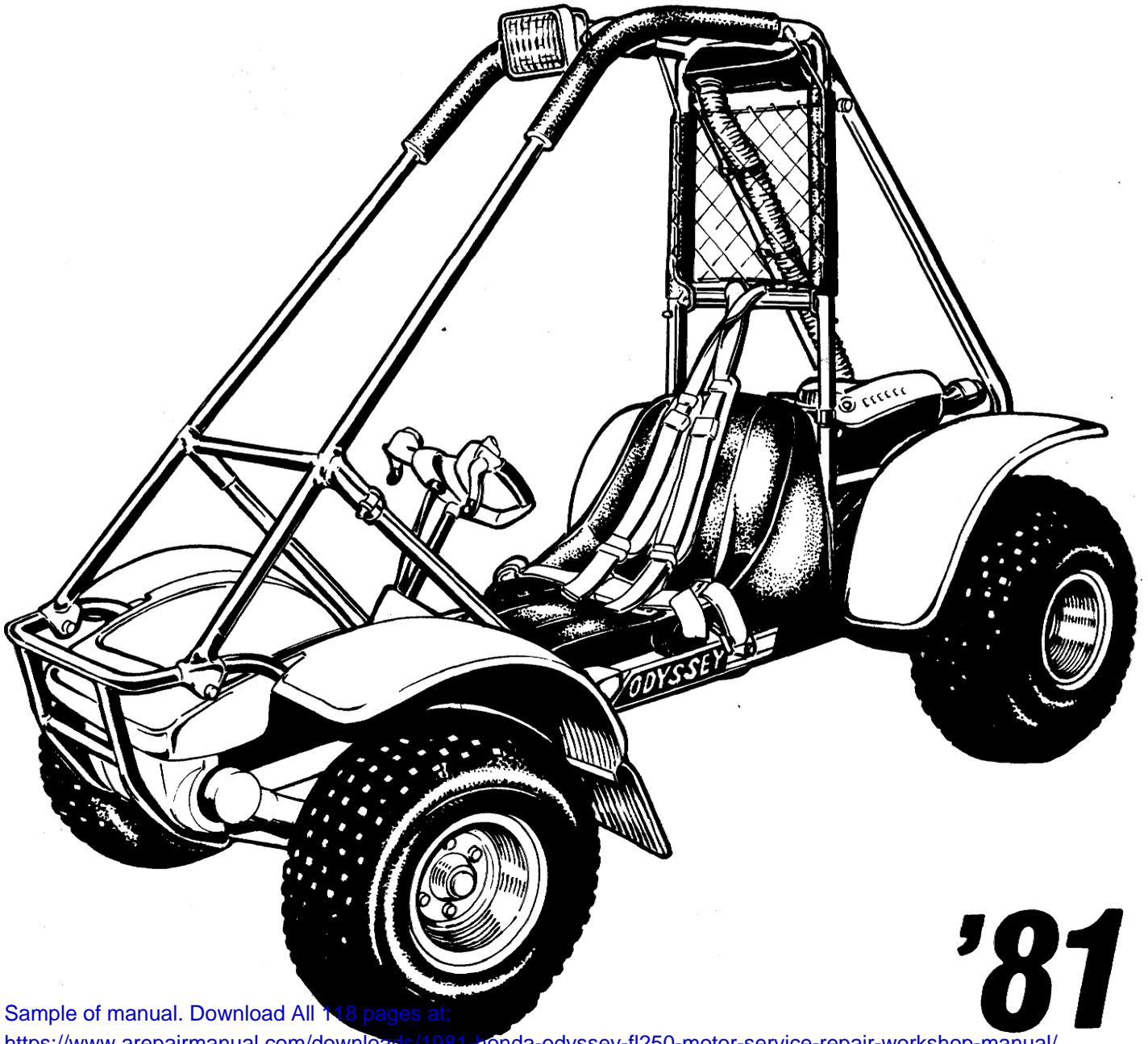


Product: 1981 Honda ODYSSEY FL250 Motor Service Repair Workshop Manual  
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# SHOP MANUAL

## HONDA ODYSSEY FL 250



Sample of manual. Download All 118 pages at:  
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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.



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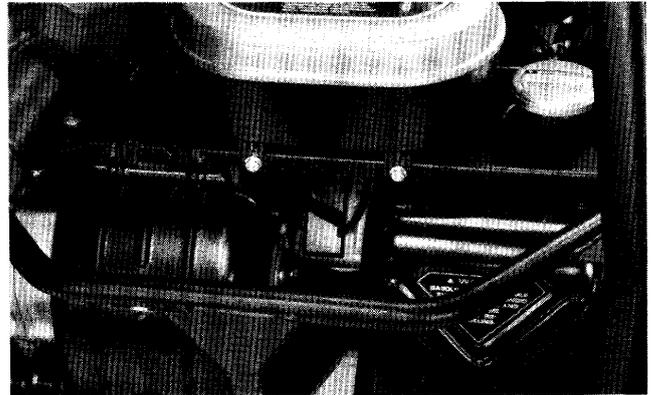
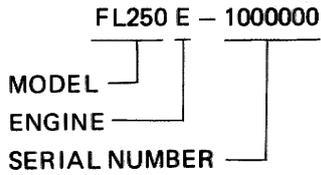
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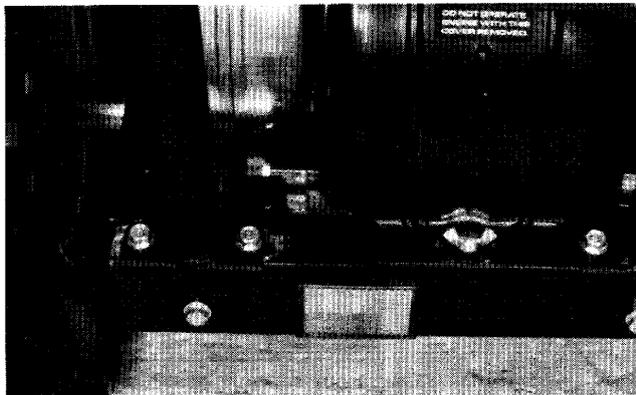
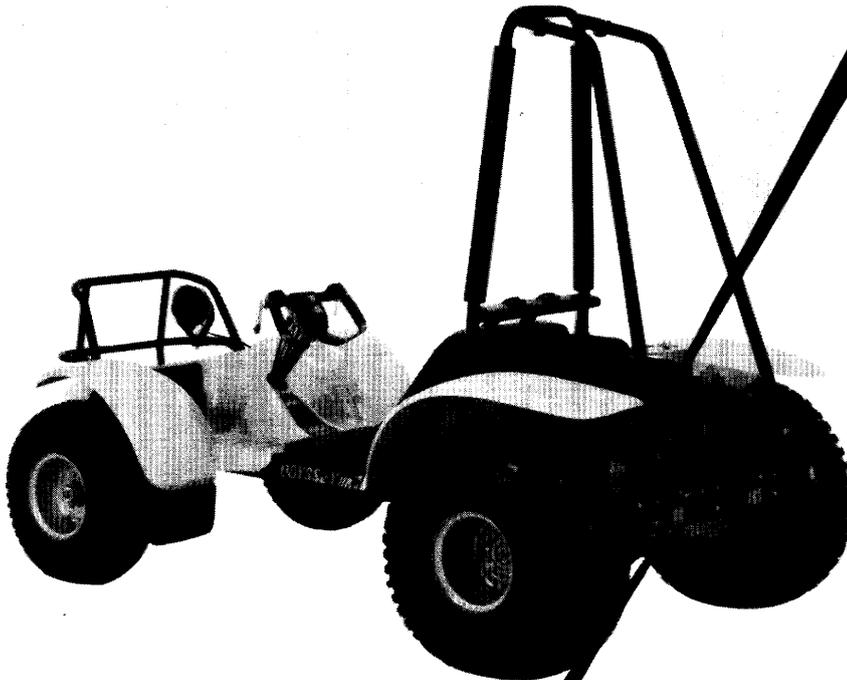
# GENERAL INFORMATION

## A. Frame/Engine Number Identifications and Number Locations

### ENGINE SERIAL NUMBER IDENTIFICATION

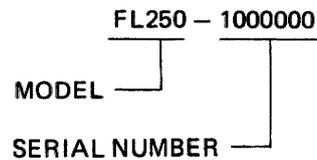


ENGINE NUMBER



FRAME NUMBER

### FRAME NUMBER IDENTIFICATION





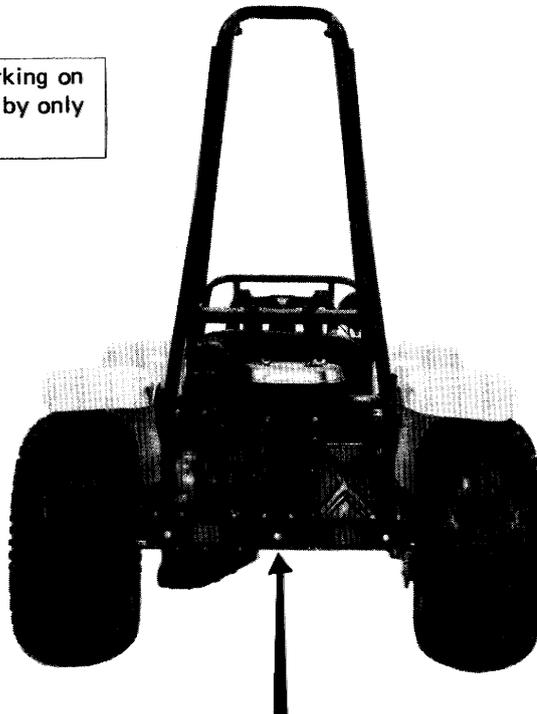
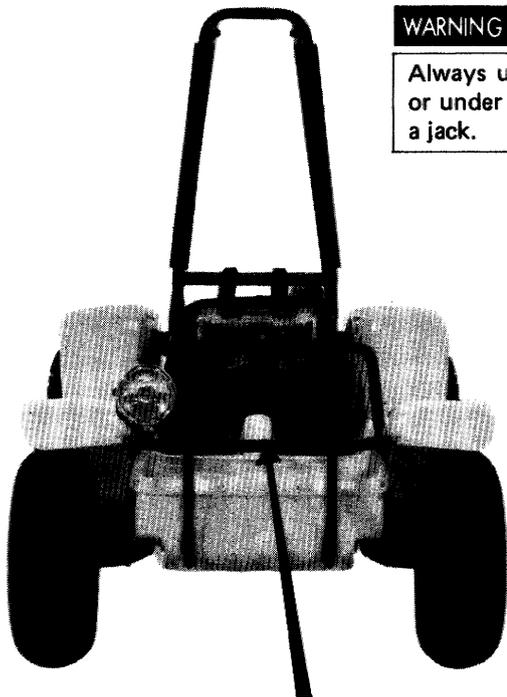
B. Lift and Support Points

FRONT

REAR

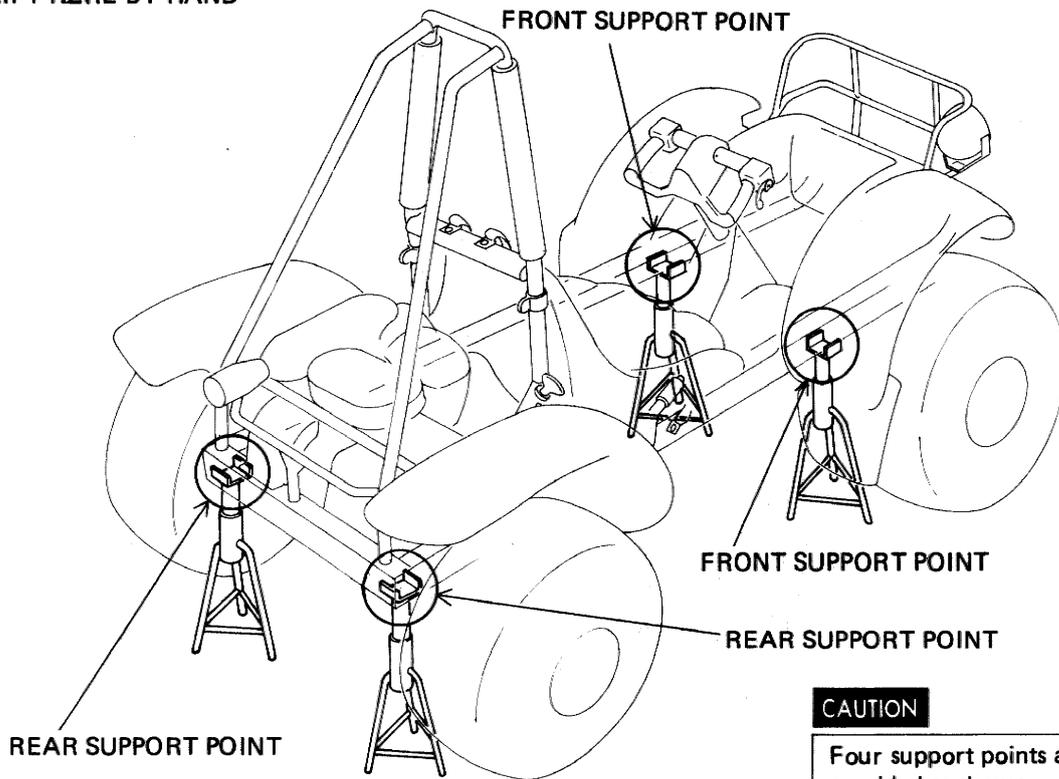
**WARNING**

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

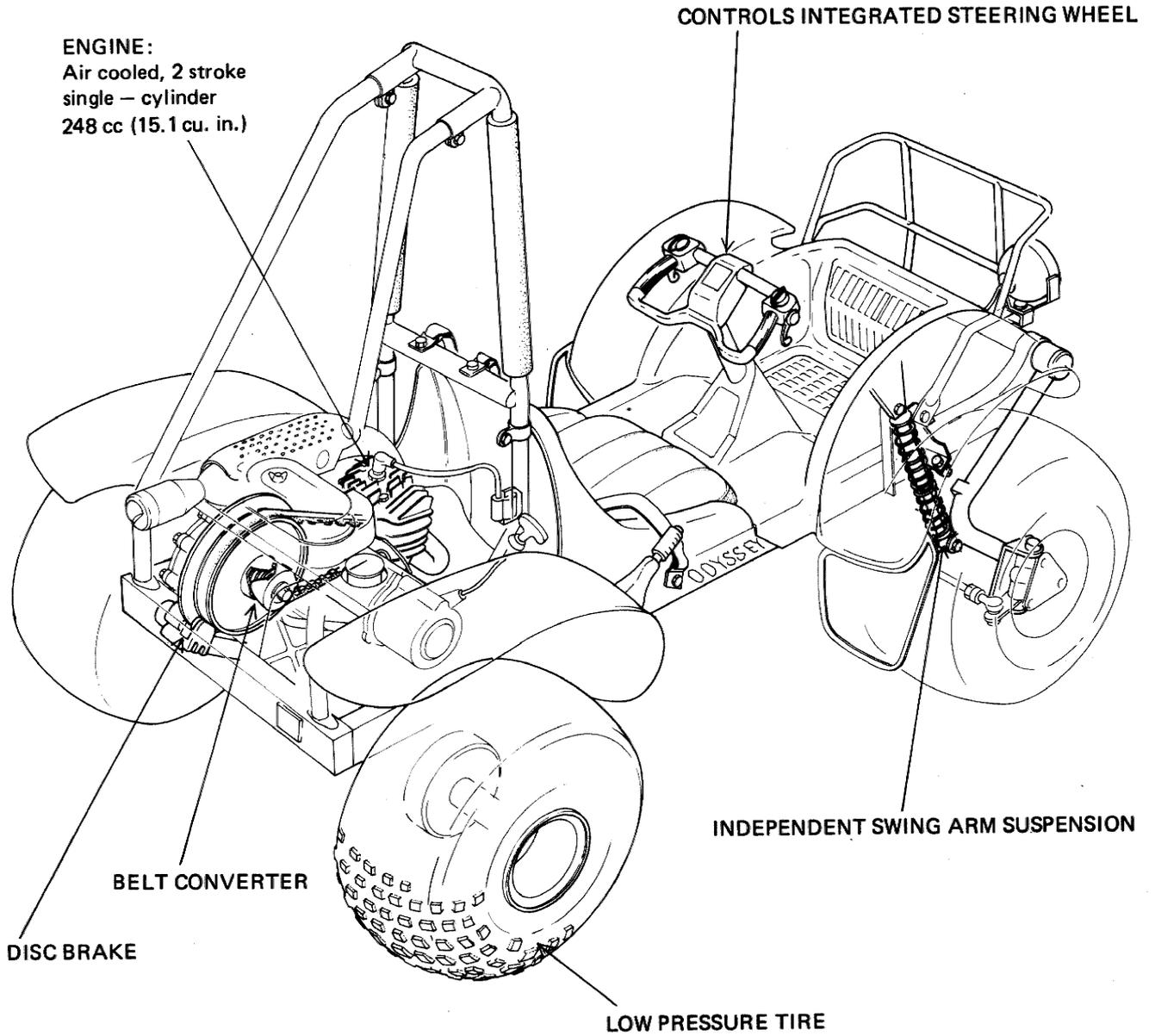


**CAUTION**

Four support points are provided as shown.



# TECHNICAL FEATURES



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**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

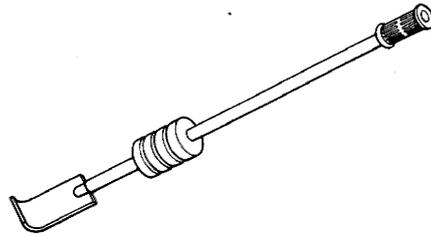
## REAR BRAKE



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)

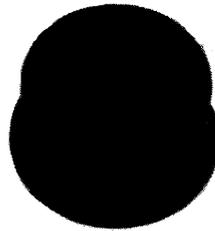
Fig. 2.

## FRONT SUSPENSION



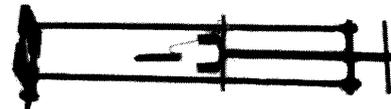
6 mm Spring Pin Driver  
07944 - 9350300  
(For removal of front arm  
and pivot pipe.)

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.



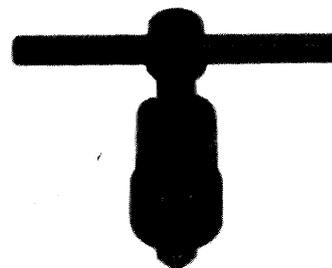
**Engine**

**ROTOR**



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

**Fig. 6**

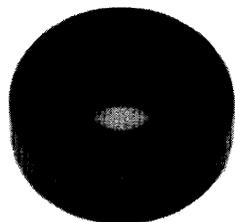


**Rotor Puller**  
07933 - 0010000  
(For removal of rotor)

**Fig. 7**

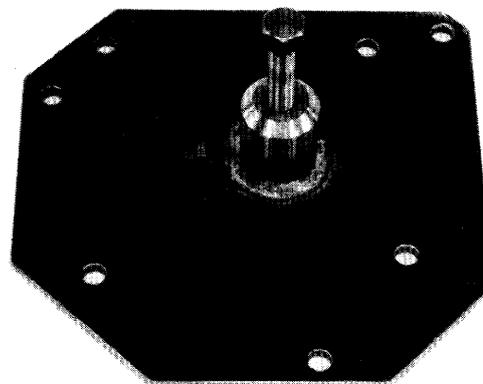
**CRANKSHAFT**

**CRANKCASE**



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

**Fig. 8**



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

**Fig. 9**

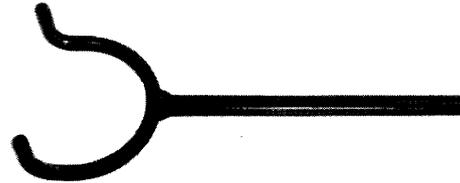
**FRAME AND ENGINE**

**BELT CONVERTER**



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

Fig. 10



Spanner  
Salsbury #602112  
(For holding drive pulley)

Fig. 11

**BELT CONVERTER**

**BELT CONVERTER**



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

Fig. 12

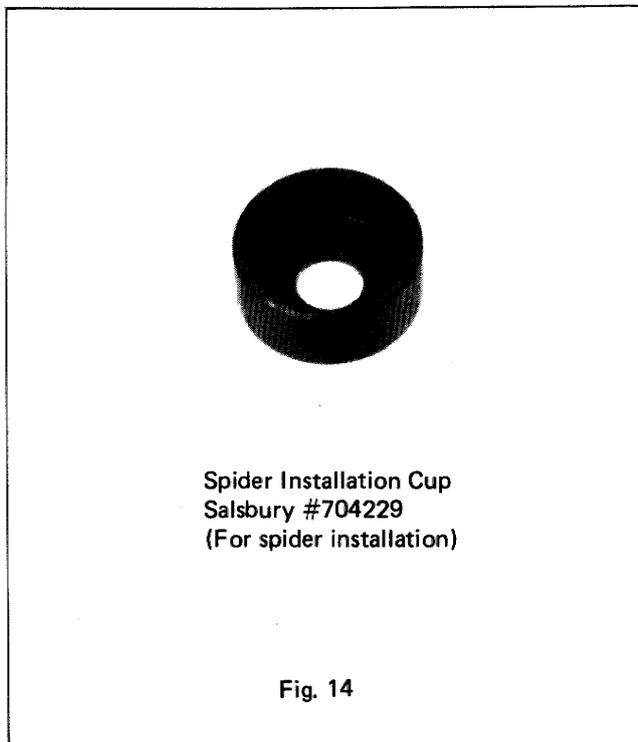


Taper Plug  
Salsbury #703463  
(For securing drive pulley)

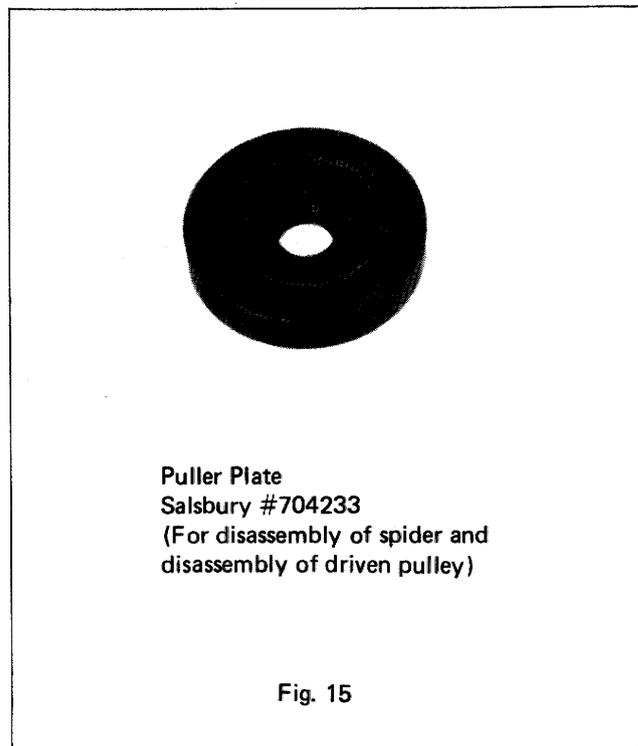
Fig. 13



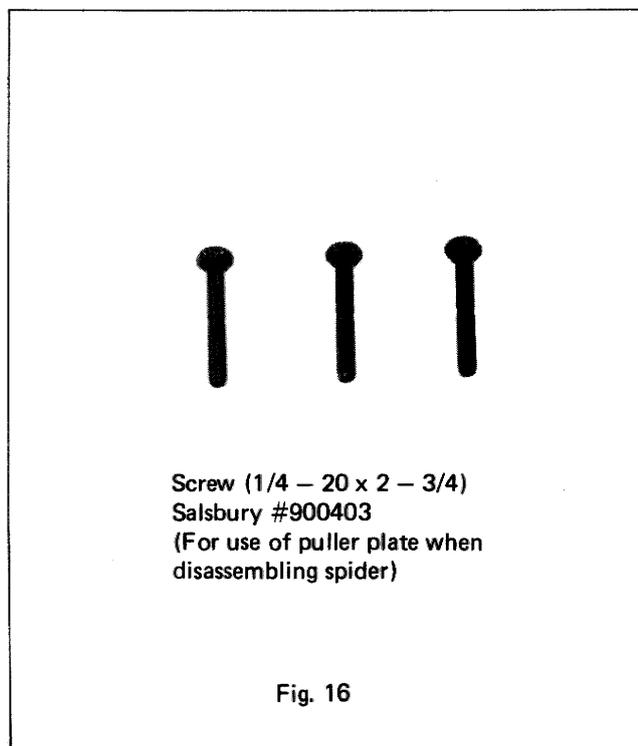
**BELT CONVERTER**



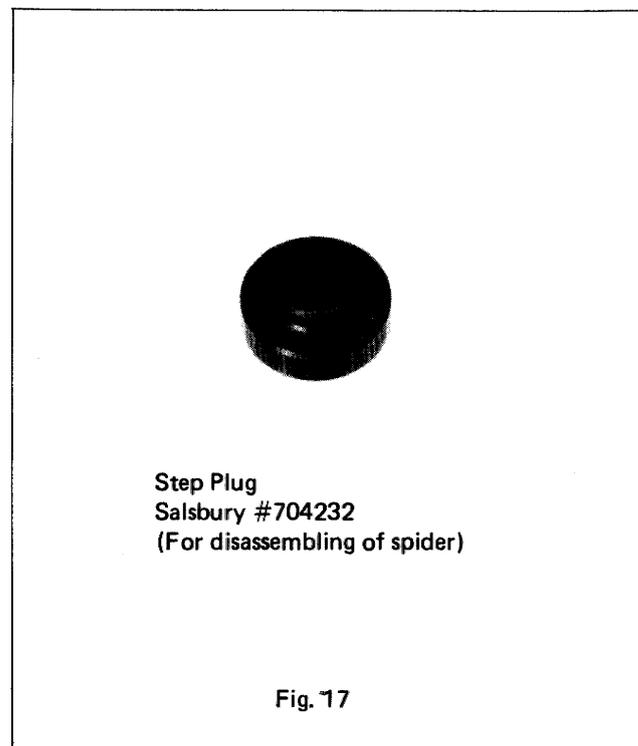
**BELT CONVERTER**



**BELT CONVERTER**

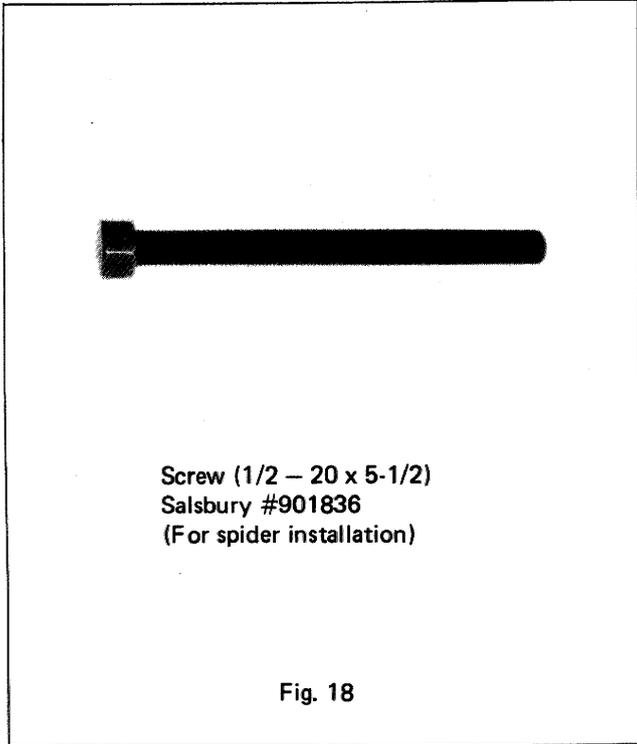


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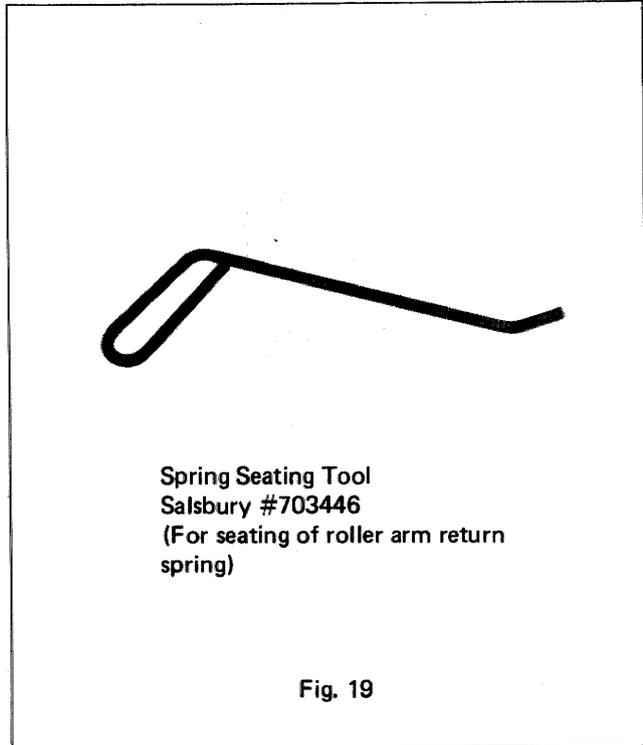




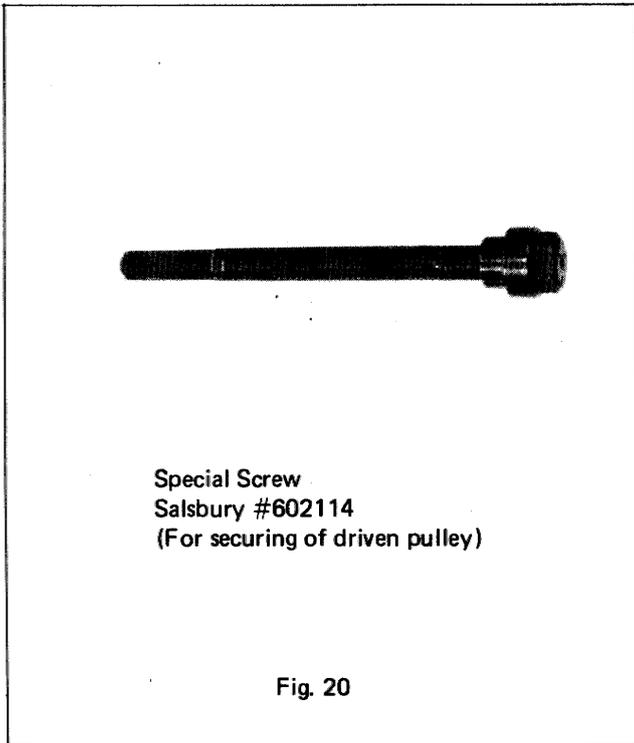
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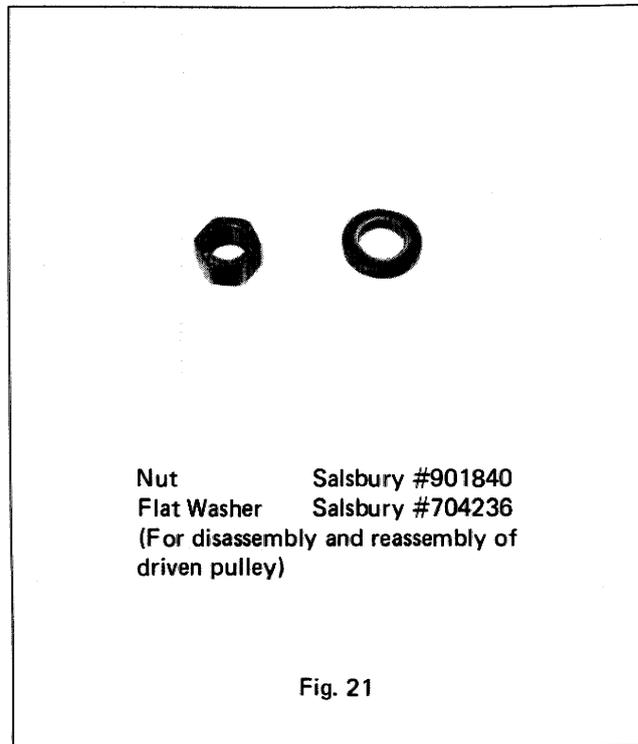
**BELT CONVERTER**



**BELT CONVERTER**

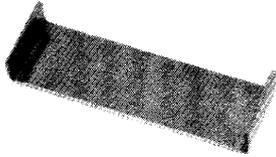


**BELT CONVERTER**





**BELT CONVERTER**



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

Fig. 22

1

2

3

4

5

6

7



**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**

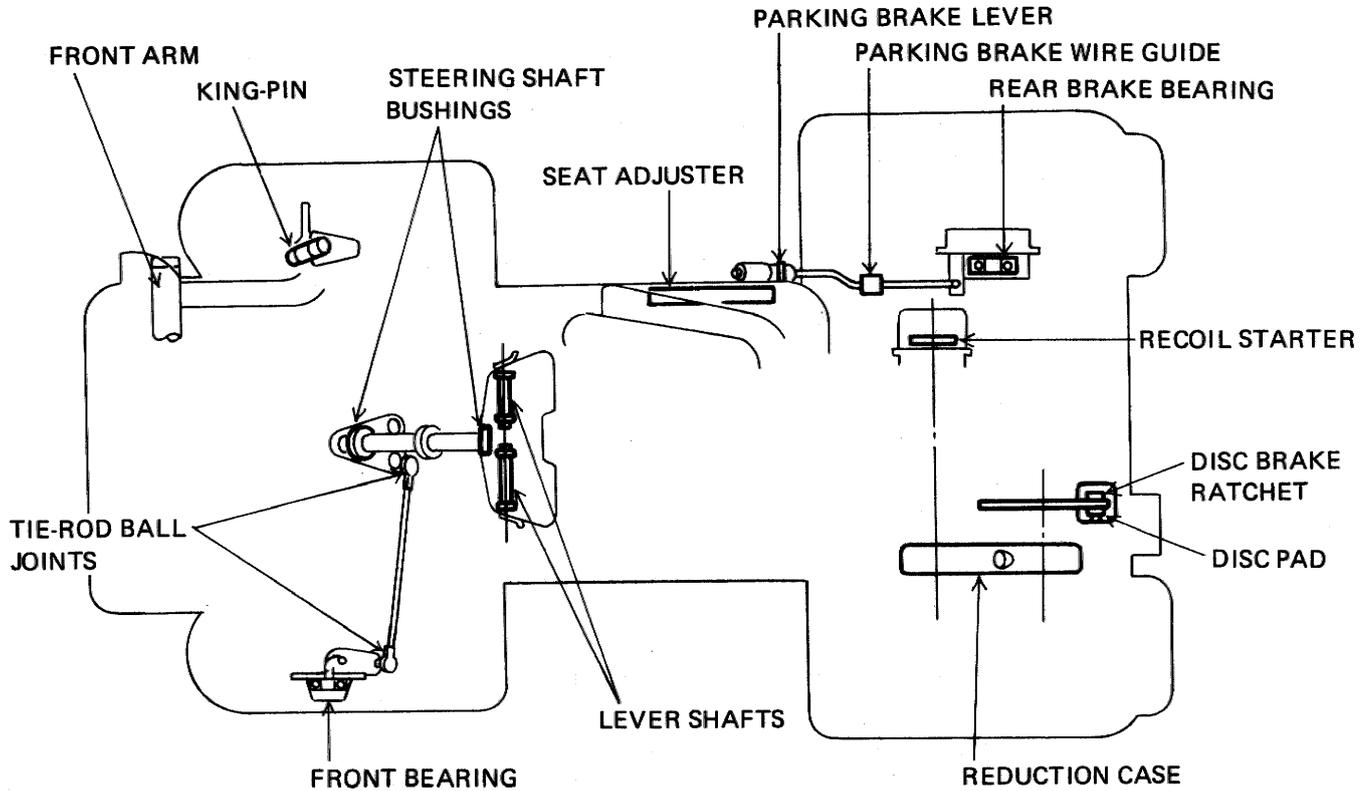
- SPARK PLUG – Clean and adjust gap, or replace if necessary.
- \*CONTACT POINTS AND IGNITION TIMING – Clean, check, and adjust or replace if necessary.
- POLYURETHANE FOAM AIR FILTER ELEMENT – Clean and oil. Service more frequently if operated in dusty areas.
- \*CARBURETOR – Check and adjust if necessary.
- \*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
Tie-Rod Ball Joints	Texaco Molytex Grease 2	



## TECHNICAL DATA

### 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 - 1.1 Kg (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	



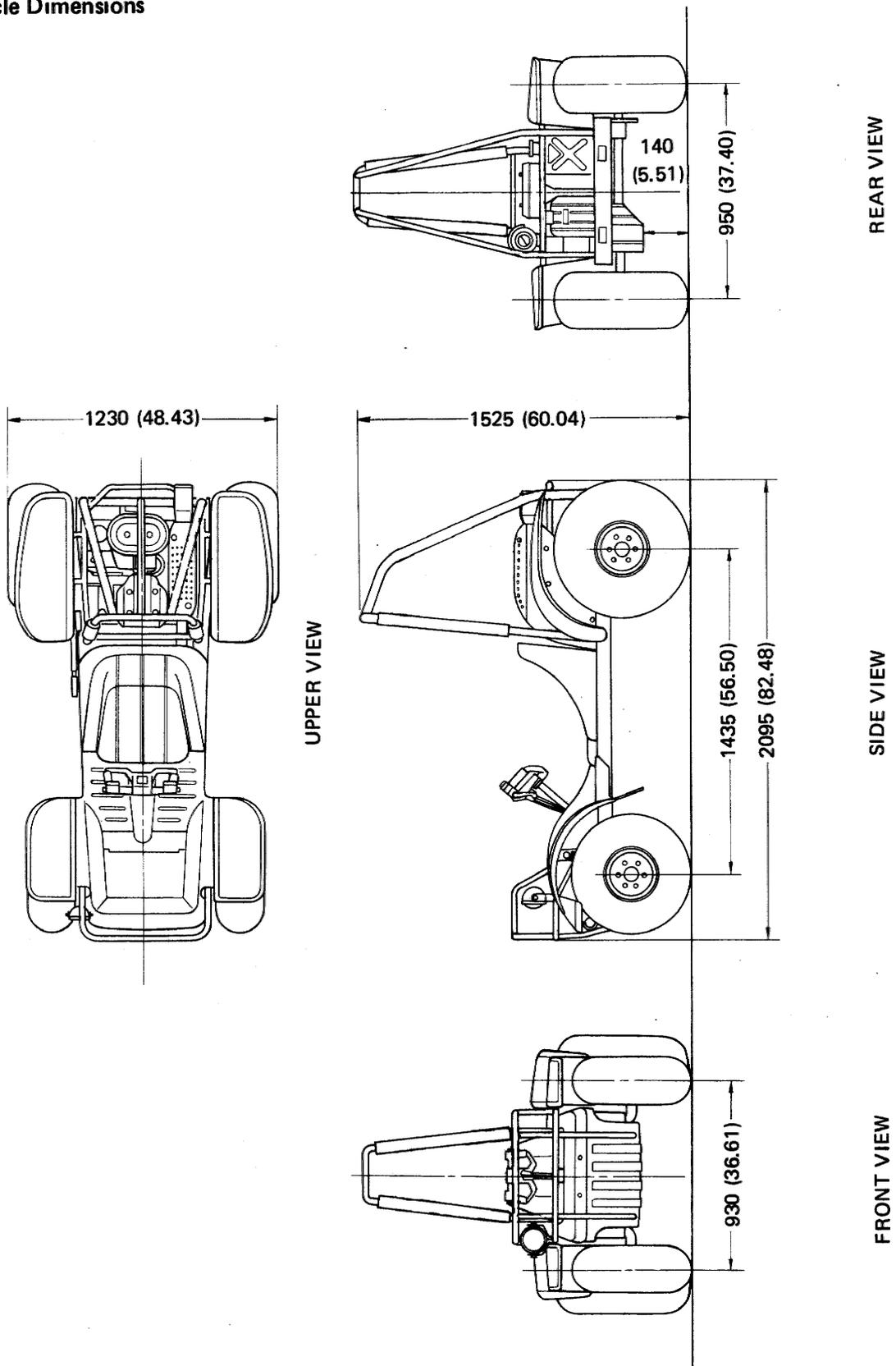
SUBJECT	ITEM	DESCRIPTION	THREAD DIA.	TORQUE	
				Kg - cm	lb - ft
FRAME	Frame Parts	Guard pipe to roll bar	M8	190 - 250	14 - 18
		Guard pipe:			
		Front	M8	190 - 250	14 - 18
		Rear	M8	190 - 250	14 - 18
		Roll bar to rear roll bar	M8	190 - 250	14 - 18
		Rear roll bar	M8	190 - 250	14 - 18
		Rear roll bar 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	





**GENERAL DATA**

**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.)		
Track 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 <sup>2</sup> /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	



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	SALSURY'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 $\frac{\text{inside}}{\text{outside}}$	$\frac{28^\circ}{20^\circ}$	
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 <sup>2</sup> (5.0 psi.)
rear		0.21 Kg/cm <sup>2</sup> (3.0 psi.)	
LIGHTS	Headlight	6 V – 35 W	

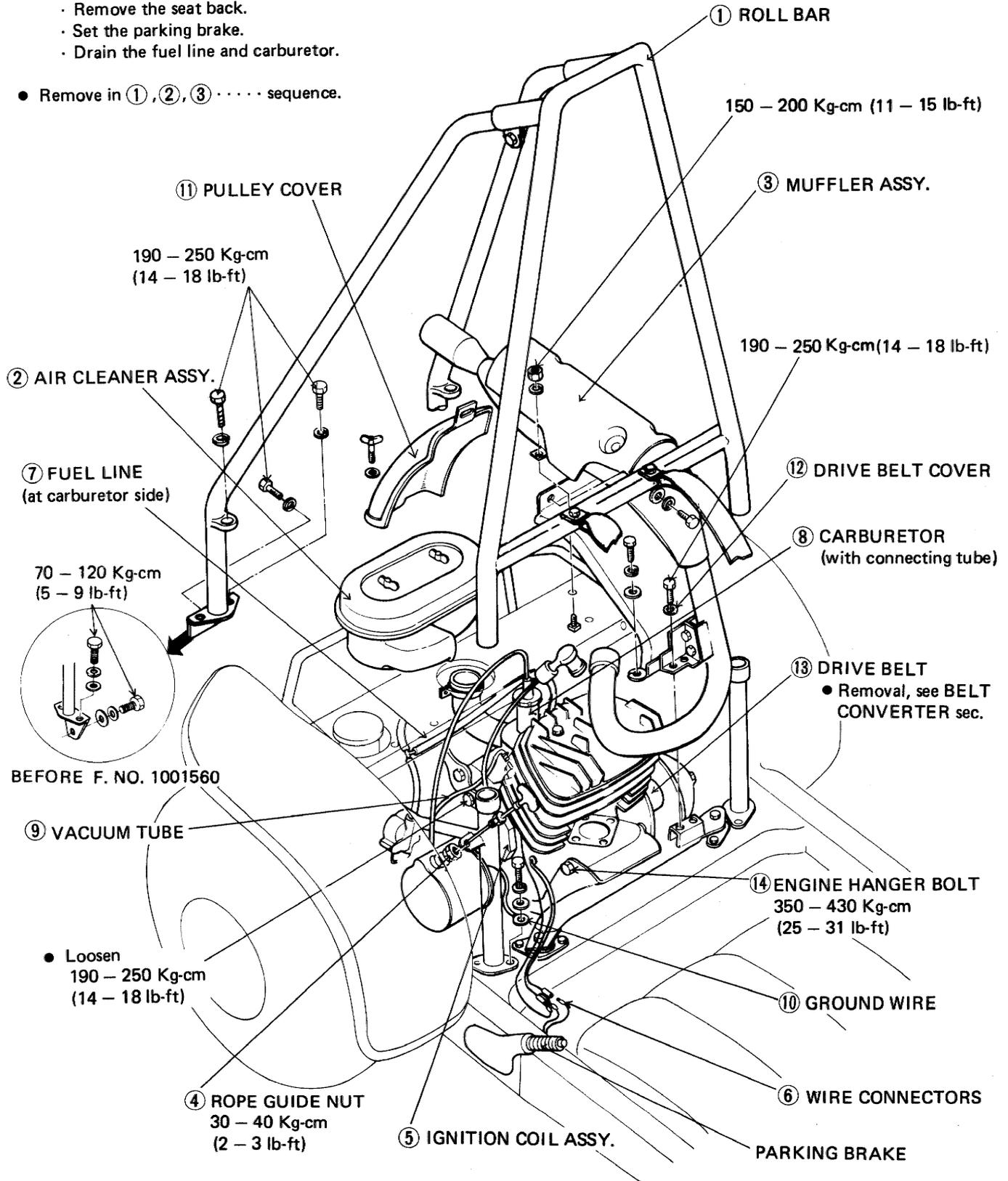


## ENGINE REMOVAL/ INSTALLATION

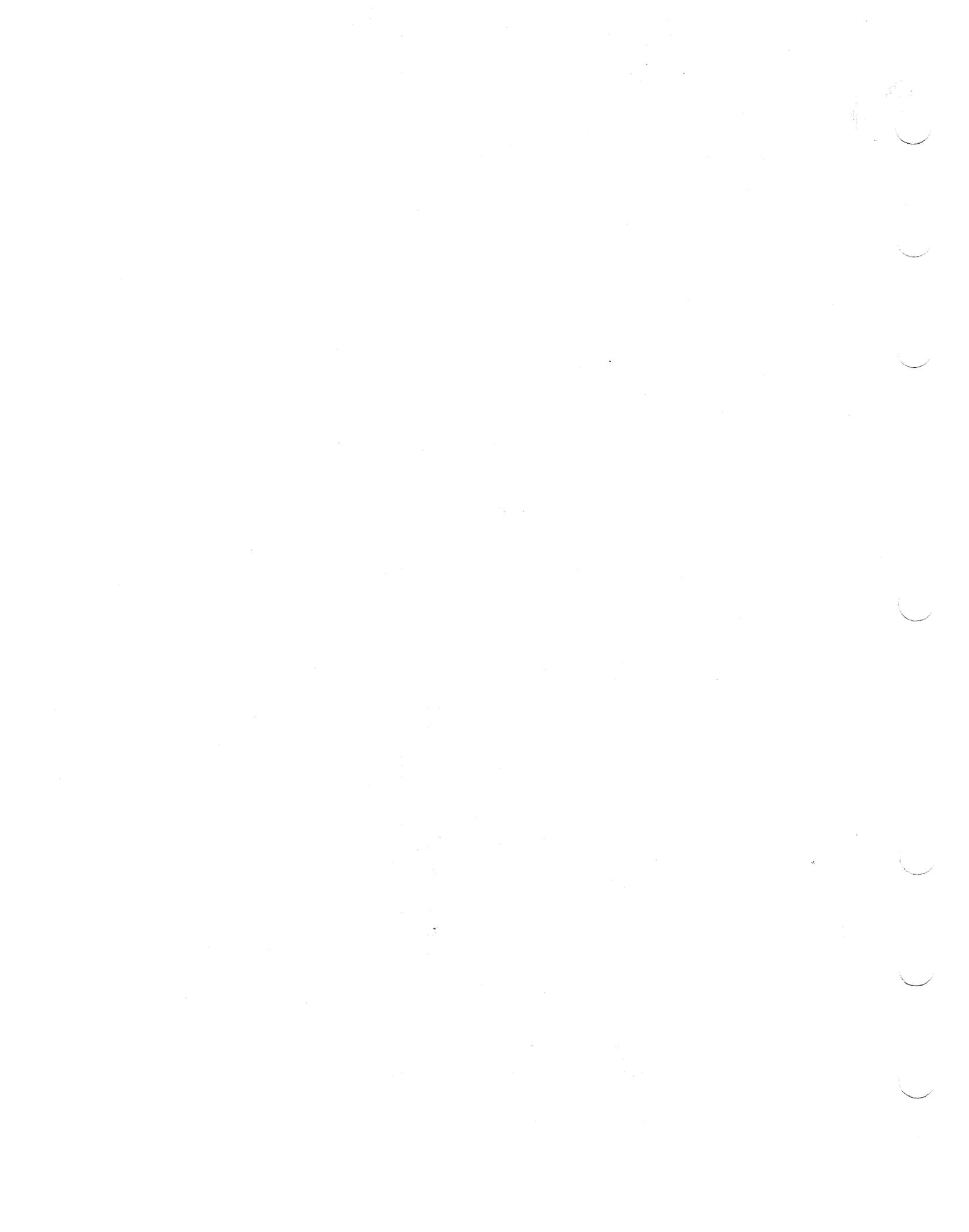
- Before removing, make sure to perform the following operations:

- Remove the seat back.
- Set the parking brake.
- Drain the fuel line and carburetor.

- Remove in ①, ②, ③ . . . . . sequence.

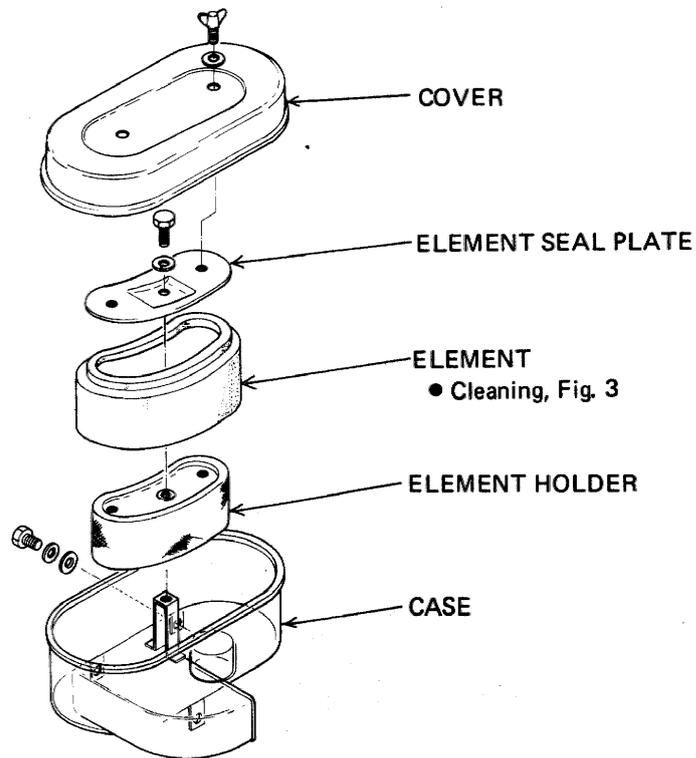


- Loosen  
190 – 250 Kg-cm (14 – 18 lb-ft)

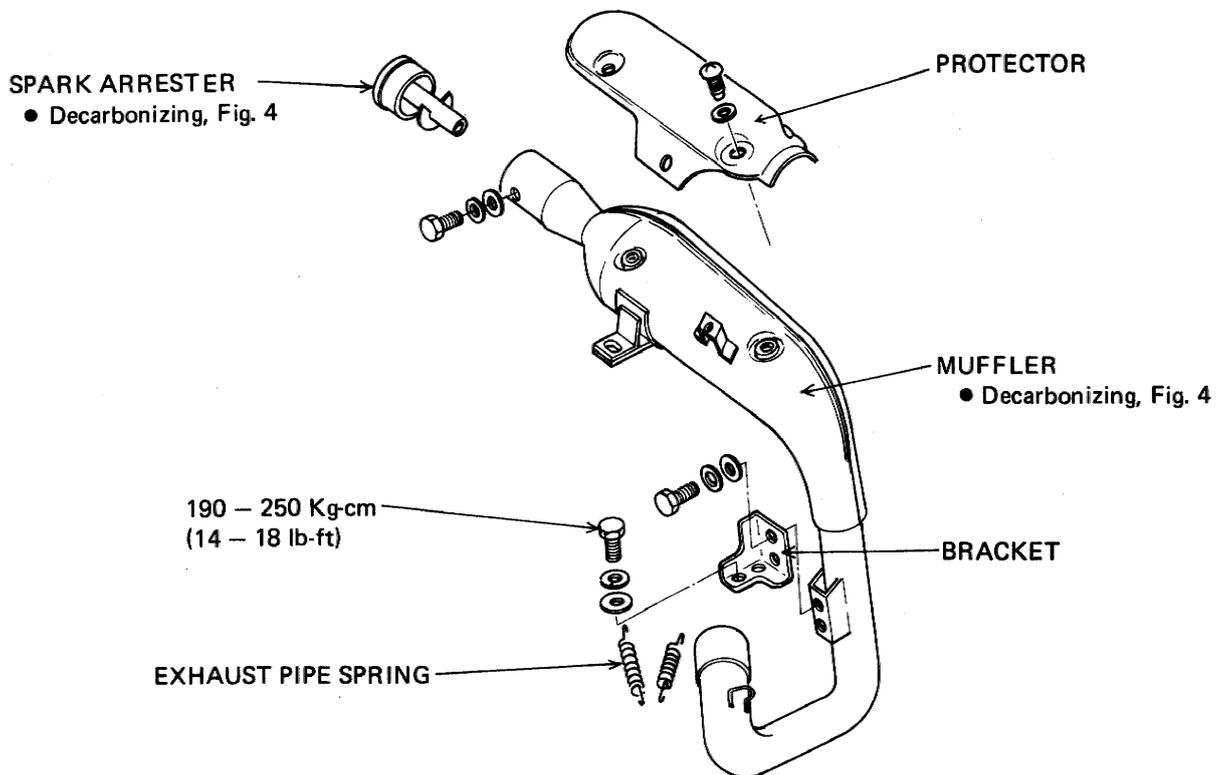




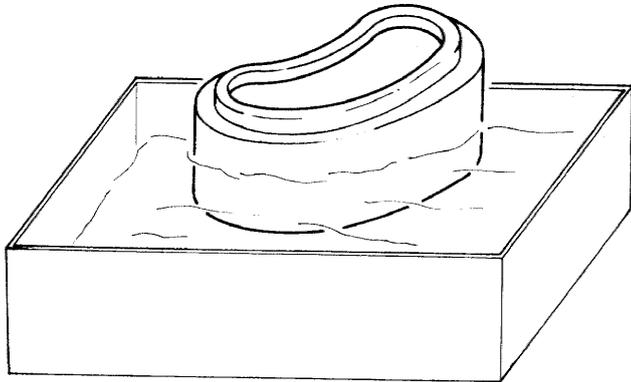
**A. AIR CLEANER & MUFFLER**



**Fig. 1 AIR CLEANER DISASSEMBLY/REASSEMBLY**

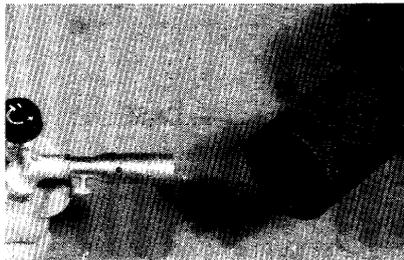


**Fig. 2 MUFFLER DISASSEMBLY/REASSEMBLY**



- 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



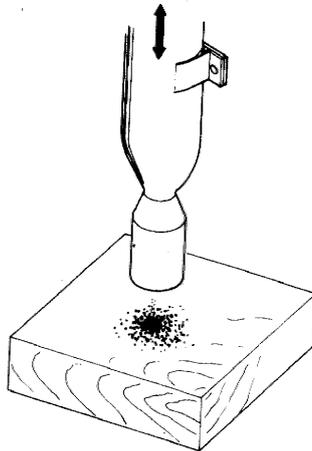
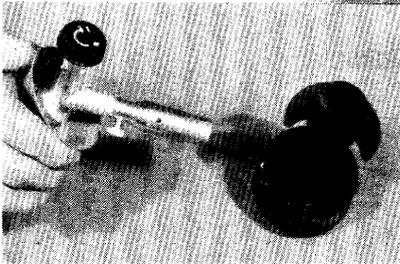
- ① Use propane torch to burn off oil from carbon deposits.

**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