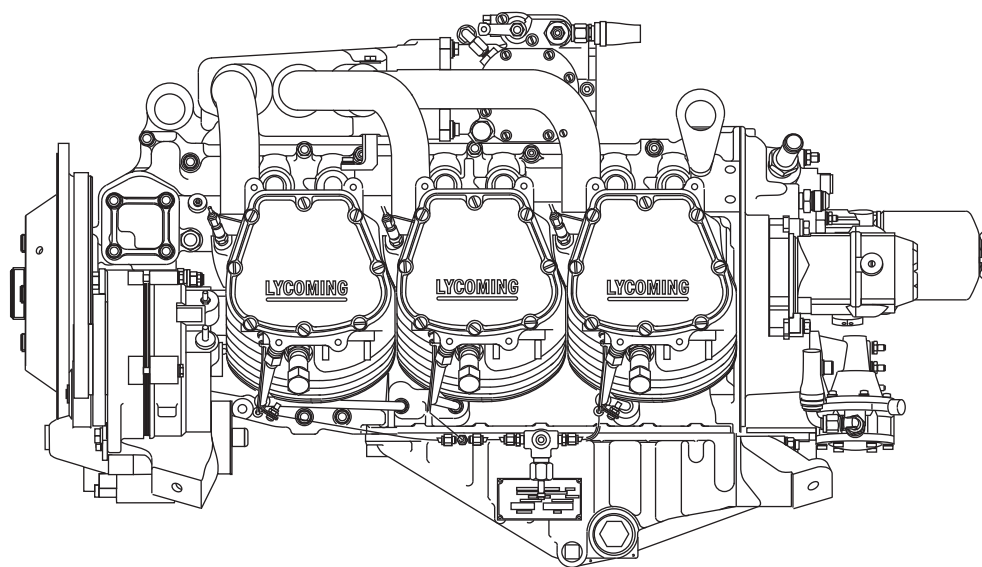


Lycoming AIRCRAFT ENGINES

IO-540-AC1A5 Wide Series Flange Crankcase Model Engine

PARTS CATALOG PC-615-12



November 2008

Lycoming

652 Oliver Street
Williamsport, PA 17701 U.S.A.
570/323-6181

This illustrated parts catalog contains a complete parts listing for the Lycoming IO-540-AC1A5 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
66670	BUSHING		X	X								
69260	INSERT		X	X								
69796	DOWEL		X									
71903-A	BUSHING	See Latest Edition of Service Instruction No. 1143.										
75656-S	BUSHING		X	X								
75657-S	BUSHING		X	X								
78443	SEAL	See Latest Edition of Service Instruction No. 1324.										
LW-13683	BEARING									X	X	X
LW-13885	BEARING									X*	X*	X*
LW-14830	BEARING									X*	X*	
LW-15628	SEAL	See Latest Edition of Service Instruction No. 1324.										
LW-19042	SEAT			X		X	X					
16T19468	SEAT			X		X	X					
16P21709	GUIDE	See Latest Edition of Service Instruction No. 1256.										
16R21710	GUIDE	See Latest Edition of Service Instruction No. 1256.										
18A19399	BEARING									X*	X*	X*

* 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 along with the proper part number. For example, to order bearing LW-13885 in .003 undersize, order part number LW-13885-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	QTY. PER ASSY.
1	11F24024-S7	CRANKCASE ASSEMBLY (See Note)	1
2	38-21	STUD, 3/8-16 x 2-5/8 long	1
3	38-26	STUD, 3/8-16 x 3-1/4 long	4
4	38-23	STUD, 3/8-16 x 2-7/8 long	2
5	31C-13	STUD, 5/16-18 x 1-5/8 long	3
6	38-13	STUD, 3/8-16 x 1-5/8 long	24
7	50-15	STUD, 1/2-13 x 1-7/8 long	12
8	38-22	STUD, 3/8-16 x 2-3/4 long	1
9	38D-17	STUD, 3/8-16 x 2-1/8 long, drilled	1
10	10-8	STUD, No. 10-32 x 1.00 long	2
11	10D-8	STUD, No. 10-32 x 1.00 long, drilled	1
12	LW-13794	STUD, 5/16-18 x 1.00 long, drilled	1
13	69796	DOWEL, Crankshaft bearing	2
14	STD-514	DOWEL, 5/16 dia. x 1/2 long	2
15	STD-557	DOWEL, 1/2 dia. x 11/16 long, hollow	2
16	72158	BUSHING, Governor drive idler shaft	1
17	31C-17	STUD, 5/16-18 x 2-1/8 long	4
18	73772	NOZZLE ASSY., Piston cooling	6
19	MS29512-06	"O" RING, 15/32 I.D. x 5/64 section	1
20	AN814-6L	PLUG, 9/16-18 hex. head	1

NOTE

This crankcase assembly is not available as a service item. Refer to Service Kits, Section 7, for applicable Crankcase Assembly and Governor Stud Kit Part Number.

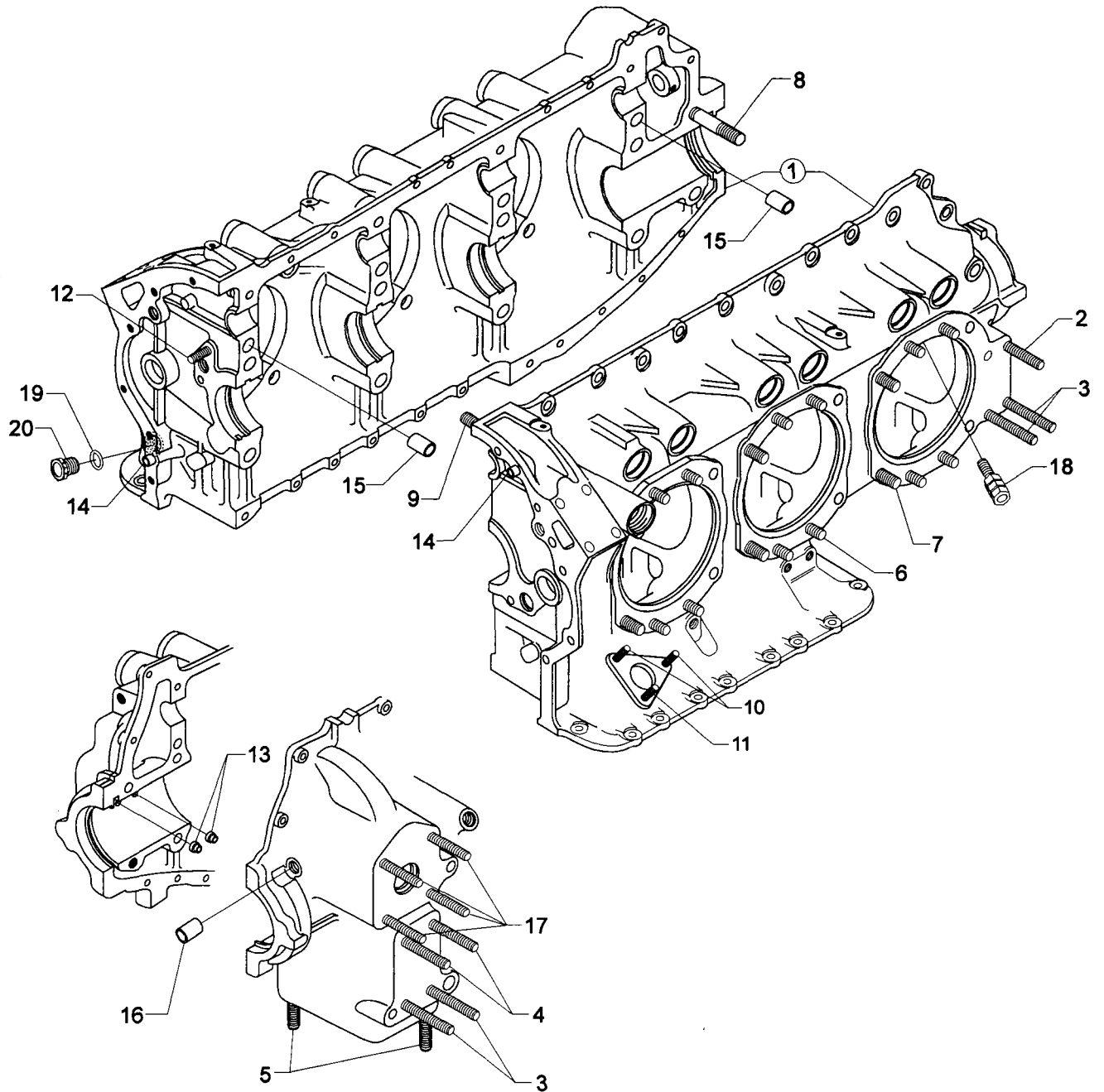


Figure 1. CRANKCASE ASSEMBLY

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

FIG REF. 2	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	LW-18481	GASKET, Oil filler adapter	1
2	12D22326	ADAPTER, Oil filler tube	1
3	STD-28	WASHER, No. 10 plain	3
4	STD-251	WASHER, No. 10 internal lock	3
5	STD-63	NUT, No. 10-32 plain	3
6	72059*	GASKET, Oil level gage	1
7	56C22332*	TUBE, Oil level gage (long)	1
8	07C22331*	CLAMP, Oil filler tube	1
9	73966*	SPACER	1
10	07A22329*	BRACKET, Twist, 55°	1
11	STD-8*	WASHER, 1/4 plain	1
12	STD-160*	WASHER, 1/4 lock, internal teeth	1
13	LW-25-1.50*	BOLT, 1/4-20 x 1-1/2 long, hex. hd.	1
14	STD-425*	WASHER, No. 10 plain	2
15	STD-860*	SCREW, No. 10-32 x 5/8 long, fill. hd.	1
16	STD-670*	LOCKNUT, No. 10-32	1
17	74068*	RING, Oil level gage plug	1
18	LW-16783-26*	GAGE ASSY., Oil level	1
19	12A22201	BRACKET, Engine mount, left rear	1
20	12A22202	BRACKET, Engine mount, right rear	1
21	12A22233	BRACKET, Engine mount, left front	1
22	12A22234	BRACKET, Engine mount, right front	1
23	STD-33	WASHER, 3/8 plain	11
24	STD-678	WASHER, 3/8 lock, internal teeth	11
25	STD-596	NUT, 3/8-24 plain	11

* These parts are shipped loose.

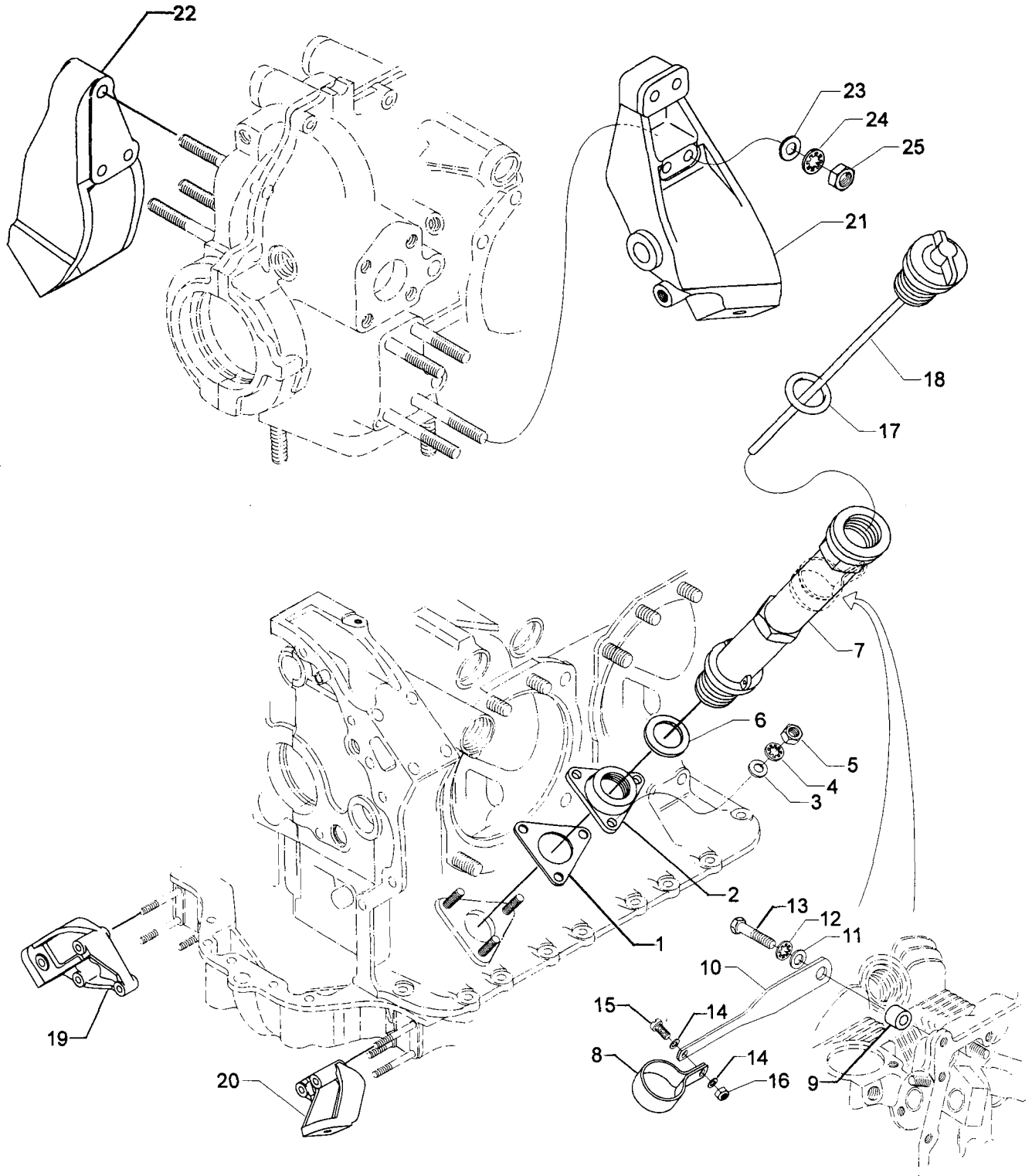


Figure 2. OIL LEVEL GAGE ASSEMBLY AND ENGINE MOUNTING BRACKETS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP CRANKCASE RELATED PARTS

FIG REF. 3	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	1028-B	BALL, 11/16 diameter	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 valve, adj.	1
5	LW-13683	BEARING, Crankshaft	6
	LW-14830	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.	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 Lycoming Table of Limits SSP-1776, Part I for spring identification.

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

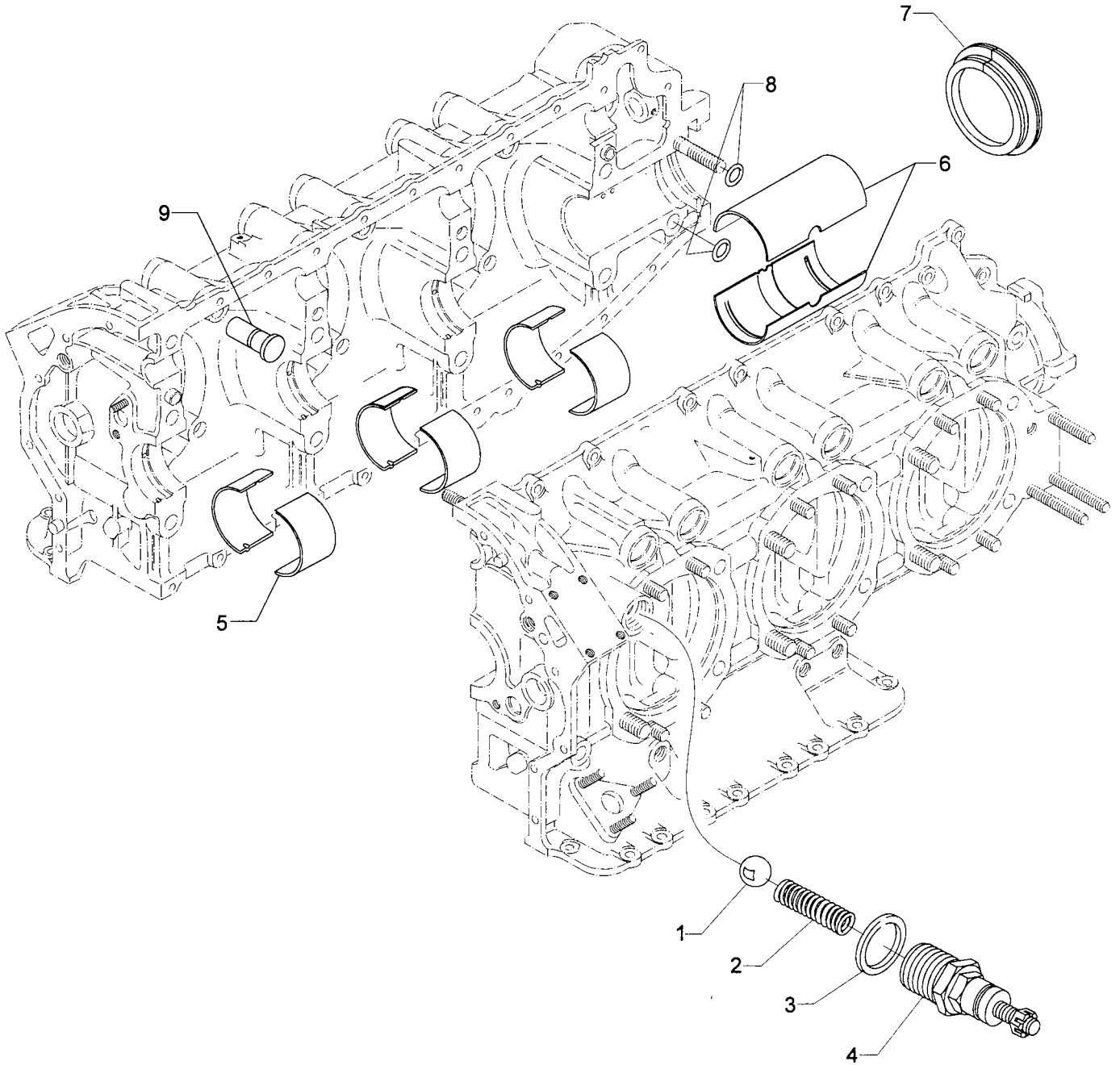


Figure 3. CRANKCASE RELATED PARTS

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

FIG REF. 4	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	13F27743	CRANKSHAFT AND BUSHING ASSEMBLY	1
2	73810*	BUSHING, Crankshaft, dynamic	4
3	STD-1065	DOWEL, Stepped, 5/16 & 1/4 dia. x 35/64 long	1
4	60945	PLUG, 1-1/4 O.D.	1
5	75656-S	BUSHING, Propeller flange, long	5
6	75657-S	BUSHING, Propeller flange, indexing	1
7	STD-1211	PLUG, 2.00 dia. expansion	1
8	LW-19210**	COUNTERWEIGHT ASSEMBLY	2
9	71903-A+	BUSHING, Dynamic counterweight	8
10	73648**	ROLLER, Dynamic counterweight, 5.1 order	2
11	76788**	ROLLER, Dynamic counterweight, 6.3 order	2
12	71907	WASHER, Dynamic counterweight	8
13	LW-14820	RING, Internal retaining	8
14	13S19648++	GEAR, Crankshaft	1
15	LW-18638++	LOCKPLATE, Crankshaft gear	1
16	STD-2209++	BOLT, 5/16-24 x 1-3/4 long	1
17	LW-19340	CAMSHAFT ASSEMBLY	1
18	76118	SPACER, Tachometer shaft centering	1
19	76155	SHAFT ASSY., Tachometer	1
20	LW-18667	PIN, 3/16 dia. x 2-21/64 long	1
21	STD-2231	RING, Internal retaining	1
22	31M22246	SUPPORT ASSY., Starter ring gear, 12/14 pitch	1
23	72566	GEAR, Starter ring	1

- * See latest edition of
- ** See latest edition of
- + See latest edition of
- ++ See latest edition of

Lycoming Service Instruction No. 1142 for application.
 Lycoming Service Instruction No. 1012 for application.
 Lycoming Service Instruction No. 1143 for application.
 Lycoming Service Bulletin No. 475 for application.

CRANKSHAFT & COUNTERWEIGHT ASSEMBLY, Kit P/N 05K27793 available.

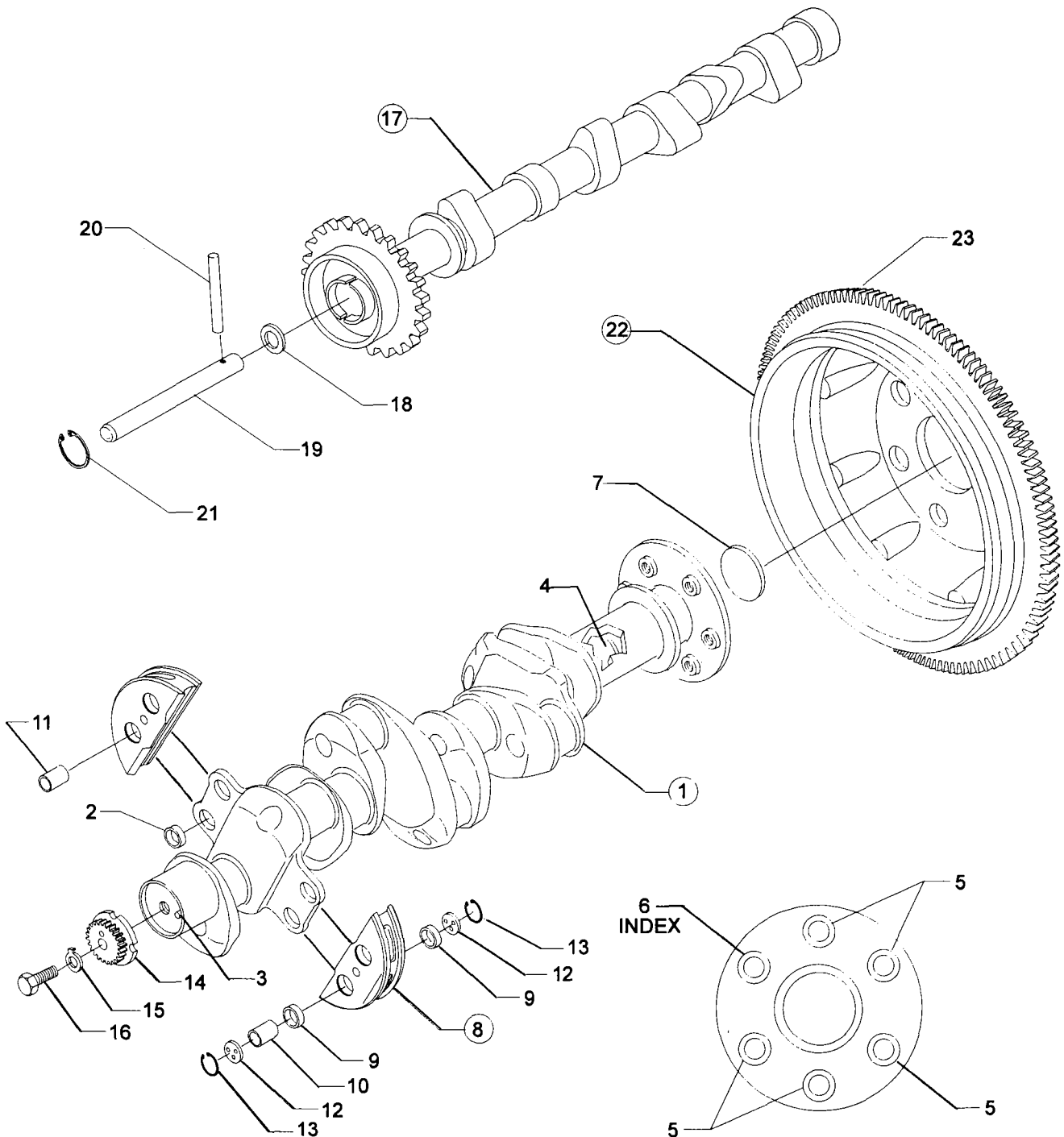


Figure 4. CAMSHAFT, CRANKSHAFT, COUNTERWEIGHT AND RELATED PARTS

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

FIG REF. 5	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	LW-10442	GEAR, Propeller governor driven	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 (.0585 - .0595 thick)	AR
	73250	WASHER, Thrust (.062 - .063 thick)	AR
	73251	WASHER, Thrust (.0655 - .0665 thick)	AR
	73252	WASHER, Thrust (.069 - .070 thick)	AR
	01L21418	WASHER, Thrust (.055 - .056 thick)	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

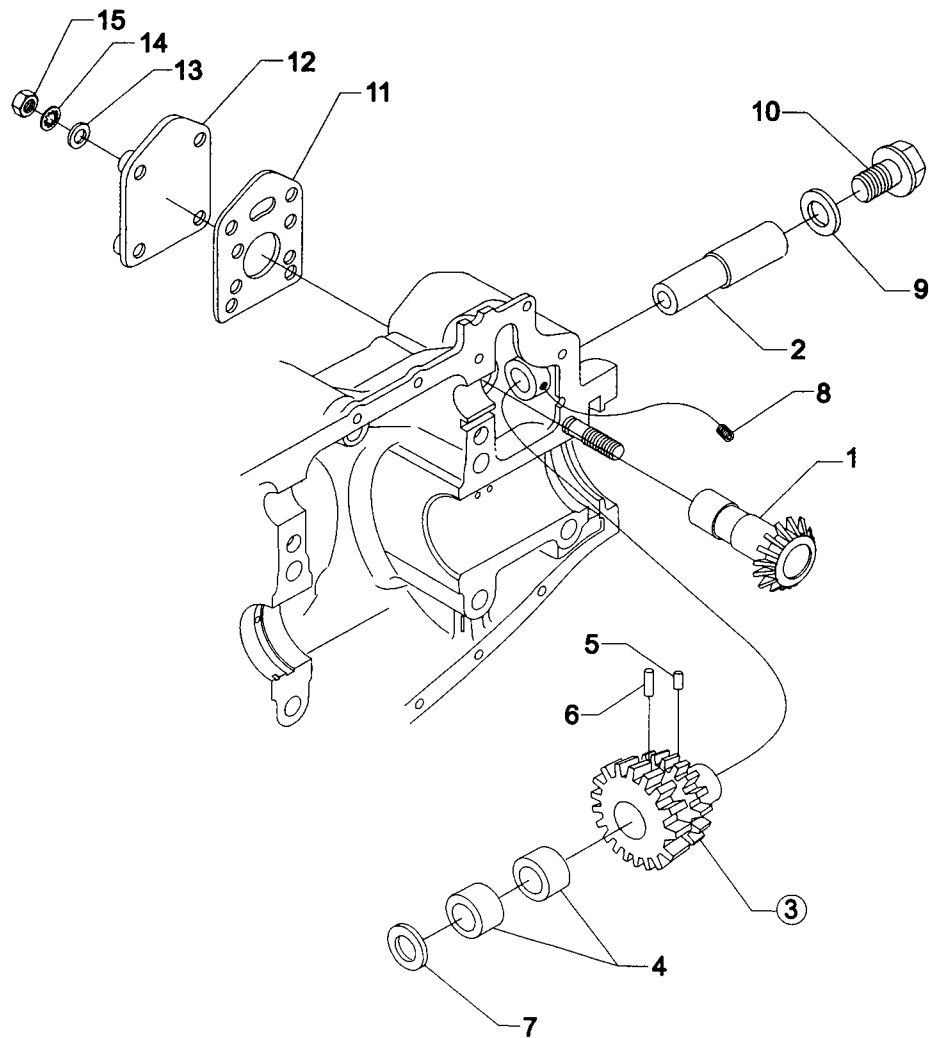


Figure 5. PROPELLER GOVERNOR DRIVE ASSEMBLY

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

FIG REF. 6	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
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	LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex. hd. dr.	3
8	STD-2168	NUT, 5/16-18 NC-3 slotted shear	1

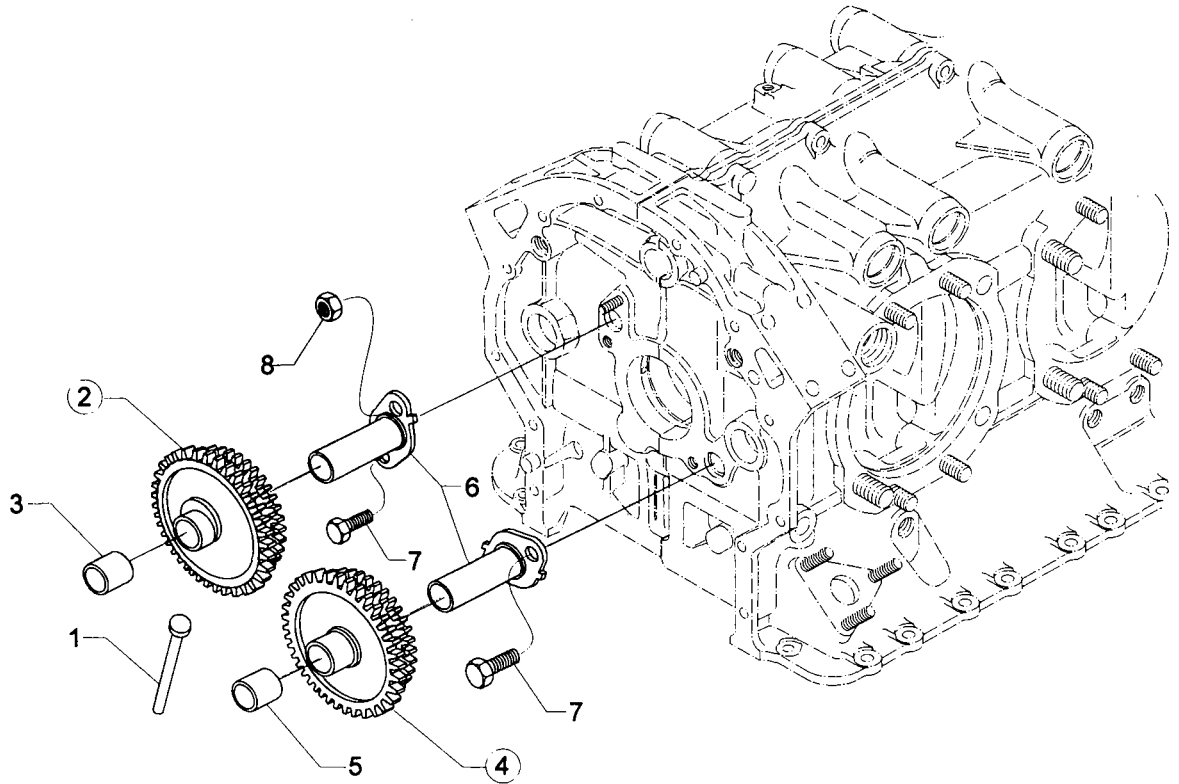


Figure 6. CRANKSHAFT AND FUEL PUMP IDLER GEARS

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

FIG REF. 7	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	07E22596	SUPPORT, Induction housing	1
2	LW-25-1.75	BOLT, 1/4-20 x 1-3/4 long, hex. hd.	2
3	LW-25-1.75	BOLT, 1/4-20 x 1-3/4 long, hex. hd.	1
4	LW-25-1.50	BOLT, 1/4-20 x 1-1/2 long, hex. hd.	10
5	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. hd.	1
6	STD-8	WASHER, 1/4 plain	33
7	STD-160	WASHER, 1/4 lock, internal teeth	16
8	STD-1411	NUT, 1/4-20 plain	14
9	LW-25S1.50	BOLT, 1/4-20 x 1-1/2 long, hex. hd., dr. end	6
10	STD-8	WASHER, 1/4 plain	6
11	STD-1409	NUT, 1/4-20 slotted shear	6
12	STD-33	WASHER, 3/8 plain	1
13	STD-872	NUT, 3/8-24 slotted	1
14	AN6-34A	BOLT, 3/8-24 x 3-37/64 long, hex. hd.	1
15	STD-33	WASHER, 3/8 plain	4
16	STD-678	WASHER, 3/8 lock, internal teeth	2
17	STD-596	NUT, 3/8-24 plain	2
18	76220	STUD, 1/2-20 x 10-45/64 long	8
19	12B22287	EYE, Lifting, rear	2
20	STD-678	WASHER, 3/8 lock, internal teeth	2
21	LW-38-1.13	BOLT, 3/8-16 x 1-1/8 long, hex. hd.	2
22	LW-31-2.75	BOLT, 5/16-18 x 2-3/4 long	1
23	LW-31-1.16	BOLT, 5/16-18 x 1-5/32 long	3
24	STD-35	WASHER, 5/16 plain	4
25	STD-475	WASHER, 5/16 lock, internal teeth	4

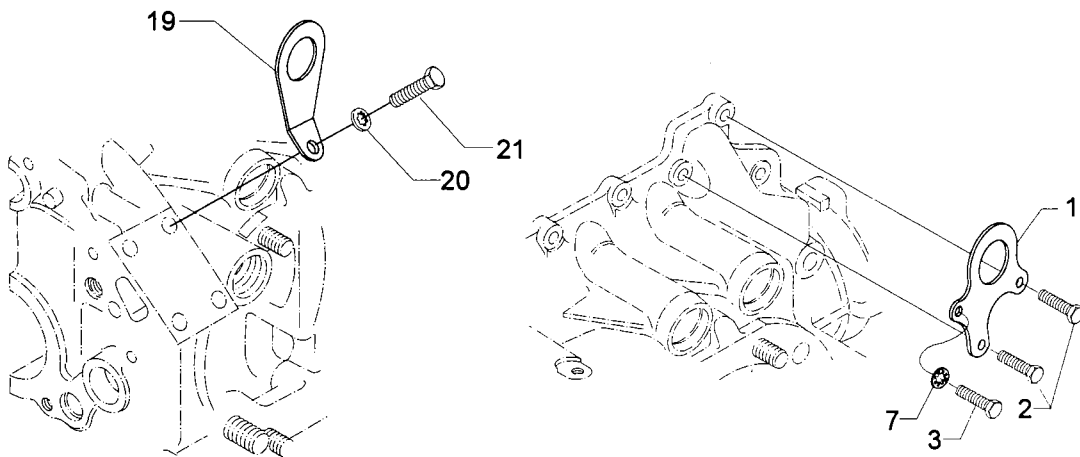
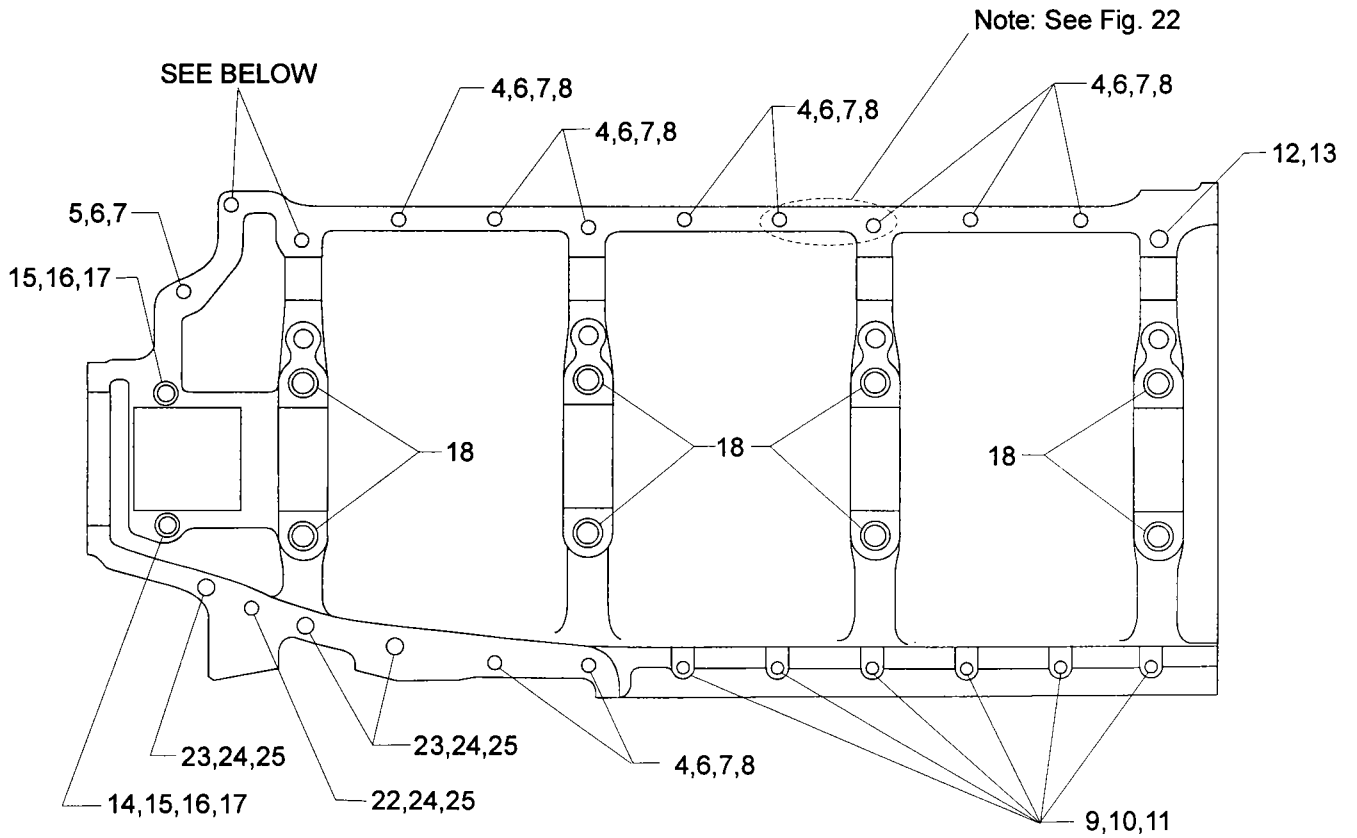


Figure 7. CRANKCASE ATTACHING PARTS

ACCESSORY HOUSING AND RELATED PARTS
ACCESSORY HOUSING ASSEMBLY

FIG REF. 8	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	73818	GASKET, Accessory housing	1
2	21C21539-04	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-20	STUD, 5/16-18 x 2-1/2 long, drilled	3
7	1102	PLUG, 1/8-27 NPT, Allen head	4
8	STD-784	PLUG, 3/8-18 NPT, Allen head	1

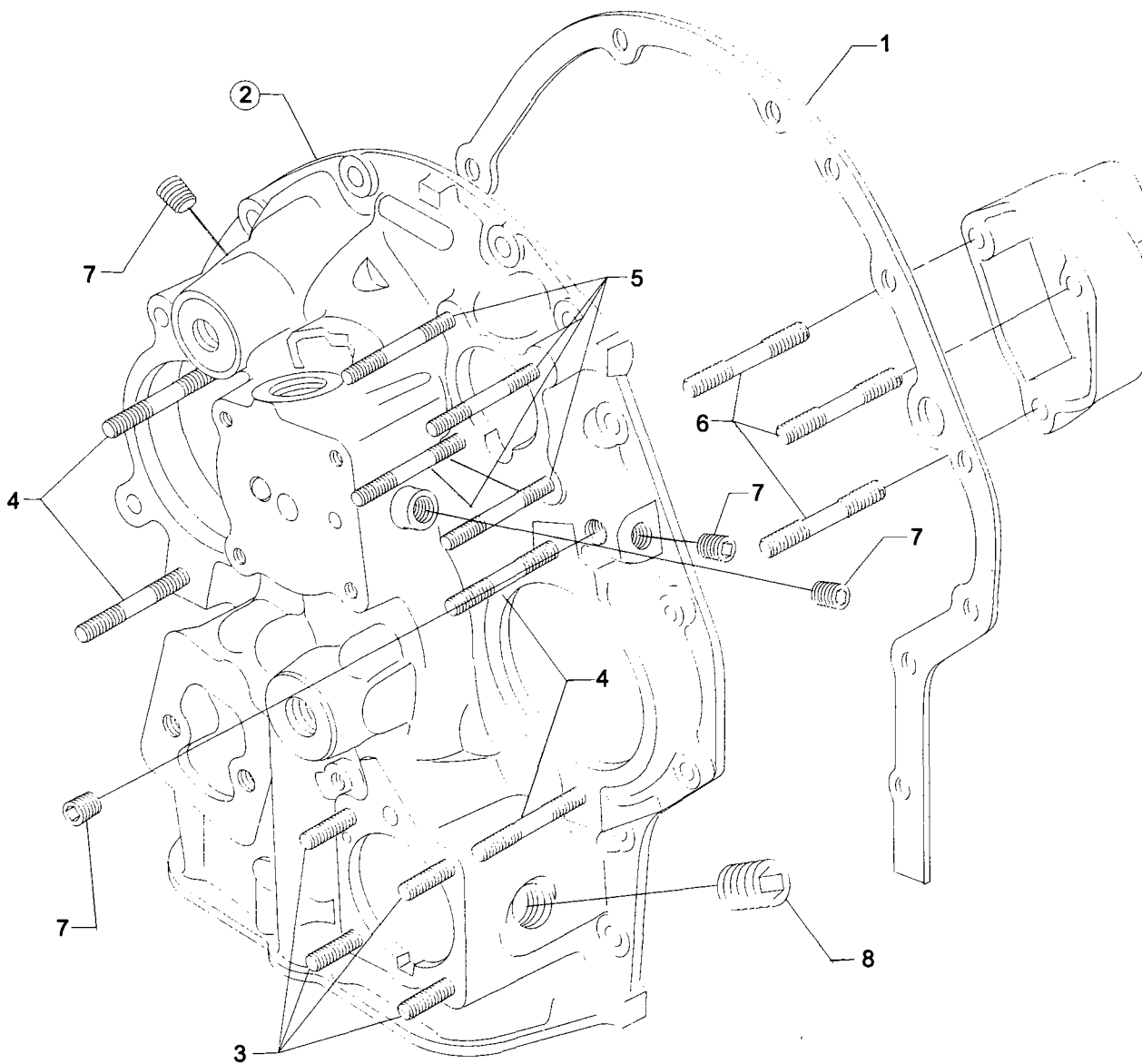


Figure 8. ACCESSORY HOUSING ASSEMBLY

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

FIG REF. 9	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	51A22618	BODY ASSY., Oil pump	1
2	51D22617	SHAFT, Oil pump, idler	1
3	STD-714	COTTER PIN, 1/8 dia. x 1.00 long	1
4	STD-1339	PLUG, 1/16-27 NPT	1
5	76784	SHAFT, Oil pump drive	1
6	61297	IMPELLER, Oil pump, driving	1
7	61298	IMPELLER, Oil pump, driven	1
8	STD-35	WASHER, 5/16 plain	3
9	STD-1420	NUT, 5/16-18 slotted	3
10	LW-14260	SEAL, Tachometer drive, oil	1
11	STD-8	WASHER, 1/4 plain	10
12	STD-160	WASHER, 1/4 lock, internal teeth	12
13	LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. hd.	9
14	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. hd.	1
15	LW-25-1.50	BOLT, 1/4-20 x 1-1/2 long, hex. hd.	2

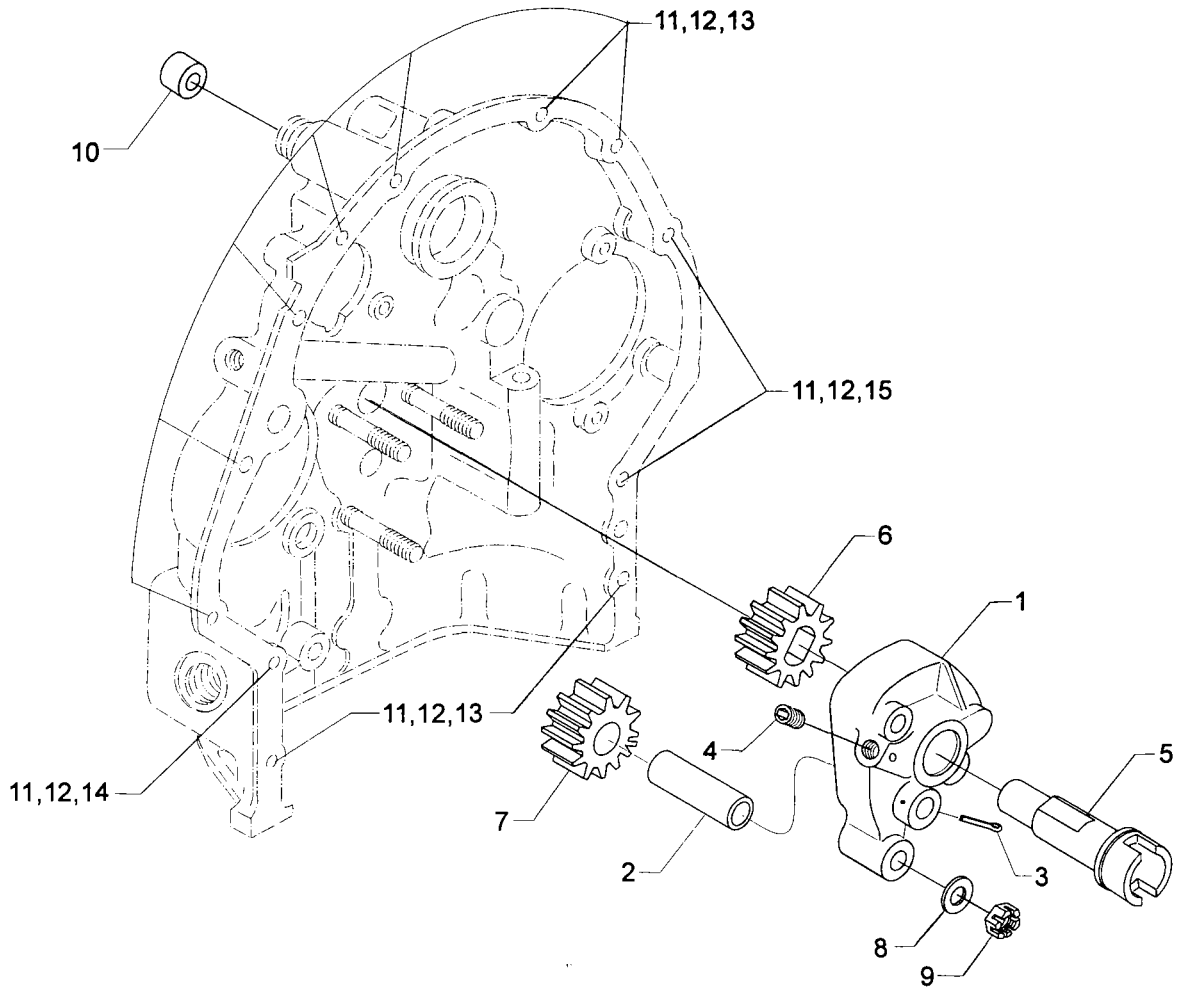


Figure 9. OIL PUMP ASSEMBLY AND ACCESSORY HOUSING ATTACHING PARTS

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

FIG REF. 10	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	60096	GASKET, Fuel pump	1
2	LW-15473	FUEL PUMP, Dual diaphragm (6441234)	1
3	STD-33	WASHER, 3/8 plain	2
4	STD-1882	SCREW, 3/8-16 x 1-9/32 socket head, dr.	2
5	72377	ELBOW, 3/8 flared tube, adjustable (outlet)	1
6	MS29512-06	"O" RING	1

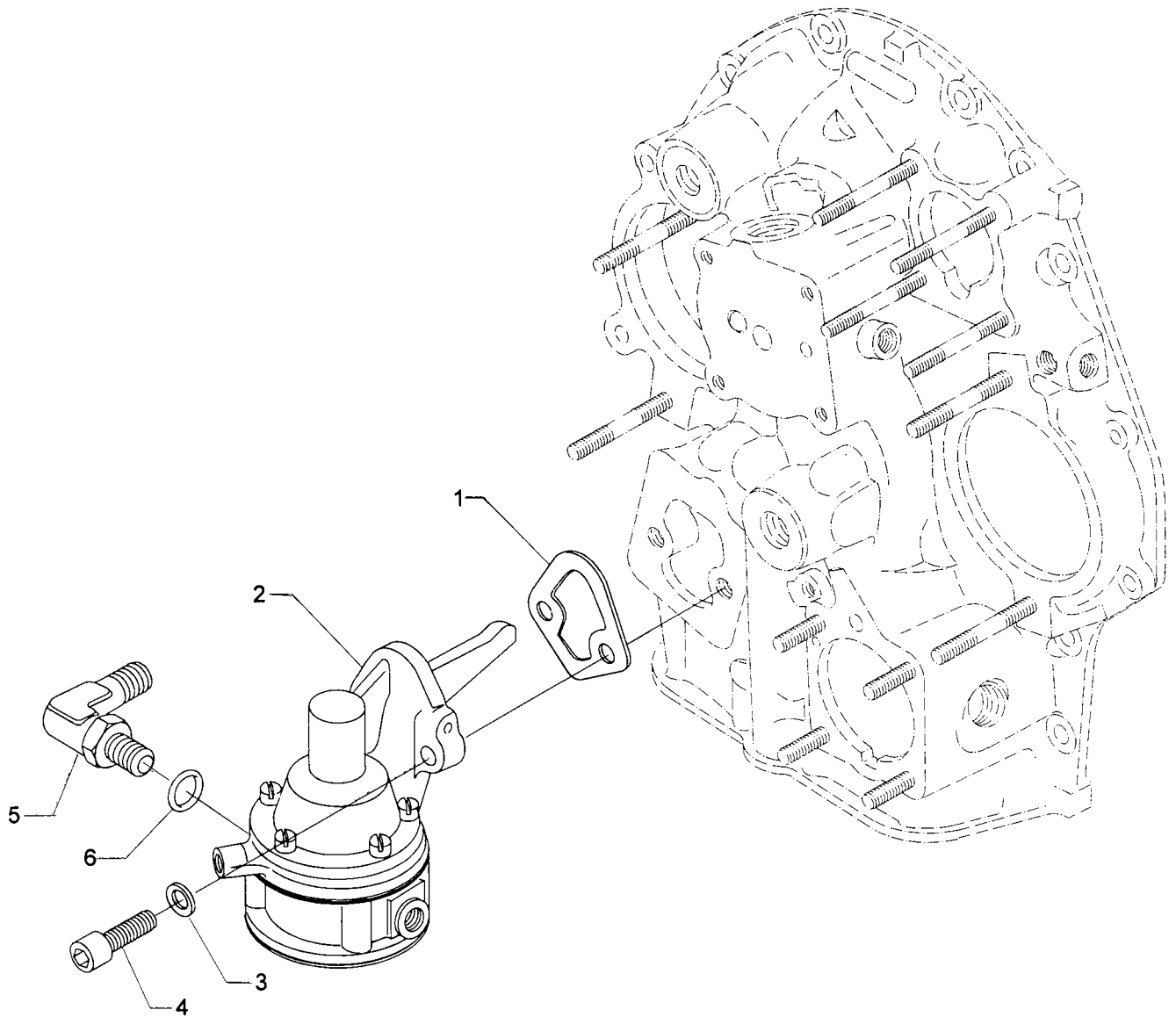


Figure 10. FUEL PUMP ASSEMBLY AND ATTACHING PARTS

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

FIG REF. 11	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	61183	GASKET, Accessory adapter	1
2	67536	ADAPTER ASSY., Vacuum pump	1
3	06A19956	OIL SEAL, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide	1
4	STD-1774	PIN, 1/8 dia. x 1/4 long	1
5	72974	GEAR ASSY., Vacuum pump driven	1
6	72962	THRUST BUTTON	1
7	71596	WASHER, Accessory drive gear	1
8	8313	GASKET, Vacuum pump	1
9	60430	COVER, Vacuum pump	1
10	STD-8	WASHER, 1/4 plain	4
11	STD-160	WASHER, 1/4 lock, internal teeth	4
12	STD-1411	NUT, 1/4-20 plain	4
13	72964	GEAR ASSY., Hydraulic pump driven	1
14	72962	THRUST BUTTON	1
15	71596	WASHER, Accessory drive gear	1
16	68315	GASKET, Accessory drive adapter	1
17	71675	ADAPTER ASSY., Hydraulic pump	1
18	06A19956	OIL SEAL, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide	1
19	STD-1774	PIN, 1/8 dia. x 1/4 long	1
20	25C-12	STUD, 1/4-20 x 1-1/2 long	4
21	STD-35	WASHER, 5/16 plain	4
22	STD-475	WASHER, 5/16 lock, internal teeth	4
23	STD-1410	NUT, 5/16-18 plain	4
24	8313	GASKET, Hydraulic pump	1
25	60430	COVER, Hydraulic pump	1
26	STD-8	WASHER, 1/4 plain	4
27	STD-160	WASHER, 1/4 lock, internal teeth	4
28	STD-1411	NUT, 1/4-20 plain	4

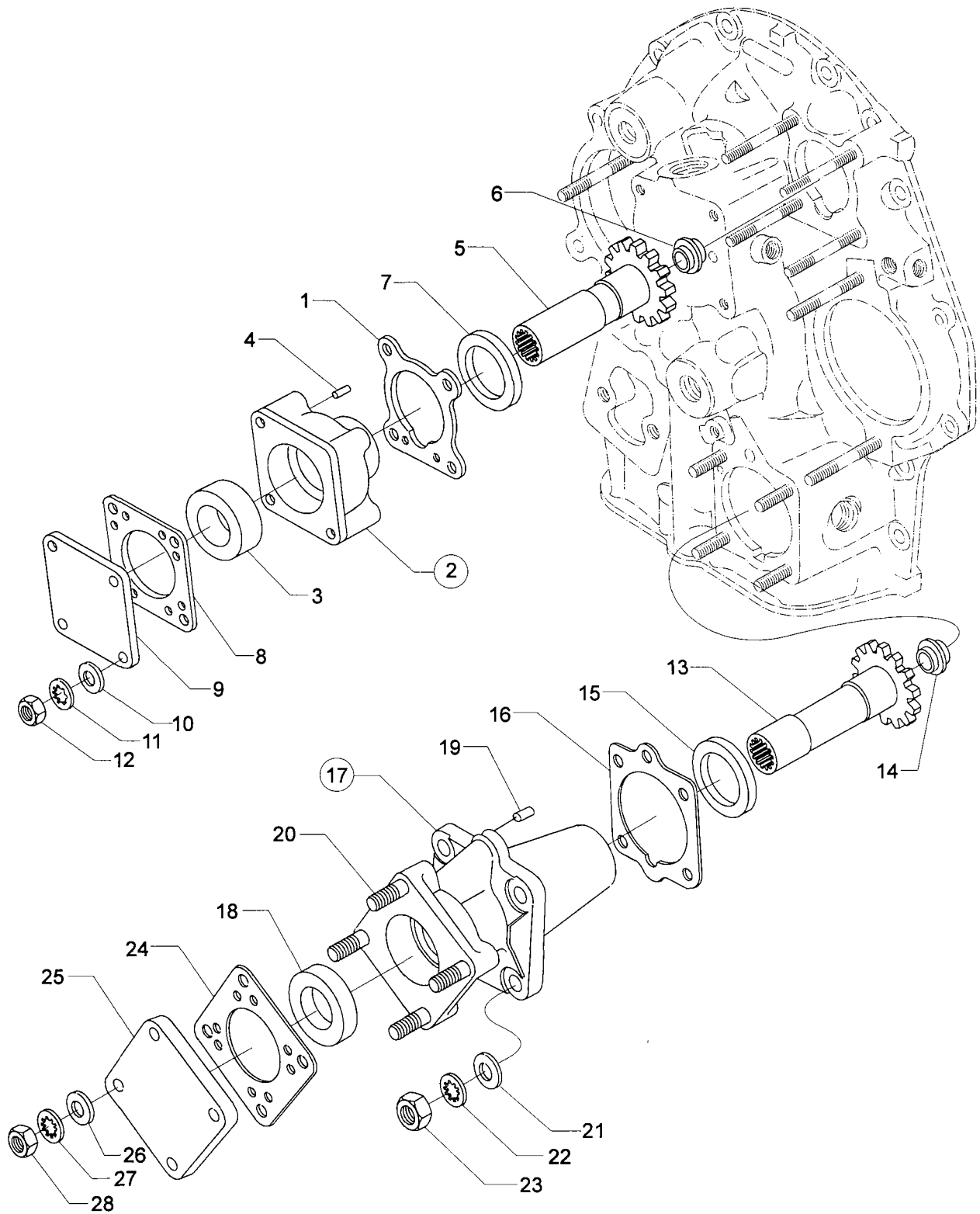


Figure 11. VACUUM AND HYDRAULIC PUMP DRIVES AND COVERS

ACCESSORY HOUSING AND RELATED PARTS OIL FILTER ASSEMBLY, OIL COOLER BYPASS VALVE AND BREATHER FITTING

FIG REF. 12	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	LW-12795*	GASKET, Oil filter adapter	2
2	77852	OIL FILTER BASE ASSEMBLY	1
3	LW-13215**	OIL FILTER	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.	3
8	53E22144	VALVE ASSY., Temp. control oil cooler	1
9	76510	GASKET, Valve assembly	1
10	25C-10	STUD, 1/4-20 x 1-1/4 long	1
11	AN840-12D	FITTING, Breather	1
12	STD-2238	NIPPLE, -10 to -6 special	2
13	06E19769-0.63	GASKET, Annular, 5/8 I.D.	1
14	62417	PLUG, Oil cooler bypass	1

* Extra gasket, shipped as loose part, with engine.

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

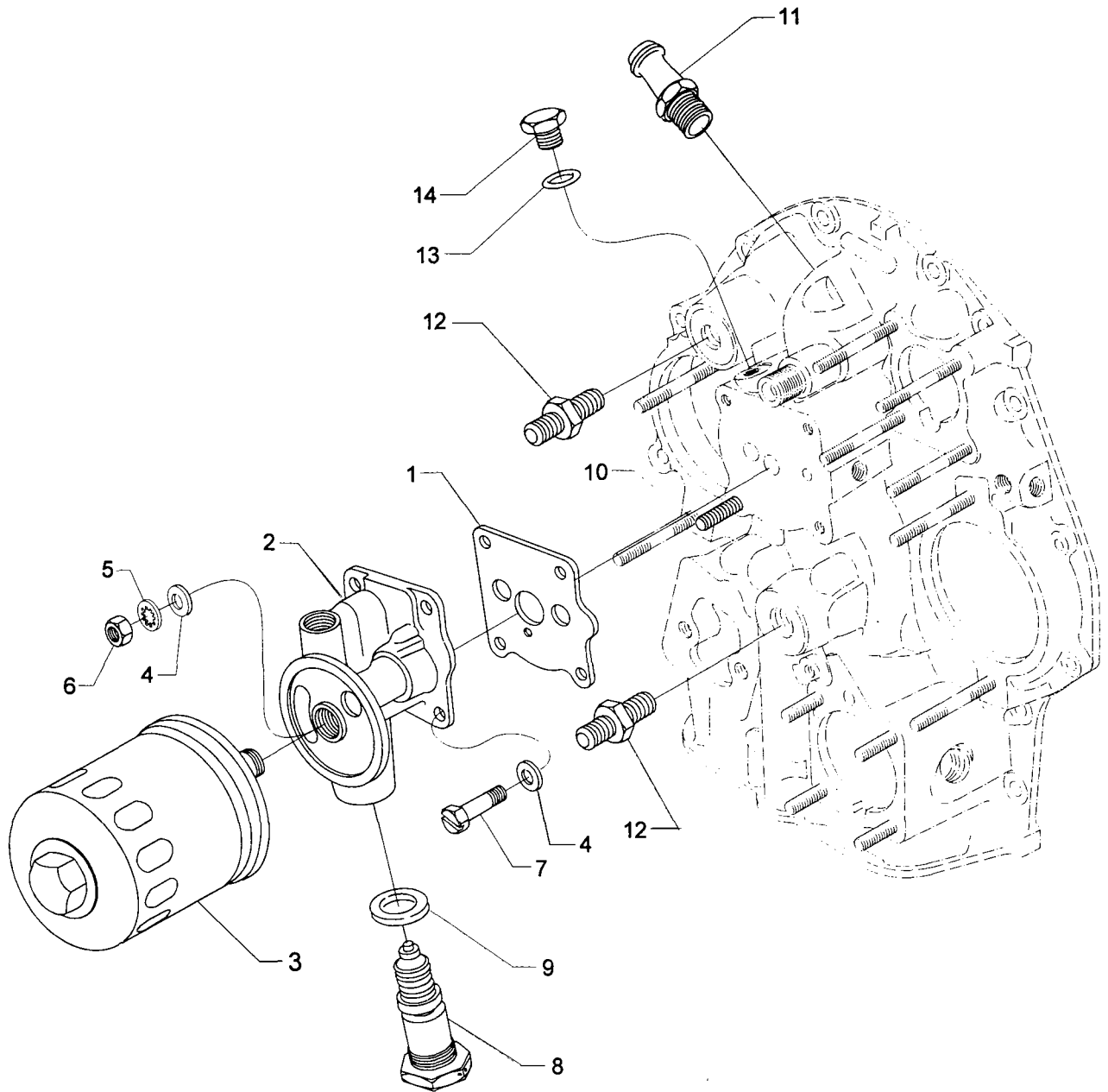


Figure 12. OIL FILTER ASSEMBLY, OIL COOLER BYPASS VALVE AND BREATHER FITTING

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

FIG REF. 13	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
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 bolt	12
5	74309	BEARING, Connecting rod	12
6	LW-10207-S	PISTON, Compression ratio, 8.7:1	6
7	LW-14077	PIN, Piston	6
8	60828	PLUG, Piston pin	12
9	74241	RING, Piston, compression	12
10	14H21950	RING, Piston, oil regulating, expander type	6

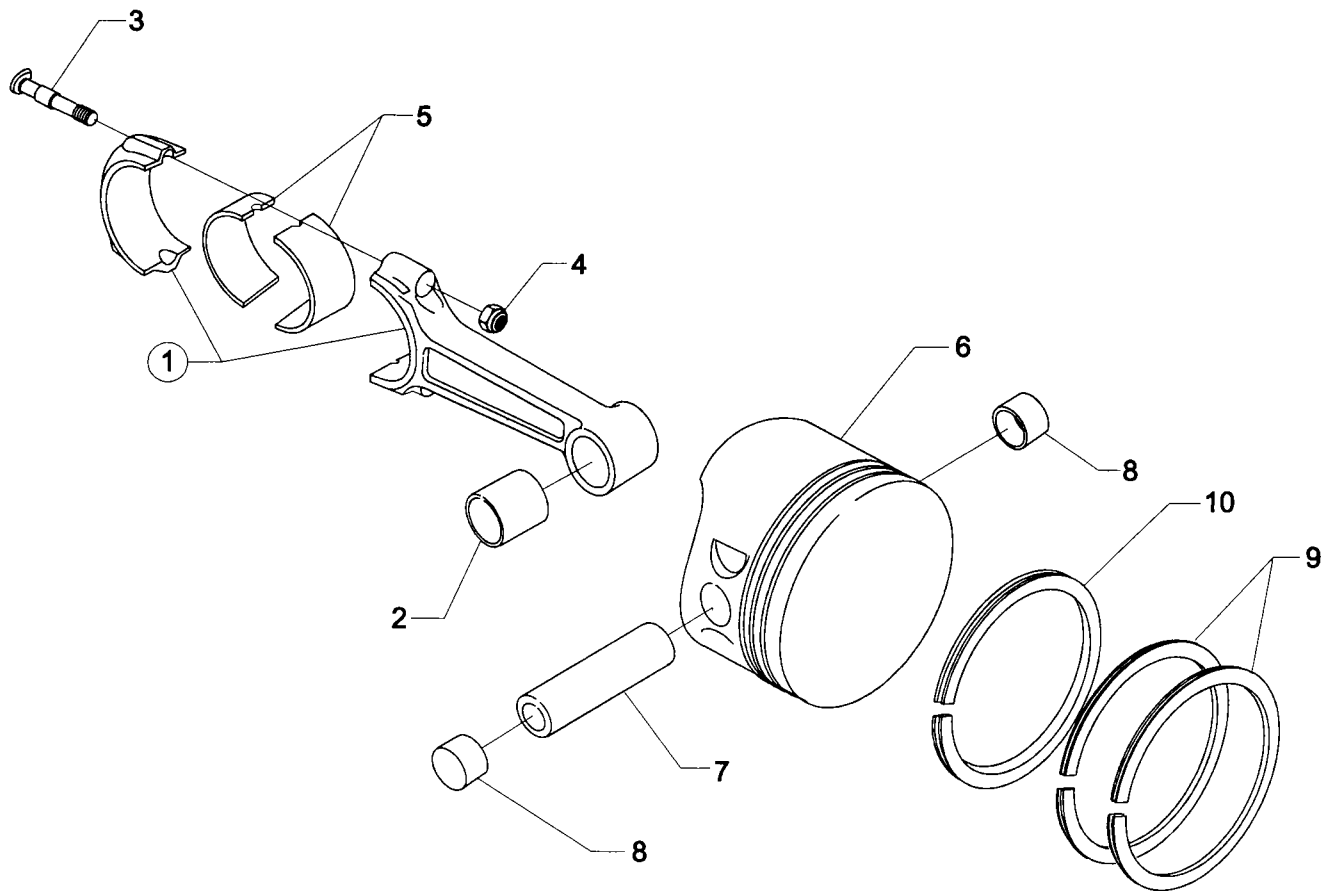


Figure 13. CONNECTING RODS, PISTONS AND RING ASSEMBLIES

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

FIG REF. 14	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	16A22541	CYLINDER ASSY., Up Intake 1.4:1	6
2	LW-19042	SEAT, Intake valve	6
3	16T19468	SEAT, Exhaust valve	6
4	16P21709*	GUIDE, Intake valve, flanged	6
5	16R21710*	GUIDE, Exhaust valve, flanged	6
6	69260	INSERT, Spark plug, 18 - 1.5 MM (long reach)	12
7	72706	INSERT, 1/4-20 UNC x 3/8 long	12
8	25C-11	STUD, 1/4-20 x 1-3/8 long	24
9	66670	BUSHING, Rocker shaft, inner	24
10	25C-8	STUD, 1/4-20 x 1.00 long	18
11	AN816-6	NIPPLE, 1/4 NPT to 3/8 tube	6
12	STD-148	NIPPLE, Union, 1/8 NPT	6
13	LW-18234	GASKET, Exhaust flange	12
14	AN960C416	WASHER, 1/4 plain	24
15	STD-2044	NUT, 1/4-20 self-locking	24
16	1102**	PLUG, 1/8 pipe	6

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

** Assemble in cylinder head when no priming lines are installed.

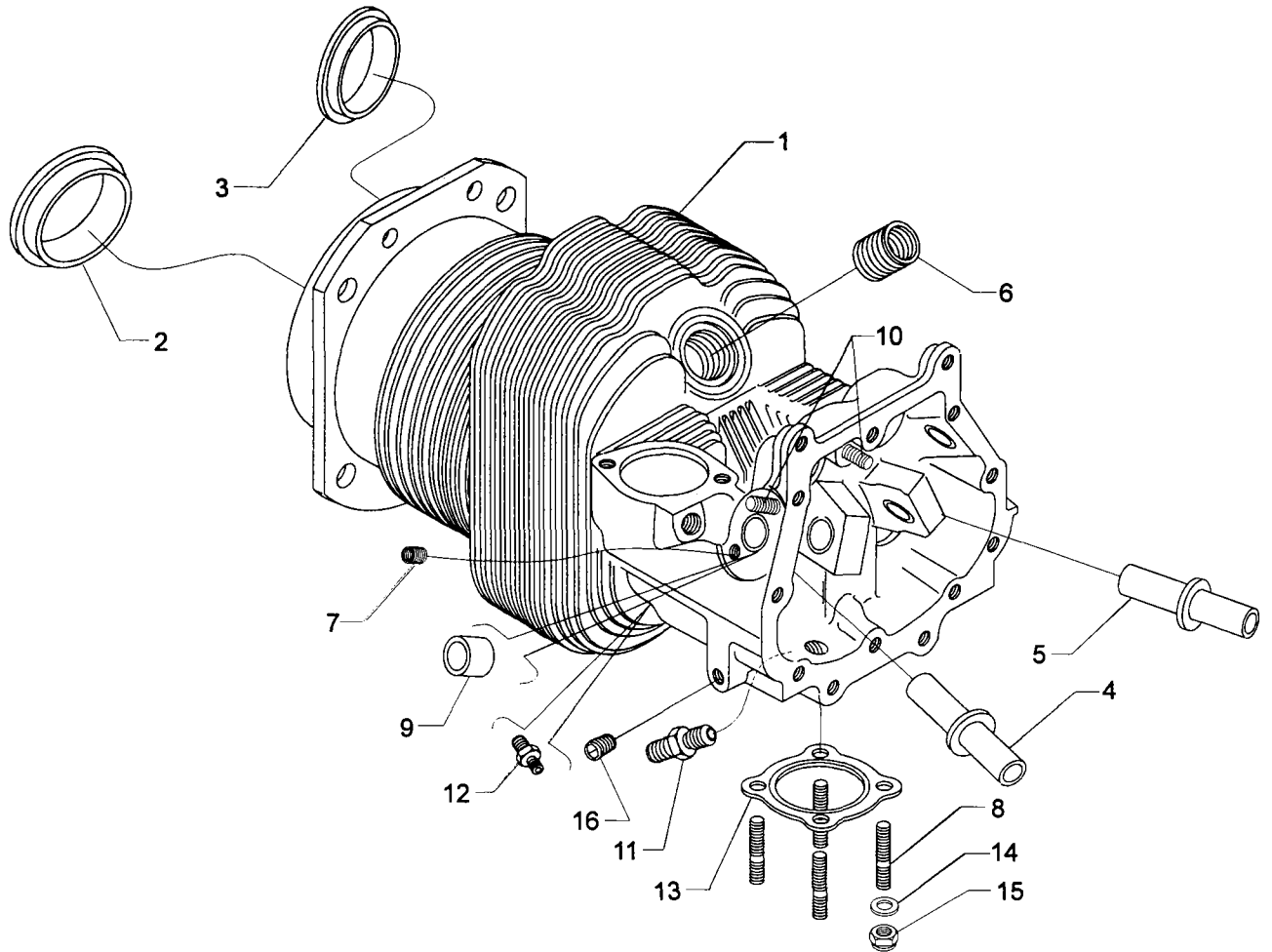


Figure 14. CYLINDER ASSEMBLY

CYLINDER, PISTON AND VALVE TRAIN VALVE ASSEMBLY AND RELATED PARTS

FIG REF. 15	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	LW-13262	VALVE, Intake, hollow stem	6
2	LW-18497	VALVE, Exhaust (rotator type)	6
3	LW-11797	SPRING, Valve, inner	12
4	LW-11796	SPRING, Valve, outer	12
5	LW-13321	SEAT, Valve spring, lower intake	6
6	LW-13322	SEAT, Valve spring, lower exhaust	6
7	69532	SEAT, Valve spring, upper intake	6
8	LW-16475	SEAT, Valve spring, upper exhaust	6
9	72050	KEY, Valve intake	12
10	17C21191	KEY, Valve exhaust	12
11	17C19386	CAP, Valve stem, exhaust (rotator type)	6
12	62388	CAP, Valve stem	6
13	78290	PLUNGER ASSY., Hydraulic tappet	12
14	15B21319	SOCKET, Hydraulic tappet	12
15	LW-18944	TUBE, Push rod shroud	12
16	LW-14995	SPRING, Shroud tube	6
17	LW-12272	LOCKPLATE, Shroud tube	6
18	STD-1411	NUT, 1/4-20 plain	6
19	LW-18661	SEAL, Shroud tube	12
20	70310	SEAL, Shroud tube	12
21	15F19957-63*	ROD ASSEMBLY, Push	AR
	15F19957-64*	ROD ASSEMBLY, Push	AR
	15F19957-65*	ROD ASSEMBLY, Push	AR
	15F19957-66*	ROD ASSEMBLY, Push	AR
	15F19957-67*	ROD ASSEMBLY, Push	AR
	15F19957-68*	ROD ASSEMBLY, Push	AR
22	17F22426**	ROCKER ASSY., Intake & exhaust valve	12
23	74389	BUSHING, Valve rocker	12
24	71549	WASHER, Valve rocker	12
25	72626	SHAFT, Valve rocker	12
26	LW-11665	THRUST BUTTON, Rocker shaft	24

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

** Due to the size of the area where the part number is stamped, the last five digits may be all that is shown (22426)

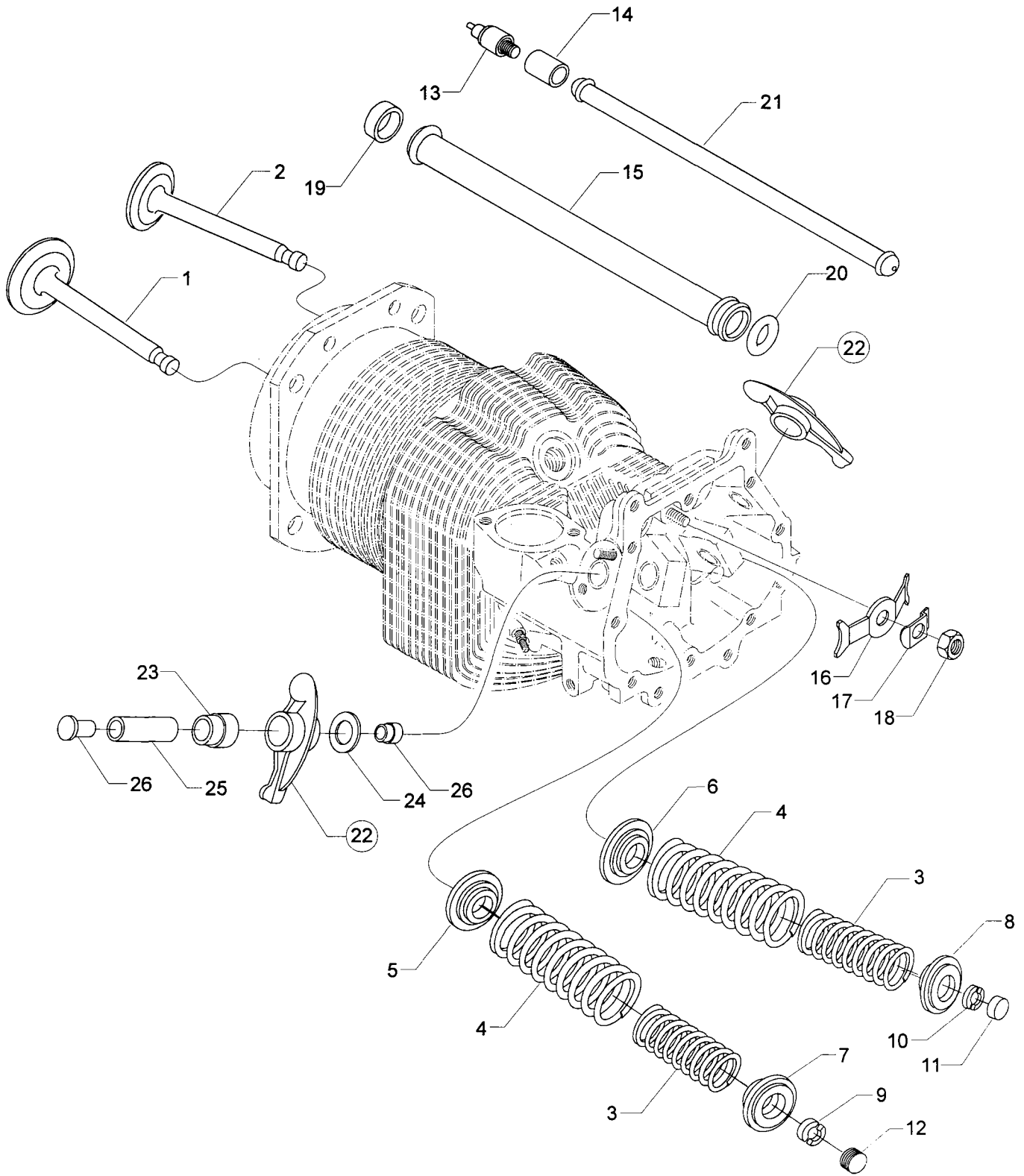


Figure 15. VALVE ASSEMBLY AND RELATED PARTS

CYLINDER, PISTON AND VALVE TRAIN CYLINDER RELATED PARTS

FIG REF. 16	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	66732	GASKET, Valve rocker shaft cover	12
2	72710	COVER, Valve rocker shaft	12
3	72709	SCREW, 1/4-20 x 5/8 long	12
4	STD-160	WASHER, 1/4 lock, internal teeth	12
5	STD-1411	NUT, 1/4-20 plain	12
6	76036	GASKET, Rocker box cover	6
7	LW-14433	COVER ASSY., Rocker box	6
8	STD-1925	SCREW, 1/4-20 x 5/8 long, pan. head	48
9	74494	PLATE, Spark plug reach caution	6
10	71481	RING, Oil seal, 3/32 dia. x 4-27/32 I.D.	6
11	77906	SPACER, 33/64 I.D. x 7/8 O.D. x 1/8 thick	2
12	74887	SPACER, 33/64 I.D. x 7/8 O.D. x 3/8 thick	2
13	383-B	NUT, 3/8-24 plain	24
14	STD-2090	NUT, 1/2-20 plain	28
15	STD-684	NIPPLE, Straight, 3/8 I.D. hose	6
16	STD-2180	HOSE, 3/8 I.D. x 1-13/16 long	6
17	LW-15592-5-05	CLAMP, Hose	12
18	LW-18555	TUBE ASSY., Cyl. hd. oil drain, cyl. # 1	1
19	17T19439	TUBE ASSY., Cyl. hd. oil drain, cyl. # 2	1
20	LW-18557	TUBE ASSY., Cyl. hd. oil drain, cyl. # 3,4,5,6	4
21	LW-18832	BAFFLE ASSY., Intercylinder	4
22	71610	HOOK, Intercylinder baffle	4
23	71611	RETAINER, Intercylinder baffle	4

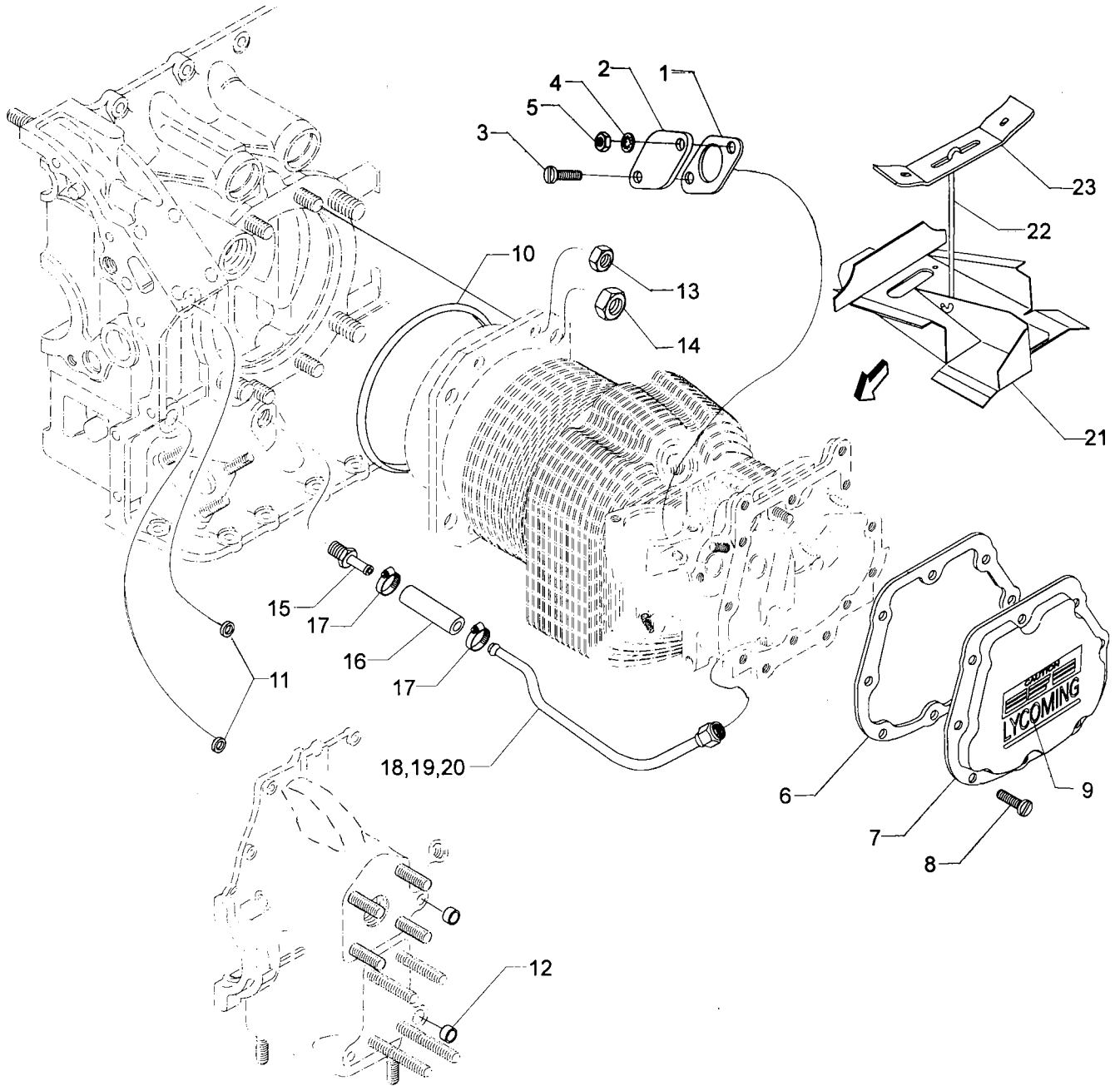


Figure 16. CYLINDER RELATED PARTS

IGNITION SYSTEM MAGNETOS (SLICK), MAGNETO DRIVES, HARNESSES AND SPARK PLUGS

FIG REF. 17	PART NUMBER	DE'SCRPTION	QTY. PER ASSY.
1	LW-13641	CUSHION, Magneto drive	4
2	LW-19096	RETAINER GEAR ASSY.	2
3	67542	BALL BEARING	2
4	62224	GASKET, Magneto adapter	2
5	LW-12707	ADAPTER, Magneto	2
6	LW-12681	GASKET, Magneto	2
7	66LC35SDNN	MAGNETO, Impulse, Slick Model No. 6351	2
8	67J20609-P	HARNESS, Left, Slick Model No. M-2965	1
9	67J20608-P	HARNESS, Right, Slick Model No. M-2966	1
10	66M21195	CLAMP, Magneto	4
11	STD-475	WASHER, 5/16 lock, internal teeth	4
12	STD-1410	NUT, 5/16-18 plain	4
13	STD-713	COTTER PIN, 3/32 dia. x 3/4 long	2
14	1182-H7*	SPARK PLUG, Champion (RHB37E) or Auburn (273)	12
**	01P19762-4-17	BAG, Magneto harness attaching	1

* Item No. 14 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.

P/N 01P19762-4-17

LW-16266-25-25	CLIP, One wire	4
LW-14060	CLIP, Two wire	4
STD-8	WASHER, 1/4 plain	12
STD-160	WASHER, 1/4 lock	8
STD-1874	SCREW, 1/4-20 x 13/16 long	6
76734	ZIP STRAP	12
LW-16266-10-75	CLAMP	1
LW-16266-25-44	CLAMP, 7/16 I.D. x 1/4 dia. screw	5
STD-696	WASHER, 1/4 plain (thin)	6
STD-1916	SCREW, 1/4-20 x 1-1/8 long	2
STD-1925	SCREW, 1/4-20 x 5/8 long	4
72815	BRACKET, Support clamp, 90°	4
STD-692	SCREW, No. 10-32 x 1/2 long	4
STD-425	WASHER, No. plain	4
STD-670	LOCKNUT, No. 10-32	4
LW-M-2376	PLATE, Spark plug cable	2

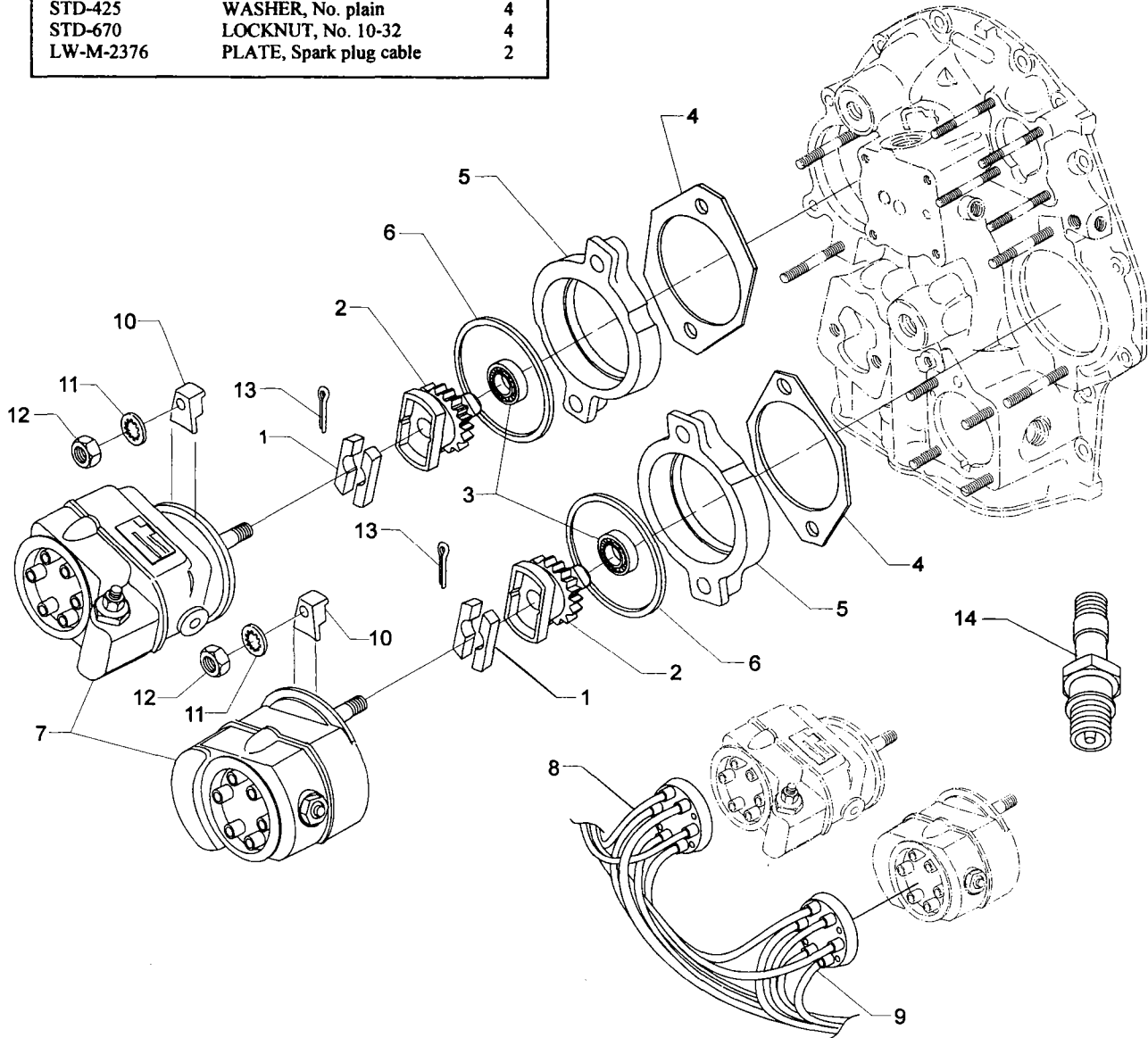


Figure 17. MAGNETOS (SLICK), MAGNETO DRIVES, HARNESSES AND SPARK PLUGS

**ELECTRICAL SYSTEM
SKY-TEC STARTER AND ATTACHING PARTS**

FIG REF. 18	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	31B22101	STARTER, Sky-Tec (149 - 24 PM)	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.

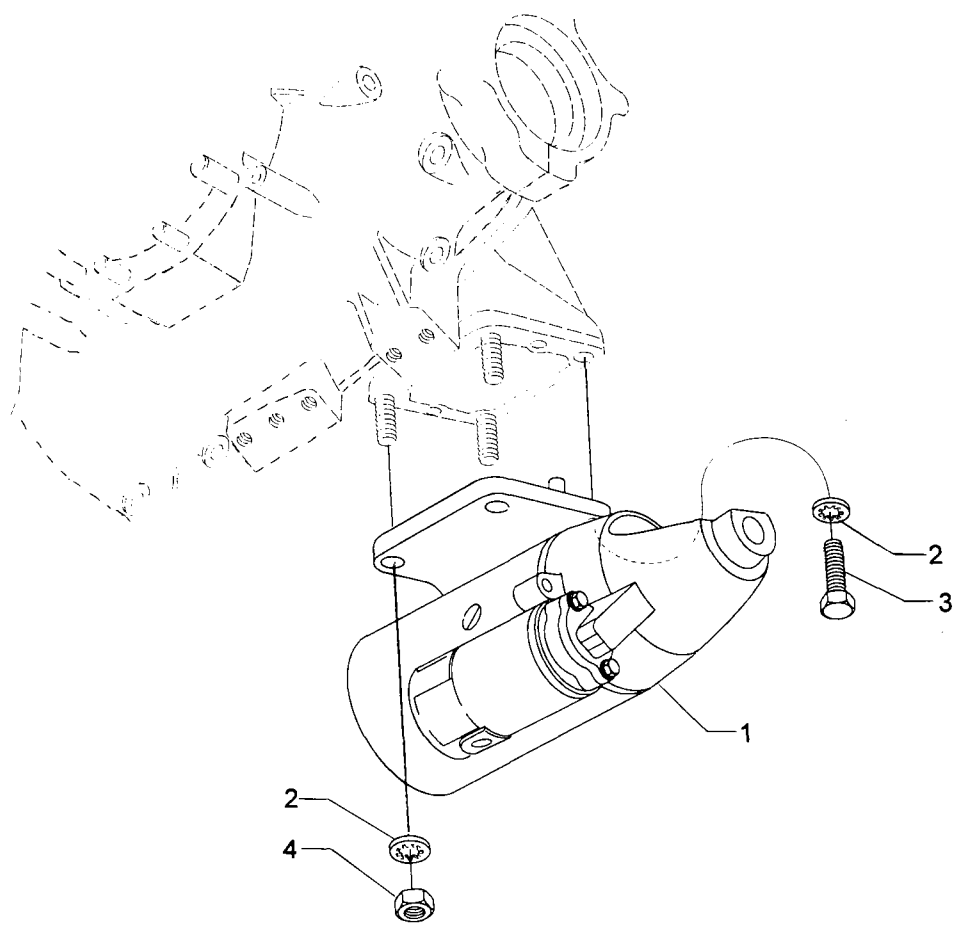


Figure 18. SKY-TEC STARTER AND ATTACHING PARTS

ELECTRICAL SYSTEM ALTERNATOR MOUNTING AND ATTACHING PARTS

FIG REF. 19	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	07A22214	BRACKET, Alternator	1
2	STD-33	WASHER, 3/8 plain	2
3	STD-678	WASHER, 3/8 lock, internal teeth	2
4	STD-596	NUT, 3/8-24 plain	2
5	07F22423	LINK, Alternator	1
6	STD-35	WASHER, 5/16 plain	1
7	LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. hd., dr.	1
8	STD-1342	WASHER, 7/8 O.D. x 25/64 I.D. x 1/8 thick	1
9	LW-38H1.09	BOLT, 3/8-18 x 1-3/32 long, hex. hd., dr.	1
10	AN7-42	BOLT, 7/16-20 x 4-21/64 long, hex. hd.	1
11	STD-2092	WASHER, 29/64 I.D. x 7/8 O.D. x 1/8 thick	2
12	AN310-7	NUT, 7/16-20 plain, slotted	1
13	LW-14650	SHIM, 7/8 O.D. x 15/32 I.D. x .005 thick	10
14	STD-713	COTTER PIN, 3/32 dia. x 3/4 long	1
15	76534	SHIM, 1-1/8 O.D. x 13/32 I.D. x .005 thick	7
16	36A22270	PULLEY & SHAFT ASSY., Alternator belt	1
17	36B22247	PULLEY, Idler	1
18	78629	BALL BEARING, Double row, alt.	1
19	MS16625-1125	RING, Internal retaining, 1-1/4 dia.	2
20	LW-19238	SHAFT, Alternator dual belt idler	1
21	LW-11635	SHIELD, Alternator idler bearing	1
22	76768	LOCKWASHER, Alternator idler pulley brg.	1
23	76769	LOCKNUT, Alternator idler pulley bearing	1
24	STD-669	WASHER, 33/64 I.D. x 1.00 O.D. x 1/8 thick	1
25	STD-2221	NUT, 1/2-20 self-locking	1

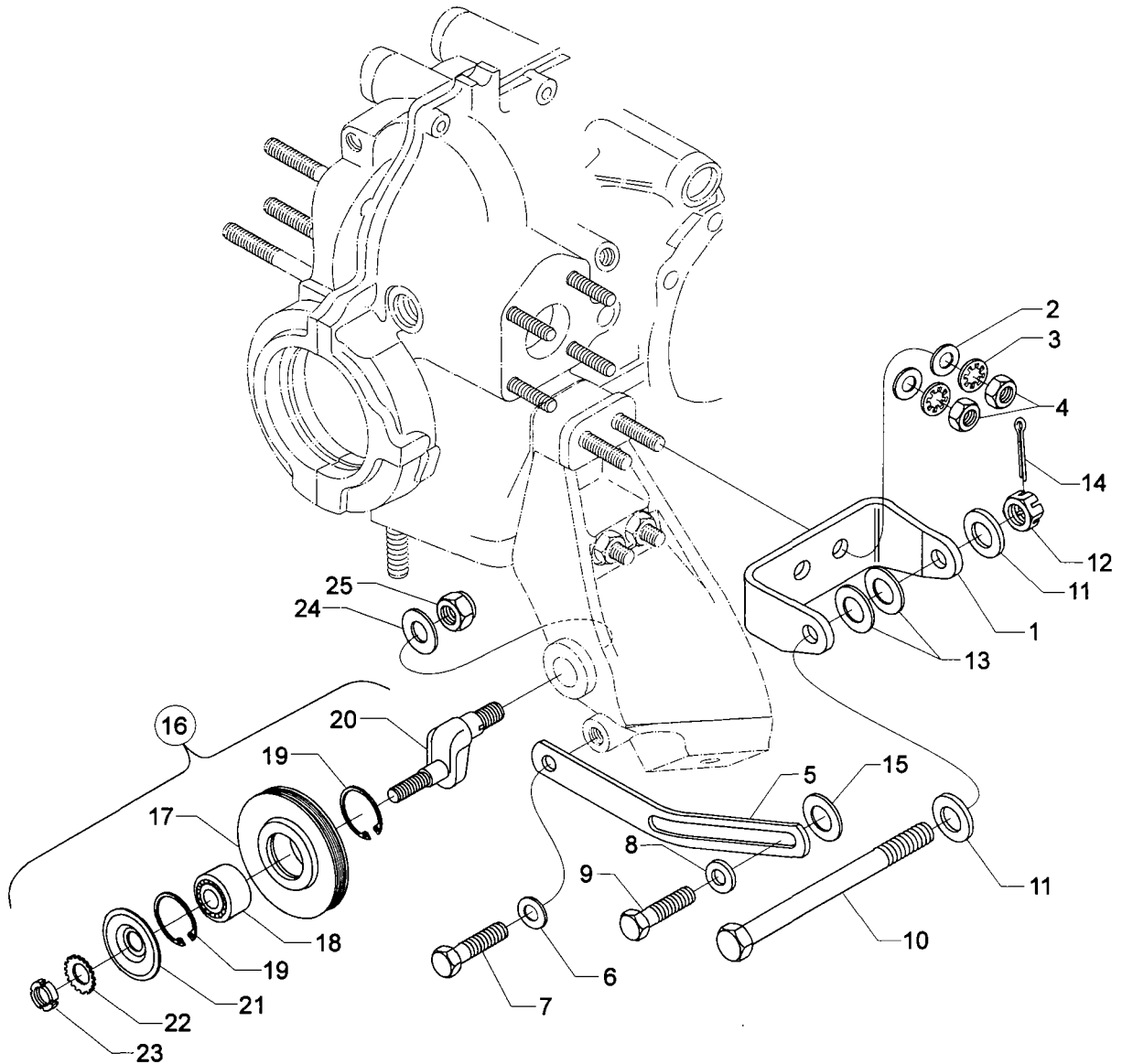


Figure 19. ALTERNATOR MOUNTING AND ATTACHING PARTS

OIL SUMP AND INDUCTION SYSTEM

OIL SUMP ASSEMBLY, INDUCTION HOUSING AND OIL SUCTION SCREEN

FIG REF. 20	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	06B21326	GASKET, Oil sump	1
2	56A22369	SUMP ASSY., Oil	1
3	38-20	STUD, 3/8-16 x 2-1/2 long	2
4	38-28	STUD, 3/8-16 x 3-1/2 long	4
5	25C-11	STUD, 1/4-20 x 1-3/8 long	6
6	STD-551	PLUG, 1/2-14 NPT, Sq. hd., drilled	1
7	STD-8	WASHER, 1/4 plain	33
8	STD-160	WASHER, 1/4 lock, internal teeth	27
9	74655	SPACER, Exhaust manifold	2
10	LW-25-1.75	BOLT, 1/4-20 x 1-3/4 long, hex. hd.	2
11	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. hd.	13
12	LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. hd.	6
13	STD-1411	NUT, 1/4-20 plain	21
14	77644	SCREEN, Oil suction	1
15	06E19769-1.50	GASKET, Annular, 1-1/2 I.D.	1
16	77645	PLUG, 1-1/2 - 18 hex. hd.	1
17	42A22429	HOUSING, Induction	1
18	1102	PLUG, 1/8 pipe	2
19	07A22431	BRACKET, Support induction housing	2
20	01L22432	SPACER, 9/32 I.D. x 9/16 O.D. x 1.00	1
21	STD-8	WASHER, 1/4 plain	2
22	STD-160	WASHER, 1/4 lock, internal teeth	2
23	LW-25-3.63	BOLT, 1/4-20 x 3-5/8 long, hex. hd.	2
24	STD-8	WASHER, 1/4 plain	3
25	STD-160	WASHER, 1/4 lock, internal teeth	3
26	LW-25-0.81	BOLT, 1/4-20 x 13/16 long, hex. hd.	1
27	LW-25-1.88	BOLT, 1/4-20 x 1-7/8 long, hex. hd.	1
28	LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. hd.	1

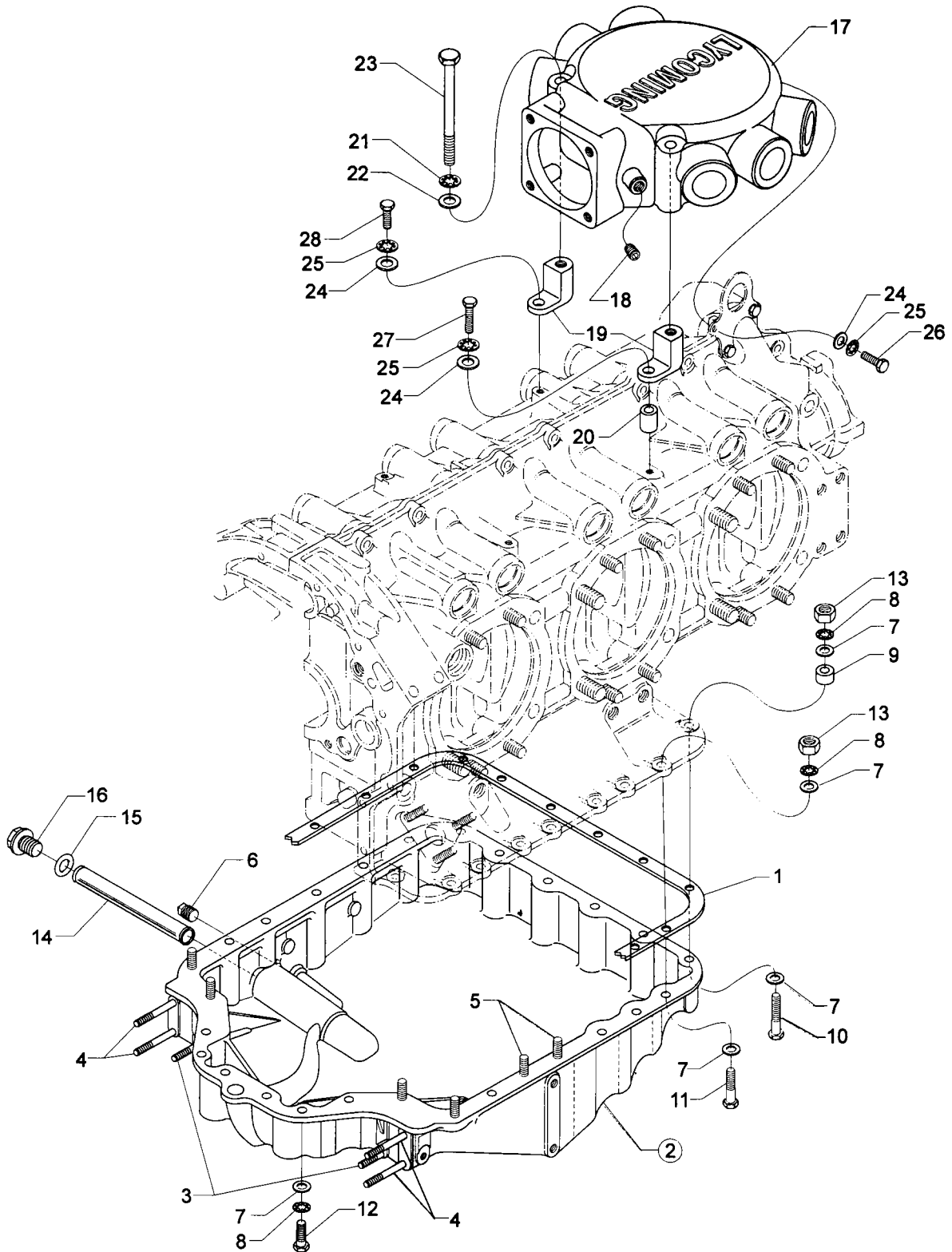


Figure 20. OIL SUMP ASSEMBLY, INDUCTION HOUSING AND OIL SUCTION SCREEN

**OIL SUMP AND INDUCTION SYSTEM
INTAKE PIPES AND ATTACHING PARTS**

FIG REF. 21	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	72711	RING, Seal, intake pipes	6
2	42E22417	PIPE, Intake, cyl. no. 1	1
3	42E22418	PIPE, Intake, cyl. no. 2	1
4	42E22419	PIPE, Intake, cyl. no. 3	1
5	42E22420	PIPE, Intake, cyl. no. 4	1
6	42E22421	PIPE, Intake, cyl. no. 5	1
7	42E22422	PIPE, Intake, cyl. no. 6	1
8	71973	GASKET, 2 bolt flange, 1-3/4 I.D.	6
9	74360	FLANGE, Intake pipe	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

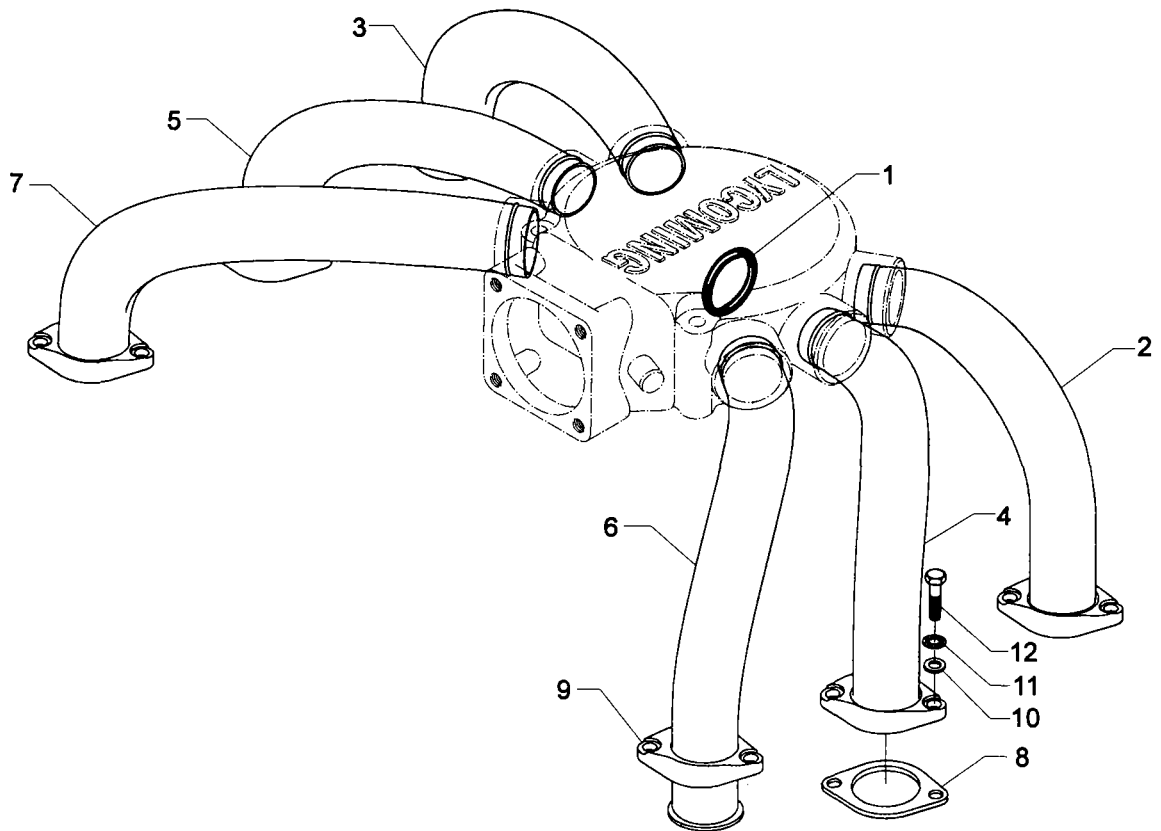


Figure 21. INTAKE PIPES AND ATTACHING PARTS

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

FIG REF. 22	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	73032	GASKET, Fuel injector	1
2	61M22620	FUEL INJECTOR, (2576546-1)	1
3	STD-1727	WASHER, Plain, 21/64 I.D. x 3/4 O.D. x 1/8 thick	4
4	STD-475	WASHER, 5/16 lock, internal teeth	4
5	LW-31-1.16	BOLT, 5/16-18 x 1-5/32 long, hex. hd.	4
6	02G21379	NIPPLE, 1/8 NPT to 1/4 tube	1
7	AN919-6	REDUCER, 3/8 flared tube to 1/4	1
8	MS29512-06	"O" RING, 15/32 I.D. x 5/64 section	1
9	78302	ELBOW, 1/4 tube, 90°, 7/16-20 adj.	1
10	63B22494	MANIFOLD ASSY., Fuel, vented	1
11	STD-2166	ELBOW, Union, 90°, 1/8 NPT	2
12	AN791-2	ELBOW, Union, 45°, 1/8 tube	3
13	STD-148	NIPPLE, Union, 1/8 NPT	1
14	MS20822-4	ELBOW, 1/8 NPT to 1/4 tube, 90°	1
15	02G21382	NIPPLE, Nozzle pressure gauge	1
16	07A22398	BRACKET, Fuel manifold	1
17	07A22397	BRACKET, Fuel manifold	1
18	01L22325*	SPACER, 61/64 long	2
19	STD-2025*	BOLT, 1/4-20 x 2-7/16 long, hex. hd.	2
20	STD-8	WASHER, 1/4 plain	2
21	STD-160	WASHER, 1/4 lock, internal teeth	2
22	STD-1411	NUT, 1/4-20 plain	2
23	LW-25-0.50	BOLT, 1/4-20 x 1/2 long	1
24	STD-160	WASHER, 1/4 lock, internal teeth	1
25	STD-251	WASHER, No. 10, internal lock	4
26	STD-82	SCREW, No. 10-24 x 1/2 long, fill. hd.	4
27	LW-12878-4S110	HOSE ASSY., 1/4 hose, 45° elbow	1
28	LW-12877-6S280	HOSE ASSY., 3/8 hose, 90° elbow	1
29	LW-18265	NOZZLE, Injection (2524864)	6
30	951391	"O" RING	12

* These bolts and spacers replace P/N LW-25-1.50 bolts shown on Figure 7, Page 1-13 when the fuel manifold bracket is installed.

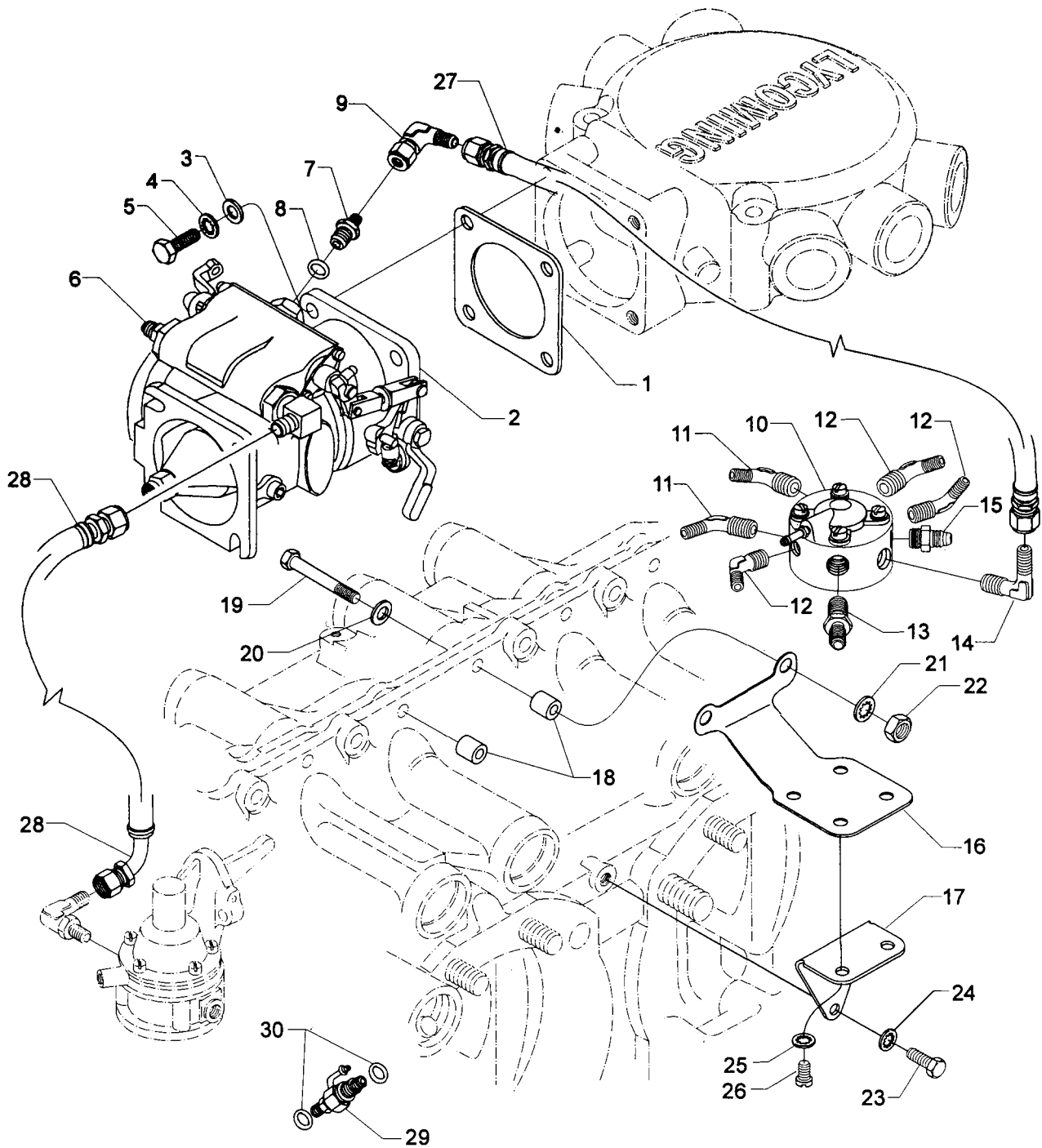


Figure 22. FUEL INJECTOR, FUEL MANIFOLD AND INJECTION NOZZLES

OIL SUMP AND INDUCTION SYSTEM FUEL LINES AND ATTACHING PARTS

FIG REF. 23	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	LW-12098-0-210	TUBE ASSY., Fuel manifold to nozzle	1
2	LW-12098-0-412	TUBE ASSY., Fuel manifold to nozzle	1
3	LW-12098-0-140	TUBE ASSY., Fuel manifold to nozzle	1
4	LW-12098-0-340	TUBE ASSY., Fuel manifold to nozzle	1
5	LW-12098-0-170	TUBE ASSY., Fuel manifold to nozzle	1
6	LW-12098-0-280	TUBE ASSY., Fuel manifold to nozzle	1
7	02M22427	HOSE, 3/16 I.D. x 7/16 O.D. x 1-7/8 long	3
8	73136	BRACKET, Extension	1
9	STD-8	WASHER, 1/4 plain	2
10	LW-16266-10-13	CLAMP, 1/8 dia. for No. 10 screw	16
11	LW-16266-10-75	CLAMP	9
12	STD-860	SCREW, No. 10-32 x 5/8 long, fill. hd.	12
13	STD-670	LOCKNUT, No. 10-32	12

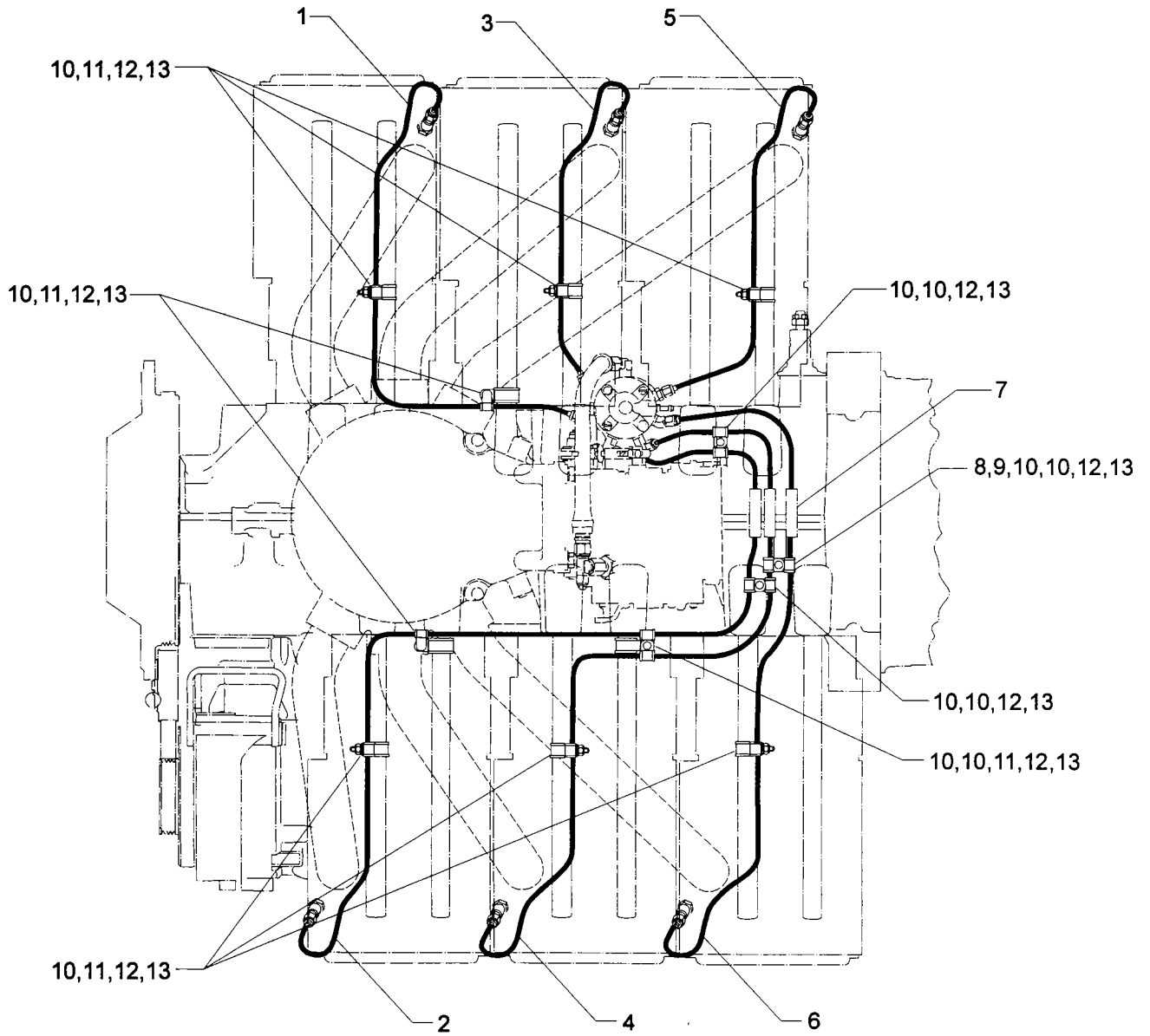


Figure 23. FUEL LINES AND ATTACHING PARTS

**OIL SUMP AND INDUCTION SYSTEM
FUEL DRAIN MANIFOLD AND TUBE ASSEMBLIES**

FIG REF. 24	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	63M22386	MANIFOLD ASSY., Fuel drain	2
2	LW-13807	ADAPTER ASSY., Fuel drain valve	1
3	STD-148	NIPPLE, Union, 1/8 NPT	2
4	1102	PLUG, 1/8 pipe	1
5	LW-12098-0-160	TUBE ASSY., Fuel drain, cyl. no. 2	1
6	LW-12098-0-100	TUBE ASSY., Fuel drain, cyl. no. 6	1
7	LW-12098-0-090	TUBE ASSY., Fuel drain, cyl. no. 3 & 4	2
8	LW-12098-0-130	TUBE ASSY., Fuel drain, cyl. no. 1 & 5	2
9	LW-12098-0-012	TUBE ASSY., Fuel drain, int., rt. & lt.	2
10	STD-148	NIPPLE, Union, 1/8 NPT	6
11	STD-853	TEE, Union, 1/8 tube	2
12	LW-16266-10-38	CLAMP, 3/8 dia. for No. 10 screw	4
13	LW-16266-10-13	CLAMP, 1/8 dia. for No. 10 screw	4
14	STD-860	SCREW, No. 10-32 x 5/8 long, fill. hd.	4
15	STD-670	LOCKNUT, No. 10-32	4

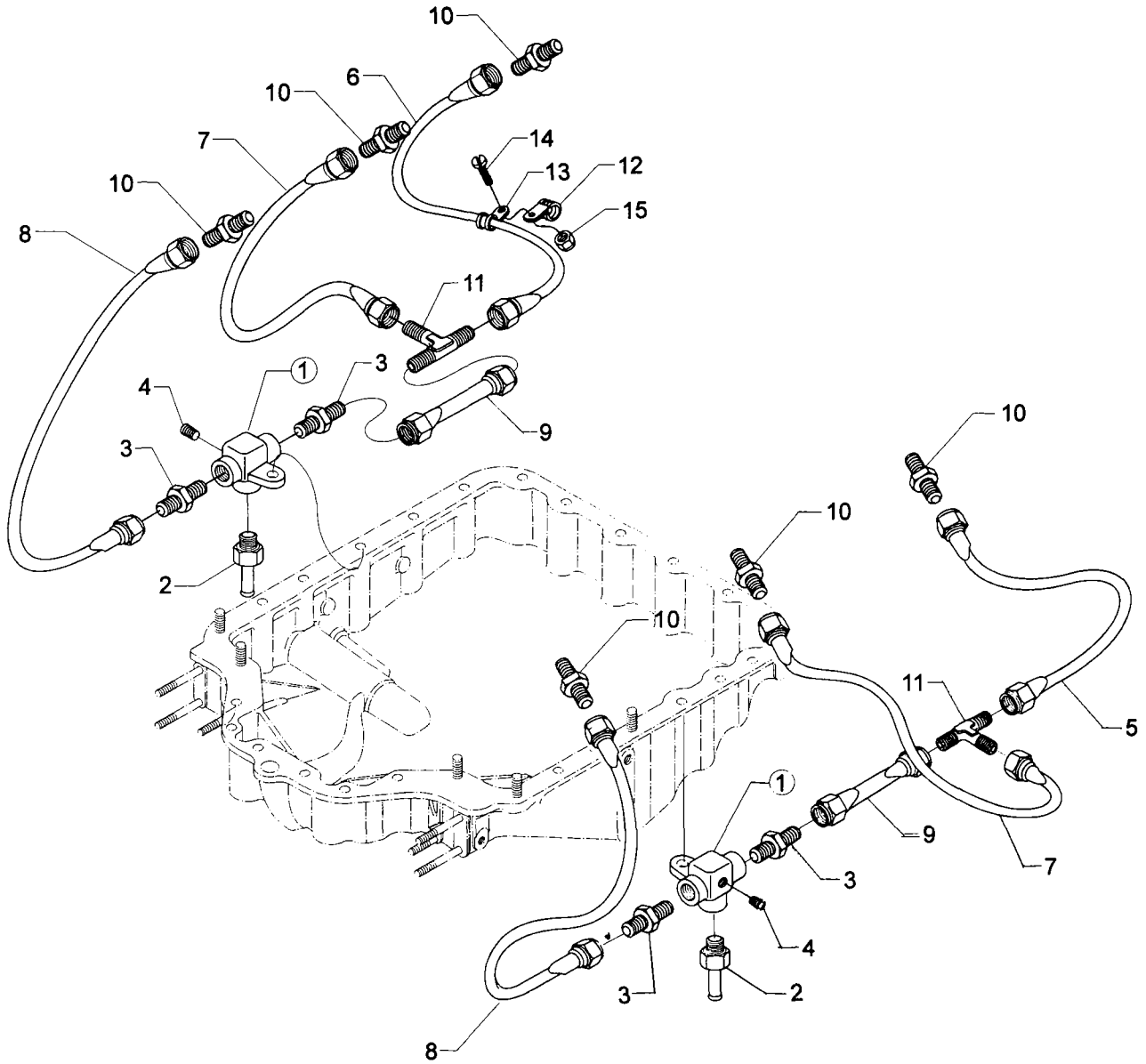


Figure 24. FUEL DRAIN MANIFOLD AND TUBE ASSEMBLIES

SERVICE KIT SECTION SEAL AND GASKET SET
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Part No.	Part Name	Qty.
05K22679	SEAL & GASKET SET	1
LW-12272	LOCKPLATE, Shroud tube	6
LW-12681	GASKET, Magneto	2
LW-12795	GASKET, Oil filter adapter	1
LW-14260	SEAL, Tachometer	1
LW-14995	SPRING, Shroud tube	6
LW-15628	SEAL, Crankshaft	1
LW-18234	GASKET, Exhaust	12
LW-18481	GASKET, Oil filler adapter	1
LW-18638	LOCKPLATE, Crankshaft gear	1
LW-18661	SEAL, Shroud tube	12
MS29512-06	O-RING	3
STD-2180	HOSE, Cyl. drain tube	6
STD-2231	RING, Internal retaining	1
02M22427	HOSE, Fuel manifold tube	3
06A19956	OIL SEAL	2
06B21326	GASKET, Oil sump	1
06E19769-0.63	GASKET, Annular	1
06E19769-1.25	GASKET, Annular	1
06E19769-1.50	GASKET, Annular	1
8313	GASKET, Vacuum pump	2
60096	GASKET, Fuel pump	1
61183	GASKET, Accessory adapter	1
62224	GASKET, Magneto	2
66732	GASKET, Valve rocker cover	12
68315	GASKET, Accessory drive adapter	1
70310	SEAL, Shroud tube	12
70455	GASKET	1
71481	RING, Cylinder base	6
71973	GASKET, Intake	6
72053	GASKET, Governor drive pad	1
72059	GASKET, Oil level gage	1
72091	RING, Oil seal	2
72711	GASKET, Oil seal intake pipe	6
73032	GASKET, Air inlet housing	1
73818	GASKET, Accessory housing	1
74068	GASKET, Oil level gage	1
74524	RING, Oil level gage bushing	1
74944	GASKET, Fuel injector	1
76036	GASKET, Rocker box	6

SERVICE KIT SECTION CYLINDER, PISTON & RING ASSY. KIT

Part No.	Part Name	Qty.
05K22672	KIT, CYLINDER, PISTON & RING ASSY. (Long Reach)	1
16A22541	CYLINDER & HEAD ASSEMBLY	1
71481	RING, Cylinder base seal	1
LW-18497	VALVE, Exhaust	1
LW-13262	VALVE, Intake	1
LW-11796	SPRING, Valve, outer	1
LW-11797	SPRING, Valve, inner	1
69532	SEAT, Valve spring, upper intake	1
LW-16475	SEAT, Valve spring, upper exhaust	1
LW-13321	SEAT, Valve spring, lower intake	1
LW-13322	SEAT, Valve spring, lower exhaust	1
72050	KEY, Valve, intake	2
17C21191	KEY, Valve, exhaust	2
62388	CAP, Valve stem, intake	1
17C19386	CAP, Valve stem, exhaust	1
LW-10207-S	PISTON	1
74241	RING, Piston, compression	2
14H21950	RING, Piston, oil regulating	1
LW-14077	PIN, Piston	1
60828	PLUG, Piston pin	2
LW-11775	PLUG, Piston pin	2
LW-18661	SEAL, Shroud tube, lower	2
70310	SEAL, Shroud tube, upper	2
LW-12272	LOCKPLATE, Shroud tube	1
66732	GASKET, Valve rocker shaft cover	2
76036	GASKET, Rocker box cover	1
LW-18234	GASKET, Exhaust	2
71973	GASKET, Intake	1
SSP-2272	TAG	1

SERVICE KIT SECTION CRANKCASE ASSY. AND THRU STUD KIT

11F24024-S7-S	CRANKCASE ASSY. AND THRU STUD KIT	1
11F24024-S7	CRANKCASE ASSEMBLY	1
76220	THRU STUD	8
31C-17	STUD, Governor	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
SSP-272	TAG, Piston cooling nozzles	1
SSP-1576	TAG, Gov. drive idler shaft	1
1102	PLUG, 1/8 pipe, oil pressure	4

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AN7-42	Bolt	5-3	LW-12098-0-130	Tube Assy.	6-9
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