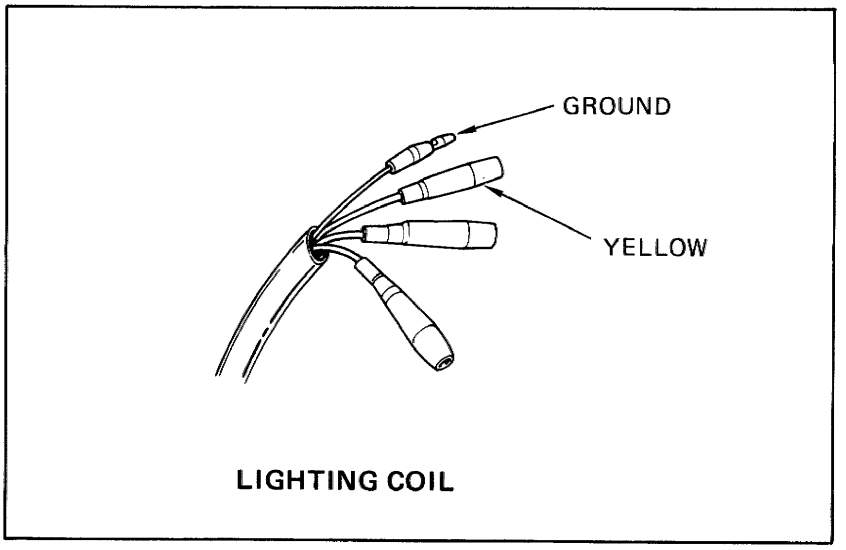
Measure the resistance between the Blue/Yellow and Green wires.

RESISTANCE: 20–60 Ω



LIGHTING COIL

The lighting coil is good if there is continuity between the yellow wire and ground.



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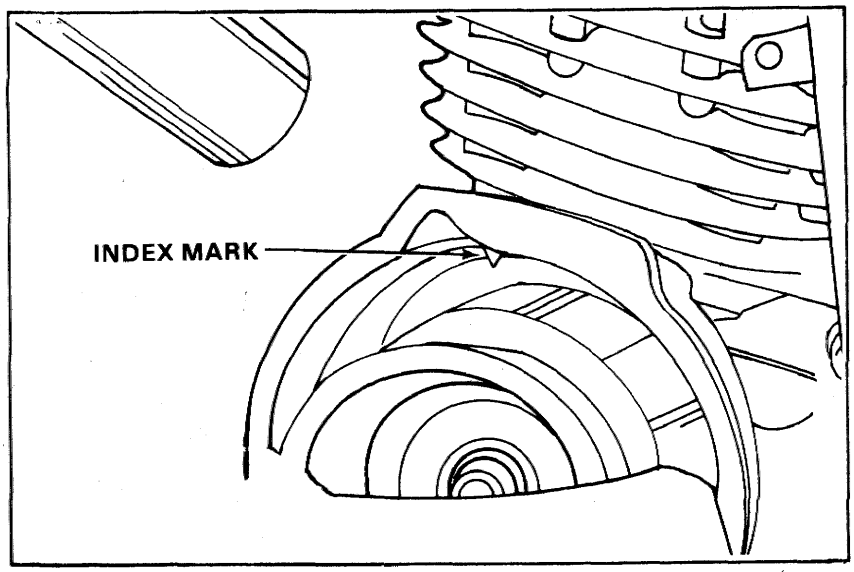
IGNITION TIMING

NOTE

Capacitive discharge ignition timing is not adjustable. If timing is incorrect, test the CDI unit and the AC generator, and replace the faulty part.

1. Remove the recoil starter.
2. Wind a rope around the pulley and start the engine.
3. Check the timing using a strobe light. Timing is correct if the index mark aligns between the two advance marks at 1500 rpm.

NEW

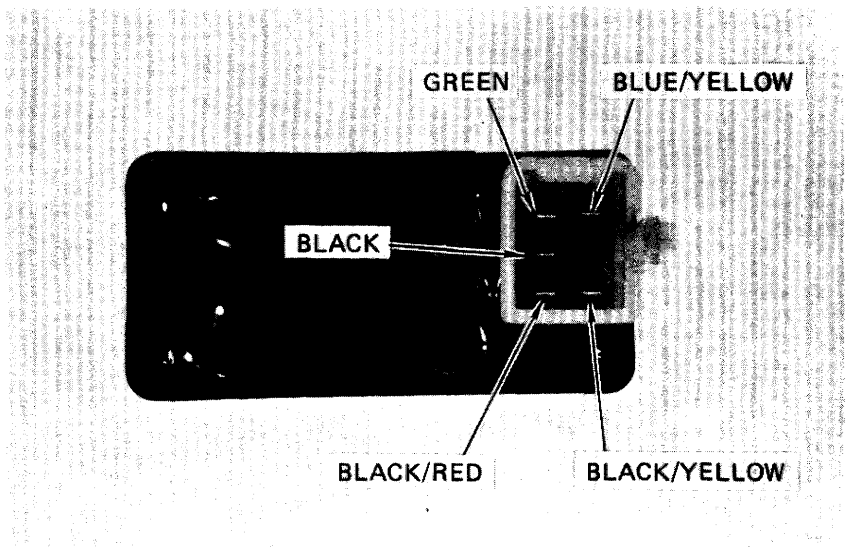


CDI UNIT

NOTE

- The CDI unit is fully transistorized.
- For accurate testing, it is necessary to use a specified electric tester. Use of an improper tester may give a false reading.
- Use SANWA ELECTRIC TESTER (P/N 7308-0020000) or KOWA ELECTRIC tester (TH–5H).

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

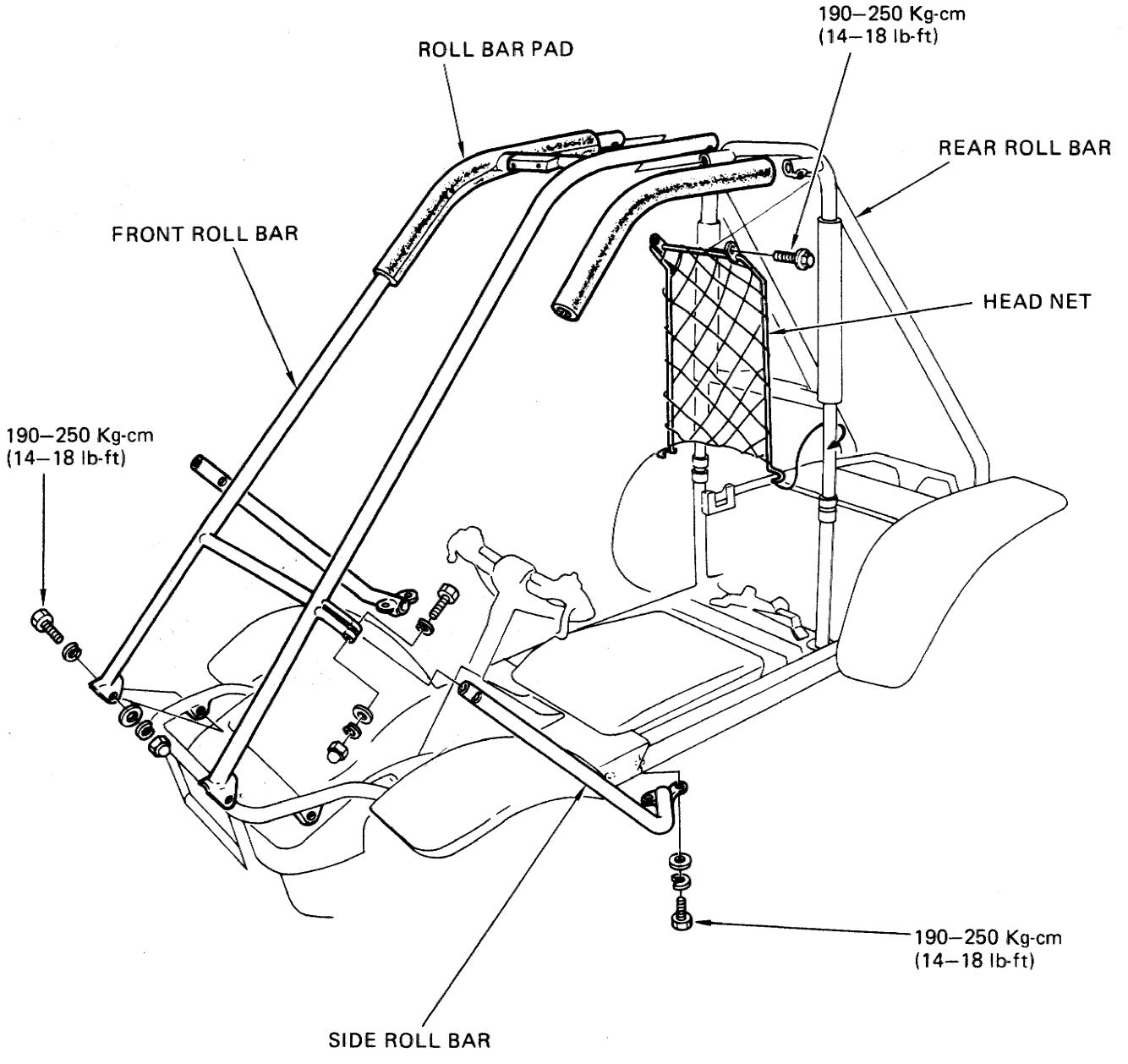


UPPER:SANWA (SP-10D)xk Ω
LOWER: KOWA (TH-5H) X100 Ω

(+) / (−)	BLUE/ YELLOW	BLACK/ YELLOW	BLACK/ RED	BLACK	GREEN
BLUE/ YELLOW		∞	∞	∞	∞
BLACK/ YELLOW	∞		∞	∞	∞
BLACK/ RED	∞	∞		0.5–10.0 5.0–100.0	∞
BLACK	∞	∞	∞		∞
GREEN	∞	∞	0.5–10.0 5.0–100.0	1.0–30.0 10.0–300.0	

FRAME

ROLL BAR



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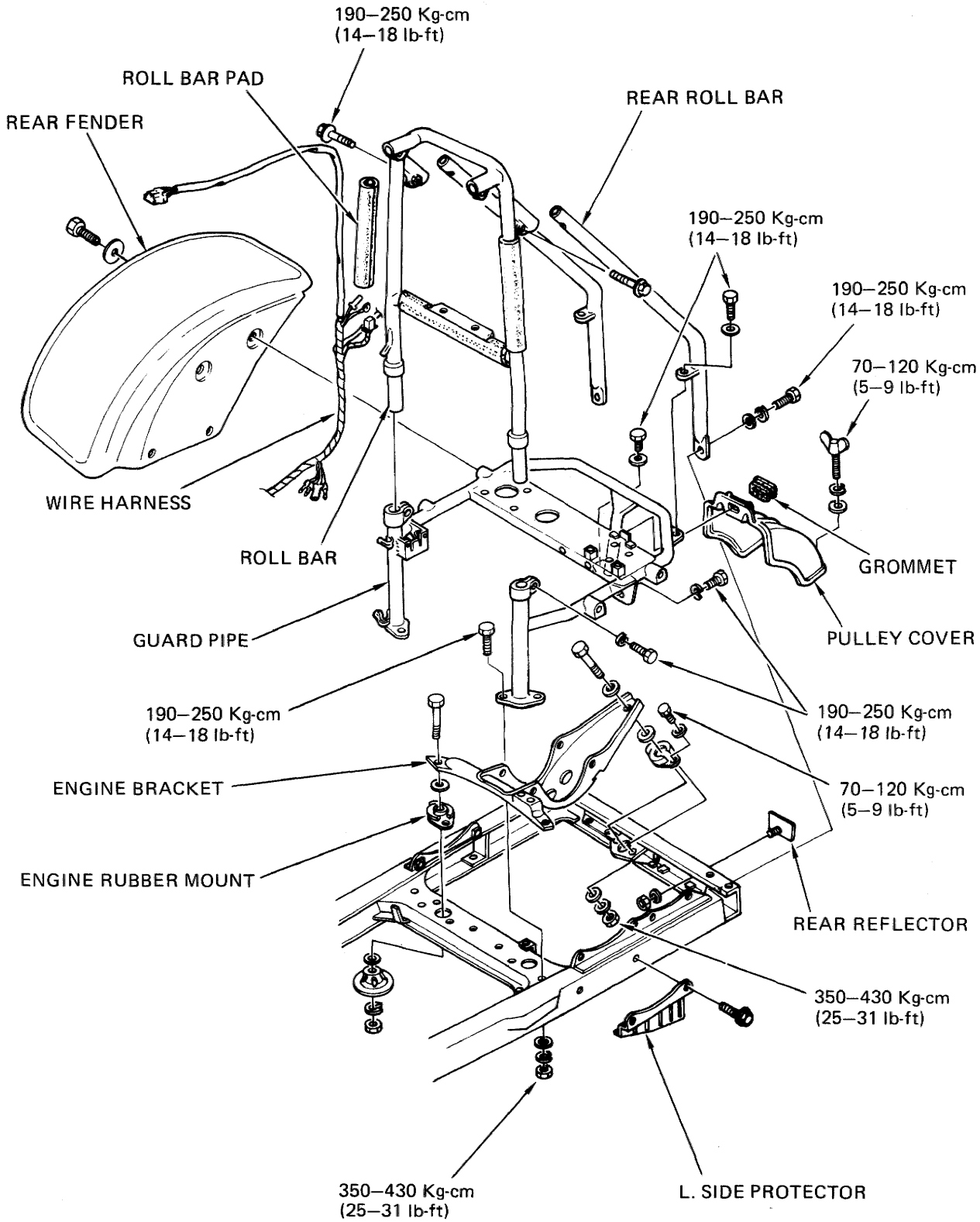
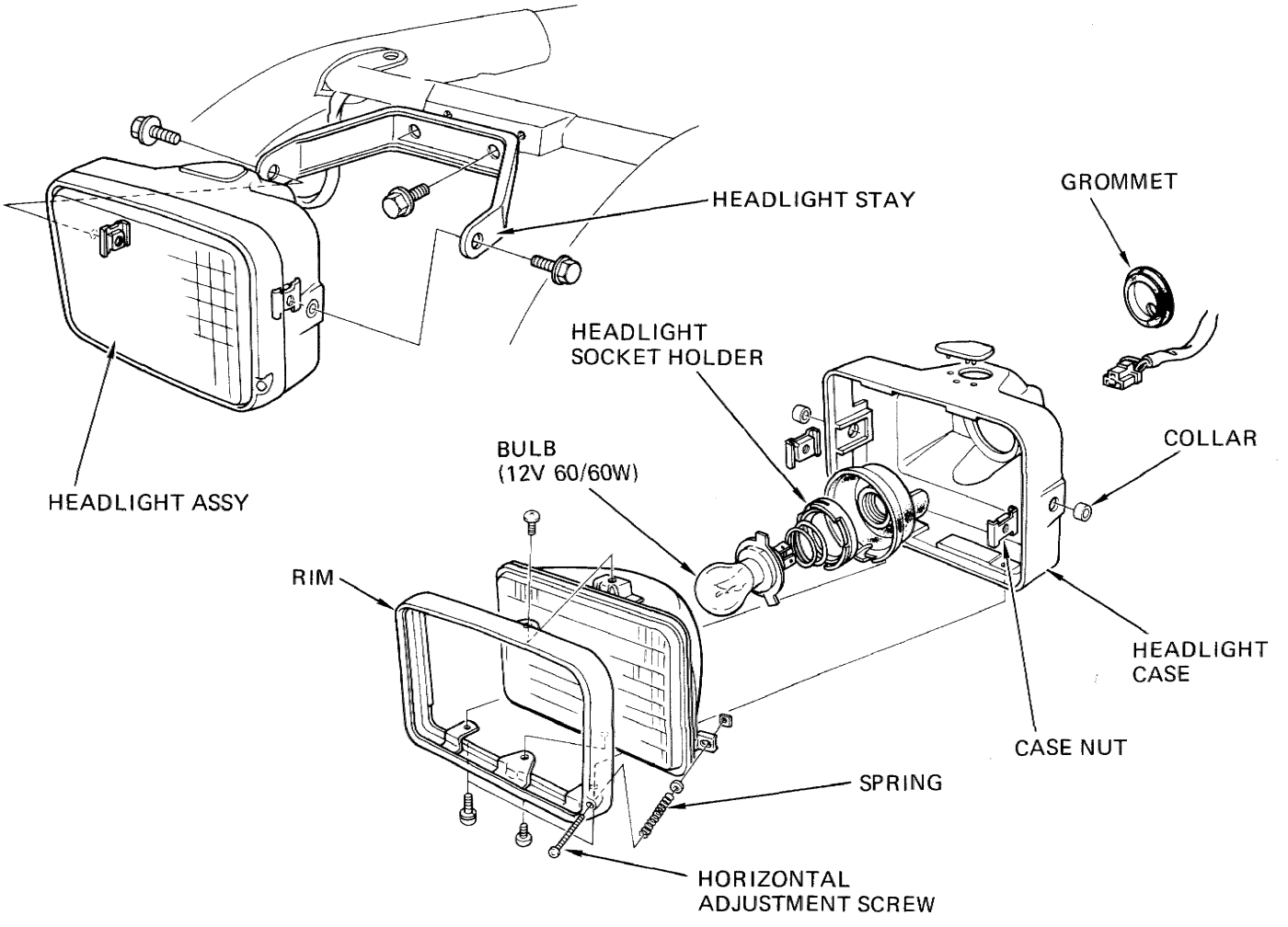
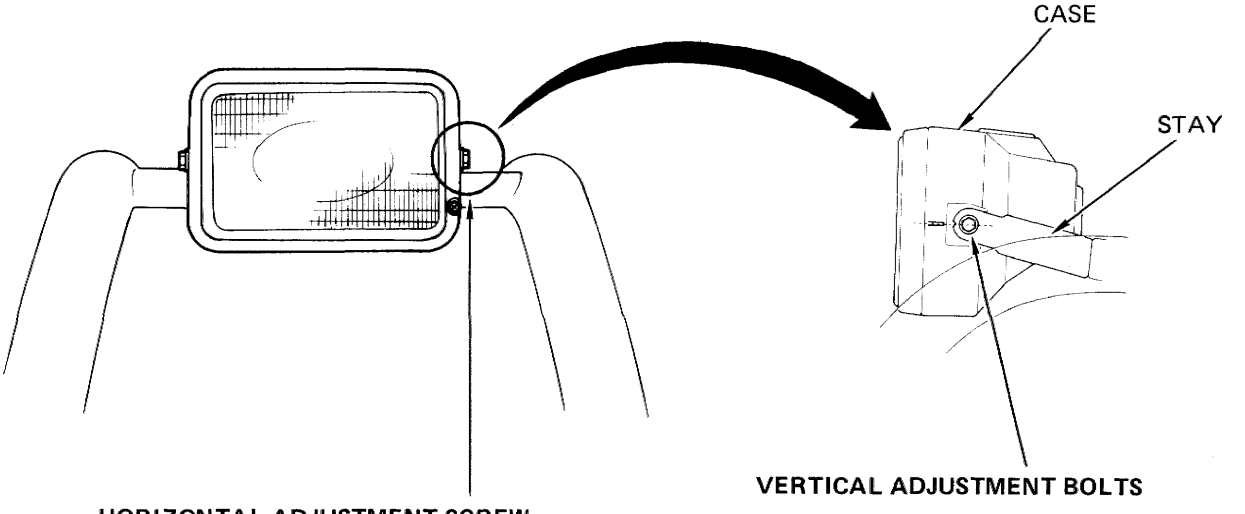
REAR FRAME



HEADLIGHT





HORIZONTAL ADJUSTMENT SCREW

- Turn the screw so the headlight beam is aimed straight ahead.

VERTICAL ADJUSTMENT BOLTS

- Loosen the bolts and align the embossed mark on the headlight case with the cut-out in the headlight stay.

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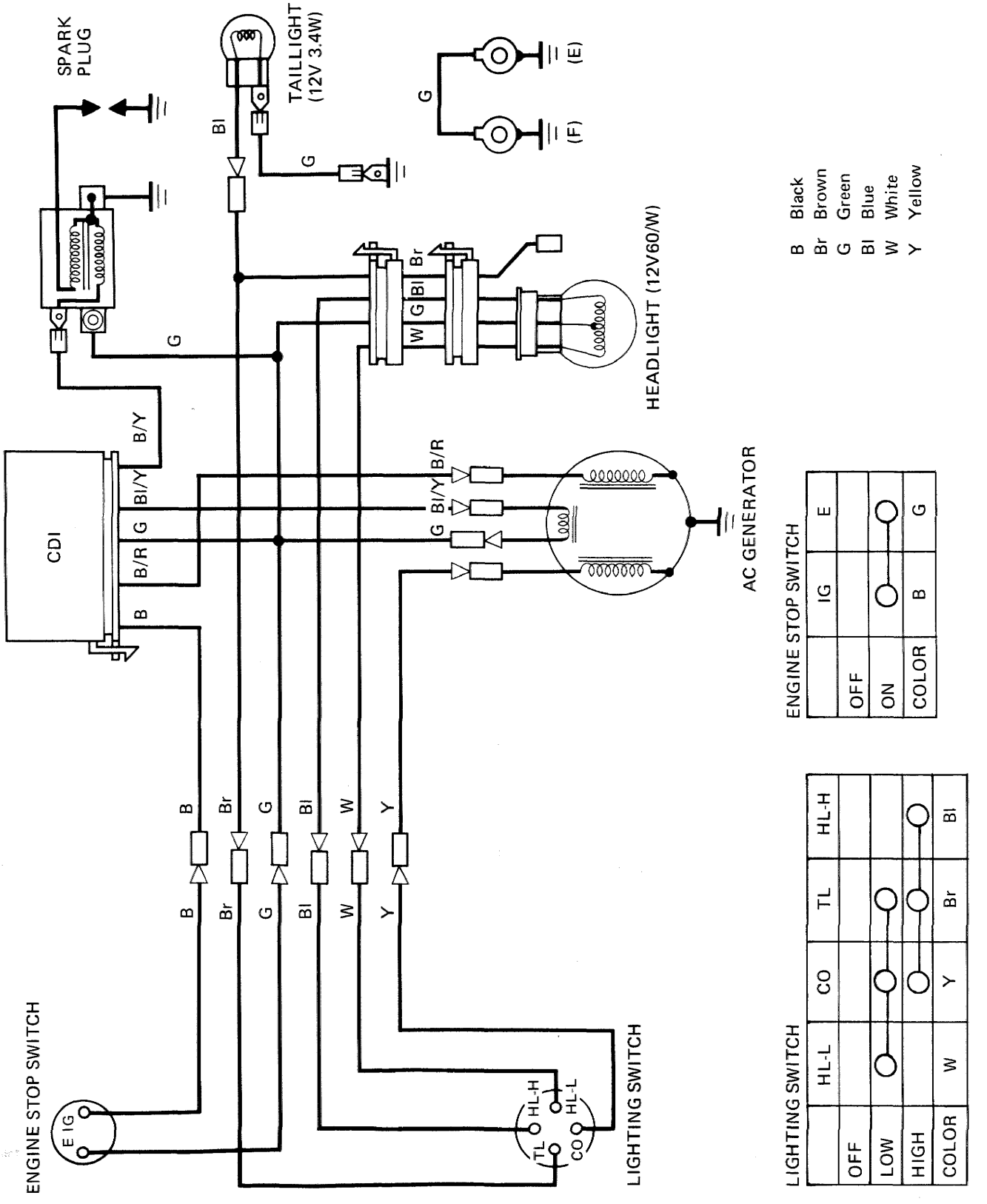
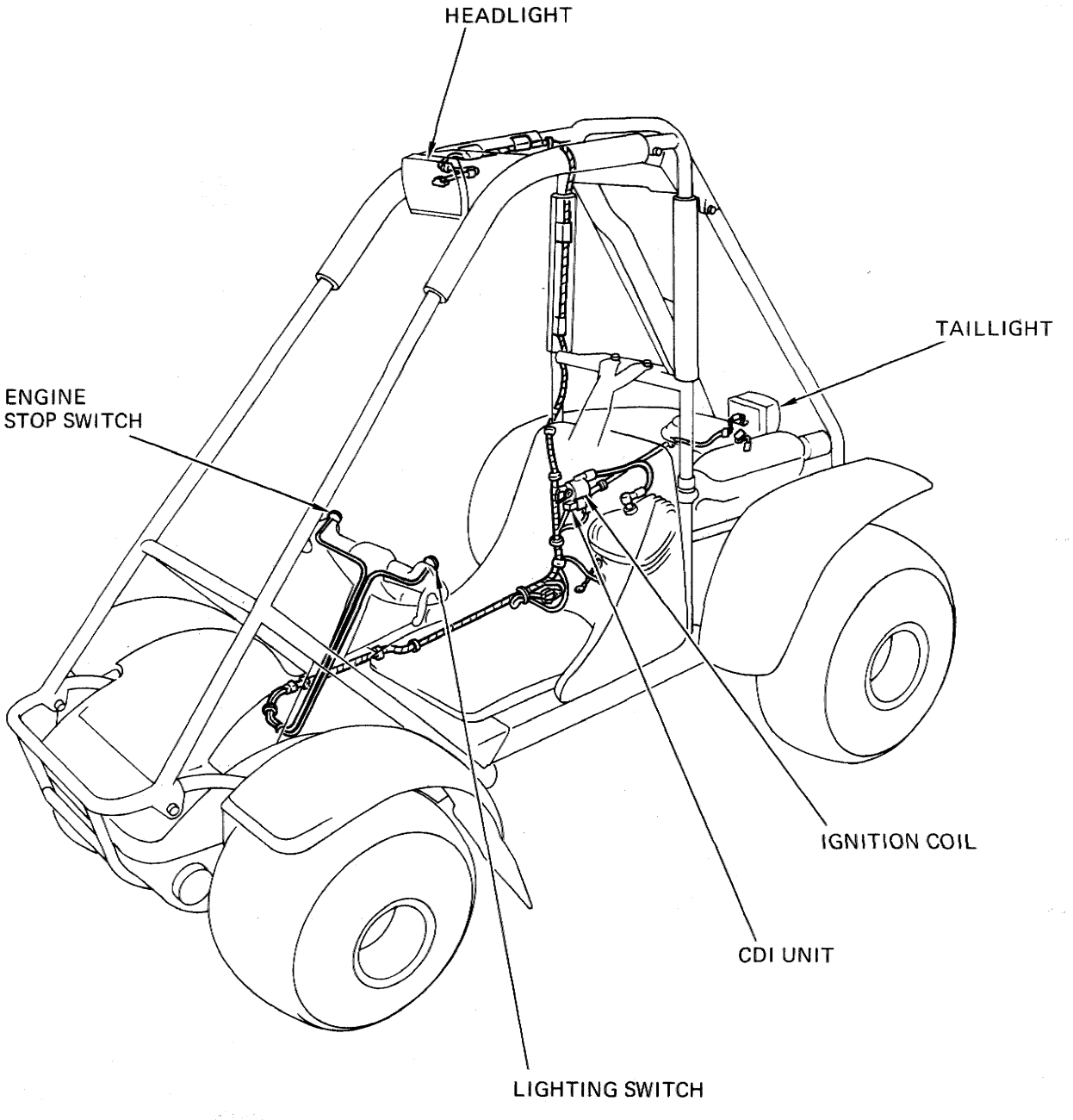
WIRING DIAGRAM



HARNESS ROUTING



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