

PARTS CATALOG

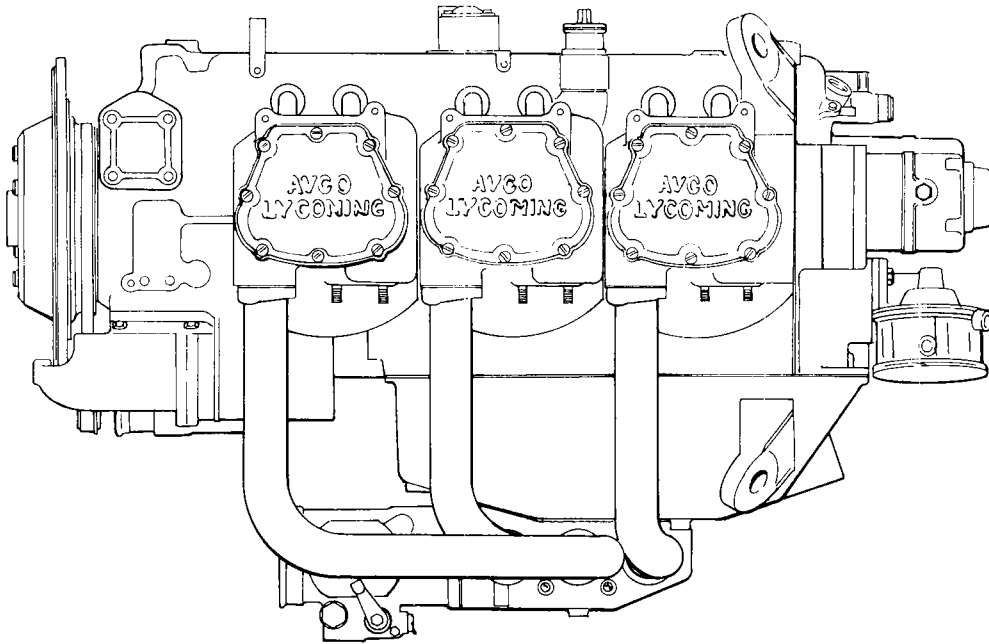
PC-615-5

LYCOMING

IO-540-L1C5

Wide Cylinder Flange Model

AIRCRAFT ENGINES



JULY 1986

Lycoming

652 Oliver Street
Williamsport, PA 17701

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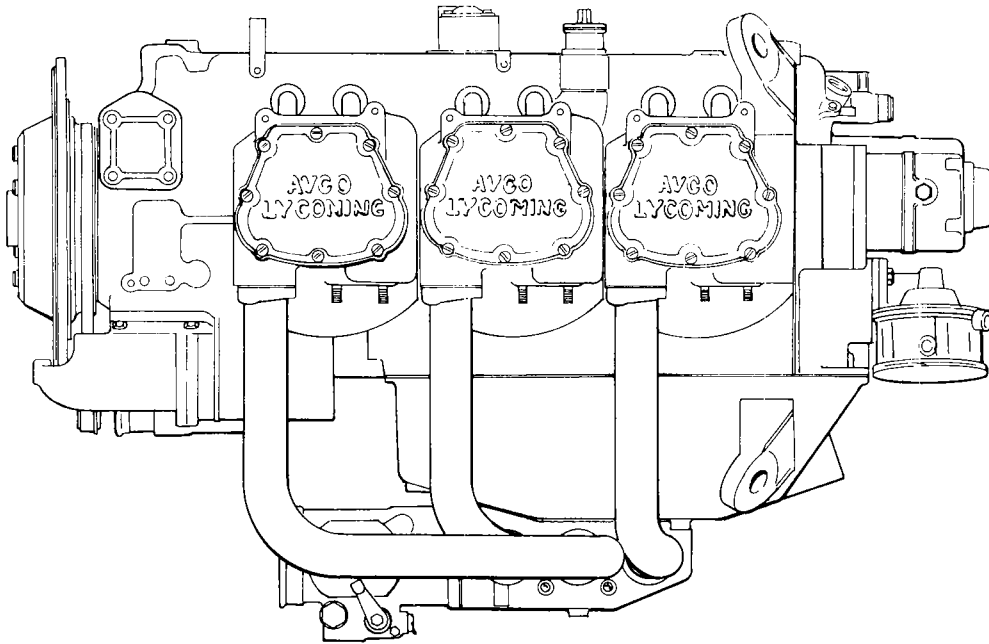
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INTRODUCTION

This illustrated parts catalog contains a complete parts listing for the Lycoming IO-540-L1C5 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 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.

SERVICE BULLETINS, INSTRUCTIONS AND LETTERS

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

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	P40 .040	P50 .050	M03 .003	M06 .006	M10 .010
66670	BUSHING		X	X								
66796	INSERT			X								
69796	DOWEL		X									
71894	SEAT			X		X	X					
71903	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								
75656-S	BUSHING		X	X	X	X						
75657-S	BUSHING		X	X		X						
78443	SEAL								X			
LW-11956	GUIDE	SEE LATEST EDITION OF SERVICE INSTRUCTION NO. 1256 FOR APPLICATION.										
LW-11958	GUIDE	SEE LATEST EDITION OF SERVICE INSTRUCTION NO. 1256 FOR APPLICATION.										
LW-12688	SEAT			X		X	X					
LW-13683	BEARING									X		
LW-13885	BEARING									X	X	X
LW-14830	BEARING									X	X	X
LW-14954	BEARING			X								
STD-1065	DOWEL	X	X	X	X							

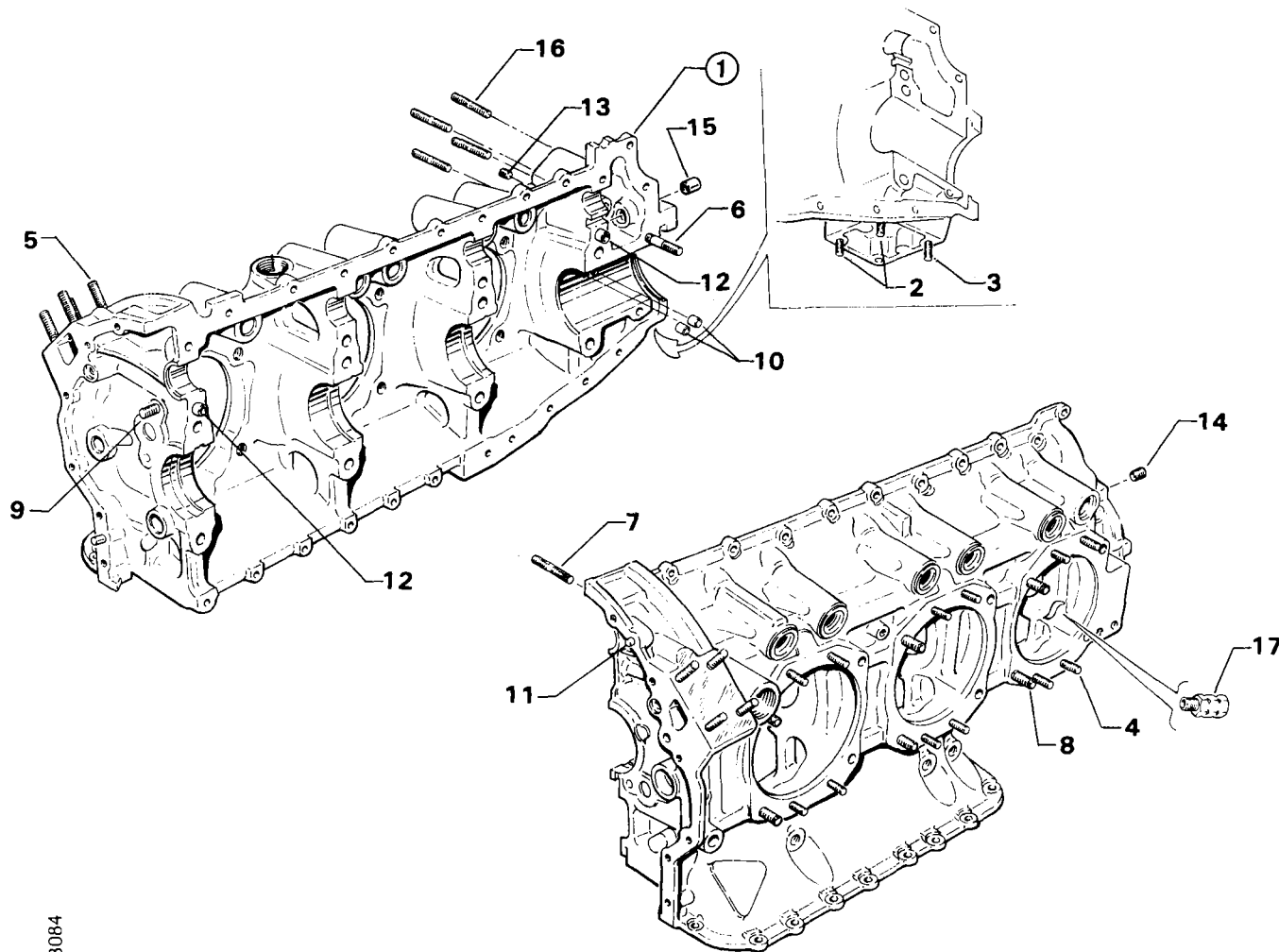
Studs available in P03, P07 and P12.

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-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-S1	CRANKCASE ASSEMBLY	1
2	31C-12	STUD, 5/16-18 x 1-1/2 long	2
3	31C-13	STUD, 5/16-18 x 1-5/8 long	1
4	38-13	STUD, 3/8-16 x 1-5/8 long	24
5	38-16	STUD, 3/8-16 x 2.00 long	8
6	38-22	STUD, 3/8-16 x 2-3/4 long	1
7	38D-17	STUD, 3/8-16 x 2-1/8 long, drilled	1
8	50-15	STUD, 1/2-20 x 1-7/8 long	12
9	LW-13794	STUD, 5/16-18 x 1.00 long, drilled	1
10	69796	DOWEL, Crankshaft bearing	2
11	STD-514	DOWEL, 5/16 dia. x 1/2 long	2
12	STD-557	DOWEL, 1/2 dia. x 11/16 long	2
13	STD-1339	PLUG, 1/16-27 pipe, Allen head	1
14	1102	PLUG, 1/8 pipe, Allen head	4
15	72158	BUSHING, Gov. drive idler shaft	1
16	31C-16	STUD, 5/16-18 x 2.00 long	4
17	73772	NOZZLE ASSY., Piston cooling	6

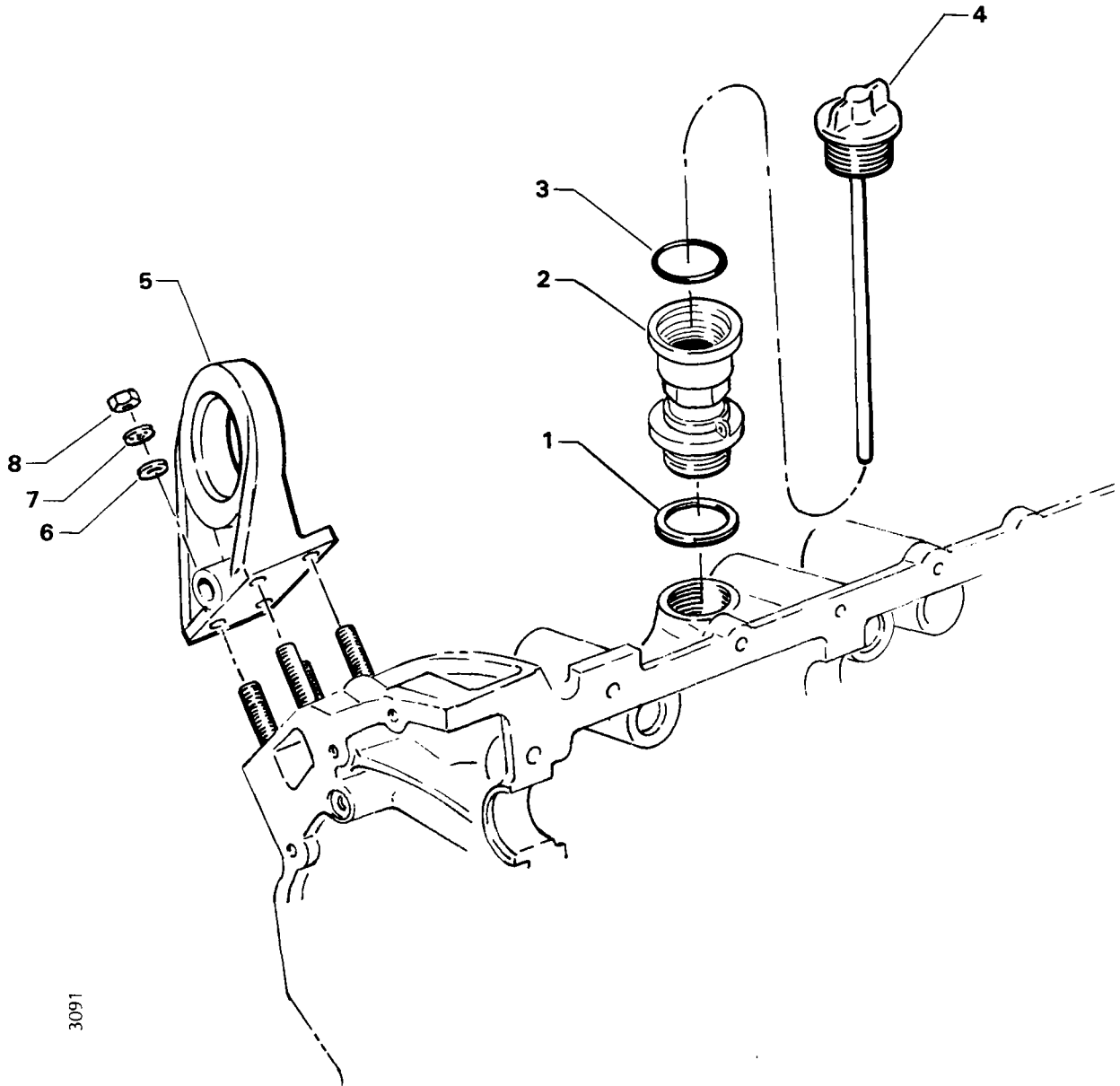


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Figure 1. CRANKCASE ASSEMBLY

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-14767	GAGE ASSEMBLY, Oil level	1
5	70456	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



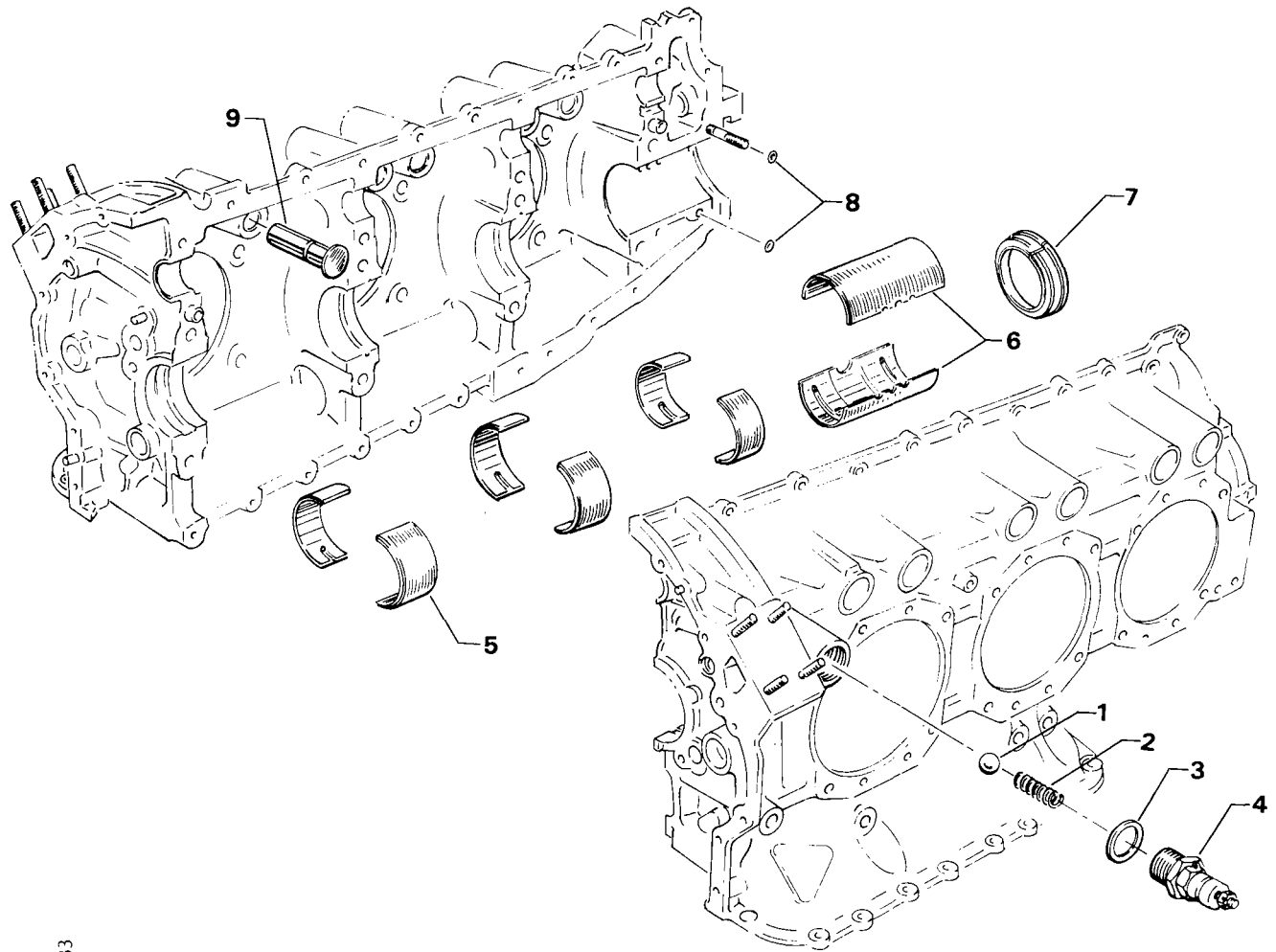
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Figure 2. OIL LEVEL GAGE AND ENGINE MOUNTING BRACKETS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
 CRANKCASE RELATED PARTS

FIG. REF. 3	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	1028B	BALL, 11/16 dia.	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	STD-1045	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-13683	BEARING, Crankshaft	6
	LW-14830	BEARING, Crankshaft (alternate)	6
6	LW-13885	BEARING, Crankshaft, front	2
7	78443	SEAL, Crankshaft oil, split	1
8	72091	RING, Oil seal, 23/64 I.D. x 7/64 dia.	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 revision of SSP-1776, Part 1 for spring identification.



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Figure 3. CRANKCASE RELATED PARTS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
 CRANKSHAFT AND RELATED PARTS

FIG. REF. 4	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-17777	CRANKSHAFT AND COUNTERWEIGHT ASSEMBLY	1
2	LW-17752	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 dia.	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 x 1/4 dia. x 35/64 long	1
10	73644	COUNTERWEIGHT ASSEMBLY	2
11	71903	BUSHING, Dynamic counterweight	8
12	76788	ROLLER, Dynamic counterweight, 6.3 order	2
13	76787	ROLLER, Dynamic counterweight, 5.1 order	2
14	LW-14820	RING, Internal retaining	8
15	71907	WASHER, Dynamic counterweight	8
16	67514	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	77579	SUPPORT ASSY., Starter ring gear, 12/14 pitch	1
20	72566	GEAR, Starter ring, 12/14 pitch	1

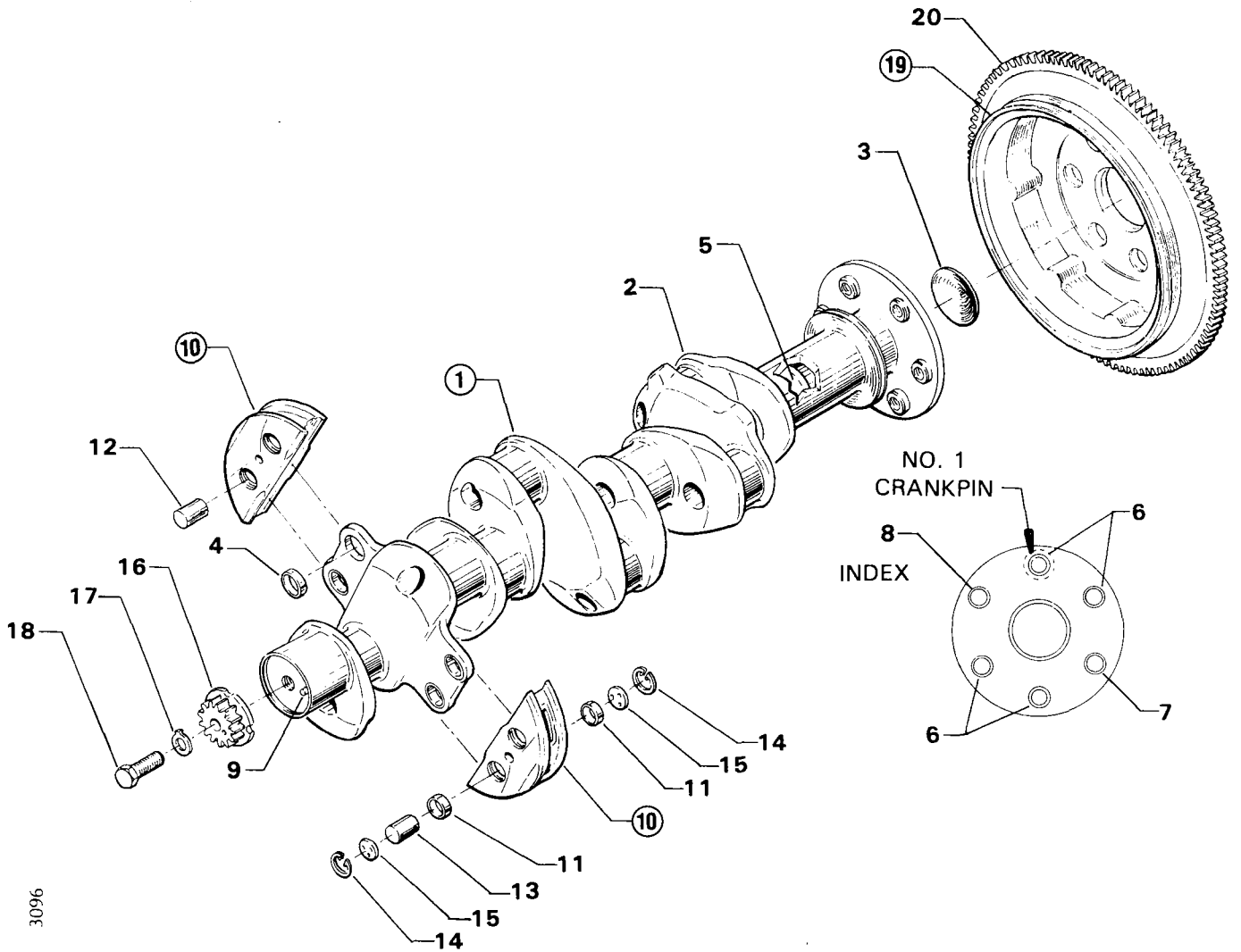
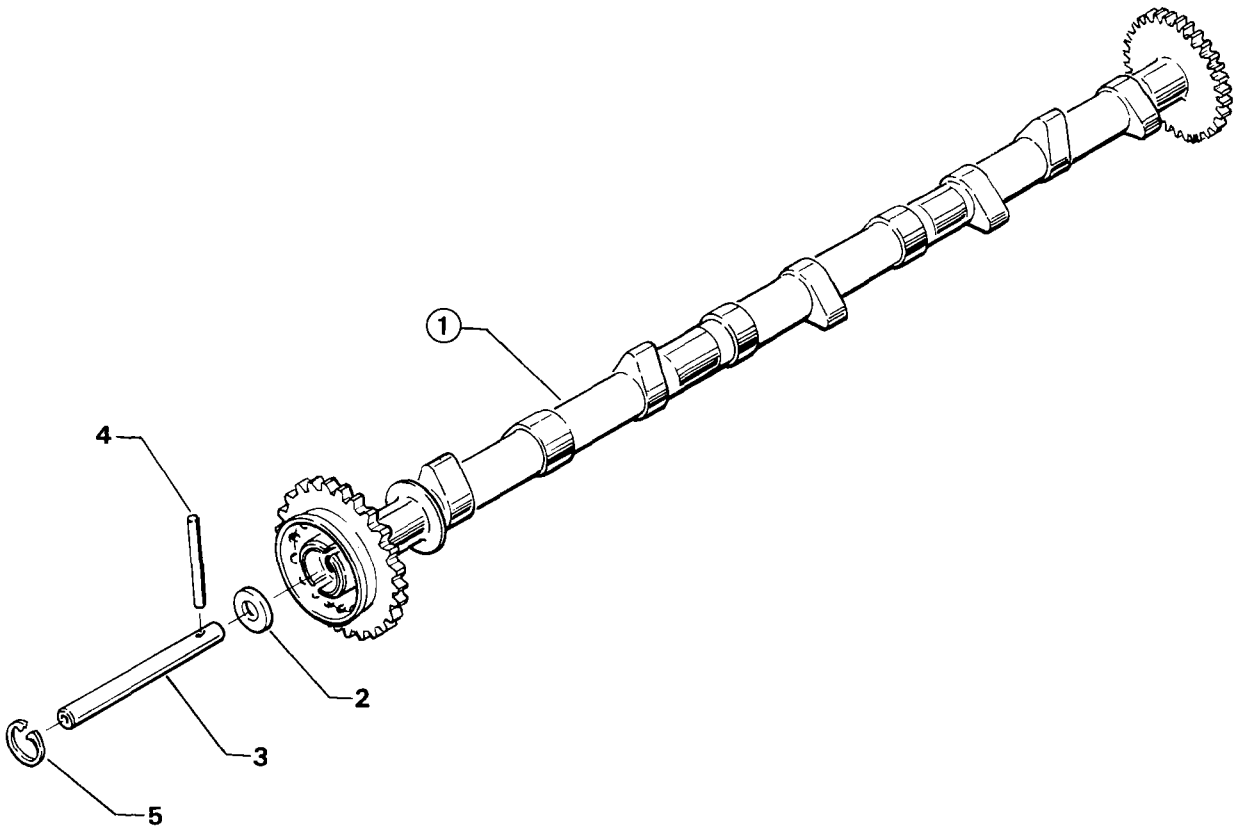


Figure 4. CRANKSHAFT AND RELATED PARTS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
 CAMSHAFT AND RELATED PARTS

FIG. REF. 5	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-19340	CAMSHAFT ASSEMBLY	1
2	76118	SPACER, Tachometer shaft centering	1
3	76155	SHAFT ASSY., Tachometer	1
4	LW-18667	PIN, 3/16 dia. x 2-21/64 long	1
5	MS16625-1081	RING, Internal retaining	1

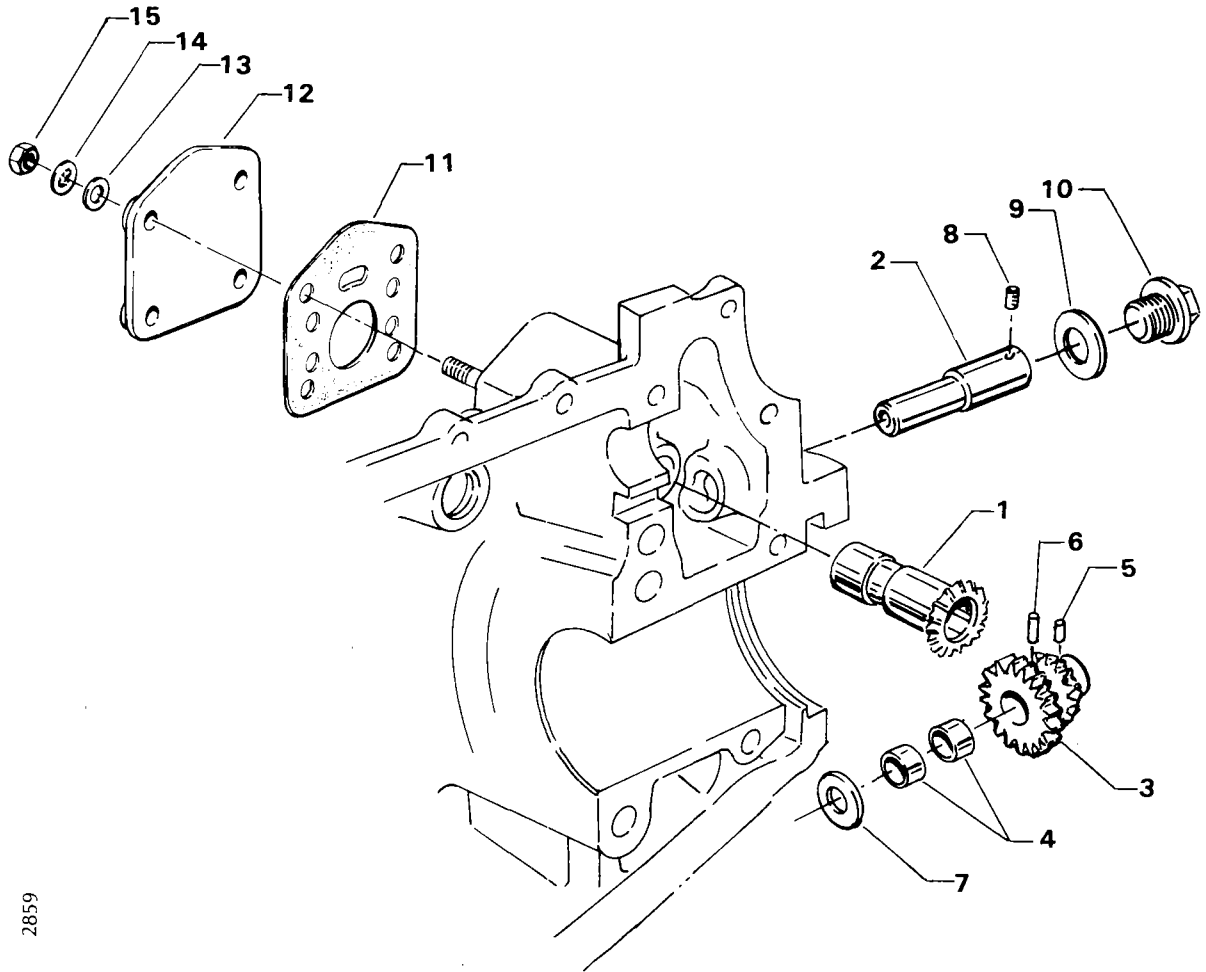


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Figure 5. CAMSHAFT AND RELATED PARTS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
 PROPELLER GOVERNOR DRIVE ASSEMBLY

FIG. REF. 6	PART NUMBER	DESCRIPTION	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., Propeller governor idler	1
4	77872	BUSHING, Propeller 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	4
14	STD-475	WASHER, 5/16 lock, internal teeth	4
15	STD-1410	NUT, 5/16-18 plain	4

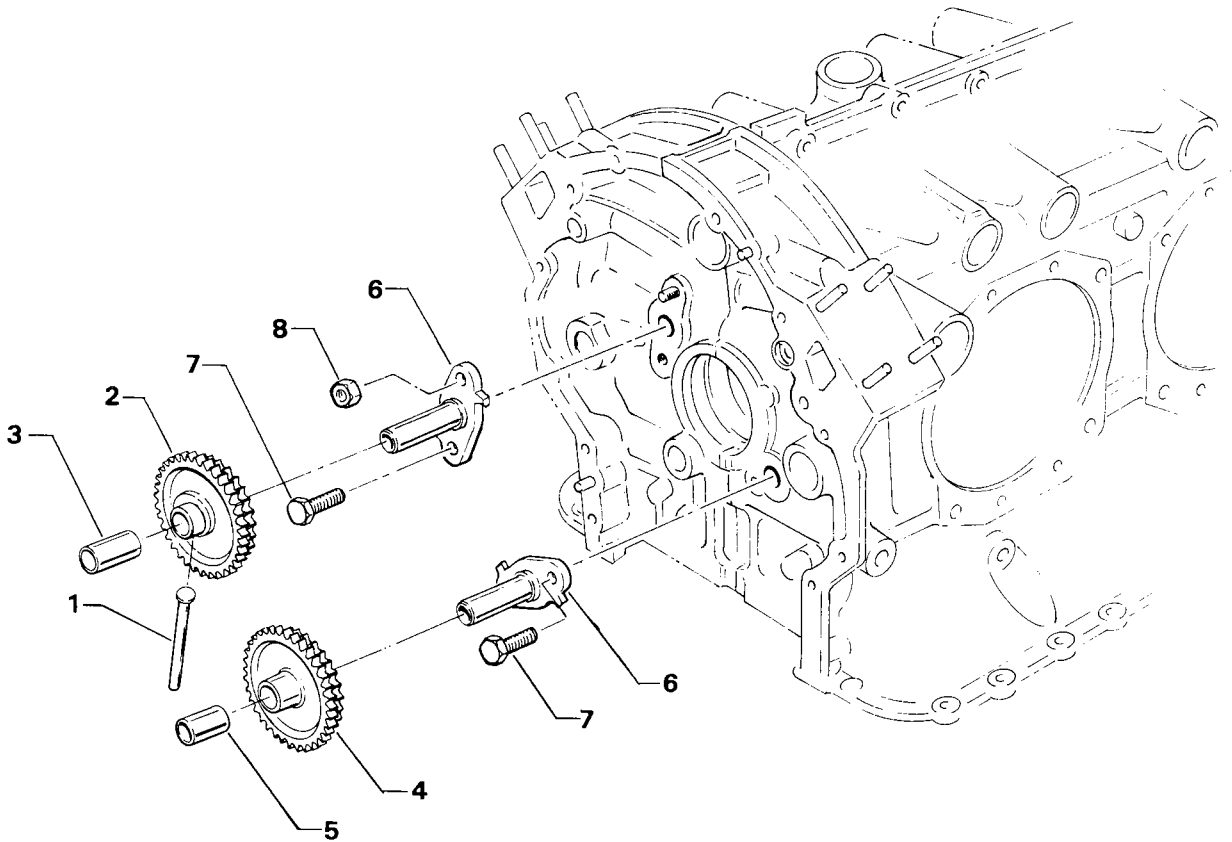


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Figure 6. PROPELLER GOVERNOR DRIVE ASSEMBLY

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
CRANKSHAFT IDLER GEARS

FIG. REF. 7	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	61544	PLUNGER, Fuel pump, long	1
2	71652	GEAR ASSY., Crankshaft idler	1
3	67530	BUSHING, Crankshaft idler gear	1
4	71668	GEAR ASSY., Crankshaft idler, plain	1
5	67530	BUSHING, Crankshaft idler gear	1
6	LW-13795	SHAFT, Crankshaft idler gear	2
7	STD-2167	SCREW, 5/16-18 x 7/8 long, hex. head	3
8	STD-2168	NUT, 5/16-18 NC-3, slotted shear	1

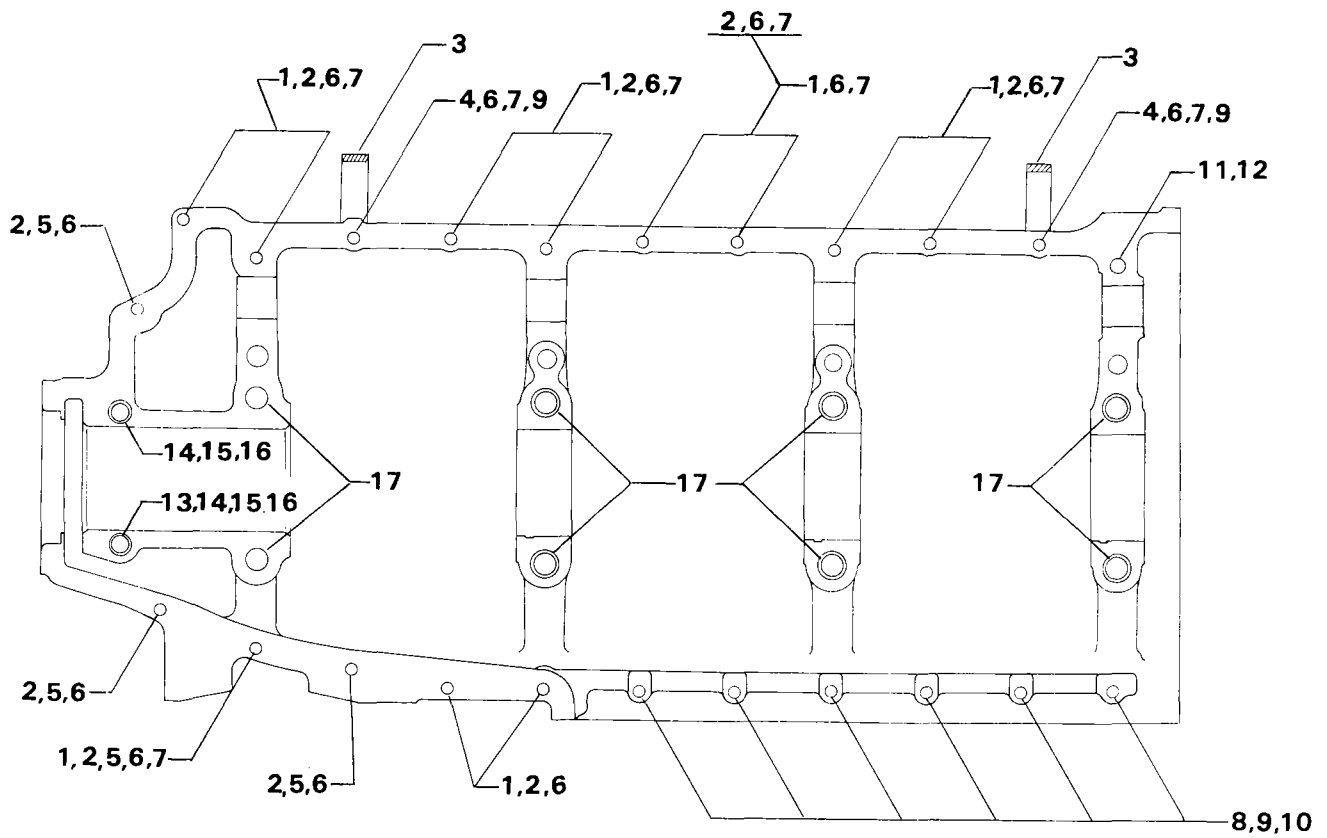


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Figure 7. CRANKSHAFT IDLER GEARS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
 CRANKCASE ATTACHING PARTS

FIG. REF. 8	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. head, drilled 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	8



2131

Figure 8. CRANKCASE ATTACHING PARTS

ACCESSORY HOUSING AND RELATED PARTS
 ACCESSORY HOUSING ASSEMBLY

FIG. REF. 9	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	73818	GASKET, Accessory housing	1
2	76152	HOUSING ASSY., 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	25C-21	STUD, 1/4-20 x 2-5/8 long	4
7	STD-784	PLUG, 3/8 NPT, Allen head	1
8	1102	PLUG, 1/8-27 NPT, Allen head	2

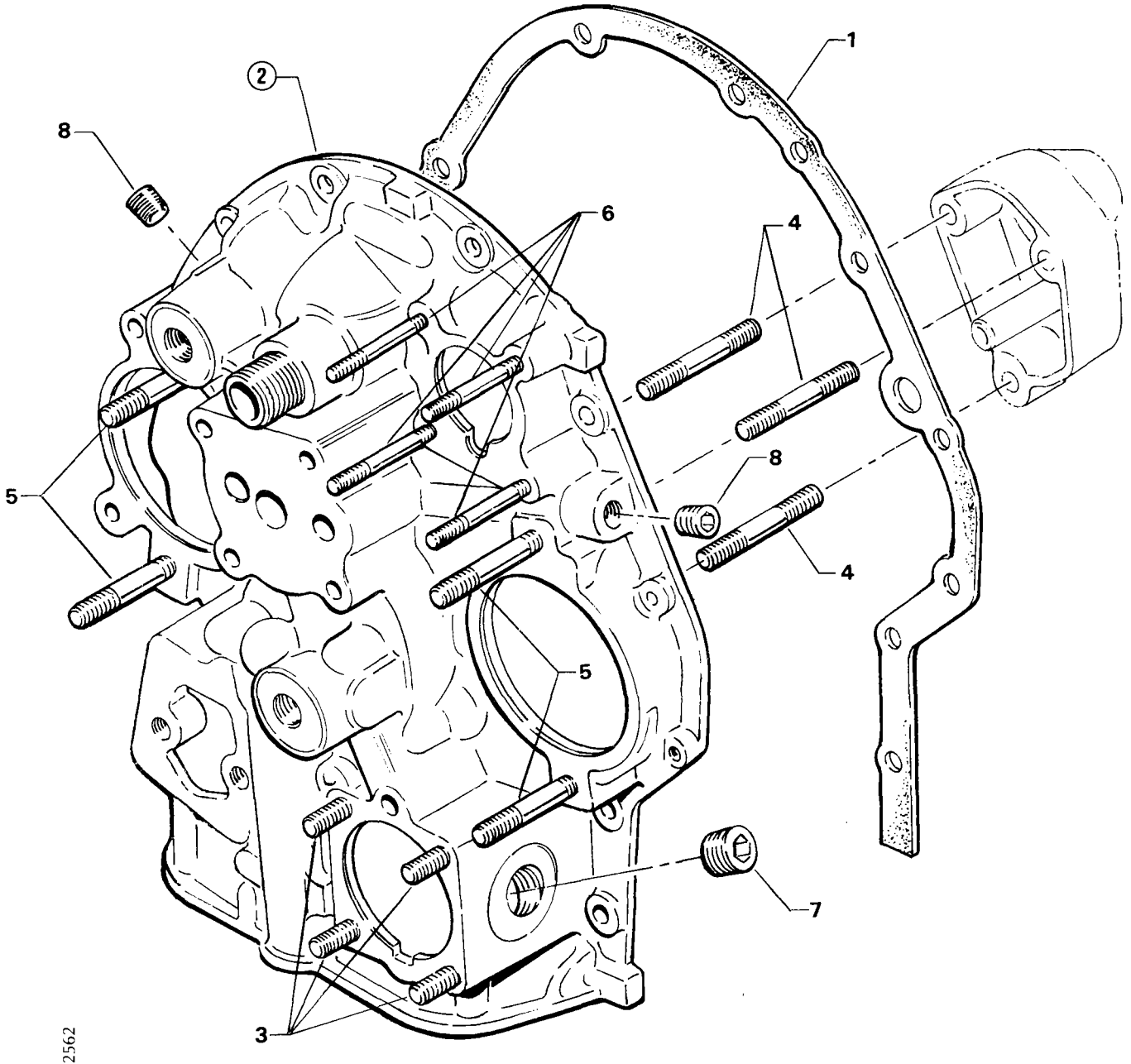
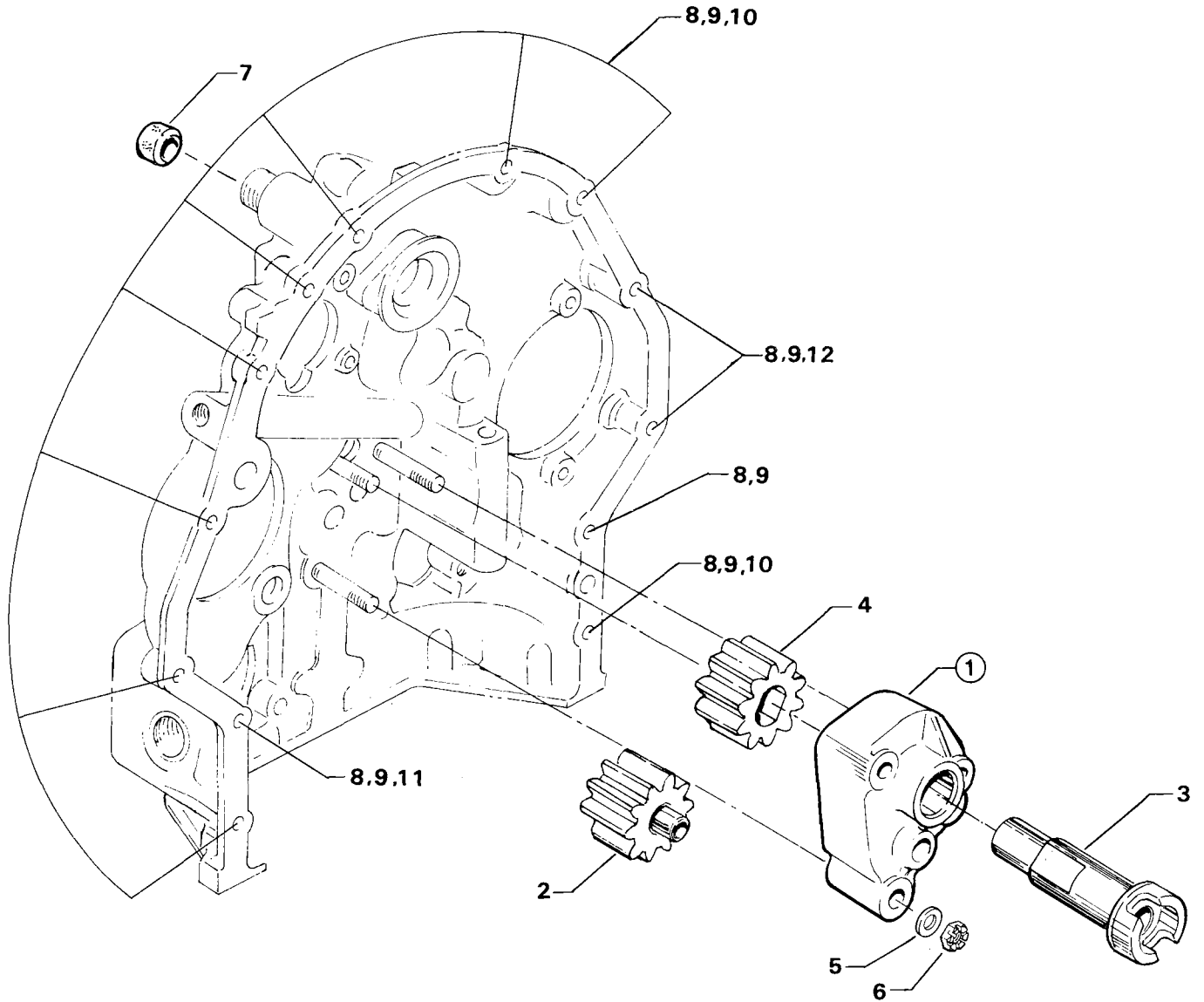


Figure 9. ACCESSORY HOUSING ASSEMBLY

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

FIG. REF. 10	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	78531	BODY, Oil pump	1
2	LW-18110	IMPELLER ASSY., Oil pump driven	1
3	74641	SHAFT, Oil pump drive	1
4	LW-18109	IMPELLER, Oil pump driving	1
5	STD-35	WASHER, 5/16 plain	3
6	STD-1420	NUT, 5/16-18 slotted	3
7	LW-14260	SEAL, Oil, tachometer drive	1
8	STD-8	WASHER, 1/4 plain	10
9	STD-160	WASHER, 1/4 lock, internal teeth	12
10	LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. head	9
11	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	1
12	LW-25-1-7/8	BOLT, 1/4-20 x 1-7/8 long, hex. head	2



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Figure 10. OIL PUMP ASSEMBLY AND ACCESSORY HOUSING ATTACHING PARTS

ACCESSORY HOUSING AND RELATED PARTS
FUEL PUMP ASSEMBLY AND ATTACHING PARTS

FIG. REF. 11	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	60096	GASKET, Fuel pump	1
2	LW-15473	FUEL PUMP (6441234)	1
3	STD-33	WASHER, 3/8 plain	2
4	STD-1882	SCREW, 3/8-16 x 1-9/32 long, socket hd., dr. hd.	2

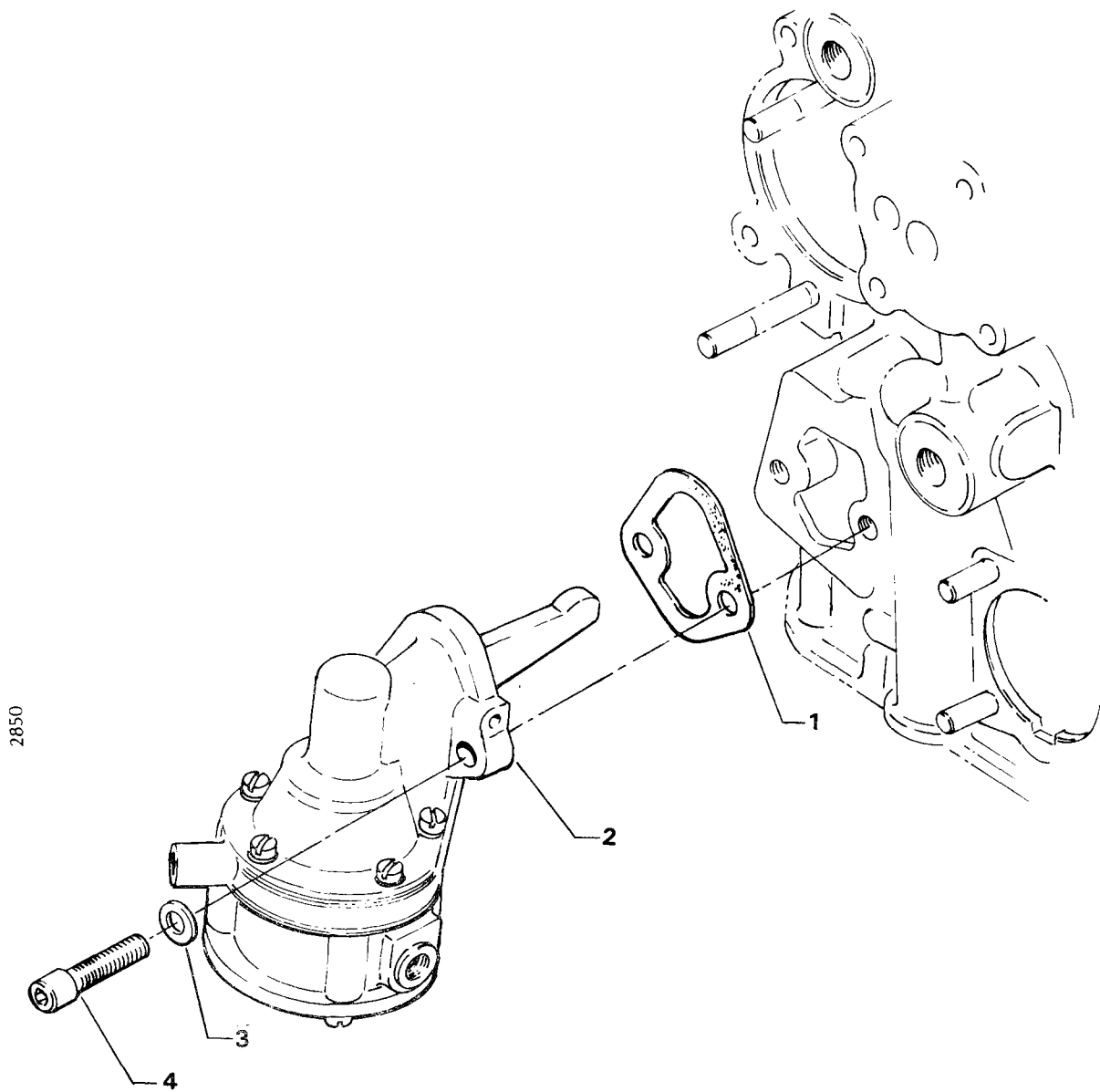
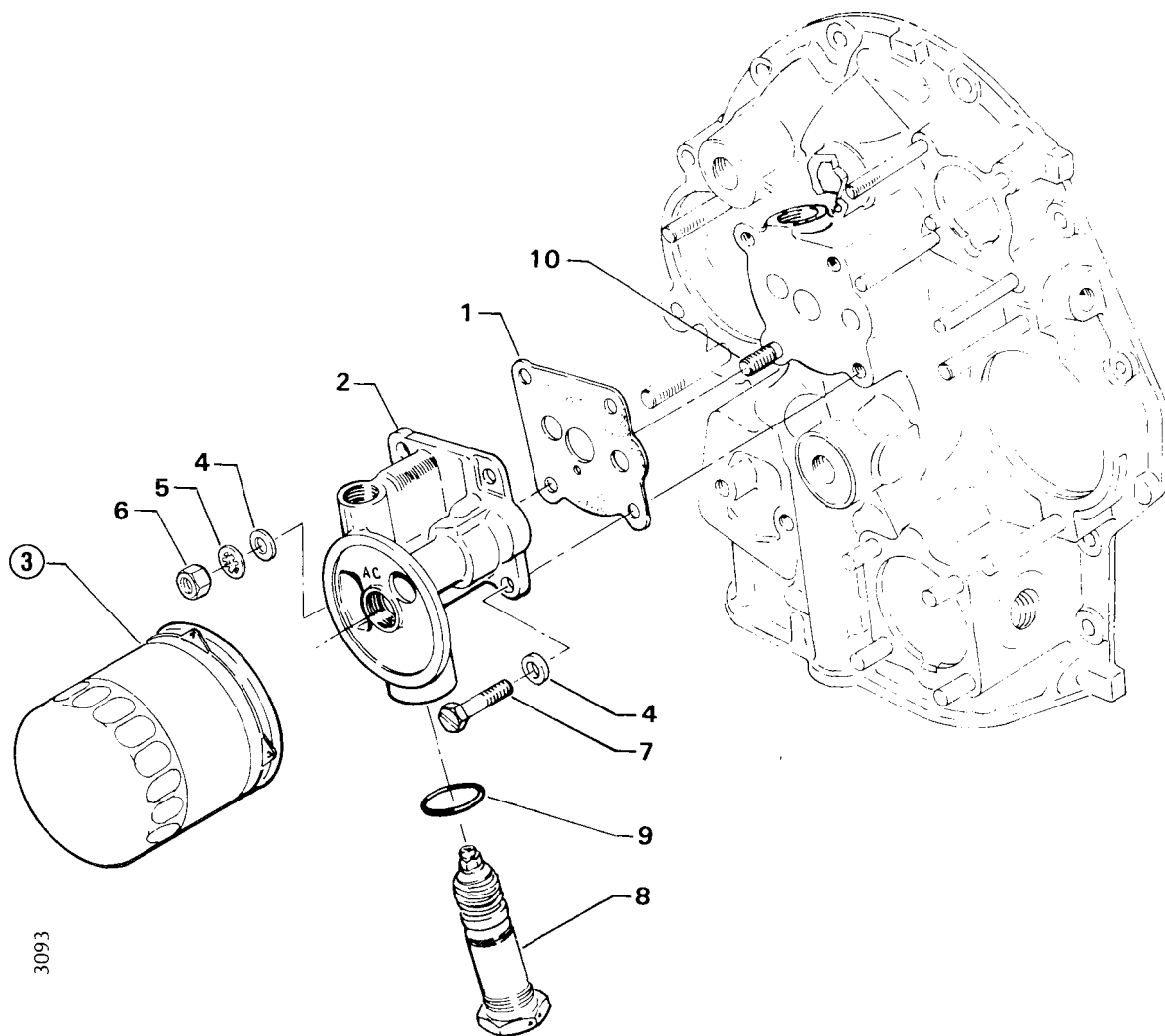


Figure 11. FUEL PUMP ASSEMBLY AND ATTACHING PARTS

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

FIG. REF. 12	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-12795	GASKET, Oil filter adapter	1
2	77852	BASE ASSY., Oil filter	1
3	54D19625	FILTER ASSY., Oil (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 lg., hex. hd., self-locking	3
8	75944	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

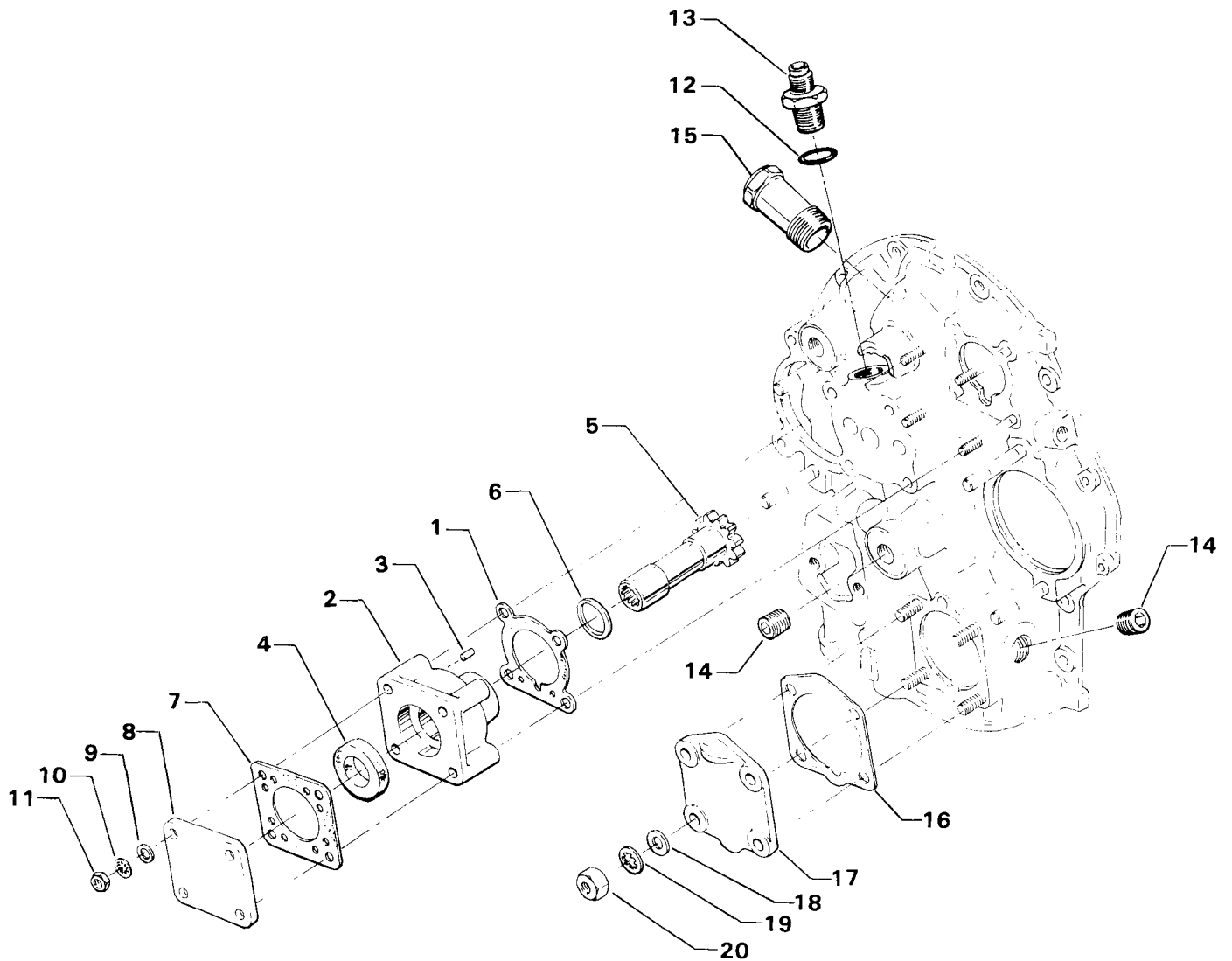


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Figure 12. OIL FILTER ASSEMBLY AND OIL COOLER BYPASS VALVE

ACCESSORY HOUSING AND RELATED PARTS
 VACUUM PUMP DRIVE, OIL COOLER & BREATHER FITTINGS
 AND HYDRAULIC PUMP PAD COVER

FIG. REF. 13	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	61183	GASKET, Accessory adapter	1
2	67536	ADAPTER ASSY., Vacuum pump	1
3	STD-1774	DOWEL, 1/8 dia. x 1/4 long	1
4	STD-2217	SEAL, Oil 7/8 I.D. x 1-1/2 O.D. x 5/16 thick	1
5	72974	GEAR ASSY., Vacuum pump driven	1
6	71596	WASHER, Accessory driven gear	1
7	8313	GASKET, Vacuum pump	1
8	60430	COVER, Vacuum pump	1
9	STD-8	WASHER, 1/4 plain	4
10	STD-160	WASHER, 1/4 lock, internal teeth	4
11	STD-1411	NUT, 1/4-20 plain	4
12	STD-294	GASKET, 7/8 O.D. x 5/8 x 3/32 annular	1
13	69675	CONNECTOR, Accessory housing to oil cooler inlet	1
14	STD-784	PLUG, 3/8 NPT socket	2
15	71651	FITTING, Breather (assemble in acc. housing)	1
16	69551	GASKET, Hydraulic pump pad cover	1
17	69106	COVER, Hydraulic pump pad	1
18	STD-35	WASHER, 5/16 plain	4
19	STD-475	WASHER, 5/16 lock, internal teeth	4
20	STD-1410	NUT, 5/16-18 plain	4



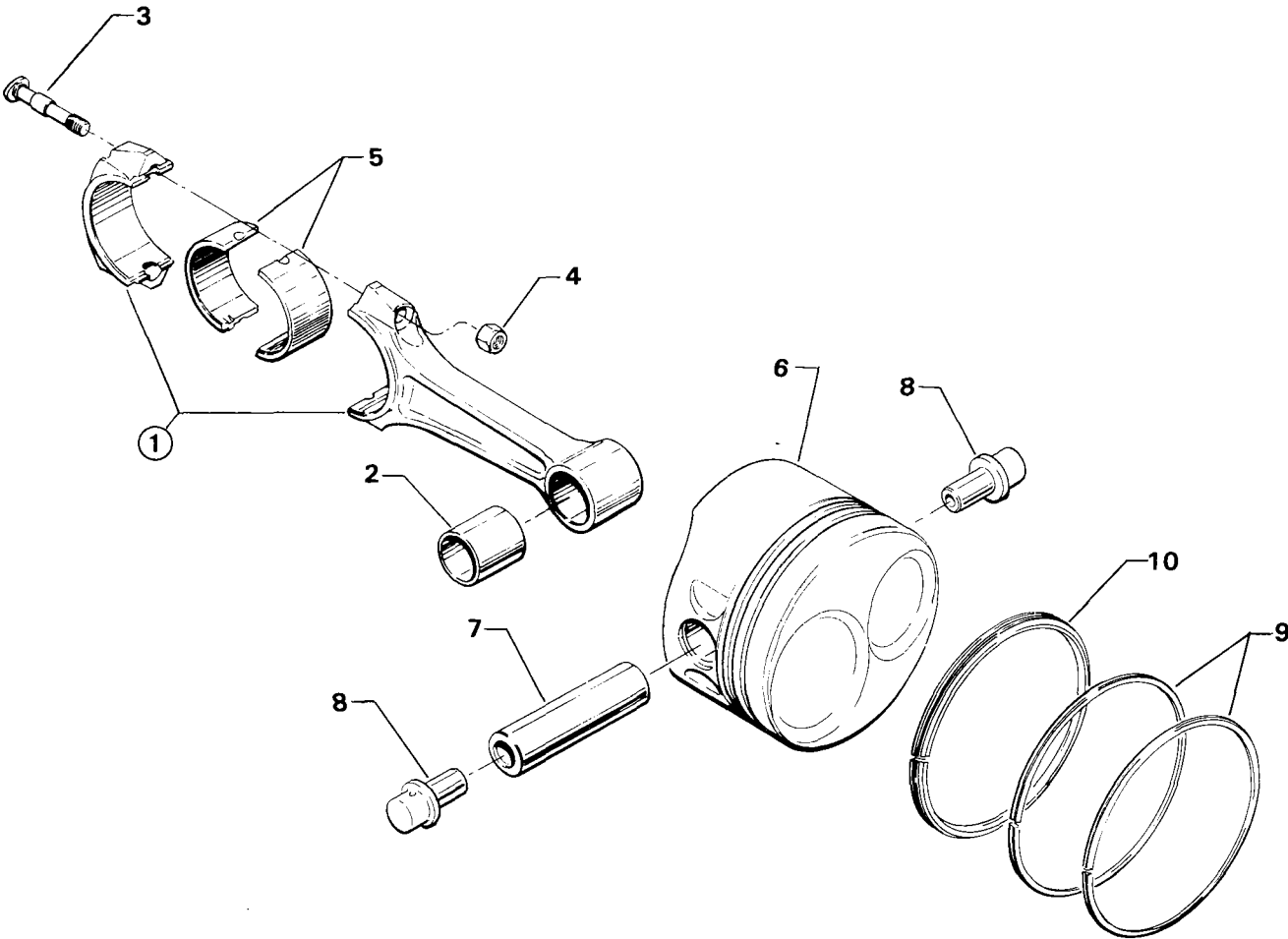
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**Figure 13. VACUUM PUMP DRIVE, OIL COOLER & BREATHER FITTINGS
AND HYDRAULIC PUMP PAD COVER**

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

FIG. REF. 14	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-19332S	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 bolt	12
5	74309	BEARING, Connecting rod	12
	LW-14954	BEARING, Connecting rod (alternate)	12
6	LW-10207S*	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

* Select pistons by weight in sets stamped 'A', 'AS', or 'B', 'BS'.



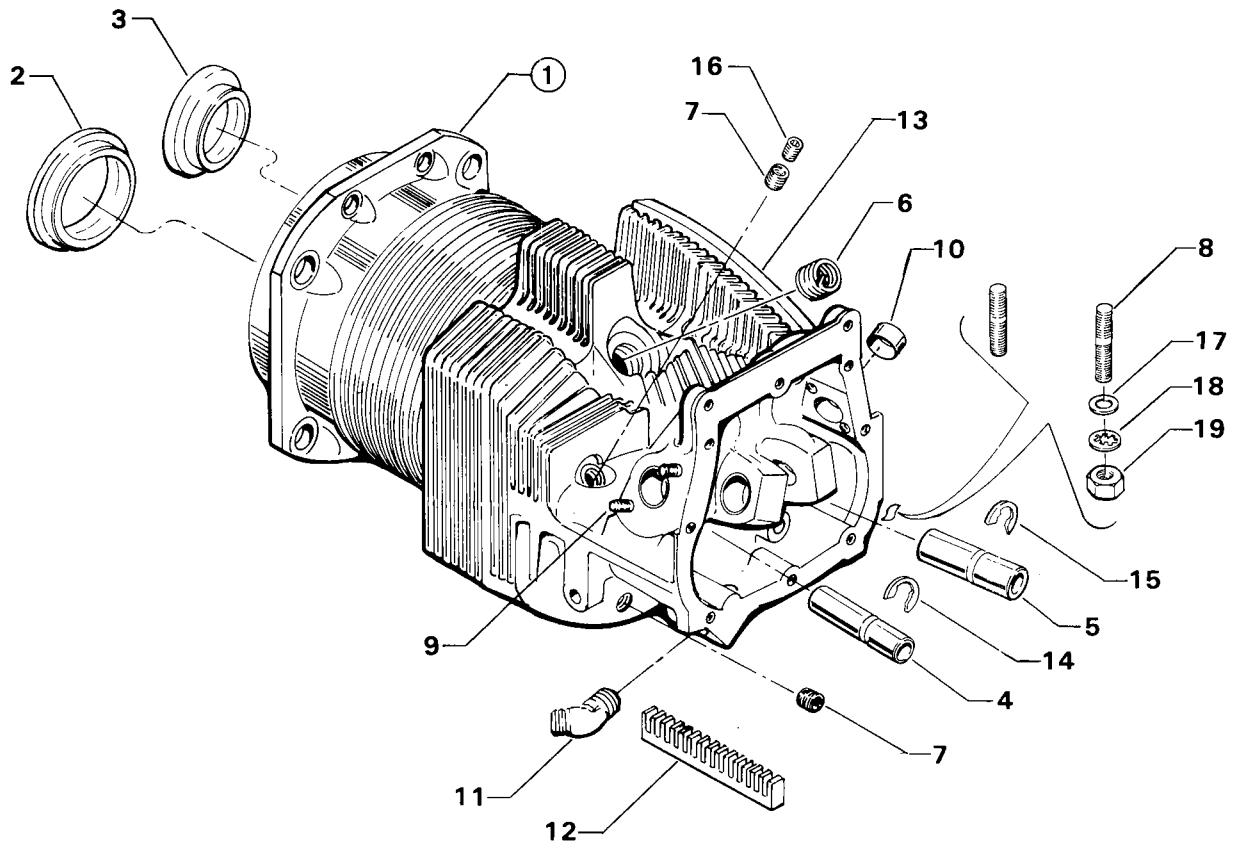
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Figure 14. CONNECTING RODS, PISTONS AND RING ASSEMBLIES

CYLINDER, PISTON AND VALVE TRAIN
 CYLINDER ASSEMBLY

FIG. REF. 15	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-12993	CYLINDER AND HEAD ASSY., Nitrided	6
2	LW-12688	SEAT, Intake valve	6
3	71894	SEAT, Exhaust valve	6
4	LW-11956★	GUIDE, Valve intake, grooved (flangeless)	6
5	LW-11958★★	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, 45° x 3/8 flared tube	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, exhaust	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.



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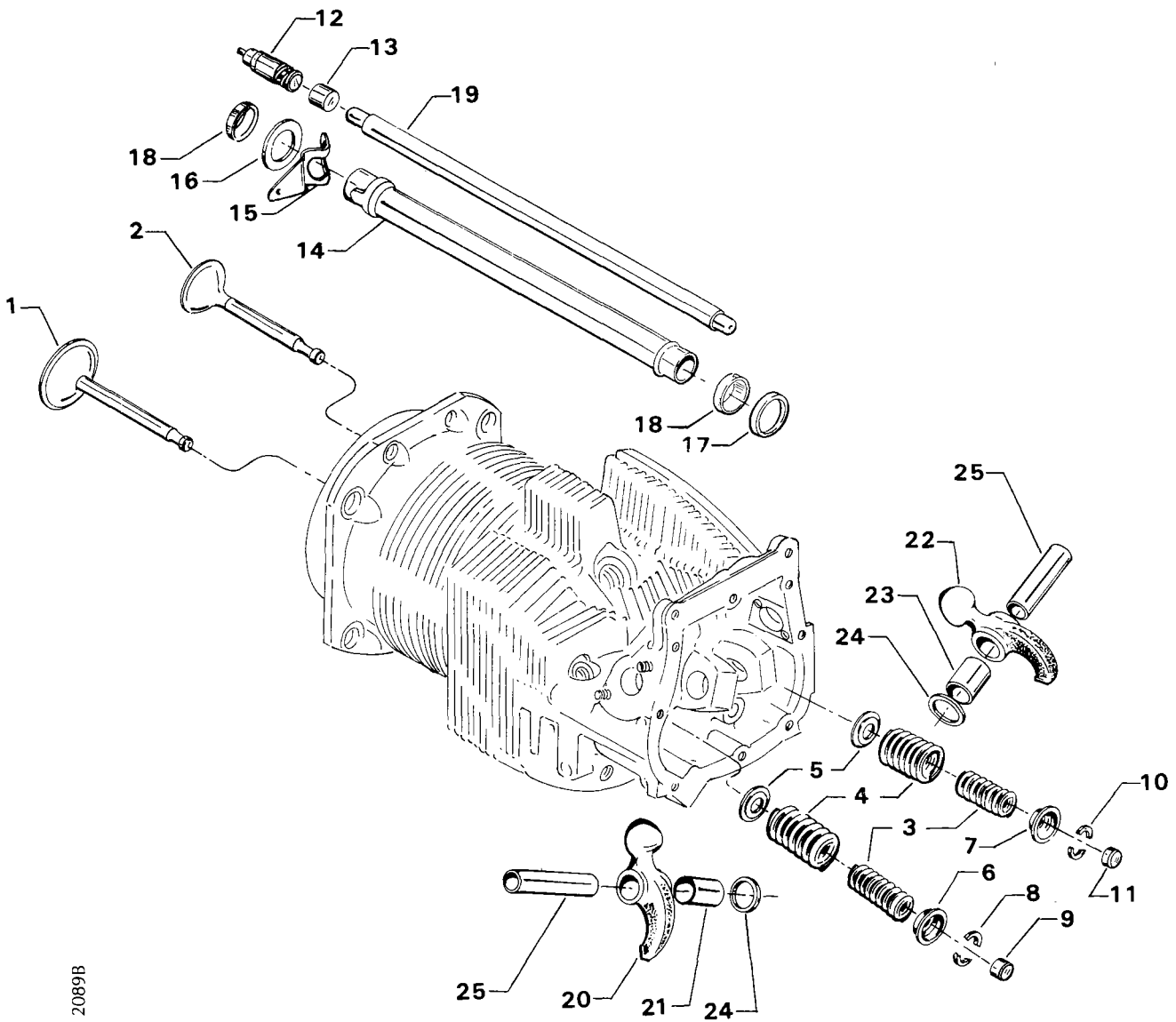
Figure 15. CYLINDER ASSEMBLY

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

FIG. REF. 16	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-13622	VALVE, Intake (small diameter intake rotator)	6
2	LW-16740	VALVE, Exhaust (nimonic)	6
3	LW-11797	SPRING, Valve, inner	12
4	LW-11796	SPRING, Valve, outer	12
5	LW-13322	SEAT, Valve spring, lower intake & exhaust	12
6	69532	SEAT, Valve spring, upper intake (rotator)	6
7	LW-16475	SEAT, Valve spring, upper exhaust (rotator)	6
8	72050	KEY, Valve intake (rotator)	12
9	62388	CAP, Valve stem, intake (rotator)	6
10	MS13997-3	KEY, Valve exhaust (rotator)	12
11	MS13998-3	CAP, Valve stem, exhaust (rotator)	6
12	78290	PLUNGER ASSY., Hydraulic tappet	12
13	78524	SOCKET, Push rod, hydraulic tappet	12
14	72255	TUBE ASSY., Shroud, 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 (Light Wall)	AR
	73456**	ROD ASSY., Push (Light Wall)	AR
	73457**	ROD ASSY., Push (Light Wall)	AR
	73458**	ROD ASSY., Push (Light Wall)	AR
	73555**	ROD ASSY., Push (Heavy Wall)	AR
	73556**	ROD ASSY., Push (Heavy Wall)	AR
	73557**	ROD ASSY., Push (Heavy Wall)	AR
	73558**	ROD ASSY., Push (Heavy Wall)	AR
20	67113	ROCKER ASSY., Intake valve	6
21	67114	BUSHING, Valve rocker	6
22	67112	ROCKER ASSY., Exhaust valve	6
23	67114	BUSHING, Valve rocker	6
24	71549	WASHER, Valve rocker thrust	12
25	72626	SHAFT, Valve rocker	12

* See latest edition of
 ** See latest edition of

Lycoming Service Instruction No. 1284 for application of Part No. 66728 washer.
 Lycoming Service Instruction No. 1060 for complete push rod application.



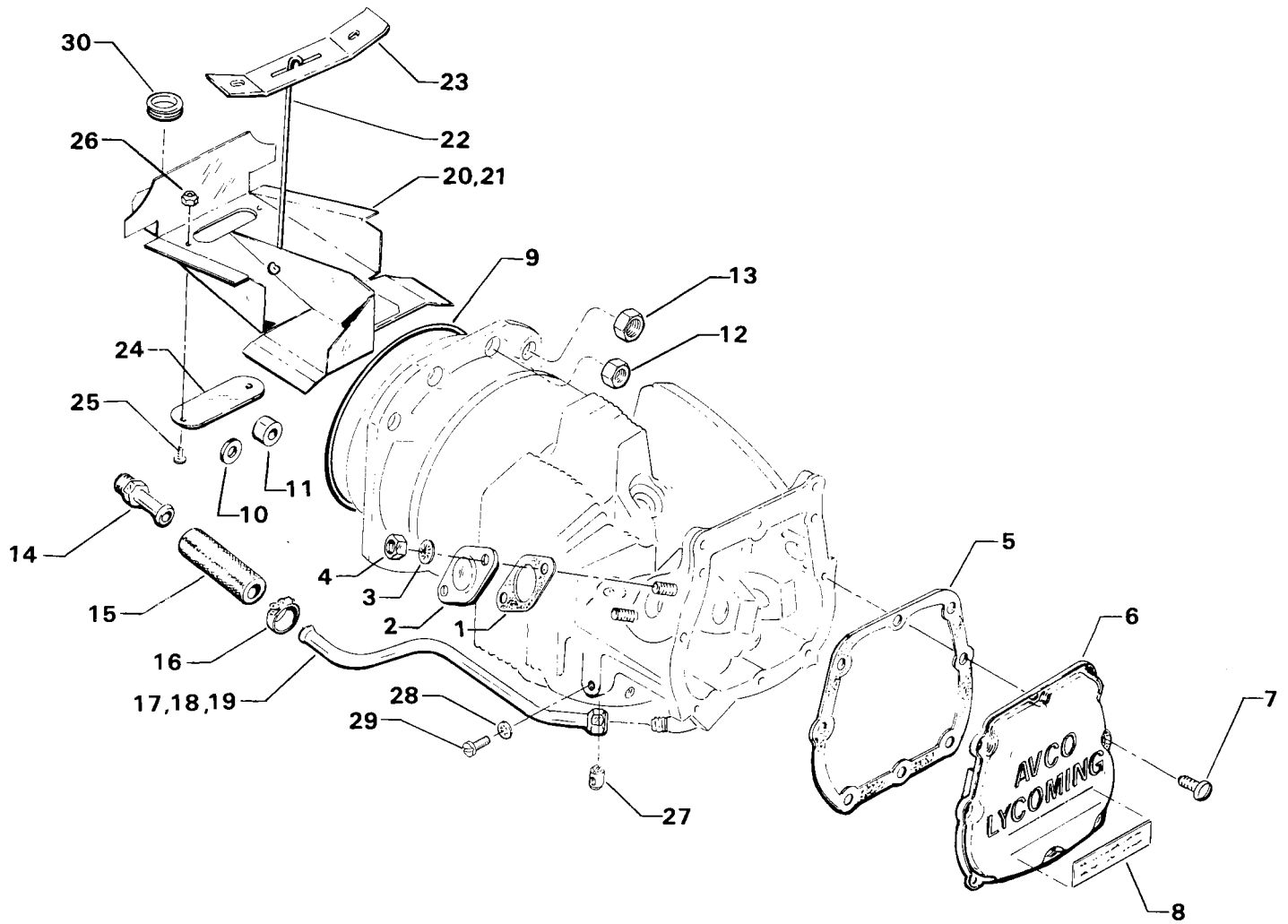
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Figure 16. VALVE ASSEMBLY

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 caution	6
9	71481	RING, Oil seal, 3/32 dia. x 4-27/32 I.D.	6
10	77906	SPACER, 33/64 I.D. x 7/8 O.D. x 1/8 thick	2
11	74887	SPACER, 33/64 I.D. x 7/8 O.D. x 3/8 thick	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, 10-32 x 1/2 long, round head	8
26	STD-670	NUT, 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, 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.



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Figure 17. CYLINDER RELATED PARTS

IGNITION SYSTEM
 MAGNETOS, MAGNETO DRIVES AND SPARK PLUGS

FIG. REF. 18	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-13641	CUSHION, Magneto drive	4
2	62224	GASKET, Magneto and magneto adapter	2
3	LW-12707	ADAPTER, Magneto	2
4	LW-12681	GASKET, Magneto	2
5	73000	COUPLING, Magneto drive	1
6	LW-349310-1	MAGNETO, S6LN-1209 (Bendix)	1
	LW-349370-4	MAGNETO, S6LN-1227, 35° lag (Bendix)	1
7	LW-18378	CLAMP, Magneto	4
8	STD-475	WASHER, 5/16 lock, internal teeth	4
9	STD-1410	NUT, 5/16-18 plain	4
10	LW-720470-3	HARNESS ASSY., Ignition	1
11	STD-160*	WASHER, 1/4 lock, internal teeth	2
12	STD-2029*	BOLT, 1/4-20 NC-3 x 1-1/8 long, hex. head	2
13	STD-696	WASHER, 1/4 plain, thin	AR
14	LW-19096	GEAR RETAINER ASSEMBLY	2
15	67542	BEARING, Ball	2
16	1182-J3**	SPARK PLUG, Champion REM 38E	12

- * Assemble at top rear of cylinders No. 3 and No. 4.
- ** Item No. 16 spark plug is used in current production only. Additional spark plugs are available for this engine. See latest edition of Lycoming Service Instruction No. 1042 for complete listing of all approved spark plugs.

NOTE

Individual harness leads may be replaced by ordering either 10-720633-48 (1B, 2B, 3B, 4B, 5B, 6B, 3T, 4T, 5T, 6T) or 10-720633-72 (1T, 2T).

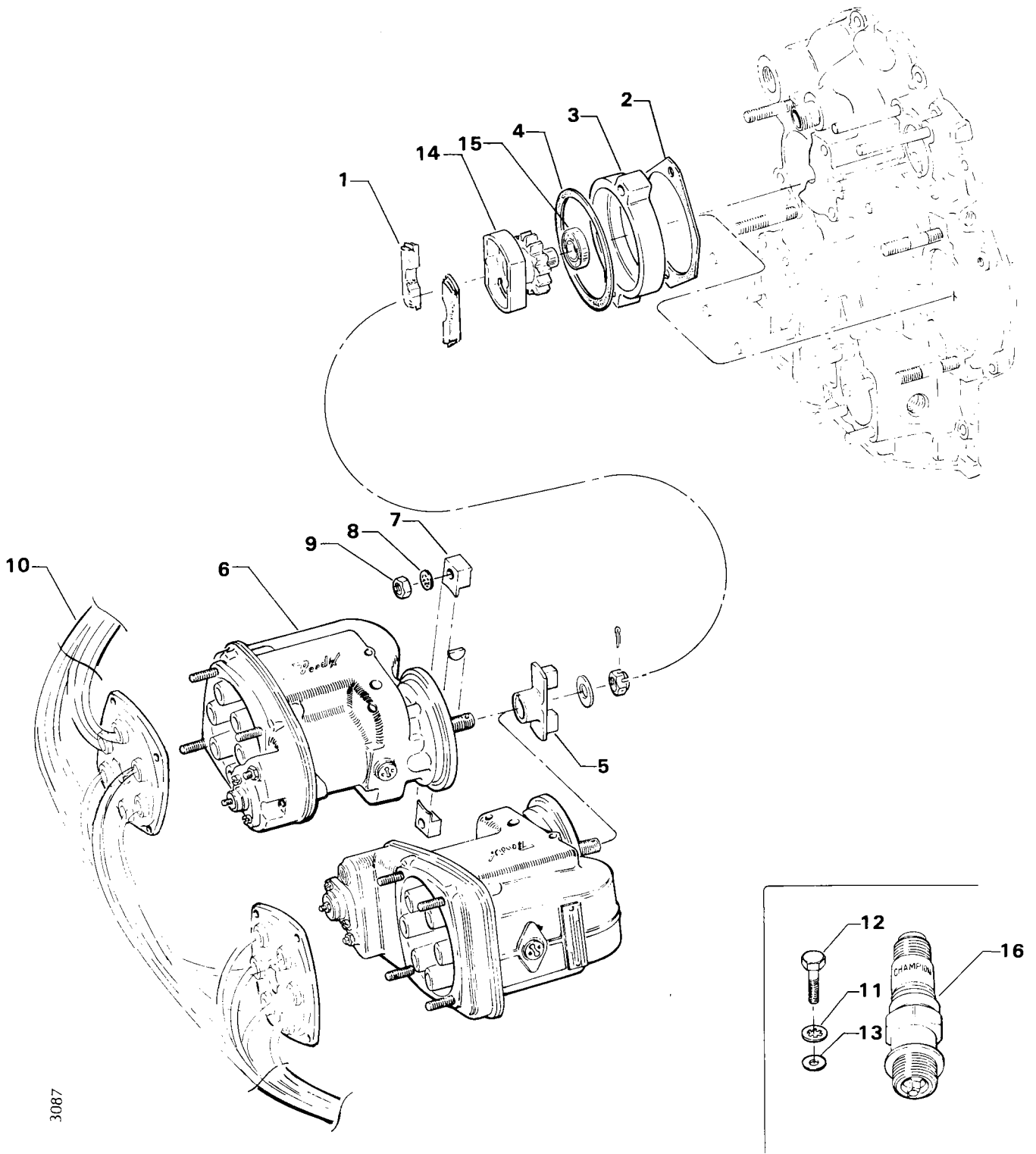


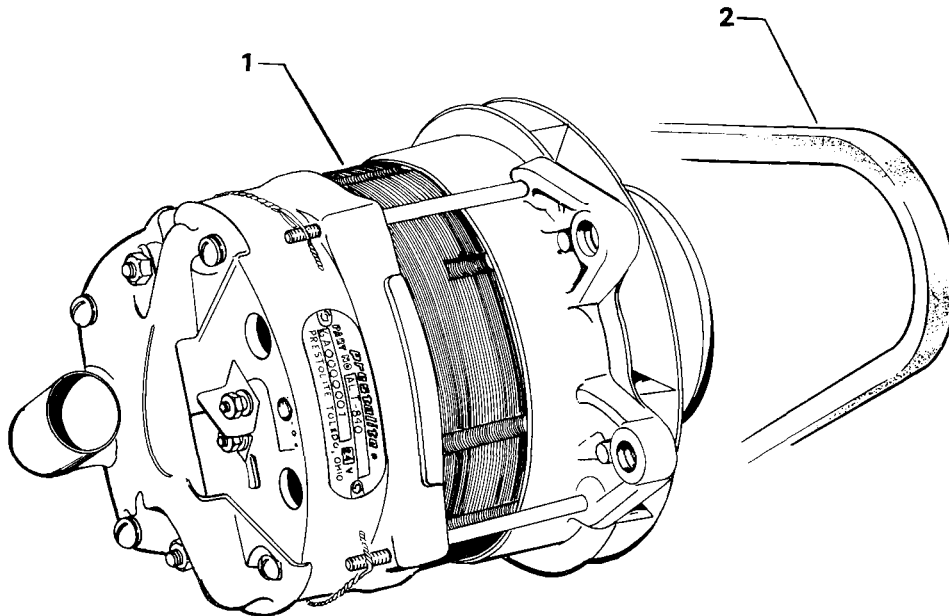
Figure 18. MAGNETOS, MAGNETO DRIVES AND SPARK PLUGS

ELECTRICAL COMPONENTS
 ALTERNATOR AND BELT

FIG. REF. 19	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-14316	ALTERNATOR, 12 volt, 70 amp. externally grounded (ALX-8421)	1
	LW-14324	ALTERNATOR, 24 volt, 70 amp. externally grounded (ALU-8421)	1
2	74519	BELT, Alternator drive with idler pulley 3/8 wide	1

NOTE

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



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Figure 19. ALTERNATOR AND BELT

ELECTRICAL COMPONENTS
 STARTER MOTOR AND ATTACHING PARTS

FIG. REF. 20	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-15571	STARTER, 12 volt (3.38:1 internal reduction, 12/14 pinion) (MZ-4222)	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 plain	3

NOTE

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

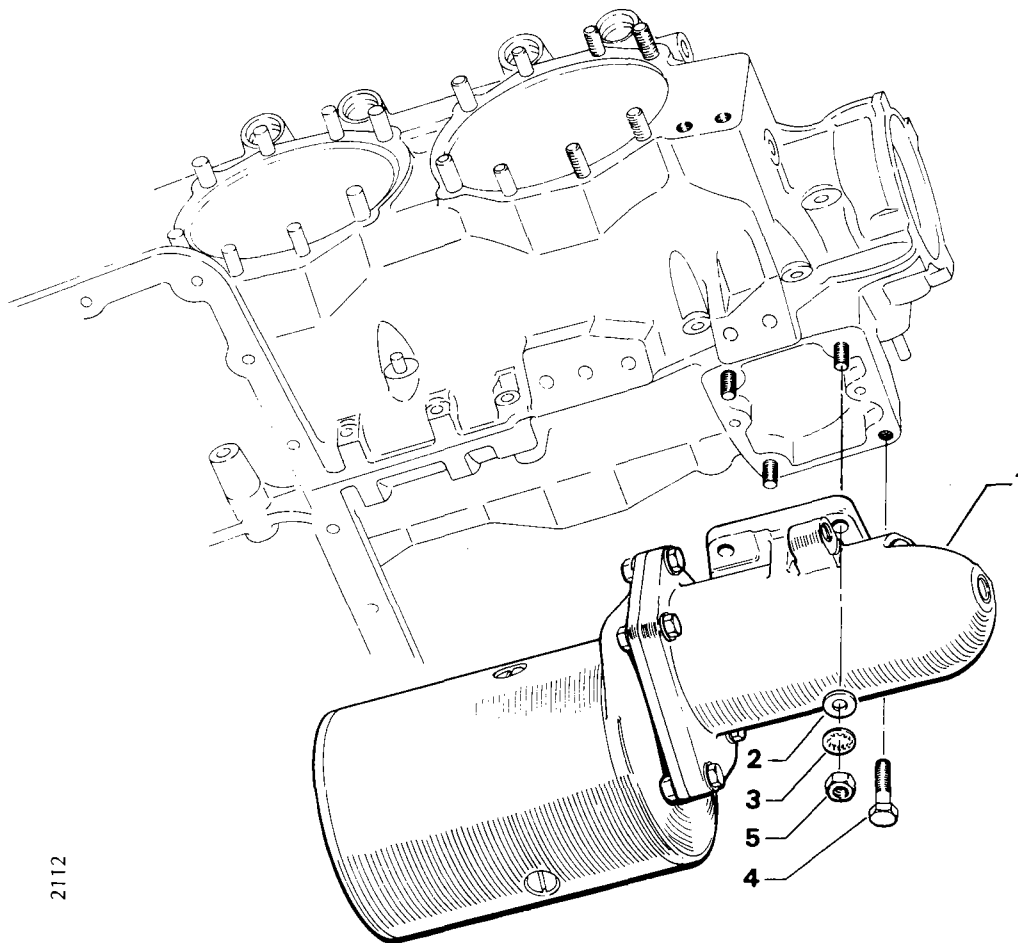
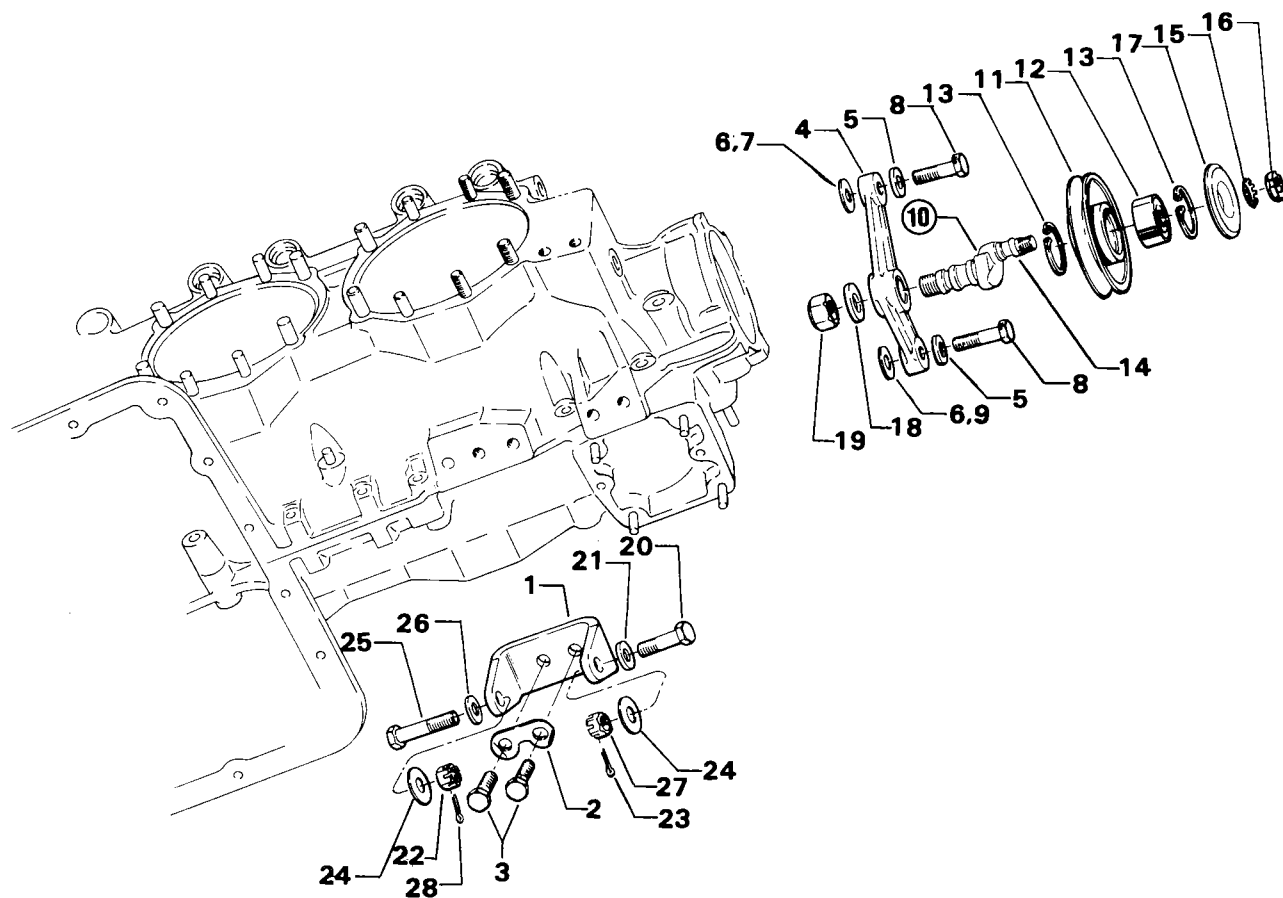


Figure 20. STARTER MOTOR AND ATTACHING PARTS

ELECTRICAL COMPONENTS
 ALTERNATOR MOUNTING AND ATTACHING PARTS

FIG. REF. 21	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	SHAFT, Idler, alternator belt adjusting	1
15	76768	WASHER, Lock, 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. head, 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 long, 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.

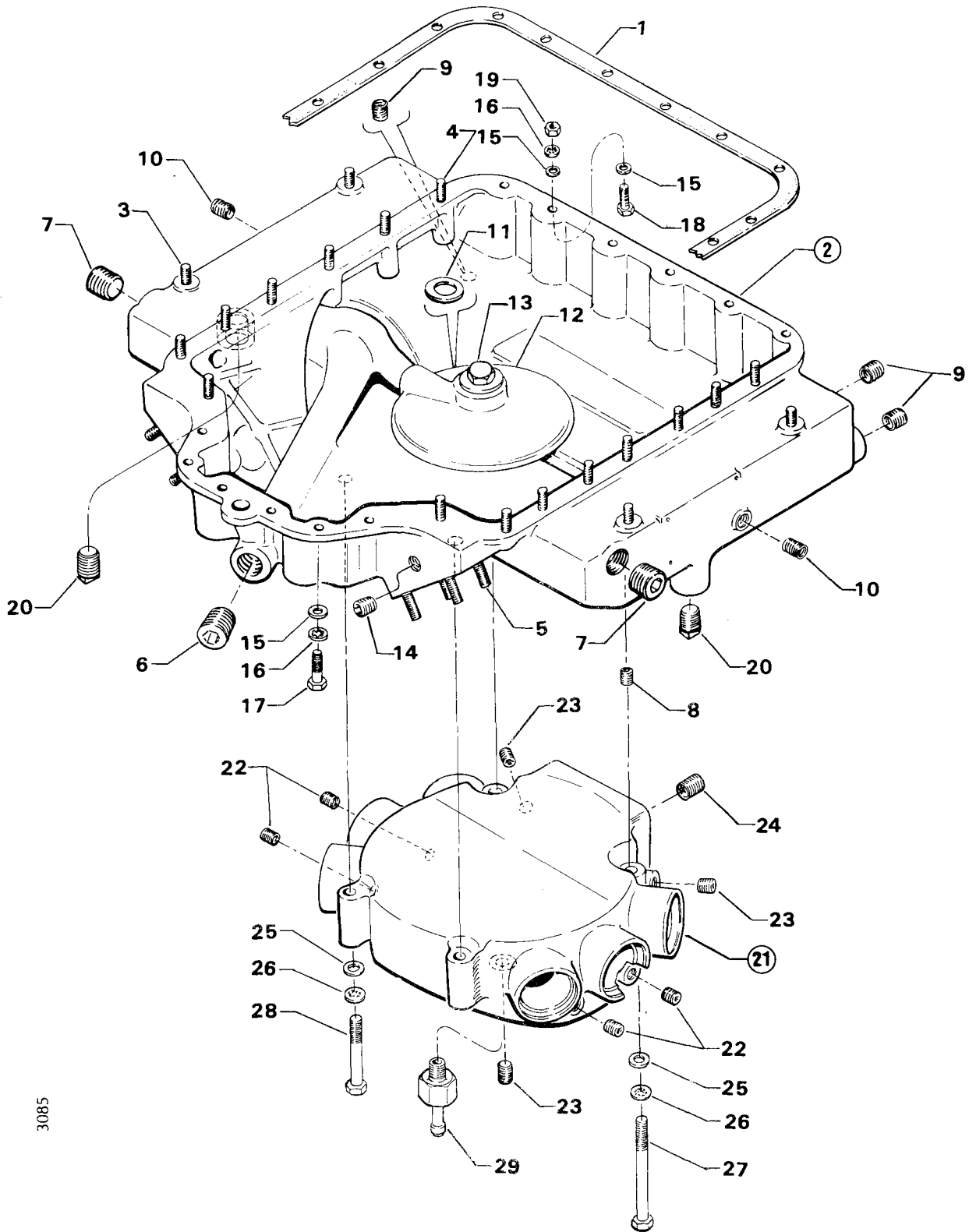


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Figure 21. ALTERNATOR MOUNTING AND ATTACHING PARTS

OIL SUMP AND INDUCTION SYSTEM
 OIL SUMP AND INDUCTION HOUSING ASSEMBLY

FIG. REF. 22	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-13306	GASKET, Oil sump	1
2	77517	SUMP ASSY., Oil	1
3	25C-9	STUD, 1/4-20 x 1-1/8 long	4
4	25C-11	STUD, 1/4-20 x 1-3/8 long	15
5	38-15	STUD, 3/8-16 x 1-7/8 long	8
6	STD-91	PLUG, 1/2-14 NPT, Allen head	1
7	STD-355	PLUG, 3/4-14 NPT, Allen head	2
8	STD-1173	INSERT, 1/4-20 x 1/2 long, heli-coil	4
9	STD-1171	INSERT, 3/8-16 x 3/4 long, heli-coil	3
10	STD-1164	INSERT, 5/16-18 x 5/8 long, heli-coil	2
11	STD-589	GASKET, Annular, 1-1/8 O.D. x 29/32 I.D.	1
12	72958	BAFFLE, Oil sump	1
13	72960	PLUG, 7/8-14 x 5/8 hex. head	1
14	1102	PLUG, 1/8-27 NPT, Allen head	1
15	STD-8	WASHER, 1/4 plain	37
16	STD-160	WASHER, Lock, internal teeth	23
17	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	6
18	LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. head	6
19	STD-1411	NUT, 1/4-20 plain	25
20	STD-551	PLUG, 1/2-14 NPT, square head, drilled	2
21	77642	HOUSING ASSY., Induction	1
22	STD-1164	INSERT, 5/16-18 x 5/8 long, heli-coil	4
23	1102	PLUG, 1/8-27 NPT, Allen head	3
24	STD-1173	INSERT, 1/4-20 x 1/2 long, heli-coil	4
25	STD-8	WASHER, 1/4 plain	4
26	STD-160	WASHER, 1/4 internal lock	4
27	STD-2026	BOLT, 1/4-20 NC-3 x 3-7/8 long, hex. head	2
28	STD-2025	BOLT, 1/4-20 NC-3 x 2-7/16 long, hex. head	2
29	75444	ADAPTER ASSY., Fuel drain valve	1

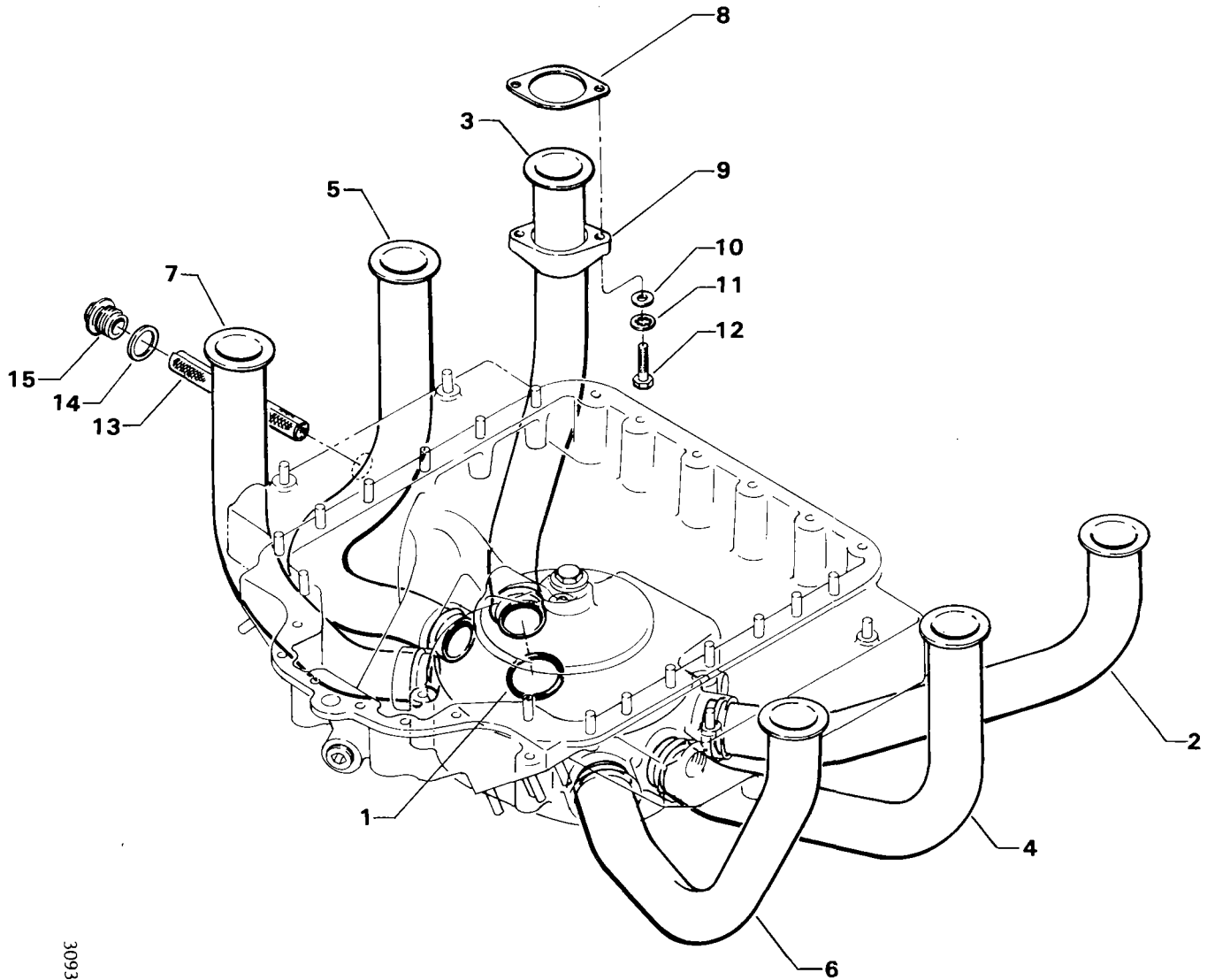


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Figure 22. OIL SUMP AND INDUCTION HOUSING ASSEMBLY

OIL SUMP AND INDUCTION SYSTEM
 INTAKE PIPES AND OIL SUCTION SCREEN

FIG. REF. 23	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	72711	RING, Seal, intake pipes	6
2	LW-16486	PIPE, Intake, cylinder no. 1	1
3	76708	PIPE, Intake, cylinder no. 2	1
4	LW-16487	PIPE, Intake, cylinder no. 3	1
5	76707	PIPE, Intake, cylinder no. 4	1
6	LW-14449	PIPE, Intake, cylinder no. 5	1
7	76706	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
13	60422	SCREEN, Oil suction	1
14	STD-111	GASKET, 1.00 I.D. x 1-1/4 O.D. x 3/32 thick	1
15	LW-12545	PLUG, 5/8 hex. head x 1.00-20 thread	1



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Figure 23. INTAKE PIPES AND OIL SUCTION SCREEN

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

FIG. REF. 24	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. section x 15/32 I.D. (assemble in fuel injector outlet)	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 lock	4
7	LW-31-1.31	BOLT, 5/16-18 x 1-5/16 long, hex. head	4
8	LW-18265	NOZZLE, Injector (2524864)	6
9	77418	MANIFOLD ASSY., Fuel	1
10	MS20822-4	ELBOW, 1/4 tube to 1/8 NPT, 90°	1
11	STD-148	NIPPLE, Union, 1/8 NPT	6
12	LW-12604	NIPPLE, 1/8 tube to 1/8 NPT, restricted	1
13	73966	SPACER, Fuel manifold bracket	2
14	73965	BRACKET, Fuel manifold	2
15	STD-251	WASHER, No. 10 lock, internal	4
16	STD-82	SCREW, 10-24 x 1/2 long, rd. head	4
17	LW-12098-0-200	TUBE ASSY., Fuel manifold to nozzle, cyls. 1, 2, 5 & 6	4
18	LW-12098-0-170	TUBE ASSY., Fuel manifold to nozzle, cyls. 3 & 4	2
19	LW-16266-10-75	CLAMP	12
20	LW-16266-10-13	CLAMP	12
21	STD-860	SCREW, 10-32 x 5/8 long, fill. head	14
22	STD-425	WASHER, No. 10 plain	2
23	STD-670	NUT, 10-32 self-locking	14
24	73136	BRACKET, 90°	2
25	LW-12798-4S242	HOSE ASSY., Fuel injector to fuel manifold	1
26	74278	BRACKET ASSY., Fuel line support	1
27	STD-1891	NUT, Clinch, self-locking	2
28	LW-16266-25-63	CLAMP	1
29	STD-860	SCREW, 10-32 x 5/8 long, fill. head	1
30	STD-692	SCREW, 10-32 x 1/2 long, rd. head	2
31	STD-425	WASHER, No. 10 plain	3
32	STD-670	NUT, 10-32 self-locking	1
33	77468	CLIP, 7/8 I.D. for 1/4 dia. screw, cushion type	2
34	LW-12799-6S322	HOSE, Fuel pump to injector	1
35	72377	ELBOW, 3/8 flared tube, adj. 90° (assemble in fuel pump outlet)	1

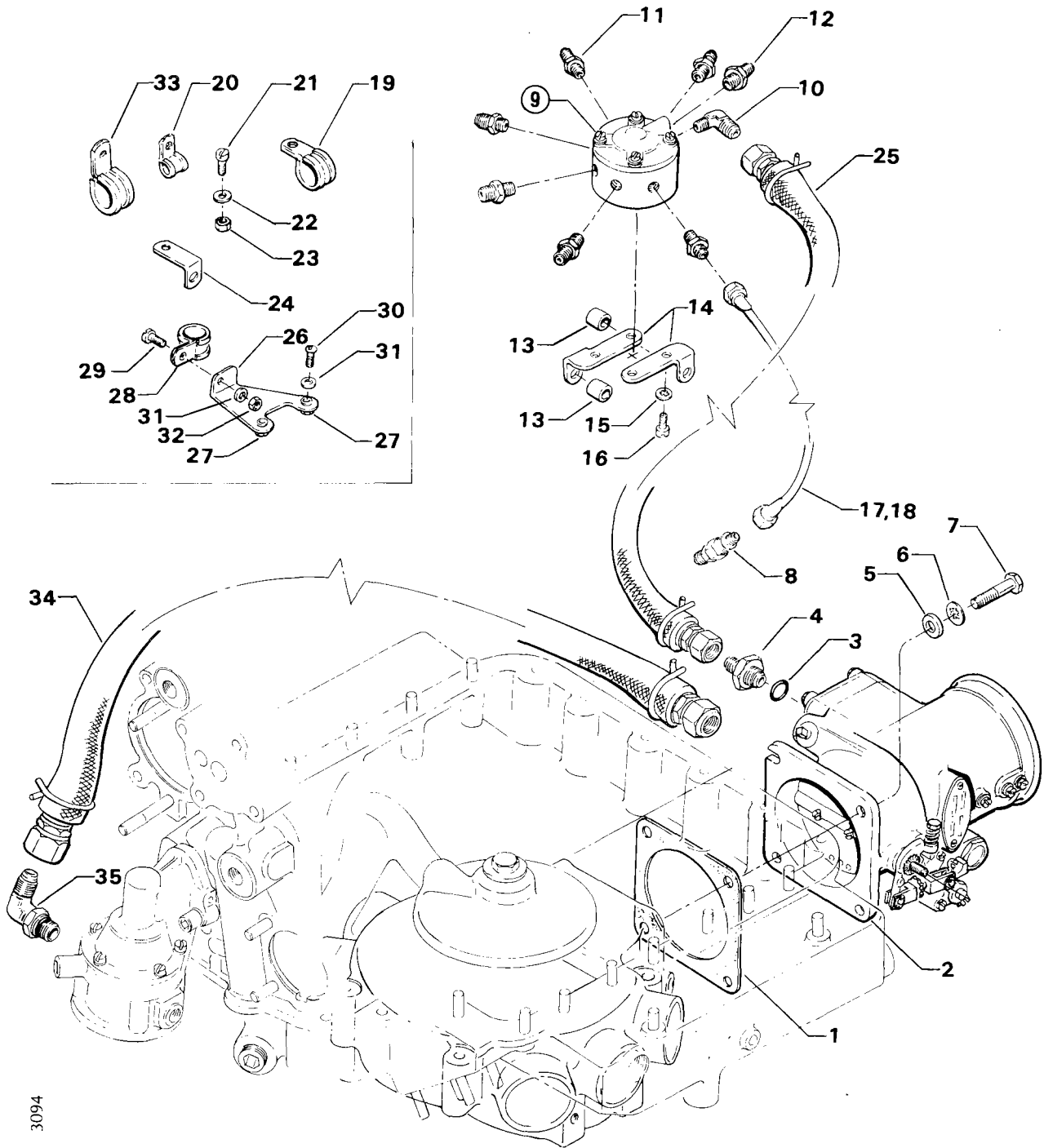


Figure 24. FUEL INJECTOR, FUEL MANIFOLD AND INJECTION NOZZLES

SERVICE KIT SECTION

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

Part No.	Part Name	Qty.
73185-1	SEAL AND GASKET SET	1
LW-12681	GASKET, Magneto	2
LW-12795	GASKET	1
LW-13306	GASKET, Oil sump	1
LW-11997	SEAL, Crankshaft oil, split	1
LW-14260	SEAL, Tachometer	1
LW-15628*	SEAL, Crankshaft	1
LW-18638	LOCKPLATE, Crankshaft gear	1
LW-18661	SEAL, Shroud tube	24
MS29512-6	SEAL	1
MS29512-8*	SEAL, Oil	1
STD-111	GASKET, Annular	2
STD-213*	SEAL, Oil (fuel pump drive)	1
STD-294	GASKET, Annular	2
STD-589	GASKET	1
STD-1045	GASKET, Annular	1
STD-1441*	GASKET, Annular	6
STD-1737*	RING	1
STD-2217	SEAL, Oil	1
1691-C*	GASKET, Fuel pump pad	1
8313	GASKET, Vacuum pump	2
60096	GASKET, Fuel pump	1
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, Cam 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

* This part not applicable to IO-540-L1C5.

SERVICE KIT SECTION

SEAL AND GASKET SET (Continued)
WIDE CYLINDER FLANGE MODELS

Part No.	Part Name	Qty.
73185-1	SEAL AND GASKET SET	1
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
78443	SEAL, Crankshaft, split	1

* This part not applicable to IO-540-L1C5.

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

Part No.	Part Name	Qty.
LW-15485	CYLINDER, PISTON AND RING KIT	1
STD-160	WASHER	4
STD-1215*	BOLT	2
STD-1411	NUT	4
STD-1925	SCREW	8
MS13997-3	KEY, Exhaust (rotator type)	2
MS13998-3	CAP, Valve stem, exhaust	1
72050	KEY, Valve intake	2
60828*	PLUG, Piston pin	2
LW-18661	SEAL, Shroud tube	4
72710	COVER, Valve rocker shaft	2
66732	GASKET, Valve rocker shaft cover	2
67193	GASKET, Rocker box cover	1
68795	COVER ASSY., Rocker box	1
LW-14077	PIN, Piston	1
67112	ROCKER ASSY., Exhaust valve	1
67113	ROCKER ASSY., Intake valve	1
71481	SEAL, Cylinder base	1
71549	WASHER, Valve rocker thrust	2
72626	SHAFT, Valve rocker	2
LW-16740	VALVE, Exhaust	1
LW-13322	SEAT, Valve spring, lower	2
LW-13622	VALVE, Intake (small head)	1
73857	RING, Piston, oil regulator (chrome)	1
74241	RING, Piston compression (chrome)	2
LW-16475	SEAT, Valve spring, upper exhaust	1
69532	SEAT, Valve spring, upper intake	1
LW-10207S	PISTON, 3 ring	1
LW-11796	SPRING, Valve, outer	2
LW-11797	SPRING, Valve inner	2
LW-12993	CYLINDER ASSY., Nitrided	1
LW-11775	PLUG, Piston pin	2
SSP2272	TAG	1
62388	CAP	1

* This part not applicable to IO-540-L1C5.

NUMERICAL INDEX

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
AN565B1032H5	Set Screw	1-11	LW-13683	Bearing	1-5
AN6-12	Bolt	5-3	LW-13794	Stud	1-1
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