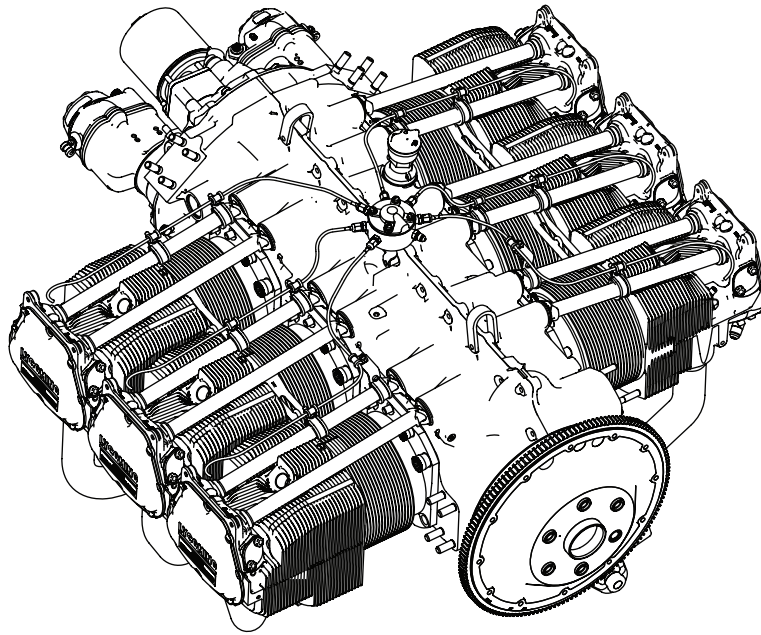


Lycoming Aircraft Engines Parts Catalog



AEIO-540-L1B5 **Wide Cylinder Flange Crankcase Model**

LYCOMING

INTRODUCTION

This illustrated parts catalog contains a complete parts listing for the flange model aircraft engines.

Lycoming AEIO-540-L1B5 wide cylinder

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

All Lycoming publications will bear the copyright notice © Lycoming 1986, "All Rights Reserved", and all Lycoming publications are to be considered copyrighted and may not be reproduced without permission of the company.

SERVICE BULLETINS, INSTRUCTIONS AND LETTERS

Although the information contained in this parts catalog is up-to-date at time of publication, users are advised to procure current information through all 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.

TABLE OF CONTENTS

SECTION	PAGE
Introduction	i
Table of Contents	ii
Oversize and Undersize Parts Listing	iii
1. CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP	
Crankcase Assembly	1-1
Oil Level Gage and Engine Mounting Brackets	1-3
Crankcase Related Parts	1-5
Camshaft, Crankshaft and Related Parts	1-7
Propeller Governor Drive Assembly	1-9
Crankshaft and Fuel Pump Idler Gears	1-11
Crankcase Attaching Parts	1-13
2. ACCESSORY HOUSING AND RELATED PARTS	
Accessory Housing Assembly	2-1
Oil Pump Assembly and Accessory Housing Attaching Parts	2-2
Fuel Pump Assembly and Attaching Parts	2-3
Accessory Housing Breather Adapter and Fitting	2-4
Hydraulic Pump Drive and Covers	2-5
Oil Filter Assembly and Oil Cooler Bypass Valve	2-7
3. CYLINDER, PISTON AND VALVE TRAIN	
Connecting Rods, Pistons and Ring Assemblies	3-1
Cylinder Assembly	3-3
Valve Assemblies and Related Parts	3-5
Cylinder Related Parts	3-7
4. IGNITION SYSTEM	
Magnetos, Magneto Drives and Spark Plugs	4-1
Bag - Magneto Harness Attaching	4-3
5. ELECTRICAL COMPONENTS	
Starter Motor and Attaching Parts	5-1
Alternator Assembly and Belt	5-2
Alternator Mounting and Attaching Parts	5-3
Alternator Mounting With Pulley and Shaft Assembly	5-5
6. OIL SUMP AND INDUCTION SYSTEM	
Oil Sump and Induction Housing Assembly	6-1
Intake Pipe Assembly	6-3
Fuel Injector, Fuel Manifold and Injection Nozzles	6-5
7. SERVICE KIT SECTION	7-1
8. NUMERICAL INDEX	8-1

Oversize and Undersize Parts Listing

PART NO.	DESCRIPTION	OVERSIZE								UNDERSIZE		
		P02 .002	P05 .005	P10 .010	P15 .015	P20 .020	P30 .030	P40 .040	P50 .050	M03 .003	M06 .006	M10 .010
66670	BUSHING		X	X								
66796	INSERT			X								
69796	DOWEL		X									
71903-A, -B	BUSHING	SEE LATEST EDITION OF SERVICE INSTRUCTION NO. 1143 FOR APPLICATION.										
72155-S	BUSHING		X	X	X	X						
73810	BUSHING	SEE LATEST EDITION OF SERVICE INSTRUCTION NO. 1142 FOR APPLICATION.										
73857	RING			X		X						
74241	RING			X								
74309	BEARING			X						X*	X*	X*
75656-S	BUSHING		X	X	X	X						
75657-S	BUSHING		X	X		X						
78443	SEAL	SEE LATEST EDITION OF SERVICE INSTRUCTION NO. 1324 FOR APPLICATION.										
LW-11956-S	GUIDE	SEE LATEST EDITION OF SERVICE INSTRUCTION NO. 1256 FOR APPLICATION.										
LW-11958-S	GUIDE	SEE LATEST EDITION OF SERVICE INSTRUCTION NO. 1256 FOR APPLICATION.										
LW-12688	SEAT			X		X	X					
LW-13683	BEARING									X	X	
LW-13885	BEARING									X	X	X
LW-14830	BEARING									X**	X**	X**
LW-14954	BEARING			X						X*	X*	X*
LW-15628	SEAL	SEE LATEST EDITION OF SERVICE INSTRUCTION NO. 1324 FOR APPLICATION.										
STD-1065	DOWEL	X	X	X	X							
16T19468	SEAT			X		X	X					
18A19399	BEARING									X**	X**	X**

Studs available in P03, P07 and P12.

- * Also available in P10 oversize.
- ** Also available in P15 oversize.

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-13885 in .003 undersize, order part number LW-13885-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

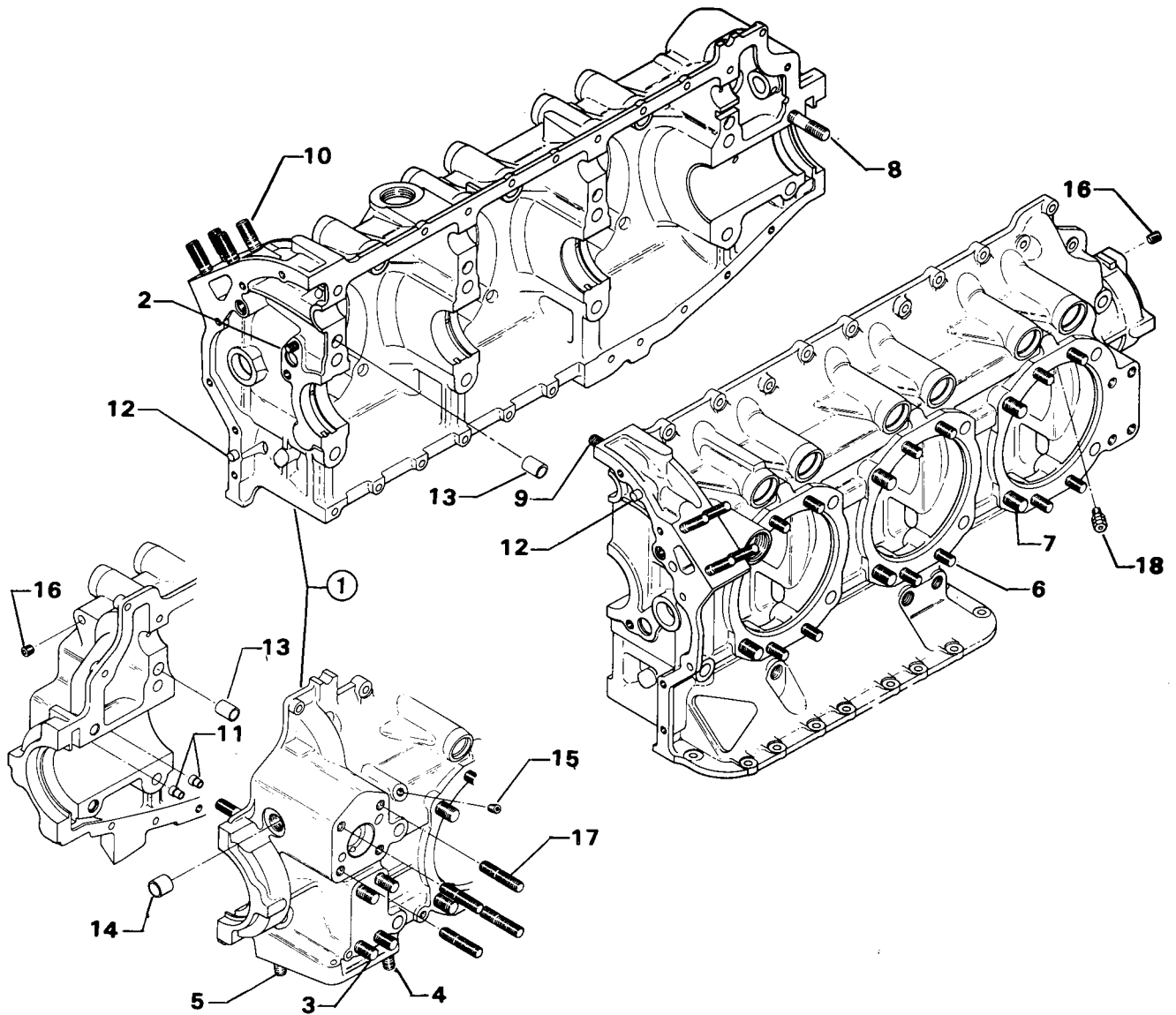
FIG. REF. 1	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	11F20020-S2 *	CRANKCASE ASSEMBLY (See note)	1
2	LW-13794	STUD, 5/16-18 x 1.00 long, left idler pad	1
3	38-13	STUD, 3/8-16 x 1-5/8 long, front left comp. pad	3
4	31C-12	STUD, 5/16-18 x 1-1/2 long, starter pad, rear	2
5	31C-13	STUD, 5/16-18 x 1-5/8 long, starter pad, front	1
6	38-13	STUD, 3/8-16 x 1-5/8 long, cylinder pad	24
7	50-15	STUD, 1/2-20 x 1-7/8 long, cylinder pad	12
8	38-22	STUD, 3/8-16 x 2-3/4 long, nose of crankcase	1
9	38D-17	STUD, 3/8-16 x 2-1/8 long, rear, above cam	1
10	38-16	STUD, 3/8-16 x 2.00 long, engine mount	8
11	69796	DOWEL, Crankshaft, front bearing	2
12	STD-514	DOWEL, 5/16 dia. x 1/2 long, accessory face	2
13	STD-557	DOWEL, 1/2 dia. x 11/16 long, between halves	2
14	72158	BUSHING, Governor drive idler shaft	1
15	STD-1339	PLUG, 1/16-27 NPT, governor pad	1
16	1102	PLUG, 1/8 pipe x 3/8 long, oil pressure	4
17	31C-17 * *	STUD, 5/16-18 x 2-1/8 long, driven height (1.50-1.54)	4
	31C-16 * *	STUD, 5/16-18 x 2.00 long, driven height (1.27-1.31)	4
18	73772	NOZZLE ASSY., Piston cooling	6

* Incorporates 2-5/8 diameter main bearings, piston squirts and provision for Sankyo compressor.

* * Check crankcase for height of studs required.

NOTE

This part not available as a service item. Refer to Service Kit Section 7 for applicable Crankcase Assy. and thru stud kit part number.

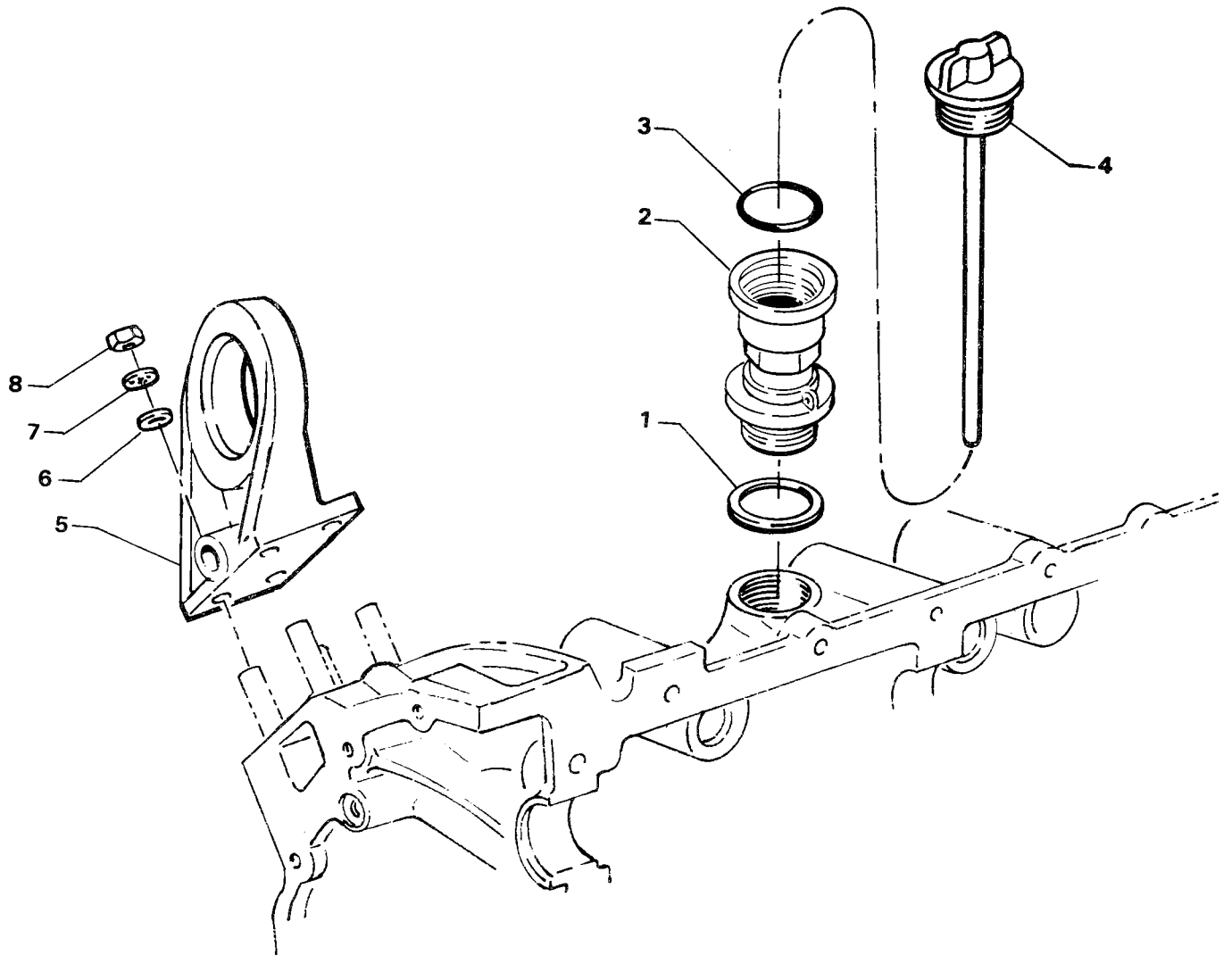


3261

Figure 1. CRANKCASE ASSEMBLY

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP OIL LEVEL GAGE AND ENGINE MOUNTING BRACKETS

FIG. REF. 2	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	70457	GASKET, Oil filler extension	1
2	75675	EXTENSION, Oil filler, short	1
3	74065	"O" RING, Oil level gage	1
4	LW-14799	GAGE ASSY., Oil level	1
5	12A19770	BRACKET, Engine mounting (Dynafoal)	4
6	STD-33	WASHER, 3/8 plain	16
7	STD-678	WASHER, 3/8 lock, internal teeth	16
8	STD-596	NUT, 3/8-24 plain	16



3137

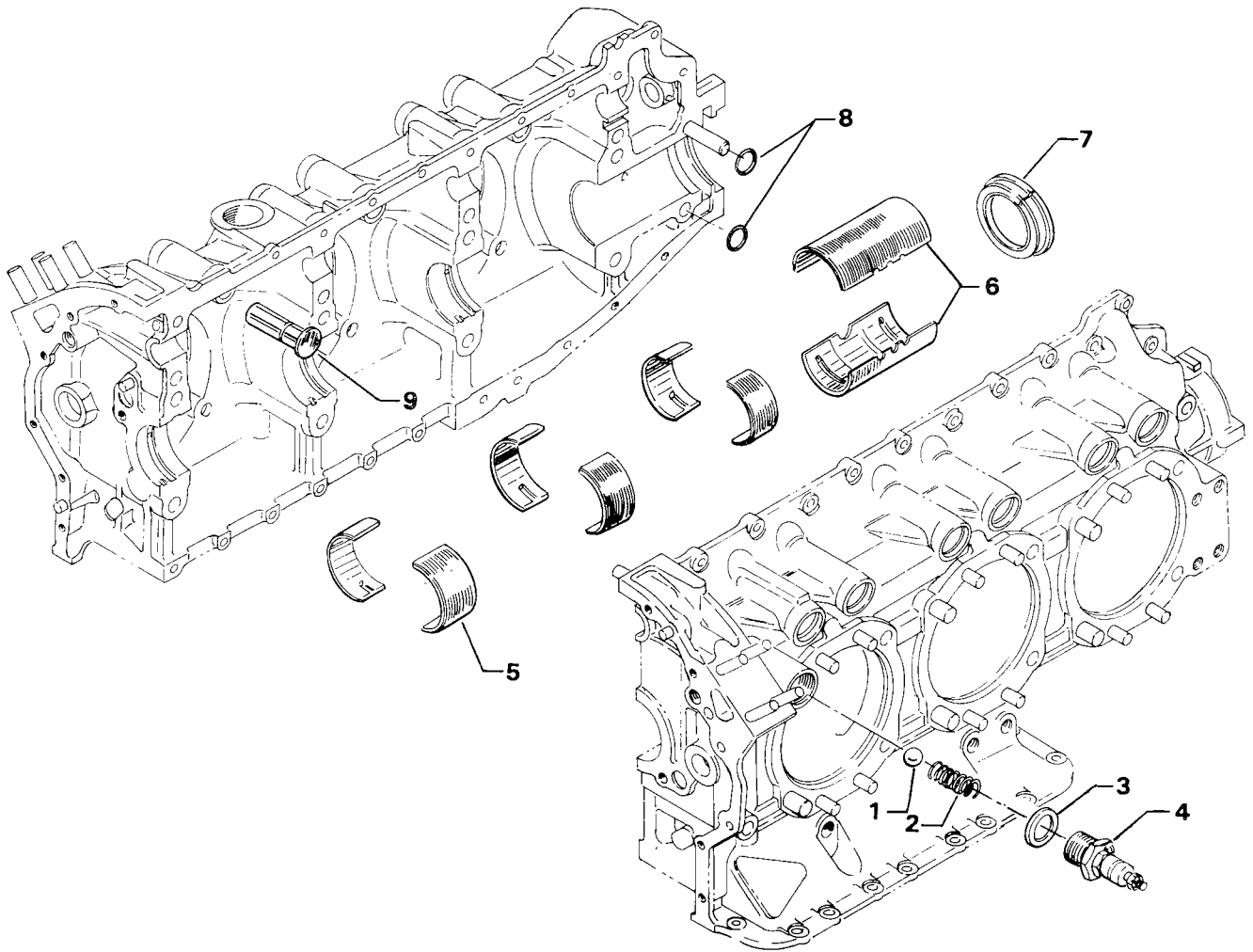
Figure 2. OIL LEVEL GAGE AND ENGINE MOUNTING BRACKETS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
CRANKCASE RELATED PARTS

FIG. REF. 3	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	1028-B	BALL, 1/16 diameter	1
2	68668 *	SPRING, Oil pressure relief valve	1
	61084 *	SPRING, Oil pressure relief valve	1
	77467 *	SPRING, Oil pressure relief valve	1
	LW-11713 *	SPRING, Oil pressure relief valve	1
	LW-18085 *	SPRING, Oil pressure relief valve	1
3	06E19769-1.25	GASKET, 1-1/4 I.D. x 1-1/2 O.D. x 3/32 annular	1
4	77808	VALVE ASSY., Oil pressure relief, adjustable	1
5	LW-14830	BEARING, Crankshaft	6
	LW-13683	BEARING, Crankshaft (alternate)	6
6	LW-13885	BEARING, Crankshaft, front	2
	18A19399	BEARING, Crankshaft, front (alternate)	2
7	LW-15628 * *	SEAL, Crankshaft oil, solid	1
	78443 * *	SEAL, Crankshaft oil, split	1
8	72091	RING, Oil seal, 23/64 I.D. x 7/64 dia. section	2
9	72877	BODY, Hydraulic tappet	12

* Select spring to give a minimum of three threads exposed on adjusting screw to allow field adjustment. Reference latest edition of SSP-1776, Part 1 for spring identification.

* * See latest edition of Service Instruction No. 1324 for application.



3098

Figure 3. CRANKCASE RELATED PARTS

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

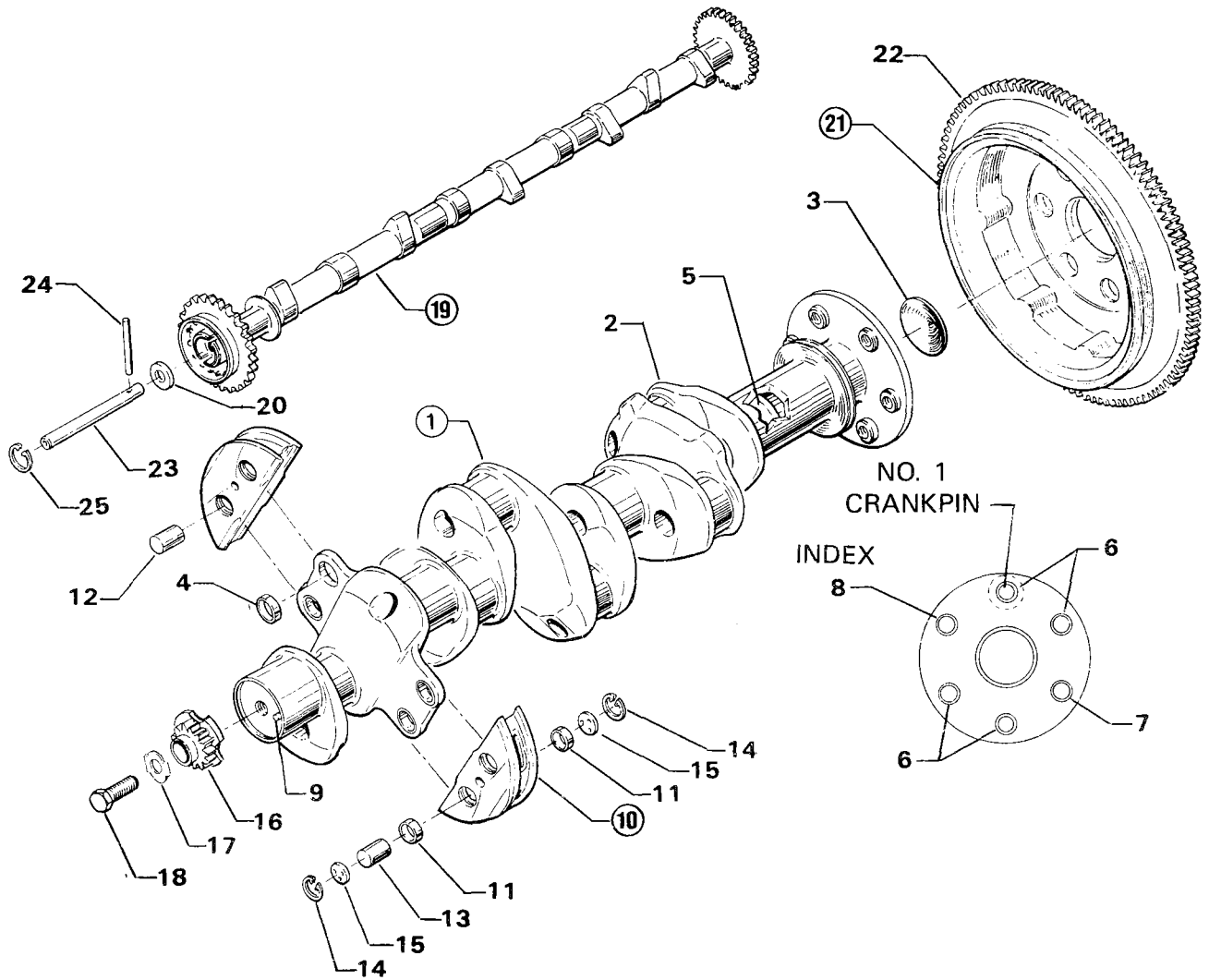
FIG. REF. 4	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	13F17777	CRANKSHAFT AND COUNTERWEIGHT ASSEMBLY	1
2	13F17752	CRANKSHAFT AND PLUG ASSEMBLY	1
3	STD-1211	PLUG, 2.00 dia. expansion	1
4	73810 *	BUSHING, Crankshaft dynamic counterweight	4
5	60945	PLUG, 1-1/4 diameter	1
6	75656-S	BUSHING, Propeller flange, long	4
7	72155-S	BUSHING, Propeller flange, short	1
8	75657-S	BUSHING, Propeller flange, indexing	1
9	STD-1065	DOWEL, Stepped, 5/16 & 1/4 dia. x 35/64 long	1
10	LW-19210 * *	COUNTERWEIGHT ASSEMBLY	2
11	71903 *	BUSHING, Dynamic counterweight	8
12	76788 * *	ROLLER, Dynamic counterweight, 6.3 order	2
13	73648 * *	ROLLER, Dynamic counterweight, 5.1 order	2
14	LW-14820	RING, Internal retaining	8
15	71907	WASHER, Dynamic counterweight	8
16	13S19647 ●	GEAR, Crankshaft	1
17	LW-18638	LOCKPLATE, Crankshaft gear	1
18	STD-2209	BOLT, 5/16-24 x 1-3/4 long, hex. head	1
19	LW-19340	CAMSHAFT ASSEMBLY	1
20	76118	SPACER, Tachometer shaft centering	1
21	77579	SUPPORT ASSY., Starter ring gear, 12/14 pitch	1
22	72566	GEAR, Starter ring	1
23	76155	SHAFT ASSY., Tachometer	1
24	LW-18667	PIN, 3/16 dia. x 2-21/64 long	1
25	MS16625-1081	RING, Internal retaining	1

* See latest edition of Service Instruction No. 1142 for application.

* * See latest edition of Service Instruction No. 1012 for application.

★ See latest edition of Service Instruction No. 1143 for application.

● See latest edition of Service Bulletin No. 475 for application.

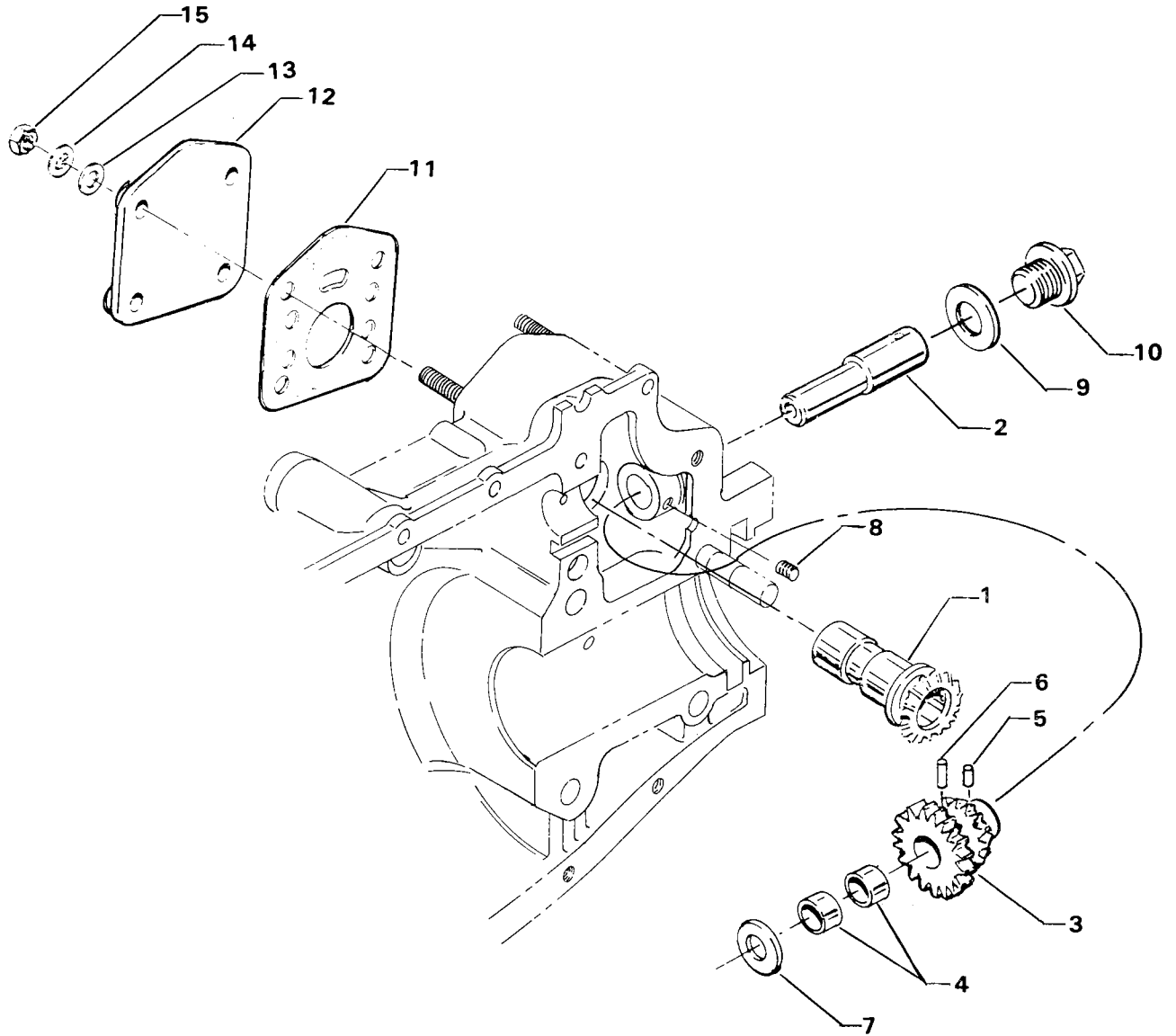


3247

Figure 4. CAMSHAFT, CRANKSHAFT AND RELATED PARTS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
PROPELLER GOVERNOR DRIVE ASSEMBLY

FIG. REF. 5	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-10442	GEAR, Propeller governor drive	1
2	LW-14021	SHAFT, Propeller governor idler gear	1
3	LW-10541	GEAR ASSY., Prop. governor idler	1
4	77872	BUSHING, Prop. governor idler 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. head	1
11	72053	GASKET, Governor	1
12	72378	COVER, Governor drive	1
13	STD-35	WASHER, 5/16 plain, Woodward governor	20
	STD-35	WASHER, 5/16 plain, AN governor	4
14	STD-475	WASHER, 5/16 lock, internal teeth	4
15	STD-1410	NUT, 5/16-18 plain	4

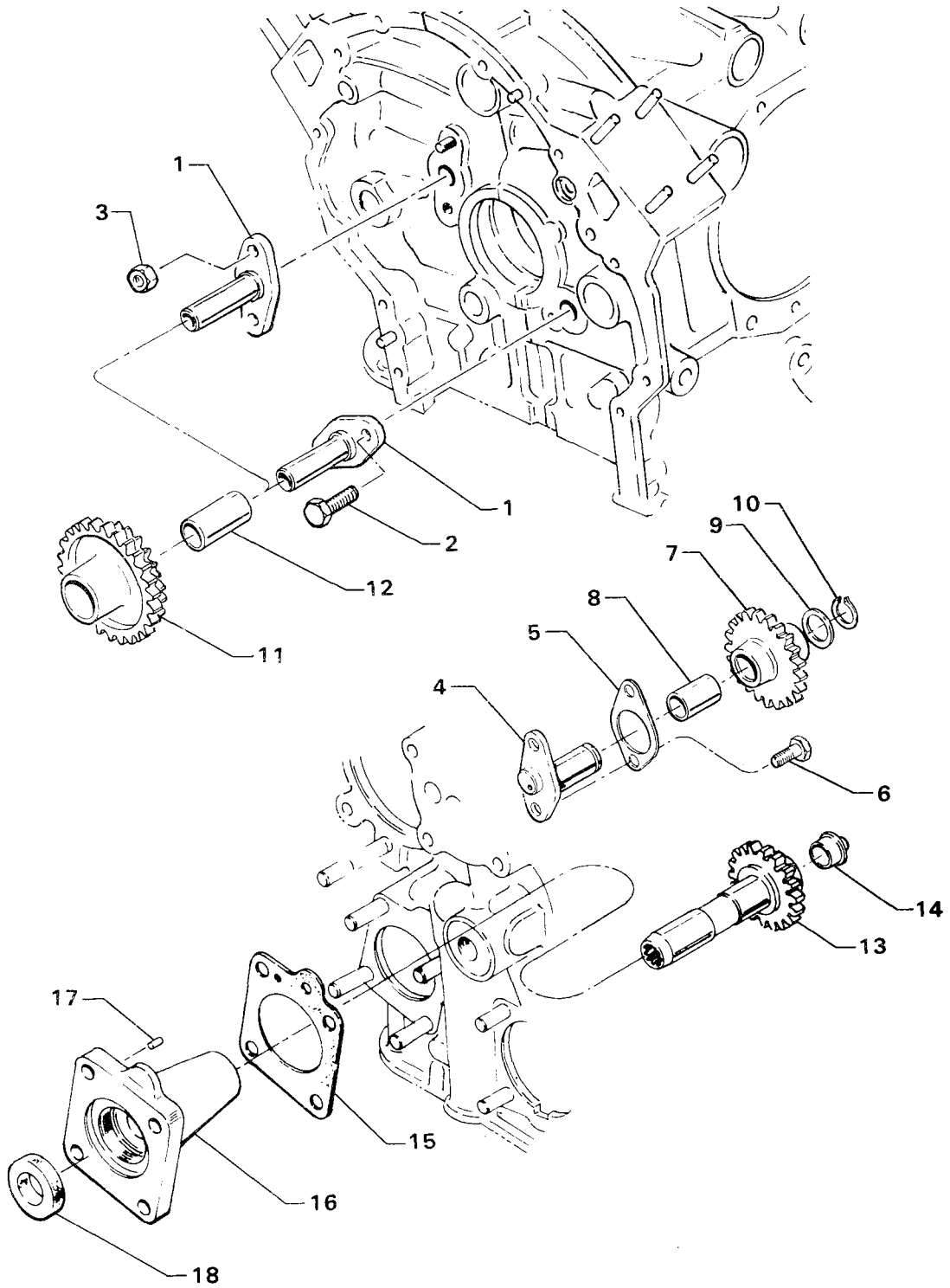


3263

Figure 5. PROPELLER GOVERNOR DRIVE ASSEMBLY

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
CRANKSHAFT AND FUEL PUMP IDLER GEARS

FIG. REF. 6	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-13795	SHAFT, Crankshaft idler gear	2
2	STD-2167	SCREW, 5/16-18 x 7/8 long, hex. head, dr.	3
3	STD-2168	NUT, 5/16-18 NC-3, slotted shear	1
4	72246	SHAFT, Fuel pump idler gear	1
5	71667	LOCKPLATE, 1/4 bolt x 1-3/4 spacing (offset)	1
6	LW-25-0.63	SCREW, 1/4-20 x 5/8 long, hex. head	2
7	71664	GEAR ASSEMBLY, Fuel pump idler	1
8	77309	BUSHING, Crankshaft idler gear	1
9	70474	WASHER, Fuel pump thrust	1
10	STD-1737	RING, 37/64 dia. x 3/64 thick, external retaining	1
11	71668	GEAR ASSY., Crankshaft idler, plain	2
12	67530	BUSHING, Crankshaft idler gear	2
13	72972	SHAFTGEAR ASSY., Fuel pump drive	1
14	72962	THRUST BUTTON, Shaftgear	1
15	69164	GASKET, Fuel pump adapter	1
16	69159	ADAPTER ASSEMBLY, Fuel pump drive	1
17	STD-1774	PIN, 1/8 dia. x 1/4 long	1
18	STD-213	SEAL, Oil, 3/4 I.D. x 1-3/8 O.D.	1

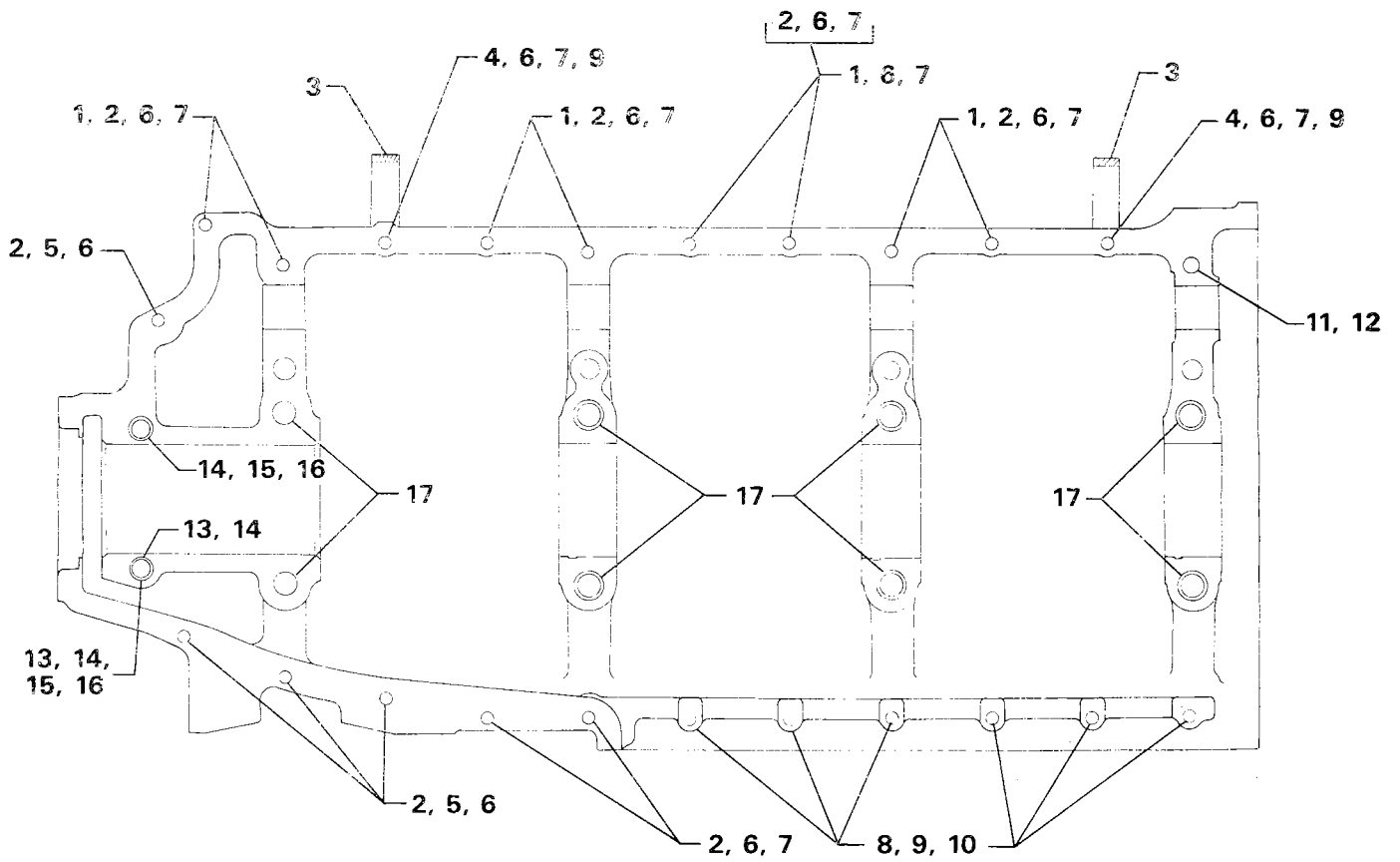


2736

Figure 6. CRANKSHAFT AND FUEL PUMP IDLER GEARS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
CRANKCASE ATTACHING PARTS

FIG. REF. 7	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-25-1.50	BOLT, 1/4-20 x 1-1/2 long, hex. head	11
2	STD-8	WASHER, 1/4 plain	27
3	60803	STRAP, Lifting	2
4	LW-25-1.75	BOLT, 1/4-20 x 1-3/4 long, hex. head	2
5	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	4
6	STD-160	WASHER, 1/4 lock, internal teeth	16
7	STD-1411	NUT, 1/4-20 plain	12
8	LW-25S1.50	BOLT, 1/4-20 x 1-1/2 long, hex. hd. dr. end	6
9	STD-8	WASHER, 1/4 plain (max. 18)	AR
10	STD-1409	NUT, 1/4-20 slotted shear	6
11	STD-33	WASHER, 3/8 plain	1
12	STD-872	NUT, 3/8-24 slotted	1
13	AN6-34A	BOLT, 3/8-24 x 3-1/2 long, hex. head	1
14	STD-33	WASHER, 3/8 plain	3
15	STD-678	WASHER, 3/8 lock, internal teeth	2
16	STD-596	NUT, 3/8-24 plain	2
17	76220	STUD, 1/2-20 x 10-45/64 long	8

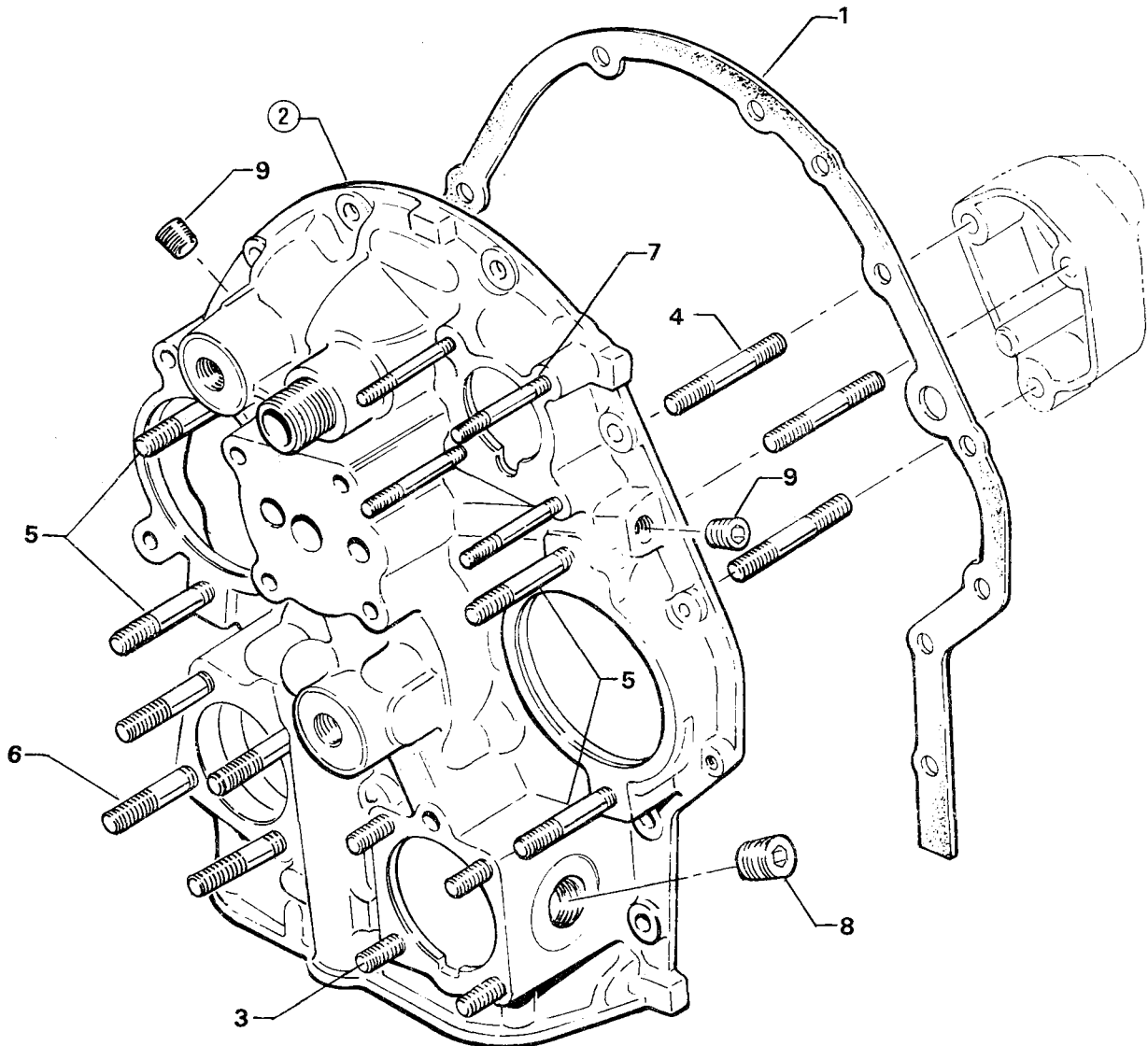


2131

Figure 7. CRANKCASE ATTACHING PARTS

ACCESSORY HOUSING AND RELATED PARTS ACCESSORY HOUSING ASSEMBLY

FIG. REF. 8	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	73818	GASKET, Accessory housing	1
2	21C21151	HOUSING ASSEMBLY, Accessory	1
3	31C-12	STUD, 5/16-18 x 1-1/2 long	4
4	31CD-17	STUD, 5/16-18 x 2-1/8 long, drilled	3
5	31C-21	STUD, 5/16-18 x 2-5/8 long	4
6	31C-19	STUD, 5/16-18 x 2-3/8 long	4
7	25C-12	STUD, 1/4-20 x 1-1/2 long	4
8	STD-784	PLUG, 3/8 pipe, Allen head	1
9	1102	PLUG, 1/8-27 pipe, Allen head	2



3246

Figure 8. ACCESSORY HOUSING ASSEMBLY

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

FIG. REF. 9	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	78528	BODY ASSEMBLY, Oil pump	1
2	STD-1339	PLUG, 1/16-27 NPT, Allen head	1
3	LW-18110	IMPELLER ASSY., Oil pump driven	1
4	74641	SHAFT, Oil pump drive	1
5	LW-18109	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	10
10	STD-160	WASHER, 1/4 lock, internal teeth	12
11	LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. head	9
12	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	1
13	LW-25-1.88	BOLT, 1/4-20 x 1-7/8 long, hex. head	2

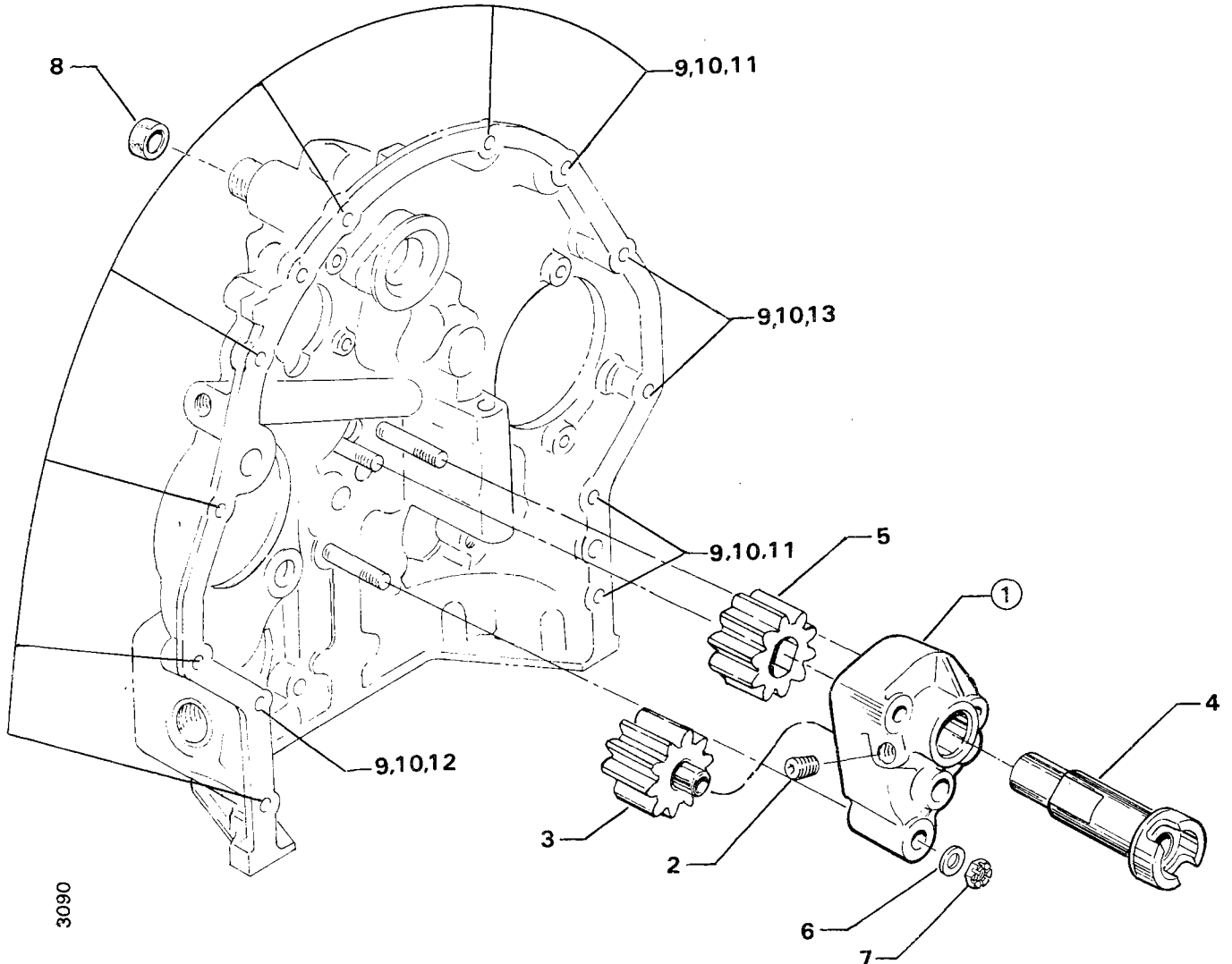
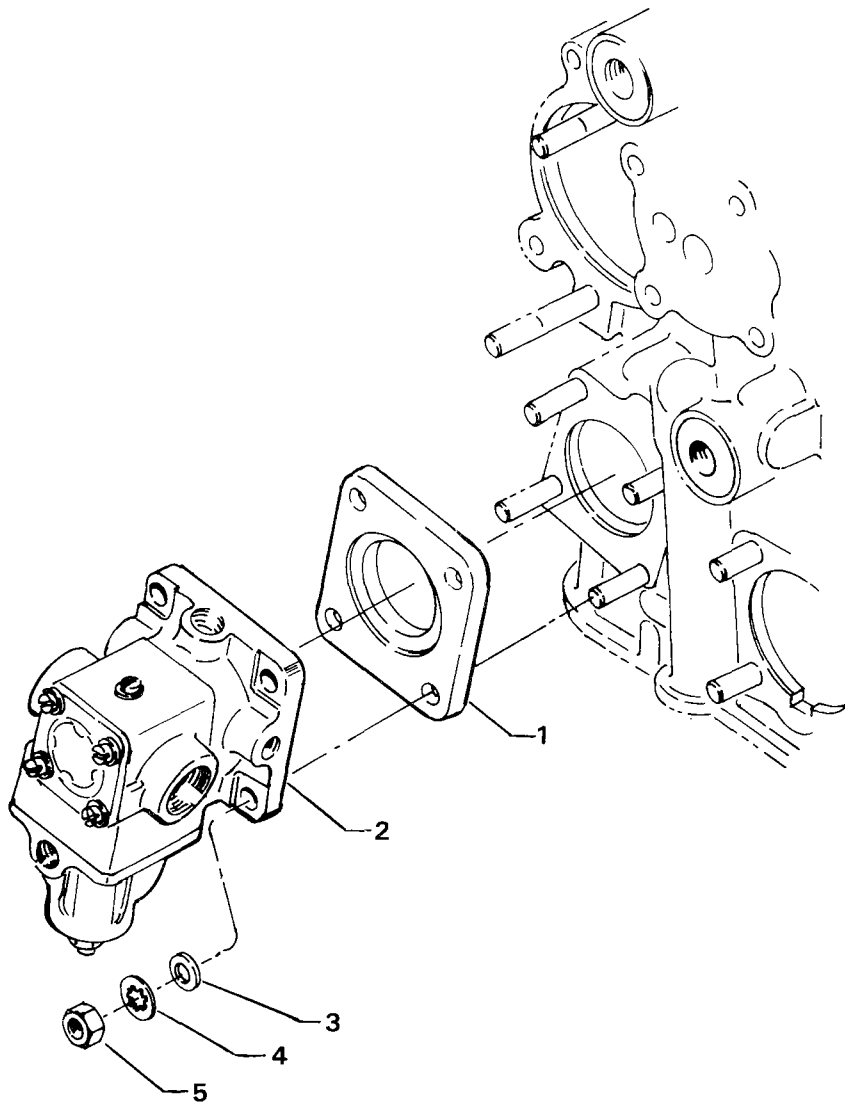


Figure 9. OIL PUMP ASSEMBLY AND ACCESSORY HOUSING ATTACHING PARTS

ACCESSORY HOUSING AND RELATED PARTS
FUEL PUMP ASSEMBLY AND ATTACHING PARTS

FIG. REF. 10	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-10799	SPACER, Fuel pump insulating	1
2	LW-13909	PUMP, Fuel (RG9080-J4A)	1
3	STD-35	WASHER, 5/16 plain	4
4	STD-475	WASHER, 5/16 lock, internal teeth	4
5	STD-1410	NUT, 5/16-18 plain	4



2911

Figure 10. FUEL PUMP ASSEMBLY AND ATTACHING PARTS

ACCESSORY HOUSING AND RELATED PARTS
ACCESSORY HOUSING BREATHER ADAPTER AND FITTING

FIG. REF. 11	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	8313	GASKET, Breather adapter	1
2	LW-16878	ADAPTER, Breather w/ oil pick up	1
3	STD-8	WASHER, 1/4 plain	4
4	STD-160	WASHER, 1/4 lock, internal teeth	4
5	STD-1411	NUT, 1/4-20 plain	4
6	AN816-10D	NIPPLE, 5/8 flared tube & 1/2 NPT	1
7	06E19769-0.63	GASKET, 7/8 O.D. x 5/8 I.D. x 3/32 annular	1
8	62417	PLUG, (Assemble in top of accessory housing)	1
9	STD-784	PLUG, 3/8-18 NPT, Allen (inlet & outlet bosses)	2
10	AN816-10-12D	FITTING, Breather (assemble in acc. hsg.)	1

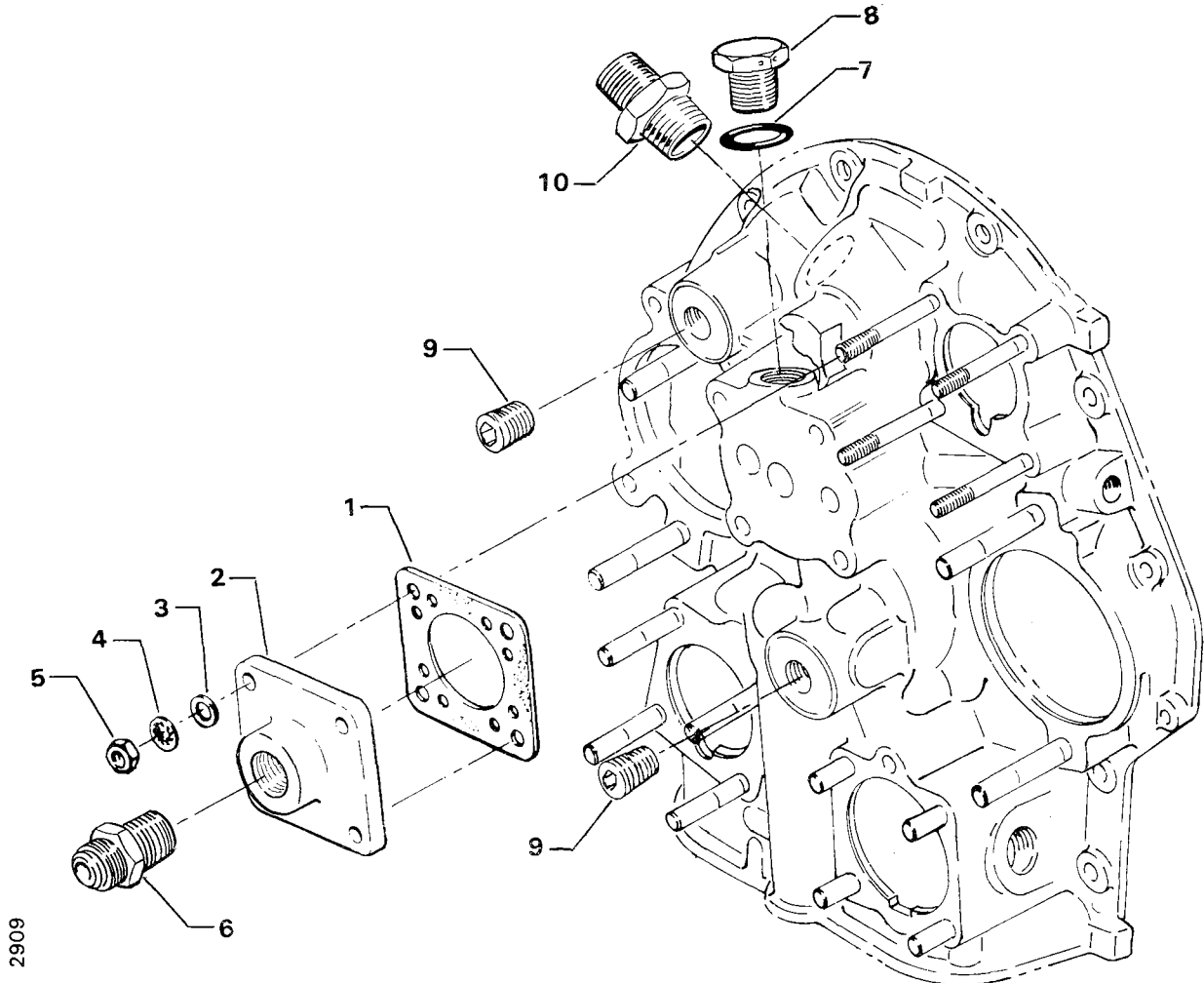
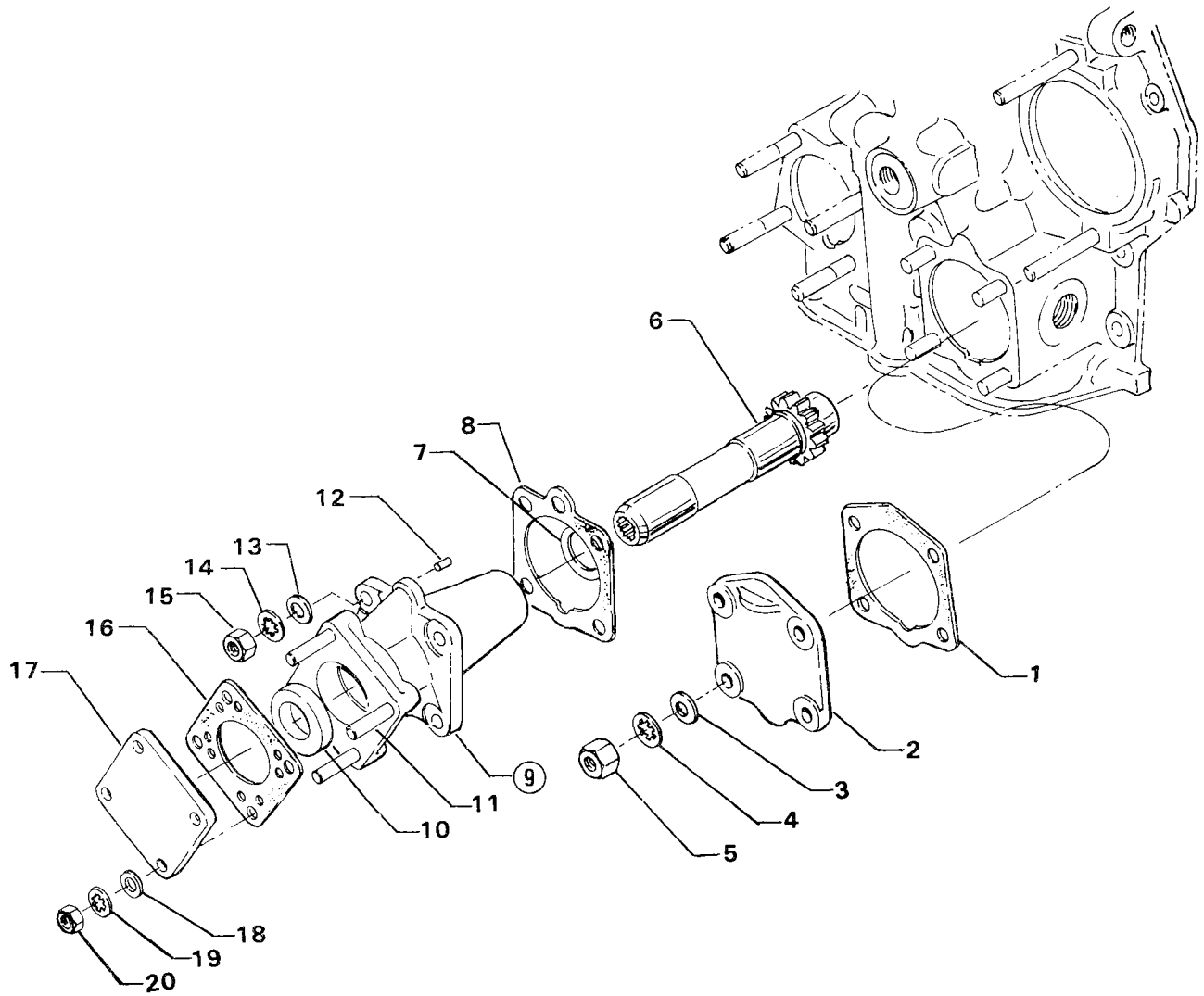


Figure 11. ACCESSORY HOUSING BREATHER ADAPTER AND FITTING

ACCESSORY HOUSING AND RELATED PARTS
HYDRAULIC PUMP DRIVE AND COVERS

FIG. REF. 12	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	69551 *	GASKET, Accessory drive adapter	1
2	69106 *	COVER, Drive adapter pad	1
3	STD-35 *	WASHER, 5/16 plain	4
4	STD-475 *	WASHER, 5/16 lock, internal teeth	4
5	STD-1410 *	NUT, 5/16-18 plain	4
6	72964	GEAR ASSY., Hydraulic pump driven	1
7	71596	WASHER, Accessory drive gear	1
8	68315	GASKET, Accessory drive adapter	1
9	71675	ADAPTER ASSY., Hydraulic pump	1
10	STD-2217	SEAL, Oil, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide	1
11	25C-12	STUD, 1/4-20 x 1-1/2 long	4
12	STD-1774	PIN, 1/8 dia. x 1/4 long	1
13	STD-35	WASHER, 5/16 plain	4
14	STD-475	WASHER, 5/16 lock, internal teeth	4
15	STD-1410	NUT, 5/16-18 plain	4
16	8313	GASKET, Pump	1
17	60430	COVER, Pump	1
18	STD-8	WASHER, 1/4 plain	4
19	STD-160	WASHER, 1/4 lock, internal teeth	4
20	STD-1411	NUT, 1/4-20 plain	4

* Not used if hydraulic pump drive is installed.



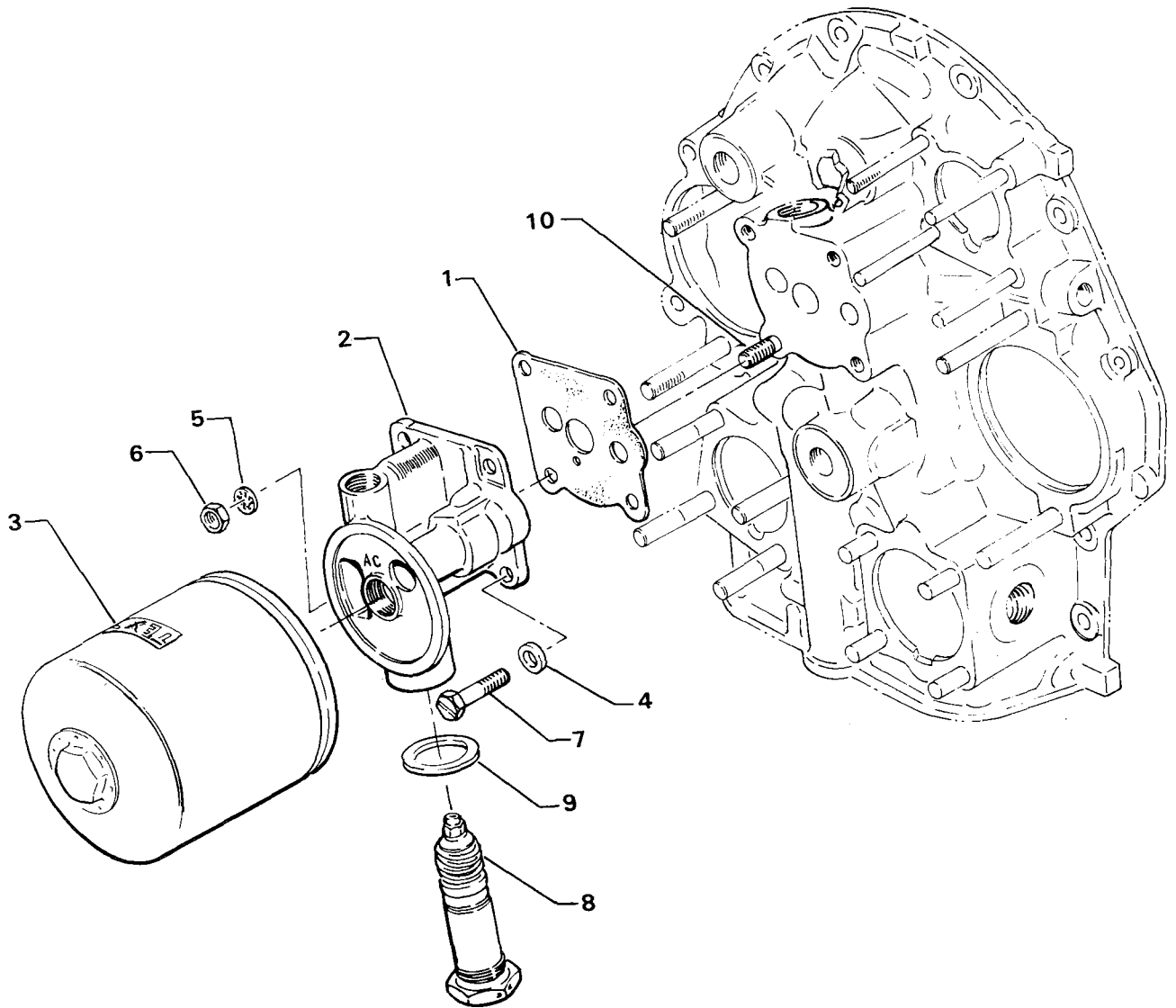
2912

Figure 12. HYDRAULIC PUMP DRIVE AND COVERS

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

FIG. REF. 13	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-12795	GASKET, Oil filter adapter	1
2	77852	BASE ASSY., Oil filter	1
3	54D19625*	OIL FILTER, (short with stud)	1
4	STD-8	WASHER, 1/4 plain	4
5	STD-160	WASHER, 1/4 lock, internal teeth	1
6	STD-1411	NUT, 1/4-20 plain	1
7	STD-1856	SCREW, 1/4-20 x 1.00 long, hex. hd., self-locking	3
8	53E19600	VALVE ASSY., Temp. control, oil cooler bypass	1
9	76510	GASKET, Valve assembly	1
10	25C-10	STUD, 1/4-20 x 1-1/4 long	1

* Reference latest edition of SSP-885 for oil filter kits and replacement filters.

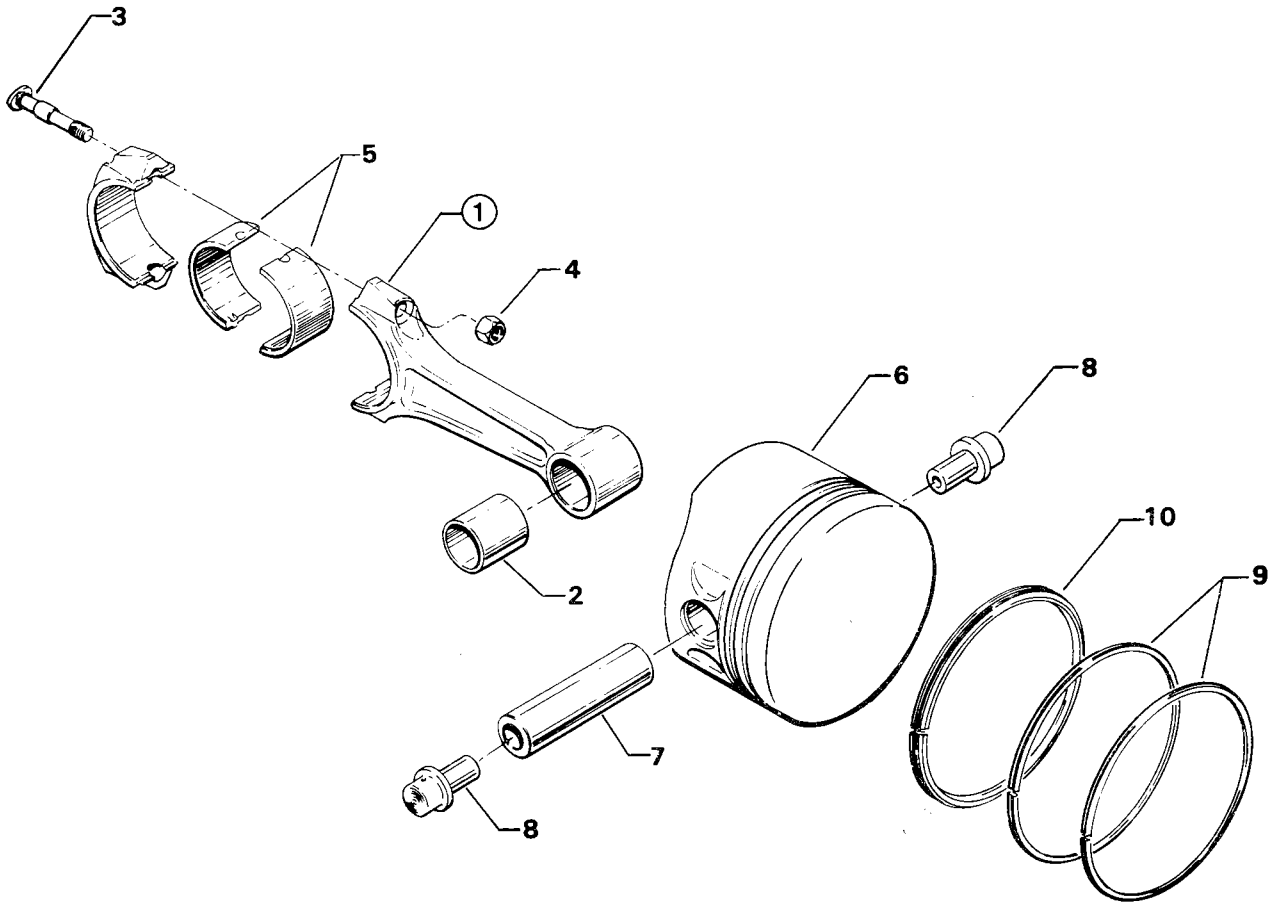


3248

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	QUANTITY PER ASSEMBLY
1	LW-19332-S	CONNECTING ROD ASSEMBLY	6
2	LW-13923	BUSHING, Connecting rod, upper	6
3	LW-12596	BOLT, Connecting rod	12
4	LW-12186	NUT, Connecting rod	12
5	LW-14954	BEARING, Connecting rod	12
	74309	BEARING, Connecting rod (alternate)	12
6	LW-10207-S	PISTON, Compression ratio 8.7:1	6
7	LW-14077	PIN, Piston	6
8	LW-11775	PLUG, Piston pin	12
9	74241	RING, Piston compression	12
10	73857	RING, Piston, oil regulating (expander type)	6



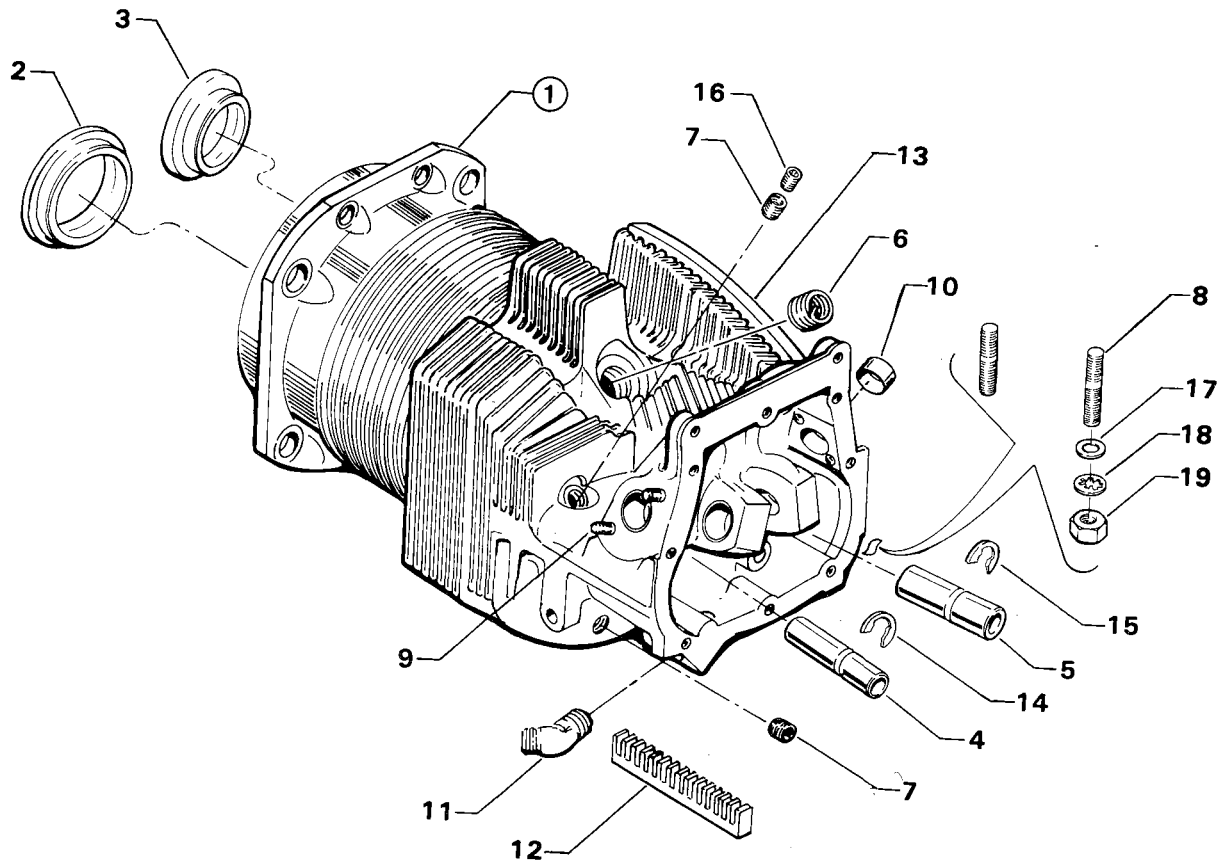
3004

Figure 14. CONNECTING RODS, PISTONS AND RING ASSEMBLIES

CYLINDER, PISTON AND VALVE TRAIN
CYLINDER ASSEMBLY

FIG. REF. 15	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-12993	CYLINDER AND HEAD ASSEMBLY	6
2	LW-12688	SEAT, Intake valve	6
3	16T19468	SEAT, Exhaust valve	6
4	LW-11956-S*	GUIDE, Valve intake, grooved (flangeless)	6
5	LW-11958-S**	GUIDE, Valve exhaust, grooved (flangeless)	6
6	66796	INSERT, Spark plug	12
7	STD-1872	INSERT, 1/8-27 Heli-coil taper pipe thread	12
8	31C-12	STUD, 5/16-18 x 1-1/2 long	12
9	25C-8	STUD, 1/4-20 x 1.00 long	24
10	66670	BUSHING, Rocker shaft, inner	24
11	MS20823-6D	ELBOW, 3/8 flared tube & 1/4 pipe thread, 45°	6
12	72343	STABILIZER, Cylinder head fins, 15 teeth	6
13	72344	STABILIZER, Cylinder head fins, 26 teeth	6
14	LW-19298	RING, Guide retaining, intake	6
15	LW-19299	RING, Guide retaining, intake	6
16	1102★	PLUG, 1/8-27 NPT, Allen head	6
17	STD-35	WASHER, 5/16 plain, exhaust flange attaching	12
18	STD-475	WASHER, 5/16 lock, exhaust flange attaching	12
19	STD-1410	NUT, 5/16 plain, exhaust flange attaching	12

- * Item No. 14 valve guide ring Part No. LW-19298 must be ordered separately when ordering this part. Refer to latest edition of Service Instruction No. 1256.
- ** Item No. 15 valve guide ring Part No. LW-19299 must be ordered separately when ordering this part. Refer to latest edition of Service Instruction No. 1256.
- ★ Assemble in cylinder head.



3086

Figure 15. CYLINDER ASSEMBLY

CYLINDER, PISTON AND VALVE TRAIN VALVE ASSEMBLIES AND RELATED PARTS

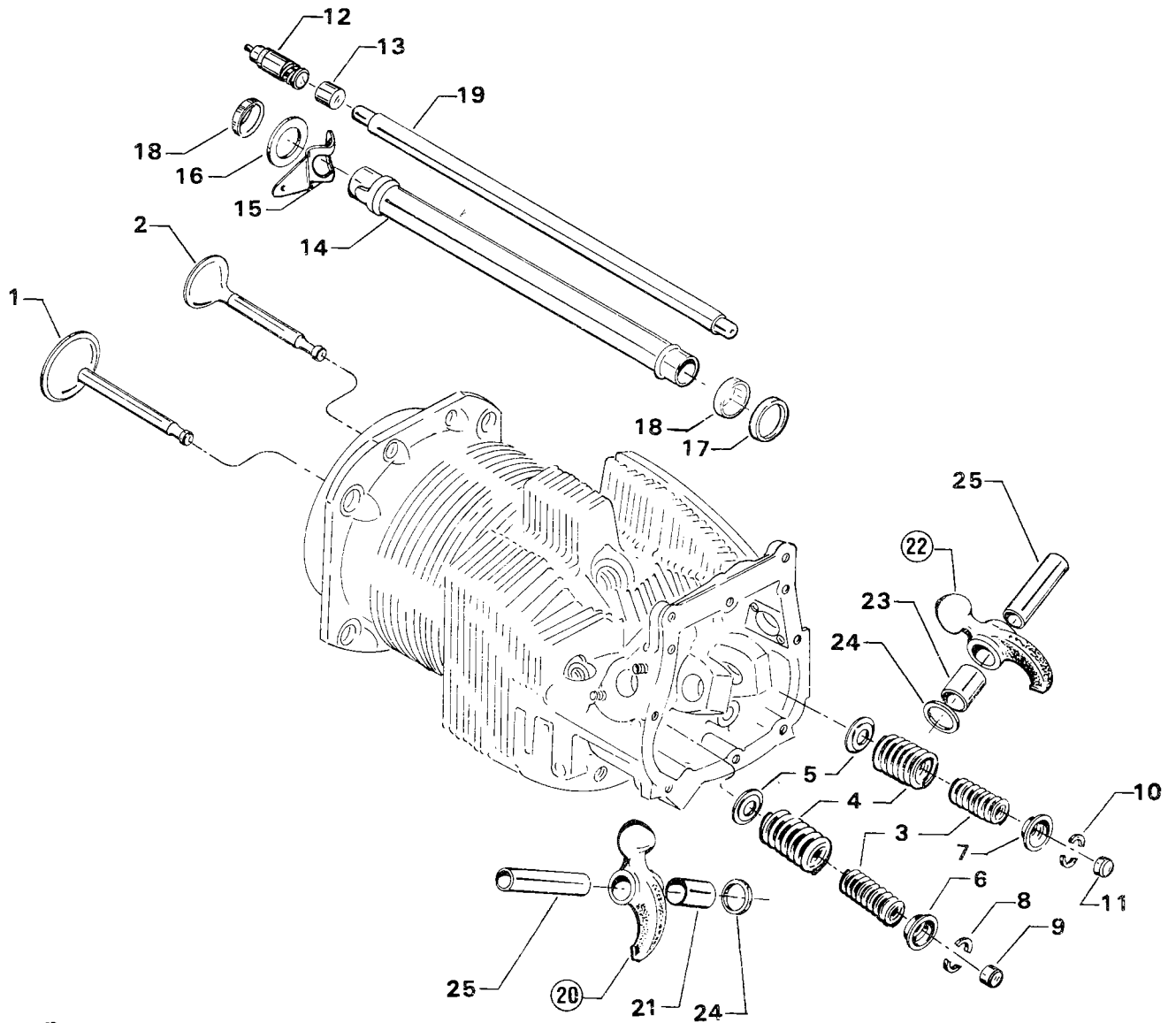
FIG. REF. 16	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-13622	VALVE, Intake	6
2	LW-16740	VALVE, Exhaust (rotator)	6
3	LW-11797	SPRING, Valve, inner	12
4	LW-11796	SPRING, Valve, outer	12
5	LW-13322	SEAT, Valve spring, lower intake and exhaust	12
6	69532	SEAT, Valve spring, upper intake	6
7	LW-16475	SEAT, Valve spring, upper exhaust (rotator)	6
8	72050	KEY, Valve intake	12
9	62388	CAP, Valve stem	6
10	17C21191	KEY, Valve exhaust (rotator)	12
11	17C19386	CAP, Valve stem, exhaust (rotator)	6
12	78290	PLUNGER ASSY., Hydraulic tappet	12
13	78524	SOCKET, Push rod, hydraulic tappet	12
14	72255	SHROUD TUBE ASSY., Push rod	12
15	LW-13077	SPRING, Shroud tube	24
16	66728 *	WASHER, 25/32 I.D. x 1-1/4 O.D. x 1/32 thick (max. 24)	AR
17	61503	SLEEVE, Shroud tube seal	12
18	LW-18661	SEAL, Shroud tube	24
19	73455 * *	ROD ASSY., Push	AR
	73456 * *	ROD ASSY., Push	AR
	73457 * *	ROD ASSY., Push	AR
	73458 * *	ROD ASSY., Push	AR
	73555 * *	ROD ASSY., Push	AR
	73556 * *	ROD ASSY., Push	AR
	73557 * *	ROD ASSY., Push	AR
	73558 * *	ROD ASSY., Push	AR
20	67113	ROCKER ASSY., Intake valve	6
21	67114	BUSHING, Valve rocker	6
22	74388	ROCKER ASSY., Exhaust valve	6
23	74389	BUSHING, Valve rocker	6
24	71549	WASHER, Valve rocker	12
25	72626	SHAFT, Valve rocker	12

* See latest edition of

Lycoming Service Instruction No. 1284 for application of Part No. 66728 washer.

** See latest edition of

Lycoming Service Instruction No. 1060 for complete push rod application.



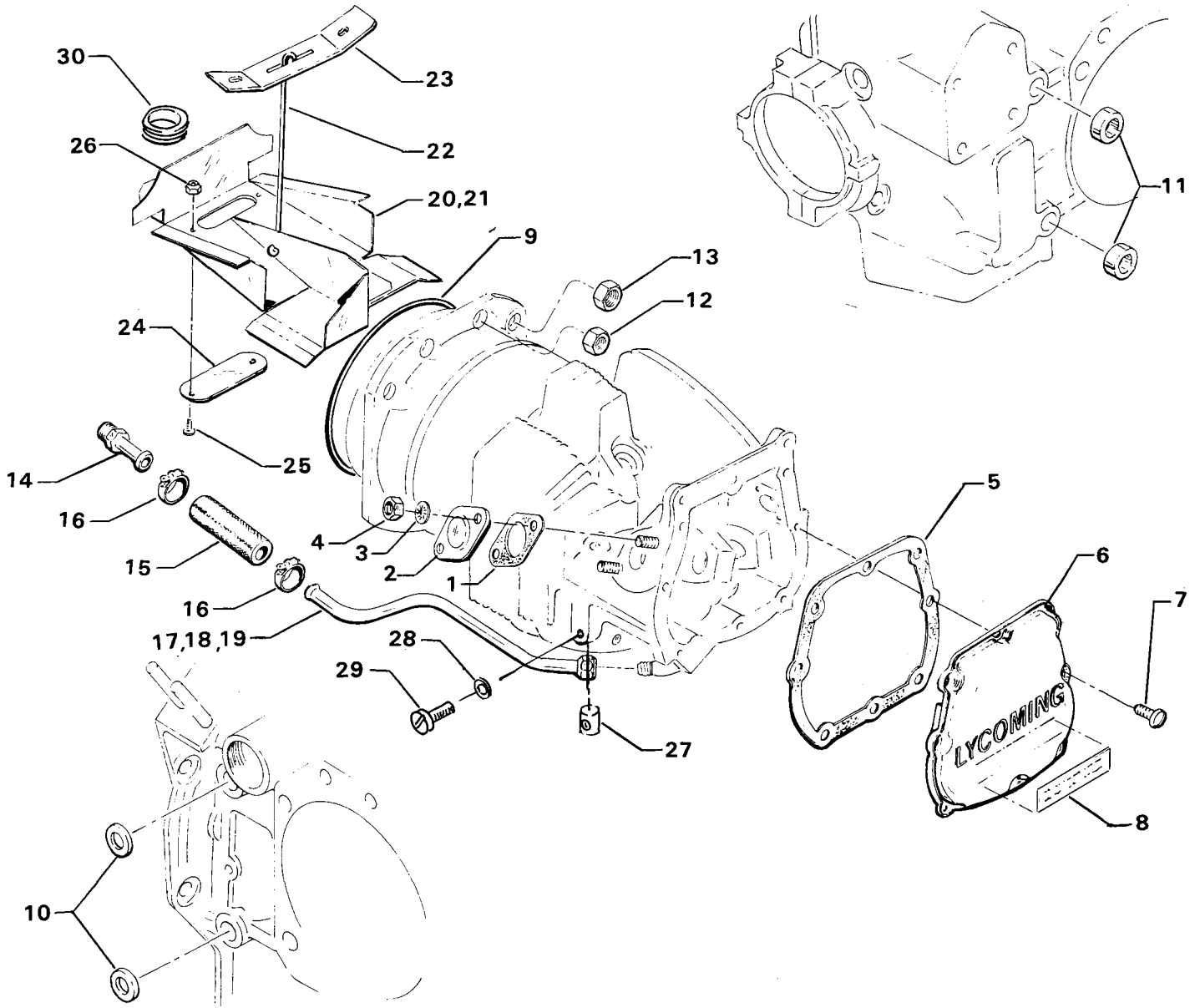
2089B

Figure 16. VALVE ASSEMBLIES AND RELATED PARTS

CYLINDER, PISTON AND VALVE TRAIN CYLINDER RELATED PARTS

FIG. REF. 17	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	66732	GASKET, Cover, valve rocker shaft	12
2	72710	COVER, Valve rocker shaft	12
3	STD-160	WASHER, 1/4 lock, internal teeth	24
4	STD-1411	NUT, 1/4-20 plain	24
5	67193	GASKET, Rocker box cover	6
6	68795	COVER ASSY., Rocker box	6
7	STD-1925	SCREW, 1/4-20 x 5/8 long, pan hd., self-locking	48
8	74494	PLATE, Spark plug reach caution	6
9	71481	RING, Oil seal, 3/32 dia. sect. x 4-27/32 I.D.	6
10	77906	SPACER, 33/64 I.D. x 7/8 O.D. x 1/8 thick (rear of c'case)	2
11	74887	SPACER, 33/64 I.D. x 7/8 O.D. x 3/8 thick (front of c'case)	2
12	383-B	NUT, 3/8-24 plain	24
13	STD-2090	NUT, 1/2-20 plain	28
14	STD-684	NIPPLE, Straight, 3/8 I.D. hose	6
15	STD-2180	HOSE, 3/8 I.D. x 1-13/16 long	6
16	LW-15592-5-05	CLAMP, Hose	12
17	72702	TUBE ASSY., Cyl. head oil drain, cyl. no. 1	1
18	72703	TUBE ASSY., Cyl. head oil drain, cyl. no. 2	1
19	73027	TUBE ASSY., Cyl. head oil drain, cyls. no. 3, 4, 5, & 6	4
20	75338	BAFFLE ASSY., Intercylinder	3
21	LW-13430 *	BAFFLE ASSY., Intercylinder	1
22	71610	HOOK, Intercylinder baffle retainer	4
23	71611	RETAINER, Intercylinder baffle	4
24	72834	COVER, Baffle, ignition cable hole	4
25	STD-692	SCREW, No. 10-32 x 1/2 long, round hd.	8
26	STD-670	NUT, No. 10-32 self-locking	8
27	65614	PLUG, Baffle attaching	4
28	STD-251	WASHER, No. 10 lock, internal teeth	4
29	STD-1686	SCREW, No. 10-32 x 7/16 long, fill. head	4
30	AN931-14-20	GROMMET, 7/8 I.D. x 1-5/8 O.D. x 7/16 thick	1

* Assemble between No. 2 and No. 4 cylinders.



3180

Figure 17. CYLINDER RELATED PARTS

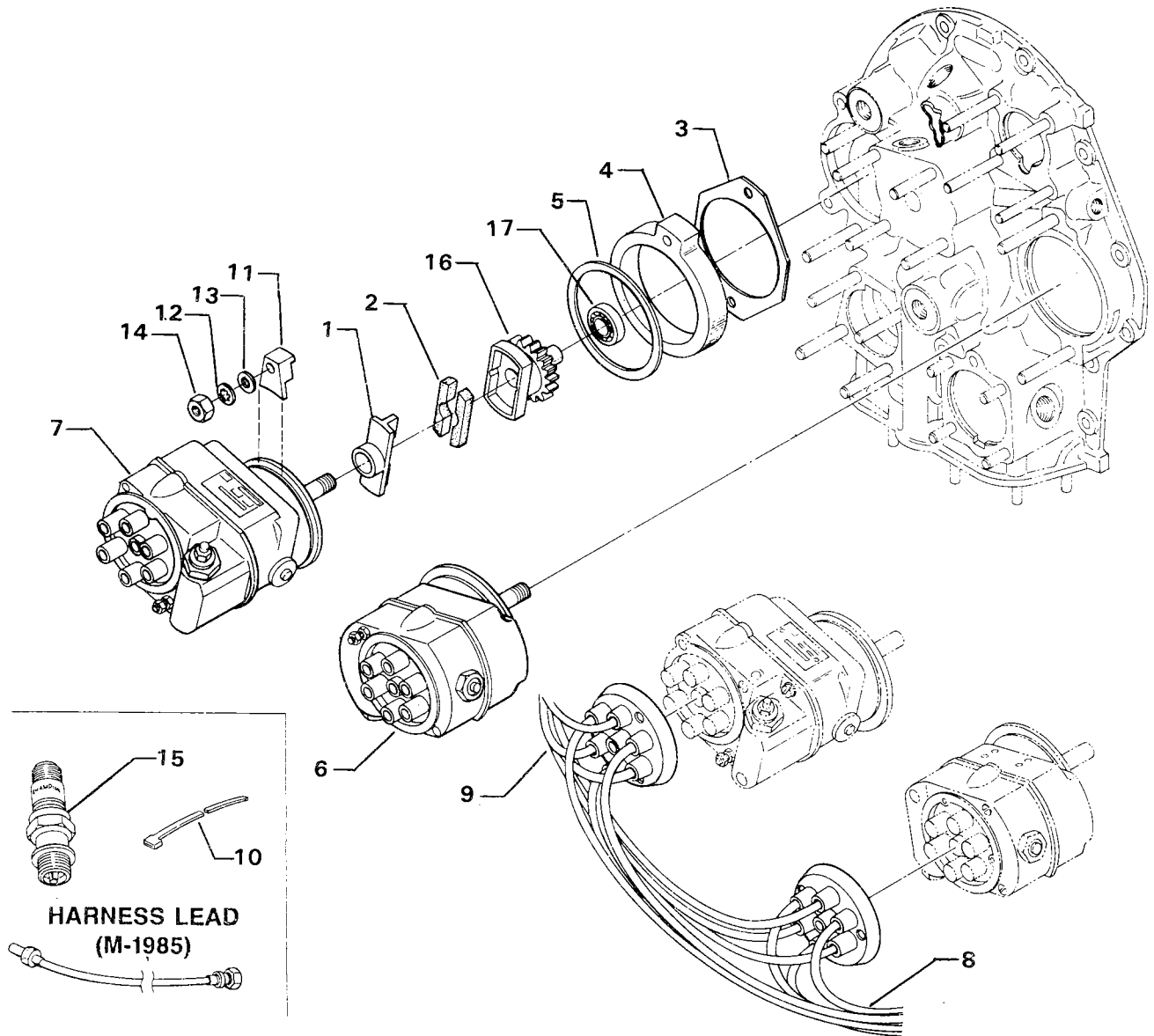
IGNITION SYSTEM MAGNETOS, MAGNETO DRIVES AND SPARK PLUGS

FIG. REF. 18	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	73000	COUPLING, Magneto drive	1
2	LW-13641	CUSHION, Magneto drive	4
3	62224	GASKET, Magneto adapter	1
4	LW-12707	ADAPTER, Magneto	2
5	LW-12681	GASKET, Magneto	2
6	66JP-0SCNN	MAGNETO, Right (6250)	1
7	66JC-35SDNN	MAGNETO, Left (6251)	1
8	67U20636	HARNESS ASSY., Ignition, right (M-2960)	1
9	67U20637	HARNESS ASSY., Ignition, left (M-2959)	1
10	76734	ZIP STRAP	AR
11	76961	CLAMP, Magneto	4
12	STD-475	WASHER, 5/16 lock, internal teeth	4
13	STD-1727	WASHER, Plain, 3/4 O.D. x 11/32 I.D. x 1/8 thick	4
14	STD-1410	NUT, 5/16-18 plain	4
15	1182-J3 *	SPARK PLUG, (Champion REM-38E)	12
16	LW-19096	GEAR RETAINER ASSEMBLY	2
17	67542	BEARING, Ball	2

- * Item No. 15 spark plug is used in current production only. Additional spark plugs are available for this engine. See latest edition of Service Instruction No. 1042 for complete listing of all approved spark plugs.

NOTE

Individual harness leads may be replaced by ordering either M-1985-48 (4B, 5T, 2B, 3T, 6B, 1B, 4T, 5B, 3B, 6T) or M-1985-72 (1T, 2T). Replacement lead assemblies have spark plug terminal end assembled and are shipped with necessary parts to complete magneto end.



2908

Figure 18. MAGNETOS, MAGNETO DRIVES AND SPARK PLUGS

**Intentionally
Left
Blank**

BAG - MAGNETO HARNESS ATTACHING

P/N 01P19762-4

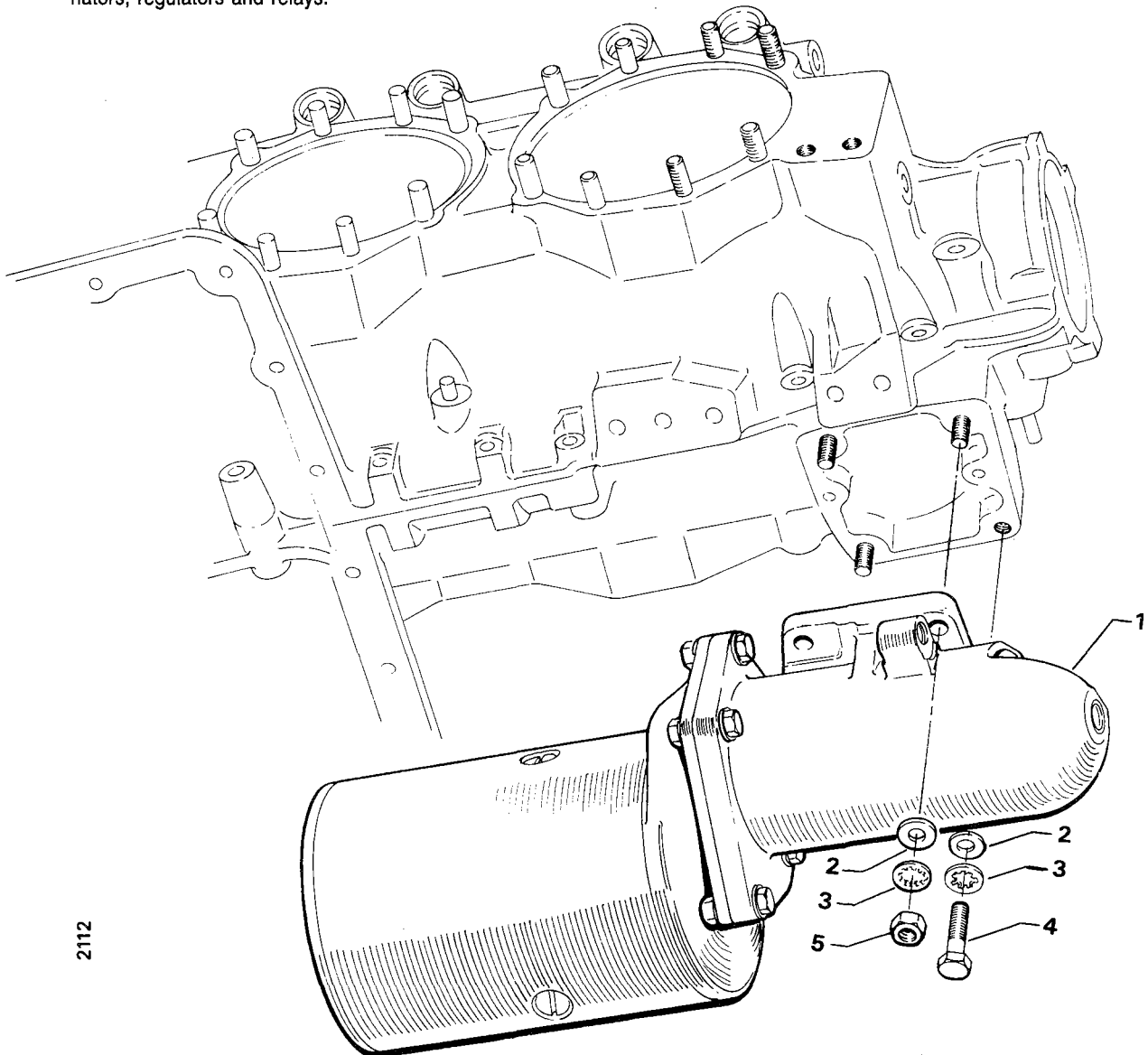
Part No.	Part Name	Qty.
01P19762-4	BAG - MAGNETO HARNESS ATTACHING	1
LW-16266-25-25	CLIP, 1 wire	4
LW-14060	CLIP, 2 wire, 1/4 screw	4
STD-8	WASHER, 1/4 plain	12
STD-160	WASHER, 1/4 lock	10
STD-1874	SCREW, Rocker box	6
76734	ZIP STRAP	12
LW-16266-10-75	CLIP, 6 wire	2
LW-16266-25-44	CLIP, 4 wire	5
STD-696	WASHER, 1/4 thin	6
AN500-416-18	SCREW, 1/4 x 1-1/8 long	2
STD-1925	SCREW, 1/4 x 5/8 long	4
72815	BRACKET, Twist	4
STD-692	SCREW, No. 10 (Bracket to Clip)	4
STD-425	WASHER, No. 10 (Bracket to Clip)	4
STD-670	NUT, No. 10 (Bracket to Clip)	4
LW-M-2376	PLATE, 3 wire	2

ELECTRICAL COMPONENTS STARTER MOTOR AND ATTACHING PARTS

FIG. REF. 19	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-15572	STARTER, 24 volt (3.38:1 internal reduction, 12/14 pinion) (MHB-4016)	1
2	STD-35	WASHER, 5/16 plain	4
3	STD-475	WASHER, 5/16 lock, internal teeth	4
4	LW-31-1.16	BOLT, 5/16-18 x 1-5/32 long, hex. head	1
5	STD-1410	NUT, 5/16-18	3

NOTE

See latest edition of Service Instruction No. 1154 for complete listing of FAA approved starters, generators, alternators, regulators and relays.



2112

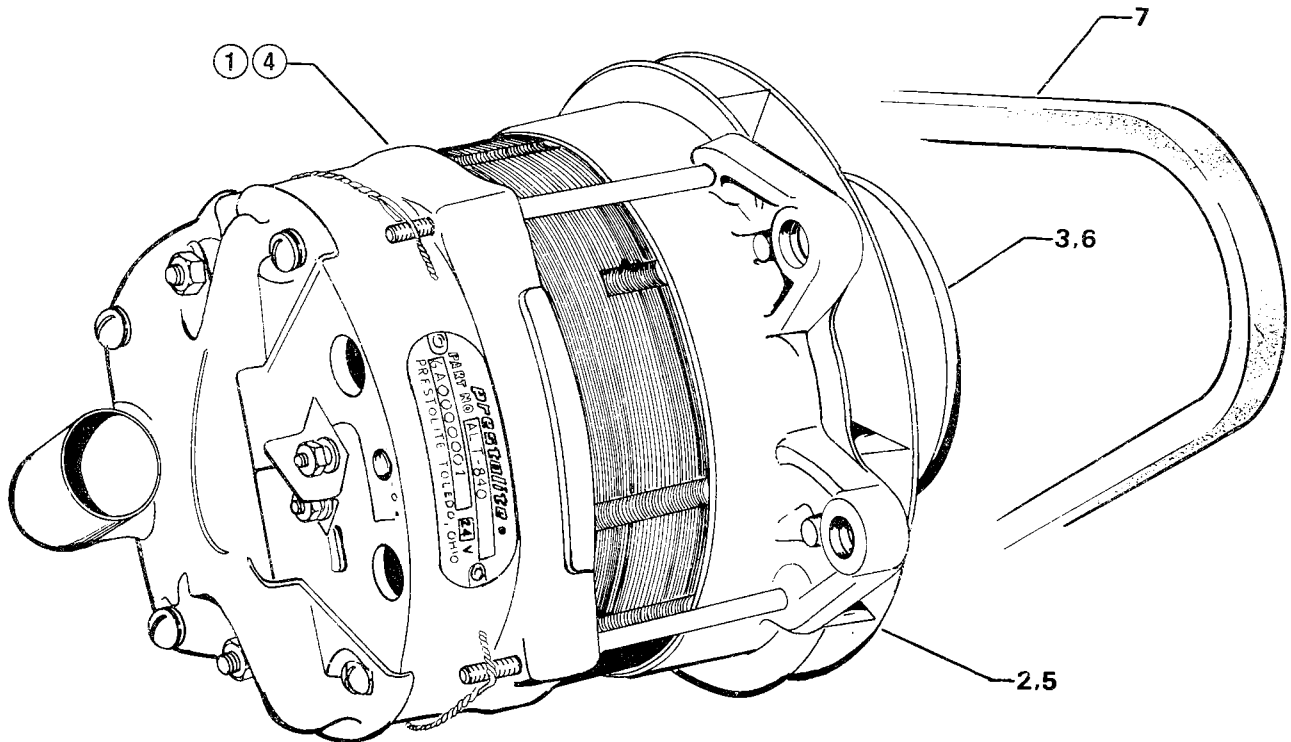
Figure 19. STARTER MOTOR AND ATTACHING PARTS

ELECTRICAL COMPONENTS ALTERNATOR ASSEMBLY AND BELT

FIG. REF. 20	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	32B19549	ALTERNATOR ASSEMBLY	1
2	LW-14318	ALTERNATOR, 12 volt, 70 amp. (ALX-8421-LS)	1
3	36B19484	PULLEY, Alternator	1
4	32C19553	ALTERNATOR ASSEMBLY	1
5	LW-14326	ALTERNATOR, 24 volt, 70 amp. (ALU-8421-LS)	1
6	36B19484	PULLEY, Alternator	1
7	37A19773-376	BELT, Alternator (used with 12v. alternator)	1
	37A19773-382	BELT, Alternator (used with 24v. alternator)	1

NOTE

See latest edition of Service Instruction No. 1154 for complete listing of FAA approved starters, generators, alternators, regulators and relays.

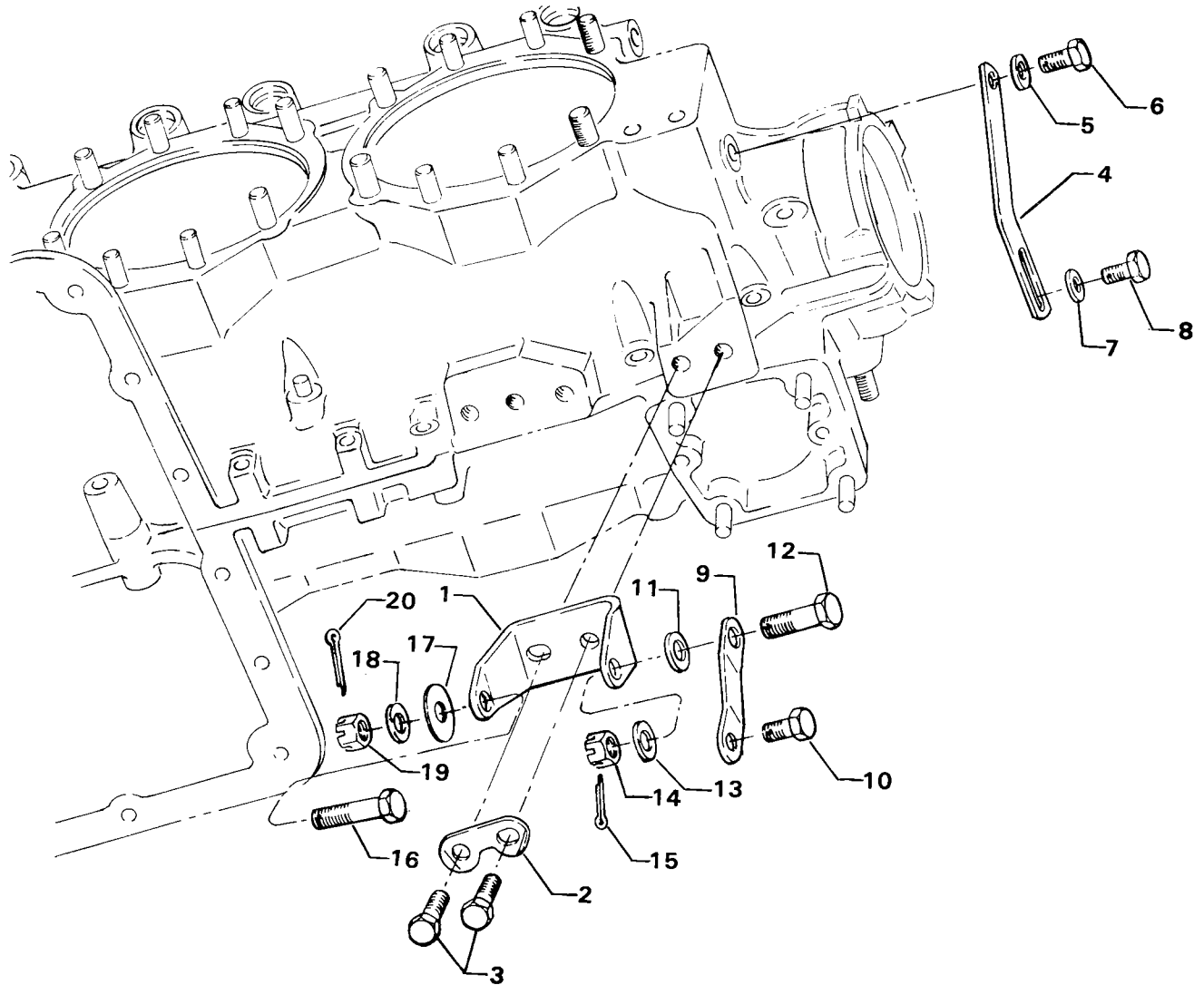


2051 |

Figure 20. ALTERNATOR ASSEMBLY AND BELT

ELECTRICAL COMPONENTS
 ALTERNATOR MOUNTING AND ATTACHING PARTS

FIG. REF. 21	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	07A19474	BRACKET, Alternator	1
2	73383	LOCKPLATE, 5/16 bolt x 1.00 spacing	1
3	LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex. head	2
4	75380	LINK, Alternator adjusting	1
5	STD-35	WASHER, 5/16 plain	1
6	LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. hd. dr.	1
7	STD-1727	WASHER, Plain, 3/4 O.D. x 11/32 I.D. x 1/8 thick	1
8	LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. hd. dr.	1
9	74323	STRUT, Alternator support	1
10	LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. hd. dr.	1
11	STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	1
12	AN6-17	BOLT, 3/8-24 x 1-61/64 long, hex. hd. drilled end	1
13	STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	AR
14	STD-872	NUT, 3/8-24 slotted	1
15	STD-713	PIN, Cotter, 3/32 dia. x 3/4 long	1
16	AN6-16	BOLT, 3/8-24 x 1-53/64 long, hex. hd. drilled end	1
17	76534	SHIM, 1-1/8 O.D. x 13/32 I.D. x 1/64 thick	AR
18	STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	AR
19	STD-872	NUT, 3/8-24 slotted	1
20	STD-713	PIN, Cotter, 3/32 dia. x 3/4 long	1



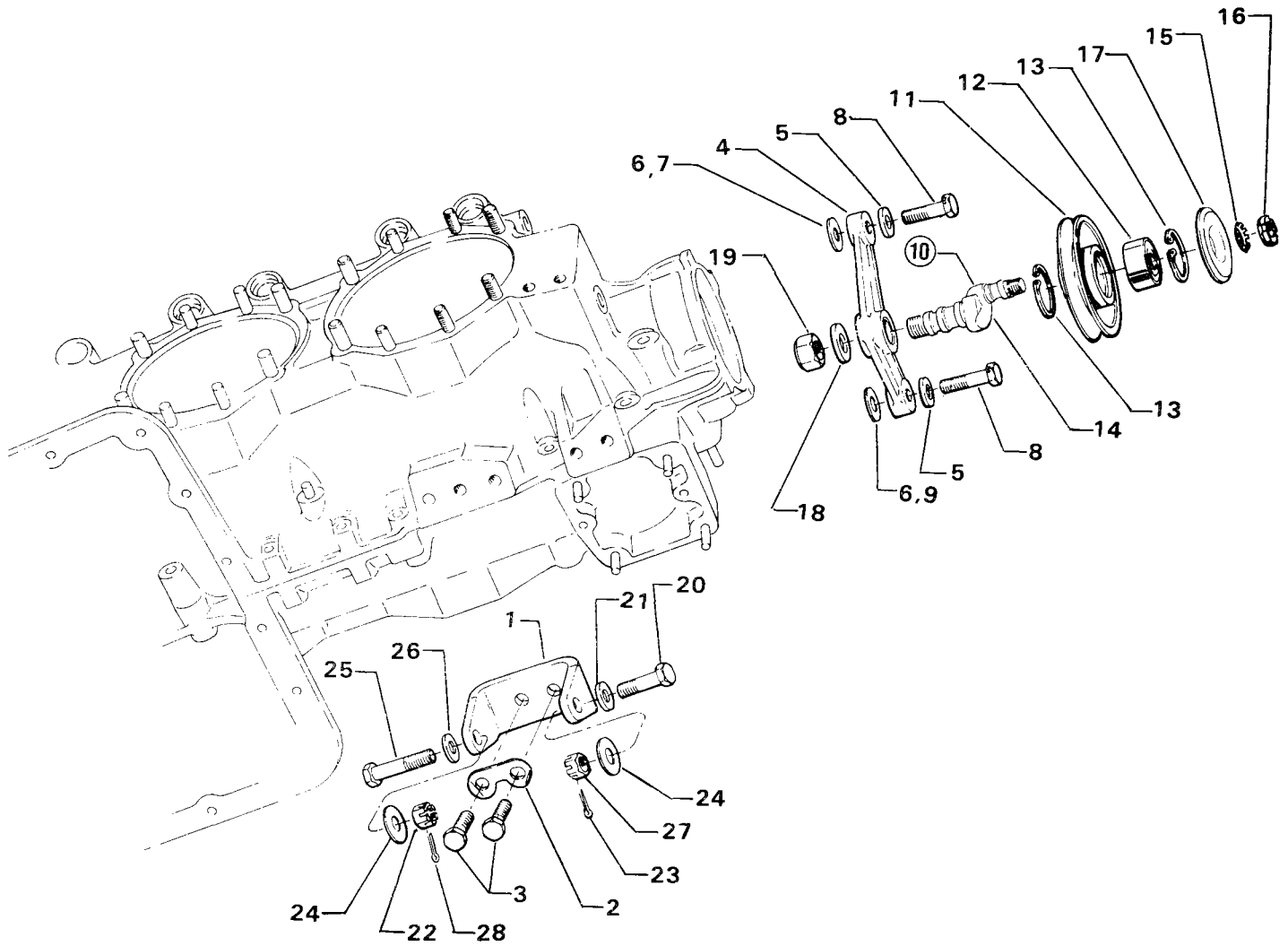
2910

Figure 21. ALTERNATOR MOUNTING AND ATTACHING PARTS

ELECTRICAL COMPONENTS ALTERNATOR MOUNTING WITH PULLEY & SHAFT ASSEMBLY

FIG. REF. 22	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	77756	BRACKET, Alternator	1
2	73383	LOCKPLATE, 5/16 bolt x 1.00 spacing	1
3	STD-1838	BOLT, 5/16-18 x 15/16 long, hex. head	2
4	LW-18759	BRACKET, Alternator belt adjusting	1
5	STD-1727	WASHER, Plain, 3/4 O.D. x 11/32 I.D. x 1/8 thick	2
6	LW-14637 *	SHIM, 13/16 O.D. x 11/32 I.D. x .005 thick	AR
7	LW-14649 *	SHIM, 13/16 O.D. x 11/32 I.D. x .010 thick	AR
8	LW-31H1.31	BOLT, 5/16-18 x 1-5/16 long, hex. head drilled	2
9	LW-10952 *	SHIM, 13/16 O.D. x 13/32 I.D. x .005 thick	AR
10	LW-19262	PULLEY & SHAFT ASSY., Alternator belt adjusting	1
11	78614	PULLEY, Alternator belt adjusting	1
12	78629	BEARING, Ball, alternator idler pulley	1
13	MS16625-1125	RING, Internal retaining, 1-1/8 diameter	2
14	LW-19237	IDLER SHAFT, Alternator belt adjusting	1
15	76768	LOCKWASHER, Alternator idler pulley bearing	1
16	76769	LOCKNUT, Alternator idler pulley bearing	1
17	LW-11635	SHIELD, Idler shaft	1
18	STD-669	WASHER, 33/64 I.D. x 1.00 O.D. x 1/8 thick	1
19	STD-2221	NUT, 1/2-20 self-locking	1
20	AN6-12	BOLT, 3/8-24 x 1-21/64 long, hex. hd., drilled end	1
21	STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	AR
22	STD-872	NUT, 3/8-24 slotted	1
23	STD-713	PIN, Cotter, 3/32 dia. x 3/4 long	1
24	76534	SHIM, 1-1/8 O.D. x 13/32 I.D. x .005 thick	AR
25	AN6-16	BOLT, 3/8-24 x 1-53/64 lg., hex. hd., drilled end	1
26	STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	AR
27	STD-872	NUT, 3/8-24 slotted	1
28	STD-713	PIN, Cotter, 3/32 dia. x 3/4 long	1

* Shim as required for belt alignment between crankcase, idler adj. bracket, alternator and alternator bracket.

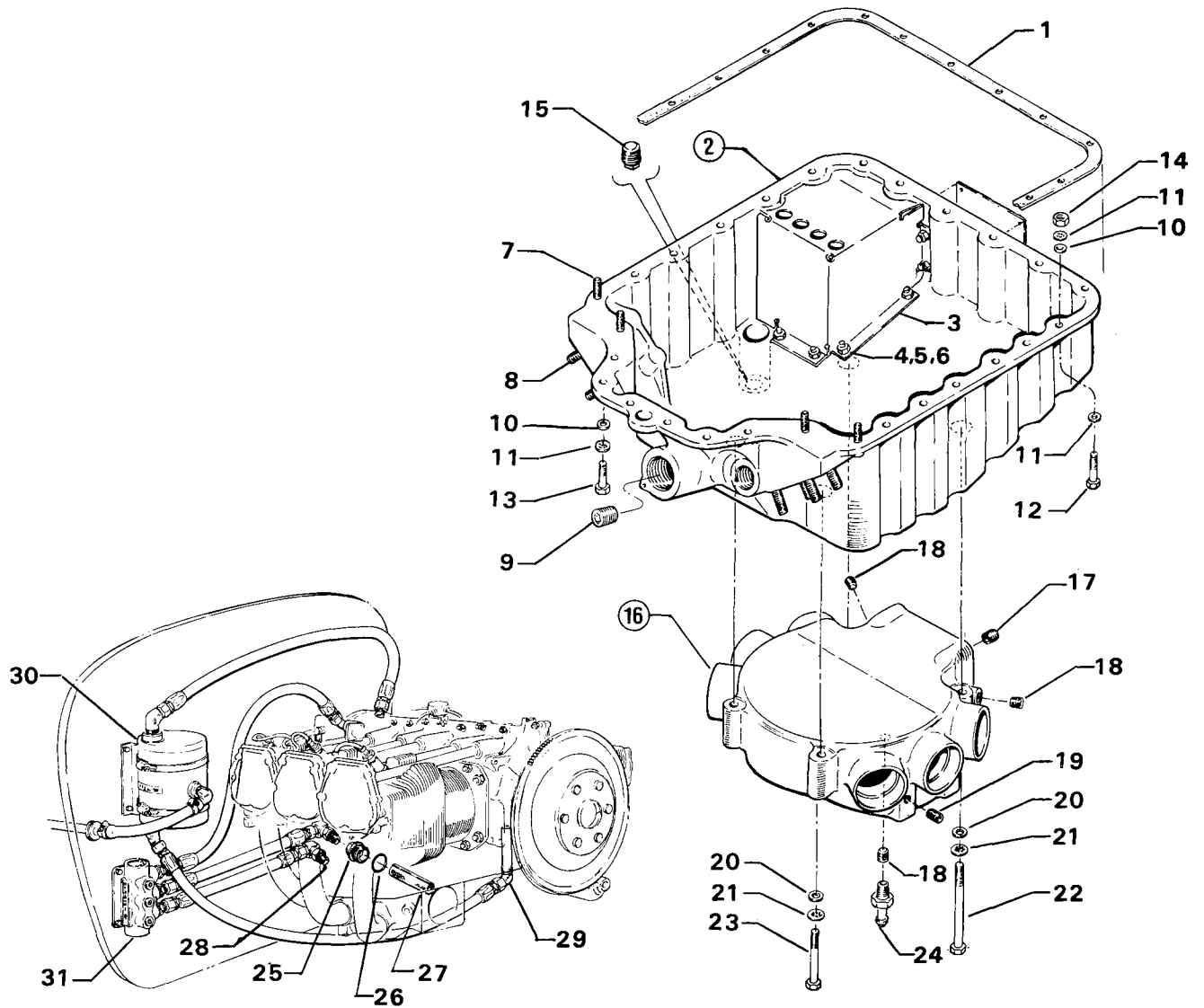


3088

Figure 22. ALTERNATOR MOUNTING WITH PULLEY & SHAFT ASSEMBLY

OIL SUMP AND INDUCTION SYSTEM OIL SUMP AND INDUCTION HOUSING ASSEMBLY

FIG. REF. 23	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-13306	GASKET, Oil sump	1
2	LW-16975	SUMP AND BAFFLE ASSY., Oil	1
3	LW-16974	BAFFLE, Oil sump breather	1
4	LW-18061	BOLT, No. 10-32 self-sealing	6
5	STD-425	WASHER, No. 10 plain	6
6	STD-670	LOCKNUT, No. 10-32	6
7	25C-11	STUD, 1/4 x 1-3/8 long	4
8	38-15	STUD, 3/8-16 x 1-7/8 long	8
9	STD-784	PLUG, 3/8-18 NPT, Allen head	1
10	STD-8	WASHER, 1/4 plain	44
11	STD-160	WASHER, Lock, internal teeth	27
12	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	17
13	LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. head	6
14	STD-1411	NUT, 1/4-20 plain	21
15	STD-551	PLUG, 1/2-14 NPT, sq. hd. drilled	1
16	LW-16899	HOUSING ASSY., Induction	1
17	STD-1164	INSERT, 5/16-18 x 5/8 long, Heli-coil	4
18	1102	PLUG, 1/8-27 NPT, Allen head	4
19	STD-1173	INSERT, 1/4-20 x 1/2 long, Heli-coil	4
20	STD-8	WASHER, 1/4 plain	4
21	STD-160	WASHER, 1/4 internal lock	4
22	STD-2026	BOLT, 1/4-20 NC-3 x 3-7/8 long, hex. head	2
23	STD-2025	BOLT, 1/4-20 NC-3 x 2-7/16 long, hex. head	2
24	75444	ADAPTER ASSY., Fuel drain valve	2
25	LW-16339	ADAPTER, Oil screen, 1-1/2-18 to 7/8-14 thread	1
26	STD-1272	GASKET, 1-1/2 I.D. x 1-3/4 O.D. x 3/32 thick	1
27	77644	SCREEN, Oil suction	1
28	77155	ELBOW, 5/8 flared tube & 13/16-14 NPT, 90°	2
29	LW-16918	FITTING, Sump, oil return, 90°	1
30	LW-13749	OIL SEPARATOR	1
31	LW-13750	OIL VALVE	1



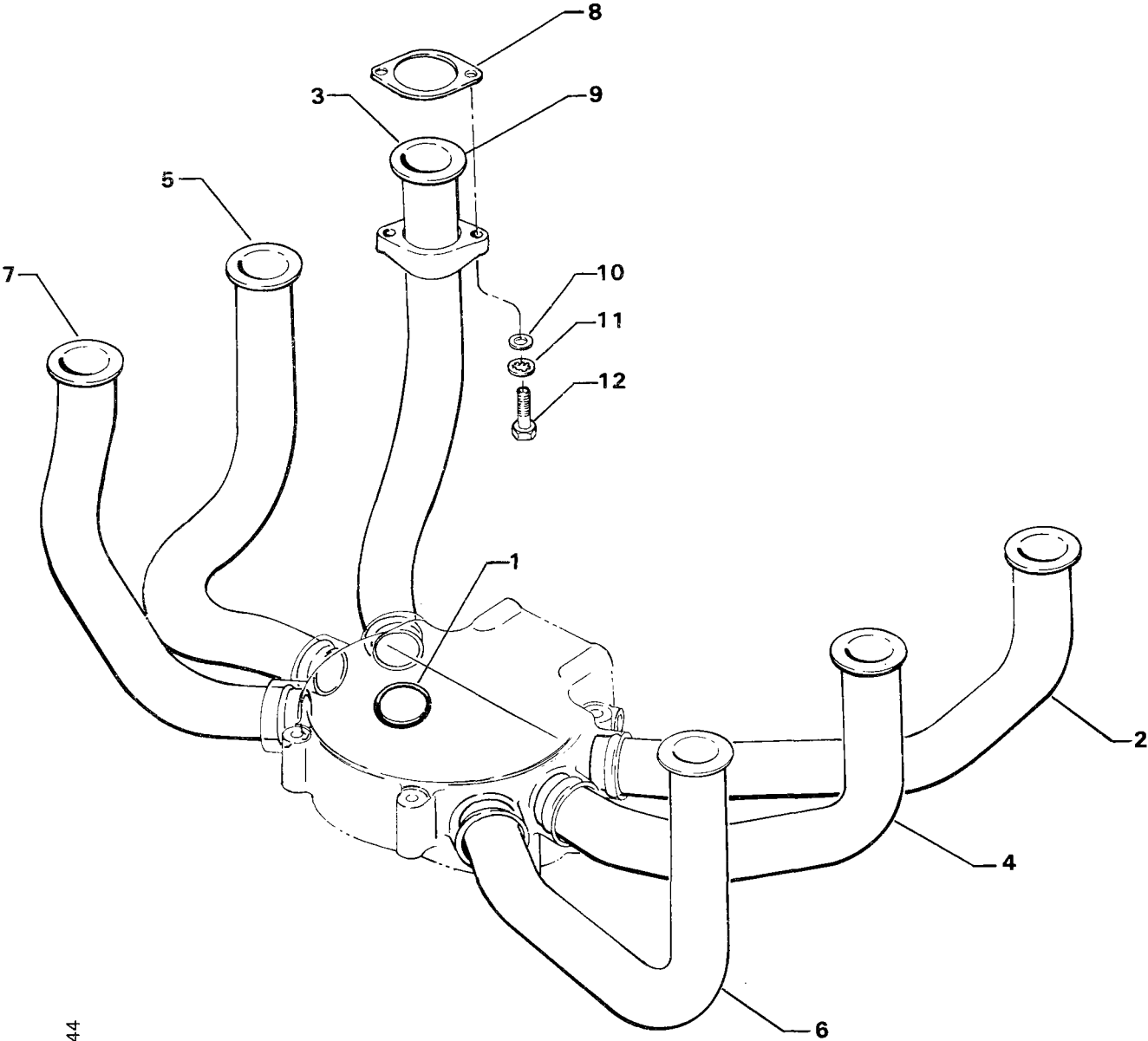
3145

Figure 23. OIL SUMP AND INDUCTION HOUSING ASSEMBLY

OIL SUMP AND INDUCTION SYSTEM
INTAKE PIPE ASSEMBLY

FIG. REF. 24	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	72711	RING, Seal, intake pipes	6
2	LW-16341 *	PIPE, Intake, cylinder no. 1	1
	LW-18641 *	PIPE, Intake, cylinder no. 1	1
3	LW-16342	PIPE, Intake, cylinder no. 2	1
4	LW-16343	PIPE, Intake, cylinder no. 3	1
5	LW-16344	PIPE, Intake, cylinder no. 4	1
6	LW-16345	PIPE, Intake, cylinder no. 5	1
7	LW-16768	PIPE, Intake, cylinder no. 6	1
8	71973	GASKET, 2 bolt flange, 1-7/8 I.D.	6
9	74360	FLANGE, Intake pipe, upper	6
10	STD-8	WASHER, 1/4 plain	12
11	STD-160	WASHER, 1/4 lock, internal teeth	12
12	LW-25-1.25	BOLT 1/4-20 x 1-1/4 long, hex. head	12

* Installations differ. Before ordering, ascertain correct part number stamped on flange end of pipe.



3144

Figure 24. INTAKE PIPE ASSEMBLY

OIL SUMP AND INDUCTION SYSTEM FUEL INJECTOR, FUEL MANIFOLD AND INJECTION NOZZLES

FIG. REF. 25	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	73032	GASKET, Inlet housing	1
2	77442	FUEL INJECTOR, RSA10-AD1 (2524318-10)	1
3	MS29512-6*	SEAL, Oil, 5/64 dia. sect. x 15/32 I.D.	1
4	AN919-6*	REDUCER, Flared tube, 1/4 tubing	1
5	STD-35	WASHER, 5/16 plain	4
6	STD-475	WASHER, 5/16 internal lock	4
7	LW-31-1.31	BOLT, 5/16-18 x 1-5/16 long, hex. head	4
8	STD-1727	WASHER, Plain, 3/4 O.D. x 21/64 I.D. x 1/8 thick	2
9	LW-18265	NOZZLE, Injector	6
10	77418	MANIFOLD ASSY., Fuel	1
11	MS20822-4	ELBOW, 1/4 tube & 1/8 NPT, 90°	1
12	STD-148	NIPPLE, Union, 1/8 NPT	6
13	LW-12604	NIPPLE, 1/8 tube to 1/8 NPT	1
14	73966	SPACER, Fuel manifold bracket	2
15	73965	BRACKET, Fuel manifold	2
16	STD-251	WASHER, No. 10 lock, internal	4
17	STD-82	SCREW, No. 10-24 x 1/2 long, rd. head	4
18	LW-12098-0-200	TUBE ASSY., Fuel manifold to nozzle cyls. 1, 2, 5, 6	4
19	LW-12098-0-170	TUBE ASSY., Fuel manifold to nozzle cyls. 3, 4	2
20	LW-16266-10-75	CLAMP	12
21	LW-16266-10-13	CLAMP	12
22	STD-860	SCREW, No. 10-32 x 5/8 long, fill. head	14
23	STD-425	WASHER, No. 10 plain	2
24	STD-670	NUT, No. 10-32 self-locking	14
25	73136	BRACKET, 90°	2
26	LW-12798-4S242	HOSE ASSY., Fuel injector to fuel manifold	1
27	74278	BRACKET ASSY., Fuel line support	1
28	STD-1891	NUT, Clinch, 10-32 self-locking	2
29	LW-16266-25-63	CLAMP	1
30	STD-860	SCREW, No. 10-32 x 5/8 long, fill. head	1
31	STD-692	SCREW, No. 10-32 x 1/2 long, rd. head	2
32	STD-425	WASHER, No. 10 plain	3
33	STD-670	NUT, No. 10-32 self-locking	1
34	LW-16266-25-88	CLIP, 7/8 I.D. for 1/4 dia. screw (cushion type)	2
35	LW-12799-6S322	HOSE, Fuel pump to injector	1
36	MS20822-6-8	ELBOW, 3/8 flared tube & 1/2 NPT (90°), fuel pump outlet	1

* Assemble in fuel injector outlet.

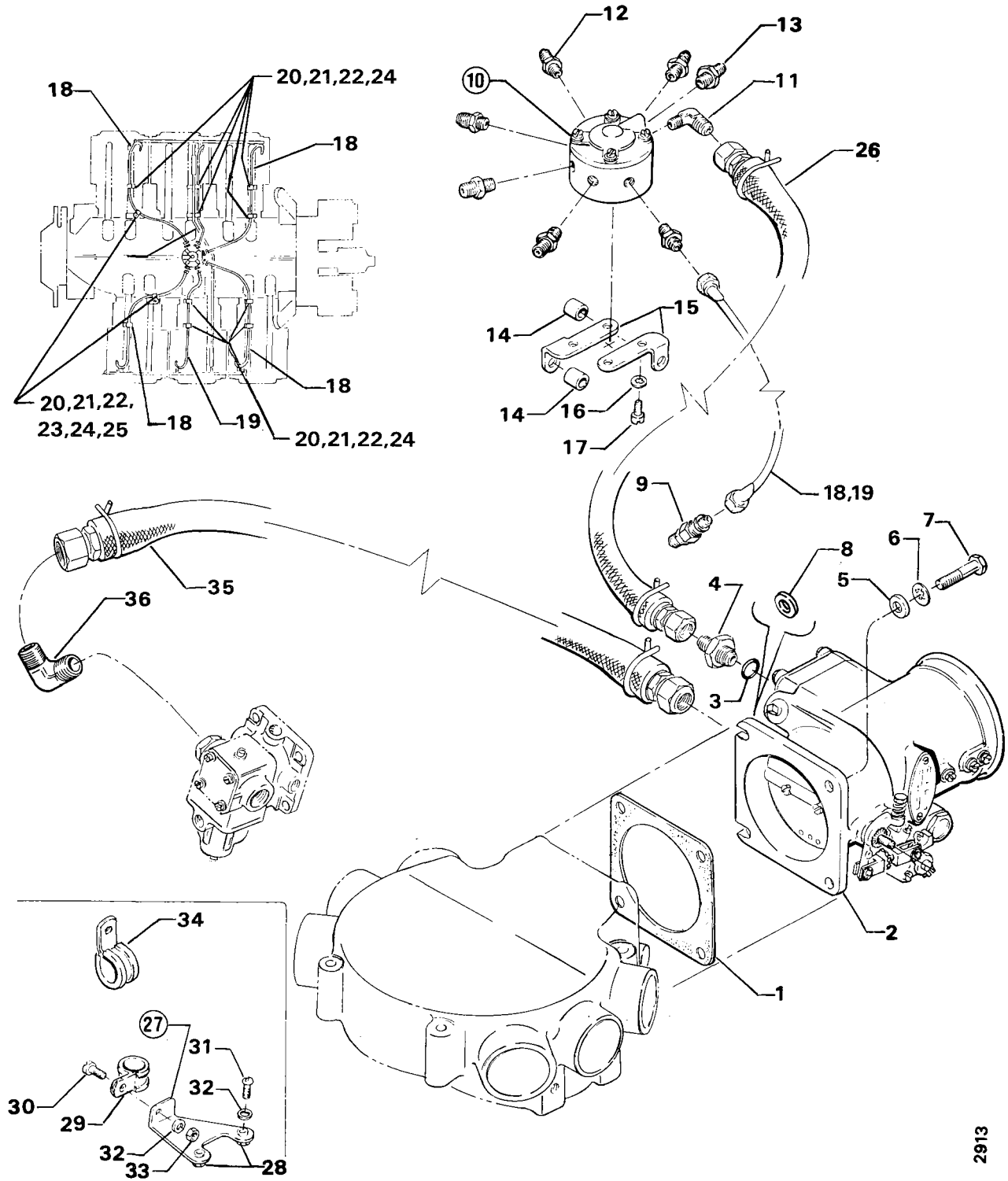


Figure 25. FUEL INJECTOR, FUEL MANIFOLD AND INJECTION NOZZLES

SERVICE KIT SECTION SEAL AND GASKET SET

Part No.	Part Name	Qty.
73185-1	SEAL AND GASKET SET	1
LW-12681	GASKET, Magneto	2
LW-12795	GASKET, Oil filter adapter	1
LW-13306	GASKET, Oil sump	1
LW-13792	SEAL, Crankshaft oil	1
LW-14260	SEAL, Tachometer, oil	1
LW-15628	SEAL, Crankshaft	1
LW-18638	LOCKPLATE, Crankshaft gear	1
LW-18661	SEAL, Shroud tube	24
MS29512-06	SEAL, "O" Ring	1
MS29512-08	SEAL, "O" Ring	1
06E19769-1.00	GASKET, Annular	2
STD-213	SEAL, Oil, fuel pump drive	1
06E19769-0.63	GASKET, Annular	2
06E19769-0.91	GASKET, Annular	1
06E19769-1.25	GASKET, Annular	1
06E19769-0.50	GASKET, Annular	6
STD-1737	RING	1
STD-2217	SEAL, Oil	1
1691-C	GASKET, Fuel pump pad	1
8313	GASKET, Vacuum pump	2
61173	GASKET, Oil pressure, housing	1
61183	GASKET, Accessory adapter	1
62224	GASKET, Magneto	4
66732	GASKET, Valve rocker shaft cover	12
67193	GASKET, Rocker box cover	6
68315	GASKET, Accessory drive adapter	1
69164	GASKET, Fuel pump adapter	1
69551	GASKET, Accessory pad cover	1
70455	GASKET	1
70457	GASKET, Oil level gage	1
71450	GASKET, Rocker box	6
71481	RING, Oil seal	6
71667	LOCKPLATE, Crankshaft idler gear	2
71973	GASKET, Intake flange	6
72053	GASKET, Governor drive pad	1
72075	SEAL, Oil	8
72078	LOCKPLATE, Camshaft gear	2
72091	RING, Oil seal	2
72210	GASKET, Air throttle housing	1
72312	RING, Oil seal	1
72711	RING, Oil seal, intake pipe	6
73032	GASKET, Air inlet housing	1
73383	LOCKPLATE	2
73818	GASKET, Accessory housing	1
74065	"O" RING, Oil filler plug	1
74305	SEAL, Crankshaft oil	1
75118	GASKET, Exhaust flange	12
75233	"O" RING	24
76510	GASKET	1
76940	SEAL, Crankshaft oil	1
60096	GASKET, Fuel pump	1

SERVICE KIT SECTION

CYLINDER, PISTON AND RING ASSEMBLY

Part No.	Part Name	Qty.
05K21120	CYLINDER, PISTON AND RING KIT	1
LW-12993	CYLINDER ASSEMBLY, Nitrided	1
LW-16740	VALVE, Exhaust	1
LW-13622	VALVE, Intake	1
LW-11796	SPRING, Valve, outer	2
LW-11797	SPRING, Valve, inner	2
69532	SEAT, Valve spring, upper intake	1
LW-16475	SEAT, Valve spring, upper exhaust	1
LW-13322	SEAT, Valve spring, lower int. & exh.	2
71481	RING, Cylinder base seal	1
72050	KEY, Valve intake	2
MS13997-3	KEY, Valve exhaust	2
62388	CAP, Valve stem, intake	1
MS13998-3	CAP, Valve stem, exhaust	1
LW-10207-S	PISTON	1
74241	RING, Piston compression	2
73857	RING, Piston, oil regulating	1
LW-14077	PIN, Piston	1
60828	PLUG, Piston pin	2
LW-11775	PLUG, Piston pin	2
66732	GASKET, Valve rocker shaft cover	2
67193	GASKET, Rocker box cover	1
LW-18661	SEAL, Shroud tube	4
SSP-2272	TAG	1

SERVICE KIT SECTION

CRANKCASE ASSY. AND THRU STUD KIT

Part No.	Part Name	Qty.
11F20020-S2-S	CRANKCASE ASSY. AND THRU STUD KIT	1
11F20020-S2*	CRANKCASE ASSEMBLY	1
76220	THRU STUD	8
31C-14	STUD, AN Governor	4
31C-16	STUD, Woodward Governor	4
STD-1339	PLUG	7
AN565-B-1032-H4	SET SCREW	1
AN565-B-1032-H5	SET SCREW	1
SSP-272	TAG, Piston cooling nozzles	1
SSP-582	TAG, Thin wall bearings	1
SSP-1576	TAG, Governor drive idler shaft	1
SSP-1769	TAG, Governor drive pad studs	1
1102	PLUG, 1/8 pipe, oil pressure	4

* See Fig. 1, Page 1-1 for component parts.

NUMERICAL INDEX

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
AN6-12	Bolt	5-5	LW-13077	Spring	3-5
AN6-16	Bolt	5-3	LW-13306	Gasket	6-1
AN6-16	Bolt	5-5	LW-13322	Seat	3-5
AN6-17	Bolt	5-3	LW-13430	Baffle Assy.	3-7
AN6-34A	Bolt	1-13	LW-13622	Valve	3-5
AN565B1032H5	Set Screw	1-9	LW-13641	Cushion	4-1
AN816-10D	Nipple	2-4	LW-13683	Bearing	1-5
AN816-10-12D	Fitting	2-4	LW-13749	Oil Separator	6-1
AN919-6	Reducer	6-5	LW-13750	Valve	6-1
AN931-14-20	Grommet	3-7	LW-13794	Stud	1-1
LW-25-0.63	Screw	1-11	LW-13795	Shaft	1-11
LW-25-0.94	Bolt	2-2	LW-13885	Bearing	1-5
LW-25-1.00	Bolt	6-1	LW-13896	Plug	1-9
LW-25-1.13	Bolt	1-13	LW-13909	Pump	2-3
LW-25-1.13	Bolt	2-2	LW-13923	Bushing	3-1
LW-25-1.13	Bolt	6-1	LW-14021	Shaft	1-9
LW-25-1.25	Bolt	6-3	LW-14077	Pin	3-1
LW-25-1.50	Bolt	1-13	LW-14260	Seal	2-2
LW-25-1.75	Bolt	1-13	LW-14318	Alternator	5-2
LW-25-1.88	Bolt	2-2	LW-14326	Alternator	5-2
LW-25S1.50	Bolt	1-13	LW-14637	Shim	5-5
LW-31-0.94	Bolt	5-3	LW-14649	Shim	5-5
LW-31-1.16	Bolt	5-1	LW-14799	Gage Assy.	1-3
LW-31-1.31	Bolt	6-5	LW-14820	Ring	1-7
LW-31H0.75	Bolt	5-3	LW-14830	Bearing	1-5
LW-31H1.31	Bolt	5-5	LW-14954	Bearing	3-1
LW-10207-S	Piston	3-1	LW-15572	Starter	5-1
LW-10442	Gear	1-9	LW-15592-5-05	Clamp	3-7
LW-10541	Gear Assy.	1-9	LW-15628	Seal	1-5
LW-10799	Spacer	2-3	LW-16266-10-13	Clamp	6-5
LW-10952	Shim	5-5	LW-16266-10-75	Clamp	6-5
LW-11635	Shield	5-5	LW-16266-25-63	Clamp	6-5
LW-11713	Spring	1-5	LW-16266-25-88	Clip	6-5
LW-11775	Plug	3-1	LW-16339	Adapter	6-1
LW-11796	Spring	3-5	LW-16341	Pipe	6-3
LW-11797	Spring	3-5	LW-16342	Pipe	6-3
LW-11956-S	Guide	3-3	LW-16343	Pipe	6-3
LW-11958-S	Guide	3-3	LW-16344	Pipe	6-3
LW-12098-0-170	Tube Assy.	6-5	LW-16345	Pipe	6-3
LW-12098-0-200	Tube Assy.	6-5	LW-16475	Seat	3-5
LW-12186	Nut	3-1	LW-16740	Valve	3-5
LW-12596	Bolt	3-1	LW-16768	Pipe	6-3
LW-12604	Nipple	6-5	LW-16878	Adapter	2-4
LW-12681	Gasket	4-1	LW-16899	Housing Assy.	6-1
LW-12688	Seat	3-3	LW-16918	Fitting	6-1
LW-12707	Adapter	4-1	LW-16975	Sump Assy.	6-1
LW-12795	Gasket	2-7	LW-18061	Bolt	6-1
LW-12798-4S242	Hose Assy.	6-5	LW-18085	Spring	1-5
LW-12799-6S322	Hose	6-5	LW-18109	Impeller	2-2
LW-12993	Cylinder Assy.	3-3	LW-18110	Impeller Assy.	2-2

NUMERICAL INDEX (Cont.)

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
LW-18265	Nozzle	6-5	STD-251	Washer	3-7
LW-18638	Lockplate	1-7	STD-251	Washer	6-5
LW-18641	Pipe	6-3	STD-425	Washer	6-1
LW-18661	Seal	3-5	STD-425	Washer	6-5
LW-18667	Pin	1-7	STD-475	Washer	1-9
LW-18759	Bracket	5-5	STD-475	Washer	2-3
LW-19096	Gear Retainer	4-1	STD-475	Washer	2-5
LW-19210	Counterweight Assy.	1-7	STD-475	Washer	3-3
LW-19237	Idler Shaft	5-5	STD-475	Washer	4-1
LW-19262	Pulley & Shaft	5-5	STD-475	Washer	5-1
LW-19298	Ring	3-3	STD-475	Washer	6-5
LW-19299	Ring	3-3	STD-514	Dowel	1-1
LW-19332-S	Connecting Rod	3-1	STD-551	Plug	6-1
LW-19340	Camshaft Assy.	1-7	STD-557	Dowel	1-1
MS13998-3	Cap	3-5	STD-596	Nut	1-3
MS16625-1081	Ring	1-7	STD-596	Nut	1-13
MS16625-1125	Ring	5-5	STD-669	Washer	5-5
MS20822-4	Elbow	6-5	STD-670	Nut	3-7
MS20822-6-8	Elbow	6-5	STD-670	Locknut	6-1
MS20823-6D	Elbow	3-3	STD-670	Nut	6-5
MS29512-6	Seal	6-5	STD-678	Washer	1-3
STD-8	Washer	1-13	STD-678	Washer	1-13
STD-8	Washer	2-2	STD-684	Nipple	3-7
STD-8	Washer	2-4	STD-690	Washer	5-3
STD-8	Washer	2-5	STD-690	Washer	5-5
STD-8	Washer	2-7	STD-692	Screw	3-7
STD-8	Washer	6-1	STD-692	Screw	6-5
STD-8	Washer	6-3	STD-713	Pin	5-3
STD-19	Dowel	1-9	STD-713	Pin	5-5
STD-33	Washer	1-3	STD-784	Plug	2-1
STD-33	Washer	1-13	STD-784	Plug	2-4
STD-35	Washer	1-9	STD-784	Plug	6-1
STD-35	Washer	2-2	STD-798	Dowel	1-9
STD-35	Washer	2-3	STD-860	Screw	6-5
STD-35	Washer	2-5	STD-872	Nut	1-13
STD-35	Washer	3-3	STD-872	Nut	5-3
STD-35	Washer	5-1	STD-872	Nut	5-5
STD-35	Washer	5-3	STD-1065	Dowel	1-7
STD-35	Washer	6-5	STD-1164	Insert	6-1
STD-82	Screw	6-5	STD-1173	Insert	6-1
STD-148	Nipple	6-5	STD-1211	Plug	1-7
STD-160	Washer	1-13	STD-1272	Gasket	6-1
STD-160	Washer	2-2	STD-1339	Plug	1-1
STD-160	Washer	2-4	STD-1339	Plug	2-2
STD-160	Washer	2-5	STD-1409	Nut	1-13
STD-160	Washer	2-7	STD-1410	Nut	1-9
STD-160	Washer	3-7	STD-1410	Nut	2-3
STD-160	Washer	6-1	STD-1410	Nut	2-5
STD-160	Washer	6-3	STD-1410	Nut	3-3
STD-213	Seal	1-11	STD-1410	Nut	4-1

NUMERICAL INDEX (Cont.)

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
STD-1410	Nut	5-1	383-B	Nut	3-7
STD-1411	Nut	1-13	1028-B	Ball	1-5
STD-1411	Nut	2-4	1102	Plug	1-1
STD-1411	Nut	2-5	1102	Plug	2-1
STD-1411	Nut	2-7	1102	Plug	3-3
STD-1411	Nut	3-7	1102	Plug	6-1
STD-1411	Nut	6-1	1182-J3	Spark Plug	4-1
STD-1420	Nut	2-2	8313	Gasket	2-4
STD-1686	Screw	3-7	8313	Gasket	2-5
STD-1727	Washer	4-1	60430	Cover	2-5
STD-1727	Washer	5-3	60803	Strap	1-13
STD-1727	Washer	5-5	60945	Plug	1-7
STD-1727	Washer	6-5	61084	Spring	1-5
STD-1737	Ring	1-11	61503	Sleeve	3-5
STD-1774	Pin	1-11	62224	Gasket	4-1
STD-1774	Pin	2-5	62417	Plug	2-4
STD-1838	Bolt	5-5	65614	Plug	3-7
STD-1856	Screw	2-7	66670	Bushing	3-3
STD-1872	Insert	3-3	66728	Washer	3-5
STD-1891	Nut	6-5	66732	Gasket	3-7
STD-1925	Screw	3-7	66796	Insert	3-3
STD-2025	Bolt	6-1	67113	Rocker Assy.	3-5
STD-2026	Bolt	6-1	67114	Bushing	3-5
STD-2090	Nut	3-7	67193	Gasket	3-7
STD-2167	Screw	1-11	67530	Bushing	1-11
STD-2168	Nut	1-11	67542	Bearing	4-1
STD-2180	Hose	3-7	68315	Gasket	2-5
STD-2209	Bolt	1-7	68668	Spring	1-5
STD-2217	Seal	2-5	68795	Cover Assy.	3-7
STD-2221	Nut	5-5	69106	Cover	2-5
25C-8	Stud	3-3	69159	Adapter Assy.	1-11
25C-10	Stud	2-7	69164	Gasket	1-11
25C-11	Stud	6-1	69532	Seat	3-5
25C-12	Stud	2-1	69551	Gasket	2-5
25C-12	Stud	2-5	69796	Dowel	1-1
31C-12	Stud	1-1	70455	Gasket	1-9
31C-12	Stud	2-1	70457	Gasket	1-3
31C-12	Stud	3-3	70474	Washer	1-11
31C-13	Stud	1-1	71481	Ring	3-7
31C-16	Stud	1-1	71549	Washer	3-5
31C-17	Stud	1-1	71596	Washer	2-5
31C-19	Stud	2-1	71610	Hook	3-7
31C-21	Stud	2-1	71611	Retainer	3-7
31CD-17	Stud	2-1	71664	Gear Assy.	1-11
38-13	Stud	1-1	71667	Lockplate	1-11
38-15	Stud	6-1	71668	Gear Assy.	1-11
38-16	Stud	1-1	71675	Adapter Assy.	2-5
38-22	Stud	1-1	71903	Bushing	1-7
38D-17	Stud	1-1	71907	Washer	1-7
50-15	Stud	1-1	71973	Gasket	6-3

NUMERICAL INDEX (Cont.)

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
72050	Key	3-5	74323	Strut	5-3
72053	Gasket	1-9	74360	Flange	6-3
72091	Ring	1-5	74388	Rocker Assy.	3-5
72155-S	Bushing	1-7	74389	Bushing	3-5
72158	Bushing	1-1	74494	Plate	3-7
72246	Shaft	1-11	74641	Shaft	2-2
72255	Shroud Tube	3-5	74887	Spacer	3-7
72343	Stabilizer	3-3	75338	Baffle Assy.	3-7
72344	Stabilizer	3-3	75380	Link	5-3
72378	Cover	1-9	75444	Adapter Assy.	6-1
72566	Gear	1-7	75656-S	Bushing	1-7
72626	Shaft	3-5	75657-S	Bushing	1-7
72702	Tube Assy.	3-7	75675	Extension	1-3
72703	Tube Assy.	3-7	76118	Spacer	1-7
72710	Cover	3-7	76155	Shaft Assy.	1-7
72711	Ring	6-3	76220	Stud	1-13
72834	Cover	3-7	76510	Gasket	2-7
72877	Body	1-5	76534	Shim	5-3
72962	Thrust Button	1-11	76534	Shim	5-5
72964	Gear Assy.	2-5	76734	Zip Strap	4-1
72972	Shaftgear Assy.	1-11	76768	Lockwasher	5-5
73000	Coupling	4-1	76769	Locknut	5-5
73027	Tube Assy.	3-7	76788	Roller	1-7
73032	Gasket	6-5	76961	Clamp	4-1
73136	Bracket	6-5	77155	Elbow	6-1
73249	Washer	1-9	77309	Bushing	1-11
73250	Washer	1-9	77418	Manifold Assy.	6-5
73251	Washer	1-9	77442	Fuel Injector	6-5
73252	Washer	1-9	77467	Spring	1-5
73383	Lockplate	5-3	77579	Support Assy.	1-7
73383	Lockplate	5-5	77644	Screen	6-1
73455	Rod Assy.	3-5	77756	Bracket	5-5
73456	Rod Assy.	3-5	77808	Valve Assy.	1-5
73457	Rod Assy.	3-5	77852	Base Assy.	2-7
73458	Rod Assy.	3-5	77872	Bushing	1-9
73555	Rod Assy.	3-5	77906	Spacer	3-7
73556	Rod Assy.	3-5	78290	Plunger Assy.	3-5
73557	Rod Assy.	3-5	78443	Seal	1-5
73558	Rod Assy.	3-5	78524	Socket	3-5
73648	Roller	1-7	78528	Body Assy.	2-2
73772	Nozzle Assy.	1-1	78614	Pulley	5-5
73810	Bushing	1-7	78629	Bearing	5-5
73818	Gasket	2-1	01P19762-4	Magneto Bag	4-3
73857	Ring	3-1	06E19769-0.63	Gasket	2-4
73965	Bracket	6-5	06E19769-1.25	Gasket	1-5
73966	Spacer	6-5	07A19474	Bracket	5-3
74065	"O" Ring	1-3	11F20020-S2	Crankcase Assy.	1-1
74241	Ring	3-1	12A19770	Bracket	1-3
74278	Bracket Assy.	6-5	13F17752	Crankshaft & Plug	1-7
74309	Bearing	3-1	13F17777	Crankshaft Assy.	1-7

NUMERICAL INDEX (Cont.)

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
13S19647	Gear	1-7	37A19773-376	Belt	5-2
16T19468	Seat	3-3	37A19773-382	Belt	5-2
17C19386	Key	3-5	53E19600	Valve Assy.	2-7
17C21191	Cap	3-5	54D19625	Oil Filter	2-7
18A19399	Bearing	1-5	66JC-35SDNN	Magneto	4-1
21C21151	Housing Assy.	2-1	66JP-OSCNN	Magneto	4-1
32B19549	Alternator Assy.	5-2	67U20636	Harness Assy.	4-1
32C19553	Alternator Assy.	5-2	67U20637	Harness Assy.	4-1
36B19484	Pulley	5-2			