

**Crusader**  
MARINE ENGINES

# PARTS CATALOG

## MODELS

CH 190

CH 220

CH 270

305 - 350 C.I.D.



# **Crusader** MARINE ENGINES

## ILLUSTRATED PARTS CATALOG

This catalog covers service parts for the following Crusader marine engines manufactured after May 1, 1977 and which are identified by Cubic Inch Displacement as shown.

305 Cubic Inch Displacement

CH - 190  
CH - 220

350 Cubic Inch Displacement

CH - 270

CH models equipped with Warner Transmissions with or without V-Drives. For parts catalogs on Warner Transmissions and V-Drives see separate publications on request from our Part Department.


Exploded views illustrate most parts of the engine, and the catalog is indexed by "Figure Number" of the exploded views of the various group (Title) sections of the engine. The Figure Number for each section appears in the title box of each page.

All illustrations are for reference only, and in some instances the part currently being used may vary slightly in detail.


When ordering parts for a specific engine, the Model Number and Serial Number must be furnished with the parts order.

An example of the engine serial number plate appears below.

10°




RH




Thermo  
Electron  
CORPORATION

10°



LH

FIRING ORDER  
V6  
LH 165432  
RH 123456



## Crusader

### MARINE ENGINES

STERLING HEIGHTS MICH. USA

FIRING ORDER  
V8  
LH 18436572  
RH 12756348

**MODEL NO.**  **SERIAL NO.**

THIS ENGINE HAS HYDRAULIC LIFTERS NO ADJ. REQUIRED

**SPARK PLUG**  GAP .035 **DISTR.**  30° DWELL .016 GAP

FUEL REQUIREMENT: LEADED 93 MIN. OCTANE  
ENGINE OIL: USE PREMIUM GRADE SAE 30 SE SERVICE  
REVERSE GEAR OIL AUTOMATIC TRANS FLUID TYPE "A"



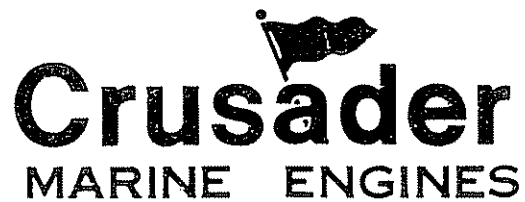
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MARINE ENGINES

Engine rotation is identified as "RH" or "LH" with the Model No., and rotation is always as viewed from the fly-wheel end of the engine. In some instances, propeller shaft rotation may be opposite to that of the engine. Always refer to engine model number for engine rotation. Quantity usage of each part per engine is shown in the appropriate "RH" or "LH" column on each page.


Crusader Marine reserves the right to change at any time without notice engine design, materials, specifications, parts and part numbers. Crusader Marine warrants its replacement parts for 90 days from date of installation. Obligation is limited to exchange of like part and does not include labor for replacement.

CRUSADER MARINE ENGINES  
7100 E. 15 MILE ROAD - STERLING HEIGHTS, MICHIGAN 48077  
TELEPHONE: (313) 264-1200 TELEX: 230435 TEECORP



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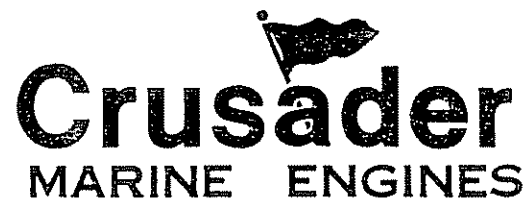
MARINE ENGINES

## KIT SUMMARY SHEET

33206	Oil Pan Gasket Kit
21006	Intake Manifold Gasket Kit
20190	Overhaul Gasket Kit
22029	Valve Grind Gasket Kit
42005	Starter Brush Holder Kit
20280	4" Riser Kit
21097	8" Riser Kit
22095	Swivel Elbow Kit
22099	Fresh Water Cooling Kit Full System
22043	Fresh Water Cooling Kit Half System Rear Mount
22064	Fresh Water Cooling Kit Half System Front Mount
45334	Carburetor Overhaul Kit 4 BBL
45346	Carburetor Overhaul Kit 2 BBL
45336	Carburetor Gasket Kit 4 BBL
45347	Carburetor Gasket Kit 2 BBL
22026	Remote Oil Filter Kit
22152	Noise Supression Kit

## ON BOARD KITS

22104	Delco Distributor
22105	Mallory Distributor
22137	Prestolite Distributor

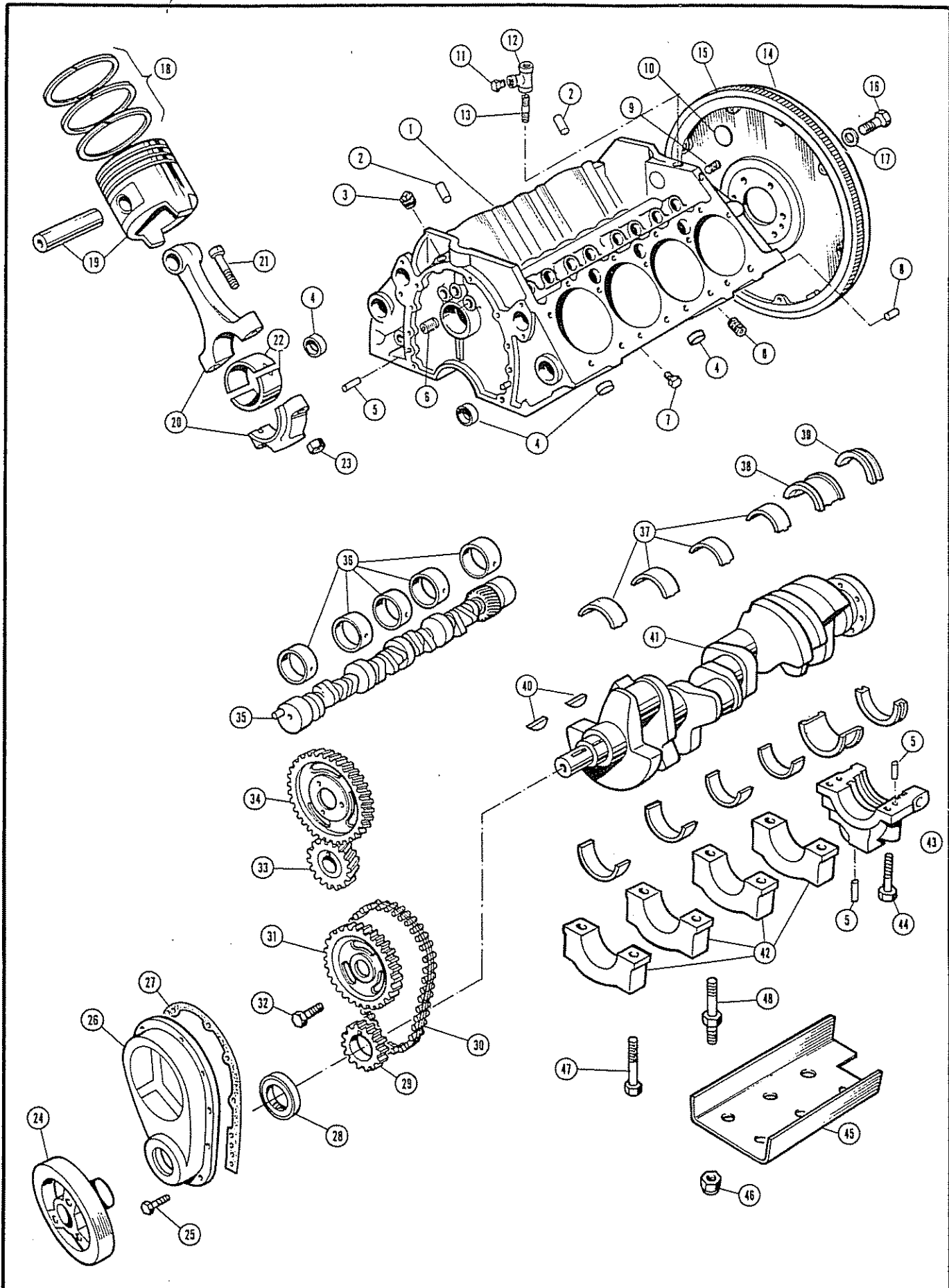


# Crusader

MARINE ENGINES

NOTE: UNLESS OTHERWISE SPECIFIED ON ORDERS ALL ON-BOARD REPAIR KITS WILL BE SUPPLIED WITH STANDARD OIL FILTER CARTRIDGES. REMOTE OIL FILTER CARTRIDGE IS PART NO. 9002514.

Early - 1986



**FIGURE 1**



FIG. 1 BLOCK ASSEMBLY CYLINDER

QUANTITY

305

350

ITEM	PART NO.	DESCRIPTION	QUANTITY			
			RH	LH	RH	LH
1	33300	BLOCK ASS'Y FITTED See Note 1	1	1		
1	33301	BLOCK ASS'Y FITTED See Note 1			1	1
1	33271	ENGINE ASS'Y COMPLETE See Note 2	1			
1	33270	ENGINE ASS'Y COMPLETE See Note 2		1		
1	33266	ENGINE ASS'Y COMPLETE See Note 2			1	
1	33267	ENGINE ASS'Y COMPLETE See Note 2				1
2	585927	PIN CYL. HEAD LOCATING	4	4	4	4
3	444776	PLUG, FRONT OIL PASSIVE	AR	AR	AR	AR
4	91330	CUP PLUG WATER JACKET	8	8	8	8
5	30157	PIN, LOCATING OIL PUMP, FRONT COVER, BIG CAP	4	4	4	4
6	33089	PLUG, OIL GALLERY CROSSOVER	3	3	3	3
7	127951	PLUG, WATER JACKET DRAIN	2	2	2	2
8	30152	DOWEL FLYWHEEL HOUSING LOCATING	2	2	2	2
9	444776	PLUG OIL GALLERY REAR	3	3	3	3
10	20045	PLUG CAM BEARING HOLE	1	1	1	1
11	127950	PLUG 1/8 NPT	AR	AR	AR	AR
12	444222	TEE 1/8 NPT	1	1	1	1
13	105406	NIPPLE 1/8 NPT	1	1	1	1
14	33183	FLYWHEEL ASS'Y See Note 3 <i>Discontinued Aug. 1989</i>	1	1	1	1
15	33264	RING GEAR <i>GM3984132</i>	1	1	1	1
16	838653	BOLT FLYWHEEL SPECIAL	6	6	6	6
17	136857	WASHER FLYWHEEL BOLT	6	6	6	6
18	33302	RING SET STD.	1	1	1	1
18	33322	RING SET (.030 OS)	AR	AR		
18	12370	RING SET STD.			1	1

FIG. 1 BLOCK ASSEMBLY CYLINDER

QUANTITY

305

350

ITEM	PART NO.	DESCRIPTION	QUANTITY			
			RH	LH	RH	LH
18	12372	RING SET (.030 05)			AR	AR
19	33303	PISTON & PIN ASS'Y STD.	8	8		
19	33323	PISTON & PIN ASS'Y (.030 O.S.)	AR	AR		
19	33304	PISTON & PIN ASS'Y STD. - <i>NLA GM 3911020 Feb'92</i>			8	8
19	33324	PISTON PIN ASS'Y (.030 0S)			AR	AR
20	20765	CONNECTING ROD ASS'Y	8	8	8	8
21	33078	BOLT CONNECTING ROD	16	16	16	16
22	33115	CONNECTING ROD BRG STD.	8	8	8	8
22	33120	CONNECTING ROD BRG (.001 U.S.)	AR	AR	AR	AR
22	33121	CONNECTING ROD BRG (.002 U.S.)	AR	AR	AR	AR
22	33116	CONNECTING ROD BRG (.010 U.S.)	AR	AR	AR	AR
22	33117	CONNECTING ROD BRG (.020 U.S.)	AR	AR	AR	AR
23	33079	NUT CONNECTING ROD	16	16	16	16
24	33306	TORSIONAL DAMPER ASS'Y	1	1	1	1
25	20790	SCREW & WASHER ASS'Y, FRONT COVER	10	10	10	10
26	33307	FRONT COVER ASS'Y		1		1
26	33308	FRONT COVER ASS'Y INCLUDES SEAL	1		1	
27	20129	GASKET FRONT COVER	1	1	1	1
28	20018	SEAL FRONT COVER	1	1	1	1
29	20959	SPROCKET CRANKSHAFT STD		1		
29	20551	SPROCKET CRANKSHAFT ROLLER CHAIN				1
30	20960	TIMING CHAIN STD		1		
30	12146	TIMING CHAIN ROLLER CHAIN				1
31	20958	SPROCKET CAMSHAFT STD		1		
31	12144	SPROCKET CAMSHAFT ROLLER CHAIN				1

FIG. 1 CYLINDER BLOCK ASSEMBLY			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
32	30166	BOLT CAM GEAR OR SPROCKET	3	3	3	3
33	12187	GEAR CRANKSHAFT	1		1	
34	12189	GEAR CAMSHAFT	1		1	
35	20570	CAMSHAFT		1		1
35	20571	CAMSHAFT	1		1	
36	33346	CAMSHAFT BEARING SET	1	1	1	1
37	33109	MAIN BEARING, CRANKSHAFT STD	4	4	4	4
37	33164	MAIN BEARING, CRANKSHAFT (.001US)	AR	AR	AR	AR
37	33165	MAIN BEARING, CRANKSHAFT (.002US)	AR	AR	AR	AR
37	33166	MAIN BEARING, CRANKSHAFT (.010US)	AR	AR	AR	AR
37	33167	MAIN BEARING, CRANKSHAFT (.020US)	AR	AR	AR	AR
38	33112	BEARING CRANKSHAFT REAR STD	1	1	1	1
38	33168	BEARING CRANKSHAFT REAR (.001US)	AR	AR	AR	AR
38	33169	BEARING CRANKSHAFT REAR (.002US)	AR	AR	AR	AR
38	33170	BEARING CRANKSHAFT REAR (.010US)	AR	AR	AR	AR
38	33171	BEARING CRANKSHAFT REAR (.020US)	AR	AR	AR	AR
39	33208	SEAL, CRANKSHAFT REAR OIL		2		2
39	33209	SEAL, CRANKSHAFT REAR OIL	2		2	
40	106751	KEY, CRANK GEAR & DAMPER	2	2	2	2
41	33313	CRANKSHAFT ASSEMBLY	1	1		
41	33314	CRANKSHAFT ASSEMBLY			1	1
42	33093	MAIN BRG CAP (NO 1-4)	4	4	4	4
43	33315	MAIN BRG CAP REAR	1	1	1	1
44	33083	BOLT	5	5	5	5
45	33317	OIL BAFFLE	1	1	1	1

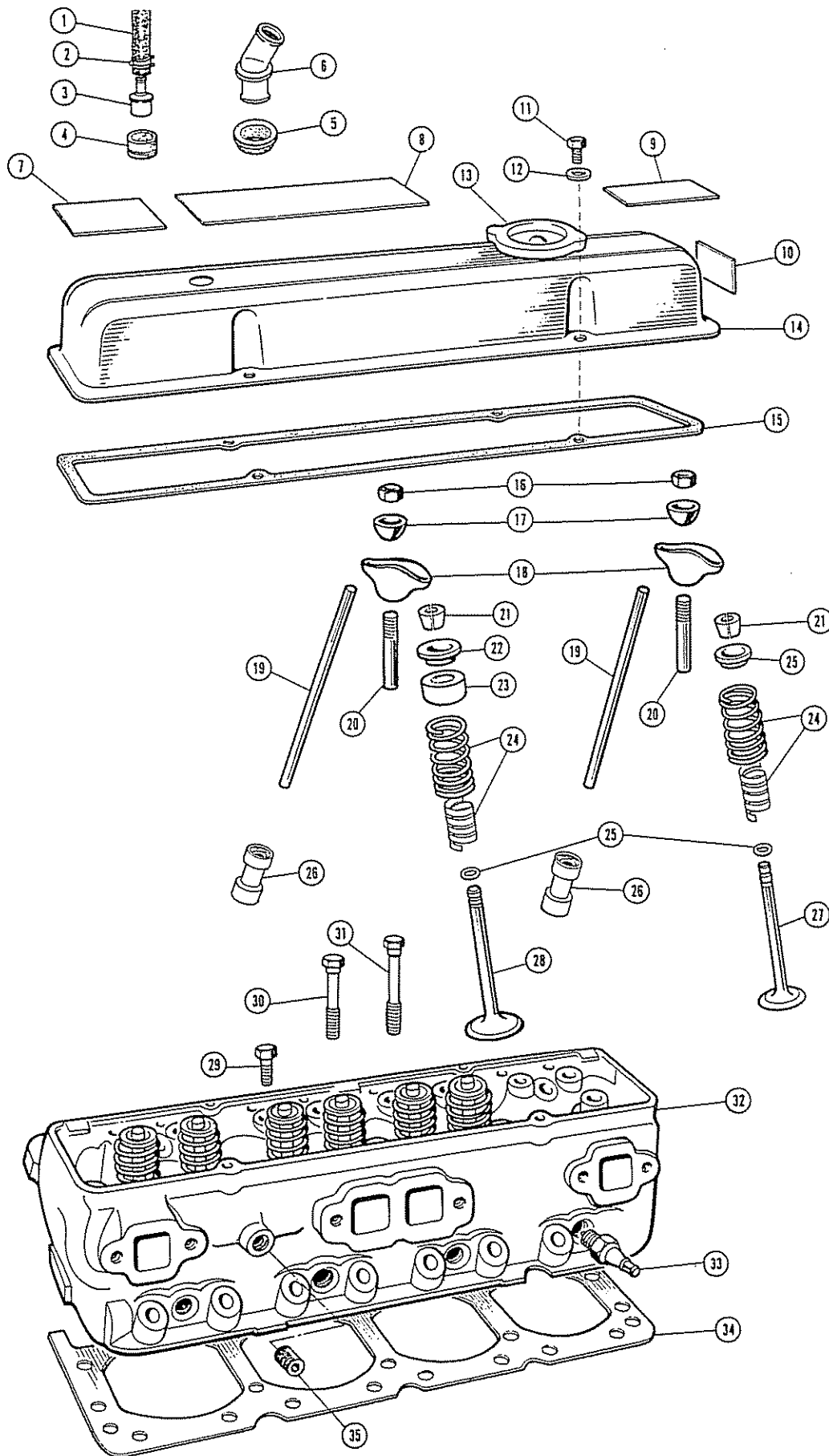
FIG. 1 CYLINDER BLOCK ASSEMBLY			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
46	33124	NUT BAFFLE ASS'Y	5	5	5	5
47	33083	BOLT	5	5	5	5
48	33316	STUD	5	5	5	5
	NOTE: 1	Fitted Block Ass'y consists of: Block Ass'y, Cam Brgs, Pistons Wrist Pins, Rings & Main Brgs				
	NOTE: 2	Complete engine ass'y consists of: Block Ass'y, Crankshaft, Camshaft Main Brgs, Rod Brgs, Cam Brgs Timing Gears, Front Cover, Oil Pan (stamped) Cylinder Heads, Pushrods, Valve Lifters, Valve Covers, Pistons, Rings, Wrist Pins, Connecting Rods, Intake Manifold and Flywheel				
	NOTE: 3	For Starter down order Flywheel  33138 12.75 DIA				

MARINE  
ENGINES



PARTS  
CATALOG

			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
		NOTES				



**FIGURE 2**

FIG. 2 CYLINDER HEAD ASSEMBLY			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
24	33312	VALVESPRING EXHAUST W/DAMPER	8	8	8	8
25	20056	SEAL, VALVE STEM OIL	16	16	16	16
26	30016	HYDRAULIC LIFTER ASS'Y	16	16	16	16
27	33325	VALVE INLET STD	8	8		
27	33326	VALVE INLET STD			8	8
27	33327	VALVE INLET (.003 O.S.)	AR	AR		
27	33328	VALVE INLET (.003 O.S.)			AR	AR
27	33329	VALVE INLET (.015 O.S.)	AR	AR		
27	33330	VALVE INLET (.015 O.S.)			AR	AR
27	33331	VALVE INLET (.030 O.S.)	AR	AR		
27	33332	VALVE INLET (.030 O.S.)			AR	AR
28	33334	VALVE EXHAUST STD Note 3	8	8		
28	33335	VALVE EXHAUST STD			8	8
28	33336	VALVE EXHAUST (.003 O.S.)	AR	AR		
28	33337	VALVE EXHAUST (.003 O.S.)			AR	AR
28	33338	VALVE EXHAUST (.015 O.S.)	AR	AR		
28	33339	VALVE EXHAUST (.015 O.S.)			AR	AR
28	33340	VALVE EXHAUST (.030 O.S.)	AR	AR		
28	33341	VALVE EXHAUST (.030 O.S.)			AR	AR
29	20123	BOLT SHORT	16	16	16	16
30	20124	BOLT MEDIUM	4	4	4	4
31	20122	BOLT LONG	14	14	14	14
32	33342	HEAD CYLINDER ASS'Y Note 2, 3	2	2		
32	33343	HEAD CYLINDER ASS'Y Note 2, 3			2	2
33	33311	SPARK PLUG	8	8	8	8

FIG. 2 CYLINDER HEAD ASSEMBLY

## QUANTITY

305

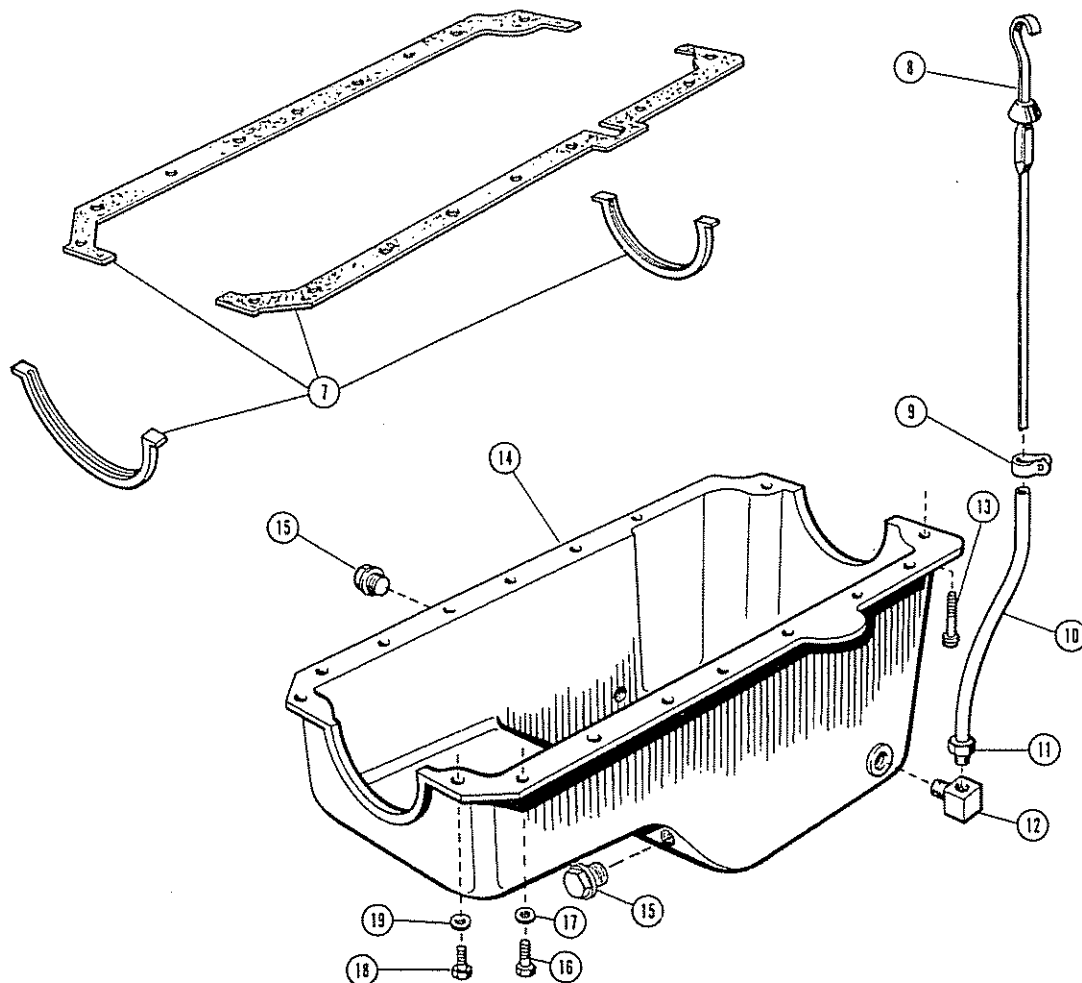
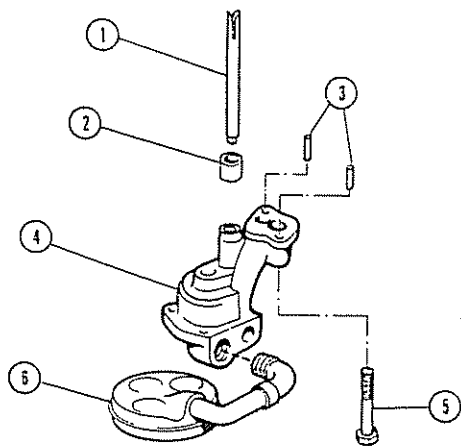
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ITEM	PART NO.	DESCRIPTION	QUANTITY			
			RH	LH	RH	LH
1	30112	HOSE, CRANK CASE VENT VALVE	1	1	1	1
2	33295	CLAMP, VENT HOSE	2	2	2	2
3	30110	CRANKCASE VENT VALVE	1	1	1	1
4	20598	GROMMET VENT VALVE	1	1	1	1
5	1104595	GROMMET BREATHER ELBOW	1	1	1	1
6	1104594	BREATHER ELBOW	1	1	1	1
7	20723	DECAL MODEL 220 See Note 1	2	2	2	2
8	22110	DECAL CRUSADER	2	2	2	2
9	96889	DECAL HYDRAULIC LIFTERS	1	1	1	1
10	97182	DECAL FIRING ORDER	1	1	1	1
11	33318	BOLT ROCKER COVER	8	8	8	8
12	33125	WASHER SPECIAL	8	8	8	8
13	20105	OIL FIL CAP	2	2	2	2
14	33243	ROCKER COVER ASSEMBLY W/CAP	2	2	2	2
15	91351	GASKET ROCKER COVER	2	2	2	2
16	20582	NUT, ROCKER STUD	16	16	16	16
17	20583	BALL, ROCKER PIVOT	16	16	16	16
18	12155	ROCKER ARM	16	16	16	16
19	12154	PUSH ROD	16	16	16	16
20	33074	STUD, ROCKER PIVOT ,003 OS	AR	AR	AR	AR
21	33075	STUD, ROCKER PIVOT ,013 OS	AR	AR	AR	AR
22	33201	KEY VALVE STEM	32	32	32	32
23	33333	EXHAUST VALVE ROTATOR ASS'Y	8	8	8	8
24	33211	SHIELD, VALVE STEM OIL	16	16	16	16
25	33241	VALVE SPRING, INLET W/DAMPER	8	8	8	8



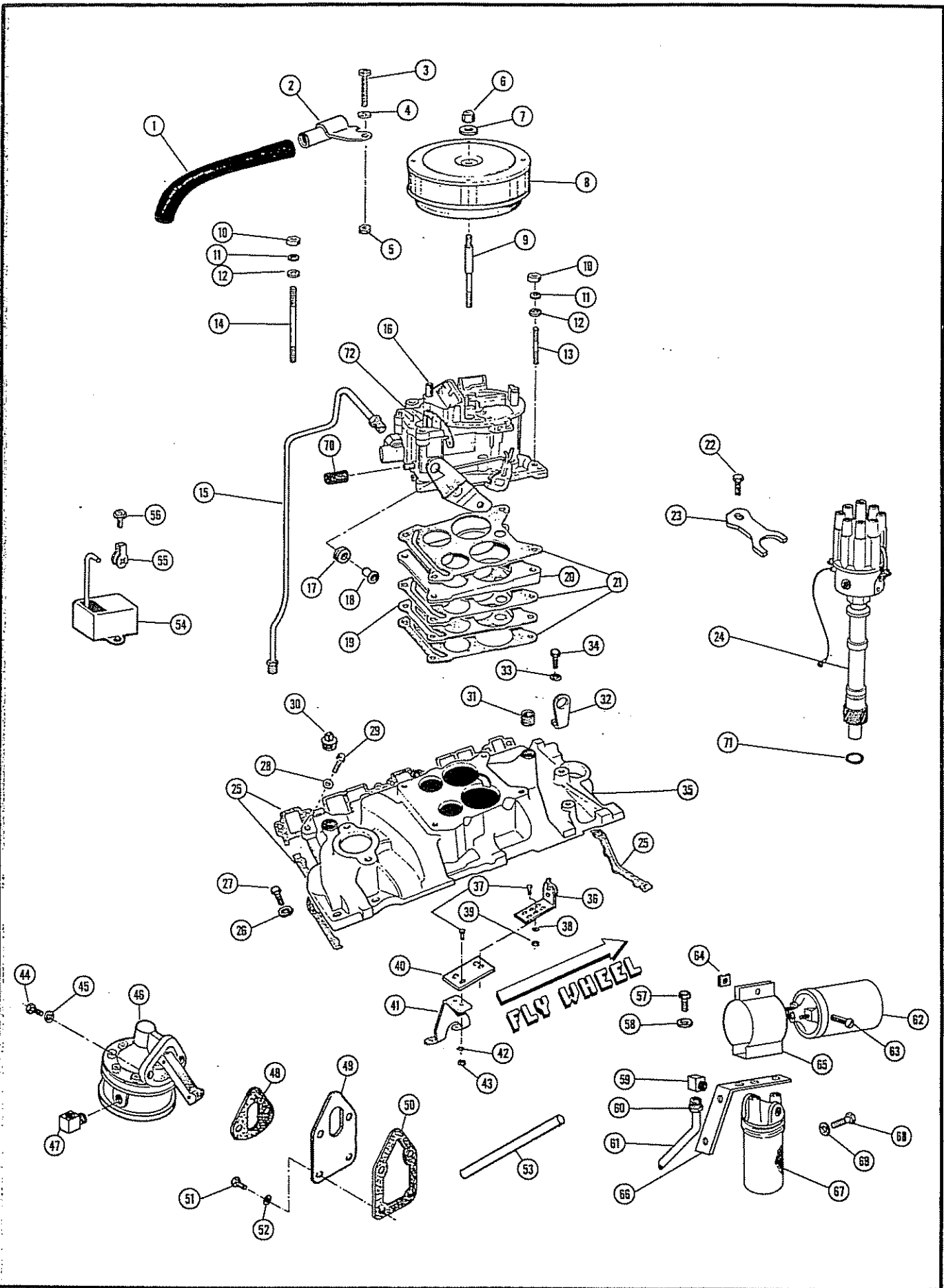
FIG. 2 CYLINDER HEAD ASSEMBLY			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
34	33345	HEAD GASKET	2	2	2	2
35	444705	PLUG 1/2 NPT SOCKET HEAD	2	2	2	2
	NOTE 1	MODEL DECALS ARE AS FOLLOWS  CH190 22123  CH220 20723  CH270 21060				
	NOTE 2	CYLINDER HEAD ASS'Y INCLUDES  HEAD, STUDS, AND CUP PLUGS ONLY				
	NOTE 3	EXHAUST VALVE STEM DIAMETERS MUST BE  SPECIFIED WHEN VALVES OR HEADS ARE ORDERED  EARLY .341 LATE .372				

**WITH CAST PAN**



**FIGURE 3**

FIG. 3 OIL PAN ASSEMBLY – CAST			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
1	12152	SHAFT, DISTRIBUTOR TO PUMP	1	1	1	1
2	33131	RETAINER, SHAFT	1	1	1	1
3	30157	PIN, PUMP LOCATING	2	2	2	2
4	33190	OIL PUMP ASSEMBLY	1	1	1	1
5	33232	BOLT, OIL PUMP ATTACHING	1	1	1	1
6	20153	OIL SCREEN ASSEMBLY	1	1	1	1
7	33206	OIL PAN GASKET SET	1	1	1	1
8	21045	OIL LEVEL INDICATOR	1	1	1	1
9	96566	CLAMP INDICATOR TUBE	1	1	1	1
10	97215	TUBE, INDICATOR	1	1	1	1
11	142433	NUT, INDICATOR TUBE	1	1	1	1
12	137423	ELBOW	1	1	1	1
13	20987	BOLT SOCKET HD. 5/16 - 18 x 2"	2	2	2	2
14	96444	OIL PAN	1	1	1	1
15	444868	PLUG 3/8 NPT	AR	AR	AR	AR
16	179803	BOLT 1/4 - 20 x 1 3/4"	13	13	13	13
17	103319	WASHER 1/4" LOCK NOMINAL	13	13	13	13
18	179826	BOLT 5/16 - 18 x 2	2	2	2	2
19	103320	WASHER 5/16" LOCK NOMINAL	2	2	2	2



**FIGURE 4**

FIG. 4 INTAKE MANIFOLD ASSEMBLY STD.			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
1	23091	HOSE CRANKCASE VENT	1	1	1	1
2	21064	VENT TUBE BRACKET	1	1	1	1
3	436673	SCREW 6-32 x 2"	1	1	1	1
4	131014	WASHER #6	1	1	1	1
5	427254	NUT # 6-32	1	1	1	1
6	20231	NUT 1/4 - 20 SELF LOCKING	1	1	1	1
7	103339	WASHER 1/4 FLAT	1	1	1	1
8	97214	FLAME ARRESTOR ASS'Y 4BBL	1	1	1	1
8	97456	FLAME ARRESTOR ASS'Y 2BBL	1	1		
9	96926	STUD SPECIAL NOTE 5	1	1	1	1
10	102634	NUT 5/16 - 18	4	4	4	4
11	103320	WASHER 5/16 LOCK	4	4	4	4
12	103340	WASHER 5/16 FLAT	4	4	4	4
13	96817	STUD SHORT	AR	AR	2	2
14	96818	STUD LONG	AR	AR	2	2
15	97459	FUEL LINE CH190	1	1	1	1
15	97378	FUEL LINE CH220,270	1	1	1	1
16	45344	CARBURETOR CH190 2BBL	1	1	1	1
16	96820	CARBURETOR CH220,270	1	1	1	1
17	20410	BUSHING THROTTLE ARM	1	1	1	1
18	20409	SLEEVE THROTTLE ARM	1	1	1	1
20	97122	8° WEDGE ADAPTER 4BBL	1	1	1	1
20	97455	8° WEDGE ADAPTER 2BBL CH190	1	1	1	1
20	97515	0° ADAPTER 2BBL CH190	1	1	1	1
21	97033	GASKET 4BBL SEE NOTE 1	AR	AR	AR	AR

FIG. 4 INTAKE MANIFOLD ASSEMBLY STD.			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
21	91616	GASKET 2BBL CH190	1	1		
22	179837	BOLT DIST. CLAMP 3/8 - 16 x 3/4	1	1	1	1
23	20799	DIST. HOLD DOWN CLAMP	1	1	1	1
24	41050	DISTRIBUTOR See Note 2	1	1	1	1
25	21006	INTAKE MANIFOLD GASKET SET	1	1	1	1
26	103321	WASHER 3/8 LOCK	12	12	12	12
27	435611	BOLT LIFT EYE BRACKET	1	1	1	1
28	103321	WASHER 3/8 LOCK	12	12	12	12
29	435611	BOLT	8	8	8	8
30	444746	PLUG 1/2 NPT	1	1	1	1
31	444699	PLUG 3/8 NPT SOCKET HEAD	1	1	1	1
32	96845	LIFTING EYE	2	2	2	2
33	103321	WASHER	1	1	1	1
34	435611	BOLT	3	3	3	3
35	96315	INTAKE MANIFOLD (STD PROFILE)	1	1	1	1
36	21033	THROTTLE CABLE CLAMP	1	1	1	1
37	443874	SCREW # 10 - 24 x 1/2"	4	4	4	4
38	120217	WASHER # 10 LOCK	2	2	2	2
39	120361	NUT # 10 - 24	2	2	2	2
40	97280	SPACER	1	1	1	1
41	96683	THROTTLE CABLE BRACKET Note 4	1	1	1	1
42	120217	WASHER # 10 LOCK	2	2	2	2
43	120361	NUT # 10 - 24	2	2	2	2
44	20791	BOLT SPECIAL	2	2	2	2
45	NSS	WASHER - PART OF 20791	-	-	-	-

FIG. 4 INTAKE MANIFOLD ASSEMBLY STD.			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
46	97405	FUEL PUMP	1	1	1	1
47	143343	ELBOW	2	2	2	2
48	91340	GASKET FUEL PUMP MOUNT	1	1	1	1
49	91607	PLATE, FUEL PUMP MOUNT	1	1	1	1
50	91341	GASKET PLATE TO BLOCK	1	1	1	1
51	20790	BOLT	2	2	2	2
52	NSS	PART OF 20790				
53	12179	PUSH ROD FUEL PUMP	1	1	1	1
54	33239	CHOKE ASS'Y 0° INST.	1	1	1	1
54	33240	CHOKE ASS'Y 15° INSTALLATION	1	1	1	1
55	96922	CLIP	1	1	1	1
56	273513	SCREW	1	1	1	1
57	181336	BOLT 5/16 - 24 x 3/4"	2	2	2	2
58	103320	WASHER 5/16 LOCK	2	2	2	2
59	143343	ELBOW	1	1	1	1
60	142427	NUT FLARE	1	1	1	1
61	97379	FUEL LINE	1	1	1	1
62	41062	COIL	1	1	1	1
63	436756	SCREW 10-32 x 1 - 1/2	1	1	1	1
65	41063	BRACKET, COIL MTG	1	1	1	1
66	97259	BRACKET FILTER MOUNTING	1	1	1	1
67	91365	FILTER ASS'Y	1	1	1	1
67	91606	FILTER ELEMENT	1	1	1	1
68	179837	BOLT 3/8 - 16 x 3/4	2	2	2	2
69	103321	WASHER 3/8 LOCK	2	2	2	2

FIG. 4 INTAKE MANIFOLD ASSEMBLY STD.

QUANTITY

305

350

ITEM	PART NO.	DESCRIPTION	QUANTITY			
			RH	LH	RH	LH
70	45342	CAP, CARB VACUUM PART	1	1	1	1
71	91083	GASKET DIST. BASE	1	1	1	1
72	45285	VACUUM BREAK CONTROL 4BBL ONLY	1	1	1	1
	NOTE: 1	97033 GASKET USE QTY. 1  FOR 0° INSTALLATION CH220,270  AND ALL CH190, USE QTY. 2 FOR 15°  CH220 AND 270				
	NOTE: 2	SEE DISTRIBUTOR BREAK DOWN  SECTION FOR ADDITIONAL LISTINGS				
	NOTE: 3	CARB KITS:  45334 OVERHAUL KIT 4BBL  45346 OVERHAUL KIT 2BBL  45336 GASKET KIT 4BBL  45347 GASKET KIT 2BBL				

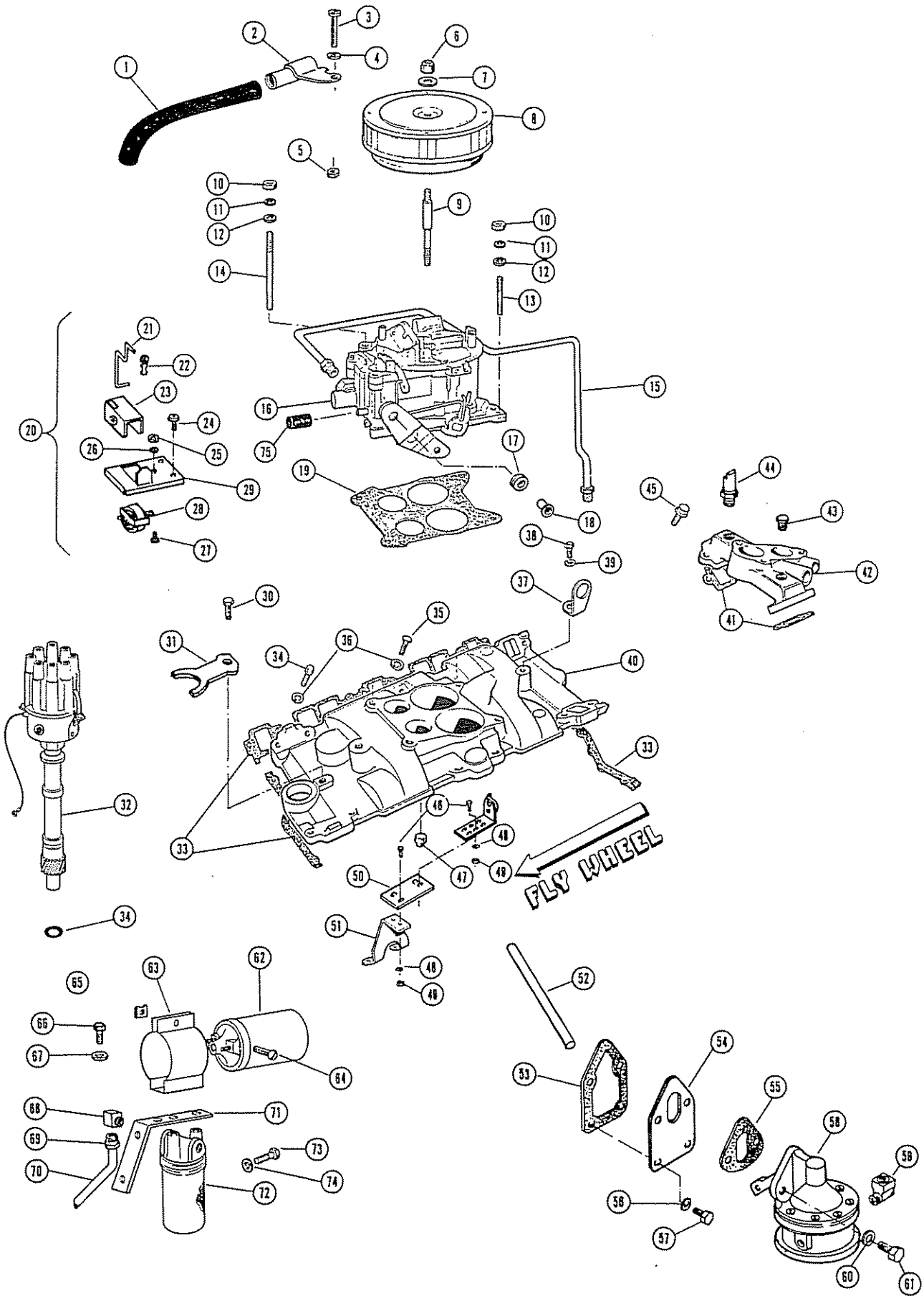


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			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
	NOTE: 4	97316 THROTTLE CONTROL BRACKET PACEMAKER ONLY				
	NOTE: 5	FOR CH190 USE BOLT # 180044 1/4 - 20 x 2" PLATED				



**FIGURE 5**

FIG. 5 INTAKE MANIFOLD ASSEMBLY LOW PROFILE			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
1	23091	BREATHER HOSE	1	1	1	1
2	21064	VENT TUBE BRACKET	1	1	1	1
3	436673	SCREW #6 - 32 x 2	1	1	1	1
4	131014	WASHER #6 LOCK	1	1	1	1
5	427524	NUT #6 - 32	1	1	1	1
6	20231	NUT SELF LOCKING	1	1	1	1
7	103339	WASHER 1/4" FLAT	1	1	1	1
8	97214	FLAME ARRESTOR 4BB2	1	1	1	1
8	97456	FLAME ARRESTOR 2BB2 CH190	1	1	1	1
9	96926	STUD FLAME ARRESTOR 4BB2	1	1	1	1
10	102634	NUT 5/16 - 18	4	4	4	4
11	103320	WASHER 5/16 LOCK	4	4	4	4
12	103340	WASHER 5/16 FLAT	4	4	4	4
13	96817	STUD SHORT	4	4	2	2
14	96818	STUD LONG	2	2	2	2
15	97380	FUEL LINE 4BBL	1	1	1	1
16	96820	CARBURETOR 4BBL	1	1	1	1
17	20410	BUSHING	1	1	1	1
18	20409	SLEEVE	1	1	1	1
19	97033	GASKET 4BBL	1	1	1	1
19	91616	GASKET 2BBL	1	1	1	1
20	96986	CHOKE ASS'Y	1	1	1	1
21	97044	CHOKE ROD 4BBL	1	1	1	1
22	96992	CLIP	1	1	1	1
23	96989	COVER	1	1	1	1

FIG. 5 INTAKE MANIFOLD LOW PROFILE			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
24	273513	SCREW AND WASHER ASS'Y	1	1	1	1
25	120361	NUT #10 - 24	1	1	1	1
26	120217	WASHER #10 LOCK	1	1	1	1
27	443874	SCREW #10 - 24 x 1/2"	1	1	1	1
28	96990	CHOKE COIL	1	1	1	1
29	97045	MOUNTING PLATE	1	1	1	1
30	179837	BOLT 3/8 - 16 x 3/4	1	1	1	1
31	20799	CLAMP, DIST.	1	1	1	1
32	41050	DISTRIBUTOR See Note 1	1	1	1	1
33	21006	INTAKE MANIFOLD GASKET SET	1	1	1	1
34	91083	DISTRIBUTOR BASE GASKET	1	1	1	1
35	179839	BOLT 3/8 - 16 x 1"	1	1	1	1
36	103321	WASHER 3/8" LOCK	8	8	8	8
37	96845	LIFTING EYE	2	2	2	2
38	179885	BOLT 1/2 - 13 x 1 1/2"	2	2	2	2
39	103323	WASHER 1/2" LOCK	2	2	2	2
40	96230	INTAKE MANIFOLD LOW PROFILE	1	1	1	1
41	96729	THERMOSTAT HSG. GASKET	2	2	2	2
42	96728	THERMOSTAT HOUSING LOW PROFILE	1	1	1	1
43	438159	PLUG 1/2 NPT	1	1	1	1
44	20326	ENGINE WATER TEMP. ALARM SENDER	1	1	1	1
45	20338	BOLT FERRY HEAD CAP	4	4	4	4
46	44374	SCREW #10 - 24 x 1/2	4	4	4	4
47	44705	PLUG 1/2 NPT	1	1	1	1
48	120217	WASHER #10 LOCK	4	4	4	4

FIG. 5 INTAKE MANIFOLD ASSEMBLY PROFILE			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
49	120361	NUT # 10 NUT	4	4	4	4
50	97280	SPACER	1	1	1	1
51	96683	THROTTLE BRACKET	1	1		1
52	12179	FUEL PUMP PUSH ROD	1	1	1	1
53	91341	PLATE MTG GASKET	1	1	1	1
54	91607	FUEL PUMP MOUNTING PLATE	1	1	1	1
55	91340	FUEL PUMP MOUNTING GASKET	1	1	1	1
56	NSS	PART OF # 20790	—	—	—	—
57	20790	BOLT AND WASHER ASS'Y	2	2	2	2
58	97405	FUEL PUMP	1	1	1	1
59	143343	ELBOW	2	2	2	2
60	NSS	PART OF # 20791	—	—	—	—
61	20791	BOLT & WASHER ASS'Y	2	2	2	2
62	41062	COIL	1	1	1	1
63	41063	COIL MTG BRACKET	1	1	1	1
64	436756	SCREW #10 - 32 x 1 1/2"	1	1	1	1
66	181336	BOLT	2	2	2	2
67	133320	WASHER	2	2	2	2
68	143343	ELBOW	1	1	1	1
69	142427	FLARE NUT	1	1	1	1
70	97379	FUEL LINE	1	1	1	1
71	97259	FILTER MOUNTING BRACKET	1	1	1	1
72	91365	FILTER ASS'Y	1	1	1	1
72	91606	FILTER ELEMENT	1	1	1	1
73	179837	BOLT 3/8 - 16 x 3/4	1	1	1	1

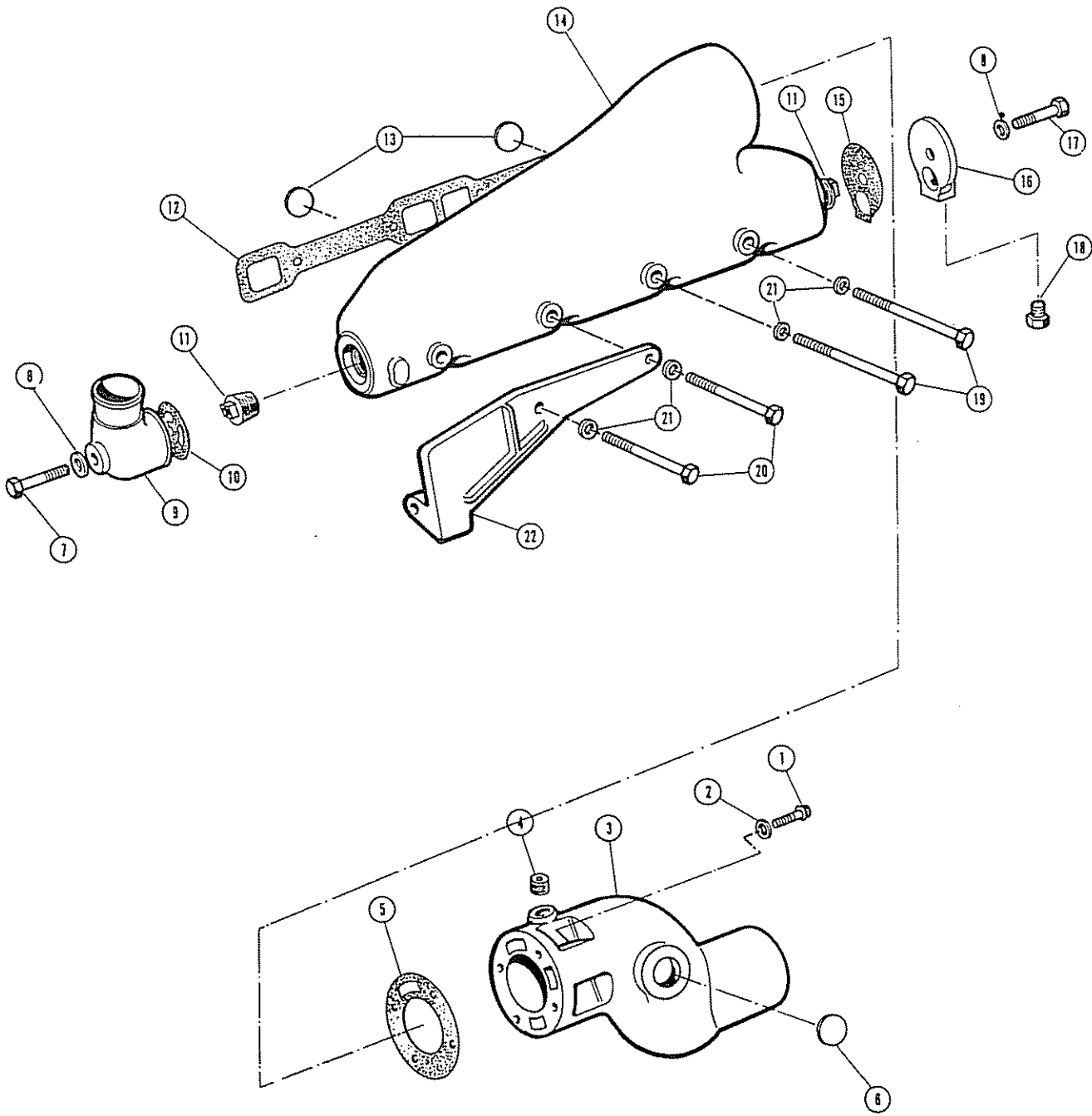
FIG. 5 INTAKE MANIFOLD ASSEMBLY LOW PROFILE			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
74	103321	WASHER 3/8 LOCK	2	2	2	2
75	45342	CAP CARB VACUUM PORT	1	1	1	1
76	20808	KIT LOW PROFILE MANIFOLD	AR	AR	AR	AR
77	179847	BOLT THERMOSTAT HSG. Not Shown 3/8 - 16 x 2	3	3	3	3
	NOTE 1	SEE DISTRIBUTOR BREAKDOWN SECTION FOR ADDITIONAL LISTINGS.				
	NOTE 2	CARB KITS 45334 OVERHAUL KIT 4BBL 45346 OVERHAUL KIT 2BBL 45336 GASKET KIT 4BBL 45347 GASKET KIT 2BBL				

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			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
		NOTES				



**FIGURE 6**



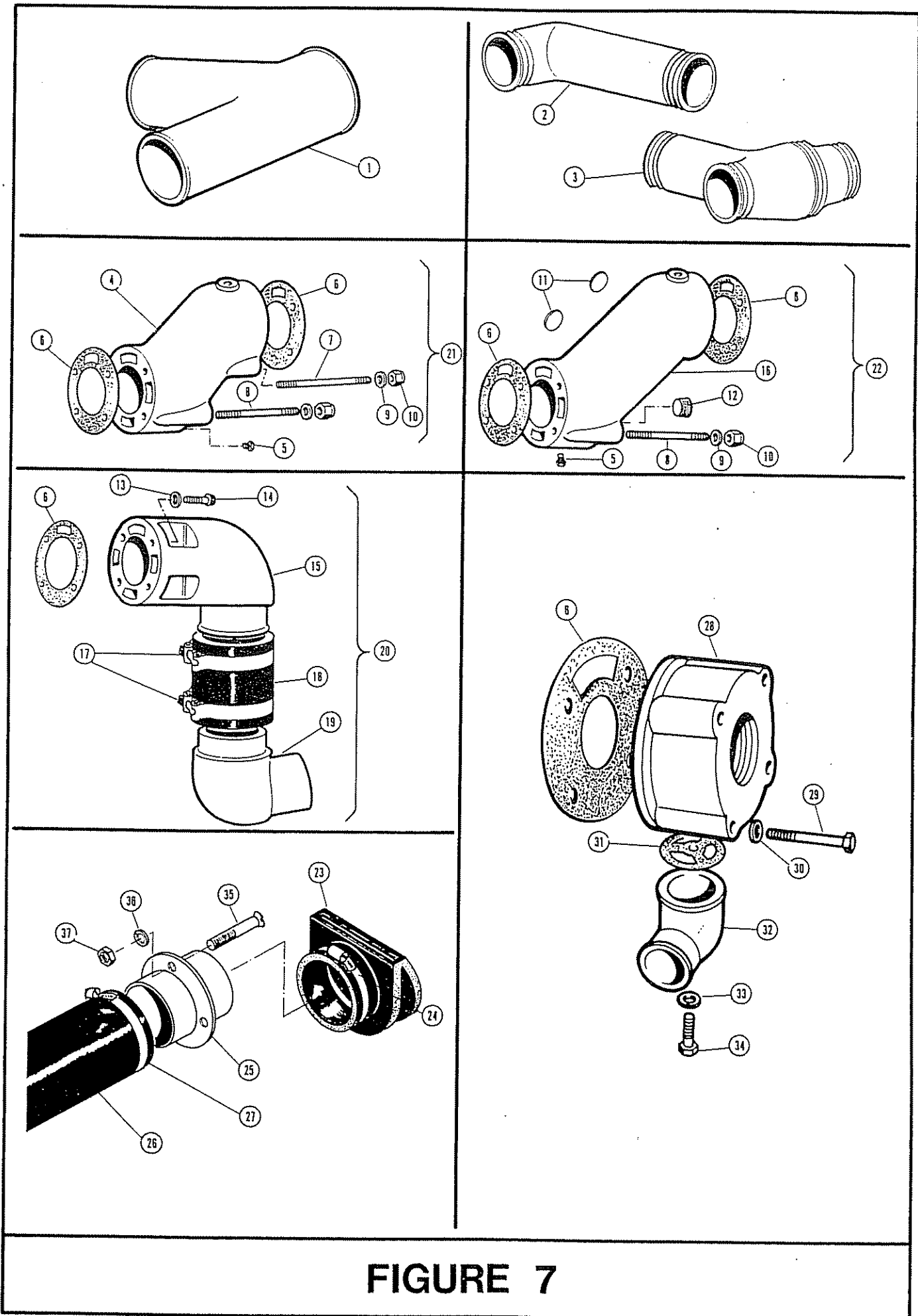
FIG. 6 EXHAUST MANIFOLD ASSEMBLY

## QUANTITY

305

350

ITEM	PART NO.	DESCRIPTION	QUANTITY			
			RH	LH	RH	LH
1	20257	BOLT FERRY HEAD CAP	8	8	8	8
2	103321	WASHER 3/8 LOCK	8	8	8	8
3	96560	ELBOW ASS'Y	2	2	2	2
4	444709	PLUG 3/4 NPT	2	2	2	2
5	96562	GASKET ELBOW	2	2	2	2
6	20244	CUP PLUG 1 1/4" S.S.	2	2	2	2
7	20271	BOLT S.S.	2	2	2	2
8	116103	WASHER 3/8 COPPER SEALING	4	4	4	4
9	96144	ELBOW WATER INLET	2	2	2	2
10	96216	GASKET WATER INLET ELBOW	2	2	2	2
11	96339	PLUG SPECIAL	4	4	4	4
12	96306	EXHAUST MANIFOLD GASKET	2	2	2	2
13	20244	CUP PLUG 1 1/4 S.S.	4	4	4	4
14	96120	EXHAUST MANIFOLD LEFT	1	1	1	1
14	96121	EXHAUST MANIFOLD RIGHT	1	1	1	1
15	96331	GASKET, DRAIN COVER	2	2	2	2
16	96292	COVER, DRAIN	2	2	2	2
17	20272	BOLT S.S.	2	2	2	2
18	127951	PLUG 1/4 NPT	2	2	2	2
19	186289	BOLT 3/8 - 16 x 5	6	6	6	6
20	187491	BOLT 3/8 - 16 x 5 1/2	2	2	2	2
21	103321	WASHER 3/8	8	8	8	8
22	96422	ALTERNATOR MOUNTING BRACKET	1	1	1	1



**FIGURE 7**

## FIG. 7 EXHAUST OPTIONS

## QUANTITY

305

350

ITEM	PART NO.	DESCRIPTION	QUANTITY			
			305		350	
			RH	LH	RH	LH
1	91452	CONNECTOR EXHAUST "Y"	1	1	1	1
2	96937	EXHAUST CROSSOVER	1	1	1	1
3	96936	EXHAUST "Y"	1	1	1	1
4	96419	4" RISER	2	2	2	2
5	127951	PLUG 1/4 NPT	2	2	2	2
6	96562	GASKET EXHAUST RISER	AR	AR	AR	AR
7	20470	STUD S.S.	4	4	4	4
8	20471	STUD S.S.	4	4	4	4
9	116103	WASHER FLAT SEALING	8	8	8	8
10	20472	NUT SELF LOCKING	8	8	8	8
11	20244	PLUG CUP 1 1/4" S.S.	4	4	4	4
12	444709	PLUG 3/4 NDT	2	2	2	2
13	103321	WASHER 3/8 LOCK	8	8	8	8
14	20257	BOLT FERRY HEAD CAP	8	8	8	8
15	97386	SWIVEL ELBOW UPPER	2	2	2	2
16	97169	8" RISER	2	2	2	2
17	96455	CLAMP SPECIAL	4	4	4	4
18	22098	HOSE UPPER TO LOWER ELBOW 4" x 2 - 1/2"	2	2	2	2
19	97387	SWIVEL ELBOW LOWER	2	2	2	2
20	22095	SWIVEL ELBOW KIT	2	2	2	2
21	20280	4" RISER KIT Note 1	2	2	2	2
22	21097	8" RISER KIT Note 2	2	2	2	2
23	20860	EXHAUST OUTLET FLAPPER	2	2	2	2
24	22001	CLAMP EXHAUST OUTLET FLAPPER	2	2	2	2
25	21099	EXHAUST OUTLET FLANGE 3"	2	2	2	2

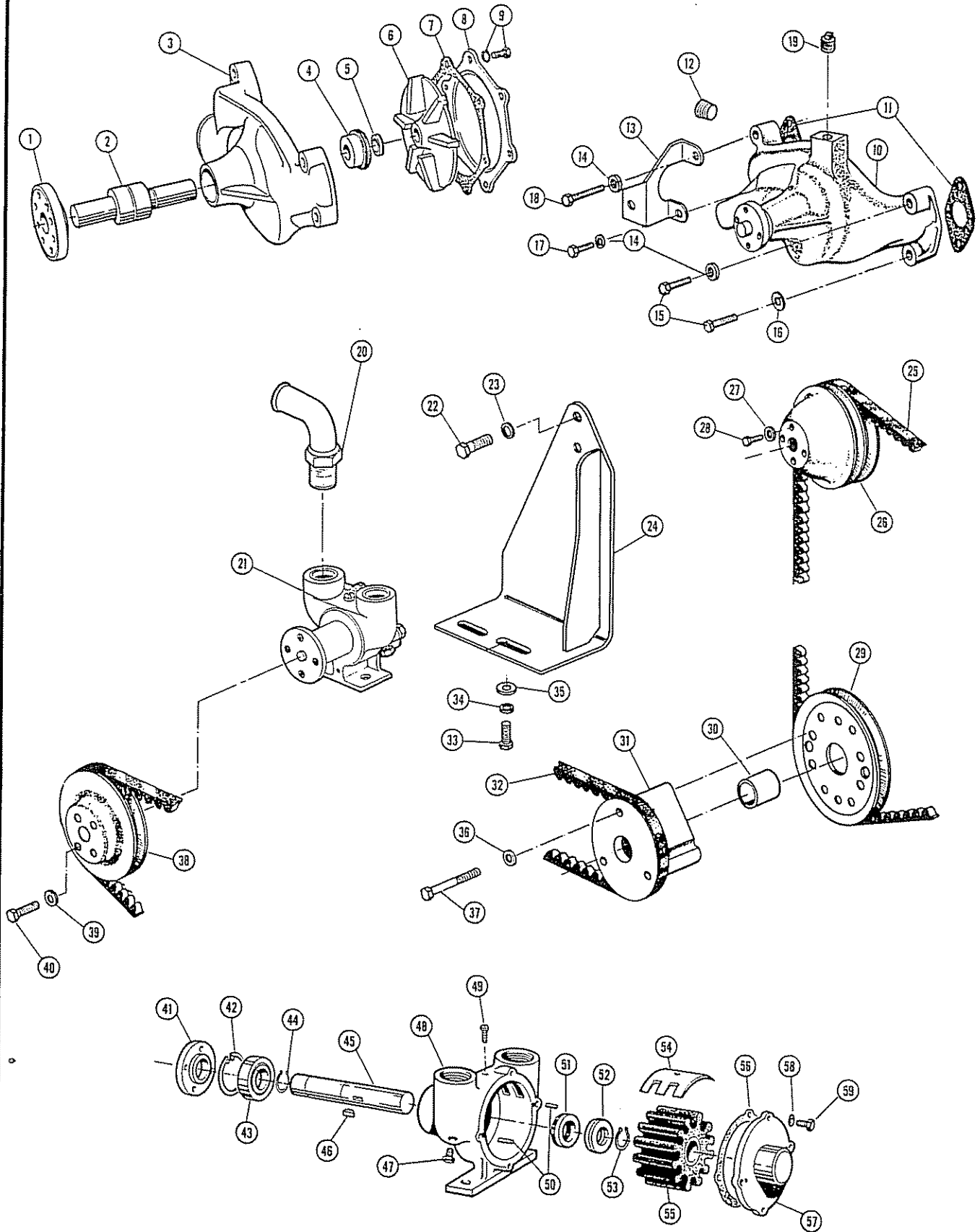
FIG. 7 EXHAUST OPTIONS			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
26	22000	HOSE 3" ID x 36" NOTE 2	2	2	2	2
27	97507	CLAMP #56	2	2	2	2
28	96169	ADAPTER DRY EXHAUST	2	2	2	2
29	186282	BOLT 3/8 - 16 x 3 1/4	8	8	8	8
30	103321	WASHER 3/8 LOCK	8	8	8	8
31	96216	GASKET	2	2	2	2
32	96144	ELBOW WATER OUTLET	2	2	2	2
33	116103	WASHER FLAT SEALING	2	2	2	2
34	20271	BOLT	2	2	2	2
35	22002	SCREW 1/4 - 20 x 3" S.S.	8	8	8	8
36	22004	WASHER 1/4 FLAT S.S.	8	8	8	8
37	22003	NUT 1/4 - 20 S.S.	8	8	8	8
	NOTE 1	RISER KITS ARE FURNISHED TO FIT BOTH RAW AND FRESH WATER COOLING SYSTEMS				
	NOTE 2	HOSE #22000 IS SUPPLIED 36" LONG CUT FOR SHORTER LENGTHS. LONGER LENGTHS AVAIL- ABLE ON SPECIAL ORDER FROM CRUSADER MARINE PARTS DEPT.				

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			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
		NOTES				



**FIGURE 8**

FIG. 8 CIRCULATION & RAW WATER PUMPS			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
1	96972	HUB	1	1	1	1
2	96996	SHAFT & BRG ASS'Y	1	1	1	1
3	20204	BODY CIRC. PUMP	1	1	1	1
4	96122	SEAL CIRC. PUMP	1	1	1	1
5	96971	SEAL CERAMIC	1	1	1	1
6	96995	IMPELLER	1	1	1	1
7	20584	GASKET	1	1	1	1
8	96217	BACKING PLATE CIRC. PUMP	1	1	1	1
9	179791	BOLT & WASHER ASS'Y	6	6	6	6
10	20318	PUMP ASS'Y	1	1	1	1
11	91112	GASKET PUMP TO BLOCK	2	2	2	2
12	444588	PLUG 1/2 NPT	1	1	1	1
13	96944	COOLER BRACKET	1	1	1	1
13	97519	COOLER BRACKET WARNER V-DRIVE 9" COOLER	1	1	1	1
14	103321	WASHER 3/8 LOCK	3	3	3	3
15	179843	BOLT 3/8 - 16 x 1 1/2	1	1	1	1
16	103321	WASHER 3/8 LOCK	1	1	1	1
17	179850	BOLT 3/8 - 16 x 2 3/4"	1	1	1	1
18	179845	BOLT 3/8 - 16 x 1 3/4"	2	2	2	2
19	444588	PLUG 1/2 NPT	1	1	1	1
20	97442	ELBOW ASS'Y	1	1	1	1
21	97179	RAW WATER PUMP ASS'Y	1	1	1	1
22	179839	BOLT 3/8 - 16 x 1"	2	2	2	2
23	103321	WASHER 3/8" LOCK	2	2	2	2
24	96945	BRACKET RAW WATER PUMP MOUNT	1	1	1	1

FIG. 8 CIRCULATION &amp; RAW WATER PUMPS

## QUANTITY

305

350

ITEM	PART NO.	DESCRIPTION	QUANTITY			
			305		350	
			RH	LH	RH	LH
25	96307	ALTERNATOR & CIRC. PUMP BELT	1	1	1	1
26	20114	PULLEY CIRC. PUMP	1	1	1	1
27	103320	WASHER 5/16 LOCK	4	4	4	4
28	181336	BOLT 5/16 - 24 x 3/4"	4	4	4	4
29	20166	PULLEY CRANKSHAFT RAW WATER PUMP & ALT.	1	1	1	1
30	96130	SLEEVE	1	1	1	1
31	96946	PULLEY CRANKSHAFT RAW WATER PUMP	1	1	1	1
32	97178	BELT RAW WATER PUMP	1	1	1	1
33	179838	BOLT 3/8 - 16 x 1"	2	2	2	2
34	103321	WASHER 3/8 LOCK	2	2	2	2
35	20465	WASHER 3/8 FLAT SPECIAL	2	2	2	2
36	103321	WASHER 3/8 LOCK	3	3	3	3
37	181380	BOLT 3/8 - 24 x 2 1/4	3	3	3	3
38	97177	PULLEY RAW WATER PUMP	1	1	1	1
39	103320	WASHER 5/16 LOCK	4	4	4	4
40	181336	BOLT 5/16 - 24 x 3/4 "	4	4	4	4
41	97176	HUB RAW WATER PUMP	1	1	1	1
42	20294	SNAP RING	1	1	1	1
43	20292	BEARING	1	1	1	1
44	20293	SNAPRING	1	1	1	1
45	20304	SHAFT	1	1	1	1
46	20295	KEY	1	1	1	1
47	127950	PLUG 1/8 NPT	1	1	1	1
48	20307	BODY	1	1	1	1
49	20298	SCREW SPECIAL	1	1	1	1



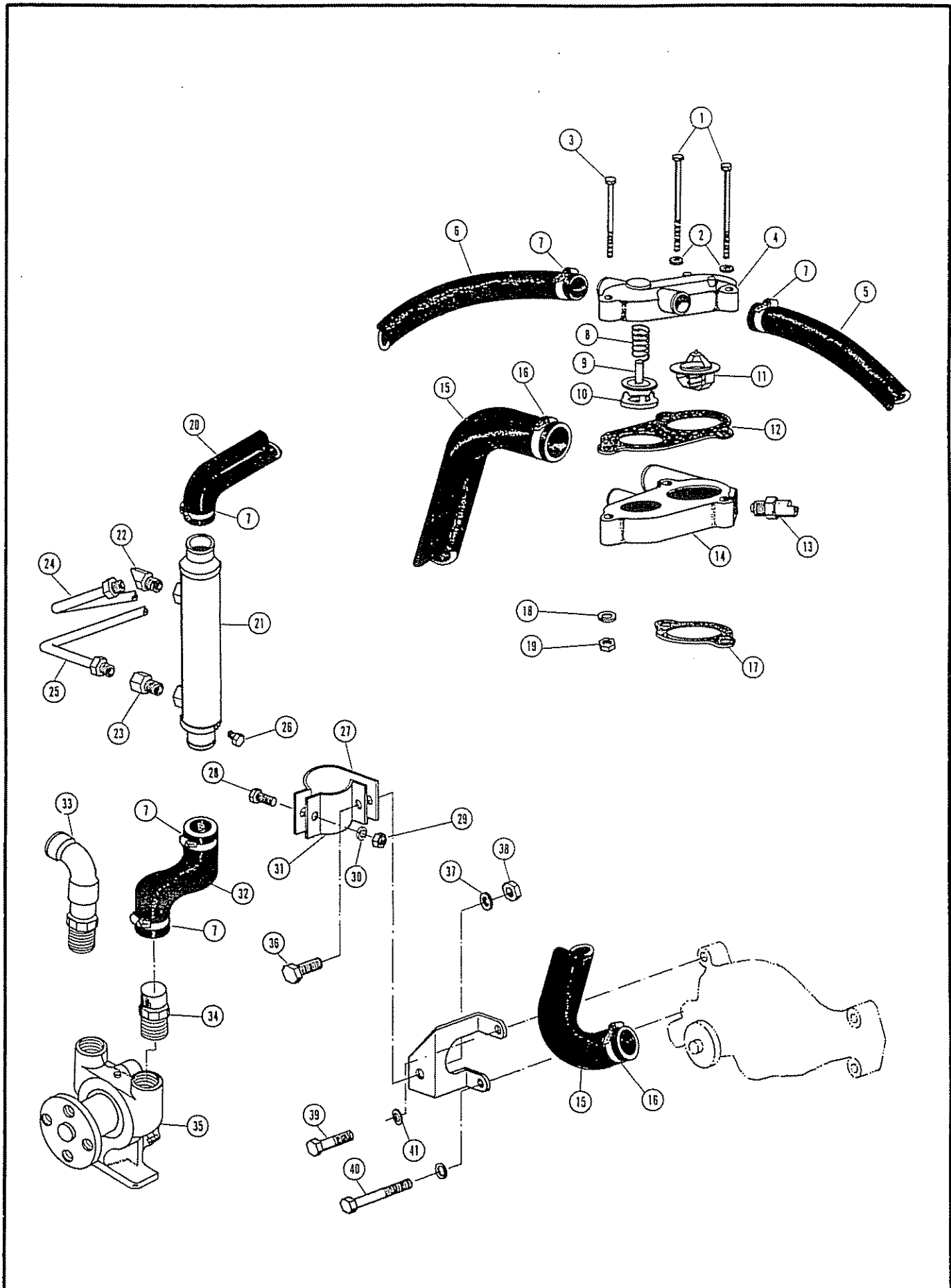
FIG. 8 CIRCULATION & RAW WATER PUMPS

QUANTITY

305

350

ITEM	PART NO.	DESCRIPTION	QUANTITY			
			RH	LH	RH	LH
50	20290	PIN	1	1	1	1
51	20309	SEAL AND SEAT ASSEMBLY	1	1	1	1
52	20299	SEAL, WATER	1	1	1	1
53	20293	SNAP RING	1	1	1	1
54	20303	CAM, IMPELLER	1	1	1	1
55	20300	IMPELLER	1	1	1	1
56	20302	COVER GASKET	1	1	1	1
57	20308	COVER & BRG ASS'Y	1	1	1	1
58	20305	WASHER	4	4	4	4
59	20291	SCREW	4	4	4	4



**FIGURE 9**

FIG. 9 RAW WATER COOLING SYSTEM

## QUANTITY

305

350

ITEM	PART NO.	DESCRIPTION	QUANTITY			
			305		350	
			RH	LH	RH	LH
1	186285	BOLT 3/8 - 16 x 4"	2	2	2	2
2	103321	WASHER 3/8 LOCK	2	2	2	2
3	186282	BOLT 3/8 - 16 x 3 1/4"	1	1	1	1
4	96101	COVER STAT HOUSING	1	1	1	1
5	23025	HOSE COVER TO MANIFOLD NOTE 1	1	1	1	1
6	23025	HOSE COVER TO MANIFOLD NOTE 1	1	1	1	1
7	20228	HOSE CLAMP #20	5	5	5	5
8	96686	SPRING RELIEF VALVE	1	1	1	1
9	96066	VALVE	1	1	1	1
10	96065	SEAT	1	1	1	1
11	96319	THERMOSTAT 143°	1	1	1	1
12	97361	COVER GASKET	1	1	1	1
13	20326	ALARM SENDER ENGINE WATER TEMP.	1	1	1	1
14	96102	THERMOSTAT HOUSING	1	1	1	1
15	96323	HOSE CIRC. PUMP TO STAT HSG.	1	1	1	1
16	20230	HOSE CLAMP #28	1	1	1	1
17	96105	GASKET STAT HSG. TO INTAKE MANIFOLD	1	1	1	1
18	103321	WASHER 3/8 LOCK	1	1	1	1
19	102635	NUT 3/8 - 16	1	1	1	1
20	23029	HOSE 1 1/4 x 11 1/4	1	1	1	1
21	97112	OIL COOLER 5" REVERSE GEAR NOTE 2	1	1	1	1
22	143340	ELBOW 45° OIL LINE NOTE 2	1	1	1	1
23	137409	ADAPTER OIL LINE NOTE 2	1	1	1	1
24	96967	OIL LINE CLR. OUT TO GEAR IN D.D. ONLY	1	1	1	1
24	96962	OIL LINE CLR. OUT TO GEAR IN RED ONLY	1	1	1	1

FIG. 9 RAW WATER COOLING SYSTEM

QUANTITY

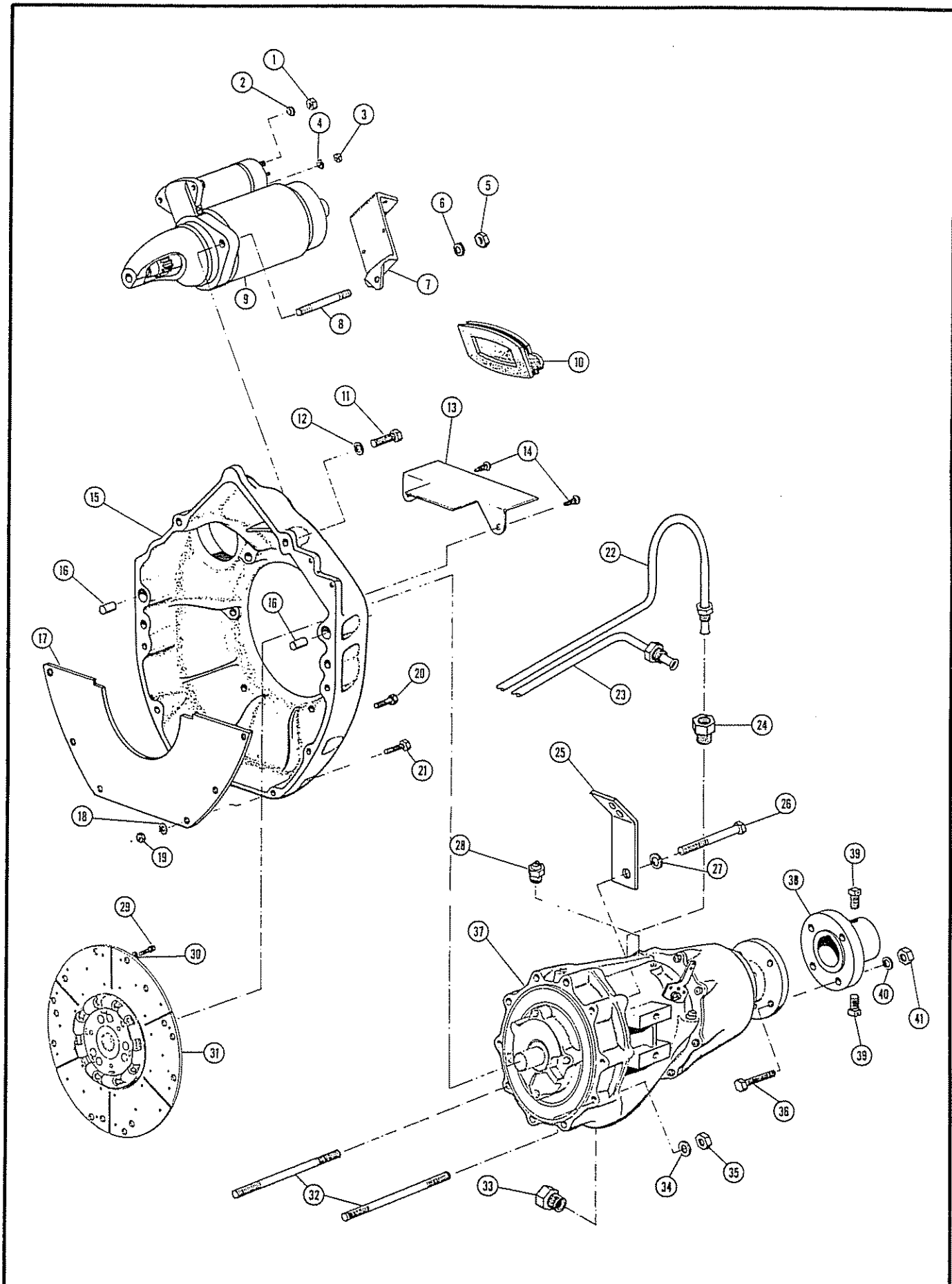
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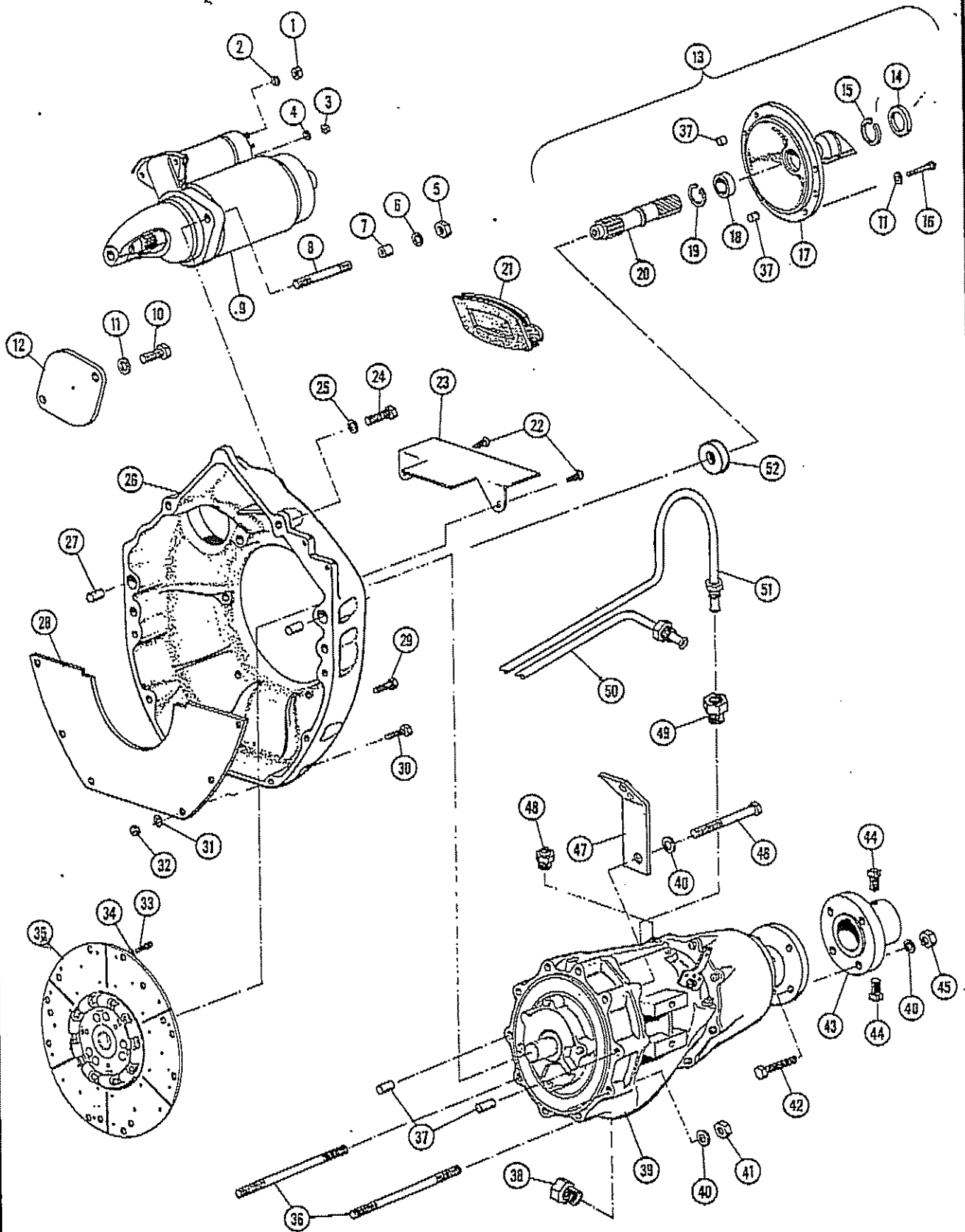
ITEM	PART NO.	DESCRIPTION	QUANTITY			
			RH	LH	RH	LH
25	96960	OIL LINE GEAR OUT TO COOLER IN	1	1	1	1
26	127950	PLUG 1/8 NPT	1	1	1	1
27	91465	CLAMP 1/2 COOLER	1	1	1	1
28	179795	BOLT 1/4 - 20 x 3/4	1	1	1	1
29	109084	NUT 1/4 - 20	1	1	1	1
30	103319	WASHER LOCK 1/4	1	1	1	1
31	91466	CLAMP 1/2 COOLER	1	1	1	1
32	97310	HOSE FORMED PUMP TO COOLER 1 1/4 I.D.	1	1	1	1
33	97442	ELBOW PUMP INLET	1	1	1	1
34	96760	ADAPTER PUMP OUTLET	1	1	1	1
35	97179	RAW WATER PUMP ASS'Y	1	1	1	1
36	179837	BOLT 3/8 - 16 x 3/4	1	1	1	1
37	103321	WASHER 3/8 LOCK	1	1	1	1
38	102635	NUT 3/8	1	1	1	1
39	179843	BOLT 3/8 - 16 x 1 1/2	1	1	1	1
40	179850	BOLT 3/8 - 16 x 2 3/4	1	1	1	1
41	103321	WASHER 3/8 LOCK	2	2	2	2

NOTE 1: FOR REVERSED MANIFOLDS USE # 23028 1 - 1/4" x 30"

FIG. 9 RAW WATER COOLING SYSTEM			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
	NOTE 2:					
		FOR WARNER V-DRIVE USE THE FOLLOWING PARTS				
21	97425	9" COOLER WARNER V-DRIVE				
25	22160	OIL LINE GEAR TO COOLER WARNER V-DRIVE 48"	1	1	1	1
24	22161	OIL LINE COOLER TO GEAR WARNER V-DRIVE 62"	1	1	1	1
23	143340	45° ADAPTER	1	1	1	1
22	30526	90° ADAPTER	1	1	1	1



**FIGURE 10**



**FIGURE 10**





050773

QTY REQD

307

350

ITEM	PART NO.	DESCRIPTION	QTY REQD			
			RH	LH	RH	LH
1	134570	NUT, HEX, 3/8-16UNC-2B	1	1	1	1
2	103321	WASHER, LOCK, 3/8 NOM SIZE	1	1	1	1
3	113103	NUT, HEX, 8-32UNC-2B	1	1	1	1
4	106496	WASHER, LOCK, #8 NOM SIZE	1	1	1	1
5	271500	NUT, HEX, 7/16-14UNC-2B	1	1	1	1
6	103322	WASHER, LOCK, 7/16 NOM SIZE	2	2	2	2
7	97366	SPACER, BUSHING	2	2	2	2
8	96433	STUD, STARTER MOTOR ATTACHING	2	2	2	2
(8)	20871	BOLT, HEX HD, STARTER MOTOR ATTACHING		1		1
(8)	20872	BOLT, HEX HD, STARTER MOTOR ATTACHING		1		1
9	96077	STARTER MOTOR ASSEMBLY		1		1
9	96078	STARTER MOTOR ASSEMBLY	1		1	
(9)	97135	STARTER MOTOR ASSEMBLY		1		1
(10)	179856	BOLT, HEX HD, 7/16-14UNC-2A x 3/4" LG.		2		2
(11)	103322	WASHER, LOCK, 7/16 NOM SIZE		6		6
(12)	97192	COVER, STARTER HOLE		1		1
(13)*	1103628	MARINE DRIVE ADAPTOR ASSEMBLY (SHORT SHAFT)		1		1
(14)	2000105	SEAL, OIL		1		1
(15)	2000104	RING, RETAINING		1		1
(16)	179862	BOLT, HEX HD, 7/16-14UNC-2A x 1-1/2" LG.		6		6
(17)	1002475	ADAPTOR, FLYWHEEL HSG TO OUTDRIVE		1		1
(18)	2000102	BEARING, BALL		1		1
(19)	2000103	RING, RETAINING		1		1
(20)	1002490	SHAFT, DRIVE		1		1
21	96350	COVER, TIMING HOLE	1	1	1	1

**REMARKS**  
 ( ) = SEE NOTE 1 AT END OF LISTING  
 \* = SEE NOTE 3 AT END OF LISTING

**TITLE** FLYWHEEL HOUSING ASSEMBLY  
 FIGURE 10 SHEET 1 OF 3



# THERMO ELECTRON ENGINE CORP.

050773

## QTY REQD

ITEM	PART NO.	DESCRIPTION	QTY REQD			
			RH	LH	RH	LH
22	97043	SCREW, DRIVE, #6	2	2	2	2
23*	96952	NAME PLATE, ENGINE SERIAL NO.	1	1	1	1
24	179841	BOLT, HEX HD, 3/8-16UNC-2A x 1-1/4" LG.	4	4	4	4
25	103321	WASHER, LOCK, 3/8 NOM SIZE	4	4	4	4
26	96938	HOUSING, FLYWHEEL	1	1	1	1
27	30152	PIN, DOWEL, HOUSING TO BLOCK	2	2	2	2
28	97315	COVER, FLYWHEEL HOUSING	1	1	1	1
(28)	96165	COVER, FLYWHEEL HOUSING		1		1
29	179801	BOLT, HEX, HD, 1/4-20UNC-2A x 1-1/2" LG.	1	1	1	1
30	179799	BOLT, HEX HD, 1/4-20UNC-2A x 1-1/4" LG.	5	5	5	5
31	103319	WASHER, LOCK, 1/4 NOM SIZE	6	6	6	6
32	109084	NUT, HEX, 1/4-20UNC-2B	6	6	6	6
33	22030	BOLT, HEX HD, DAMPER ATTACHING	6	6	6	6
34	103321	WASHER, LOCK, 3/8 NOM SIZE	6	6	6	6
35	96225	DAMPER ASSEMBLY	1	1		
35	97171	DAMPER ASSEMBLY			1	1
36	96541	STUD, TRANSMISSION ATTACHING	2	2	2	2
37	96440	PIN, DOWEL, TRANSMISSION TO HOUSING	2	2	2	2
38	137425	FITTING, 90° GEAR INLET (DIRECT DR. ONLY)	1	1	1	1
38	143340	FITTING, 45° GEAR INLET (RED. DR. ONLY)	1	1	1	1
39	9001547	TRANSMISSION ASSY. (1:1 RATIO)	AR	AR	AR	AR
39	9001545	TRANSMISSION ASSY. (1.52:1 RATIO)	AR	AR	AR	AR
39	9001541	TRANSMISSION ASSY. (1.91:1 RATIO)	AR	AR	AR	AR
39	1001512	TRANSMISSION ASSY. (2.57:1 RATIO)	AR	AR	AR	AR
39	1001513	TRANSMISSION ASSY. (2.91:1 RATIO)	AR	AR	AR	AR

**REMARKS**

\*=SEE NOTE 2 AT END OF LISTING

**TITLE**

FLYWHEEL HOUSING ASSEMBLY

FIGURE 10

SHEET 2 OF 3



**INTERNATIONAL ELECTRON ENGINE CORP.**

ORDER NO.  
050773

**QTY REQD**

307

350

ITEM	PART NO.	DESCRIPTION	307		350	
			RH	LH	RH	LH
40	103322	WASHER, LOCK, 7/16 NOM SIZE	4	4	4	4
41	271500	NUT, HEX, 7/16-14UNC-2B	4	4	4	4
42	181397	BOLT, HEX HD, 7/16-20UNF-2A x 1-1/4" LG.	4	4	4	4
43	91685	COUPLING, PROP, 1" BORE x 4" O.D.	AR	AR	AR	AR
43	91686	COUPLING, PROP, 1-1/8" BORE x 4" O.D.	AR	AR	AR	AR
43	91687	COUPLING, PROP, 1-1/4" BORE x 4" O.D.	AR	AR	AR	AR
43	91688	COUPLING, PROP, 1-3/8" BORE x 4" O.D.	AR	AR	AR	AR
43	91689	COUPLING, PROP, 1-1/2" BORE x 4" O.D.	AR	AR	AR	AR
44	2000090	SETSCREW, DRILLED SQ. HD.	2	2	2	2
45	272231	NUT, HEX, 7/16-20UNF-2B	4	4	4	4
46	179873	BOLT, HEX HD, 7/16-14UNC-2A x 3-3/4" LG.	2	2	2	2
47	96341	BRACKET, CLUTCH CABLE	1	1	1	1
48	21088	SENDING UNIT, GEAR TEMP ALARM	1	1	1	1
49	137409	FITTING, GEAR OIL OUTLET	1	1	1	1
50	96960	OIL LINE, GEAR OUTLET TO CLR INLET	1	1	1	1
51	96961	OIL LINE, CLR OUT TO GEAR IN (D.D. ONLY)	1	1	1	1
51	96962	OIL LINE, CLR OUT TO GEAR IN (RED. ONLY)	1	1	1	1
52	97193	BUSHING, DRIVE SHAFT		1		1
	NOTE: 1	ITEM NUMBERS MARKED "( )" INDICATE PARTS WHICH ARE USED ON STERN DRIVE MODELS ONLY.				
	NOTE: 2	NAMEPLATE WILL BE REPLACED ONLY WHEN DAMAGED NAMEPLATE IS RETURNED TO FACTORY.				
	NOTE: 3	OPTIONAL LONG EXTENSION KIT #23008 CONSISTS OF THOSE LISTED FOR ITEM #13 EXCEPT FOR ITEM #20 WHICH IS #97279, ITEM #16 WHICH IS #433142 AND ADDITION OF CAST SPACER #97278.				

**REMARKS**

**TITLE** FLYWHEEL HOUSING ASSEMBLY  
FIGURE 10 SHEET 3 OF 3



FIG. 10 FLYWHEEL HOUSING ASSEMBLY

## QUANTITY

305

350

ITEM	PART NO.	DESCRIPTION	QUANTITY			
			RH	LH	RH	LH
1	134570	NUT 3/8 - 16	1	1	1	1
2	103321	WASHER 3/8 LOCK	1	1	1	1
3	113103	NUT #8 - 32	1	1	1	1
4	106496	WASHER #8 LOCK	1	1	1	1
5	271500	NUT 7/16 - 14	2	2	2	2
6	103322	WASHER 7/16 LOCK	2	2	2	2
7	97478	BRACKET CIRCUIT BREAKER & RELAY	1	1	1	1
8	96433	STUD STARTER MOTOR ATTACHING	2	2	2	2
9	42083	STARTERMOTOR Note 1	1		1	
9	42084	STARTERMOTOR Note 1		1		1
10	96350	COVER TIMING ACCESS HOLE	1	1	1	1
11	179841	BOLT 3/8 x 1 1/4"	4	4	4	4
12	103321	WASHER 3/8 LOCK	4	4	4	4
13	96952	NAME PLATE Note 2	1	1	1	1
14	97043	SCREW #6 DRIVE	2	2	2	2
15	96938	FLYWHEEL HOUSING	1	1	1	1
16	30152	DOWEL HOUSING TO BLOCK	2	2	2	2
17	97315	COVER FLYWHEEL HOUSING	1	1	1	1
18	103319	WASHER 1/4 LOCK	6	6	6	6
19	109084	NUT 1/4 -20	6	6	6	6
20	179801	BOLT 1/4 -20 x 1 1/2	1	1	1	1
21	179799	BOLT 1/4 -20 x 1 1/4	5	5	5	5
22	96961	OIL LINE COOLER OUT TO GEAR IN D.D. ONLY	1	1	1	1
22	96962	OIL LINE COOLER OUT TO GEAR IN RED ONLY	1	1	1	1
23	96960	OIL LINE GEAR OUT TO COOLER IN ALL	1	1	1	1

## FIG. 10 FLYWHEEL HOUSING ASSEMBLY

## QUANTITY

305

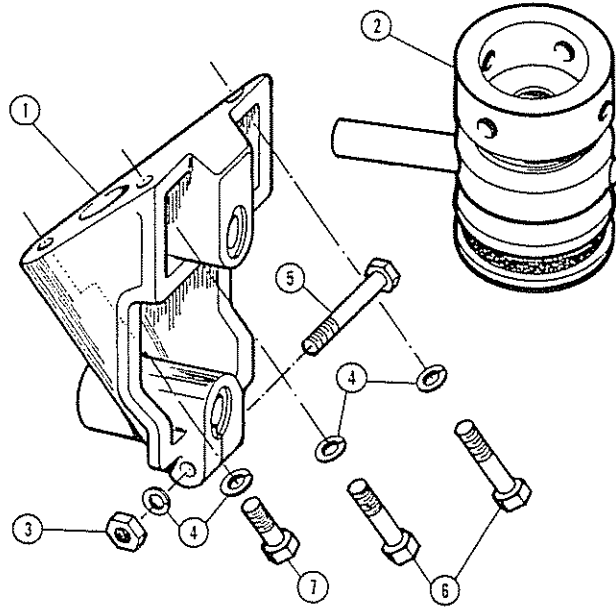
350

ITEM	PART NO.	DESCRIPTION	QUANTITY			
			RH	LH	RH	LH
24	30562	ADAPTER OIL LINE TO CASE	1	1	1	1
25	96341	BRACKET SHIFT CABLE	1	1	1	1
26	179873	BOLT 7/16 - 14 x 3 - 3/4	4	4	4	4
27	103322	WASHER 7/16 LOCK	4	4	4	4
28	21088	ALARM SENDER GEAR TEMP.	1	1	1	1
29	22030	BOLT DAMPER TO FLYWHEEL SPECIAL	6	6	6	6
30	103321	WASHER 3/8 LOCK	6	6	6	6
31	97171	DAMPER ASS'Y	1	1	1	1
32	96541	STUD TRANS ATTACHING	2	2	2	2
33	137425	FITTING 90° GEAR INLET DIRECT DR. ONLY	1	1	1	1
33	143340	FITTING 45° GEAR INLET RED DR. ONLY	1	1	1	1
34	103322	WASHER 7/16 LOCK	2	2	2	2
35	102636	NUT 7/16 SPECIAL	2	2	2	2
36	181397	BOLT COUPLING SPECIAL GRADE 8	4	4	4	4
37	9001547	TRANSMISSION ASS'Y 1:1 NOTE 3	AR	AR	AR	AR
37	9001545	TRANSMISSION ASS'Y 1.52:1 NOTE 3	AR	AR	AR	AR
37	9001541	TRANSMISSION ASS'Y 1.91:1 NOTE 3	AR	AR	AR	AR
37	1012780	TRANSMISSION ASS'Y 2.10:1 NOTE 3	AR		AR	
37	1012781	TRANSMISSION ASS'Y 2.10:1 NOTE 3		AR		AR
37	1001512	TRANSMISSION ASS'Y 2.57:1 NOTE 3	AR	AR	AR	AR
37	1001513	TRANSMISSION ASS'Y 2.91:1 NOTE 3	AR	AR	AR	AR
38	91685	COUPLING PROP. 1" SHAFT x 4" DIA	AR	AR	AR	AR
38	91686	COUPLING PROP. 1 1/8" SHAFT x 4" DIA	AR	AR	AR	AR
38	91687	COUPLING PROP. 1 1/4" SHAFT x 4" DIA	AR	AR	AR	AR



FIG. 10 FLYWHEEL HOUSING ASSEMBLY			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
38	91688	COUPLING PROP. 1 3/8" x 4" DIA	AR	AR	AR	AR
38	91689	COUPLING PROP. 1 1/2" x 4" DIA	AR	AR	AR	AR
38	91690	COUPLING PROP. 1" x 5" DIA	AR	AR	AR	AR
38	91691	COUPLING PROP. 1 1/8" x 5" DIA	AR	AR	AR	AR
38	91692	COUPLING PROP. 1 1/4" x 5" DIA	AR	AR	AR	AR
38	91693	COUPLING PROP. 1 3/8" x 5" DIA	AR	AR	AR	AR
38	91694	COUPLING PROP. 1 1/2" x 5" DIA	AR	AR	AR	AR
38	91695	COUPLING PROP. 1 3/4" x 5" DIA	AR	AR	AR	AR
38	91696	COUPLING PROP. 2" x 5" DIA	AR	AR	AR	AR
39	2000090	SET SCREW	2	2	2	2
40	103322	WASHER 7/16 LOCK	4	4	4	4
41	272231	NUT 7/16 SPECIAL	4	4	4	4
	NOTE 1	USE #97135 STARTER FOR STARTER DOWN APPLICATORS.				
	NOTE 2	NAME PLATE WILL BE REPLACED ONLY WHEN ORIGINAL NAME PLATE IS RETURNED TO FACTORY				
	NOTE 3	UNLESS SPECIFIED ALL TRANSMISSIONS WILL BE SHIPPED FOR L.H. ENGINE. ROTATION MUST BE SPECIFIED FOR 2.10:1 GEARS THEY ARE NOT BI-ROTATIONAL				

# FRONT MOUNTS



# REAR MOUNTS

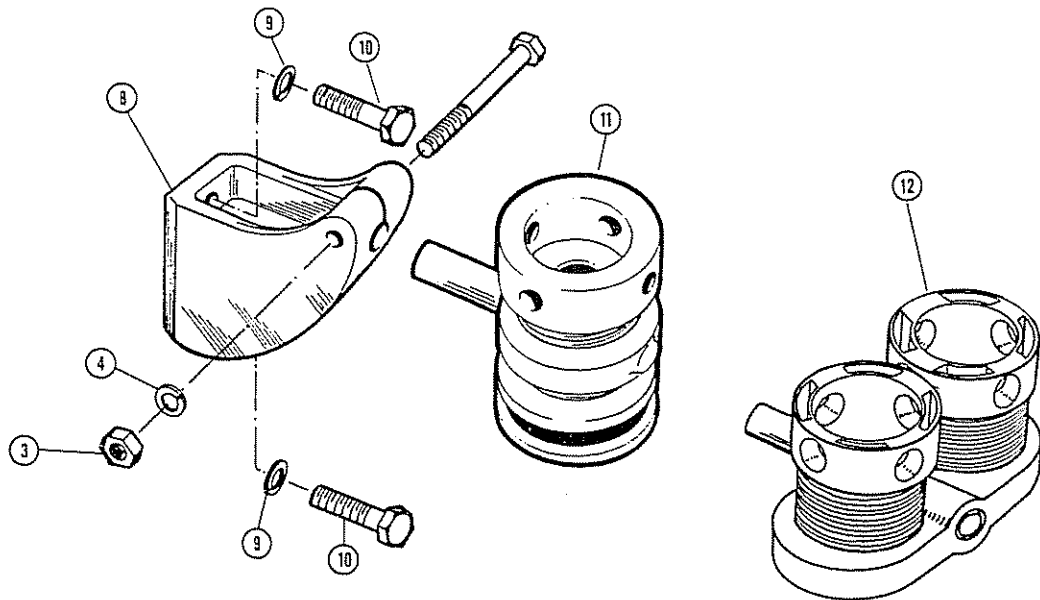
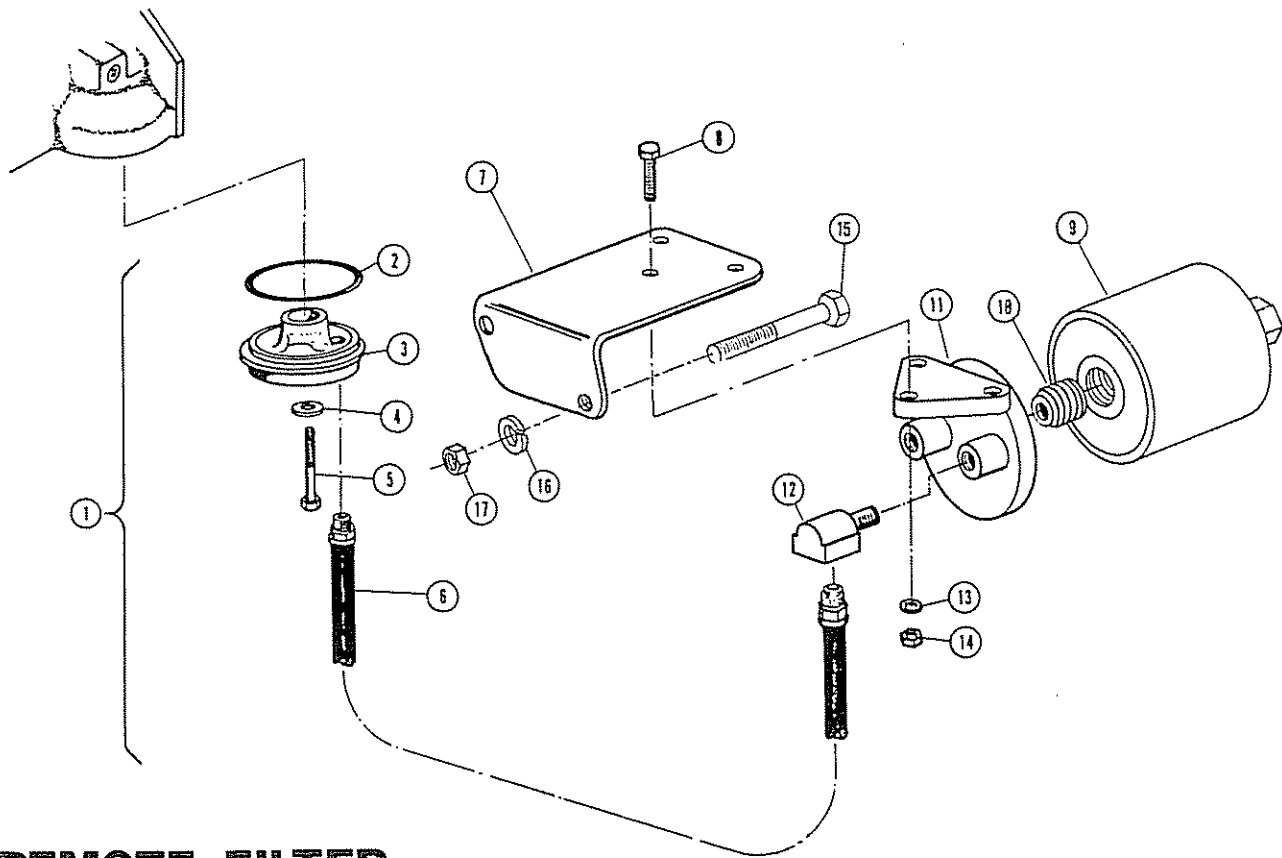
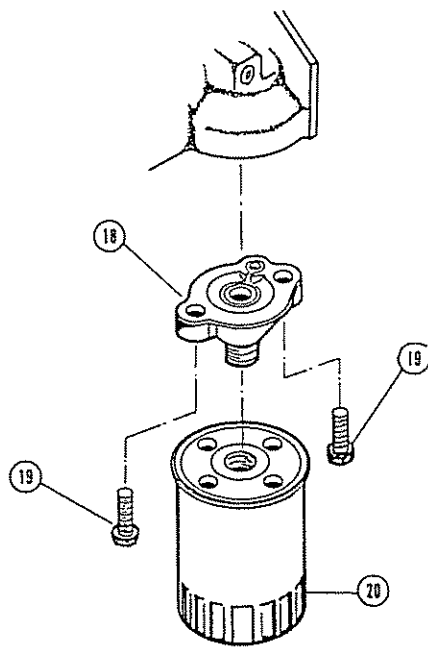


FIGURE 11

FIG. 11 ENGINE MOUNTS			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
1	97337	ENGINE FRONT SUPPORT	2	2	2	2
2	97238	ADJUSTABLE RUBBER MOUNT ASS'Y	2	2	2	2
3	102635	NUT 3/8 - 16	4	4	4	4
4	103321	WASHER 3/8 LOCK	10	10	10	10
5	179848	BOLT 3/8 - 16 x 2 1/4"	2	2	2	2
6	179841	BOLT 3/8 - 16 x 1 1/4"	4	4	4	4
7	179843	BOLT 3/8 - 16 x 1 1/2"	2	2	2	2
8	96935	ENGINE REAR SUPPORT	2	2	2	2
9	103322	WASHER 7/16 LOCK	4	4	4	4
10	179860	BOLT 7/16 - 14 x 1 1/4"	4	4	4	4
11	97238	ADJUSTABLE RUBBER MOUNT PORT	1	1	1	1
11	96974	ADJUSTABLE RUBBER MOUNT STBD	1	1	1	1
12	97514	DUAL MOUNT ASS'Y PORT	1	1	1	1
12	97450	DUAL MOUNT ASS'Y STBD	1	1	1	1



**REMOTE FILTER**



**STANDARD FILTER**

**FIGURE 12**

FIG. 12 STANDARD AND REMOTE OIL FILTER ASSEMBLY			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
1	22026	REMOTE OIL FILTER KIT	AR	AR	AR	AR
2	20156	O - RING	1	1	1	1
3	96530	ADAPTER	1	1	1	1
4	116095	WASHER FLAT SEALING	1	1	1	1
5	179896	BOLT 1/2 - 13 x 3 3/4	1	1	1	1
6	20780	HOSE ASS'Y	2	2	2	2
7	97342	BRACKET	1	1	1	1
8	179820	BOLT 5/16 - 18 x 1 1/4	3	3	3	3
9	9002514	OIL FILTER, REMOTE	1	1	1	1
10	97292	NIPPLE	1	1	1	1
11	719571	ADAPTER	1	1	1	1
12	9432250	ELBOW	1	1	1	1
13	103320	WASHER 5/16 LOCK	3	3	3	3
14	102634	NUT 5/16 - 18	3	3	3	3
15	179824	BOLT 5/16 - 18 x 1 3/4	2	2	2	2
16	103320	WASHER 5/16 LOCK	2	2	2	2
17	102634	NUT 5/16 - 18	2	2	2	2
18	20615	ADAPTER	1	1	1	1
19	30170	BOLT	2	2	2	2
20	20104	OIL FILTER, STD.	1	1	1	1

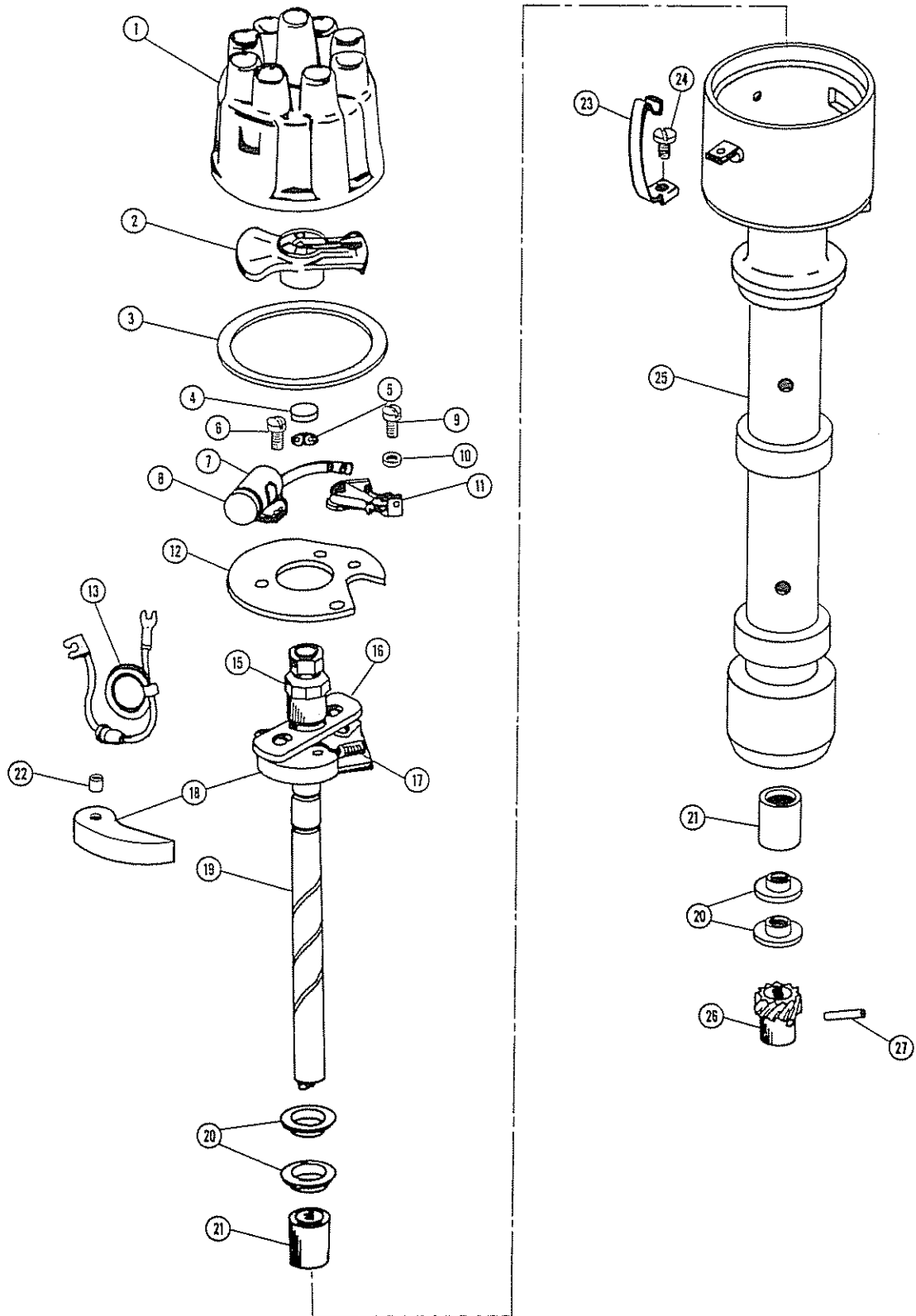


FIGURE 13

FIG. 13 PRESTOLITE DISTRIBUTOR #41050

## QUANTITY

305      350

ITEM	PART NO.	DESCRIPTION	QUANTITY			
			305		350	
			RH	LH	RH	LH
1	41052	CAP	1	1	1	1
2	41059	ROTOR	1	1	1	1
3	41061	GASKET	1	1	1	1
4	NSS	FELT	-	-	-	-
5	NSS	SNAP RING	-	-	-	-
6	NSS	SCREW	-	-	-	-
7	NSS	CONDENSER CLAMP	-	-	-	-
8	41057	CONDENSER ASS'Y	1	1	1	1
9	NSS	SCREW	-	-	-	-
10	NSS	WASHER	-	-	-	-
11	41058	POINT SET	1	1	1	1
12	41056	ARMATUR PLATE ASS'Y	1	1	1	1
13	41055	LEAD ASS'Y	1	1	1	1
15	NSS	CAM ASS'Y	-	-	-	-
16	NSS	LIMIT PLATE	-	-	-	-
1&	NSS	SPRING	-	-	-	-
18	NSS	WEIGHT	-	-	-	-
19	41060	SHAFT ASS'Y	1	1	1	1
20	41054	WASHER BUSHING & GEAR KIT	1	1	1	1
21	41051	BUSHING KIT	1	1	1	1
22	NSS	BUSHING	-	-	-	-
23	41053	CLAMP	2	2	2	2
24	NSS	SCREW	-	-	-	-
25	41050	HOUSING ASS'Y COMPLETE	1	1	1	1
26	41054	GEAR & BUSHING KIT	1	1	1	1

FIG. 13 PRESTOLITE DISTRIBUTOR 41050

QUANTITY

305

350

ITEM	PART NO.	DESCRIPTION	QUANTITY			
			RH	LH	RH	LH
27	NSS	PIN	-	-	-	-
28	97423	SPARK PLUG WIRE SET	1	1	1	1
28	97454	SPARK PLUG WIRE SET IGN SUPR.	AR	AR	AR	AR
29	41050	PRESTOLITE DISTRIBUTOR ASS'Y	1	1	1	1
	NOTE 1	PART NOS. 15, 16, 17, 18, 19, 22 ARE AVAILABLE ONLY IN ASS'Y #41060  PART NOS. 20, 26, 27 ARE AVAILABLE AS KIT #41054  PART NOS. 20, 21 AVAILABLE AS KIT #41051				
	NOTE 2	FOR DELCO DISTRIBUTOR PARTS REFER TO PREVIOUS PARTS MANUAL OR CONTACT THE PARTS DEPARTMENT OF CRUSADER MARINE				

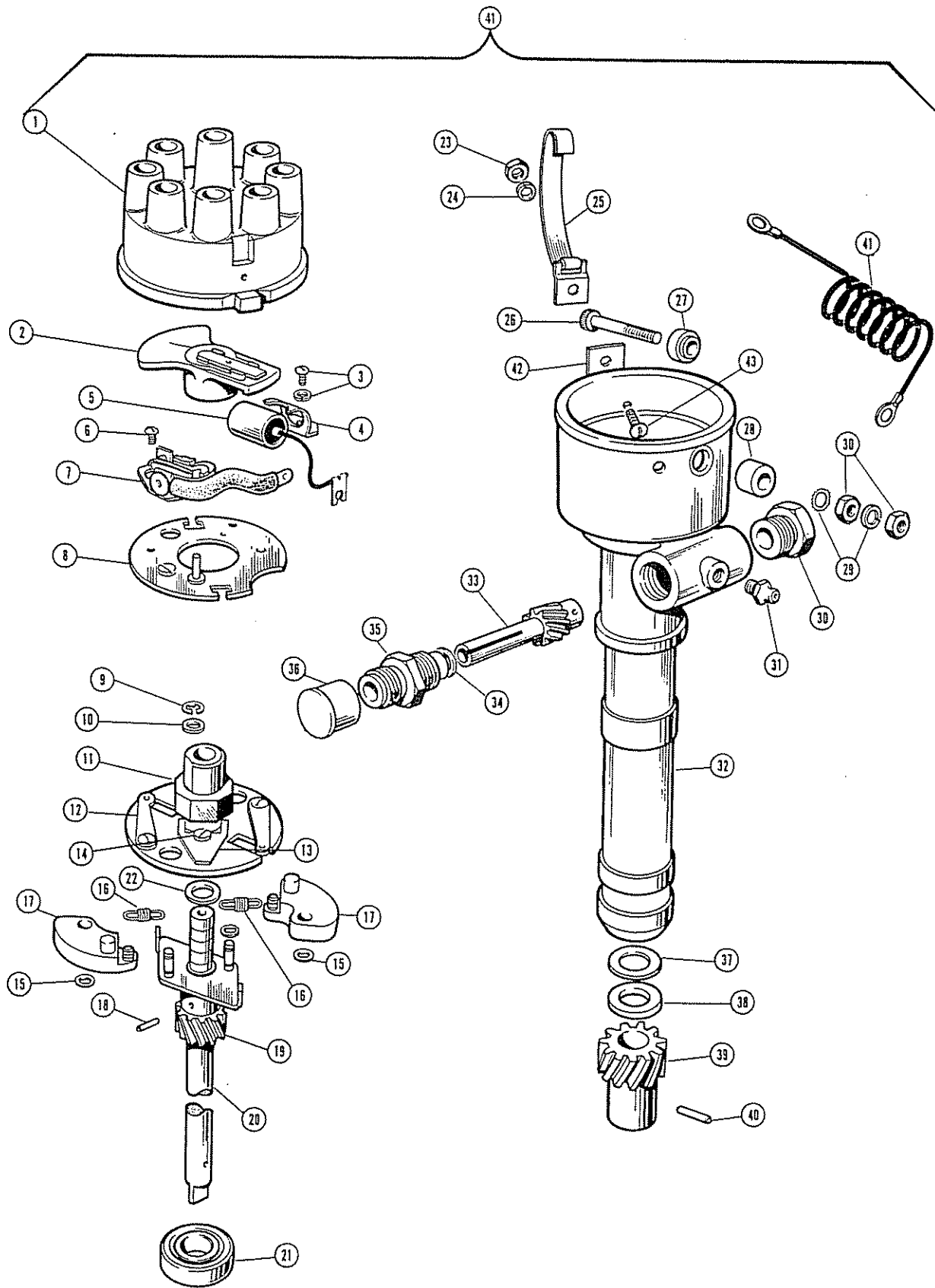


MARINE  
ENGINES



PARTS  
CATALOG

			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
		NOTES				



**FIGURE 14**

MARINE  
ENGINES



PARTS  
CATALOG

FIG. 14 MALLOY TACH. DRIVE DISTRIBUTOR ASSEMBLY

QUANTITY

305

350

ITEM	PART NO.	DESCRIPTION	305		350	
			RH	LH	RH	LH
1	20222	CAP	1	1	1	1
2	20223	ROTOR	1	1	1	1
3	37028	SCREW & WASHER ASS'Y	1	1	1	1
4	38038	CONDENSER CLAMP	1	1	1	1
5	12530	CONDENSER	1	1	1	1
6	37031	SCREW	1	1	1	1
7	20117	CONTACT SET	1	1	1	1
8	37021	ARMATUR PLATE ASS'Y	1	1	1	1
9	37039	CLIP	1	1	1	1
10	37048	WASHER	1	1	1	1
11	37052	CAM, ADVANCE PLATE ASS'Y	1	1	1	1
12	37058	ADVANCE PLATE ASS'Y	2	2	2	2
13	37059	CLAMP	1	1	1	1
14	37060	SCREW	1	1	1	1
15	37041	WASHER	2	2	2	2
16	37050	SPRING	2	2	2	2
17	37020	WEIGHT	2	2	2	2
18	37030	PIN	1	1	1	1
19	37036	GEAR	1	1	1	1
20	37053	SHAFT ASS'Y	1	1	1	1
21	37032	BEARING	1	1	1	1
22	N.A.	WASHER	1	1	1	1
23	37025	NUT	2	2	2	2
24	37026	WASHER	2	2	2	2
25	37054	CLIP	2	2	2	2

FIG. 14 MALLOY TACH. DRIVE DISTRIBUTOR ASSEMBLY

QUANTITY

305

350

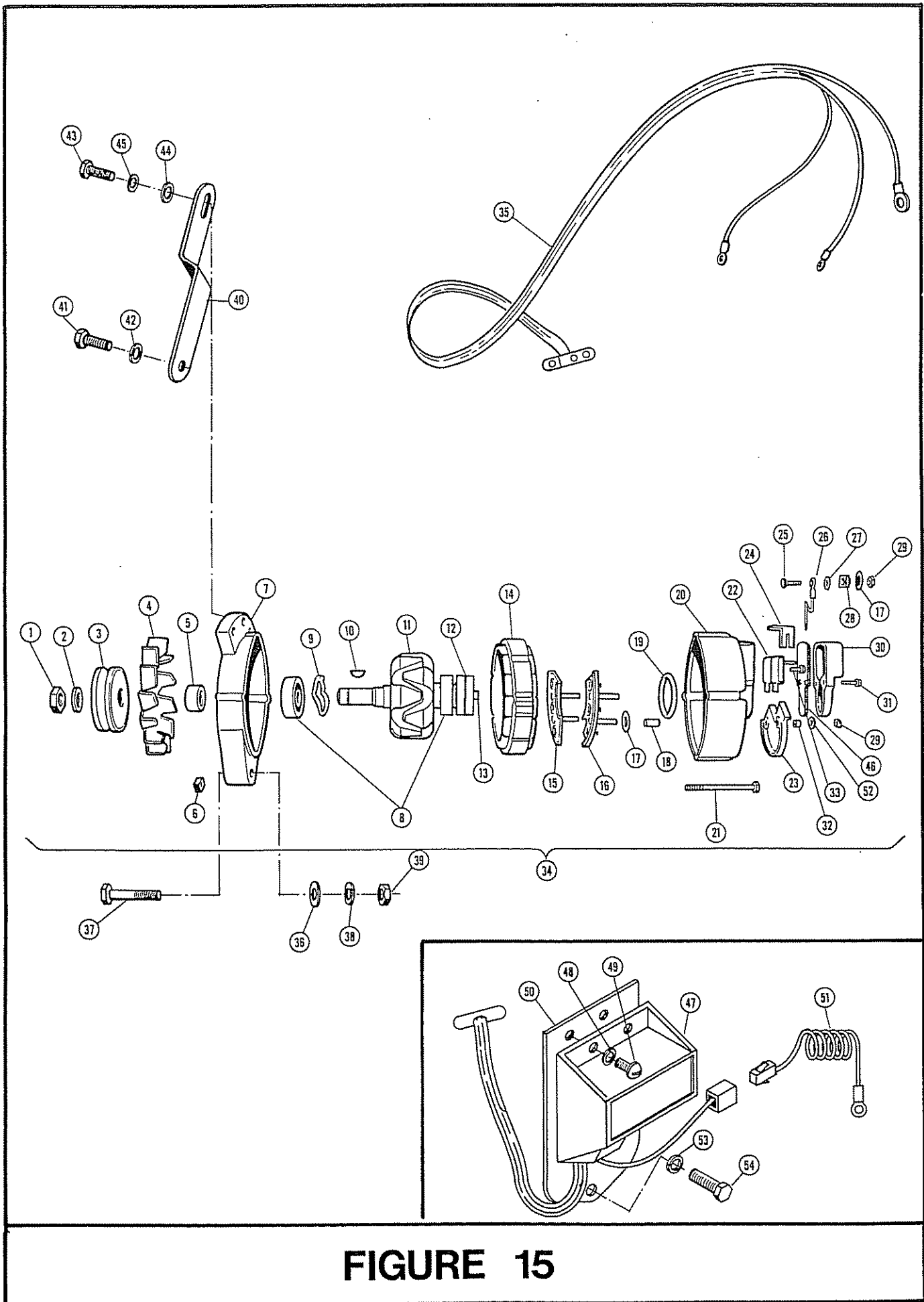
ITEM	PART NO.	DESCRIPTION	QUANTITY			
			RH	LH	RH	LH
26	37029	SCREW PRIMARY TERMINAL	1	1	1	1
27	37027	INSULATOR	1	1	1	1
28	37027	INSULATOR	1	1	1	1
29	37026	WASHER 8 LOCK	2	2	2	2
30	37025	NUT # 8 - 32	2	2	2	2
31	37037	GREASE FITTING	1	1	1	1
32	37044	HOUSING	1	1	1	1
33	37047	TACH. SHAFT & GEAR ASS'Y	1	1	1	1
34	37035	WASHER	1	1	1	1
35	37034	COUPLING	1	1	1	1
36	37046	CAP	1	1	1	1
37	37042	SHIM	1	1	1	1
38	37043	WASHER	1	1	1	1
39	92137	GEAR	1	1	1	1
40	37045	PIN	1	1	1	1
41	96856	LEAD ASS'Y	1	1	1	1
42	37049	NAME PLATE	1	1	1	1
40	97423	SPARK PLUG WIRE SET	1	1	1	1
40	97454	SPARK PLUG WIRE SET IGN SUPR.	AR	AR	AR	AR
41	96309	DISTRIBUTOR ASS'Y	1	1	1	1

MARINE  
ENGINES



PARTS  
CATALOG

			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
<h1>NOTES</h1>						



**FIGURE 15**

FIG. 15 ALTERNATOR ASSEMBLY EXTERNAL REGULATOR			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
1	39000	NUT	1	1	1	1
2	39001	WASHER	1	1	1	1
3	39039	PULLEY	1	1	1	1
4	707348	FAN	1	1	1	1
5	39005	SPACER	1	1	1	1
6	39006	NUT SQUARE #10 - 32	4	4	4	4
7	39034	HOUSING, FRONT	1	1	1	1
8	39008	BEARING	2	2	2	2
9	39009	RETAINER, FRONT BEARING	1	1	1	1
10	39010	KEY	1	1	1	1
11	39035	ROTOR ASS'Y	1	1	1	1
12	39012	SLIP RING ASS'Y	1	1	1	1
13	39013	SCREW #10 - 32 x 5/8"	1	1	1	1
14	39046	STATOR ASS'Y (50 AMP.)	1	1	1	1
15	39015	NEGATIVE DIODE ASS'Y	1	1	1	1
16	39016	POSITIVE DIODE ASS'Y	1	1	1	1
17	39017	WASHER	6	6	6	6
18	39018	INSULATOR	2	2	2	2
19	39019	RETAINER, REAR BEARING	1	1	1	1
20	39020	HOUSING, REAR	1	1	1	1
21	39027	SCREW #10 - 32 x 3 1/8	4	4	4	4
22	39022	BRUSH ASS'Y	1	1	1	1
23	39045	DUAL ISOLATION DIODE ASS'Y	1	1	1	1
24	39024	INSULATOR	1	1	1	1
25	39025	BOLT #10 - 24 x 3/4"	1	1	1	1

FIG. 15 ALTERNATOR ASSEMBLY EXTERNAL REGULATOR			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
26	39026	WIRE ASS'Y	1	1	1	1
27	39027	WASHER	1	1	1	1
28	39028	INSULATOR	1	1	1	1
29	39029	NUT, SELF LOCKING #10 - 24	9	9	9	9
30	39030	COVER REAR HOUSING	1	1	1	1
31	39031	SCREW, SELF TAPING #8 x 3/4"	2	2	2	2
32	39032	INSULATOR	1	1	1	1
33	39033	SCREW, SELF TAPING #8 x 1/2"	2	2	2	2
34	707340	ALTERNATOR ASS'Y	1	1	1	1
35	725048	HARNESS	1	1	1	1
36	103343	WASHER FLAT 1/2"	1	1	1	1
37	179893	BOLT 1/2 - 13 x 3"	1	1	1	1
38	103325	WASHER 1/2" LOCK	1	1	1	1
39	102637	NUT 1/2 - 13	1	1	1	1
40	97061	STRAP, ALTERNATOR ADJUSTING	1	1	1	1
41	179837	BOLT 3/8 - 16 x 3/4"	1	1	1	1
42	103321	WASHER 3/8" LOCK	1	1	1	1
43	179816	BOLT 5/16 - 18 x 3/4	1	1	1	1
44	20523	WASHER SPECIAL	1	1	1	1
45	103320	WASHER 5/16 LOCK	1	1	1	1
46	39040	GASKET REAR HOUSING	1	1	1	1
47	707341	VOLTAGE REGULATOR ASS'Y	1	1	1	1
48	106497	WASHER #10 LOCK	3	3	3	3
49	436586	SCREW #10 - 32 x 3/8"	3	3	3	3
50	725035	BRACKET, VOLTAGE REGULATOR MFG.	1	1	1	1



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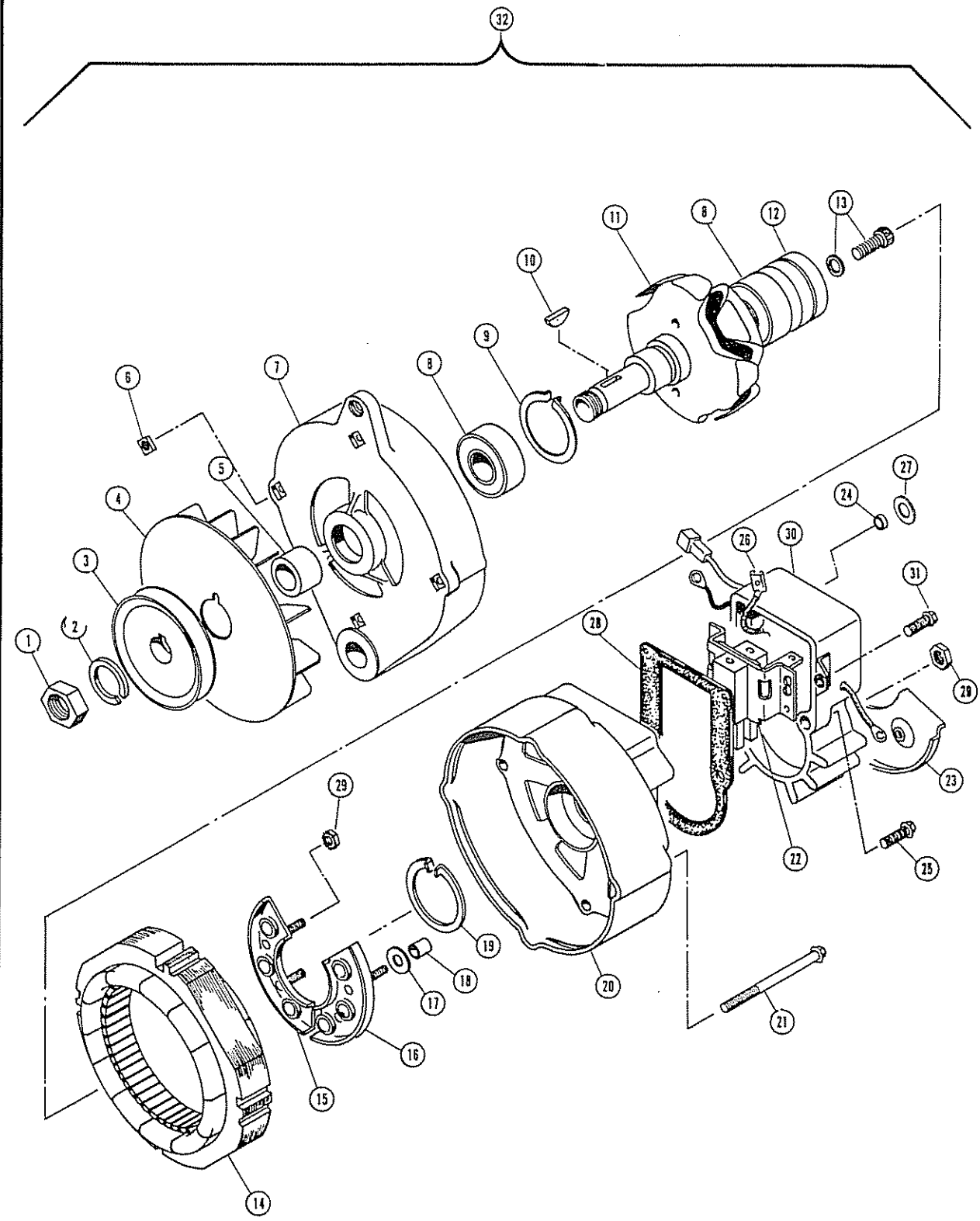
FIG. 15 ALTERNATOR ASSEMBLY EXTERNAL REGULATOR

QUANTITY

305

350

ITEM	PART NO.	DESCRIPTION	QUANTITY			
			RH	LH	RH	LH
51	96573	WIRE ASS'Y	1	1	1	1
52	39044	INSULATOR	1	1	1	1
53	103321	WASHER 3/8" LOCK	1	1	1	1
54	179837	BOLT 3/8 - 19 x 3/4	1	1	1	1



**FIGURE 16**

FIG. 16 ALTERNATOR ASSEMBLY INTEGRAL REGULATOR			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
1	39000	NUT	1	1	1	1
2	39001	WASHER	1	1	1	1
3	39039	PULLEY	1	1	1	1
4	707348	FAN	1	1	1	1
5	39005	SPACER	1	1	1	1
6	39006	NUT SQUARE #10 - 32	4	4	4	4
7	39007	HOUSING, FRONT	1	1	1	1
8	39008	BEARING	2	2	2	2
9	39009	RETAINER, FRONT BEARING	1	1	1	1
10	39010	KEY	1	1	1	1
11	39011	ROTOR ASS'Y	1	1	1	1
12	39012	SLIP RING ASS'Y	1	1	1	1
13	39013	SCREW #10 - 32 x 5/8"	1	1	1	1
14	39014	STATOR ASS'Y	1	1	1	1
15	39015	NEGATIVE DIODE ASS'Y	1	1	1	1
16	39016	POSITIVE DIODE ASS'Y	1	1	1	1
17	39017	WASHER	1	1	1	1
18	39018	INSULATOR	1	1	1	1
19	39019	RETAINER, REAR	1	1	1	1
20	39020	HOUSING	1	1	1	1
21	39021	SCREW #10 - 32 x 2 55/64	1	1	1	1
22	39022	BRUSH ASS'Y	1	1	1	1
23	39023	DUAL DIODE ASS'Y	1	1	1	1
24	39024	INSULATOR	1	1	1	1
25	39025	BOLT #10 - 24 x 3/4"	1	1	1	1

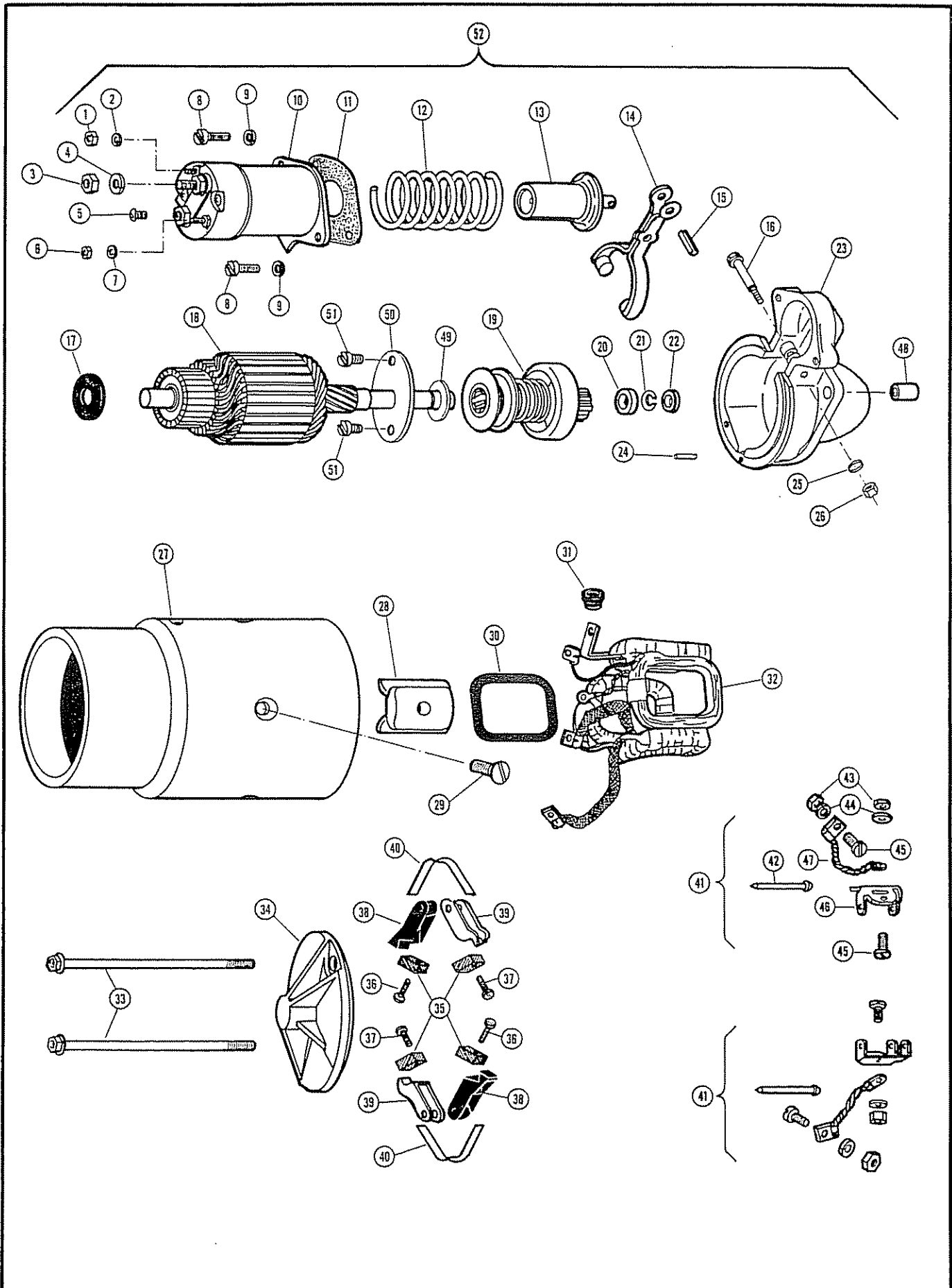
FIG. 16 ALTERNATOR ASSEMBLY INTEGRAL REGULATOR			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
26	39026	WIRE ASS'Y	1	1	1	1
27	39027	WASHRE	1	1	1	1
28	39040	GASKET	1	1	1	1
29	39029	NUT #10 - 24	2	2	2	2
30	39050	VOLTAGE REGULATOR ASS'Y	1	1	1	1
31	39031	SCREW SELF TAPPING #8 x 3/4"	2	2	2	2
32	39049	ALTERNATOR AND REGULATOR ASS'Y	1	1	1	1

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			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
<b>NOTES</b>						



**FIGURE 17**

FIG. 17 STARTER ASSEMBLY			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
1	112432	NUT #10 - 32	1	1	1	1
2	455348	WASHER #10	1	1	1	1
3	134570	NUT 3/8 - 16	1	1	1	1
4	454722	WASHER 3/8 LOCK	1	1	1	1
5	42071	SCREW	1	1	1	1
6	113103	NUT#8 - 32	1	1	1	1
7	455766	WASHER #8	1	1	1	1
8	42073	SCREW	2	2	2	2
9	42040	WASHER	2	2	2	2
10	42016	SOLENOID ASS'Y	1	1	1	1
11	42061	GASKET	1	1	1	1
12	42018	SPRING	1	1	1	1
13	42019	PLUNGER	1	1	1	1
14	42020	LEVER	1	1	1	1
15	455106	PIN	1	1	1	1
16	42022	BOLT	1	1	1	1
17	42048	WASHER	1	1	1	1
18	42080	ARMATURE		1		1
18	42081	ARMATURE	1		1	
19	42036	DRIVE ASS'Y		1		1
19	42031	DRIVE ASS'Y	1		1	
20	42012	COLLAR	1	1	1	1
21	42013	RING	1	1	1	1
22	42014	COLLAR	1	1	1	1
23	42032	HOUSING	1	1	1	1

FIG. 17 STARTER ASSEMBLY			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
24	42055	PIN	1	1	1	1
25	42039	WASHER	1	1	1	1
26	42042	NUT	1	1	1	1
27	42000	FRAME	1	1	1	1
28	42056	POLE SHOE	4	4	4	4
29	42046	SCREW POLE SHOE	4	4	4	4
30	42053	INSULATOR	4	4	4	4
31	42052	GRAMMET	1	1	1	1
32	42088	SHUNT COIL ASS'Y	1	1	1	1
32	42034	FIELD COIL ASS'Y		1		1
32	42028	FIELD COIL ASS'Y	1		1	
33	42049	BOLT	2	2	2	2
34	NSS	COMMUNTATOR END CAP	—	—	—	—
35	42001	BRUSH	4	4	4	4
36	42043	SCREW	2	2	2	2
37	42043	SCREW	2	2	2	2
38	42002	BRUSH HOLDER GROUNDED	2	2	2	2
39	42003	BRUSH HOLDER INSULATED	2	2	2	2
40	42004	SPRING	2	2	2	2
41	42005	BRUSH HOLDER SUPPORT KIT	2	2	2	2
42	42054	PIN	2	2	2	2
43	120361	NUT #10 - 24	2	2	2	2
44	453435	WASHER	2	2	2	2
45	274738	SCREW	2	2	2	2
46	NSS	BRACKET	—	—	—	—



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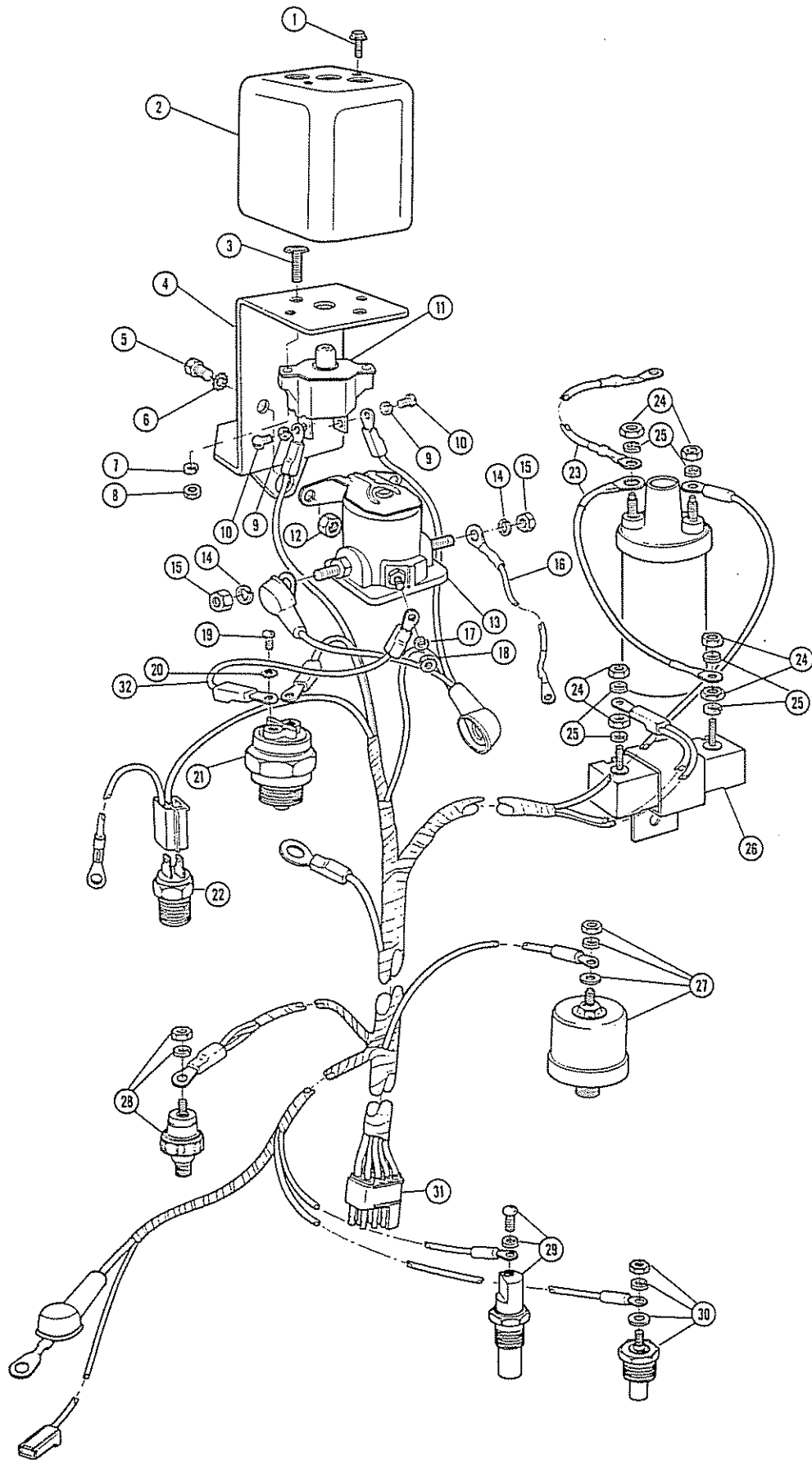


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FIG. 17 STARTER ASSEMBLY

QUANTITY  
305 350

ITEM	PART NO.	DESCRIPTION	QUANTITY			
			RH	LH	RH	LH
47	42006	LEAD	2	2	2	2
48	42051	BUSHING	1	1	1	1
49	42087	WASHER	1	1	1	1
50	42088	PLATE	1	1	1	1
51	42089	SCREWS	2	2	2	2
52	42084	STARTER ASS'Y		1		1
52	42083	STARTER ASS'Y	1		1	



**FIGURE 18**

FIG. 18 ENGINE WIRING			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
1	22140	SCREW #10 - 24 x 3/8" THREAD CUTTING	2	2	2	2
2	97474	COVER	1	1	1	1
3	436734	SCREW #10 - 24 x 3/4"	2	2	2	2
4	97478	BRACKET	1	1	1	1
5	179791	BOLT 1/4 - 20 x 1/2:	2	2	2	2
6	103319	WASHER 1/4" LOCK	2	2	2	2
7	120217	WASHER #10 LOCK	2	2	2	2
8	120361	NUT #10 - 24	2	2	2	2
9	120217	WASHER #10 LOCK	2	2	2	2
10	436728	SCREW #10 - 24 x 1/4	2	2	2	2
11	9006077	CIRCUIT BREAKER	1	1	1	1
12	109084	NUT 1/4 - 20	2	2	2	2
13	9006320	RELAY ASS'Y	1	1	1	1
14	103320	WASHER	2	2	2	2
15	102634	NUT 5/16 - 18	2	2	2	2
16	97479	WIRE RELAY TO STARTER SOLENOID	1	1	1	1
17	120217	WASHER #10 LOCK	2	2	2	2
18	120361	NUT #10 - 24	2	2	2	2
19	436728	SCREW #10 - 24 x 1/4"	2	2	2	2
20	120217	WASHER #10 LOCK	2	2	2	2
21	20171	NEUTRAL START SWITCH	1	1	1	1
22	21088	ALARM SENDER GEAR OIL TEMP.	1	1	1	1
23	97475	WIRE ASSEMBLY STARTER TO COIL & RESISTOR	1	1	1	1
24	120361	NUT #10 - 24	1	1	1	1
25	120217	WASHER #10 LOCK	1	1	1	1

FIG. 18 ENGINE WIRING

QUANTITY

305

350

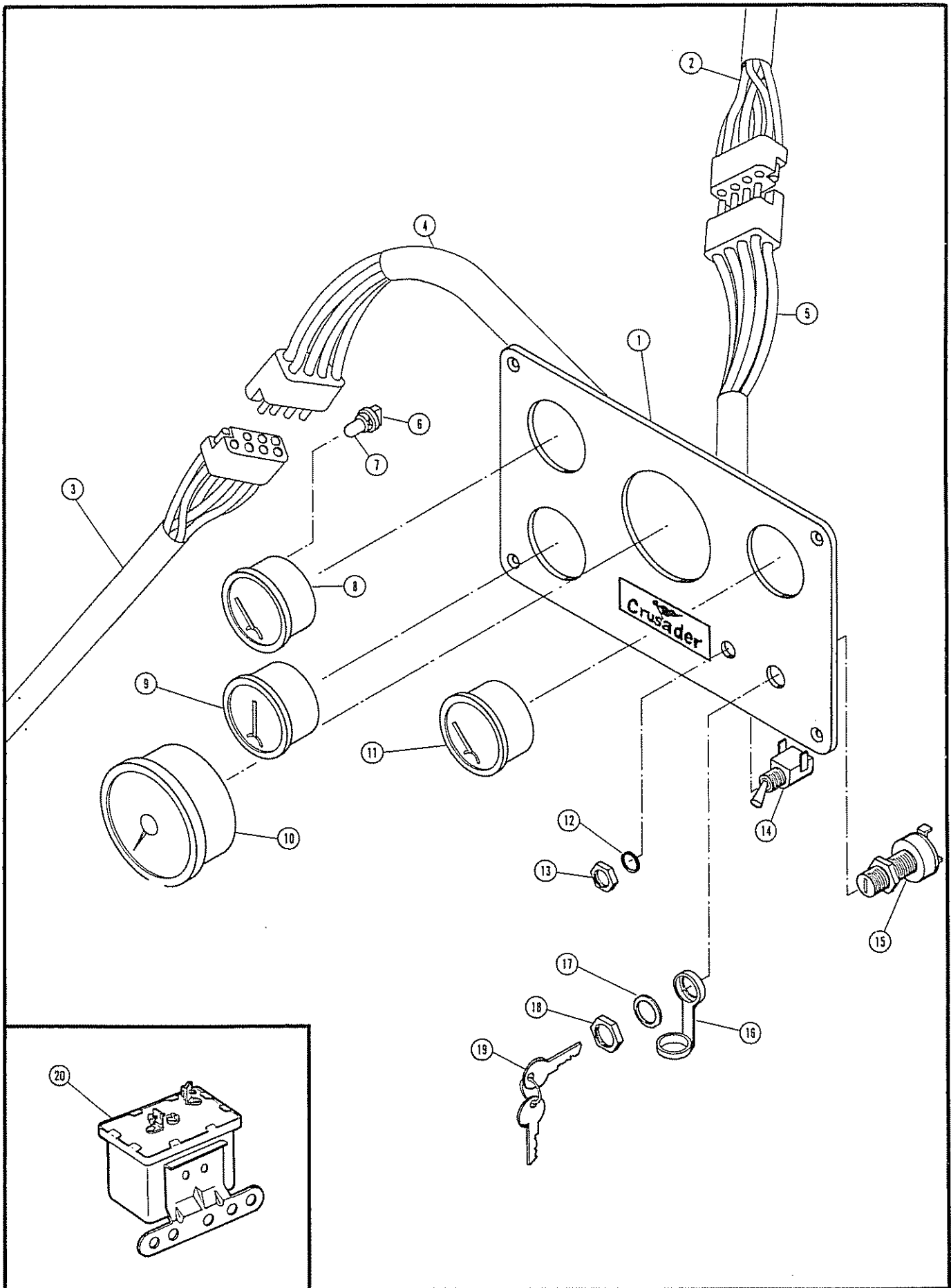
ITEM	PART NO.	DESCRIPTION	QUANTITY			
			RH	LH	RH	LH
26	41064	RESISTOR ASS'Y	1	1	1	1
27	700425	GAUGE SENDER ENGINE OIL PRESSURE SINGLE	1	1	1	1
27	700403	GAUGE SENDER ENGINE OIL PRESSURE DUAL	AR	AR	AR	AR
28	96399	ALARM SENDER ENGINE OIL PRESSURE	1	1	1	1
29	20326	ALARM SENDER ENGINE WATER TEMP	1	1	1	1
30	700427	GAUGE SENDER ENGINE WATER TEMP. SINGLE	1	1	1	1
30	727046	GAUGE SENDER ENGINE WATER TEMP. DUAL	AR	AR	AR	AR
31	97477	WIRING HARNESS UNIVERSAL	1	1	1	1
32	97480	WIRE SAFETY SWITCH TO RELAY	1	1	1	1
33	20640	ALARM BUZZER	1	1	1	1
34	97423	SPARK PLUG WIRE SET	1	1	1	1
35	97454	SPARK PLUG WIRE RADIO SUPPRESSION	AR	AR	AR	AR

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			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
<b>NOTES</b>						



**FIGURE 19**

FIG. 19 INSTRUMENT PANEL ASSEMBLY			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
1	1020946	PANEL, INST. MTG. SINGLE 4 GAUGES	1	1	1	1
1	1020947	PANEL, INST. MTG. SINGLE 3 GAUGES	AR	AR	AR	AR
1	1020948	PANEL, INST. MTG. DUAL 8 GAUGES	1	1	1	1
1	1020949	PANEL, INST. MTG. DUAL 6 GAUGES	AR	AR	AR	AR
2	97494	HARNESS EXTENSION UPPER TO LOWER STATION	AR	AR	AR	AR
3	97344	HARNESS EX. UPPER TO LOWER STATION 20 FT.	AR	AR	AR	AR
3	97354	HARNESS EX. UPPER TO LOWER STATION 25 FT.	AR	AR	AR	AR
4	1020956	PIGTAIL ASS'Y PANEL TO ENGINE	1	1	1	1
5	1020955	PIGTAIL ASS'Y UPPER TO LOWER STATION	AR	AR	AR	AR
6	1020940	SOCKET AND LAMP ASS'Y	4	4	4	4
7	NSS	LAMP	—	—	—	—
8	1020944	WATER TEMPERATURE GAUGE F.C.B. NOTE 1	AR	AR	AR	AR
8	1020952	WATER TEMPERATURE GAUGE R.C.B. NOTE 1	AR	AR	AR	AR
8	1020958	WATER TEMPERATURE GAUGE R.B.B. NOTE 1	1	1	1	1
9	1020943	AMPMETER F.C.B. NOTE 1	AR	AR	AR	AR
9	1020951	AMPMETER R.C.B. NOTE 1	AR	AR	AR	AR
9	1020957	AMPMETER R.B.B. NOTE 1	1	1	1	1
9	1020954	VOLTMETER R.B.B. NOTE 1	1	1	1	1
10	1020945	TACHOMETER F.C.B. NOTE 1	AR	AR	AR	AR
10	1020953	TACHOMETER R.C.B. NOTE 1	AR	AR	AR	AR
10	1020960	TACHOMETER R.B.B. NOTE 1	1	1	1	1
11	1020942	OIL PRESSURE GAUGE F.C.B. NOTE 1	AR	AR	AR	AR
11	1020950	OIL PRESSURE GAUGE R.C.B. NOTE 1	AR	AR	AR	AR
11	1020959	OIL RESSSURE GAUGE R.B.B. NOTE 1	1	1	1	1
12	NSS	WASHER	—	—	—	—

FIG. 19 INSTRUMENT PANEL ASSEMBLY			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
13	NSS	NUT	—	—	—	—
14	1020939	SWITCH INSTRUMENTS LIGHTS	1	1	1	1
15	1020938	IGNITION SWITCH ASS'Y	1	1	1	1
16	1020941	CAP	1	1	1	1
17	NSS	WASHER	—	—	—	—
18	NSS	NUT	—	—	—	—
19	NSS	KEY	—	—	—	—
20	20640	ALARM BUZZER	—	—	—	—
21	97490	INSTRUMENT PANEL ASS'Y SINGLE LOWER NOTE 2	AR	AR	AR	AR
21	97491	INSTRUMENT PANEL ASS'Y SINGLE UPPER NOTE 2	AR	AR	AR	AR
21	97492	INSTRUMENT PANEL ASS'Y DUAL LOWER NOTE 2	AR	AR	AR	AR
21	97493	INSTRUMENT PANEL ASS'Y DUAL UPPER NOTE 2	AR	AR	AR	AR
22	20175	ALARM KIT	—	—	—	—
	NOTE 1	ABBREVIATIONS: F.C.B. FLAT CHROME BEZEL R.C.B. RAISED CHROME BEZEL R.B.B. RAISED BLACK BEZEL CAUTION ! AMPMETERS AND VOLTMETERS ARE NOT INTERCHANGEABLE				
	NOTE 2	COMPLETE INSTRUMENT PANELS ARE FURNISHED WITH VOLTMETERS. FOR USE ON AN AMPMETER TYPE APPLICATION CONTACT CRUSADER MARINE PARTS DEPT.				



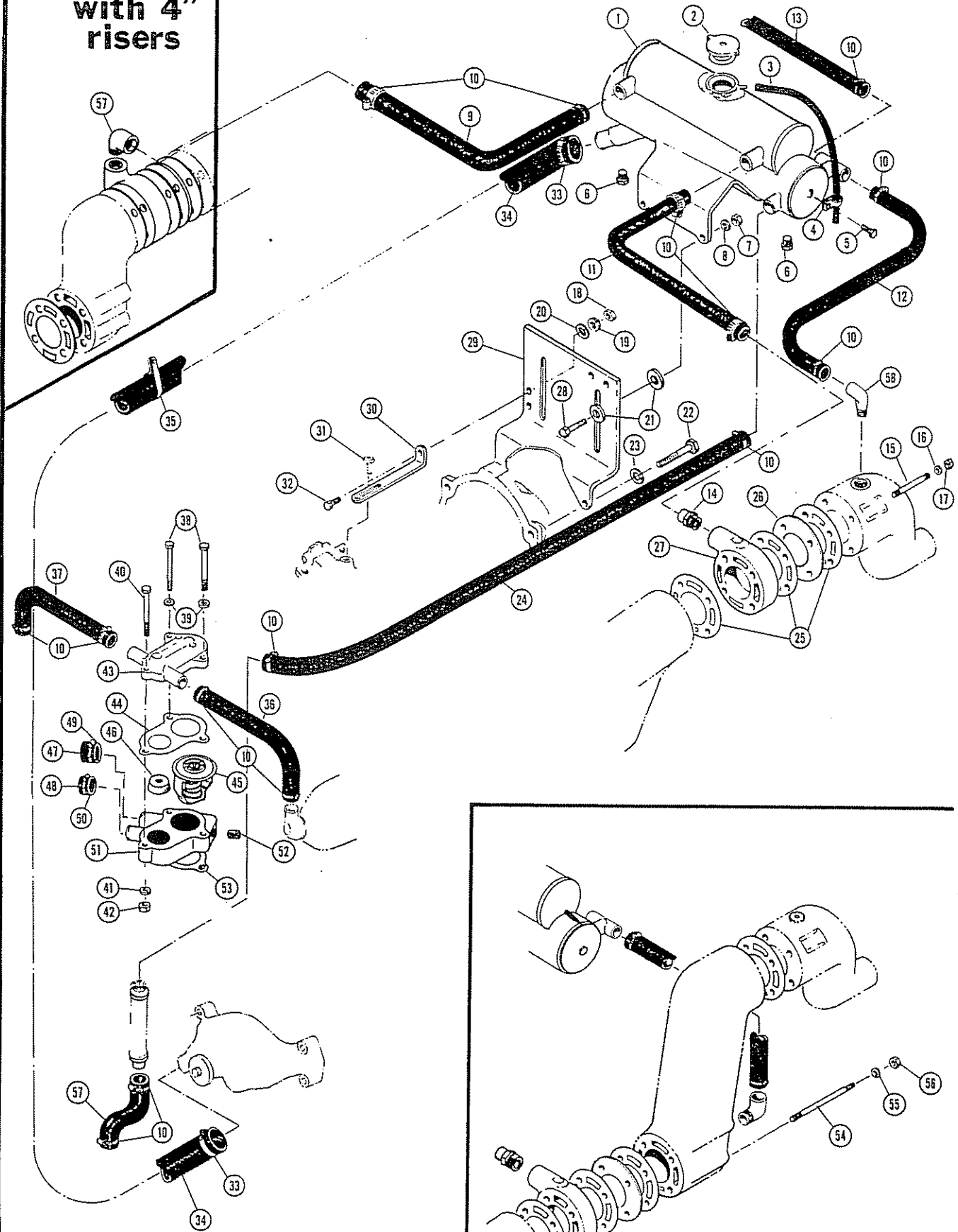
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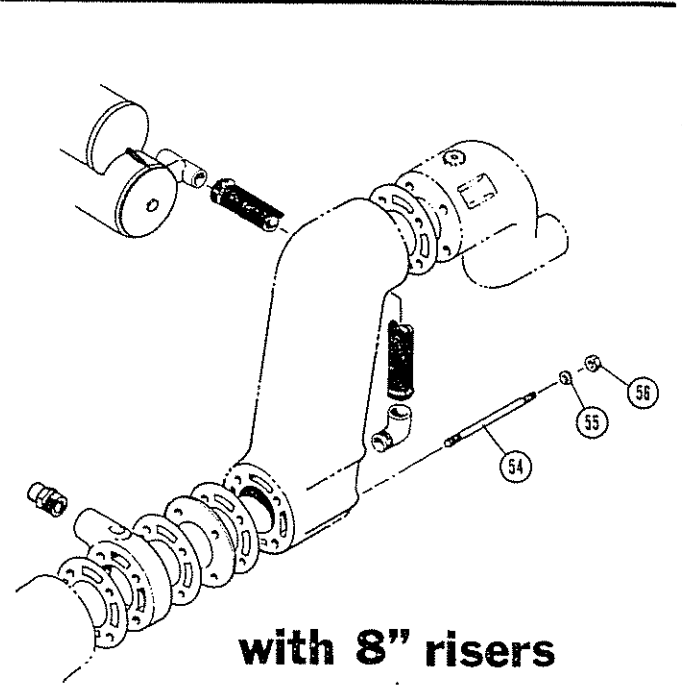
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			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
<b>NOTES</b>						

**with 4" risers**



**with 8" risers**



**FIGURE 20**

## FIG. 20 FRESHWATER COOLING FULL SYSTEM

## QUANTITY

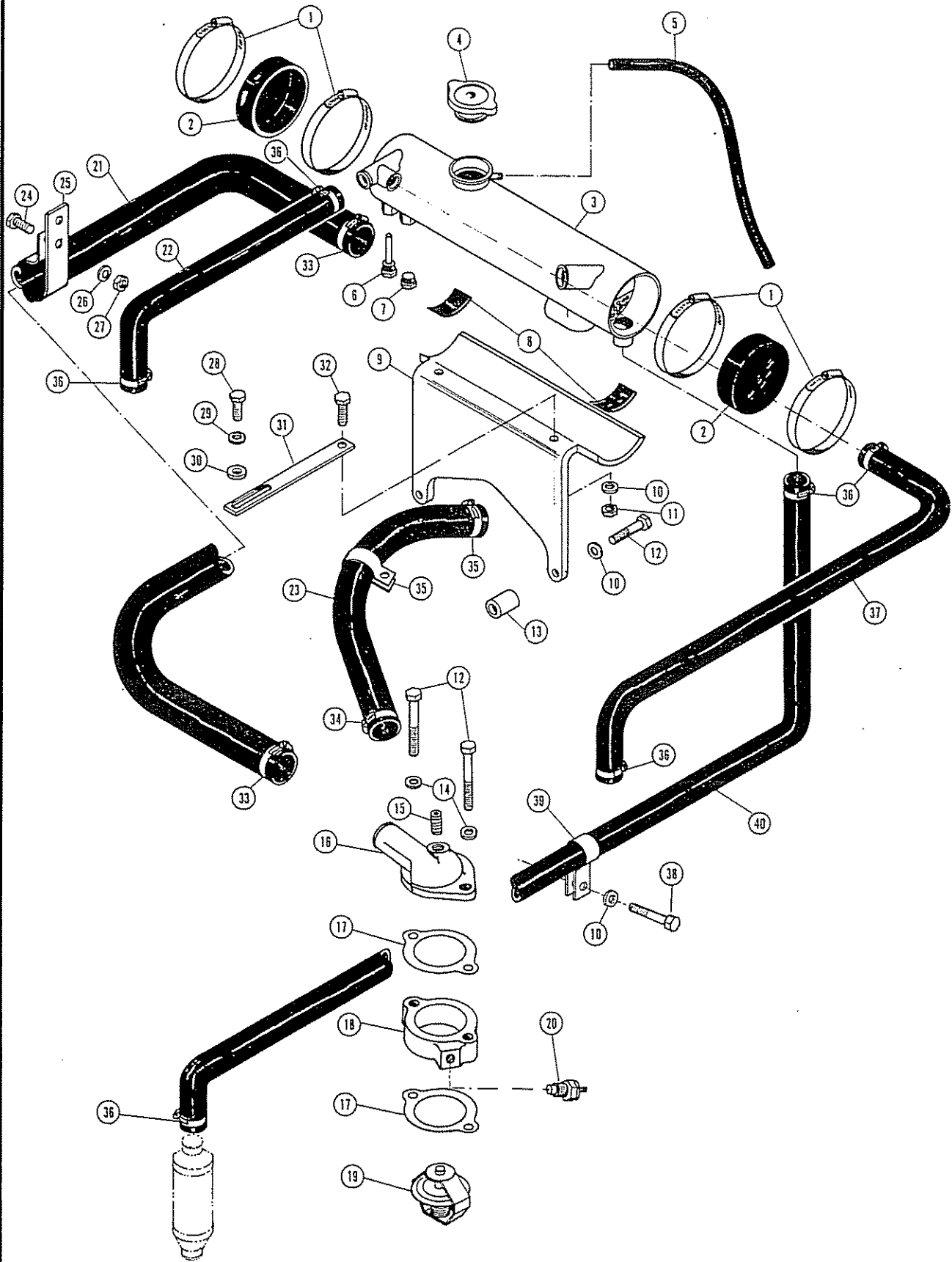
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ITEM	PART NO.	DESCRIPTION	QUANTITY			
			RH	LH	RH	LH
1	97433	HEAT EXCHANGER ASS'Y	1	1	1	1
2	22027	PRESSURE CAP	1	1	1	1
3	20237	OVERFLOW HOSE	1	1	1	1
4	2000147	CLAMP	1	1	1	1
5	174695	BOLT 3/16 - 16 x 5/8"	2	2	2	2
6	127950	PLUG 1/8 N.P.T.	1	1	1	
7	271500	NUT 7/16 - 14				
8	103322	WASHER 7/16 LOCK				
9	23073	HOSE 1 1/4" x 19"				
10	20227	HOSE CLAMP 16				
11	23073	HOSE 1 1/4" x 17" Note 1				
12	23071	HOSE 1" x 30" Note 1				
13	23070	HOSE 1" x 18" Note 1				
14	96760	ADAPTER				
15	96369	STUD S.S.				
16	103321	WASHER 3/8 LOCK				
17	102635	NUT 3/8 - 16				
18	102635	NUT 3/8 - 16				
19	103321	WASHER LOCK				
20	103341	WASHER 3/8 FLAT				
21	33189	WASHER SPECIAL				
22	179843	BOLT 3/8 - 16 x 1 1/2				
23	103321	WASHER 3/8 LOCK				
24	23074	HOSE 1 - 1/4 x 63"				
25	96108	GASKET				

FIG. 20 FRESH WATER COOLING FULL SYSTEM			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
26	97296	BLOCK OFF PLATE				
27	97295	WATER OUTLET ADAPTER				
28	179862	BOLT 7/16 - 14 x 1 1/2				
29	97308	BRACKET HEAT EXCHANGER MOUNTING				
30	97309	BRACKET SUPPORT				
31	179840	BOLT				
32	179841	BOLT 3/8 - 16 x 1 1/4				
33	20230	CLAMP # 28				
34	23075	HOSE 1 3/4" x 44"				
35	97347	HOSE SUPPORT CLAMP				
36	23025	HOSE NOTE 1				
37	23025	HOSE NOTE 1				
38	186285	BOLT 3/8 - 16 x 4"				
39	103321	WASHER 3/8 LOCK				
40	186282	BOLT 3/8 - 16 x 3 1/4				
41	103321	WASHER 3/8 LOCK				
42	102635	NUT 3/8 - 16				
43	96101	COVER STAT. HSG.				
44	97361	GASKET THERMOSTAT HSG.				
45	96358	THERMOSTAT 160°				
46	97436	RESTRICTOR				
47	96519	CAP				
48	97311	CAP				
49	20230	CLAMP # 28				
50	20228	CLAMP # 20				

FIG. 20 FRESHWATER COOLING FULL SYSTEM			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
51	96102	THERMOSTAT HSG.				
52	444588	PLUG 1/2 NPT				
53	96105	STAT. HSG. GASKET				
54	22032	STUD S.S.				
55	116103	WASHER FLAT SEALING				
56	20472	NUT SELF LOCKING				
57	30530	ELBOW 90°				
58	727003	ELBOW 90° 3/4 NPT				
59	23099	FRESH WATER COOLING FULL SYSTEM KIT				
	NOTE 1	FOR REVERSED MANIFOLDS				
9	22147	HOSE 1 - 1/4" x 32"				
11	22147	HOSE 1 - 1/4" x 32"				
12	22145	HOSE 1" x 44"				
13	22149	HOSE 1" x 54"				
36	22151	HOSE 1 - 1/4" x 33"				
37	22151	HOSE 1 - 1/4" x 33"				



**FIGURE 21**

FIG. 21 FRESH WATER COOLING HALF SYSTEM REAR			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
1	22096	CLAMP	4	4	4	4
2	23064	END CAP	2	2	2	2
3	97402	HEAT EXCHANGER	1	1	1	1
4	22027	CAP, FILLER	1	1	1	1
5	23065	OVERFLOW HOSE	1	1	1	1
6	10335	ZINC ELECTRODE	1	1	1	1
7	127951	PLUG 1/4 NPT	1	1	1	1
8	96790	RUBBER PAD	2	2	2	2
9	97404	MOUNTING BRACKET	1	1	1	1
10	103321	WASHER 3/8 LOCK	4	4	4	4
11	102635	NUT 3/8 - 16	1	1	1	1
12	179849	BOLT 3/8 - 16 x 2 1/2	2	2	2	2
13	97123	SPACER	2	2	2	2
14	103321	WASHER 3/8 LOCK	2	2	2	2
15	444705	PLUG	1	1	1	1
16	96357	THERMOSTAT HSG.	1	1	1	1
17	96105	GASKET THERMOSTAT HSG.	2	2	2	2
18	97452	SPACER	1	1	1	1
19	96358	THERMOSTAT 160%	1	1	1	1
20	21088	ALARM SENDER	1	1	1	1
21	23048	HOSE 1 - 3/4" x 52"	1	1	1	1
22	23044	HOSE 1 - 1/4" x 26" Note 1	1	1	1	1
23	23047	HOSE 1 - 1/2" x 38 1/2"	1	1	1	1
24	179795	BOLT 1/4 - 20 x 3/4"	1	1	1	1
25	97347	SUPPORT	1	1	1	1

FIG. 21 FRESH WATER COOLING HALF SYSTEM REAR			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
26	103319	WASHER 1/4 LOCK	1	1	1	1
27	109084	NUT 1/4 - 20	1	1	1	1
28	179816	BOLT 5/16 - 18 x 3/4	1	1	1	1
29	103320	WASHER 5/16 LOCK	1	1	1	1
30	446362	WASHER 5/16 FLAT	1	1	1	1
31	707494	BRACE	1	1	1	1
32	179839	BOLT 3/18 - 16 x .1"	1	1	1	1
33	20230	CLAMP #28	2	2	2	2
34	20229	CLAMP #24	2	2	2	2
35	2000245	SUPPORT	1	1	1	1
36	20228	CLAMP #20	6	6	6	6
37	23046	HOSE 1 1/4 x 41" Note 1	1	1	1	1
38	186289	BOLT 3/8 - 16 x 5	1	1	1	1
39	2000285	SUPPORT	1	1	1	1
40	23046	HOSE 1 1/4" x 55"	1	1	1	1
41	23043	KIT, FRESH WATER COOLING 1/2 REAR MTD.	AR	AR	AR	AR
	NOTE 1	FOR REVISED MANIFOLDS				
22	23025	HOSE 1 - 1/4" x 13"				
37	20992	HOSE 1 - 1/4" x 25"				

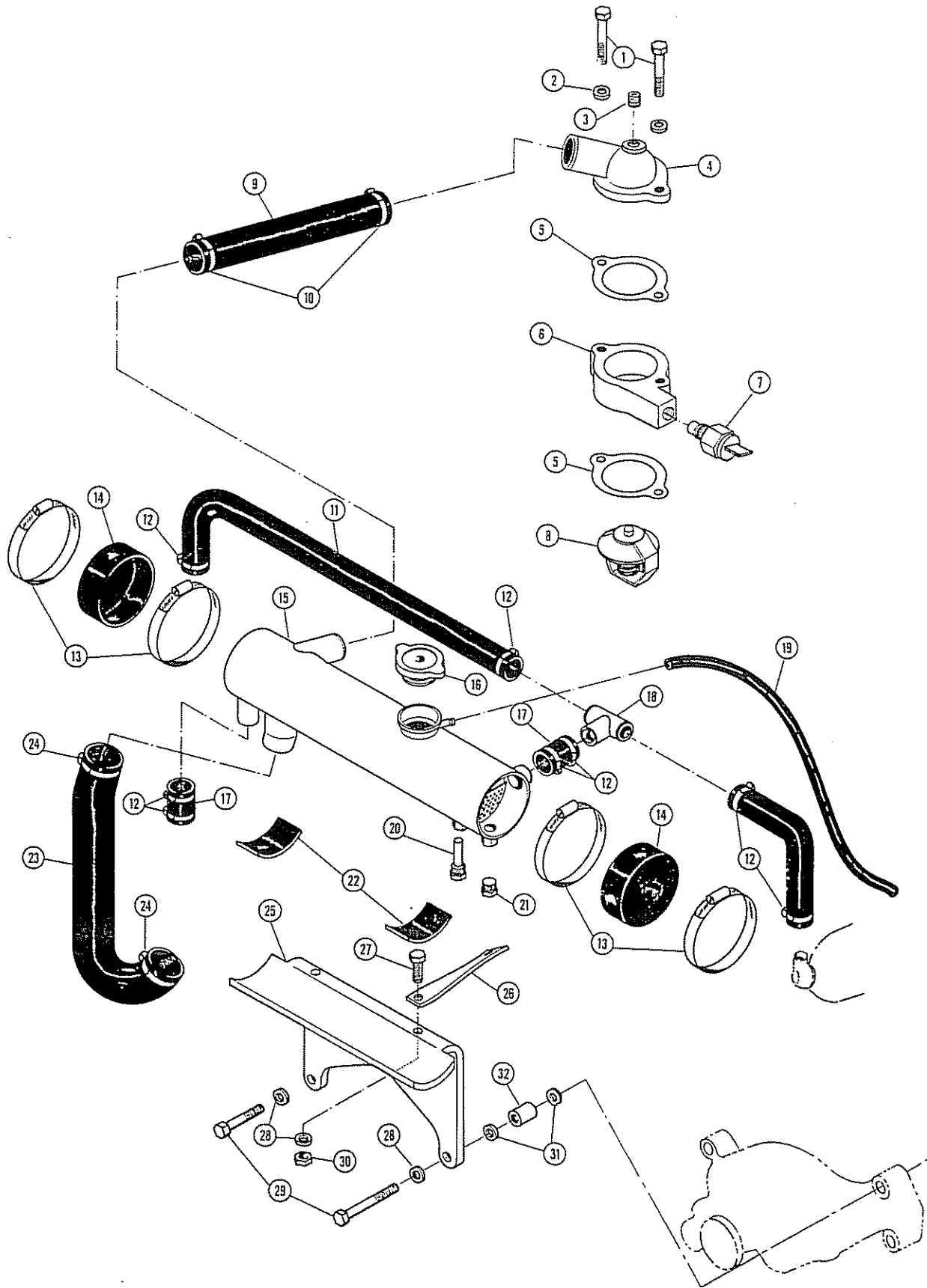


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PARTS  
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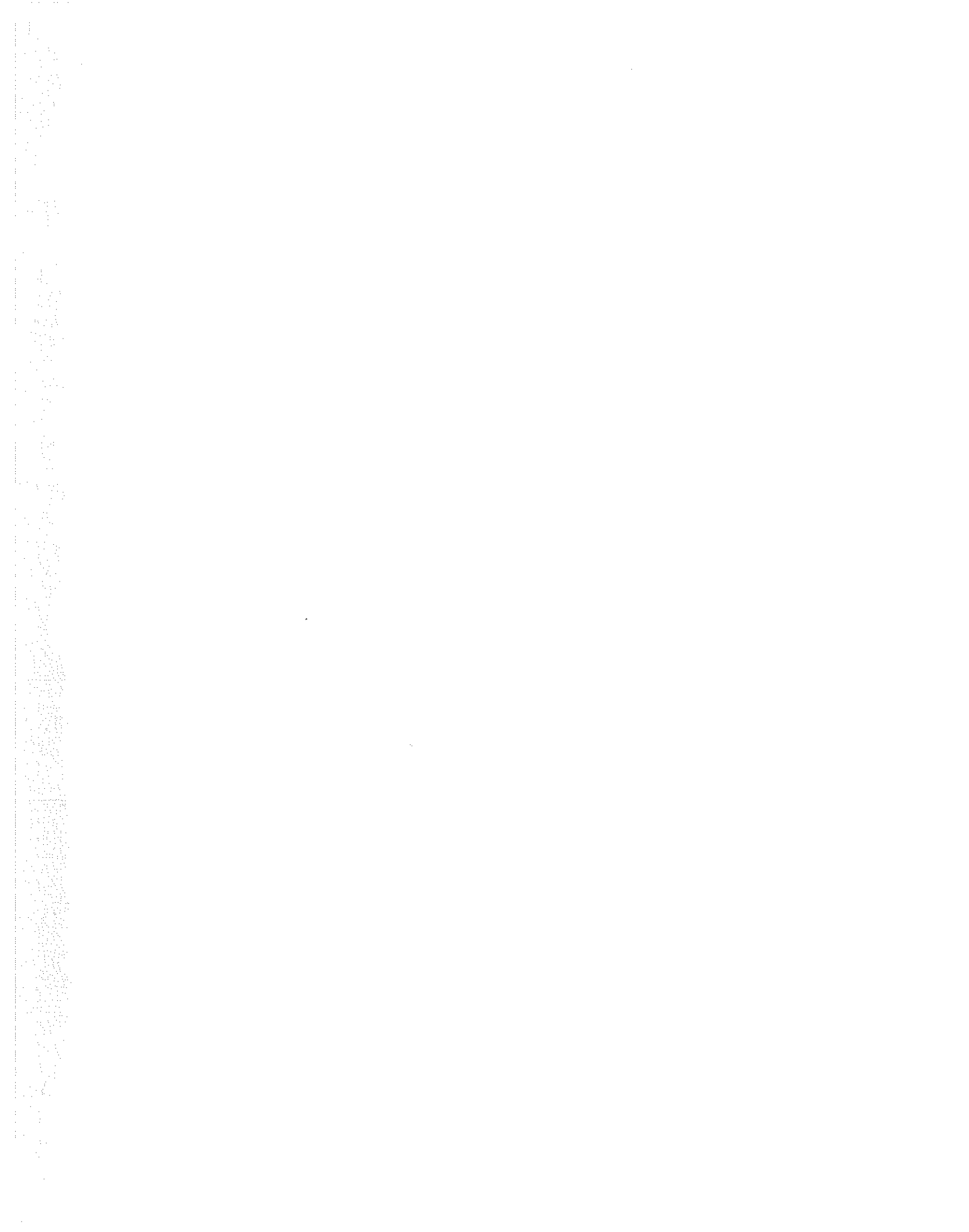
			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
		NOTES				



**FIGURE 22**

FIG. 22 FRESHWATER COOLING HALF SYSTEM FRONT MTD.			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
1	179845	BOLT 3/8 - 16 x 1 - 3/4"	2	2	2	2
2	103321	WASHER	2	2	2	2
3	444705	PLUG	1	1	1	1
4	96357	THERMOSTAT HSG.	1	1	1	1
5	96105	THERMOSTAT GASKET	2	2	2	2
6	97198	SPACER	1	1	1	1
7	21088	ALARM SENDER WATER TEMP.	1	1	1	1
8	96358	THERMOSTAT 160°	1	1	1	1
9	23069	HOSE 1 - 1/2 x 21 - 1/2	1	1	1	1
10	20229	CLAMP # 24	2	2	2	2
11	23059	HOSE 1 - 1/4 x 22"	1	1	1	1
12	20228	CLAMP # 20	8	8	8	8
13	22096	CLAMP	4	4	4	4
14	23064	END CAP	2	2	2	2
15	97371	HEAT EXCHANGER	1	1	1	1
16	22027	CAP, FILLER	1	1	1	1
17	23060	HOSE 1 - 1/4 x 3"	2	2	2	2
18	30559	TEE	1	1	1	1
19	23065	HOSE, OVERFLOW	1	1	1	1
20	10335	ZINC ELECTRODE	1	1	1	1
21	127951	PLUG 1/4 NPT	1	1	1	1
22	96790	PAD MOUNTING	2	2	2	2
23	96323	HOSE FORMED	1	1	1	1
24	20230	CLAMP # 28	2	2	2	2
25	97404	MOUNTING BRACKET	1	1	1	1

FIG. 22 FRESH WATER COOLING HALF SYSTEM FRONT MTD.			QUANTITY			
			305		350	
ITEM	PART NO.	DESCRIPTION	RH	LH	RH	LH
26	97429	BRACE	1	1	1	1
27	179837	BOLT 3/8 - 16 x 3/4"	1	1	1	1
28	103321	WASHER 3/8 LOCK	3	3	3	3
29	179851	BOLT 3/8 - 16 x 3"	1	1	1	1
30	102635	NUT 3/8 - 16	1	1	1	1
31	116103	WASHER FLAT	2	2	2	2
32	96943	SPACER	1	1	1	1
33	22064	KIT FRESH WATER COOLING 1/2, FRONT MTD.	AR	AR	AR	AR





**Engine Division**

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