

**THERMO
ELECTRON
ENGINE** CORP.



PALMER

P-302 / 351

ILLUSTRATED PARTS MANUAL

THERMO ELECTRON ENGINE CORP.

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PARTS MAY VARY IN DETAIL.

ORDER PARTS FROM YOUR NEAREST AUTHORIZED THERMO ELECTRON
DISTRIBUTOR

WHEN ORDERING PARTS ALWAYS SUPPLY THE ENTIRE ENGINE
SERIAL NUMBER. ORDER BY PART NUMBER TO EXPEDITE PROC-
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THE RIGHT TO CHANGE ENGINE DESIGN, PARTS, PART NUMBERS
AND/OR PRICES WITHOUT PRIOR NOTICE, OR OTHER OBLIGATION,
IS RESERVED.

THERMO ELECTRON ENGINE CORP.

PALMER MODELS P-302, P-351

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|---------|--------------------------------------|
| FIG. 1 | BASIC ENGINE BLOCK |
| FIG. 2 | CYLINDER HEAD ASSEMBLY |
| FIG. 3 | PISTON & ROD ASSEMBLY |
| FIG. 4 | CAMSHAFT & RELATED ITEMS |
| FIG. 5 | CRANKSHAFT & RELATED ITEMS |
| FIG. 6 | INTAKE MANIFOLD SYSTEM |
| FIG. 7 | OIL PUMP & OIL PAN |
| FIG. 8 | CENTRIFUGAL WATER PUMP |
| FIG. 9 | DISTRIBUTOR (AUTOLITE) |
| FIG. 10 | DISTRIBUTOR (MALLORY FLAT CAP) |
| FIG. 11 | DISTRIBUTOR (MALLORY FLAT CAP) |
| FIG. 12 | DISTRIBUTOR (MALLORY STACK CAP) |
| FIG. 13 | DISTRIBUTOR (MALLORY STACK CAP) |
| FIG. 14 | DISTRIBUTOR (MALLORY FLAT CAP) |
| FIG. 15 | ELECTRICAL EQUIPMENT |
| FIG. 16 | RAW WATER PUMP & RELATED ITEMS |
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| FIG. 18 | FUEL PUMP & FUEL LINE |
| FIG. 19 | OIL FILTER, COOLERS, & RELATED ITEMS |
| FIG. 20 | EXHAUST MANIFOLD & RISER ASSEMBLY |
| FIG. 21 | ENGINE MOUNTING SYSTEM |

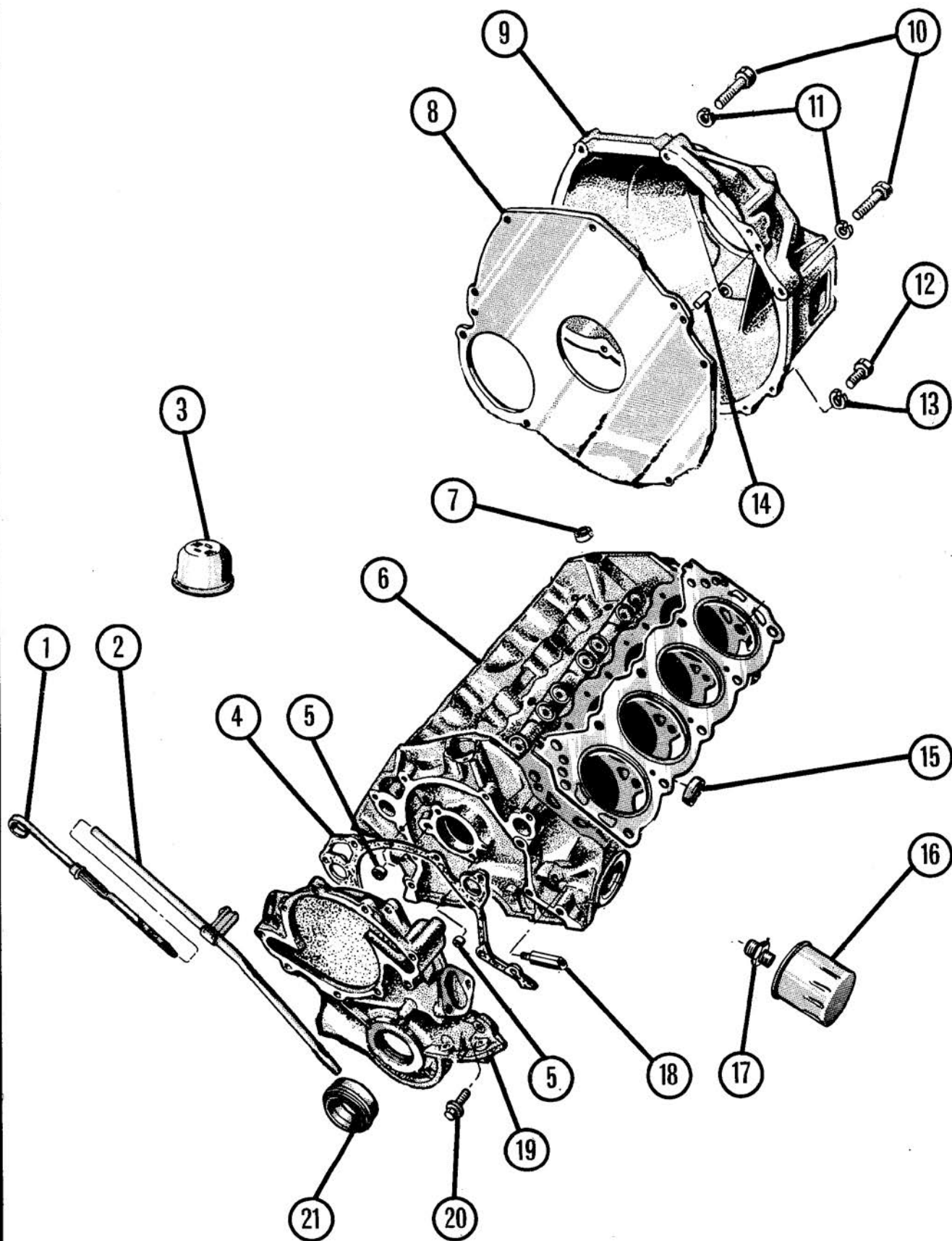


FIGURE # 1

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FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
1	***	1104446	STRIPPED ENGINE ASSEMBLY			1	
1	***	1104447	STRIPPED ENGINE ASSEMBLY				1
1	***	3000001	STRIPPED ENGINE ASSEMBLY	1			
1	***	3000002	STRIPPED ENGINE ASSEMBLY		1		
1	***	1104487	ENGINE CYL. ASSY. & CRANKSHAFT(SHT.BLK.)			1	
1	***	1104488	ENGINE CYL.ASSY. & CRANKSHAFT(SHT. BLK.)				1
1	***	3000530	ENGINE CYL.ASSY. & CRANKSHAFT(SHT. BLK.)	1			
1	***	3000531	ENGINE CYL.ASSY. & CRANKSHAFT(SHT. BLK.)		1		
1	1	725082	INDICATOR ASSEMBLY, OIL LEVEL	1	1		
1	1	3000359	INDICATOR ASSEMBLY, OIL LEVEL			1	1
1	2	725081	TUBE, OIL LEVEL INDICATOR	1	1		
1	2	3000357	TUBE, OIL LEVEL INDICATOR			1	1
1	3	10002403	CAP, OIL FILLER & BREATHER	1	1	1	1
1	4	9008234	GASKET, CYLINDER FRONT COVER	1	1	1	1
1	5	725017	PLUG, CUP EXPN. DIPSTICK TUBE HOLE IN, FRONT COVER (STD DRIVE ONLY)	1	1	1	1
1	6	3000003	BARE BLOCK ASSEMBLY,CYLINDER	1	1		
1	6	3000296	BARE BLOCK ASSEMBLY,CYLINDER			1	1
1	7	725103	PLUG, CUP TYPE EXPANSION	1	1	1	1
1	8	725233	PLATE ASSY. ENGINE REAR COVER	1	1	1	1
1	9	725003	FLYWHEEL HOUSING-CAST IRON	1	1	1	1
1	9	1002623	FLYWHEEL HOUSING-ALUMINUM	1	1	1	1
1	10	700742	CAPSCREW, F/W HSG. TO BLK. 7/16"14x1-1/2	4	4	4	4
1	10	179867	HEX BOLT 7/16"-14 x 2-1/4	6	6	6	6
REMARKS			TITLE				
*** NOT ILLUSTRATED			FIG. 1 BASIC ENGINE BLOCK 302 C.I.D. BASIC ENGINE 351 C.I.D. BASIC ENGINE				

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FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
1	11	700959	LOCKWASHER 7/16"	4	4	4	4
1	11	103322	LOCKWASHER 7/16"	6	6	6	6
1	12	179816	HEX BOLT 5/16"-18 x 3/4"	2	2	2	2
1	12	179818	HEXBOLT 5/16"-18 x 1"	2	2	2	2
1	12	700681	CAPSCREW, REAR ENGINE PLATE TO HOUSING	2	2	2	2
1	13	103320	LOCKWASHER 5/16"	4	4	4	4
1	13	700956	LOCKWASHER 5/16"	2	2	2	2
1	14	725231	DOWEL, FLYWHEEL HOUSING TO BLOCK	2	2	2	2
1	15	725102	PLUG, CUP TYPE EXPANSION	6	6	6	6
1	16	1002984	ELEMENT ASSY. ENG. OIL FILTER WITH GSKT.	1	1	1	1
1	17	3000116	INSERT, OIL FILTER MTG. BOLT, SHLDR. TYPE	1	1	1	1
1	18	725117	OIL PRESSURE SENDER ADAPTOR	1	1	1	1
1	19	725105	COVER, CYLINDER FRONT	1	1	1	1
1	20	700693	CAPSCREW, CYL. FRT. COVER TO BLOCK	2	2	2	2
1	21	3000345	OIL SEAL, CYLINDER FRONT COVER	1	1	1	1
1	***	3000398	POINTER, TIMING	1	1	1	1
	***	727116	COMPLETE OVERHAUL GASKET KIT	1	1		
	***	1103040	TRANS. DRIVE DAMPER ASSY.	1	1	1	1
	***	2000297	SPECIAL SHOULDER BOLT DAMPER ASSY.	1	1	1	1
	***	120214	LOCKWASHER	1	1	1	1
REMARKS			TITLE FIG. 1 BASIC ENGINE BLOCK				
*** NOT ILLUSTRATED			302 C.I.D. BASIC ENGINE				
			351 C.I.D. BASIC ENGINE				

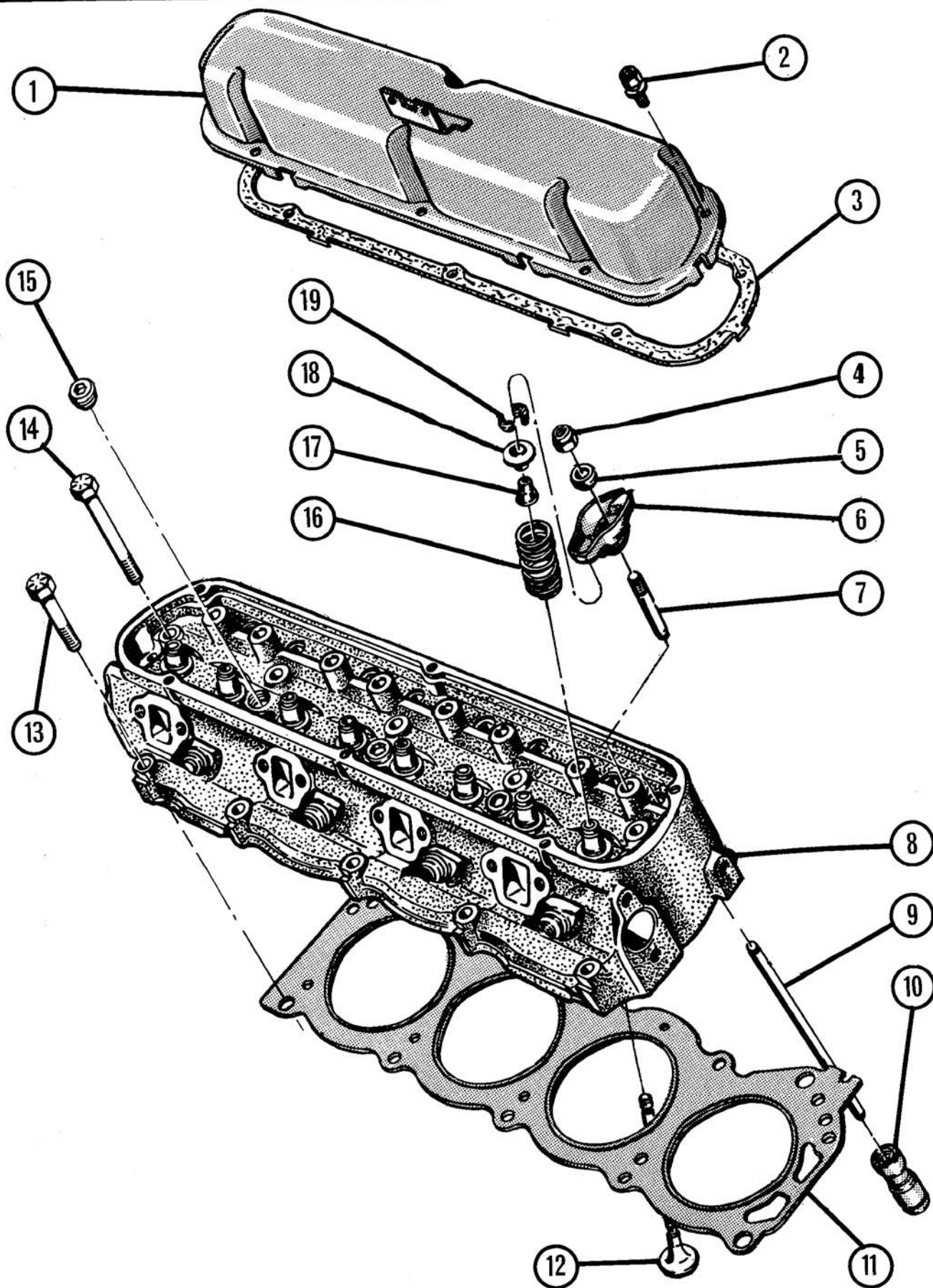


FIGURE # 2

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FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
2	1	3000068	COVER ASSY VALVE ROCKER ARM COVER L.H.	1		1	
2	1	3000069	COVER ASSY VALVE ROCKER ARM COVER R.H.		1		1
2	2	2000001	CAPSCREW W/LOCKWASHER	12	12	12	12
2	3	9008284	GASKET, VALVE ROCKER ARM COVER	2	2	2	2
2	4	3000067	NUT, VALVE ROCKER ARM STUD	16	16	16	16
2	5	3000064	SEAT, VALVE ROCKER ARM FULCRUM	16	16	16	16
2	6	3000391	ARM, VALVE ROCKER	16	16	16	16
2	7	3000390	STUD, VALVE ROCKER ARM SUPPORT, STD.	16	16	16	16
2	7	3000443	STUD, VALVE ROCKER ARM SUPT. .006" O/S	16	16	16	16
2	7	3000444	STUD, VALVE ROCKER ARM SUPT..010" O/S	16	16	16	16
2	7	3000445	STUD, VALVE ROCKER ARM SUPT. .015" O/S	16	16	16	16
2	8	3000298	HEAD ASSEMBLY, CYLINDER			1	1
2	8	3000052	HEAD ASSEMBLY, CYLINDER	1	1		
2	9	3000051	ROD, VALVE PUSH			16	16
2	9	3000300	ROD, VALVE PUSH	16	16		
2	10	3000050	TAPPET ASSEMBLY	16	16	16	16
2	11	3000299	GASKET-CYLINDER HEAD			2	2
2	11	725109	GASKET, CYLINDER HEAD	2	2		
2	12	3000338	INTAKE VALVE STANDARD	8	8	8	8
2	12	3000056	VALVE EXHAUST STD.	8	8	8	8
2	13	3000054	BOLT CYLINDER HEAD 7/16-14 x 5.88	10	10		
2	14	3000055	BOLT CYLINDER HEAD 7/16-14 x 2.26	10	10		
2	15	725135	PLUG, (CLEAN OUT HOLES IN HEAD)	4	4	4	4
REMARKS			TITLE FIG. 2 CYLINDER HEAD ASSY. 302 C.I.D. BASIC ENGINE 351 C.I.D. BASIC ENGINE				

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FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
2	16	725374	SPRING VALVE, INTAKE & EXHAUST	16	16	16	16
2	17	3000065	SEAL, RUBBER, VALVE GUIDE & VALVE STEM	16	16	16	16
2	18	3000060	RETAINER, VALVE SPRING INTAKE	16	16	16	16
2	19	725186	KEY, VALVE SPRING RETAINER	32	32	32	32
2	13	3000532	BOLT CYLINDER HEAD 1/2-13 x 2.50			10	10
2	14	3000533	BOLT CYLINDER HEAD 1/2-13 x 4-5/16			10	10
REMARKS				TITLE FIG. 2 CYLINDER HEAD ASSY. 302 C.I.D. BASIC ENGINE 351 C.I.D. BASIC ENGINE			

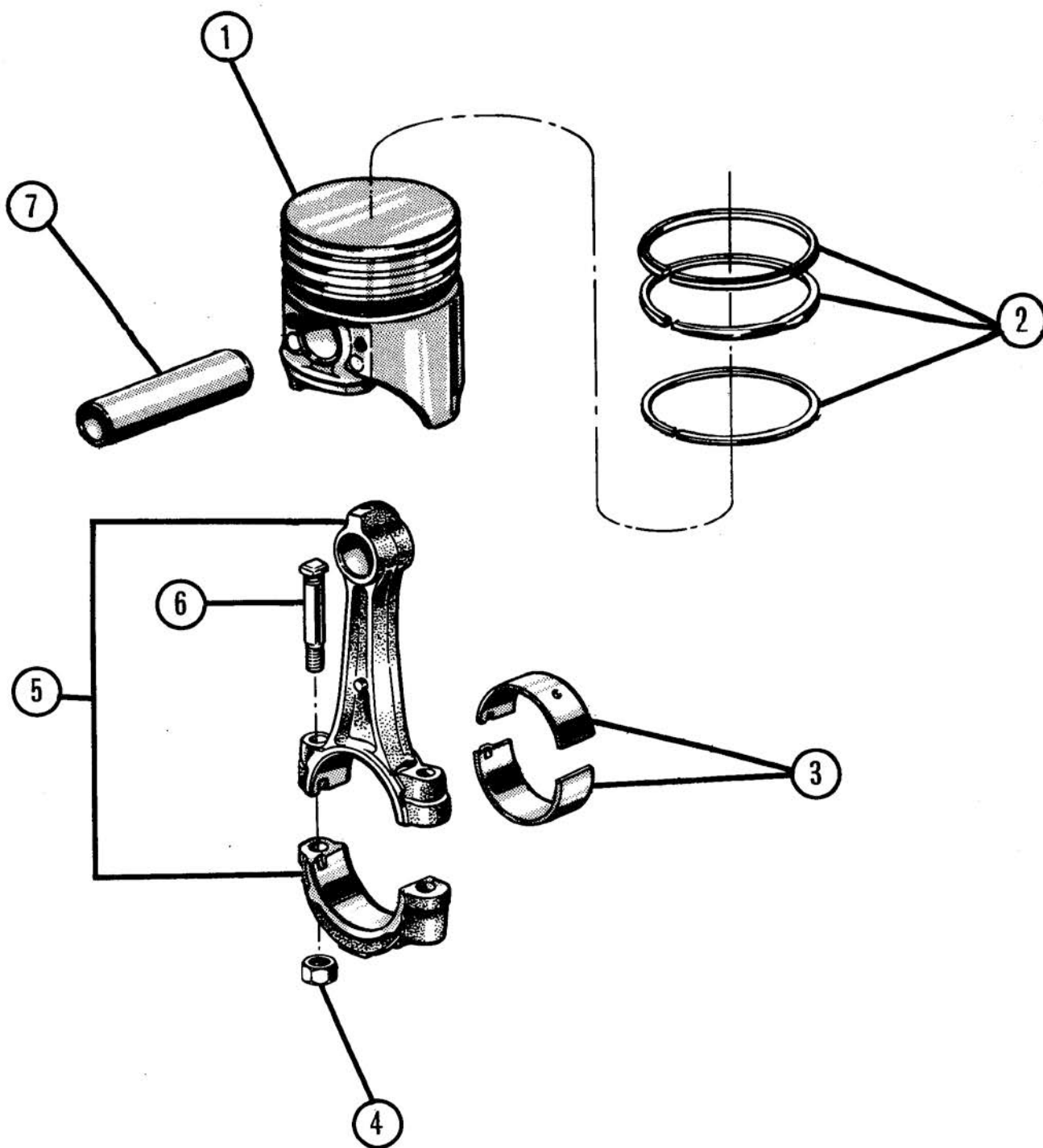


FIGURE # 3

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FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
3	1	3000005	PISTON ASSEMBLY STANDARD 4" DIA.	8	8		
3	1	3000302	PISTON ASSEMBLY STNADARD 3.998" DIA.			8	8
3	1	3000303	PISTON ASSEMBLY STANDARD 3.999" DIA.			8	8
3	1	3000006	PISTON ASSEMBLY .003" O/S	8	8		
3	1	3000304	PISTON ASSEMBLY .003" O/S			8	8
3	2	12370	PISTON RING STD. SET -COMPLETE RE-RINGS	1	1	1	1
3	2	1006630	PISTON RING SET (3) RINGS .020" O/S WILL RE-RING (2) PISTONS	4	4	4	4
3	2	1006631	PISTON RING SET (3) RINGS .030" O/S WILL RE-RING (2) PISTONS	4	4	4	4
3	2	1006632	PISTON RING SET (3) RINGS .040" O/S WILL RE-RING (2) PISTONS	4	4	4	4
3	3	1000481	CONN. ROD BEARING UPPER AND LOWER STD.	16	16		
3	3	3000018	CONN. ROD BEARING UPR.& LWR. .001" U/S	16	16		
3	3	3000019	CONN. ROD BEARING UPR.& LWR. .002" U/S	16	16		
3	3	3000020	CONN. ROD BEARING UPR.& LWR. .010" U/S	16	16		
3	3	3000021	CONN. ROD BEARING UPR.& LWR. .020" U/S	16	16		
3	3	3000022	CONN. ROD BEARING UPR.& LWR. .030" U/S	16	16		
3	3	3000023	CONN. ROD BEARING UPR.& LWR. .040" U/S	16	16		
3	3	3000306	CONNECTING ROD BEARING UPPER & LWR. STD			16	16
3	3	3000307	CONN. ROD BEARING UPR.& LWR. .001" U/S			16	16
3	3	3000308	CONN. ROD BEARING UPR.& LWR. .002" U/S			16	16
3	3	3000309	CONN. ROD BEARING UPR.& LWR. .010" U/S			16	16
3	3	3000310	CONN. ROD BEARING UPR.& LWR. .020" U/S			16	16
REMARKS			TITLE	FIG. 3 PISTON & ROD ASSY. 302 C.I.D. BASIC ENGINE 351 C.I.D. BASIC ENGINE			

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FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
3	3	3000311	CONN. ROD BEARING UPR.& LWR. .030" U/S			16	16
3	4	1000098	NUT-CONNECTING ROD	16	16		
3	4	3000012	NUT-CONNECTING ROD			16	16
3	5	3000015	ROD ASSEMBLY-CONNECTING	8	8		
3	5	3000305	ROD ASSEMBLY-CONNECTING			8	8
3	6	1000097	BOLT-CONNECTING ROD	16	16		
3	6	3000313	BOLT-CONNECTING ROD			16	16
3	7	1000085	PIN PISTON .9121" O.D. .600" I.D. 3.023" LONG	8	8	8	8
3	7	3000488	PIN PISTON .001" O/S	8	8	8	8
3	***	727149	OVERHAUL GASKET KIT			1	1
3	***	1104518	VALVE GRIND SET			1	1
3	***	727116	OVERHAUL GASKET SET	1	1		
3	***	1104509	VALVE GRIND SET	1	1		
REMARKS				TITLE			
*** NOT ILLUSTRATED				FIG. 3 PISTON & ROD ASSY. 302 C.I.D. BASIC ENGINE 351 C.I.D. BASIC ENGINE			

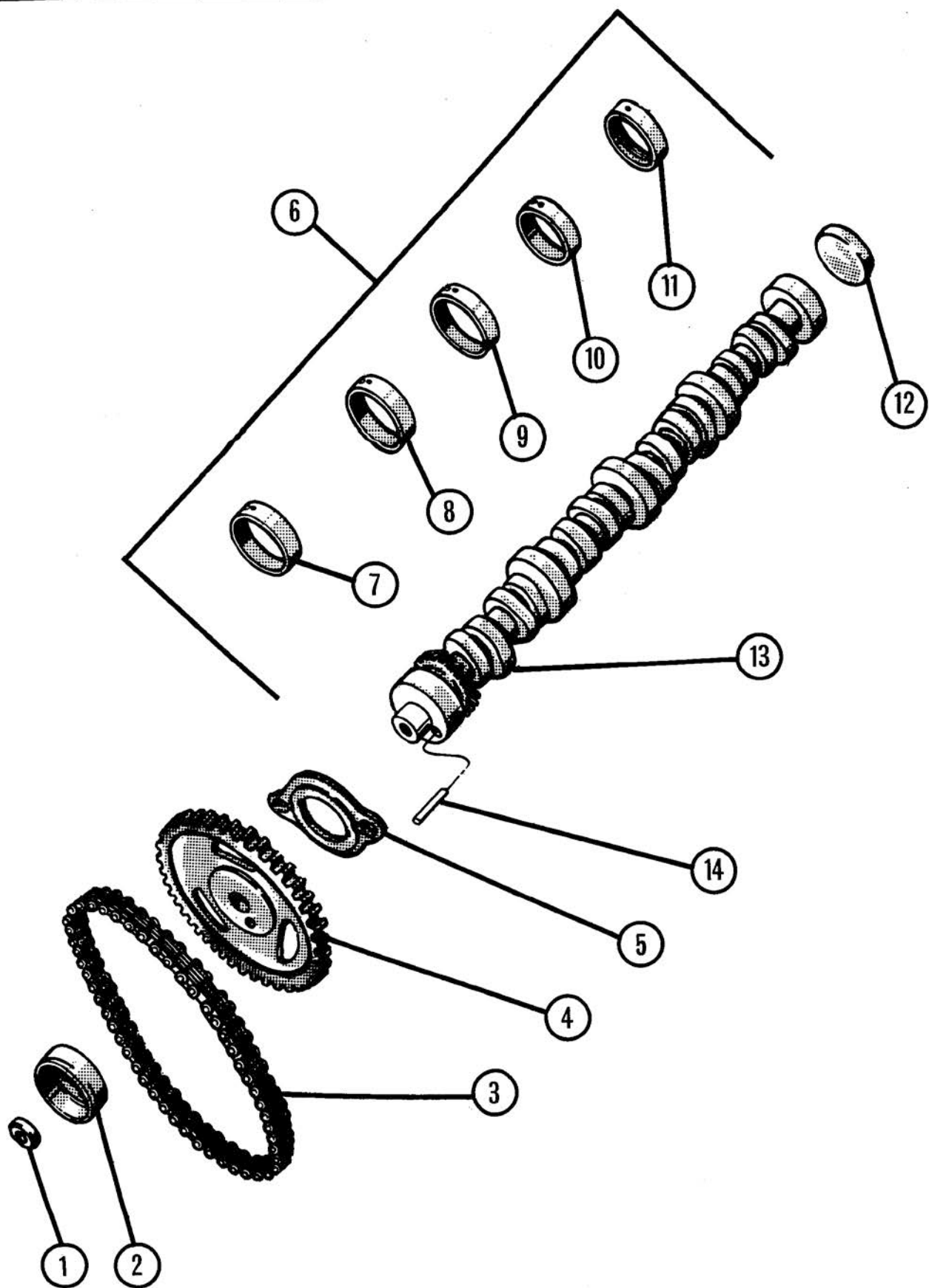


FIGURE #4

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FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
4	1	9008144	WASHER CAMSHAFT SPROCKER 1.20" O.D. .406" I.D. .224" THICK	1	1	1	1
4	2	9008145	ECCENTRIC CAMSHAFT-FUEL PUMP DRIVE (1) .325" DIA. HOLE	1	1	1	1
4	3	3000038	CHAIN TIMING 58 LINKS	1	1	1	1
4	4	3000037	SPROCKET, CAMSHAFT, NYLON, 42 TEETH	1	1	1	1
4	5	3000036	PLATE-CM/SHF THRUST STD. .251" THICK	1	1	1	1
4	5	3000454	PLATE CAMSHAFT THRUST .002" O/S	1	1	1	1
4	5	3000489	PLATE-CAMSHAFT THRUST .004" O/S	1	1	1	1
4	6	1004055	CAMSHAFT BEARING SET STD.	1	1	1	1
4	7	**	CAMSHAFT BEARING FRONT STANDARD	1	1	1	1
4	7	3000384	CAMSHAFT BEARING FRONT .015" U/S	1	1	1	1
4	8	**	CAMSHAFT BEARING FRONT INTERMEDIATE STD	1	1	1	1
4	8	3000385	CM/SHF BEARING FRT. INTER. .015 " U/S	1	1	1	1
4	9	**	CAMSHAFT BEARING CTR STD.	1	1	1	1
4	9	3000386	CAMSHAFT BEARING CTR .015" U/S	1	1	1	1
4	10	**	CAMSHAFT BEARING REAR INTERMEDIATE STD.	1	1	1	1
4	10	3000387	CAMSHAFT BRG. REAR INTER. .015" U/S	1	1	1	1
4	11	**	CAMSHAFT BEARING REAR STD.	1	1	1	1
4	11	3000388	CAMSHAFT BEARING REAR .015" U/S	1	1	1	1
4	12	**	PLUG CAMSHAFT REAR BEARING STD, 2.156" O.D. CUP SHAPED	1	1	1	1
4	13	3000033	CAMSHAFT ASSY. LESS GEAR & HYD. TAPPETS	1		1	
4	13	3000034	CAMSHAFT ASSY. LESS GEAR & HYD. TAPPETS		1		1
4	14	1000820	DOWEL 5/16" x 1-3/8"	1	1	1	1
REMARKS			TITLE				
** ORDER IN SET 1004055 ONLY			FIG. 4 CM/SHF & RELATED ITEMS				
			302 C.I.D. BASIC ENGINE				
			351 C.I.D. BASIC ENGINE				

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FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
4	*	3000143	BOLT 1/4" x 20 x 5/8" PLATE TO BLOCK	2	2	2	2
4	*	9008147	BOLT 3/8" 16 x 1/2 ECCENTRIC SPROCKET TO CAMSHAFT	1	1	1	1
REMARKS				TITLE			
* NOT SHOWN				FIG. 4 CM/SHF & RELATED ITEMS 302 C.I.D. BASIC ENGINE 351 C.I.D. BASIC ENGINE			

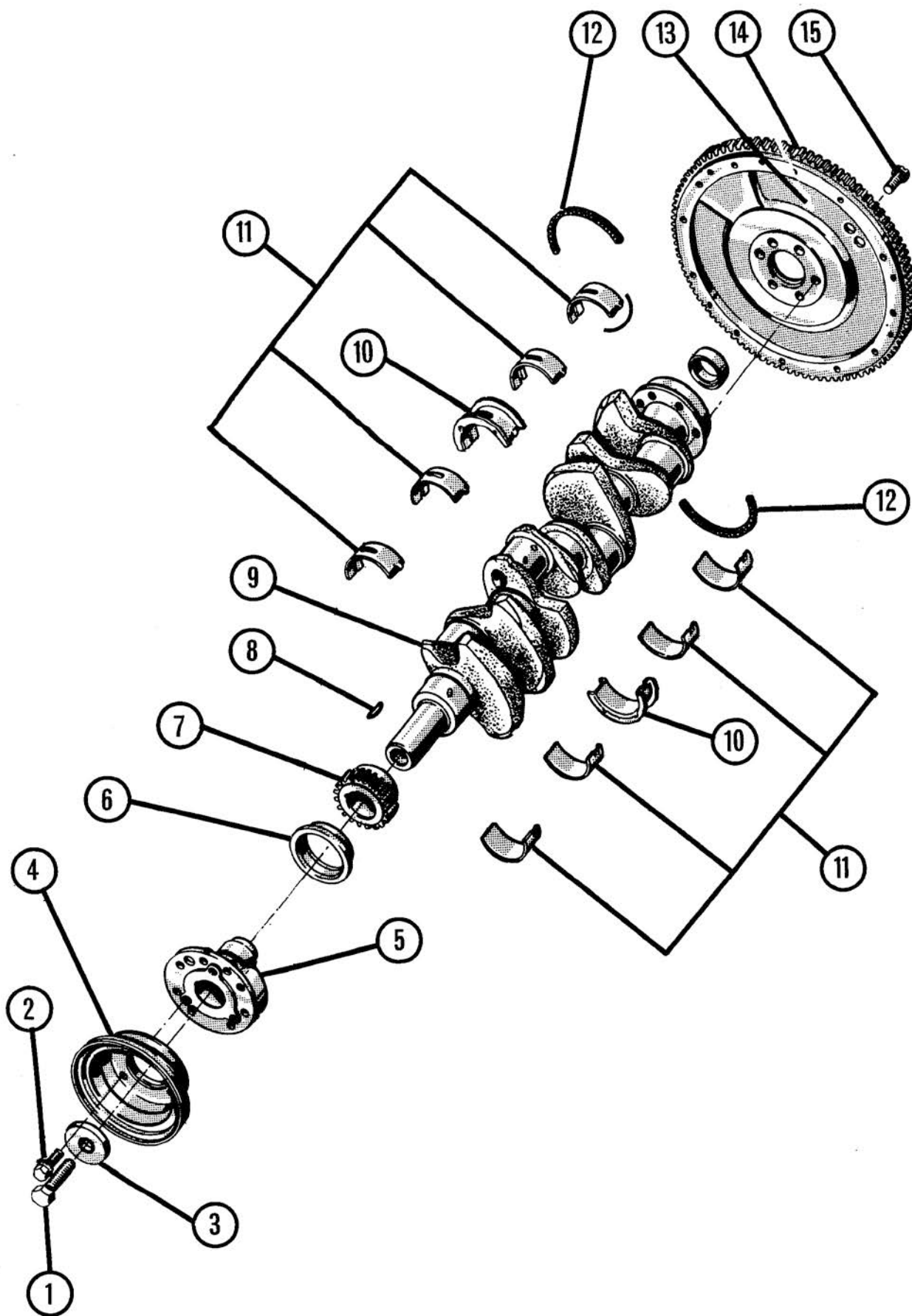


FIGURE # 5

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FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
5	1	3000382	BOLT 5/8"-18 x 2" HEX HEAD DAMPER WASHER TO CRANKSHAFT	3	3	3	3
5	2	3000044	BOLT & WASHER CRANKSHAFT PULLEY OR DAMPENER RETAINING 1.76" O.D. .66" I.D. .212" THICK	3	3	3	3
5	3	725197	WASHER, DAMPER TO CRANKSHAFT	1	1	1	1
5	4	725090	PULLEY, CRANKSHAFT (SINGLE GROOVE)	1	1	1	1
5	5	3000042	DAMPER ASSY. 1/2" DIA. 3-7/32" LG.	1	1		
5	5	3000319	DAMPER ASSY. 3/8" DIA. 3-1/32" LG.			1	1
5	6	3000031	SLINGER, CRANKSHAFT, OIL	1	1		
5	7	3000026	SPROCKET, CRANKSHAFT, 21 TEETH	1	1	1	1
5	8	3000476	KEY, DAMPER TO CRANKSHAFT 3/16"x 1-13/32"	1	1		
5	8	3000534	KEY, DAMPER TO CRANKSHAFT 3/16 x 1-3/4			1	1
5	9	3000024	CRANKSHAFT ASSEMBLY	1			
5	9	3000025	CRANKSHAFT ASSEMBLY		1		
5	9	3000316	CRANKSHAFT ASSEMBLY			1	
5	9	3000317	CRANKSHAFT ASSEMBLY				1
5	10	3000028	MAIN BEARING, LOWER, STD., CTR	1	1		
5	10	3000027	MAIN BEARING, UPPER STD., CTR	1	1		
5	10	3000455	MAIN BEARING UPR. .001" O/S CTR.	1	1		
5	10	3000465	MAIN BEARING, LWR. .001" O/S CTR.	1	1		
5	10	3000465	MAIN BEARING, UPR. .002" O/S CTR.	1	1		
5	10	3000466	MAIN BEARING LWR. .002" O/S CTR.	1	1		
5	10	3000457	MAIN BEARING UPR. .010" O/S CTR.	1	1		
REMARKS			TITLE	FIG. 5 CR/SHF & RELATED ITEMS 302 C.I.D. BASIC ENGINE 351 C.I.D. BASIC ENGINE			

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FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
5	10	3000467	MAIN BEARING LWR. .010" O/S CTR.	1	1		
5	10	3000458	MAIN BEARING UPR. .020" O/S CTR.	1	1		
5	10	3000468	MAIN BEARING LWR. .020" O/S CTR.	1	1		
5	10	3000459	MAIN BEARING UPR. .030" O/S CTR.	1	1		
5	10	3000469	MAIN BEARING LWR. .030" O/S CTR.	1	1		
5	10	3000322	MAIN BEARING UPR. & LWR. STD. CTR.			1	1
5	10	3000324	MAIN BEARING UPR.& LWR. CTR. .001" O/S			1	1
5	10	3000326	MAIN BEARING UPR.& LWR. CTR. .002" O/S			1	1
5	10	3000328	MAIN BEARING UPR.& LWR. CTR. .010" O/S			1	1
5	10	3000330	MAIN BEARING UPR.& LWR. CTR. .020" O/S			1	1
5	10	3000332	MAIN BEARING UPR.& LWR. CTR. .030" O/S			1	1
5	11	3000029	MAIN BRG. UPR. STD. FRT., FRONT INTER. REAR INTERMEDIATE AND REAR	1	1		
5	11	3000460	MAIN BRG. UPR. .001" O/S FRT., FRONT INTERMEDIATE, REAR INTERMEDIATE, & REAR	1	1		
5	11	3000461	MAIN BRG. UPR. .002" O/S FRT., FRONT INTERMEDIATE, REAR INTERMEDIATE & REAR	1	1		
5	11	3000462	MAIN BRG. UPR. .010" O/S FRT., FRONT INTERMEDIATE, REAR INTERMEDIATE, AND REAR	1	1		
5	11	3000463	MAIN BRG. UPR. .020" O/S FRT., FRONT INTERMEDIATE, REAR INTERMEDIATE & REAR	1	1		
5	11	3000464	MAIN BRG. UPR. .030" O/S FRT., FRONT INTERMEDIATE, REAR INTERMEDIATE & REAR	1	1		
5	11	3000030	MAIN BRG. LWR. STD. .0959" FRT., FRONT INTERMEDIATE, REAR INTERMEDIATE & REAR	1	1		
5	11	3000470	MAIN BRG. LWR. .001" O/S FRT., FRONT INTERMEDIATE, REAR INTERMEDIATE & REAR	1	1		
REMARKS			TITLE	FIG. 5 CR/SHF & RELATED ITEMS			
				302 C.I.D. BASIC ENGINE			
				351 C.I.D. BASIC ENGINE			

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FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
5	11	3000471	MAIN BRG. LWR. .002" O/S FRONT, FRONT INTERMEDIATE, REAR INTERMEDIATE & REAR	1	1		
5	11	3000472	MAIN BRG. LWR. .010" O/S FRONT, FRONT INTERMEDIATE, REAR INTERMEDIATE & REAR	1	1		
5	11	3000473	MAIN BRG. LWR. .020" O/S FRONT, FRONT INTERMEDIATE, REAR INTERMEDIATE & REAR	1	1		
5	11	3000474	MAIN BRG. LWR. .030" O/S FRONT, FRONT INTERMEDIATE, REAR INTERMEDIATE & REAR	1	1		
5	11	3000321	MAIN BRG. UPR. & LWR. STD, FRT, FRT. INTERMEDIATE, REAR INTERMEDIATE & REAR			1	1
5	11	3000323	MAIN BRG. UPR. & LWR. .001" O/S FRONT FRONT INTER. , REAR INTER. & REAR			1	1
5	11	3000325	MAIN BRG. UPR. & LWR. .002" O/S FRONT FRONT INTER. REAR INTER. & REAR			1	1
5	11	3000327	MAIN BRG. .010" O/S UPR. & LWR. FRONT FRONT INTER. REAR INTER. & REAR			1	1
5	11	3000329	MAIN BRG. .020" O/S UPR. & LWR. FRONT FRONT INTER. REAR INTER. & REAR			1	1
5	11	3000331	MAIN BRG. .030" O/S UPR. & LWR. FRONT FRONT INTER. REAR INTER. & REAR			1	1
5	11	3000389	CRANKSHAFT MAIN BEARING KIT STD.	1	1		
5	11	3000490	CRANKSHAFT MAIN BEARING KIT .001" O/S	1	1		
5	11	3000491	CRANKSHAFT MAIN BEARING KIT .002" O/S	1	1		
5	11	3000492	CRANKSHAFT MAIN BEARING KIT .010" O/S	1	1		
5	11	3000493	CRANKSHAFT MAIN BEARING KIT .020" O/S	1	1		
5	11	3000494	CRANKSHAFT MAIN BEARING KIT .030" O/S	1	1		
5	11	3000500	CRANKSHAFT MAIN BEARING KIT STD.			1	1
5	11	3000495	CRANKSHAFT MAIN BEARING KIT .001" O/S			1	1
REMARKS			TITLE	FIG. 5 CR/SHF & RELATED ITEMS 302 C.I.D. BASIC ENGINE 351 C.I.D. BASIC ENGINE			

THERMO ELECTRON ENGINE CORP.

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FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
5	11	3000496	CRANKSHAFT MAIN BEARING KIT .002" O/S			1	1
5	11	3000497	CRANKSHAFT MAIN BEARING KIT .010" O/S			1	1
5	11	3000498	CRANKSHAFT MAIN BEARING KIT .020" O/S			1	1
5	11	3000499	CRANKSHAFT MAIN BEARING KIT .030" O/S			1	1
5	12	3000354	SEAL, CRANKSHAFT, REAR OIL LH ROTATION			2	
5	12	3000355	SEAL, CRANKSHAFT REAR OIL RH ROTATION				2
5	12	1104455	SEAL, CRANKSHAFT REAR OIL LH ROTATION	2			
5	12	3000269	SEAL, CRANKSHAFT REAR OIL RH ROTATION		2		
5	13	3000047	FLYWHEEL & RING GEAR ASSEMBLY	1	1	1	1
5	14	1000511	GEAR, FLYWHEEL RING	1	1	1	1
5	15	2000152	BOLT, FLYWHEEL TO CRANKSHAFT	6	6	6	6
REMARKS			TITLE FIG. 5 CR/SHF & RELATED ITEMS 302 C.I.D. BASIC ENGINE 351 C.I.D. BASIC ENGINE				

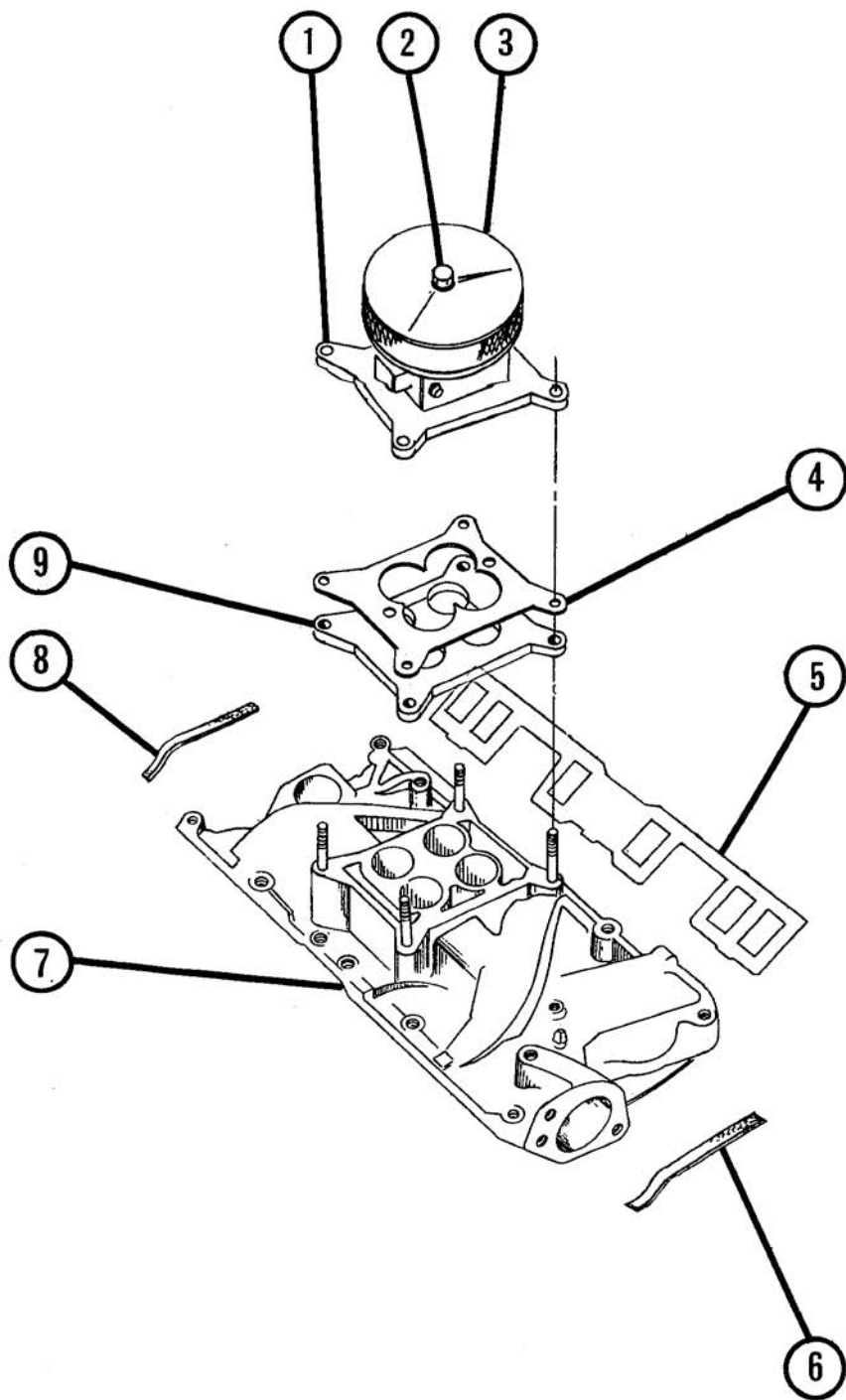


FIGURE # 6

THERMO ELECTRON ENGINE CORP.

040172

FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
6	1	3000150	HOLLEY CARBURETOR	1	1		
6	1	3000291	HOLLEY CARBURETOR			1	1
6	2	179803	HEX BOLT, FLAME ARRESTOR ATTACHING	1	1	1	1
6	3	1000145	ASSEMBLY FLAME ARRESTOR	1	1	1	1
6	4	9004095	GASKET, CARB. TO SPACER (1), SPACER TO INTAKE MANIFOLD (1)	2	2	2	2
6	5	3000341	GASKET INTAKE MANIFOLD TO CYLINDER HD.	2	2	2	2
6	6	1000135	SEAL, INTAKE MANIFOLD TO CYL. BLK. RR.	1	1		
6	6	3000290	SEAL, INTAKE MANIFOLD TO CYL. BLK. RR.			1	1
6	7	1104216	MANIFOLD ASSEMBLY, INTAKE	1	1		
6	7	3000282	MANIFOLD ASSEMBLY, INTAKE			1	1
6	6	3000289	SEAL, INTAKE MANIFOLD TO CYL. BLK. FRT.			1	1
6	8	1000137	SEAL, INTAKE MANIFOLD TO CYL. BLK. FRT.	1	1		
6	9	1000540	SPACER, CARBURETOR TO INTAKE MANIFOLD	1	1	1	1
6	***	3000252	HOLLEY CARBURETOR OVERHAUL KIT	1	1		
6	***	3000295	HOLLEY CARBURETOR OVERHAUL KIT			1	1
6	***	3000293	HOLLEY CARBURETOR GASKET KIT	1	1		
6	***	3000294	HOLLEY CARBURETOR GASKET KIT			1	1
REMARKS			TITLE FIG. 6 INTAKE MANIFOLD SYSTEM				
*** NOT ILLUSTRATED			302 C.I.D. BASIC ENGINE				
			351 C.I.D. BASIC ENGINE				

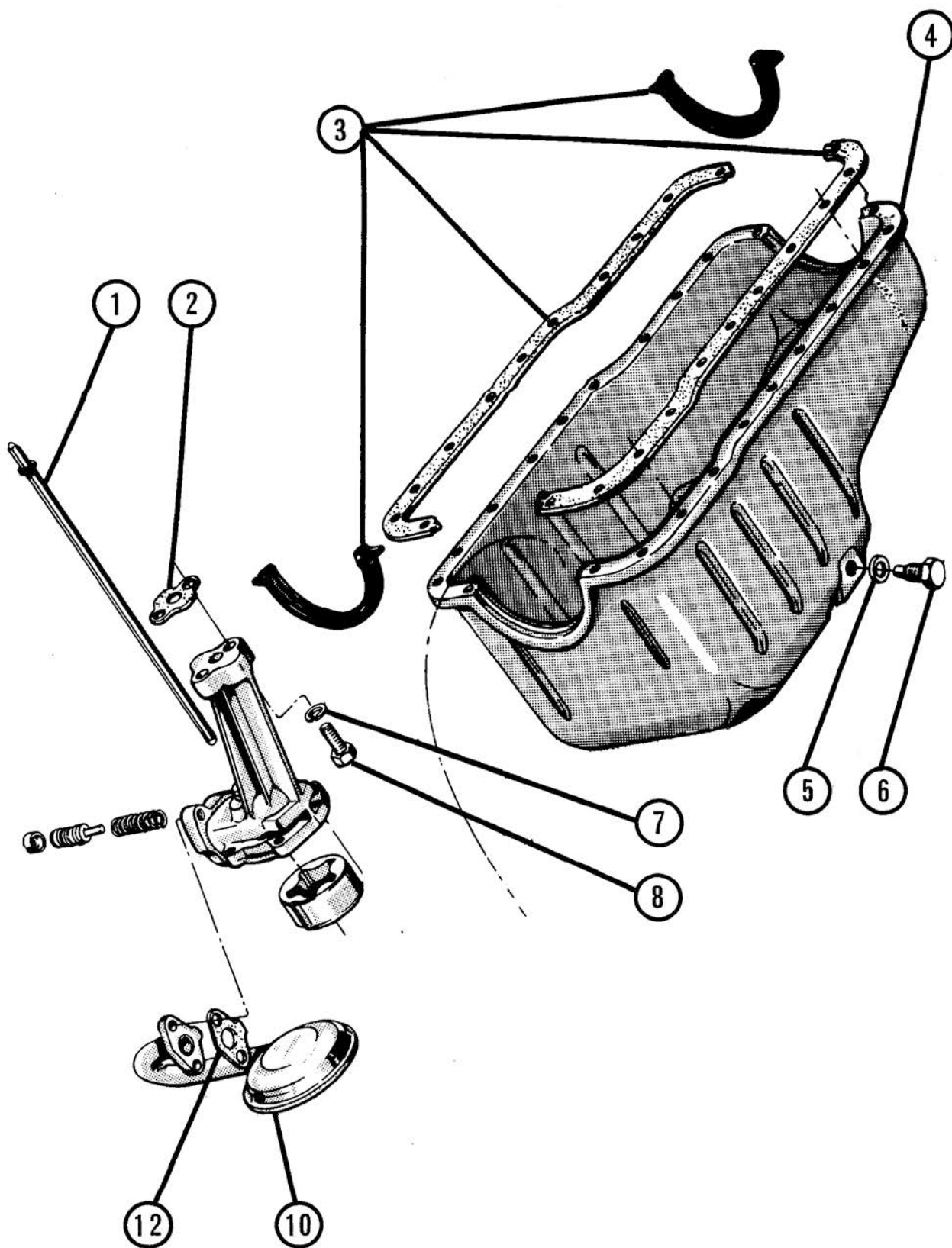


FIGURE #7

THERMO ELECTRON ENGINE CORP.

040172

FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
7	1	3000344	SHAFT-OIL PUMP INTER. INCLUDES RET.RING			1	1
7	1	9002314	SHAFT-OIL PUMP INTER. INCLUDES RET.RING	1	1		
7	2	9002315	GASKET-OIL PUMP BLOCK .010" THICK	1	1		
7	2	3000348	GASKET-OIL PUMP BLOCK .010" THICK			1	1
7	3	3000089	KIT-OIL PAN GASKET	1	1		
7	3	3000358	KIT-OIL PAN GASKET			1	1
7	3	***	SEAL-OIL PAN FRONT	1	1	1	1
7	3	***	SEAL-OIL PAN FRONT & REAR	1	1		
7	3	***	SEAL-OIL PAN REAR	1	1		
7	3	***	GASKET, OIL PAN L.H.	1	1		
7	3	***	GASKET, OIL PAN R.H.	1	1		
7	4	725070	PAN ASSEMBLY-ENGINE OIL-CAST IRON			1	1
7	5	3000392	GASKET ENGINE OIL PAN DRAIN PLUG	1	1	1	1
7	5	***	GASKET-OIL PAN DRAIN PLUG				
7	6	3000356	PLUG-ENG. OIL PAN INCLUDES GASKET, C2AZ6734A	1	1	1	1
7	7	3000379	WASHER 3/8"	1	1	1	1
7	8	3000378	BOLT-PUMP TO BLOCK	2	2	2	2
7	10	1101424	SCREEN-TUBE & COVER ASSY.-OIL PUMP	1	1		
7	10	1104444	SCREEN-TUBE & COVER ASSY.-OIL PUMP			1	1
7	12	9002019	GASKET-OIL PUMP SCR N CVR & INLET TUBE	1	1		
7	12	3000346	GASKET-OIL PUMP SCR N CVR & INLET TUBE			1	1
7	16	9002313	PUMP ASSEMBLY, ENGINE OIL	1	1		
7	16	3000342	PUMP ASSEMBLY, ENGINE OIL			1	1
REMARKS			TITLE				
*** COMPONENT OF KIT 3000358 (ORDER AS SET) 3000089			FIG. 7 OIL PUMP & OIL PAN 302 C.I.D. BASIC ENGINE 351 C.I.D. BASIC ENGINE				

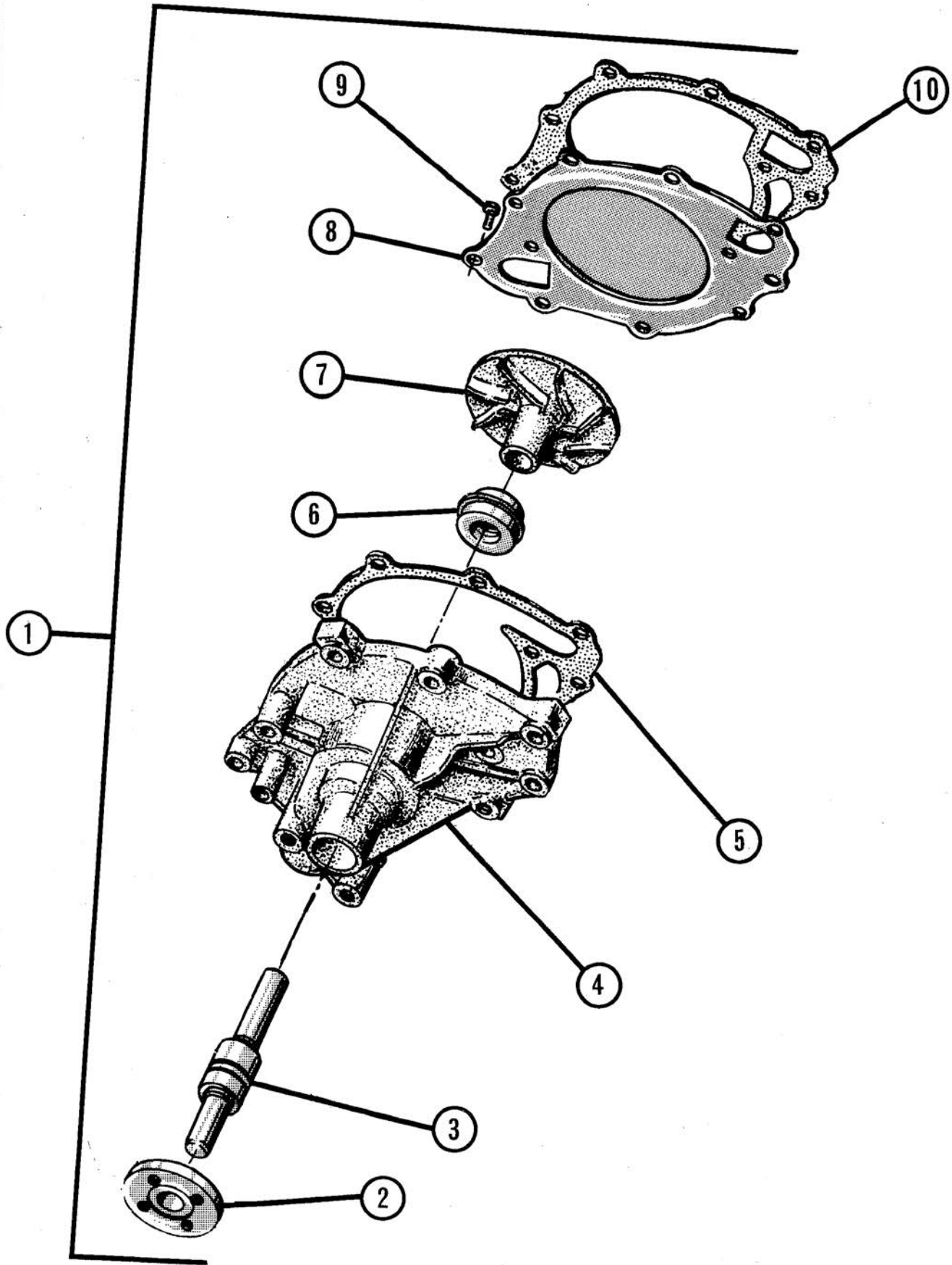


FIGURE #8

THERMO ELECTRON ENGINE CORP.

040172

FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
8	1	3000401	PUMP ASSEMBLY, WATER BI-DIRECTIONAL	1	1	1	1
8	2	3000265	HUB, WATER PUMP PULLEY	1	1	1	1
8	3	3000266	BEARING & SLINGER ASSEMBLY	1	1	1	1
8	5	3000417	GASKET, WATER PUMP COVER		1		
8	5	3000261	GASKET, WATER PUMP COVER	1			
8	5	3000362	GASKET, WATER PUMP COVER			1	1
8	6	3000263	SEAL ASSEMBLY, WATER PUMP	1	1	1	1
8	7	3000259	IMPELLER, WATER PUMP	1			
8	7	3000413	IMPELLER, WATER PUMP		1		
8	7	3000363	IMPELLER, WATER PUMP			1	1
8	8	3000301	CAPSCREW, PUMP COVER TO PUMP	2	2	2	2
8	9	3000258	COVER, WATER PUMP	1	1		
8	9	3000361	COVER, WATER PUMP			1	1
8	10	3000400	GASKET, WATER PUMP	1	1	1	1
REMARKS *MUST SPECIFY L OR R HAND WHEN ORDERING PARTS				TITLE FIG.8 CENTRIFUGAL WATER PUMP 302 C.I.D. BASIC ENGINE 351 C.I.D. BASIC ENGINE			

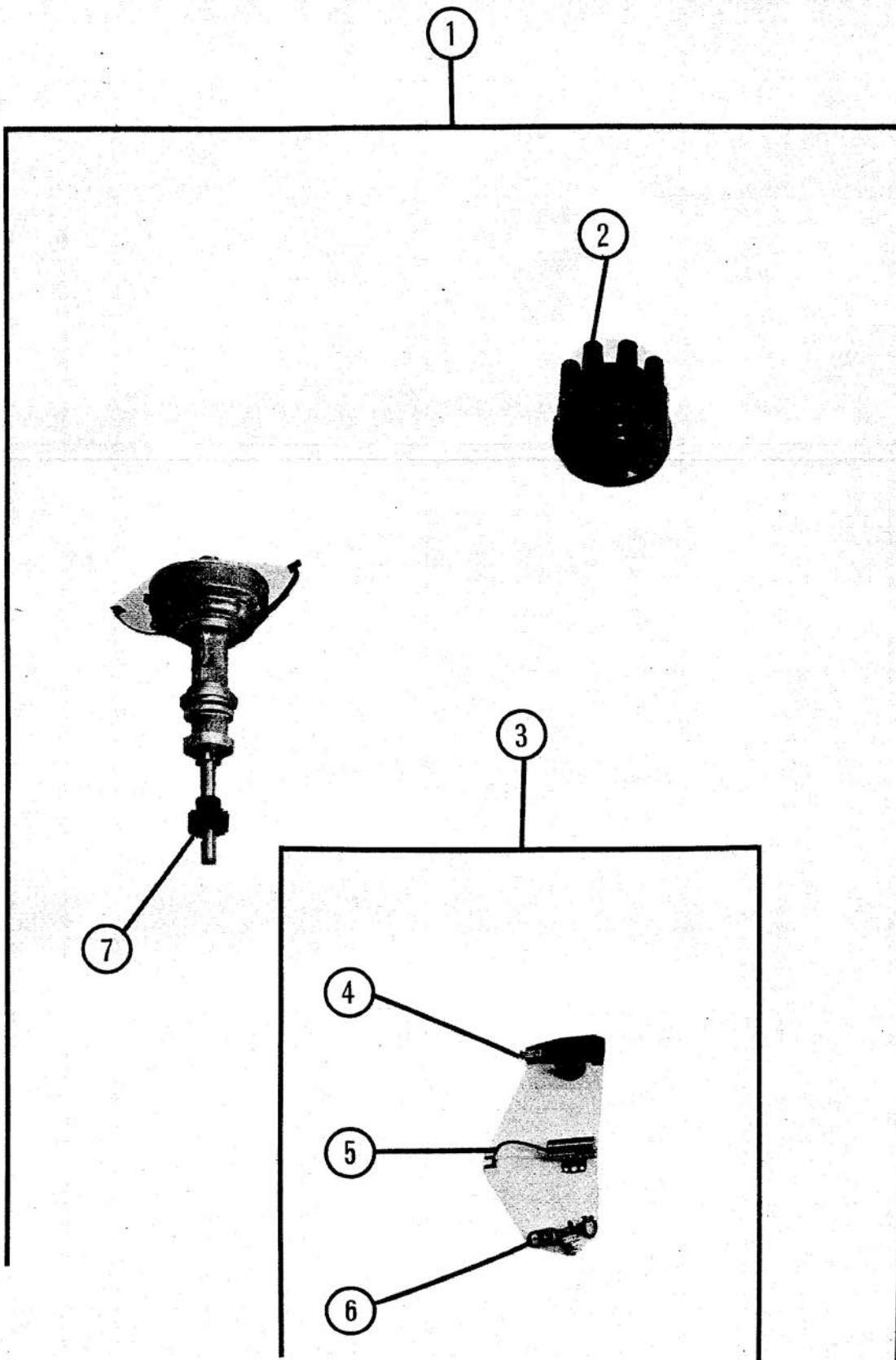


FIGURE #9

THERMO ELECTRON ENGINE CORP.

040172

FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
9	1	3000117	DISTRIBUTOR ASSEMBLY (AUTOLITE)	1			
9	1	3000118	DISTRIBUTOR ASSEMBLY (AUTOLITE)		1		
9	1	3000376	DISTRIBUTOR ASSEMBLY (AUTOLITE)			1	
9	1	3000375	DISTRIBUTOR ASSEMBLY (AUTOLITE)				1
9	2	3000121	DISTRIBUTOR CAP	1	1		
9	2	3000374	DISTRIBUTOR CAP			1	1
9	3	3000120	REPAIR KIT, DIST. CONSISTING OF POINTS ROTOR & CONDENSER	1	1	1	1
9	4	3000122	ROTOR, DISTRIBUTOR	1	1	1	1
9	5	3000123	CONDENSER, DISTRIBUTOR	1	1	1	1
9	6	3000124	POINT SET, DIST. ARM & CONTACT	1	1	1	1
9	7	3000127	GEAR, DISTRIBUTOR DRIVEN		1		
9	7	3000126	GEAR, DISTRIBUTOR DRIVEN	1			
9	7	3000520	GEAR, DISTRIBUTOR DRIVEN			1	
9	7	3000524	GEAR, DISTRIBUTOR DRIVEN				1
REMARKS			TITLE FIG. 9 DISTRIBUTOR (AUTOLITE) 302 C.I.D. BASIC ENGINE 351 C.I.D. BASIC ENGINE				

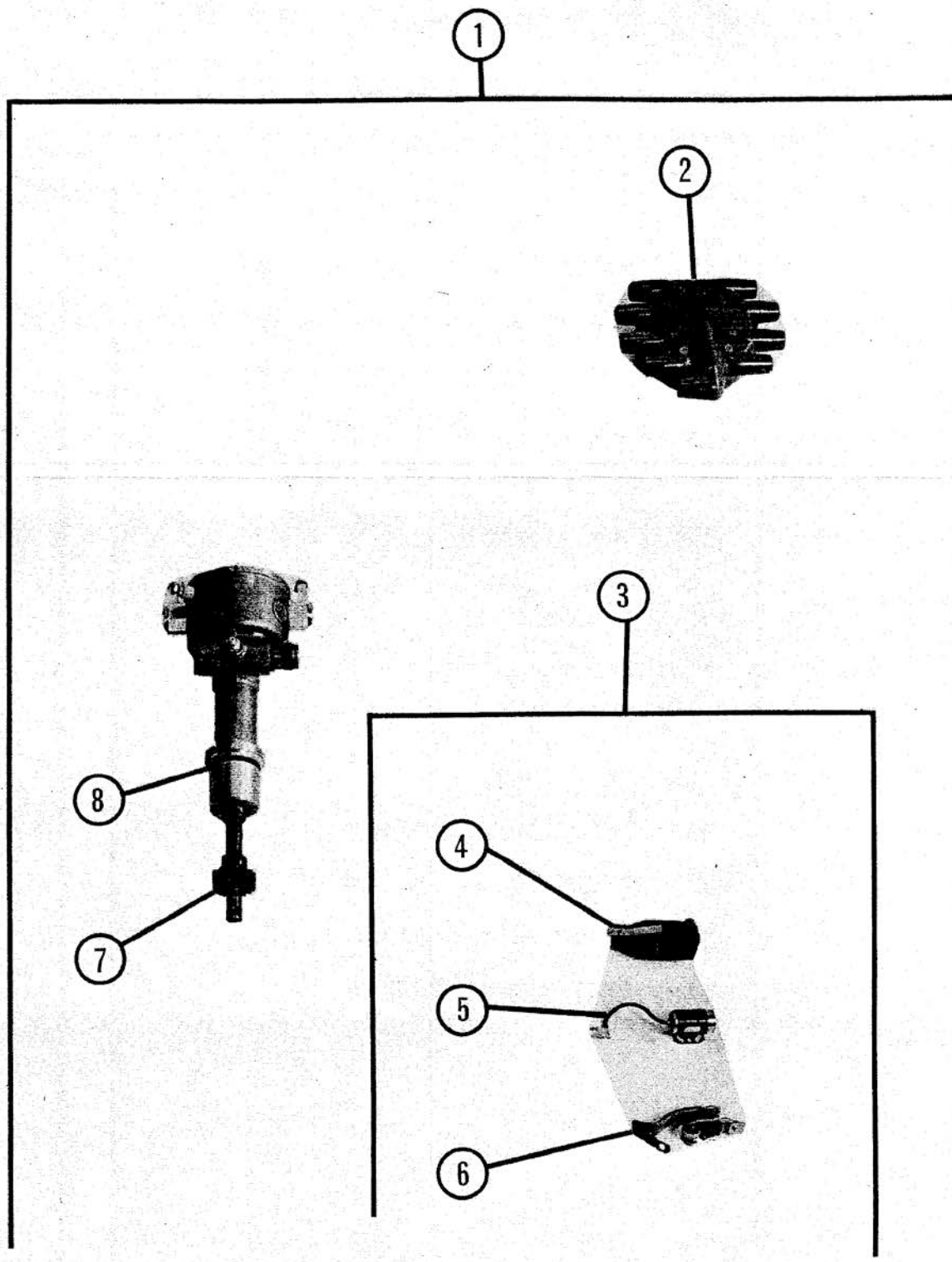


FIGURE # 10

THERMO ELECTRON ENGINE CORP.

040172

FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
10	1	1104102	DISTRIBUTOR ASSEMBLY (MALLORY) W/TACH	1	-		
10	1	1104103	DISTRIBUTOR ASSEMBLY (MALLORY) W/TACH	-	1		
10	2	1003317	DISTRIBUTOR CAP	1	1		
10	3	3000515	REPAIR KIT, DISTRIBUTOR	1	1		
10	4	1003318	ROTOR	1	1		
10	5	1003310	CONDENSER, DISTRIBUTOR	1	1		
10	6	1003307	BREAKER ARM, DISTRIBUTOR	1	1		
10	7	1003352	GEAR, HELIX, (L.H. ROTATION)	1	-		
10	7	1003353	GEAR, HELIX (R.H. ROTATION)	-	1		
10	8	1003291	"O" RING	1	1		
	*	727139	EMERGENCY KIT	1	1		
	*	727138	MAJOR ON BOARD KIT	1	1		
REMARKS				TITLE FIG.10 DIST.(MALLORY FLAT CAP) 302 C.I.D. BASIC ENGINE 351 C.I.D. BASIC ENGINE			

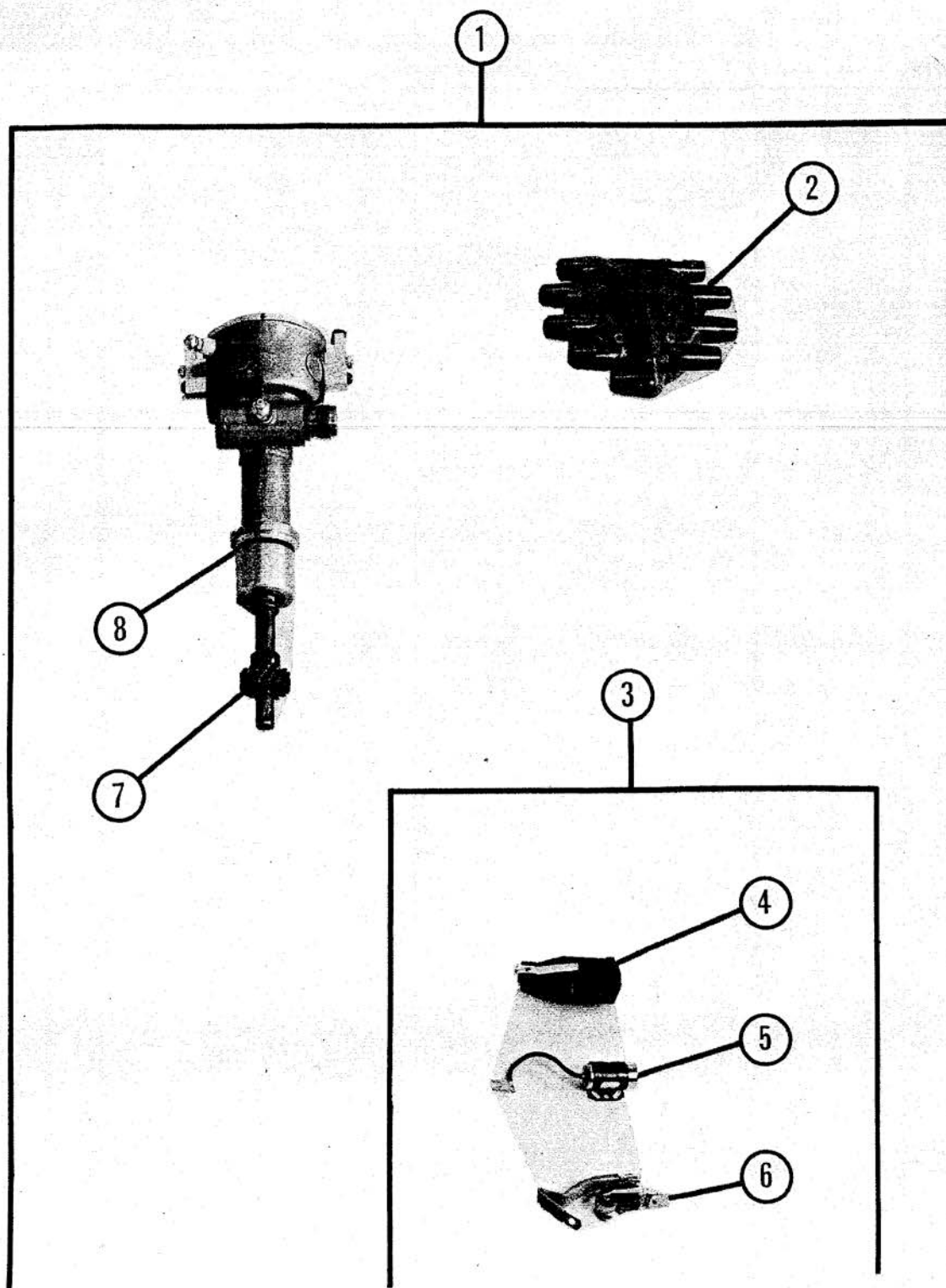


FIGURE # 11

THERMO ELECTRON ENGINE CORP.

040172

FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
11	1	1104450	DIST. ASSY STD. ROTATION (FLAT CAP TYPE W/TACH DRIVE			1	-
11	1	1104451	DIST. ASSY REVERSE ROTATION(FLAT CAP TYPE W/TACH DRIVE)			-	1
11	2	1003317	DISTRIBUTOR CAP (FLAT TYPE)			1	1
11	3	3000515	REPAIR KIT, DIST.(POINTS, ROTOR & CNDSR)			1	1
11	4	1003318	ROTOR, DISTRIBUTOR			1	1
11	5	1003310	CONDENSER, DISTRIBUTOR			1	1
11	6	1003307	BREAKER ARM, DISTRIBUTOR			1	1
11	7	3000520	GEAR, HELIX (STANDARD ROTATION)			1	-
11	7	3000524	GEAR, HELIX (REVERSE ROTATION)			-	1
11	8	1003291	"O" RING			1	1
	*	727139	EMERGENCY KIT			1	1
	*	727138	MAJOR ON BOARD KIT			1	1
REMARKS			TITLE				
* NOT SHOWN			FIG. 11 DIST.(MALLORY FLAT CAP)				
			302 C.I.D. BASIC ENGINE				
			351 C.I.D. BASIC ENGINE				

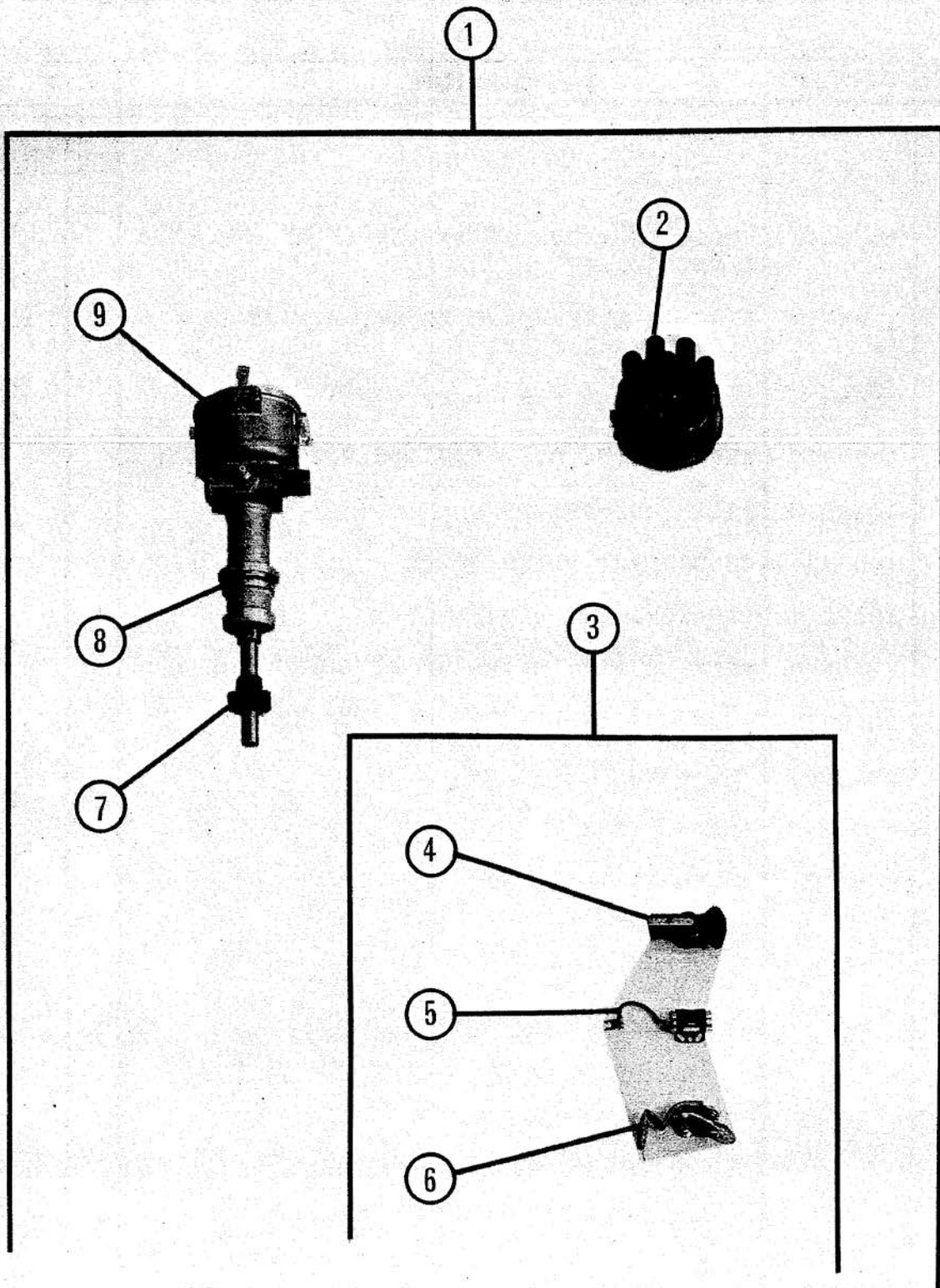


FIGURE # 12

THERMO ELECTRON ENGINE CORP.

040172

FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
12	1	1104495	DIST. ASSY (FLAME ARRESTOR TYPE)W/TACH			1	-
12	1	1104496	DIST. ASSY (FLAME ARRESTOR TYPE)W/TACH			-	1
12	2	20222	STACK CAP			1	1
12	3	3000506	REPAIR KIT (POINTS, ROTOR & CONDENSER)			1	1
12	4	20223	ROTOR, DISTRIBUTOR			1	1
12	5	1003310	CONDENSER, DISTRIBUTOR			1	1
12	6	1003307	BREAKER ARM, DISTRIBUTOR			1	1
12	7	3000525	GEAR, HELIX(STD ROT. ASSY. 1104495)			1	
12	7	3000524	GEAR, HELIX(OPP ROT. ASSY. 1104496)				1
12	8	1003291	"O" RING			1	1
12	9	3000505	GASKET, DISTRIBUTOR CAP			1	1
	*	37055	CLIP			2	2
	*	37056	SCREW			2	2
	*	727140	EMERGENCY KIT			1	1
	*	727137	MAJOR ON BOARD KIT			1	1
		727141	SPRAY PAINT ORANGE				
REMARKS			TITLE				
* NOT SHOWN			FIG. 12 DIST.MALLORY STACK CAP				
			302 C.I.D. BASIC ENGINE				
			351 C.I.D. BASIC ENGINE				

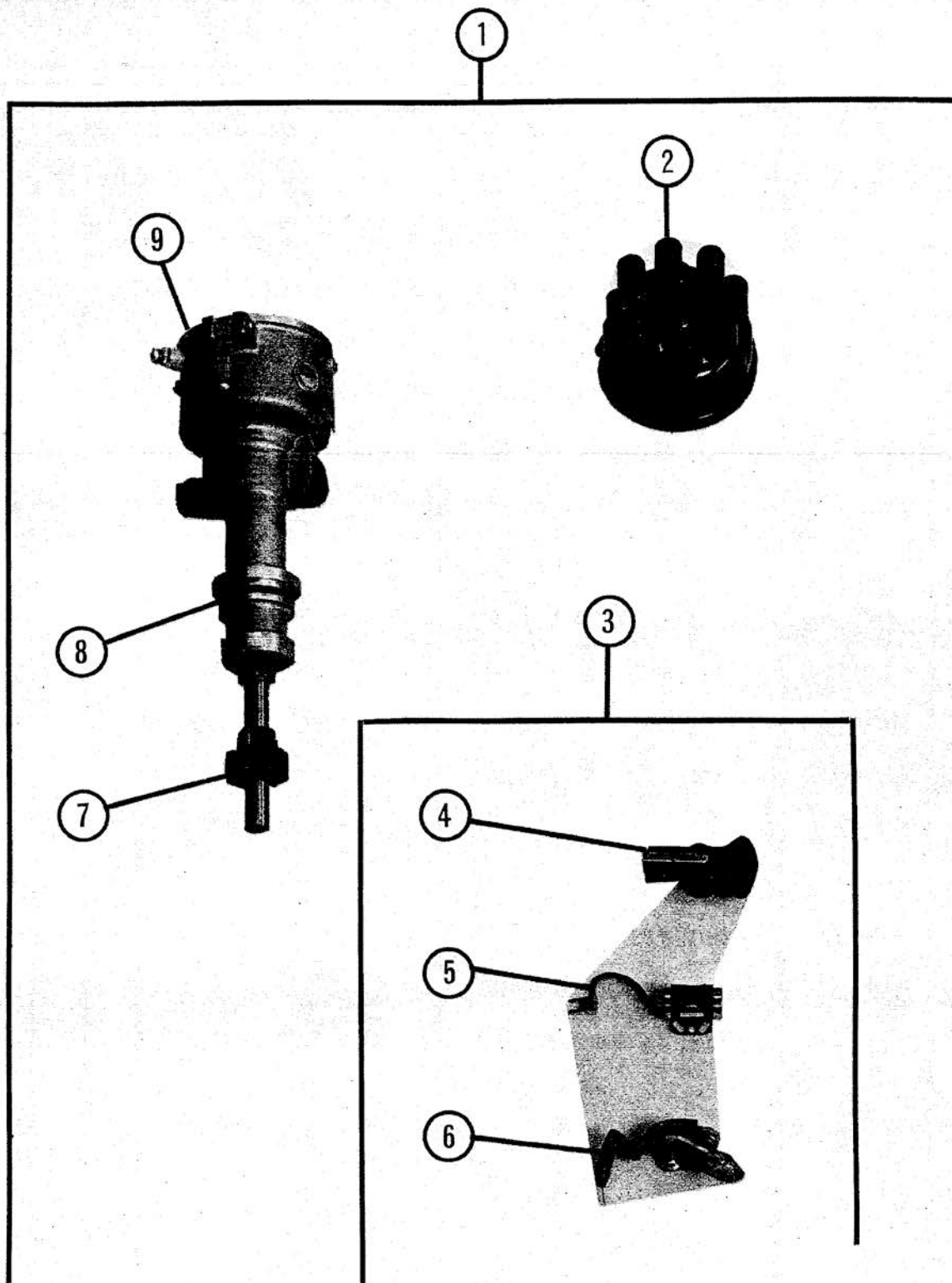


FIGURE # 13

THERMO ELECTRON ENGINE CORP

040172

FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
13	1	1104511	DISTRIBUTOR ASSEMBLY (MALLORY)	1			
13	1	1104510	DISTRIBUTOR ASSEMBLY (MALLORY)		1		
13	2	20222	DISTRIBUTOR CAP (STACK TYPE)	1	1		
13	3	3000506	REPAIR KIT (ROTOR, POINTS & CONDENSER)	1	1		
13	4	20223	ROTOR, DISTRIBUTOR	1	1		
13	5	1003310	CONDENSER, DISTRIBUTOR	1	1		
13	6	1003307	BREAKER ARM, DISTRIBUTOR	1	1		
13	7	1003352	HELIX GEAR	1			
13	7	1003353	HELIX GEAR		1		
13	8	1003291	"O" RING	1	1		
13	9	3000505	GASKET, DISTRIBUTOR CAP	1	1		
	*	37055	SCREW FOR CLIP	2	2		
	*	37056	CLIP FOR CAP	2	2		
	*	727140	EMERGENCY KIT	1	1		
	*	727137	MAJOR ON BOARD KIT	1	1		
REMARKS				TITLE			
* NOT SHOWN				FIG. 13 DIST.MALLORY STACK CAP			
				302 C.I.D. BASIC ENGINE			
				351 C.I.D. BASIC ENGINE			

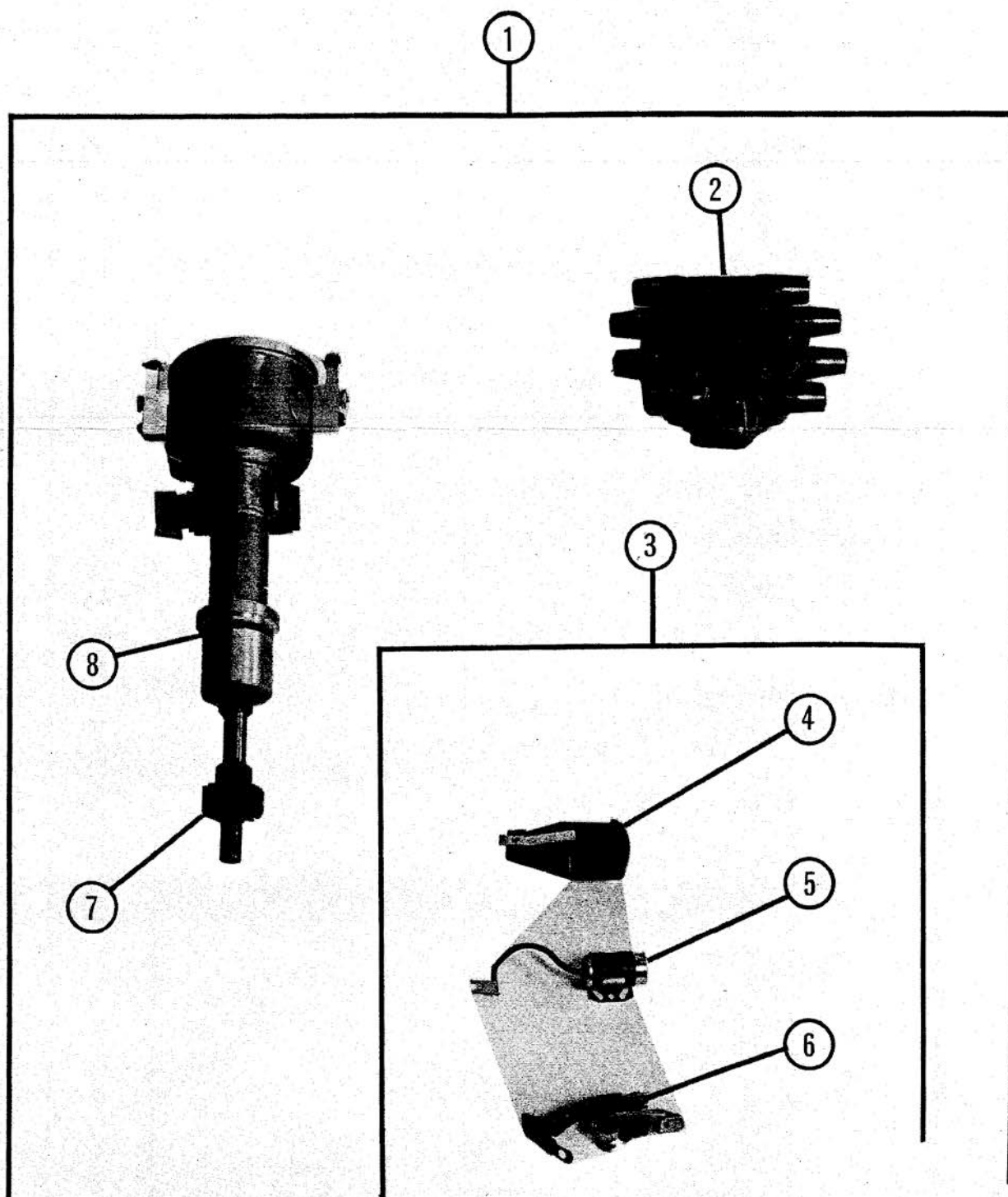


FIGURE # 14

THERMO ELECTRON ENGINE CORP.

040172

FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
14	1	1104146	DIST. ASSY STD. ROTATION FLAT CAP TYPE W/O TACH DRIVE	1			
14	1	1104147	DIST. ASSY REVERSE ROTATION FLAT CAP TYPE W/O TACH DRIVE		1		
14	2	1103317	DIST. CAP (FLAT TYPE)	1	1		
14	3	3000515	REPAIR KIT, DIST. CONSISTING OF POINTS, ROTOR & CONDENSER	1	1		
14	4	1103318	ROTOR, DISTRIBUTOR	1	1		
14	5	1103310	CONDENSER, DISTRIBUTOR	1	1		
14	6	1103307	BREAKER ARM, DISTRIBUTOR	1	1		
14	7	1003353	GEAR, HELIX (REVERSE ROTATION)		1		
14	7	1003352	GEAR, HELIX (STD. ROTATION)	1			
14	8	1003291	"O" RING	1	1		
	*	727139	EMERGENCY KIT	1	1		
	*	727138	MAJOR ON BOARD KIT	1	1		
REMARKS				TITLE			
* NOT SHOWN				FIG. 14 DIST.MALLORY FLAT CAP 302 C.I.D. BASIC ENGINE 351 C.I.D. BASIC ENGINE			

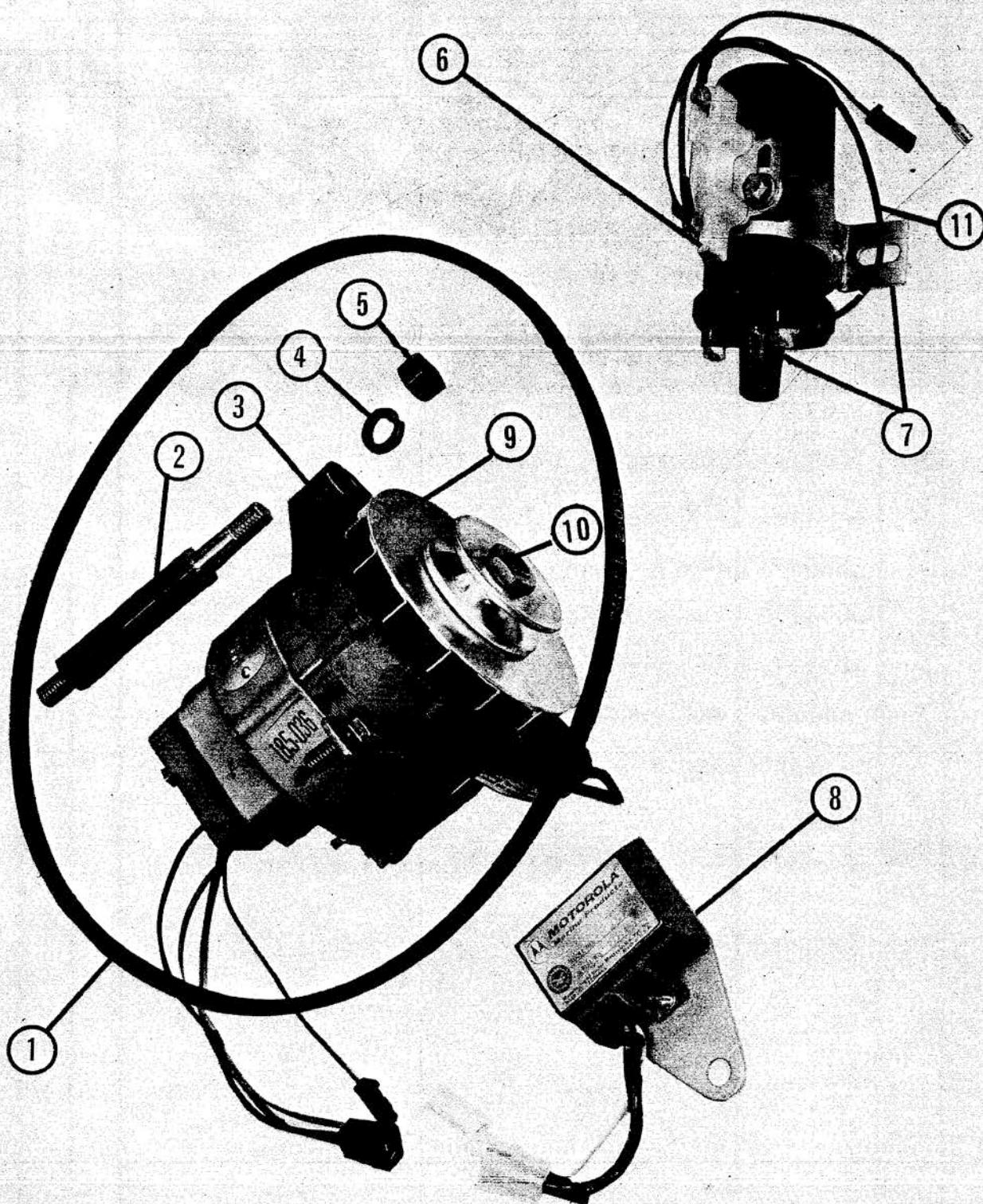


FIGURE # 15

THERMO ELECTRON ENGINE CORP.

040172

FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
15	1	725028	"V" BELT, ALTERNATOR	1	1		
15	1	725027	"V" BELT, ALTERNATOR			1	1
15	2	725030	STUD, ALTERNATOR MOUNTING	1	1	1	1
15	3	707340	ALTERNATOR ASSEMBLY	1	1	1	1
15	4	700961	LOCKWASHER 1/2"	1	1	1	1
15	5	102637	NUT 1/2" 13	1	1	1	1
15	6	727001	BALLAS, RESISTOR	1	1	1	1
15	7	700735	IGNITION COIL & BRACKET	1	1	1	1
15	8	707341	REGULATOR ALTERNATOR	1	1	1	1
15	*	9006086	SPARK PLUGS	8	8	8	8
15	*	725032	IGNITION WIRE SET	1	1	1	1
15	*	10002202	STARTER ASSY. LEFT HAND ROTATION	1		1	
15	*	10002203	STARTER ASSY. RIGHT HAND ROTATION		1		1
15	*	725035	ALT. REG. MOUNTING BRACKET	1	1		1
15	*	707494	STRAP ALT MOUNTING	1	1	1	1
15	*	725048	ALT WIRE HARNESS	1	1	1	1
15	*	725052	LEAD COIL TO REGULATOR	1	1	1	1
15	9	707348	ALT FAN	1	1	1	1
15	10	702447	ALT PULLEY	1	1	1	1
15	11	725053	LEAD BALLAST TO COIL	1	1	1	1
15	*	725055	WIRE LEAD 6-3/4" COIL TO CHOKE	1	1	1	1
15	*	725036	BRK. SOLENOID MOUNTING	1	1	1	1
15	*	700897	SOLENOID STARTER	1	1	1	1
REMARKS				TITLE			
* NOT SHOWN				FIG. 15 ELECTRICAL EQUIPMENT PALMER P-302/P-351			

THERMO ELECTRON ENGINE CORP.

040172

FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
15	*	725029	STRAP-SOLENOID TO STARTER	1	1	1	1
15	*	725054	LEAD WIRE 4" CHOKE TO GROUND	1	1	1	1
REMARKS				TITLE			
* NOT SHOWN				FIG.15 ELECTRICAL EQUIPMENT PALMER P-302/P-351			

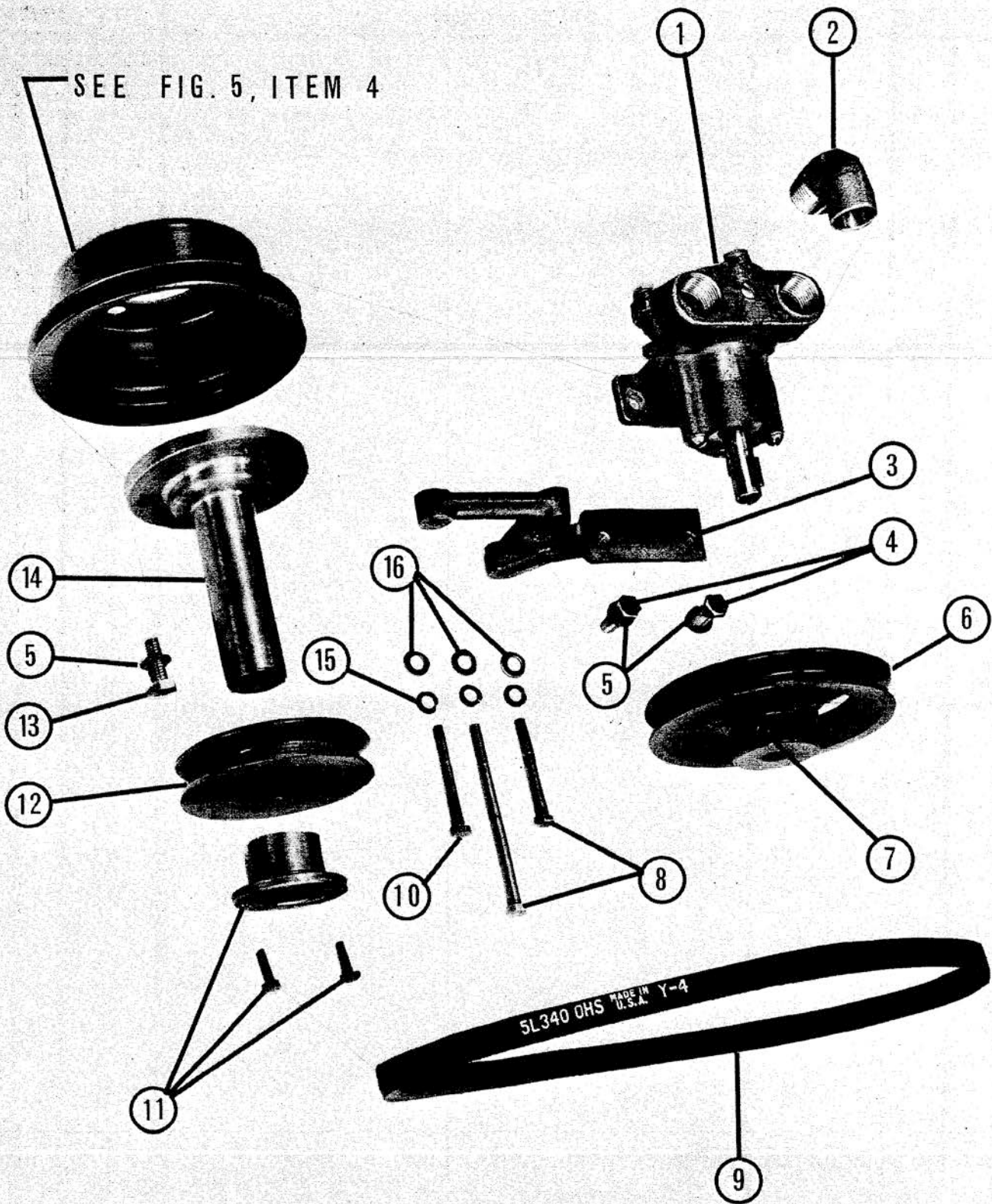


FIGURE # 16

THERMO ELECTRON ENGINE CORP.

040172

FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
16	1	725022	PUMP, RAW WATER	1	1	1	1
16	2	727003	ELBOW 90° 3/4" MNPT x 3/4" COPPER	1	1	1	1
16	3	725024	BRACKET, RAW WATER PUMP MOUNTING	1	1	1	1
16	4	179837	CAPSCREW 3/8 16 UNC x 3/4" LONG	2	2	2	2
16	5	103321	LOCKWASHER 3/8"	2	2	2	2
16	6	707455	PULLEY, RAW WATER PUMP (DRIVEN)	1	1	1	1
16	7	727006	SET SCREW, NYLOCK 1/4 20 x 1/4	1	1	1	1
16	8	187953	CAPSCREW 5/16 18 UNC x 4-1/2" LONG	2	2	2	2
16	9	725021	"V" BELT, RAW WATER PUMP DRIVE	1	1	1	1
16	10	179828	CAPSCREW 5/16" UNC x 2-1/2" LONG	1	1	1	1
16	11	707817	BUSHING, PULLEY 1-3/8" DIA BORE WITH CAPSCREWS	1	1	1	1
16	12	707817	PULLEY, RAW WATER PUMP	1	1	1	1
16	13	179841	CAPSCREW 3/8" 16 UNC x 1-1/4" LONG	3	3	3	3
16	14	725025	STUB-SHAFT	1	1	1	1
16	*	727109	MAJOR SERVICE KIT FOR 725022 W/P	1	1	1	1
16	*	727110	BODY	1	1	1	1
16	"	1003033	GASKET	1	1	1	1
16	*	1003026	IMPELLER	1	1	1	1
16	*	127950	PLUG	1	1	1	1
16	*	1006132	PIN	2	2	2	2
16	*	1003007	BUSHING	1	1	1	1
16	*	1003028	CAM	1	1	1	1
REMARKS				TITLE			
* NOT SHOWN				FIG. 16 RAW WATER COOL SYSTEM PALMER P-302/P-351			

THERMO ELECTRON ENGINE CORP.

040172

FIG	ITEM	PART NO	DESCRIPTION	QTY		REQD	
				302		351	
				LH	RH	LH	RH
16	*	1003000	SCREW	4	4	4	4
16	*	1003049	WASHER	6	6	6	6
16	*	1003024	SCREW	1	1	1	1
16	*	20309	SEAL AND SEAT	1	1	1	1
16	*	1003044	SEAL	1	1	1	1
16	*	727111	GASKET	1	1	1	1
16	*	1003002	BEARING	1	1	1	1
16	*	727113	BEARING HOUSING	1	1	1	1
16	*	1003002	RING	1	1	1	1
16	*	1003004	RING	3	3	3	3
16	*	727114	SHAFT	1	1	1	1
16	*	1003005	KEY	2	2	2	2
16	*	727115	SCREW	2	2	2	2
REMARKS				TITLE			
* NOT SHOWN				FIG.16 RAW WATER COOL SYSTEM PALMER P-302/P-351			

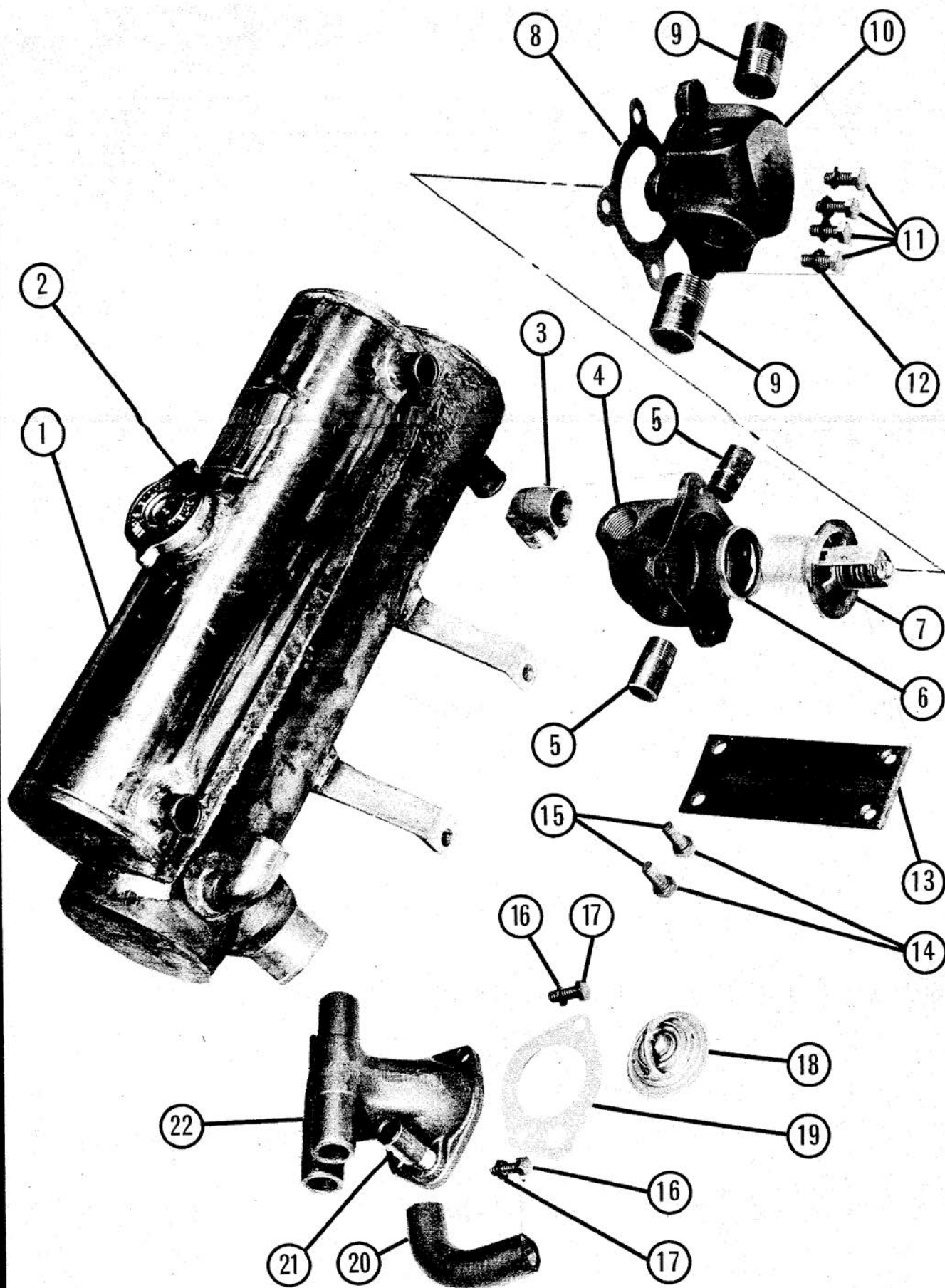


FIGURE #17

THERMO ELECTRON ENGINE CORP.

FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
17	1	725023	HEAT EXCHANGER EXPANSION TANK	1	1	1	1
17	2	713625	CAP EXPANSION TANK	1	1	1	1
17	3	727003	ELBOW 90° 3/4" MNPT x 3/4" COPPER	1	1	1	1
17	4	701401	THERMOSTAT HOUSING UPPER	1	1	1	1
17	5	191032	NIPPLE, HOSE 1/2 NPT	2	2	2	2
17	6	727009	SEAL, THERMOSTAT HOUSING	1	1	1	1
17	7	701404	THERMOSTAT ELEMENT-FRESH WATER	1	1	1	1
17	8	727008	GASKET-THERMOSTAT HOUSING	1	1	1	1
17	9	700514	NIPPLE, HOSE 3/4" NPT	2	2	2	2
17	10	701402	THERMOSTAT HOUSING, LOWER	1	1	1	1
17	11	700681	CAPSCREW 5/16 18 x 3/4	4	4	4	4
17	12	103320	LOCKWASHER 5/16"				
17	13	725008	BRACKET, THERMOSTAT HOUSING	1	1		
17	13	725006	BRACKET, THERMOSTAT HOUSING				
17	14	179837	CAPSCREW 3/8 16 x 3/4	4	4	4	4
17	15	103321	LOCKWASHER 3/8	4	4	4	4
17	16	700684	CAPSCREW 5/16" 18 x 7/8	2	2	2	2
17	17	103320	LOCKWASHER 5/16"	2	2	2	2
17	18	725009	THERMOSTAT ELEMENT-SALT WATER	1	1	1	1
17	19	725287	GASKET-WATER OUTLET-HOUSING	1	1	1	1
17	20	725060	HOSE-BY PASS	1	1	1	1
17	21	144606	NIPPLE-HOSE 3/8 NPT	1	1	1	1
17	22	725010	HOUSING-WATER OUTLET	1	1	1	1
REMARKS			TITLE				
			FIG. 17 FRESH WATER COOL SYS. PALMER P-302/P-351				

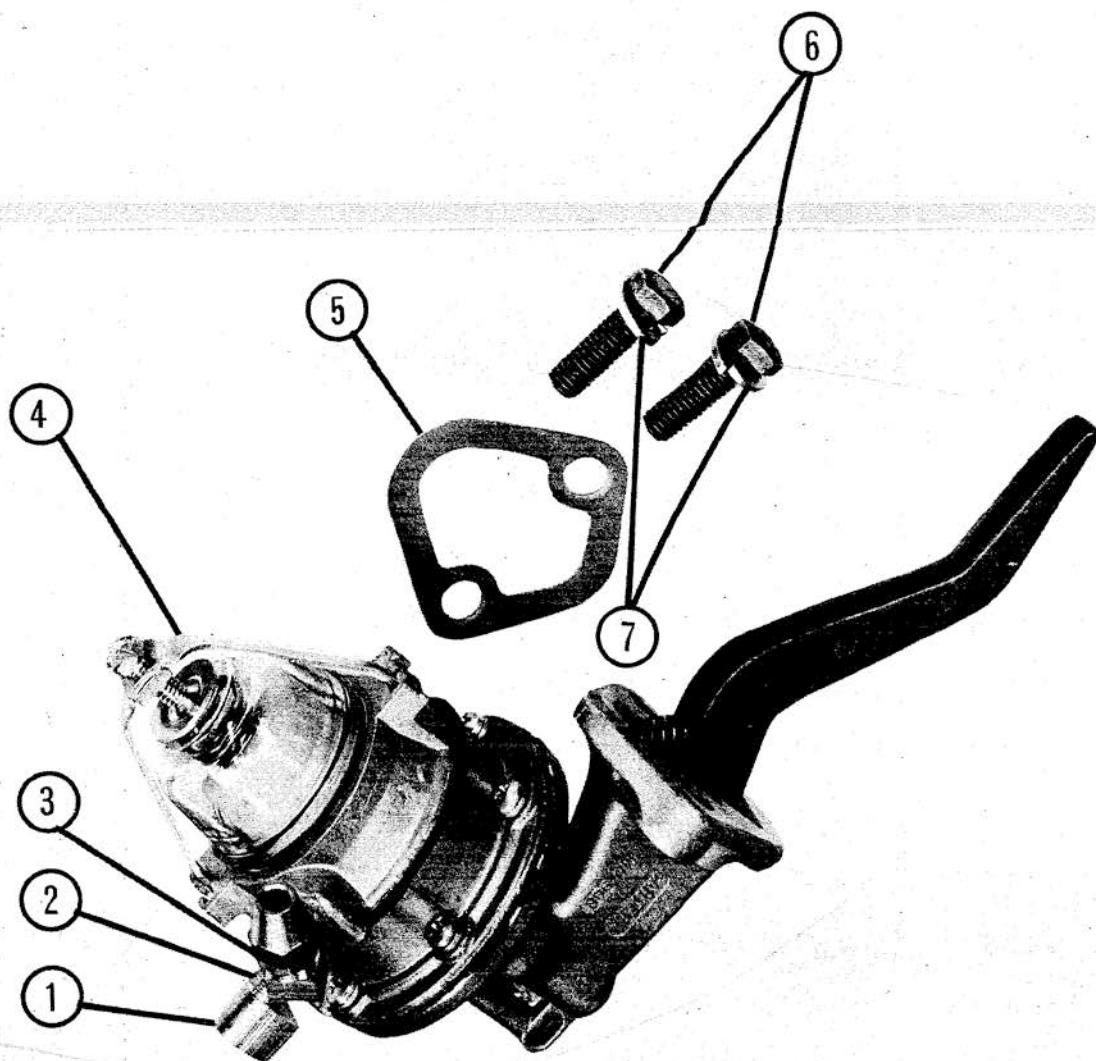


FIGURE # 18

THERMO ELECTRON ENGINE CORP.

040172

FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
18	1	409931	ELBOW FUEL PUMP	1	1	1	1
18	2	137422	ELBOW FUEL PUMP	1	1	1	1
18	4	9004305	FUEL PUMP; CARTER	1	1	1	1
18	5	9008309	GASKET FUEL PUMP MOUNTING	1	1	1	1
18	6	179841	CAPSCREW	2	2	2	2
18	7	103321	LOCKWASHERS	2	2	2	2
18	8	1104409	FUEL LINE, FUEL PUMP TO CARBURETOR	1	1	1	1
REMARKS				TITLE			
				FIG. 18 FUEL PUMP & FUEL LINE PALMER P-302/P-351			

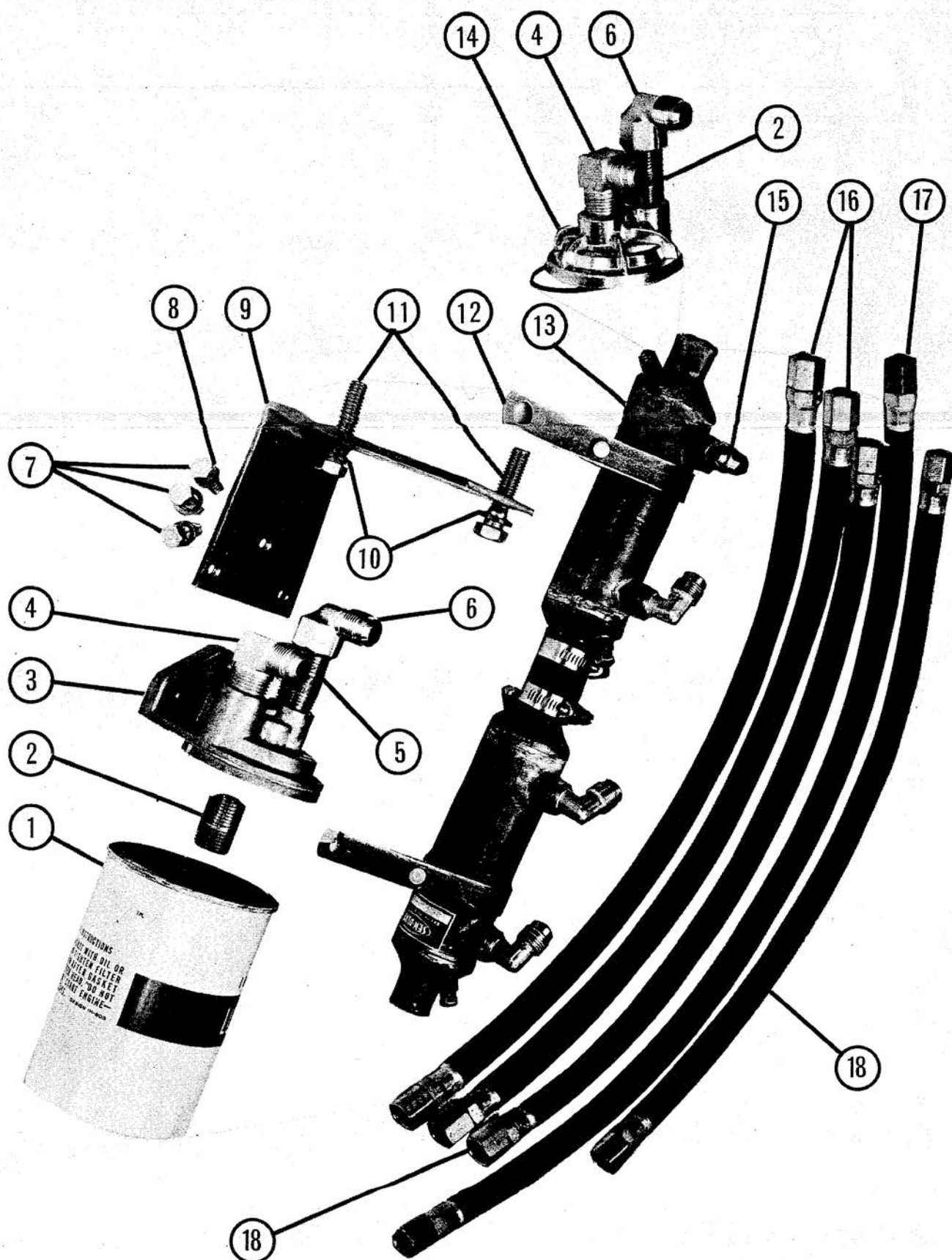


FIGURE # 19

THERMO ELECTRON ENGINE CORP.

040172

FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
19	1	725034	ELEMENT, OIL FILTER	1	1	1	1
19	2	701957	NIPPLE, FILTER ADAPTOR	1	1	1	1
19	3	719571	ADAPTOR OIL FILTER ELEMENT	1	1	1	1
19	4	700260	ELBOW 90° 1/2 MNPT x 1/2 FLARE	1	1	1	1
19	5	121208	NIPPLE SHORT 1/2" PIPE	1	1	1	1
19	6	727004	ELBOW 90° 1/2 FNPT x 1/2" FLARE	1	1	1	1
19	7	179816	CAPSCREW 5/16" 18 x 3/4"	2	2	2	2
19	8	103320	LOCKWASHER 5/16"	2	2	2	2
19	9	725007	BRACKET-ENGINE OIL FILTER ADAPTOR	1	1	1	1
19	10	103321	LOCKWASHER 7/16"	2	2	2	2
19	11	179864	CAPSCREW 7/16" 14 x 1-3/4"	2	2	2	2
19	12	725020	CLAMP OIL COOLER	2	2		
19	12	725037	CLAMP-OIL COOLER			2	2
19	13	707311	OIL COOLER ENGINE & CLUTCH	2	2	2	2
19	14	725040	PAD-OIL OUTLET & RETURN TO BLK. W/O RING	1	1	1	1
19	15	225828	ELBOW 90° 3/8" NPT x 1/2" FLARE	4	4	4	4
19	16	725039	OIL LINE FILTER TO COOLER-ENG. TO FLTR.	1	1	1	1
19	17	725038	OIL LINE COOLER TO TRANSMISSION	1	1	1	1
19	18	719569	OIL LINE TRANSMISSION TO COOLER, COOLER TO ENGINE	1	1	1	1
	*	727144	REMOTE OIL FILTER KIT	1	1	1	1
REMARKS				TITLE			
				FIG. 19 OIL FILTERS & COOLERS PALMER P-302/P-351			



THERMO ELECTRON ENGINE CORP.

040172

FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
20	1	179839	CAPSCREW 3/18" 16 UNC x 1"	8	8	8	8
20	2	719383	COVER EXHAUST MANIFOLD	2	2	2	2
20	3	719384	GASKET EXHAUST MANIFOLD COVER	2	2	2	2
20	4	725018	EXHAUST MANIFOLD	2	2	2	2
20	5	727003	ELBOW 90° 3/4 MNPT x 3/4" COPPER	4	4	4	4
20	6	700103	ADAPTOR STRAIGHT 3/4 MNPT x 3/4" COPPER	2	2	2	2
20	7	700131	PLUG PIPE SOCKET HEAD 3/4" MNPT	6	6	6	6
20	8	725019	EXHAUST OUTLET, WATER JACKET	2	2	2	2
20	9	127950	PLUG PIPE SQUARE HEAD BRASS 1/8" MNPT	2	2	2	2
20	10	700852	STUD 3/8" 16 UNC x 1-1/2" LONG	8	8	8	8
20	11	102635	NUT, HEX 3/8" UNC	8	8	8	8
20	12	725018	STUD EXHAUST MANIFOLD MOUNTING	8	8	8	8
	*	1000819	EXHAUST MANIFOLD GASKETS	2	2	2	2
REMARKS				TITLE			
* NOT SHOWN				FIG. 20 EXH. MANIF.& RISER ASSY. PALMER P-302/P-351			

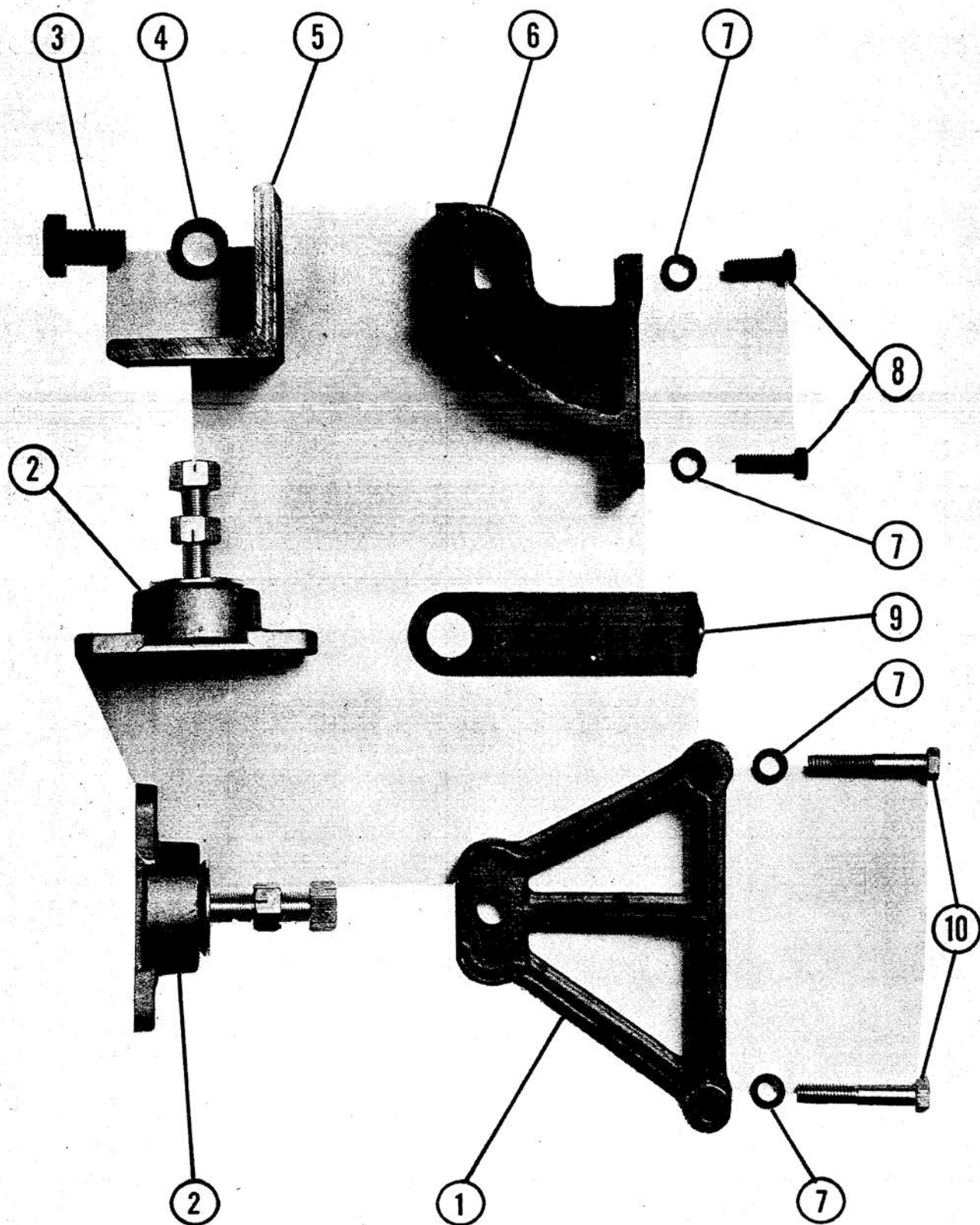


FIGURE # 21

THERMO ELECTRON ENGINE CORP.

040172

FIG	ITEM	PART NO	DESCRIPTION	QTY REQD			
				302		351	
				LH	RH	LH	RH
21	1	725002	FRONT ENGINE SUPPORT	2	2	2	2
21	2	700635	ADJUSTABLE RUBBER MOUNT	4	4	4	4
21	3	271605	3/4-10 x 1-1/4 HEX HEAD BOLT	2	2	2	2
21	4	103326	LOCKWASHER 3/4	2	2	2	2
21	5	709369	"L" IRON REAR ENGINE SUPPORT	2	2	2	2
21	6	709654	REAR ENGINE SUPPORT	2	2	2	2
21	7	103322	LOCKWASHER 7/16	8	8	8	8
21	8	179860	7/16-14 x 1-1/4 HEX HEAD BOLT	4	4	4	4
21	9	725005	ENGINE LIFTING BRACKET	2	2	2	2
21	10	179868	7/16-14 x 2-1/2 HEX HEAD BOLT	4	4	4	4
REMARKS				TITLE			
				FIG.21 ENGINE MTG.SUPPORT FRONT & REAR PALMER P-302/P-351			

THERMO ELECTRON ENGINE CORP.

7100 East 15 Mile Road, Sterling Heights, Michigan 48077.