

# **IO-540-K1A5 Series Illustrated Parts Catalog**

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**February 2015**

## **\*\*\*\*\*NOTICE\*\*\*\*\***

This parts catalog, PC-615-K1A5 Series (models IO-540-K1A5, IO-540-K1A5D) supersedes the previous IO-540-K1A5, IO-540-K1A5D model engines which are covered in PC-615.

## **PC-615-K1A5 Series**

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652 Oliver Street  
Williamsport, PA 17701

## **IO-540-K1A5 Series Illustrated Parts Catalog**

Lycoming Part Number: PC-615-K1A5

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**NOTE:** Service Documents override parts information in this document.

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## INTRODUCTION

**⚠ CAUTION:** DO NOT USE THIS CATALOG AS AN ASSEMBLY OR INSTALLATION DOCUMENT. THIS CATALOG MUST ONLY BE USED TO IDENTIFY PARTS IN CONJUNCTION WITH THE APPLICABLE OVERHAUL MANUAL.

## Purpose of this Catalog

This Illustrated Parts Catalog contains a complete list of spare parts for the Lycoming IO-540-K1A5 Certified Series wide cylinder flange model engine.

## How to use this Catalog

This catalog is based on the Air Transport Association (ATA) Spec100 format.

This catalog is frequently updated by Service Bulletins (SB) and Service Instructions (SI). The updated information will be incorporated into subsequent full revisions of this catalog.

The ATA two element numbering system provides consistency throughout various manuals. The bottom of each page (beyond the frontal section) contains a two element number (##-##). In the two element numbering, the first two digits represent a chapter, and the next two digits subdivide the material into a more specific section.

The ATA 100 format designates chapters by the numeric code. In the example below, Chapter 74 is for Ignition with a subsection 20 for Distribution.

**EXAMPLE:**      **74**      **—**      **20**  
Chapter                      Section  
**Ignition**                      **Distribution**

**NOTE:** Refer to the IPC Table of Contents for the sub-systems listed in each section.

## Numerical Index

The Numerical Index is a single list of part numbers, names and their locations within the IPC. It is useful for locating parts when you only know the number or name of the part.

### Description column

Indentation of a part name represents a lower level of assembly. Attaching parts have the same indentation level and are listed below the parts grouping or assembly they attach to. This column is often referred to as the “Nomenclature” on other ATA Spec manuals.

**Units per Assembly column**

Where more than one assembly exists, this column contains the quantity of a specific part required in the build sequence of only one next higher assembly. The Letters “AR” represent “as required” for bulk items or non-illustrated select-from-range-parts. “RF” represents items listed for reference purposes only.

**Cross-Reference list of Manufacturer Parts to Standard Part Numbers****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.

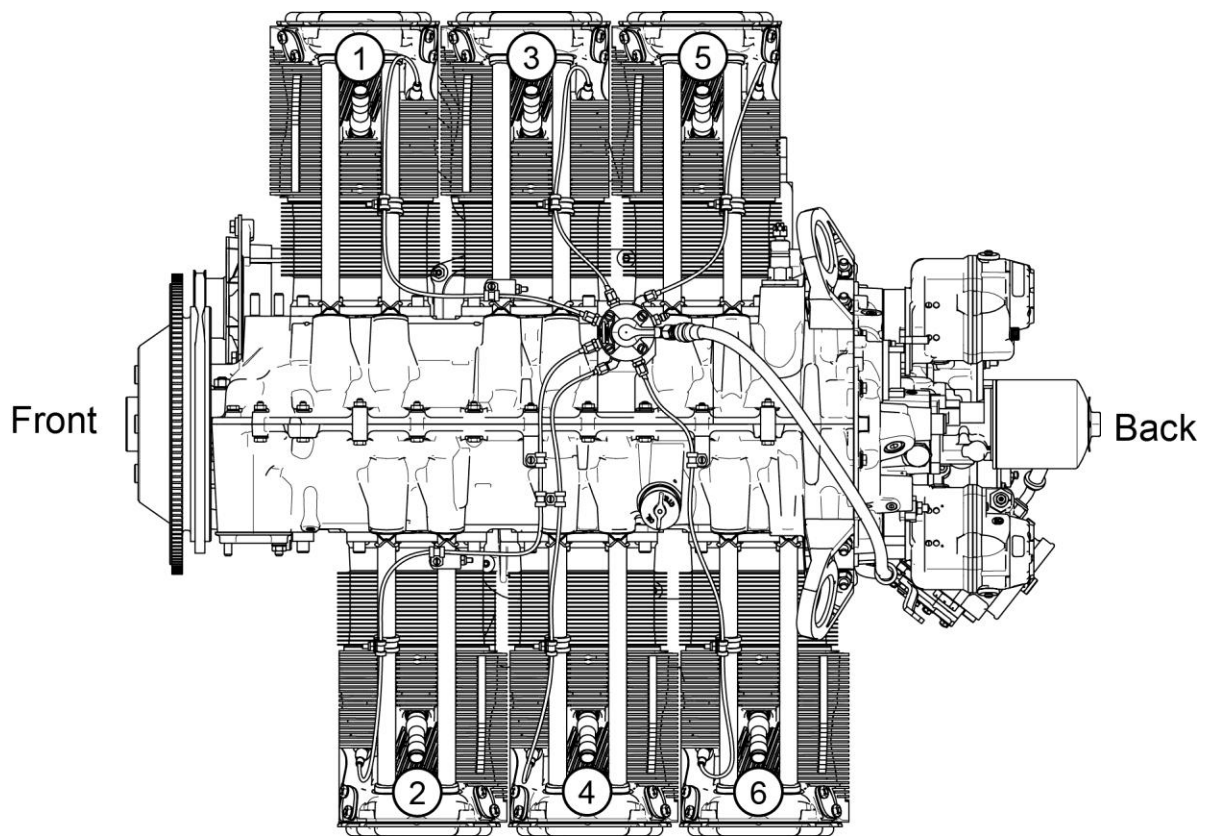
**Environmental Compliance**

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 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 frontal 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. In order to expedite correct part shipments without delay:
  - a. Always specify the model and serial number of your engine.
  - b. Always specify part number, nomenclature and quantity required.

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

Full Revisions of the Illustrated Parts Catalog are available from Lycoming distributors, or the factory.

Every effort has been made in preparing this manual to ensure its accuracy. However, any comments, suggestions, or corrections to this manual are welcome and must be directed in writing to:

**Technical Publications Coordinator****Lycoming Engines****652 Oliver Street****Williamsport, PA 17701**

**NOTE:** The owner of the manual is responsible for notifying the factory of a change of address.

Additionally, Lycoming has a Customer Service Hot Line to provide information and assistance to owners, operators, and maintenance personnel servicing Lycoming engines.

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**ABBREVIATIONS AND ACRONYMS**

A	
Adj.	Adjustable
C	
Cyl.	Cylinder
F	
Fill.	Fillister
H	
Hex.	Hexagon
I	
I.D.	Inside Diameter
N	
No.	Number
O	
O.D.	Outside Diameter
S	
Scav.	Scavenge
T	
Temp.	Temperature
Thd.	Thread
V	
Vac.	Vacuum

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**OVERSIZE AND UNDERSIZE PARTS LISTING**

Part No.	Description	Oversize (In.)									Undersize (In.)		
		.0015	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									
66713*	GUIDE			X	X								
66796	INSERT				X								
69796	STEPPED DOWEL			X									
LW-10647	STR. DOWEL			X									
16T19468	SEAT				X		X	X					
71903-A **	BUSHING												
72155-S	BUSHING			X									
75838 *	GUIDE			X	X								
73810 ♦	BUSHING			X	X	X							
14H21950	RING						X						
74241	RING				X								
75656-S	BUSHING			X									
75657-S	BUSHING			X									
LW-15628†	SEAL									X			
LW-12688	SEAT				X		X	X					
18B23885	BEARING										X	X	X
18E23886	BEARING										X	X	X
LW-15628†	SEAL												
STD-1065	DOWEL			X	X								
STD-2078	DOWEL			X									

**NOTE**

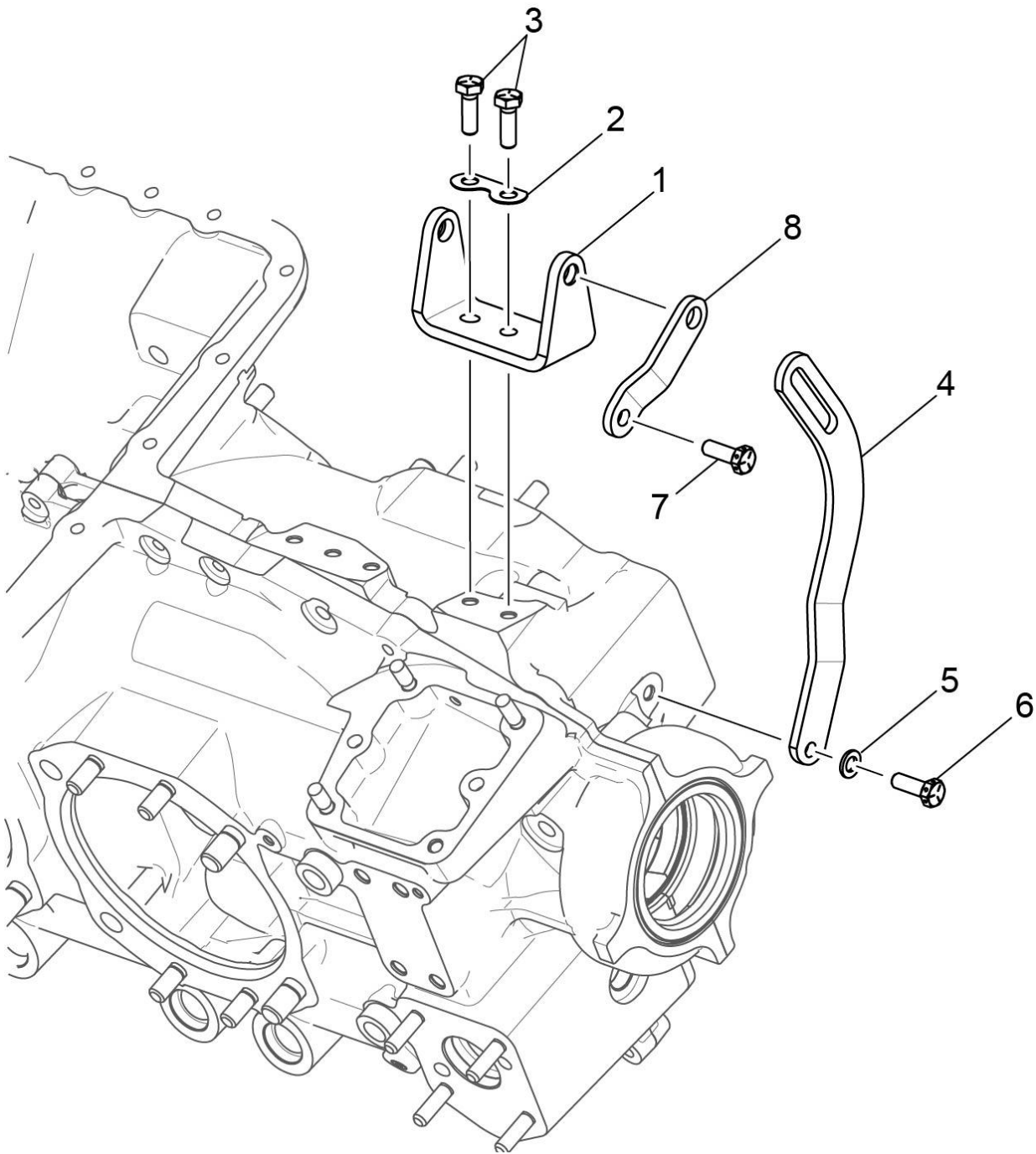
When ordering oversize and undersize parts, be sure to specify the required oversize and undersize dimension along with the proper part number. For example, to order bearing P/N 18B23885 bearing in .003 in. undersize, order P/N 18B23885-M03. Undersize code letter is "M" while oversize code letter is "P". These letters are then followed by the number designating the size in thousandths of an inch.

\* See latest revision of Service Instruction No. 1256. Refer to Figure 9 items 4 and 5 for valve guides

\*\* See latest revision of Service Instruction No. 1143

♦ See latest revision of Service Instruction No. 1142

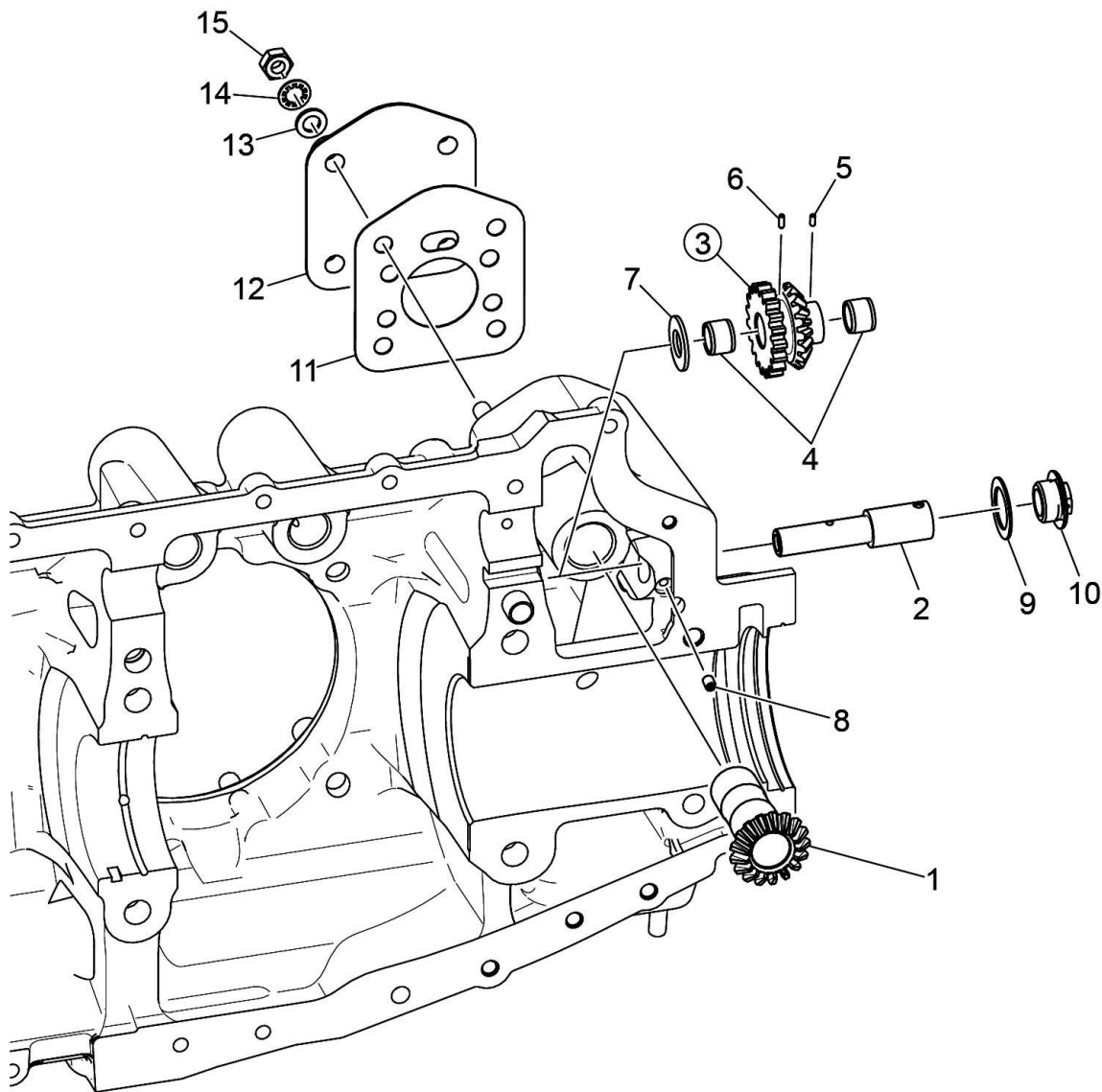
† See latest revision of Service Instruction No. 1324



**Alternator Mounting and Attaching Parts**  
**Figure 1**

**FIGURE 1 - ALTERNATOR MOUNTING AND ATTACHING PARTS**

Figure Item	Code	Part Number	Description	Units per Assembly
				K1A5
1		07A21443	BRACKET, Alternator	1
2		73383	LOCKPLATE, 5/16 bolt x 1.00 spacing	1
3		LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex. head	2
4		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		LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex. head, drilled	1
8		76908	STRUT, Alternator support	1

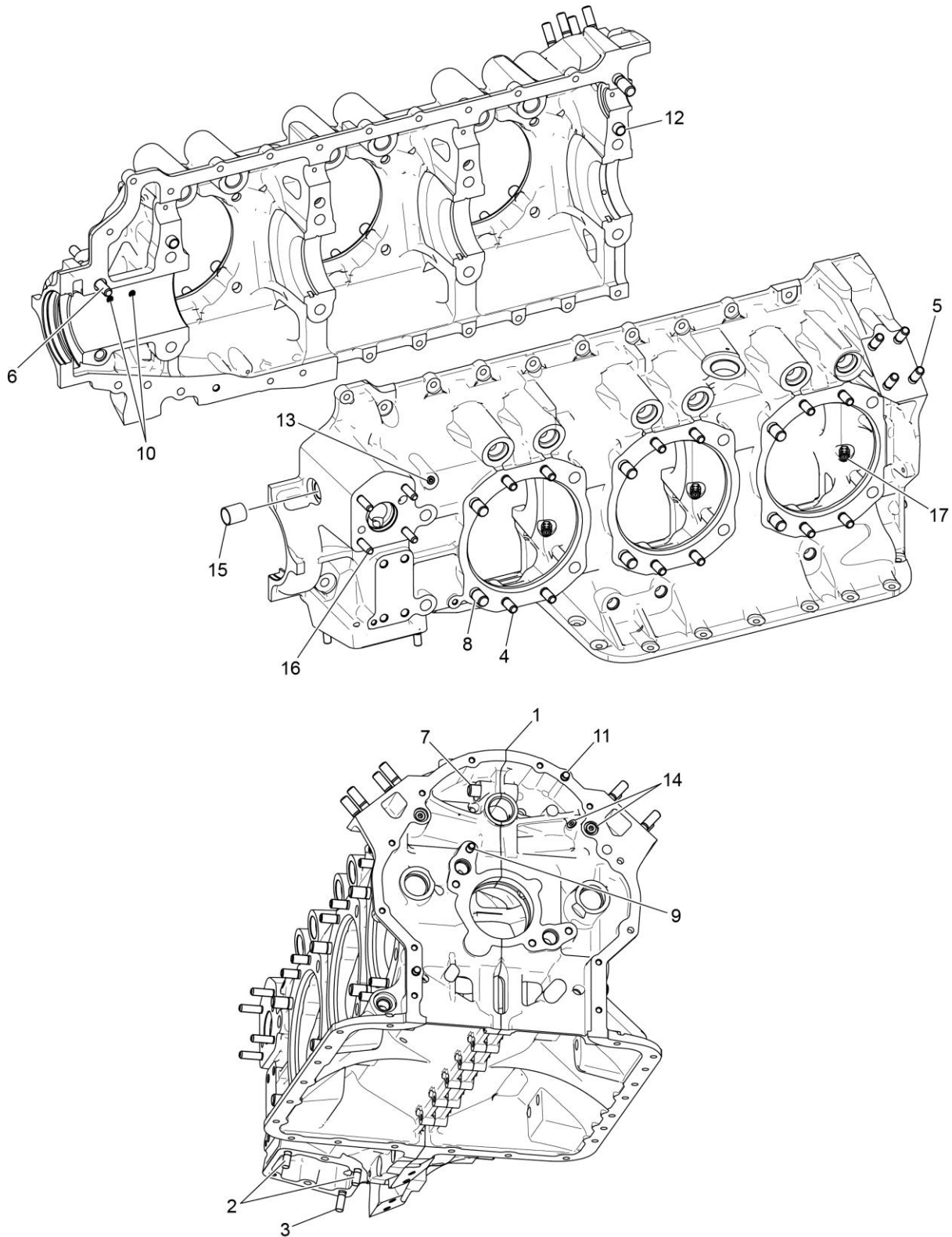


**Propeller Governor Drive Assembly**  
**Figure 2**



**FIGURE 2 - PROPELLER GOVERNOR DRIVE ASSEMBLY**

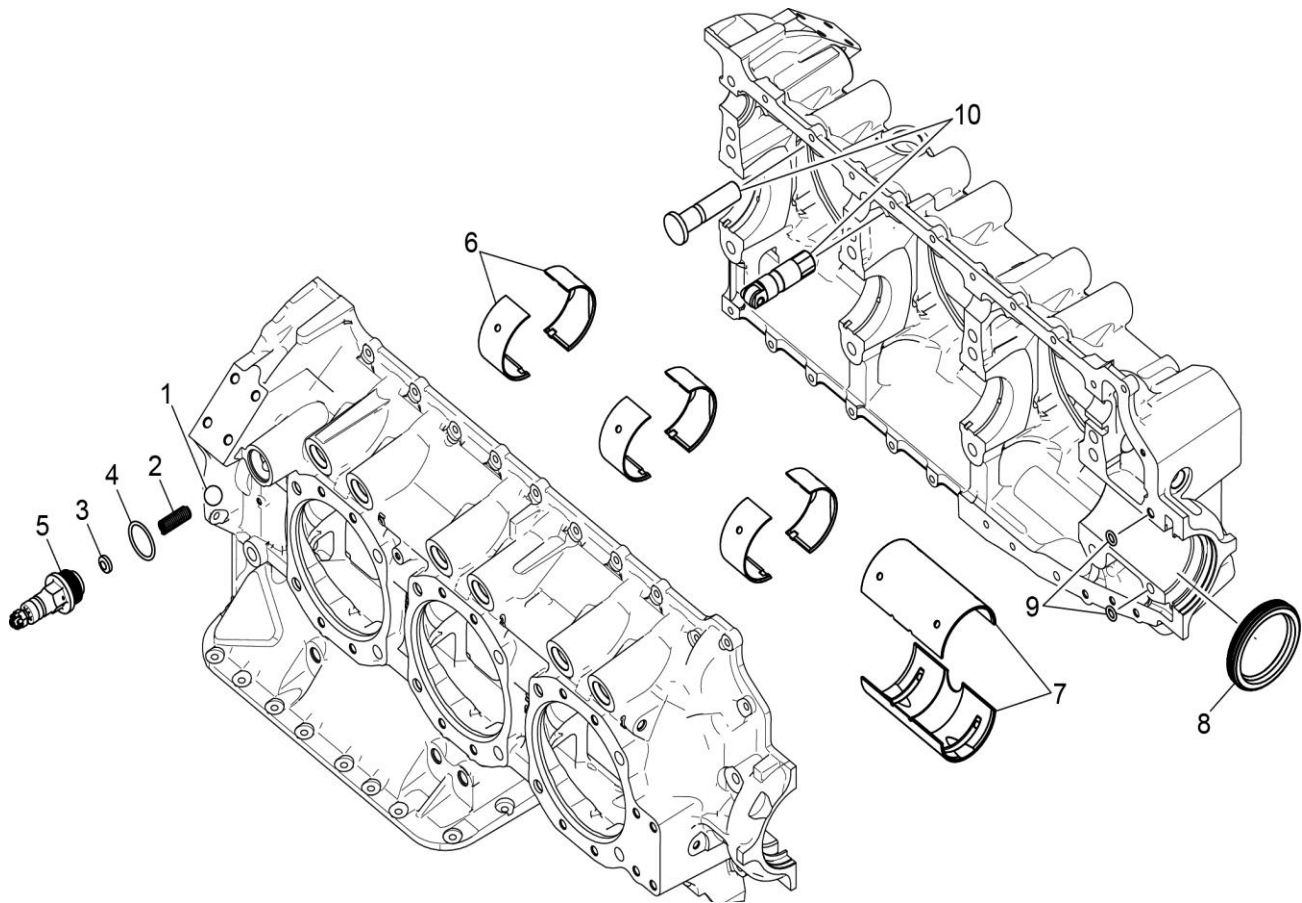
Figure Item	Code	Part Number	Description	Units per Assembly	
				K1A5	K1A5D
1		LW-10442	GEAR, Propeller governor driven	1	
2		LW-14021	SHAFT, Propeller governor idler gear	1	
3		LW-10541	GEAR ASSEMBLY, Propeller governor idler	1	
4		77872	BUSHING, Propeller governor idler gear	2	
5		STD-19	DOWEL, 3/32 diameter x 7/32 long	1	
6		STD-798	DOWEL, 3/32 diameter x 9/32 long	1	
7	AR	73249	WASHER, Thrust (.0585 - .0595 thick)	AR	
	AR	73250	WASHER, Thrust (.062 - .063 thick)	AR	
	AR	73251	WASHER, Thrust (.0655 - .0665 thick)	AR	
	AR	73252	WASHER, Thrust (.069 - .070 thick)	AR	
	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. 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	
AR as required					



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

**FIGURE 3 - CRANKCASE ASSEMBLY**

Figure Item	Code	Part Number	Description	Units per Assembly	
				K1A5	K1A5D
1		11F24020-S1-S	KIT, CRANKCASE ASSEMBLY	1	
	<b>P</b>	11F24020-S1	CRANKCASE ASSEMBLY	1	
		11F24120-S1-S	KIT, CRANKCASE ASSEMBLY-ROLLER LIFTER	1	
	<b>P</b>	11F24120-S1	CRANKCASE ASSEMBLY-ROLLER LIFTER	1	
		11F24120-D1-S	KIT, CRANKCASE ASSEMBLY-ROLLER LIFTER		1
	<b>P</b>	11F24120-D1	CRANKCASE ASSEMBLY-ROLLER LIFTER		1
2		31C-12	STUD, 5/16-18 x 1-1/2 long	2	2
3		31C-13	STUD, 5/16-18 x 1-5/8 long	1	1
4		38-13	STUD, 3/8-16 x 1-5/8 long	24	24
5		38-16	STUD, 3/8-16 x 2.00 long	8	8
6		38-22	STUD, 3/8-16 x 2-3/4 long	1	1
7		38D-17	STUD, 3/8-16 x 2-1/8 long, drilled	1	1
8		50-15	STUD, 1/2-13 x 1-7/8 long	12	12
9		01A23354	STUD, 5/16-18 x 1.00 long, drilled	1	
10		69796	DOWEL, Crankshaft, front bearing	2	2
11		STD-514	DOWEL, 5/16 diameter x 1/2 long	2	2
12		STD-557	DOWEL, 1/2 diameter x 11/16 long	2	2
13		STD-1339	PLUG, 1/16-27 NPT, allen head	1	1
14		1102	PLUG, 1/8 pipe, allen head	4	4
15		72158	BUSHING, Governor drive idler shaft	1	1
16		31C-14	STUD, 5/16-18 x 1-3/4 long	4	4
		31C-16	STUD, 5/16-18 x 2.00 long	4	
17		73772	NOZZLE ASSEMBLY, Piston cooling	6	6
<p><b>P</b> Lycoming proprietary part. Listed for reference purposes only, cannot be purchased. See latest revision of Service Instruction No. 1514 for shroud tube spring information.</p>					



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

**FIGURE 4 - CRANKCASE RELATED PARTS**

Figure Item	Code	Part Number	Description	Units per Assembly	
				K1A5	K1A5D
1		1028-B	BALL, 11/16 diameter	1	1
2	*	68668	SPRING, Oil pressure relief valve	1	1
	*	61084	SPRING, Oil pressure relief valve	1	1
	*	LW-11713	SPRING, Oil pressure relief valve	1	1
	*	LW-18085	SPRING, Oil pressure relief valve	1	1
3	**	STD-425	WASHER, No. plain (max. 9)	AR	AR
4		06E19769-1.25	GASKET, 1-1/4 I.D. annular	1	1
5		77808	VALVE ASSEMBLY, Oil pressure relief, adj.	1	1
6		18E23886	BEARING, Crankshaft	6	6
7		18B23885	BEARING, Crankshaft, front	2	2
8	◆	LW-15628	SEAL, Crankshaft oil	1	1
9		72091	RING, Oil seal, 23/64 I.D. x 7/64 dia. section	2	2
10	+	15B26262	BODY ASSEMBLY, Hydraulic tappet	12	
		LRT23381	BODY ASSEMBLY, Hydraulic <b>roller tappet</b>	12	12
<p>* Select spring to give a minimum of three threads exposed on adjusting screw to allow field adjustment. Refer to the latest revision of SSP-1776, Part I for spring identification.</p> <p>** Used for standard pressure oil relief valve</p> <p>◆ See latest revision of Service Instruction No. 1324 for installation.</p> <p>+ Refer to the latest revision of Service Instruction S.I. 1011</p>					

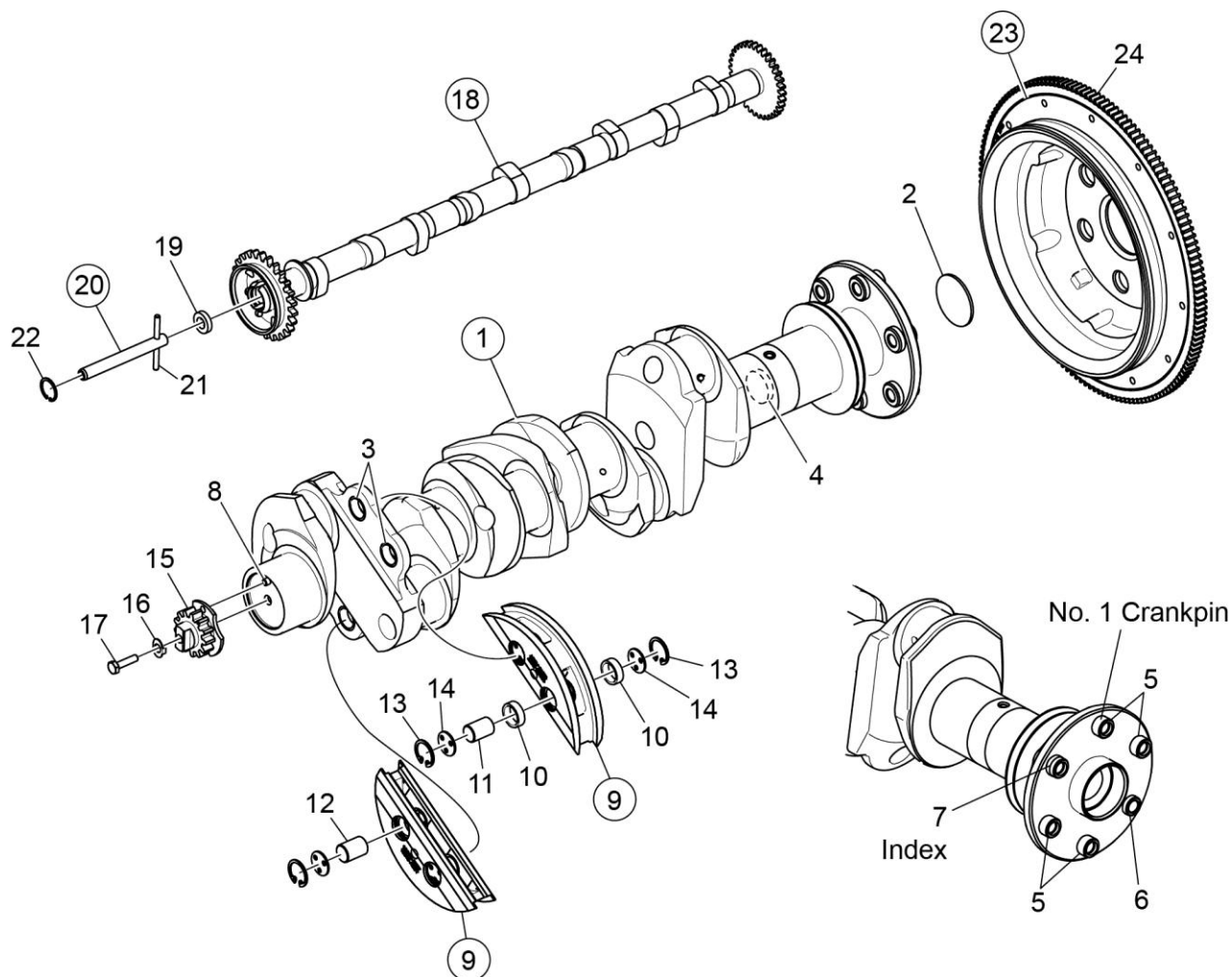
**Crankshaft, Counterweight, Camshaft and Related Parts****Figure 5****FIGURE 5 - CRANKSHAFT, COUNTERWEIGHT, CAMSHAFT AND RELATED PARTS**

Figure Item	Code	Part Number	Description	Units per Assembly	
				K1A5	K1A5D
1		13F47727	CRANKSHAFT ASSEMBLY	1	
		13F47733	CRANKSHAFT ASSEMBLY		1
2		STD-1211	PLUG, 2.00 diameter expansion	1	1
3		73810	BUSHING, Crankshaft counterweight	4	4
4		60945	PLUG, 1-1/4 diameter	1	1
5		75656-S	BUSHING, Propeller flange, long	4	4
6		72155-S	BUSHING, Propeller flange, short	1	1
7		75657-S	BUSHING, Propeller flange, indexing	1	1
8		STD-1065	DOWEL, Stepped, 5/16 & 1/4 dia. x 35/64	1	1
		STD-2078	DOWEL, 3/8 dia. x 1/2 long	1	1
9		LW-19210	COUNTERWEIGHT ASSEMBLY	2	2
10		71903-A	BUSHING, Dynamic counterweight	4	4
11		76788	ROLLER, Dynamic counterweight, 6.3 order	2	2
12		73648	ROLLER, Dynamic counterweight, 5.1 order	2	2
13		LW-14820	RING, Internal retaining	8	8
14		71907	WASHER, Dynamic counterweight	8	8
15		13S19647	GEAR, Crankshaft	1	
		13S19649	GEAR, Crankshaft		1
16		LW-18638	LOCKPLATE, Crankshaft gear	1	
		LW-10332	LOCKPLATE, Crankshaft gear		1
17		STD-2247	BOLT, 5/16-24 x 1.75	1	
		STD-2251	BOLT, 1/2-20 UNF-3A x 1-19/32 hex head		1
18		15N23374	CAMSHAFT ASSEMBLY, roller lifter	1	1
		LW-19340	CAMSHAFT ASSEMBLY	1	
19		76118	SPACER, Tachometer shaft centering	1	1
20		76155	SHAFT ASSEMBLY, Tachometer	1	1
21		LW-18667	PIN, 3/16 diameter x 2-21/64 long	1	1
22		STD-2231	RING, Internal retaining	1	1

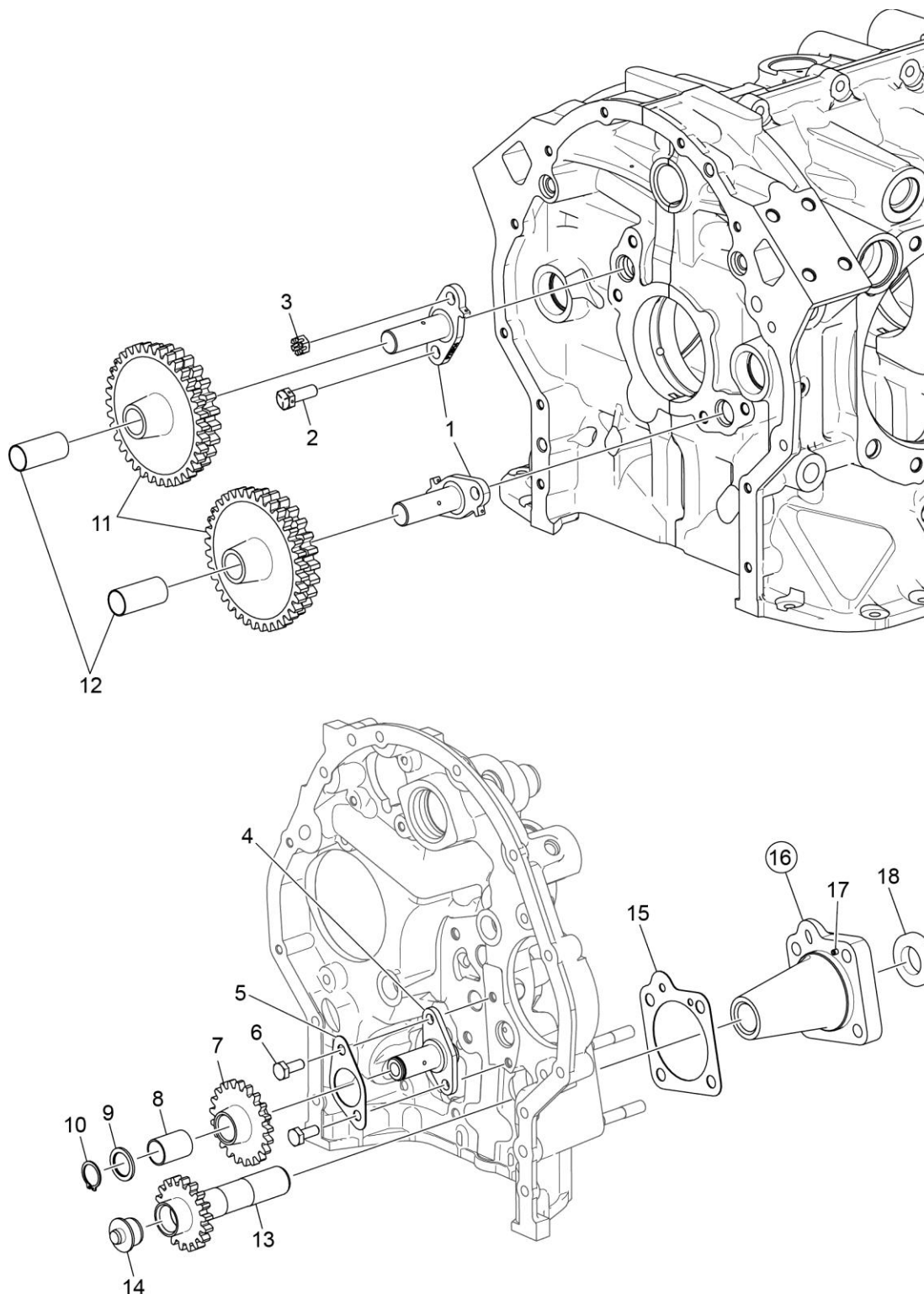
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**FIGURE 5 - CRANKSHAFT, COUNTERWEIGHT, CAMSHAFT AND RELATED PARTS**  
**CONTINUED**

Figure Item	Code	Part Number	Description	Units per Assembly	
				K1A5	K1A5D
23		LW-16471	SUPPORT ASSEMBLY, Starter ring gear	1	
		72245	SUPPORT ASSEMBLY, Starter ring gear	1	1
24		72566	GEAR, Starter ring	1	1



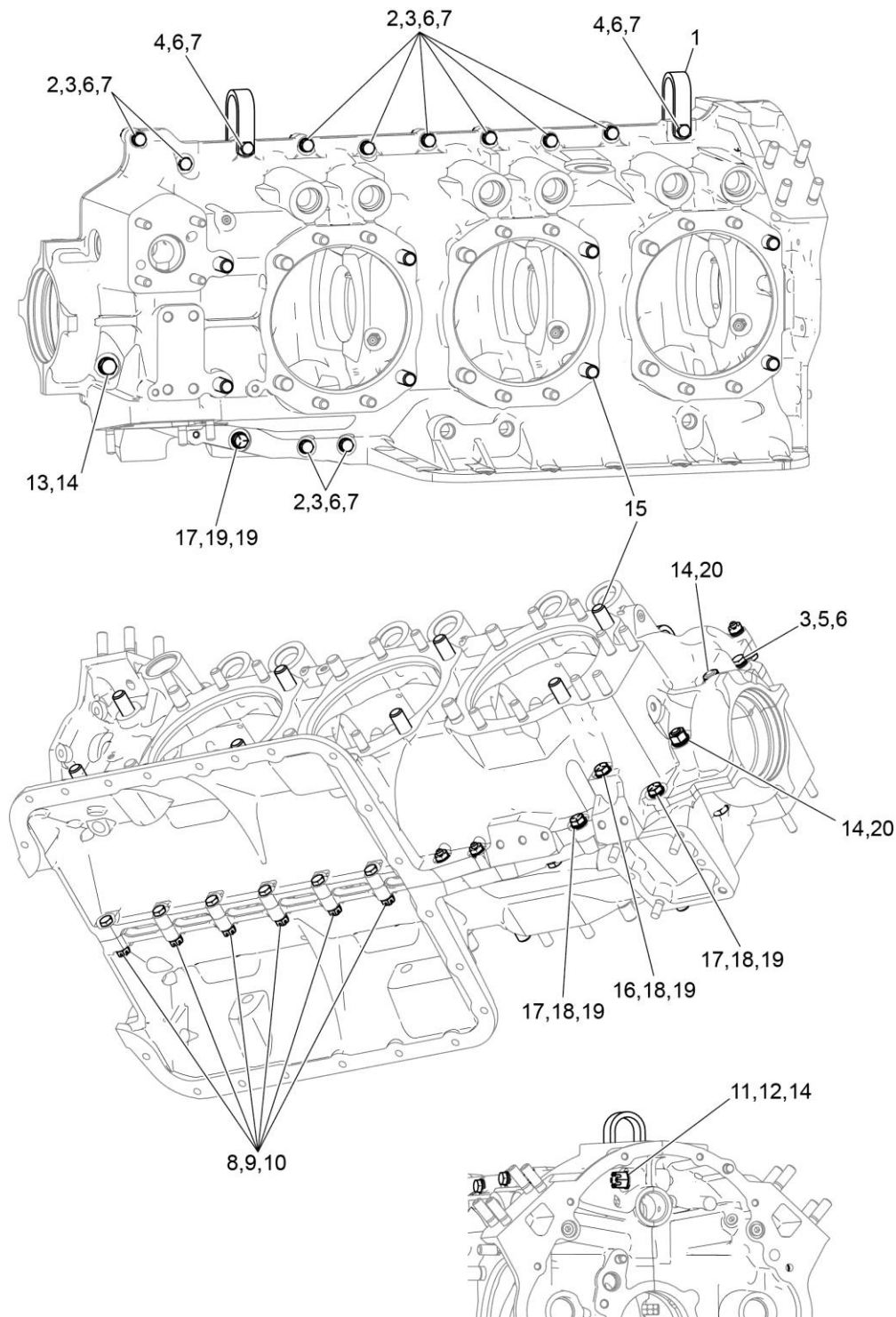
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**Crankshaft and Fuel Pump Idler Gears**  
**Figure 6**

**FIGURE 6 – CRANKSHAFT AND FUEL PUMP IDLER GEARS**

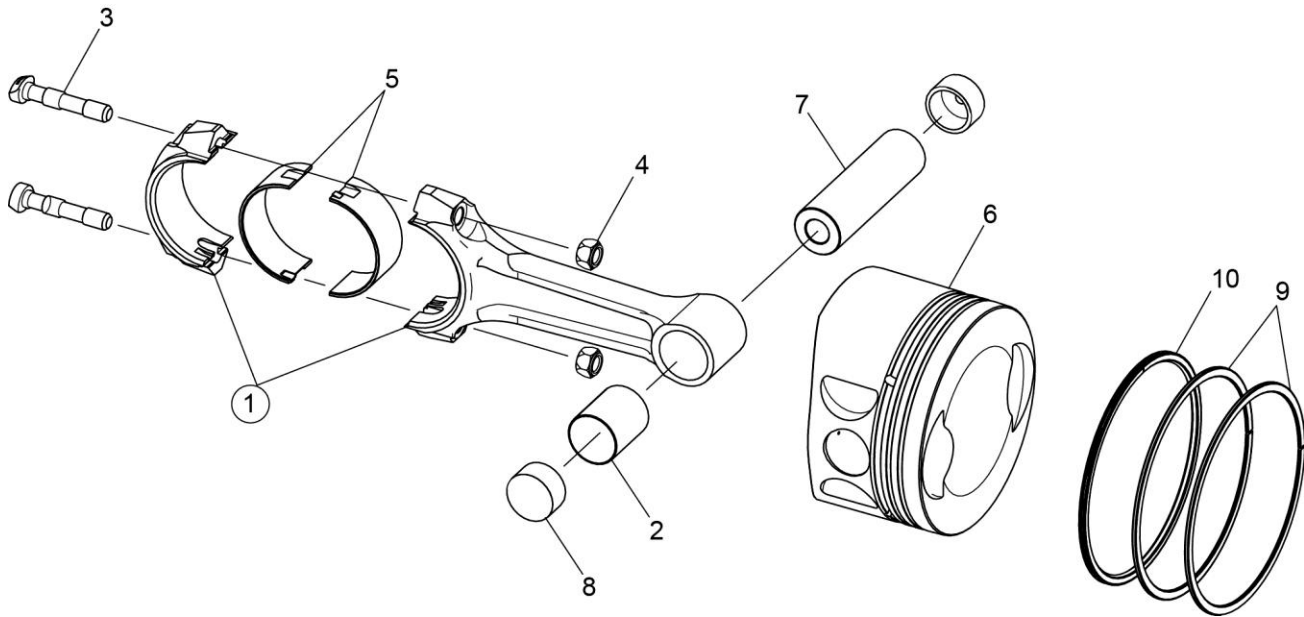
Figure Item	Code	Part Number	Description	Units per Assembly	
				K1A5	K1A5D
1		LW-13795	SHAFT, Crankshaft idler gear	2	
2		LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex head	3	
3		STD-2168	NUT, 5/16-18 x NC-3, slotted shear	1	
4		72246	SHAFT, Fuel pump idler gear	1	
5		71667	LOCKPLATE 1/4 bolt x 1.75 spacing	1	
6		LW-25-0.63	BOLT, 1/4-20 x 5/8 long, hex head	2	
7		71664	GEAR ASSEMBLY, Fuel pump idler	1	
		LW-10324	GEAR ASSEMBLY, Fuel pump idler		1
8		77309	BUSHING, Crankshaft idler gear	1	
9		70474	WASHER, Fuel pump thrust	1	
10		STD-1737	RING, 9/16 diameter x 11/32 thk. ext. retaining	1	
11		71668	GEAR ASSEMBLY, Crankshaft idler, plain	2	
		LW-10292	GEAR ASSEMBLY, Crankshaft idler, plain		2
		LW-10297	GEAR ASSEMBLY, Crankshaft idler		2
12		67530	BUSHING, Crankshaft idler gear	2	
13		72972	SHAFTGEAR ASSEMBLY, Fuel pump drive	1	
		LW-10329	SHAFTGEAR ASSEMBLY, Fuel pump		1
14		72962	THRUST BUTTON, gear drive	1	
15		69164	GASKET, Fuel pump adapter	1	1
16		69159	ADAPTER ASSEMBLY, Fuel pump drive	1	1
17		STD-1774	PIN, 1/8 diameter x 1/4 long	1	1
18		STD-213	SEAL, Oil, 3/4 I.D. x 1-3/8 O.D.	1	1



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

**FIGURE 7 - CRANKCASE ATTACHING PARTS**

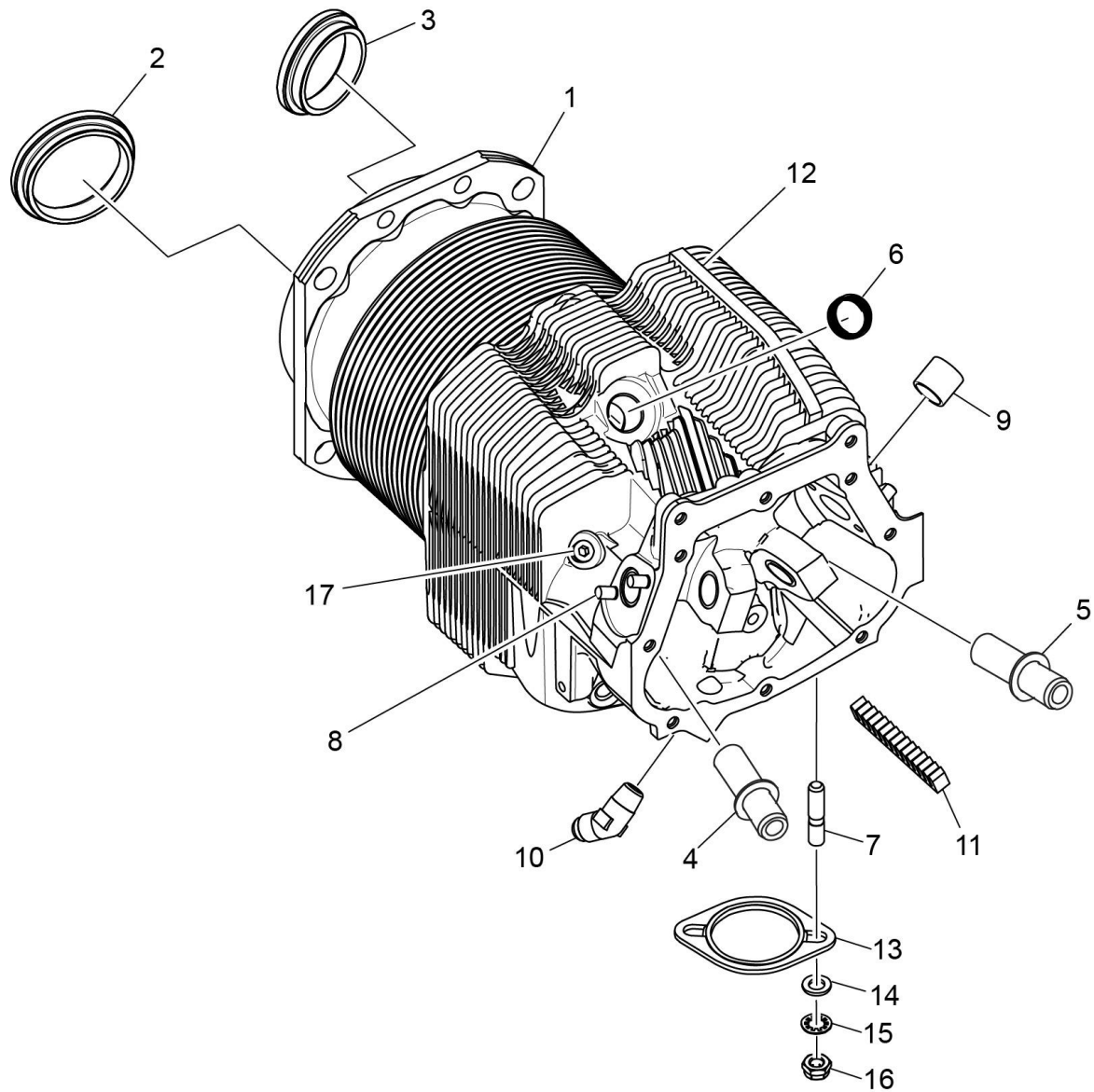
Figure Item	Code	Part Number	Description	Units per Assembly	
				K1A5	K1A5D
1		60803	STRAP, Lifting	2	
2		LW-25-1.50	BOLT, 1/4-20 x 1-1/2 long, hex. head	10	
3		STD-8	WASHER, 1/4 plain	24	
4		LW-25-1.75	BOLT, 1/4-20 x 1-3/4 long, hex. head	2	
5		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	1	
6		STD-160	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. head, drilled	6	
9		STD-8	WASHER, 1/4 plain	18	
10		STD-2249	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 3-9/16 long, hex. head	1	
14		STD-33	WASHER, 3/8 plain	4	
15		76220	STUD, 1/2-20 x 11-45/64 long	8	
16		LW-31-2.75	BOLT, 5/16-18 x 2-3/4 long, hex. head	1	
17		LW-31-1.16	BOLT, 5/16-18 x 1-5/32 long, hex. head	3	
18		STD-35	WASHER, 5/16 plain	4	
19		STD-475	WASHER, 5/16 lock, internal teeth	4	
20		LW-11866	SPACER-NUT, Compressor	2	



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

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

Figure Item	Code	Part Number	Description	Units per Assembly	
				K1A5	K1A5D
1		LW-19332-S	CONNECTING ROD ASSEMBLY	6	
2	<b>P</b>	LW-13923	BUSHING, Connecting rod, upper	6	
3	<b>P</b>	14S23889	BOLT, Connecting rod	12	
	*	LW-12596	BOLT, Connecting rod	12	
4		LW-12186	NUT, Connecting rod bolt	12	
5		18N26106	BEARING, Connecting rod	12	
6		14D23908	PISTON, Compression ratio, 8.70:1	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	
<b>P</b> Lycoming proprietary part. Listed for reference purposes only, cannot be purchased. <b>*</b> Service use only.					

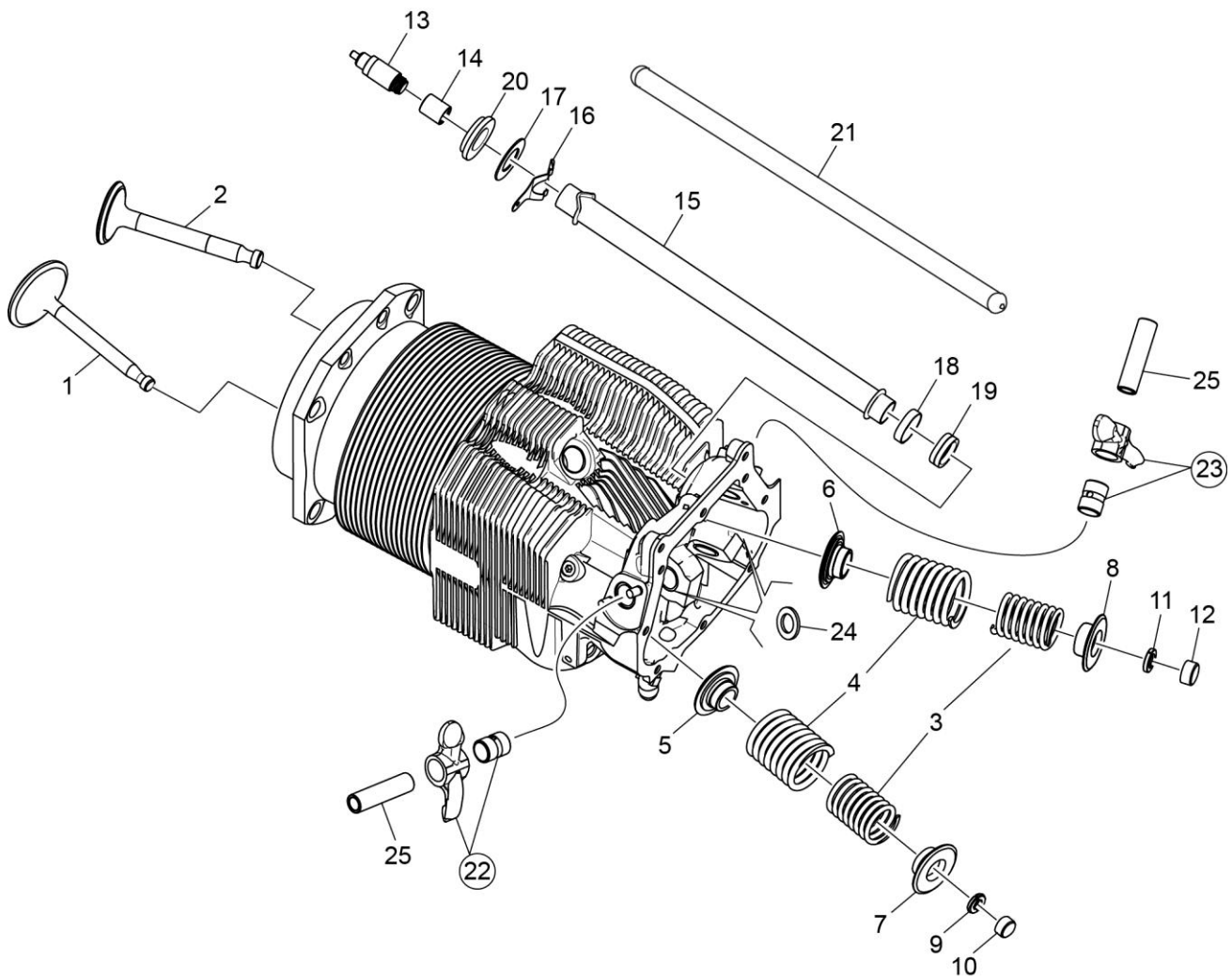


**Cylinder Assembly  
Figure 9**



**FIGURE 9 - CYLINDER ASSEMBLY**

Figure Item	Code	Part Number	Description	Units per Assembly	
				K1A5	K1A5D
1		LW-12993	CYLINDER AND HEAD ASSEMBLY, Nitrided	6	6
2		LW-12688	SEAT, Intake valve	6	6
3		16T19468	SEAT, Exhaust valve	6	6
4	<b>P *</b>	LW-11956	GUIDE, Valve, intake, flangeless	6	6
5	<b>P *</b>	LW-11958	GUIDE, Valve, exhaust, flangeless	6	6
6		66796	INSERT, Spark plug, 18-1.5 mm	12	12
7		31C-12	STUD, 5/16-18 x 1-1/2 long	12	12
8		25C-8	STUD, 1/4-20 x 1.00 long	24	24
9		66670	BUSHING, Rocker shaft, inner	24	24
10		MS20823-6D	ELBOW, 3/8 flared tube, 45°	6	6
11		72343	STABILIZER, Cylinder head fins, 15 teeth	6	6
12		72344	STABILIZER, Cylinder head fins, 26 teeth	6	6
13		75118	GASKET, Exhaust flange		12
		77611	GASKET, Exhaust flange	6	
14		STD-35	WASHER, 5/16 plain	12	12
15		STD-475	WASHER, 5/16 lock, internal teeth	12	12
16		STD-1410	NUT, 5/16-18 plain	12	12
17		1102	PLUG, 1/8 pipe, allen head	6	6
<b>P</b> Lycoming proprietary part. Listed for reference purposes only, cannot be purchased. <b>*</b> Refer to latest revision of Service Instruction No. 1256 for service valve guides.					



**Valve Assembly and Related Parts – Roller Tappets**  
**Figure 10**

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

Figure Item	Code	Part Number	Description	Units per Assembly	
				K1A5	K1A5D
1		17A23937	VALVE, Intake	6	
2		17B23935	VALVE, Exhaust	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		62388	CAP, Valve stem	6	
11		17C21191	KEY, Valve, exhaust	12	
12		17C19386	CAP, Valve stem, exhaust (rotator type)	6	
13		15B26066	PLUNGER ASSEMBLY, Hydraulic lifter	12	
14		15B21319	SOCKET, Hydraulic lifter	12	
15		15G23462	SHROUD TUBE ASSEMBLY, Push rod	12	
16	*	15H21201	SPRING, Shroud tube	24	
17		01L23459	WASHER, 25/32 I.D. x 1-3/8 O.D. x 1/32 thick	12	
18		61503	SLEEVE, Shroud tube seal	12	
19		LW-18661	SEAL, Shroud tube	12	
20		06A23493	SEAL, Shroud tube	12	

**NOTE:** Various push rod lengths are used to set valve clearances.

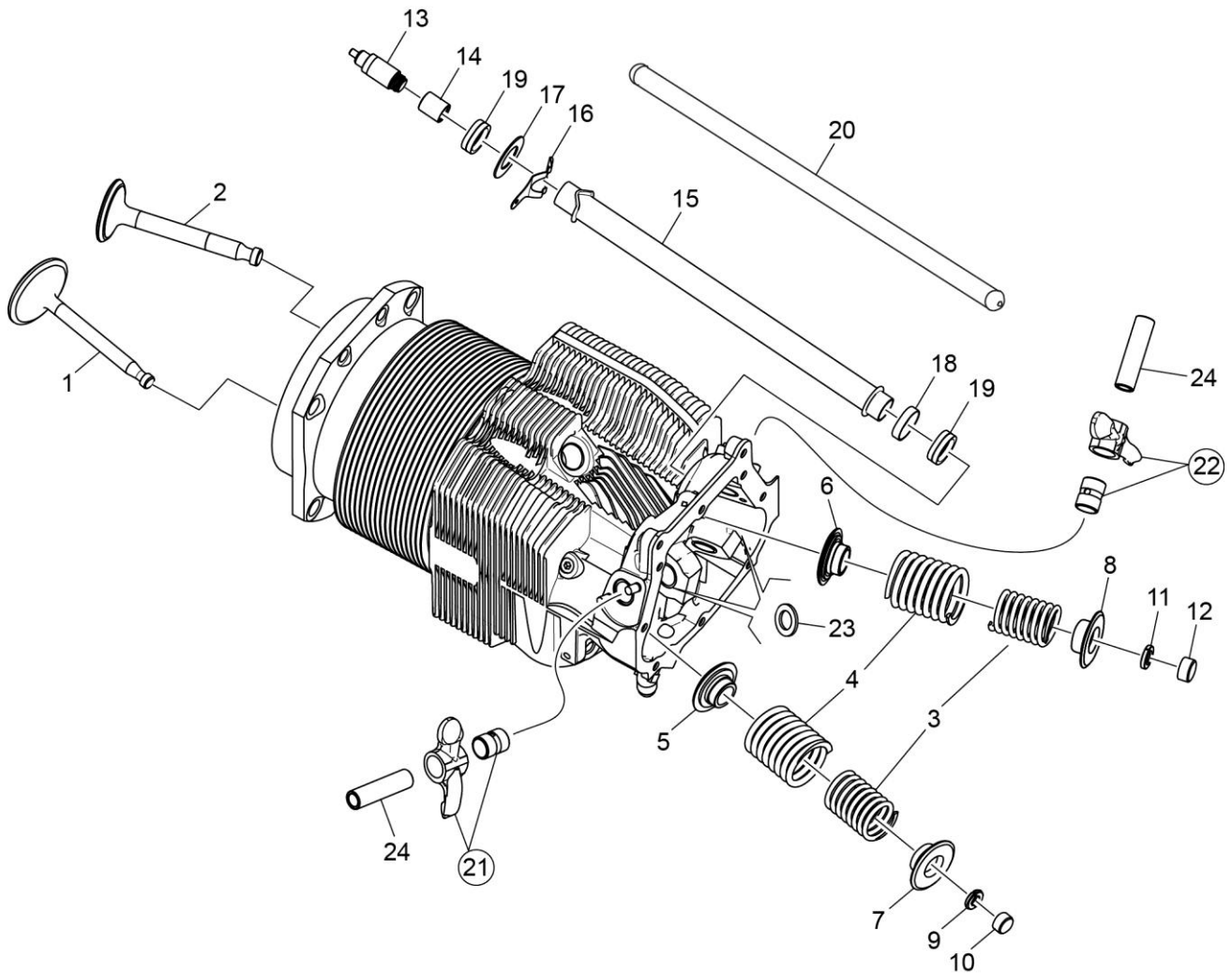
\* See latest revision of Service Instruction No. 1514 for shroud tube spring information.

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

Figure Item	Code	Part Number	Description	Units per Assembly	
				K1A5	K1A5D
21	AR *	15F19957-52	ROD ASSEMBLY, Push (A total of 12 required)	AR	
	AR *	15F19957-53	ROD ASSEMBLY, Push (A total of 12 required)	AR	
	AR *	15F19957-54	ROD ASSEMBLY, Push (A total of 12 required)	AR	
	AR *	15F19957-55	ROD ASSEMBLY, Push (A total of 12 required)	AR	
	AR *	15F19957-56	ROD ASSEMBLY, Push (A total of 12 required)	AR	
	AR *	15F19957-57	ROD ASSEMBLY, Push (A total of 12 required)	AR	
	AR *	15F19957-58	ROD ASSEMBLY, Push (A total of 12 required)	AR	
	AR *	15F21362-18	ROD ASSEMBLY, Push (A total of 12 required)	AR	
	AR *	15F21362-19	ROD ASSEMBLY, Push (A total of 12 required)	AR	
	AR *	15F21362-20	ROD ASSEMBLY, Push (A total of 12 required)	AR	
	AR *	15F21362-21	ROD ASSEMBLY, Push (A total of 12 required)	AR	
	AR *	15F21362-22	ROD ASSEMBLY, Push (A total of 12 required)	AR	
	AR *	15F21362-23	ROD ASSEMBLY, Push (A total of 12 required)	AR	
	AR *	15F21362-24	ROD ASSEMBLY, Push (A total of 12 required)	AR	
22	**	17F21186	ROCKER ASSEMBLY, Valve, intake	6	
23	**	17F21185	ROCKER ASSEMBLY, Valve, exhaust	6	
24		71549	WASHER, Valve rocker	12	
25		72626	SHAFT, Valve rocker	12	
<b>AR</b> 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 (21185 or 21186).					

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**Valve Assembly and Related Parts- Flat Tappets**  
**Figure 10A**

**FIGURE 10A – VALVE ASSEMBLY AND RELATED PARTS – FLAT TAPPETS**

Figure Item	Code	Part Number	Description	Units per Assembly
				K1K5
1		17A23937	VALVE, Intake	6
2		17B23935	VALVE, Exhaust	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		62388	CAP, Valve stem	6
11		17C21191	KEY, Valve, exhaust	12
12		17C19386	CAP, Valve stem, exhaust (rotator type)	6
13		15B26066	PLUNGER ASSEMBLY, Hydraulic lifter	12
14		15B21319	SOCKET, Hydraulic lifter	12
15		72255	SHROUD TUBE ASSEMBLY, Push rod	12
16	*	15H21201	SPRING, Shroud tube	24
17		66728	WASHER, 25/32 I.D. x 1-1/4 O.D. x 1/32 thick	12
18		61503	SLEEVE, Shroud tube seal	12
19		LW-18661	SEAL, Shroud tube	24
<p><b>NOTE:</b> Various push rod lengths are used to set valve clearances.</p> <p>* See latest revision of Service Instruction No. 1514 for shroud tube spring information.</p>				

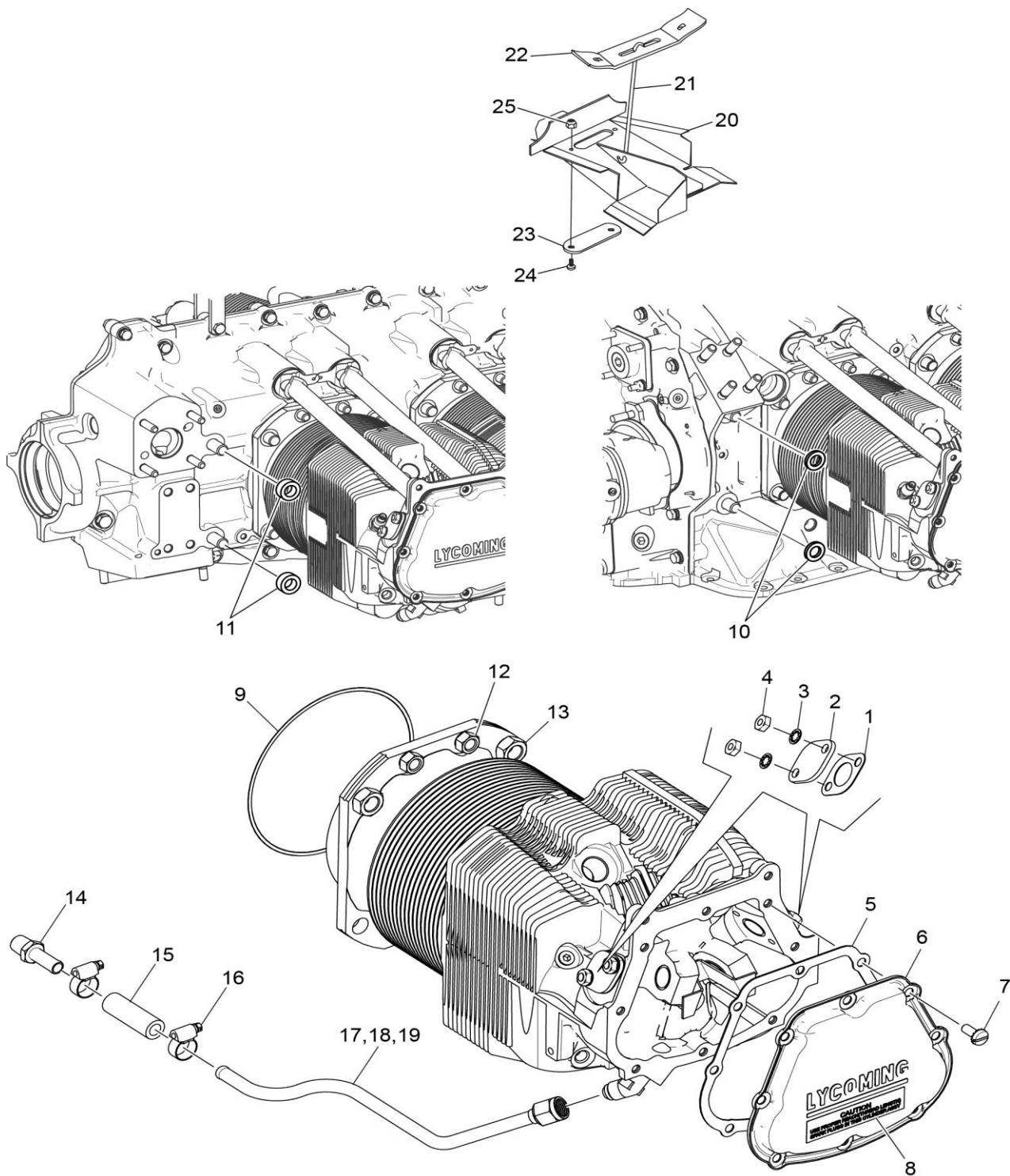
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**FIGURE 10A - VALVE ASSEMBLY AND RELATED PARTS- FLAT TAPPETS (CONT.)**

Figure Item	Code	Part Number	Description	Units per Assembly
				K1K5
20	AR *	15F19957-55	ROD ASSEMBLY, Push (A total of 12 required)	AR
	AR *	15F19957-56	ROD ASSEMBLY, Push (A total of 12 required)	AR
	AR *	15F19957-57	ROD ASSEMBLY, Push (A total of 12 required)	AR
	AR *	15F19957-58	ROD ASSEMBLY, Push (A total of 12 required)	AR
	AR *	15F21362-21	ROD ASSEMBLY, Push (A total of 12 required)	AR
	AR *	15F21362-22	ROD ASSEMBLY, Push (A total of 12 required)	AR
	AR *	15F21362-23	ROD ASSEMBLY, Push (A total of 12 required)	AR
	AR *	15F21362-24	ROD ASSEMBLY, Push (A total of 12 required)	AR
21	**	17F21186	ROCKER ASSEMBLY, Valve, intake	6
22	**	17F21185	ROCKER ASSEMBLY, Valve, exhaust	6
23		71549	WASHER, Valve rocker	12
24		72626	SHAFT, Valve rocker	12
<b>AR</b> 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 (21185 or 21186).				



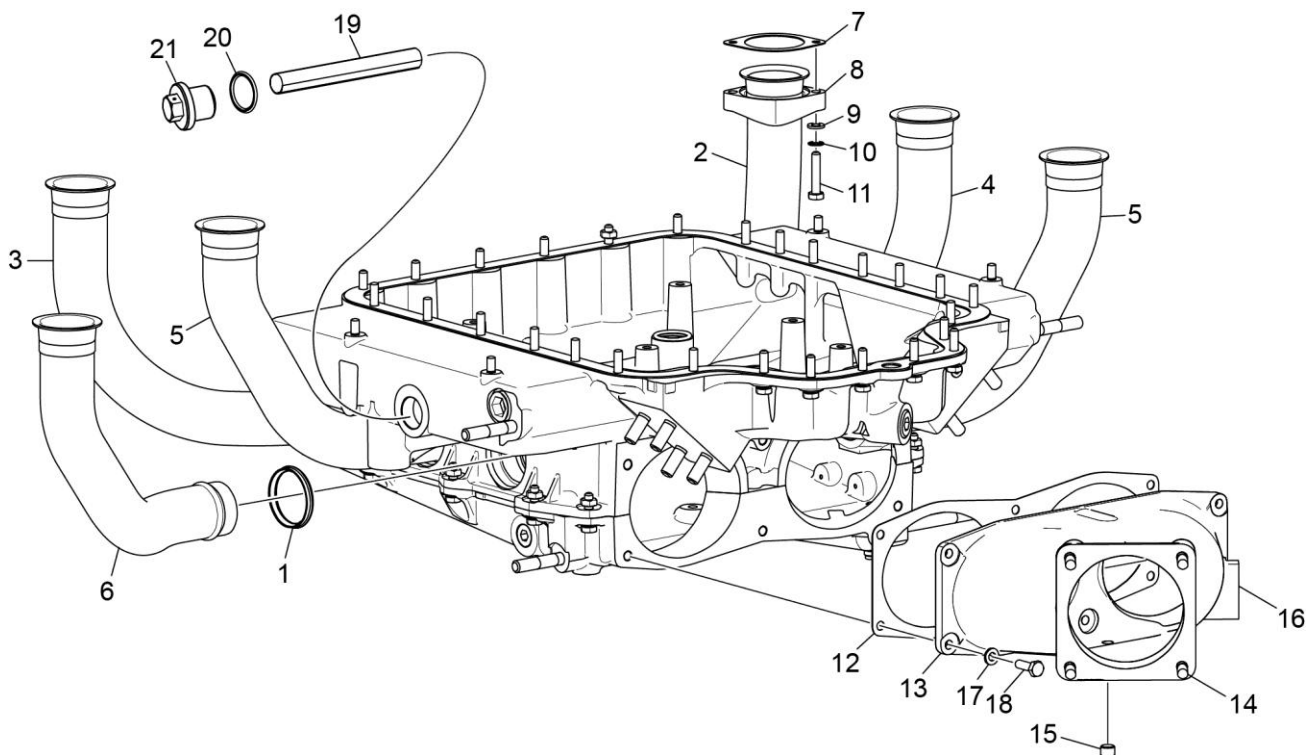
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**Cylinder Related Parts**  
**Figure 11**

**FIGURE 11 – CYLINDER RELATED PARTS**

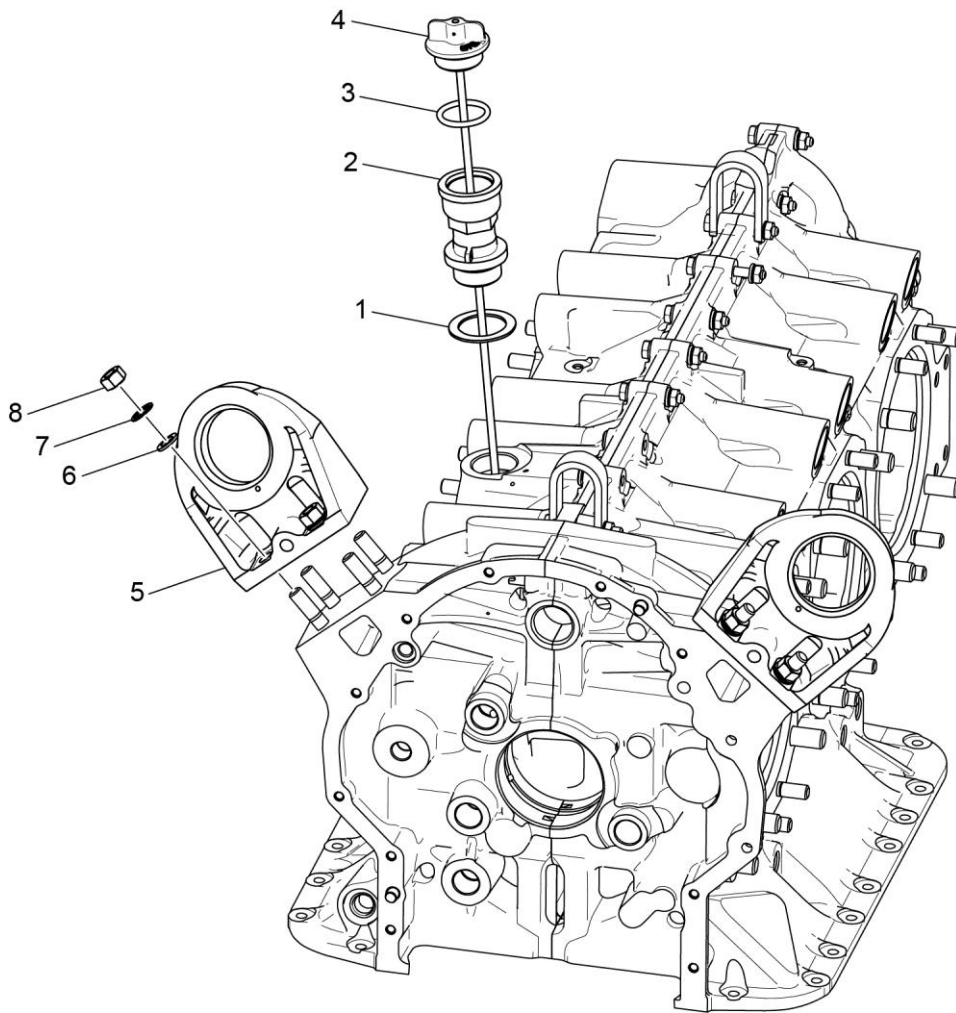
Figure Item	Code	Part Number	Description	Units per Assembly	
				K1A5	K1A5D
1		66732	GASKET, Valve rocker shaft cover	12	
2		72710	COVER, Valve rocker shaft	12	
3		STD-160	WASHER, 1/4 lock, internal teeth	24	
4		STD-1411	NUT, 1/4-20 plain	24	
5		67193	GASKET, Rocker box cover	6	
6		68795	COVER ASSEMBLY, Rocker box	6	
7		STD-1925	SCREW, 1/4-20 x 5/8 long, pan. head, self-locking	48	
8		74494	PLATE, Spark plug reach caution	6	
9		71481	RING, Oil seal, 3/32 diameter x 4-27/32 I.D.	6	
10		77906	SPACER, 33/64 I.D. x 7/8 O.D. x 1/8 thick	2	
11		74887	SPACER, 33/64 I.D. x 7/8 O.D. x 3/8 thick	2	
12		383-B	NUT, 3/8-24 plain	24	
13		STD-2090	NUT, 1/2-20 plain	28	
14		STD-684	NIPPLE, Straight, 3/8 I.D. hose	6	
15		STD-2180	HOSE, 3/8 I.D. x 1-7/8 long	6	
16		LW-15592-5-05	CLAMP, Hose	12	
17		72702	TUBE ASSEMBLY, Cyl. head oil drain, cyl. no.1	1	
18		72703	TUBE ASSEMBLY, Cyl. head oil drain, cyl. no. 2	1	
19		73027	TUBE ASSEMBLY, Cyl. head oil drain, cyl. no. 3,4,5,6	4	
20		75338	BAFFLE ASSEMBLY, Intercylinder	4	
21		71610	HOOK, Intercylinder baffle retainer	4	
22		71611	RETAINER, Intercylinder baffle	4	
23		72834	COVER, Baffle, ignition cable hole	4	
24		STD-692	SCREW, No. 10-32 x 1/2 long, round head	8	
25		STD-670	LOCKNUT, No. 10-32	8	



**Intake Pipes and Air Inlet Housing**  
**Figure 12**

**FIGURE 12 – INTAKE PIPES AND AIR INLET HOUSING**

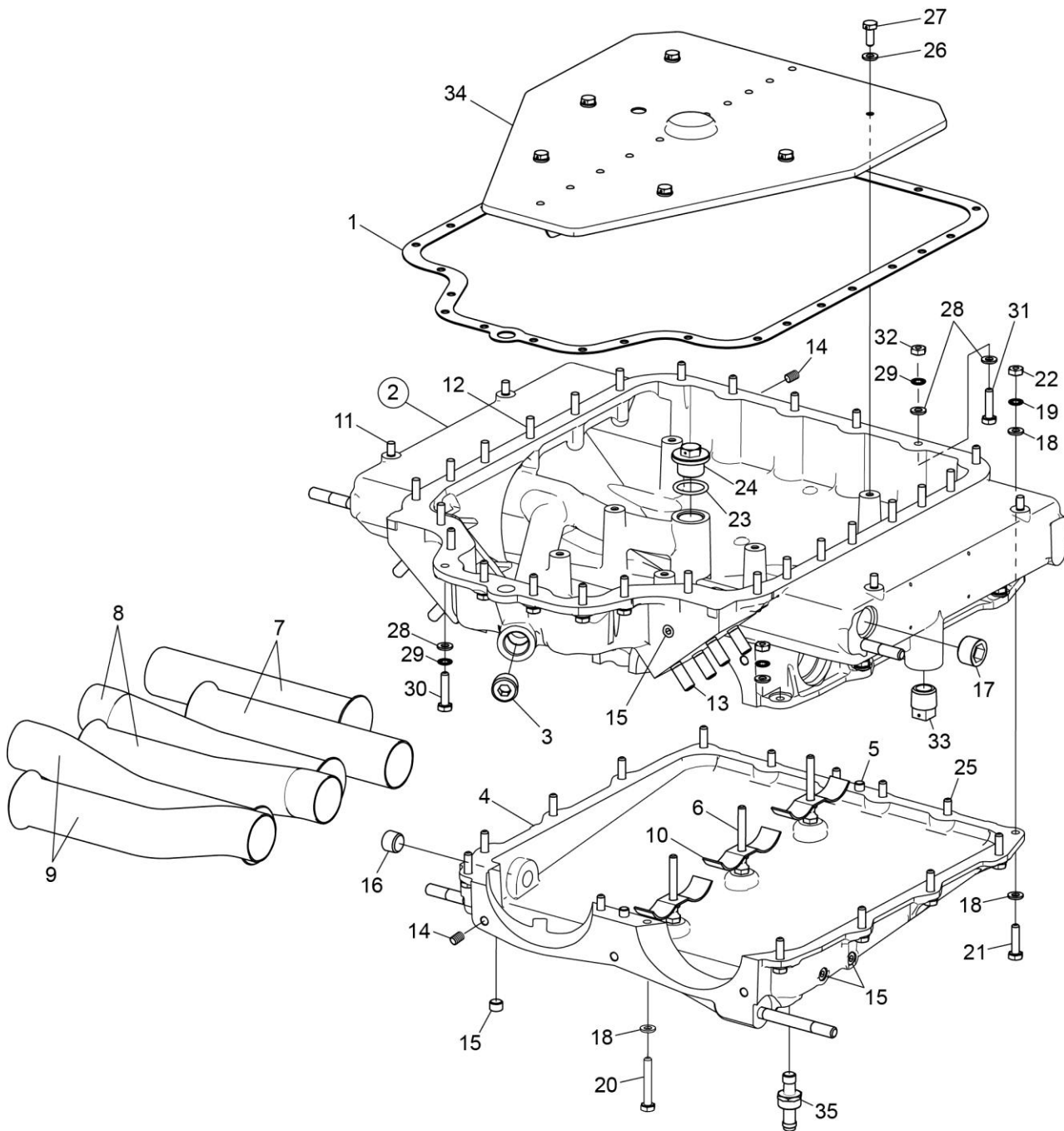
Figure Item	Code	Part Number	Description	Units per Assembly	
				K1A5	K1A5D
1		72711	RING, Seal, intake pipes	6	
2		LW-12191	PIPE, Intake, cylinder no. 1	1	
3		LW-12192	PIPE, Intake, cylinder no. 2	1	
4		LW-12193	PIPE, Intake, cylinder no. 3	1	
5		LW-12194	PIPE, Intake, cylinders no. 4 and 5	2	
6		LW-12195	PIPE, Intake, cylinder no. 6	1	
7		71973	GASKET, 2 bolt flange, 1-13/16 I.D.	6	
8		74360	FLANGE, Intake pipe, upper	6	
9		STD-8	WASHER, 1/4 plain	12	
10		STD-160	WASHER, 1/4 lock, internal teeth	12	
11		LW-25-1.25	BOLT, 1/4-20 x 1-1/4 long, hex. head	12	
12		72210	GASKET, Air throttle housing	1	
13	*	LW-16956	HOUSING ASSEMBLY, Air inlet	1	
14		31C-14	STUD, 5/18 x 1.75 long	4	
15		1102	PLUG, 1/8-27 NPT, allen head	1	
16		STD-1353	INSERT, #10-24 UNC x 3/8 long	3	
17		STD-8	WASHER, 1/4 plain	6	
18		LW-25-0.81	BOLT, 1/4-20 x 13/16 long, hex. head	6	
19		60422	SCREEN, Oil suction	1	
20		06E19769-1.00	GASKET, Annular, 1.00 I.D.	1	
21		LW-12545	PLUG, 5/8 hex head x 1.00-20 thread	1	
* Assemble with pipe tap on right side of engine.					



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

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

Figure Item	Code	Part Number	Description	Units per Assembly	
				K1A5	K1A5D
1		70457	GASKET, Oil filler extension	1	1
2		77527	EXTENSION, Oil filler (2-3/16 long)	1	1
3		72312	O- RING, Oil level gage	1	1
4		LW-14729	GAGE ASSEMBLY, Oil level	1	1
5		12A19770	BRACKET, Engine mounting (dynafocal)	4	
		70456	BRACKET, Engine mounting (dynafocal)	4	4
6		STD-33	WASHER, 3/8 plain	16	16
7		STD-678	WASHER, 3/8 lock, internal teeth	16	16
8		STD-596	NUT, 3/8-24 plain	16	16



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



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

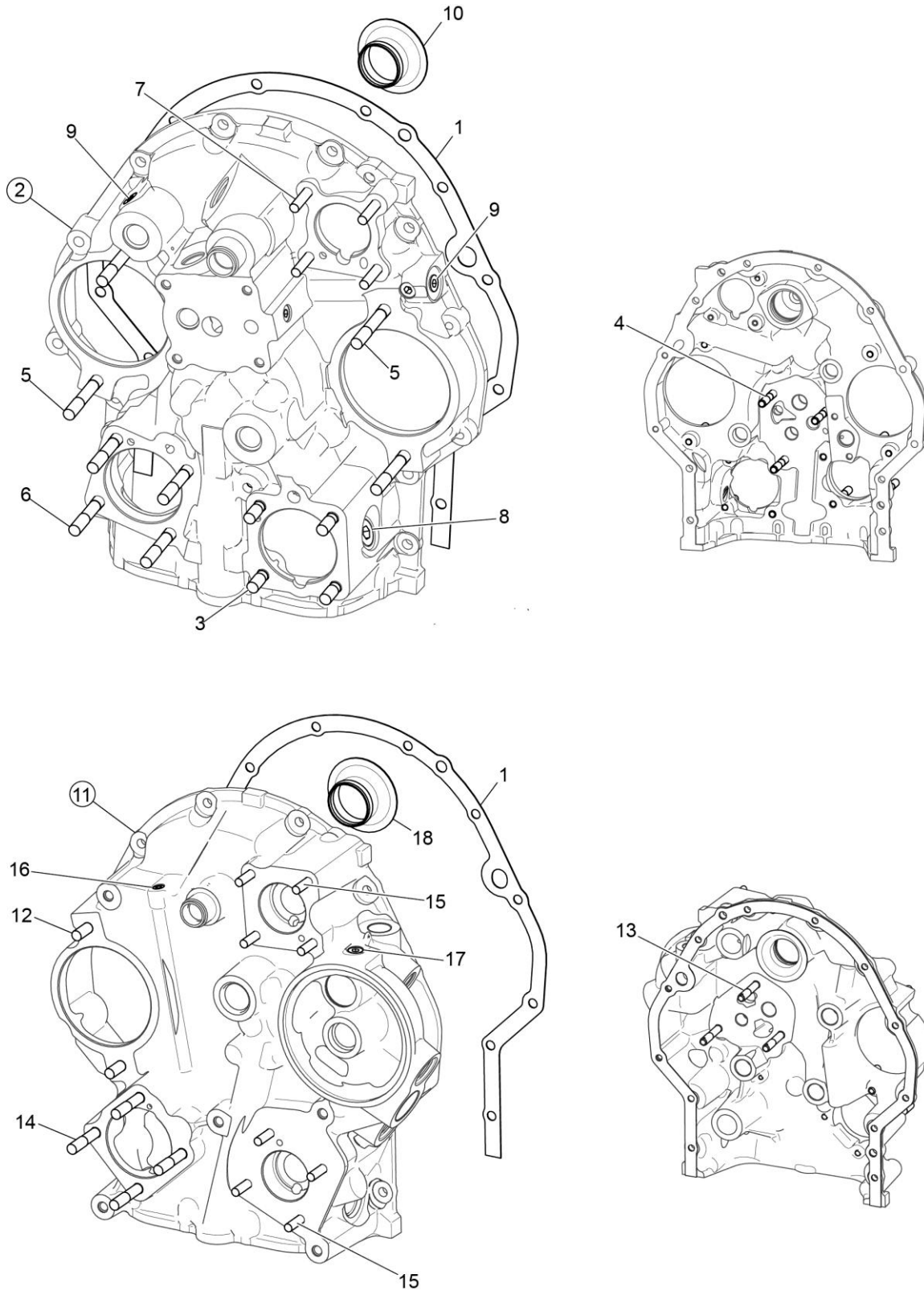
Figure Item	Code	Part Number	Description	Units per Assembly	
				K1A5	K1A5D
1		06B21326	GASKET, Oil sump	1	1
2		56A26071-03	HOUSING ASSEMBLY, Oil sump & induction	1	1
3		STD-91	PLUG, 1/2-14, NPT, allen head	1	1
4		LW-18291	COVER, Induction housing	1	1
5		STD-514	DOWEL, 5/16 diameter x 1/2 long	2	2
6		72179	STUD, Intake pipe, extension pipe	3	3
7		72167	PIPE, Extension, intake, cylinders no. 1 & 2	2	2
8		72168	PIPE, Extension, intake, cylinders no. 3 & 4	2	2
9		72169	PIPE, Extension, intake, cylinders no. 5 & 6	2	2
10		LW-11273	CLAMP, Intake pipe extension	3	3
11		25C-9	STUD, 1/4-20 x 1-1/8 long	4	4
12		25C-11	STUD, 1/4-20 x 1-3/8 long	15	15
13		38-15	STUD, 3/8-16 x 1-7/8 long	8	8
14		72706	INSERT, 1/4-20 UNC x 3/8 long	14	14
15		1102	PLUG, 1/8-27 NPT, allen head	5	5
16		STD-784	PLUG, 3/8-18 NPT, allen head	1	1
17		STD-355	PLUG, 3/4-14 NPT, allen head	2	2
18		STD-8	WASHER, 1/4 plain	29	29
19		STD-160	WASHER, 1/4 lock, internal teeth	23	23
20		LW-25-2.00	BOLT, 1/4-20 x 2.00 long, hex. head	2	2
21		LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. head	10	10
22		STD-1411	NUT, 1/4-20 plain	13	13
23		06E19769-0.91	GASKET, Annular, 29/32 I.D.	1	1
24		72960	PLUG, 7/8-14 x 5/8, hex. Head	1	1
25		LW-25-0.81	BOLT, 1/4-20 x 13/16 long, hex. head	4	4
26		STD-8	WASHER, 1/4 plain	6	6
27		LW-25-H0.63	BOLT, 1/4-20 x 5/8 long, hex. head, drilled	6	6
28		STD-8	WASHER, 1/4 plain	37	37
29		STD-160	WASHER, 1/4 lock, internal teeth	23	23
30		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	6	6
31		LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. head	6	6
32		STD-1411	NUT, 1/4-20 plain	25	25
33		STD-551	PLUG, 1/2-14 NPT, square head, drilled	2	2

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**FIGURE 14 – OIL SUMP AND INDUCTION HOUSING ASSEMBLY (CONT)**

Figure Item	Code	Part Number	Description	Units per Assembly	
				K1A5	K1A5D
34		56G26069	BAFFLE, Oil sump	1	1
35		75444	ADAPTER ASSY, Fuel drain valve	1	
Reference S.I. 1279 for baffle information					

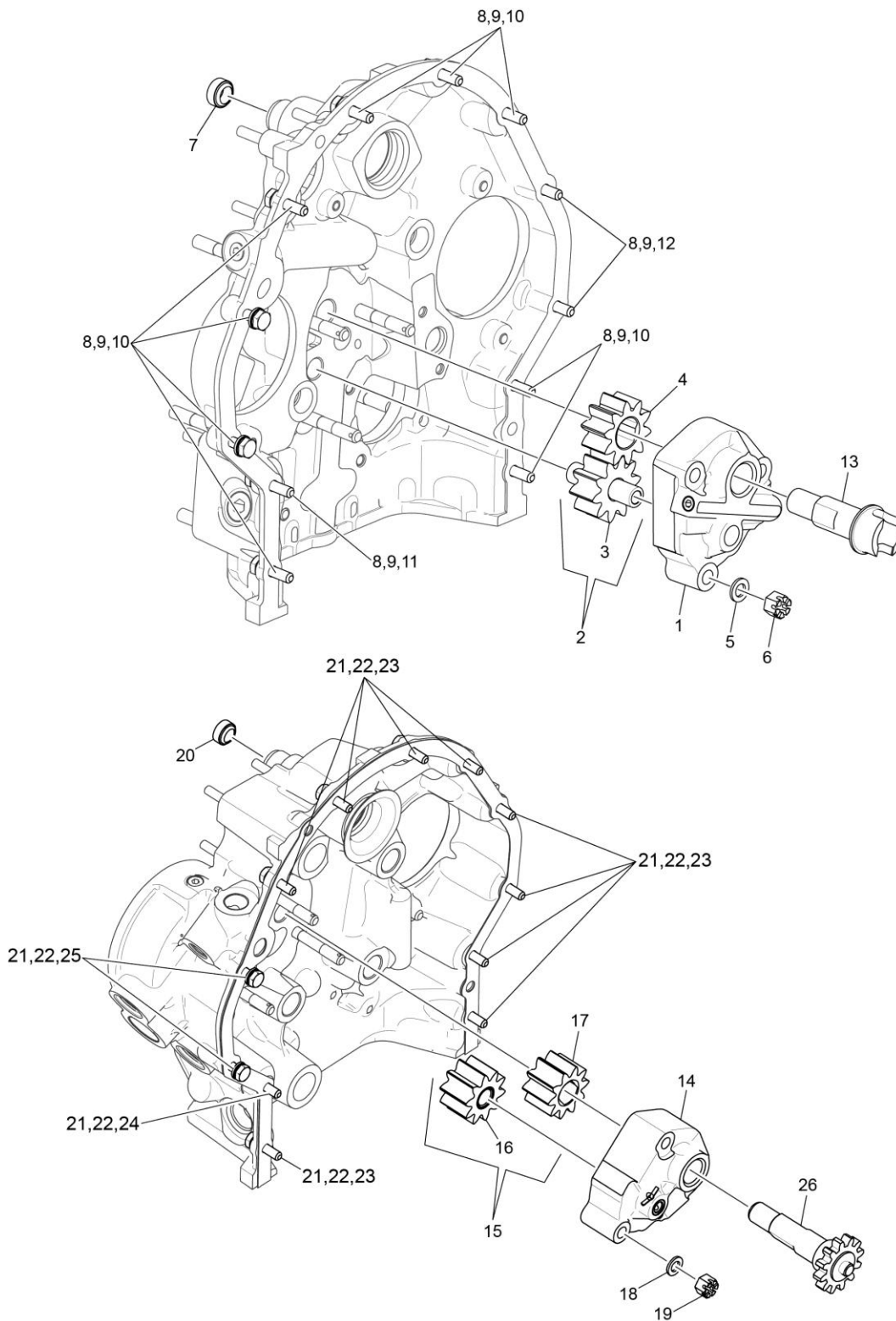
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**Accessory Housing Assembly  
Figure 15**

**FIGURE 15 – ACCESSORY HOUSING ASSEMBLY**

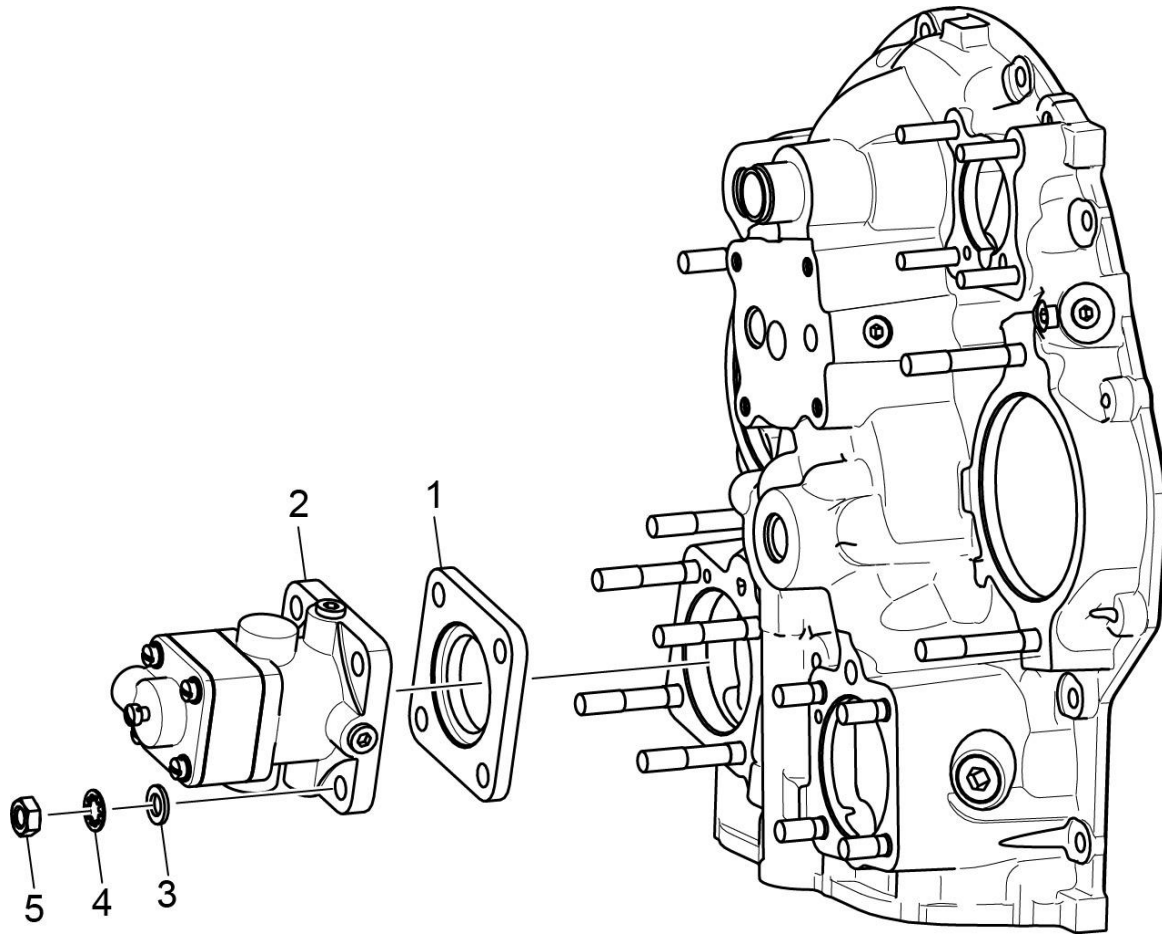
Figure Item	Code	Part Number	Description	Units per Assembly	
				K1A5	K1A5D
1		73818	GASKET, Accessory housing	1	1
2		21C21541-02	HOUSING ASSEMBLY, Accessory	1	
3		31C-12	STUD, 5/16-18 x 1-1/2 long	4	
4		31CD-17	STUD, 5/16-18 x 2-1/8 long, drilled	3	
5		31C-21	STUD, 5/16-18 x 2-5/8 long	4	
6		31C-19	STUD, 5/16-18 x 2-3/8 long	4	
7		25C-21	STUD, 1/4-20 x 2-5/8 long	4	
8		STD-784	PLUG, 3/8-18 NPT, allen head	1	
9		1102	PLUG, 1/8-27 NPT, allen head	4	
10		76156	SHIELD, Oil accessory	1	
11		21D21608-01	HOUSING ASSEMBLY, Accessory		1
12		31C-13	STUD, 5/16-18 x 1-5/8 long		2
13		31CD-20	STUD, 5/16-18 x 2-1/2 long, drilled		3
14		31C-19	STUD, 5/16-18 x 2-3/8 long		4
15		25C-12	STUD, 1/4-20 x 1-1/2 long		8
16		STD-1339	PLUG, 1/16-27 NPT, allen head		1
17		1102	PLUG, 1/8-27 NPT, allen head		1
18		76156	SHIELD, Oil accessory		1



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

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

Figure Item	Code	Part Number	Description	Units per Assembly	
				K1A5	K1A5D
1		78528	BODY ASSEMBLY, Oil pump	1	
2		05K19423-S	IMPELLER KIT	1	
3	*	LW-18110	IMPELLER ASSEMBLY, Oil pump driven	1	
4	*	LW-18109	IMPELLER, 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		74641	SHAFT, Oil pump drive	1	
14		LW-10344	BODY ASSEMBLY, Oil pump		1
15		05K23463	IMPELLER KIT		1
16	**	51C23290	IMPELLER ASSEMBLY, Oil pump driven		1
17	**	51B23274	IMPELLER, Pump driving		1
18		STD-35	WASHER, 5/16 plain		3
19		STD-1420	NUT, 5/16-18 slotted		3
20		LW-14260	SEAL, Tachometer drive, oil		1
21		STD-8	WASHER, 1/4 plain		12
22		STD-160	WASHER, 1/4 lock, internal teeth		12
23		LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. head		9
24		LW-25-1.25	BOLT, 1/4-20 x 1-1/4 long, hex. head		1
25		LW-25-0.81	BOLT, 1/4-20 x 13/16 long, hex. head		2
26		LW-10318	GEAR ASSEMBLY, Oil pump drive		1
* Sold in complete sets only (Kit P/N 05K19423-S).					
** Sold in complete sets only (Kit P/N 05K23463).					

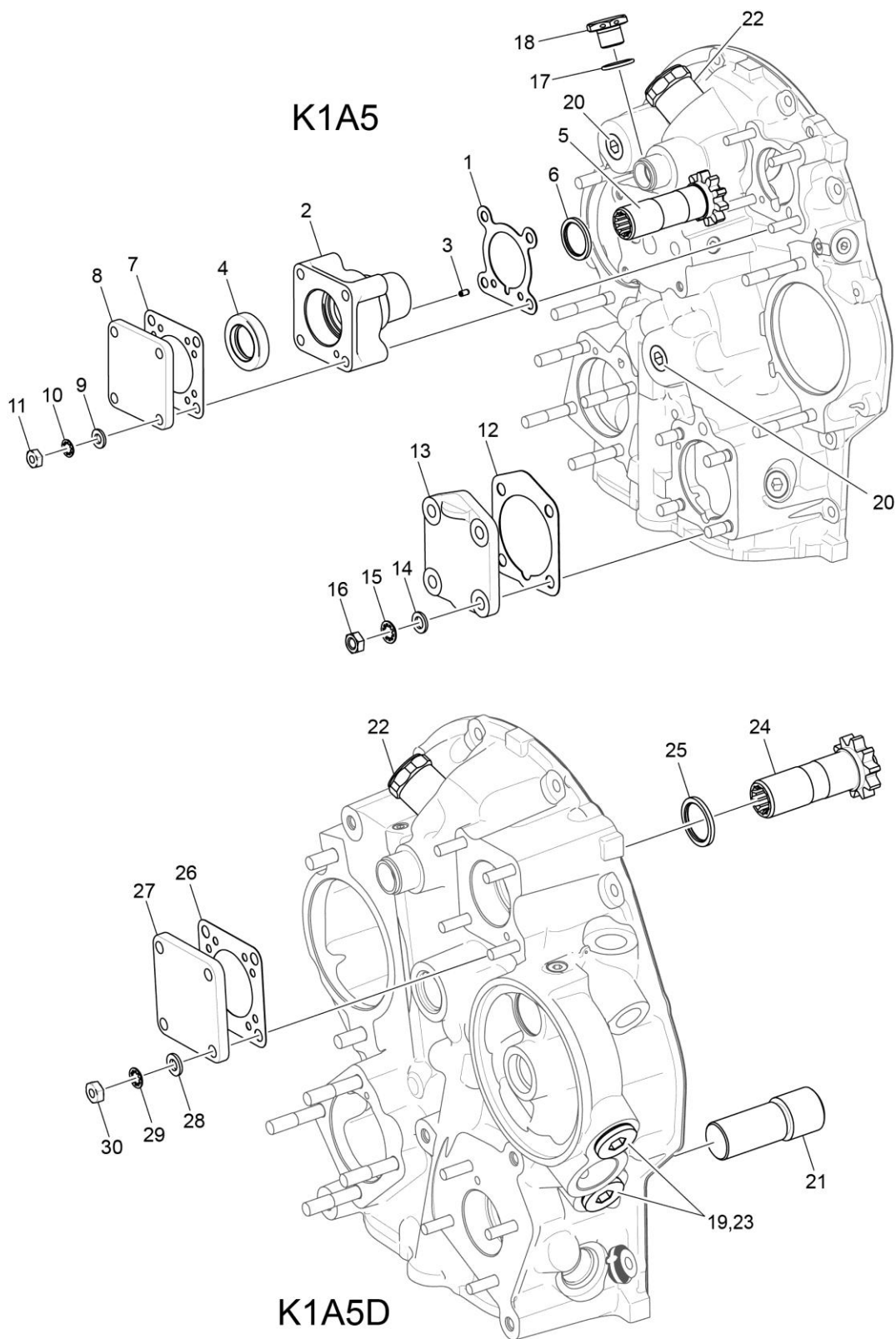


**Fuel Pump Assembly and Attaching Parts**  
**Figure 17**



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

Figure Item	Code	Part Number	Description	Units per Assembly	
				K1A5	K1A5D
1		LW-10799	SPACER, Fuel pump insulating	1	1
2	<b>V</b>	62D26032	FUEL PUMP ( <b>V</b> HET 201F-5003)	1	
	<b>V</b>	62D26035	FUEL PUMP ( <b>V</b> HET 201F-5006)		1
3		STD-35	WASHER, 5/16 plain	4	4
4		STD-475	WASHER, 5/16 lock, internal teeth	4	4
5		STD-1410	NUT, 5/16-18 plain	4	4
<b>V</b> Vendor Prime Manufacturer part					

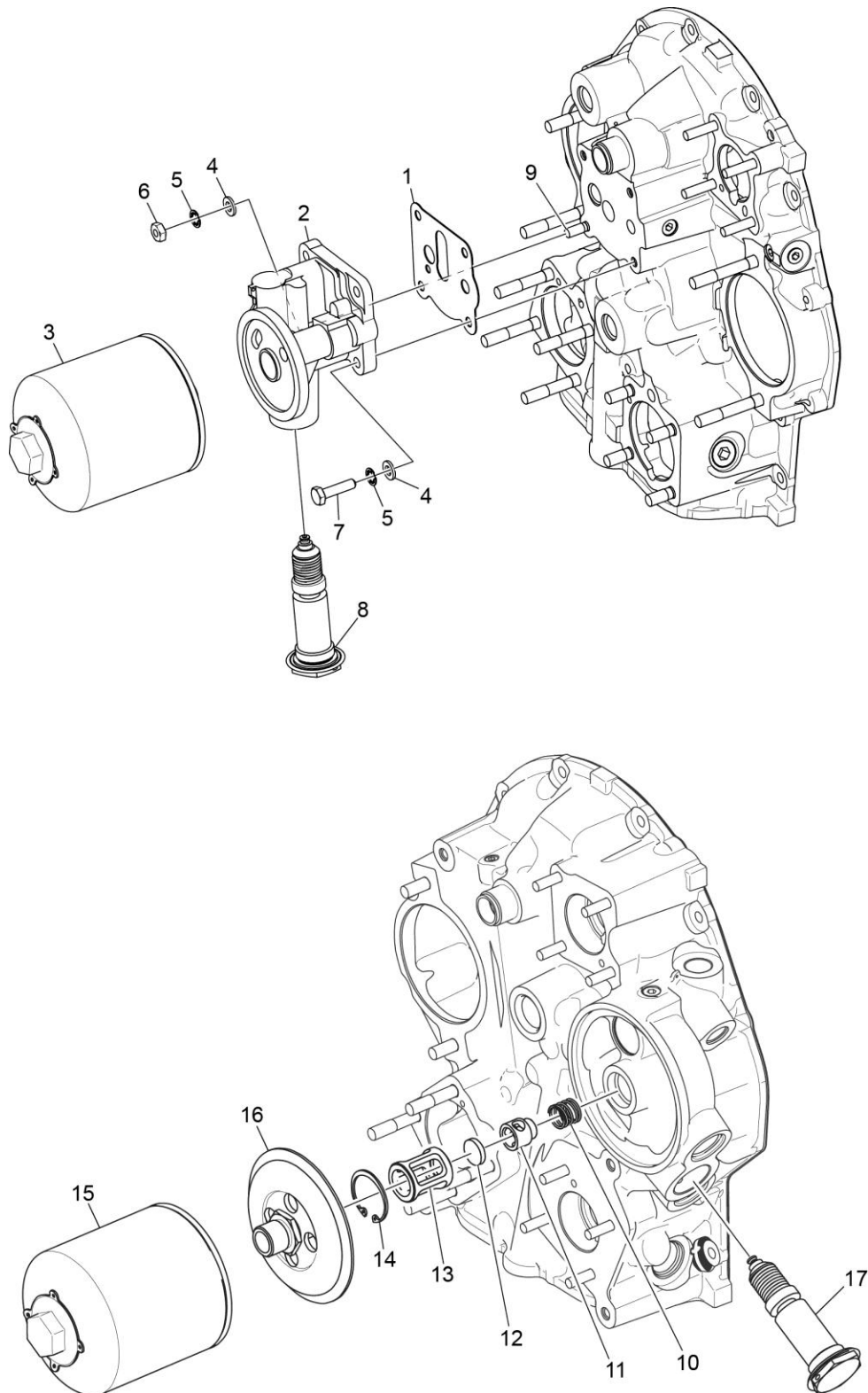


### Vacuum Pump Drive, Oil Cooler and Breather Fittings

#### Figure 18

**FIGURE 18 – VACUUM PUMP DRIVE, OIL COOLER AND BREATHER FITTINGS**

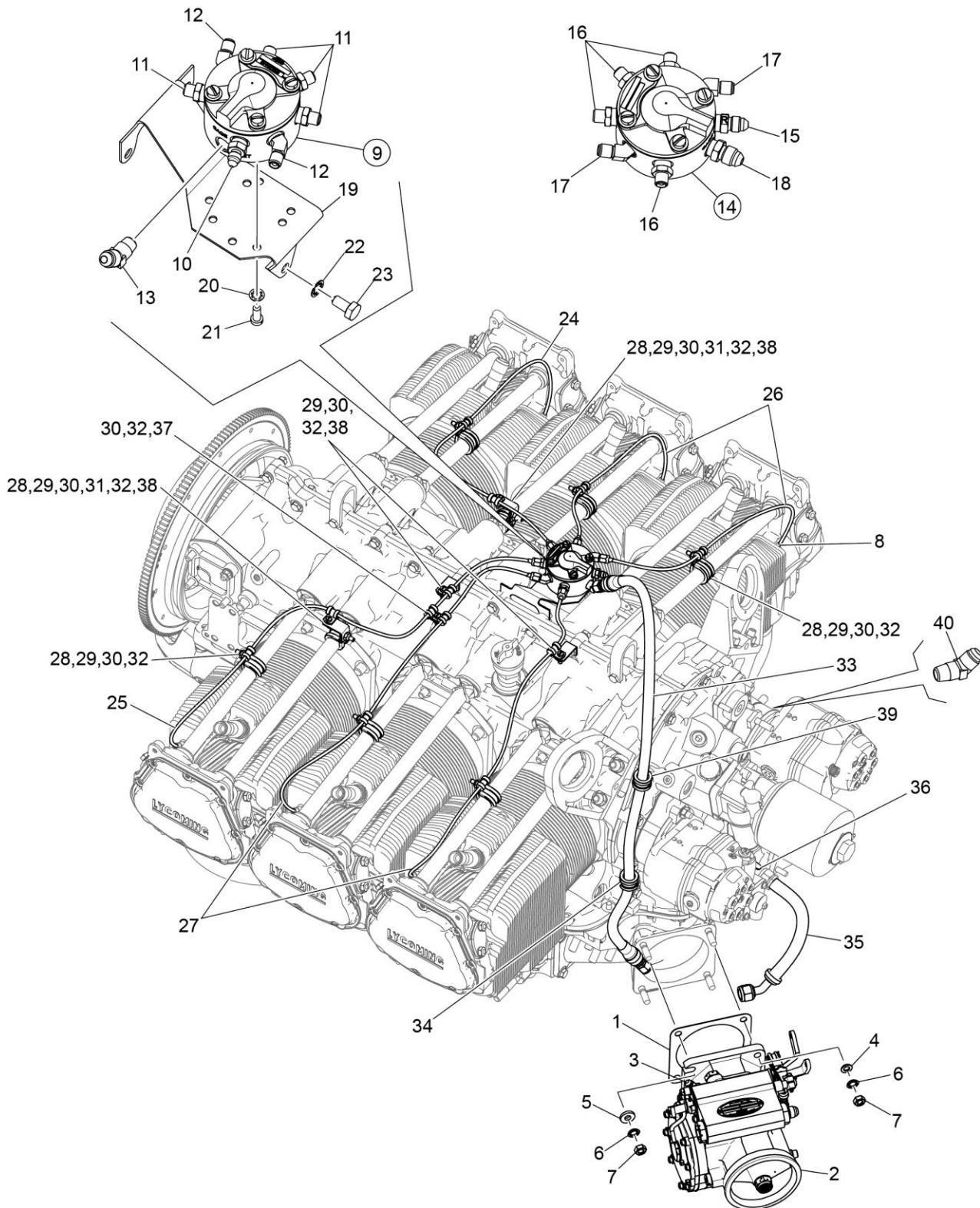
Figure Item	Code	Part Number	Description	Units per Assembly	
				K1A5	K1A5 D
1		61183	GASKET, Accessory adapter	1	
2		67536	ADAPTER ASSEMBLY, Vacuum pump	1	
3		STD-1774	PIN, 1/8 diameter x 1/4 long	1	
4		06A19956	SEAL, Oil, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide	1	1
5		72974	GEAR ASSEMBLY, Vacuum pump driven	1	
6		71596	WASHER, Accessory drive gear	1	
7		8313	GASKET, Vacuum pump	1	1
8		60430	COVER, Vacuum pump	1	1
9		STD-8	WASHER, 1/4 plain	4	4
10		STD-160	WASHER, 1/4 lock, internal teeth	4	4
11		STD-1411	NUT, 1/4-20 plain	4	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	
17		06E19769-0.63	GASKET, Annular, 5/8 I.D.	1	
18		62417	PLUG, Oil cooler by-pass	1	
19		03C21720	PLUG, 7/8-14 thread		2
20		STD-784	PLUG, 3/8-18 NPT allen head	2	
21		LW-10303	PLUG, Vacuum pump drive		1
22		72996	FITTING, Breather	1	1
23		MS29512-10	SEAL, Oil, 0.097 section x 0.706		2
24		LW-10307	GEAR ASSEMBLY, Accessory driven		1
25		71596	WASHER, Accessory drive gear		1
26		8313	GASKET, Vacuum pump		1
27		60430	COVER, Vacuum pump		1
28		STD-8	WASHER, 1/4 plain		4
29		STD-160	WASHER, 1/4 lock, internal teeth		4
30		STD-1411	NUT, 1/4-20 plain		4



**Oil Filter Assembly and Oil Cooler Bypass Valve  
Figure 19**

**FIGURE 19 – OIL FILTER ASSEMBLY AND OIL COOLER BYPASS VALVE**

Figure Item	Code	Part Number	Description	Units per Assembly	
				K1A5	K1A5D
1		06B23862	GASKET, Oil filter adapter	1	
2		77852	BASE ASSEMBLY, Oil filter	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	4	
6		STD-1411	NUT, 1/4-20 plain	1	
7		LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. head	3	
8		53E22144	VALVE ASSEMBLY with gasket, Temp. control, oil cooler bypass	1	
9		25C-10	STUD, 1/4-20 x 1.25 long	1	
10		05S21021	SPRING, Oil filter by-pass valve		1
11		55K21022	SPACER, Oil pressure by-pass valve		1
12		76539	SEAT, Oil relief valve		1
13		LW-10320	SLEEVE, Oil filter bypass valve		1
14		MS16625-1100	RING, Internal retaining, 1.00 dia.		1
15	<b>V</b>	LW-13906	OIL FILTER, Short ( <b>V</b> CH48103-1)		1
16		54E23093	KIT, Converter plate, oil filter		1
17		53E22144	VALVE ASSEMBLY with gasket, Temp. control, oil cooler bypass		1
<b>V</b> Vendor Prime Manufacturer part					



**Fuel Injector, Fuel Lines, Manifold Assembly and Pressure Line**  
**Figure 20**

**FIGURE 20 – FUEL INJECTOR, FUEL LINES, MANIFOLD ASSEMBLY AND PRESSURE LINE**

Figure Item	Code	Part Number	Description	Units per Assembly	
				K1A5	K1A5D
1		73032	GASKET, Air inlet	1	1
2		61M26410	FUEL INJECTOR (2524273-12)	1	1
3		76304	ELBOW, 45°	1	1
4		STD-35	WASHER, 5/16 plain	2	2
5		STD-1727	WASHER, Plain, 3/4 O.D. x 11/32 I.D. x 1/8 thick	2	2
6		STD-475	WASHER, 5/16 lock, internal teeth	4	4
7		STD-1410	NUT, 5/16-18, plain	4	4
8		63C26450	NOZZLE, Injection (2524864-2)	6	6
9		63B26719	MANIFOLD ASSEMBLY, Fuel	1	1
10		02G21446	NIPPLE, 1/8 NPT to 1/4 tube	1	1
11		STD-148	NIPPLE, Union, 1/8 NPT	4	4
12		AN791-2	ELBOW, Union, 45 °, 1/8 tube	2	2
13		MS20823-4	ELBOW, 1/8 NPT to 1/4 fl tube	1	1
14		63B26713	MANIFOLD ASSEMBLY, Fuel	1	
15		02G21382	NIPPLE, Nozzle pressure gage	1	
16		STD-148	NIPPLE, Union, 1/8 NPT	4	
17		AN791-2	ELBOW, Union, 45 °, 1/8 tube	2	
18		AN816-4	NIPPLE, 1/8 NPT to 1/4 tube	1	
19		75009	BRACKET, Fuel manifold	1	1
20		STD-251	WASHER, #10, internal lock	4	4
21		STD-82	SCREW, #10-24 x 1/2 long, fill. head	4	4
22		STD-160	WASHER, 1/4 lock, internal teeth	1	1
23		LW-25-0.50	BOLT, 1/4-20 x 1/2 long, hex head	1	1
24		LW-12098-0-210	TUBE ASSEMBLY, Fuel injector line, cylinder no. 1	1	1
25		LW-12098-0-280	TUBE ASSEMBLY, Fuel injector line, cylinder no. 2	1	1
26		LW-12098-0-140	TUBE ASSEMBLY, Fuel injector line, cylinders no. 3 and 5	2	2

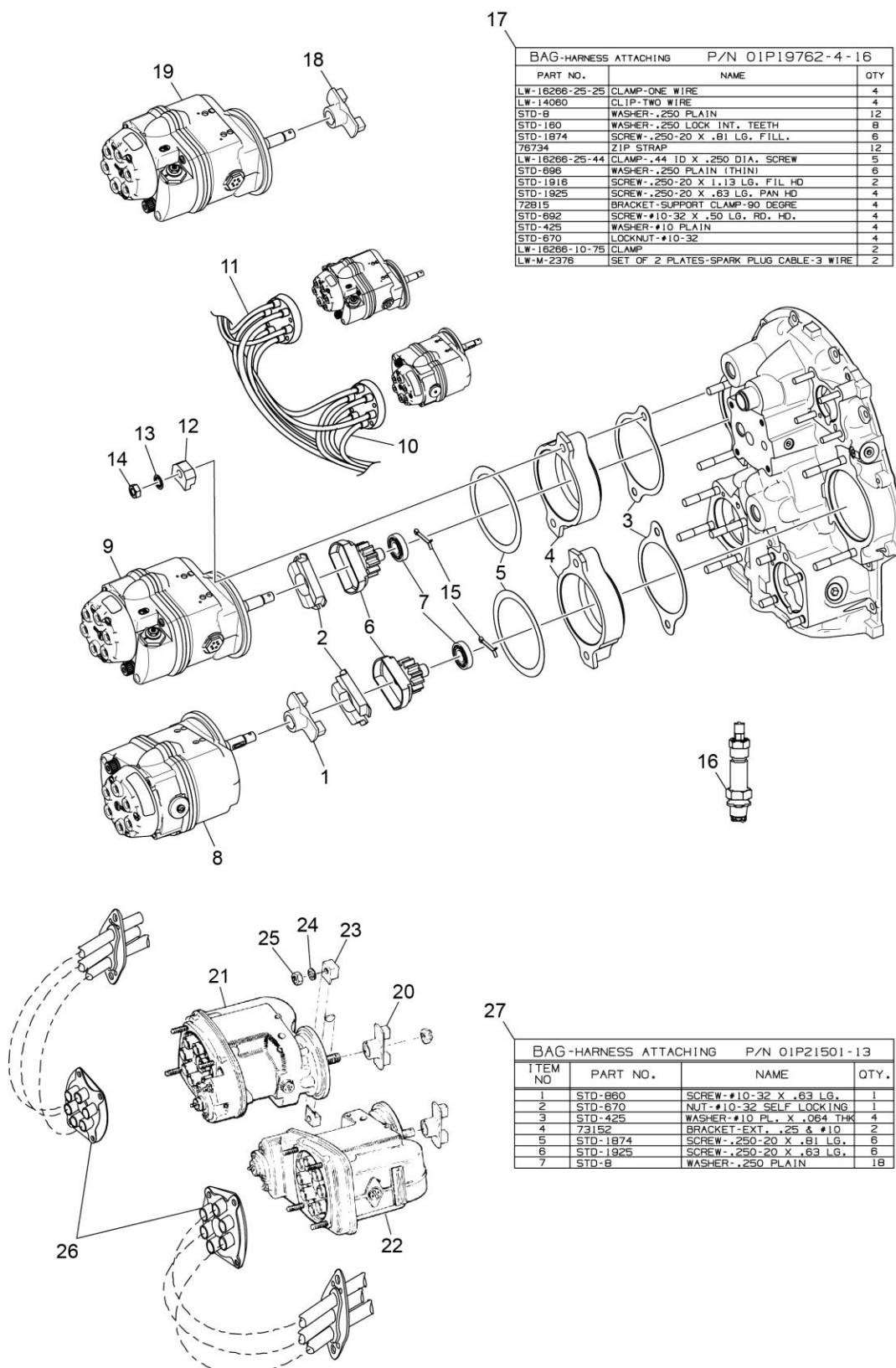
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**FIGURE 20 – FUEL INJECTOR, FUEL LINES, MANIFOLD ASSEMBLY  
AND PRESSURE LINE (CONT)**

Figure Item	Code	Part Number	Description	Units per Assembly	
				K1A5	K1A5D
27		LW-12098-0-210	TUBE ASSEMBLY, Fuel injector line, cylinders no. 4 and 6	2	2
28		LW-16266-10-75	CLAMP	8	8
29		LW-16266-10-13	CLAMP, 1/8 diameter for #10 screw	10	10
30		STD-860	SCREW, No. 10-32 x 5/8 long, fill. head	13	13
31		STD-425	WASHER, #10 plain	2	2
32		STD-670	LOCKNUT, No. 10-32	13	13
33		LW-12798-4S340	HOSE ASSEMBLY, 1/4 hose, straight	1	1
34		LW-16266-25-63	CLAMP, 5/8 I.D. x 1/4 diameter screw		1
35		LW-12799-6S110	HOSE ASSEMBLY, 3/8 hose, straight	1	1
36		MS20822-6	ELBOW, 1/4 NPT to 3/8 fl tube-9	1	1
37		LW-16266-10-13	CLAMP, 1/8 diameter for #10 screw	2	2
38		73136	BRACKET, extension, fuel injection line	4	4
39		LW-16266-25-50	CLAMP	1	
40		MS20823-6	ELBOW, 1/4 NPT to 3/8 fl tube-4	1	1



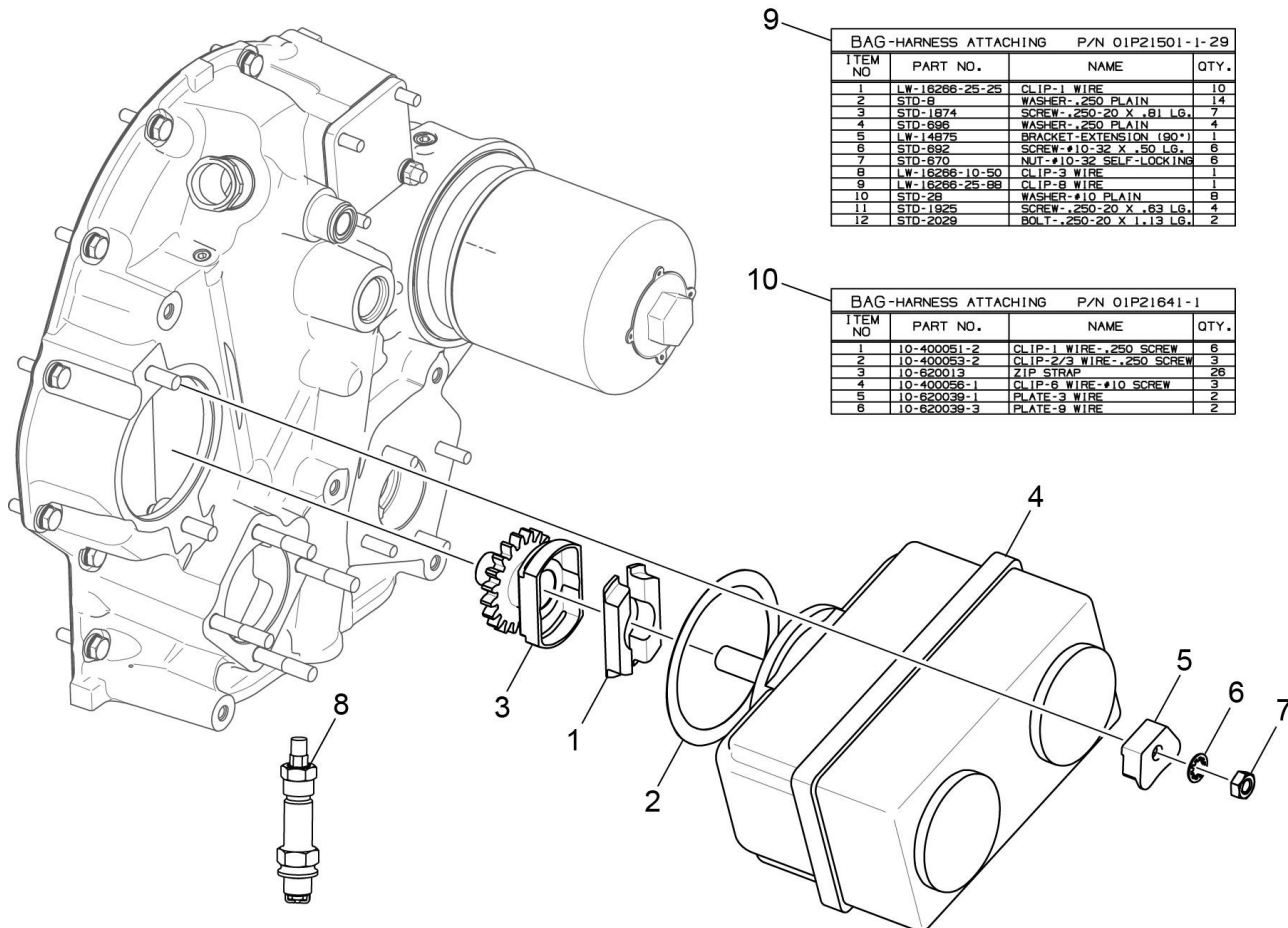
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**Magnetos, Magneto Drives and Spark Plugs**  
**Figure 21**

**FIGURE 21 -MAGNETOS, MAGNETO DRIVES AND SPARK PLUGS**

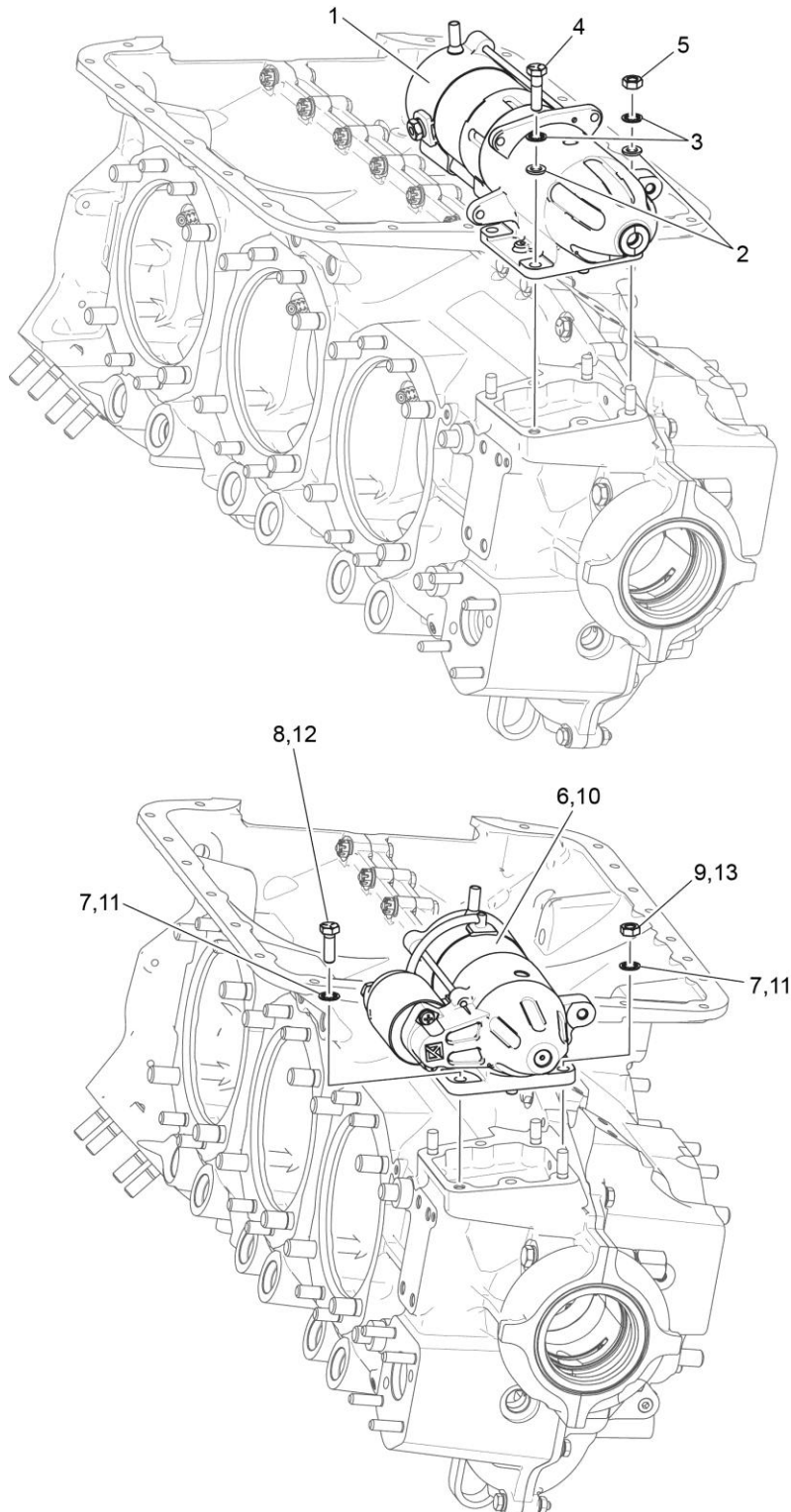
Figure Item	Code	Part Number	Description	Units per Assembly
				K1A5
1		73000	COUPLING, Magneto drive	1
2		68H22624	CUSHION, Magneto drive	4
3		62224	GASKET, Magneto adapter	2
4		LW-12707	ADAPTER, Magneto	2
5		LW-12681	GASKET, Magneto	2
6		LW-19096	GEAR RETAINER ASSEMBLY	2
7		67542	BALL BEARING	2
8	V	66LP-0SCNN	MAGNETO, Plain, right, ( V Model No. 6350)	1
9	V	66LC35SDNN	MAGNETO, Impulse, left, ( V Model No. 6351)	1
10	V	67U20636	HARNESS, Right, ( V Slick M-2960)	1
11	V	67U20637	HARNESS, Left, ( V Slick M-2959)	1
12		66M21195	CLAMP, Magneto	4
13		STD-475	WASHER, 5/16 lock, internal teeth	4
14		STD-1410	NUT, 5/16-18 plain	4
15		MS9245-44	COTTER PIN, 3/32 diameter x 3/4 long	2
16	V	1182-E7	SPARK PLUG, ( V Champion REM38E)	12
	V	1182-F7	SPARK PLUG, ( V Champion RHM38E)	12
17		01P19762-4-16	BAG, Magneto harness attaching	1
18		73013	COUPLING, Magneto drive	1
19	V	66LR37SCNN	MAGNETO, Retard, ( V Model No. 6393)	1
20		73636	COUPLING	1
21	V	LW-349290-1	MAGNETO, Ignition ( V Model No. S6LN-1208)	1
22	V	LW-349310-1	MAGNETO, Ignition ( V Model No. S6LN-1209)	1
23		66M19385	CLAMP, Magneto	4
24		STD-475	WASHER, 5/16 lock, internal teeth	4
25		STD-1410	NUT, 5/16-18 plain	4
26		67Y21895	HARNESS ASSY, ( V TCM 10-821684-40)	1
27		01P21501-13-56	BAG, Magneto harness attaching	1
V Vendor Prime Manufacturer part				



**Magneto, Magneto Drive and Spark Plugs**  
**Figure 21A**

**FIGURE 21A -MAGNETO, MAGNETO DRIVE AND SPARK PLUGS**

Figure Item	Code	Part Number	Description	Units per Assembly
				K1A5D
1		68H22624	CUSHION, Magneto drive	2
2		LW-12681	GASKET, Magneto	1
3		LW-13899	GEAR RETAINER ASSEMBLY	1
4	<b>V</b>	66E21577	MAGNETO, Ignition system ( <b>V</b> Model No. 10-785126-107)	1
5		66M19385	CLAMP, Magneto	2
6		STD-475	WASHER, 5/16 lock, internal teeth	2
7		STD-1410	NUT, 5/16-18 plain	2
8	<b>V</b>	1182-F7	SPARK PLUG, ( <b>V</b> Champion RHM38E)	12
9		01P21501-1-29	BAG, Magneto harness attaching	1
10		01P21641-1	BAG, Magneto harness attaching	1
<b>V</b> Vendor Prime Manufacturer part				



**Starter Motor and Attaching Parts**  
**Figure 22**

**FIGURE 22 - STARTER MOTOR AND ATTACHING PARTS**

Figure Item	Code	Part Number	Description	Units per Assembly	
				K1A5	K1A5D
1	V	31A26041	STARTER, 12V., 12/14 pitch pinion, (Kelly, V ERZ-8011)	1	1
2		STD-35	WASHER, 5/16 plain	4	4
3		STD-475	WASHER, 5/16 lock, internal teeth	4	4
4		LW-31-1.16	BOLT, 5/16-18 x 1-5/32 long, hex.head	1	1
5		STD-1410	NUT, 5/16-18 plain	3	3
6	V	31A22104	STARTER, 12V., (Sky Tec, V 149-12LS)	1	1
7		STD-475	WASHER, 5/16 lock, internal teeth	4	4
8		LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex.head	1	1
9		STD-1410	NUT, 5/16-18 plain	3	3
10	V	31A22100	STARTER, 12V., (Sky Tec, V 149-12PM)	1	
11		STD-475	WASHER, 5/16 lock, internal teeth	4	
12		LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex.head	1	
13		STD-1410	NUT, 5/16-18 plain	3	
<p><b>V</b> Vendor Prime Manufacturer part</p> <p><b>NOTE:</b> 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>73185-1</b>	<b>KIT - SEAL AND GASKET SET</b>	<b>1</b>
06A19956	SEAL, Oil, 7/8 I.D. x 1-1/2 O.D. x 5/16	1
06A23493	SEAL, Shroud tube	12
06B21326	GASKET, Oil sump	1
06B23862	GASKET, Oil filler adapter	1
06E19769-0.50	GASKET, Annular 1/2 I.D.	6
06E19769-0.63	GASKET, Annular 5/8 I.D.	2
06E19769-0.91	GASKET, Annular, 0.906 I.D.	1
06E19769-1.00	GASKET, Annular, 1.00 I.D.	1
06E19769-1.25	GASKET, Annular, 1 1/4 I.D.	1
15H21201	SPRING, Shroud tube	24
1691-C	GASKET, Fuel pump	1
61173	GASKET, Oil pressure housing	1
61183	GASKET, Accessory adapter	1
62224	GASKET, Magneto adapter	4
66732	GASKET, Valve rocker shaft cover	12
67193	GASKET, Rocker box cover	6
68315	GASKET, Accessory drive adapter	1
69164	GASKET, Fuel pump adapter	1
69551	GASKET, Accessory drive adapter	1
70455	GASKET, 25/32 I.D. x 1-1/8 O.D. x 1/32 thick	1
70457	GASKET, Oil filler extension	1
71450	GASKET, Rocker box cover	6
71481	RING, Oil seal, 3/32 diameter x 4-27/32 I.D.	6
71667	LOCKPLATE, 1/4 bolt x 1.75	2
71973	GASKET, 2 bolt flange, 1-13/16 I.D.	6
72053	GASKET, Governor	1
72075	SEAL, Oil, 29/64 I.D. x 3/32 section	8
72078	LOCKPLATE, 5/16 bolt x 1.33	2
72091	RING, Oil seal, 0.36 I.D. x 7/64 diameter	2
72210	GASKET, Air throttle housing	1
72312	RING, Oil seal, 1.00 x 1.30	1
72711	RING, Seal, intake pipes	6
73032	GASKET, Air inlet housing	1
73383	LOCKPLATE, 5/16 bolt x 1.00	2
73818	GASKET, Accessory housing	1
74065	RING, Oil level gage seal	1
74305	SEAL	1



PART NO.	PART NAME	Qty.
75118	GASKET, Exhaust flange	12
75233	O-RING SEAL, Rocker shaft cover	24
76510	GASKET, Oil cooler bypass valve	1
76940	SEAL, Crankshaft oil	1
8313	GASKET, Vacuum pump	2
LW-12681	GASKET, Magneto	2
LW-13792	SEAL, Crankshaft oil	1
LW-14260	SEAL, Tachometer drive, oil	1
LW-15628	SEAL, Crankshaft oil	1
LW-18638	LOCKPLATE, Crankshaft gear	1
LW-18661	SEAL, Shroud tube	24
MS29512-06	O-RING, 15/32 I.D. x 5/64 section	1
MS29512-08	O-RING, 41/64 I.D. x 0.087 section	1
STD-1737	RING, Internal retaining (9/16)	1

**CYLINDER, PISTON AND RING ASSEMBLY**

<b>PART NO.</b>	<b>PART NAME</b>	<b>Qty.</b>
<b>05K21120</b>	<b>KIT - CYLINDER, PISTON AND RING ASSEMBLY</b>	<b>1</b>
LW-12993	CYLINDER ASSEMBLY	1
72343	STABILIZER, Cylinder head fins, 15 teeth	1
72344	STABILIZER, Cylinder head fins, 26 teeth	1
17A23937	VALVE, Intake	1
17B23935	VALVE, Exhaust (rotator type)	1
LW-13321	SEAT, Valve spring, lower intake	1
LW-13322	SEAT, Valve spring, lower exhaust	1
LW-11796	SPRING, Valve, outer	2
LW-11797	SPRING, Valve, inner	2
69532	SEAT, Valve spring, upper intake	1
LW-16475	SEAT, Valve spring, upper exhaust (rotator type)	1
72050	KEY, Valve intake	2
17C21191	KEY, Valve exhaust (rotator type)	2
MS20523-6D	ELBOW, 45 degree, 3/8 flared tube	1
62388	CAP, Valve stem	1
17C19386	CAP, Valve stem, exhaust (rotator type)	1
1102	PLUG, 1/8-27 NPT, allen head	2
71481	RING, Oil seal, 3/32 diameter x 4-27/32 I.D.	1
14D23908	PISTON, 8.70:1	1
74241	RING, Piston, compression	2
14H21950	RING, Piston, oil regulating (expander type)	1
LW-14078	PIN, Piston	1
72198	PLUG, Piston pin	2
66732	GASKET, Valve rocker shaft cover	2
67193	GASKET, Rocker box cover	1
LW-18661	SEAL, Shroud tube	4
SSP-299	TAG, Use of piston pin plugs	1
77611	GASKET, Exhaust flange	1
71973	GASKET, 2 bolt flange, 1-13/16 I.D.	1
06A23493	SEAL, Shroud tube	2

**CRANKSHAFT AND COUNTERWEIGHT ASSEMBLY KIT**

PART NO.	PART NAME	Qty.
<b>05K47777</b>	<b>KIT - CRANKSHAFT AND COUNTERWEIGHT ASSEMBLY</b>	<b>1</b>
13F47727	CRANKSHAFT ASSEMBLY	1
LW-19210	COUNTERWEIGHT ASSEMBLY	2
73648	ROLLER, Dynamic counterweight, 5.1 order	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**

PART NO.	PART NAME	Qty.
<b>11F24020-S1-S</b>	<b>KIT - CRANKCASE ASSEMBLY AND THRU-STUD</b>	<b>1</b>
11F24020-S1	CRANKCASE ASSEMBLY	1
76220	STUD, 1/2-20 x 10-45/64 long	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, Allen head	7
AN565B1032H4	SETSCREW, No. 10-32 x 1/4 long	1
AN565B1032H5	SETSCREW, No. 10-32 x 5/16 long	1
1102	PLUG, 1/8-27 NPT, Allen head	4

**CRANKCASE ASSEMBLY AND THRU-STUD KITS**

PART NO.	PART NAME	Qty.
<b>11F24120-S1-S</b>	<b>KIT - CRANKCASE ASSEMBLY AND THRU-STUD</b>	<b>1</b>
11F24120-S1	CRANKCASE ASSEMBLY	1
76220	STUD, 1/2-20 x 10-45/64 long	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, Allen head	7
AN565B1032H4	SETSCREW, No. 10-32 x 1/4 long	1
AN565B1032H5	SETSCREW, No. 10-32 x 5/16 long	1
1102	PLUG, 1/8-27 NPT, Allen head	4

**NUMERICAL INDEX**

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
AN565B1032H5	SET SCREW	5	LW-11797	SPRING	21
AN6-16	BOLT	1	LW-11797	SPRING	25
AN6-17	BOLT	1	LW-11956	GUIDE	19
AN6-34A	BOLT	15	LW-11958	GUIDE	19
AN791-2	ELBOW	49	LW-12098-0-140	TUBE ASSEMBLY	49
LRT23381	BODY ASSEMBLY	9	LW-12098-0-210	TUBE ASSEMBLY	49
LW-25-0.50	BOLT	49	LW-12098-0-210	TUBE ASSEMBLY	49
LW-25-0.63	BOLT	13	LW-12098-0-280	TUBE ASSEMBLY	49
LW-25-0.81	BOLT	31	LW-12186	NUT	17
LW-25-0.81	BOLT	35	LW-12191	PIPE	31
LW-25-0.94	BOLT	41	LW-12192	PIPE	31
LW-25-1.00	BOLT	35	LW-12193	PIPE	31
LW-25-1.00	BOLT	35	LW-12194	PIPE	31
LW-25-1.00	BOLT	47	LW-12195	PIPE	31
LW-25-1.13	BOLT	15	LW-12596	BOLT	17
LW-25-1.13	BOLT	35	LW-12681	GASKET	53
LW-25-1.13	BOLT	41	LW-12688	SEAT	19
LW-25-1.25	BOLT	31	LW-12707	ADAPTER	53
LW-25-1.44	BOLT	41	LW-12798-4S340	HOSE ASSEMBLY	50
LW-25-1.50	BOLT	15	LW-12879-6S120	HOSE ASSEMBLY	50
LW-25-1.75	BOLT	15	LW-12993	CYLD & HEAD ASSY	19
LW-25-2.00	BOLT	35	LW-13215	OIL FILTER	47
LW-25-H0.63	BOLT	35	LW-13321	SEAT	21
LW-25S1.50	BOLT	15	LW-13321	SEAT	25
LW-31-0.94	BOLT	1	LW-13322	SEAT	21
LW-31-1.16	BOLT	15	LW-13322	SEAT	25
LW-31-1.16	BOLT	55	LW-13795	SHAFT	13
LW-31-2.75	BOLT	15	LW-13896	PLUG	5
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