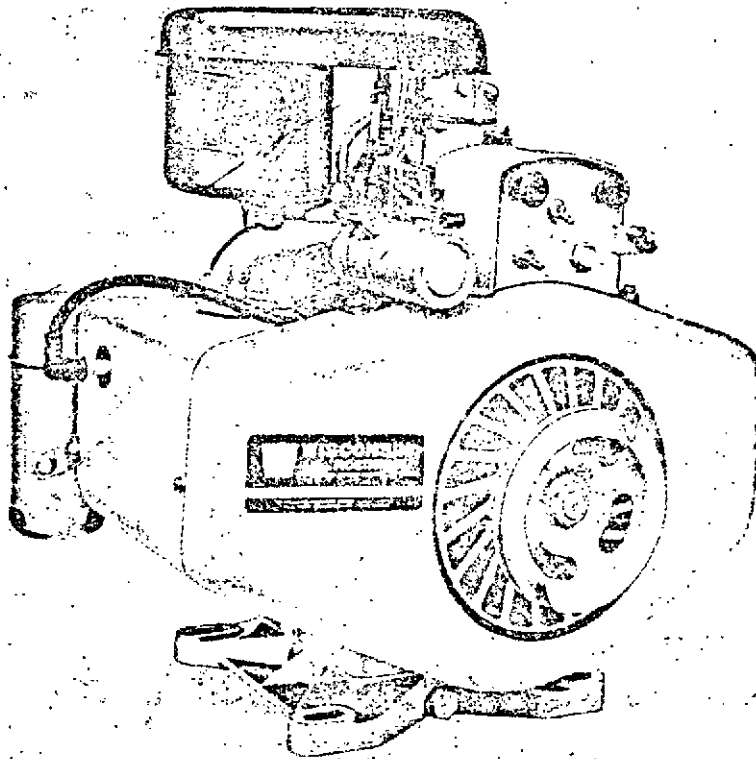


# Service Parts Manual

ISSUE MM-347-B

## WISCONSIN ROBIN

*Air-Cooled Engines*



Model EY21W

 TELEDYNE WISCONSIN MOTOR

MILWAUKEE, WISCONSIN 53246, U.S.A.

SALES AND SERVICE REPRESENTATIVES FOR ROBIN ENGINES

## SERVICE FACILITIES

Wisconsin Robin Engine Distributors and Service Centers, located throughout the U.S. and foreign countries, have been carefully selected in order to assure complete and efficient repair and inspection service to owners of Wisconsin Robin Engines. These service centers, equipped and staffed for complete engine repair, also stock parts to facilitate immediate delivery for all Wisconsin Robin Engines.


Order parts from the Wisconsin Distributor or Service Center in your locality - Refer to the Yellow Pages of the Telephone Directory under ENGINES - GASOLINE.

Do not order parts from TELEDYNE WISCONSIN MOTOR.

The MODEL, SPECIFICATION and SERIAL NUMBERS  
of engine MUST BE GIVEN WHEN ORDERING PARTS.

The Model and Specification number are shown on the name plate located on flywheel shroud.  
The Serial number is stamped on the crankcase just below the fuel pump.

COPY THE MODEL, SPECIFICATION NUMBER AND SERIAL NUMBER IN THE SPACES PROVIDED  
BELOW SO THAT IT WILL BE AVAILABLE TO YOU WHEN ORDERING PARTS.

	<b>WISCONSIN ROBIN</b>	
MODEL	AIR COOLED ENGINE	SPEC. NO.
<input type="text"/>	<input type="text"/>	<input type="text"/>
TELEDYNE WISCONSIN MOTOR MILWAUKEE, WISCONSIN FUJI HEAVY INDUSTRIES LTD. TOKYO, JAPAN		

SERIAL NO.	<input type="text"/>
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TO INSURE PROMPT AND ACCURATE SERVICE, THE FOLLOWING  
INFORMATION MUST ALSO BE GIVEN.

1. State exactly, quantity of each part and part number.
2. State definitely, whether parts are to be shipped by express, freight or parcel post.
3. State exact mailing address.

# AUTOMATIC CHOKE CARBURETOR

For WISCONSIN-ROBIN Model EY21W Engine

## OPERATION

The choke assembly is a component part of the carburetor that automatically closes the carburetor choke valve for starting and regulates the degree of opening as the engine warms up. Its operation is dependent on current to heat a *thermostat spring* and manifold vacuum for the *choke diaphragm*.

While the engine is cold and inoperative the thermostat spring will hold the carburetor choke valve in a closed position. When engine is started, manifold vacuum opens the diaphragm operated choke valve, against the thermostat spring tension, a predetermined amount for warm-up. By the time the engine is sufficiently warmed up, electric current connected to an element in the choke cover heats up the thermostat spring causing it to completely lose its tension. This enables the manifold vacuum to rotate the choke valve to a full open position for normal engine operation.

Refer to the following *Figs. 1, 2 and 3* for detailed information and illustrations of the choke position for *Starting, Warm-up and Running*.

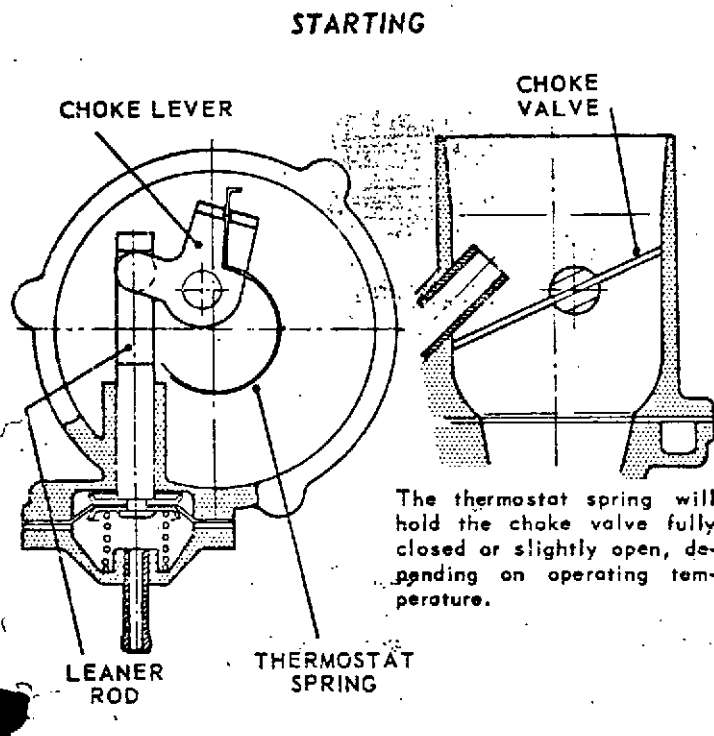


Fig. 1

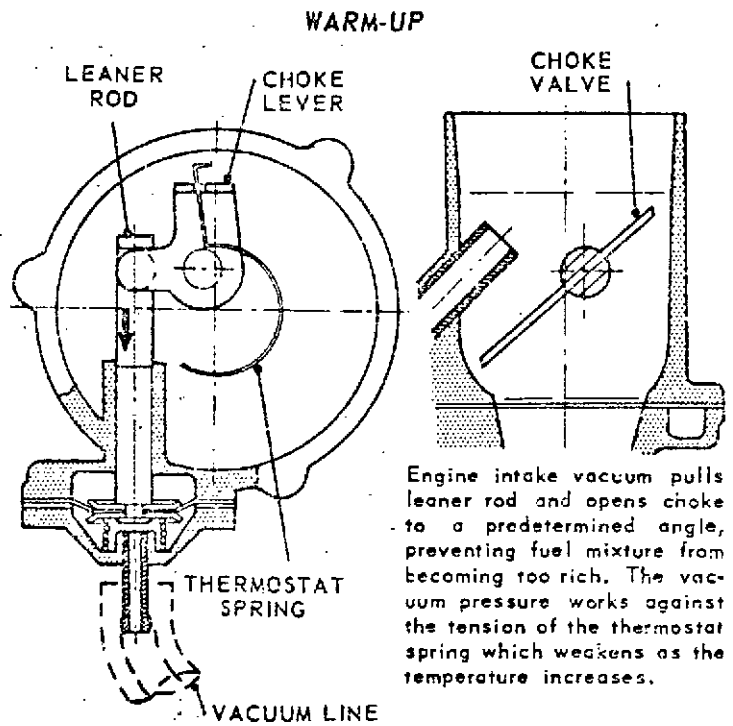


Fig. 2

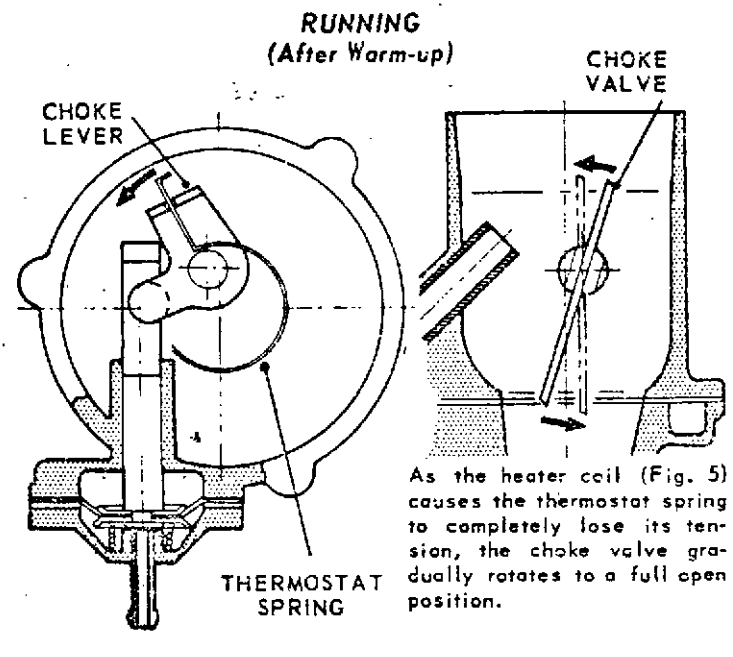


Fig. 3

## SERVICE

With reference to Fig. 4, check choke valve opening when automatic leaner is fully activated, *engine cold*. If the appropriate angle is not obtained, check diaphragm assembly and thermostat spring. Replace complete cover and thermostat assembly if heating coil or thermostat spring are defective.

In reassembly of choke, mount components as illustrated in Fig. 5 and Fig. 7. Be sure that choke shaft and choke valve operate freely, and that the choke lever engages end of thermostat spring.

When servicing carburetor parts other than the automatic choke, refer to the carburetor overhaul instructions in the *Engine Repair Manual* for Model EY21W.

**Caution:** Do not lubricate inside of thermostat spring cover and housing. Clean with automatic choke spray cleaner and blow out with compressed air.

Choke valve position when automatic leaner is fully activated (*engine cold*).

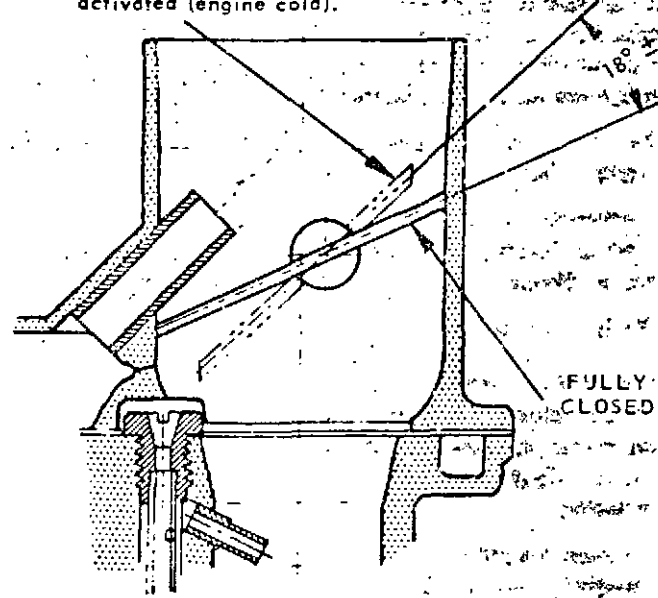


Fig. 4

Insert end of thermostat spring into slot in choke lever.

CHOKE VALVE

HEATER COIL  
(12 Volt, 14-Watt)

THERMOSTAT  
SPRING

VACUUM LINE

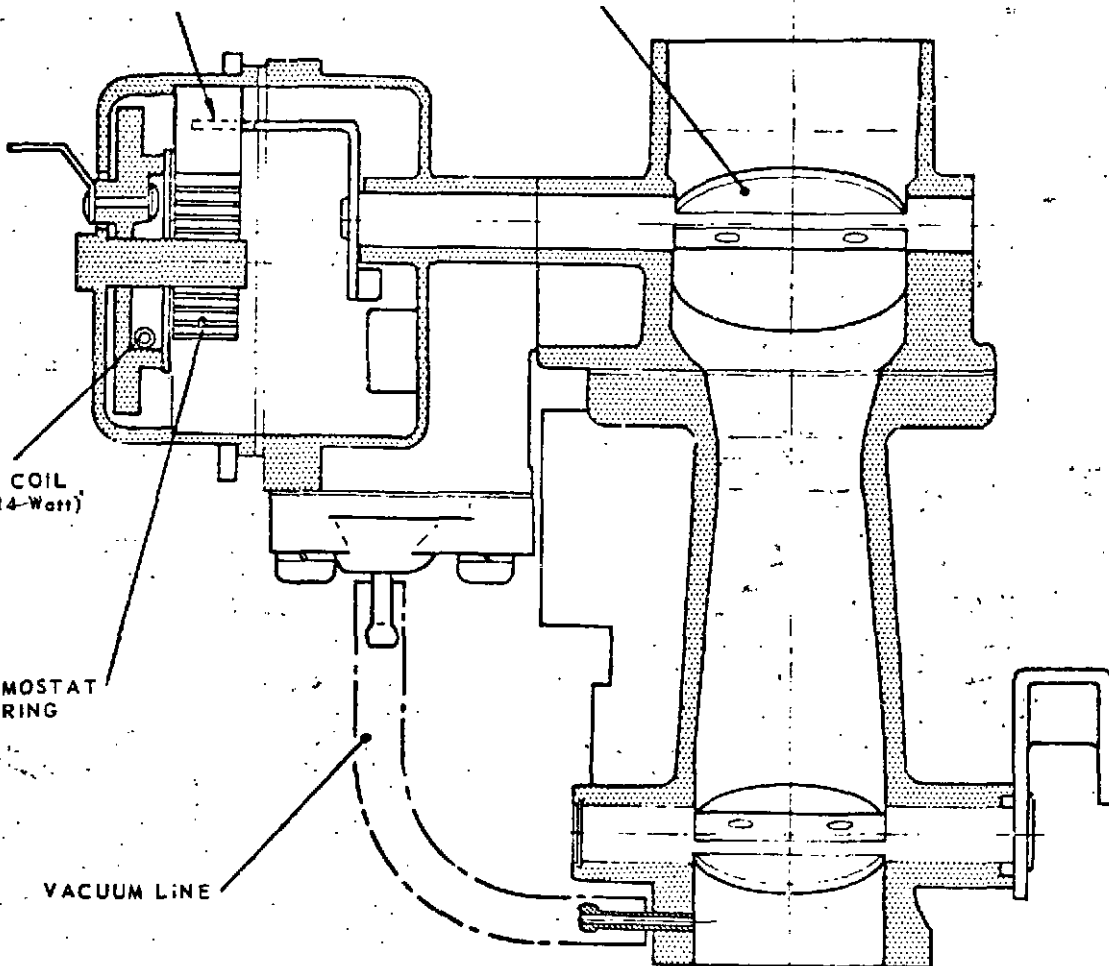


Fig. 5

## CHOKE ADJUSTMENT

The automatic choke is adjusted by the manufacturer to satisfy all normal running conditions and therefore should not immediately be tampered with. In the event of repair or abnormal conditions, adjustment can be made in the following manner and with reference to Fig. 6, and Fig. 7.

1. Initially, slip end of *thermostat spring* into slot in *choke lever* when mounting choke cover, see Fig. 6.

At an ambient temperature of 73°F (23°C), and the choke valve closed, there should be *no spring tension* between the thermostat spring and choke lever.

2. Mount lock ring and three screws but do not tighten.
3. To obtain initial tension on thermostat spring, turn choke cover clockwise about 60° or until *dash (-) mark* on cover aligns with *point of cast notches* on choke body. Tighten lock ring screws and connect ignition wires.
4. If further adjustment is required after engine has been tested, slightly loosen lock ring screws and turn choke cover one notch at a time — *clockwise* to delay choke valve opening (richer fuel mixture). *counter-clockwise* to advance choke valve opening (leaner starting mixture). Tighten lock ring screws.

**Note:** Carburetor settings other than automatic choke adjustment can be found on Page 23 of the EY21W Repair Manual.

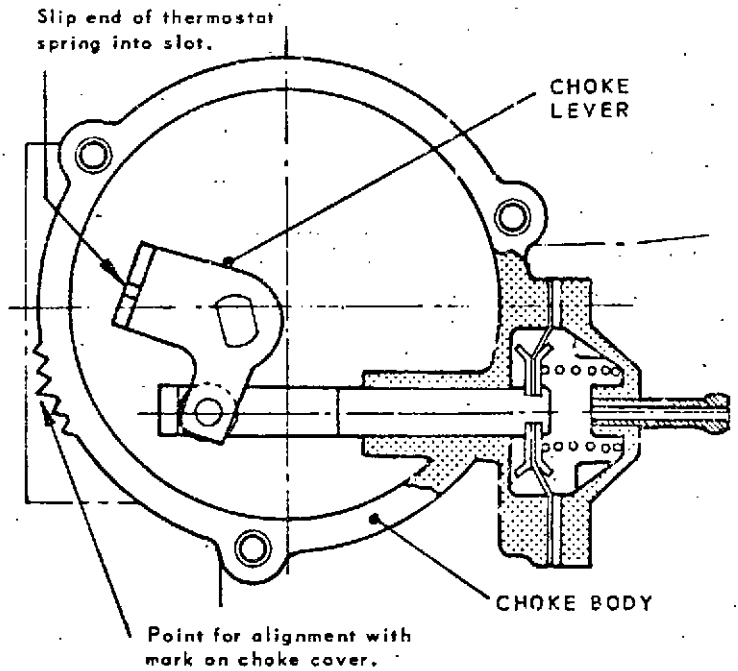


Fig. 6

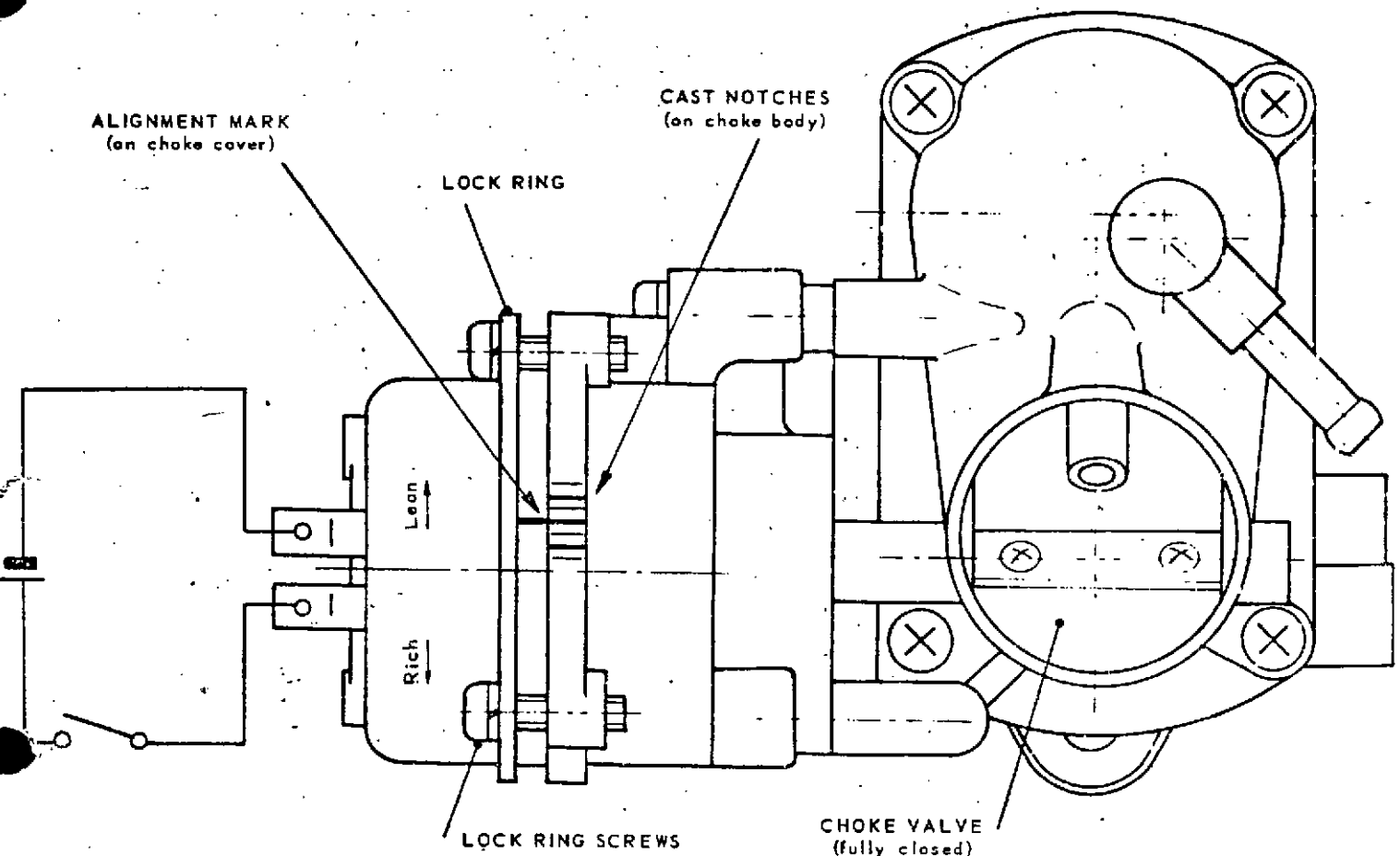
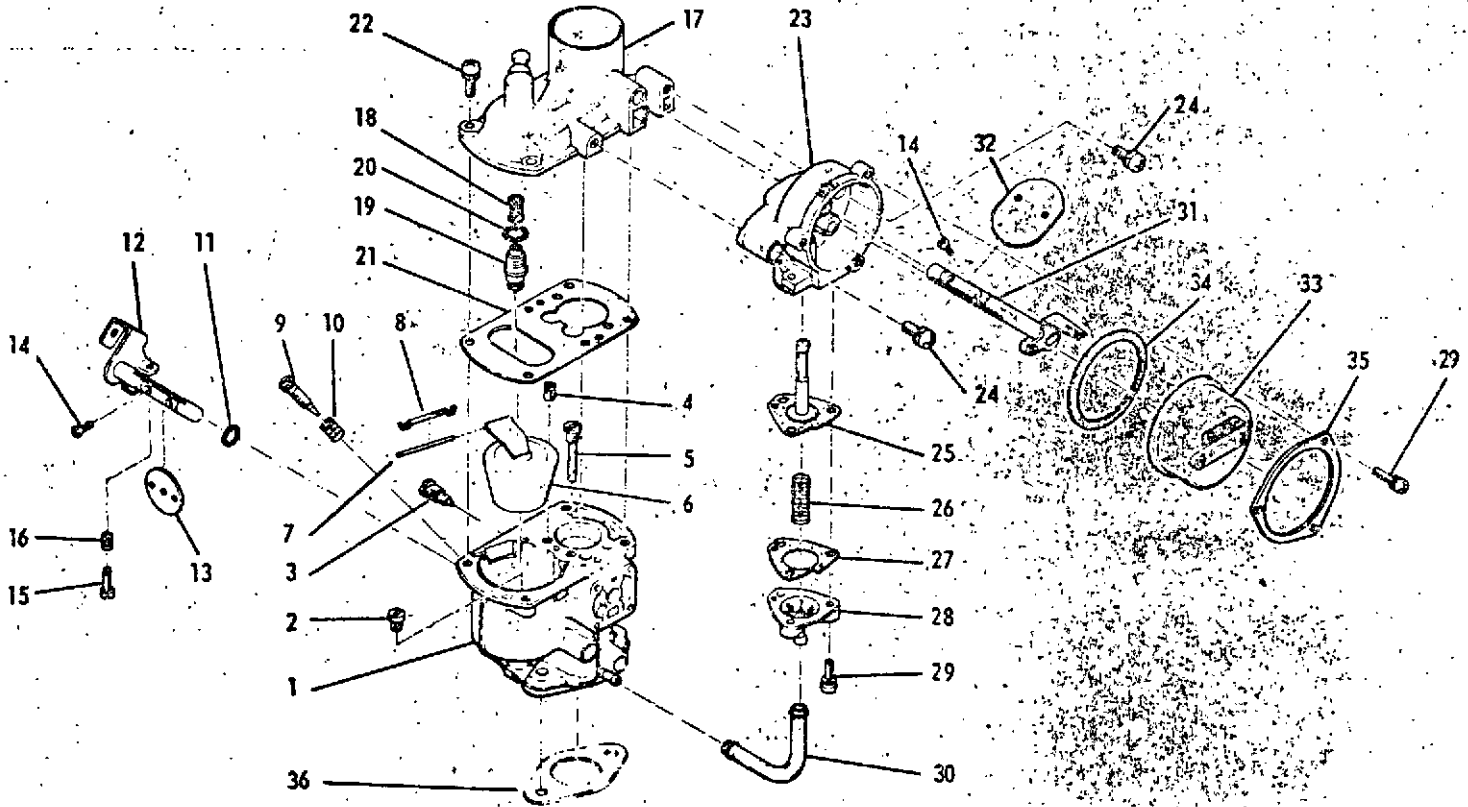


Fig. 7

# AUTOMATIC CHOKE CARBURETOR

For Engine Model EY 21W



NOTE: Items without a part number are not sold separately.

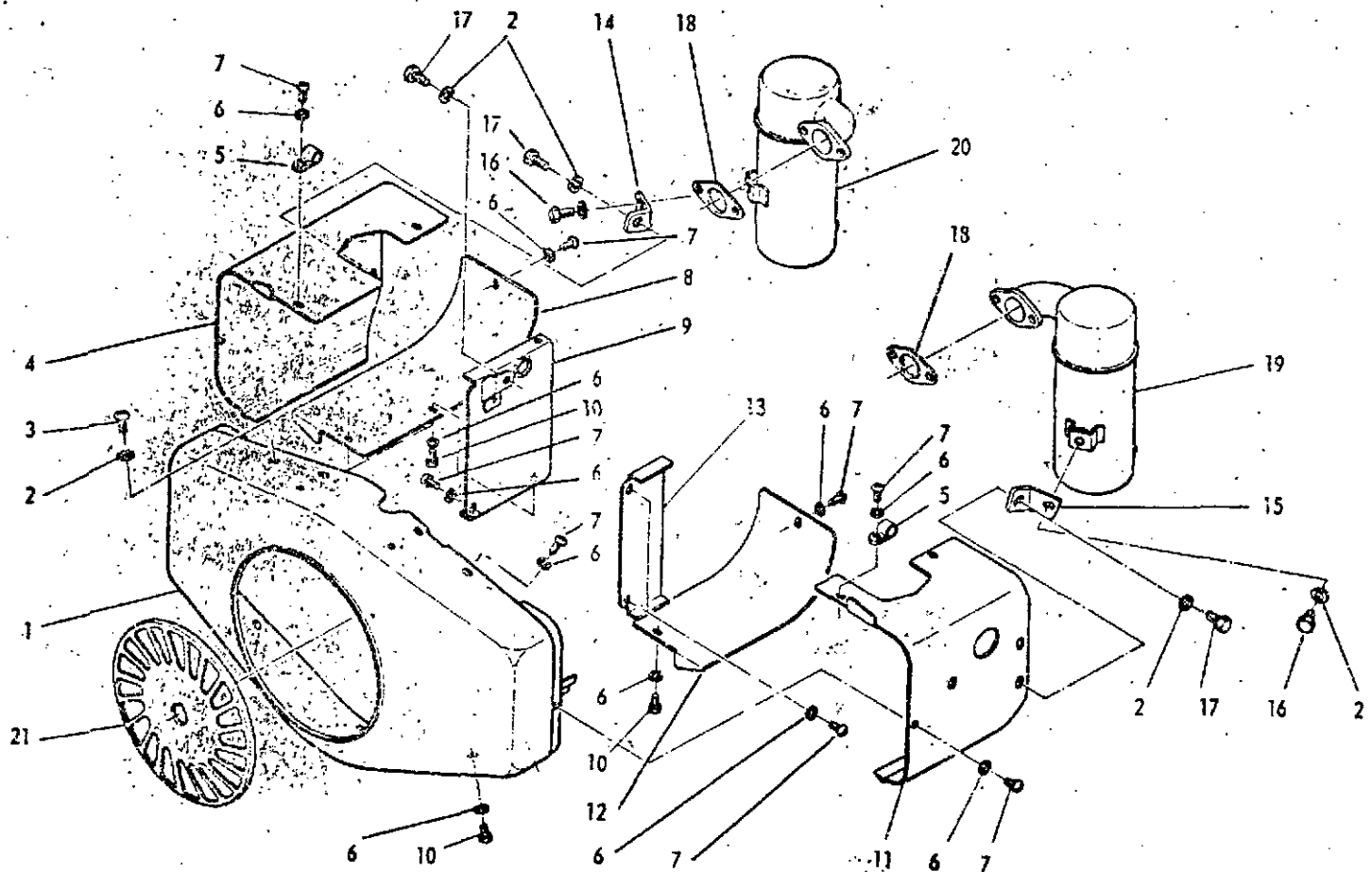
Ref. No.	Part Number	Description	Qty.
	EY2106230510	CARBURETOR assembly	1
1		BODY, lower	1
2		MAIN JET	1
3	EY2106232208 †	IDLE JET	1
4		JET, idle air	1
5		MAIN NOZZLE	1
6	EY2106230108	FLOAT	1
7	EY2106231008	FLOAT PIN	1
8		RETAINER, float pin	1
9	EY2106232008 †	IDLE SCREW	1
10	EY2106244608 †	SPRING, idle screw	1
11	EY2106231708 †*	SEAL, throttle shaft	1
12		THROTTLE SHAFT and LEVER	1
13		THROTTLE VALVE	1
14	EY1306235808	SCREW, throttle and choke valve 3 mm x 7 mm long, round head	4
15	EY2096235208	SCREW, throttle stop, 4 mm x 12 mm	1
16		SPRING, throttle stop screw	1
17		BODY, upper	1
18	EY2106236108 †	STRAINER, fuel	1
19	EY2106250108 †	FUEL VALVE assembly	1
20	EY2076254508 †*	GASKET, fuel valve	1
21	EY2106231208 †*	GASKET, carburetor body	1

Ref. No.	Part Number	Description	Qty.
22	EY2016231308	SCREW-WASHER, body-attaching 5 mm x 14 mm long	4
23		CHOKE HOUSING	1
24	EY1306237308	SCREW-WASHER, choke housing mt'g 5 mm x 16 mm long	2
25	EY2106235208 †	DIAPHRAGM, choke	1
26		SPRING, choke diaphragm	1
27	EY2106255008 †*	GASKET, choke diaphragm	1
28		COVER, choke diaphragm	1
29	EY1076235708	SCREW-WASHER, choke covers 4 mm x 16 mm long	6
30	EY2106235408	HOSE, vacuum	1
31		CHOKE SHAFT and LEVER	1
32		CHOKE VALVE	1
33	EY2106236208	CHOKE COVER assembly	1
34	EY2106235508 †*	GASKET, choke cover	1
35		LOCK RING	1
36	EY2106700703 †*	FLANGE GASKET, carburetor	1
	EY2106230307	REPAIR KIT, carburetor † Parts included in kit.	
	EY2106230407	GASKET SET, carburetor * Parts included in set.	

When ordering parts: Always give Model, Specification and Serial Numbers of engine.

# AIR SHROUDING For Model EY21W

Fig. 1



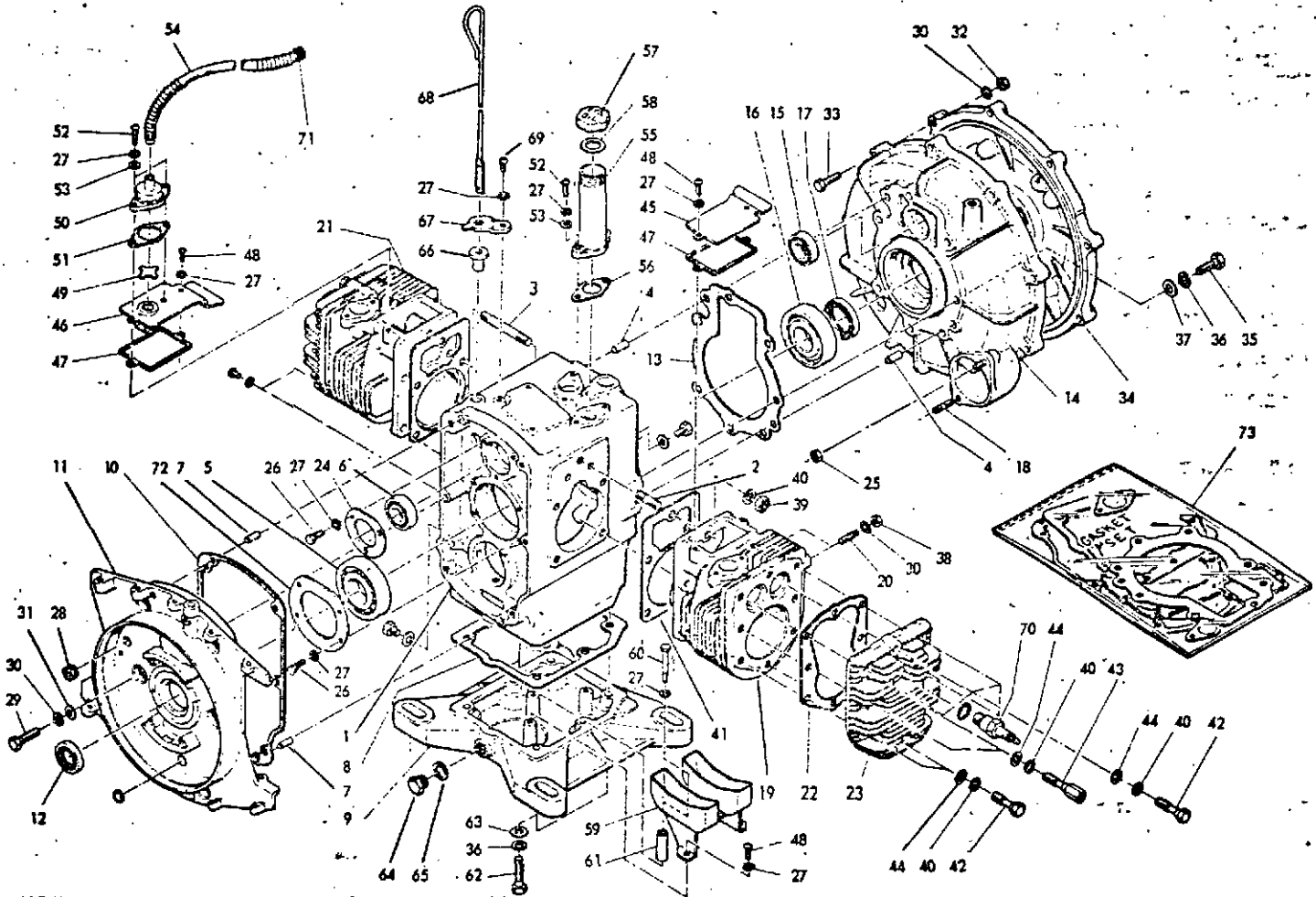
NOTE: Items without a part number are not sold separately.  
\*\* Included in Engine Gasket Set.

Ref. No.	Part Number	Description	Qty.	Ref. No.	Part Number	Description	Qty.
1	EY2105115801X	BLOWER HOUSING .....	1	8	EY2105295801X	SHROUD, lower cylinder, L.H. side ..	1
2	EY0032008000	WASHER, 8 mm, spring lock .....	6	9	EY2105300111	HEAT DEFLECTOR, cyl., L.H. side ..	1
		1-for blower housing mounting		10	EY0016506090	SCREW, 6 mm x 8 mm long, hex. hd.	6
		4-for muffler bracket				3-for lower cylinder shrouds	
		1-for cylinder baffle				3-for blower housing	
3	EY0043108160	SCREW, blower housing mounting ....	1	11	EY2105285801X	COVER, cylinder head, R.H. side ....	1
		8 mm x 16 mm long, pan head		12	EY2105265801X	SHROUD, lower cylinder, R.H. side ..	1
4	EY2105315801X	COVER, cylinder head, L.H. side ..	1	13	EY2105270101	HEAT DEFLECTOR, cyl., R.H. side ..	1
5	EY0566100021	CLAMP, spark plug wire .....	2	14	EY2103530101	BRACKET, muffler, L.H. side .....	1
6	EY0032006000	WASHER, 6 mm, spring lock .....	18	15	EY2103530201	BRACKET, muffler, R.H. side .....	1
		4-for cylinder head covers		16	EY0016508120	SCREW, muffler bracket to muffler ..	2
		5-for lower cylinder shrouds				8 mm x 12 mm long, hexagon head	
		3-for cylinder heat deflectors		17	EY0016508160	SCREW, 8 mm x 16 mm long, hex. hd.	3
		2-for spark plug wire clamps				2-for muffler bracket to cylinder hd.	
		4-for blower housing				1-for heat deflector, L.H. side	
7	EY0043106120	SCREW, 6 mm x 12 mm long, Phillips	11	18	EY2103550101	GASKET, exhaust muffler .....	2
		round head .....					
		4-for cylinder head covers		19	EY2103011511YA	MUFFLER, right hand side .....	1
		2-for lower cylinder shrouds		20	EY2103021511YA	MUFFLER, left hand side .....	1
		2-for cylinder heat deflectors					
		2-for spark plug wire clamp		21	EY2105535801X	DUST PLATE, blower housing .....	1
		1-for blower housing					

When ordering parts: Always give Model, Specification and Serial Numbers of engine.

Fig. 2

CRANKCASE and CYLINDER Group  
For Model EY21W



NOTE: Items without a part number are not sold separately.  
\*\* Included in Engine Gasket Set.

Ref. No.	Part Number	Description	Qty.	Ref. No.	Part Number	Description	Qty.
1	EY2101020101	CRANKCASE assembly ..... Includes:	1	11	EY2101150101	CRANKCASE COVER assembly, ... fan and ..... Includes:	1
2		EY0105100042 STUD, cyl. block ..... 10 mm x 38 mm long	9	12		EY0440270010 OIL SEAL .....	1
3		EY0105100031 STUD, cyl. block ..... 10 mm x 83 mm long	1	13	**	GASKET, bearing cover .....	1
4		DOWEL PIN, crankcase cover .....	2	14	EY2101100101	MAIN BEARING COVER assembly, take-off end .....	1
5		EY0600350020 BEARING, crankshaft main .....	1	15		EY0600200010 BEARING, camshaft	1
6		EY0600200020 BEARING, camshaft main .....	1	16		EY0601350010 BEARING, crank- shaft main .....	1
7		DOWEL PIN, crankcase cover mtg. ...	2	17		EY0440350020 OIL SEAL, crankshaft .....	1
8	**	GASKET (BASE) .....	1	18		EY0105080044 STUD, starting motor mounting .....	2
9	EY2101340103	ENGINE BASE .....	1				
10	**	GASKET, crankcase cover .....	1				

When ordering parts: Always give Model, Specification and Serial Numbers of engine.

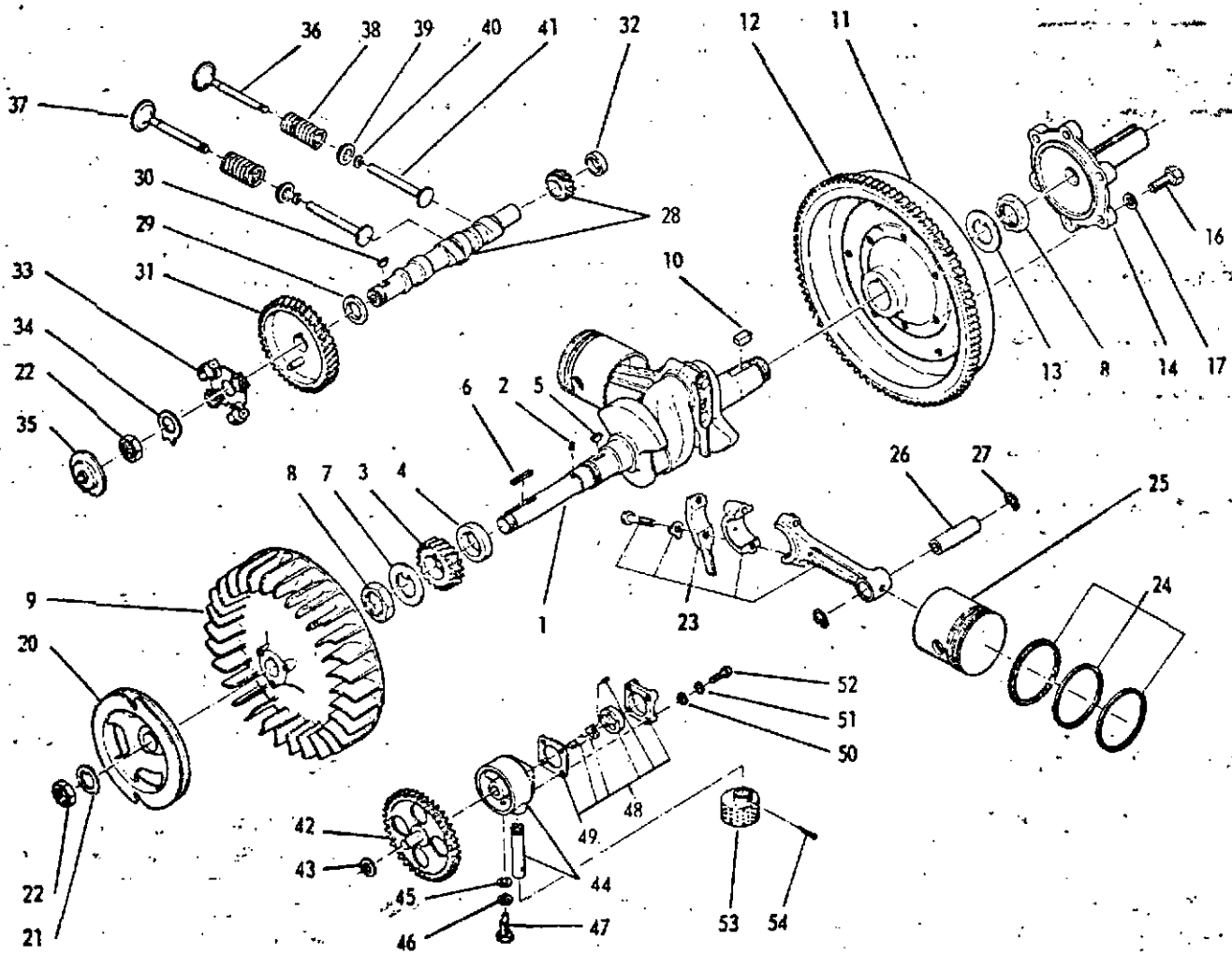
**CRANKCASE and CYLINDER Group**  
For Model EY21W

Fig. 2

Ref. No.	Part Number	Description	Qty.	Ref. No.	Part Number	Description	Qty.
19	EY2101250121	CYLINDER BLOCK asse'y, R.H. side Includes:	1	41	**	GASKET, cylinder base .....	2
20		EY0013108301 STUD, muffler mtg. 8 mm x 30 mm long	2	42	EY0103100020	SCREW, cylinder head mounting .....	12
21	EY2101240121	CYLINDER BLOCK asse'y, L.H. side Includes:	1	43	EY0103100010	SCREW, cylinder head mtg. (special) 10 mm x 63.2 mm long	4
22	**	STUD (Ref. 20)		44	EY0200100040	WASHER, cylinder head .....	16
22	EY2101510101	GASKET, cylinder head .....	2	45	EY2101440101	TAPPET COVER, right hand side .....	1
23	EY2101320103	CYLINDER HEAD .....	2	46	EY2101430111	TAPPET COVER, left hand side .....	1
24	EY2101700403	BEARING RETAINER, camshaft, fan end .....	1	47	**	GASKET, tappet cover .....	2
25	EY0021708000	NUT (self-locking) starting motor mtg.	2	48	EY0043106140	SCREW, 6 mm x 14 mm long, pan head 3-for tappet covers 1-for oil trough	4
26	EY0016506160	SCREW, 6 mm x 16 mm long, hex. hd. 3-for camshaft brg. retainer (fan end) 4-for main bearing retainer (fan end)	7	49	EY2101600203	BREATHER VALVE .....	1
27	EY0032006000	WASHER, 6 mm, spring lock .....	17	50	EY2101600103	ADAPTER, breather valve .....	1
		7-for bearing retainers		51	**	GASKET, breather adapter .....	1
		3-for tappet covers		52	EY0043106200	SCREW, 6 mm x 20 mm long, pan head 2-for breather adapter 2-for oil filler adapter	4
		2-for breather adapter		53	EY0031006000	WASHER, breather adapter .....	4
		1-for dip stick seal retainer		54	EY0850100011	BREATHER TUBE .....	1
		2-for oil filler adapter		55	EY2106370107	ADAPTER, oil filter - dip stick .....	1
		2-for oil trough		56	**	GASKET .....	1
28	EY0241100010	GROMMET, alternator wire, fan end	1	57	EY2109900907	OIL FILLER CAP .....	1
29	EY0016608350	SCREW, crankcase cover, fan end .....	6	58	**	GASKET, oil filler cap .....	1
30	EY0032008000	WASHER, 8 mm, spring lock .....	18	59	EY2106380111	OIL TROUGH .....	1
		6-for crankcase cover		60	EY0016606503	SCREW, oil trough mounting .....	1
		8-for flange adapter, take-off end		61	EY2106700503	SPACER, oil trough mounting .....	1
		4-for muffler mounting		62	EY0016610400	SCREW, engine base mounting .....	4
31	EY0031008000	WASHER, 8.4 mm I.D. x 16 mm O.D., plain steel, crankcase cover, fan end	6	63	EY0031010000	WASHER, engine base mounting .....	4
32	EY0021708000	NUT, flange adapter mounting .....	8	64	EY0400160010	PLUG, oil drain .....	1
33	EY0016508550	SCREW, flange adapter mounting .....	8	65	**	GASKET, oil drain plug .....	1
34	EY2101700203	FLANGE ADAPTER .....	1	66	EY2106700313	SEAL, oil dip stick .....	1
35	EY0100100010	SCREW, main brg. cover T.O. end .....	7	67	EY2106540101	RETAINER, dip stick seal .....	1
	EY0100100090	10 mm x 32 mm long, hexagon head ..	1	68	EY2106360101	OIL DIP STICK .....	1
		10 mm x 40 mm long, hexagon head ..	6	69	EY0043106120	SCREW, dip stick seal retainer .....	1
36	EY0032010000	WASHER, 10 mm, spring lock .....	13	70	EY0650140010	SPARK PLUG, with gasket .....	2
		7-for main bearing cover, T.O. end			(Optional)	NGK-B4, Champion J-8, AC 45	
		6-for engine base		71	EY2101530103	PROTECTOR, breather tube .....	1
37	EY0031010000	WASHER, main brg. cover, T.O. end 10.5 mm, plain steel	7	72	EY2101700313	BEARING RETAINER, fan end .....	1
38	EY0021908000	NUT, muffler mounting .....	4	73	EY2109900107	ENGINE GASKET SET .....	1
		8 mm thread, hexagon steel				Consisting of:	
39	EY0021810000	NUT, cylinder block mounting .....	10			CRANKCASE COVER gasket .....	1
		10 mm thread, hexagon steel				BASE gasket .....	1
40	EY0032010000	WASHER, 10 mm, spring lock .....	26			MAIN BEARING COVER gasket .....	1
		16-for cylinder head mounting				MANIFOLD FLANGE gasket .....	1
		10-for cylinder block mounting				CYLINDER gasket .....	2
						CYLINDER HEAD gasket .....	2
						TAPPET COVER gasket .....	2
						BREATHER HOUSING gasket .....	1
						OIL FILLER ADAPTER gasket .....	1
						OIL FILLER CAP gasket .....	1
						DRAIN PLUG gasket .....	1
						MUFFLER gasket .....	2
						DRAIN FITTING gasket .....	1

Fig. 3

**CRANKSHAFT, CAMSHAFT, PISTON, ROD, VALVE and DRIVE END Group**  
For Model EY21W



NOTE: Items without a part number are not sold separately.

Ref. No.	Part Number	Description	Qty.	Ref. No.	Part Number	Description	Qty.
1	EY2102020101	CRANKSHAFT assembly .....	1	8	EY0173300010	LOCKNUT, 30 mm thread, hex. steel	2
2		Includes: EY0310040010 DOWEL PIN, alternator mounting .....	1	9	EY2105410111	COOLING BLOWER .....	1
3	EY2102230103	CRANKSHAFT GEAR .....	1	10	EY0320100010	KEY, flywheel mounting .....	1
4	EY2102600113	SPACER, crankshaft .....	1	11	EY2102240111	FLYWHEEL assembly .....	1
5	EY0323050010	WOODRUFF KEY, crankshaft gear mounting .....	1	12		Includes: EY2107100103 RING GEAR .....	1
6	EY0320050020	KEY, blower mounting .....	1	13	EY0205300010	LOCKWASHER, flywheel mounting	1
7	EY0033630000	LOCKWASHER, crankshaft gear (special) .....	1	14	EY2102440213	TAKE-OFF SHAFT .....	1
		31 mm I.D. x 4.6 mm O.D., plain steel		16	EY0016610300	SCREW, take-off shaft mounting .....	6
						10 mm x 30 mm long, hexagon head	

When ordering parts: Always give Model, Specification and Serial Numbers of engine.

**CRANKSHAFT, CAMSHAFT, PISTON, ROD, VALVE and DRIVE END Group**  
For Model EY21W

Fig. 3

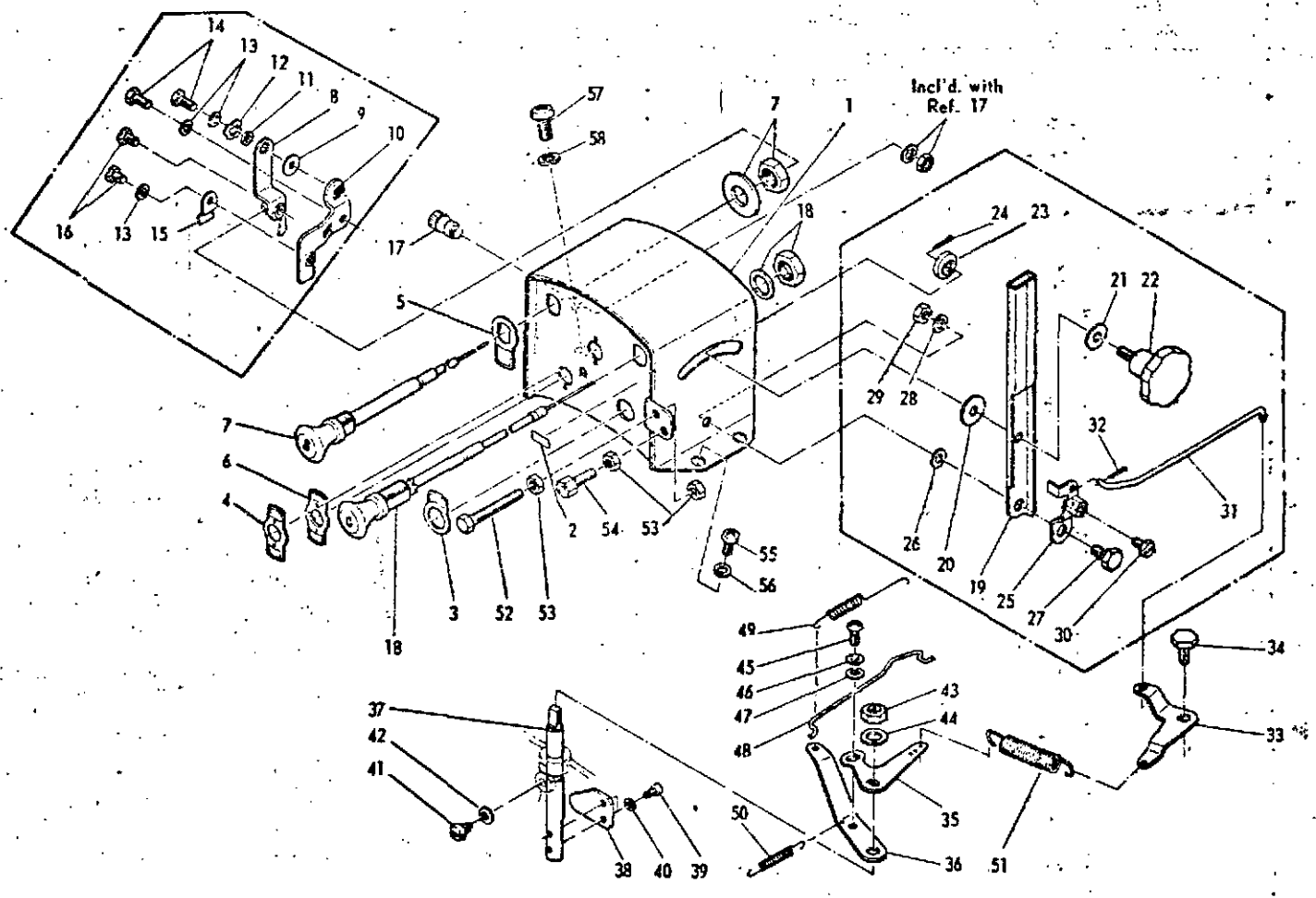
Ref. No.	Part Number	Description	Qty.	Ref. No.	Part Number	Description	Qty.
17	EY003101000	WASHER, take-off shaft mounting 10 mm spring lock	6	36	EY2103340103	INTAKE VALVE	2
20	EY2105420113	STARTING PULLEY, rope	1	37	EY2103350133	EXHAUST VALVE	2
21	EY0205200010	LOCKWASHER, starter pulley mtg.	1	38	EY2083360113	VALVE SPRING	4
22	EY0173200010	NUT, 20 mm thread, hexagon steel 1 for starting pulley 1 for camshaft mounting	2	39	EY2103370101	RETAINER, valve spring	4
23	EY2102250110	CONNECTING ROD assembly Includes: EY2102310123 OIL SCRAPER EY0205080031 LOCKWASHER EY2102300113 ROD BOLT	2	40	EY2083380103	LOCK, valve spring	4
	EY2102250210	CONNECTING ROD assembly .010" undersize	1	41	EY2103330123	VALVE TAPPET	4
24	EY2102360117	RING SET, standard size Consisting of: COMPRESSION RING SCRAPER RING OIL RING	1	42	EY2106410101	GEAR, oil pump drive	1
	EY2102360217	.010" oversize Ring Set	2	43	EY0200120010	WASHER, oil pump gear 12.5mm I.D. x 21 mm O.D., plain steel	1
	EY2102360317	.020" oversize Ring Set	2	44	EY2106400151	ADAPTER ASSEMBLY, oil pump	1
25	EY2102340103	PISTON, standard size	2	45	EY0031008000	WASHER, oil pump adapter 8.4 mm I.D. x 16 mm O.D., plain steel	1
	EY2102340203	.010" oversize Piston	2	46	EY0032008000	WASHER, oil pump adapter mounting 8 mm, spring lock	1
	EY2102340303	.020" oversize Piston	2	47	EY2106701503	SET SCREW, oil pump adapter mtg. 8 mm x 24 mm long, hexagon head	1
26	EY2102330103	PISTON PIN	2	48	EY2106390100	OIL PUMP assembly Includes: EY2106390107 GASKET	1
27	EY0565200030	SNAP RING, piston pin	4	49			1
28	EY2103160111	CAMSHAFT with pinion gear	1	50	EY0031005000	WASHER, oil pump mounting 5.5 mm I.D. x 10 mm O.D., plain steel	4
29	EY0230220011	SPACER, camshaft gear	1	51	EY0032005000	WASHER, oil pump mounting 5 mm, spring lock	4
30	EY0053204200	WOODRUFF KEY, camshaft gear mtg. 4 mm wide x 5 mm high	1	52	EY0043105200	SCREW, oil pump mounting 5 mm x 20 mm long, pan head	4
31	EY2103320111	CAMSHAFT GEAR	1	53	EY2106430101	STRAINER, oil pump	1
32	EY0230200050	SPACER, camshaft	1	54	EY0051030250	COTTER PIN, oil pump strainer mtg. 3 mm x 25 mm long	1
33	EY2104170111	GOVERNOR PLATE and flyweight assembly	1				
34	EY2103540103	LOCKWASHER, camshaft gear 20.5mm I.D. x 32 mm O.D., plain steel	1				
35	EY2104500111	THRUST PLATE, governor	1				

When ordering parts: Always give Model, Specification and Serial Numbers of engine

Fig. 4

# THROTTLE, GOVERNOR and CONTROL BOX Group

For Model EY21W



**NOTE:** Items without a part number are not sold separately.

Ref. No.	Part Number	Description	Qty.
1	EY2104065800X	CONTROL BOX assembly .....	1
2		(Includes ref. 2) LABEL (CHOKE) .....	1
3	EY0732000410	LABEL (START SWITCH) .....	1
4	EY0732000390	LABEL (ENGINE SWITCH) .....	1
5	EY0732000361	LABEL (START LEVER) .....	1
6	EY0732000530	LABEL (CHARGE SWITCH) .....	1
7	EY2104530101	START CONTROL assembly .....	1
8	EY2109900407	START CONTROL LEVER SET .....	1
8		(Includes Items 8 thru 16)- START LEVER .....	1
9		FRICITION WASHER, start lever .....	1
10		CLAMP LEVER, start wire .....	1

Ref. No.	Part Number	Description	Qty.
11		SPACER, start lever .....	1
12		FRICITION WASHER, start wire screw .....	1
13		WASHER, start lever & start wire mtg- 5 mm, spring lock .....	3
14		SCREW, start lever & start wire mtg. 5 mm x 12 mm long, hexagon head .....	2
15		CLAMP, start wire .....	1
16		SCREW, start lever & clamp lever 5 mm x 8 mm long, hexagon head .....	2
17	EY0664000010	TERMINAL, accessory lamp .....	1
18	EY2104400101	CHOKE CONTROL assembly .....	1
19	EY2109900507	THROTTLE (SPEED) CONTROL LEVER SET .....	1
		(Includes Items 19 thru 32)	

**When ordering parts:** Always give Model, Specification and Serial Numbers of engine.

# THROTTLE, GOVERNOR and CONTROL BOX Group

Fig. 4

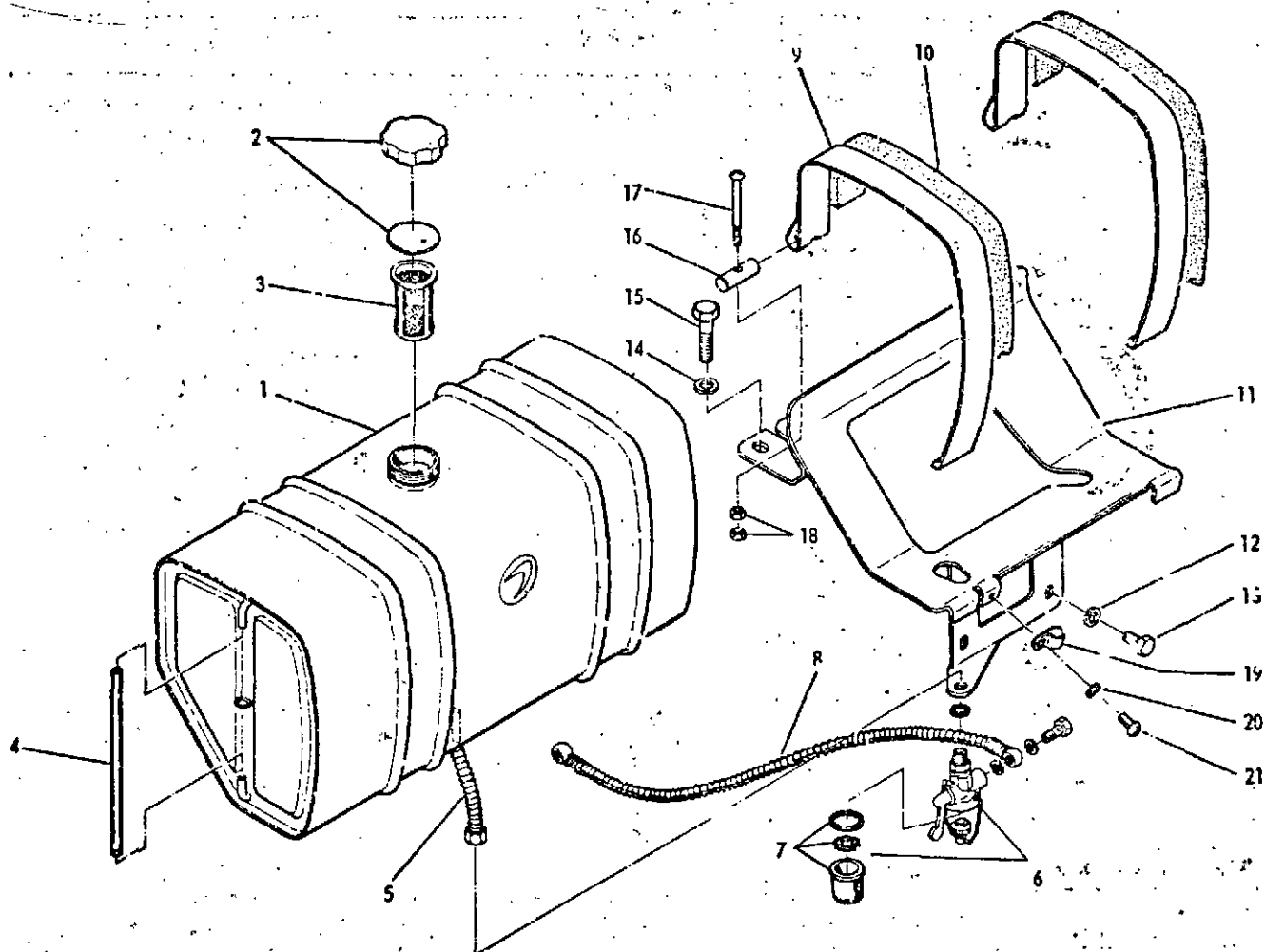
For Model EY21W

Ref. No.	Part Number	Description	Qty.	Ref. No.	Part Number	Description	Qty.
19		LEVER, throttle control .....	1	43	EY0022708000	NUT, governor shaft mounting .....	1
20		FRICITION WASHER, control lever (inner) .....	1			8 mm thread, hexagon steel	
21		FRICITION WASHER, control lever (outer) .....	1	44	EY0032008000	WASHER, governor shaft mounting ..	1
22	EY0637000202	KNOB, throttle lever .....	1			8 mm, spring lock	
23		SCREW SEAT, knob .....	1	45	EY0043105120	SCREW, control link mounting .....	1
24		COTTER PIN, knob .....	1			5 mm x 12 mm long, pan head	
		1.6 mm x 10 mm long		46	EY0032005000	WASHER, control link mounting ....	1
25		WIRE LEVER .....	1			5 mm, spring lock	
26		SPACER, control lever .....	1	47	EY0031005000	WASHER, control link mounting .....	1
27		FULCRUM SCREW, wire lever .....	1			5.5 mm I.D. x 10 mm O.D., plain steel	
28		WASHER, wire lever mounting .....	1	48	EY2104250107	GOVERNOR SPRING and LINK SET	1
29		NUT, wire lever mounting .....	1			(Includes Items 48 thru 51)	
		6 mm thread, hexagon steel		49		GOVERNOR ROD .....	1
30		SCREW, wire lever mounting .....	1	50		ROD SPRING, governor rod .....	1
		5 mm x 10 mm long, hexagon head		51		ROD SPRING, governor rod .....	1
31		CONTROL ROD, wire lever .....	1	52	EY0016506450	GOVERNOR SPRING .....	1
32		COTTER PIN, control rod .....	1			SCREW, speed adjustment stop .....	1
		1.2 mm x 8 mm long		53	EY0022706000	6 mm x 45 mm long, hexagon head	
33	EY2104290201	CONTROL LINK (spring to control rod) .....	1			NUT, 6 mm thread, hexagon steel ...	3
34	EY2104310111	FULCRUM SCREW, control link .....	1			1 for speed adjustment screw	
35	EY2104230117	GOVERNOR LEVER and SHAFT SET (Includes Items 35 thru 47)	1	54	EY0149060011	1 for bowden wire adapter	
36		CONTROL LINK (gov. lever to spring)	1			1 for control box mounting	
37		GOVERNOR LEVER .....	1	55	EY0043106120	SCREW, control box mounting .....	3
38		GOVERNOR SHAFT .....	1			6 mm x 12 mm long, pan head	
39	EY0043104080	GOVERNOR YOKE .....	1	56	EY0032006000	WASHER, control box mounting .....	3
40	EY0032004000	SCREW, governor yoke mounting .....	2			6 mm, spring lock	
		4 mm x 8 mm long, pan head		57	EY0043108160	SCREW, control box mounting .....	1
41		WASHER, governor yoke mounting ..	2			8 mm x 16 mm long, pan head	
		4 mm, spring lock		58	EY0032008000	WASHER, control box mounting .....	1
42		SCREW, governor shaft setting .....	1			8 mm, spring lock	
43		WASHER, governor shaft setting .....	1				

When ordering parts: Always give Model, Specification and Serial Numbers of engine.

Fig. 5

### FUEL TANK Group For Model EY21W



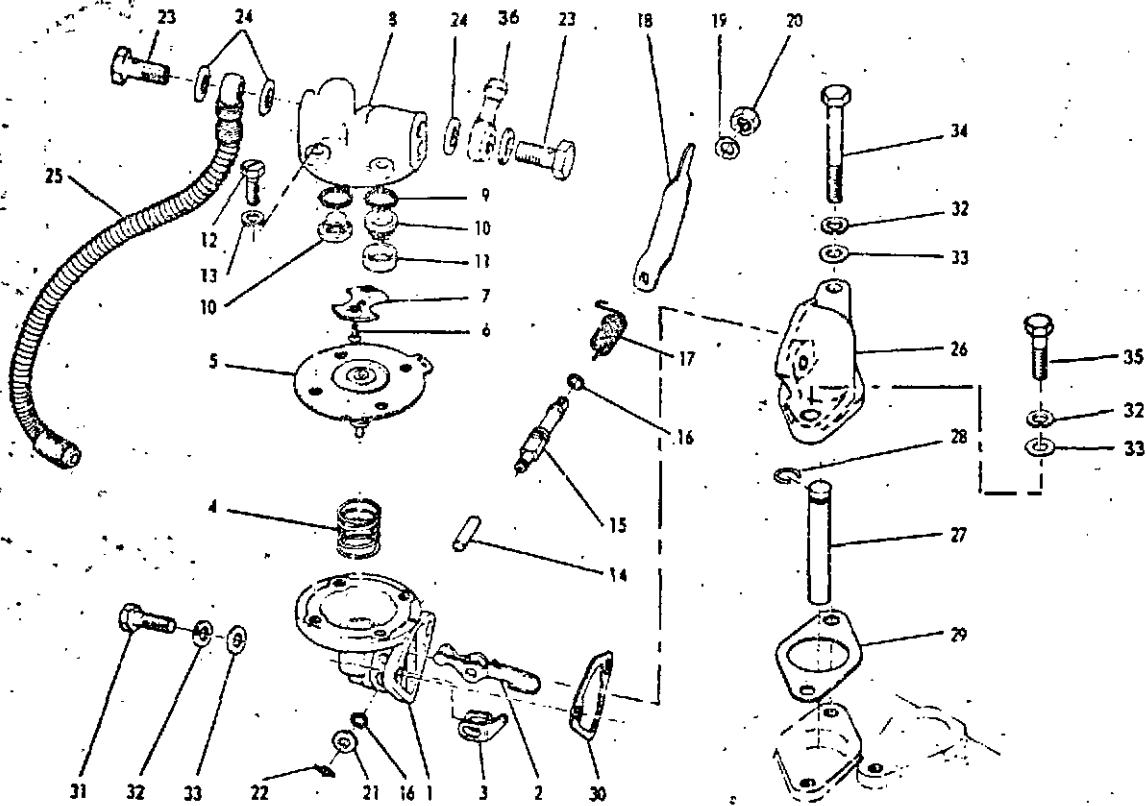
NOTE: Items without a part number are not sold separately.

Ref. No.	Part Number	Description	Qty.	Ref. No.	Part Number	Description	Qty.
1	EY2106011200	FUEL TANK assembly .....	1	13	EY0016508160	SCREW, fuel tank bracket mounting 8 mm x 16 mm long, hexagon head	2
2		Includes: EY2109900207 CAP with gasket ....	1	14	EY0032010000	WASHER, fuel tank bracket mounting 10 mm, spring lock	2
3		EY0641310010 FILTER SCREEN ..	1	15	EY0016510200	SCREW, fuel tank bracket mounting 10 mm x 20 mm long, hexagon head	2
4		EY0850050180 SIGHT GAUGE .....	1	16	EY2106550101	TENSION PIN, fuel tank strap .....	2
5	EY2106270111	FUEL LINE assembly .....	1	17	EY0140060010	SCREW, fuel tank strap tension .....	2
		Tank to fuel strainer		18	EY0022706000	NUT, fuel tank strap tension screw 6 mm thread, hexagon steel	4
6	EY0642000402	FUEL STRAINER .....	1	19	EY0566100021	CLAMP, fuel line .....	1
7	EY2109900607	REPAIR KIT, fuel strainer .....	1	20	EY0032006000	WASHER, clamp mounting .....	1
8	EY2106260111	FUEL LINE assembly .....	1	21	EY0043106120	SCREW, clamp mounting .....	1
		Strainer to pump				6 mm x 12 mm long, pan head	
9	EY2106515801X	FUEL TANK STRAP .....	2				
10	EY2106701113	FELT BAND, fuel tank strap .....	2				
11	EY2106165801X	FUEL TANK BRACKET .....	1				
12	EY0032008000	WASHER, fuel tank bracket mtg. ....	2				
		8 mm, spring lock					

When ordering parts: Always give Model, Specification and Serial Numbers of engine.

FUEL PUMP Group  
For Model EY21W

Fig. 6



NOTE: Items without a part number are not sold separately.

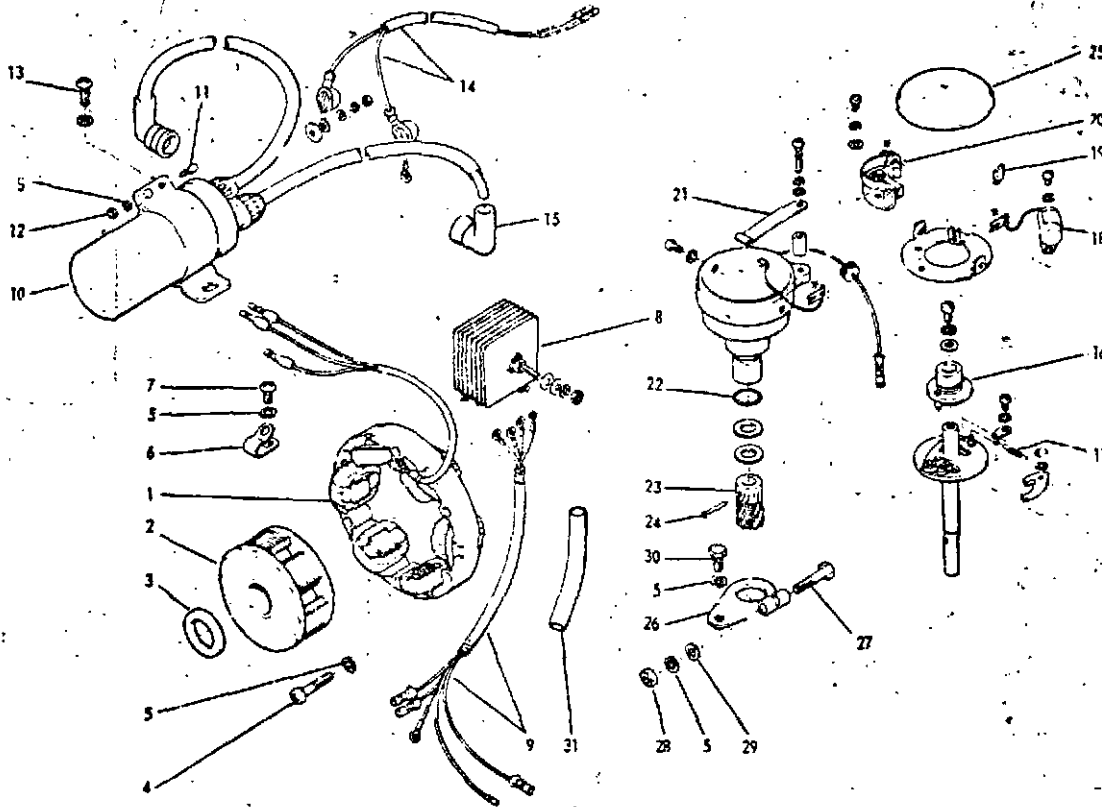
Ref. No.	Part Number	Description	Qty.	Ref. No.	Part Number	Description	Qty.
●	EY2105220110	FUEL PUMP, complete (Includes Items 1 thru 22)	1	24	****	GASKET, banjo bolt mounting	4
1		BODY, bottom half	1	25	EY2106280111	FUEL LINE assby., pump to carb.	1
2		ROCKER ARM	1	26	EY2106700823	ADAPTER, fuel pump mounting	1
3		PRIMING ARM	1	27	EY2106700603	PUSH ROD, fuel pump	1
4		DIAPHRAGM SPRING	1	28	EY0565100010	CLIP, push rod retainer	1
5	EY2106220118 †	DIAPHRAGM, complete	1	29	****	GASKET, adapter flange	1
6		SCREW	2	30	****	GASKET, fuel pump flange	1
7		VALVE RETAINER	1	31	EY0016506160	SCREW, fuel pump to adapter 6 mm x 16 mm long, hexagon head	2
8		BODY, top half	1	32	EY0032006000	WASHER, 6 mm, spring lock 2-for fuel pump to adapter 2-for fuel pump adapter mounting	4
9		VALVE SEAT	2	33	EY0031006000	WASHER, 6.4 mm I.D. x 11.5 mm O.D., plain steel 2-for fuel pump to adapter 2-for fuel pump adapter mounting	4
10	EY2106220218 †	VALVE CAGE, complete	2	34	EY0100060060	SCREW, fuel pump adapter mtg. 6 mm x 48 mm long, hexagon head	1
11		COLLER, valve cage	1	35	EY0016606200	SCREW, fuel pump adapter mtg. 6 mm x 20 mm long, hexagon head	1
12		SCREW, body attaching	4	36	EY0521070010 Optional	BANJO FITTING, fuel line Engine less tank - for 1/4" I.D. plastic fuel line furn'd. by cust.	1
13		WASHER, body screw	4	●	EY2106220117	REPAIR KIT, fuel pump † parts included in kit.	1
14		SHAFT, rocker arm	1	●	EY2106220217	GASKET SET, fuel pump **** parts included in set.	1
15		SHAFT, primer lever	1				
16	EY2106221618 †	"O" RING, primer shaft	2				
17		SPRING, primer return	1				
18		PRIMING LEVER	1				
19		WASHER, priming lever	1				
20		NUT, priming lever	1				
21		WASHER, 'O' ring retainer	1				
22		CLIP, primer shaft retainer	1				
23	EY0530080010	BANJO BOLT, fuel line fitting	2				

When ordering parts: Always give Model, Specification and Serial Numbers of engine.

Fig. 7

IGNITION TIMER, COIL and ALTERNATOR Group

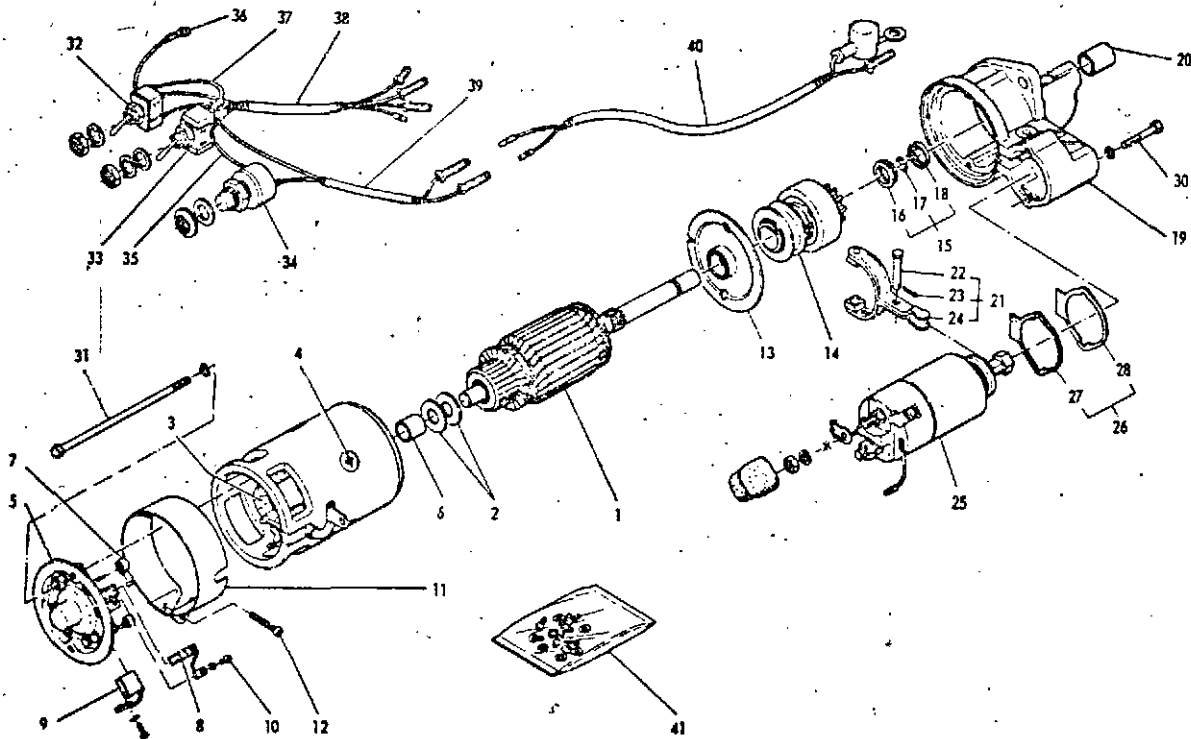
Model EY21W



NOTE: Items without a part number are not sold separately.

Ref. No.	Part Number	Description	Qty.
●	EY2107030110	ALTERNATOR assembly .....	1
		Includes:	
1	EY2107030118	STATOR .....	1
2	EY2107030218	ROTOR .....	1
3	EY0230220020	SPACER, alternator .....	1
4	EY0043106300	SCREW, stator mounting .....	4
		6 mm x 30 mm long, pan head	
5	EY0032006000	WASHER, 6 mm, spring lock .....	8
		4 for stator mounting	
		1 for clamp mounting	
		1 for ignition coil	
		2 for breaker bracket mounting	
6	EY0566100021	CLAMP, stator wire .....	1
7	EY0043106120	SCREW, stator wire clamp .....	1
		6 mm x 12 mm long, pan head	
8	EY2107130120	SELENIUM RECTIFIER assembly .....	1
9	EY2107310611	WIRE HARNESS, rectifier .....	1
10	EY2107120120	IGNITION COIL assembly, with spark plug cables .....	1
		Includes:	
11	EY2107120228	SCREW .....	2
		5 mm x 12 mm long, hexagon head	
12	EY2107120328	NUT .....	2
		5 mm thread, hexagon steel	
13	EY0043108140	SCREW, ignition coil mounting .....	2
		8 mm x 14 mm long, pan head	
14	EY2107120128	WIRE HARNESS, ignition coil .....	1

Ref. No.	Part Number	Description	Qty.
15	EY0655000040	CAP, spark plug .....	2
●	EY2107070120	IGNITION TIMER assembly .....	1
		(Includes Items 16 thru 25)	
16		CAM .....	1
17		GOVERNOR SPRING .....	2
●	EY2107070127	POINT & CONDENSER KIT .....	1
		(Includes Items 18, 19, 20)	
18		CONDENSER .....	1
19		OIL FELT .....	1
20		CONTACT BREAKER .....	1
21	EY2107070628	SPRING, cover retainer .....	1
22	EY2107070728	"O" RING, timer body .....	1
23	EY2107070828	GEAR, driven .....	1
24	EY2107070928	GEAR RIVET .....	1
25	EY2107071028	BREAKER COVER .....	1
26	EY2107080111	ADVANCE ARM .....	1
27	EY0016606300	SCREW, advance arm clamp .....	1
		6 mm x 30 mm long, hexagon head	
28	EY0022706000	NUT, advance arm clamp .....	1
		6 mm thread, hexagon steel	
29	EY0031006000	WASHER, advance arm clamp screw .....	1
		6.4 mm I.D. x 11.5 mm O.D., pl. steel	
30	EY0016506120	SCREW, advance arm mounting .....	1
		6 mm x 12 mm long, hexagon head	
31	EY0850100020	VINYL TUBE, wire protect .....	1



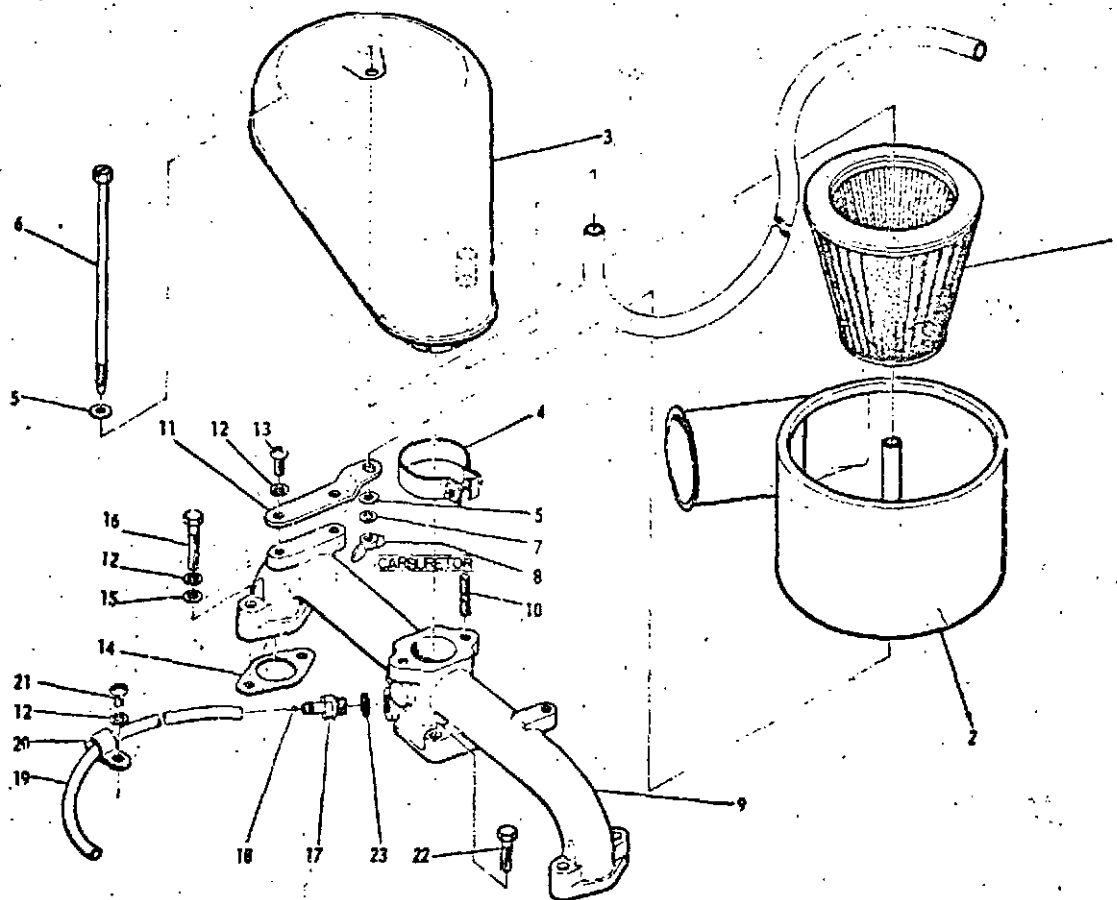
NOTE: Items without a part number are not sold separately.

Ref. No.	Part Number	Description	Qty.	Ref. No.	Part Number	Description	Qty.
●	EY2107050140	STARTING MOTOR assembly .....	1	21	EY2107050207	SHIFT LEVER SET .....	1
		(Includes Items 1 thru 31)				Includes:	
1	EY2107050108	ARMATURE assembly .....	1	22		PIN, shift lever .....	1
2	EY2107050208	THRUST WASHER .....	2	23		COTTER PIN .....	1
3	EY2107050708	FIELD COIL assembly .....	1	24		SHIFT LEVER .....	1
		Includes:		25	EY2107052208	MAGNETIC SWITCH assembly .....	1
4		EY2107050808 CORE SCREWS .....	4	26	EY2107050307	DUST PROOF KIT .....	1
5	EY2107050908	REAR COVER assembly .....	1			Includes:	
		Includes:		27		PACKING .....	1
6		EY2107051008 BEARING .....	1	28		DUST PLATE .....	1
7		EY2107051308 BRUSH SPRING .....	4	30		SCREW, magnetic switch mounting	2
8		BRUSH (+) .....	2	31		THRU BOLT .....	2
9		BRUSH (-) .....	2	●	EY2107310711	SWITCH and wire harness assembly	1
10		SCREW, brush .....	4			(Includes Items 32 thru 40)	
11		BRUSH COVER assembly .....	1	32	EY0660000020	SWITCH, charge select .....	1
		Includes:		33	EY0660000030	SWITCH, ignition .....	1
12		SCREW, brush cover .....	1	34	EY0663000010	SWITCH, starter .....	1
13	EY2107051408	CENTER BEARING .....	1	35		WIRES (yellow, red) ignition switch	
14	EY2107051508	PINION assembly .....	1			to starter switch .....	1
15	EY2107050107	PINION STOPPER SET .....	1	36		WIRE 3, to light terminal .....	1
		(Includes Items 16, 17, 18)		37		WIRE 5 (red) ignition switch to	
16		PINION STOPPER .....	1			charge switch .....	1
17		CLIP, pinion stopper .....	1	38	EY2107310212	WIRE HARNESS 2, alternator .....	1
18		WASHER, pinion stopper .....	1	39	EY2107310902	WIRE HARNESS 9, ignition -	
19		DRIVE END HEAD assembly .....	1			starter switch .....	1
		Includes:		40	EY2107310121	WIRE HARNESS 1, to starting motor	1
20		EY2107051708 BEARING, drive end	1	41	EY2107050407	SCREW KIT .....	1
						* Included in kit (Ref. 10, 12)	
				●	EY2109900707	BRUSH SET for service .....	1
						† Included in brush set	

When ordering parts: Always give Model, Specification and Serial Numbers of engine.

Fig. 9

# AIR CLEANER and INTAKE MANIFOLD Group For Model EY21W



NOTE: Items without a part number are not sold separately.

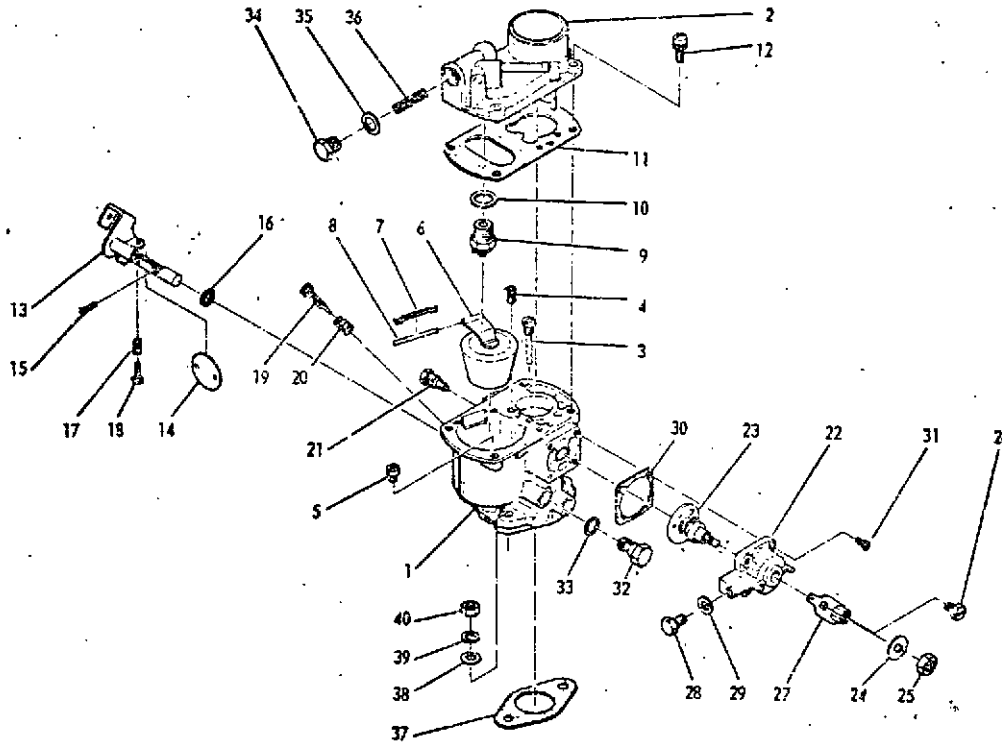
\*\* Included in Engine Gasket Set.

Ref. No.	Part Number	Description	Qty.	Ref. No.	Part Number	Description	Qty.
6	EY2103260220	AIR CLEANER assembly .....	1	12	EY0032006000	WASHER, 6 mm, spring lock .....	7
1		Consisting of:				2-for bracket mounting	
		EY2103260128 ELEMENT .....	1			4-for manifold mounting	
2		BODY .....	1			1-for drain clamp mounting	
3		COVER .....	1	13	EY0043106140	SCREW, air cleaner-bracket mounting	2
4		CLAMP .....	1		**	GASKET, manifold .....	2
5		WASHER, cover and bracket mt'g. ...	2	15	EY0031006000	WASHER, manifold mounting .....	4
6		6 mm, plain steel				6.4 mm I.D. x 11.5 mm O.D.,	
7		BOLT, air cleaner cover mounting...	1			plain steel	
		6 mm x 165 mm long, hexagon head		16	EY0016606350	SCREW, manifold mounting .....	4
8		WASHER, body mounting .....	1			6 mm x 35 mm long, hexagon head	
		6 mm, spring lock		17	EY2106530101	DRAIN FITTING, assembly .....	1
9	EY2103310121	INTAKE MANIFOLD assembly .....	1			Includes:	
		Includes:		18		EY006901080G STEEL BALL .....	1
10		EY0013106281 STUD, carb. mt'g. ....	2	19	EY0850050100	TUBING, manifold drain, vinyl .....	1
		6 mm x 28 mm long		20	EY0566120010	CLAMP, manifold drain tubing .....	1
11	EY2103520111	BRACKET, air cleaner support .....	1	21	EY0043106140	SCREW, clamp mounting .....	1
						6 mm x 14 mm long, pan head	
				22	EY0016506250	SCREW, manifold mounting .....	2
						6 mm x 25 mm long, hexagon head	
				23	**	GASKET, drain fitting .....	1

When ordering parts: Always give Model, Specification and Serial Numbers of engine.

# CARBURETOR Group For Model EY21W

Fig. 10



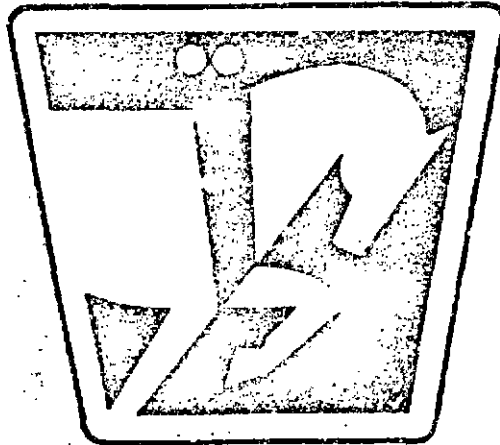
NOTE: Items without a part number are not sold separately.

Ref. No.	Part Number	Description	Qty.	Ref. No.	Part Number	Description	Qty.
●	EY2106230100	CARBURETOR assembly .....	1	22	EY2106230208	STARTING VALVE assembly .....	1
1		(Includes Items 1 thru 36)		23		STARTING VALVE .....	1
2		BODY, lower .....	1	24		WASHER, lever .....	1
3		BODY, upper .....	1	25		NUT, lever .....	1
4		NOZZLE .....	1	26		SCREW, lever mounting .....	1
5		IDLE AIR JET .....	1	27	†	STARTING LEVER assembly .....	1
6		MAIN JET .....	1	28		SCREW, starting valve .....	1
6	EY2106230108	FLOAT .....	1	29		WASHER, starting valve .....	1
7		RETAINER, float pin .....	1	30	† *	GASKET, starting valve .....	1
8	†	FLOAT PIN .....	1	31		SCREW, valve mounting .....	4
9	EY2106230308	FUEL VALVE assembly .....	1	32		STARTING JET .....	1
10	† *	GASKET, fuel valve .....	1	33		WASHER, jet mounting .....	1
11	† *	GASKET, carburetor body .....	1	34		PLUG, screen retainer .....	1
12		SCREW - WASHER, body attaching .....	4	35	*	GASKET, screen plug .....	1
13		THROTTLE SHAFT .....	1	36		SCREEN, fuel filter .....	1
14		THROTTLE VALVE .....	1	37	† *	FLANGE GASKET, carburetor .....	1
15		SCREW, throttle shaft and valve .....	2	38	EY0031006000	WASHER, carburetor mounting .....	2
16		SEAL, throttle shaft .....	1			6.4 mm I.D. x 11.5 mm O.D., plain steel	
17		SPRING, throttle stop screw .....	1	39	EY0032006000	WASHER, carburetor mounting .....	2
18		SCREW, throttle stop .....	1			.6 mm, spring lock	
19	†	IDLE SCREW .....	1	40	EY0022706090	NUT, carburetor mounting .....	2
20	†	SPRING, idle screw .....	1			6 mm thread, hexagon steel	
21	†	IDLE JET .....	1	●	EY2106230107	REPAIR KIT, carburetor	
						† Parts included in kit.	
				●	EY2106230207	GASKET SET, carburetor	
						* Parts included in set.	

When ordering parts: Always give Model, Specification and Serial Numbers of engine.

34386

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