

# TECHNICAL PUBLICATION REVISION

REVISION No. <b>PC-302B</b>	ENGINE MODEL 0-235 Series	PUBLICATION No. PC-302	PUBLICATION DATE June, 1982
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The page(s) furnished herewith are intended to replace the corresponding page(s) of the publication indicated above.

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June, 1982

2-13, 3-1, 3-2

January, 1987

2-13, 3-1, 3-2

# TECHNICAL PUBLICATION REVISION

REVISION No. <b>PC-302A</b>	ENGINE MODEL O-235 Series	PUBLICATION No. PC-302	PUBLICATION DATE June, 1982
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The page(s) furnished herewith are intended to replace the corresponding page(s) of the publication indicated above.

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Insert

PC-302A - February, 1984

Page 1-5

Propeller flange bushings clarification.

Page 1-6

Propeller flange bushings added.

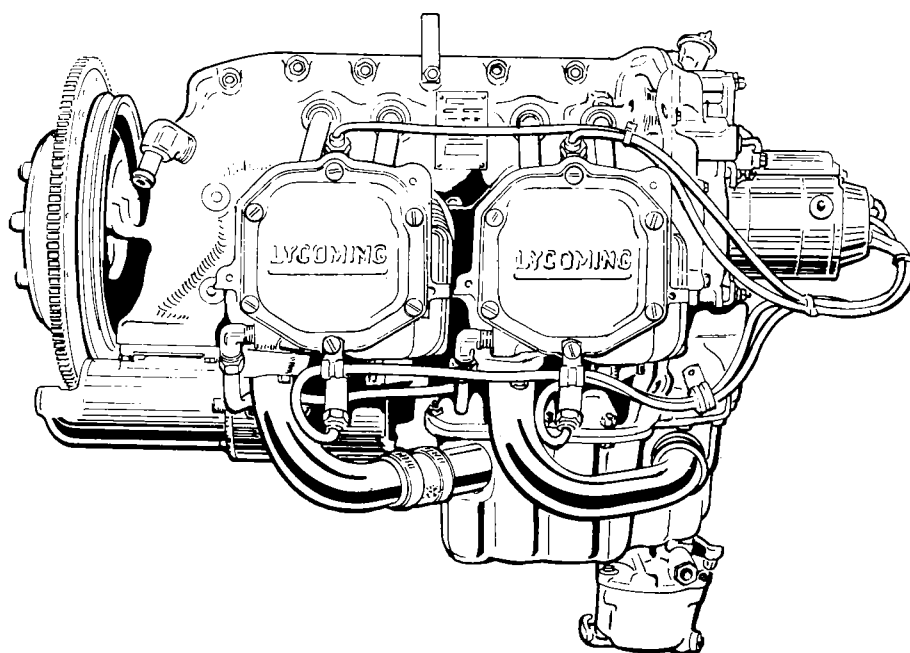
# **PARTS CATALOG**

**PC-302**

## **TEXTRON Lycoming**

**O-235 SERIES**

### **AIRCRAFT ENGINES**



**JUNE 1982**

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**TEXTRON** Lycoming

Textron Lycoming/Subsidiary of Textron Inc.

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## INTRODUCTION

### NOTE

This Parts Catalog supersedes PC-102 dated August, 1973 and PC-202 dated March, 1978.

This illustrated parts catalog contains a complete parts listing for the Lycoming O-235 series aircraft engines. For use in expediting of parts when ordering, the serial number and model designation are stamped on the engine nameplate located on the oil sump.

The Group Assembly Section lists major assemblies and sub-assemblies in general sequence of engine build-up. The "Quantity Per Assembly" column indicates the number required at that particular location only and is not to be construed to mean quantity for the complete engine. When the symbol "un" is listed, it means to use quantity as necessary.

The Service Kit Section provides listings for seal and gasket sets and cylinder, piston and ring assemblies for use in ordering parts as necessary during overhaul.

The Numerical Index is provided for convenience in finding parts when only the part number is known.

In the Oversize and Undersize Parts section, procurable oversize and undersize parts are listed preceding the main group assembly parts list.

Parts coverage of Vendor Accessories used on Lycoming engines may be found in the appropriate Vendor's Parts Catalog. A list of the publications appear in the latest edition of Lycoming Service Letter No. L114.

### SERVICE BULLETINS, INSTRUCTIONS AND LETTERS

Although the information contained in this parts catalog is up-to-date at time of publication, users are urged to keep abreast of later information through all Lycoming distributors or from the factory by subscription. Consult the latest edition of Service Letter No. L114 for subscription information.

### NOTE

The illustrations shown in this publication are typical of the subject matter they portray; in no instance are they to be interpreted as examples of any specific engines, equipment or part thereof.

Any reference in this document to a suppliers/parts manufacturers' product, by name, trademark, part number or other description is solely for the purposes of identification and does not indicate or infer that Lycoming accepts responsibility for quality control and/or airworthiness of parts which do not pass through the Lycoming quality control system.

O-235 SERIES

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## O-235 SERIES

## Oversize and Undersize Parts Listing

PART NO.	DESCRIPTION	OVERSIZE					UNDERSIZE		
		P05	P10	P15	P20	P30	M03	M06	M10
61681	GUIDE, Valve intake	X	X		X	X			
LW-11626	GUIDE, Valve	X	X		X	X			
66796	INSERT, Spark plug		X						
69796	DOWEL, Crankshaft bearing	X							
60814	BUSHING, Propeller flange	X	X	X	X				
73757	BUSHING, Propeller flange	X	X	X	X				
61258	SEAT, Intake valve (Alum Bronze)		X		X	X			
LW-11900	SEAT, Intake valve (steel) Allison		X		X	X			
LW-16800	SEAT, Intake valve (solid)		X		X	X			
60337	SEAT, Exhaust valve (solid)		X		X	X			
LW-16699	SEAT, Exhaust valve, Allison		X		X	X			
68763	BEARING, Crankshaft						X	X	X
LW-13884	BEARING, Crankshaft, front						X	X	X
61533	BEARING, Crankshaft, right front						X	X	X
61520	BEARING, Crankshaft, left front						X	X	X
69373	BEARING, Connector rod						X	X	X

Studs available in P03, P07 and P12 oversize.

## NOTE

When ordering oversize or undersize parts, be sure to specify the required oversize or undersize dimension along with the proper part number. For example: to order bearing LW-13521 in .003 undersize, order part number LW-13521-M3. Oversize code is "P" while undersize code letter is "M". These letters are then followed by the numbers designating the size in thousandths of an inch.

# LYCOMING

# O-235 SERIES PARTS CATALOG

## CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP CRANKCASE ASSEMBLY

FIG. REF. 1	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY															
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A
1	78213 *	CRANKCASE ASSEMBLY		1	1		1												
	78214 **	CRANKCASE ASSEMBLY		1	1	1	1	1											
	LW-11631 **	CRANKCASE ASSEMBLY							1	1		1	1	1					
	LW-13257 **	CRANKCASE ASSEMBLY								1									
	LW-13282 **	CRANKCASE ASSEMBLY								1			1	1		1	1		
	LW-16354 **	CRANKCASE ASSEMBLY													1				
	LW-18735 **	CRANKCASE ASSEMBLY					1												
2	61182	STUD, 3/8-24 x 10-15/64 long		2	2	2	2	2		2									
3	74124	STUD, 3/8-16 x 9-11/16 long		4	4	4	4	4		4									
4	38-12	STUD, 3/8-16 x 1-1/2 long		24	24	24	24	24		24									
5	31C-12	STUD, 5/16-18 x 1-1/2 long	4																
	31C-12	STUD, 5/16-18 x 1-1/2 long					2												
6	LW-11623	STUD, 7/16-20 x 10-7/16 long						2	2		2	2	2	2	2	2	2	2	2
7	LW-11622	STUD, 7/16-14 x 9-25/32 long						4	4		4	4	4	4	4	4	4	4	4
8	44-13	STUD, 7/16-14 x 1-5/8 long						8	8		8	8	8	8	8	8	8	8	8
9	38-13	STUD, 3/8-16 x 1-5/8 long						16	16		16	16	16	16	16	16	16	16	16
10	31C-13	STUD, 5/16-18 x 1-5/8 long					1												
11	STD-557	DOWEL, 1/2 dia. x 19/32 long, hollow		2															
12	STD-514	DOWEL, 5/16 dia. x 1/2 long		2															
13	69796	DOWEL, Crankshaft bearing														2			
14	1102	PLUG, 1/8-27 NPT, Allen		4	4		4												
	1102	PLUG, 1/8-27 NPT, Allen		3															
15	STD-1111	ELBOW, 3/4 pipe & hose 90°						1	1		1	1	1	1	1	1	1	1	1
16	61584	VALVE, Hydraulic		1															
17	61531	GASKET, Hydraulic valve		1	1		1												
18	61583	COVER ASSY., Hydraulic valve		1															
19	LW-14260	SEAL, Oil		1															
20	61227	LEVER, Hydraulic valve		1															
21	STD-131	SCREW, 1/4-28 x 1.00 long, hex hd. dr.		1															
22	STD-43	NUT, 1/4-28 Slotted shear		1															
23	STD-68	PIN, Cotter, 1/16 x 1/2 long		1															
24	STD-160	WASHER, 1/4 lock		2	2		2												
25	STD-8	WASHER, 1/4 plain		2	2		2												
26	STD-1875	BOLT, 1/4-20 x 13/16 long		2	2		2												
27	61555	PLUG, Hydraulic valve hole		1	1		1												
28	61554	COVER, Hydraulic valve hole plug		1	1		1												

\* Used with controllable pitch propeller.  
\*\* Used with fixed pitch propeller.

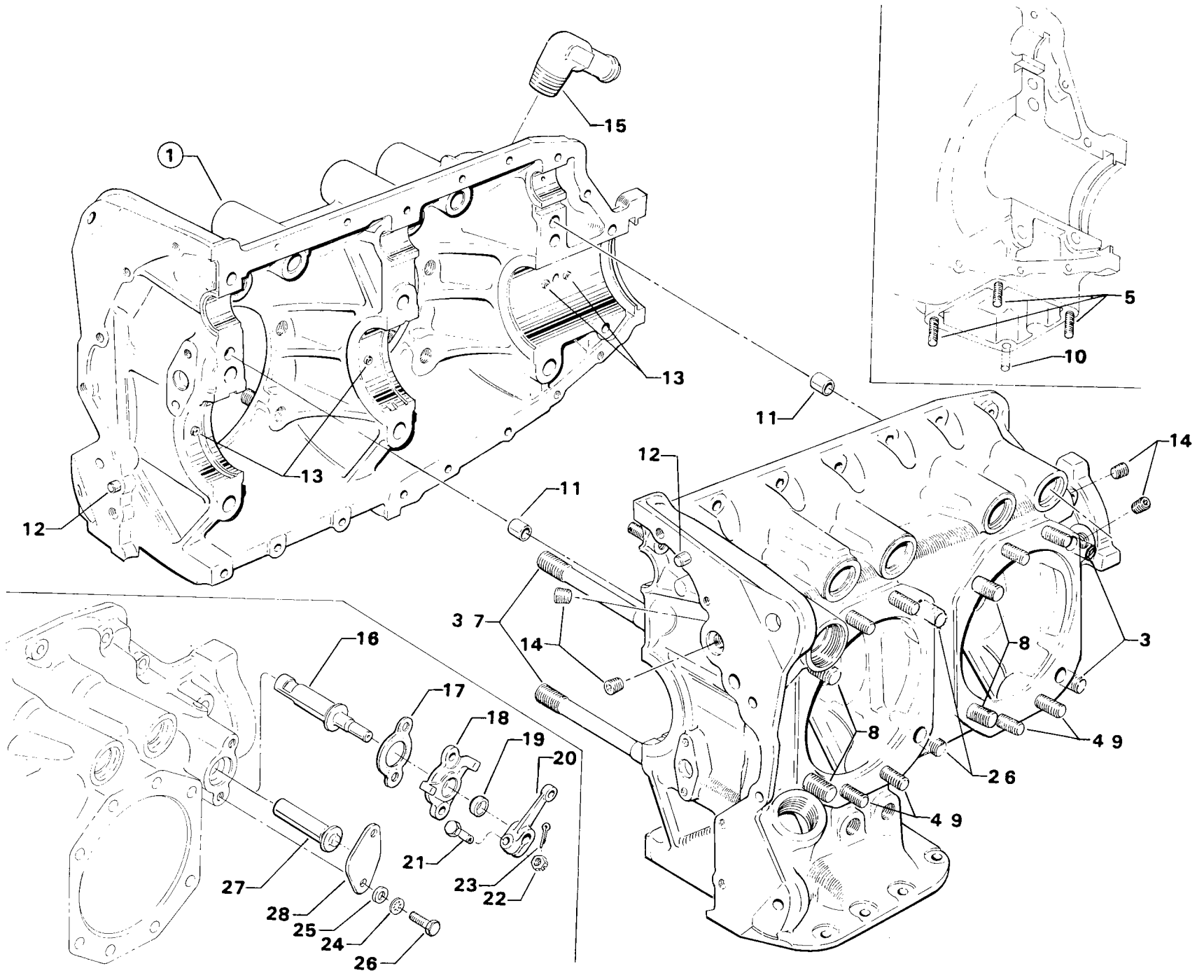
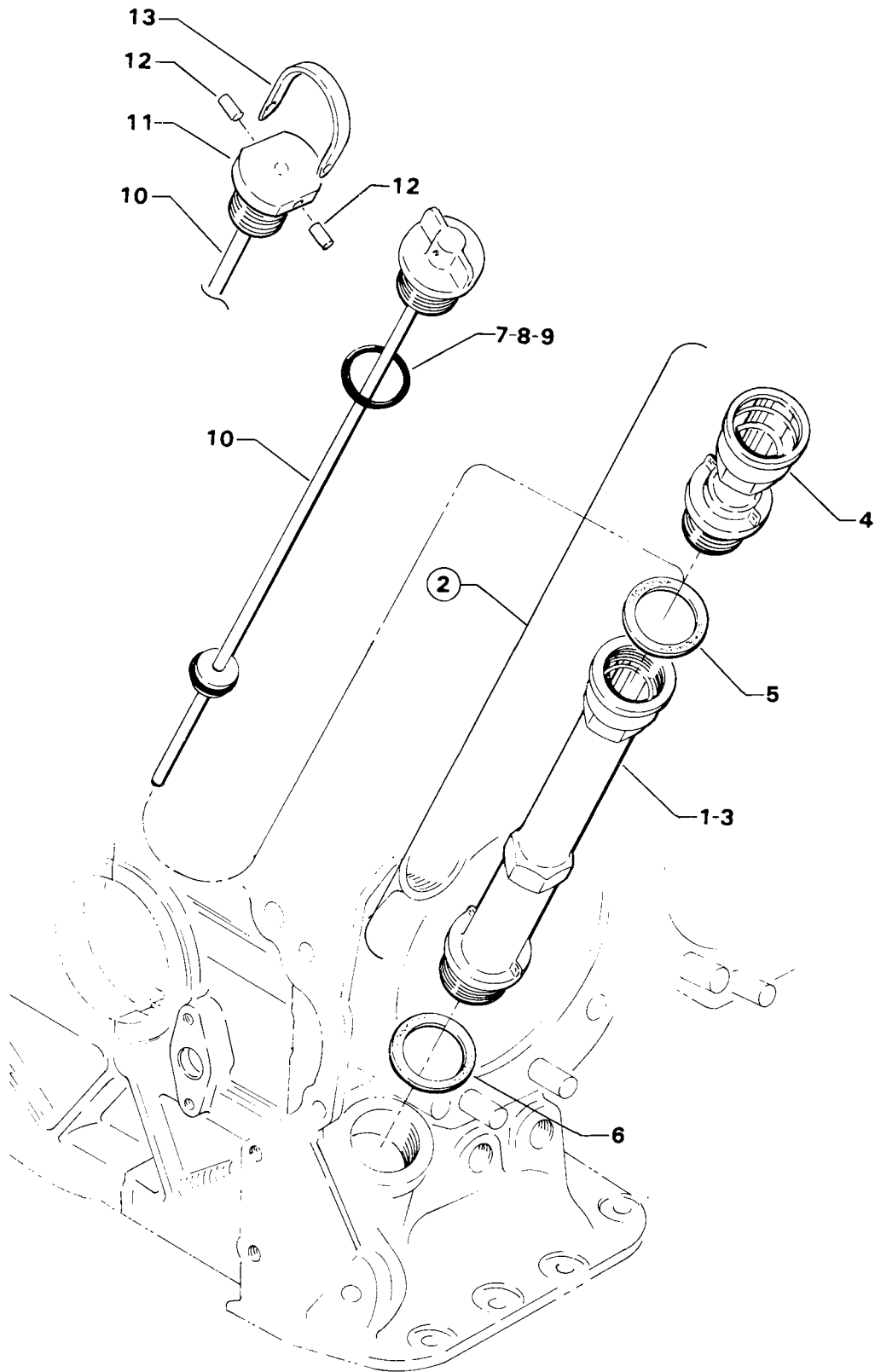


Figure 1. Crankcase Assembly







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Figure 2. Oil Level Gage Assemblies

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP  
CRANKSHAFT, CAMSHAFT AND RELATED PARTS

FIG. REF. 3	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY															
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A
1	LW-12693*	CRANKSHAFT ASSY.		1	1														
	LW-12699**	CRANKSHAFT ASSY.		1	1	1													
	LW-12697**	CRANKSHAFT ASSY.			1		1	1	1	1	1	1	1	1	1		1	1	
	LW-18697**	CRANKSHAFT ASSY.																	1
	LW-12947**	CRANKSHAFT ASSY.														1			
2	STD-1211	PLUG. 2.00 dia. expansion	1																
3	STD-1065	DOWEL. Stepped. 19/64 x 1/4 dia. x 35/64 long	1																
4	60814	BUSHING. Propeller flange	6	6															
	60814	BUSHING. Propeller flange	5																
5	73757	BUSHING. Propeller flange	1																
6	61510	PLUG. 1-3/4 OD	1	1												1			
7	75706	CAMSHAFT ASSY.	1																
8	61155	GEAR. Crankshaft	1																
9	61156	LOCKPLATE. Crankshaft gear	1																
10	STD-847	SCREW. 5/16-24 x 1.00 long	1																
11	69340	SUPPORT ASSY.. Starter ring gear. 10/12 pitch. 1.91:1 drive		1	1														
	68942	SUPPORT ASSY.. Starter ring gear. 10/12 pitch. 1.91:1 drive		1	1														
	76124	SUPPORT ASSY.. Starter ring gear. 10/12 pitch. 1.91:1 drive					1												
	76944	SUPPORT ASSY.. Starter ring gear. 10/12 pitch. 3.25:1 drive		1	1	1													
	78426	SUPPORT ASSY.. Starter ring gear. 10/12 pitch. 3.25:1 drive					1	1	1	1	1	1							
	LW-13675	SUPPORT ASSY.. Starter ring gear. 10/12 pitch. 3.25:1 drive									1	1	1	1	1	1	1		
	LW-16577	SUPPORT ASSY.. Starter ring gear. 10/12 pitch. 3.25:1 drive													1			1	
	LW-18694	SUPPORT ASSY.. Starter ring gear. 10/12 pitch. 3.25:1 drive																	1
	LW-18736	SUPPORT ASSY.. Starter ring gear. 12/14 pitch. 3.25:1 drive					1												
12	60882	GEAR. Starter ring. 10/12 pitch	1																
	72566	GEAR. Starter ring. 12/14 pitch					1												
13	STD-1214	SCREW. Truss head. 10-32 x 3/8 long		2	2	2													

\* Used with controllable pitch propeller.

\*\* Used with fixed pitch propeller.



CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP  
CRANKCASE RELATED PARTS

FIG. REF. 4	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY															
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A
1	1028-B	BALL, 11/16 dia.	1																
2	61084	SPRING, Oil pressure relief valve	1																
3	STD-425	WASHER, No. 10 plain (Max. 9)	un																
4	STD-1045	GASKET, 1-1/4 ID x 1-1/2 OD x 3/32 annular	1																
5	76529	PLUG, Oil relief valve	1																
6	77808	VALVE ASSY., Oil pressure relief, adjustable			1														
7	68763*	BEARING, Crankshaft		6	6		6												
	68763**	BEARING, Crankshaft		8	8	8	8	8	8	8	8	8	8	8	8		8	8	
	68763**	BEARING, Crankshaft															4		
8	61533*	BEARING, Crankshaft, right front		1	1		1												
	61520*	BEARING, Crankshaft, left front		1	1		1												
	LW-13884**	BEARING, Crankshaft, front															2		
9	LW-13792	SEAL, Crankshaft oil	1																
10	72091	RING, Oil seal, 23/64 ID x 7/64 dia. section	8																
	72091	RING, Oil seal, 23/64 ID x 7/64 dia. section						2	2		2		2		2				
11	LW-11632	RING, Oil seal, 7/16 ID x 5/64 dia. section						6	6		6		6		6				
12	71105	BODY, Tappet	8																
13	71032	BUSHING, Engine support (1.00 inch diameter mounting hole)		8	8	8	8	8	8	8		8	8	8					
14	STD-619	WASHER, 17/32 ID x 1-3/4 OD x 5/32 inch thick		8	8	8	8	8	8	8		8	8	8					

\* Used with controllable pitch propeller.  
\*\* Used with fixed pitch propeller.

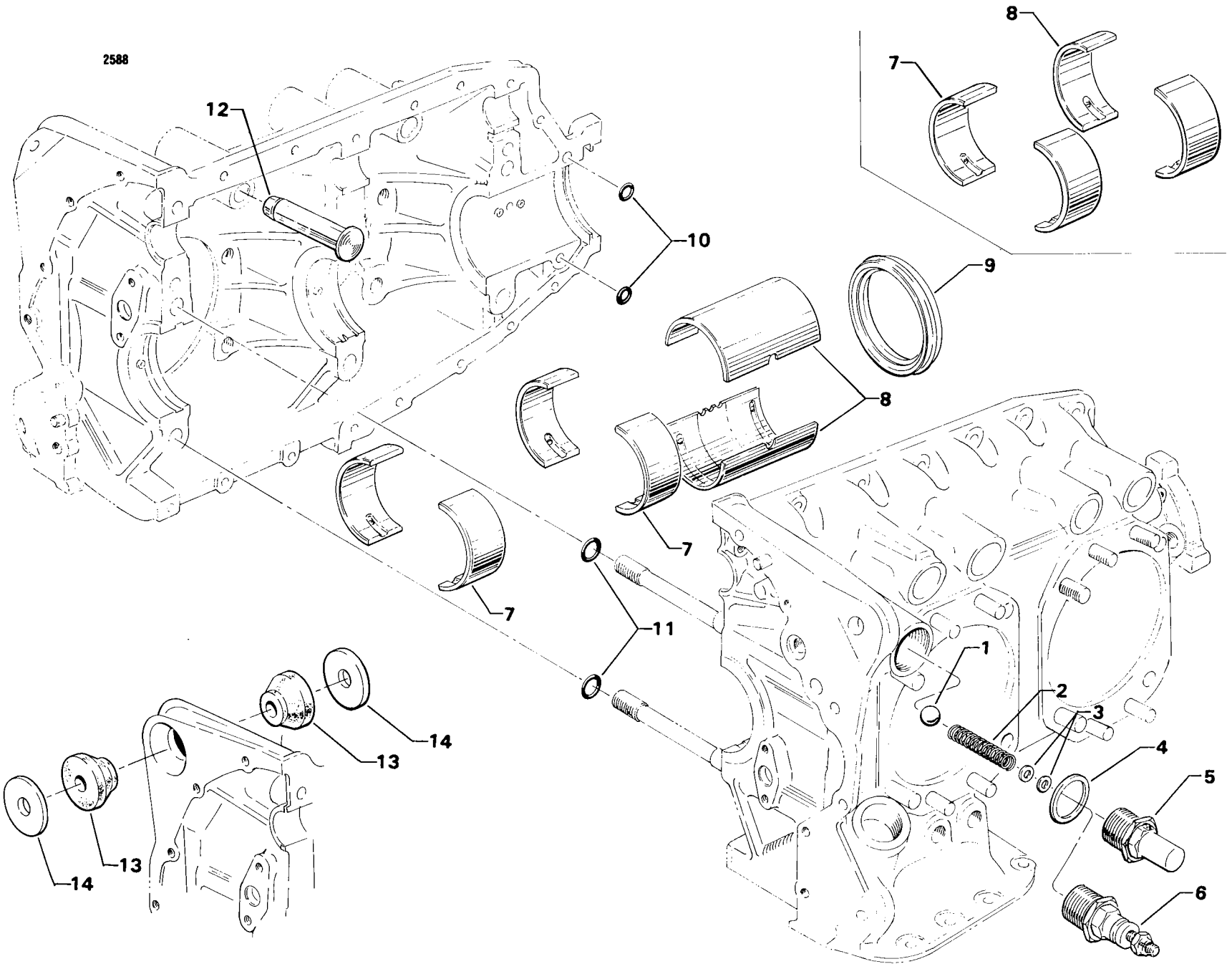


Figure 4. Crankcase Related Parts

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP  
 CRANKSHAFT IDLER GEARS AND TACHOMETER SHAFT

FIG. REF. 5	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY																							
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A	N 2 C							
1	74996	GEAR ASSY., Crankshaft idler		2	2		2	2						2	2			2									
2	77309	BUSHING, Crankshaft idler gear		2	2		2	2						2	2			2									
3	74996	GEAR ASSY., Crankshaft idler		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
4	77309	BUSHING, Crankshaft idler gear		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
5	75072	GEAR ASSY., Crankshaft idler		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
6	77309	BUSHING, Crankshaft idler gear		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
7	61151	SHAFT, Crankshaft idler gear	2																								
8	73817	LOCKPLATE, 1/4 bolt, 1-3/4 spacing	2																								
9	STD-705	BOLT, 1/4-20 x 11/16 long	4																								
10	75708	SHAFT ASSY., Tachometer	1																								
11	78368	PIN, 3/16 x 2-5/16 long	1																								
12	61544	PLUNGER, Fuel pump, long		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
13	45530	RING, Oil pump shaft retaining	1																								

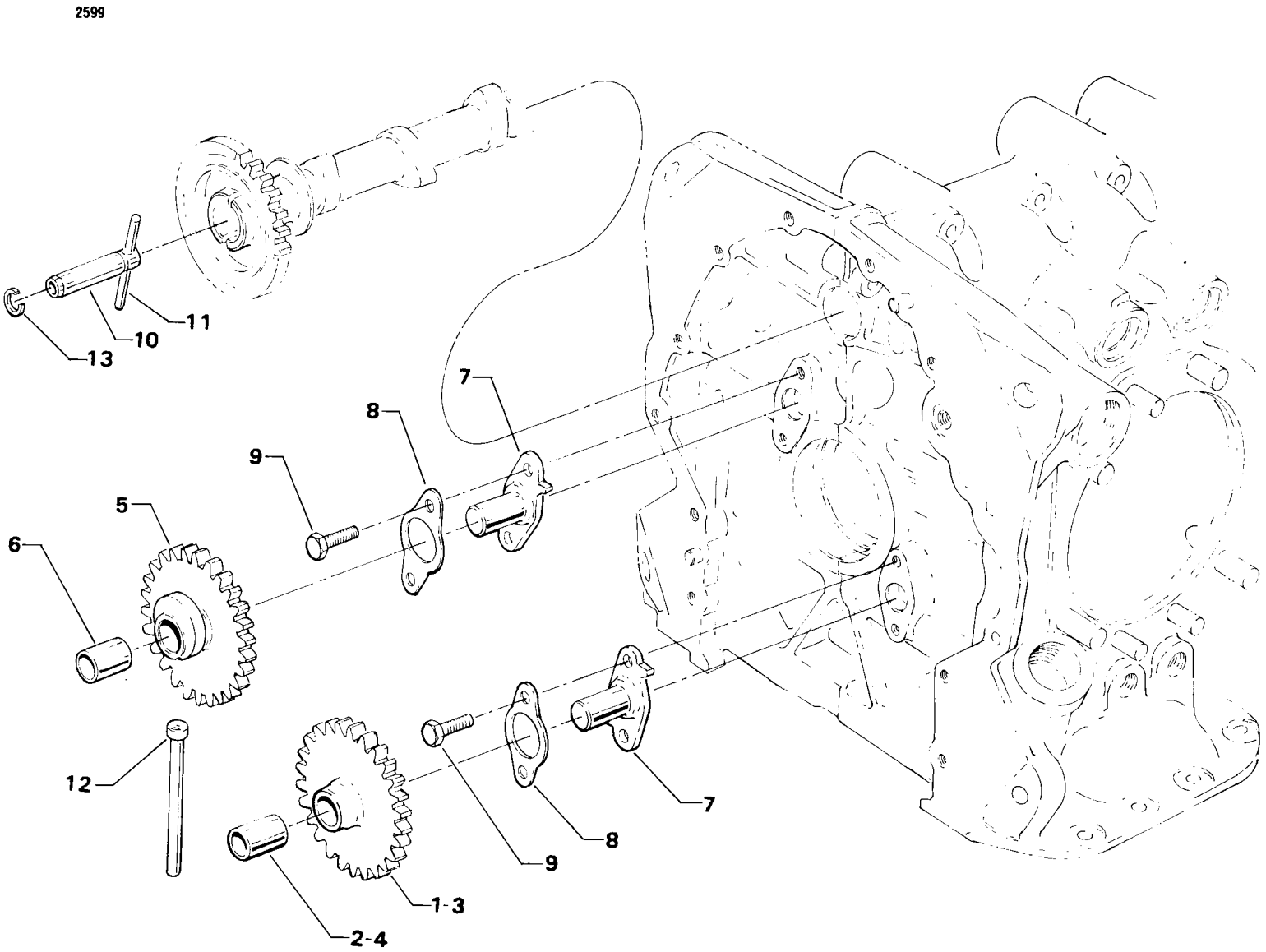


Figure 5. Crankshaft Idler Gears and Tachometer Shaft

1-10





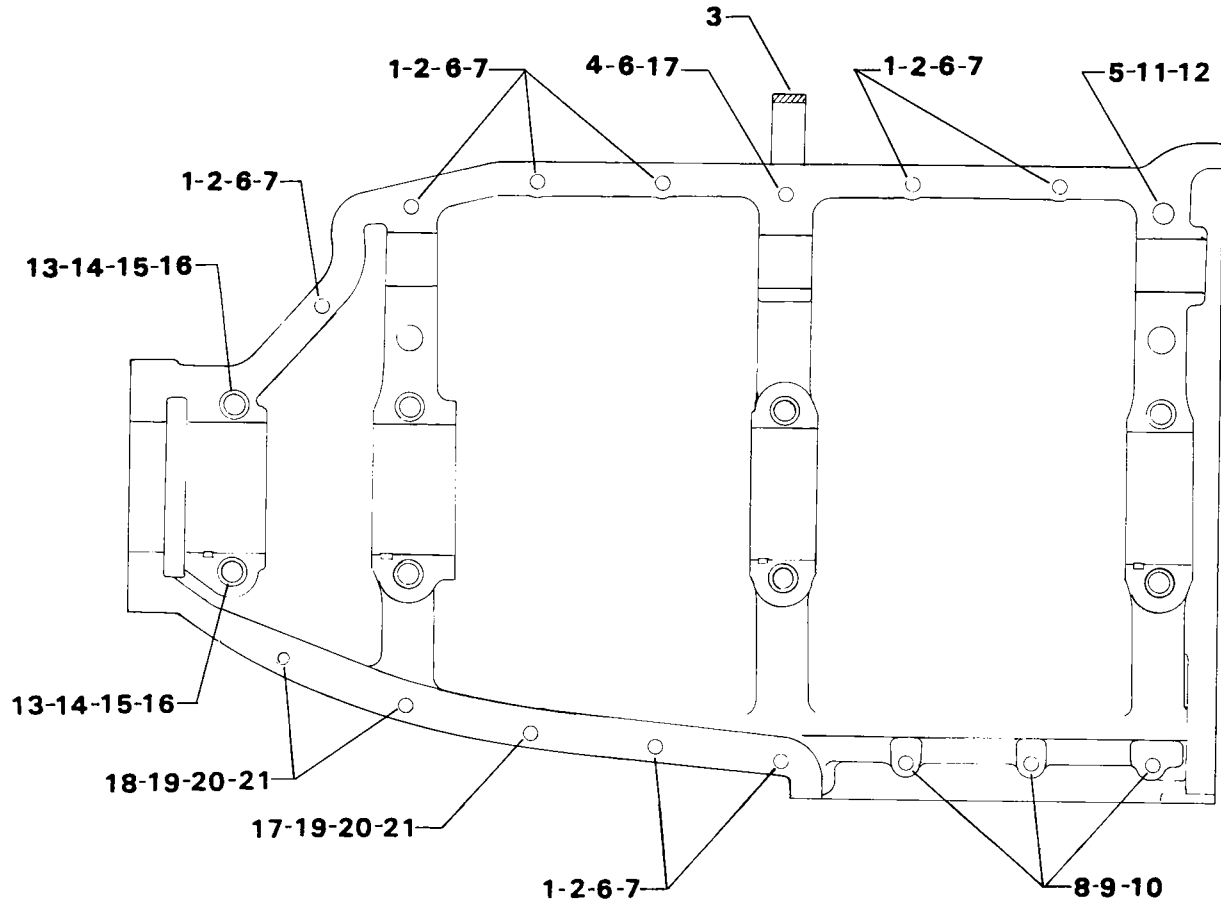
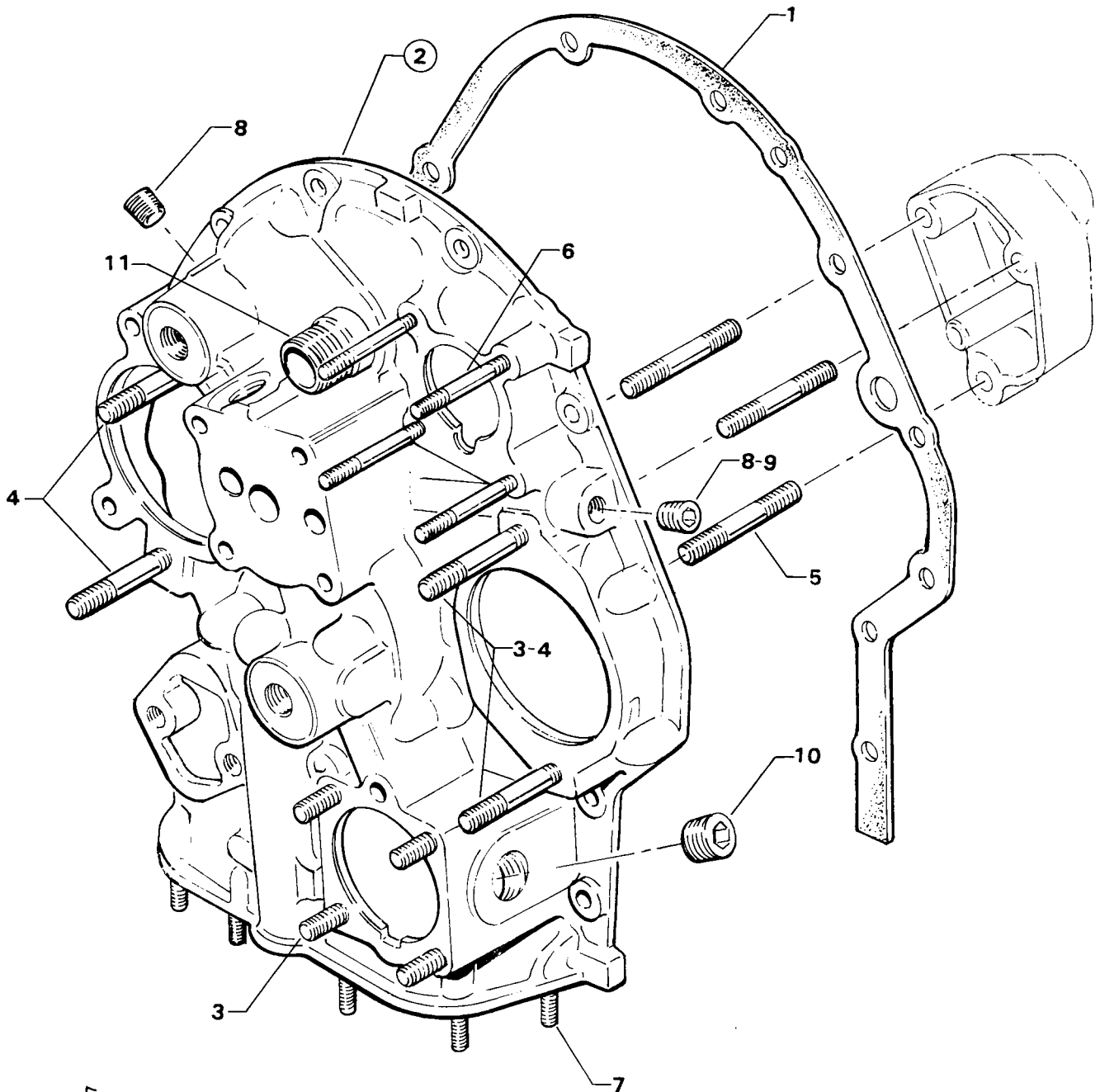


Figure 6. Crankcase Attaching Parts





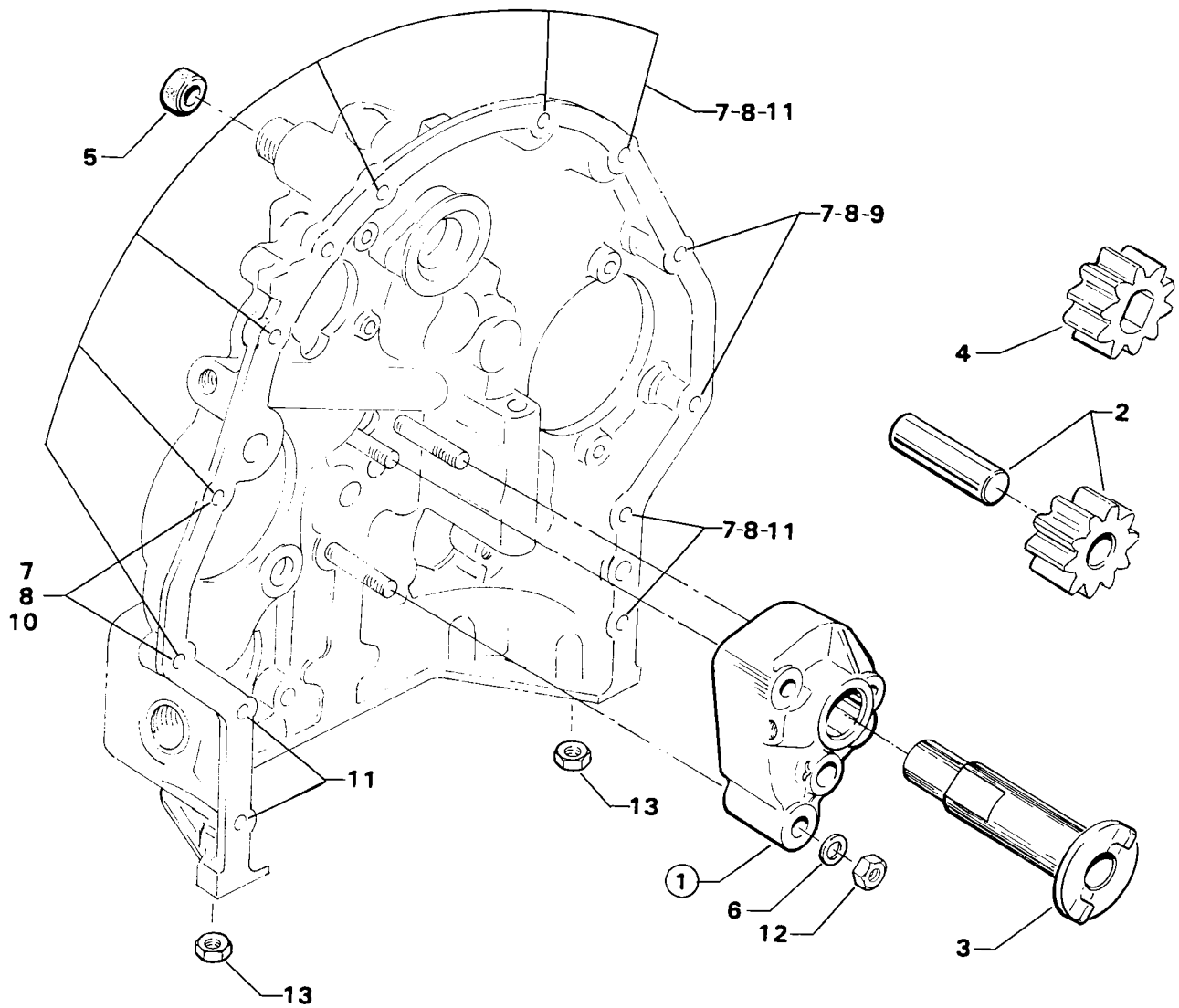
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Figure 7. Accessory Housing Assembly

ACCESSORY HOUSING AND RELATED PARTS

OIL PUMP ASSEMBLY AND ACCESSORY HOUSING ATTACHING PARTS

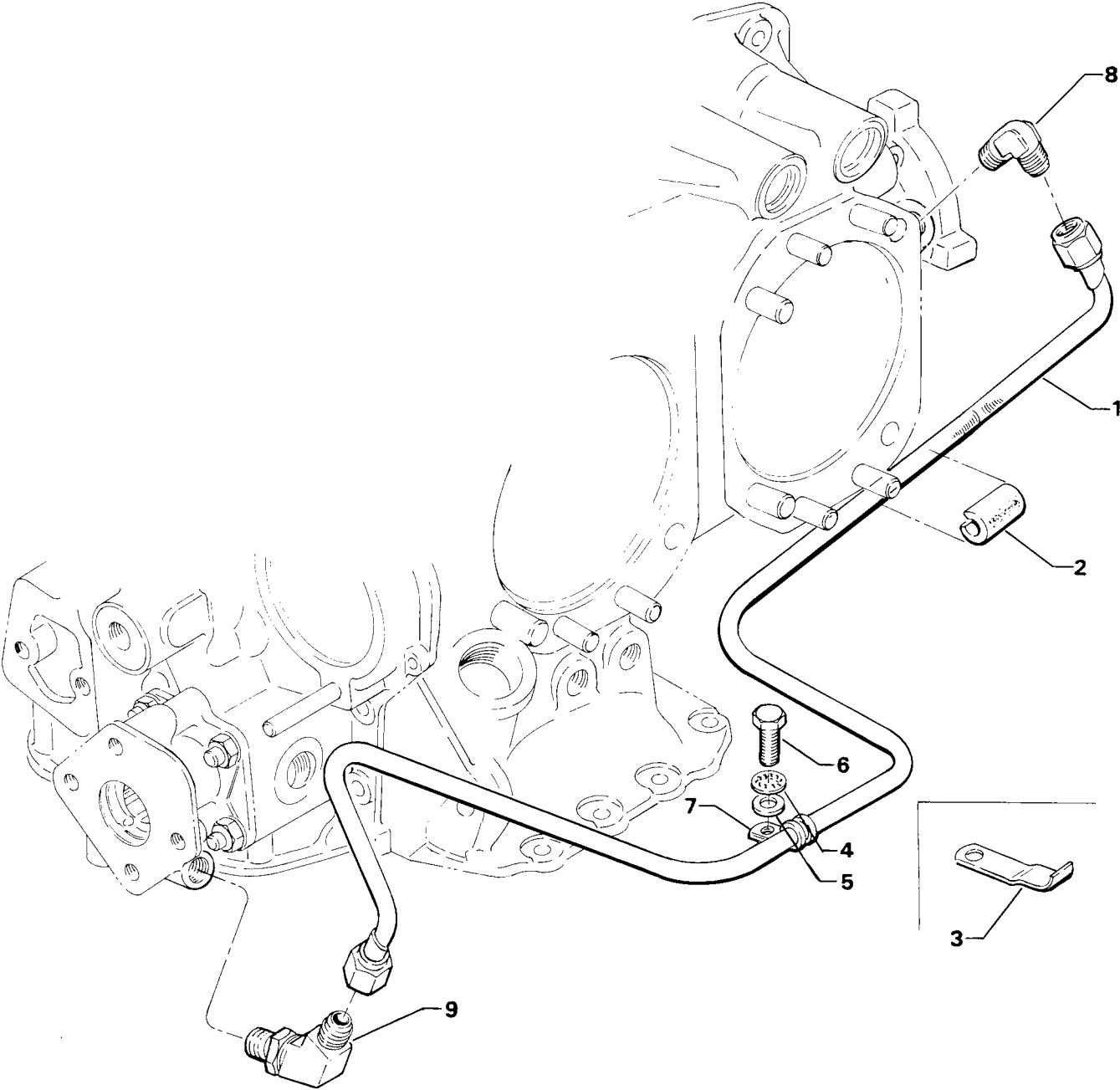
FIG. REF. 8	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY															
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A
1	78531	BODY ASSY., Oil pump	1																
2	LW-13775	IMPELLER ASSY., Oil pump driven	1																
3	61174	SHAFT, Oil pump drive	1																
4	60746	IMPELLER, Oil pump driving	1																
5	LW-14260	SEAL, Tachometer drive, oil	1																
6	STD-35	WASHER, 5/16 plain	1																
7	STD-8	WASHER, 1/4 plain	13																
8	STD-160	WASHER, 1/4 lock	12																
9	STD-1646	BOLT, 1/4-20 x 2.00 long		2			2	2	2	2	2	2	2	2	2	2	2	2	
10	STD-1885	BOLT, 1/4-20 x 1-41/64 long		2	2	2													
11	STD-1204	BOLT, 1/4-20 x 15/16 long	10																
12	STD-1420	NUT, 5/16-18 Slotted	3																
13	STD-1411	NUT, 1/4-20 plain	2																



2598

Figure 8. Oil Pump Assembly and Accessory Housing Attaching Parts



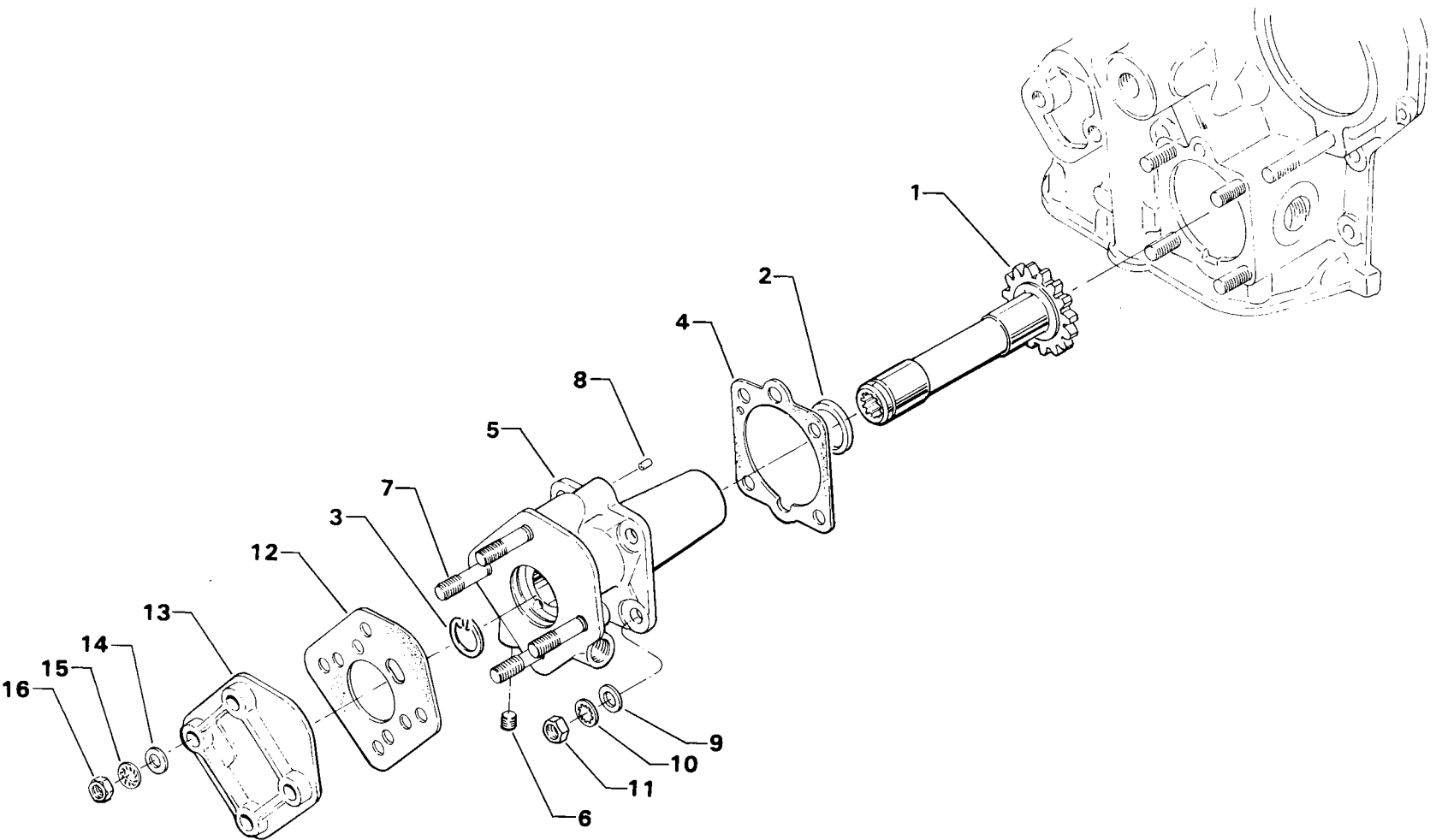


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Figure 9. Propeller Governor Oil Line



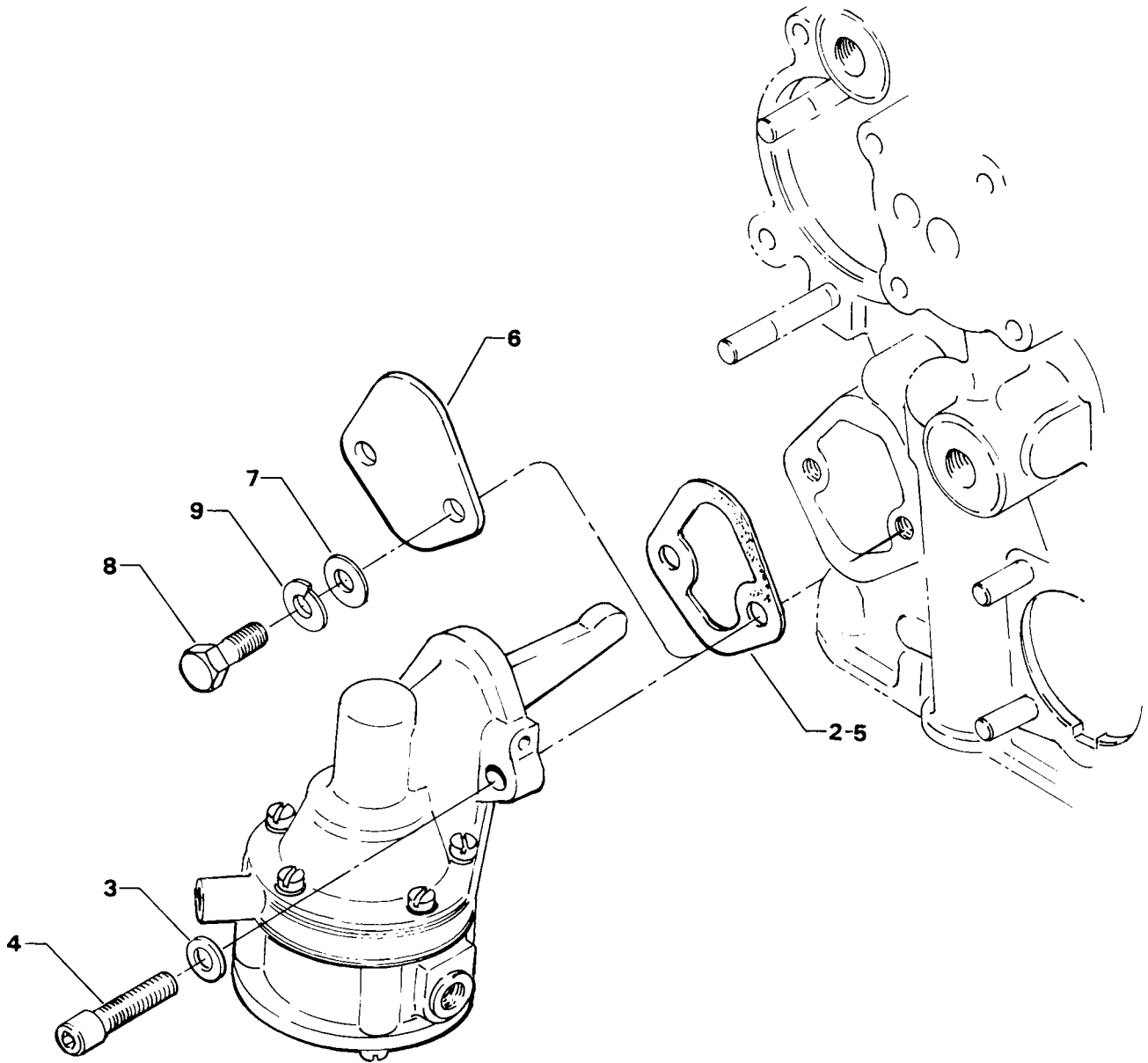




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Figure 10. Propeller Governor Drive and Cover



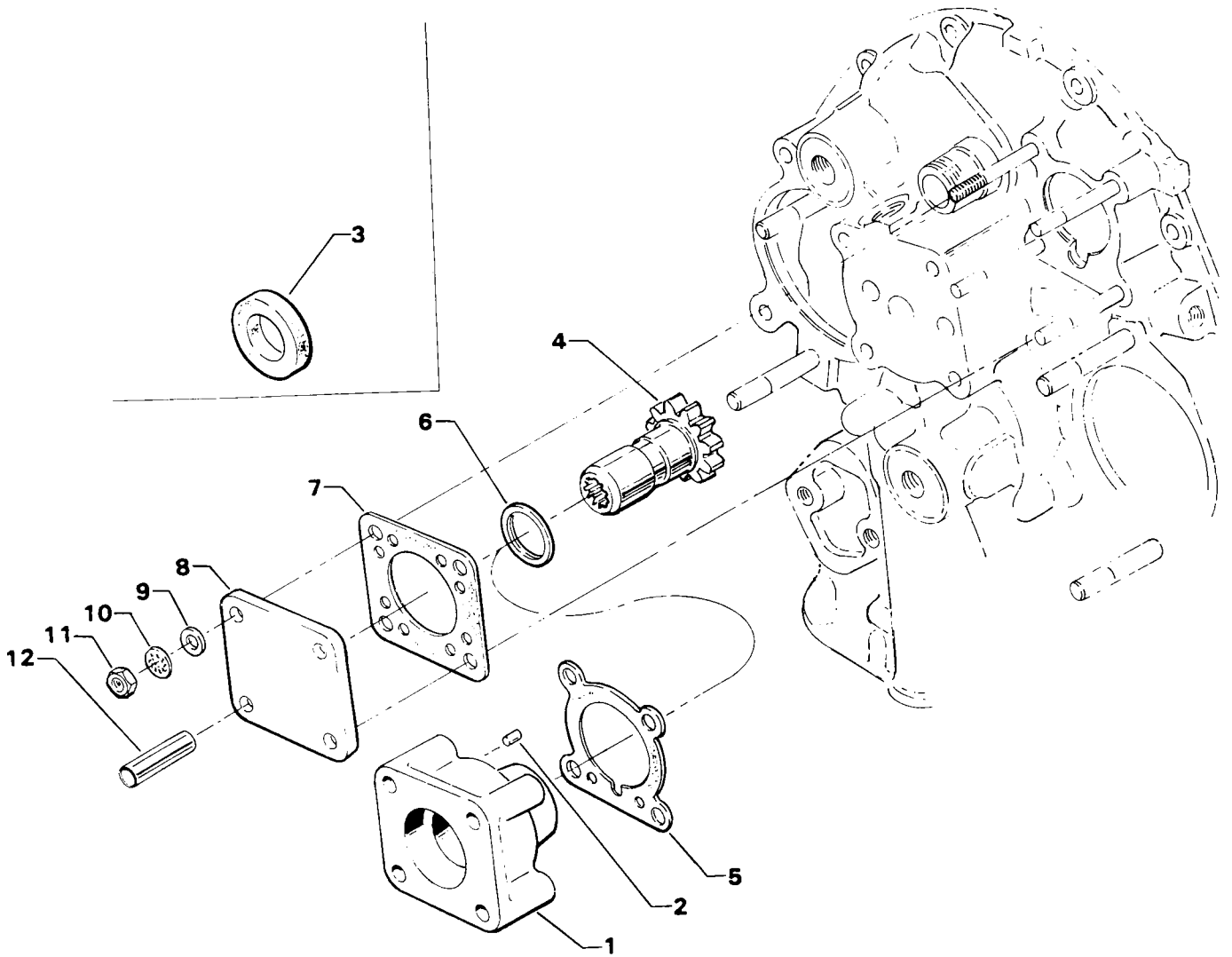


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Figure 11. Fuel Pump Assembly and Attaching Parts

ACCESSORY HOUSING AND RELATED PARTS  
VACUUM PUMP DRIVE AND COVER

FIG. REF. 12	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY																									
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A	N 2 C									
1	61098	ADAPTER ASSY., Vacuum pump		1	1		1	1	1	1		1	1	1		1	1	1	1	1									
2	STD-1774	PIN, 1/8 dia. x 1/4 long		1	1		1	1	1	1		1	1	1		1	1	1	1	1									
3	STD-208	SEAL, Oil, 7/8 ID x 1-1/2 OD x 5/16 wide		1	1		1	1	1	1		1	1	1		1	1	1	1	1									
4	72970	GEAR ASSY., Vacuum pump driven		1	1		1	1	1	1		1	1	1		1	1	1	1	1									
5	61183	GASKET, Accessory adapter	1																										
6	71596	WASHER, Accessory driven gear		1	1		1	1	1	1		1	1	1		1	1	1	1	1									
7	8313	GASKET, Vacuum pump		1	1		1	1	1	1		1	1	1		1	1	1	1	1									
8	60430	COVER, Vacuum pump	1																										
9	STD-8	WASHER, 1/4 plain	4																										
10	STD-160	WASHER, 1/4 lock	4																										
11	STD-1411	NUT, 1/4-20 plain	4																										
12	68593	SPACER, Vacuum pump stud		4	4	4	4	4			4				4	4			4										



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Figure 12. Vacuum Pump Drive and Cover

ACCESSORY HOUSING AND RELATED PARTS  
OIL FILTER ASSEMBLY AND OIL COOLER BYPASS VALVE

FIG. REF. 13	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY															
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A
1	77853	HOUSING ASSY., Oil filter		1															
2	77852	BASE ASSY., Oil filter		1										1	1	1	1	1	
3	54D19625	OIL FILTER, Short, spin-on												1	1	1	1	1	
4	LW-12999	PLATE, Oil filter adapter		1										1	1	1	1	1	
5	LW-12795	GASKET, Oil filter adapter		2										2	2	2	2	2	
6	75944	VALVE ASSY., Temp. control, oil cooler																	
		bypass		1	1		1	1	1	1	1	1	1	1	1	1	1	1	
7	62817	SCREEN ASSY., Oil pressure		1	1	1	1	1	1	1	1	1	1	1	1				
8	68974	HOUSING, Oil pressure screen		1	1	1	1	1							1				
9	69510	HOUSING, Oil pressure screen		1	1		1	1	1	1	1	1	1	1	1				
10	61173	GASKET, Oil pressure housing		1	1	1	1	1	1	1	1	1	1	1	1				
11	STD-294	GASKET, 7/8 x 5/8 ID x 3/32																	
		annular		1	1	1	1	1	1	1	1	1	1	1	1			1	
12	STD-111	GASKET, 1.00 ID x 1-1/4 OD x 3/32		1										1	1				
13	25C-10	STUD, 1/4-20 x 1-1/4		1										1	1	1	1	1	
14	STD-1350	PLUG, 1.00-14 sq. hd. drilled		1										1	1				
15	STD-8	WASHER, 1/4 plain	4																
16	STD-160	WASHER, 1/4 lock		1										1	1	1	1	1	
17	STD-1856	SCREW, 1/4-20 x 1.00 hex hd.,																	
		slotted		4	4	4	4	4	4	4	4	4	4	4	4				
	STD-1856	SCREW, 1/4-20 x 1.00 hex hd.,																	
		slotted		3										3	3	3	3	3	
18	STD-1411	NUT, 1/4-20 plain		1										1	1	1	1	1	
19	69436*	SPRING, Oil cooler bypass		1	1		1								1				
20	62415*	PLUNGER, Oil cooler bypass		1	1		1								1				
21	STD-294	GASKET, 7/8 x 5/8 ID x 3/32																	
		annular		1	1		1	1	1	1	1	1	1	1	1	1	1	1	
22	62417	PLUG, Oil cooler bypass		1	1		1	1	1	1	1	1	1	1	1	1	1	1	
23	STD-784	PLUG, 3/8 NPT		2	2		2	2	2	2	2	2	2	2	2	2	2	2	
24	AN816-8	NIPPLE, 1/2 flared tube, 3/8 NPT												2			2		
25	AN777-8D	ELBOW, Universal 75°					1	1							1				
26	AN901-8A	GASKET, Metal tube connection seal					1	1							1				
27	71620	BOLT, Oil cooler fitting					1	1							1				
28	71623	WASHER, Oil cooler fitting					1	1							1				

\* Do not use spring and plunger on engines equipped with 75944 oil cooler bypass valve or engines without oil cooler installation.

2595

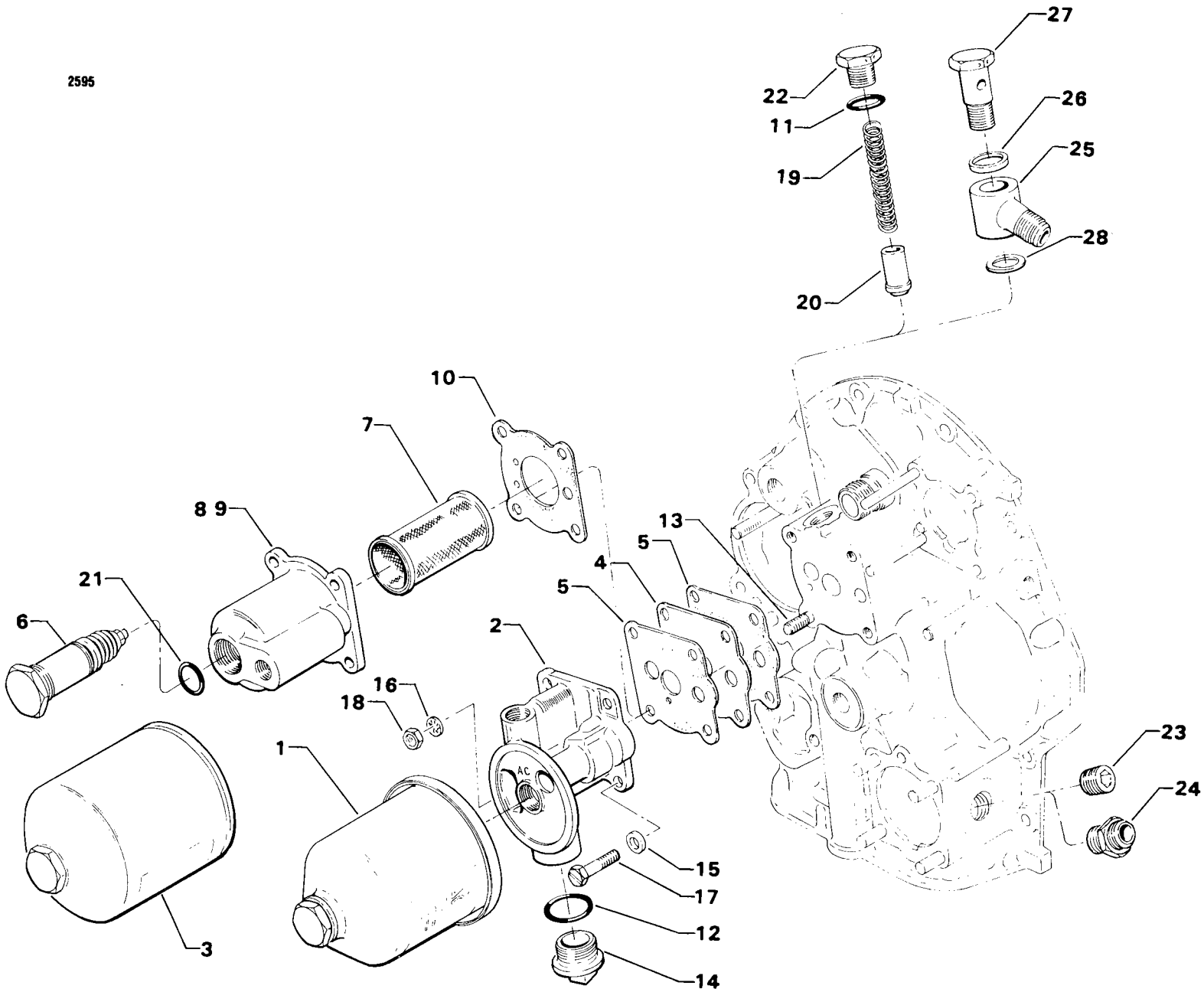


Figure 13. Oil Filter Assembly and Oil Cooler Bypass Valve



CYLINDER, PISTON AND VALVE TRAIN  
CONNECTING RODS, PISTONS AND RING ASSEMBLIES

FIG. REF. 14	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY															
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A
1	78030	ROD ASSY., Connecting	4																
2	LW-13923	BUSHING, Connecting rod, upper	4																
3	78027	BOLT, Connecting rod	8																
4	LW-12186	NUT, Connecting rod	8																
5	69373	BEARING, Connecting rod	8																
6	73851	PISTON, Low compression		4	4	4	4	4			4								
	LW-11621	PISTON, Compression ratio 9.7:1							4	4		4							
	LW-13623	PISTON, Compression ratio 8.5:1										4	4	4	4	4	4	4	4
7	60827	PIN, Piston		4	4	4	4	4			4								
	LW-13445*	PIN, Piston							4	4	4	4	4	4	4	4	4	4	4
8	60828	PLUG, Piston pin		8	8	8	8	8			8								
	LW-11625	PLUG, Piston pin (piloted)							8	8	8	8	8	8	8	8	8	8	8
9	68196	RING, Piston, compression		8	8	8	8	8			8								
	78862	RING, Piston, compression							8	8		8	8	8	8	8	8	8	8
10	LW-16867	RING, Piston, oil regulating		4	4	4	4	4			4								
	78864	RING, Piston, oil regulating, expander type							4	4		4	4	4	4	4	4	4	4
11	60072	RING, Piston, scraper (plain)		4	4	4	4	4			4								

\* Used with piloted plug P/N LW-11625.

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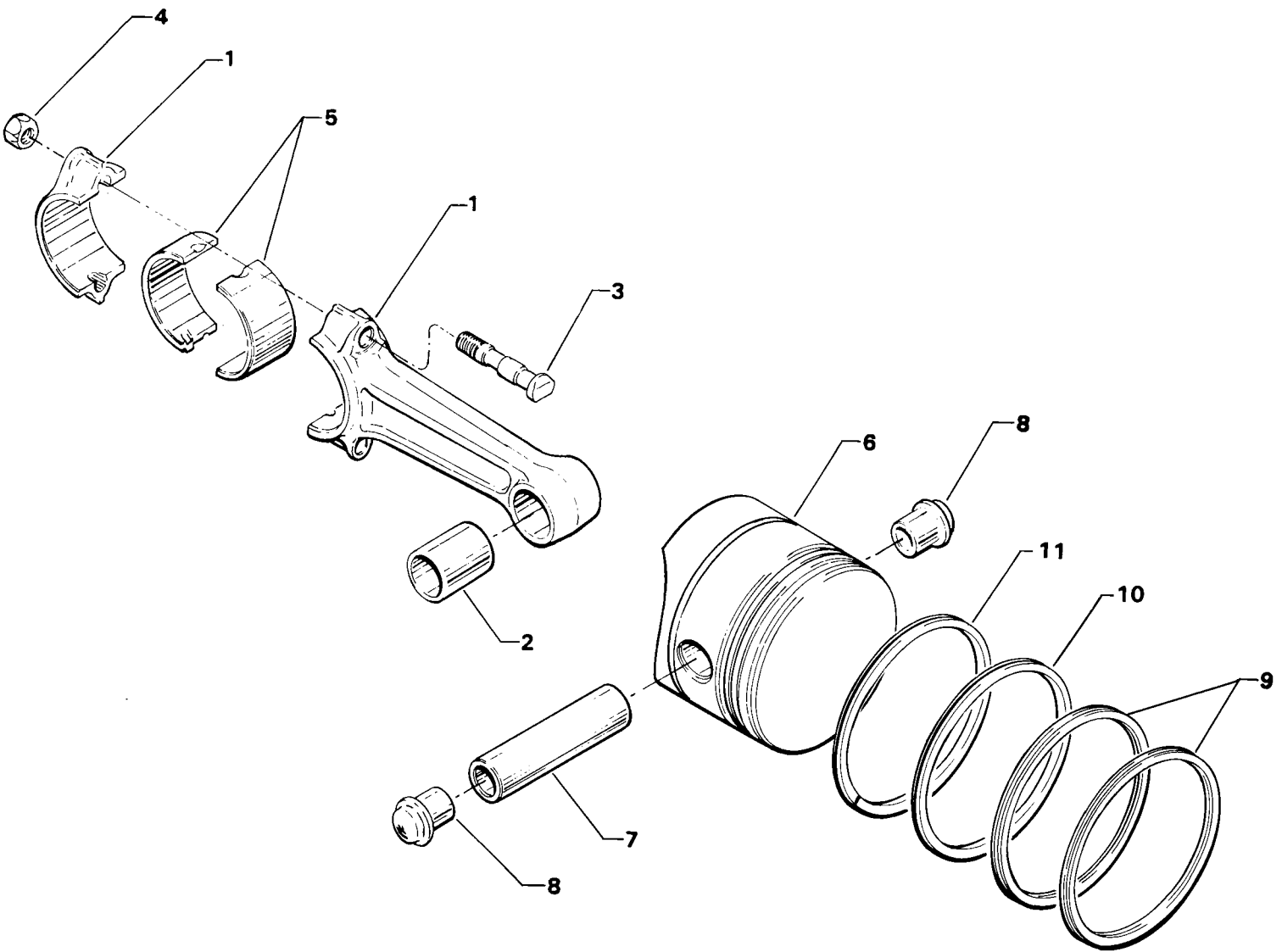
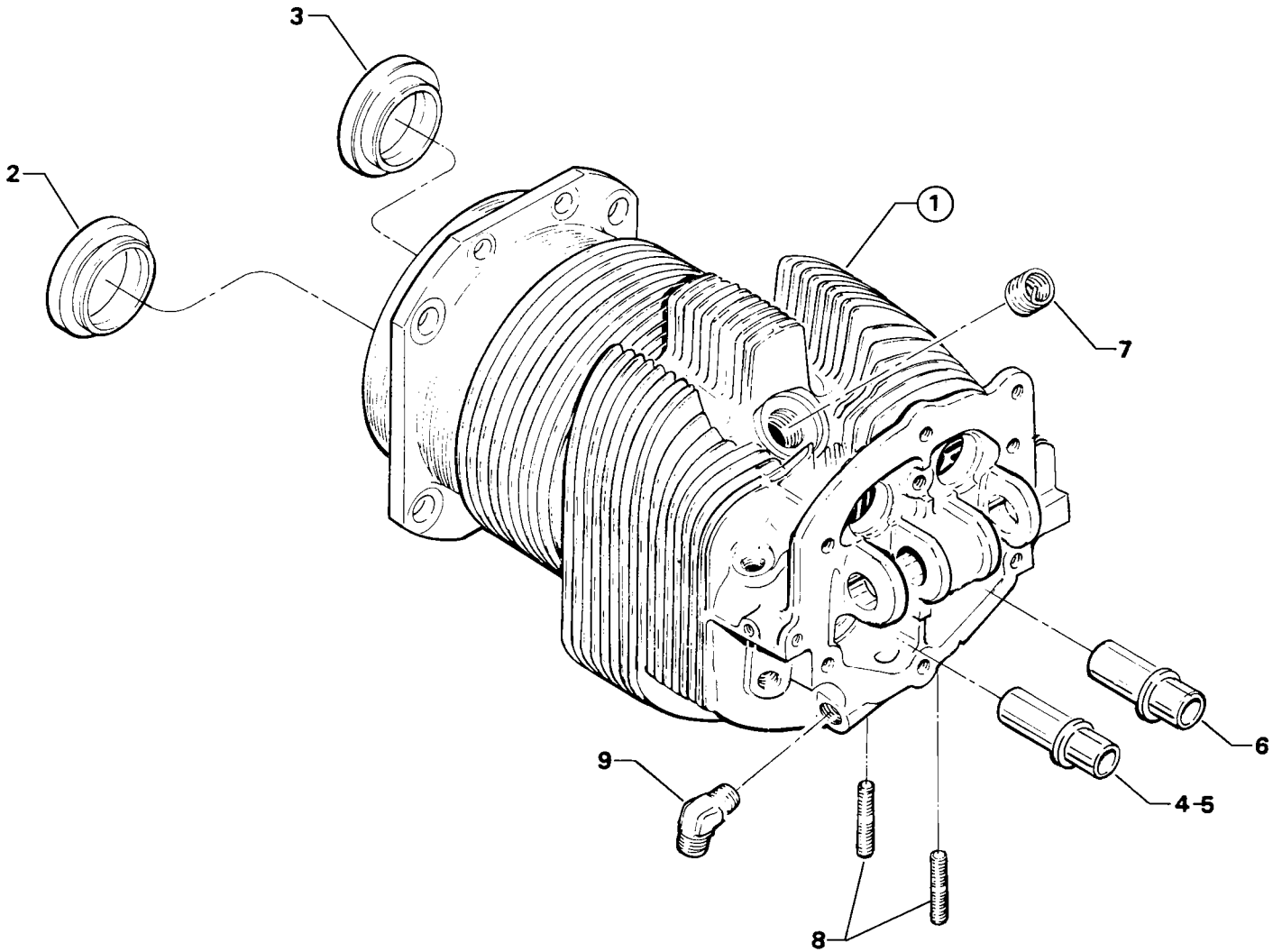


Figure 14. Connecting Rods, Pistons and Ring Assemblies





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Figure 15. Cylinder Assembly



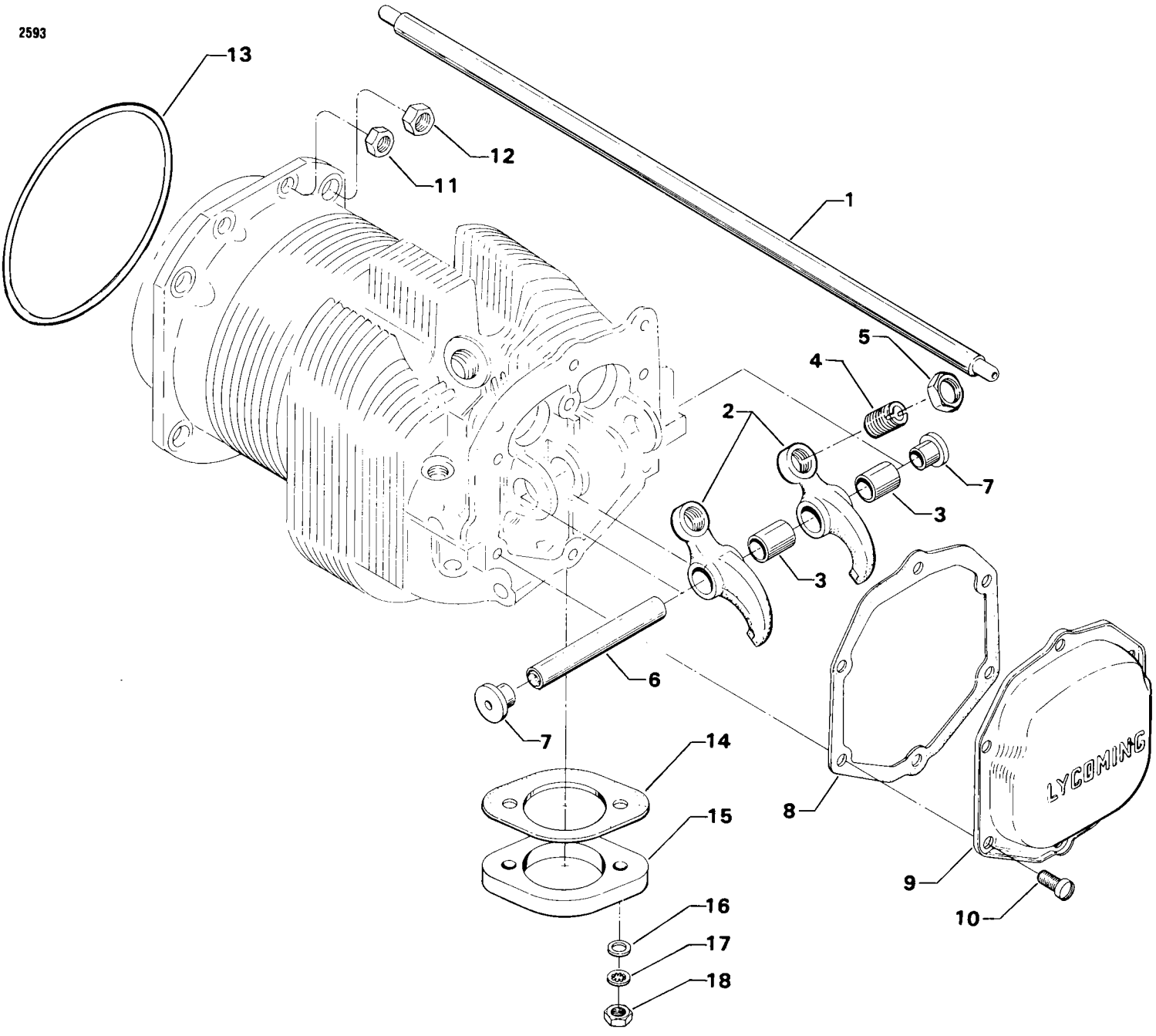


Figure 16. Cylinder Related Parts

CYLINDER, PISTON AND VALVE TRAIN  
VALVE ASSEMBLY

FIG. REF. 17	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY															
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A
1	60037	VALVE, Intake		4	4	4	4	4			4								
	LW-11901	VALVE, Intake							4	4		4	4	4	4	4	4	4	4
2	66531	VALVE, Exhaust		4	4	4	4	4			4								
	LW-11634	VALVE, Exhaust		4	4				4	4		4	4	4	4	4	4	4	4
3	61252	SEAT, Valve spring, outer	8																
4	LW-13320	SEAT, Valve spring, inner	8																
5	LW-10077	SEAT, Valve spring	8																
6	LW-11795	SPRING, Valve, auxiliary	8																
7	LW-11800	SPRING, Valve, outer	8																
8	60903	TUBE, Push rod shroud	8																
9	LW-18661	SEAL, Shroud tube	16																
10	60009	KEY, Valve	16																

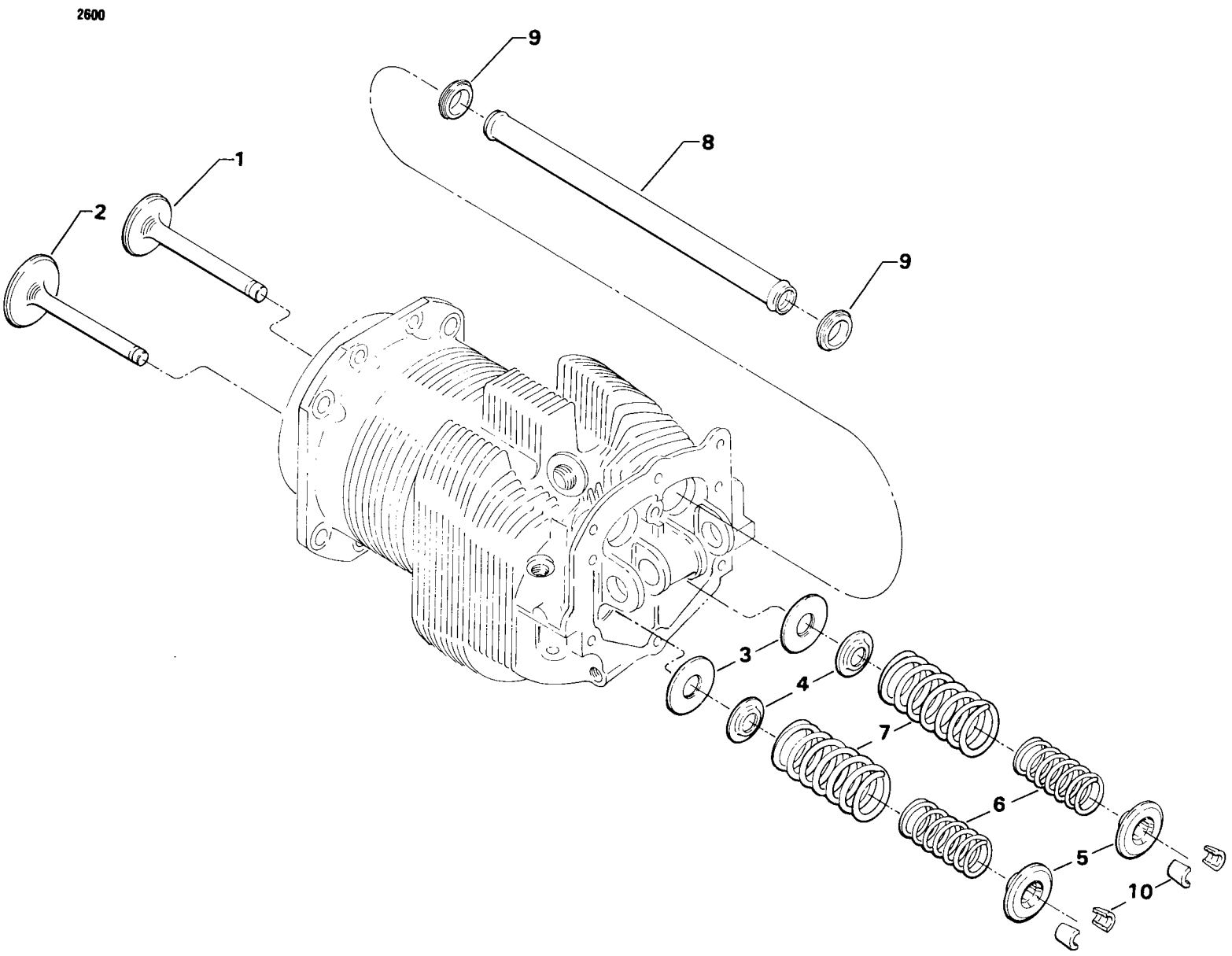


Figure 17. Valve Assembly





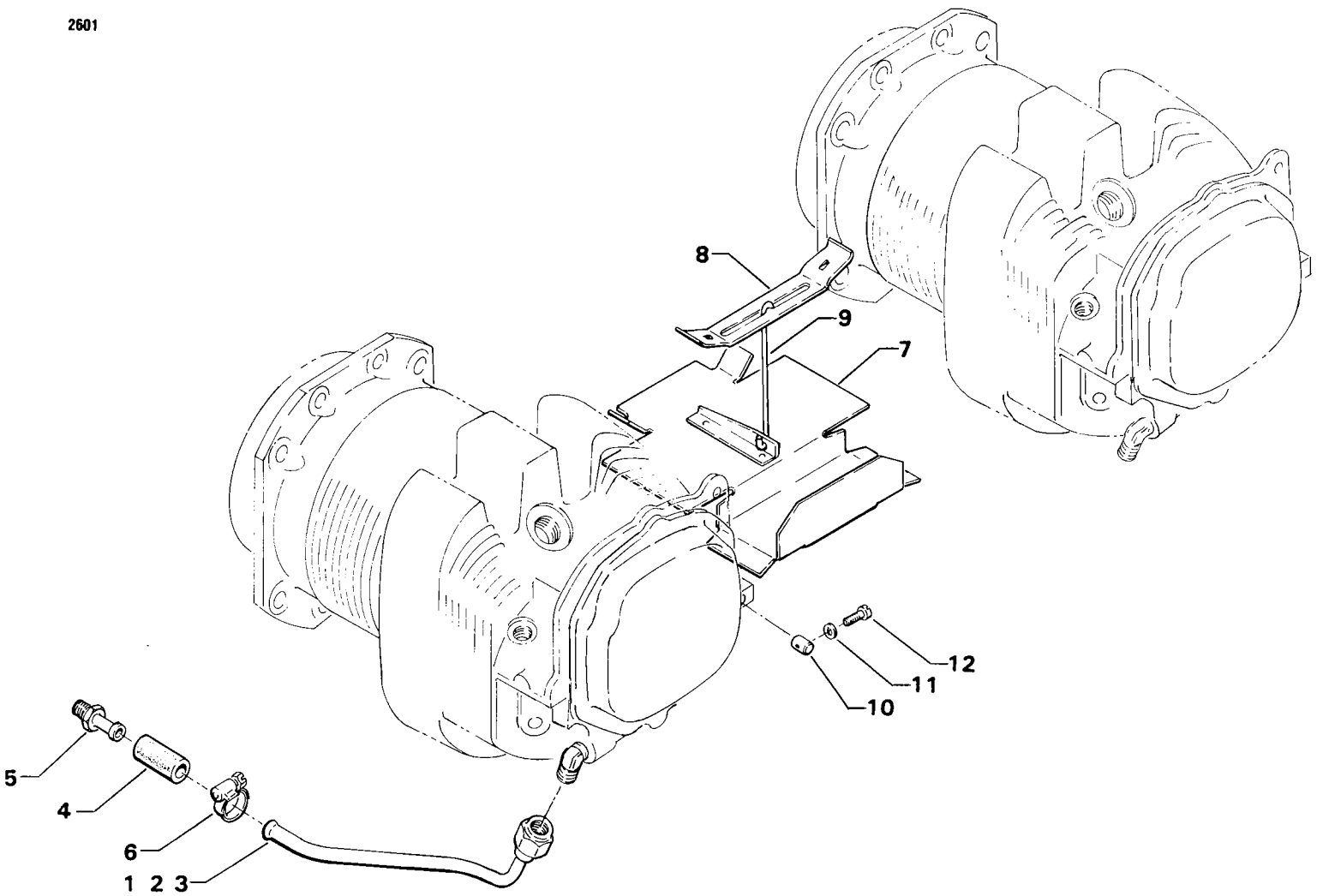
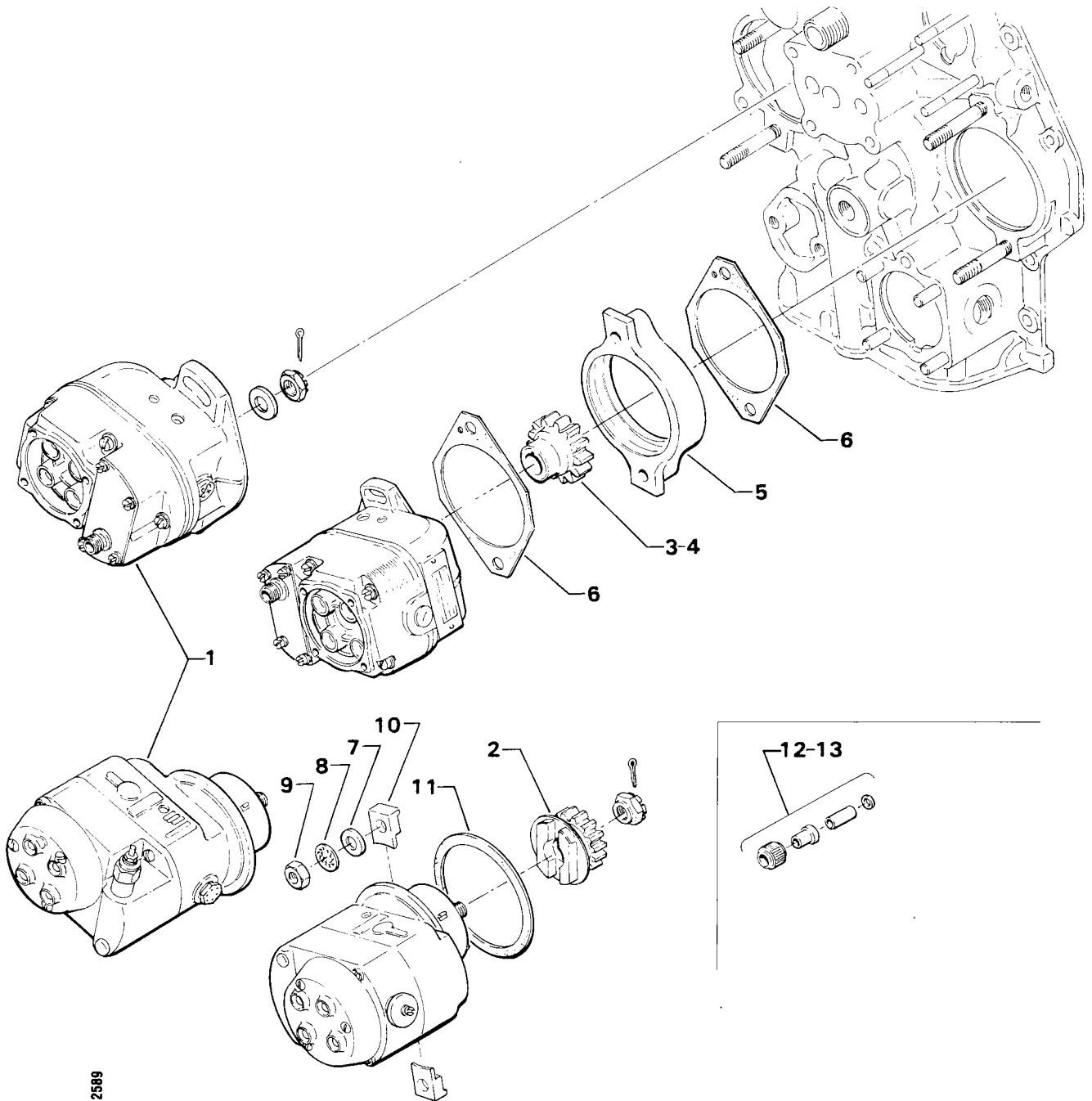


Figure 18. Cylinder Head Drain Tubes and Inter-cylinder Cooling Baffles

IGNITION SYSTEM  
MAGNETOS AND MAGNETO DRIVES

FIG. REF. 19	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY																							
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A	N 2 C							
1	LW-51360-29	MAGNETO, S4LN-20		1			1	1				1	1			1	1	1									
	LW-51360-37	MAGNETO, Impulse coupling, S4LN-21		1			1	1				1															
	LW-51360-54	MAGNETO, Impulse coupling, S4LN-21											1			1		1	1								
	LW-51360-58	MAGNETO, Impulse coupling, S4LN-21														1											
	LW-163045-8	MAGNETO, S4LN-204														1											
	LW-163045-3	MAGNETO, S4LN-204				1																					
	LW-163005-2	MAGNETO, Retard breaker, S4LN-200				1																					
	LW-349305-1	MAGNETO, S4LN-1209								1						1											
	LW-349365-3	MAGNETO, S4LN-1227								1																	
	LW-349365-9	MAGNETO, S4LN-1227														1											
2	61665	GEAR, Magneto, impulse coupling		1			1	1	1			1	1	1		1		1	1								
3	72495	GEAR, Magneto, retard breaker				1																					
4	61163	GEAR, Magneto		1	1		1	1	1			1	1	1		1		1	1								
5	LW-12706	ADAPTER, Magneto, impulse coupling		1			1	1	1			1	1	1		1		1	1								
6	62224	GASKET, Magneto adapter and magneto		3	2		3	3	1			3	3	1		3		3	3								
7	STD-1727	WASHER, Plain, 3/4 OD x 21/64 ID x 1/8 thick		4	4		4	4				4	4			4		4	4								
8	STD-475	WASHER, 5/16 lock, internal teeth		4	4		4	4	4			4	4	4		4		4	4								
9	STD-1410	NUT, 5/16-18 plain		4	4		4	4	4			4	4	4		4		4	4								
10	75965	CLAMP, Magneto								4				4													
11	LW-12681	GASKET, Magneto							2				2														
12	LW-52305-1	KIT ASSY., Magneto ground terminal		2			2	2				2				2		2	2								
	LW-157209	KIT ASSY., Magneto ground terminal				2																					
13	LW-157208	KIT ASSY., Magneto ground terminal				1																					



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Figure 19. Magnetos and Magneto Drives

IGNITION SYSTEM  
MAGNETOS AND MAGNETO DRIVES

FIG. REF. 20	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY															
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A
1	LW-15635	MAGNETO & HARNESS ASSY., Right (Slick)				1	1			1			1	1					
2	LW-15636	MAGNETO, Right (Slick Model 4250)			1	1			1				1	1					
3	77743	HARNESS ASSY., Ignition, right			1	1			1				1	1					
4	LW-16596	MAGNETO & HARNESS ASSY., Right (Slick)												1					
5	LW-15636	MAGNETO, Right (Slick Model 4250)												1					
6	LW-15866	HARNESS ASSY., Ignition, right												1					
7	LW-16590	MAGNETO & HARNESS ASSY., Right (Slick)												1			1		
8	LW-16595	MAGNETO, Right (Slick Model 4281, impulse coupling)												1			1		
9	77743	HARNESS ASSY., Ignition, right												1			1		
10	LW-16685	MAGNETO & HARNESS ASSY., Right (Slick)											1						
11	LW-16594	MAGNETO, Right (Slick Model 4252, impulse coupling)												1					
12	77743	HARNESS ASSY., Ignition, right												1					
13	LW-15637	MAGNETO & HARNESS ASSY., Left (Slick)			1	1			1										
14	LW-15638	MAGNETO, Left (Slick Model 4251, impulse coupling)			1	1			1										
15	77745	HARNESS ASSY., Ignition, left			1	1			1										
16	LW-16587	MAGNETO & HARNESS ASSY., Left (Slick)											1	1					
17	LW-16594	MAGNETO, Left (Slick Model 4252, impulse coupling)											1	1					
18	77745	HARNESS ASSY., Ignition, left											1	1					
19	LW-16588	MAGNETO & HARNESS ASSY., Left (Slick)												1					
20	LW-16595	MAGNETO, Left (Slick Model 4281, impulse coupling)												1					
21	LW-15868	HARNESS ASSY., Ignition, left												1					
22	LW-16589	MAGNETO & HARNESS ASSY., Left (Slick)												1			1		
23	LW-16595	MAGNETO, Left (Slick Model 4281, impulse coupling)												1			1		
24	77745	HARNESS ASSY., Ignition, left												1			1		
25	61665	GEAR, Magneto, impulse coupling			1	1			1				1	1					
	61665	GEAR, Magneto, impulse coupling											2	2			2		
26	61163	GEAR, Magneto			1	1			1				1	1					
27	LW-12706	ADAPTER, Magneto, impulse coupling			1	1			1				1	1					
	LW-12706	ADAPTER, Magneto, impulse coupling											2	2			2		
28	62224	GASKET, Magneto adapter and magneto			1	1			1				1	1					
	62224	GASKET, Magneto adapter and magneto											2	2			2		

IGNITION SYSTEM  
MAGNETOS AND MAGNETO DRIVES (Cont.)

FIG. REF.	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY														
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1
29	LW-12681	GASKET, Magneto				2	2			2			2	2				2
30	76961	CLAMP, Magneto			4	4		4				4	4					4
31	LW-14057	CLIP, 1 wire			2	2		2				2	2					2
	LW-14057	CLIP, 1 wire										4						
32	LW-14060	CLIP, 2 wire			3	3		3				3	3					3
33	STD-475	WASHER, 5/16 lock, internal teeth			4	4		4				4	4					4
34	STD-1727	WASHER, Plain, 3/4 OD x 21/64 ID x 1/8 thick			4	4		4				4	4					4
35	STD-1410	NUT, 5/16-18 plain			4	4		4				4	4					4
36	STD-761	COTTER PIN, 3/32 dia. x 1.00 long			1	1		1				1	1					
	STD-761	COTTER PIN, 3/32 dia. x 1.00 long										2	2					2

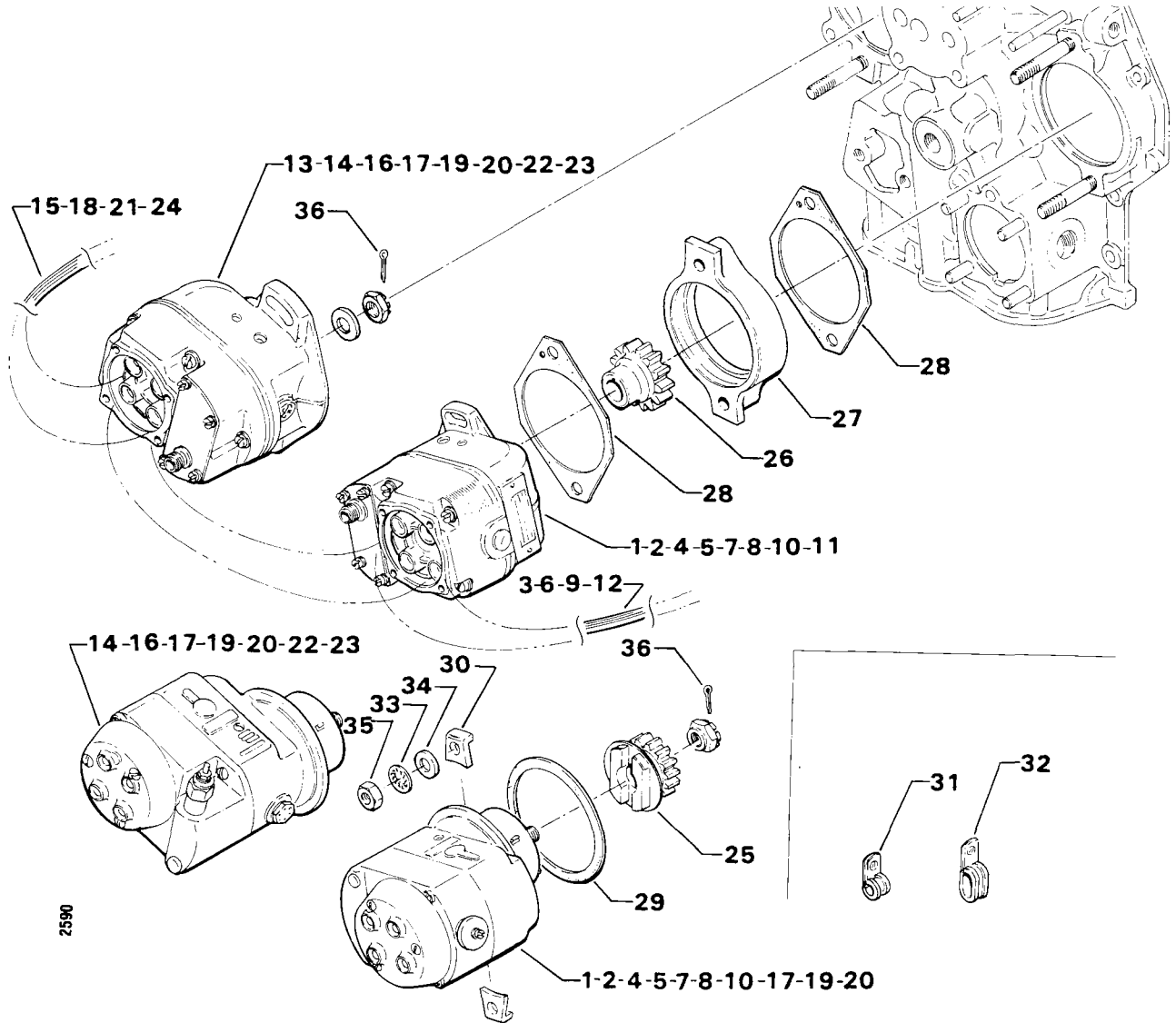


Figure 20. Magnetos and Magneto Drives

IGNITION SYSTEM  
IGNITION HARNESS AND LEAD ASSEMBLY (SLICK)

FIG. REF. 21	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY															
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A
1	LW-M-2403	HARNESS ASSY., Left magneto (Slick)		1	1	1	1		1	1			1	1					
	LW-M-2415	HARNESS ASSY., Left magneto (Slick)							1			1							
	LW-M-2404	HARNESS ASSY., Right magneto (Slick)		1	1	1	1		1	1			1	1					
	LW-M-2416	HARNESS ASSY., Right magneto (Slick)							1			1							
2	LW-M-2375	PLATE, Spark plug cable		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
3	LW-14060	CLIP, Two wire for 1/4 screw		3	3	3	3	2	3	3	2	3	3	3	3	3	3	3	
4	LW-14057	CLIP, One wire for 1/4 screw						2			2								
5	71909	CLAMP, 1-1/2 ID (Offset)		4	4	4	4		4	4		4	4	4	4	4	4	4	
6	LW-16266-25-50	CLAMP		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
7	STD-8	WASHER, 1/4 plain		1	1	1	1	8	1	1	8	1	1	1	1	1	1	1	
8	STD-160	WASHER, 1/4 lock, internal teeth		2	2	2	2		2	2		2	2	2	2	2	2	2	
9	STD-696	WASHER, 1/4 plain						un			un								
10	AN500-416-12	SCREW, 1/4-20 x 3/4 long, fill. hd.		1	1	1	1		1	1		1	1	1	1	1	1	1	
11	AN500A-416-10	SCREW, 1/4-20 x 5/8 long		1	1	1	1		1	1		1	1	1	1	1	1	1	
12	STD-553	SCREW, 6/32 x 1/2 long, rd. hd.		4	4	4	4		4	4		4	4	4	4	4	4	4	
13	STD-1874	SCREW, 1/4-20 self-locking						4			4								
14	STD-1411	NUT, 1/4-20 plain		1	1	1	1		1	1		1	1	1	1	1	1	1	
15	AN365-632A	NUT, 6-32 self-locking		4	4	4	4		4	4		4	4	4	4	4	4	4	
16	76734	ZIP STRAP		2	2	2	2	6	2	2	6	2	2	2	2	2	2	2	
*	M-1985-48	LEAD ASSY., Replacement top & bottom leads (LW-M-2403 & LW-M-2404 harnesses)		un	un	un	un		un	un		un	un	un	un	un	un	un	
*	M-1985-48	LEAD ASSY., Replacement top leads, except for 1T, 2T. (LW-M-2415 & LW-M-2416 harnesses)						un			un								
*	M-1985-72	LEAD ASSY., Replacement 1T, 2T leads (LW-M-2415 & LW-M-2416 harnesses)						un			un								
*	76923-48S70-63	LEAD ASSY., Replacement, top and bottom leads (78539 harness)		un	un	un	un		un			un							
*	76923-72S90-63	LEAD ASSY., Replacement, Nos. 1 & 2 top leads (78546 harness)						un			un								
*	76923-48S90-63	LEAD ASSY., Replacement, Nos. 3 & 4 top leads (78546 harness)						un			un								
*	76923-48S70-63	LEAD ASSY., Replacement, bottom leads (78546 harness)						un			un								

\* Replacement lead assemblies have spark plug terminal end assembled and are shipped with necessary parts to complete magneto end assembly after being cut to proper length.

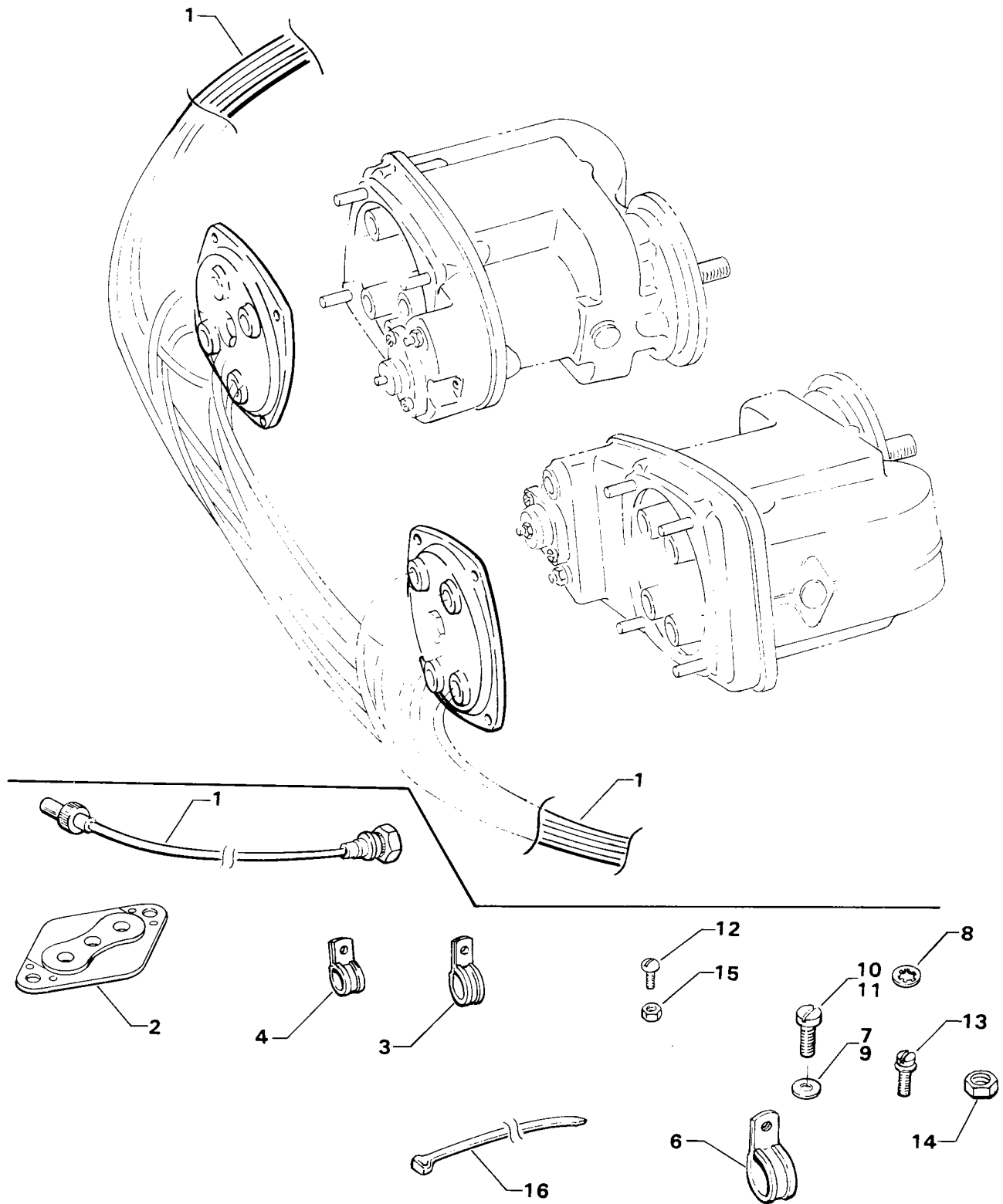


Figure 21. Ignition Harness and Lead Assembly (Slick)



IGNITION SYSTEM  
SPARK PLUGS

FIG. REF. 22	PART NUMBER	DESCRIPTION	O N A L	QUANTITY PER ASSEMBLY															
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A
1	1182-B3	SPARK PLUG, (Champion REM-40E), high compression, shielded		8											8				
	1182-B6	SPARK PLUG, (Champion EM-41E), low compression, shielded		8	8	8	8	8		8									
	1182-J3	SPARK PLUG, (Champion REM-38E), high compression, shielded							8			8	8	8	8	8	8		
	1182-B7	SPARK PLUG, (Champion REM-37BY), extended electrode, shielded												8	8	8		8	
	1182-P3	SPARK PLUG, (AC-SR-86), resistor type, shielded							8	8		8	8	8					

NOTE

The above spark plugs are those used in current production only; this list does not include additional spark plugs that are approved for use in these engines. See latest edition of Service Instruction No. 1042 for complete listing of all approved spark plugs.

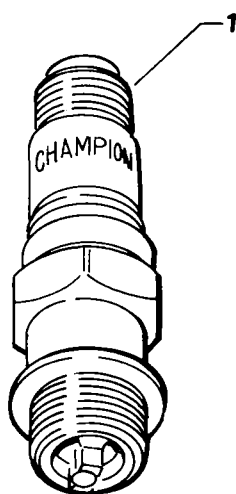
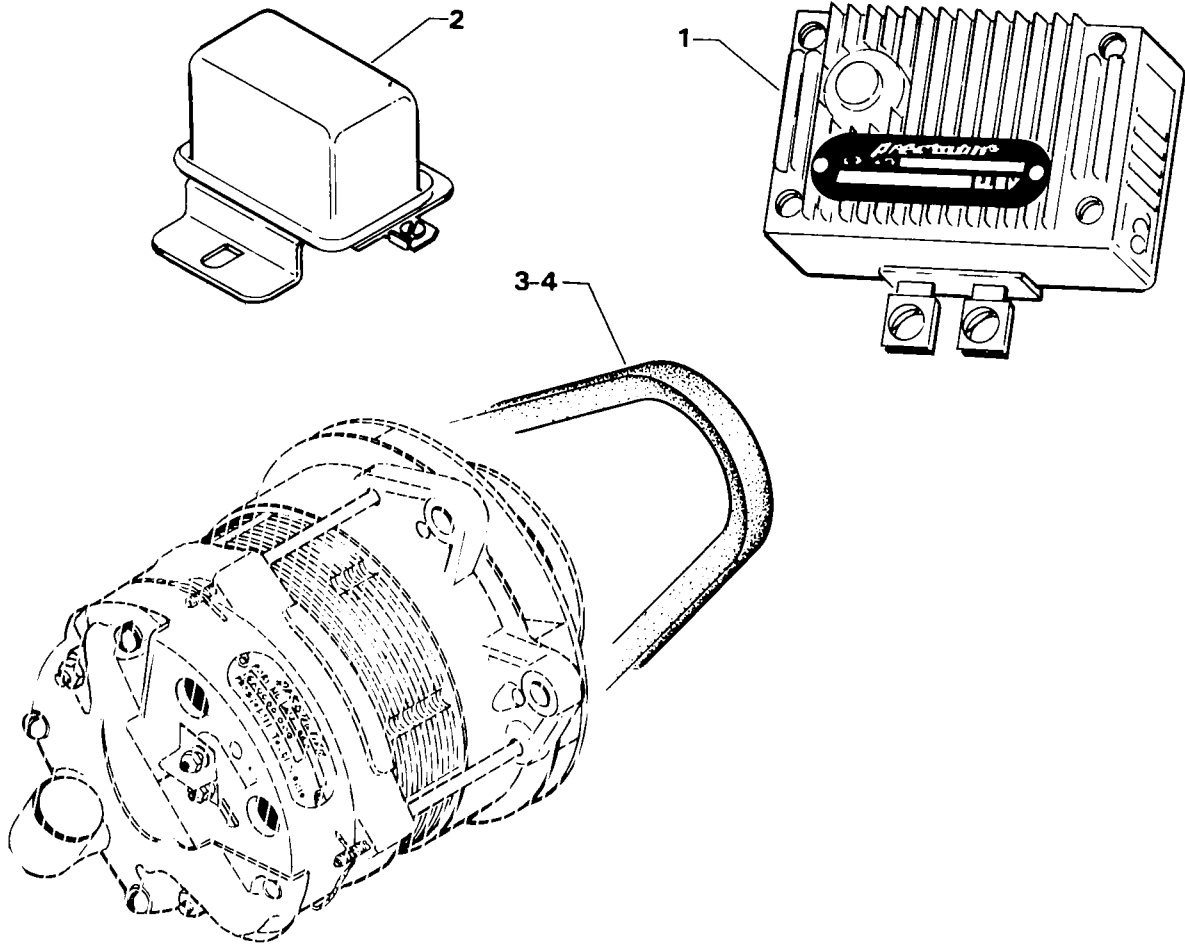


Figure 22. Spark Plugs

ELECTRICAL COMPONENTS

VOLTAGE REGULATORS, RELAY, ALTERNATOR AND GENERATOR DRIVE BELTS

FIG. REF. 23	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY																					
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A	N 2 C					
1	72205	REGULATOR, Voltage (12V - 20 Amp.)		1	1		1																		
	62833	REGULATOR, Voltage (12V - 35 Amp.)		1	1		1																		
	71745	REGULATOR, Voltage (12V - 50 Amp.)		1	1																				
	LW-10185	REGULATOR, Voltage, 12V, full transistor		1	1		1	1	1	1	1	1	1	1	1	1	1	1	1						
	LW-15895	REGULATOR, Voltage, 12V, transistorized		1				1						1		1									
	LW-10179	REGULATOR, Voltage, 24V, full transistor						1								1									
2	78059	RELAY, Overvoltage, 12V		1			1	1	1		1			1		1	1	1							
3	60886	BELT, Generator drive		1	1		1																		
4	76026	BELT, Alternator drive (3/8 wide)		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						



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Figure 23. Voltage Regulators, Alternator and Generator Drive Belts

ELECTRICAL COMPONENTS  
GENERATOR MOUNTING AND ATTACHING PARTS

FIG. REF. 24	PART NUMBER	DESCRIPTION	O N A L	QUANTITY PER ASSEMBLY															
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A
1	69113	BRACKET, Generator (For 12V - 20A)		1	1	1													
2	69452	BRACKET, Generator (For 12V - 35A & 50A)		1	1	1													
3	60733	SHIM, 11/32 ID x 1-1/8 OD x .005 thick		un	un	un													
4	STD-8	WASHER, 1/4 plain		1	1	1													
5	STD-160	WASHER, 1/4 lock		3	3	3													
6	STD-2084	BOLT, 1/4-20 x 1-3/4 long, hex. hd.		1	1	1													
7	STD-1414	BOLT, 1/4-20 x 1-1/2 long, hex. hd.		1	1	1													
8	STD-1215	BOLT, 1/4-20 x 1-1/4 long, hex. hd.		2	2	2													
9	STD-1411	NUT, 1/4-20 plain		1	1	1													
10	76028	LINK, Generator adjusting		1	1	1													
11	STD-35	WASHER, 5/16 plain		1	1	1													
12	LW-31H.75	BOLT, 5/16-18 x 3/4 long, hex. hd. dr.		2	2	2													
13	STD-1727	WASHER, Plain, 3/4 OD x 11/32 ID x 1/8 thick		1	1	1													
14	STD-1834	BOLT, 5/16-18 x 1-1/16 long, hex. hd. dr.		1	1	1													
15	STD-1835	BOLT, 5/16-18 x 1-23/64 long, hex. hd. dr.		1	1	1													
16	STD-35	WASHER, 5/16 plain		un	un	un													
17	STD-1420	NUT, 5/16-18 slotted		2	2	2													
18	STD-68	PIN, Cotter, 1/16 dia. x 1/2 long		2	2	2													
19	69951	STRUT, Generator support		1	1	1													
20	LW-31H.75	BOLT, 5/16-18 x 3/4 long, hex. hd. dr.		1	1	1													

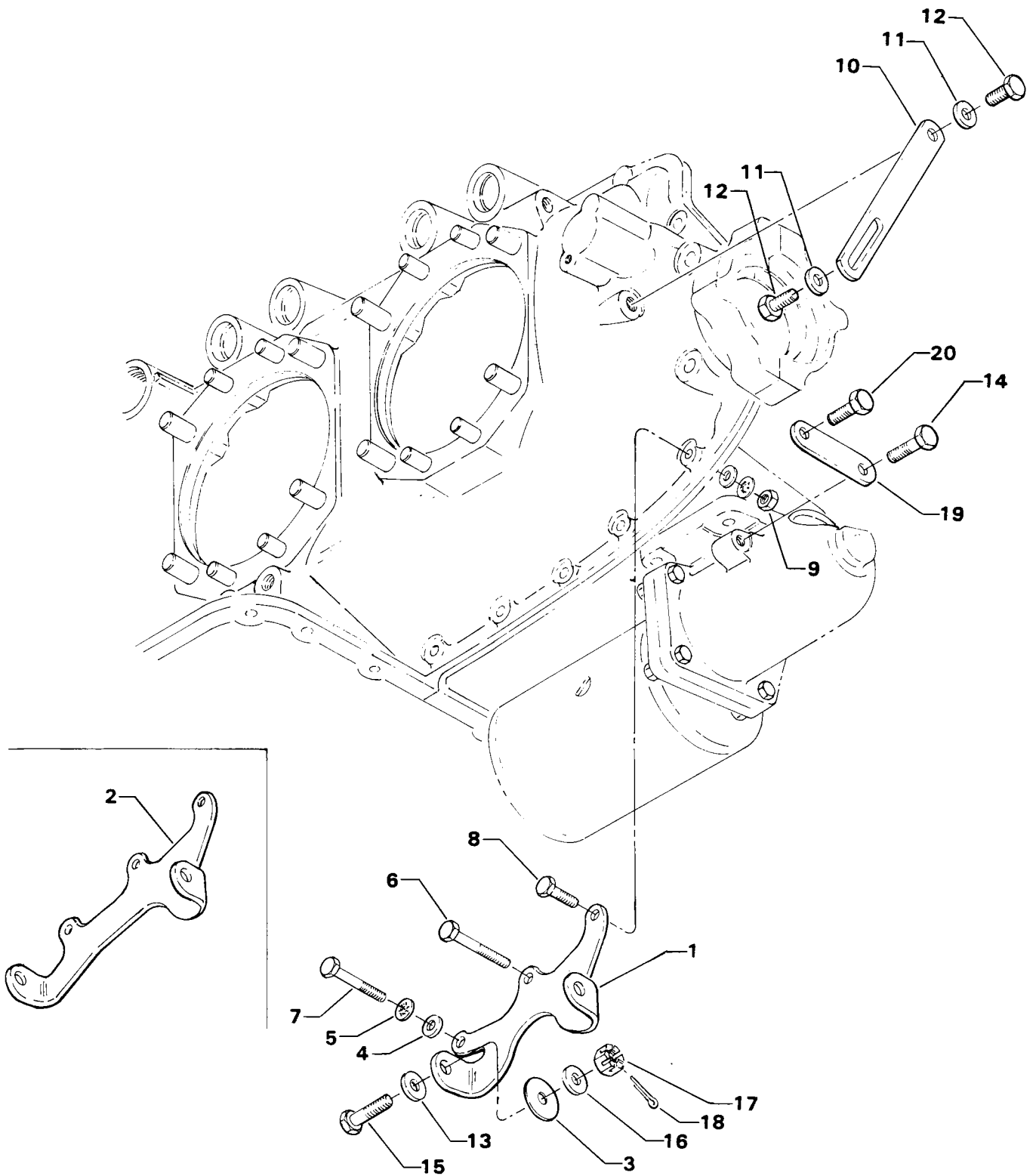


Figure 24. Generator Mounting and Attaching Parts







ELECTRICAL COMPONENTS  
GENERATOR AND ALTERNATOR ASSEMBLIES

FIG. REF. 26	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY															
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A
1	68767	GENERATOR, 12V - 35A (1101900)		1	1		1												
	71744	GENERATOR, 12V - 50A (1101915)		1	1														
2	78401*	ALTERNATOR, 12V - 40A, externally grounded (ALE-6406)		1			1	1											
	LW-14303*	ALTERNATOR, 12V - 40A, externally grounded (ALE-6420)					1												
	LW-14301*	ALTERNATOR, 12V - 40A, externally grounded (ALE-8420)					1	1											
	78308*	ALTERNATOR, 12V - 40A, externally grounded (ALE-8406)		1	1		1	1	1										
	LW-12832*	ALTERNATOR ASSY., 12V - 60A, internally grounded		1									1	1					
	LW-12739	STRAP, Alternator ground		1									1	1					
	LW-14319*	ALTERNATOR, 24V - 50A, externally grounded (ALT-8421)						1											
	LW-14309*	ALTERNATOR, 12V - 60A, externally grounded (ALY-8420)					1	1					1	1	1				
	LW-14308*	ALTERNATOR, 12V - 60A, less thermocouples, externally grounded (ALY-8420)		1	1	1	1	1	1	1	1	1	1	1	1	1			
	LW-14310*	ALTERNATOR, 12V - 60A, externally grounded (ALY-6420)		1			1	1											
	LW-12833*	ALTERNATOR ASSY., 12V - 60A, internally grounded													1				
	LW-12739	STRAP, Alternator ground													1				
	LW-12834*	ALTERNATOR ASSY., 12V - 60A, internally grounded						1							1				
	LW-12739	STRAP, Alternator ground						1							1				
	LW-14316*	ALTERNATOR, 12V - 70A, less thermocouples, externally grounded (ALX-8421)													1				
	LW-14317*	ALTERNATOR, 12V - 70A, externally grounded (ALX-8421)													1				
	LW-14324*	ALTERNATOR, 24V - 70A, less thermocouples, externally grounded (ALU-8421)													1				

\* 3.25:1 Ratio.

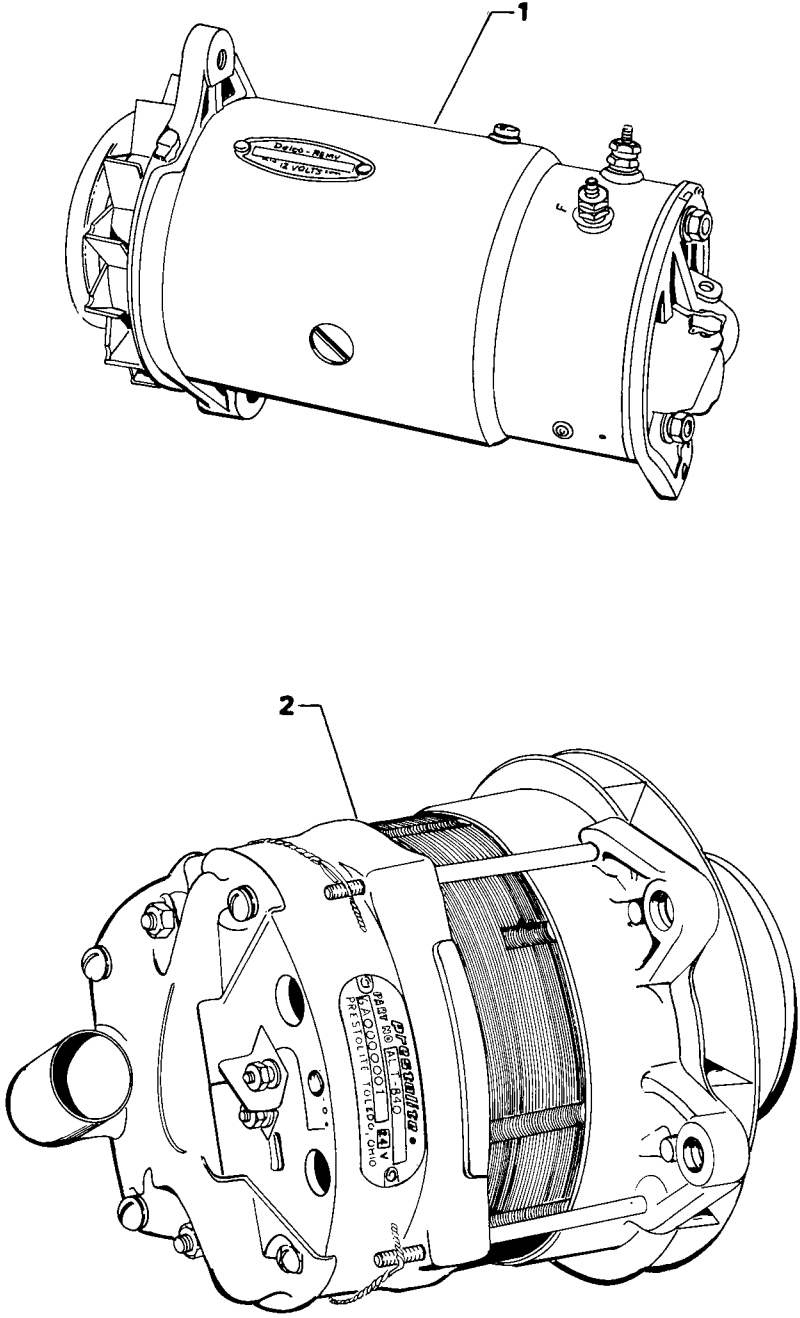


Figure 26. Generator and Alternator Assemblies

ELECTRICAL COMPONENTS  
STARTER MOTOR AND ATTACHING PARTS

FIG. REF. 27	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY																								
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A	N 2 C								
1	76210	STARTER, 12 volt, 10/12 pitch pinion (MZ-4204)		1	1	1	1	1	1	1	1	1	1	1	1	1	1											
	69953	STARTER, 24 volt; 10/12 pitch pinion (1109669)						1								1												
	LW-16207	STARTER, 24 volt, 10/12 pitch pinion (MMU-4001)													1	1												
	LW-15571	STARTER, 12 volt, 12/14 pitch pinion (MZ-4222)						1																				
2	STD-35	WASHER, 5/16 plain	4																									
3	STD-475	WASHER, 5/16 lock, internal teeth	4																									
4	LW-31-1.09	BOLT, 5/16-18 x 1-3/32 long, hex. hd.	4																									
5	STD-2156	BOLT, 5/16-18 x 1-5/32 long, hex. hd.					1																					
6	STD-1410	NUT, 5/16-18 plain					3																					
7	LW-12083	SWITCH, Magnetic (SAZ-4201-E-1)		1	1		1	1	1	1	1	1	1	1	1	1	1	1	1									
8	LW-12085	SWITCH, Magnetic (SAZ-4401C-1)					1									1												

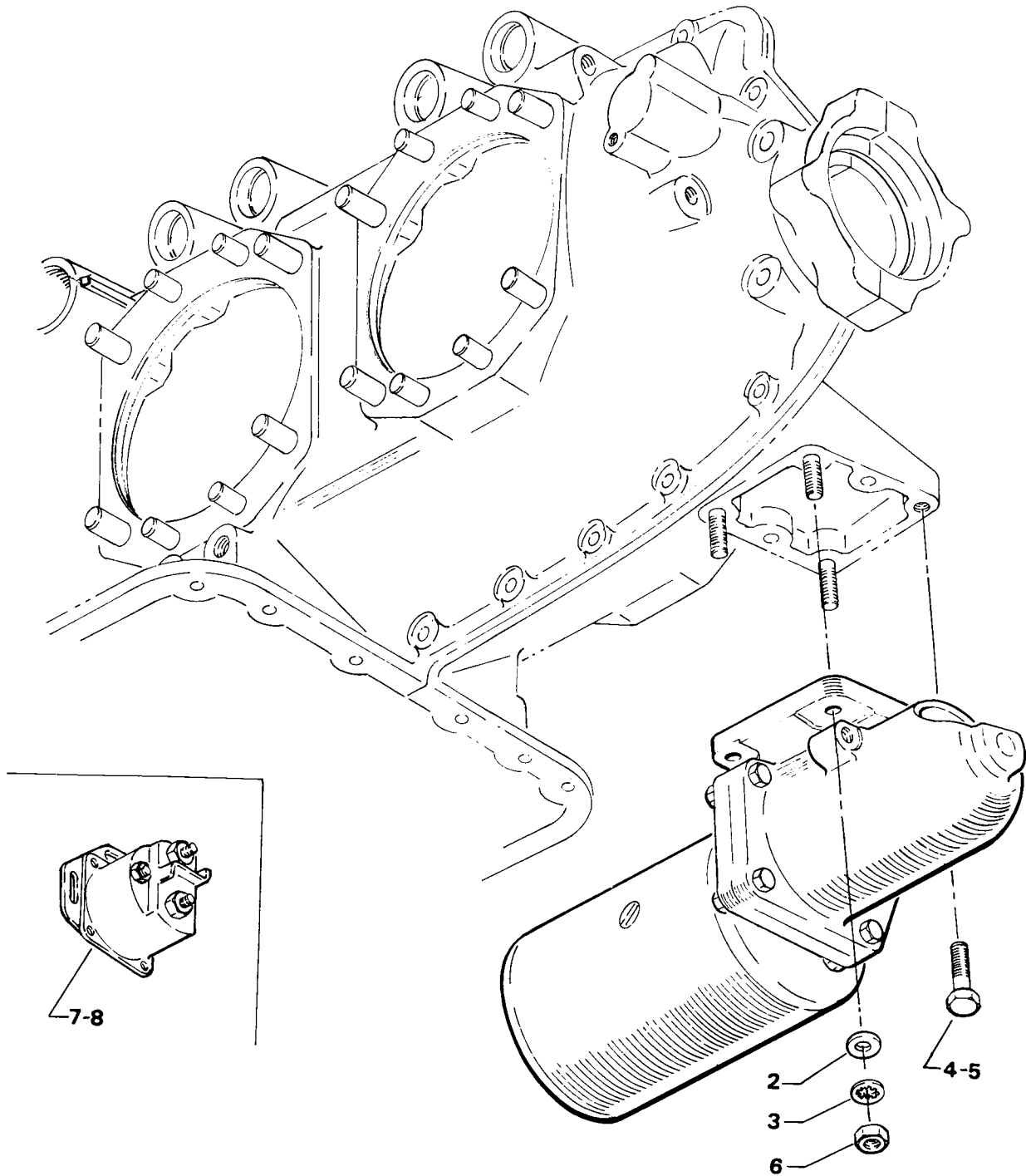
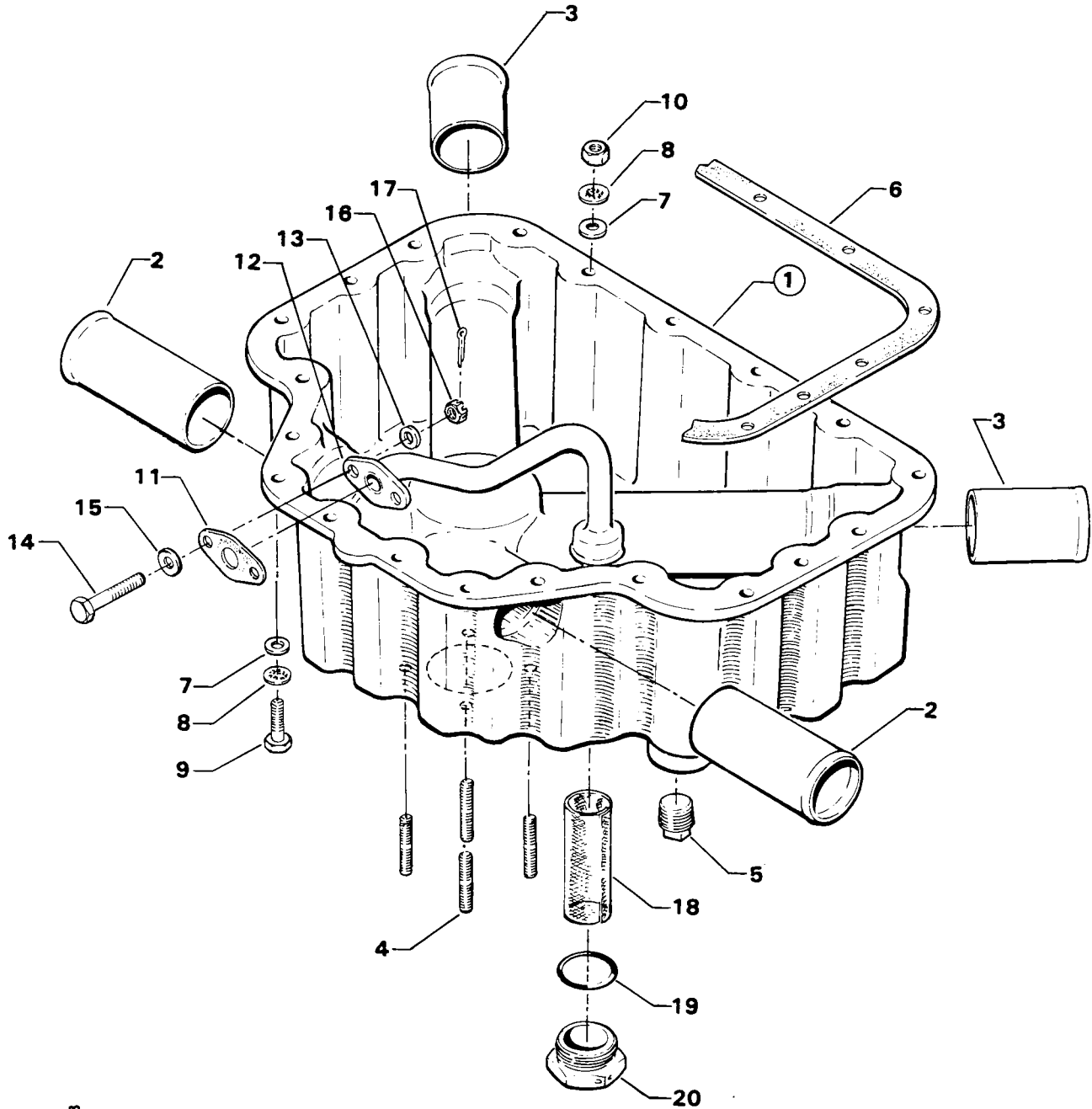


Figure 27. Starter Motor and Attaching Parts





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Figure 28. Oil Sump Assembly and Oil Suction Screen

OIL SUMP AND INDUCTION SYSTEM  
INTAKE PIPE ASSEMBLY

FIG. REF. 29	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY																							
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A	N 2 C							
1	LW-16728	PIPE, Intake cyls. nos. 1 & 2	2																								
2	LW-16730	PIPE, Intake, cyl. no. 3	1																								
3	LW-16729	PIPE, Intake, cyl. no. 4	1																								
4	STD-1196	HOSE, 1-1/2 ID x 1-7/8 x 1-1/2 long	4																								
5	LW-15592-8-28	CLAMP, Hose	8																								
6	71973	GASKET, 2 bolt flange, 1-7/8 ID	4																								
7	74360	FLANGE, Intake pipe, upper		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4									
	LW-16731	FLANGE, Intake pipe, upper													4							4					
8	STD-8	WASHER, 1/4 plain	8																								
9	STD-160	WASHER, 1/4 lock, internal teeth	8																								
10	STD-1215	BOLT, 1/4-20 x 1-1/4 long, hex. hd.	8																								

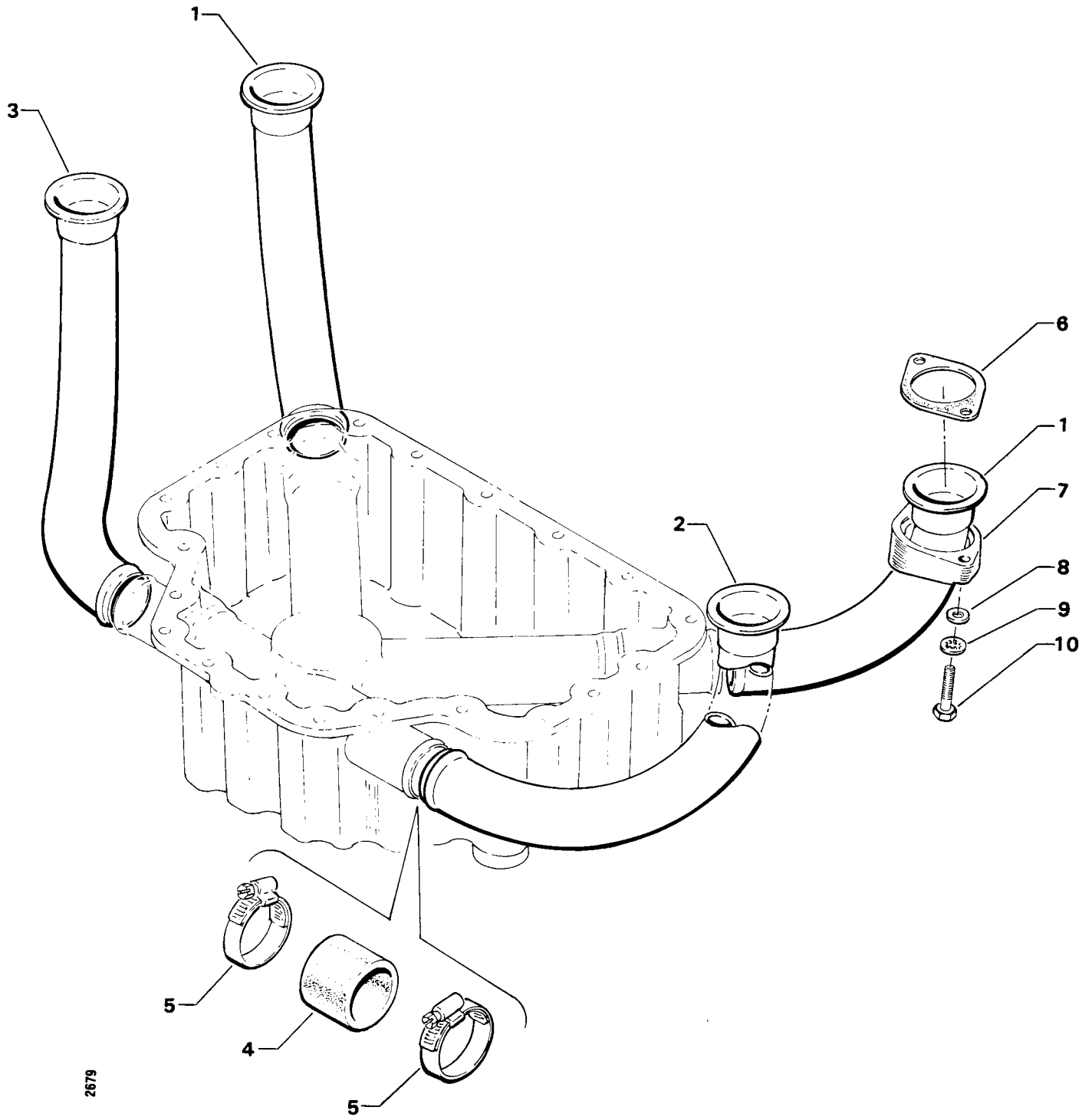


Figure 29. Intake Pipe Assembly





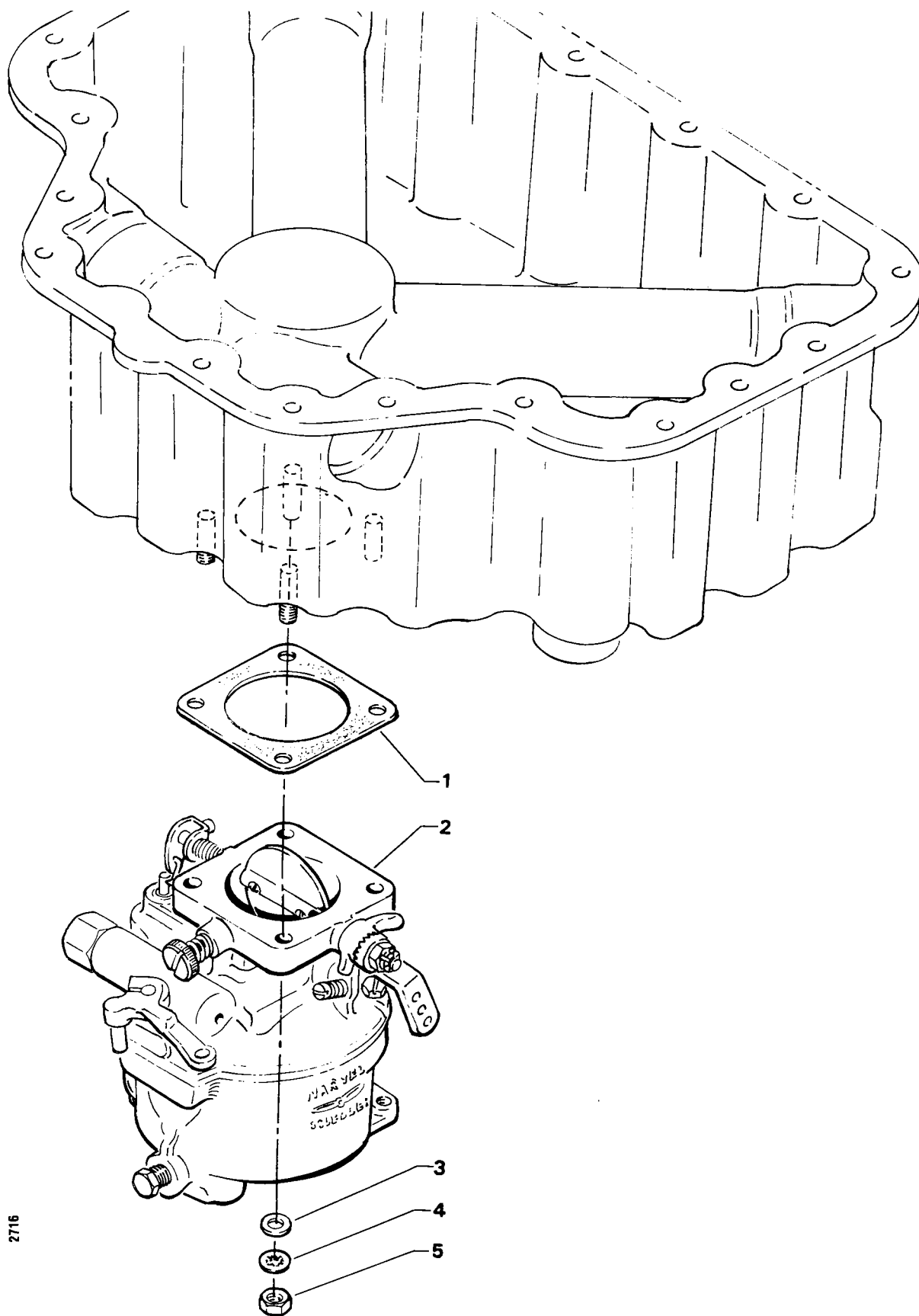


Figure 30. Carburetor Assembly

OIL SUMP AND INDUCTION SYSTEM  
PRIMING SYSTEM

FIG. REF. 31	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY																					
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A	N 2 C					
1	1102*	PLUG, 1/8-27 NPT, Allen hd.	4																						
2	LW-12098-1-170	TUBE ASSY., Primer cylinders, nos. 1 & 2		2	2		2	2	2	2				2		2	2								
3	LW-12098-1-116	TUBE ASSY., Primer cylinders, nos. 3 & 4		2	2		2	2	2	2				2		2	2								
4	LW-12098-0-100	TUBE ASSY., Primer, intermediate		2	2		2	2	2	2				2		2	2								
5	LW-16266-25-13	CLAMP		4	4		4	4	4	4				4		4	4								
6	71909	CLAMP, 1-1/2 ID with 1/4 dia. offset		4	4		4	4	4	4				4		4	4								
7	STD-553	SCREW, No. 6-32 x 1/2 long, rd. hd.		4	4		4	4	4	4				4		4	4								
8	AN365-632A	NUT, No. 6-32, self-locking		4	4		4	4	4	4				4		4	4								
9	STD-853	TEE, Union, 1/8 tube		3	3		3	3	3	3				3		3	3								
10	74225	NIPPLE ASSY., Primer		4	4		4	4	4	4				4		4	4								

\* Assemble in cylinder heads.



**SECTION 7**  
**SERVICE KIT SECTION**  
**SEAL AND GASKET SET**  
**O-235 SERIES**

Part No.	Part Name	Qty.
61499-1	SEAL AND GASKET SET	1
STD-111	GASKET	1
STD-208	SEAL, Oil	1
STD-294	GASKET, Annular	2
STD-1045	GASKET, Annular	2
8313	GASKET, Vac. pump	2
60096	GASKET, Fuel pump	1
60592	GASKET, Carb.	1
60820	GASKET, Oil suction tube flange	1
LW-18639	LOCKPLATE, Crankshaft gear	1
LW-14260	SEAL, Tach. shaft	1
61173	GASKET, Oil press. hsg.	1
61183	GASKET, Accy. adapter	1
61523	CONTAINER	1
61531	GASKET, Hydraulic valve	1
62224	GASKET, Mag. adapter	3
LW-18661	SEAL, Shroud tube	16
65321	GASKET, Exhaust flange	4
68315	GASKET, Accy. dr. adapter	1
LW-13353	GASKET, Oil sump	1
71973	GASKET, Intake flange	4
72053	GASKET, Gov. drive	1
72059	GASKET	1
72078	LOCKPLATE, Cam gear	2
72091	RING, Oil seal	8
73383	LOCKPLATE	1
73817	LOCKPLATE, Camshaft idler gear shaft	2
73818	GASKET, Accy. hsg.	1
74065	RING, Oil level gage seal	1
74068	RING, Oil level gage seal	1
75906	GASKET, Rocker box cover	4
76940	SEAL, Crankshaft oil	1
LW-13792	SEAL, Crankshaft oil	1
LW-12681	GASKET, Mag.	2
LW-12795	GASKET	1
LW-11632	RING, Oil seal	6
62869	RING, Cyl. base	4
LW-12040	TOP OVERHAUL GASKET SET	1
62869	SEAL, Cylinder base	4
LW-18661	SEAL, Shroud tube	16
71973	GASKET, Intake, 2 bolt flange	4
75906	GASKET, Rocker box cover	4

**SECTION 7**  
**SERVICE KIT SECTION**  
**CYLINDER, PISTON AND RING ASSY.**  
**O-235-C1, -C1B, -C2A, -C2C, -H2C**

Part No.	Part Name	Qty.
75805	CYLINDER, PISTON AND RING ASSY.	1
LW-16701	CYLINDER AND HEAD ASSY.	1
66429	VALVE, Intake	1
66531	VALVE, Exhaust	1
LW-13320	SEAT, Valve spring, inner spring	2
61252	SEAT, Valve spring, outer spring	2
LW-11800	SPRING, Valve, outer	2
LW-11795	SPRING, Valve, auxiliary	2
LW-10077	SEAT, Valve spring	2
60009	KEY, Valve	4
60831	ROCKER ASSY., Valve	2
LW-13790	SHAFT, Valve rocker	1
1102	PLUG, .125 pipe x .375 long (socket)	1
75906	GASKET, Rocker box cover	1
61247	COVER, Rocker box	1
STD-1925	SCREW, .250-20 x .63 long fill. head, self-locking	6
73807	SCREW, Valve adjusting	2
STD-587	NUT, .5625-18 x .16 thick	2
71195	BOX, Set-up	1
73851	PISTON	1
60827	PIN, Piston	1
60828	PLUG, Piston pin	2
LW-13672	RING, Piston, top compression	1
LW-13658	RING, Piston, scraper	1
62869	RING, Oil seal (cylinder base)	1
LW-18661	SEAL, Shroud tube	4
LW-12892	BUTTON, Thrust	2
STD-1215	BOLT	2
73806	PUSH ROD ASSY.	2
LW-16867	RING, Oil regulator	1

**SECTION 7**  
**SERVICE KIT SECTION**  
**CYLINDER, PISTON AND RING ASSY.**  
**O-235-F2A, -F2B, -J2A**

Part No.	Part Name	Qty.
LW-12591	CYLINDER, PISTON AND RING ASSEMBLY	1
STD-587	NUT, 9/16-18 x 5/32 thick	2
STD-1215	BOLT	2
STD-1925	SCREW, 1/4-20 x 5/8 long, fill. hd.	6
1102	PLUG, 1/8 pipe x 3/8 long, socket	1
60009	KEY, Valve	4
LW-13790	SHAFT, Valve rocker	1
60831	ROCKER ASSY., Valve	2
61247	COVER, Rocker box	1
LW-13320	SEAT, Valve spring, inner	2
61252	SEAT, Valve spring, outer	2
62869	RING, Oil seal (cylinder base)	1
LW-18661	SEAL, Shroud tube	4
71195	BOX, Set-up	1
73807	SCREW, Valve adjusting	2
75906	GASKET, Rocker box cover	1
LW-13445	PIN, Piston	1
78862	RING, Piston compression	2
78864	RING, Piston, oil regulator	1
LW-10077	SEAT, Valve spring	2
LW-11621	PISTON	1
LW-11625	PLUG, Piston pin	2
LW-11633	CYLINDER ASSY., Nitrided	1
LW-11634	VALVE, Exhaust	1
LW-11795	SPRING, Valve, auxiliary	2
LW-11800	SPRING, Valve, outer	2
LW-11901	VALVE, Intake	1
LW-12892	THRUST BUTTON	2

**SECTION 7**  
**SERVICE KIT SECTION**  
**CYLINDER, PISTON AND RING ASSY.**  
**O-235-K2A, -K2B, -K2C, -L2A, -L2C, -M1**

Part No.	Part Name	Qty.
LW-13969	CYLINDER, PISTON AND RING ASSEMBLY	1
STD-587	NUT, 9/16-18 x 5/32 thick	2
STD-1215	BOLT	2
STD-1925	SCREW, 1/4-20 x 5/8 long, fill. hd.	6
1102	PLUG, 1/8 pipe x 3/8 long, socket	1
60009	KEY, Valve	4
LW-13790	SHAFT, Valve rocker	1
60831	ROCKER ASSY., Valve	2
61247	COVER, Rocker box	1
LW-13320	SEAT, Valve spring, inner spring	2
61252	SEAT, Valve spring, outer spring	2
62869	RING, Oil seal, cylinder base	1
LW-18661	SEAL, Shroud tube	4
71195	BOX, Set-up	1
73807	SCREW, Valve adjusting	2
75906	GASKET, Rocker box cover	1
78862	RING, Piston compression	2
78864	RING, Piston, oil regulating	1
LW-10077	SEAT, Valve spring	2
LW-11625	PLUG, Piston pin	2
LW-11633	CYLINDER ASSY., Nitrided	1
LW-11634	VALVE, Exhaust	1
LW-11795	SPRING, Valve auxiliary	2
LW-11800	SPRING, Valve outer	2
LW-11901	VALVE, Intake	1
LW-13445	PIN, Piston	1
LW-13623	PISTON	1
LW-12892	THRUST BUTTON	2



**SECTION 7**  
**SERVICE KIT SECTION**  
**CYLINDER, PISTON AND RING ASSY.**  
**O-235-C1, -C1B, -C2A, -C2C, -H2C**

Part No.	Part Name	Qty.
LW-14126	CYLINDER, PISTON AND RING ASSEMBLY	1
60009	KEY, Valve	4
60037	VALVE, Intake	1
60072	RING, Piston, scraper	1
LW-13790	SHAFT, Valve rocker	1
60827	PIN, Piston	1
60828	PLUG, Piston pin	2
60831	ROCKER ASSY., Valve	2
LW-16867	RING, Piston, oil regulating	1
61247	COVER, Rocker box	1
61251	SEAT, Valve spring, inner	2
61252	SEAT, Valve spring, outer	2
62869	RING, Oil seal, cylinder base	1
LW-18661	SEAL, Shroud tube	4
68196	RING, Piston, compression	2
71195	BOX, Set-up	1
73807	SCREW, Valve adjusting	2
73851	PISTON	1
75906	GASKET, Rocker box cover	1
73806	PUSH ROD ASSY.	2
STD-587	NUT, 9/16-18 x 5/32 thick	2
STD-1215	BOLT	2
STD-1925	SCREW, 1/4-20 x 5/8 long, fill. hd.	6
LW-10077	SEAT, Valve spring	2
LW-11634	VALVE, Exhaust	1
LW-11795	SPRING, Valve, auxiliary	2
LW-11800	SPRING, Valve, outer	2
LW-12986	CYLINDER ASSY., Plain	1
LW-12892	THRUST BUTTON	2

**SECTION 7**  
**SERVICE KIT SECTION**  
**CYLINDER, PISTON AND RING ASSY.**  
**O-235-N2C**

Part No.	Part Name	Qty.
LW-18660	CYLINDER, PISTON AND RING ASSEMBLY	1
STD-587	NUT, 9/16-18 x 5/32 thick	2
STD-1215	BOLT	2
STD-1925	SCREW, 1/4-20 x 5/8 long, fill. hd.	6
1102	PLUG, 1/8 pipe x 3/8 long, socket	1
60009	KEY, Valve	4
60831	ROCKER ASSY., Valve	2
61247	COVER, Rocker box	1
LW-13320	SEAT, Valve spring, inner	2
61252	SEAT, Valve spring, outer	2
LW-13790	SHAFT, Valve rocker	1
62869	RING, Oil seal (cylinder base)	1
LW-18661	SEAL, Shroud tube	4
71195	BOX, Set-up	1
73807	SCREW, Valve adjusting	2
75906	GASKET, Rocker box cover	1
LW-13445	PIN, Piston	1
78862	RING, Piston compression	2
78864	RING, Piston, oil regulator	1
LW-10077	SEAT, Valve spring	2
LW-13623	PISTON	1
LW-11625	PLUG, Piston pin	2
LW-18290	CYLINDER ASSY., Nitrided	1
LW-11634	VALVE, Exhaust	1
LW-11795	SPRING, Valve, auxiliary	2
LW-11800	SPRING, Valve, outer	2
LW-11901	VALVE, Intake	1
LW-12892	THRUST BUTTON	2

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PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
AN365-632A	Nut	4-5	LW-12892	Thrust Button	3-5
AN365-632A	Nut	6-7	LW-12947	Crankshaft Assy.	1-5
AN500A-416-10	Screw	4-5	LW-12986	Cylinder and Head Assy.	3-3
AN500-416-12	Screw	4-5	LW-12999	Plate	2-13
AN6-13	Bolt	5-5	LW-13039	Bracket	5-5
AN6-14	Bolt	5-5	LW-13133	Carburetor	6-5
AN6-16	Bolt	5-5	LW-13215	Oil Filter	2-13
AN6-21	Bolt	1-11	LW-13257	Crankcase Assy.	1-1
AN6-34A	Bolt	1-11	LW-13282	Crankcase Assy.	1-1
AN777-8D	Elbow	2-13	LW-13303	Hook	3-9
AN816-8	Nipple	2-13	LW-13304	Baffle Assy.	3-9
AN901-8A	Gasket	2-13	LW-13320	Seat	3-7
LW-10077	Seat	3-7	LW-13353	Gasket	6-1
LW-10179	Regulator	5-1	LW-13445	Pin	3-1
LW-10185	Regulator	5-1	LW-13623	Piston	3-1
LW-10619	Carburetor	6-5	LW-13675	Support Assy.	1-5
LW-10729	Link	5-5	LW-13775	Impeller Assy.	2-3
LW-11621	Piston	3-1	LW-13790	Shaft	3-5
LW-11622	Stud	1-1	LW-13792	Seal	1-7
LW-11623	Stud	1-1	LW-13884	Bearing	1-7
LW-11625	Plug	3-1	LW-13923	Bushing	3-1
LW-11626	Guide	3-3	LW-14016	Carburetor	6-5
LW-11631	Crankcase Assy.	1-1	LW-14057	Clip	4-4
LW-11632	Ring	1-7	LW-14057	Clip	4-5
LW-11633	Cylinder and Head Assy.	3-3	LW-14060	Clip	4-4
LW-11634	Valve	3-7	LW-14060	Clip	4-5
LW-11795	Spring	3-7	LW-14260	Seal	1-1
LW-11800	Spring	3-7	LW-14260	Seal	2-3
LW-11900	Seat	3-3	LW-14301	Alternator	5-7
LW-11901	Valve	3-7	LW-14303	Alternator	5-7
LW-12044	Housing Assy.	2-1	LW-14308	Alternator	5-7
LW-12083	Switch	5-9	LW-14309	Alternator	5-7
LW-12085	Switch	5-9	LW-14310	Alternator	5-7
LW-12098-0-100	Tube Assy.	6-7	LW-14316	Alternator	5-7
LW-12098-1-116	Tube Assy.	6-7	LW-14317	Alternator	5-7
LW-12098-1-170	Tube Assy.	6-7	LW-14319	Alternator	5-7
LW-12186	Nut	3-1	LW-14324	Alternator	5-7
LW-12681	Gasket	4-1	LW-14746	Gage	1-3
LW-12681	Gasket	4-4	LW-14752	Gage	1-3
LW-12693	Crankshaft Assy.	1-5	LW-14781	Gage	1-3
LW-12697	Crankshaft Assy.	1-5	LW-14792	Gage	1-3
LW-12699	Crankshaft Assy.	1-5	LW-15496	Carburetor	6-5
LW-12706	Adapter	4-1	LW-15571	Starter	5-9
LW-12706	Adapter	4-3	LW-15592-5-05	Clamp	3-9
LW-12739	Strap	5-7	LW-15592-8-28	Clamp	6-3
LW-12789	Tube Assy.	1-3	LW-15635	Mag. & Harness Assy.	4-3
LW-12795	Gasket	2-13	LW-15636	Magneto	4-3
LW-12832	Alternator Assy.	5-7	LW-15637	Mag. & Harness Assy.	4-3
LW-12833	Alternator Assy.	5-7	LW-15638	Magneto	4-3
LW-12834	Alternator Assy.	5-7	LW-157208	Kit Assy.	4-1

NUMERICAL INDEX (Cont.)

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
LW-157209	Kit Assy.	4-1	LW-51360-58	Magneto	4-1
LW-15866	Harness Assy.	4-3	LW-52305-1	Kit Assy.	4-1
LW-15868	Harness Assy.	4-3	LW-M-2375	Plate	4-5
LW-15895	Regulator	5-1	LW-M-2403	Harness Assy.	4-5
LW-16011	Housing Assy.	2-1	LW-M-2404	Harness Assy.	4-5
LW-16073	Carburetor	6-5	LW-M-2415	Harness Assy.	4-5
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