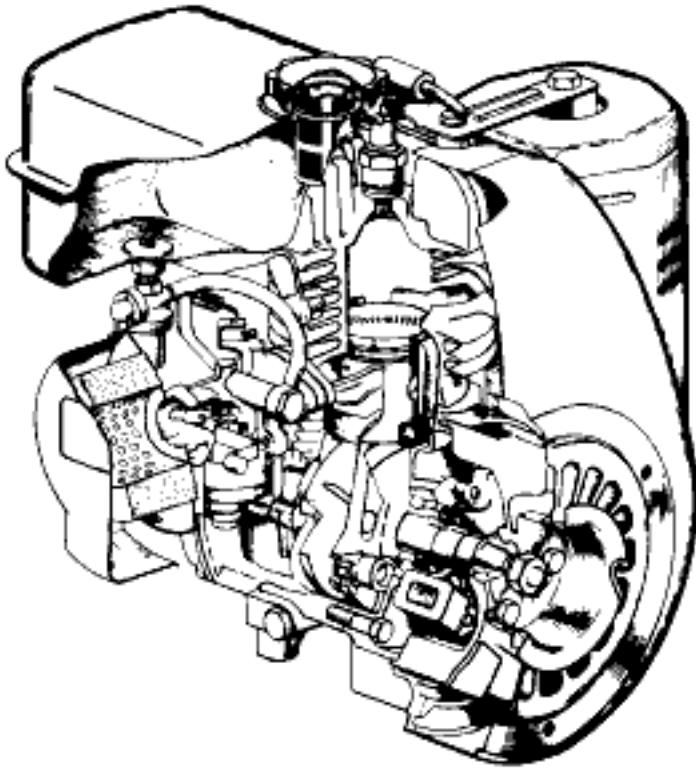
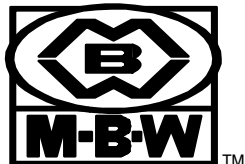


OPERATING INSTRUCTIONS AND PARTS LIST



MODEL EC10D

It is the OWNER'S RESPONSIBILITY to communicate information on the SAFE USE and OPERATION of this machine to the operators !



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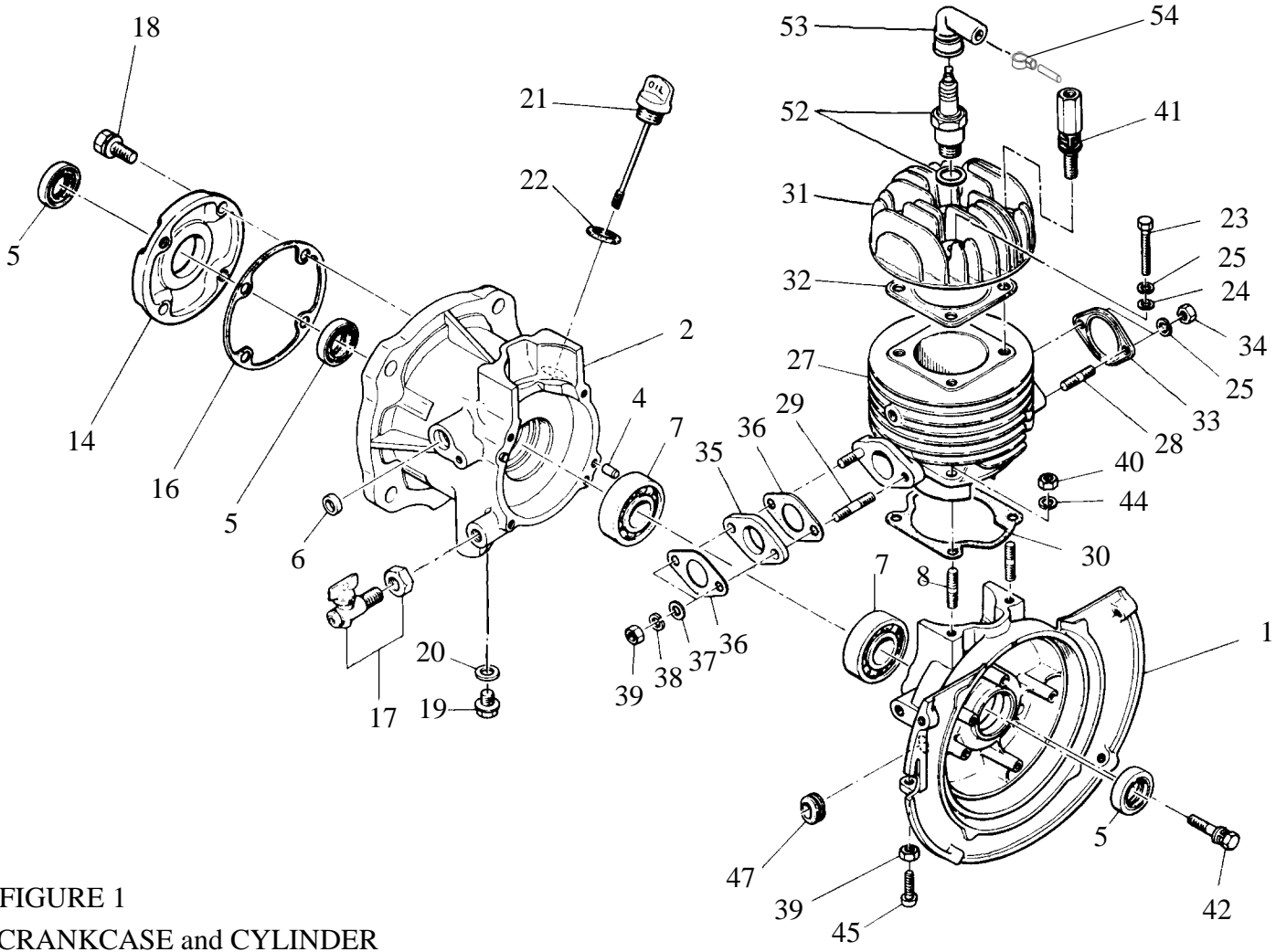


FIGURE 1
CRANKCASE and CYLINDER

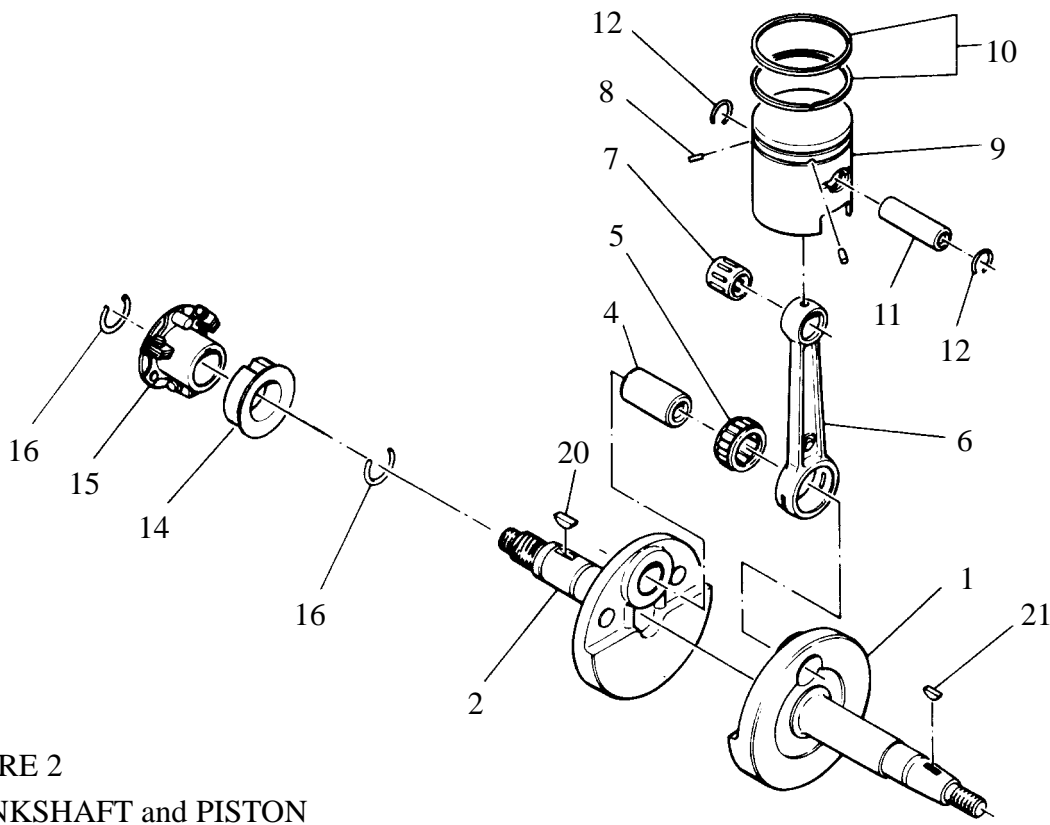


FIGURE 2
CRANKSHAFT and PISTON

ITEM NO. Bild-Nr. No. repere No. item	PART NO. Teile-Nr. No. de la piece No. de la parte	DESCRIPTION Bezeichnung Designation Descripción	
CRANKCASE AND CYLINDER (FIGURE 1)			
1	J1061071401	CRANKCASE ASM. (INCLUDES ITEMS 2, 4-9, 42)	1
4	J0310060010	PIN, DOWEL 6 x 12mm	2
5	J0440200010	SEAL, OIL	1
6	J0440080010	SEAL, OIL	1
7	01105	BEARING, BALL	2
8	J0105070010	STUD, M7	4
14	J1061160111	COVER ASM, CRANKCASE	1
16	J1061500203	GASKET, COVER	1
17	J0643000101	VALVE, DRAIN	1
18	J0011406160	BOLT & WASHER ASSEMBLY	4
19	J0401080010	PLUG	1
*20	J0210080010	GASKET	1
21	J1066360601	STICK, DIP	1
22	J0210160010	GASKET	1
23	J0103080010	BOLT, M8 x 38mm	2
24	J0031008000	WASHER	2
25	J0032008000	LOCKWASHER, M8	4
27	J1061240511	CYLINDER ASSEMBLY	1
28	J0013108301	STUD	2
29	J0013106301	STUD	2
*30	J1061500123	GASKET, CYLINDER	1
31	J1061300113	HEAD, CYLINDER	1
*32	J1061510111	GASKET, HEAD	1
*33	J1063510201	GASKET, EXHAUST	1
34	J0021908000	NUT, HEX M8 BRASS	2
35	J1063290203	INSULATOR	1
*36	J1063500103	GASKET, INSULATOR	2
37	J0031006000	WASHER	2
38	J0032006000	LOCKWASHER, M6 THIN	2
39	J0021806000	NUT, HEX M6	3
40	J0170070020	NUT, HEX M7	4
41	J0130080071	BOLT & WASHER ASSEMBLY	2
42	J0011406350	BOLT & WASHER ASSEMBLY, M6 x 35mm	4
44	J0203070010	LOCKWASHER, M7	4
45	J0149060040	SCREW, ADJUSTING	1
47	J0241070090	GROMMET	1
52	J0650140010	PLUG, SPARK NGK B-4 OR CHAMPION UJ12	1
53	J0655000140	CAP, SPARK PLUG	1
54	J0659000010	IGNITION WIRE TERMINAL	1
KITS			
	J1069900117	SET, GASKET (INCLUDING ITEMS WITH *)	
CRANKSHAFT & PISTON (FIGURE 2)			
1	J1062021900	CRANKSHAFT ASS'Y (INCLUDING ITEMS 2, 4, THRU 6)	1
7	J0610120010	BEARING, NEEDLE	1
9	J1062340111	PISTON ASS'Y (INCLUDING ITEM 8)	1
	J1062340211	PISTON ASS'Y (OVERSIZE 0.25mm)	1
	J1062340311	PISTON ASS'Y (OVERSIZE 0.50mm)	1
10	J1062350107	SET, PISTON RING (STANDARD)	1
	J1062350207	SET, PISTON RING (OVERSIZE 0.25mm)	1
	J1062350307	SET, PISTON RING (OVERSIZE 0.50mm)	1
11	J1062330123	PIN, PISTON	1
12	J0565120010	CLIP	2
14	J1064190303	SLEEVE, GOVERNOR	1
15	J1064170601	PLATE ASS'Y, GOVERNOR	1
16	J0565200020	CLIP	2
20	J0323040010	KEY, WOODRUFF	1
21	J0323040020	KEY, WOODRUFF	1

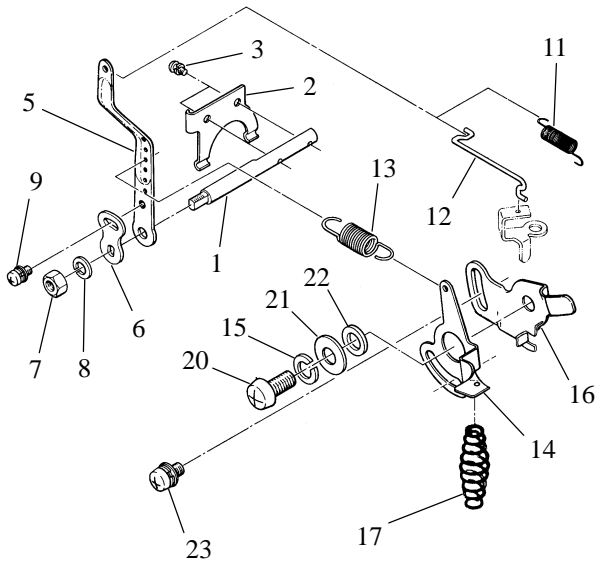


FIGURE 3
GOVERNOR

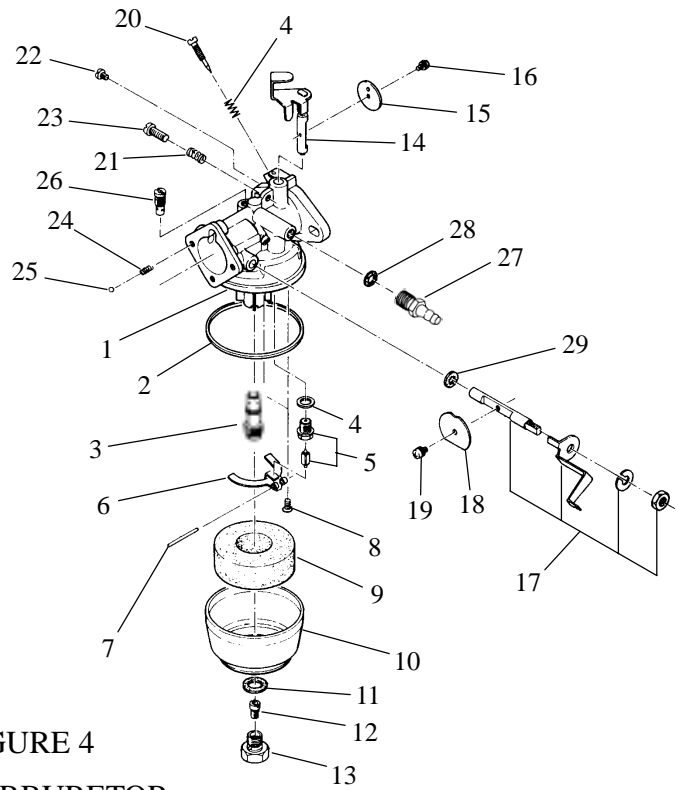


FIGURE 4
CARBURETOR

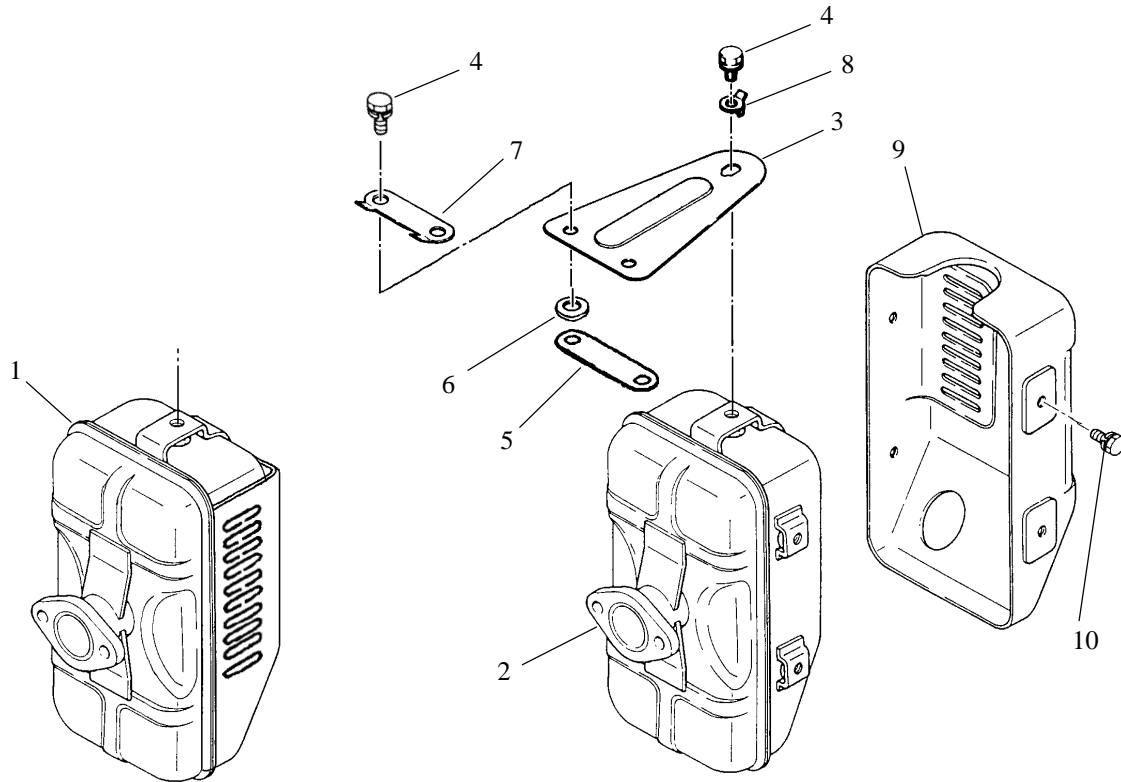


FIGURE 5
MUFFLER

ITEM NO. Bild-Nr. No. repere No. item	PART NO. Teile-Nr. No. de la pieza No. de la parte	DESCRIPTION Bezeichnung Designation Descripción	
GOVERNOR (FIGURE 3)			
1	J1064220103	SHAFT,GOVERNOR	1
2	J1064210113	YOKE,GOVERNOR	1
3	J0043504060	SCREW & WASHER ASM	2
5	J1064230111	LEVER,GOVERNOR	1
6	J1064240101	PLATE,ADJUSTING	1
7	J0021806000	NUT,HEX M6	1
8	J0032006000	LOCKWASHER,M6 THIN	1
9	J0043504080	SCREW & WASHER ASM	1
11	J1064280113	SPRING,ROD	1
12	J1054270111	ROD,GOVERNOR	1
13	J1054250101	SPRING,GOVERNOR	1
14	J1064330201	CONTROL,GOVERNOR (INCL ITEMS 15 THRU 19)	1
15	J0032008000	LOCKWASHER,M8	1
16	J1064170601	PLATE,STOP	1
17	J0830000010	SPRING,COIL	1
20	J0043108160	SCREW,PAN HEAD M8 x 16mm	1
21	J0031108000	PLAINWASHER,M8	1
22	J0230080060	SPACER	1
23	J0043606100	SCREW & WASHER ASM	1
CARBURETOR (FIGURE 4)			
1	J1066251600	CARB ASM, FLOAT (PARTS LISTED BELOW)	1
1	J1066256300	CARB ASM, DIAPHRAGM (R540 ONLY) (PARTS NOT AVAILABLE)	1
*2	J1066254708	PACKING,FLOAT CHAMBER	1
3	J1066244208	NOZZLE,MAIN	1
*4	J1066238108	WASHER	1
*5	J1286250008	VALVE,NEEDLE (1.5 dia)	1
6	J1066251108	FLOAT ARM	1
7	J1066251608	PIN,FLOAT	1
8	J1306235808	SCREW	1
9	J1066250808	FLOAT	1
10	J1066238908	CHAMBER,FLOAT	1
*11	J2066243108	PACKING,MAIN JET	1
12	J2076240308	JET,MAIN REVERSE	1
13	J2066235008	BOLT	1
14	J1066253408	SHAFT ASM,THROTTLE	1
15	J1066253808	VALVE,THROTTLE	1
16	J2096235108	SCREW & WASHER ASM	1
17	J1066255308	SHAFT ASM	1
18	J1066255408	VALVE,CHOKE	1
19	J2096235108	SCREW & WASHER ASM	1
20	J1066243608	SCREW,PILOT	1
21	J2066244608	SPRING	2
22	J1066235708	SCREW,GUIDE	1
23	J1066235808	SCREW	1
24	J2096244608	SPRING,CHOKE	1
25	J2096235308	BALL,STEEL	1
26	J2076242008	JET,PILOT	1
27	07736	FITTING, METRIC HOSE END INLET	1
*28	07766	GASKET	1
*29	J1066239218	SEAL	1
30	02317	KIT, CARBURETOR REBUILD (INCL ITEMS WITH *)	1
MUFFLER.(FIGURE 5)			
1	J1063012201	MUFFLER (NEW STYLE--COMBINES ITEMS 2, 9, & 10)	1
2	J1063011631	MUFFLER (OLD STYLE)	1
3	J1063560131	BRACKET, MUFFLER	1
4	J0011308160	BOLT & WASHER ASM, M8 x 16mm	3
5	J1063530201	SPACER	2
6	J0230080060	SPACER(OLD STYLE)	1
7	J1056510121	LOCKWASHER, TANK	1
8	J0205080011	WASHER, LOCK	1
9	J1063425121	COVER, MUFFLER	1
10	J0011606100	BOLT & WASHER ASM, M6 x 10mm	1

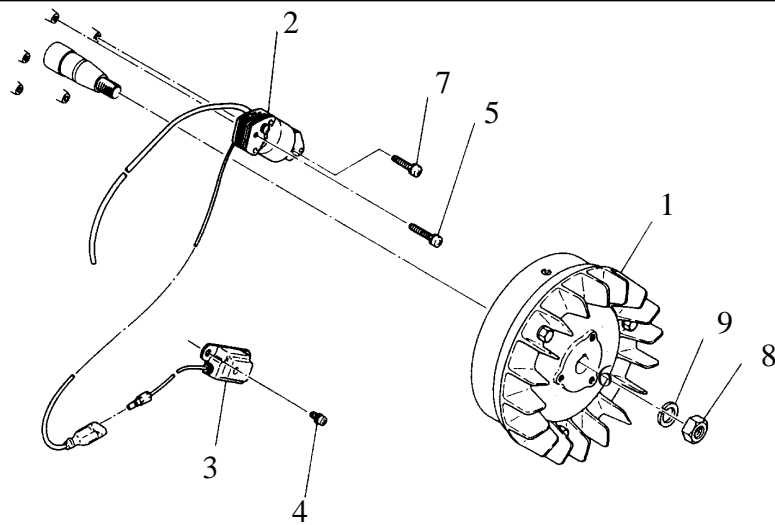


FIGURE 6
MAGNETO and FLYWHEEL

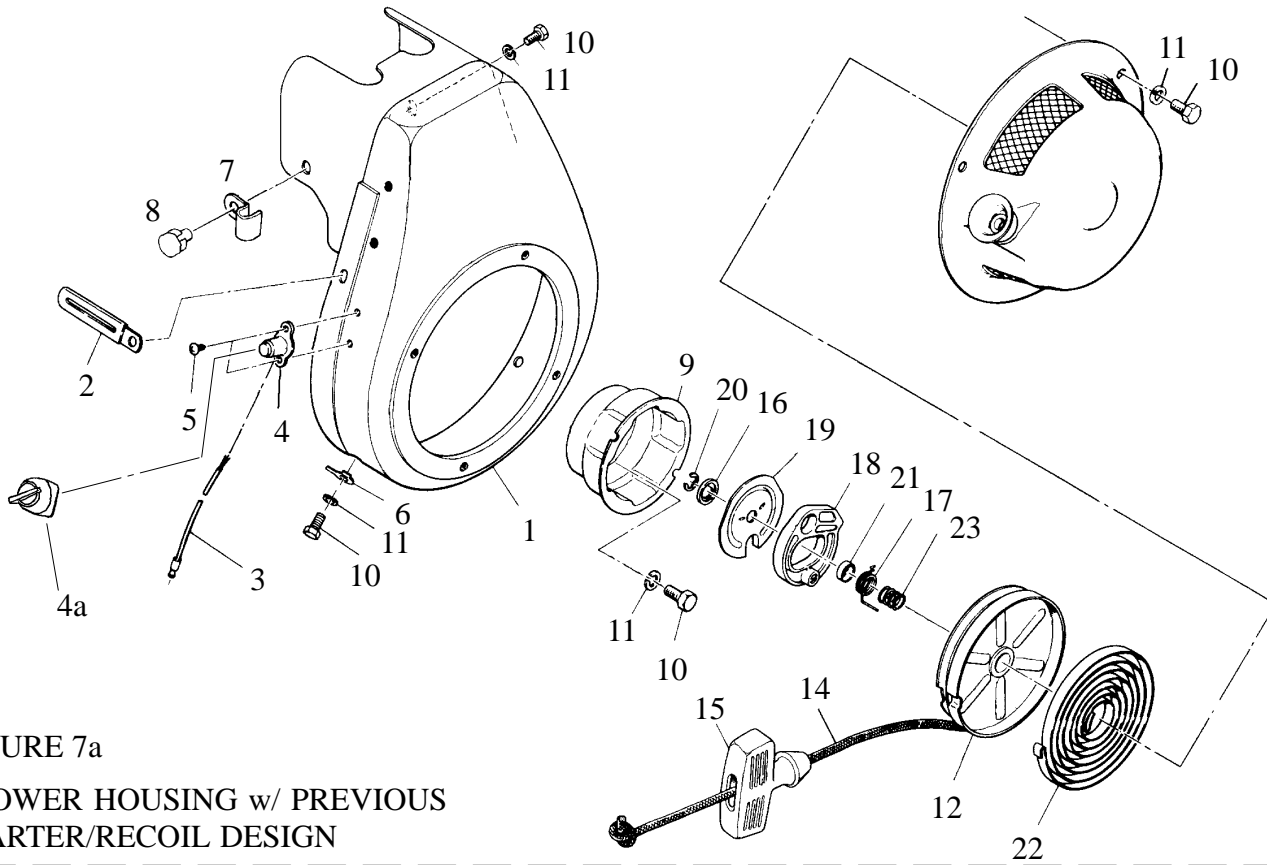


FIGURE 7a
BLOWER HOUSING w/ PREVIOUS
STARTER/RECOIL DESIGN

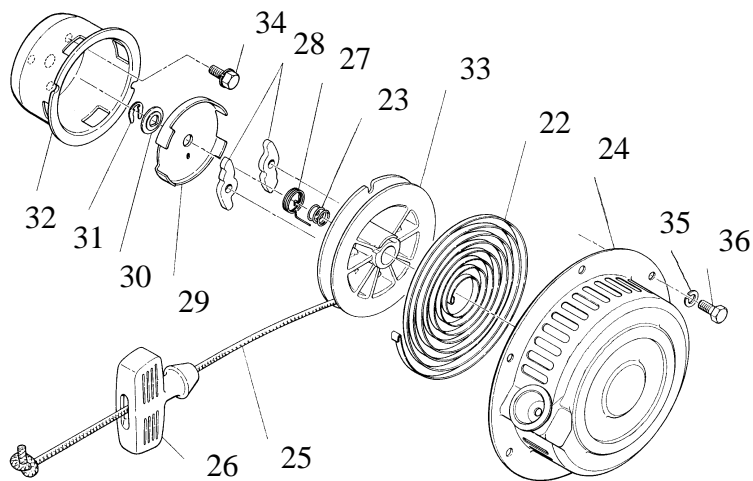


FIGURE 7b
CURRENT HEAVY DUTY
STARTER/RECOIL DESIGN

ITEM NO. Bild-Nr. No. repere No. item	PART NO. Teile-Nr. No. de la piece No. de la parte	DESCRIPTION Bezeichnung Designation Descripción	
		MAGNETO AND FLYWHEEL (FIGURE 6)	
1	J1067017508	FLYWHEEL, 2 PIECE	1
2	J1067011018	GENERATING ASM FOR TCI UNIT	1
3	J1067024708	TCI UNIT (ROBIN)	1
4	07747 J0011305100	KIT, BREAKERLESS MODULE (MBW Replacement for ROBIN TCI Unit) SCREW & WASHER ASM	1 2
5	J0043504250	SCREW & WASHER ASM, M4 x 25mm	1
6	J0032005000	LOCKWASHER, M5	2
7	J0043504200	SCREW & WASHER ASM, M4 x 20mm	1
8	J0170100010	NUT, HEX M10	1
9	J0032010000	LOCKWASHER, M10	1
		KITS & TOOLS	
	02324	PULLER, FLYWHEEL	
		BLOWER HOUSING & RECOIL STARTER (FIGURE 7a & 7b)	
1	J1065183901	HOUSING, BLOWER	1
2	J1507520103	CLAMP	1
3	J1067330101	WIRE ASM, STOP BUT TON	1
4	J0662000011	BUTTON, STOP	1
4a	J0669900207	SWITCH, STOP (NEW)	1
5	J0150040010	SCREW, TAPPING	2
6	J0205060010	LOCKWASHER	4
7	J1067501701	CLAMP	1
8	J0011308120	BOLT & WASHER ASM	1
9	J1065017808	PULLEY, STARTING	1
10	J0016606120	HEX HEAD CAP SCREW, M6 x 12mm	12
11	J0032006000	LOCKWASHER, M6 THIN	12
12	J1065012408	REEL	1
13		STARTER ASS'Y, RECOIL (INCLUDES ITEMS 14 THRU 23) FIG. 7a	1
14	J1295011008	ROPE, STARTER	1
15	J1065010008	KNOB, STARTER	1
16	J1065017708	WASHER, THRUST	1
17	J1065013508	SPRING, RETURN	1
18	J1065012708	RATCHET	3
19	J1065014308	PLATE, FRICTION	1
20	J1055015508	CLIP	1
21	J1055015408	COVER, SPRING	1
22	J1065011608	SPRING, SPIROL	1
23	J1065013208	SPRING, FRICTION	1
24	J1065081310	STARTER ASS'Y, RECOIL (INCLUDES ITEMS 22 THRU 34) FIG. 7b	1
25	J1065011308	ROPE, STARTER	1
26	J2065010108	KNOB, STARTER	1
27	J1065013618	SPRING, RETURN	1
28	J1065012818	RATCHET	2
29	J1065014408	PLATE, FRICTION	1
30	J1065018508	WASHER, THRUST	1
31	J1065018608	CLIP	1
32	J1065018318	PULLEY, STARTING	1
33	J1065018418	REEL	1
34	J0011006120	BOLT & WASHER ASS'Y.	3
35	J0032006000	LOCKWASHER, M6 THIN	4
36	J0016606120	HEX HEAD CAP SCREW, M6 x 12mm	4

OPERATING INSTRUCTIONS

FUEL MIXTURE

Use 2-cycle engine oil for the gasoline oil mixture. For the first ten hours of operation of a brand new engine, use a fuel to oil mixture of 20:1. After the engine is broken in, use a fuel to oil mixture of 50:1. Strain the fuel mixture through a fine meshed screen when filling gasoline tank on engine to remove dirt and water if present.

LUBRICATION

The crankcase has oil in it to lubricate the governor. Capacity is 1 oz. (30 ml) SAE 30.

PREPARATION FOR STARTING

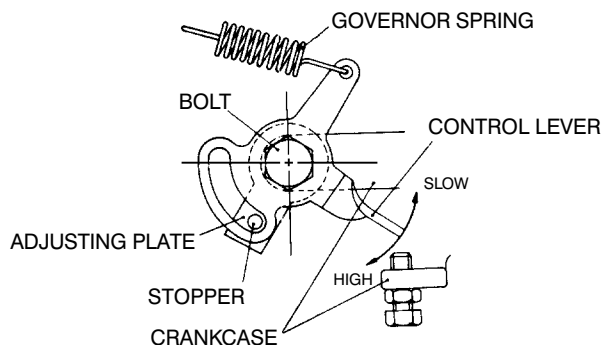
- A. Fill fuel tank prepared as outlined above. Wipe up all spilled gasoline.
- B. Open fuel shut-off valve.
- C. Move choke to closed position.
- D. To facilitate starting, crank engine part way through compression to bleed off some compression, then crank with quick, short pulls. When engine starts, move choke to open position.
- E. Perform the steps outlined "CARBURETOR ADJUSTMENT", if necessary.

TO STOP ENGINE

Push the stop button to stop engine by shorting the magneto to ground.

CARBURETOR ADJUSTMENT

- A. **LOW SPEED ADJUSTMENT:** With the control lever set at slow speed, the engine should be operating on idling speed. The idling speed for an EC 10D is 1400 rpm. The idling speed of the engine is adjusted in the following sequence.
 - a. Adjust pilot screw by turning it counterclockwise by one turn after fully closing it once.
 - b. Turn throttle stop screw clockwise until the specified idling speed is obtained. If this speed exceeds the specified idling speed, turn throttle stop screw counterclockwise.
- B. **HIGH SPEED ADJUSTMENT:** Loosen control lever screw and adjust control lever up to decrease rpm or down to increase rpm. Using a tachometer adjust the rpm of the specific model to the correct setting as specified in the **Rammer Parts and Service Manual** and lock the control lever. Note: Make sure the governor spring adjusting plate stopper is up against the right side of the control lever slot.



MAGNETO

- A. **BREAKER POINT ADJUSTMENT:** To adjust breaker point opening, remove starting pulley, blower housing and flywheel from the engine and proceed as follows.
 - a. Remove breaker cover from contact breaker.
 - b. Turn crankshaft over until breaker arm comes in contact with the high point of the breaker cam.
 - c. Loosen contact support plate lock screw just enough so that bracket can be removed.
 - d. Insert a 0.35mm (0.014 in) feeler gauge between the points.
 - e. Apply a screwdriver to adjusting tab and move the contact support plate just enough so that a slight drag is felt while sliding the feeler gage from between the points.
 - f. Tighten lock screw and recheck breaker point gap.
 - g. Mount flywheel, blower housing and starting pulley on engine after adjustment.
- B. **TIMING ADJUSTMENT:** The spark advance is controlled by the breaker point opening. The correct spark advance is obtained when the breaker point opening is adjusted according to the "BREAKER POINT ADJUSTMENT".

SPARK PLUG

Check and clean spark plugs regularly. Set spark plug gap at 0.6 mm (.025 in). Torque to 250–300 kg-cm (18–22 ft-lbs). The replacement spark plug is an NGK B-4 or a CHAMPION UJ12.

STORING

The following steps should be taken to prepare your engine for storage:

- A. Drain fuel from the fuel tank and carburetor float chamber. Drain oil from governor.
- B. Remove the spark plug and pour 1/8 cup of oil into the cylinder. Replace the spark plug. Crank engine over once or twice to circulate the oil.
- C. Clean the engine outside with oiled cloth.
- D. Put a vinyl or other cover over the engine and store the engine in a dry place.

TORQUE CHART

Flywheel	486 kg-cm (35 ft-lbs)
Spark Plug	175 kg-cm (20 ft-lbs)

GENERAL SCREWS

6mm	90 kg-cm (6.5 ft-lbs)
8mm	250 kg-cm (18 ft-lbs)
10mm	370 kg-cm (26.7 ft-lbs)