

PARTS CATALOG

PC-203-1

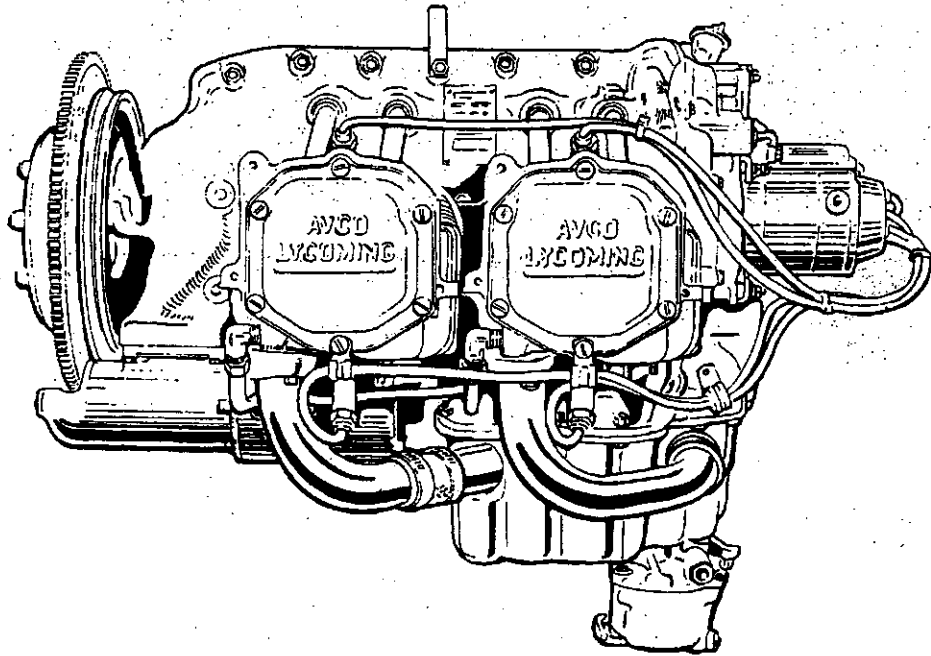
AVCO LYCOMING

O-320 A and E Series

LOW COMPRESSION

Wide Cylinder Flange Model

AIRCRAFT ENGINES

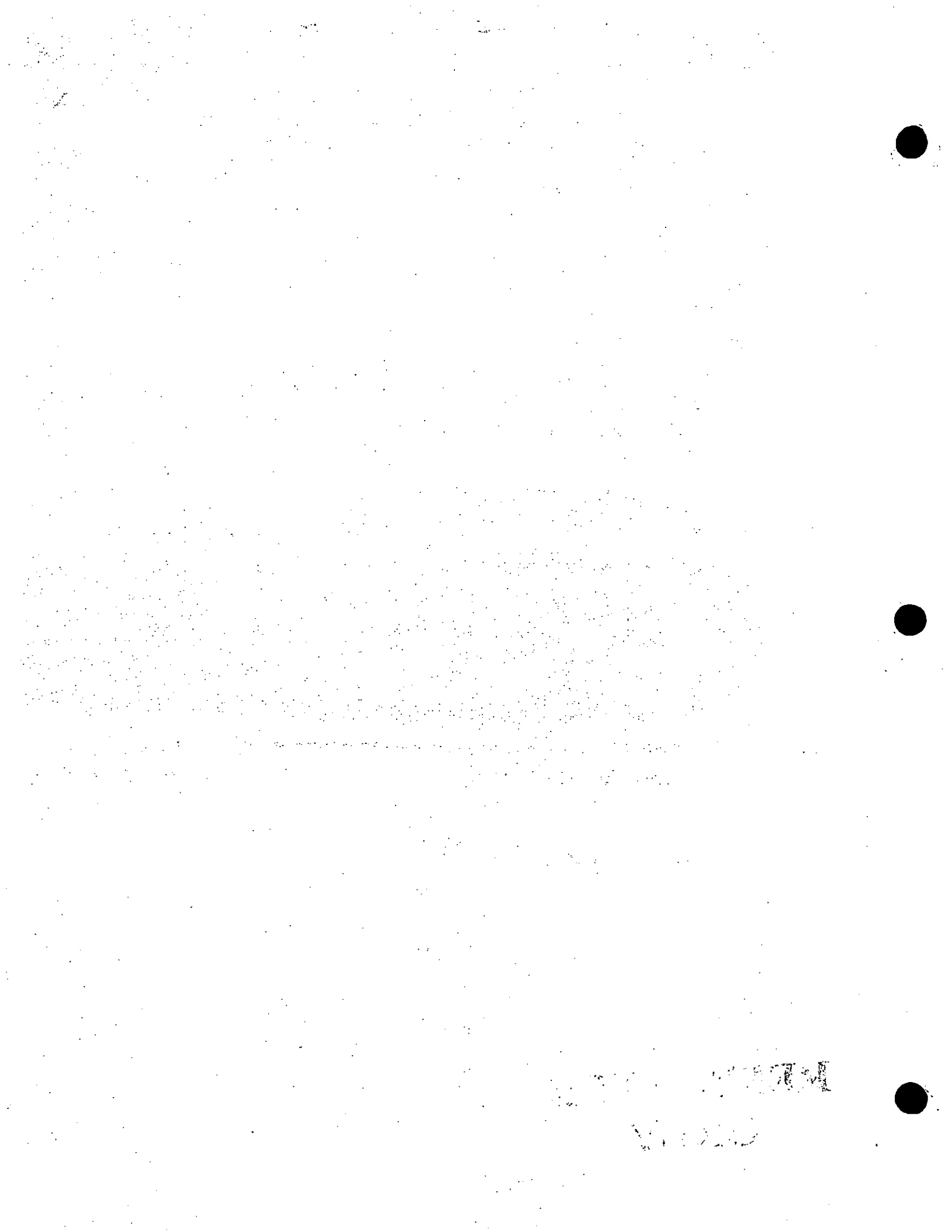


JULY 1984

**REFERENCE
ONLY**

AVCO LYCOMING WILLIAMSPORT DIVISION
652 Oliver Street, Williamsport, Pennsylvania 17701

AVCO LYCOMING ENGINE GROUP



INTRODUCTION

This illustrated parts catalog contains a complete parts listing for the Avco Lycoming O-320 A and E series low compression wide cylinder flange model aircraft engines.

Major assembly and sub-assembly parts of the engines are listed in the Group Assembly sections in the general sequence of engine build up.

A Service Kits section and Oversize and Undersize Parts List are included to aid in ordering parts as necessary during overhaul.

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

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

NOTE

The illustrations, pictures and drawings shown in this publication are typical of the subject matter they portray.

This catalog, when used in conjunction with the appropriate overhaul manual, shall be used for parts identification only. Under no circumstances shall this catalog be used as an assembly or installation document.

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 Avco Lycoming accepts responsibility for quality control and/or airworthiness of parts which do not pass through the Avco Lycoming quality control system.

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 Avco Lycoming distributors or from the factory by subscription. Consult the latest edition of Service Letter No. L114 for subscription information.

HOW TO ORDER PARTS

In ordering parts for your engine, observe the following instructions which will expedite shipment of correct parts required without delay.

- a. Always specify the model and serial number of your engine.
- b. Always specify Part Number, Nomenclature and quantity required.

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Oversize and Undersize Parts Listing

PART NO.	DESCRIPTION	OVERSIZE							UNDERSIZE		
		P02 .002	P05 .005	P10 .010	P15 .015	P20 .020	P30 .030	P50 .050	M03 .003	M06 .006	M10 .010
60028	GUIDE		X	X		X	X				
66145	DOWEL			X		X					
66610	BUSHING		X	X							
66796	INSERT			X							
69373	BEARING								X	X	X
69796	DOWEL			X							
72057	SEAT			X		X	X				
72058	SEAT			X		X	X				
72063S	BUSHING		X	X	X	X					
72064S	BUSHING		X	X	X	X					
72065S	BUSHING		X	X	X	X					
72066S	BUSHING		X	X	X						
72067S	BUSHING		X	X	X	X					
73857	RING			X		X					
74230	GUIDE		X	X		X	X				
74241	RING			X							
74989	RING			X		X					
LW-10647	DOWEL		X	X							
LW-13792	SEAL							X			
LW-13884	BEARING				X				X	X	X
LW-16047	BEARING	SEE LATEST EDITION OF SERVICE INSTRUCTION NO. 1377 FOR APPLICATION.									
LW-16711	BEARING	SEE LATEST EDITION OF SERVICE INSTRUCTION NO. 1377 FOR APPLICATION.									
STD-1065	DOWEL	X	X	X	X						

Studs available in P03, P07, P12.

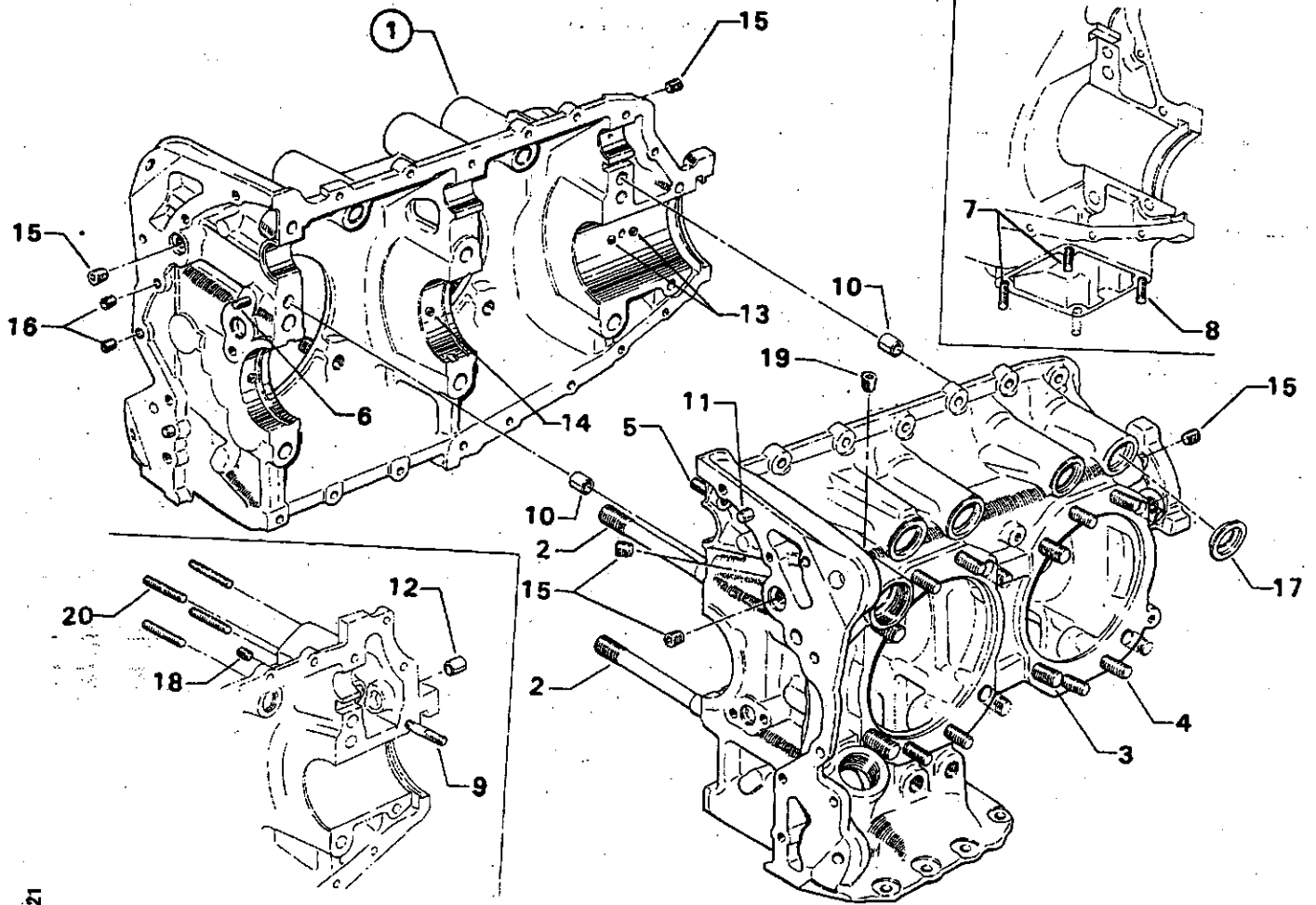
NOTE

When ordering oversize and undersize parts, be sure to specify the required oversize and undersize dimension along with the proper part number. For example, to order bearing LW-13884 in .003 undersize, order part number LW-13884-M3. Oversize code letter is "P" while undersize code letter is "M". These letters are then followed by the number designating the size in thousandths of an inch.

**CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
CRANKCASE ASSEMBLY**

FIG. REF. 1	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY													
				A 2 B	A 2 C	A 2 D	A 3 B	E 1 A	E 1 F	E 2 A	E 2 B	E 2 C	E 2 D	E 2 F	E 2 G	E 2 H	E 3 D
1	LW-18369*	CRANKCASE ASSEMBLY		1	1		1										1
	LW-18372**	CRANKCASE ASSEMBLY		1			1	1	1	1							
	LW-18379**	CRANKCASE ASSEMBLY									1	1	1	1	1		
	LW-13813★	CRANKCASE ASSEMBLY					1				1						
	LW-13817*	CRANKCASE ASSEMBLY			1												
2	75154	STUD, 1/2-13 x 10-1/32 long	2														
3	50-15	STUD, 1/2-20 x 1-7/8 long	8														
4	38-13	STUD, 3/8-16 x 1-5/8 long	16														
5	38D-17	STUD, 3/8-16 x 2-1/8 long, drilled	1														
6	LW-13793	STUD, 5/16-18 x 15/16 long	1														
7	31C-12	STUD, 5/16-18 x 1-1/2 long	2														
8	31C-13	STUD, 5/16-18 x 1-5/8 long	1														
9	38-22	STUD, 3/8-16 x 2-3/4 long						1				1					
10	STD-557	DOWEL, 1/2 dia. x 19/32 long	2														
11	STD-514	DOWEL, 5/16 dia. x 1/2 long	2														
12	72158	BUSHING, Governor drive idler shaft						1				1					
13	69796	DOWEL, Crankshaft bearing		2	2	8	2	2	2	2	2	2	2			2	
14	LW-10647	DOWEL, Crankshaft bearing						4				4					
15	1102	PLUG, 1/8-27 NPT, Allen		5	5	5	5	5	4	5	5	5	5	4	5	5	5
16	STD-1623	INSERT, 1/4-20 x 3/8 long	2														
17	65007	RETAINER, Shroud tube seal	8														
18	STD-1339	PLUG, 1/16-27 NPT, Allen						1				1					
19	1102	PLUG, 1/8-27 NPT, Allen	1														
20	31C-14●	STUD, 5/16-18 x 1-3/4 long						4				4					

* Straight conical mounting provision.
 ** No. 1 dynafocal mounting provision.
 ★ Governor drive at front of crankcase and dynafocal mounts.
 ● Used for installation of "AN" Governor.



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Figure 1. CRANKCASE ASSEMBLY

**CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
OIL LEVEL GAGE ASSEMBLIES**

FIG. REF. 2	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY													
				A 2 B	A 2 C	A 2 D	A 3 B	E 1 A	E 1 F	E 2 A	E 2 B	E 2 C	E 2 D	E 2 F	E 2 G	E 2 H	E 3 D
1	75735	TUBE, Oil level gage, short		1	1	1	1			1			1	1			
	75767	TUBE, Oil level gage, intermediate		1		1	1					1	1				
	75736	TUBE, Oil level gage, long		1			1	1	1	1	1	1	1	1	1		1
	LW-15970	TUBE, Oil level gage, short		1	1												
2	78626	TUBE ASSY., Oil level gage, 15-1/8 long											1			1	
3	75767	TUBE, Oil level gage											1			1	
4	75761	EXTENSION, Oil filter											1			1	
5	72220	GASKET, Oil level gage											1			1	
6	LW-12789	TUBE ASSY., Oil level gage, 12-13/16 long															1
7	75767	TUBE, Oil level gage															1
8	77527	EXTENSION, Oil filter															1
9	72220	GASKET, Oil level gage															1
10	72059	GASKET, Oil level gage	1														1
11	74068*	RING, Oil level gage, seal		1	1	1	1	1	1	1	1	1	1	1	1	1	1
	74065**	RING, Oil level gage, seal		1		1	1						1			1	
	72312★	RING, Oil seal, 1.00 I.D. x 1/8 section															1
12	LW-14759	GAGE ASSY., Oil level		1	1	1	1			1			1			1	
	LW-14780	GAGE ASSY., Oil level		1		1	1				1	1					
	LW-14758	GAGE ASSY., Oil level		1			1	1	1	1	1	1	1	1	1	1	1
	LW-14757	GAGE ASSY., Oil level											1				
	LW-14768	GAGE ASSY., Oil level											1			1	
	LW-14735	GAGE ASSY., Oil level															1
	LW-14793	GAGE ASSY., Oil level		1	1												

* Used with LW-14759, LW-14758, LW-14757 & LW-14793 gage assemblies.
 ** Used with LW-14780 & LW-14768 gage assemblies.
 ★ Used with LW-14735 gage assembly.

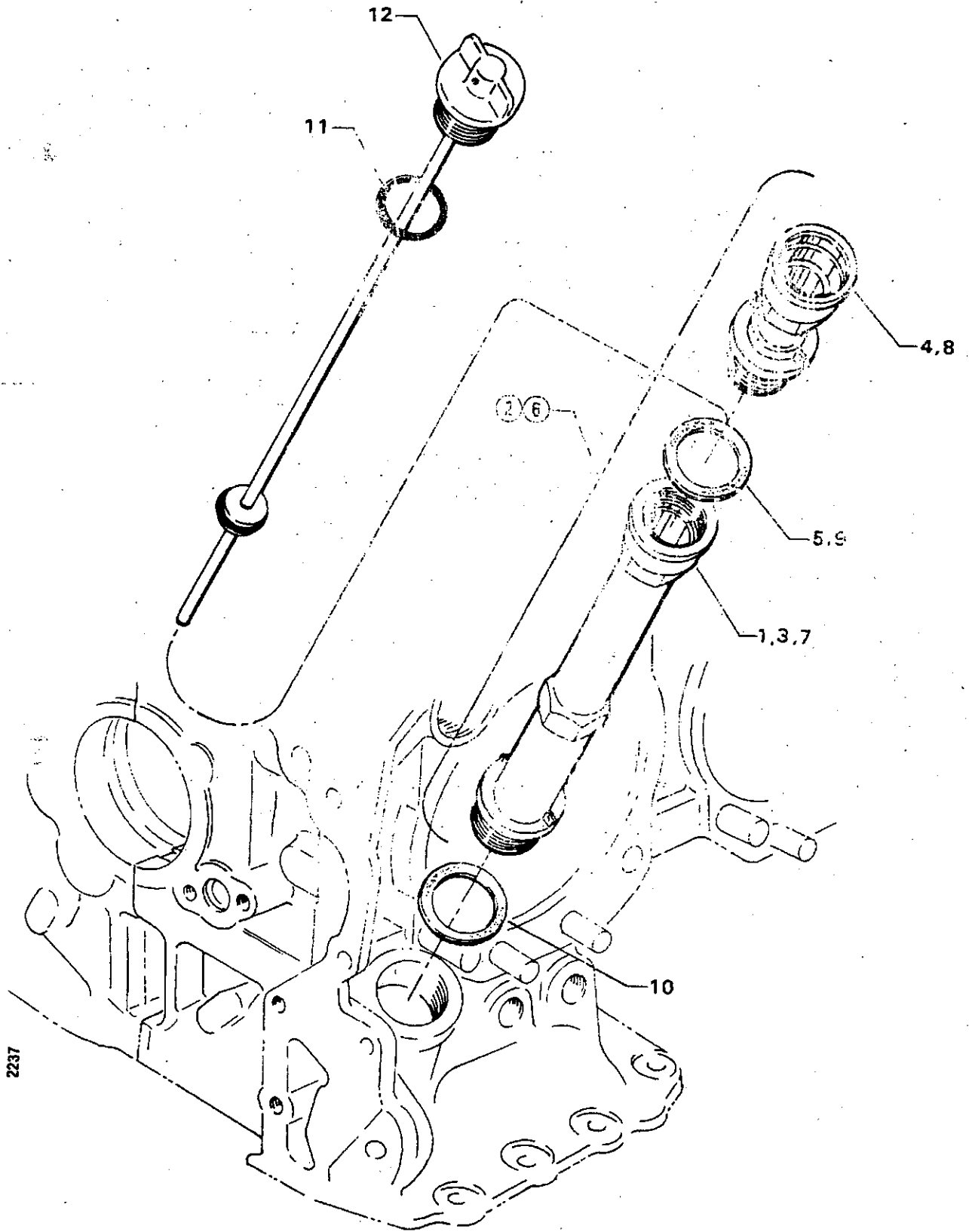


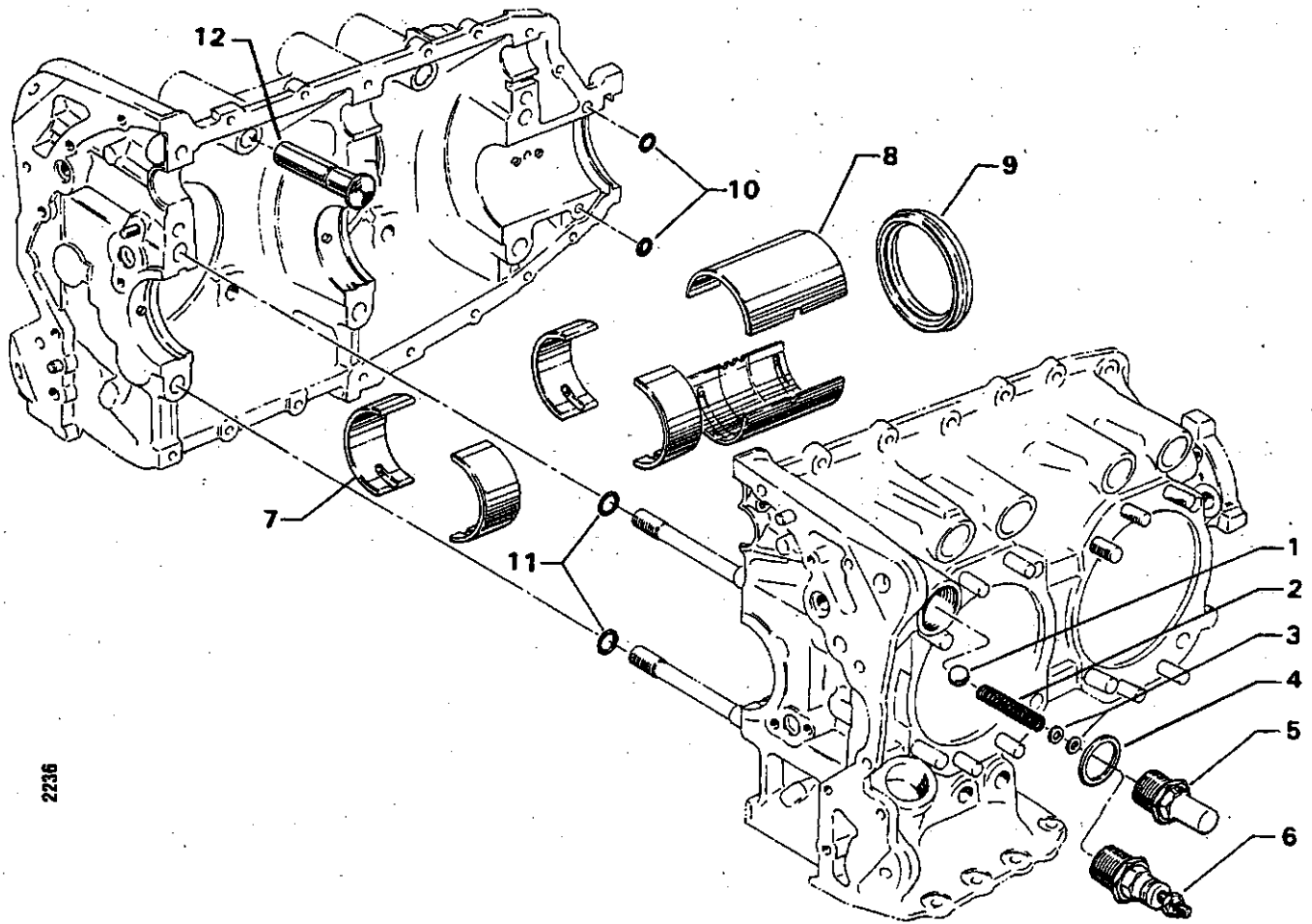
Figure 2. OIL LEVEL GAGE ASSEMBLIES

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP

CRANKCASE RELATED PARTS

FIG. REF. 3	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY														
				A	A	A	A	E	E	E	E	E	E	E	E	E	E	
				2	2	2	3	1	1	2	2	2	2	2	2	2	3	3
				B	C	D	B	A	F	A	B	C	D	F	G	H	D	H
1	1028-B	BALL, 11/16 diameter	1															
2	61084	SPRING, Oil pressure relief valve	1															
3	STD-425★	WASHER, No. 10 plain (Max. 9)	AR															
4	STD-1045	GASKET, 1-1/4 I.D. x 1-1/2 O.D. x 3/32 annular	1															
5	76529	PLUG, Oil relief valve	1															
6	77808	VALVE ASSY., Oil pressure relief, adjustable							1									
7	LW-16047*	BEARING, Crankshaft		4			4		4	4	4	4		4				
	LW-16711**	BEARING, Crankshaft		4	4	8	4	4		4	4	4	8		8	8	8	8
8	LW-13884	BEARING, Crankshaft, front		2	2		2	2	2	2	2	2		2				
9	LW-13792	SEAL, Oil, crankshaft	1															
10	72075	SEAL, Oil, 3/32 sect. 15/32 I.D.	2															
11	72091	RING, Oil seal, 23/64 I.D. x 7/64 dia.	2															
12	72877	BODY, Hydraulic tappet	8															

* Used as an alternate to LW-11020 and LW-11021 crankshaft bearings.
 ** Thin wall, high crush.
 ★ Used only with item no. 5 plug.

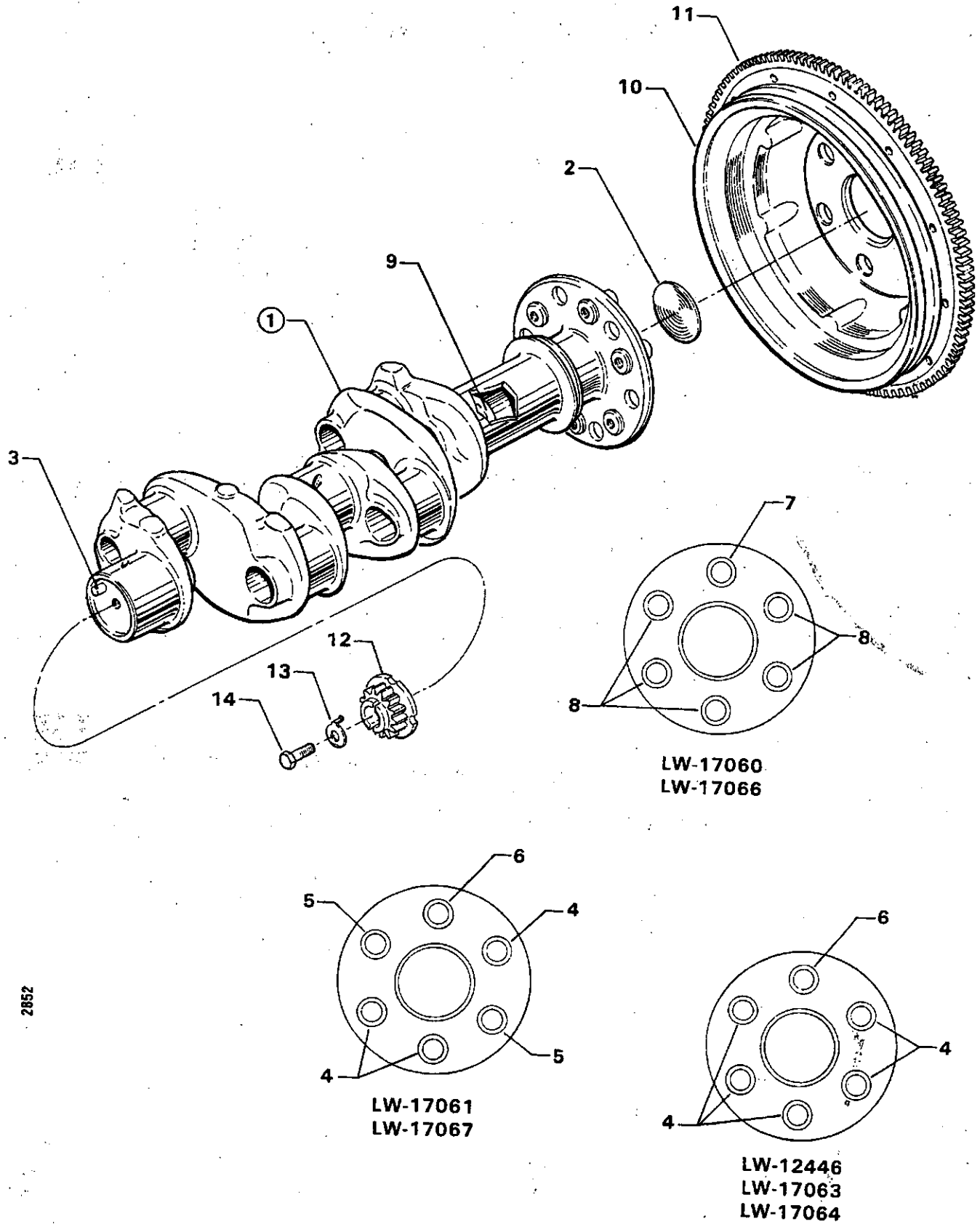


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Figure 3. CRANKCASE RELATED PARTS

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

FIG. REF. 4	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY														
				A 2 B	A 2 C	A 2 D	A 3 B	E 1 A	E 1 F	E 2 A	E 2 B	E 2 C	E 2 D	E 2 F	E 2 G	E 2 H	E 3 D	E 3 H
1	LW-17060	CRANKSHAFT AND PLUG ASSEMBLY		1	1					1	1	1					1	
	LW-17066	CRANKSHAFT AND PLUG ASSEMBLY				1											1	1
	LW-17061	CRANKSHAFT AND PLUG ASSEMBLY					1	1	1									
	LW-17063	CRANKSHAFT AND PLUG ASSEMBLY											1		1	1		
	LW-17064	CRANKSHAFT AND PLUG ASSEMBLY												1				
	LW-17067	CRANKSHAFT AND PLUG ASSEMBLY															1	
	LW-12446	CRANKSHAFT ASSEMBLY												1				
2	STD-1211	PLUG, 2.00 dia. expansion	1															
3	STD-1085	DOWEL, Stepped 5/16 - 1/4 dia. x 9/16 long	1															
4	72063	BUSHING, Propeller flange					3	3	3				5	5	5	5	3	
5	72064	BUSHING, Propeller flange, short					2	2	2								2	
6	72065	BUSHING, Propeller flange					1	1	1				1	1	1	1	1	
7	72066	BUSHING, Propeller flange		1	1	1				1	1	1					1	1
8	72067	BUSHING, Propeller flange		5	5	5				5	5	5					5	5
9	61510	PLUG, 1-3/4 O.D.					1	1	1					1			1	
10	68867	SUPPORT ASSY., Starter ring gear 10/12 pitch, 1.91:1 drive		1	1					1	1						1	1
	74414	SUPPORT ASSY., Starter ring gear 12/14 pitch, 1.91:1 drive		1			1			1	1	1					1	
	76628	SUPPORT ASSY., Starter ring gear 12/14 pitch, 3.25:1 drive	1															
	76899	SUPPORT ASSY., Starter ring gear 10/12 pitch, 2.55:1 drive		1														
	76944	SUPPORT ASSY., Starter ring gear 10/12 pitch, 3.25:1 drive		1		1	1			1							1	1
11	60882	GEAR, Starter ring, 10/12 pitch		1	1	1	1			1	1						1	1
	72566	GEAR, Starter ring, 12/14 pitch	1															
12	61155	GEAR, Crankshaft	1															
13	LW-18639	LOCKPLATE, Crankshaft gear	1															
14	STD-2213	SCREW, 5/16-24 x 1.00 long	1															

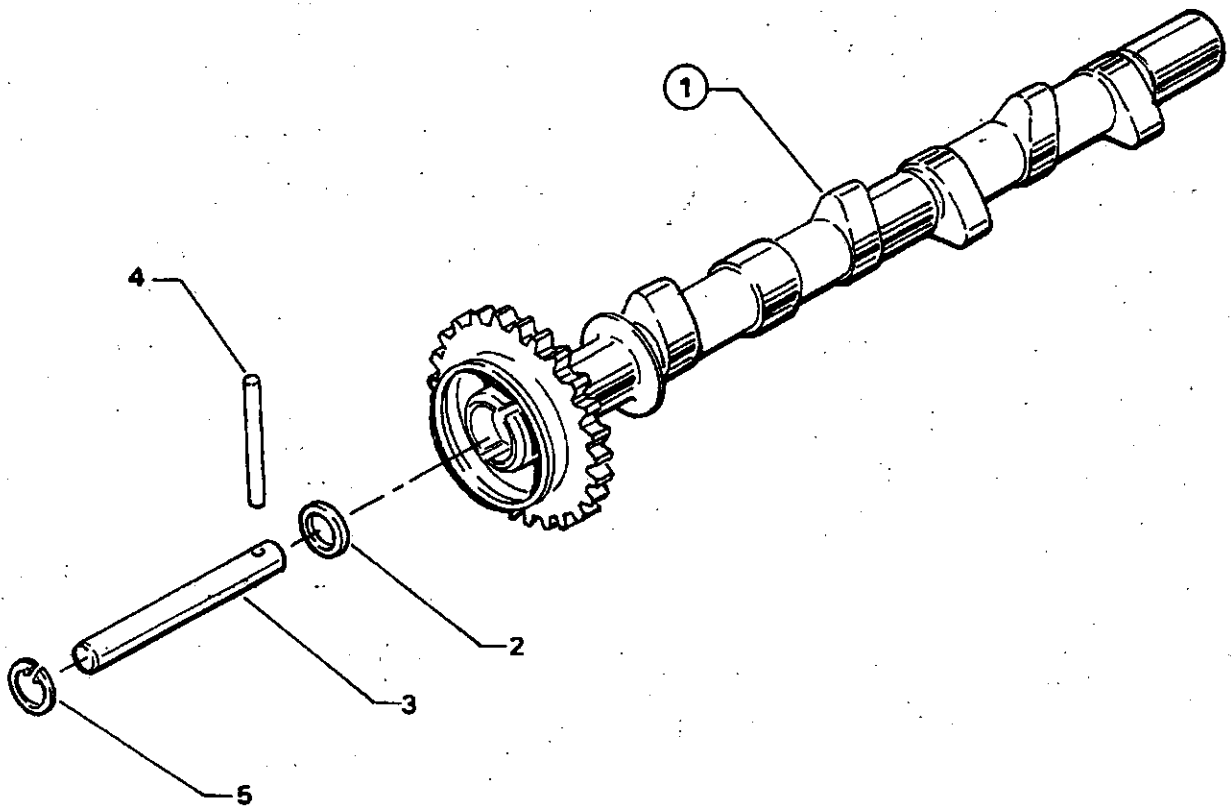


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Figure 4. CRANKSHAFT AND RELATED PARTS

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

FIG. REF. 5	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY													
			A	A	A	A	E	E	E	E	E	E	E	E	E	E
			2	2	2	3	1	1	2	2	2	2	2	2	2	3
1	LW-18837	CAMSHAFT ASSEMBLY														
	LW-18838	CAMSHAFT ASSEMBLY	1	1	1	1	1		1	1	1	1	1	1	1	
2	76118	SPACER, Tachometer shaft centering	1										1			
3	76121	SHAFT ASSY., Tachometer	1													
4	LW-18667	PIN, 3/16 dia. x 2-21/64 long	1													
5	MS16625-1081	RING, Internal retaining	1													



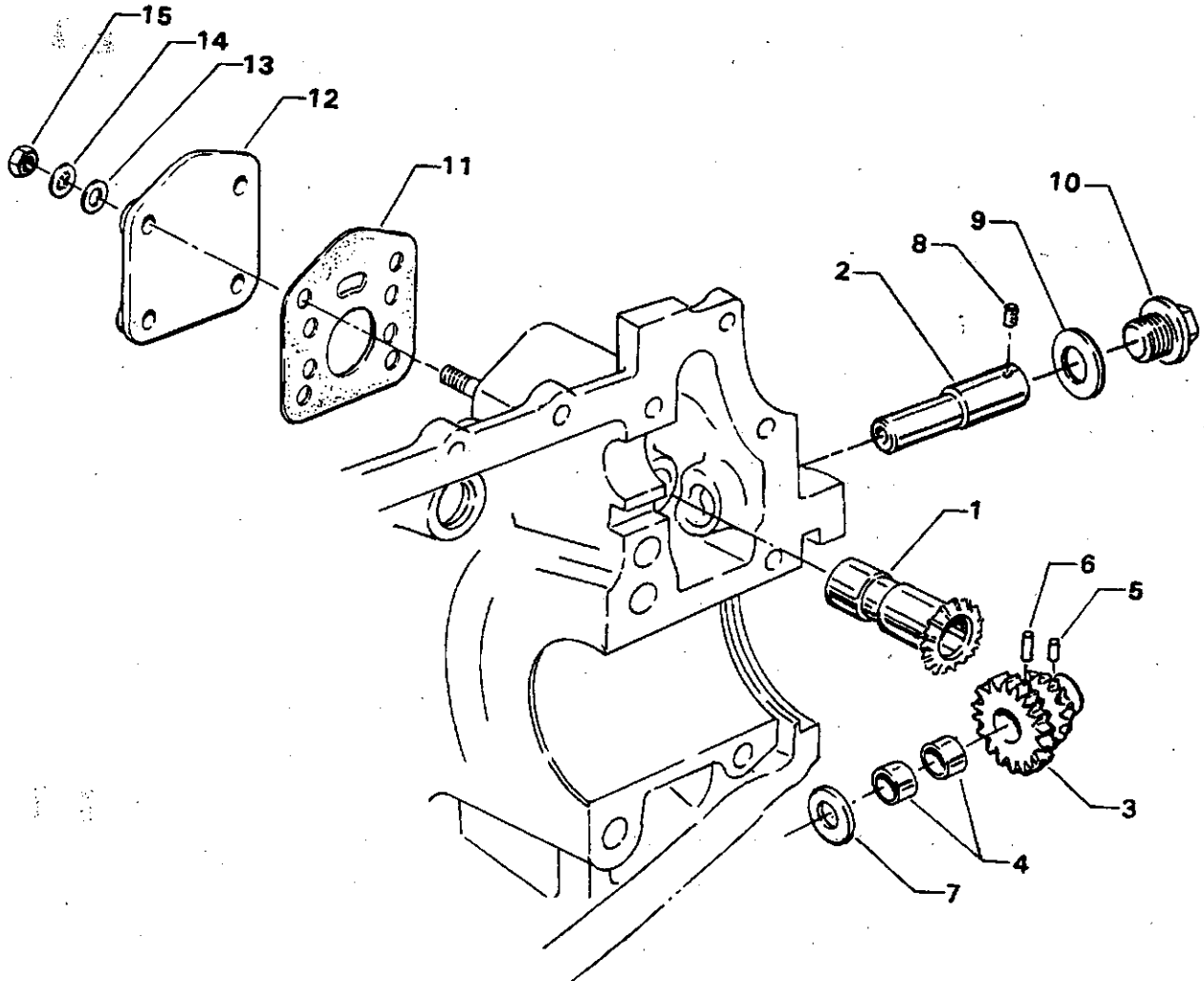
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Figure 5. CAMSHAFT AND RELATED PARTS

**CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
PROPELLER GOVERNOR DRIVE ASSEMBLY**

FIG. REF. 6	PART NUMBER	DESCRIPTION	ON ALL	QUANTITY PER ASSEMBLY																					
				A 2 B	A 2 C	A 2 D	A 3 B	E 1 A	E 1 F	E 2 A	E 2 B	E 2 C	E 2 D	E 2 F	E 2 G	E 2 H	E 3 D	E 3 H							
1	77875	GEAR, Prop. governor driven															1								
2	LW-14021	SHAFT, Prop. governor idler gear																						1	
3	77874	GEAR ASSY., Prop. governor idler																							1
4	77872	BUSHING, Prop. governor gear																							2
5	STD-19	DOWEL, 3/32 dia. x 7/32 long																							1
6	STD-798	DOWEL, 3/32 dia. x 9/32 long																							1
7	73249	WASHER, Thrust																							AR
	73250	WASHER, Thrust																							AR
	73251	WASHER, Thrust																							AR
	73252	WASHER, Thrust																							AR
8	AN565B1032H5	SET SCREW, No. 10-32 x 5/16 long																							1
9	70455	GASKET, 25/32 I.D. x 1-1/8 O.D. x 1/16 thick																							1
10	LW-13896	PLUG, 3/4-16 hex. hd.																							1
	78589*	PLUG, Prop. governor idler shaft																							1
	74058*	PLUG, Prop. governor drive gear																							1
11	72053	GASKET, Governor																							1
12	72378	COVER, Governor drive																							1
13	STD-35**	WASHER, 5/16 plain																							AR
14	STD-475	WASHER, 5/16 lock, internal teeth																							4
15	STD-1410	NUT, 5/16-18 plain																							4

* Governor plugs are used when not employing a propeller governor drive.
 ** 32 required for Woodward governor; 4 required for "AN" governor.

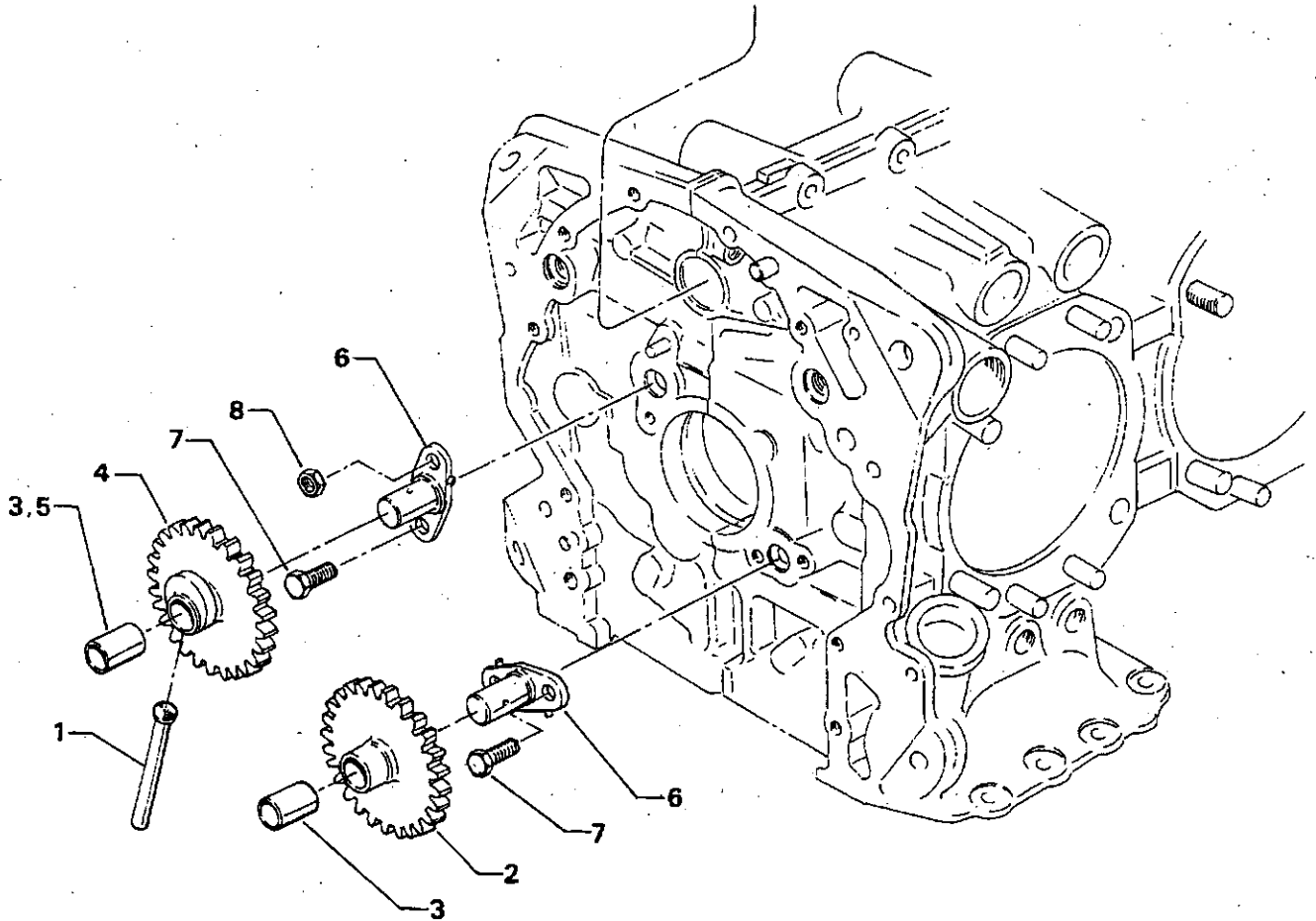


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Figure 6. PROPELLER GOVERNOR DRIVE ASSEMBLY

**CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
CRANKSHAFT IDLER GEARS**

FIG. REF.	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY													
				A 2 B	A 2 C	A 2 D	A 3 B	E 1 A	E 1 F	E 2 A	E 2 B	E 2 C	E 2 D	E 2 F	E 2 G	E 2 H	E 3 D
1	61544	PLUNGER, Fuel pump, long	1														
2	74996	GEAR ASSY., Crankshaft idler, plain	1														
	74996	GEAR ASSY., Crankshaft idler, plain		2	2	2			2			2					2
3	77309	BUSHING, Crankshaft idler gear	1														
	77309	BUSHING, Crankshaft idler gear		2	2	2			2			2					2
4	75072	GEAR ASSY., Crankshaft idler	1														
5	77309	BUSHING, Crankshaft idler gear	1														
6	LW-13796	SHAFT, Crankshaft idler gear	2														
7	STD-2167	SCREW, 5/16-18 x 7/8 long, hex. hd. dr.	3														
8	STD-2168	NUT, 5/16-18 NC-3 slotted shear	1														



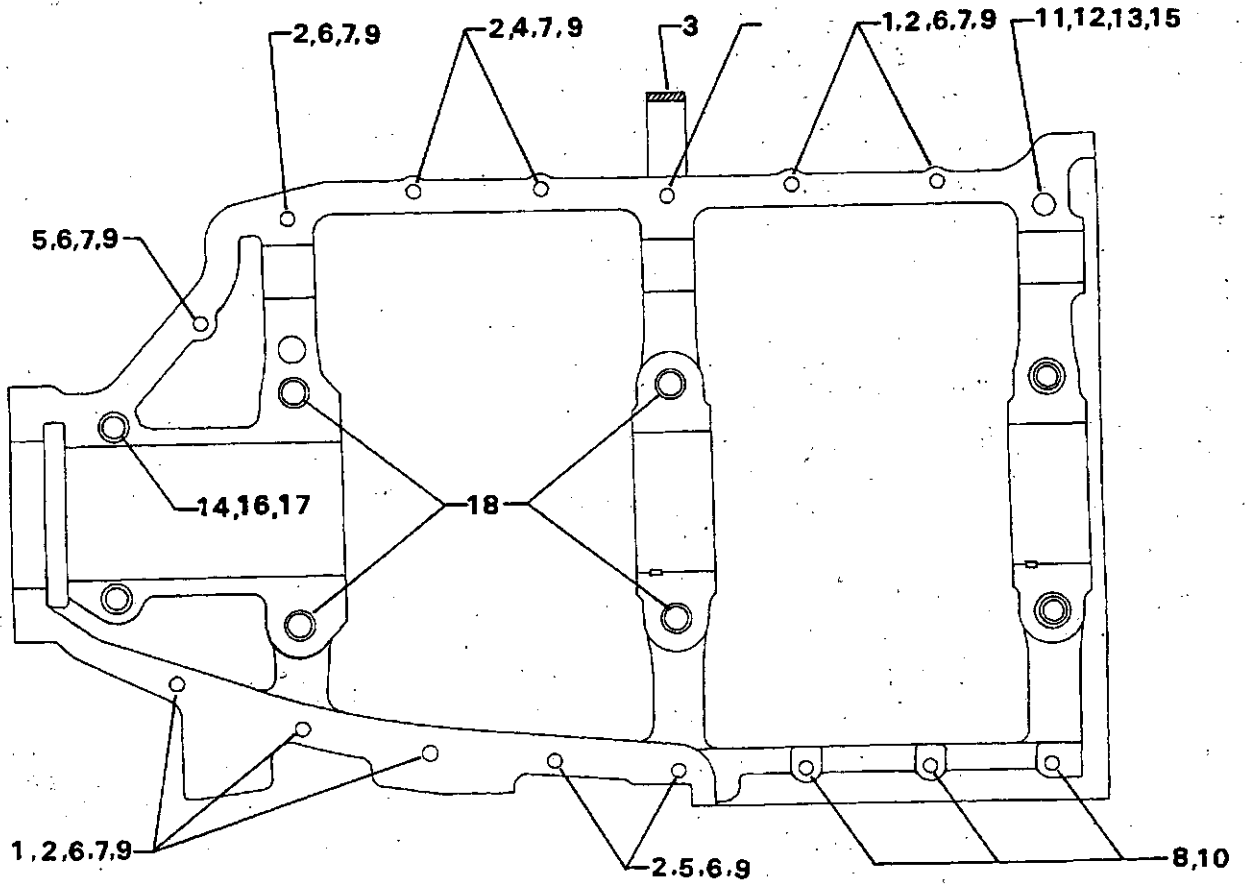
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Figure 7. CRANKSHAFT IDLER GEARS

**LOW COMPRESSION: WIDE CYLINDER FLANGE CRANKCASE MODEL ENGINE
CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
CRANKCASE ATTACHING PARTS**

FIG. REF. 8	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY															
				A 2 B	A 2 C	A 2 D	A 3 B	E 1 A	E 1 F	E 2 A	E 2 B	E 2 C	E 2 D	E 2 F	E 2 G	E 2 H	E 3 D	E 3 H	
1	STD-1414	BOLT, 1/4-20 x 1-1/2 long, hex. hd.	8																
2	STD-8	WASHER, 1/4 plain		19	19	19	19	19	20	19	19	19	19	20	19	19	19		
3	6D803	STRAP, Lifting	1																
4	STD-2084	BOLT, 1/4-20 x 1-3/4 long, hex. hd.	1																
5	STD-1419	BOLT, 1/4-20 x 1-1/8 long, hex. hd.		3	3	3	3	3	4	3	3	3	3	4	3	3	3		
6	STD-160	WASHER, 1/4 lock, internal teeth		12	12	12	12	12	13	12	12	12	12	13	12	12	12		
7	STD-1411	NUT, 1/4-20 plain	9																
8	STD-1416	BOLT, 1/4-20 x 1-1/2 long, hex. hd. dr. end	3																
9	STD-8	WASHER, 1/4 plain (max. 9)	AR																
10	STD-1409	NUT, 1/4-20 slotted shear	3																
11	STD-33	WASHER, 3/8 plain	3																
12	AN960-616L	WASHER, 3/8 plain (thick) (max. 3)	AR																
13	STD-872	NUT, 3/8-24 slotted	1																
14	AN6-34A	BOLT, 3/8-24 x 3-37/64 long, hex. hd.		2	2	2	2	2	1	2	2	2	2	1	2	2	2		
15	STD-33	WASHER, 3/8 plain	2																
	STD-33	WASHER, 3/8 plain																	
16	STD-678	WASHER, 3/8 lock, internal teeth	2						5							6	6		
	STD-678	WASHER, 3/8 lock, internal teeth																	
17	STD-596	NUT, 3/8-24 plain	2						1										
	STD-596	NUT, 3/8-24 plain																	
	LW-11866*	NUT, Spacer, compressor							1										
18	76220	STUD, 1/2-20 x 10-45/64 long	4						1							2	2		

* Used on installations to provide for mounting of York freon compressor.

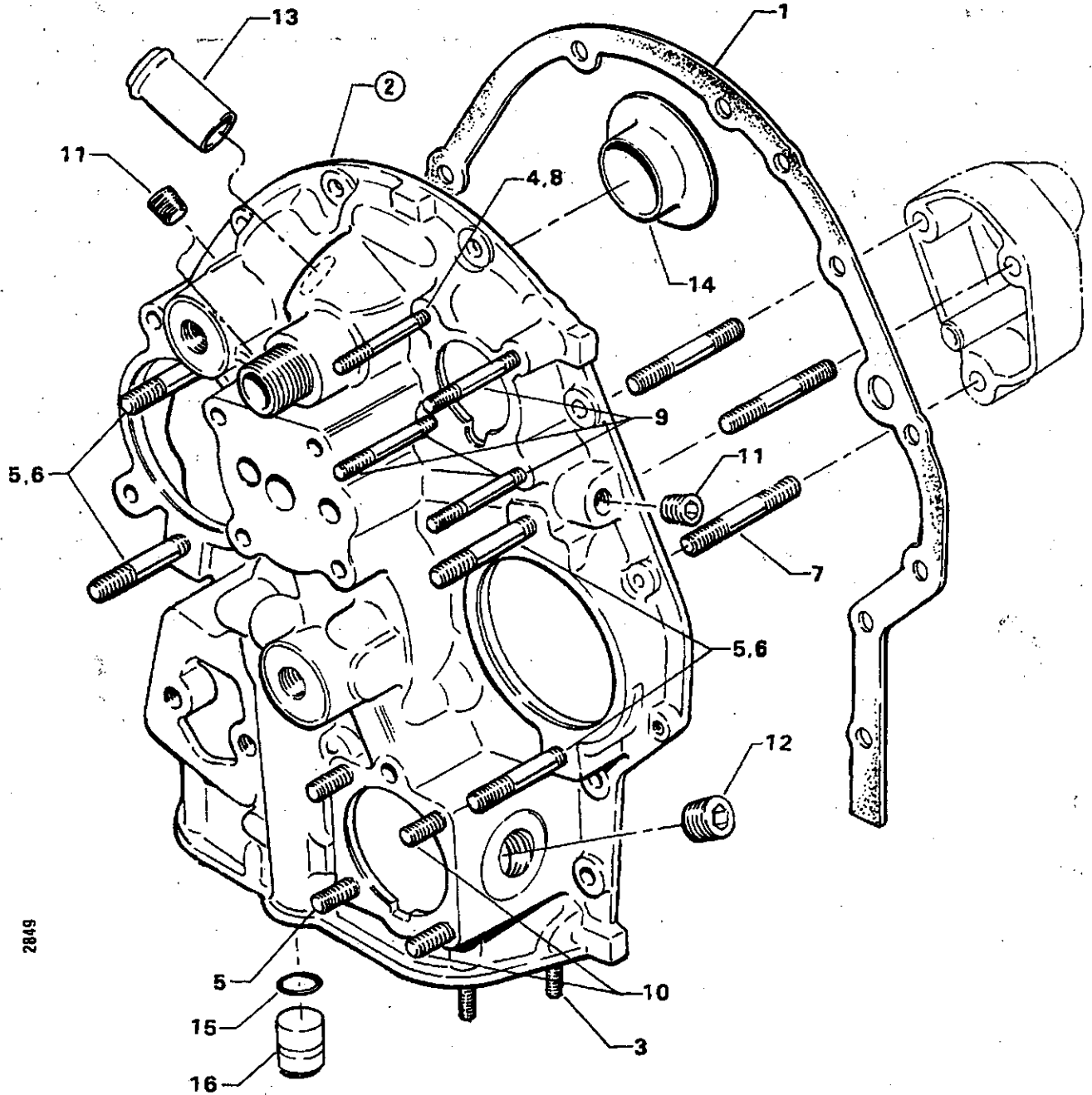


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Figure 8. CRANKCASE ATTACHING PARTS

**ACCESSORY HOUSING AND RELATED PARTS
ACCESSORY HOUSING ASSEMBLY**

FIG. REF. 9	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY														
				A 2 B	A 2 C	A 2 D	A 3 B	E 1 A	E 1 F	E 2 A	E 2 B	E 2 C	E 2 D	E 2 F	E 2 G	E 2 H	E 3 D	E 3 H
1	73818	GASKET, Accessory housing	1															
2	76103	HOUSING ASSY., Accessory (one plain, one impulse mag. and AC fuel pump provisions)		1			1					1		1		1	1	
	76104	HOUSING ASSY., Accessory (one plain, one impulse mag., AC fuel pump and vac. & hyd. drive provisions)					1											
	76107	HOUSING ASSY., Accessory (one plain, one retard mag. and AC fuel pump provisions)		1														
	76110	HOUSING ASSY., Accessory (one plain, one impulse mag. and AC fuel pump provisions)						1	1	1		1		1				
	76111	HOUSING ASSY., Accessory (one plain, one retard mag. and AC fuel pump provisions)									1							
	76927	HOUSING ASSY., Accessory (machined for vacuum pump and fuel pump pad; Gov. pad unmachined)										1						
	LW-12408	HOUSING ASSY., Accessory (machined for vacuum pump and fuel pump pad; Gov. pad unmachined)										1			1	1	1	
	LW-12712	HOUSING ASSY., Accessory (one plain, one impulse mag., machined for vacuum pump and AC fuel pump drives; Gov. pad unmachined)										1						
	LW-12782	HOUSING ASSY., Accessory (two impulse mags., machined for vacuum pump and AC fuel pump drives; Gov. pad unmachined)					1								1			
	LW-14416	HOUSING ASSY., Accessory (one plain S4LN-20 and one impulse S4LN-21 mag., pressure tap on side of filter pad)					1											
3	61400	STUD, 1/4-20 x 1-3/16 long		2	2	2	2						2		2		2	
4	25C-22	STUD, 1/4-20 x 2-3/4 long	4															
5	31C-12	STUD, 5/16-18 x 1-1/2 long		6	8	2	6	6	6	6	6	6	6	6	2	6	6	
	31C-12	STUD, 5/16-18 x 1-1/2 long										2		2		2	2	
6	31C-19	STUD, 5/16-18 x 2-3/8 long		2		2	2	2	2			2	2	2	2	2	2	
	31C-19	STUD, 5/16-18 x 2-3/8 long				4												
7	31CD-17	STUD, 5/16-18 x 2-3/16 long, drilled	3															
8	25C-11	STUD, 1/4-20 x 1-3/8 long					1											
9	25C-31	STUD, 1/4-20 x 3-7/8 long					3											
10	31C-13	STUD, 5/16-18 x 1-5/8 long									2							
11	1102	PLUG, 1/8-27 NPT	2															
	1102	PLUG, 1/8-27 NPT		3						3								
12	STD-784	PLUG, 3/8-18 NPT		1	1		1	1	1	1	1	1	1	1	1	1	1	
13	73317	TUBE, Accessory breather		1	1	1	1					1		1		1	1	
14	76119	SHIELD, Oil, accessory breather	1															
15	STD-1006	RING, Oil seal, 7/16 I.D. x 3/32 dia.		1	1	1	1					1		1		1	1	
16	75626	PLUG, 5/8 O.D. x 3/4 long		1	1	1	1					1		1		1	1	

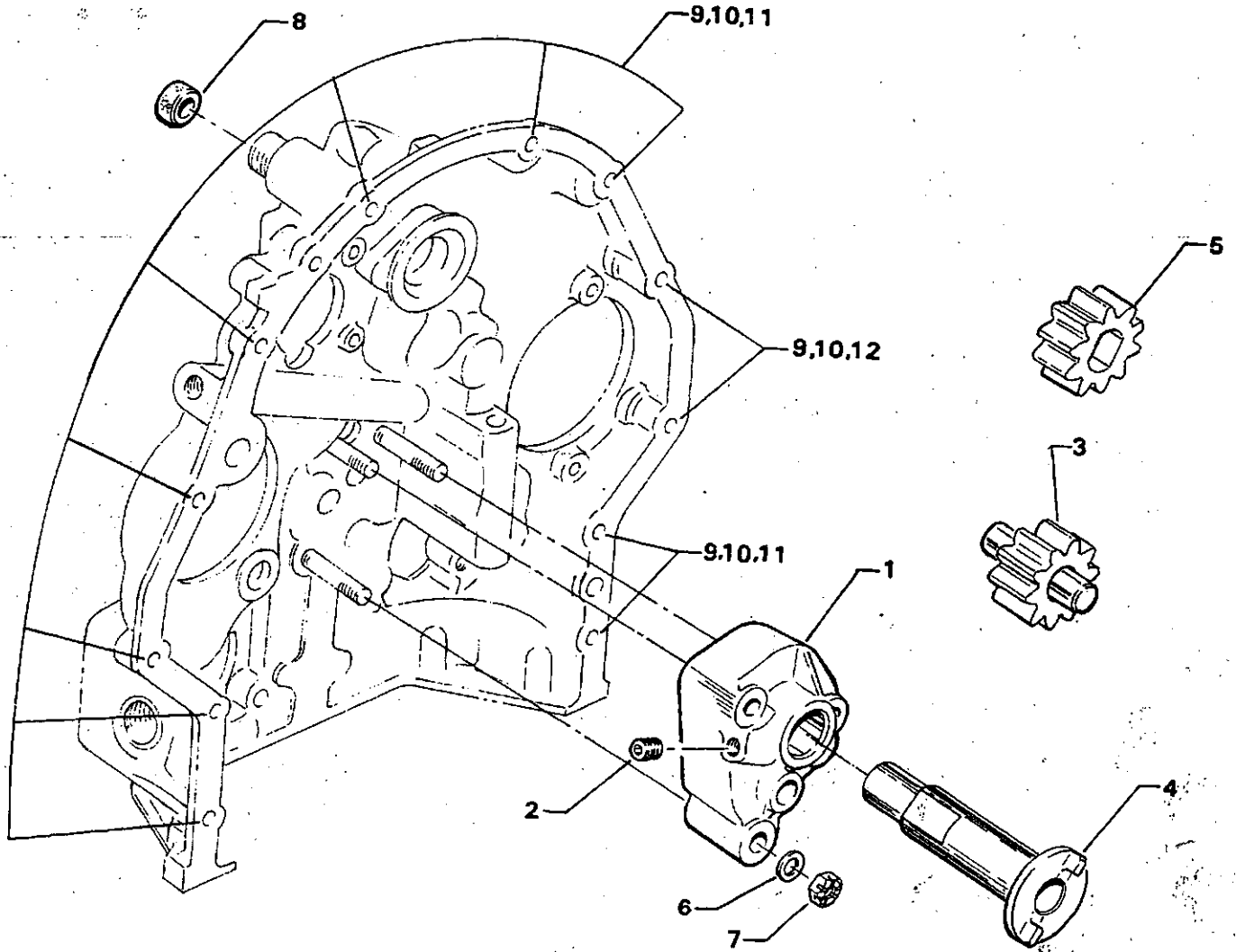


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Figure 9. ACCESSORY HOUSING ASSEMBLY

**ACCESSORY HOUSING AND RELATED PARTS
OIL PUMP ASSEMBLY AND ACCESSORY HOUSING ATTACHING PARTS**

FIG. REF. 10	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY													
				A 2 B	A 2 C	A 2 D	A 3 B	E 1 A	E 1 F	E 2 A	E 2 B	E 2 C	E 2 D	E 2 F	E 2 G	E 2 H	E 3 D
1	78528	BODY ASSY., Oil pump	1														
2	STD-1339	PLUG, 1/16-27 NPT, Allen head	1														
3	LW-13775	IMPELLER ASSY., Oil pump driven	1														
4	61174	SHAFT, Oil pump drive	1														
5	60746	IMPELLER, Oil pump driving	1														
6	STD-35	WASHER, 5/16 plain	3														
7	STD-1420	NUT, 5/16-18 slotted	3														
8	LW-14260	SEAL, Tachometer drive, oil	1														
9	STD-8	WASHER, 1/4 plain	12														
10	STD-160	WASHER, 1/4 lock, internal teeth	12														
11	STD-1204	BOLT, 1/4-20 x 15/16 long, hex. hd.	10														
12	STD-1414	BOLT, 1/4-20 x 1-1/2 long, hex. hd.	2														



2598

Figure 10. OIL PUMP ASSEMBLY AND ACCESSORY HOUSING ATTACHING PARTS

**ACCESSORY HOUSING AND RELATED PARTS
PROPELLER GOVERNOR OIL LINE**

FIG. REF. 11	PART NUMBER	DESCRIPTION	O N A L	QUANTITY PER ASSEMBLY															
				A 2 B	A 2 C	A 2 D	A 3 B	E 1 A	E 1 F	E 2 A	E 2 B	E 2 C	E 2 D	E 2 F	E 2 G	E 2 H	E 3 D	E 3 H	
1	75166*	TUBE ASSY., Prop. governor oil line						1											
	75167**	TUBE ASSY., Prop. governor oil line					1	1											
	75730**	TUBE ASSY., Prop. governor oil line					1												
2	STD-1930	HOSE, 3/8 I.D. x 1.00 long					1	1											
3	75165	CLIP, Prop. governor oil line support					1	1											
4	STD-35	WASHER, 5/16 plain					3	3											
5	STD-475	WASHER, 5/16 lock, internal teeth					1	1											
6	STD-1838	BOLT, 5/16-18 x 15/16 long, hex. hd.					1	1											
7	LW-16266-25-38	CLAMP					1	1											
8	MS20822-6★	ELBOW, 3/8 flared tube & 1/4 NPT, 90°					1	1											
9	74070●	ELBOW, 3/8 flared tube & 9/16-18 str. thd., adj. 45°					1	1											
10	MS29512-06	RING, "O"					1	1											
11	75739●	NIPPLE, 3/8 flared tube & 9/16-18 str. thd.					1												
12	MS29512-06	RING, "O"					1												

- * Used with nipple at gov. drive adapter set-up with generator.
- ** Used with 45° elbow at gov. drive adapter set-up with alternator.
- ★ Assemble in right crankcase, front.
- Assemble in prop. governor adapter.

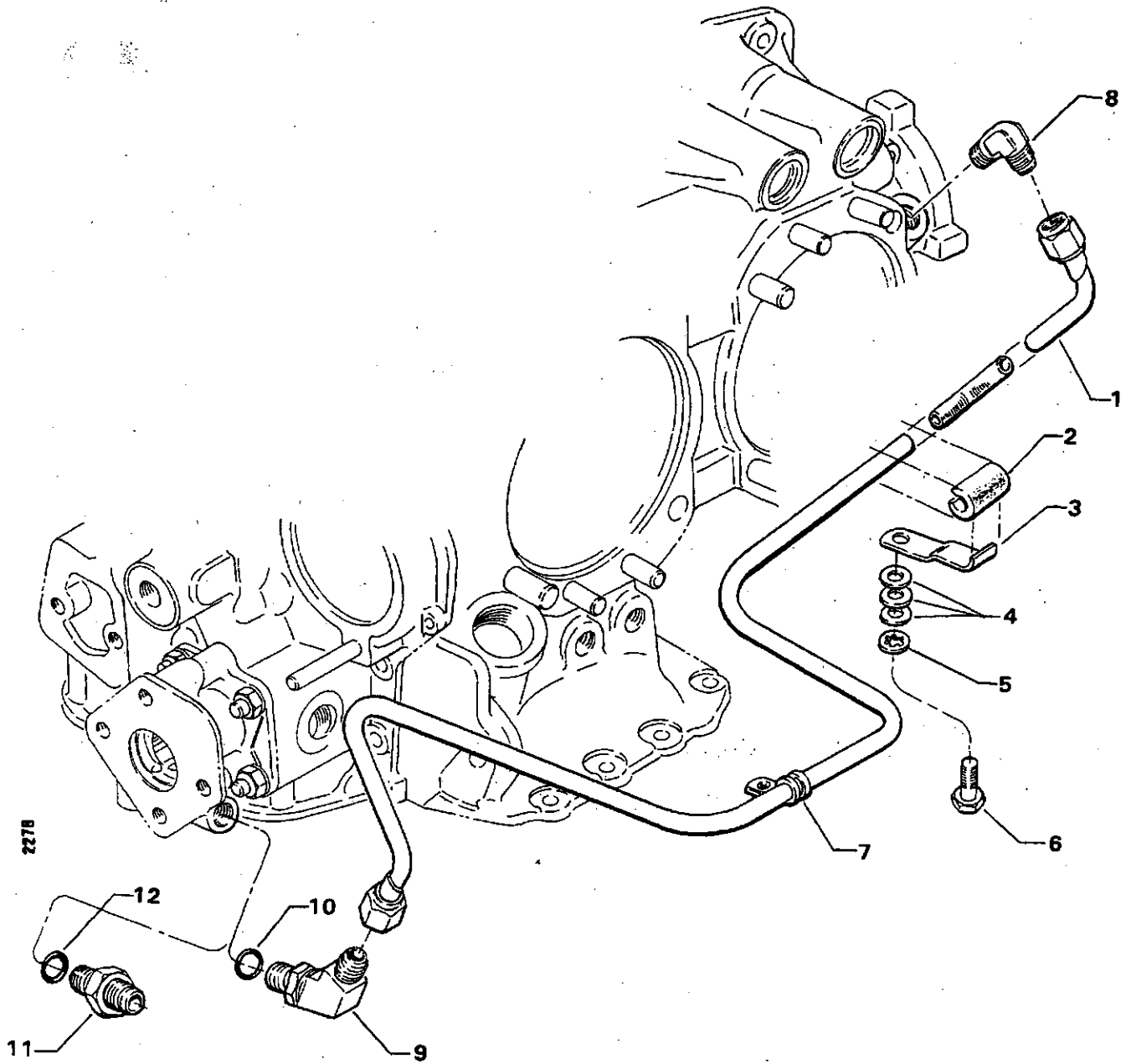
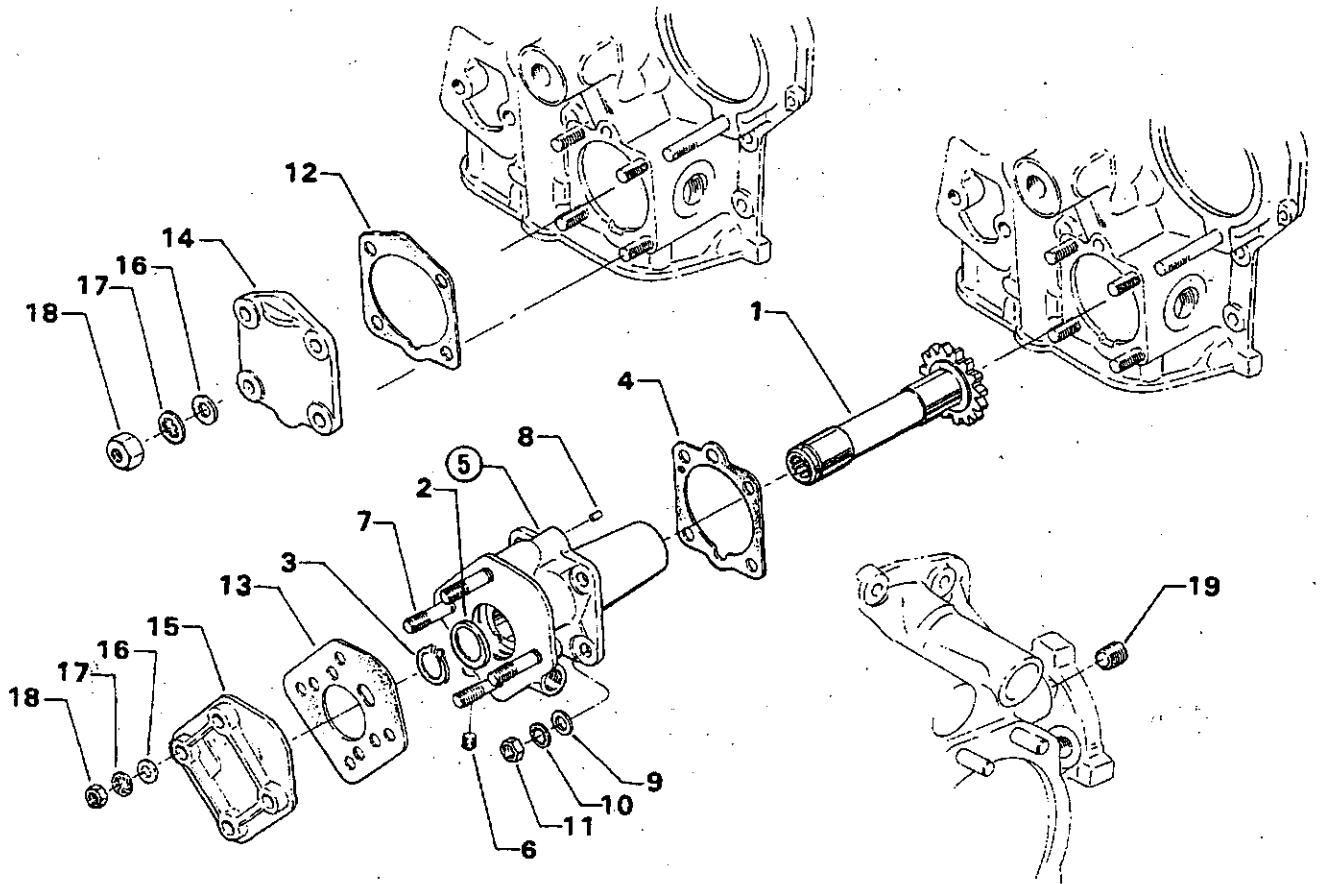


Figure 11. PROPELLER GOVERNOR OIL LINE

**ACCESSORY HOUSING AND RELATED PARTS
PROPELLER GOVERNOR DRIVES AND COVERS**

FIG. REF. 12	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY															
				A 2 B	A 2 C	A 2 D	A 3 B	E 1 A	E 1 F	E 2 A	E 2 B	E 2 C	E 2 D	E 2 F	E 2 G	E 2 H	E 3 D	E 3 H	
1	68317	SHAFTGEAR, Prop. governor drive						1	1										
2	71596	WASHER, Accessory driven gear					1	1											
3	STD-1221	RING, 13/16 dia. x 27/64 thick, internal retaining					1	1											
4	68315	GASKET, Accessory drive adapter					1	1											
5	75153*	ADAPTER ASSY., Prop. governor drive					1	1											
	75545**	ADAPTER ASSY., Prop. governor drive					1	1											
6	1102	PLUG, 1/8-27 NPT, Allen					1	1											
7	31C-16*	STUD, 5/16-18 x 2.00 long					4	4											
	31C-14**	STUD, 5/16-18 x 1-3/4 long					4	4											
8	STD-1774	PIN, 1/8 dia. x 1/4 long					1	1											
9	STD-35	WASHER, 5/16 plain					4	4											
10	STD-475	WASHER, 5/16 lock, internal teeth					4	4											
11	STD-1410	NUT, 5/16-18 plain					4	4											
12	69551	GASKET, Accessory drive adapter		1	1				1	1	1	1		1	1		1		
13	72053	GASKET, Governor					1	1											
14	69106	COVER, Governor drive adapter pad		1	1				1	1	1	1		1	1		1		
15	72378	COVER, Governor drive adapter pad					1	1											
16	STD-35★	WASHER, 5/16 plain		4	4		AR	AR	4	4	4	4		4	4		4		
17	STD-475	WASHER, 5/16 lock, internal teeth		4	4		4	4	4	4	4	4		4	4		4		
18	STD-1410	NUT, 5/16-18 plain		4	4		4	4	4	4	4	4		4	4		4		
19	STD-783●	PLUG, 1/4-18 NPT, Allen hd.		1	1				1	1	1			1			1		

- * Adapter assembly and studs for Woodward governor installations.
- ** Adapter assembly and studs for "AN" governor installations.
- ★ 32 required for Woodward governor, 4 required for "AN" governor.
- Assemble in right crankcase, front.

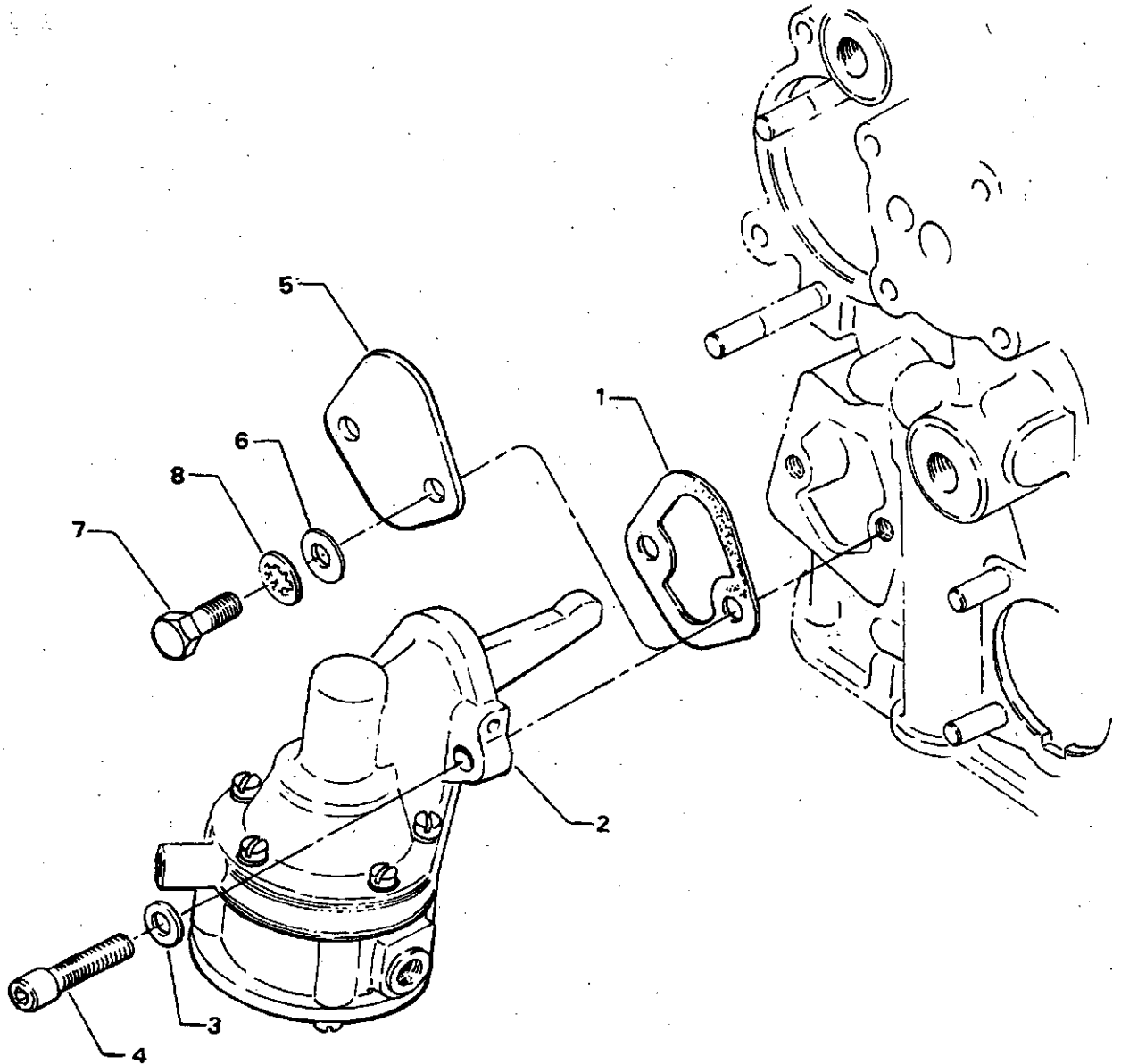


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Figure 12. PROPELLER GOVERNOR DRIVES AND COVERS

**ACCESSORY HOUSING AND RELATED PARTS
FUEL PUMP ASSEMBLY AND ATTACHING PARTS**

FIG. REF. 13	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY													
				A 2 B	A 2 C	A 2 D	A 3 B	E 1 A	E 1 F	E 2 A	E 2 B	E 2 C	E 2 D	E 2 F	E 2 G	E 2 H	E 3 D
1	60096	GASKET, Fuel pump	1														
2	LW-15472	FUEL PUMP, Low pressure, dual diaphragm (6441271)		1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	STD-33	WASHER, 3/8 plain		2	2	2	2	2	2	2	2	2	2	2	2	2	2
4	STD-1882	SCREW, 3/8-16 x 1-9/32 long, socket hd., dr. hd.		2	2	2	2	2	2	2	2	2	2	2	2	2	2
5	65098	COVER, Fuel pump		1	1	1		1	1			1			1	1	
6	STD-33	WASHER, 3/8 plain		2	2	2		2	2			2			2	2	
7	LW-38.75	BOLT, 3/8-16 x 3/4 long, hex. hd.		2	2	2		2	2			2			2	2	
8	STD-678	WASHER, Lock		2	2	2		2	2			2			2	2	



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Figure 13. FUEL PUMP ASSEMBLY AND ATTACHING PARTS

**ACCESSORY HOUSING AND RELATED PARTS
VACUUM PUMP DRIVE AND DUAL DRIVE ASSEMBLIES**

FIG. REF. 14	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY													
				A 2 B	A 2 C	A 3 D	A 1 B	E 1 A	E 1 F	E 2 A	E 2 B	E 2 C	E 2 D	E 2 F	E 2 G	E 2 H	E 3 D
1	61183	GASKET, Accessory adapter		1	1		1	1	1	1	1	1	1	1	1	1	1
2	61098	ADAPTER ASSY., Vacuum pump		1	1		1	1	1	1	1	1	1	1	1	1	1
3	STD-1774	PIN, 1/8 x 1/4 long		1	1		1	1	1	1	1	1	1	1	1	1	1
4	STD-2217	SEAL, Oil, 7/8 I.D. x 1-1/2 O.D. x 5/16		1	1		1	1	1	1	1	1	1	1	1	1	1
5	72970	GEAR ASSY., Vacuum pump driven		1	1		1	1	1	1	1	1	1	1	1	1	1
6	71596	WASHER, Accessory driven gear		1	1		1	1	1	1	1	1	1	1	1	1	1
7	70347	DUAL DRIVE ASSY., Vacuum pump & hydraulic pump		1	1		1	1	1	1	1	1	1	1	1	1	1
8	69725	ADAPTER ASSY., Dual accessory drive					1										
9	61262	STUD, 1/4-20 x 1-17/32 long					1										
10	69724	STUD, 1/4-20 x 3-5/8 long					3										
11	66145	DOWEL, 1/4 dia. x 1/2 long					2										
12	69319	GEAR ASSY., Accessory drive					1										
13	71596	WASHER, Accessory driven gear					1										
14	STD-2072	RING, "O", Static seal					1										
15	69316	GEAR, Dual accessory drive					1										
16	69730	GEAR ASSY., Accessory idler					1										
17	69731	BUSHING, Accessory idler gear					1										
18	71596	WASHER, Accessory driven gear					2										
19	73231	GEAR ASSY., Vacuum pump driven					1										
20	69720	GASKET, Dual accessory drive adapter cover					1										
21	69742	COVER ASSY., Vacuum & hydraulic pump drive					1										
22	STD-548	SEAL, Oil, 7/8 I.D. x 1-3/8 O.D. x 5/16					1										
23	STD-2217	SEAL, Oil, 7/8 I.D. x 1-1/2 O.D. x 5/16					1										
24	69942	STUD, 1/4-20 x 1-17/32 long					2										
25	69722	STUD, 1/4-20 x 1-15/16 long					1										
26	69318	SHAFT, Accessory idler gear					1										
27	STD-938	DOWEL, 3/32 dia. x 11/32 long					1										
28	STD-1339	PLUG, 1/16-27 NPT, Allen					2										
29	STD-8	WASHER, 1/4 plain					2										
30	STD-160	WASHER, 1/4 internal lock					2										
31	STD-1411	NUT, 1/4-20 plain					2										
32	STD-8	WASHER, 1/4 plain					1										
33	STD-160	WASHER, 1/4 lock, internal teeth					1										
34	STD-1411	NUT, 1/4-20 plain					1										
35	STD-696	WASHER, 17/64 I.D. x 1/2 O.D. x 1/32 thick															
36	71023	BRACE, Dual drive															
37	STD-160	WASHER, 1/4 lock, internal teeth															
38	STD-1215	BOLT, 1/4-20 x 1-1/4 long, hex. hd.															

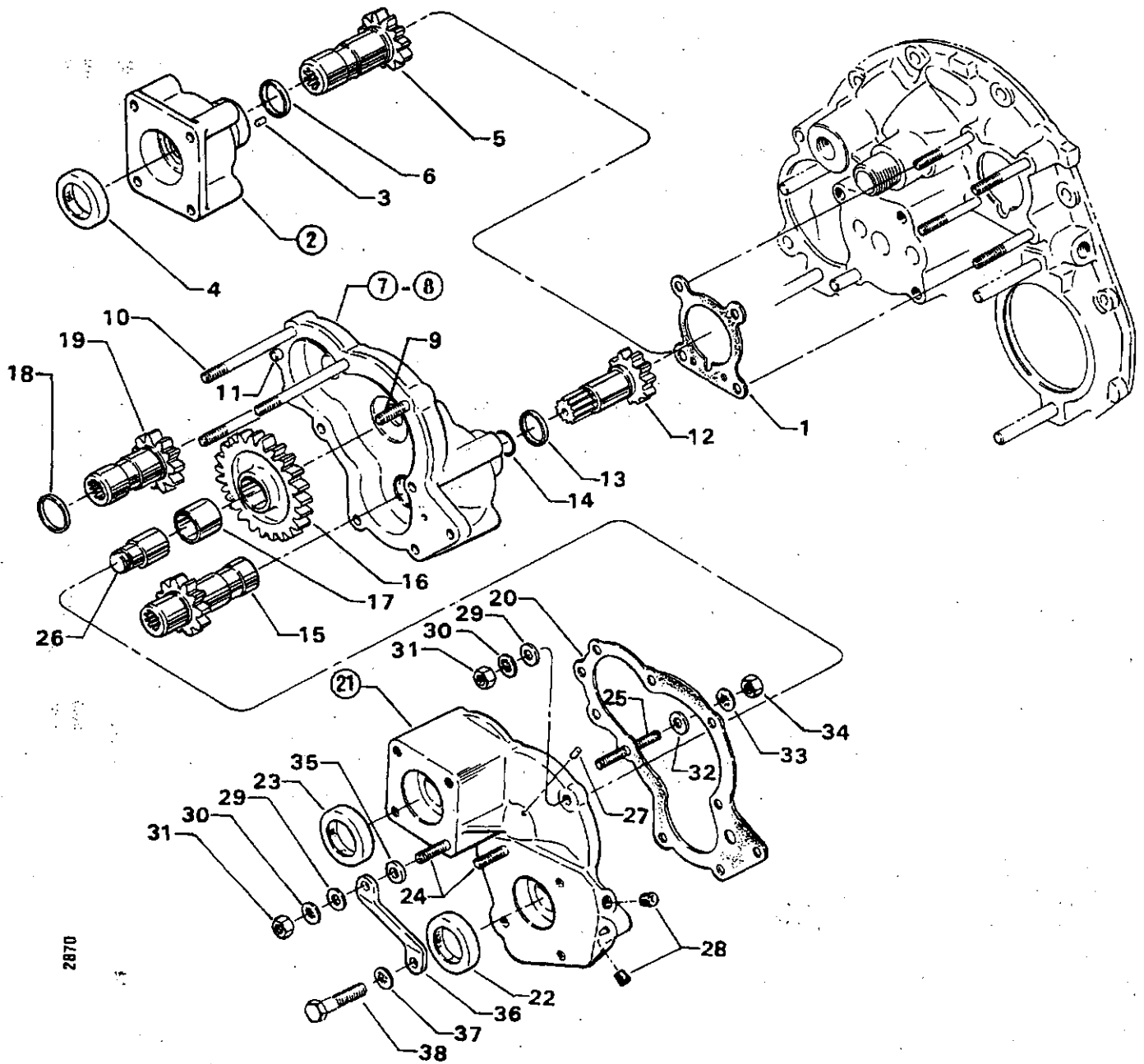


Figure 14. VACUUM PUMP DRIVE AND DUAL DRIVE ASSEMBLIES

**Intentionally
Left
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**ACCESSORY HOUSING AND RELATED PARTS
ACCESSORY DRIVE COVERS**

FIG. REF. 15	PART NUMBER	DESCRIPTION	Q N A L L	QUANTITY PER ASSEMBLY													
				A 2 B	A 2 C	A 2 D	A 3 B	E 1 A	E 1 F	E 2 A	E 2 B	E 2 C	E 2 D	E 2 F	E 2 G	E 2 H	E 3 D
1	8313	GASKET, Vacuum pump		1	1		1	1	1	1	1	1	1	1	1	1	1
2	60430	COVER, Vacuum pump	1														
3	68593	SPACER, Vacuum pump stud		4	4	4	4	4		4	4	4				4	4
	74771	SPACER, Vacuum & hydraulic dual drive stud		3													
4	STD-8	WASHER, 1/4 plain	4														
5	STD-160	WASHER, 1/4 lock, internal teeth	4														
6	STD-1411	NUT, 1/4-20 plain	4														
7	8313	GASKET, Vacuum and hydraulic pump					2										
8	60430	COVER, Vacuum and hydraulic pump					2										
9	STD-8	WASHER, 1/4 plain					8										
10	STD-160	WASHER, 1/4 lock, internal teeth					8										
11	STD-1411	NUT, 1/4-20 plain					8										

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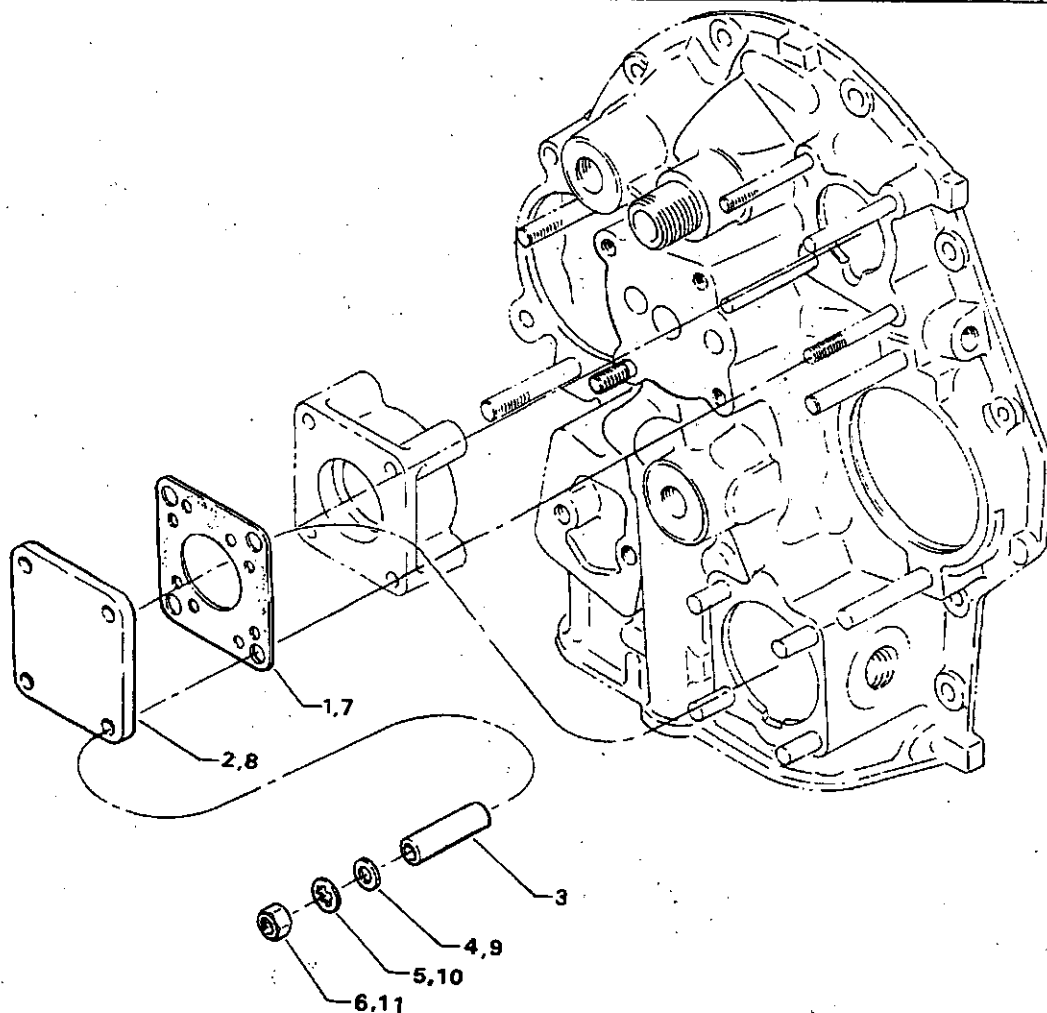


Figure 15. ACCESSORY DRIVE COVERS

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

FIG. REF. 16	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY														
			A 2 B	A 2 C	A 2 D	A 3 B	E 1 A	E 1 F	E 2 A	E 2 B	E 2 C	E 2 D	E 2 F	E 2 G	E 2 H	E 3 D	E 3 H
1	69436*	SPRING, Oil cooler bypass															
2	62415*	PLUNGER, Oil cooler bypass	1			1			1			1					
3	STD-294	GASKET, 7/8 O.D. x 5/8 I.D. x 3/32 annular				1			1			1					
4	62417	PLUG, Oil cooler bypass	1														
5	STD-784	PLUG, 3/8 pipe	1	1	1	1			1	1		1				1	1
6	69675	CONNECTOR, Accessory housing to oil cooler inlet hose		1	1	1	1	1	1	1		1	1	1	1	1	
7	71140	FITTING, Breather (assemble in accessory housing)						1	1	1	1	1	1	1	1	1	
8	AN844-10D	ELBOW, Breather, 45° (assemble in accessory housing)							1			1				1	1
9	71623	WASHER, Oil cooler fitting							1	1	1					1	1
10	AN777-8D	ELBOW, Universal, 75°	1						1	1	1					1	1
11	AN901-8A	GASKET, Metal tube connection seal	1						1	1	1					1	1
12	71620	BOLT, Oil cooler fitting	1						1	1	1					1	1
13	72413	FITTING, Breather, 120° elbow (assemble in acc. hsg.)	1						1	1	1					1	1
14	62732	CAP, Tachometer drive (assemble in acc. hsg.)	1	1					1	1	1					1	1
15	AN816-8	NIPPLE, 1/2 flared tube, 3/8 NPT								2							
16	62817	SCREEN ASSY., Oil pressure	1														
17	61173	GASKET, Oil pressure housing	1														
18	68974	HOUSING, Oil pressure screen	1			1			1			1					
19	62815	HOUSING, Oil pressure screen	1														
20	69510**	HOUSING, Thermostatic valve and pressure screen	1														
21	STD-294	GASKET, 7/8 O.D. x 5/8 I.D. x 3/32 annular	1														
22	STD-8	WASHER, 1/4 plain	4														
	STD-8	WASHER, 1/4 plain															
23	STD-1856	SCREW, 1/4-20 x 31/32 to 1.00 long, hex. hd. slotted	4														
	STD-1856	SCREW, 1/4-20 x 31/32 to 1.00 long, hex. hd. slotted															
24	STD-294	GASKET, 7/8 O.D. x 5/8 I.D. x 3/32 annular															
25	LW-12795	GASKET, Oil filter adapter	2														
26	77852	OIL FILTER BASE ASSY.	2						2	2						2	2
27	77853	OIL FILTER HOUSING ASSY.	1						1	1						1	1
28	LW-13215	FILTER, Oil, short (spin on)	1						1	1						1	
29	STD-8	WASHER, 1/4 plain							1							1	1
30	STD-160	WASHER, 1/4 lock, internal teeth	4						4	4						4	4
31	STD-1411	NUT, 1/4-20 plain	1						1	1						1	1
32	STD-1856	SCREW, 1/4-20 x 31/32 to 1.00 long, hex. hd. slotted	1						1	1						1	1
33	75944	VALVE ASSY., Temp. control, oil cooler bypass	3						3	3						3	3
34	76510	GASKET, Valve assembly	1														
35	25C-10	STUD, 1/4-20 x 1-1/4 long	1						1	1						1	1

* Not required when thermostatic bypass valve is used.
 ** Provision for thermostatic valve in oil screen housing.

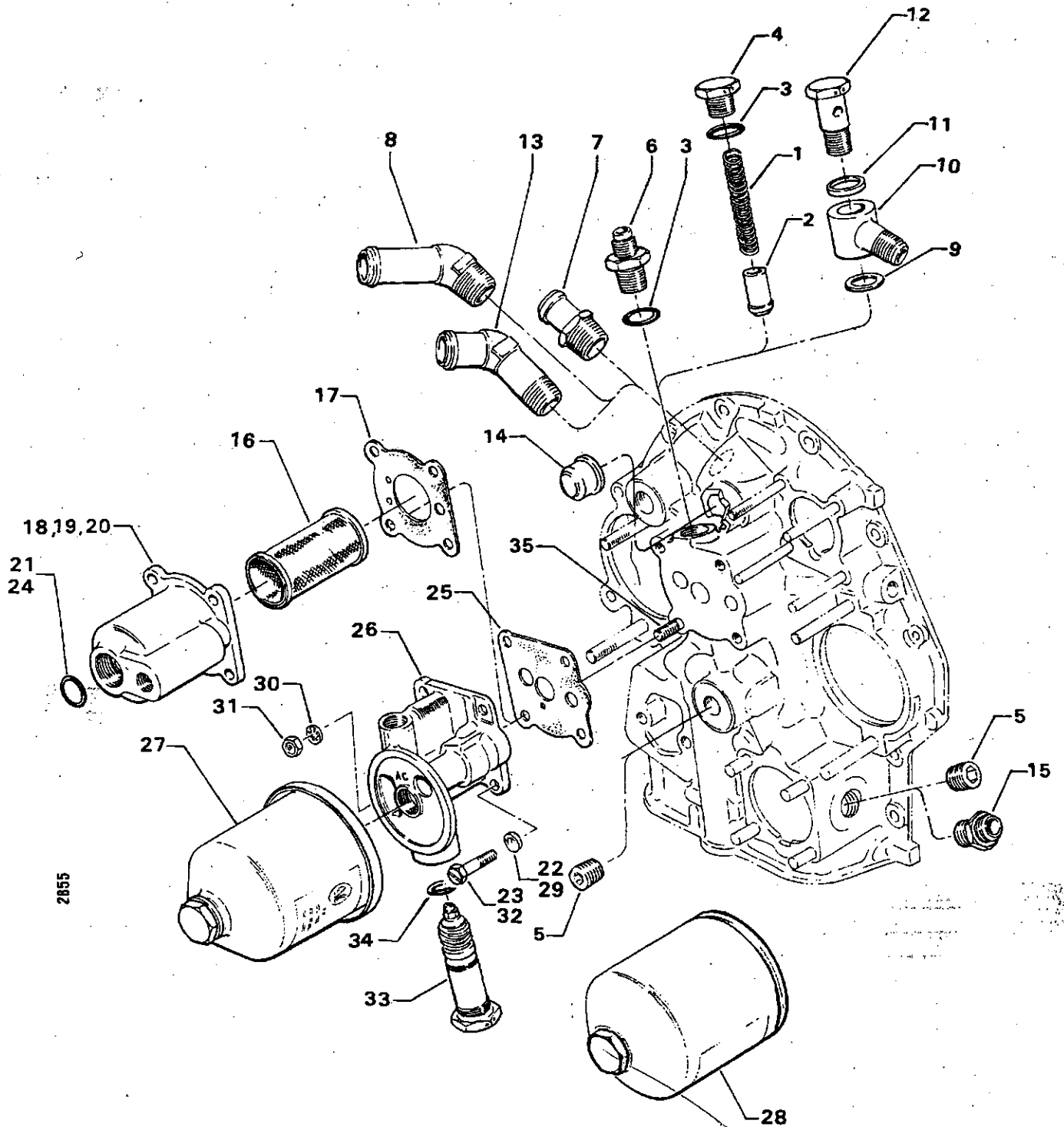


Figure 16. OIL FILTER ASSEMBLY AND OIL COOLER BYPASS VALVE

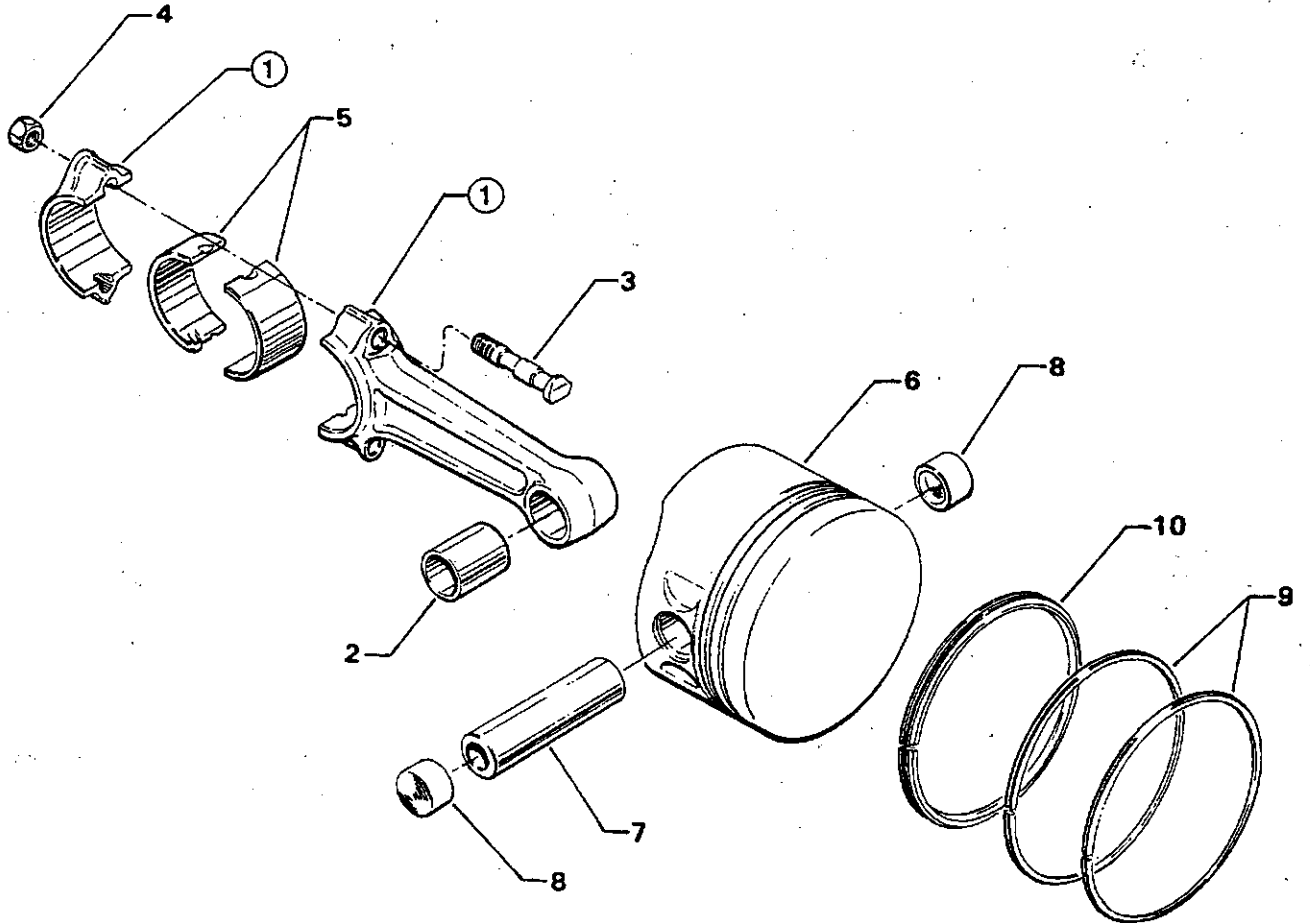
**CYLINDER, PISTON AND VALVE TRAIN
CONNECTING RODS, PISTONS AND RING ASSEMBLIES**

FIG. REF. 17	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY														
			A 2 B	A 2 C	A 2 D	A 3 B	E 1 A	E 1 F	E 2 A	E 2 B	E 2 C	E 2 D	E 2 F	E 2 G	E 2 H	E 3 D	E 3 H
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	75413	PISTON, Compression ratio 7.00:1	4														
	75089	PISTON, Compression ratio 8.50:1		4													
7	LW-14068	PIN, Piston (49/64" I.D.) See Note	4														
	LW-14077	PIN, Piston (9/16" I.D.) See Note							4								
	LW-14078	PIN, Piston (37/64" I.D.) See Note		4													
8	60828	PLUG, Piston pin	8														
	LW-11775	PLUG, Piston pin (piloted in piston pin)		8		8		8	8								
9	74989*	RING, Piston, compression	8														
	74241**	RING, Piston, compression		8	8	8		8	8	8							
10	73857	RING, Piston, oil regulating (expander type)	4														

* Chrome ring for plain cylinders.
** Chrome ring for nitrided cylinders.

NOTE

Refer to latest Service Instruction No. 1267 for piston pin and plug usage.



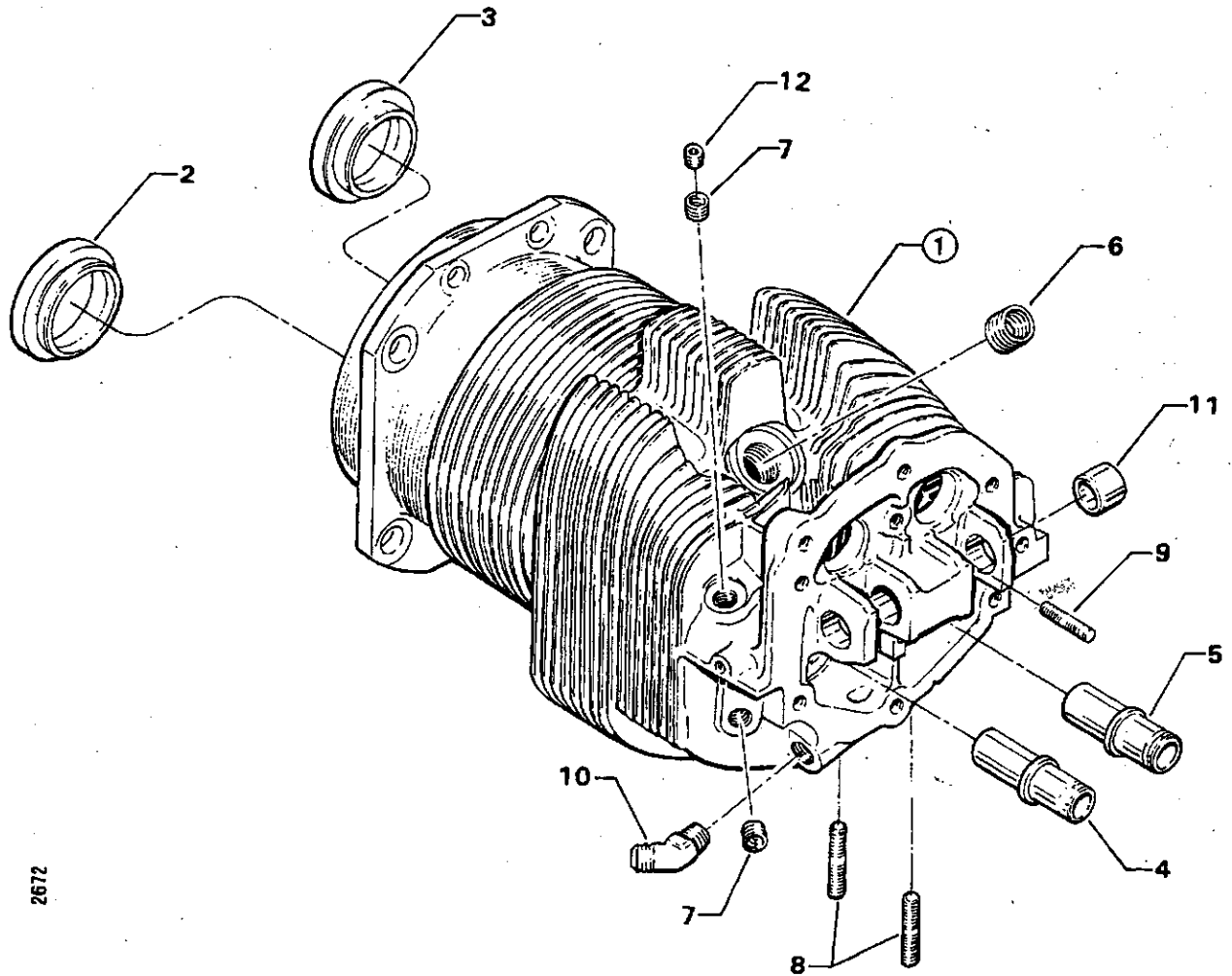
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Figure 17. CONNECTING RODS, PISTONS AND RING ASSEMBLIES

**CYLINDER, PISTON AND VALVE TRAIN
CYLINDER ASSEMBLY**

FIG. REF. 18	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY														
			A 2 B	A 2 C	A 2 D	A 3 B	E 1 A	E 1 F	E 2 A	E 2 B	E 2 C	E 2 D	E 2 F	E 2 G	E 2 H	E 3 D	E 3 H
1	LW-12416	CYLINDER AND HEAD ASSY., Nitrided							4	4							
	LW-12417	CYLINDER AND HEAD ASSY., Plain	4														
2	72057	SEAT, Intake valve	4														
3	72058	SEAT, Exhaust valve	4														
4	60028	GUIDE, Valve intake	4														
5	74230	GUIDE, Valve exhaust	4														
6	66796	INSERT, Spark plug (18-1.5mm)	8														
7	STD-1872	INSERT, 1/8-27 heli-coil, taper pipe thread		8		8		8	8	8							
8	31C-12	STUD, 5/16-18 x 1-1/2 long	8														
9	25C-9	STUD, 1/4-20 x 1-1/8 long	4														
10	MS20823-6D	ELBOW, 45°, 3/8 flared tube	4														
11	66610	BUSHING, Rocker shaft	16														
12	1102*	PLUG, 1/8-27 NPT, Allen head	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

* Used on installations with no injector or priming system.

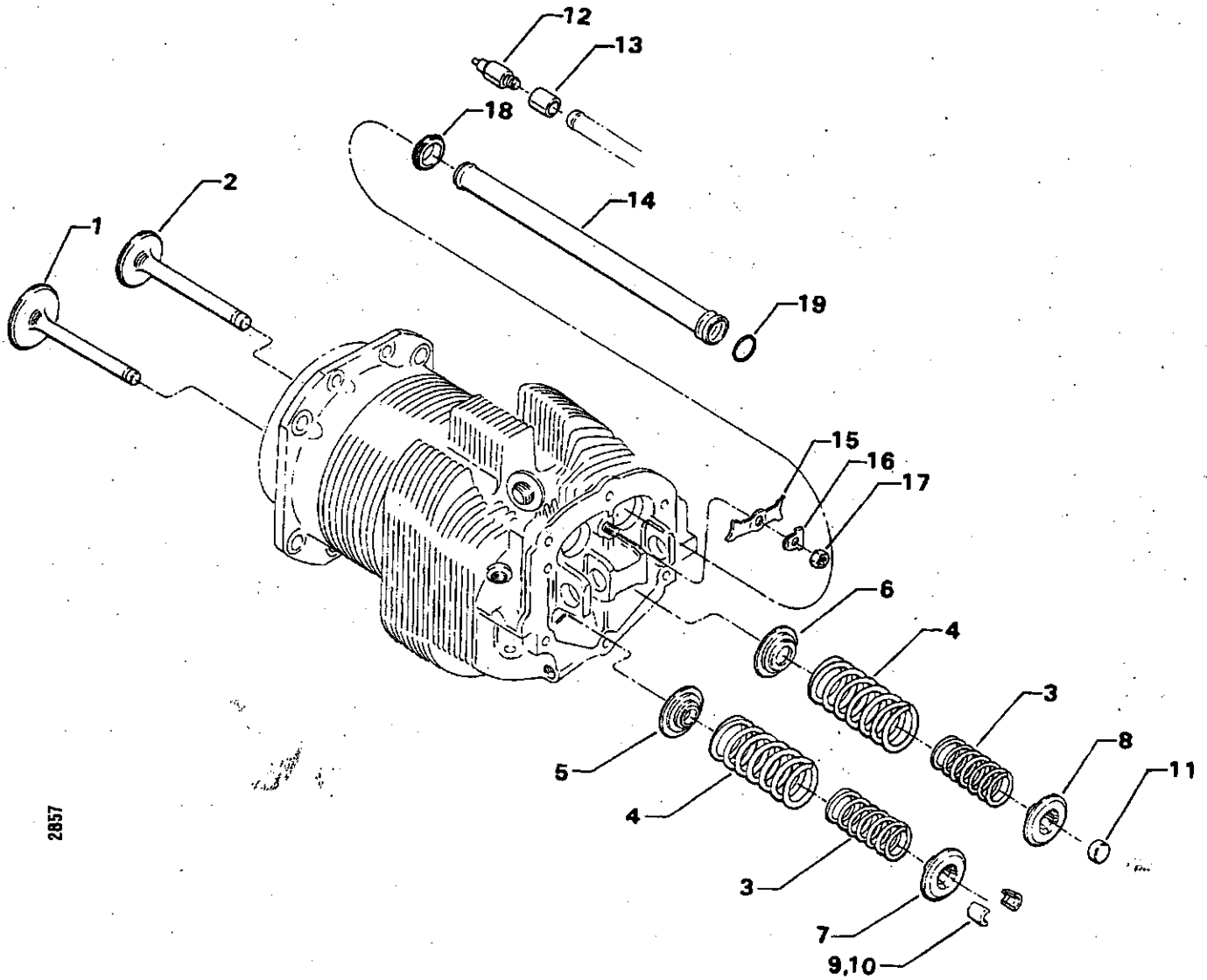


2672

Figure 18. CYLINDER ASSEMBLY

**CYLINDER, PISTON AND VALVE TRAIN
VALVE ASSEMBLY**

FIG. REF. 19	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY														
			A 2 B	A 2 C	A 2 D	A 3 B	E 1 A	E 1 F	E 2 A	E 2 B	E 2 C	E 2 D	E 2 F	E 2 G	E 2 H	E 3 D	E 3 H
1	73938	VALVE, Intake	4														
2	LW-19001	VALVE, Exhaust (rotator type)	4														
3	LW-11795	SPRING, Valve, inner	8														
4	LW-11800	SPRING, Valve, outer	8														
5	65441	SEAT, Valve spring, lower intake	4														
6	LW-13323	SEAT, Valve spring, lower exhaust	4														
7	LW-10077	SEAT, Valve spring, upper intake	4														
8	LW-16475	SEAT, Valve spring, upper exhaust (rotator type)	4														
9	60009	KEY, Valve, intake	8														
10	MS13997-3	KEY, Valve, exhaust (rotator type)	8														
11	MS13998-3	CAP, Valve stem, exhaust (rotator type)	4														
12	78290	PLUNGER ASSY., Hydraulic tappet	8														
13	78524	SOCKET, Push rod, hydraulic tappet	8														
14	68987	TUBE, Push rod shroud	8														
15	LW-14995	SPRING, Shroud tube	4														
16	LW-12272	LOCKPLATE, Shroud tube	4														
17	STD-1411	NUT, 1/4-20 plain	4														
18	62922	SEAL, Shroud tube	8														
19	70310	SEAL, Shroud tube	8														



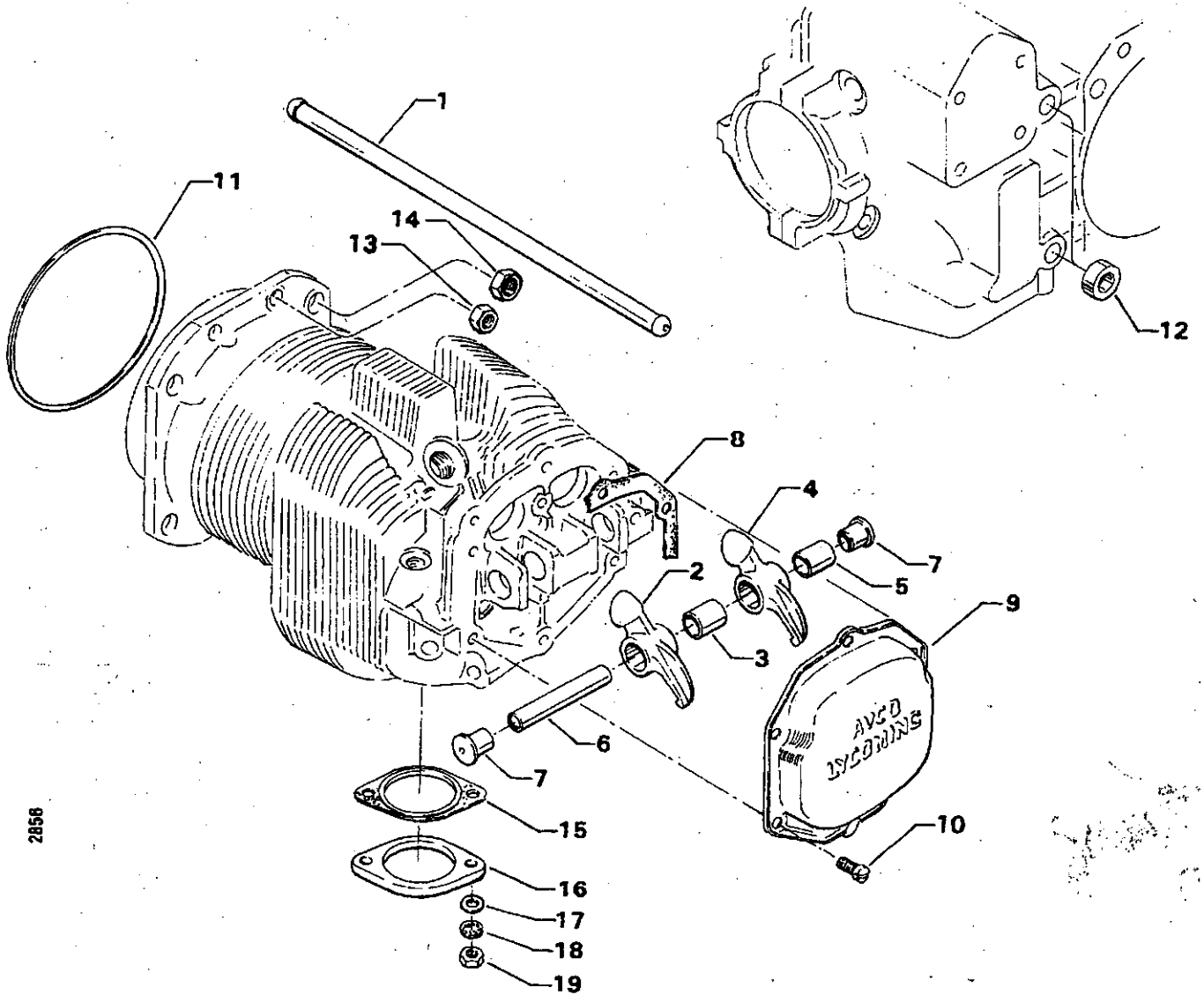
2857

Figure 19. VALVE ASSEMBLY

**CYLINDER, PISTON AND VALVE TRAIN
CYLINDER RELATED PARTS**

FIG. REF. 20	PART NUMBER	DESCRIPTION		QUANTITY PER ASSEMBLY													
				A 2 B	A 2 C	A 2 D	A 3 B	E 1 A	E 1 F	E 2 A	E 2 B	E 2 C	E 2 D	E 2 F	E 2 G	E 2 H	E 3 D
1	73411*	ROD ASSY., Push	AR														
	73412*	ROD ASSY., Push	AR														
	73413*	ROD ASSY., Push	AR														
	73414*	ROD ASSY., Push	AR														
2	LW-18790	ROCKER ASSY., Valve, intake	4														
3	74637	BUSHING, Valve rocker, intake	4														
4	74636	ROCKER ASSY., Valve, exhaust	4														
5	74637	BUSHING, Valve rocker, exhaust	4														
6	LW-13790	SHAFT, Valve rocker	4														
7	LW-12892	THRUST BUTTON, Rocker shaft	8														
8	75906	GASKET, Cover, rocker box	4														
9	61247	COVER, Rocker box	4														
10	STD-1925	SCREW, 1/4-20 x 5/8 long, pan hd., self locking	24														
11	71481	RING, Oil seal, 3/32 x 4-27/32 I.D.	4														
12	74887	SPACER, 33/64 I.D. x 7/8 O.D. x 3/8 thick	2														
13	383-B	NUT, 3/8-24 plain	16														
14	STD-2090	NUT, 1/2-20 plain	18														
15	65321	GASKET, Exhaust flange, copper/asbestos	4														
	77611	GASKET, Exhaust flange, stainless														4	4
	75118	GASKET, Exhaust flange, copper			8												
16	61260	FLANGE, Exhaust, stainless		4	4	4	4	4	4	4	4	4	4	4			
	61259	FLANGE, Exhaust, carbon		4													
17	STD-35	WASHER, 5/16 plain	8														
18	STD-475	WASHER, 5/16 lock, internal teeth	8														
19	STD-1410	NUT, 5/16-18 plain	8														

* A total of 8 required.



2858

Figure 20. CYLINDER RELATED PARTS

**Intentionally
Left
Blank**

**CYLINDER, PISTON AND VALVE TRAIN
CYLINDER HEAD DRAIN TUBES AND INTERCYLINDER COOLING BAFFLES**

FIG. REF. 21	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY														
			A 2 B	A 2 C	A 2 D	A 3 B	E 1 A	E 1 F	E 2 A	E 2 B	E 2 C	E 2 D	E 2 F	E 2 G	E 2 H	E 3 D	E 3 H
1	STD-684	NIPPLE, Straight, 3/8 I.D. hose	4														
2	STD-2180	HOSE, 3/8 I.D. x 1-13/16 long	4														
3	LW-15592-5-05	CLAMP, Hose	8														
4	68759	TUBE ASSY., Oil drain, cylinder no. 1	1														
5	68760	TUBE ASSY., Oil drain, cylinder no. 2	1														
6	68761	TUBE ASSY., Oil drain, cylinders no. 3 & 4	2														
7	72569	BAFFLE ASSY., Intercylinder	2														
8	71611	RETAINER, Intercylinder	2														
9	71610	HOOK, Intercylinder baffle retainer	2														

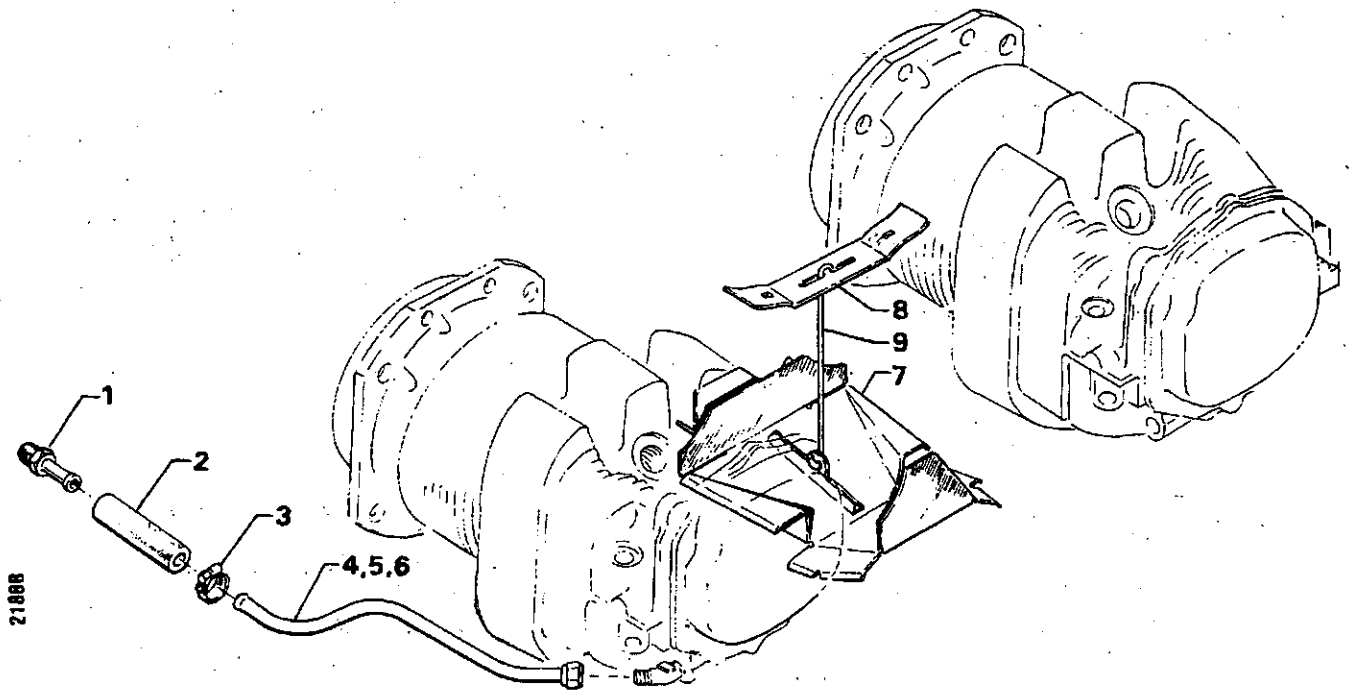


Figure 21. CYLINDER HEAD DRAIN TUBES AND INTERCYLINDER COOLING BAFFLES

**IGNITION SYSTEM
MAGNETOS AND MAGNETO DRIVES**

FIG. REF.	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY														
			A 2	A 2	A 2	A 3	E 1	E 1	E 2	E 2	E 2	E 2	E 2	E 2	E 3	E 3	
22			B	C	D	B	A	F	A	B	C	D	F	G	H	D	H
1	61665	GEAR, Magneto, impulse coupling	1		1	1	1	1	1		1	1	1	1	1	1	1
	61665	GEAR, Magneto, impulse coupling			2												
2	72495	GEAR, Magneto, retard breaker		1						1							
3	STD-761	PIN, Cotter, 3/32 dia. x 1.00 long			1							1		1		1	
	STD-761	PIN, Cotter, 3/32 dia. x 1.00 long			2												
4	61163	GEAR, Magneto	1														
5	62224	GASKET, Magneto adapter and magneto	3	2	1	3	3	1	3	2	1	1	1	1	3	1	3
	62224	GASKET, Magneto adapter and magneto			2												
6	LW-12706	ADAPTER, Magneto, impulse coupling	1		2	1	1	1	1		1	1	1	1	1	1	1
7	LW-12681	GASKET, Magneto			2			2			2	2	2	2		2	
8	LW-51360-29	MAGNETO, S4LN-20	1			1	1		1						1	1	
	LW-51360-37	MAGNETO, Impulse coupling, S4LN-21	1			1	1		1						1	1	
	LW-163045-3	MAGNETO, S4LN-204		1					1	1					1	1	
	LW-163005-2	MAGNETO, Retard breaker, S4LN-200		1						1							
	LW-349305-1	MAGNETO, S4LN-1209						1			1		1				
	LW-349365-3	MAGNETO, Impulse coupling, S4LN-1227						1			1		1				
	LW-163045-6	MAGNETO, w/Electric tach. pick-up, S4LN-204	1	1													
	LW-51360-45	MAGNETO, Impulse coupling/feed thru cap., S4LN-21							1								
9	LW-15635	MAGNETO AND HARNESS ASSY., Right (Slick)			1						1		1		1		
10	LW-15636	MAGNETO, Right, Slick model 4250			1						1		1		1		
11	77743	HARNESS ASSY., Ignition, right			1						1		1		1		
12	LW-15637	MAGNETO AND HARNESS ASSY., Left (Slick)			1						1		1		1		
13	LW-15638	MAGNETO, Left, (Slick model 4251, impulse coupling)			1						1		1		1		
14	77745	HARNESS ASSY., Ignition, left			1						1		1		1		
15	LW-16591	MAGNETO AND HARNESS ASSY., Right (Slick)			1						1		1		1		
16	LW-15638	MAGNETO, Right (Slick model 4251, impulse coupling)			1						1		1		1		
17	77743	HARNESS ASSY., Ignition, right			1						1		1		1		
18	75965	CLAMP, Magneto						4			4		4				
	76961	CLAMP, Magneto			4						4		4		4		4
19	STD-1727	WASHER, Plain, 3/4 O.D. x 21/64 I.D. x 1/8 thick	4	4	4	4	4		4	4	4	4	4	4	4	4	4
20	STD-475	WASHER, 5/16 lock, internal teeth	4														
21	STD-1410	NUT, 5/16-18 plain	4														
22	76734	STRAP, Zip			8						8		8		8		
23	LW-14057	CLIP, 1 wire			2						2		2		2		
24	LW-14060	CLIP, 2 wire			3						3		3		3		
25	LW-52305-1	KIT ASSY., Magneto ground terminal	2			2	2		2						2		2
	LW-52305-1	KIT ASSY., Magneto ground terminal	1														
	LW-157209	KIT ASSY., Magneto ground terminal	1	2					2	2							
26	LW-157208	KIT ASSY., Magneto retard terminal			1				1								
27	1182-B3*	SPARK PLUG, Champion (REM-40E)	8														
	1182-B7*	SPARK PLUG, Champion (REM37BY)	8														
	1182-F3*	SPARK PLUG, AC (SR-88)					8										
	1182-Q5*	SPARK PLUG, AC (SR-93)							8								
	1182-U4*	SPARK PLUG, Auto-Lite (SH-15)									8						

* Item No. 27 spark plugs are used in current production only. Additional spark plugs are available for these engines. See latest edition of Avco Lycoming Service Instruction No. 1042 for complete listing of all approved spark plugs.

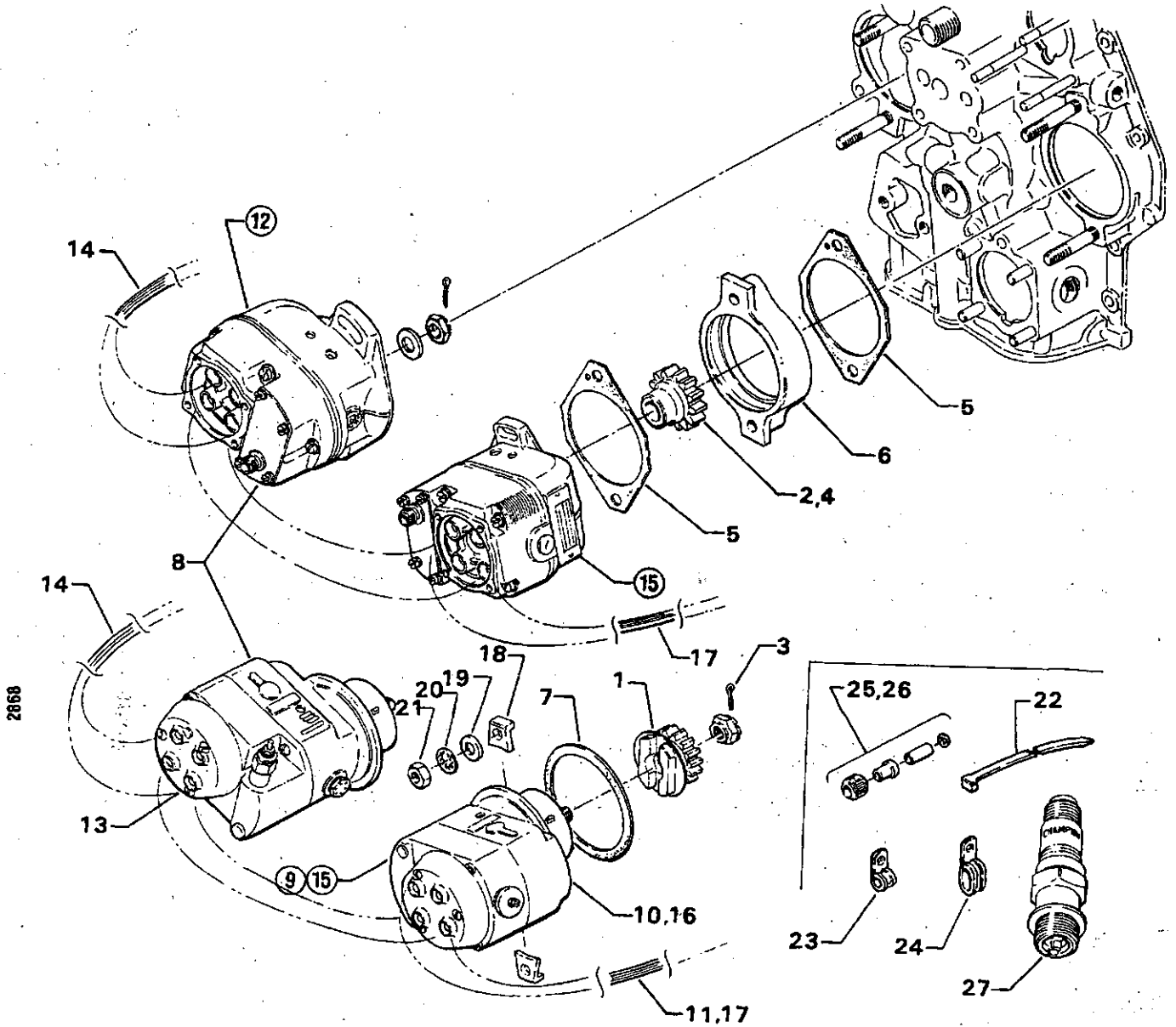
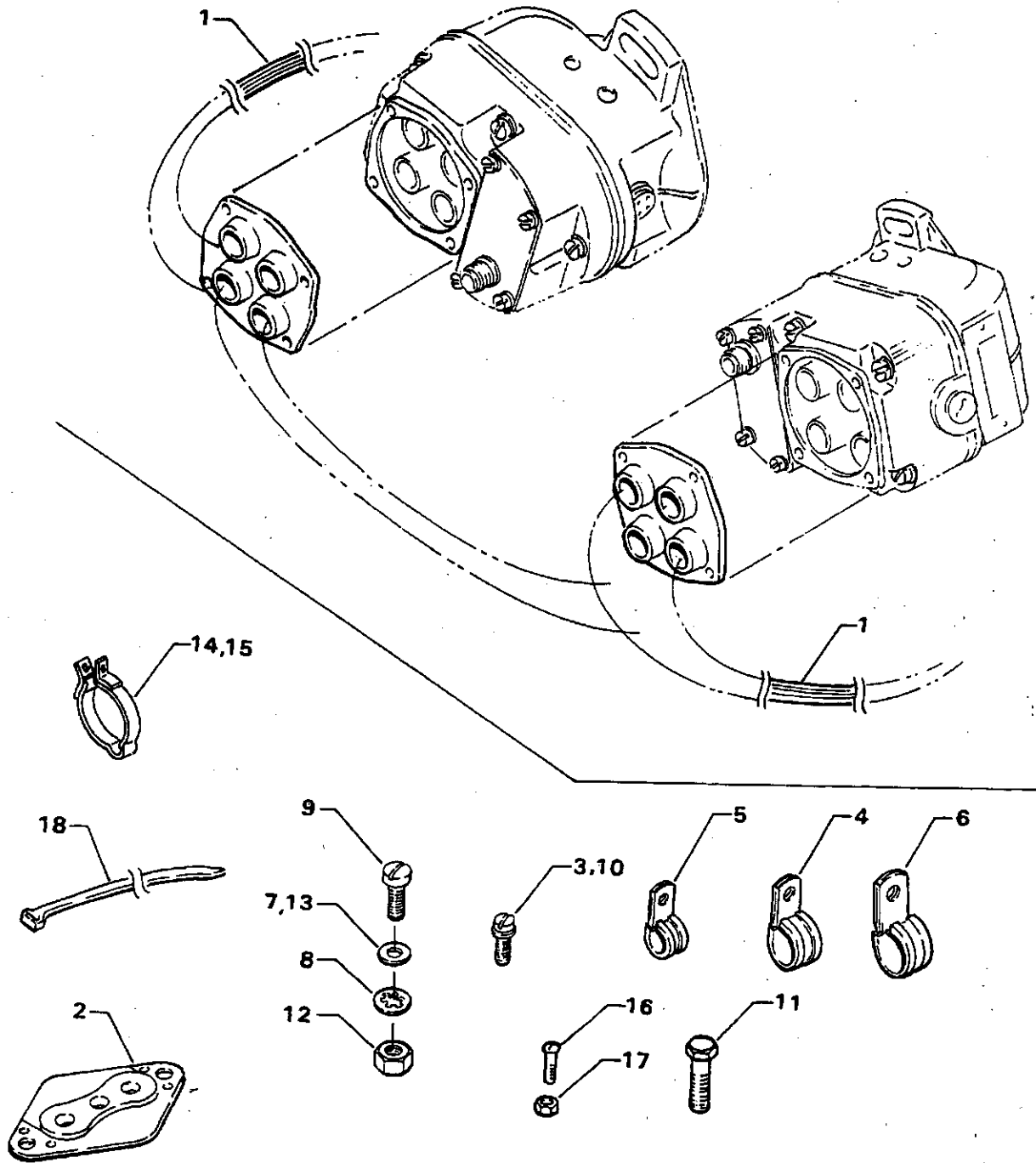


Figure 22. MAGNETOS AND MAGNETO DRIVES

**IGNITION SYSTEM
IGNITION HARNESS AND LEAD ASSEMBLY**

FIG. REF. 23	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY													
				A 2	A 2	A 2	A 3	E 1	E 1	E 2	E 2	E 2	E 2	E 2	E 2	E 3	E 3
				B	C	D	B	A	F	A	B	C	D	F	G	H	D
1	LW-M-2403	HARNESS ASSY., Magneto (left)		1	1		1	1		1	1				1	1	
	LW-M-2415	HARNESS ASSY., Magneto (left)							1			1		1			
	LW-M-2404	HARNESS ASSY., Magneto (right)		1	1		1	1		1	1				1	1	
	LW-M-2416	HARNESS ASSY., Magneto (right)							1			1		1			
2	LW-M-2375	PLATE, Spark plug cable		2	2		2	2	2	2	2	2	2	2	2	2	
3	72351	SCREW, No. 10-32 self-locking		8	8		8	8		8	8				8	8	
4	LW-14060	CLIP, Two wire for 1/4 screw		2	2		2	2	2	2	2	2	2	2	2	2	
5	LW-14057	CLIP, One wire for 1/4 screw							2			2	2				
6	LW-16266-25-50	CLAMP							1			1	1				
7	STD-8	WASHER, 1/4 plain		2	2		2	2	8	2	2	8		8	2	2	
8	STD-160	WASHER, 1/4 lock, internal teeth		2	2		2	2		2	2				2	2	
9	AN500-416-18	SCREW, 1/4-20 x 1-1/8 long, fillister head		1	1		1	1		1	1				1	1	
10	STD-1874	SCREW, 1/4-20 self-locking							4			4	4				
11	STD-1215	SCREW, 1/4-20 x 1-1/4 long		1	1		1	1		1	1				1	1	
12	STD-1411	NUT, 1/4-20 plain		2	2		2	2		2	2				2	2	
13	STD-696	WASHER, 1/4 plain							AR			AR	AR				
14	71910	CLAMP, 1-3/4 I.D.						4		4	4				4	4	
15	LW-18959-150-25	CLAMP, 1-1/2 I.D.		4	4		4									4	
16	STD-553	SCREW, 6/32 x 1/2 long, rd. hd.		4	4		4	4		4	4				4	4	
17	AN365-632A	NUT, 6/32 self-locking		4	4		4	4		4	4				4	4	
18	76734	ZIP STRAP		2	2		2	2	6	2	2	6		6	2	2	
*	M-1985-48	LEAD ASSY., Replacement top & bottom leads (LW-M-2403 & LW-M-2404 harnesses)		AR	AR		AR	AR		AR	AR				AR	AR	
*	M-1985-48	LEAD ASSY., Replacement top & bottom leads except for 1T & 2T (LW-M-2415 & LW-M-2416 harnesses)							AR			AR	AR				
*	M-1985-72	LEAD ASSY., Replacement for 1T & 2T leads (LW-M-2415 & LW-M-2416 harnesses)							AR			AR	AR				
*	76923-48S70-63	LEAD ASSY., Replacement, top and bottom leads (78539 harness)		AR	AR		AR	AR		AR	AR						
*	76923-48S90-63	LEAD ASSY., Replacement, top leads (78540 harness)					AR										
*	76923-48S70-63	LEAD ASSY., Replacement, bottom leads (78540 harness)					AR										
*	10-720632-48	LEAD ASSY., Replacement, top & bottom leads (LW-720505-1 harness)										AR					
*	76923-72S90-63	LEAD ASSY., Replacement for 1T & 2T leads (78546 harness)										AR					
*	76923-48S90-63	LEAD ASSY., Replacement for 3T & 4T leads (78546 harness)							AR			AR	AR				
*	76923-48S70-63	LEAD ASSY., Replacement, bottom leads (78546 harness)							AR			AR	AR				
*	76923-72S90-63	LEAD ASSY., Replacement, top leads (LW-10177 harness)							AR			AR	AR				
*	76923-48S70-63	LEAD ASSY., Replacement, bottom leads (LW-10177 harness)										AR					

* 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.



2867

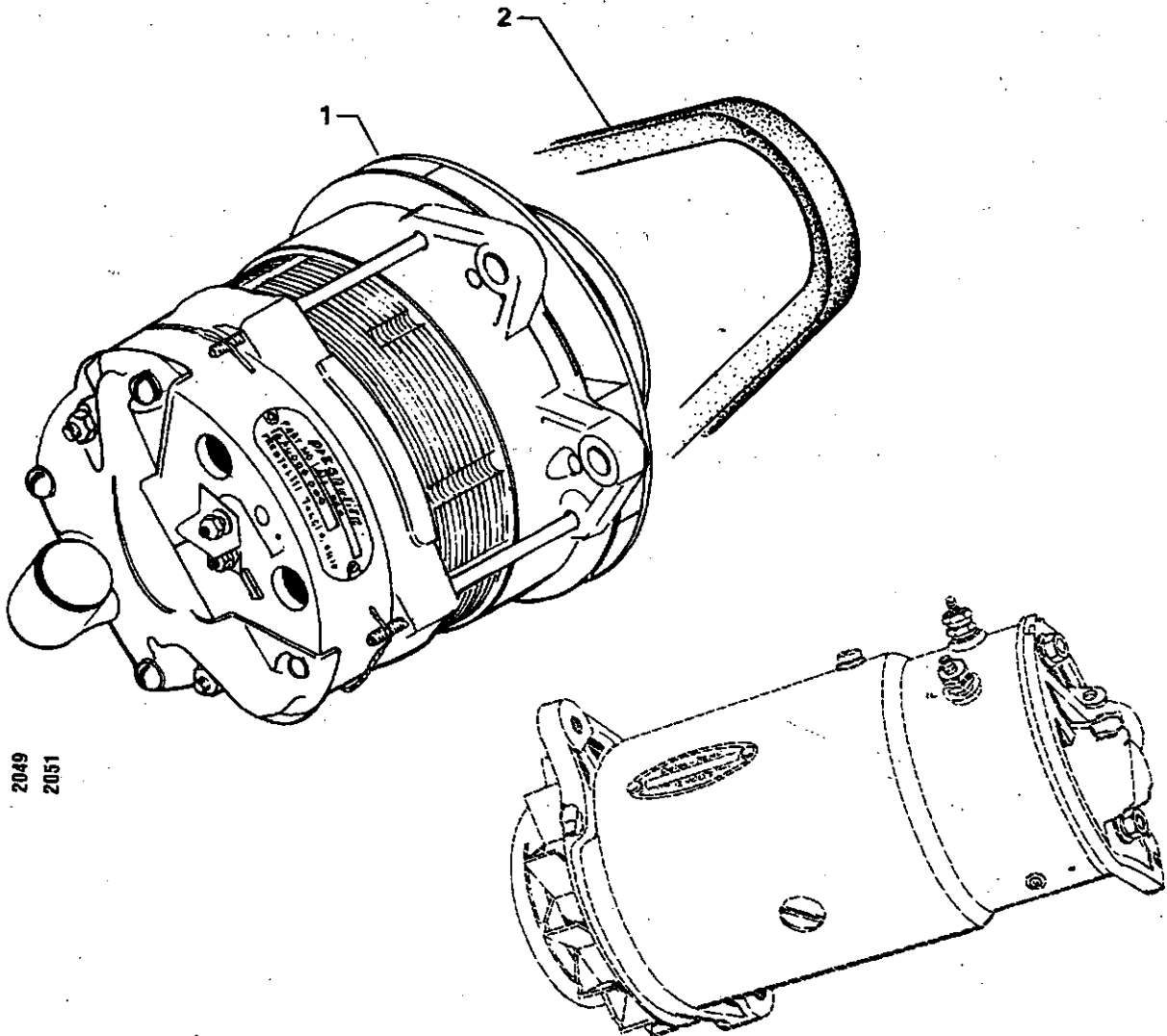
Figure 23. IGNITION HARNESS AND LEAD ASSY. (SLICK)

**Intentionally
Left
Blank**

**ELECTRICAL COMPONENTS
ALTERNATOR ASSEMBLY**

FIG. REF. 24	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY													
			A	A	A	A	E	E	E	E	E	E	E	E	E	E
			2	2	2	3	1	1	2	2	2	2	2	2	3	3
1	78308*	ALTERNATOR, 12 volt - 40 amp (ALE-8406)														
	LW-14316*	ALTERNATOR, 12 volt - 70 amp (ALX-8421)	1		1	1	1	1	1		1	1				
	LW-14319*	ALTERNATOR, 24 volt - 50 amp (ALT-8421)							1							
	LW-14308*	ALTERNATOR, 24 volt - 60 amp (ALY-8420)					1		1							
	76496	ALTERNATOR, 12 volt - 40 amp (ALE-8105A)	1	1	1	1	1	1	1		1	1		1	1	
2	60886	BELT, Generator drive	1	1		1			1			1				
	76026	BELT, Alternator drive	1	1	1	1	1	1	1	1	1	1	1	1	1	

* Externally grounded, 3.25:1 ratio.



2049
2051

Figure 24. ALTERNATOR ASSEMBLY

**ELECTRICAL COMPONENTS
GENERATOR MOUNTING AND ATTACHING PARTS**

FIG. REF. 25	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY													
			A 2	A 2	A 2	A 3	E 1	E 1	E 2	E 2	E 2	E 2	E 2	E 2	E 3	E 3
1	70419	BRACKET, Generator	2	2		2			2			2				
2	73383	LOCKPLATE, 5/16 bolt x 1.00 spacing	2	2		2			2			2				
3	STD-1838	BOLT, 5/16-18 x 15/16 long, hex. hd.	4	4		4			4			4				
4	76028	LINK, Generator adjusting	1	1		1			1			1				
5	STD-35	WASHER, 5/16 plain	1	1		1			1			1				
6	LW-31H.75	BOLT, 5/16-18 x 3/4 long, hex. hd. dr.	1	1		1			1			1				
7	STD-1727	WASHER, Plain, 3/4 O.D. x 11/32 I.D. x 1/8 thick	1	1		1			1			1				
8	LW-31H.75	BOLT, 5/16-18 x 3/4 long, hex. hd. dr.	1	1		1			1			1				
9	STD-1851	BOLT, 5/16-18 x 1-5/32 long, dr. end	2	2		2			2			2				
	STD-1836*	BOLT, 5/16-18 x 1-29/32 long, hex. dr. end	1													
	STD-1837*	BOLT, 5/16-18 x 2-9/32 long, hex. dr. end	1													
10	STD-35	WASHER, 5/16 plain	AR	AR		AR			AR			AR				
11	STD-1420	NUT, 5/16-18 slotted	2	2		2			2			2				
12	STD-68	PIN, Cotter, 1/16 dia. x 1/2 long	2	2		2			2			2				

* Special bolts for Piper installations.

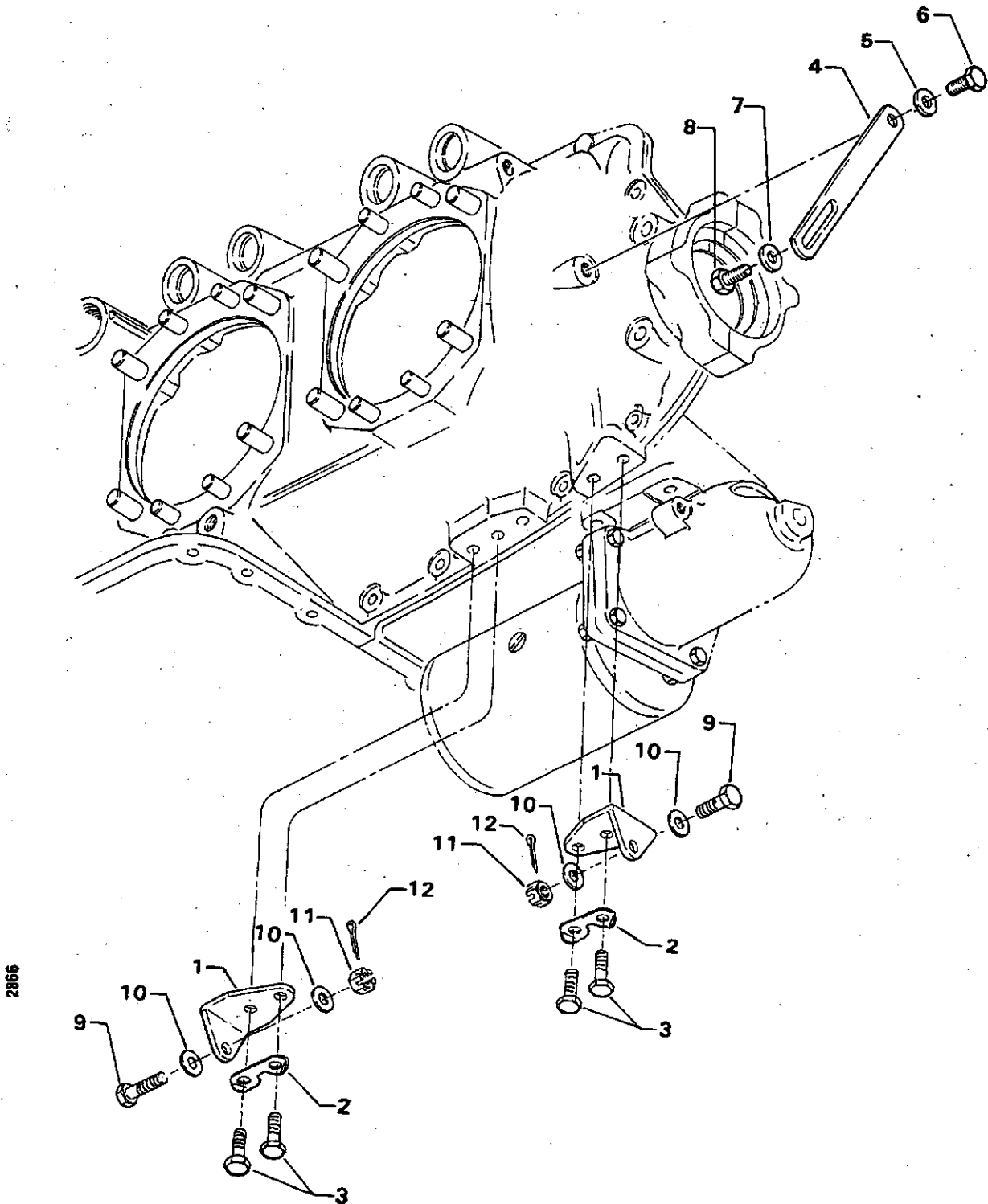
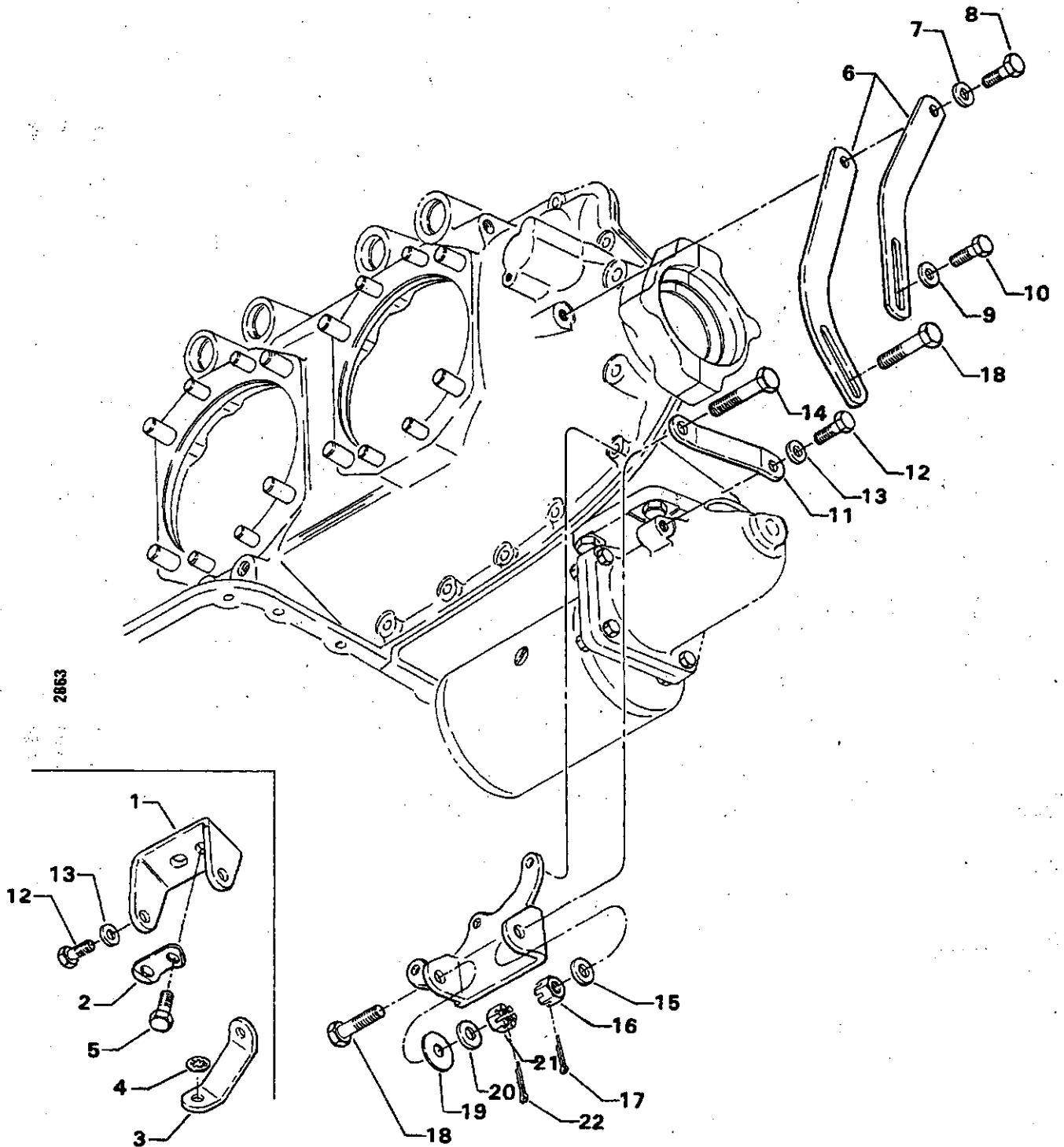


Figure 25. GENERATOR MOUNTING AND ATTACHING PARTS

ELECTRICAL COMPONENTS
ALTERNATOR MOUNTING AND ATTACHING PARTS

FIG. REF. 26	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY															
			A2	A2	A2	A3	E1	E1	E2	E2	E2	E2	E2	E2	E2	E3	E3	
			B	C	D	B	A	F	A	B	C	D	F	G	H	D	H	
1	74324	BRACKET, Alternator	1						1	1								
	LW-13039*	BRACKET, Alternator	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	76906**	BRACKET, Alternator										1		1	1	1	1	
2	73383	LOCKPLATE, 5/16 bolt x 1.00 spacing	1															
3	LW-13365	BRACE, Alternator bracket														1	1	
4	STD-475	WASHER, 5/16 lock, internal teeth														1	1	
5	STD-1838	BOLT, 5/16-18 x 15/16 long	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3
6	74325	LINK, Alternator adjusting	1						1	1								
	75380	LINK, Alternator adjusting	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	LW-10729**	LINK, Alternator adjusting										1		1	1	1	1	
7	STD-35	WASHER, 5/16 plain	1															
8	LW-31H.75	BOLT, 5/16-18 x 3/4 long, hex. hd. dr.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	STD-1858	BOLT, 5/16-18 x 29/32 long, hex. hd. dr.	1						1	1	1	1	1	1	1	1	1	
9	STD-1727	WASHER, Plain, 3/4 O.D. x 11/32 I.D. x 1/8 thick	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
10	LW-31H.75	BOLT, 5/16-18 x 3/4 long, hex. hd. dr.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
11	74323	STRUT, Alternator support	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	76908**	STRUT, Alternator support											1	1	1	1	1	
12	LW-31H.75	BOLT, 5/16-18 x 3/4 long, hex. hd. dr.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	STD-1858	BOLT, 5/16-18 x 29/32 long, hex. hd. dr.										1		1	1	1	1	
13	STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
14	AN6-32	BOLT, 3/8-24 x 3-21/64 long, hex. hd. dr. end	1						1	1								
	AN6-14	BOLT, 3/8-24 x 1-37/64 long, hex. hd. dr. end	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
15	STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	
16	STD-872	NUT, 3/8-24 slotted	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
17	STD-713	PIN, Cotter, 3/32 dia. x 3/4 long	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
18	AN6-13	BOLT, 3/8-24 x 1-7/16 long, hex. hd. dr. end	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	AN6-16	BOLT, 3/8-24 x 53/64 long, hex. hd. dr. end					1	1										
19	76534	SHIM, 1-1/8 O.D. x 13/32 I.D. x 1/64 thick	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	
20	STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR	
21	STD-872	NUT, 3/8-24 slotted	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
22	STD-713	PIN, Cotter, 3/32 dia. x 3/4 long	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

* Used on Prestolite installations.
** Used on Cessna and Beech installations.



2863

Figure 26. ALTERNATOR MOUNTING AND ATTACHING PARTS

**ELECTRICAL COMPONENTS
STARTER MOTOR AND ATTACHING PARTS**

FIG. REF. 27	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY																
				A	A	A	A	E	E	E	E	E	E	E	E	E	E			
				2	2	2	3	1	1	2	2	2	2	2	2	2	3	3		
				B	C	D	B	A	F	A	B	C	D	F	G	H	D	H		
1	76210*	STARTER, 12 volt (no reduction) 10/12 pitch pinion (MZ-4204)																		
	LW-15571	STARTER, 12 volt, 3.38:1 internal reduction, 12/14 pitch pinion (MZ-4222)		1	1	1	1				1	1							1	1
	LW-15572	STARTER, 24 volt, 3.38:1 internal reduction, 12/14 pitch pinion (MHB-4016)	1																	
	LW-16460	STARTER, 12 volt, 3.38:1 internal reduction, 12/14 pitch pinion (MZ-4224)							1	1			1							
2	STD-35	WASHER, 5/16 plain	4	1	1															
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.		1	1	1	1				1	1							1	1
	STD-2156	BOLT, 5/16-18 x 1-5/32 long, hex. hd.	1																	
5	STD-1410	NUT, 5/16-18 plain	3																	

* Do not use with 2.50:1 or 3.25:1 generator drive.
** Used with 76210 starter.

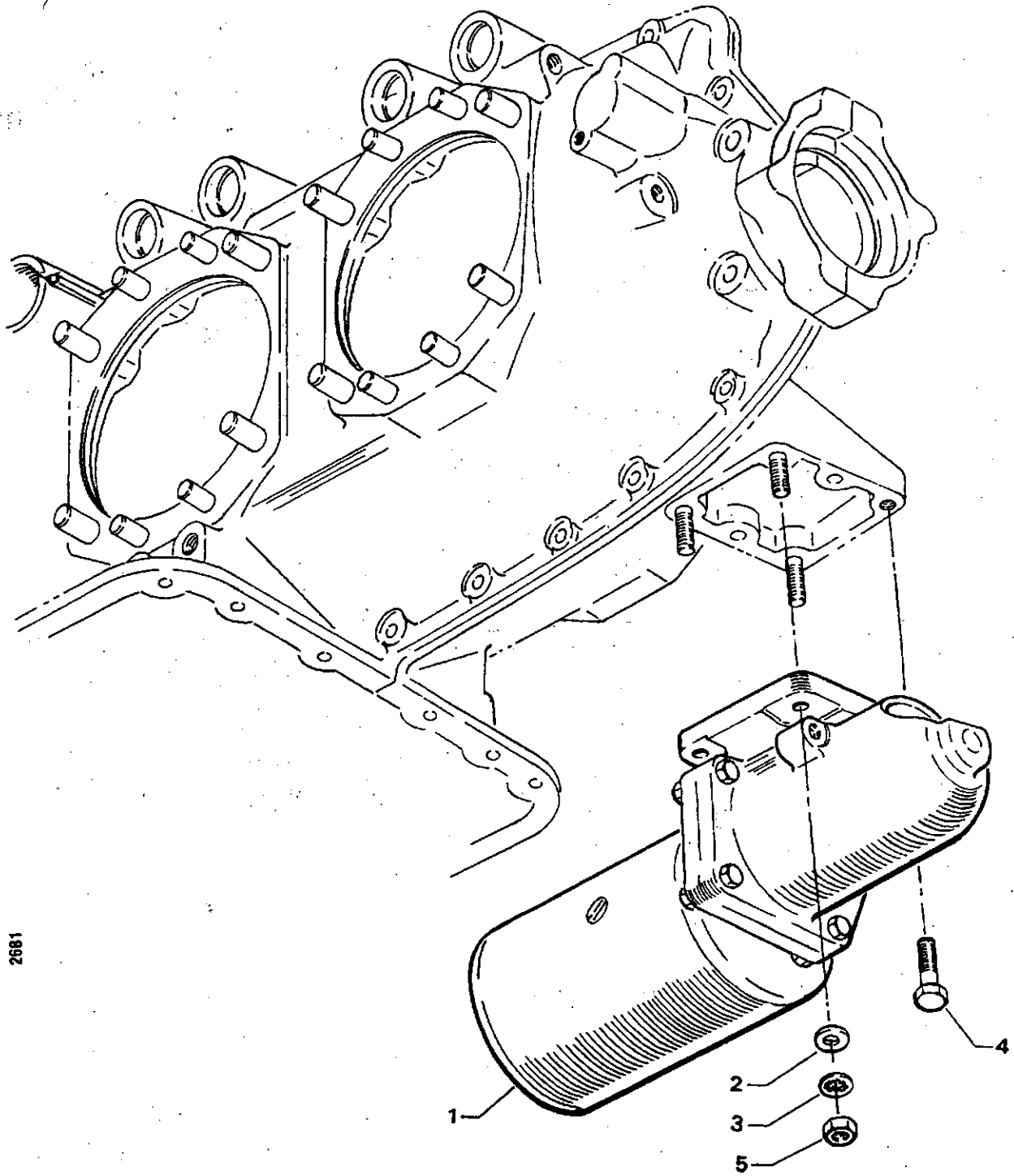
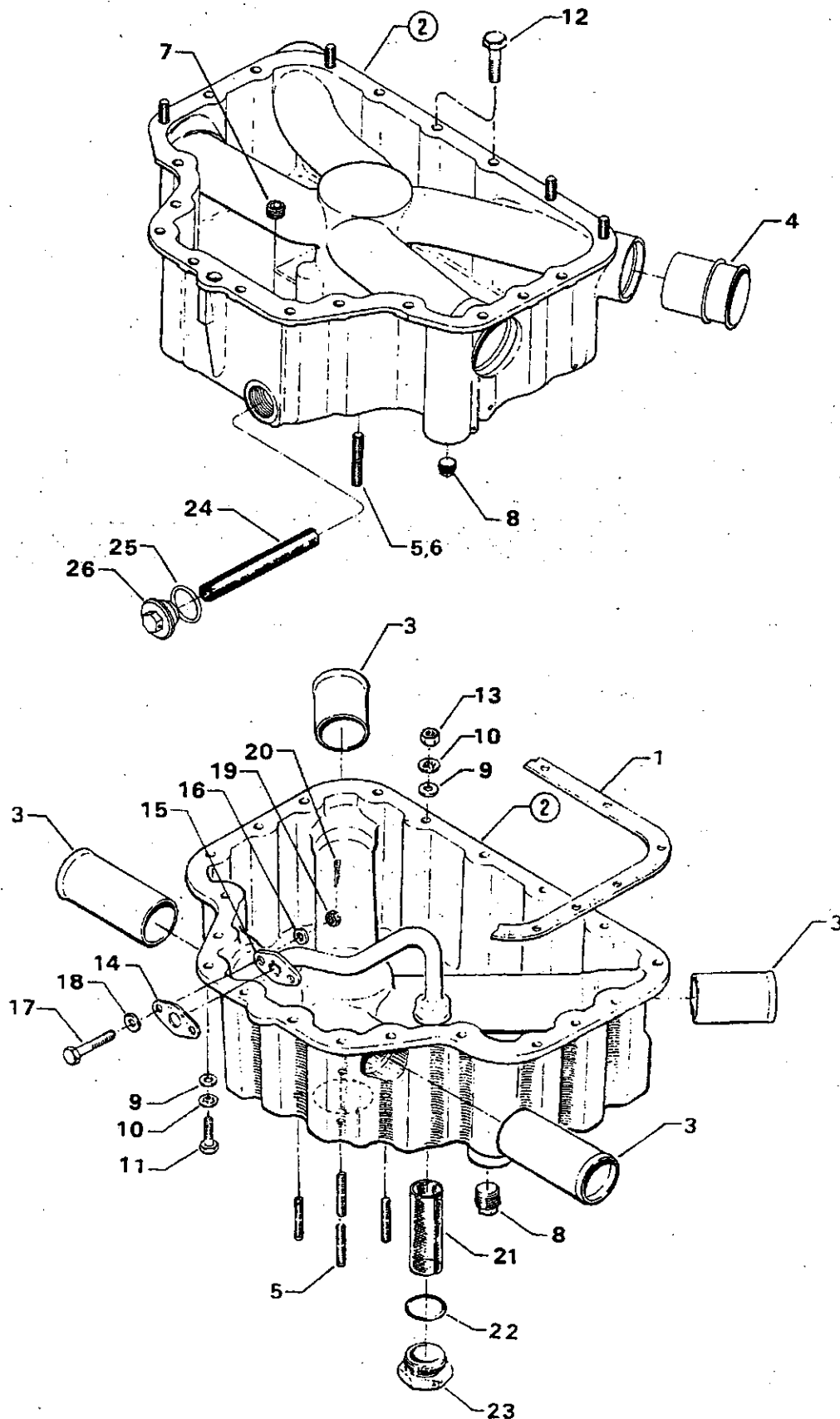


Figure 27. STARTER MOTOR AND ATTACHING PARTS

OIL SUMP AND INDUCTION SYSTEM
OIL SUMP ASSEMBLY AND OIL SUCTION SCREEN

FIG. REF. 28	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY															
				A 2 B	A 2 C	A 2 D	A 3 B	E 1 A	E 1 F	E 2 A	E 2 B	E 2 C	E 2 D	E 2 F	E 2 G	E 2 H	E 3 D	E 3 H	
1	LW-13353	GASKET, Oil sump	1																
2	72362	SUMP ASSEMBLY, Oil		1	1	1	1									1			
	LW-10828	SUMP ASSEMBLY, Oil		1				1	1	1	1	1	1	1		1	1	1	
3	61376	CONNECTION, Intake pipe, front		2	2	2	2									2			
	61377	CONNECTION, Intake pipe, rear		2	2	2	2									2			
4	78914	CONNECTION, Intake pipe		4				4	4	4	4	4	4	4		4	4	4	
5	31C-15	STUD, 5/16-18 x 1-7/8 long	4																
6	61400	STUD, 1/4-20 x 1-3/16 long		4				4	4	4	4	4	4	4		4	4	4	
7	STD-91	PLUG, 1/2-14 NPT, Allen		4				4	4	4	4	4	4	4		4	4	4	
8	STD-551	PLUG, 1/2-14 NPT, Sq. hd. drilled		1	1	1	1									1			
	STD-551	PLUG, 1/2-14 NPT, Sq. hd. drilled		2				2	2	2	2	2	2	2		2	2	2	
9	STD-8	WASHER, 1/4 plain		32	32	32	32									32			
	STD-8	WASHER, 1/4 plain		28				28	28	28	28	28	28	28		28	28	28	
10	STD-160	WASHER, 1/4 lock, internal teeth	20																
11	STD-1204	BOLT, 1/4-20 x 15/16 long, hex. hd.		16	16	16	16									16			
	STD-1204	BOLT, 1/4-20 x 15/16 long, hex. hd.		14				14	14	14	14	14	14	14		14	14	14	
12	STD-1419	BOLT, 1/4-20 x 1-1/8 long, hex. hd.	2																
13	STD-1411	NUT, 1/4-20 plain		14	14	14	14									14			
	STD-1411	NUT, 1/4-20 plain		12				12	12	12	12	12	12	12		12	12	12	
14	60820	GASKET, Oil suction tube flange		1	1	1	1												
15	61381	TUBE ASSY., Oil suction		1	1	1	1												
16	STD-1227	WASHER, 1/4 plain (copper)		2	2	2	2												
17	STD-1433	BOLT, 1/4-20 x 1-1/2 long, hex. hd. drilled end		2	2	2	2												
18	STD-8	WASHER, 1/4 plain (max. 4)		AR	AR	AR	AR												
19	STD-1409	NUT, 1/4-20, slotted shear		2	2	2	2												
20	STD-68	PIN, 1/16 dia. x 1/2 long, cotter		2	2	2	2												
21	61378	SCREEN, Oil suction		1	1	1	1												
22	STD-1045	GASKET, 1-1/4 I.D. x 1-1/2 O.D. x 3/32 annular		1	1	1	1												
23	61358	PLUG, 1-1/2 hex. hd. x 1-1/4-12 thd.		1	1	1	1												
24	70484	SCREEN, Oil suction		1				1	1	1	1	1	1	1	1	1	1	1	
25	STD-111	GASKET, 1.00 I.D. x 1-1/4 O.D. x 3/32 annular		1				1	1	1	1	1	1	1	1	1	1	1	
26	LW-12545	PLUG, 5/8 hex. hd. x 1.00-20 thd.		1				1	1	1	1	1	1	1	1	1	1	1	



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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															
				A 2 B	A 2 C	A 2 D	A 3 B	E 1 A	E 1 F	E 2 A	E 2 B	E 2 C	E 2 D	E 2 F	E 2 G	E 2 H	E 3 D	E 3 H	
1	LW-16728	PIPE, Intake, cyls. no. 1 and 2		2	2	2	2									2			
2	LW-16730	PIPE, Intake, cyl. no. 3		1	1	1	1									1			
3	LW-16729	PIPE, Intake, cyl. no. 4		1	1	1	1									1			
4	74084*	PIPE, Intake		4				4	4	4	4	4	4	4	4		4	4	4
5	STD-1196	HOSE, 1-1/2 I.D. x 1-7/8 O.D. x 1-1/2 long		4	4	4	4									4			
	69603	HOSE, 1-3/4 I.D. x 2-3/16 O.D. x 1-3/4 long		4				4	4	4	4	4	4	4	4		4	4	4
6	LW-15592-8-28	CLAMP, Hose	8																
7	71793	GASKET, 2 bolt flange, 1-7/8 I.D.	4																
8	74360	FLANGE, Intake pipe, upper		4	4	4	4									4			
	73346	FLANGE, Intake pipe, upper		4				4	4	4	4	4	4	4	4			4	4
	LW-14555	FLANGE, Intake pipe, upper												4			4		
9	STD-8	WASHER, 1/4 plain	8																
10	STD-160	WASHER, 1/4 lock, internal teeth	8																
11	STD-1215	BOLT, 1/4-20 x 1-1/4 long, hex. hd.	8																

* Used on sumps with dynafocal mounting.

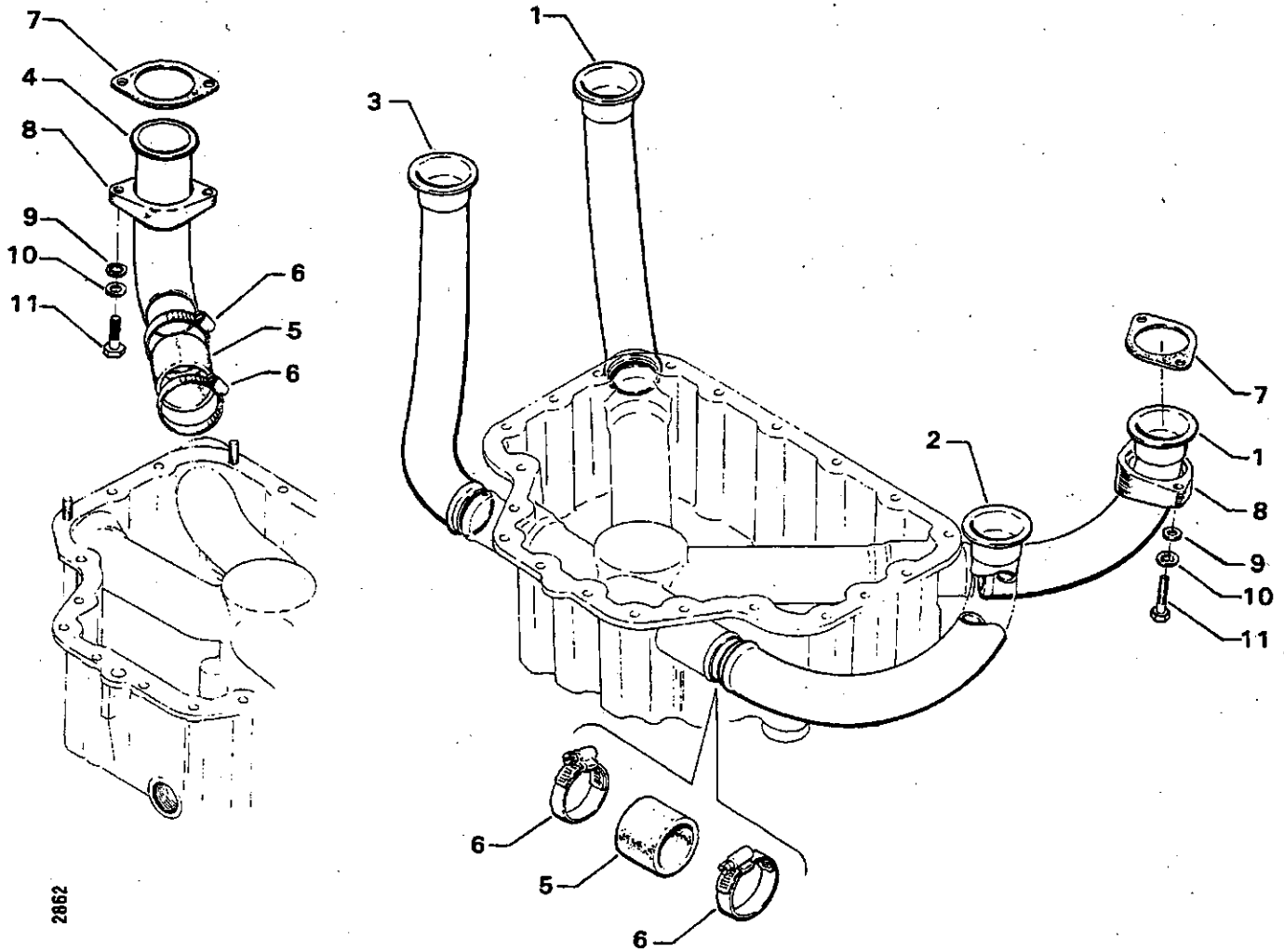
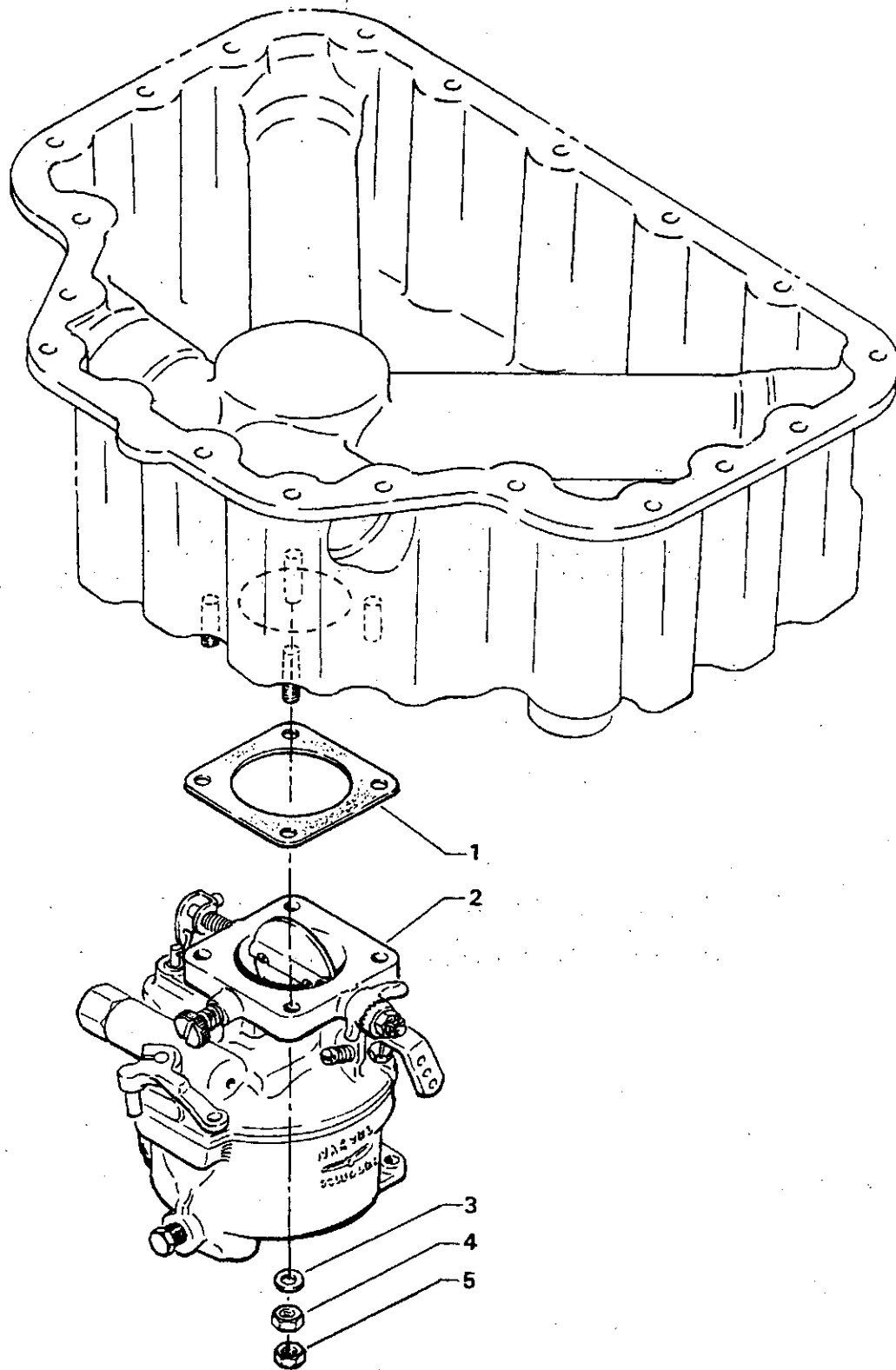


Figure 29. INTAKE PIPE ASSEMBLY

**OIL SUMP AND INDUCTION SYSTEM
CARBURETOR ASSEMBLY**

FIG. REF. 30	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY													
				A 2 B	A 2 C	A 2 D	A 3 B	E 1 A	E 1 F	E 2 A	E 2 B	E 2 C	E 2 D	E 2 F	E 2 G	E 2 H	E 3 D
1	66224	GASKET, Carburetor	1														
2	72394	CARBURETOR, Marvel Schebler, MA-4SPA (10-3678-32)		1	1	1	1	1		1	1	1					1
	77279	CARBURETOR, Marvel Schebler, MA-4SPA (10-4910)		1						1							
	78728	CARBURETOR, Marvel Schebler, MA-4SPA (10-5009)		1				1	1	1		1	1	1	1		1
	LW-13659	CARBURETOR, Marvel Schebler, MA-4SPA (10-5135)			1					1			1		1	1	1
	LW-15986	CARBURETOR, Marvel Schebler, MA-4SPA (10-5217)		1	1												
3	STD-35	WASHER, 5/16 plain	4														
4	STD-1410	NUT, 5/16-18 plain	4														
5	STD-1763	LOCKNUT, 5/16 palnut	4														



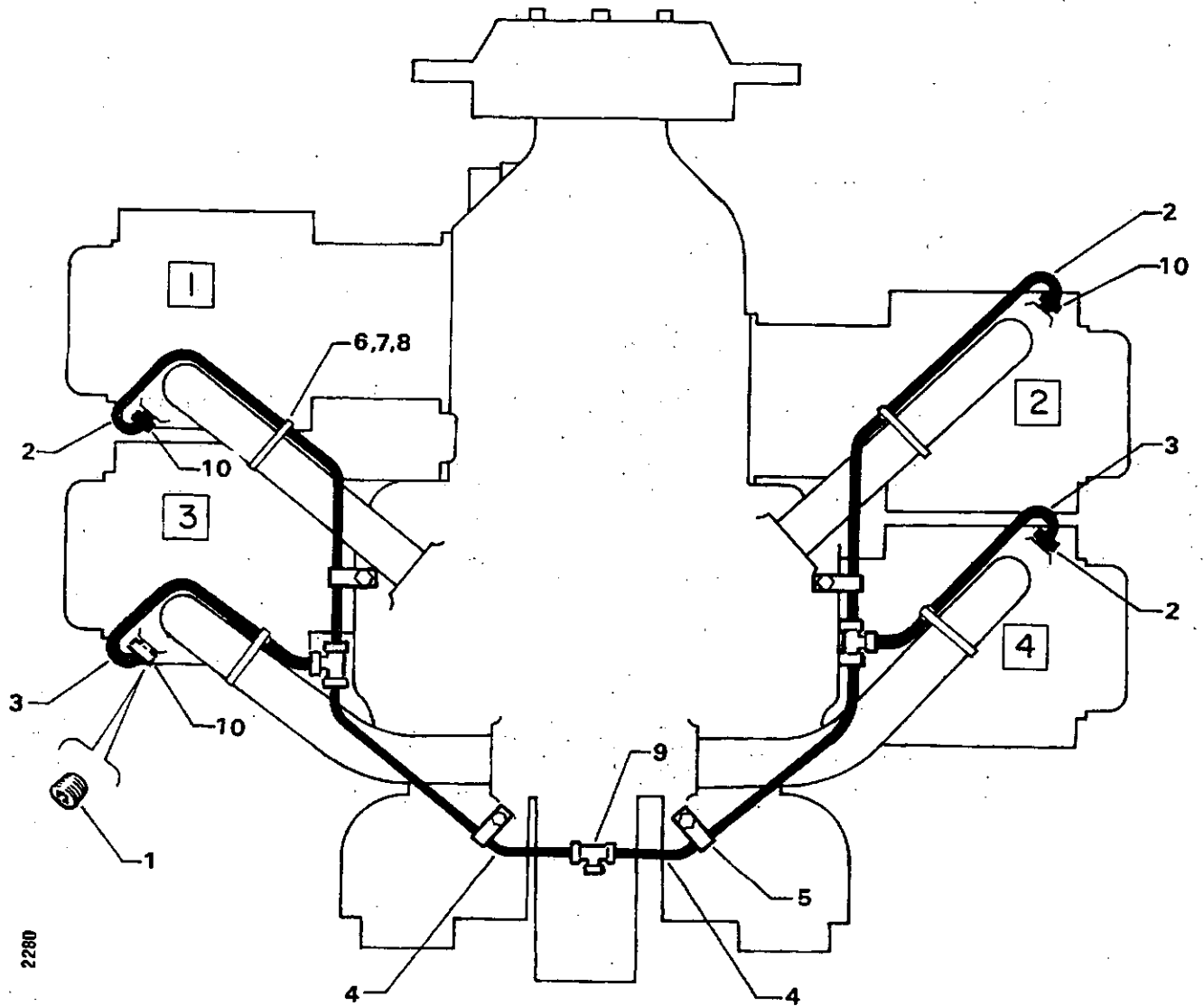
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Figure 30. CARBURETOR ASSEMBLY

**OIL SUMP AND INDUCTION SYSTEM
PRIMING SYSTEM**

FIG. REF. 31	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY														
				A 2 B	A 2 C	A 2 D	A 3 B	E 1 A	E 1 F	E 2 A	E 2 B	E 2 C	E 2 D	E 2 F	E 2 G	E 2 H	E 3 D	E 3 H
1	1102*	PLUG, 1/8-27 NPT, Allen	4															
2	LW-12098-1-170	TUBE ASSY., Primer cylinders, nos. 1 & 2		2	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		2	2
4	LW-12098-0-100	TUBE ASSY., Primer, intermediate		2	2		2	2		2	2	2	2		2		2	2
5	LW-16266-25-13	CLAMP		4	4		4	4		4	4	4	4		4		4	4
6	LW-18959-150-25	CLAMP, 1-1/2 I.D. with 1/4 dia. offset		4	4		4								4			
	71910	CLAMP, 1-3/4 I.D. with 1/4 dia. offset						4		4	4	4	4				4	4
7	STD-553	SCREW, No. 6-32 x 1/2 lg., rd. hd.		4	4		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		4	4
9	STD-853	TEE, Union, 1/8 tube		3	3		3	3		3	3	3	3		3		3	3
10	74225	NIPPLE ASSY., Primer		4	4		4	4		4	4	4	4		4		4	4

* Assemble in cylinder heads.



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Figure 31. PRIMING SYSTEM

SERVICE KIT SECTION

**SEAL AND GASKET SET
WIDE CYLINDER FLANGE MODELS**

Part No.	Part Name	Qty.
69371-1	SEAL AND GASKET SET	1
MS29512-6	SEAL	1
STD-111	GASKET	1
STD-2217	SEAL, Oil	1
STD-213	SEAL	1
STD-294	GASKET, Annular	2
STD-548	SEAL, Oil	1
STD-1006	RING, Oil seal	1
STD-1045	GASKET, Annular	2
STD-2072	"O RING"	1
1691-C	GASKET	1
8313	GASKET, Vacuum pump	2
60096	GASKET, Fuel pump	1
60592	GASKET, Carburetor	1
60820	GASKET, Oil suction tube flange	1
61173	GASKET, Oil pressure housing	1
61183	GASKET, Accessory adapter	1
61523	CONTAINER	1
61531	GASKET, Hydraulic valve	1
62224	GASKET, Magneto adapter	4
65321	GASKET, Exhaust flange	4
66224	GASKET, Carburetor	2
68315	GASKET, Accessory drive adapter	1
69164	GASKET	1
69345	SPACER	4
69551	GASKET, Accessory pad cover	1
69720	GASKET, Dual accessory drive cover	1
69827	GASKET, Governor spacer	1
70310	SEAL, Shroud tube	8
70455	GASKET	1
71481	RING, Oil seal	4
71973	GASKET, Intake flange	4
72053	GASKET, Governor drive	2
72059	GASKET	1
72075	SEAL, Oil	6
72078	LOCKPLATE, Cam gear	2
72091	RING, Oil seal	2
72312	RING, Oil seal	1
72829	LOCKPLATE	1
73383	LOCKPLATE	2
73817	LOCKPLATE, Crankshaft idler gear shaft	2
73818	GASKET, Accessory housing	1
74065	RING, Oil level gage seal	1
74068	RING, Oil level gage seal	1
74524	RING, Oil seal	1
75906	GASKET, Rocker box cover	4
76510	GASKET	1
76940	SEAL, Crankshaft oil	1
LW-12272	LOCKPLATE, Shroud tube	4

SERVICE KIT SECTION**SEAL AND GASKET SET
WIDE CYLINDER FLANGE MODELS**

Part No.	Part Name	Qty.
69371-1	SEAL AND GASKET SET (Continued)	1
LW-12681	GASKET, Magneto	2
LW-12795	GASKET	1
LW-13353	GASKET, Oil sump	1
LW-13792	SEAL, Crankshaft oil	1
LW-14260	SEAL, Tachometer shaft	1
LW-14995	SPRING	4
LW-18639	LOCKPLATE, Crankshaft gear	1
LW-18661	SEAL, Shroud tube	16

SERVICE KIT SECTION

**CYLINDER, PISTON AND RING KIT
WIDE CYLINDER FLANGE MODELS**

Part No.	Part Name	Qty.
76659-A*	CYLINDER, PISTON AND RING KIT	1
MS13997-3	KEY, Valve, exhaust	2
MS13998-3	CAP, Valve stem	1
STD-1411	NUT, Plain, 1/4-20	1
STD-1925	SCREW, 1/4-20 x 5/8 long, fill. hd., self-locking	6
60009	KEY, Valve	2
LW-18661	SEAL, Shroud tube	2
LW-13790	SHAFT, Valve rocker	1
60828	PLUG, Piston pin	2
61247	COVER, Rocker box	1
LW-11800	SPRING, Valve, outer	2
65441	SEAT, Valve spring, lower	1
LW-11795	SPRING, Valve, auxiliary	2
LW-10077	SEAT, Valve spring	1
LW-14995	SPRING, Shroud tube	1
LW-12272	LOCKPLATE, Shroud tube	1
LW-13445	PIN, Piston	1
LW-18790	ROCKER ASSY., Valve	2
70310	SEAL, Shroud tube	2
71195	BOX, Set-up	1
71481	RING, Oil seal, 4-27/32 I.D. x 3/32 dia. sect.	1
LW-16475	SEAT, Valve spring	1
73857 or LW-12328	RING, Oil regulating	1
73938	VALVE, Intake	1
LW-13323	SEAT, Valve spring, lower exhaust	1
74989	RING, Piston-compression	2
LW-19001	VALVE, Exhaust (rotator type)	1
75413	PISTON	1
LW-12417	CYLINDER AND HEAD ASSY.	1
75906	GASKET, Rocker box cover	1
STD-1215	BOLT	2
SSP-2472	TAG	1
LW-12892	THRUST BUTTON	2

* - Kit designated with suffix "A" for engine incorporating heavy piston pin (LW-13445).

SERVICE KIT SECTION

**CYLINDER, PISTON AND RING KIT
WIDE CYLINDER FLANGE MODELS**

Part No.	Part Name	Qty.
77462-A*	CYLINDER, PISTON AND RING KIT	1
MS13997-3	KEY, Valve, exhaust	2
MS13998-3	CAP, Valve stem	1
STD-1215	BOLT, 1/4-20 x 1-1/4 long	1
STD-1411	NUT, Plain, 1/4-20	1
STD-1925	SCREW, 1/4-20 x 5/8 long, fill. hd., self-locking	6
60009	KEY, Valve, intake	2
LW-18661	SEAL, Shroud tube	2
LW-13790	SHAFT, Valve rocker	1
60828	PLUG, Piston pin	2
61247	COVER, Rocker box	1
LW-11800	SPRING, Valve, outer	2
65441	SEAT, Valve spring, lower intake	1
LW-11795	SPRING, Valve, inner	2
LW-10077	SEAT, Valve spring, upper intake	1
LW-14995	SPRING, Shroud tube	1
LW-12272	LOCKPLATE, Shroud tube	1
LW-13445	PIN, Piston	1
LW-18790	ROCKER ASSY., Valve	2
70310	SEAL, Shroud tube	2
71195	BOX, Set-up	1
71481	SEAL, Cylinder base	1
LW-16475	SEAT, Valve spring, upper exhaust	1
73857 or LW-12328	RING, Oil regulating	1
73938	VALVE, Intake	1
74241	RING, Piston compression	2
LW-13323	SEAT, Valve spring, lower exhaust	1
LW-12416	CYLINDER ASSY., (Nitrided)	1
LW-19001	VALVE, Exhaust	1
75413	PISTON	1
75906	GASKET, Rocker box cover	1
SSP-2472	TAG	1
LW-12892	THRUST BUTTON	2

* - Kit part number with suffix "A" uses LW-13445 piston pin (heavy).

NUMERICAL INDEX

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
AN365-632A	Nut	4-3	LW-13796	Shaft	1-13
AN365-632A	Nut	6-7	LW-13813	Crankcase Assy.	1-1
AN-500-416-18	Screw	4-3	LW-13817	Crankcase Assy.	1-1
AN565B1032H5	Set Screw	1-11	LW-13884	Bearing	1-5
AN6-13	Bolt	5-4	LW-13896	Plug	1-11
AN6-14	Bolt	5-4	LW-13923	Bushing	3-1
AN6-16	Bolt	5-4	LW-14021	Shaft	1-11
AN6-32	Bolt	5-4	LW-14057	Clip	4-1
AN6-34A	Bolt	1-15	LW-14057	Clip	4-3
AN777-8D	Elbow	2-14	LW-14060	Clip	4-1
AN816-8	Nipple	2-14	LW-14060	Clip	4-3
AN844-10D	Elbow	2-14	LW-14068	Pin	3-1
AN901-8A	Gasket	2-14	LW-14077	Pin	3-1
AN960-616L	Washer	1-15	LW-14078	Pin	3-1
LW-10077	Seat	3-5	LW-14260	Seal	2-3
LW-10647	Dowel	1-1	LW-14308	Alternator	5-1
LW-10729	Link	5-4	LW-14316	Alternator	5-1
LW-10828	Sump Assy.	6-1	LW-14319	Alternator	5-1
LW-11775	Plug	3-1	LW-14416	Housing Assy.	2-1
LW-11795	Spring	3-5	LW-14555	Flange	6-3
LW-11800	Spring	3-5	LW-14735	Gage Assy.	3-1
LW-11866	Nut	1-15	LW-14757	Gage Assy.	1-3
LW-12098-0-100	Tube Assy.	6-7	LW-14758	Gage Assy.	1-3
LW-12098-1-116	Tube Assy.	6-7	LW-14759	Gage Assy.	1-3
LW-12098-1-170	Tube Assy.	6-7	LW-14768	Gage Assy.	1-3
LW-12186	Nut	3-1	LW-14780	Gage Assy.	1-3
LW-12272	Lockplate	3-5	LW-14793	Gage Assy.	1-3
LW-12408	Housing Assy.	2-1	LW-14995	Spring	3-5
LW-12416	Cylinder Assy.	3-3	LW-15472	Fuel Pump	2-9
LW-12417	Cylinder Assy.	3-3	LW-15571	Starter	5-6
			LW-15572	Starter	5-6
LW-12446	Crankshaft Assy.	1-7	LW-15592-5-05	Clamp	3-9
LW-12545	Plug	6-1	LW-15592-8-28	Clamp	6-3
LW-12681	Gasket	4-1	LW-15635	Mag. & Harness Assy.	4-1
LW-12706	Adapter	4-1	LW-15636	Magneto	4-1
LW-12712	Housing Assy.	2-1	LW-15637	Mag. & Harness Assy.	4-1
LW-12782	Housing Assy.	2-1	LW-15638	Magneto	4-1
LW-12789	Tube Assy.	1-3	LW-157208	Kit Assy.	4-1
LW-12795	Gasket	2-14	LW-157209	Kit Assy.	4-1
LW-12892	Thrust Button	3-7	LW-15970	Tube	1-3
LW-13039	Bracket	5-4	LW-15986	Carburetor	6-5
LW-13215	Oil Filter	2-14	LW-16047	Bearing	1-5
LW-13323	Seat	3-5	LW-16266-25-13	Clamp	6-7
LW-13353	Gasket	6-1	LW-16266-25-38	Clamp	2-5
LW-13365	Brace	5-4	LW-16266-25-50	Clamp	4-3
LW-13659	Carburetor	6-5	LW-163005-2	Magneto	4-1
LW-13775	Impeller Assy.	2-3	LW-163045-3	Magneto	4-1
LW-13790	Shaft	3-7	LW-163045-6	Magneto	4-1
LW-13792	Seal	1-5	LW-16460	Starter	5-6
LW-13793	Stud	1-1	LW-16475	Seat	3-5

NUMERICAL INDEX (Cont.)

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
LW-16591	Mag. & Harness Assy.	4-1	STD-8	Washer	6-1
LW-16711	Bearing	1-5	STD-8	Washer	6-3
LW-16728	Pipe	6-3	STD-19	Dowel	1-11
LW-16729	Pipe	6-3	STD-33	Washer	1-15
LW-16730	Pipe	6-3	STD-33	Washer	2-9
LW-17060	Crankshaft Assy.	1-7	STD-35	Washer	1-11
LW-17061	Crankshaft Assy.	1-7	STD-35	Washer	2-3
LW-17063	Crankshaft Assy.	1-7	STD-35	Washer	2-5
LW-17064	Crankshaft Assy.	1-7	STD-35	Washer	2-7
LW-17066	Crankshaft Assy.	1-7	STD-35	Washer	3-7
LW-17067	Crankshaft Assy.	1-7	STD-35	Washer	5-2
LW-18369	Crankcase Assy.	1-1	STD-35	Washer	5-4
LW-18372	Crankcase Assy.	1-1	STD-35	Washer	5-6
LW-18379	Crankcase Assy.	1-1	STD-35	Washer	6-5
LW-18639	Lockplate	1-7	STD-68	Pin	5-2
LW-18667	Pin	1-9	STD-68	Pin	6-1
LW-18790	Rocker Assy.	3-7	STD-91	Plug	6-1
LW-18837	Camshaft Assy.	1-9	STD-111	Gasket	6-1
LW-18838	Camshaft Assy.	1-9	STD-160	Washer	1-15
LW-18959-150-25	Clamp	4-3	STD-160	Washer	2-3
LW-18959-150-25	Clamp	6-7	STD-160	Washer	2-11
LW-19001	Valve	3-5	STD-160	Washer	2-13
LW-31-1.09	Bolt	5-6	STD-160	Washer	2-14
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**Intentionally
Left
Blank**



