

# **IO-540-AB1A5 Illustrated Parts Catalog**

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**January 2016**

**PC-IO-540-AB1A5 - Supersedes PC-615-10B**

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652 Oliver Street  
Williamsport, PA 17701

## **IO-540-AB1A5 Illustrated Parts Catalog**

Lycoming Part Number: PC-IO-540-AB1A5 - Supersedes PC-615-10B

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**Cross-Reference List of Manufacturer Parts to Standard Part Number****Vendor Accessories**

Parts coverage of Vendor Accessories used on Lycoming engines may be found in the appropriate Vendor's Parts Catalog. A list of vendor's addresses appears in the latest revision of Lycoming Service Letter No. L114.

Any reference in this document to the suppliers/part manufacturer's product, by name, trademark, part number or other description is solely for the purpose 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.

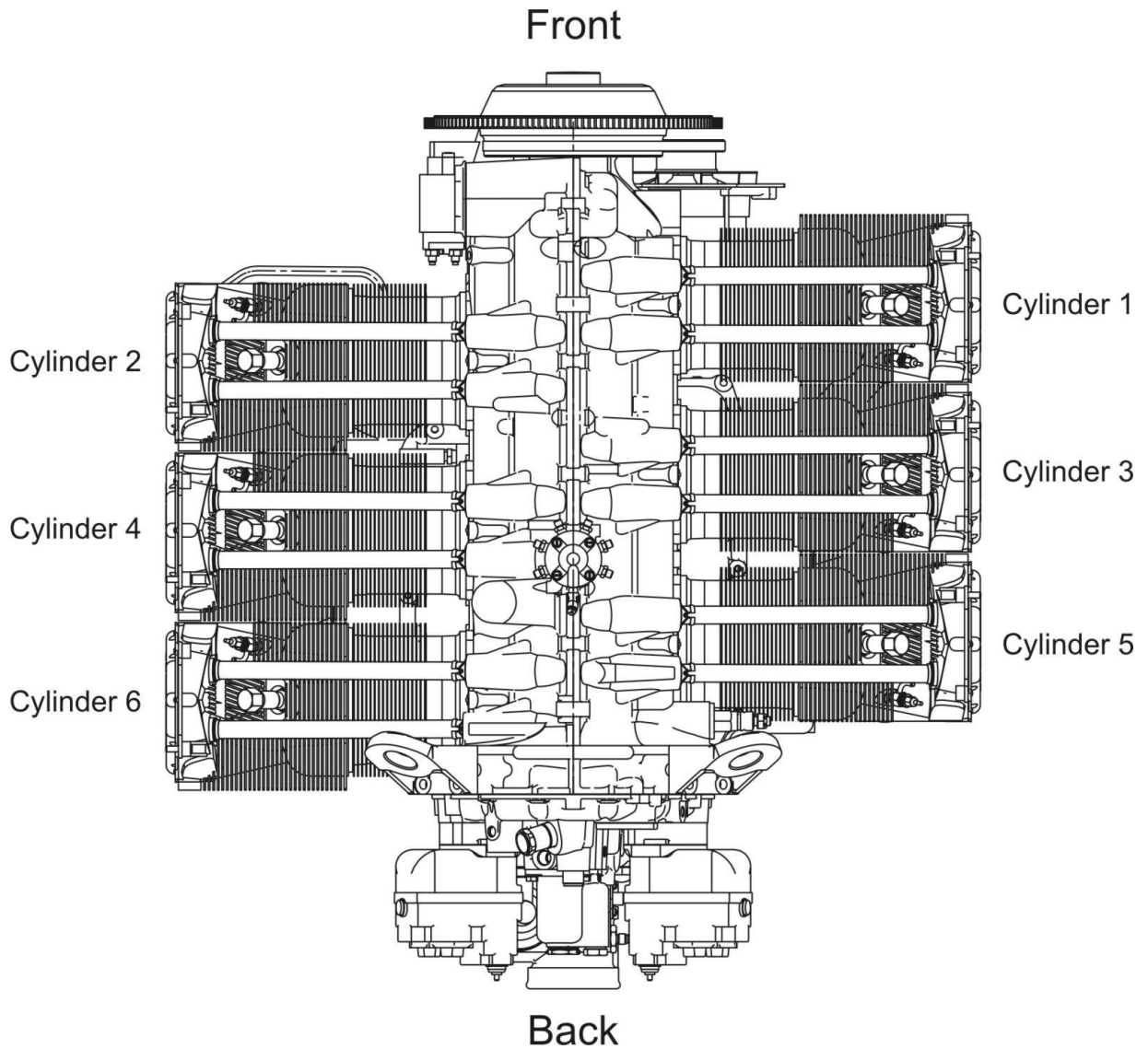
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Lycoming is concerned with preserving the environment. Lycoming strongly urges engine owners and repair/overhaul personnel to observe and comply with all federal, state, and local environmental regulations when solvents, paint, fuel, oil, chemicals, or other consumables are used in operating, maintaining, or overhauling an engine component. Please share our concern for, and commitment to a clean earth, clean water, and especially clean air for succeeding generations of flyers.



**Perspective of References**

In this manual, all references to locations of various components will be designated as if viewing the engine from the rear (or anti-propeller) end. The front of the engine is considered to be the propeller end and the oil sump is considered to be on the bottom of the engine. Cylinders are numbered from front to rear with the odd-numbered cylinders on the right-hand side. The firing order for this six-cylinder engine is 1-4-5-2-3-6.



**Top View of Engine**

**How to Order Parts and Publications**

An Oversize and Undersize Parts List is included in the front section of this catalog to aid in ordering parts as necessary during overhaul.

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. Refer to the latest revision of Service Letter No. L114 for subscription information.

1. For correct, expedited part shipments without delay:
  - A. Always give the model and serial number of your engine.
  - B. Always give the part number, nomenclature, and quantity.

The SB and SI documents are available from Lycoming distributors, or the factory, or by subscription.

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**ABBREVIATIONS AND ACRONYMS**

<b>A</b>	
Adj.	Adjustable
Assy	Assembly
<b>C</b>	
cyl.	Cylinder
<b>F</b>	
Fill.	Fillister
<b>H</b>	
Hex.	Hexagon
<b>I</b>	
I.D.	Inside Diameter
in.	Inch
<b>M</b>	
mm	Millimeter
<b>N</b>	
No.	Number
NPT	National Pipe Taper (thread)
<b>O</b>	
O.D.	Outside Diameter
<b>P</b>	
P/N	Part Number
psi	Pounds per square inch
<b>U</b>	
UNC	Unified National Coarse
UNF	Unified National Fine

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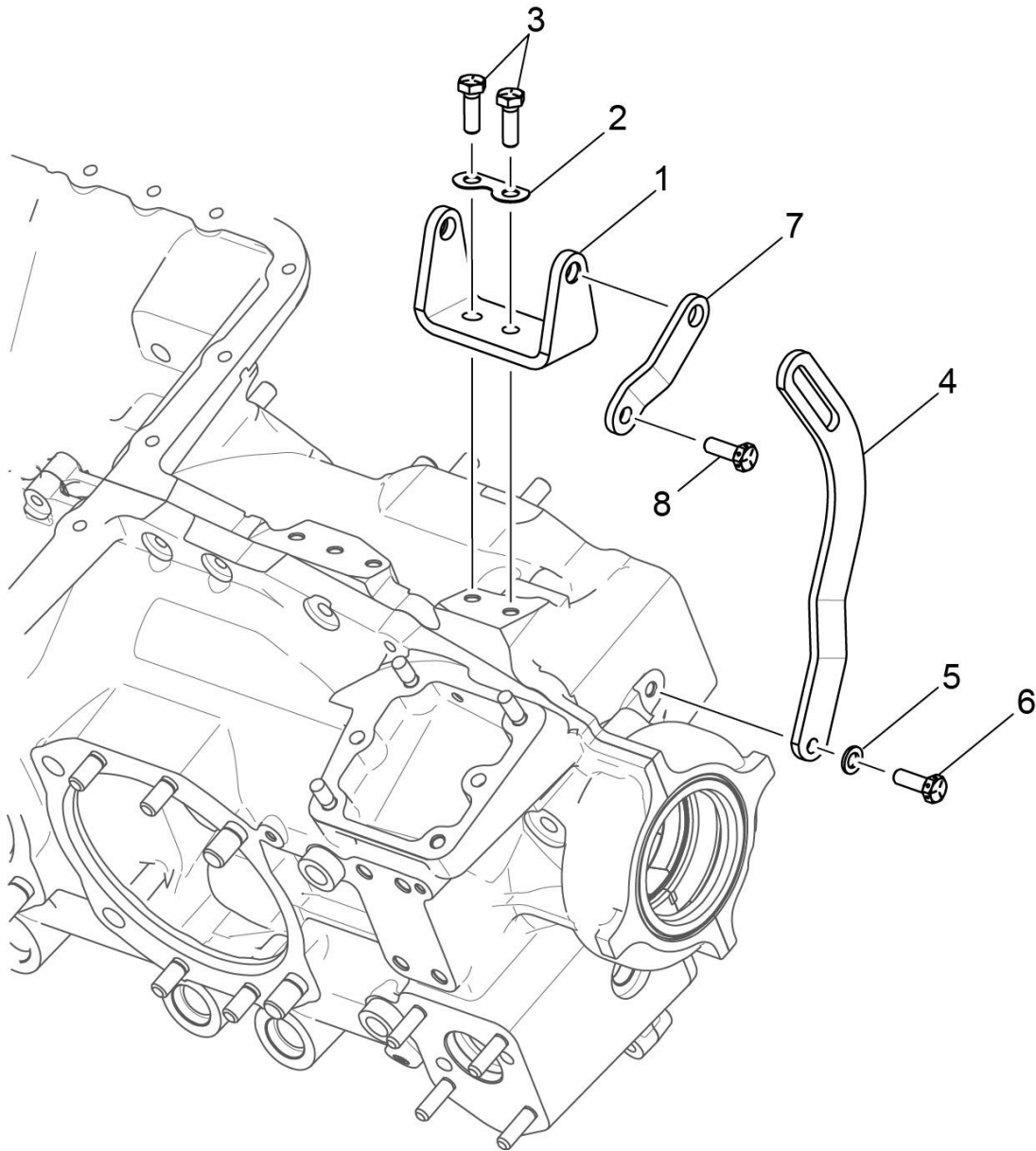
**OVERSIZE AND UNDERSIZE PARTS LISTING**

PART NO.	DESCRIPTION	OVERSIZE (IN.)					UNDERSIZE (IN.)		
		P05 .005	P10 .010	P15 .015	P20 .020	P50 .050	M03 .003	M06 .006	M10 .010
66610	BUSHING	X							
61681*	GUIDE	X	X						
66796	INSERT		X						
69796	DOWEL	X							
72155-S	BUSHING	X							
71903-A	BUSHING								
75656-S	BUSHING	X							
75657-S	BUSHING	X							
16R22291*	GUIDE	X	X						
LW-11997	SEAL					X			
72057	SEAT	X	X						
18M26105	BEARING						X	X	
LW-13792	SEAL					X			
STD-1065	DOWEL	X	X						
72058	SEAT		X		X				
18A26093	BEARING						X	X	
18D26099	BEARING						X	X	

\* Reference Figure 9 items no. 4 and 5 for valve guides.

## NOTE

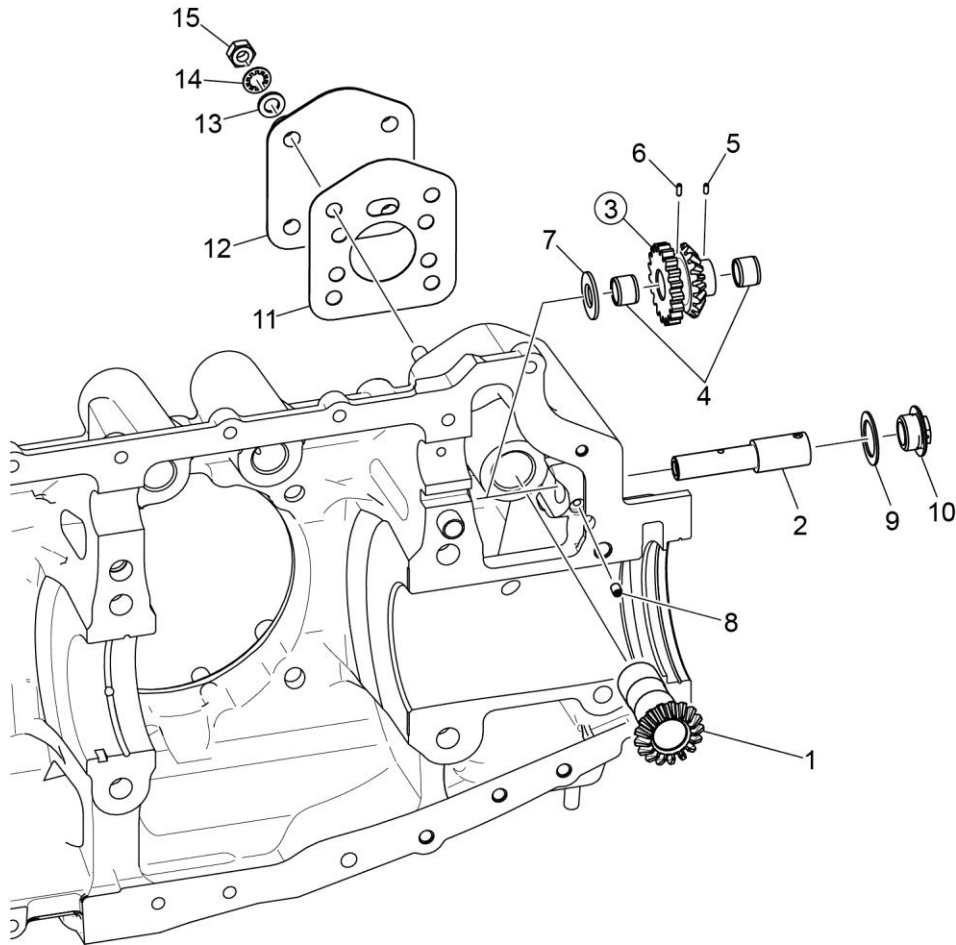
When ordering oversize and undersize parts, be sure to specify the required oversize and undersize dimension along with the proper part number. For example, to order bearing P/N 18D26099 bearing in .003 in. undersize, order P/N 18D26099-M03. Undersize code letter is "M" while oversize code letter is "P". These letters are then followed by the number designating the size in thousandths of an inch.



**Figure 1**  
**Alternator Attaching Parts**

**FIGURE 1 - ALTERNATOR ATTACHING PARTS**

<b>Figure Item</b>	<b>Code</b>	<b>Part Number</b>	<b>Description</b>	<b>Units per Assembly</b>
1		07A21443	BRACKET, Alternator	1
2		73383	LOCKPLATE, 5/16 bolt x 1.00 long	1
3		LW-31-0.94	BOLT, 5/16-18 x 15/16 long hex. head	2
4		LW-10729	LINK, Alternator adjusting	1
5		STD-35	WASHER, 5/16 plain	1
6		LW-31H0.88	BOLT, 5/16-18 x 7/8 long hex. head, drilled	1
7		76908	STRUT, Alternator support	1
8		LW-31H0.88	BOLT, 5/16-18 x 7/8 long hex. head, drilled	1

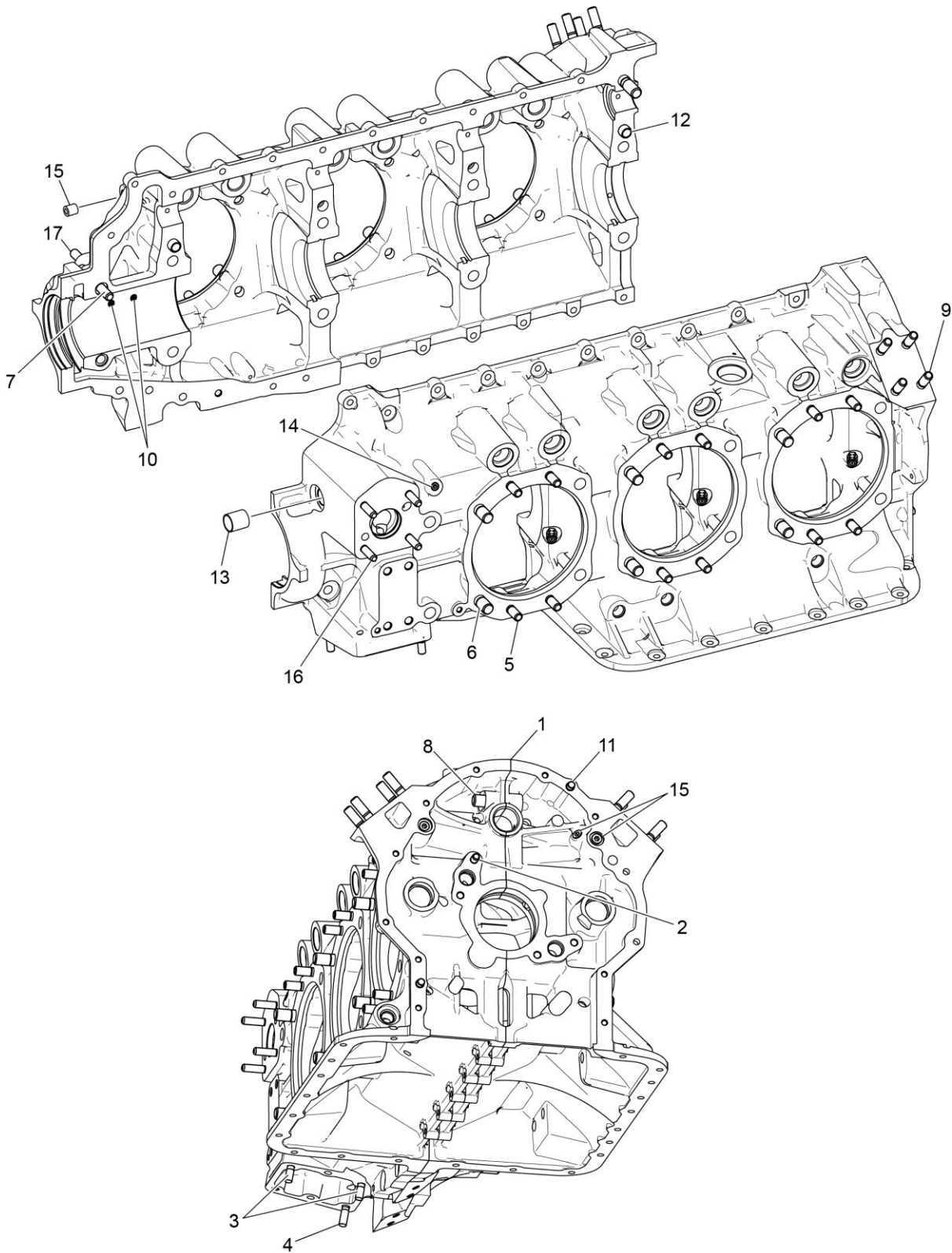


**Figure 2**  
**Propeller Governor Drive Assembly**



**FIGURE 2 – PROPELLER GOVERNOR DRIVE ASSEMBLY**

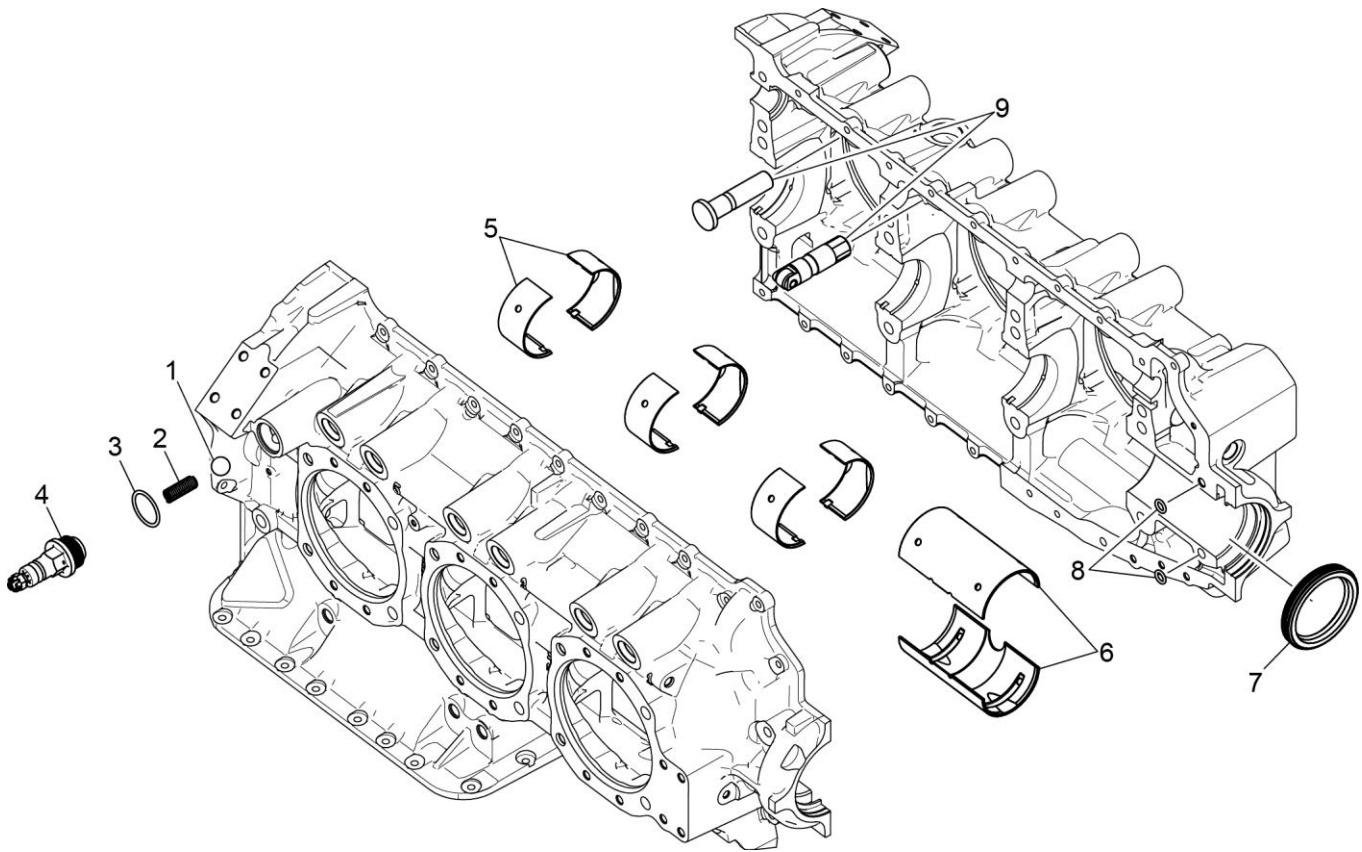
Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-10442	GEAR, Propeller governor drive	1
2		LW-14021	SHAFT, Propeller governor idler gear	1
3		LW-10541	GEAR ASSEMBLY, Propeller governor idler	1
4		77872	BUSHING, Propeller governor idler gear	2
5		STD-19	DOWEL, 3/32 diameter x 7/32 long	1
6		STD-798	DOWEL, 3/32 diameter x 9/32 long	1
7	<b>AR</b>	73249	WASHER, Thrust (0.0585-0.0595 thick)	AR
	<b>AR</b>	73250	WASHER, Thrust (0.062-0.063 thick)	AR
	<b>AR</b>	73251	WASHER, Thrust (0.0655-0.0665 thick)	AR
	<b>AR</b>	73252	WASHER, Thrust (0.069-0.070 thick)	AR
	<b>AR</b>	01L21418	WASHER, Thrust (0.055-0.056 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 1/16 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
<b>AR</b> as required				



**Figure 3**  
**Crankcase Assembly**

**FIGURE 3 - CRANKCASE ASSEMBLY**

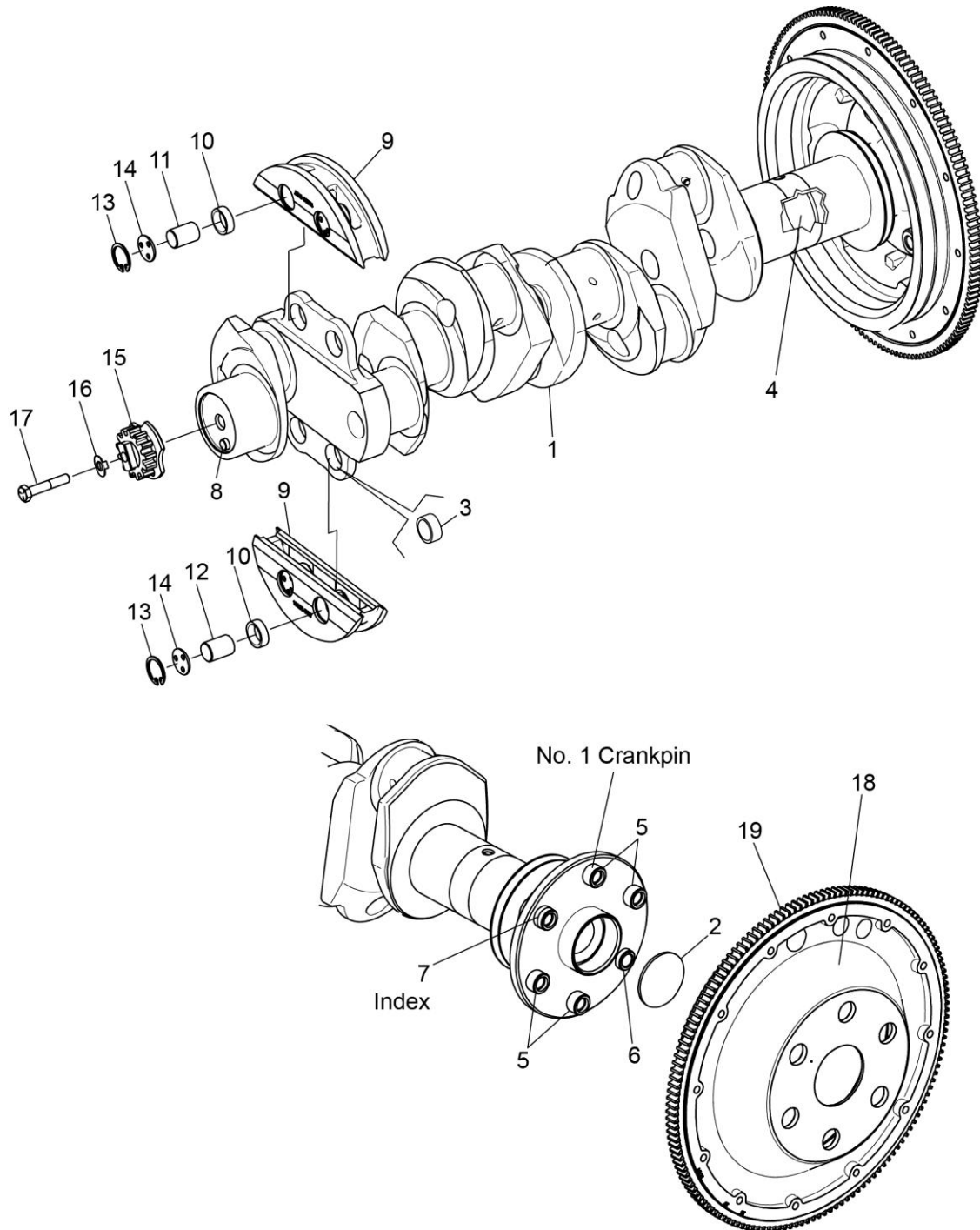
Figure Item	Code	Part Number	Description	Units per Assembly
1		11E24100-S1-S	CRANKCASE ASSEMBLY KIT	1
	<b>P</b>	11E24100-S1	CRANKCASE ASSEMBLY	1
		11E24000-S1-S	CRANKCASE ASSEMBLY KIT	1
	<b>P</b>	11E24000-S1	CRANKCASE ASSEMBLY	1
2		01A23354	STUD, 5/16-18 x 1.00 long, drilled	1
3		31C-12	STUD, 5/16-18 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 diameter x 1/2 long	2
12		STD-557	DOWEL, 1/2 diameter x 11/16 long	2
13		72158	BUSHING, Governor drive idler shaft	1
14		STD-1339	PLUG, 1/16-27 NPT, allen head	7
15		1102	PLUG, 1/8-27 NPT, allen head	4
16		31C-17	STUD, 5/16-18 x 2 1/8 long	4
17		31C-16	STUD, 5/16-18 x 2.00 long	4
<b>P</b> Lycoming proprietary part. Listed for reference purposes only, cannot be purchased.				



**Figure 4**  
**Crankcase Related Parts**

**FIGURE 4 - CRANKCASE RELATED PARTS**

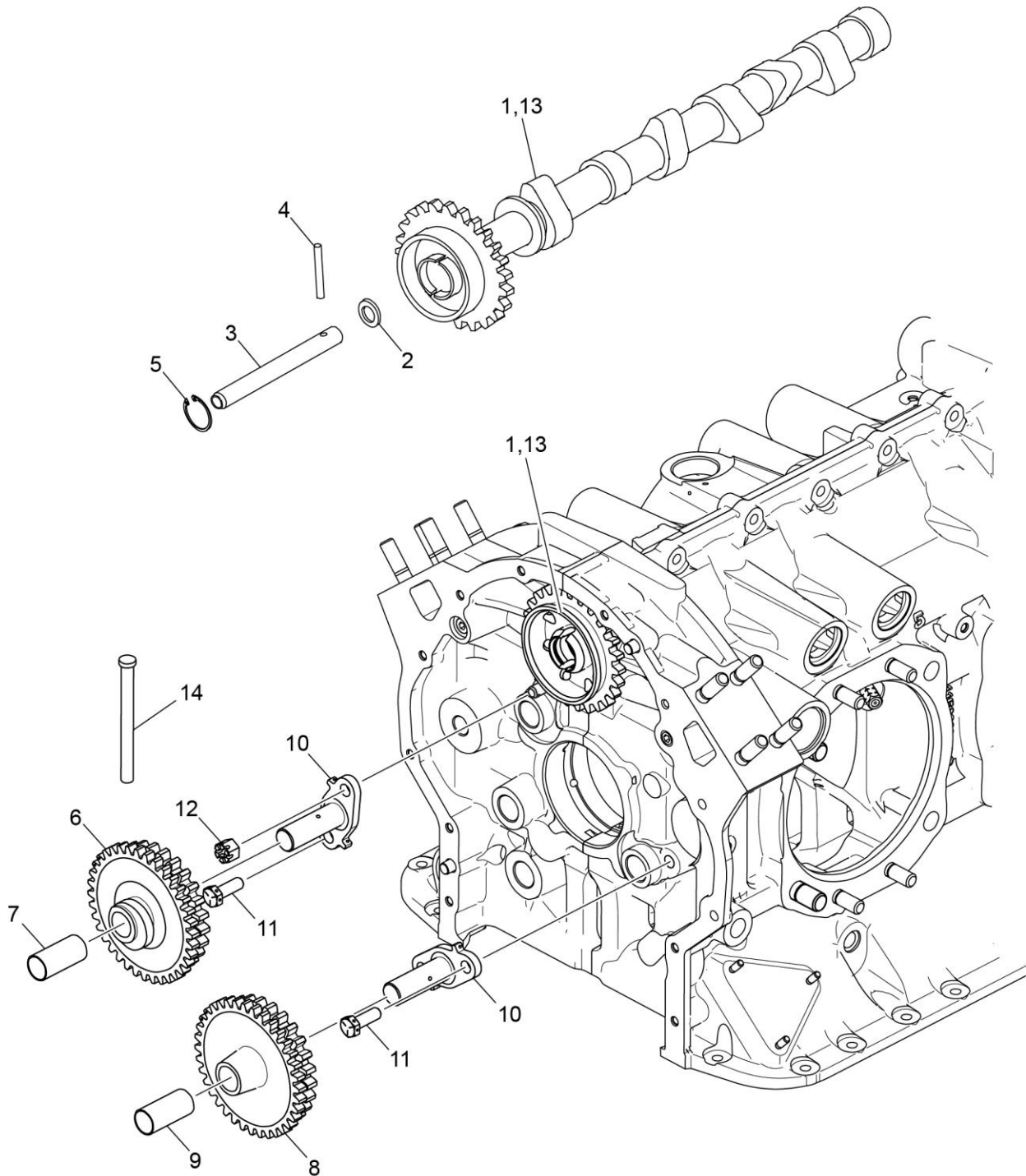
Figure Item	Code	Part Number	Description	Units per Assembly
1		1028-B	BALL, 11/16 diameter	1
2	*	61084	SPRING, Oil pressure relief valve	1
	*	68668	SPRING, Oil pressure relief valve	1
	*	77467	SPRING, Oil pressure relief valve	1
	*	LW-11713	SPRING, Oil pressure relief valve	1
	*	LW-18085	SPRING, Oil pressure relief valve	1
3		06E19769-1.25	GASKET, Annular, 1-1/4 I.D.	1
4		77808	VALVE ASSEMBLY, Oil pressure relief valve, adj.	1
5		18D26099	BEARING, Crankshaft	6
6		18A26093	BEARING, Crankshaft	2
7	**	LW-13792	SEAL, Crankshaft oil	1
8		72091	RING, Oil seal, 23/64 I.D. x 7/64 diameter	2
9	+	LRT23381	BODY, Hydraulic <b>(roller tappet)</b>	12
	+	15B26262	BODY, Hydraulic tappet	12
<p>* Refer to latest revision of SSP-1776, Part I for spring identification.  ** Refer to the latest revision of Lycoming Service Instruction No. 1324 for installation.  + Refer to the latest revision of Service Instruction S.I. 1011</p>				



**Figure 5**  
**Crankshaft Assembly and Related Parts**

**FIGURE 5 - CRANKSHAFT ASSEMBLY AND RELATED PARTS**

Figure Item	Code	Part Number	Description	Units per Assembly
1		13E47628	CRANKSHAFT ASSEMBLY	1
2		STD-1211	PLUG, 2.00 diameter expansion	1
3		73810	BUSHING, Crankshaft counterweight	4
4		61510	PLUG, 1-3/4 diameter	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, 0.310 – 0.251 diameter	1
9		LW-19210	COUNTERWEIGHT ASSEMBLY	2
10		71903-A	BUSHING, Dynamic counterweight	8
11		76788	ROLLER, Dynamic counterweight, 6.3 order	2
12		LW-15558	ROLLER, Dynamic counterweight	2
13		LW-14820	RING, Internal retaining	8
14		71907	WASHER, Counterweight	8
15		13S19647	GEAR, Crankshaft	1
16		LW-18638	LOCKPLATE, Crankshaft	1
17		STD-2247	BOLT, 5/16-24 x 1-3/4 long	1
18		31M22045	SUPPORT ASSEMBLY, Starter ring gear	1
19		72566	GEAR, Starter ring, 12/14 pitch	1
<b>NOTE:</b> Refer to Service Kit Section for Crankshaft and Counterweight Assembly kit.				

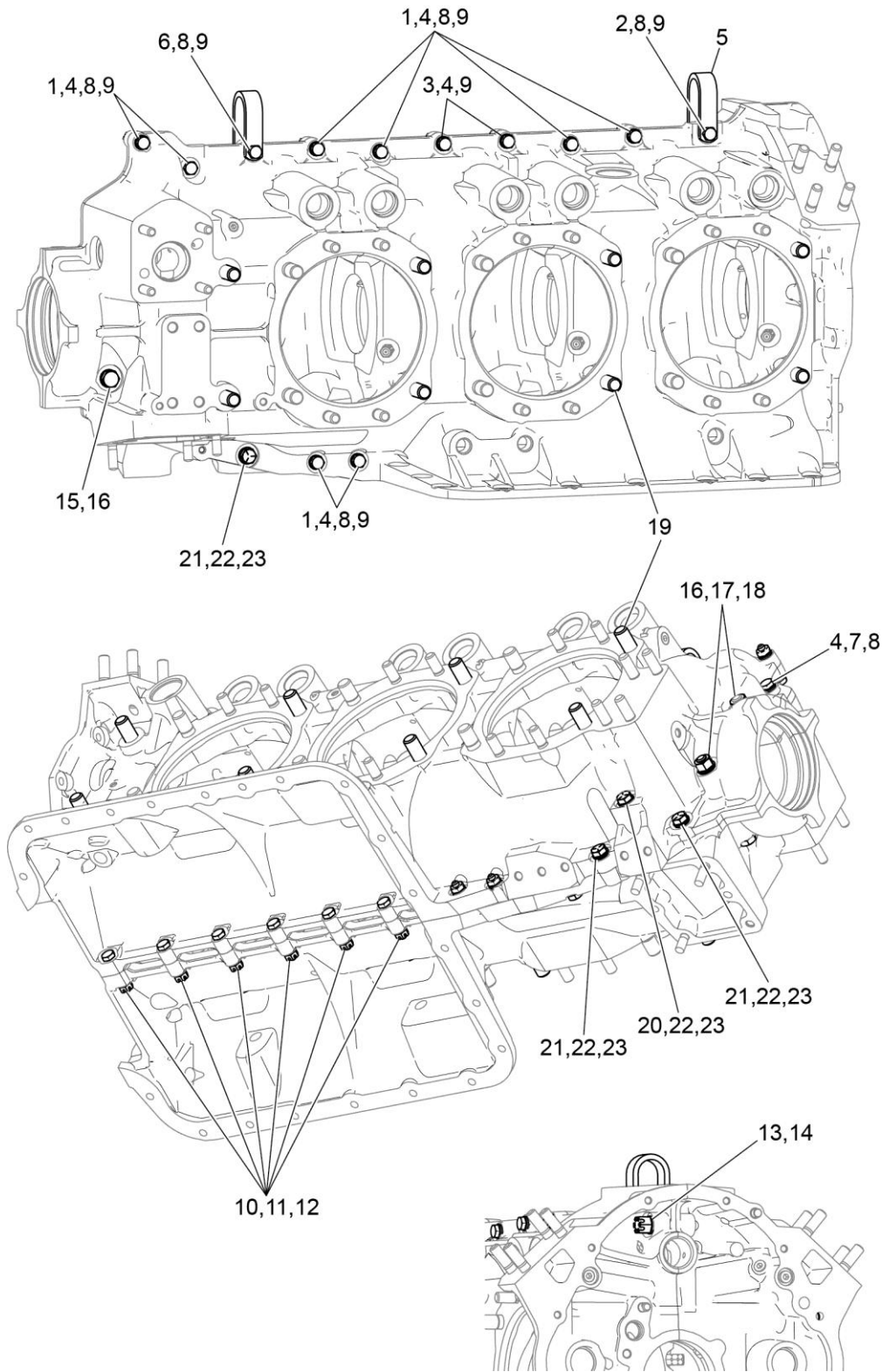


**Figure 6**  
**Crankshaft Idler Gears, Tachometer Drive and Camshaft**



**FIGURE 6 - CRANKSHAFT IDLER GEARS, TACHOMETER DRIVE AND CAMSHAFT**

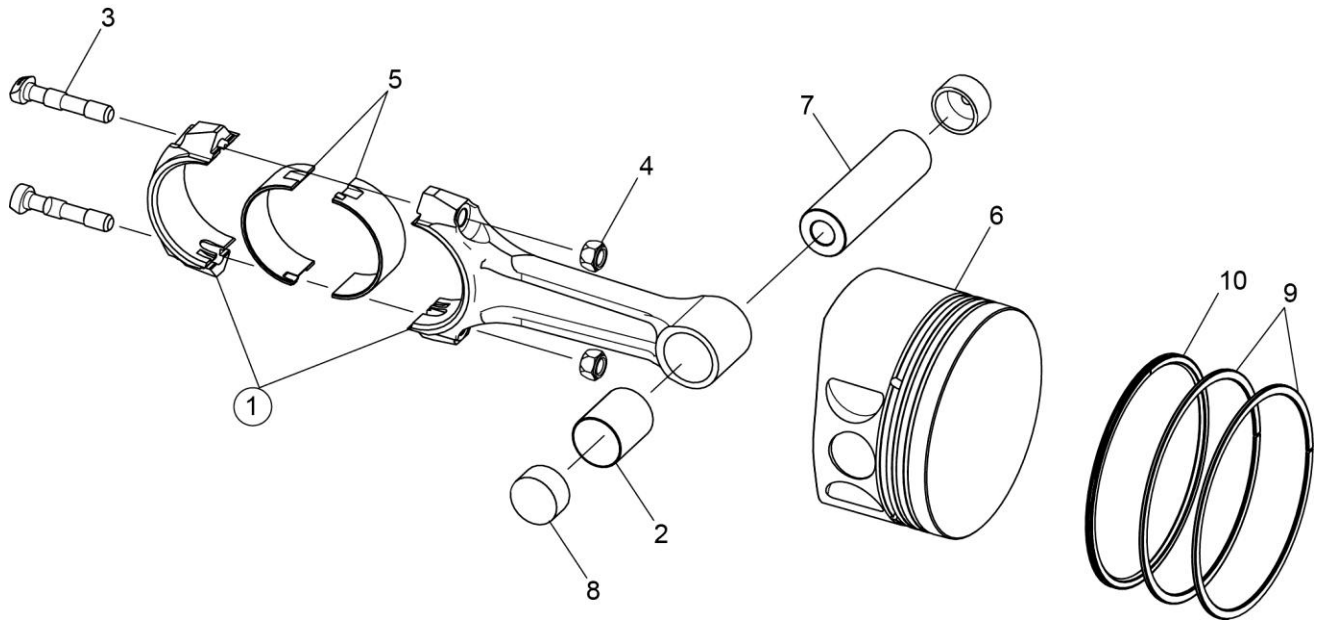
Figure Item	Code	Part Number	Description	Units per Assembly
1		15N23374	CAMSHAFT ASSEMBLY	1
2		76118	SPACER, Tachometer shaft centering	1
3		76155	SHAFT ASSEMBLY, Tachometer	1
4		LW-18667	PIN, 3/16 diameter x 2-21/64 long	1
5		STD-2231	RING, Internal retaining (13/16)	1
6		71652	GEAR ASSEMBLY, Crankshaft idler	1
7		67530	BUSHING, Crankshaft idler gear	1
8		71668	GEAR ASSEMBLY, Crankshaft idler, plain	1
9		67530	BUSHING, Crankshaft idler gear	1
10		LW-13795	SHAFT, Crankshaft idler gear	2
11		LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex. head, drilled	3
12		STD-2168	NUT, 5/16-18 NC-3 slotted shear	1
13		LW-19340	CAMSHAFT ASSEMBLY	1
14		23D26777	PLUNGER, Fuel pump	1



**Figure 7**  
**Crankcase Attaching Parts**

**FIGURE 7 - CRANKCASE ATTACHING PARTS**

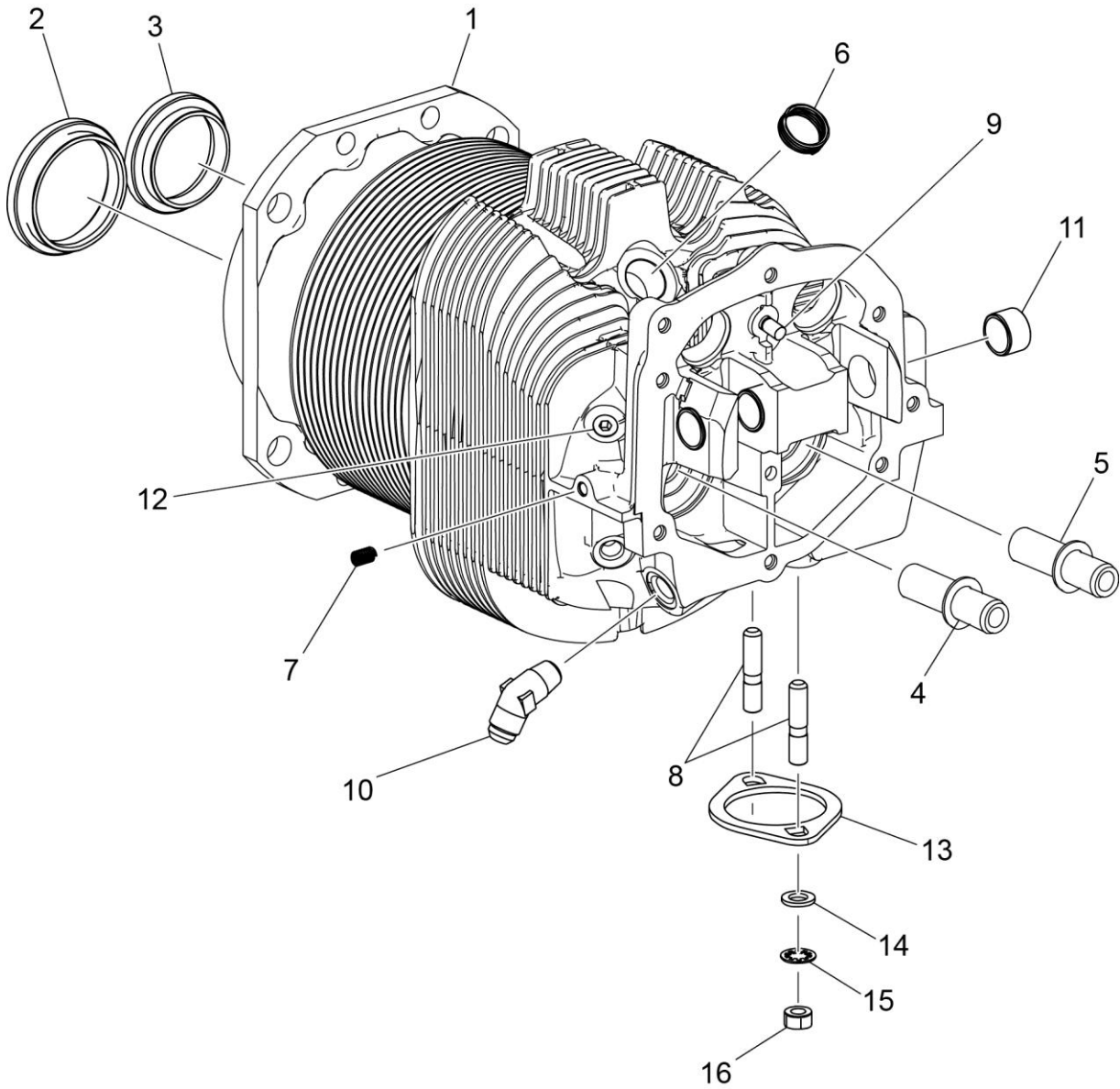
Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-25-1.50	BOLT, 1/4-20 x 1-1/2 long, hex. head	8
2		LW-25-1.88	BOLT, 1/4-20 x 1-7/8 long, hex. head	1
3		LW-25-2.00	BOLT, 1/4-20 x 2.00 long, hex. head	2
4		STD-8	WASHER, 1/4 plain	22
5		60803	STRAP, Lifting	2
6		LW-25-1.75	BOLT, 1/4-20 x 1-3/4 long, hex. head	1
7		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	1
8		STD-160	WASHER, 1/4 lock, internal teeth	13
9		STD-1411	NUT, 1/4-20 plain	12
10		LW-25S1.50	BOLT, 1/4-20 x 1-1/2 long, drilled end	6
11	<b>AR</b>	STD-8	WASHER, 1/4 plain (max. 18)	AR
12		STD-2249	NUT, 1/4-20, slotted shear	6
13		STD-33	WASHER, 3/8 plain	1
14		STD-872	NUT, 3/8-24 slotted	1
15		AN6-34A	BOLT, 3/8-24 x 3-37/64 long, hex. head	1
16		STD-33	WASHER, 3/8 plain	3
17		STD-678	WASHER, 3/8 lock, internal teeth	2
18		STD-596	NUT, 3/8-24 plain	2
19		76220	STUD, 1/2-20 x 10-45/64 long	8
20		LW-31-2.75	BOLT, 5/16-18 x 2-3/4 long, hex. head	1
21		LW-31-1.16	BOLT, 5/16-18 x 1-5/32 long, hex. head	3
22		STD-35	WASHER, 5/16 plain	4
23		STD-475	WASHER, 5/16 lock, internal teeth	4
<b>AR</b> as required				



**Figure 8**  
**Connecting Rods, Pistons and Ring Assemblies**

**FIGURE 8 - CONNECTING RODS, PISTONS AND RING ASSEMBLIES**

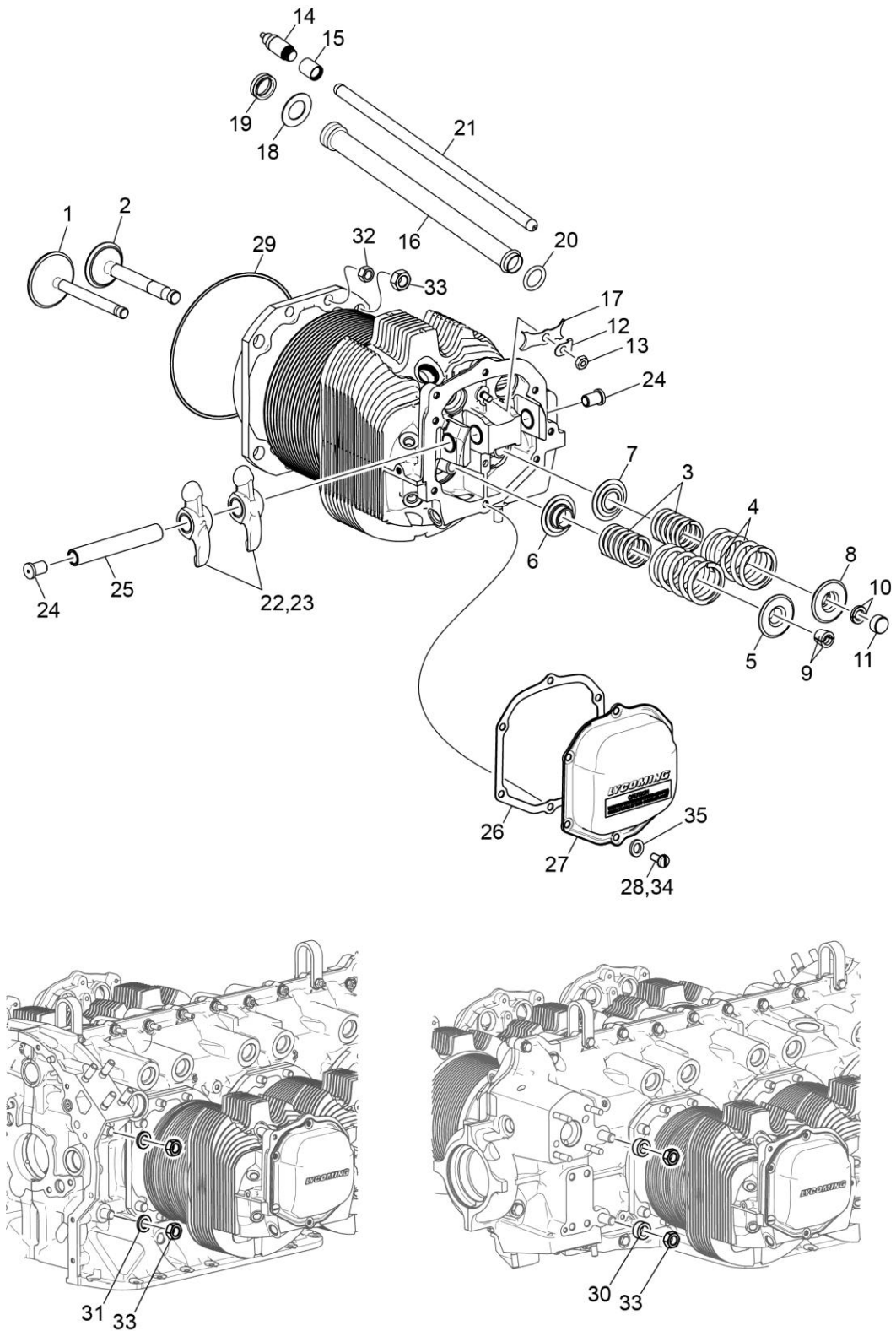
Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-13865-S	CONNECTING ROD ASSEMBLY	6
2		LW-13923	BUSHING, Connecting rod, upper	6
3	<b>P</b>	14S23890	BOLT, Connecting rod	12
	*	75061	BOLT, Connecting rod	12
4		LW-12186	NUT, Connecting rod bolt	12
5		18M26105	BEARING, Connecting rod	12
6		LW-13396	PISTON, Compression ratio 8.50:1	6
7		LW-13445	PIN, Piston	6
8	**	72198	PLUG, Piston pin	12
9		74241	RING, Piston, compression	12
10		14H21950	RING, Piston, oil regulating (expander type)	6
<p><b>P</b> Lycoming proprietary part. Listed for reference purpose only, cannot be purchased.  * Service use only. Refer to the latest revision of Lycoming Service Instruction No. 1458.  ** Refer to the latest revision of Lycoming Service Instruction No. 1267.</p>				



**Figure 9**  
**Cylinder Assembly**

**FIGURE 9 - CYLINDER ASSEMBLY**

Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-13870	CYLINDER ASSEMBLY, Nitrided	6
2		72057	SEAT, Valve, intake	6
3		72058	SEAT, Valve, exhaust	6
4	<b>P</b> *	76943	GUIDE, Valve, intake	6
5	<b>P</b> *	16R22126	GUIDE, Valve, exhaust	6
6	<b>P</b>	66796	INSERT, Spark plug, 18-1.5 mm	12
7		STD-1353	INSERT, No. 10-24 UNC x 3/8 long	6
8		31C-12	STUD, 5/16-18 x 1-1/2 long	12
9		25C-8	STUD, 1/2-20 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		77611	GASKET, Exhaust flange	6
14		STD-35	WASHER, 5/16 plain	12
15		STD-475	WASHER, 5/16 lock, internal teeth	12
16		STD-1410	NUT, 5/16-18 plain	12
<p><b>P</b> Lycoming proprietary part. Listed for reference purpose only, cannot be purchased.  * Refer to the latest revision of Lycoming Service Instruction No. 1256 for service valve guides.</p>				



**Figure 10**  
**Valve Assembly and Related Parts**



**FIGURE 10 – VALVE ASSEMBLY AND RELATED PARTS- ROLLER TAPPETS**

Figure Item	Code	Part Number	Description	Units per Assembly
1		17A23938	VALVE, Intake	6
2		17B23936	VALVE, Exhaust (rotator type)	6
3		LW-11800	SPRING, Valve, outer	12
4		LW-11795	SPRING, Valve, inner	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		LW-12272	LOCKPLATE, Shroud tube	6
13		STD-1411	NUT, 1/4-20 plain	6
14		15B26066	PLUNGER ASSEMBLY, Hydraulic lifter	12
15		15B21319	SOCKET, Hydraulic tappet <b>(roller tappet)</b>	12
16	*	15G23461	SHROUD TUBE ASSEMBLY, Push rod <b>(roller tappet)</b>	12
		LW-11485	SHROUD TUBE ASSEMBLY, Push rod	12
17	*	LW-14995	SPRING, Shroud tube	6
18	*	01L23459	WASHER, 25/32 I.D. x 1-3/8 O.D. x 0.041 thick	12
19	*	06A23493	SEAL, Shroud tube <b>(roller tappet)</b>	12
	*	LW-18661	SEAL, Shroud tube	12
20	*	70310	SEAL, Shroud tube	12
* See latest revision of Service Instruction No. 1514 for shroud tube spring information.				

(continued on next page)

**FIGURE 10 - VALVE ASSEMBLY AND RELATED PARTS- ROLLER TAPPETS (CONT.)**

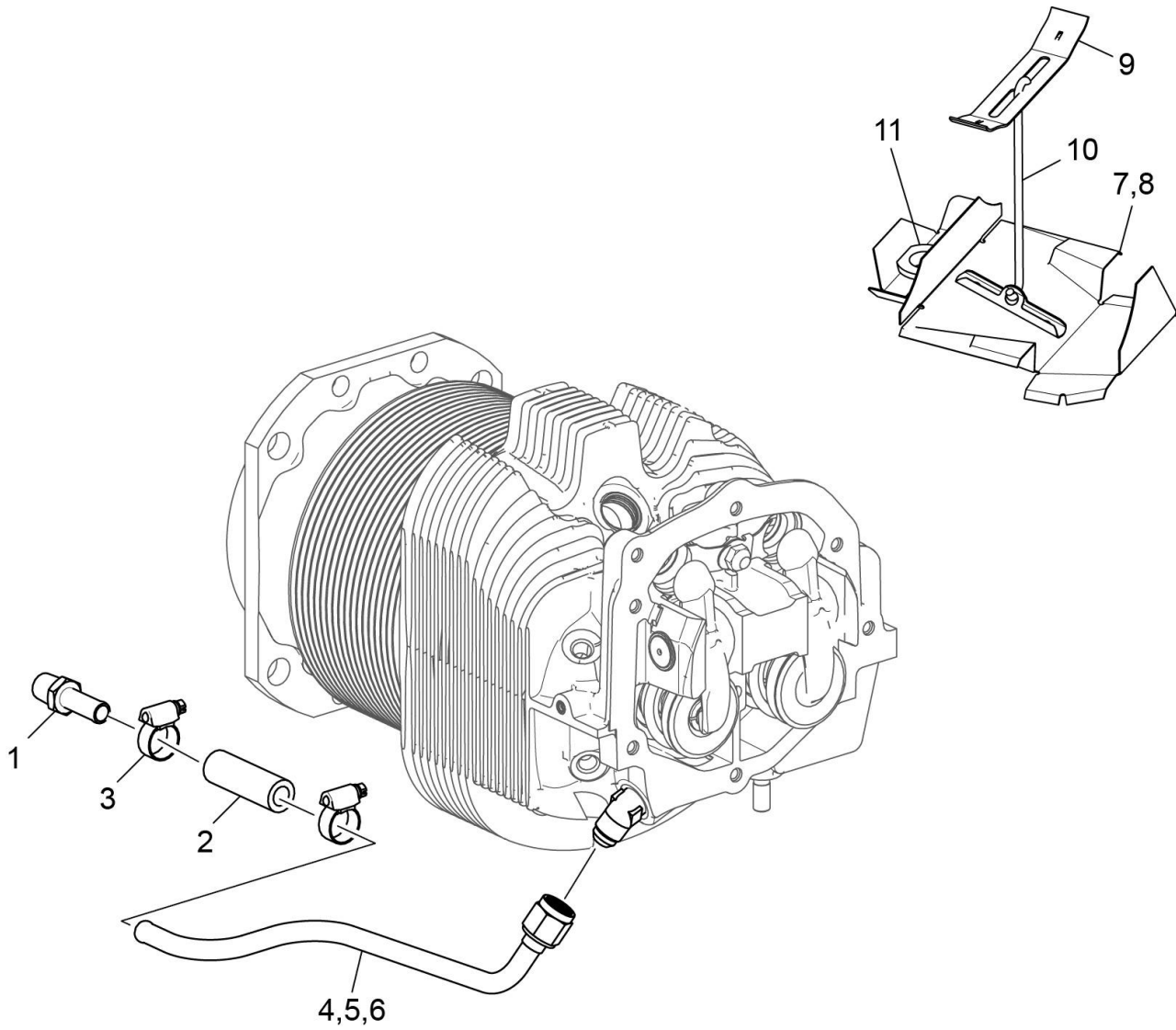
Figure Item	Code	Part Number	Description	Units per Assembly
21	AR *	15F19957-28	ROD ASSEMBLY, Push (A total of 12 required)	AR
	AR *	15F19957-29	ROD ASSEMBLY, Push (A total of 12 required)	AR
	AR *	15F19957-30	ROD ASSEMBLY, Push (A total of 12 required)	AR
	AR *	15F19957-31	ROD ASSEMBLY, Push (A total of 12 required)	AR
	AR *	15F19957-32	ROD ASSEMBLY, Push (A total of 12 required)	AR
	AR *	15F19957-33	ROD ASSEMBLY, Push (A total of 12 required)	AR
	AR *	15F19957-34	ROD ASSEMBLY, Push (A total of 12 required)	AR
	AR *	15F19957-35	ROD ASSEMBLY, Push (A total of 12 required)	AR
	AR *	15F19957-36	ROD ASSEMBLY, Push (A total of 12 required)	AR
	AR *	15F19957-37	ROD ASSEMBLY, Push (A total of 12 required)	AR
22	**	17F19357	ROCKER ASSEMBLY, Valve, intake and exhaust	12
23		74637	BUSHING, Valve rocker	12
24		LW-12892	WASHER, Thrust, valve rocker	12
25		LW-13790	SHAFT, Valve rocker	12
26		75906	GASKET, Rocker box cover	6
27		61247	COVER ASSEMBLY, Rocker box	6
		61247-C	COVER ASSEMBLY, Rocker box-chrome	6
28		STD-1925	SCREW, 1/4-20 x 5/8 long, pan. head	36
29		71481	RING, Oil seal, 3/32 dia. x 4-27/32 long	6
30		74887	SPACER, 33/64 I.D. x 7/8 O.D. x 3/8 thick	2
31		77906	SPACER, 33/64 I.D. x 7/8 O.D. x 1/8 thick	2
32		383-B	NUT, 3/8-24 plain	24
33		STD-2090	NUT, 1/2-20 UNF-3B	28
34		01F22880	SCREW, 1/4-20 x 19/32 long, stainless	36
35		MS35335-33	WASHER	36

**AR** as required

\* Various push rod lengths are used to set valve clearances. Refer to the latest revision of Service Instruction No. 1060 for complete push rod application.

\*\* Due to the size of the area where the number is stamped, the last five digits may be all that is shown (19357).

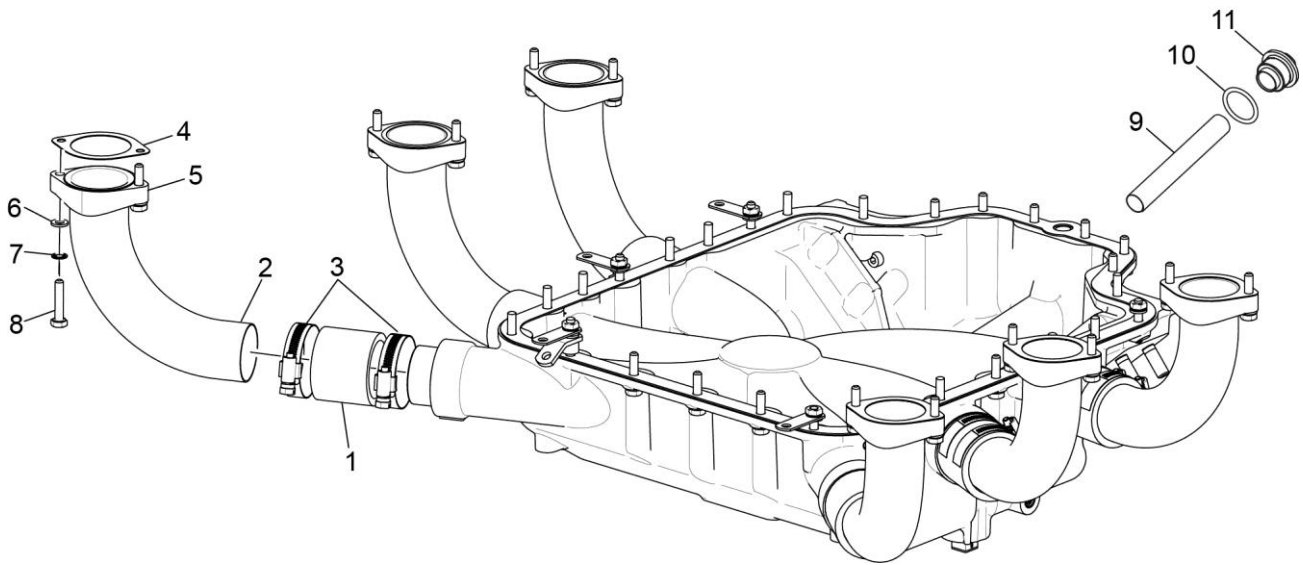
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**Figure 11**  
**Cylinder Related Parts**

**FIGURE 11 - CYLINDER RELATED PARTS**

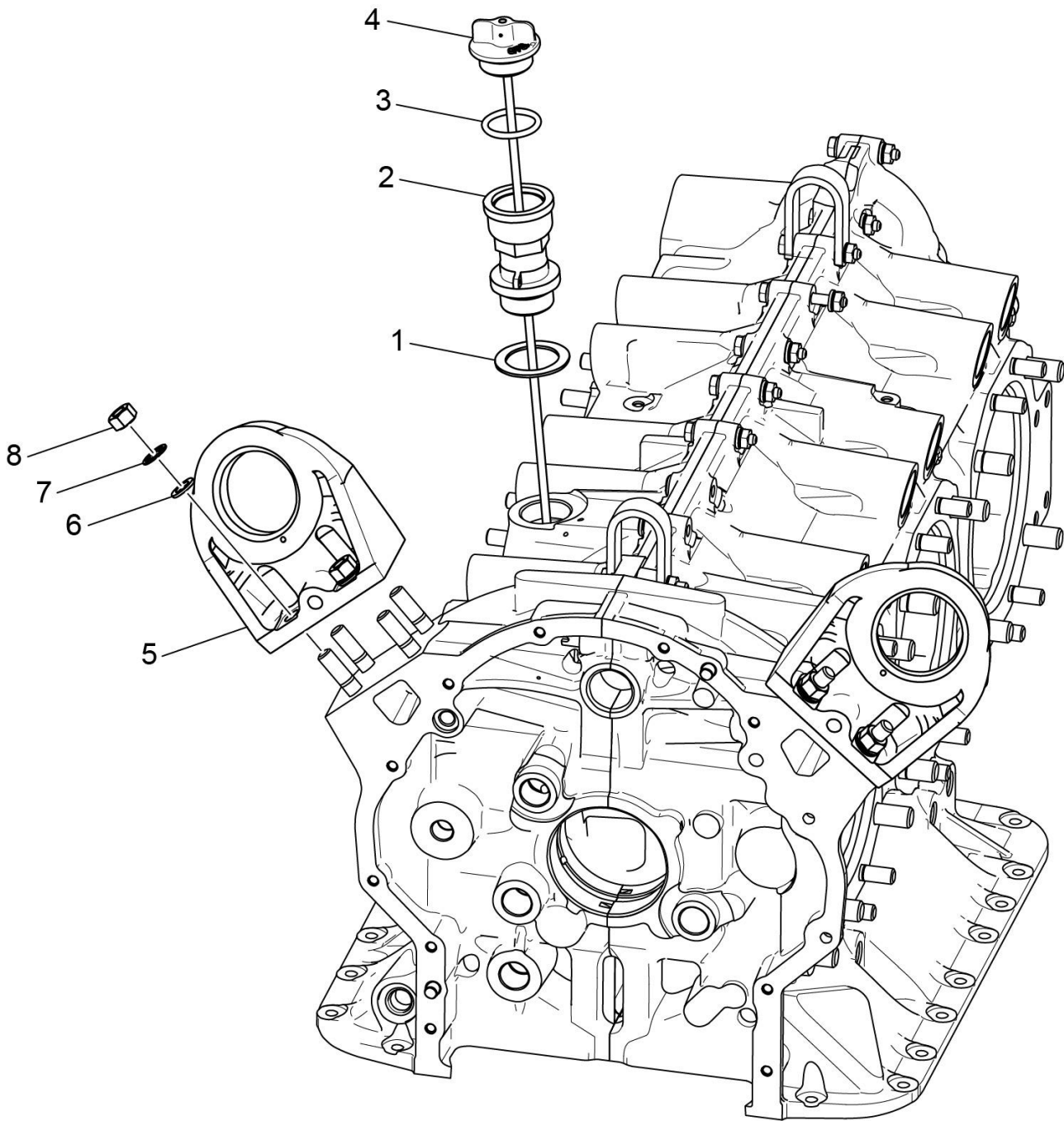
Figure Item	Code	Part Number	Description	Units per Assembly
1		STD-684	NIPPLE, Straight, 3/8 I.D. hose	6
2		STD-1821	HOSE, 3/8 I.D. x 2-1/2 long	6
3		LW-15592-5-05	CLAMP, Hose	12
4		68759	TUBE ASSY., Cylinder head oil drain, cyl. no. 1	1
5		71737	TUBE ASSY. Cylinder head oil drain, cyl. no. 2	1
6		68761	TUBE ASSY., Cylinder head oil drain, cyls. no. 3,4,5,6	4
7		LW-15839	BAFFLE ASSEMBLY, Inter-cylinder	3
8	*	LW-16838	BAFFLE ASSEMBLY, Inter-cylinder	1
9		71611	RETAINER, Inter-cylinder baffle	4
10		71629	HOOK, Inter-cylinder baffle retainer	4
11	**	MS35489-20X	GROMMET	1
<p>* Between cylinders no. 1 and no. 3  ** Install in LW-16838 baffle.</p>				



**Figure 12**  
**Intake Pipes Assembly**

**FIGURE 12 – INTAKE PIPES ASSEMBLY**

Figure Item	Code	Part Number	Description	Units per Assembly
1		69603	HOSE, 1.75 I.D. x 2-3/16 O.D. x 1.75 long	6
2		70485	PIPE, Intake, cylinder no. 1,2,3,4,5,6	6
3		LW-15592-8-28	CLAMP, Hose	12
4		71973	GASKET, 2 bolt flange, 1-13/16 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. head	12
9		70484	SCREEN, Oil suction	1
10		06E19769-1.00	GASKET, Annular, 1.00 I.D.	1
11		LW-12545	PLUG, 5/8 hex head x 1.00-20 thread	1

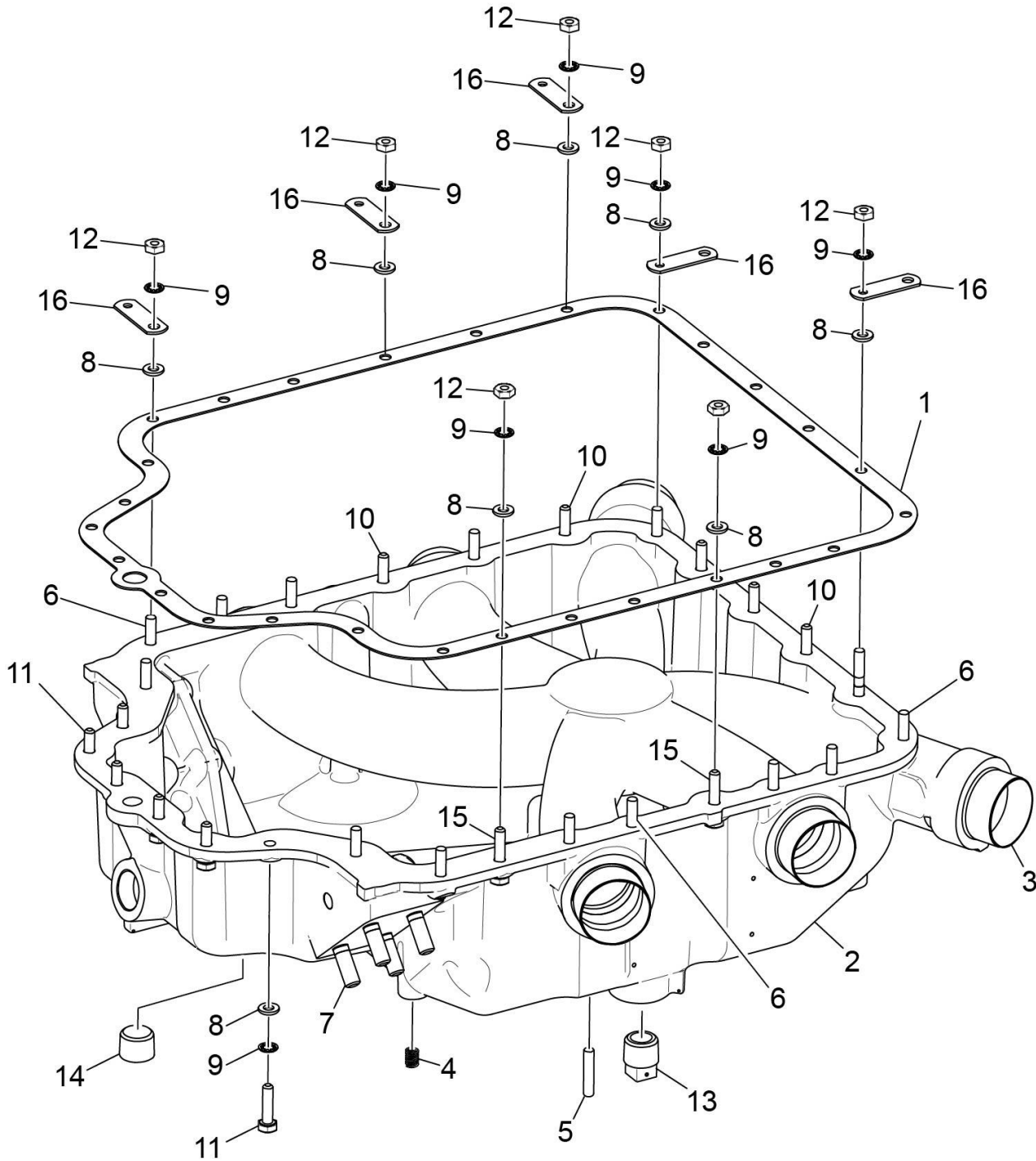


**Figure 13**  
**Oil Level Gage Assembly and Engine Mounting Brackets**



**FIGURE 13 – OIL LEVEL GAGE ASSEMBLY AND ENGINE MOUNTING BRACKETS**

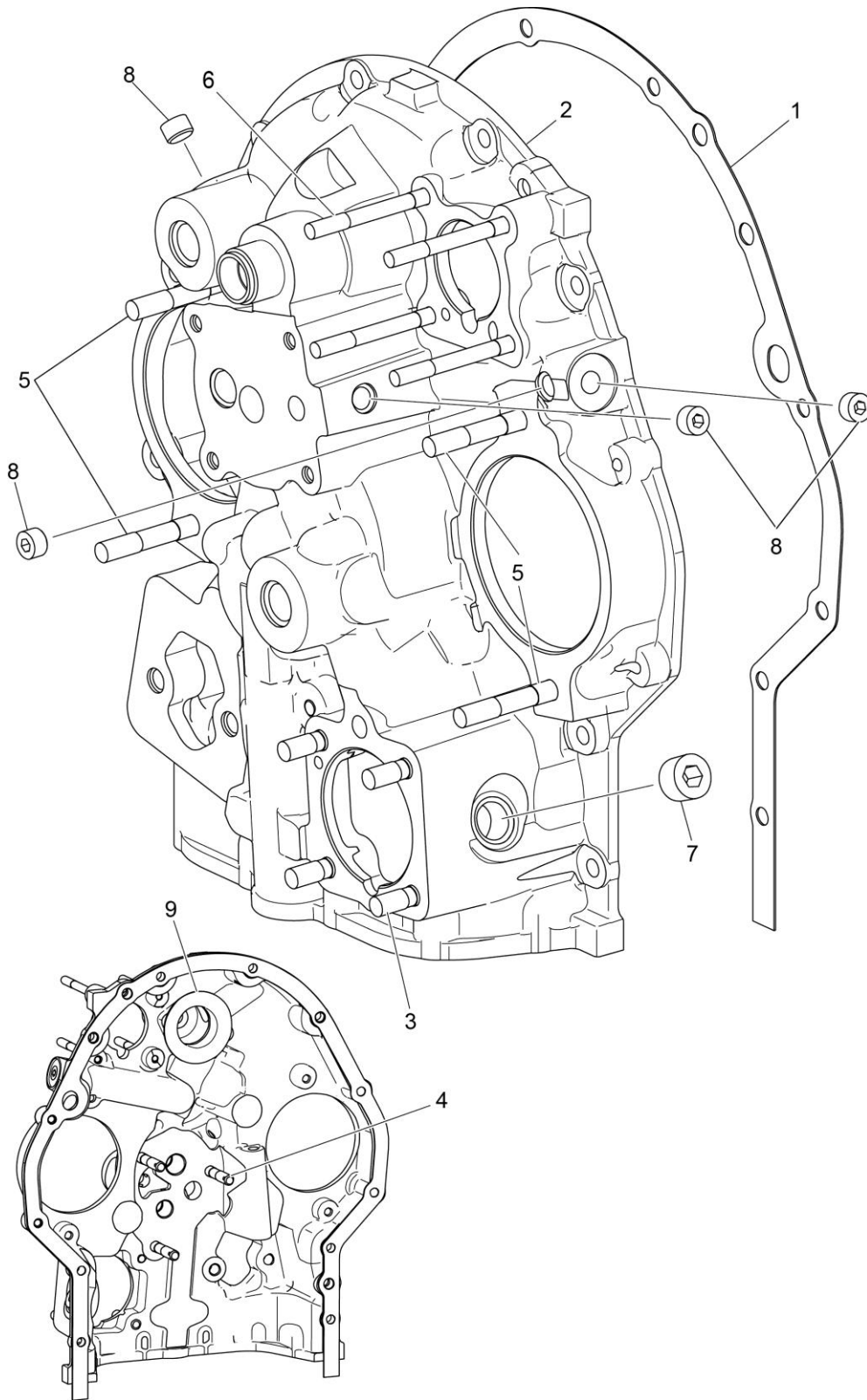
Figure Item	Code	Part Number	Description	Units per Assembly
1		70457	GASKET, Oil filler extension	1
2		75675	EXTENSION, Oil filler (2-3/16 long)	1
3		74065	RING, Oil level gage seal	1
4		LW-16783-24	GAGE ASSEMBLY, Oil level	1
5		12A19770	BRACKET, Engine mounting, dynafocal	4
6		STD-33	WASHER, 3/8 plain	16
7		STD-678	WASHER, 3/8 lock, internal teeth	16
8		STD-596	NUT, 3/8-24 plain	16



**Figure 14**  
**Oil Sump and Induction Housing Assembly**

**FIGURE 14 – OIL SUMP AND INDUCTION HOUSING ASSEMBLY**

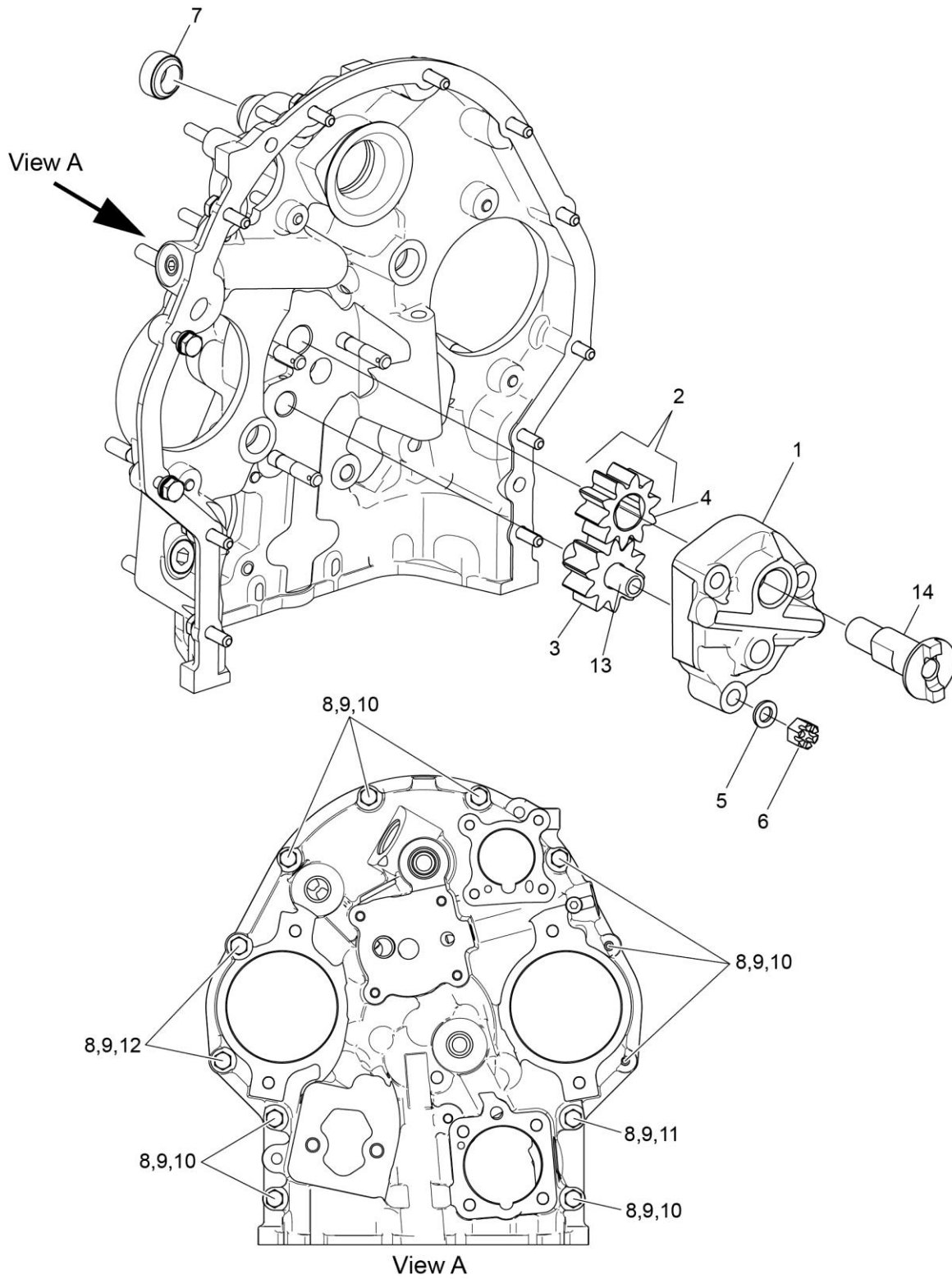
Figure Item	Code	Part Number	Description	Units per Assembly
1		06B21326	GASKET, Oil sump	1
2		LW-13901	HOUSING ASSEMBLY, Oil sump and induction	1
3		71699	CONNECTION, Intake pipe	6
4		STD-1173	INSERT, 1/4- 20 x 1/2 long	4
5		31C-15	STUD, 5/16-18 x 1-7/8 long	4
6		25C-11	STUD, 1/4-20 x 1-3/8 long	14
7		38-15	STUD, 3/8-16 x 1-7/8 long	8
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. head	5
11		LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. head	6
12		STD-1411	NUT, 1/4-20 plain	21
13		STD-551	PLUG, 1/2-14 NPT, square head, drilled	2
14		STD-2229	PLUG, 1/2 NPT allen head	2
15		LW-25-1.25	BOLT, 1/4-20 x 1-1/4 long, hex. head	2
16		73152	BRACKET, support clamp	5



**Figure 15**  
**Accessory Housing Assembly**

**FIGURE 15 – ACCESSORY HOUSING ASSEMBLY**

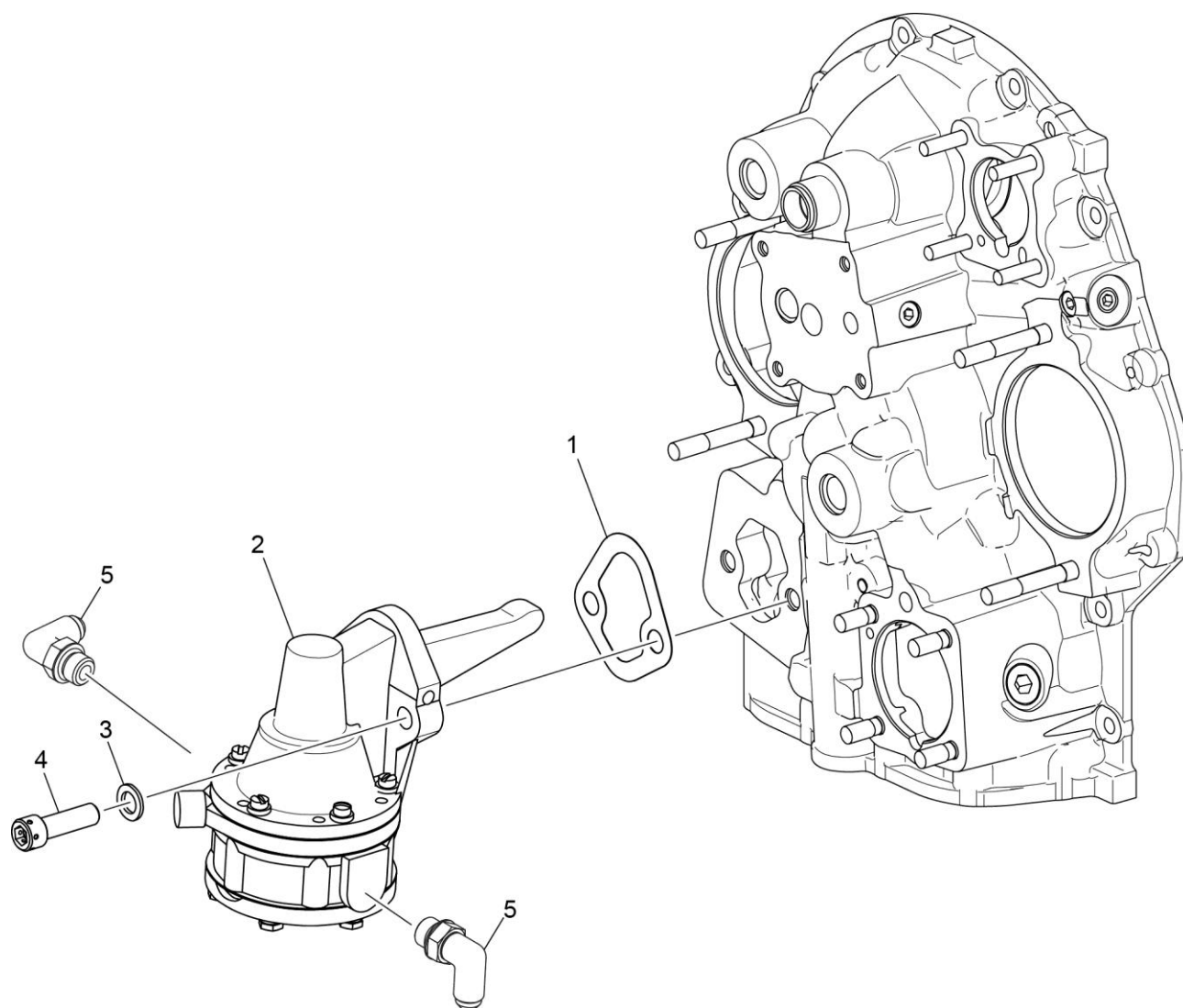
Figure Item	Code	Part Number	Description	Units per Assembly
1		73818	GASKET, Accessory housing	1
2		21C21539-02	HOUSING ASSEMBLY, Accessory	1
3		31C-12	STUD, 5/16-18 x 1-1/2 long	4
4		31CD-17	STUD, 5/16-18 x 2-1/8 long, drilled	3
5		31C-21	STUD, 5/16-18 x 2-5/8 long	4
6		25C-21	STUD, 1/4-20 x 2-5/8 long	4
7		STD-784	PLUG, 3/8-18 NPT, allen head	1
8		1102	PLUG, 1/8-27 NPT, allen head	4
9		76156	SHIELD-OIL ACCESSORY	1



**Figure 16**  
**Oil Pump Assembly and Accessory Housing Attaching Parts**

**FIGURE 16 – OIL PUMP ASSEMBLY AND ACCESSORY HOUSING ATTACHING PARTS**

Figure Item	Code	Part Number	Description	Units per Assembly
1		78531	BODY ASSEMBLY, Oil pump	1
2		05K19423-S	IMPELLER KIT	1
3	*	LW-18110	IMPELLER, Oil pump driven	1
4	*	LW-18109	IMPELLER ASSEMBLY, 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, Tachometer drive, oil	1
8		STD-8	WASHER, 1/4 plain	12
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-25-1.44	BOLT, 1/4-20 x 1-7/16 long, hex. head	2
13		78530	SHAFT, Oil pump idler	1
14		74641	SHAFT, Oil pump drive	1
* To ensure impellers are replaced together, oil pump impellers available in kit form only.				

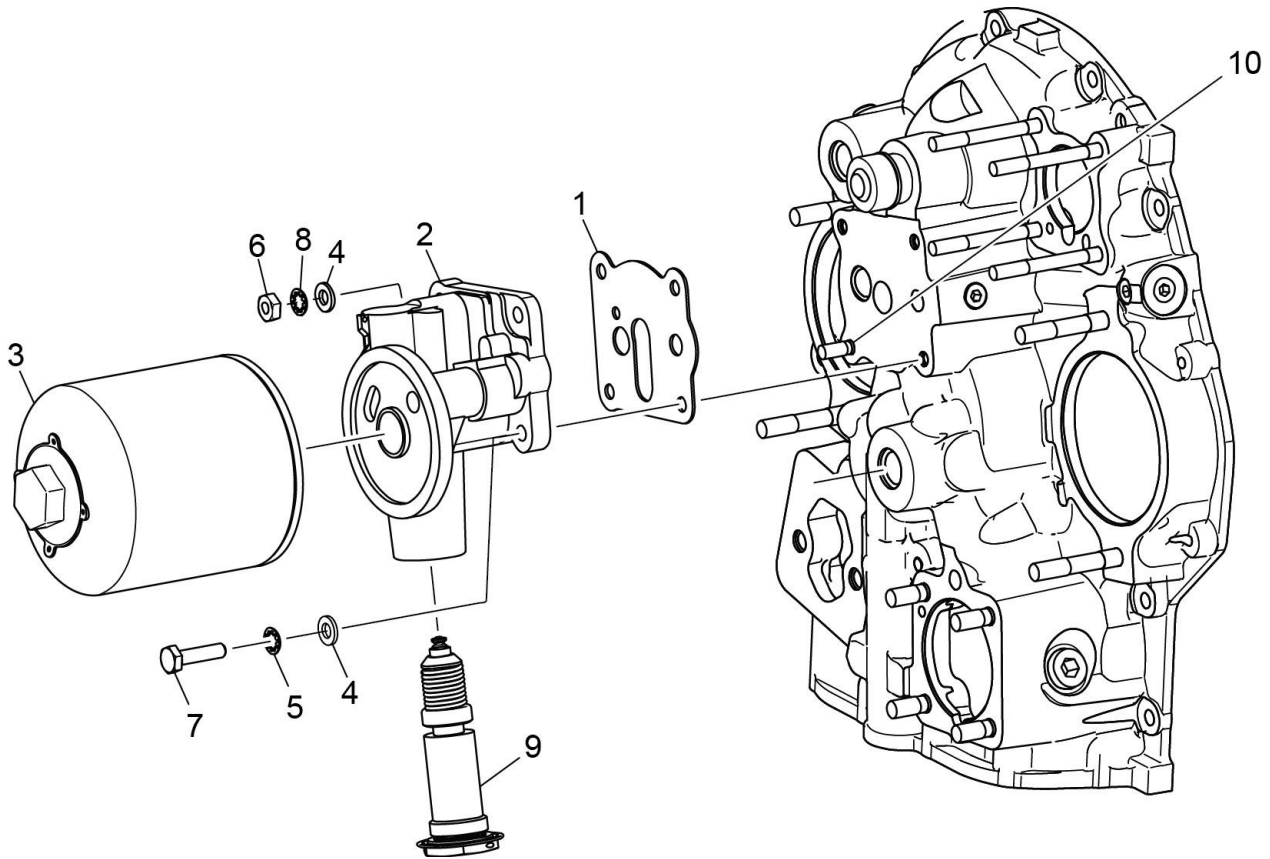


**Figure 17**  
**Fuel Pump Assembly and Attaching Parts**



**FIGURE 17 – FUEL PUMP ASSEMBLY AND ACCESSORY HOUSING ATTACHING PARTS**

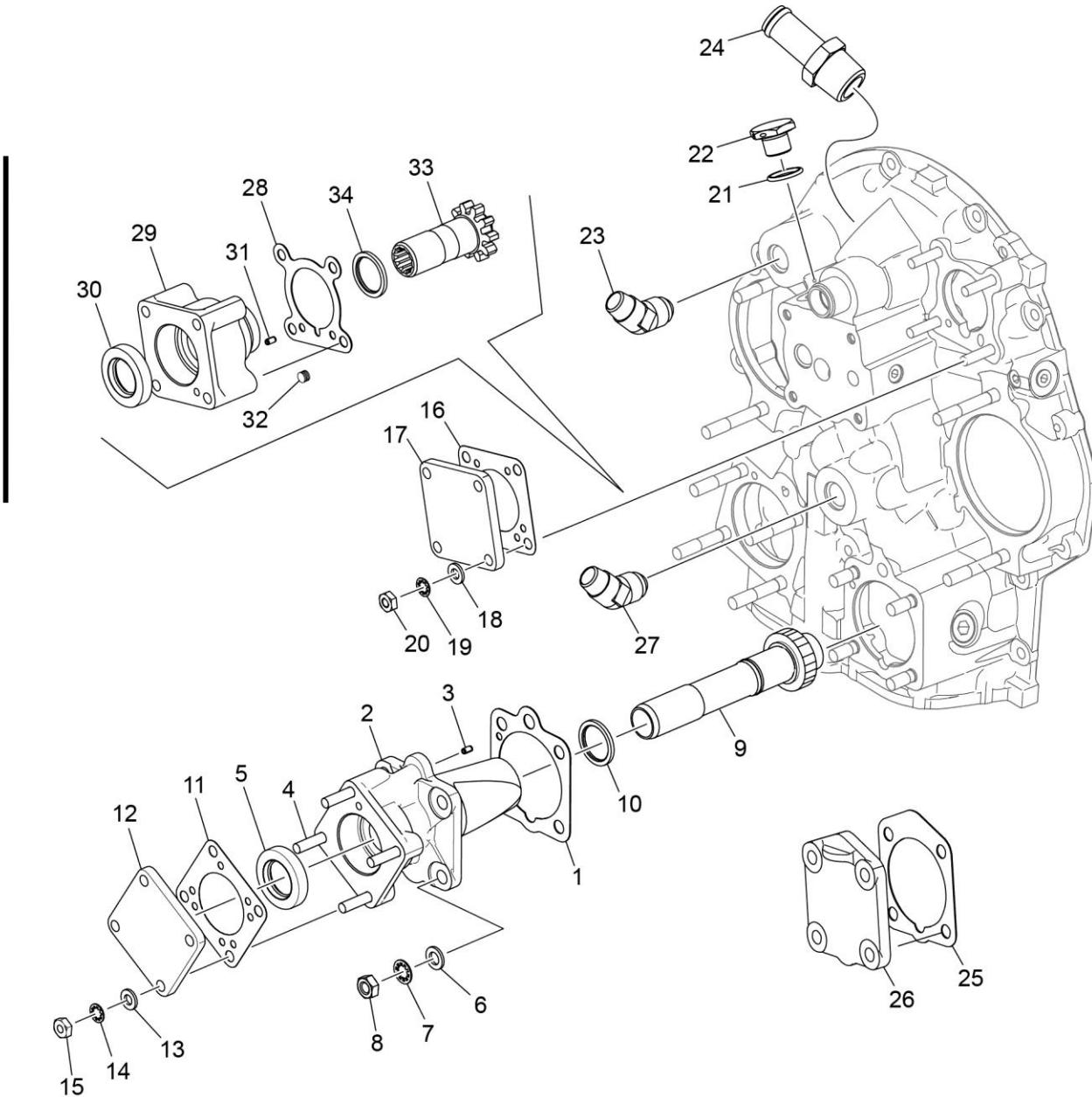
Figure Item	Code	Part Number	Description	Units per Assembly
1		60096	GASKET, Fuel pump	1
2		62B26931	FUEL PUMP	1
3		STD-33	WASHER, 3/8 plain	2
4		STD-1882	SCREW, 3/8-16 x 1-9/32 long, socket head, drilled	2
5		72377	ELBOW, 3/8 flared tube	2



**Figure 18**  
**Oil Filter and Valve Assembly**

**FIGURE 18 – OIL FILTER AND VALVE ASSEMBLY**

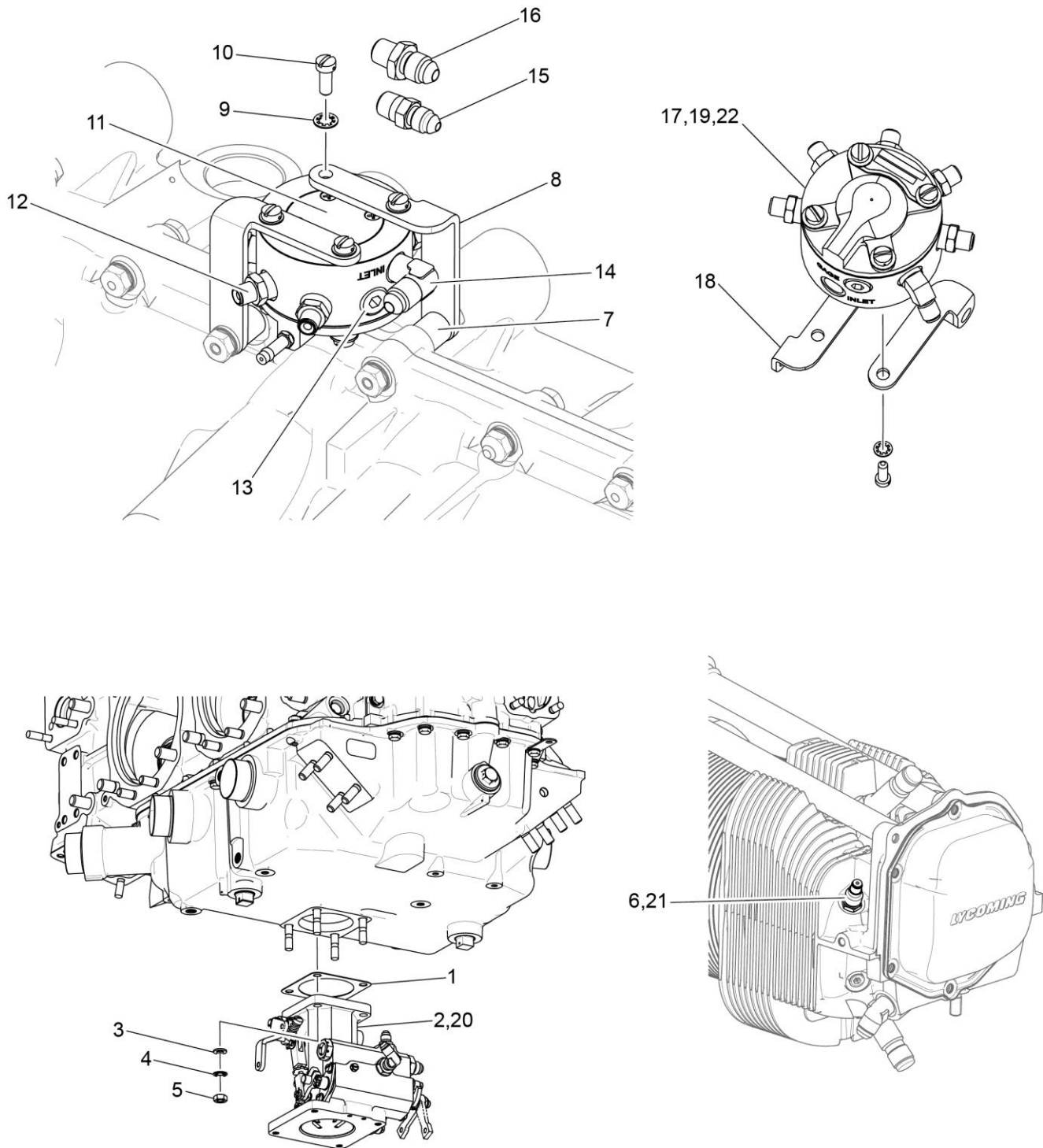
Figure Item	Code	Part Number	Description	Units per Assembly
1		06B23862	GASKET, Oil filter adapter	1
2		77852	ASSEMBLY, Oil filter base	1
3	<b>V</b>	LW-13215	OIL FILTER, Short, <b>V</b> CH48110-1	1
4		STD-8	WASHER, 1/4 Plain	4
5		STD-160	WASHER, 1/4 Lock, internal teeth	3
6		STD-1411	NUT, 1/4 -20 plain	1
7		LW-25H1.00	BOLT, 1/4-20 x 1.00 long, hex head, drilled head	3
8		STD-160	WASHER, 1/4 Lock, internal teeth	1
9		53E22144	VALVE ASSEMBLY, temp cont. oil cool	1
10		25C-10	STUD, 1/4 -20 x 1-1/4 long	1
<b>V</b> Vendor Prime Manufacturer part				



**Figure 19**  
**Vacuum and Hydraulic Pumps**

**FIGURE 19 – VACUUM AND HYDRAULIC PUMPS**

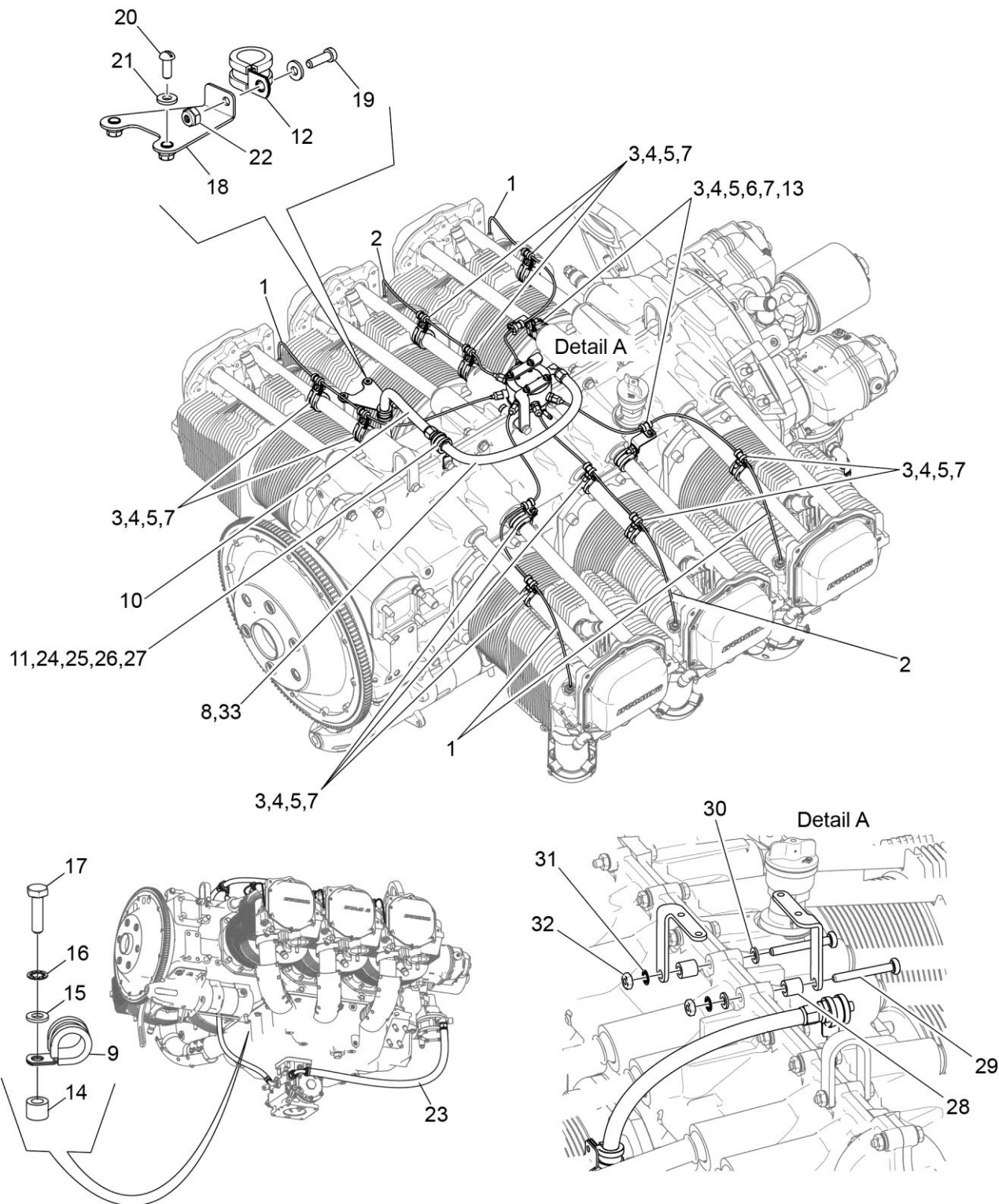
Figure Item	Code	Part Number	Description	Units per Assembly
1		68315	GASKET, Accessory drive adapter	1
2		27D21250	ADAPTER ASSEMBLY, Hydraulic pump	1
3		STD-1774	PIN, 1/8 diameter x 1/4 long	1
4		25C-12	STUD, 1/4-20 x 1-1/2 long	4
5		06A19956	SEAL, Oil, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide	1
6		STD-35	WASHER, 5/16 plain	4
7		STD-475	WASHER, 5/16 lock, internal teeth	4
8		STD-1410	NUT, 5/16-18 plain	4
9		72964	GEAR ASSEMBLY, Hydraulic pump driven	1
10		71596	WASHER, Accessory drive gear	1
11		8313	GASKET, Vacuum pump	1
12		60430	COVER, Vacuum pump	1
13		STD-8	WASHER, 1/4 plain	4
14		STD-160	WASHER, 1/4 lock, internal teeth	4
15		STD-1411	NUT, 1/4-20 plain	4
16		8313	GASKET, Vacuum pump	1
17		60430	COVER, Vacuum pump	1
18		STD-8	WASHER, 1/4 plain	4
19		STD-160	WASHER, 1/4 lock, internal teeth	4
20		STD-1411	NUT, 1/4-20 plain	4
21		06E19769-0.63	GASKET, Annular 5/8 I.D.	1
22		62417	PLUG, Oil cooler bypass	1
23		MS20823-8	ELBOW, 1/2 flared tube	1
24		AN840-12D	FITTING, breather	1
25		69551	GASKET, Accessory drive adapter	1
26		69106	COVER, Governor drive adapter pad	1
27		MS20822-8	ELBOW, 1/2 flared tube	1
28		61183	GASKET, Accessory adapter	1
29		28A21289	ADAPTER ASSEMBLY, Vacuum pump	1
30		06A19956	SEAL, Oil, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide	1
31		STD-1774	PIN, 1/8 diameter x 1/4 long	1
32		01N19833-187	PLUG, Pin	1
33		72974	GEAR ASSEMBLY, Vacuum pump driven	1
34		71596	WASHER, Accessory drive gear	1



**Figure 20**  
**Fuel Injector, Fuel Manifold and Injection Nozzles**

**FIGURE 20 – FUEL INJECTOR, FUEL MANIFOLD AND INJECTION NOZZLES**

Figure Item	Code	Part Number	Description	Units per Assembly
1		66224	GASKET, Air inlet housing	1
2	<b>V</b>	61J26427	FUEL INJECTOR, <b>V</b> 2576544-3	1
3		STD-35	WASHER, 5/16 plain	4
4		STD-475	WASHER, 5/16 lock, internal teeth	4
5		STD-1410	NUT, 5/16-18 Plain	4
6		63C26450	NOZZLE ASSEMBLY, Low flow	6
7		73966	SPACER, Fuel manifold	2
8		07A22995	BRACKET, Fuel manifold	2
9		STD-251	WASHER, #10, internal lock	4
10		STD-82	SCREW, #10-24 x 1/2 long	4
11	*	63B26714	MANIFOLD ASSEMBLY, Fuel	1
12		STD-148	NIPPLE, Union, 1/8 NPT	6
13		1102	PLUG, 1/8 pipe	1
14		MS20822-4	ELBOW, 1/8 NPT to 1/4 tube, 90°	1
15		02G21382	NIPPLE, Nozzle pressure gauge	1
16		02G22988	NIPPLE, 1/4 flared tube to 1/8-27 NPT	1
17	*	63B26717	MANIFOLD ASSEMBLY, Fuel	1
18		07A23031	BRACKET, Fuel manifold	2
19		63B26709	MANIFOLD ASSEMBLY, Fuel	1
20	<b>V</b>	61J23428	FUEL INJECTOR, <b>V</b> 2576544-3	1
21		LW-18265	NOZZLE ASSEMBLY, Low flow	6
22	*	63B22999	MANIFOLD ASSEMBLY, Fuel	1
<b>V</b> Vendor Prime Manufacturer part * Refer to the latest revision of Service Instruction No. 1532 for engine P/N				



**Figure 21**  
**Fuel Lines and Attaching Parts**



**FIGURE 21 – FUEL LINES AND ATTACHING PARTS**

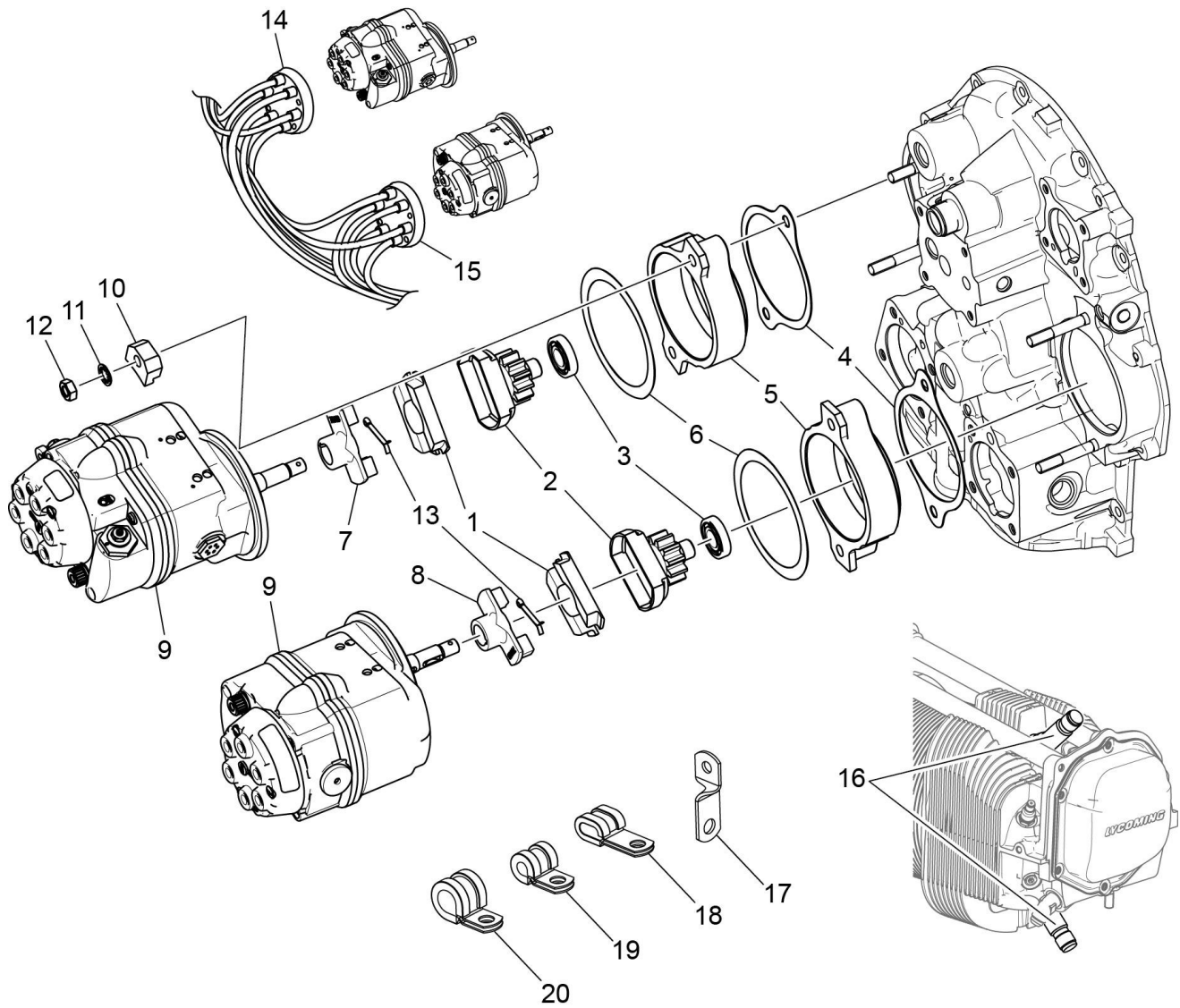
Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-12098-0-210	TUBE ASSEMBLY, Fuel injector line, cylinder no. 1	4
2		LW-12098-0-170	TUBE ASSEMBLY, Fuel injector line, cylinder no. 2	2
3		LW-16266-10-75	CLAMP	12
4		LW-16266-10-13	CLAMP, 1/8 diameter for #10 screw	12
5		STD-860	SCREW, No. 10-32 x 5/8 long, fill. head	14
6		STD-425	WASHER, #10 plain	2
7		STD-670	LOCKNUT, No. 10-32	14
8		LW-12798-4S303	HOSE ASSEMBLY, 1/4 hose, straight	1
9		LW-16266-25-63	CLAMP, 5/8 I.D. x 1/4 diameter screw	1
10		LW-12798-4S150	HOSE ASSEMBLY, 3/8 hose, 45 ° elbow	1
11		AN815-4	UNION, 1/4 fl tube	1
12		LW-16266-25-50	CLAMP, 1/8 diameter for #10 screw	1
13		73136	BRACKET, extension, fuel injection line	2
14		74655	SPACER, exhaust manifold	1
15		STD-8	WASHER, 1/4 plain	1
16		STD-160	WASHER, 1/4 lock, internal teeth	1
17		LW-25-0.94	BOLT, 1/4-20 x 15/16 long hex	1
18		74278	BRACKET ASSEMBLY, Fuel line support	1
19		STD-860	SCREW, #10-32 x 5/8 long fill. head	1
20		STD-692	SCREW, #10-32 x 1/2 long, round head	2
21		STD-425	WASHER, #10 plain	3
22		STD-670	LOCKNUT, #10-32	1
23		LW-12877-6S254	HOSE ASSEMBLY, 3/8 hose, 90 elbow	1
24		72815	BRACKET, Support clamp, 90 degree	1
25		STD-860	SCREW, #10-32 x 5/8 long, fill. head	1
26		STD-670	LOCKNUT, #10-32	1
27		LW-16266-10-63	CLAMP, 5/8 I.D. x #10 screw	1
28		73966	SPACER, Fuel manifold	2
29		LW-25-2.00	BOLT, 1/4 -20 x 2.00 long, hex	2
30		STD-8	WASHER, 1/4 plain	4

(continued on next page)

**FIGURE 21 – FUEL LINES AND ATTACHING PARTS (CONT.)**

<b>Figure Item</b>	<b>Code</b>	<b>Part Number</b>	<b>Description</b>	<b>Units per Assembly</b>
31		STD-160	WASHER, 1/4 lock, internal teeth	2
32		STD-1411	NUT, 1/4-20 plain	2
33		LW-12798-4S274	HOSE ASSEMBLY, 1/4 hose, straight	1

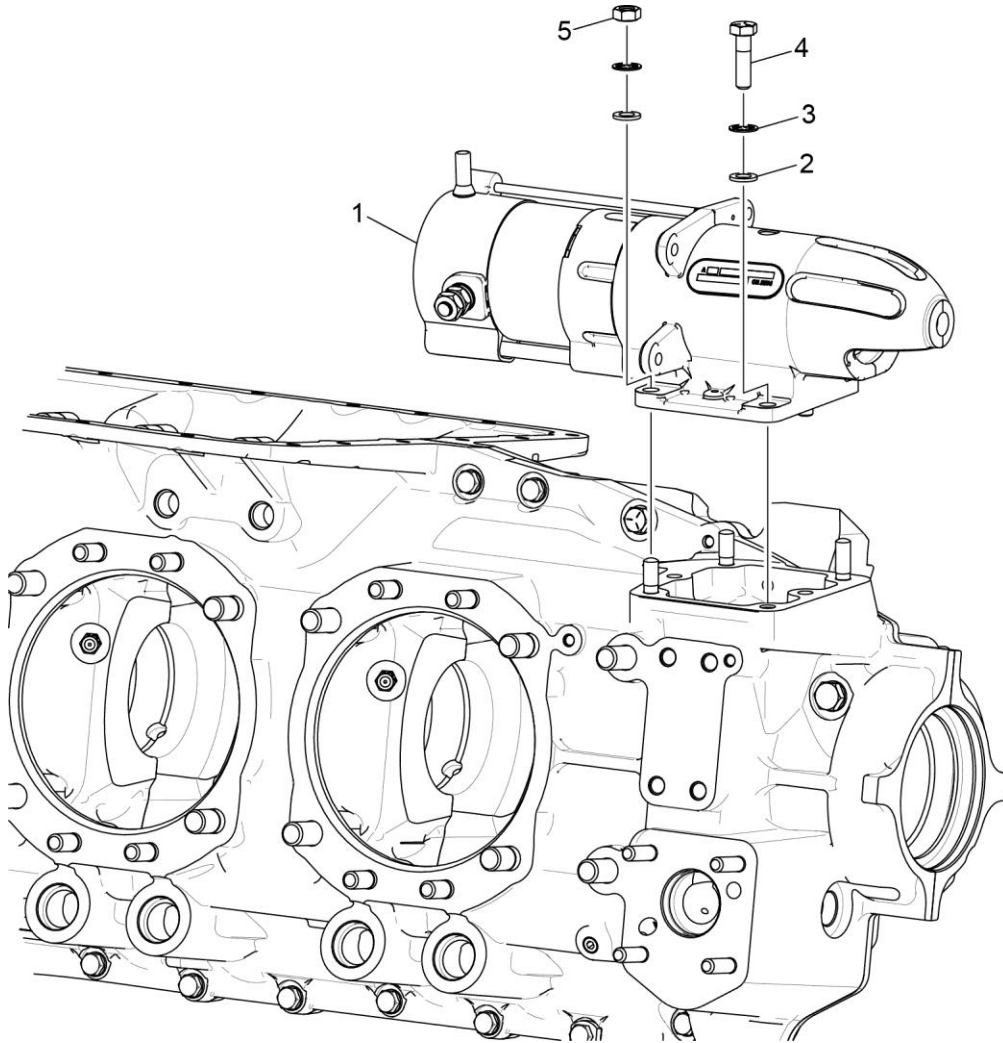
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**Figure 22**  
**Magnetos, Magneto Drives, Harnesses and Spark Plugs**

**FIGURE 22 – MAGNETOS, MAGNETO DRIVES, HARNESSSES AND SPARK PLUGS**

Figure Item	Code	Part Number	Description	Units per Assembly
1		68H22624	CUSHION, Magneto drive	4
2		LW-19096	GEAR ASSEMBLY, Retainer	2
3		67542	BALL BEARING	1
4		62224	GASKET, Magneto adapter	2
5		LW-12707	ADAPTER, Magneto	2
6		LW-12681	GASKET, Magneto	2
7		73000	COUPLING, Magneto drive	1
8		73636	COUPLING, Magneto drive, right	1
9	<b>V</b>	66LC35SDNN	MAGNETO, Ignition, Slick (Impulse) <b>V</b> 6351	2
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		MS9245-44	PIN, cotter style, 3/32 dia. X 5/8 long	2
14	<b>V</b>	67U20639	HARNESS ASSEMBLY, Left, Slick <b>V</b> M-2961	1
	<b>V</b>	67U20639-YEL	HARNESS ASSEMBLY, Left, Slick <b>V</b> M-2961Y	1
15	<b>V</b>	67U20638	HARNESS ASSEMBLY, Right, Slick <b>V</b> M-2962	1
	<b>V</b>	67U20638-YEL	HARNESS ASSEMBLY, Right, Slick <b>V</b> M-2962Y	1
16	<b>V *</b>	1182-E7	SPARK PLUG, Champion <b>V</b> REM38E	12
17		72815	BRACKET, Support clamp, 90 degree	2
18		LW-14060	CLIP, Two wire	2
19		LW-16266-25-25	CLAMP, One wire	2
20		LW-16266-25-44	CLAMP, 7/16 I.D. x 1/4 dia.	2
<p><b>V</b> Vendor Prime Manufacturer part  <b>*</b> Refer to the latest revision of Lycoming Service Instruction No. 1042 for complete listing of all approved spark plugs.</p>				



**Figure 23**  
**Starter and Attaching Parts**

**FIGURE 23 - STARTER AND ATTACHING PARTS**

Figure Item	Code	Part Number	Description	Units per Assembly
1	V	31B26040	STARTER, 24V., 12/14 pitch pinion, (Kelly, V ERB-8011)	1
	V	31B26554	STARTER, 24V., 12/14 pitch pinion, (Sky-Tec, V 149NL/EC)	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
		LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex. head	1
5		STD-1410	NUT, 5/16-18 plain	3
<p><b>V</b> Vendor Prime Manufacturer part  Refer to the latest revision of Service Instruction No. 1154 for complete listing of FAA approved starters, alternators, generators, regulators and relays.</p>				

**SERVICE KIT SECTION**  
**SEAL AND GASKET SET**

<b>PART NO.</b>	<b>PART NAME</b>	<b>Qty.</b>
<b>71569-1</b>	<b>KIT - SEAL AND GASKET SET</b>	<b>1</b>
06A19956	OIL SEAL, .875ID X 1.50 OD X.31	2
06A23493	SEAL, Shroud tube	12
06B21326	GASKET, Oil sump	1
06B23862	GASKET, - Oil filter adapter	1
06E19769-0.63	GASKET, Annular-.625 ID	2
06E19769-1.00	GASKET, Annular-1.000 ID	1
06E19769-1.25	GASKET, Annular-1.250 ID	1
1691-C	GASKET, Fuel pump	1
8313	GASKET, Vacuum pump	2
60096	GASKET, Fuel pump	1
61173	GASKET, Oil press housing	1
61183	GASKET, Accessory adapter	1
62224	GASKET, Mag 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, .78 ID X 1.13 OD X .030	1
70457	GASKET, Oil filler extension	1
71481	RING, Oil seal-.09 DIA X 4.84ID	6
71667	LOCKPLATE, .250 bolt x 1.75 space	1
71973	GASKET, 2 bolt flange-1.81 ID	6
72053	GASKET, Governor	1
72059	GASKET, Oil level gage	1
72075	SEAL, OIL-.090 SEC. X .455 ID	8
72078	LOCKPLATE, .3125 bolt X 1.33 SP	2
72091	RING, Oil seal-.36ID X.10 DIA	2
72210	GASKET, Air throttle housing	1
72312	RING, Oil seal-1.00 X 1.3	1
73383	LOCKPLATE, .3125 BOLT X 1.00	2
73818	GASKET, Accessory housing	1
74065	RING, Oil level gage seal	1
74068	RING, Oil level gage plug	1
74305	SEAL	1
75906	GASKET, Rocker box cover	6



**SEAL AND GASKET SET (CONT.)**

<b>PART NO.</b>	<b>PART NAME</b>	<b>Qty.</b>
76510	GASKET, Oil cooler by-pass valve	1
76940	SEAL, Crankshaft oil	1
77611	GASKET, Exhaust flange	6
LW-12272	LOCKPLATE, Shroud tube	6
LW-12681	GASKET, Magneto	2
LW-13792	SEAL, Crankshaft-oil	1
LW-14260	SEAL, Tachometer drive-oil	1
LW-14995	SPRING, Shroud tube	6
LW-15628	SEAL, Crankshaft-oil	1
LW-18638	LOCKPLATE, Crankshaft gear	1
LW-18661	SEAL, Shroud tube	12
STD-213	OIL SEAL, .75 ID X 1.375 OD	1
STD-2231	RING, Internal retaining (.812)	1

**CYLINDER, PISTON AND RING ASSEMBLY**

<b>PART NO.</b>	<b>PART NAME</b>	<b>Qty.</b>
<b>05K21117</b>	<b>KIT - CYLINDER, PISTON AND RING ASSEMBLY</b>	<b>1</b>
LW-13870	CYLINDER ASSEMBLY	1
17A23938	VALVE, Intake	1
17B23936	VALVE, Exhaust	1
65441	SEAT, Valve spring-lower	1
LW-13323	SEAT, Valve spring-lower	1
LW-11800	SPRING, Valve-outer (blue)	2
LW-11795	SPRING, Valve-inner (blue)	2
LW-10077	SEAT, Valve spring-upper	1
LW-16475	SEAT, Valve spring-upper exhaust	1
60009	KEY, Valve	2
17C21191	KEY, Valve-exhaust	2
MS20823-6D	ELBOW, 45 deg-.375 flared tube	1
17C19386	CAP, Valve stem-exhaust(rotator)	1
06A23493	SEAL, Shroud tube	2
1102	PLUG, 1/8 pipe	2
LW-13396	PISTON, 5.125 bore-8.5:1 compression	1
74241	RING, Piston-comp-5.125 bore	2
14H21950	RING, Piston-oil-5.125 bore	1
LW-13445	PIN, Piston	1
72198	PLUG, Piston pin	2
71481	RING, Oil seal-.09 dia x 4.84 I.D.	1
LW-18661	SEAL, Shroud tube	2
70310	SEAL, Shroud tube	2
75906	GASKET, Rocker box cover	1
71195	CONTAINER	1
77611	GASKET, Exhaust flange	1
71973	GASKET, 2 bolt flange-1.81 I.D.	1
LW-12272	LOCKPLATE, Shroud tube	1
SSP-299	TAG: use of piston pin plugs	1

**CRANKSHAFT AND COUNTERWEIGHT ASSEMBLY KIT**

<b>PART NO.</b>	<b>PART NAME</b>	<b>Qty.</b>
<b>05K47686</b>	<b>KIT - CRANKSHAFT AND COUNTERWEIGHT ASSEMBLY</b>	<b>1</b>
13F47628	CRANKSHAFT ASSEMBLY	1
LW-19210	COUNTERWEIGHT ASSEMBLY	2
LW-15558	ROLLER, Dynamic counterweight	2
76788	ROLLER, Dynamic counterweight, 6.3 order	2
71907	WASHER. Counterweight	8
LW-14820	RING, Internal retaining	8

**CRANKCASE ASSEMBLY AND THRU-STUD KITS**

<b>PART NO.</b>	<b>PART NAME</b>	<b>Qty.</b>
<b>11E24100-S1-S</b>	<b>KIT - CRANKCASE ASSEMBLY AND THRU-STUD</b>	<b>1</b>
11E24100-S1	CRANKCASE ASSEMBLY	1
50-15	STUD, 1/2-13 X 1-7/8 long	12
31C-12	STUD, 5/16-18 x 1-1/2 long	2
31C-13	STUD, 5/16-18 x 1-5/8 long	1
38-13	STUD, 3/8-16 X 1-5/8 long	24
38-22	STUD, .3/8-16 X 2-3/4 long	1
38D-17	STUD, 3/8-16 X 2-1/8 long -dr	1
38-16	STUD, 3/8-16 X 2.00 long	8
01A23354	STUD, 5/16-18 X 1.00 long -dr	1
69796	DOWEL, Crankshaft bearing	2
STD-514	DOWEL, 5/16 DIA X 1/2 long	2
STD-557	DOWEL, 1/2 DIA X 11/16 long -hollow	2
72158	BUSHING, Governor dr idler shaft	1
STD-1339	PLUG, 1/16-27 NPT	7
1102	PLUG, 1/8 pipe	4
31C-17	STUD, 5/16-18 X 2-1/8 long	4

**CRANKCASE ASSEMBLY AND THRU-STUD KITS**

<b>PART NO.</b>	<b>PART NAME</b>	<b>Qty.</b>
<b>11E24000-S1-S</b>	<b>KIT - CRANKCASE ASSEMBLY AND THRU-STUD</b>	<b>1</b>
11E24000-S1	CRANKCASE ASSEMBLY	1
50-15	STUD, .500-13 X 1-7/8 long	12
31C-12	STUD, 5/16-18 x 1-1/2 long	2
31C-13	STUD, 5/16-18 x 1-5/8 long	1
38-13	STUD, 3/8-16 X 1-5/8 long	24
38-22	STUD, 3/8-16 X 2-3/4 long	1
38D-17	STUD, 3/8-16 X 2-1/8 long -dr	1
38-16	STUD, 3/8-16 X 2.00 long	8
01A23354	STUD, 5/16-18 X 1.00 long -dr	1
69796	DOWEL, Crankshaft bearing	2
STD-514	DOWEL, 5/16 DIA X 1/2 long	2
STD-557	DOWEL, 1/2 DIA X 11/16 long-hollow	2
72158	BUSHING, Governor drive idler shaft	1
1102	PLUG, 1/8 PIPE	4
31C-14	STUD, 5/16-18 X 1-3/4 long	4
31C-16	STUD, 5/16-18 X 2.00 long	4
76220	STUD, 1/2-20 X 10.70 long	8
LW-31-2.75	BOLT, 5/16-18 X 2-3/4 long hex	1
LW-31-1.16	BOLT, 5/16-18 X 1-5/32 long hex	3
STD-35	WASHER, 5/16 plain	4
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