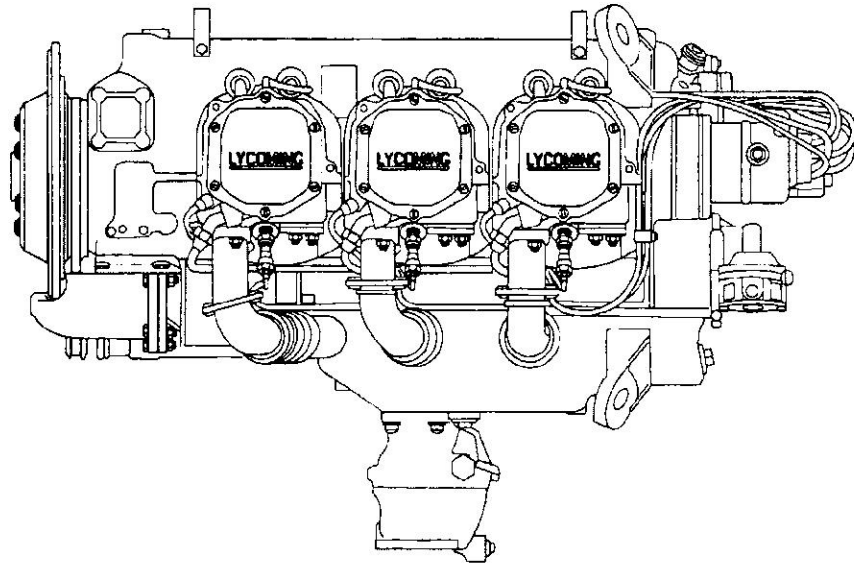


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Engine Parts Catalog

O-540-A4D5

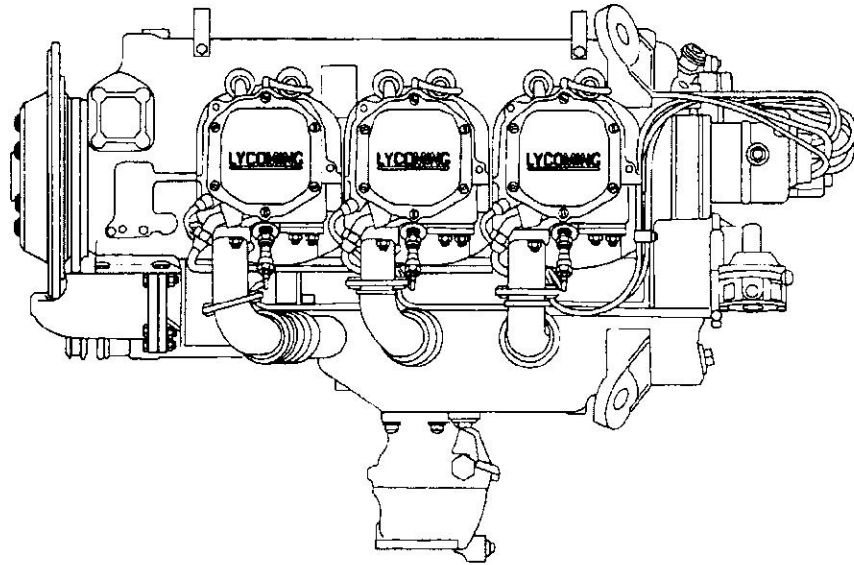
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February 2003

Part No. PC-515-3

652 Oliver Street
Williamsport, PA 17701

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Engine Parts Catalog

O-540-A4D5

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February 2003

Part No. PC-515-3

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Williamsport, PA 17701

O-540-A4D5 Engine Parts Catalog

Lycoming Part Number: PC-515-3

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For additional information:

Mailing address:

Lycoming
652 Oliver Street
Williamsport, PA 17701 U.S.A.

Phone:

Factory: 570-323-6181
Sales Department: 570-327-7278
Fax: 570-327-7101

Lycoming's regular business hours are Monday through Friday from 8:00 A.M. through 5:00 P.M. Eastern Time (+5 GMT)

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This illustrated parts catalog contains a complete parts listing for the Lycoming O-540-A4D5 wide cylinder flange crankcase model aircraft engines.

Major assembly and sub-assembly parts of the engine 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 addresses of where to obtain these publications appears in the latest edition of Service Letter No. L114.

NOTE

The illustrations, pictures and drawings shown in the 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 manufacturer's 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.

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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.

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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
61681	GUIDE		X	X		X	X	X				
66610	BUSHING		X	X								
66796	INSERT		X	X								
69796	DOWEL		X									
72057	SEAT		X	X		X	X					
72058	SEAT		X	X		X	X					
72155-S	BUSHING		X	X	X	X						
73810	BUSHING		X	X	X							
75656-S	BUSHING		X	X	X	X						
75657-S	BUSHING		X	X	X	X						
LW-11997	SEAL								X			
LW-13521	BEARING			X						X*	X*	X*
LW-13792	SEAL								X			
STD-1065	DOWEL	X	X	X	X							
16R22291	GUIDE		X	X		X	X	X				
18M19389	BEARING			X						X*	X*	X*
18A19441	BEARING									X•	X•	X•
18D23135	BEARING									X•	X•	X•

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

In addition to the above, studs are available in P03, P07 & P12.

NOTE

When ordering oversize and undersize parts, be sure to specify the required oversize and undersize dimension with the proper part number. For example, to order bearing LW-13521 in .003 undersize, order part number LW-13521-M03. 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	11E24000-S1	CRANKCASE ASSEMBLY	1
2	LW-13794	STUD, 5/16-18 x 1.00 long, drilled	1
3	31C-12	STUD, 5/16-18 x 1-1/2 long	2
4	31C-13	STUD, 5/16-18 x 1-5/8 long	1
5	38-13	STUD, 3/8-16 x 1-5/8 long	24
6	50-15	STUD, 1/2-13 x 1-7/8 long	12
7	38-22	STUD, 3/8-16 x 2-3/4 long	1
8	38D-17	STUD, 3/8-16 x 2-1/8 long, drilled	1
9	38-16	STUD, 3/8-16 x 2.00 long	8
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	72158	BUSHING, Gov. drive idler shaft	1
14	STD-1339 *	PLUG, 1/16-27 pipe	7
15	1102	PLUG, 1/8 pipe	4
16	31C-14	STUD, 5/16-18 x 1-3/4 long	4

* 1 at governor pad, 6 at piston squirt holes.

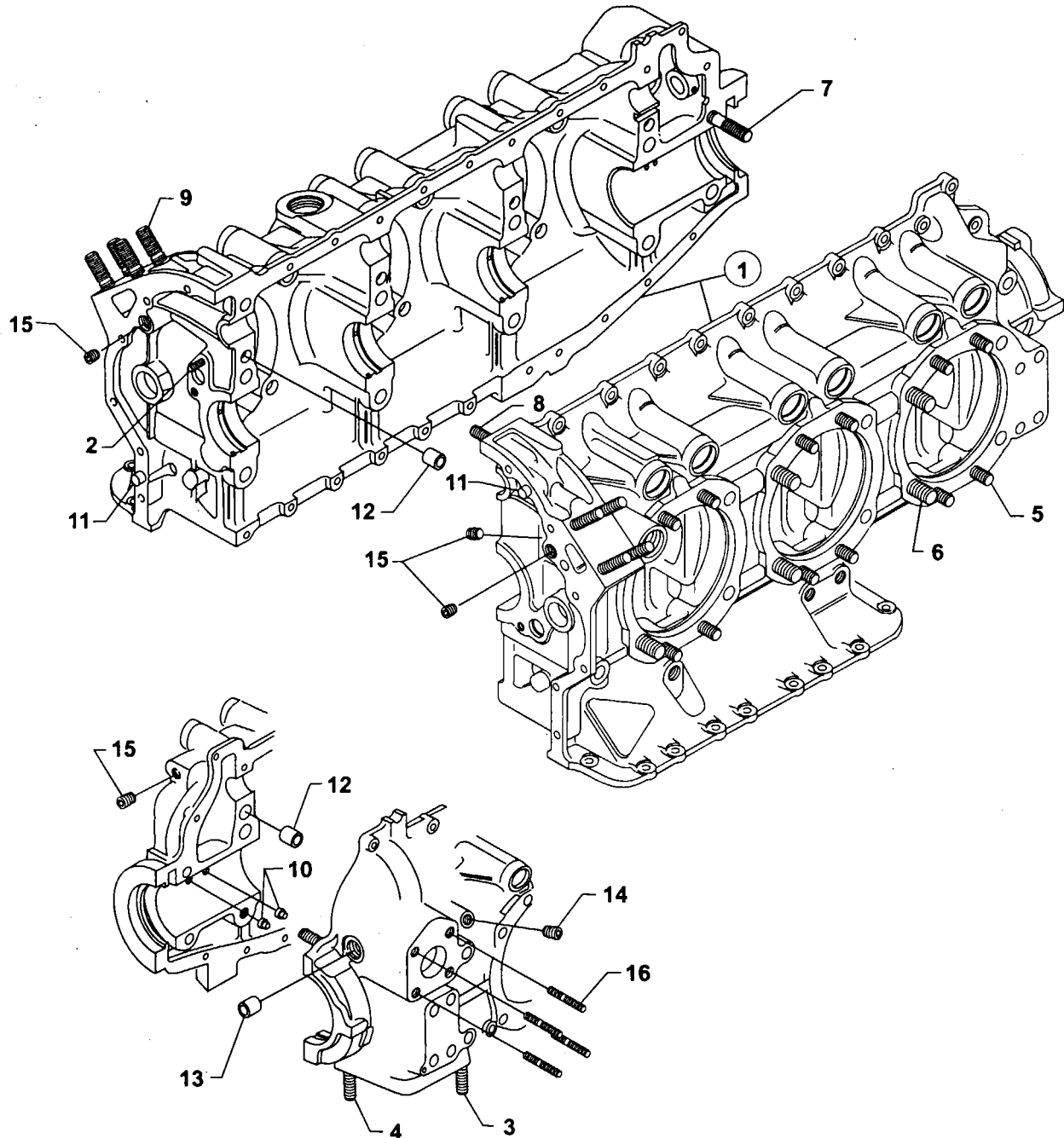


Figure 1. CRANKCASE ASSEMBLY

**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	75737	EXTENSION, Oil filler (short), 2-11/16 long	1
3	74068	"O" RING, Oil level gage	1
4	LW-14756	GAGE ASSY., Oil level	1
5	12A19770	BRACKET, Engine mounting (dynafocal)	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

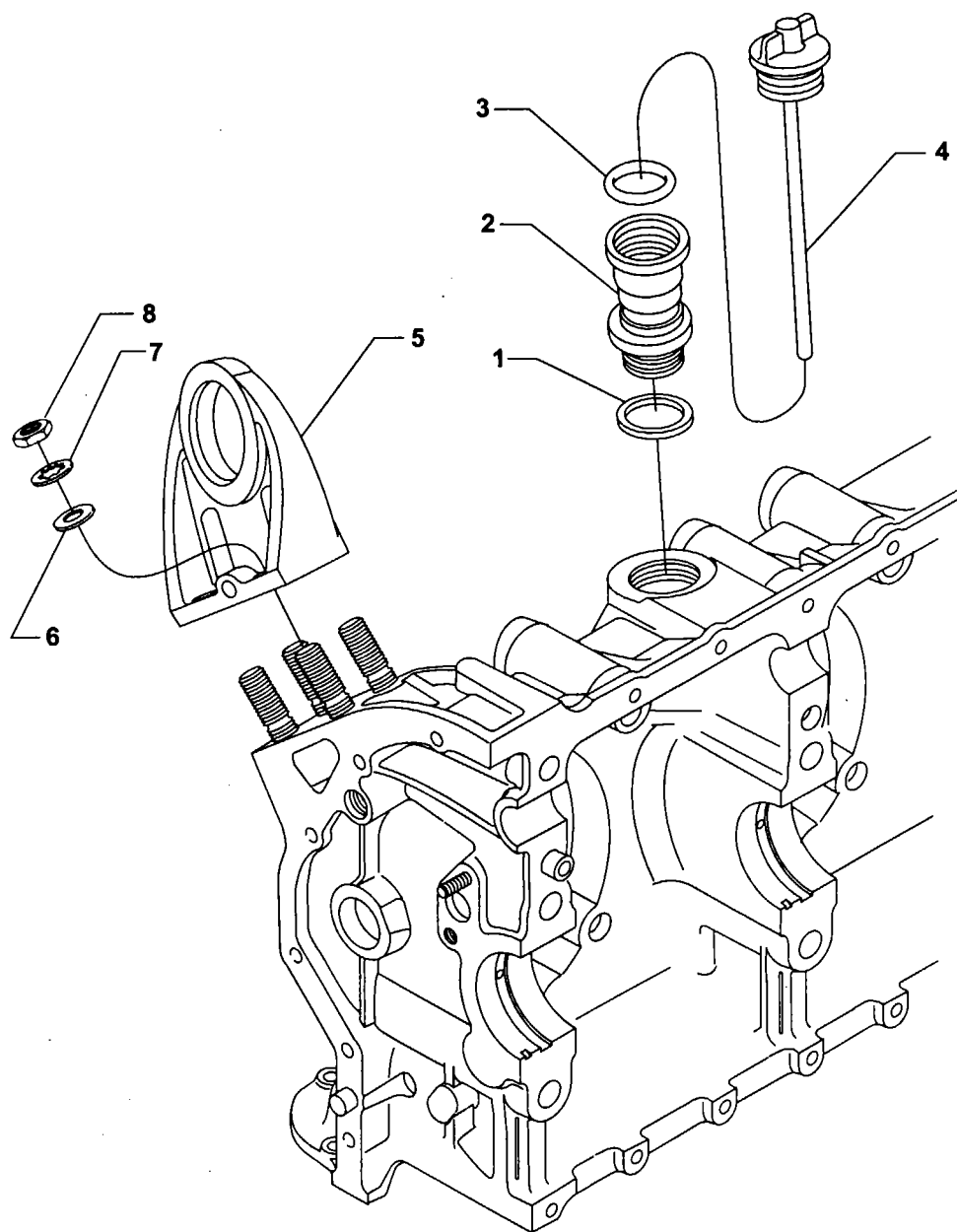


Figure 2. OIL LEVEL GAGE AND ENGINE MOUNTING BRACKETS

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

FIG. REF. 3	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	1028-B	BALL, 11/16 dia.	1
2	61084 *	SPRING, Oil pressure relief valve	1
	68668 *	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	18D23135	BEARING, Crankshaft	6
	LW-16711	BEARING, Crankshaft (alternate)	6
6	18A19441	BEARING, Crankshaft, front	2
	LW-13884	BEARING, Crankshaft, front (alternate)	2
7	LW-11997 **	SEAL, Crankshaft oil, split	1
	LW-13792 **	SEAL, Crankshaft oil, solid	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 revision of SSP-1776, Part I for spring identification.

** Refer to latest edition of Lycoming Service Instruction No. 1324 for installation.

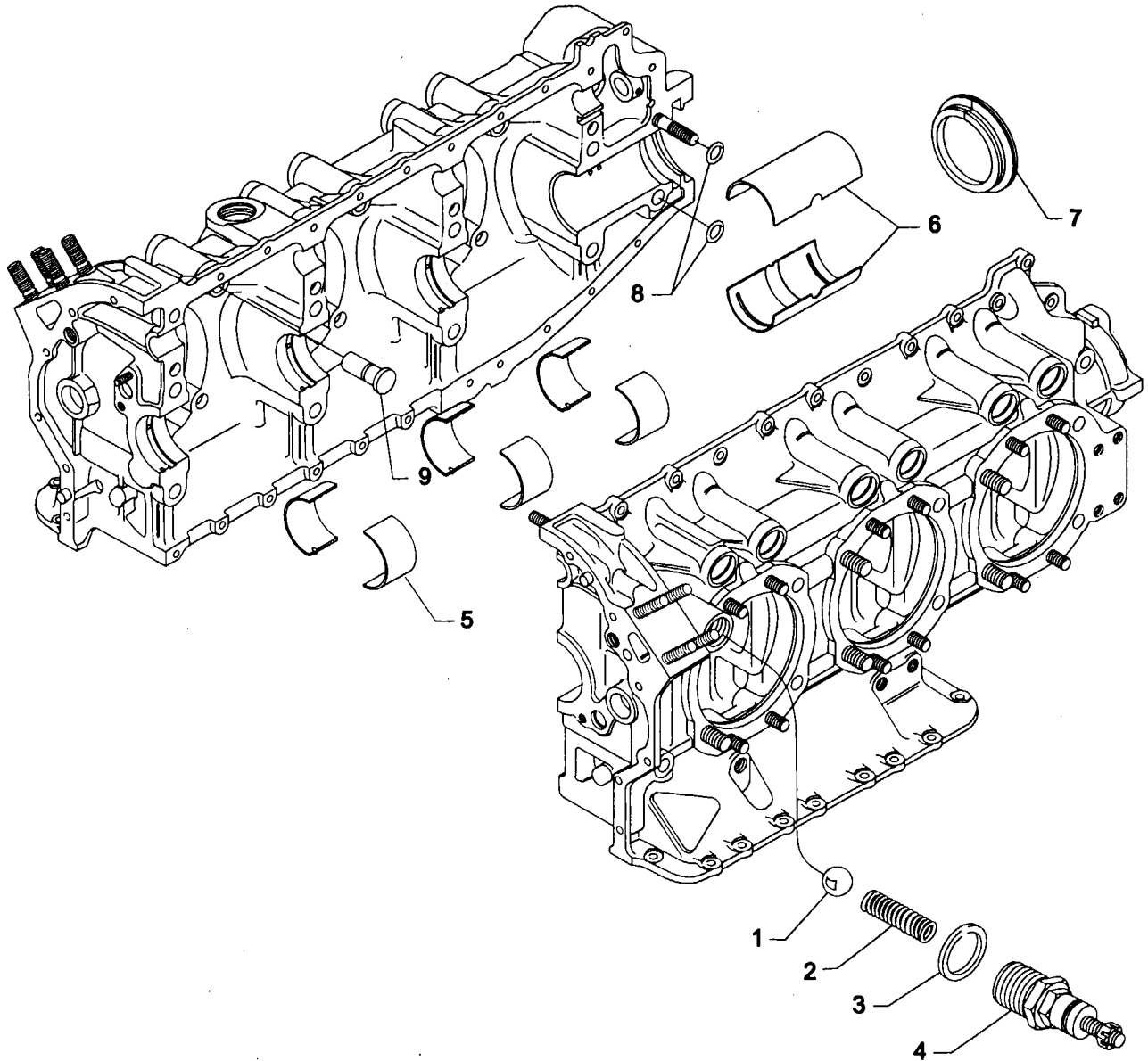


Figure 3. CRANKCASE RELATED PARTS

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

FIG. REF. 4	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	13E27622	CRANKSHAFT AND BUSHING ASSY.	1
2	STD-1211	PLUG, 2.00 dia. expansion	1
3	73810	BUSHING, Crankshaft dyn. counterweight	4
4	71640	PLUG, 1-3/8 dia.	1
5	75656-S	BUSHING, Propeller flange, long	4
6	72155-S	BUSHING, Propeller flange, short	1
7	75657-S	BUSHING, Propeller flange, indexing	1
8	STD-1065	DOWEL, Stepped, 5/16 x 1/4 dia. x 35/64 long	1
9	LW-19227 *	COUNTERWEIGHT ASSEMBLY	2
10	71903-A	BUSHING, Dynamic counterweight	8
11	72797 *	ROLLER, Dynamic counterweight, 6.3 order	2
12	72965 *	ROLLER, Dynamic counterweight, 5.1 order	2
13	LW-14820	RING, Internal retaining	8
14	71907	WASHER, Dynamic counterweight	8
15	13S19647 **	GEAR, Crankshaft	1
16	LW-18638	LOCKPLATE, Crankshaft gear	1
17	STD-2247	BOLT, 5/16-24 UNF-3 x 1-3/4 long, hex. hd.	1
18	LW-16471	SUPPORT ASSY., Starter ring gear, 12/14 pitch	1
19	72566	GEAR, Starter ring, 12/14 pitch	1

* See latest edition of Lycoming Service Instruction No. 1012 for proper counterweight and roller location.

** See latest edition of Lycoming Service Bulletin No. 475 for proper installation.

CRANKSHAFT & COUNTERWEIGHT ASSEMBLY, Kit P/N 05K27676 available.

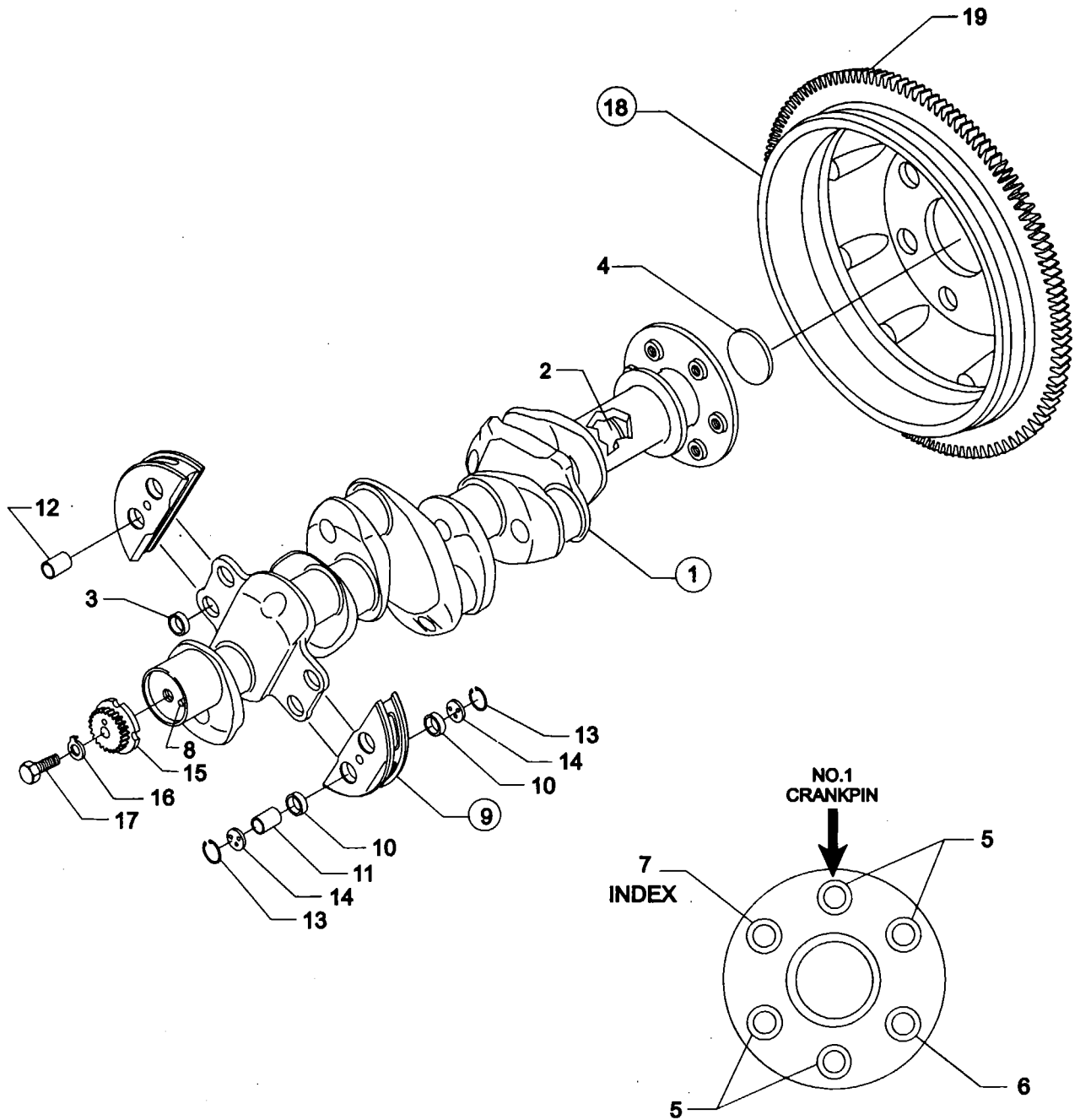


Figure 4. CRANKSHAFT AND COUNTERWEIGHT ASSEMBLY

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

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 ASSEMBLY, Tachometer	1
4	LW-18667	PIN, 3/16 dia. x 2-21/64 long	1
5	STD-2231	RING, Internal retaining	1
6	61544	PLUNGER, Fuel pump, long	1
7	71652	GEAR ASSEMBLY., Crankshaft idler	1
8	67530	BUSHING, Crankshaft idler gear	1
9	71668	GEAR ASSEMBLY, Crankshaft idler, plain	1
10	67530	BUSHING, Crankshaft idler gear	1
11	LW-13795	SHAFT, Crankshaft idler gear	2
12	LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex. hd., dr.	3
13	STD-2168	NUT, 5/16-18 NC-3 slotted shear	1

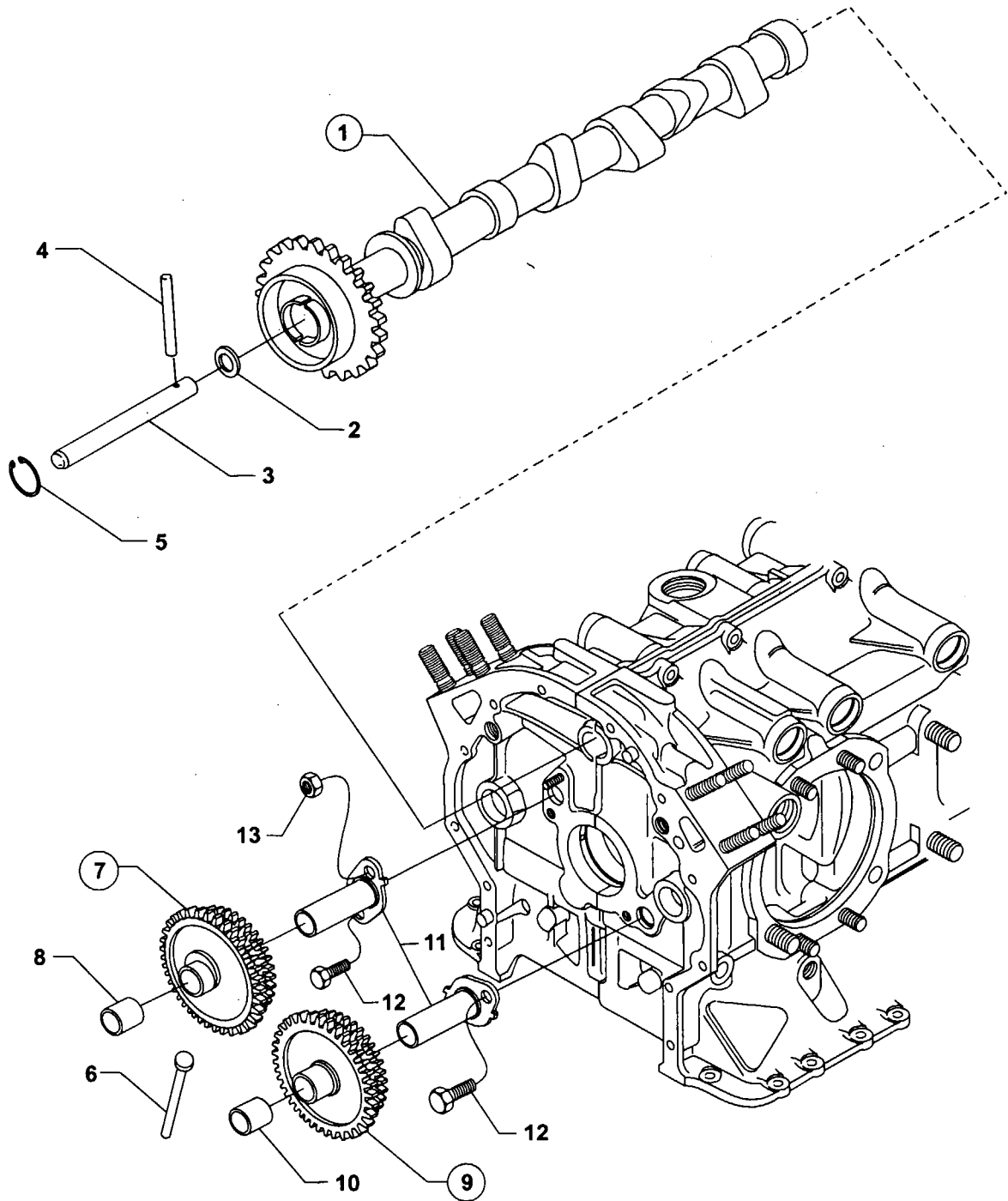


Figure 5. CAMSHAFT, TACHOMETER DRIVE AND CRANKSHAFT IDLER GEARS

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

FIG. REF. 6	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-10442	GEAR, Propeller governor driven	1
2	LW-14021	SHAFT, Propeller governor idler gear	1
3	LW-10541	GEAR ASSEMBLY, 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
	01L21418	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 1/32 thick	1
10	LW-13896	PLUG, 3/4-16 hex. hd.	1
11	72053	GASKET, Governor	1
12	72378	COVER, Governor drive	1
13	STD-35	WASHER, 5/16 plain	20
14	STD-475	WASHER, 5/16 lock, internal teeth	4
15	STD-1410	NUT, 5/16-18 plain	4

* For alternate set screws and installation information, see latest edition of Lycoming Service Instruction No. 1343.

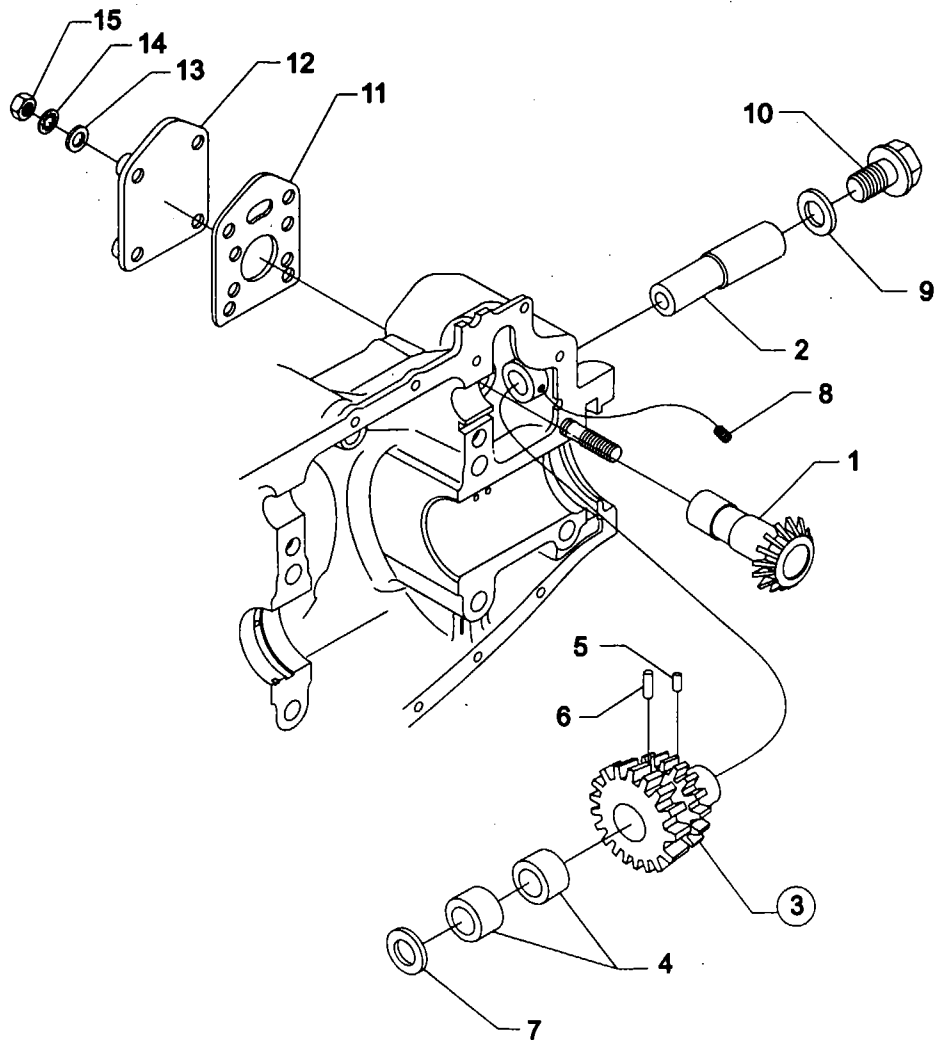


Figure 6. PROPELLER GOVERNOR DRIVE ASSEMBLY

**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. hd.	11
2	STD-8	WASHER, 1/4 plain	24
3	60803	STRAP, Lifting	2
4	LW-25-1.75	BOLT, 1/4-20 x 1-3/4 long, hex. hd.	2
5	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. hd.	1
6	STD-160	WASHER, 1/4 lock, internal teeth	13
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 3-37/64 long, hex. hd.	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
18	LW-31-2.75	BOLT, 5/16-18 x 2-3/4 long, hex. hd.	1
19	LW-31-1.16	BOLT, 5/16-18 x 1-5/32 long, hex. hd.	3
20	STD-35	WASHER, 5/16 plain	4
21	STD-475	WASHER, 5/16 lock, internal teeth	4

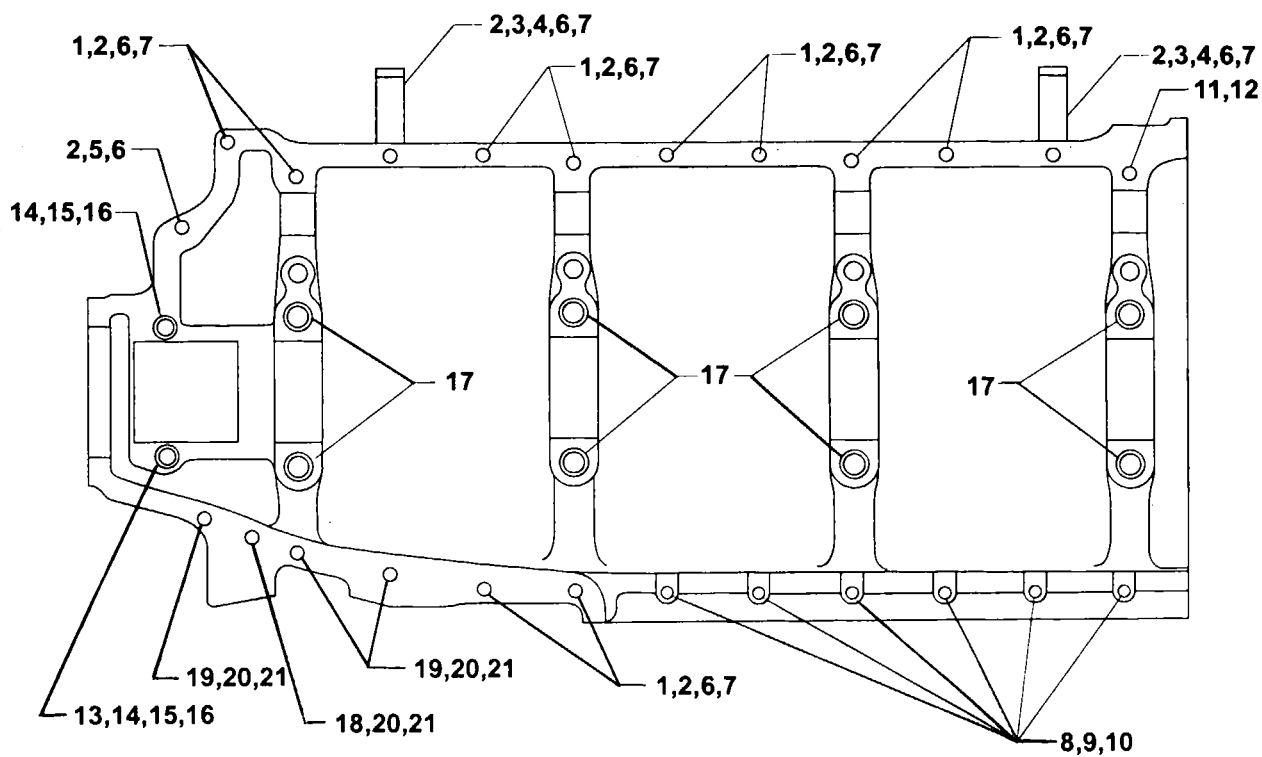


Figure 7. CRANKCASE ATTACHING PARTS

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

FIG. REF. 8	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	73818	GASKET, Accessory housing	1
2	21C21539-02	HOUSING ASSY., Accessory	1
3	31C-12	STUD, 5/16-18 x 1-1/2 long	4
4	31C-21	STUD, 5/16-18 x 2-5/8 long	4
5	25C-21	STUD, 1/4-20 x 2-5/8 long	4
6	31CD-17	STUD, 5/16-18 x 2-1/8 long, drilled	3
7	1102	PLUG, 1/8-27 NPT, Allen head	4
8	STD-784	PLUG, 3/8 pipe, Allen head	1

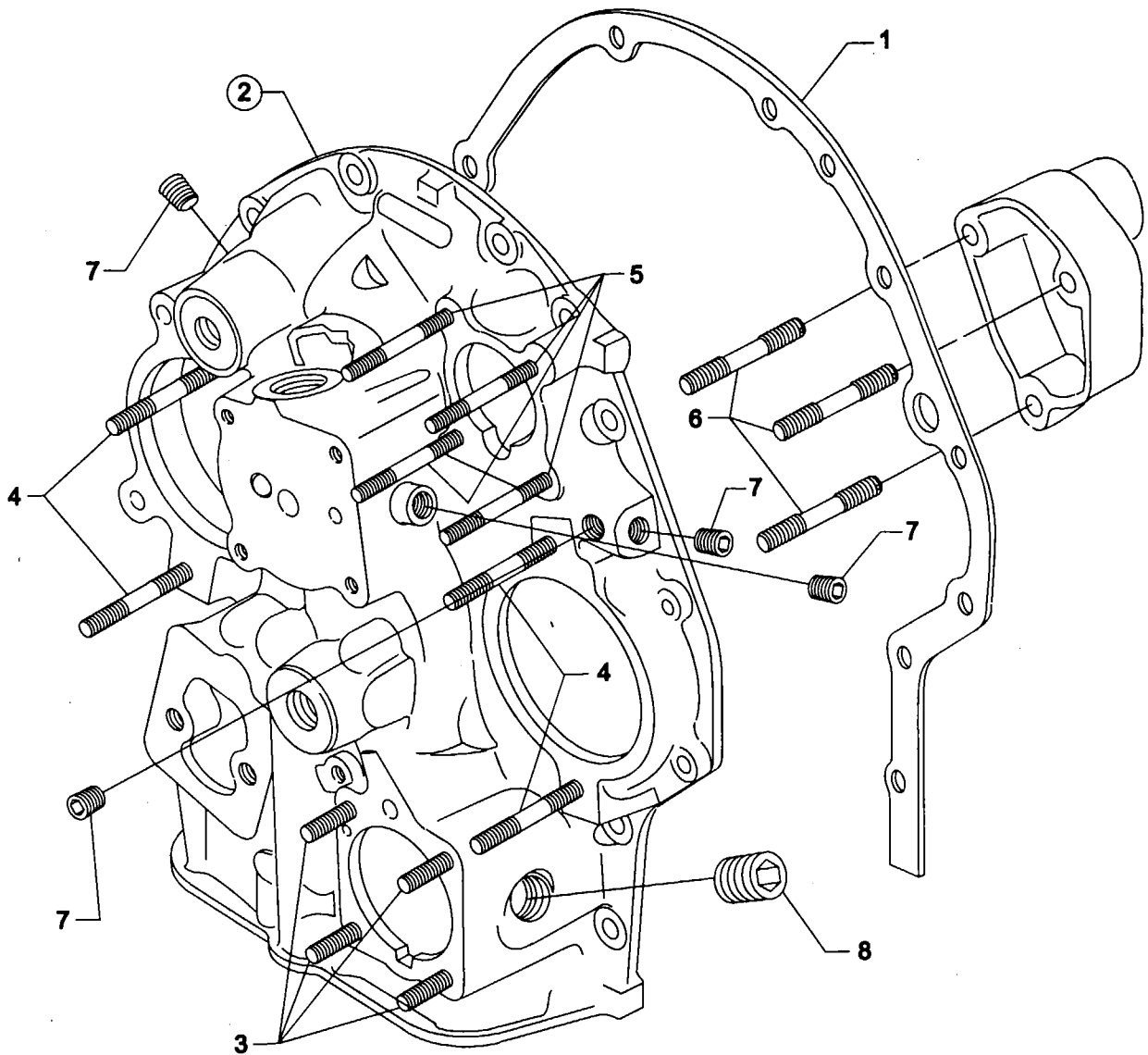


Figure 8. ACCESSORY HOUSING ASSEMBLY

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

FIG. REF. 9	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	78531	BODY ASSY., Oil pump	1
2	05K19423-S *	OIL PUMP IMPELLER KIT	1
3	74641	SHAFT, Oil pump drive	1
4	STD-35	WASHER, 5/16 plain	3
5	STD-1420	NUT, 5/16-18 slotted	3
6	LW-14260	SEAL, Tachometer drive, oil	1
7	STD-8	WASHER, 1/4 plain	12
8	STD-160	WASHER, 1/4 lock, internal teeth	12
9	LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. hd.	9
10	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. hd.	1
11	LW-25-1.44	BOLT, 1/4-20 x 1-7/16 long, hex. hd.	2

* To insure impellers are replaced together, oil pump impellers available in kit form only.

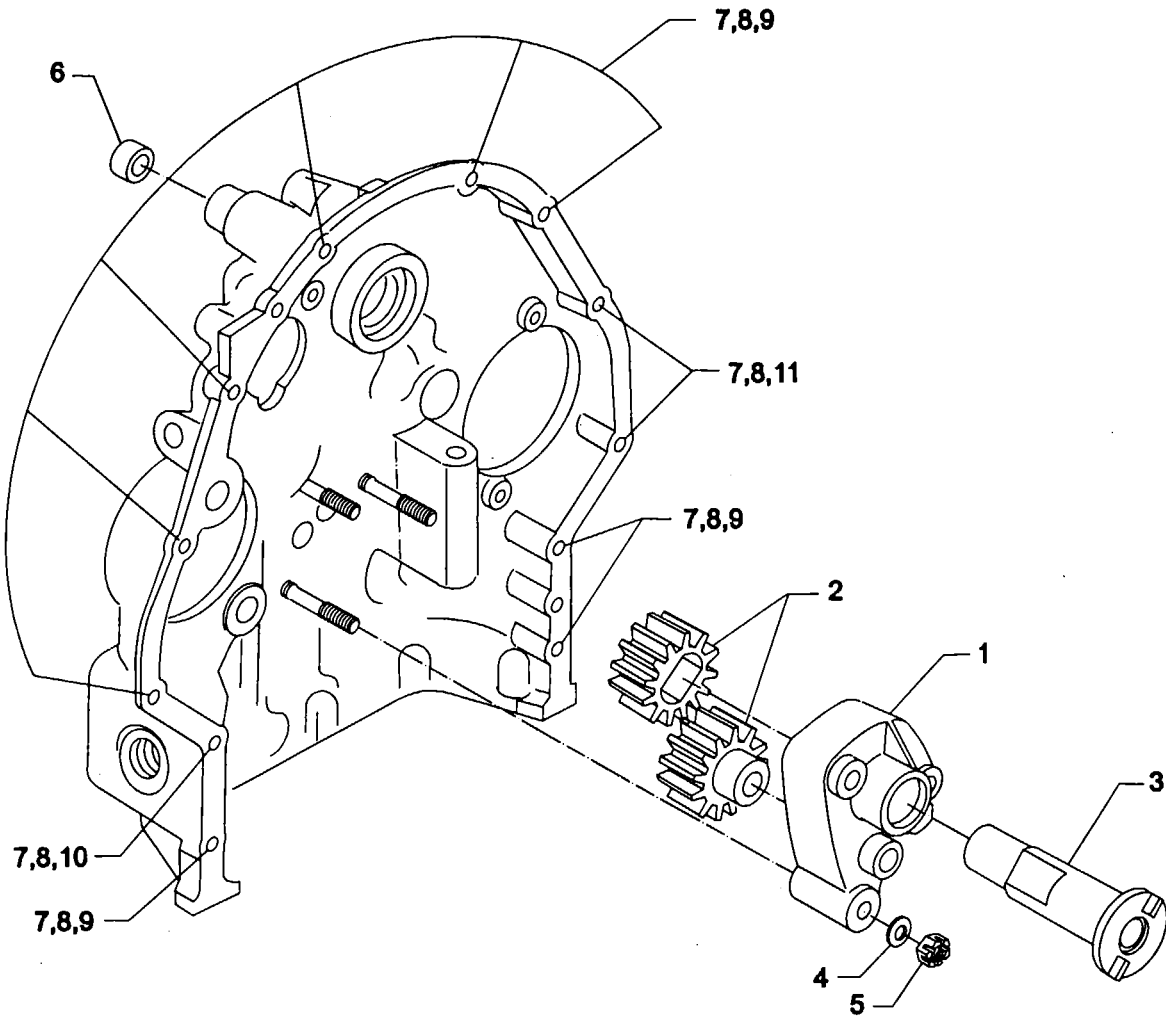


Figure 9. OIL PUMP ASSEMBLY AND ACCESSORY HOUSING ATTACHING PARTS

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

FIG. REF. 10	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	60096	GASKET, Fuel pump	1
2	LW-15472	FUEL PUMP, Dual diaphragm	1
3	STD-33	WASHER, 3/8 plain	2
4	STD-1882	SCREW, 3/8-16 x 1-9/32 long, socket dr.	2
5	72377	ELBOW, 3/8 flared tube, adjustable, 90°	2
6	MS29512-06	"O" RING	2

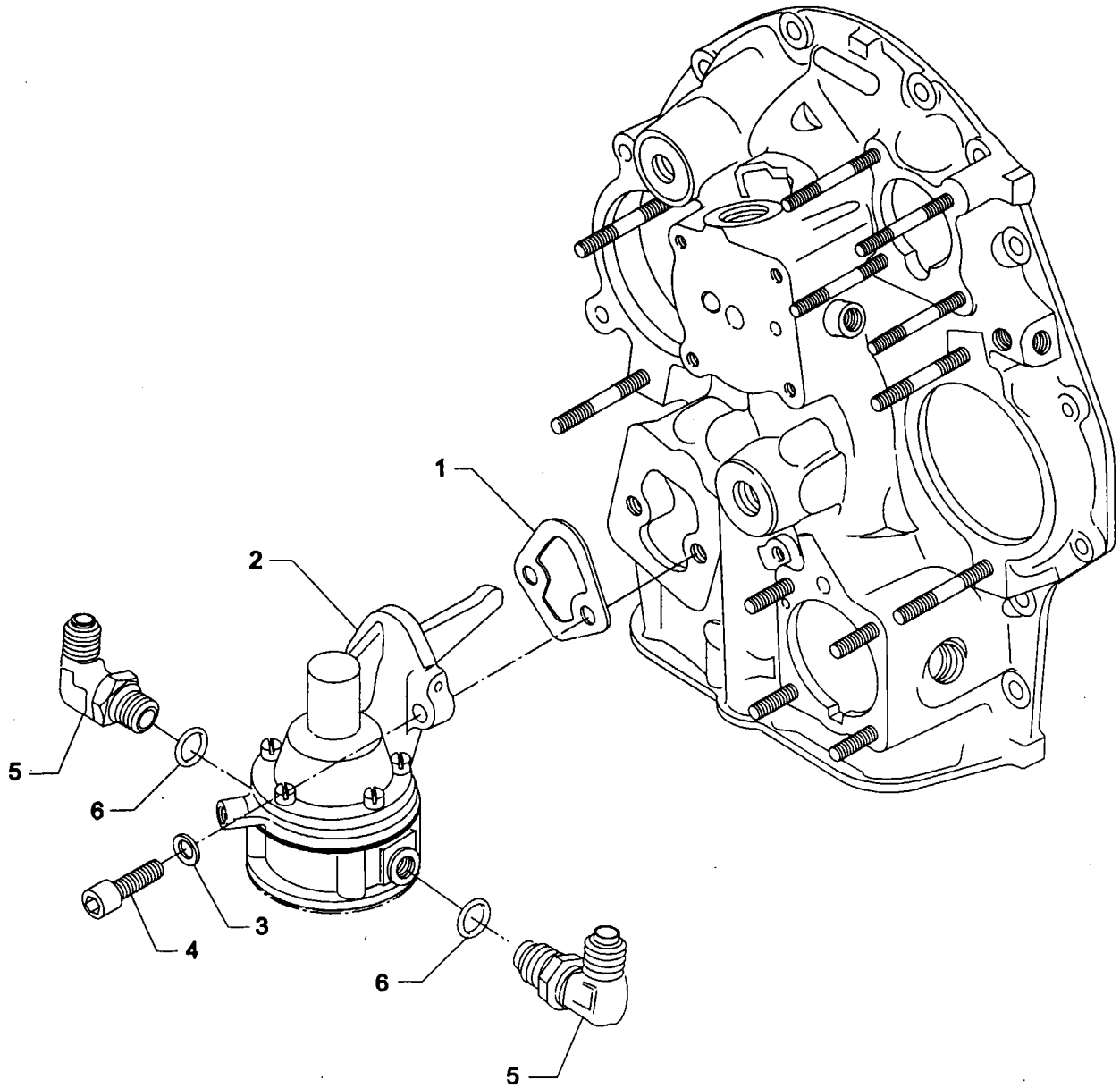


Figure 10. FUEL PUMP ASSEMBLY

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

FIG. REF. 11	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-12795 *	GASKET, Oil filter adapter	2
2	77852	OIL FILTER BASE ASSEMBLY	1
3	LW-13215 *	OIL FILTER, Short, spin-on	2
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	LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. hd.	3
8	STD-160	WASHER, 1/4 lock, internal teeth	3
9	53E22144	VALVE ASSY., Temp. control oil cooler bypass	1
10	76510	GASKET, Valve assembly	1
11	25C-10	STUD, 1/4-20 x 1-1/4 long	1
12	06E19769-0.63	GASKET, Annular, 5/8 I.D.	1
13	62417	PLUG, Oil cooler bypass	1
14	MS20822-8	ELBOW, 1/2 flared tube, 3/8 NPT	1
15	AN816-8	NIPPLE, 1/2 flared tube	1
16	72996	FITTING, Breather	1

* Extra gasket and oil filter, shipped as loose parts, with engine.

NOTE

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

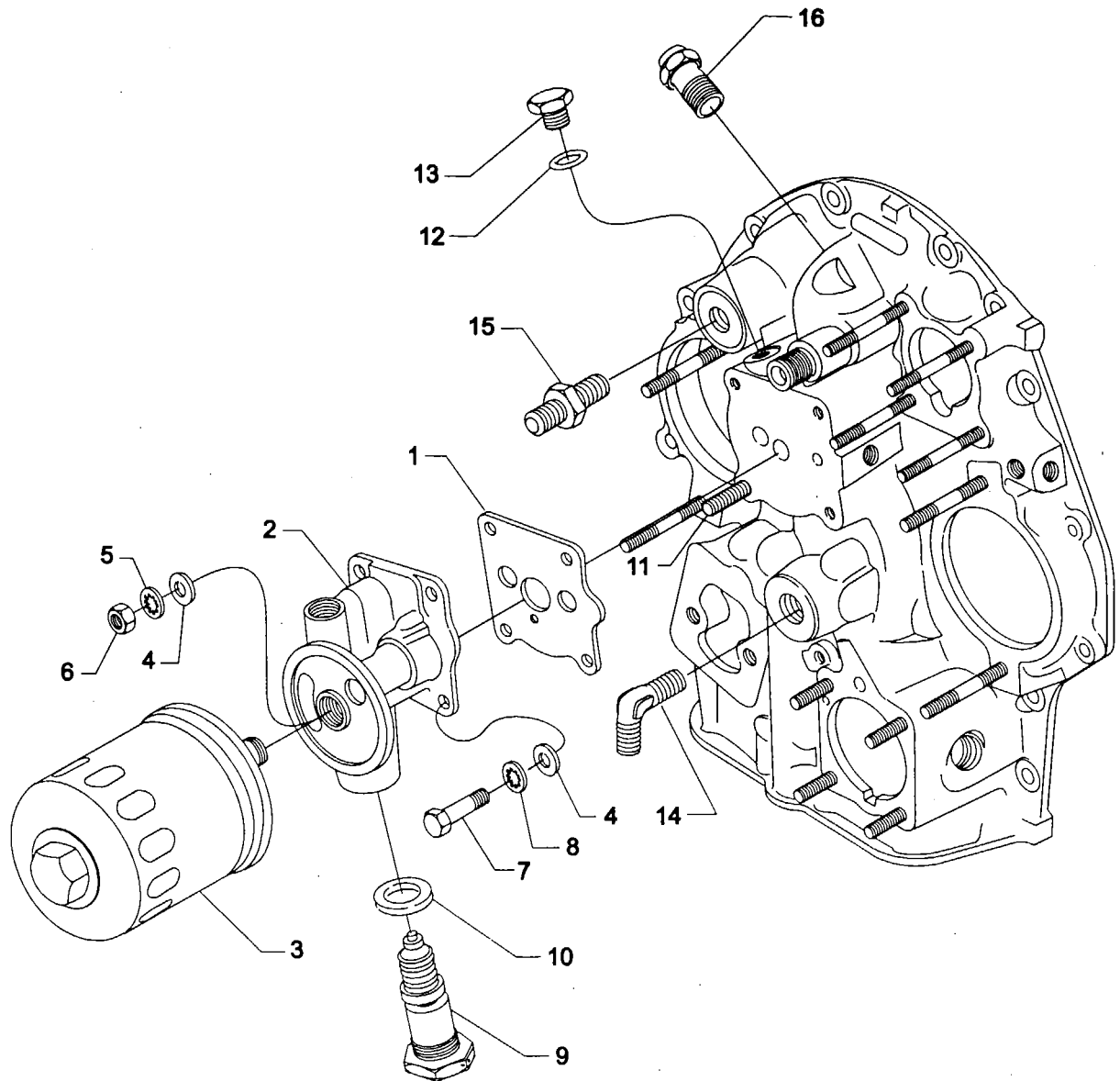


Figure 11. OIL FILTER ASSEMBLY AND OIL COOLER BYPASS VALVE

**ACCESSORY HOUSING AND RELATED PARTS
VACUUM AND HYDRAULIC PUMP DRIVES AND COVERS**

FIG. REF. 12	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	61183	GASKET, Accessory adapter	1
2	67536	ADAPTER ASSY., Vacuum pump	1
3	STD-1774	PIN, 1/8 dia. x 1/4 long	1
4	06A19956	OIL SEAL, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide	1
5	72974	GEAR ASSY., Vacuum pump driven	1
6	71596	WASHER, Accessory drive 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	69551	GASKET, Accessory drive adapter	1
13	69106	COVER, Governor drive adapter pad	1
14	STD-35	WASHER, 5/16 plain	4
15	STD-475	WASHER, 5/16 lock, internal teeth	4
16	STD-1410	NUT, 5/16-18 plain	4

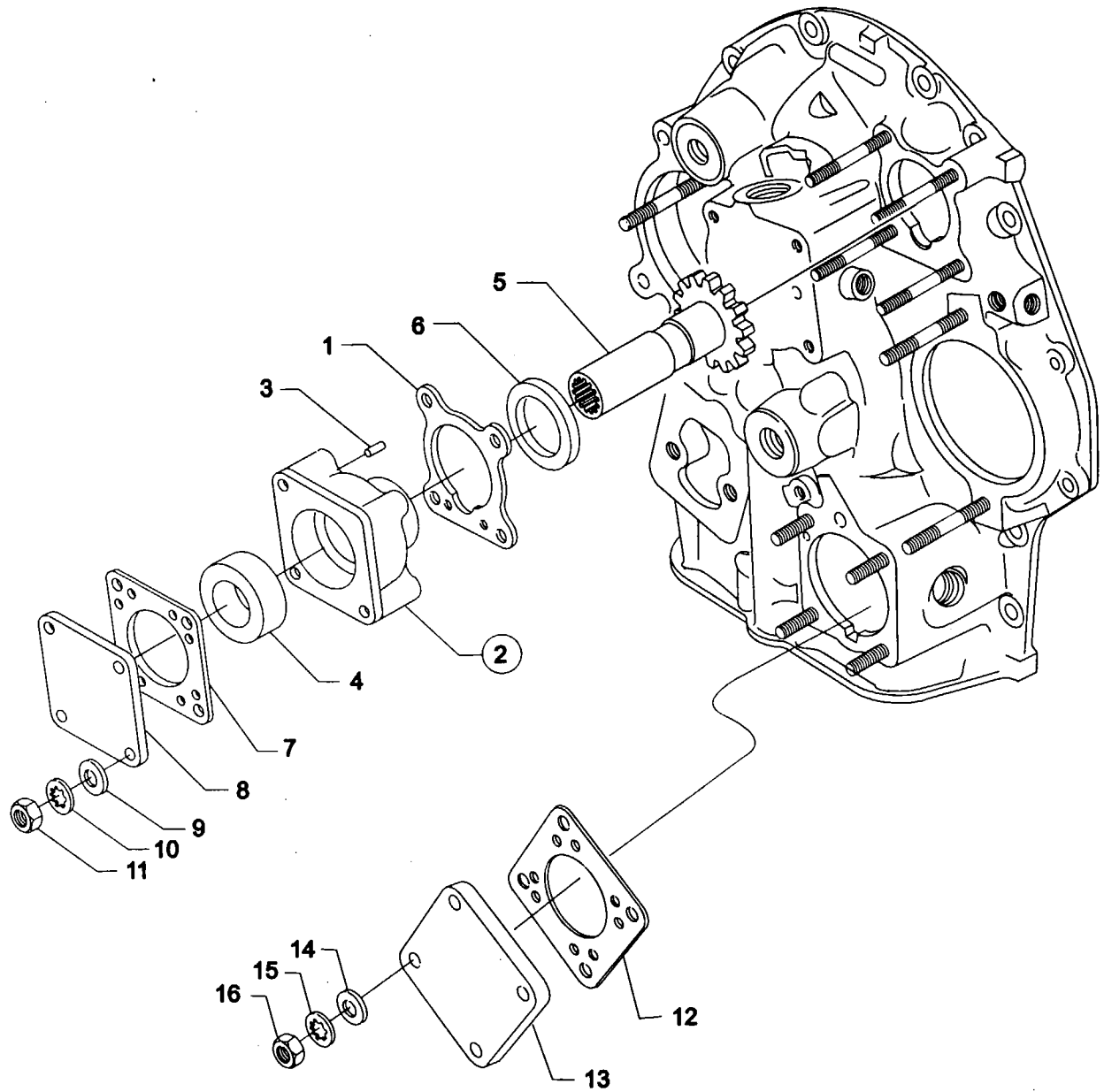


Figure 12. VACUUM AND HYDRAULIC PUMP DRIVES AND COVERS

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

FIG. REF. 13	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-11750	CONNECTING ROD ASSEMBLY	6
2	LW-13923	BUSHING, Connecting rod, upper	6
3	75061	BOLT, Connecting rod	12
4	LW-12186	NUT, Connecting rod bolt	12
5	18M19389	BEARING, Connecting rod	12
	LW-13521	BEARING, Connecting rod (alternate)	12
6	75089	PISTON, Compression ratio 8.50:1	6
7	LW-14078 *	PIN, Piston	6
8	72198 *	PLUG, Piston pin	12
9	74241	RING, Piston compression	12
10	14H21950	RING, Piston, oil regulating (expander type)	6

* See latest edition of Lycoming Service Instruction No. 1267.

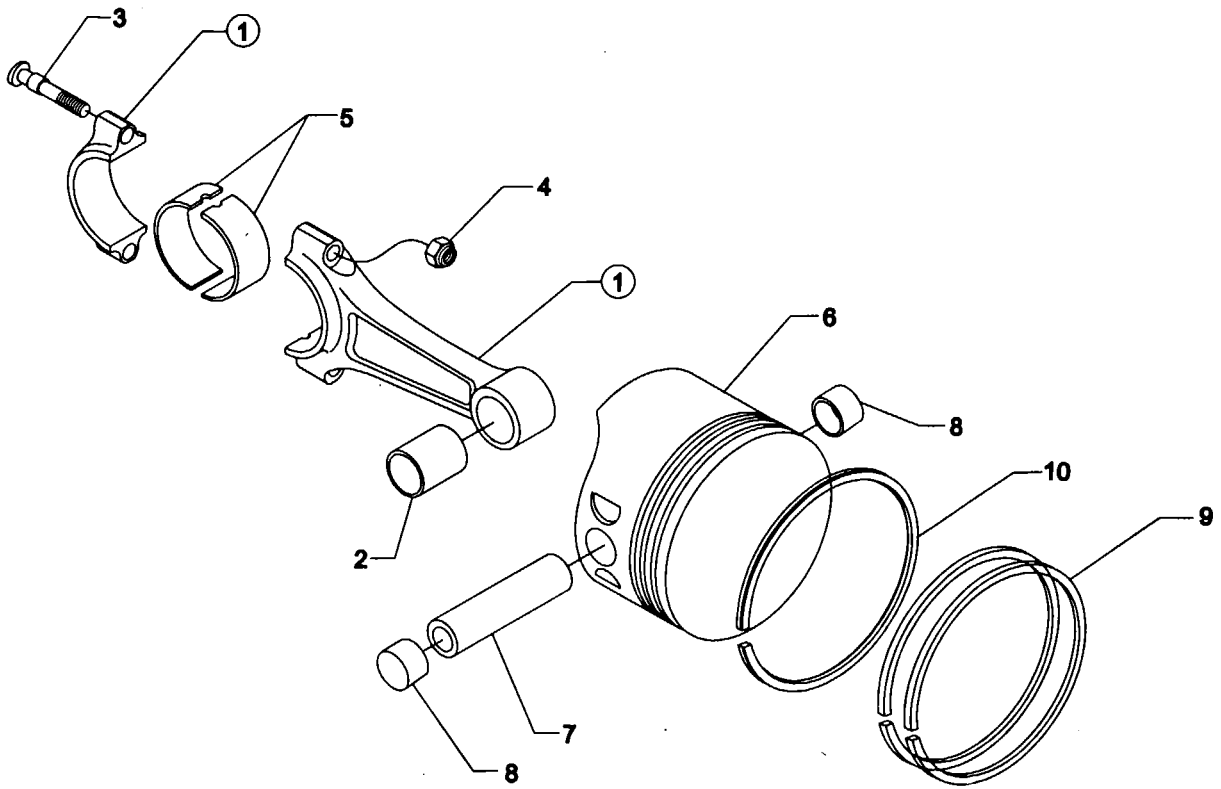


Figure 13. CONNECTING RODS, PISTON AND RING ASSEMBLIES

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

FIG. REF. 14	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-12427	CYLINDER AND HEAD ASSY., Nitrided	6
2	72057	SEAT, Intake valve	6
3	72058	SEAT, Exhaust valve	6
4	61681 *	GUIDE, Valve intake, flanged	6
5	16R22291 *	GUIDE, Valve exhaust, flanged	6
6	66796	INSERT, Spark plug, 18-1.5 MM	12
7	STD-1353	INSERT, No. 10-24 Heli-coil x 3/8 long	6
8	31C-12	STUD, 5/16-18 x 1-1/2 long	12
9	25C-8	STUD, 1/4-20 x 1.00 long	6
10	MS20823-6D	ELBOW, 45° x 3/8 flared tube	6
11	66610	BUSHING, Rocker shaft	24
12	1102 **	PLUG, 1/8-27 NPT, Allen head	6
13	LW-19296	GASKET, Exhaust flange	6
14	61260	FLANGE, Exhaust, stainless	6
15	STD-35	WASHER, 5/16 plain	12
16	STD-475	WASHER, 5/16 lock, internal teeth	12
17	STD-1410	NUT, 5/16-18 plain	12

* See latest edition of Lycoming Service Instruction No. 1256.

** Assemble in cylinder head.

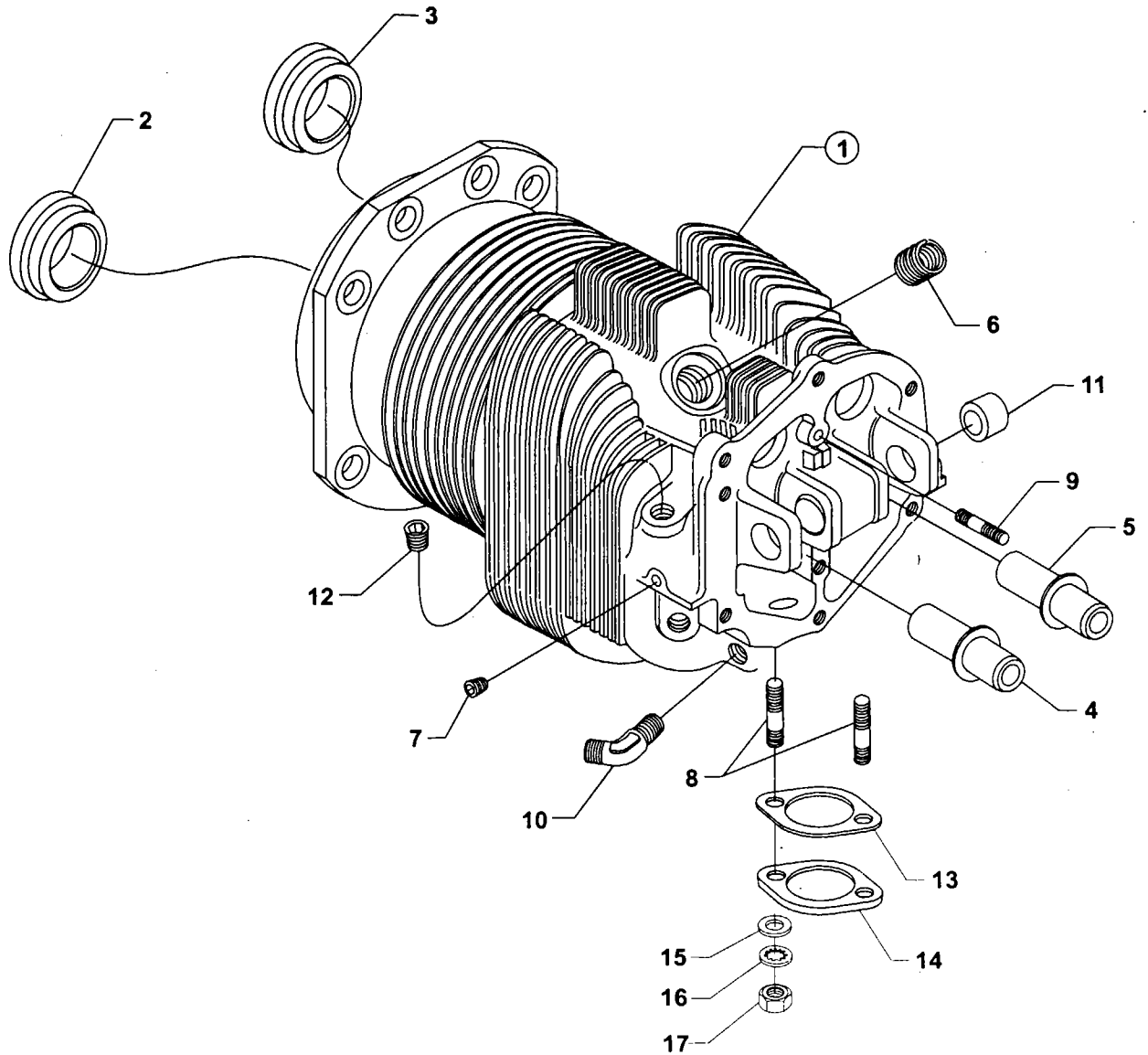


Figure 14. CYLINDER ASSEMBLY

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

FIG. REF. 15	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	73938	VALVE, Intake	6
2	LW-19001	VALVE, Exhaust (rotator type)	6
3	LW-11795	SPRING, Valve, inner	12
4	LW-11800	SPRING, Valve, outer	12
5	LW-10077	SEAT, Valve spring, upper intake	6
6	65441	SEAT, Valve spring, lower intake	6
7	LW-13323	SEAT, Valve spring, lower exhaust	6
8	LW-16475	SEAT, Valve spring, upper exhaust (rotator type)	6
9	60009	KEY, Valve intake	12
10	17C21191	KEY, Valve exhaust (rotator type)	12
11	17C19386	CAP, Valve stem, exhaust (rotator type)	6
12	78290	PLUNGER ASSY., Hydraulic tappet	12
13	15B21319	SOCKET, Push rod, hydraulic tappet	12
14	LW-11485	SHROUD TUBE ASSY., Push rod	12
15	LW-14995	SPRING, Shroud tube	6
16	LW-12272	LOCKPLATE, Shroud tube	6
17	STD-1411	NUT, 1/4-20 plain	6
18	LW-18661	SEAL, Shroud tube	12
19	70310	SEAL, Shroud tube	12
20	15F19957-34 *	ROD ASSY., Push (A total of 12 reqd.)	AR
	15F19957-35 *	ROD ASSY., Push (A total of 12 reqd.)	AR
	15F19957-36 *	ROD ASSY., Push (A total of 12 reqd.)	AR
	15F19957-37 *	ROD ASSY., Push (A total of 12 reqd.)	AR
21	17F19357	ROCKER ASSY., Valve intake and exhaust	12
22	74637	BUSHING, Valve rocker, intake and exhaust	12
23	LW-13790	SHAFT, Valve rocker	6
24	LW-12892	THRUST BUTTON, Rocker shaft	12

* See latest edition of Lycoming Service Instruction No. 1060 for complete push rod application.

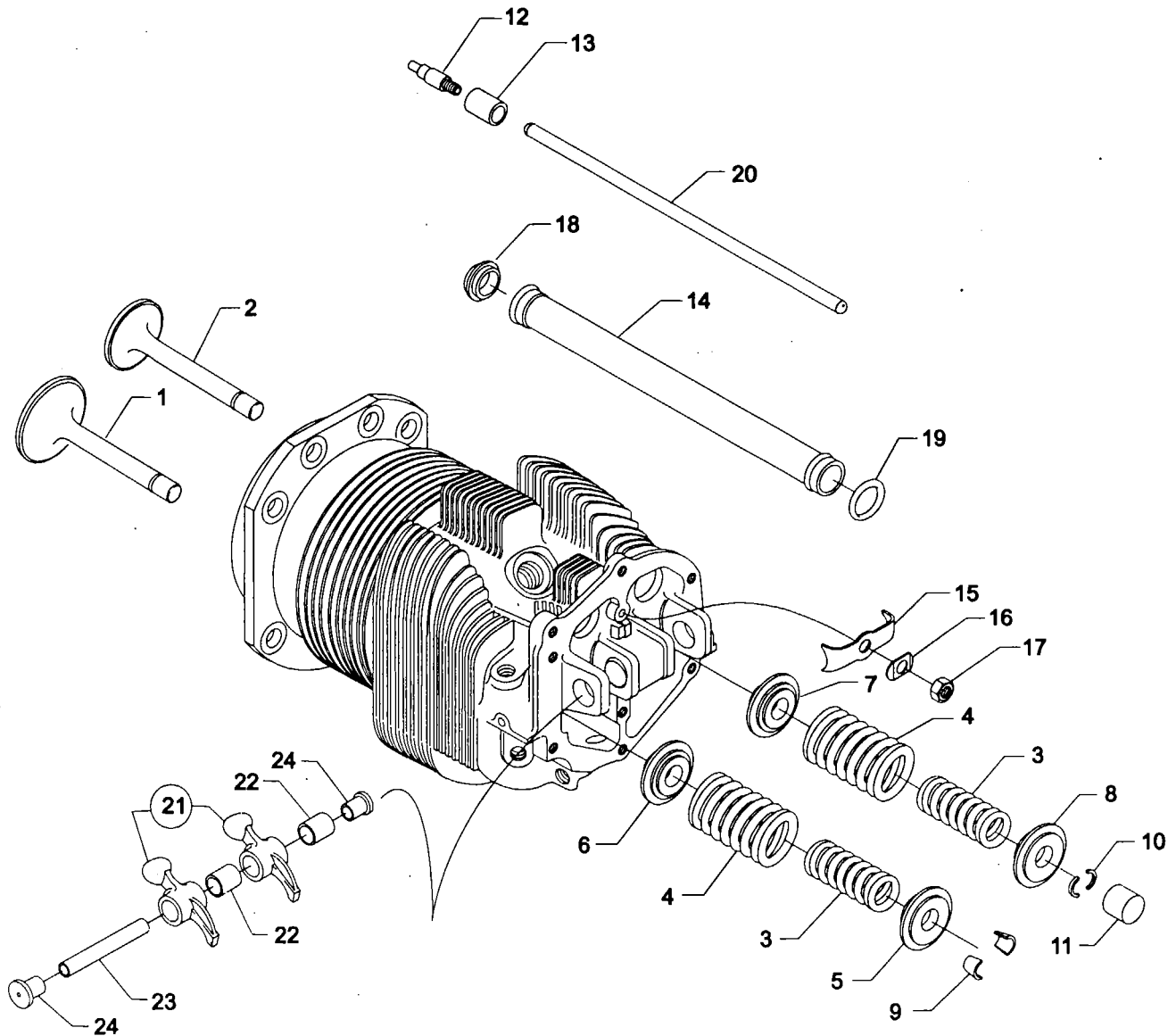


Figure 15. VALVE ASSEMBLY AND RELATED PARTS

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

FIG. REF. 16	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	75906	GASKET, Rocker box cover	6
2	61247	COVER, Rocker box	6
3	STD-1925	SCREW, 1/4-20 x 5/8 long, pan. hd., self-locking	36
4	71481	RING, Oil seal, 3/32 dia. x 4-27/32 I.D.	6
5	77906	SPACER, 33/64 I.D. x 7/8 O.D. x 1/8 thick	2
6	74887	SPACER, 33/64 I.D. x 7/8 O.D. x 3/8 thick	2
7	383-B	NUT, 3/8-24 plain	24
8	STD-2090	NUT, 1/2-20 plain	28
9	STD-684	NIPPLE, Straight, 3/8 I.D. hose	6
10	STD-1821	HOSE, 3/8 I.D. x 2-1/2 long	6
11	LW-15592-5-05	CLAMP, Hose	12
12	68759	TUBE ASSY., Cyl. head oil drain, cyl. no. 1	1
13	71737	TUBE ASSY., Cyl. head oil drain, cyl. no. 2	1
14	68761	TUBE ASSY., Cyl. head oil drain, cyls. no. 3, 4, 5, 6	4
15	75339	BAFFLE ASSY., Intercylinder	4
16	71611	RETAINER, Intercylinder baffle	4
17	71610	HOOK, Intercylinder baffle retainer	4

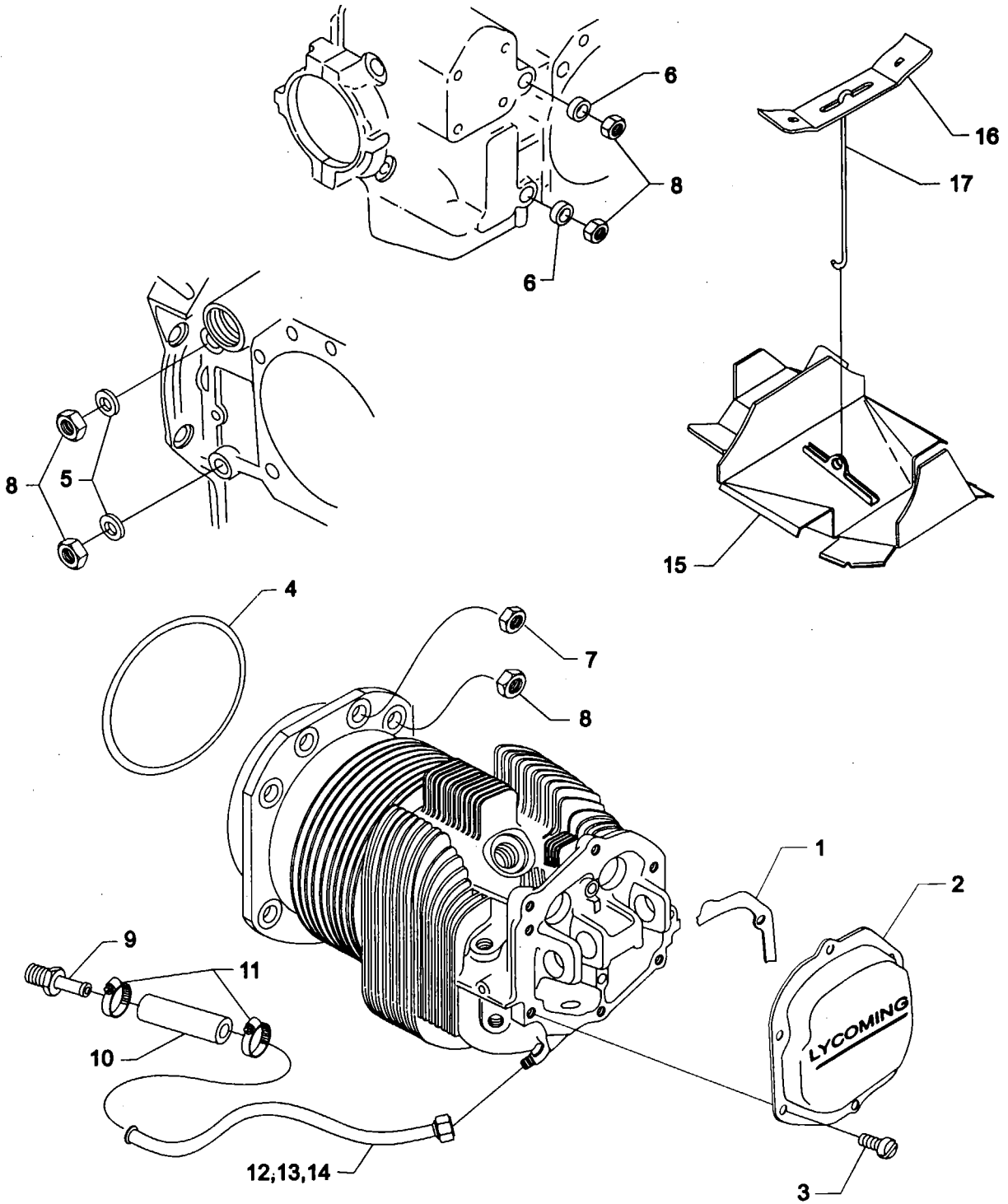


Figure 16. CYLINDER RELATED PARTS

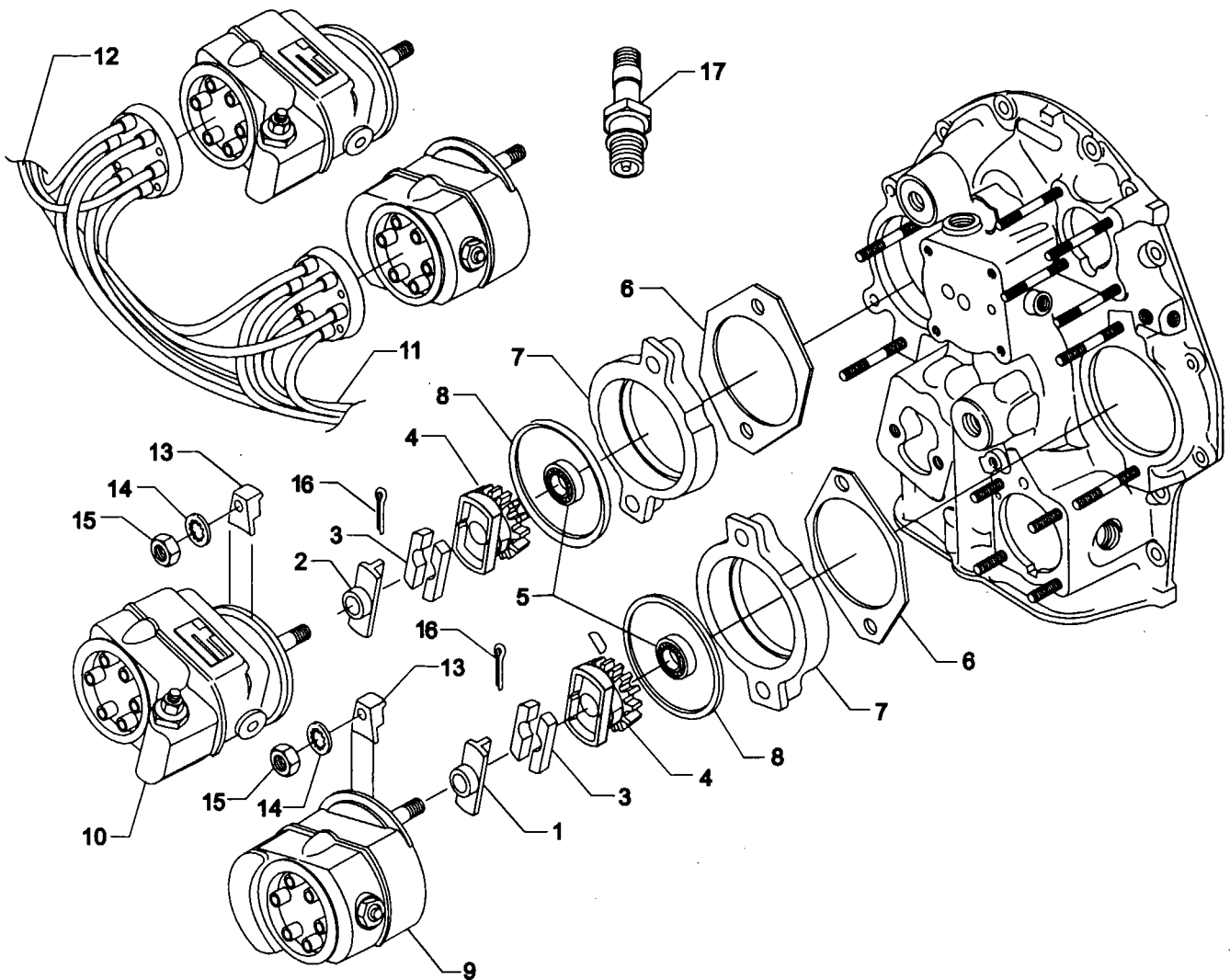
IGNITION SYSTEM

SLICK MAGNETOS, MAGNETO DRIVES, SLICK HARNESSES AND SPARK PLUGS

FIG. REF. 17	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	73000	COUPLING, Magneto drive	1
2	73013	COUPLING, Magneto drive	1
3	LW-13641	CUSHION, Magneto drive	4
4	LW-19096	GEAR ASSY., Retainer	2
5	67542	BALL BEARING	2
6	62224	GASKET, Magneto adapter	4
7	LW-12707	ADAPTER, Magneto	2
8	LW-12681	GASKET, Magneto	2
9	66LP-OSCNN	MAGNETO, Slick, Plain (6350)	1
10	66LR37SCNN	MAGNETO, Slick, Retard (6393)	1
11	67U20608	HARNESS, Right, Slick M-2878	1
12	67U20609	HARNESS, Left, Slick M-2877	1
13	66M21195	CLAMP, Magneto	4
14	STD-475	WASHER, 5/16 lock, internal teeth	4
15	STD-1410	NUT, 5/16-18 plain	4
16	STD-713	COTTER PIN, 3/32 dia. x 3/4 long	2
17	1182-E7 *	SPARK PLUG, Champion (REM38E) or Auburn (SR8)	12
**	01P19762-3-13	BAG, Magneto harness attaching	1

* Item No. 17 spark plugs are 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.

** See page 4-2 for a breakdown of individual parts contained in the magneto and harness attaching parts bag. These parts to be attached by customer per engine line drawing included in each bag.



01P19762-3-13 ATTACHING PARTS

LW-16266-25-25	CLIP, One wire	2
LW-14060	CLIP, Two wire	3
STD-8	WASHER, 1/4 plain	10
STD-160	WASHER, 1/4 lock	8
STD-1874	SCREW, 1/4-20 x 13/16 long	8
76734	ZIP STRAP	8
LW-16266-25-44	CLAMP	3
STD-696	WASHER, 1/4 plain	6
LW-M-2376	PLATE Spark plug cable	2
STD-1411	NUT, 1/4-20 plain	4

Figure 17. SLICK MAGNETOS, MAGNETO DRIVES, SLICK HARNESSSES AND SPARK PLUGS

ELECTRICAL SYSTEM SKY-TEC STARTER AND ATTACHING PARTS

FIG. REF. 18	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	31B22105	STARTER, Sky-Tec (149-24 LS)	1
2	STD-475	WASHER, 5/16 lock, internal teeth	4
3	LW-31-1.16	BOLT, 5/16-18 x 1-5/32 long, hex. hd.	1
4	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, alternators, regulators and relays.

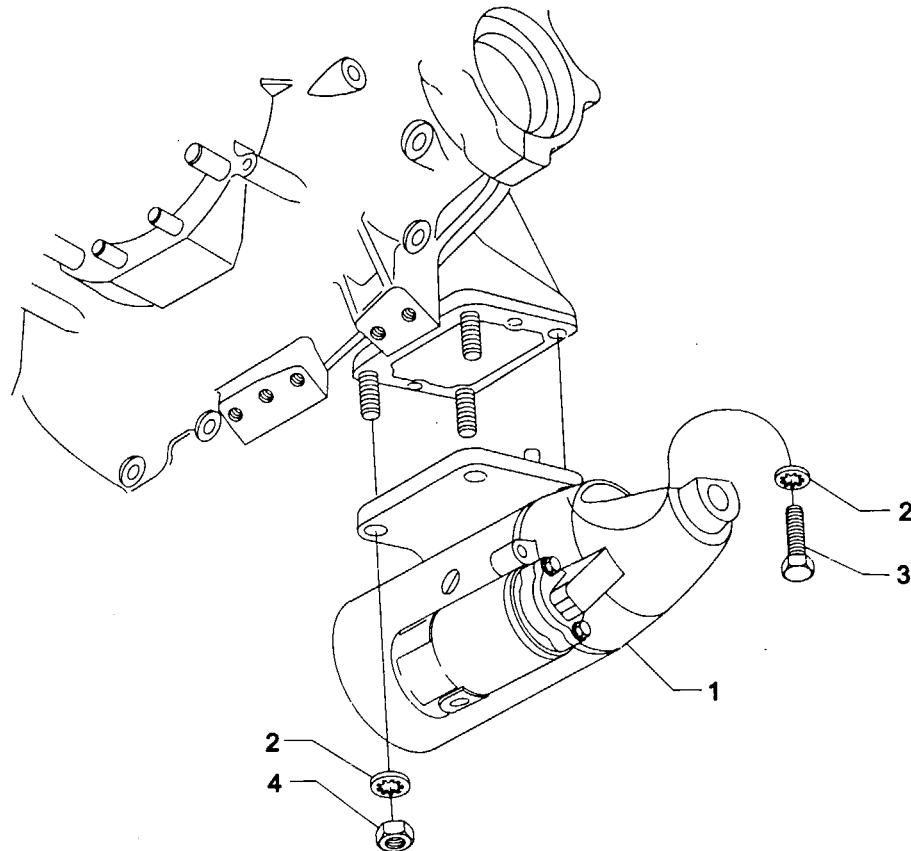


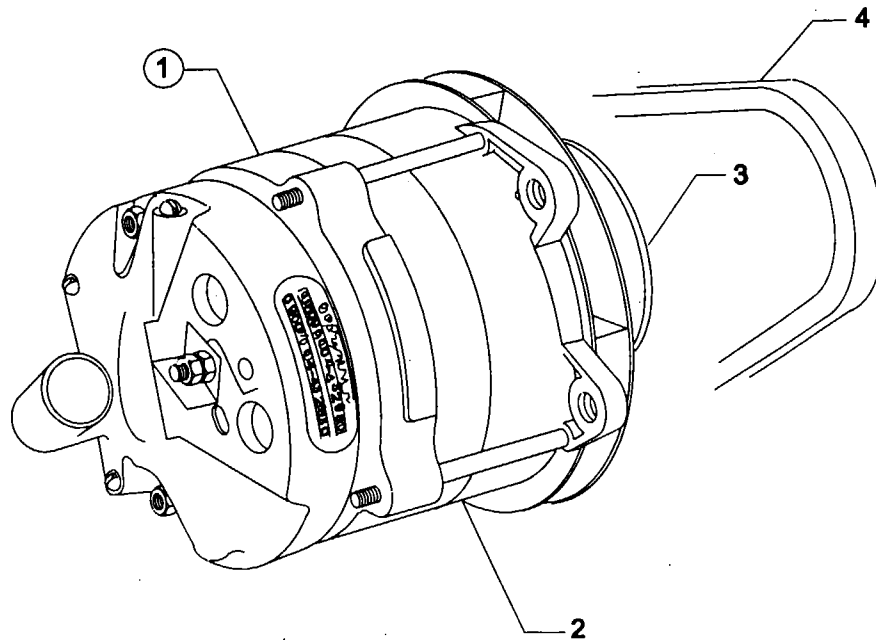
Figure 18. SKY-TEC STARTER AND ATTACHING PARTS

**ELECTRICAL SYSTEM
ALTERNATOR ASSEMBLY AND BELT**

FIG. REF. 19	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	32C19553	ALTERNATOR ASSY., 24 Volt, 70 Amp.	1
2	LW-14326	ALTERNATOR, (ALU-8521-LS)	1
3	36B19484	PULLEY, Alternator	1
4	37A19773-376	BELT, Alternator drive, 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.

**Figure 19. ALTERNATOR ASSEMBLY AND BELT**

**ELECTRICAL SYSTEM
ALTERNATOR MOUNTING AND ATTACHING PARTS**

FIG. REF. 20	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. hd.	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	07F23268	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.	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	COTTER PIN, 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 .005 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	COTTER PIN, 3/32 dia. x 3/4 long	1

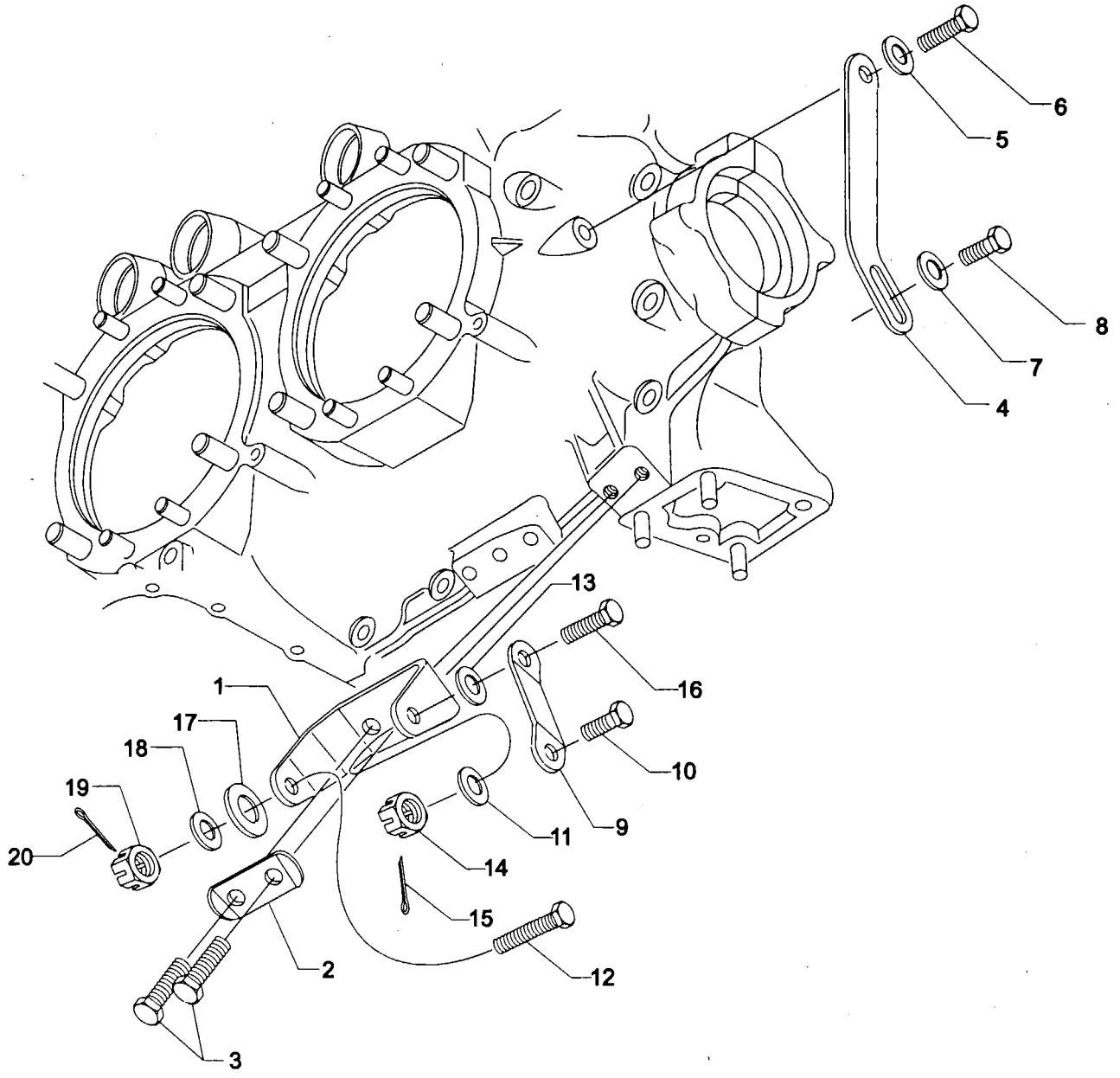


Figure 20. ALTERNATOR MOUNTING AND ATTACHING PARTS

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

FIG. REF. 21	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	06B21326	GASKET, Oil sump	1
2	LW-13901	SUMP ASSY., Oil	1
3	71699	CONNECTION, Intake pipe	6
4	25C-11	STUD, 1/4-20 x 1-3/8 long	14
5	31C-15	STUD, 5/16-18 x 1-7/8 long	4
6	38-15	STUD, 3/8-16 x 1-7/8 long	8
7	STD-1173	INSERT, 1/4-20 Helicoil x 1/2 long	4
8	STD-8	WASHER, 1/4 plain	34
9	STD-160	WASHER, 1/4 lock, internal teeth	27
10	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. hd.	7
11	LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. hd.	6
12	STD-1411	NUT, 1/4-20 plain	21
13	STD-551	PLUG, 1/2-14 NPT, Sq. hd., drilled	2
14	STD-2229	PLUG, 1/2 NPT, Allen hd.	2
15	70484	SCREEN, Oil suction	1
16	06E19769-1.00	GASKET, Annular. 1.00 I.D.	1
17	LW-12545	PLUG, 5/8 hex. hd. x 1.00-20 thd.	1

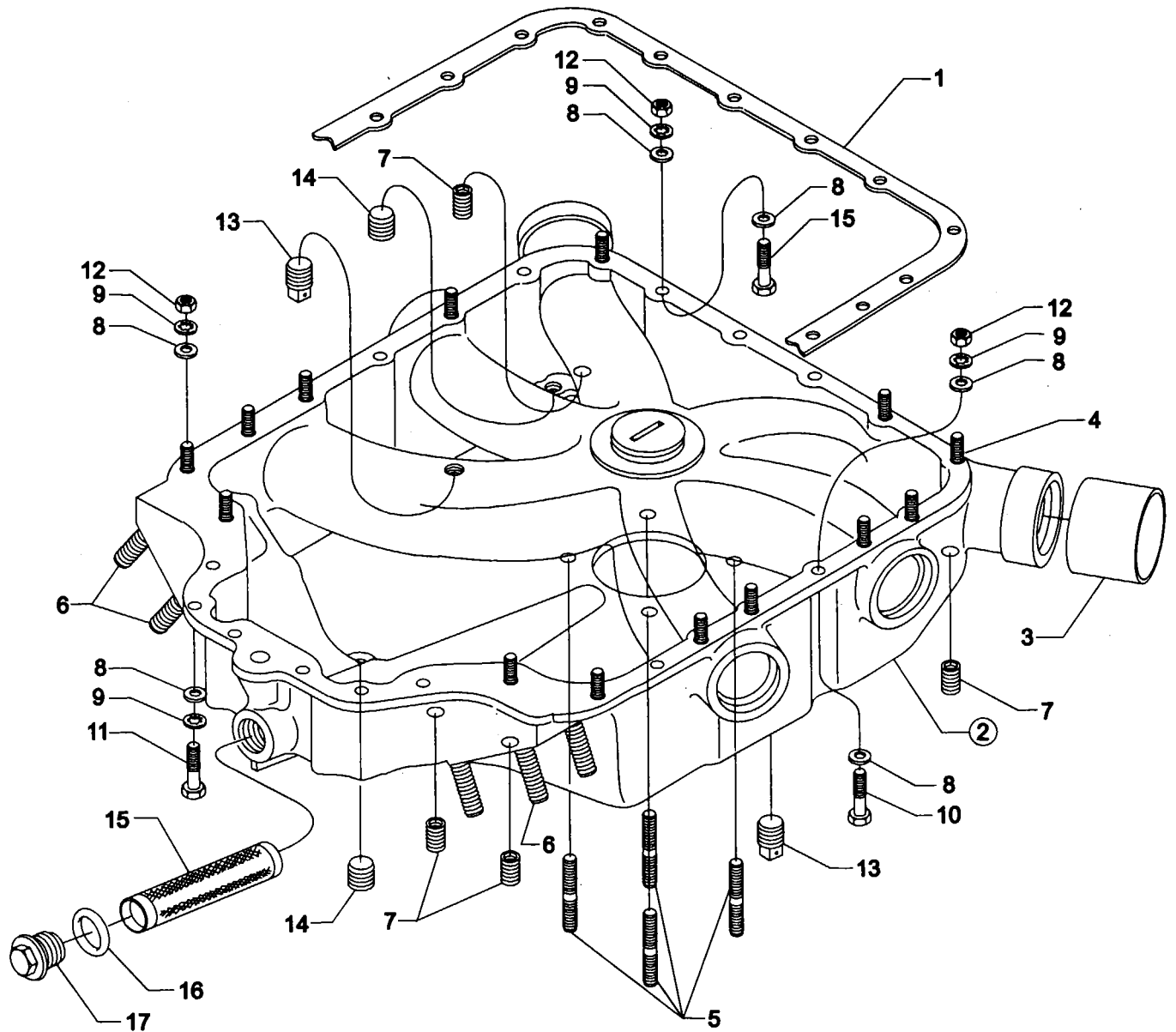


Figure 21. OIL SUMP ASSEMBLY AND OIL SUCTION SCREEN

**OIL SUMP AND INDUCTION SYSTEM
INTAKE PIPE ASSEMBLY**

FIG. REF. 22	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	70485	PIPE, Intake	6
2	69603	HOSE, 1-3/4 I.D. x 2-3/16 O.D. x 1-3/4 long	6
3	LW-15592-8-28	CLAMP, Hose	12
4	71973	GASKET, 2 bolt flange, 1-3/4 I.D.	6
5	73346	FLANGE, Intake pipe, upper	6
6	STD-8	WASHER, 1/4 plain	12
7	STD-160	WASHER, 1/4 lock, internal teeth	12
8	LW-25-1.25	BOLT, 1/4-20 x 1-1/4 long, hex. hd.	12

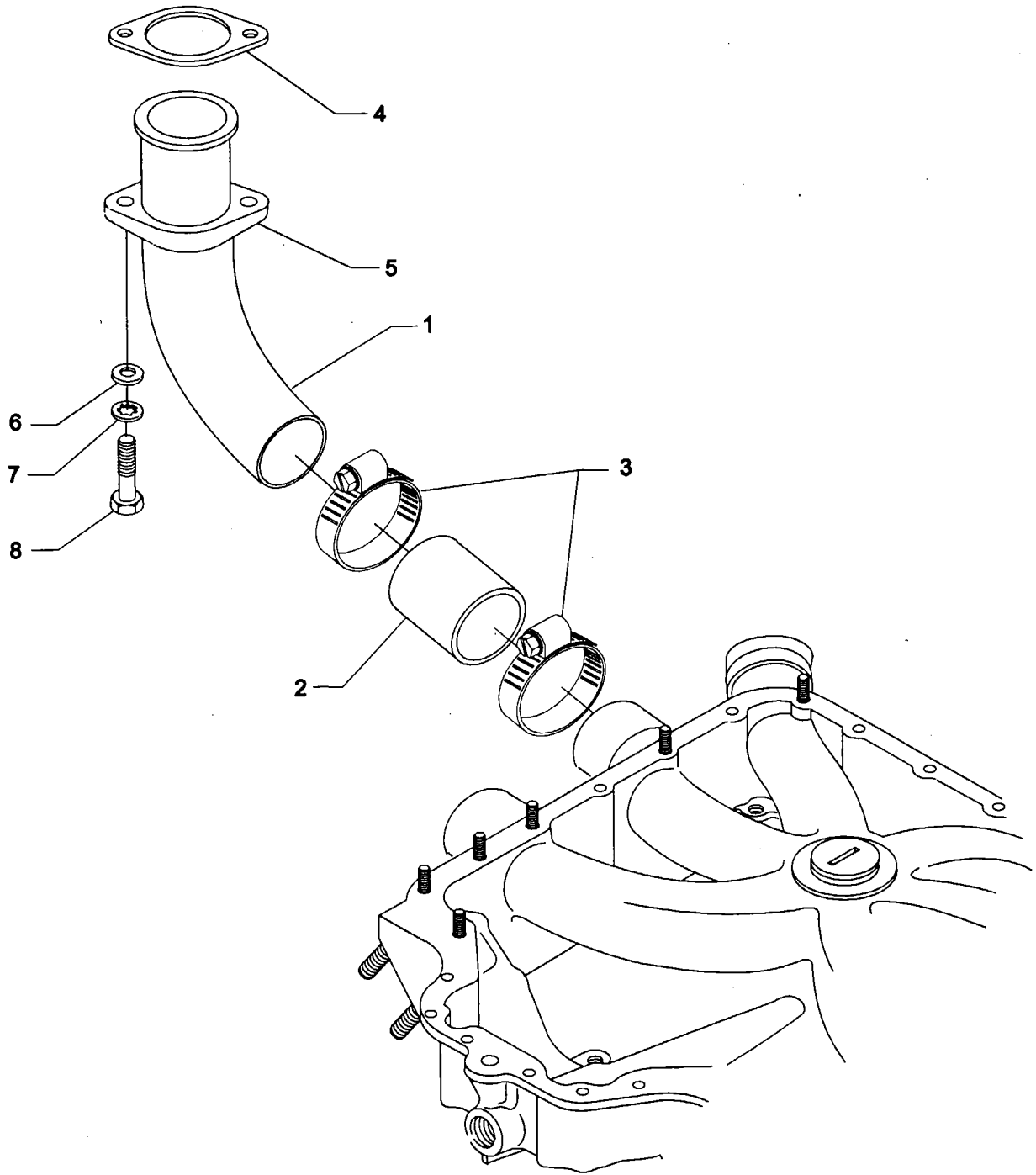


Figure 22. INTAKE PIPE ASSEMBLY

**OIL SUMP AND INDUCTION SYSTEM
CARBURETOR AND RELATED PARTS**

FIG. REF. 23	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	66224	GASKET, Carburetor	1
2	LW-10540	CARBURETOR, MA4-5 (10-5054)	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

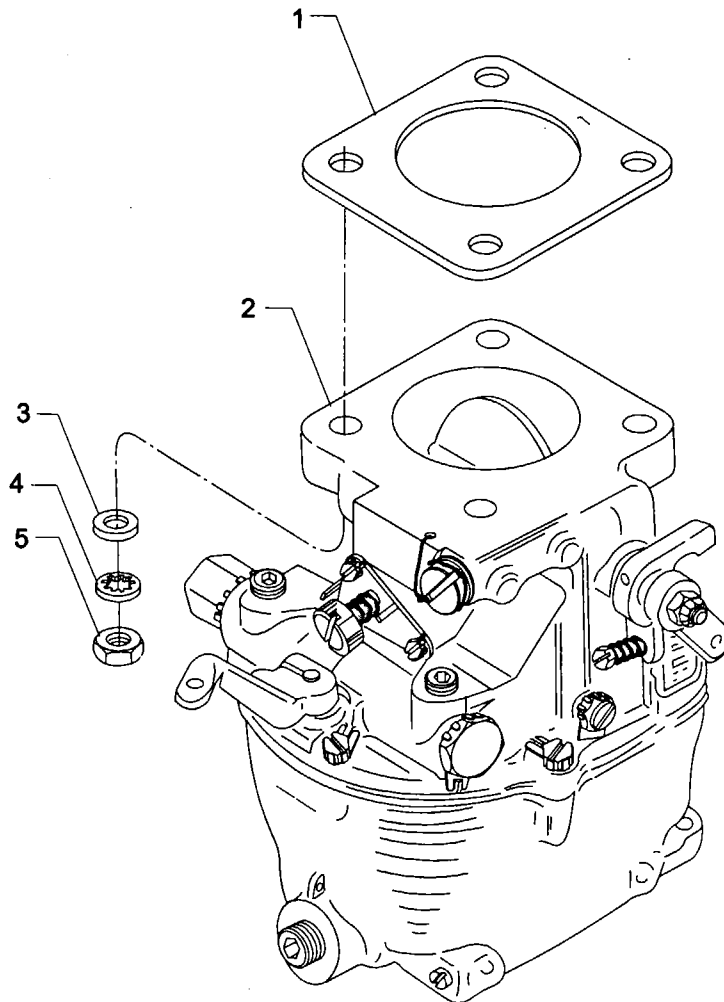


Figure 23. CARBURETOR AND RELATED PARTS

SERVICE KIT SECTION SEAL AND GASKET SET

Part No.	Part Name	Qty.
71569-1	KIT – SEAL AND GASKET SET	1
LW-12272	LOCKPLATE, Shroud tube	6
LW-12681	GASKET, Magneto	2
LW-12795	GASKET, Oil filter adapter	1
06B21326	GASKET, Oil sump	1
LW-13792	SEAL, Crankshaft oil	1
LW-14260	SEAL, Tachometer drive oil	1
LW-14995	SPRING, Shroud tube	6
LW-15628	SEAL, Crankshaft	1
LW-18638	LOCKPLATE, Crankshaft gear	1
LW-18661	SEAL, Shroud tube	12
LW-19296	GASKET, Exhaust flange	6
STD-2231	RING, Internal retaining	1
06E19769-1.00	GASKET, Annular	1
STD-213	SEAL, Oil	1
06E19769-0.63	GASKET, Annular	2
06E19769-1.25	GASKET, Annular	1
06A19956	SEAL, Oil	2
1691-C	GASKET, Fuel pump	1
60096	GASKET, Fuel pump	1
61173	GASKET, Oil pressure housing	1
61183	GASKET, Accessory adapter	1
62224	GASKET, Magneto adapter	4
66224	GASKET, Carburetor	1
68315	GASKET, Accessory drive adapter	1
69164	GASKET, Fuel pump adapter	1
69345	SPACER	6
69551	GASKET, Accessory drive adapter	1
70310	SEAL, Shroud tube	12
70455	GASKET	1
70457	GASKET	1
71481	RING, Oil seal	6
71667	LOCKPLATE, Fuel pump idler gear	1
71973	GASKET, 2 bolt flange	6
72053	GASKET, Governor	1
72059	GASKET, Oil level gage	1
72075	RING, Oil seal	8
72078	LOCKPLATE, Cam gear	2
72091	RING, Oil seal	2
72210	GASKET	1
72312	RING, Oil seal	1
73383	LOCKPLATE	2
73818	GASKET, Accessory housing	1
74065	“O” RING, Oil level gage	1

SERVICE KIT SECTION SEAL AND GASKET SET (Continued)

Part No.	Part Name	Qty.
71569-1	KIT – SEAL AND GASKET SET (Continued)	1
74068	“O” RING	1
74305	SEAL	1
75906	GASKET, Rocker box cover	6
76510	GASKET	1
76940	SEAL, Crankshaft oil	1
8313	GASKET, Vacuum pump	2

SERVICE KIT SECTION CYLINDER, PISTON AND RING KIT

Part No.	Part Name	Qty.
05K21104	KIT – CYLINDER, PISTON AND RING ASSY.	1
LW-12427	CYLINDER ASSEMBLY	1
LW-19001	VALVE, Exhaust	1
73938	VALVE, Intake	1
LW-11800	SPRING, Valve, outer	2
LW-11795	SPRING, Valve, inner	2
LW-10077	SEAT, Valve spring, upper intake	1
LW-16475	SEAT, Valve spring, upper exhaust	1
65441	SEAT, Valve spring, lower intake	1
LW-13323	SEAT, Valve spring, lower exhaust	1
60009	KEY, Valve, intake	2
17C21191	KEY, Valve, exhaust	2
17C19386	CAP, Valve stem, exhaust	1
75089	PISTON	1
74241	RING, Piston, compression	2
14H21950	RING, Piston, oil regulating	1
LW-14078	PIN, Piston	1
60828	PLUG, Piston pin	2
71481	RING, Oil seal	1
LW-18661	SEAL, Shroud tube	2
70310	SEAL, Shroud tube	2
75906	GASKET, Rocker box cover	1
72198	PLUG, Piston pin	2
77611	GASKET, Exhaust	1
71973	GASKET, 2 bolt flange	1
LW-12272	LOCKPLATE, Shroud tube	1
SSP-299	TAG	1

SERVICE KIT SECTION CRANKCASE ASSY. AND THRU STUD KIT

Part No.	Part Name	Qty.
11E24000-S1-S	KIT, CRANKCASE ASSY. AND THRU STUD	1
11E24000-S1	CRANKCASE ASSEMBLY	1
76220	THRU STUD	8
31C-14	STUD, 5/16-18 x 1-3/4 long	4
31C-16	STUD, 5/16-18 x 2.00 long	4
STD-1339	PLUG, 1/16-27 NPT	7
AN565B1032H4	SET SCREW, No. 10-32 x 1/4 long	1
AN565B1032H5	SET SCREW, No. 10-32 x 5/16 long	1
1102	PLUG, 1/8 pipe, oil pressure	4
LW-31-2.75	BOLT, 5/16-18 x 2-3/4 long	1
LW-31-1.16	BOLT, 5/16-18 x 1-5/32 long	3
STD-35	WASHER, 5/16 plain	4
STD-475	WASHER, 5/16 lock, internal teeth	4

SERVICE KIT SECTION CRANKSHAFT & COUNTERWEIGHT ASSY. KIT

Part No.	Part Name	Qty.
05K27676	KIT, CRANKSHAFT & COUNTERWEIGHT ASSY.	1
13E27622	CRANKSHAFT & BUSHING ASSY.	1
LW-19227	COUNTERWEIGHT ASSY.	2
72965	ROLLER, Counterweight	2
72797	ROLLER, Counterweight	2
71907	WASHER, Dynamic counterweight	8
LW-14820	RING, Internal retaining	8

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PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
AN565B1032H5	Set Screw	1-11	LW-13790	Shaft	3-5
AN6-16	Bolt	5-3	LW-13792	Crankshaft Seal	1-5
AN6-17	Bolt	5-3	LW-13794	Stud	1-1
AN6-34A	Bolt	1-13	LW-13795	Shaft	1-9
AN816-8	Nipple	2-7	LW-13884	Bearing	1-5
LW-25-0.94	Bolt	2-3	LW-13896	Plug	1-11
LW-25-1.00	Bolt	2-7	LW-13901	Sump Assy.	6-1
LW-25-1.00	Bolt	6-1	LW-13923	Bushing	3-1
LW-25-1.13	Bolt	1-13	LW-14021	Shaft	1-11
LW-25-1.13	Bolt	2-3	LW-14078	Piston Pin	3-1
LW-25-1.13	Bolt	6-1	LW-14260	Tachometer Seal	2-3
LW-25-1.25	Bolt	6-3	LW-14326	Alternator	5-2
LW-25-1.44	Bolt	2-3	LW-14756	Gage Assy.	1-3
LW-25-1.50	Bolt	1-13	LW-14820	Ring	1-7
LW-25-1.75	Bolt	1-13	LW-14995	Spring	3-5
LW-25S1.50	Bolt	1-13	LW-15472	Fuel Pump	2-5
LW-31-0.94	Bolt	5-3	LW-15592-5-05	Clamp	3-7
LW-31-1.16	Bolt	1-13	LW-15592-8-28	Clamp	6-3
LW-31-1.16	Bolt	5-1	LW-16471	Support Assy.	1-7
LW-31-2.75	Bolt	1-13	LW-16475	Seat	3-5
LW-31H0.75	Bolt	5-3	LW-16711	Bearing	1-5
LW-31H0.88	Bolt	1-9	LW-18085	Spring	1-5
LW-10077	Seat	3-5	LW-18638	Lockplate	1-7
LW-10442	Gear	1-11	LW-18661	Seal	3-5
LW-10540	Carburetor	6-5	LW-18667	Pin	1-9
LW-10541	Gear Assy.	1-11	LW-19001	Exhaust Valve	3-5
LW-11485	Shroud Tube Assy.	3-5	LW-19096	Gear Assy.	4-1
LW-11713	Spring	1-5	LW-19227	Counterweight Assy.	1-7
LW-11750	Conn. Rod Assy.	3-1	LW-19296	Gasket	3-3
LW-11795	Spring	3-5	LW-19340	Camshaft Assy.	1-9
LW-11800	Spring	3-5	MS20822-8	Elbow	2-7
LW-11997	Crankshaft Seal	1-5	MS20823-6D	Elbow	3-3
LW-12186	Nut	3-1	MS29512-06	"O" Ring	2-5
LW-12272	Lockplate	3-5	STD-8	Washer	1-13
LW-12427	Cyl. & Head Assy.	3-3	STD-8	Washer	2-3
LW-12545	Plug	6-1	STD-8	Washer	2-7
LW-12681	Gasket	4-1	STD-8	Washer	2-9
LW-12707	Adapter	4-1	STD-8	Washer	6-1
LW-12795	Gasket	2-7	STD-8	Washer	6-3
LW-12892	Thrust Button	3-5	STD-19	Dowel	1-11
LW-13215	Oil Filter	2-7	STD-33	Washer	1-3
LW-13323	Seat	3-5	STD-33	Washer	1-13
LW-13521	Bearing	3-1	STD-33	Washer	2-5
LW-13641	Cushion	4-1	STD-35	Washer	1-11

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