

IO-540-K1K5 Illustrated Parts Catalog

September 2013

*******NOTICE*******

This parts catalog, PC-615-K1K5 (model IO-540-K1K5) supersedes the previous IO-540-K1K5 model engine which is covered in PC-615-2.

PC-615-K1K5

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652 Oliver Street
Williamsport, PA 17701

IO-540-K1K5 Illustrated Parts Catalog

Lycoming Part Number: PC-615-K1K5

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This parts catalog, PC-615-K1K5 (model IO-540-K1K5) supersedes the previous IO-540-K1K5 model engine which is covered in PC-615-2.

NOTE: Service Documents override parts information in this document.

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LIST OF EFFECTIVE PAGES

<u>Ch-Se-Su</u>	<u>Pages</u>	<u>Date</u>
24-20.....	0—3	09/13
72-10.....	4—5	09/13
72-20.....	6-15.....	09/13
72-30.....	16—25	09/13
72-50.....	26—32	09/13

<u>Ch-Se-Su</u>	<u>Pages</u>	<u>Date</u>
72-60	34—43	09/13
73-10	44—46	09/13
74-20	48—49	09/13
80-10	50—51	09/13

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TABLE OF CONTENTS

<u>Subject</u>	<u>Ch-Se-Su</u>	<u>Page</u>	<u>Date</u>
Frontal			
Record of Revisions	iii	09/13	
List of Effective Pages.....	v	09/13	
Table of Contents	vii	09/13	
Introduction	ix	09/13	
Abbreviations and Acronyms	xiii	09/13	
Oversize and Undersize Part Listing	xv	09/13	
Electrical Power	24-00		
AC Generation	24-20		
1. Alternator-Mounting-and-Attaching-Parts.....	0-1	09/13	
2. Alternator-Assemblies-and-Belt	2-3	09/13	
Reciprocating Engine	72-00		
Front Section	72-10		
1. Propeller-Governor-Drive-Assembly	4-5	09/13	
Power Section	72-20		
1. Crankcase-Assembly	6-7	09/13	
2. Crankcase-Related-Parts	8-9	09/13	
3. Crankshaft,-Counterweight,-Camshaft-and-Related-Parts	10-11	09/13	
4. Crankshaft and Fuel Pump Idler Gears.....	12-13	09/13	
5. Crankcase-Attaching-Parts.....	14-15	09/13	
Cylinder Section	72-30		
1. Connecting-Rods,-Pistons-and-Ring-Assemblies	16-17	09/13	
2. Cylinder-Assembly.....	18-19	09/13	
3. Valve-Assembly-and-Related-Parts	20-26	09/13	
4. Cylinder-Related-Parts	28-29	09/13	
Lubrication System	72-50		
1. Intake Pipes and Air Inlet Housing.....	30-31	09/13	
2. Oil-Level-Gage-and-Engine-Mounting-Brackets	32-33	09/13	
3. Oil-Sump-and-Induction-Housing-Assembly	34-36	09/13	
Accessory Drives	72-60		
1. Accessory-Housing-Assembly	38-39	09/13	
2. Oil-Pump-Assembly-and-Accessory-Housing-Attaching Parts	40-41	09/13	

<u>Subject</u>	<u>Ch-Se-Su</u>	<u>Page</u>	<u>Date</u>
Accessory Drives CONT	72-60		
3. Fuel-Pump-Assembly-and-Attaching-Parts		42-43.....	09/13
4. Vacuum-Pump-Drive-and-Oil-Cooler.....		44-45.....	09/13
5. Oil-Filter-Assembly-and-Oil-Cooler-Bypass-Valve		46-47	09/13
Engine and Fuel Control	73-00		
Fuel Distribution	73-10		
1. Fuel-Injector,-Fuel Lines,-Manifold-Assembly-and-Pressure-Line		48-50.....	09/13
Ignition Distribution System	74-00		
Distribution	74-20		
1.Magnetos,-Magneto-Drives-and-Spark-Plugs.....		52-53.....	09/13
Starting	80-00		
Cranking	80-10		
1. Starter-Motor-and-Attaching-Parts		54-55.....	09/13
Service Kit Section		56-59.....	09/13
Numerical Index		60-65.....	09/13

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-K1KA 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.

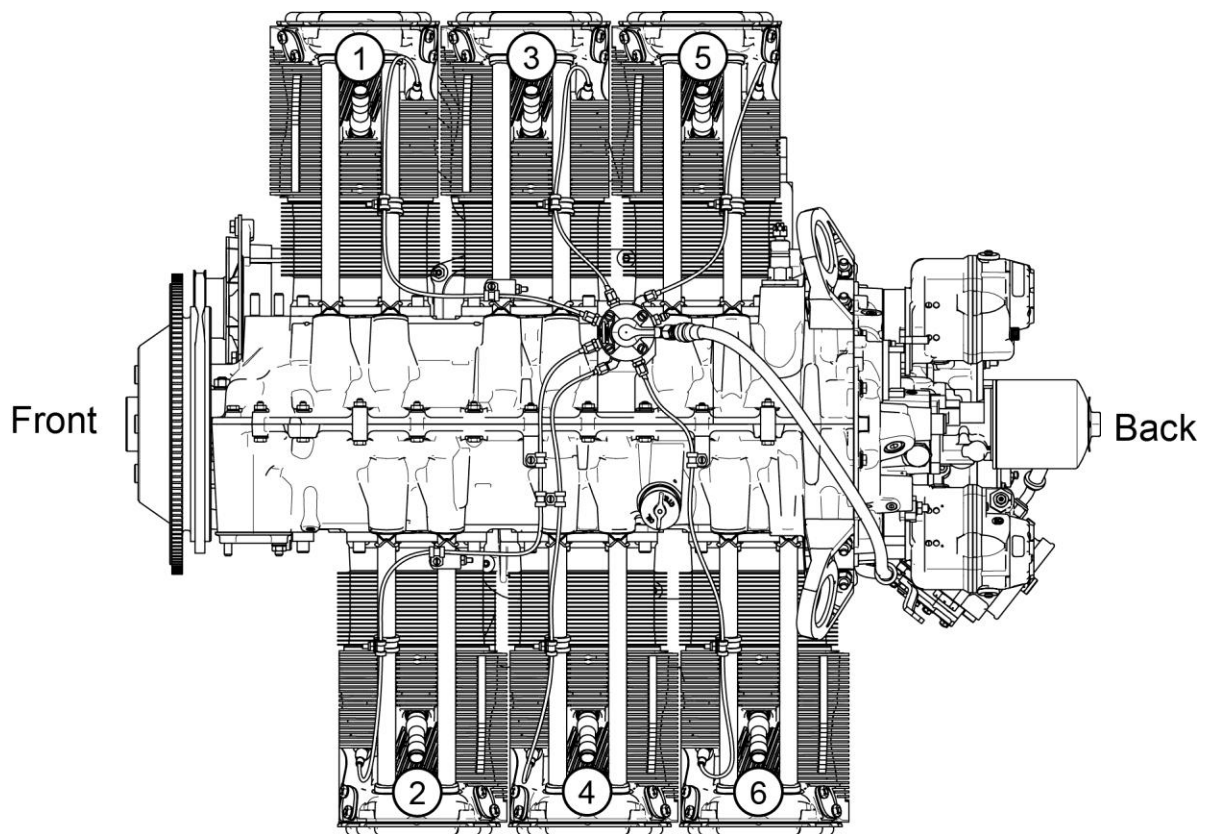
Any reference in this document to the suppliers/part manufacturer’s product, by name, trademark, part number or other description is solely for the purpose of identification and does not indicate or infer that Lycoming accepts responsibility for quality control and/or airworthiness of parts, which do 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.

Call **1-800-258-3279 - U.S. and Canada toll free**
1-570-323-6181 - International

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Monday – Friday.

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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		X						
66796	INSERT				X								
69796	DOWEL			X									
16T19468	SEAT				X		X	X					
71903-A **	BUSHING												
72155-S	BUSHING			X	X	X							
75838 *	GUIDE			X	X		X						
73810 ♦	BUSHING			X	X	X							
14H21950	RING						X						
74241	RING				X								
75656-S	BUSHING			X	X	X							
75657-S	BUSHING			X	X	X							
LW-15628†	SEAL									X			
LW-12688	SEAT				X		X	X					
18E23886	BEARING										X	X	X
18B23885	BEARING										X	X	X
LW-15628†	SEAL												

NOTE

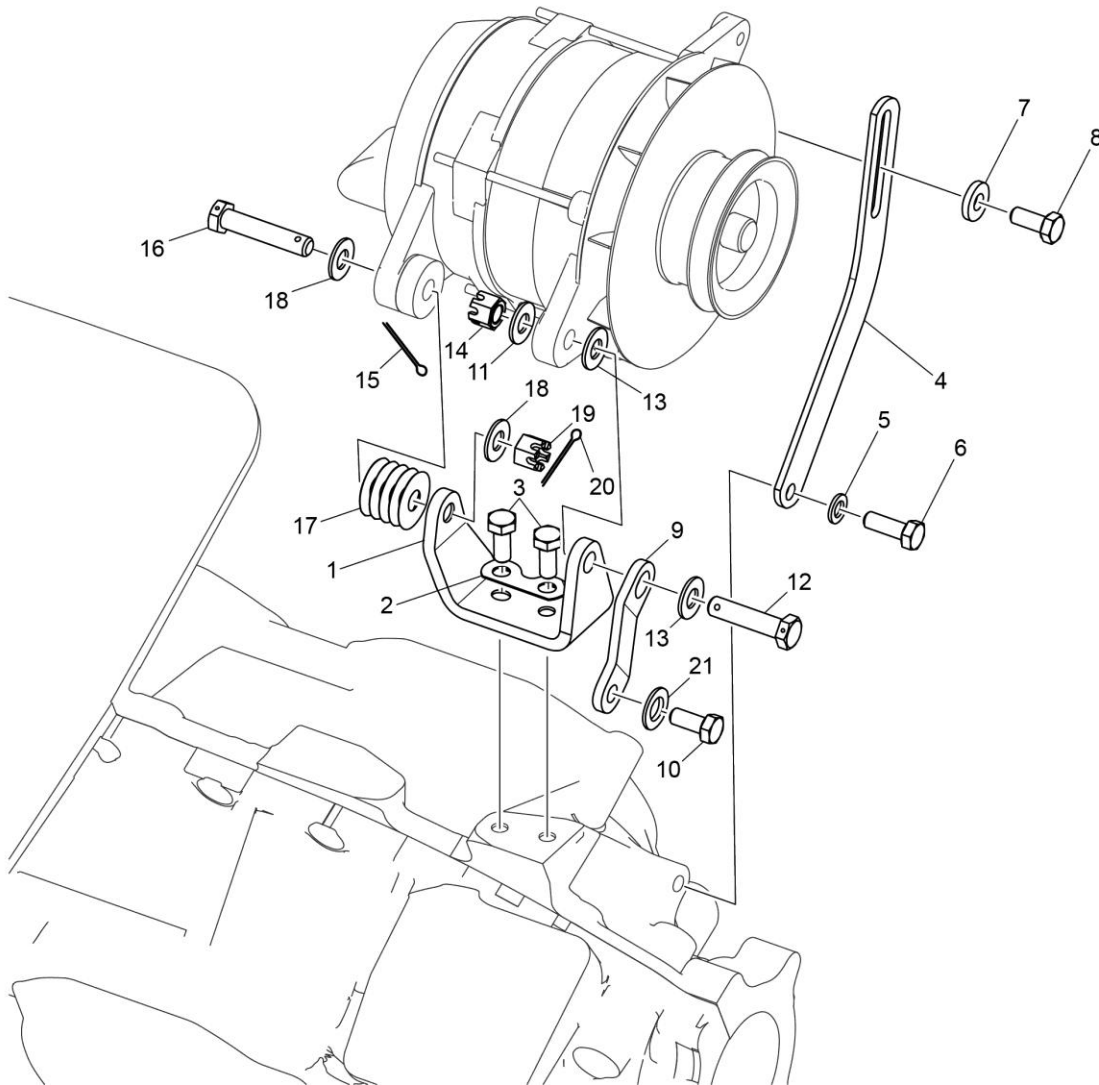
When ordering oversize and undersize parts, be sure to specify the required oversize and undersize dimension along with the proper part number. For example, to order bearing P/N LW-13885 bearing in .003 in. undersize, order P/N LW-13885-M03. Undersize code letter is "M" while oversize code letter is "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 10 items 4 and 5 for valve guides

** See latest revision of Service Instruction No. 1143

♦ - See latest revision of Service Instruction No. 1142

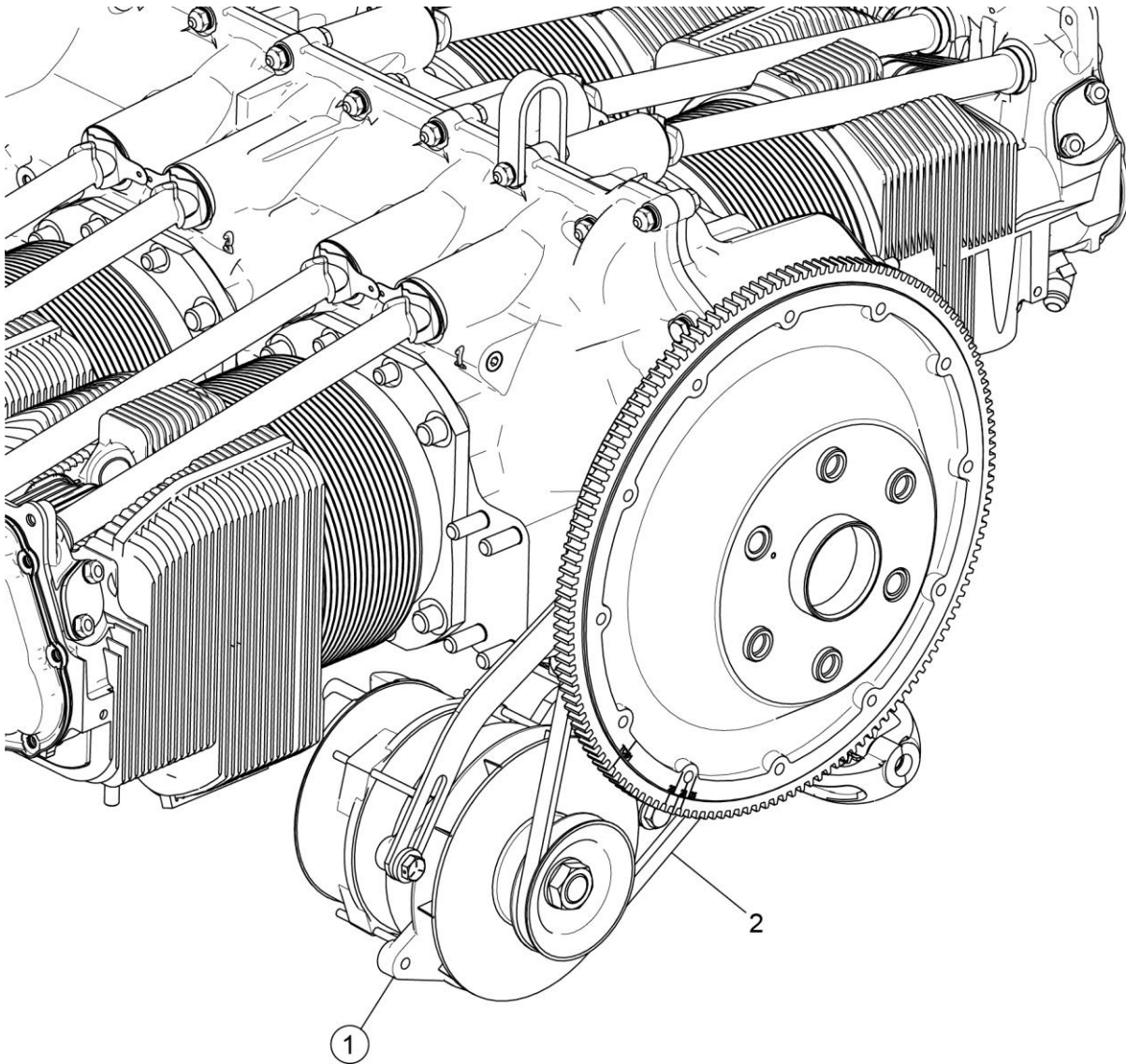
† - See latest revision of Service Instruction No. 1324



Alternator Mounting and Attaching Parts Figure 1

FIGURE 1 - ALTERNATOR MOUNTING AND ATTACHING PARTS

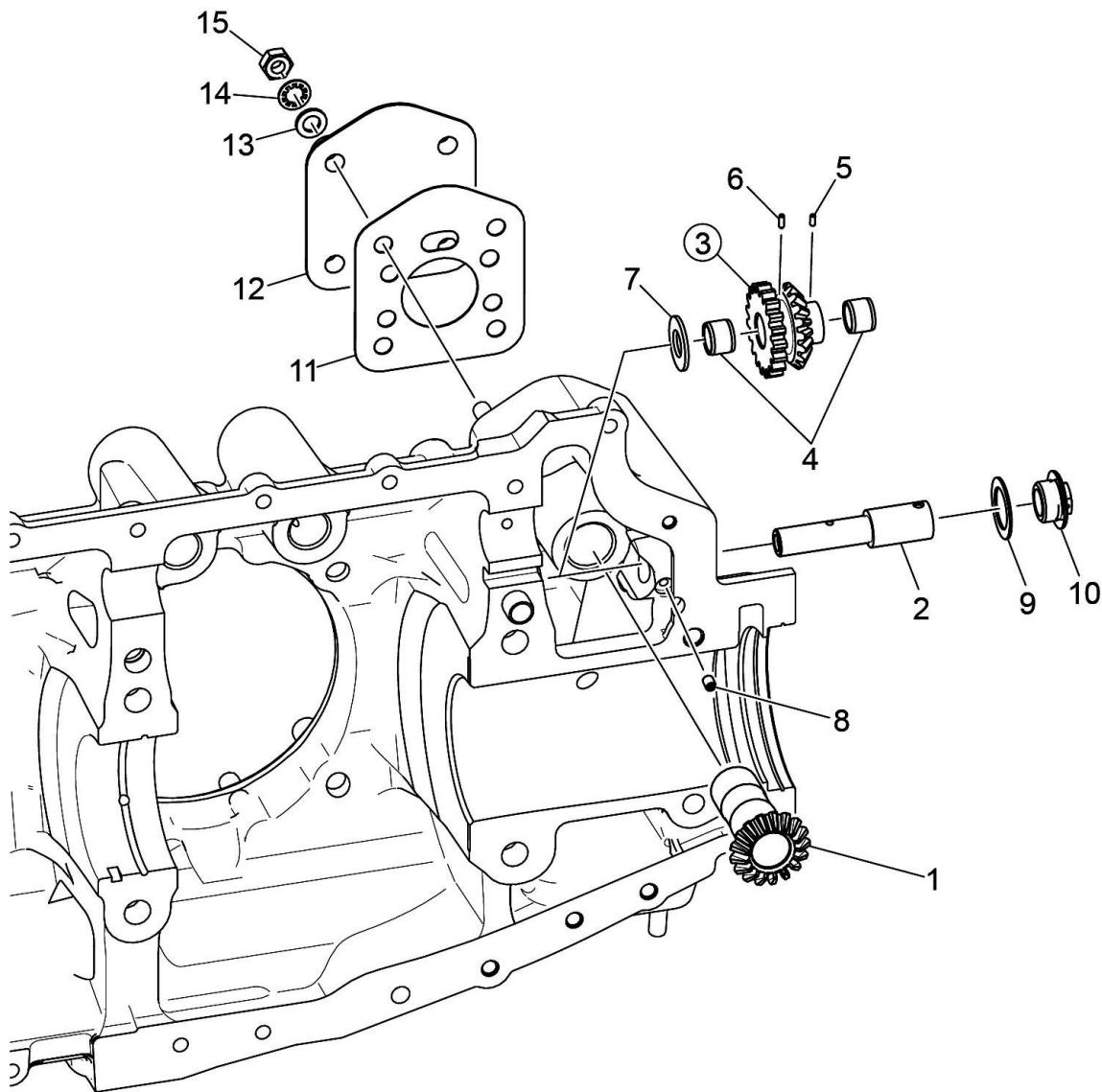
	Code	Part Number	Description	Units per
1		07A19474	BRACKET, Alternator	1
2		73383	LOCKPLATE, 5/16 bolt x 1.00 spacing	1
3		LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex. head	2
4		75380	LINK, Alternator adjusting	1
5		STD-35	WASHER, 5/16 plain	1
6		LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. head, drilled	1
7		STD-1727	WASHER, Plain, 3/4 O.D. x 11/32 I.D. x 1/8 thick	1
8		LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. head, drilled	1
9		07F23268	STRUT, Alternator support	1
10		LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. head, drilled	1
11		STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	1
12		AN6-17	BOLT, 3/8-24 x 1-37/64 long, hex. head, drilled end	1
13		STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	3
14		STD-872	NUT, 3/8-24 slotted	1
15		STD-713	COTTER PIN, 3/32 diameter x 3/4 long	1
16		AN6-16	BOLT, 3/8-24 x 1-53/64 long, hex. head, drilled end	1
17		76534	SHIM, 1-1/8 O.D. x 13/32 I.D. x .005 thick	5
18		STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	3
19		STD-872	NUT, 3/8-24 slotted	1
20		STD-713	COTTER PIN, 3/32 diameter x 3/4 long	1
21		STD-2197	WASHER, 13/16 O.D. x 21/64 I.D. x .064 thick	1



**Alternator Assemblies and Belt
Figure 2**

FIGURE 2 – ALTERNATOR ASSEMBLIES AND BELT

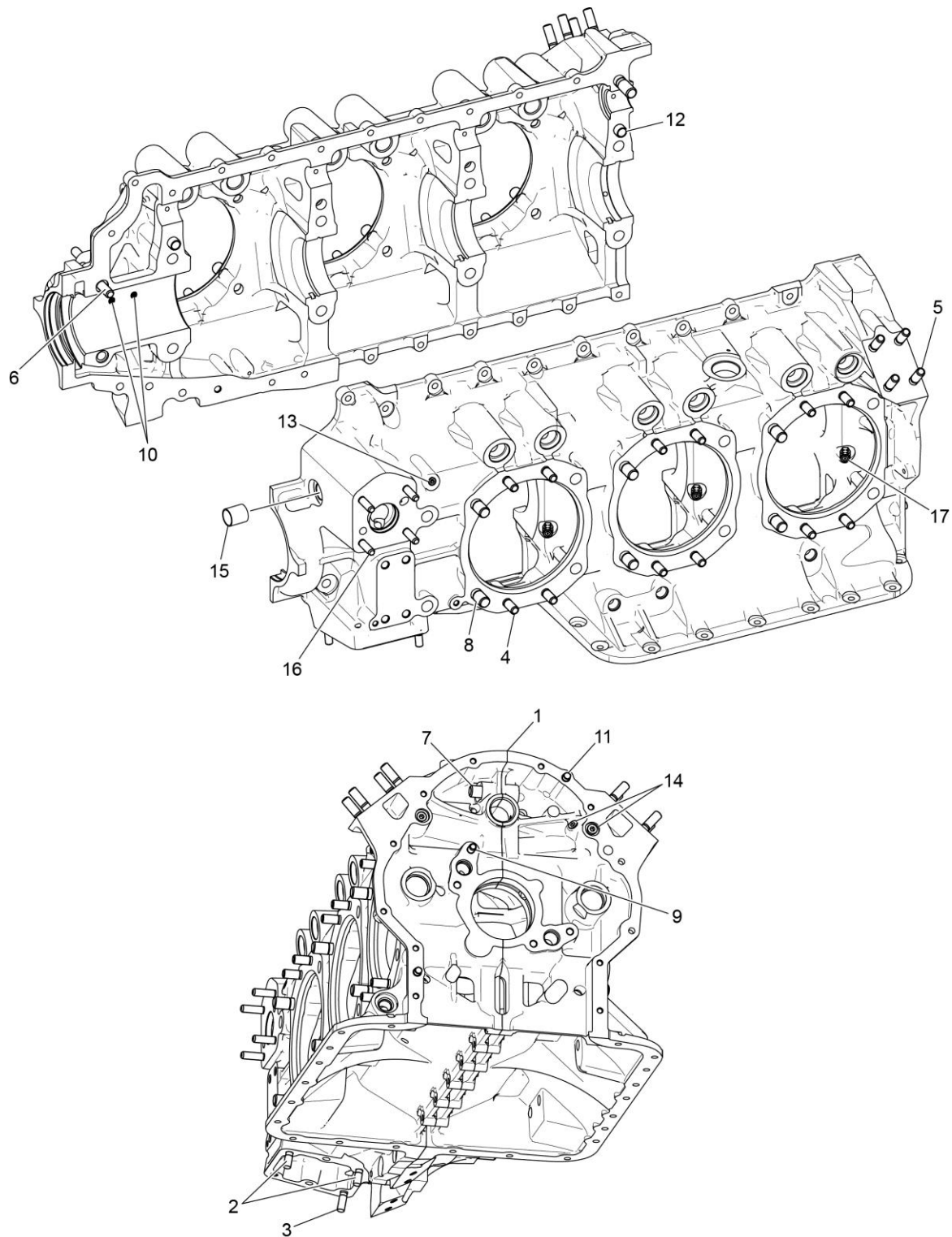
Figure Item	Code	Part Number	Description	Units per Assembly
1		32C19553	ALTERNATOR ASSEMBLY. 24V..70 Amp.	1
		LW-14326	ALTERNATOR, 24V.,70Amp. (ALU-8521-LS)	1
		32C19570	ALTERNATOR ASSEMBLY, 24V.,70 Amp.	1
		LW-14339	ALTERNATOR, 24V.,70Amp. (ALU-8521-LS-1)	1
		36B19484	PULLEY, Alternator	1
2		37A19773-376	BELT, Alternator drive, 3/8 wide	1



Propeller Governor Drive Assembly
Figure 3

FIGURE 3 - PROPELLER GOVERNOR DRIVE ASSEMBLY

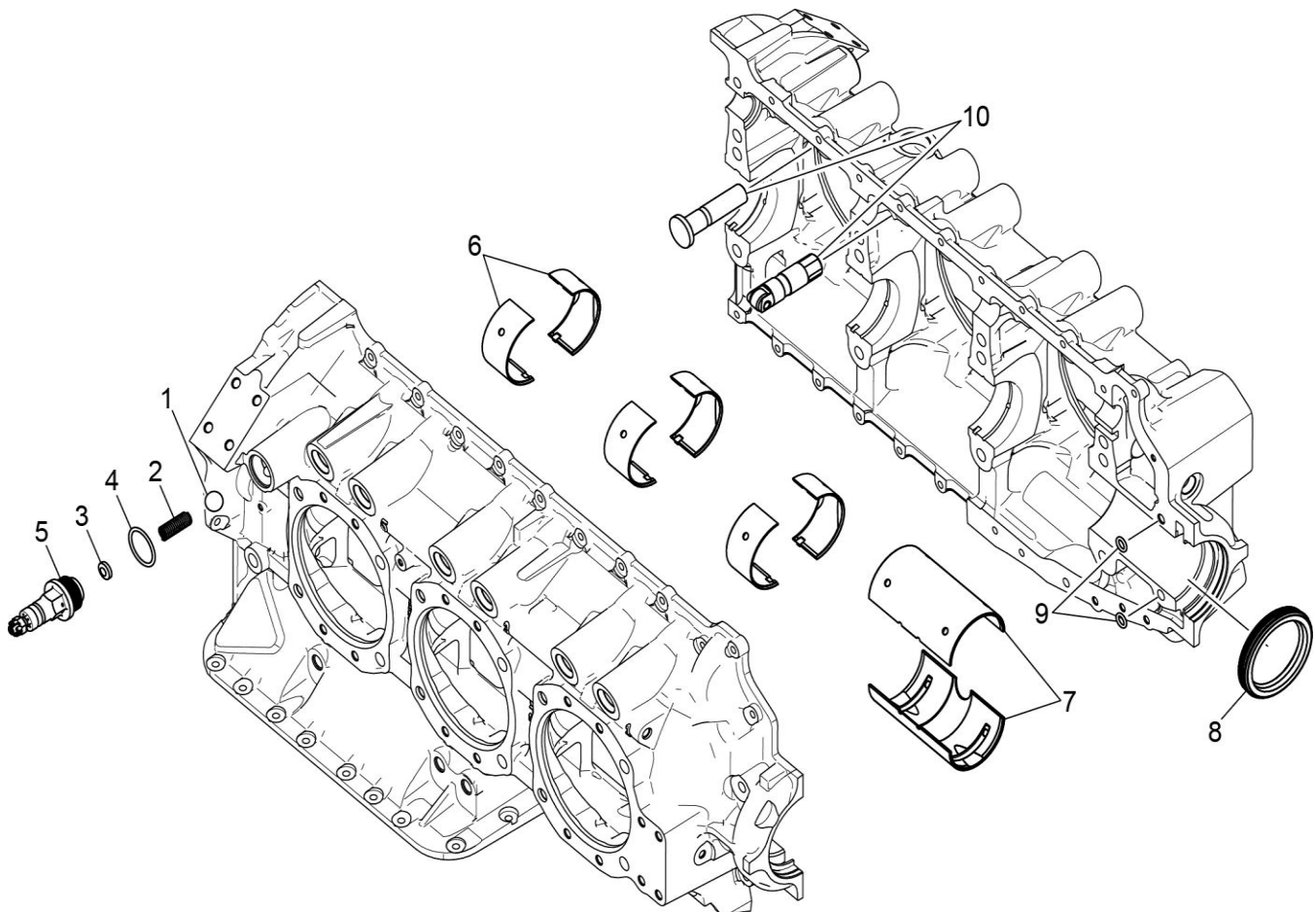
Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-10442	GEAR, Propeller governor driven	1
2		LW-14021	SHAFT, Propeller governor idler gear	1
3		LW-10541	GEAR ASSEMBLY, Propeller governor idler	1
4		77872	BUSHING, Propeller governor idler gear	2
5		STD-19	DOWEL, 3/32 diameter x 7/32 long	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 4

FIGURE 4 - CRANKCASE ASSEMBLY

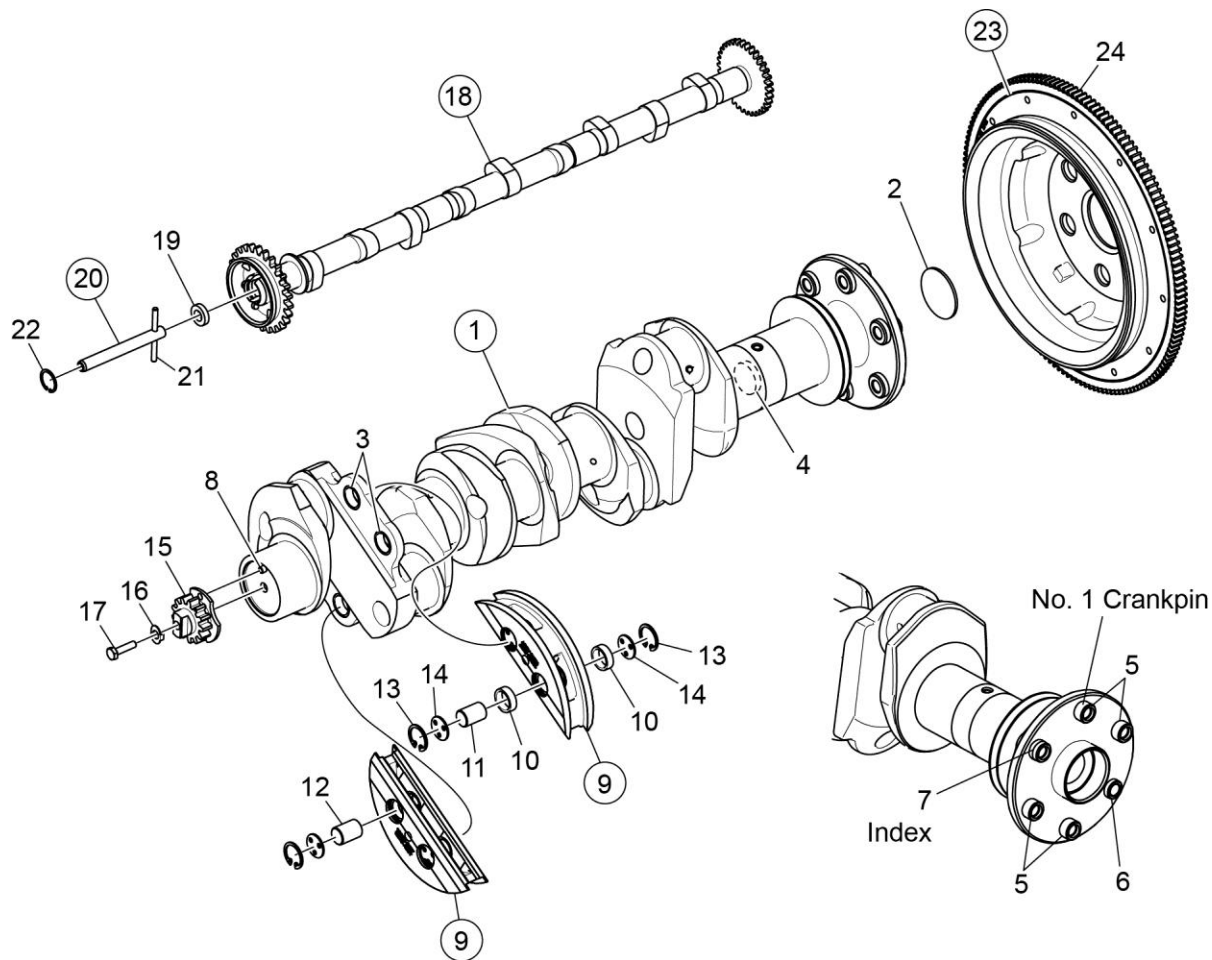
Figure Item	Code	Part Number	Description	Units per Assembly
1		11F24020-S1-S	KIT, CRANKCASE ASSEMBLY	1
		11F24020-S1	CRANKCASE ASSEMBLY	1
		11F24120-S1-S	KIT, CRANKCASE ASSEMBLY-ROLLER LIFTER	1
		11F24120-S1	CRANKCASE ASSEMBLY-ROLLER LIFTER	1
2		31C-12	STUD, 5/16-18 x 1-1/2 long	2
3		31C-13	STUD, 5/16-18 x 1-5/8 long	1
4		38-13	STUD, 3/8-16 x 1-5/8 long	24
5		38-16	STUD, 3/8-16 x 2.00 long	8
6		38-22	STUD, 3/8-16 x 2-3/4 long	1
7		38D-17	STUD, 3/8-16 x 2-1/8 long, drilled	1
8		50-15	STUD, 1/2-13 x 1-7/8 long	12
9		01A23354	STUD, 5/16-18 x 1.00 long, drilled	1
10		69796	DOWEL, Crankshaft, front 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		STD-1339	PLUG, 1/16-27 NPT, allen head	1
14		1102	PLUG, 1/8 pipe, allen head	4
15		72158	BUSHING, Governor drive idler shaft	1
16		31C-14	STUD, 5/16-18 x 1-3/4 long	4
17		73772	NOZZLE ASSEMBLY, Piston cooling	6



Crankcase Related Parts
Figure 5

FIGURE 5 - CRANKCASE RELATED PARTS

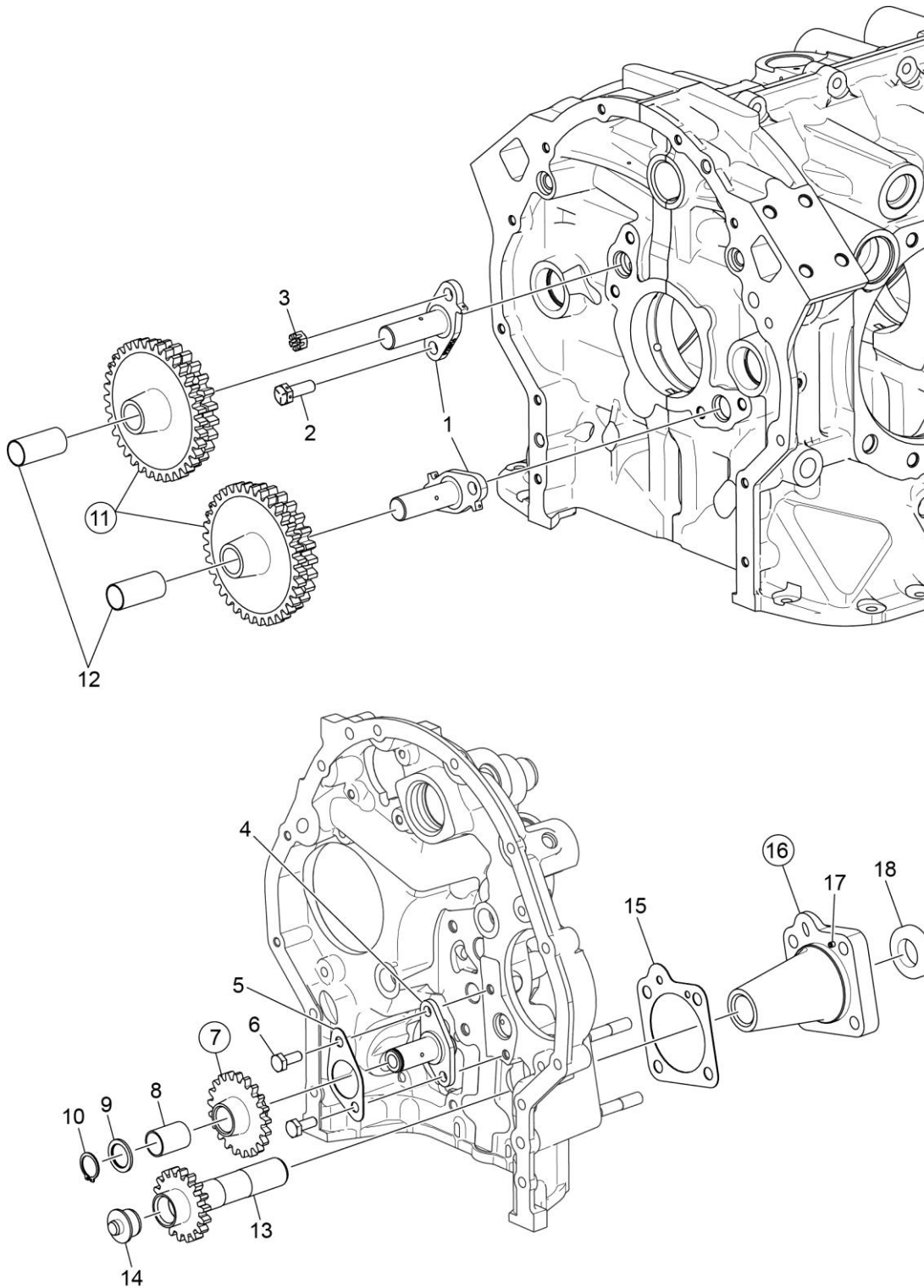
Figure Item	Code	Part Number	Description	Units per Assembly
1		1028-B	BALL, 11/16 diameter	1
2	*	68668	SPRING, Oil pressure relief valve	1
	*	61084	SPRING, Oil pressure relief valve	1
	*	LW-11713	SPRING, Oil pressure relief valve	1
	*	LW-18085	SPRING, Oil pressure relief valve	1
3	**	STD-425	WASHER, No. plain (max. 9)	AR
4		06E19769-1.25	GASKET, 1-1/4 I.D. annular	1
5		77808	VALVE ASSEMBLY, Oil pressure relief, adj.	1
6		18E23886	BEARING, Crankshaft	6
7		18B23885	BEARING, Crankshaft, front	2
8	◆	LW-15628	SEAL, Crankshaft oil	1
9		72091	RING, Oil seal, 23/64 I.D. x 7/64 dia. section	2
10	+	15B26262	BODY ASSEMBLY, Hydraulic tappet	12
		LRT23381	BODY ASSEMBLY, Hydraulic roller tappet	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>+ Flat tappets can be converted to roller tappets. Refer to the latest revision of Service Instruction S.I. 1011</p>				



Crankshaft, Counterweight, Camshaft and Related Parts
Figure 6

FIGURE 6 - CRANKSHAFT, COUNTERWEIGHT, CAMSHAFT AND RELATED PARTS

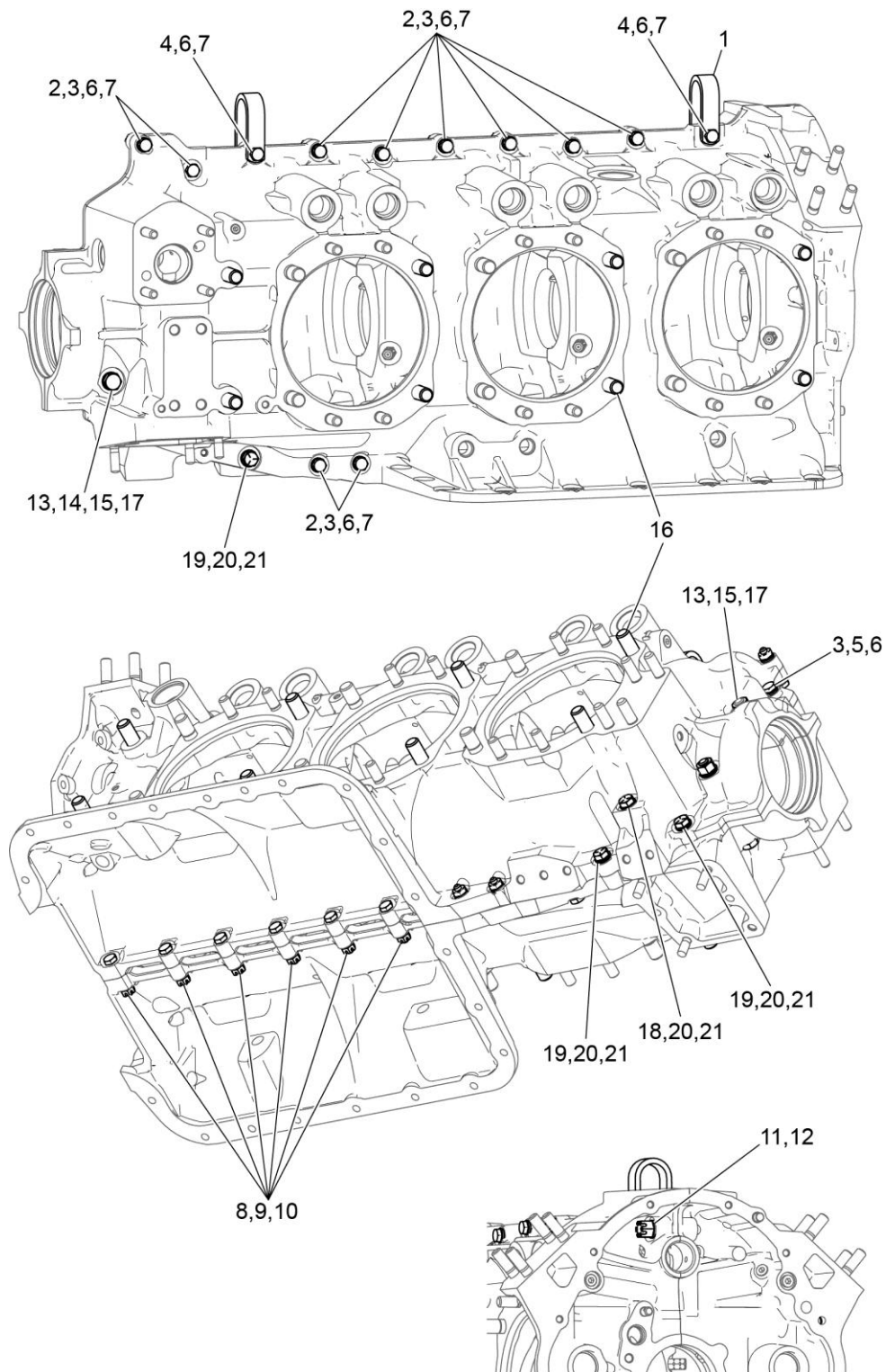
Figure Item	Code	Part Number	Description	Units per Assembly
1		13F47727	CRANKSHAFT ASSEMBLY	1
2		STD-1211	PLUG, 2.00 diameter expansion	1
3		73810	BUSHING, Crankshaft counterweight	4
4		60945	PLUG, 1-1/4 diameter	1
5		75656-S	BUSHING, Propeller flange, long	4
6		72155-S	BUSHING, Propeller flange, short	1
7		75657-S	BUSHING, Propeller flange, indexing	1
8		STD-1065	DOWEL, Stepped, 5/16 & 1/4 dia. x 35/64	1
9		LW-19210	COUNTERWEIGHT ASSEMBLY	2
10		71903-A	BUSHING, Dynamic counterweight	4
11		76788	ROLLER, Dynamic counterweight, 6.3 order	2
12		73648	ROLLER, Dynamic counterweight, 5.1 order	2
13		LW-14820	RING, Internal retaining	8
14		71907	WASHER, Dynamic counterweight	8
15		13S19647	GEAR, Crankshaft	1
16		LW-18638	LOCKPLATE, Crankshaft gear	1
17		STD-2247	BOLT, 5/16-24 x 1.75	1
18		15N23374	CAMSHAFT ASSEMBLY, roller lifter	1
		LW-19340	CAMSHAFT ASSEMBLY	1
19		76118	SPACER, Tachometer shaft centering	1
20		76155	SHAFT ASSEMBLY, Tachometer	1
21		LW-18667	PIN, 3/16 diameter x 2-21/64 long	1
22		STD-2231	RING, Internal retaining	1
23		LW-16471	SUPPORT ASSEMBLY, Starter ring gear	1
24		72566	GEAR, Starter ring	1



Crankshaft and Fuel Pump Idler Gears
Figure 7

FIGURE 7 – CRANKSHAFT AND FUEL PUMP IDLER GEARS

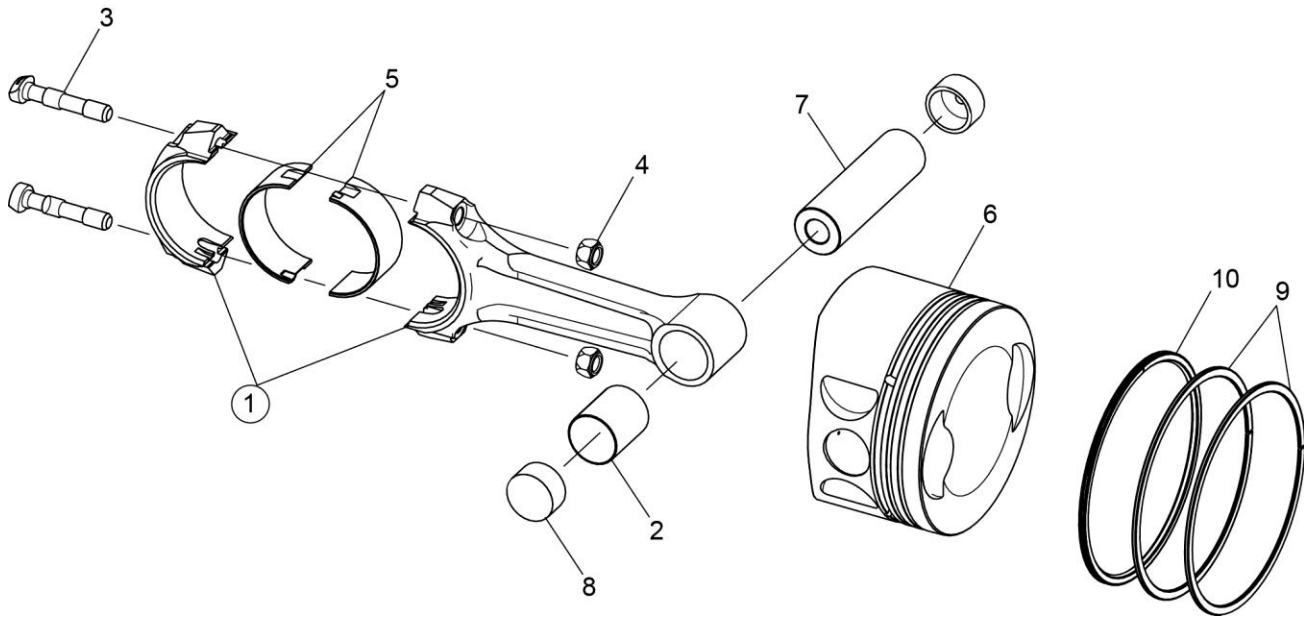
Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-13795	SHAFT, Crankshaft idler gear	2
2		LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex head	3
3		STD-2168	NUT, 5/16-18 x NC-3, slotted shear	1
4		72246	SHAFT, Fuel pump idler gear	1
5		71667	LOCKPLATE 1/4 bolt x 1.75 spacing	1
6		LW-25-0.63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



Crankcase Attaching Parts
Figure 8

FIGURE 8 - CRANKCASE ATTACHING PARTS

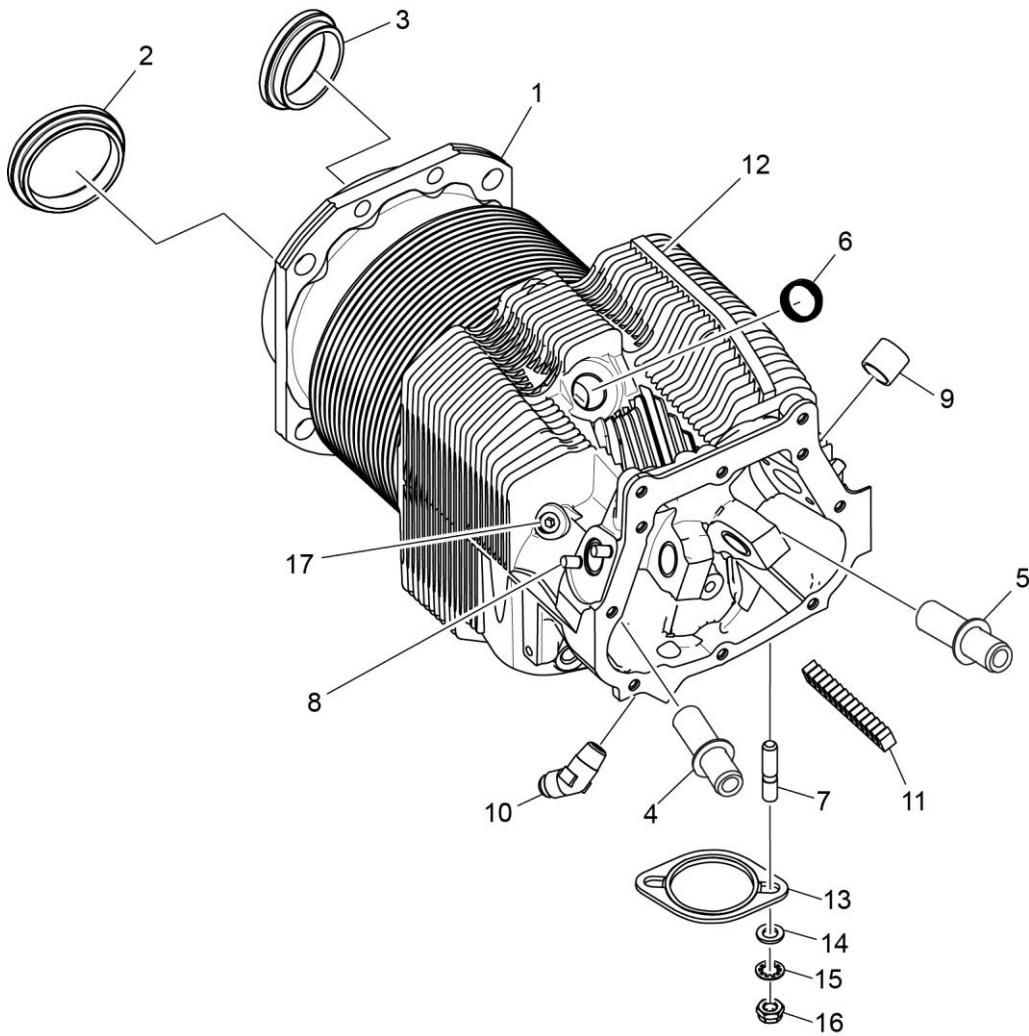
Figure Item	Code	Part Number	Description	Units per Assembly
1		60803	STRAP, Lifting	2
2		LW-25-1.50	BOLT, 1/4-20 x 1-1/2 long, hex. head	10
3		STD-8	WASHER, 1/4 plain	24
4		LW-25-1.75	BOLT, 1/4-20 x 1-3/4 long, hex. head	2
5		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	1
6		STD-160	WASHER, 1/4 lock, 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	6
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		STD-678	WASHER, 3/8 lock, internal teeth	2
14		AN6-34A	BOLT, 3/8-24 x 3-9/16 long, hex. head	1
15		STD-33	WASHER, 3/8 plain	3
16		76220	STUD, 1/2-20 x 11-45/64 long	8
17		STD-596	NUT, 3/8-24 plain	2
18		LW-31-2.75	BOLT, 5/16-18 x 2-3/4 long, hex. head	1
19		LW-31-1.16	BOLT, 5/16-18 x 1-5/32 long, hex. head	3
20		STD-35	WASHER, 5/16 plain	4
21		STD-475	WASHER, 5/16 lock, internal teeth	4



Connecting Rods, Pistons and Ring Assemblies
Figure 9

FIGURE 9 - CONNECTING RODS, PISTONS AND RING ASSEMBLIES

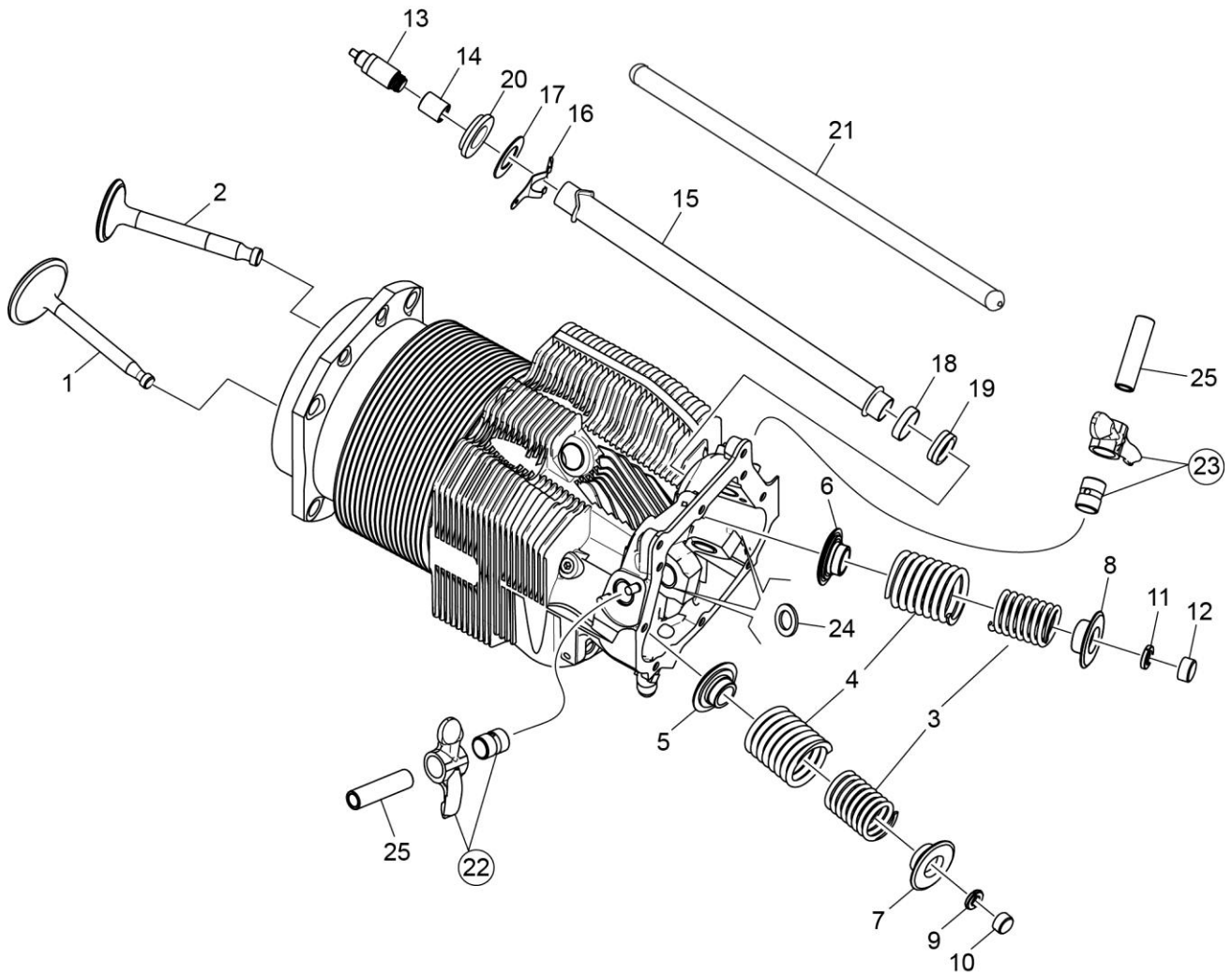
Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-19332-S	CONNECTING ROD ASSEMBLY	6
2		LW-13923	BUSHING, Connecting rod, upper	6
3	P	14S23889	BOLT, Connecting rod	12
	*	LW-12596	BOLT, Connecting rod	12
4		LW-12186	NUT, Connecting rod bolt	12
5		18N26106	BEARING, Connecting rod	12
6		14D23908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



**Cylinder Assembly
Figure 10**

FIGURE 10 - CYLINDER ASSEMBLY

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



Valve Assembly and Related Parts – Roller Tappets
Figure 11

FIGURE 11 – VALVE ASSEMBLY AND RELATED PARTS - ROLLER TAPPETS

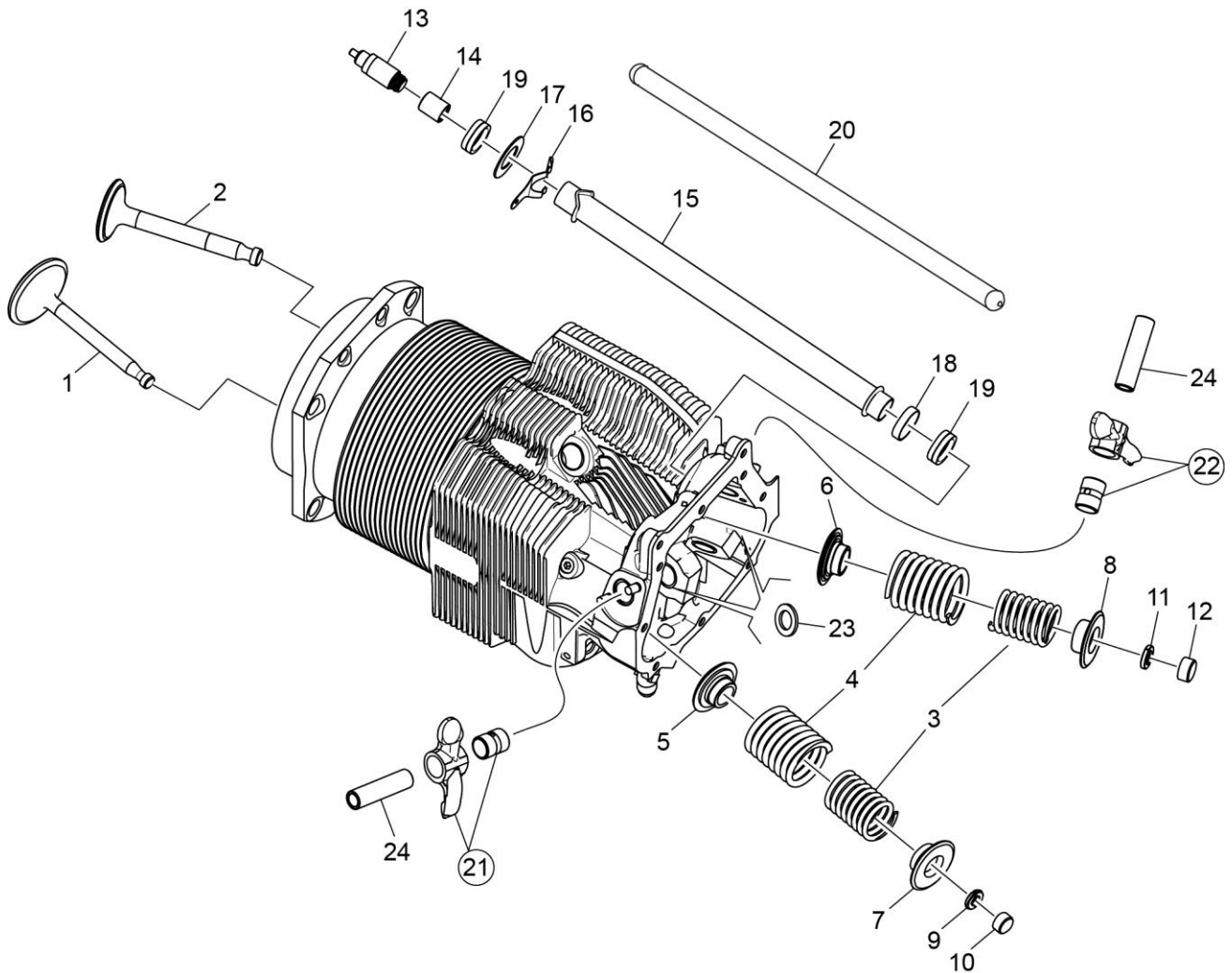
Figure Item	Code	Part Number	Description	Units per Assembly
1		17A23937	VALVE, Intake	6
2		17B23935	VALVE, Exhaust	6
3		LW-11797	SPRING, Valve, inner	12
4		LW-11796	SPRING, Valve, outer	12
5		LW-13321	SEAT, Valve spring, lower intake	6
6		LW-13322	SEAT, Valve spring, lower exhaust	6
7		69532	SEAT, Valve 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
AR as required NOTE: Various push rod lengths are used to set valve clearances.				

(continued on next page)

FIGURE 11 - VALVE ASSEMBLY AND RELATED PARTS- ROLLER TAPPETS (CONT.)

Figure Item	Code	Part Number	Description	Units per Assembly
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
<p>AR as required</p> <p>* 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).</p> <p>NOTE: Various push rod lengths are used to set valve clearances.</p>				

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Valve Assembly and Related Parts- Flat Tappets
Figure 11A

FIGURE 11A – VALVE ASSEMBLY AND RELATED PARTS – FLAT TAPPETS

Figure Item	Code	Part Number	Description	Units per Assembly
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
NOTE: Various push rod lengths are used to set valve clearances.				

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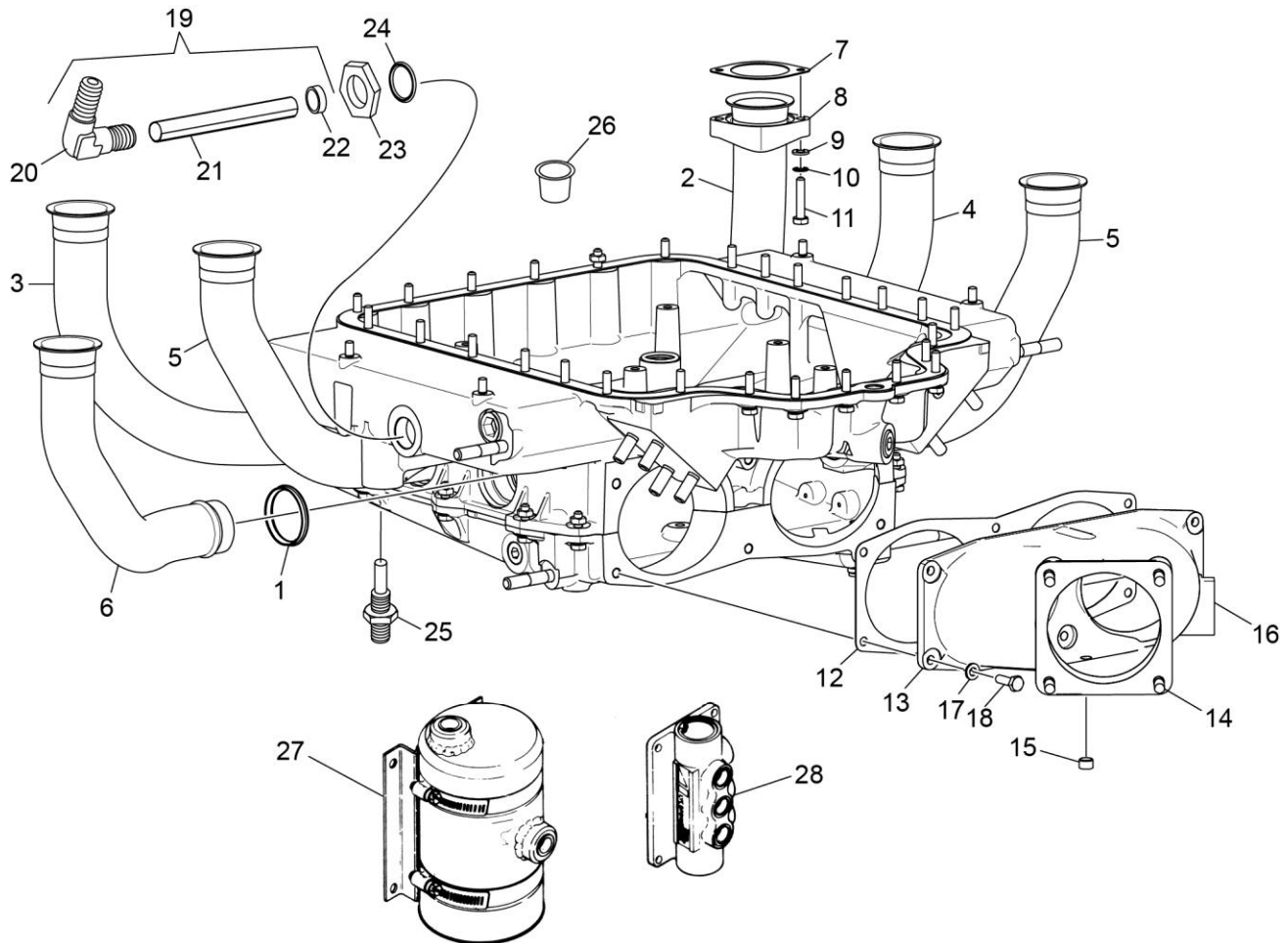
FIGURE 11A - VALVE ASSEMBLY AND RELATED PARTS- FLAT TAPPETS (CONT.)

Figure Item	Code	Part Number	Description	Units per Assembly
20	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
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
<p>AR as required</p> <p>* 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).</p> <p>NOTE: Various push rod lengths are used to set valve clearances.</p>				

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FIGURE 12 – CYLINDER RELATED PARTS

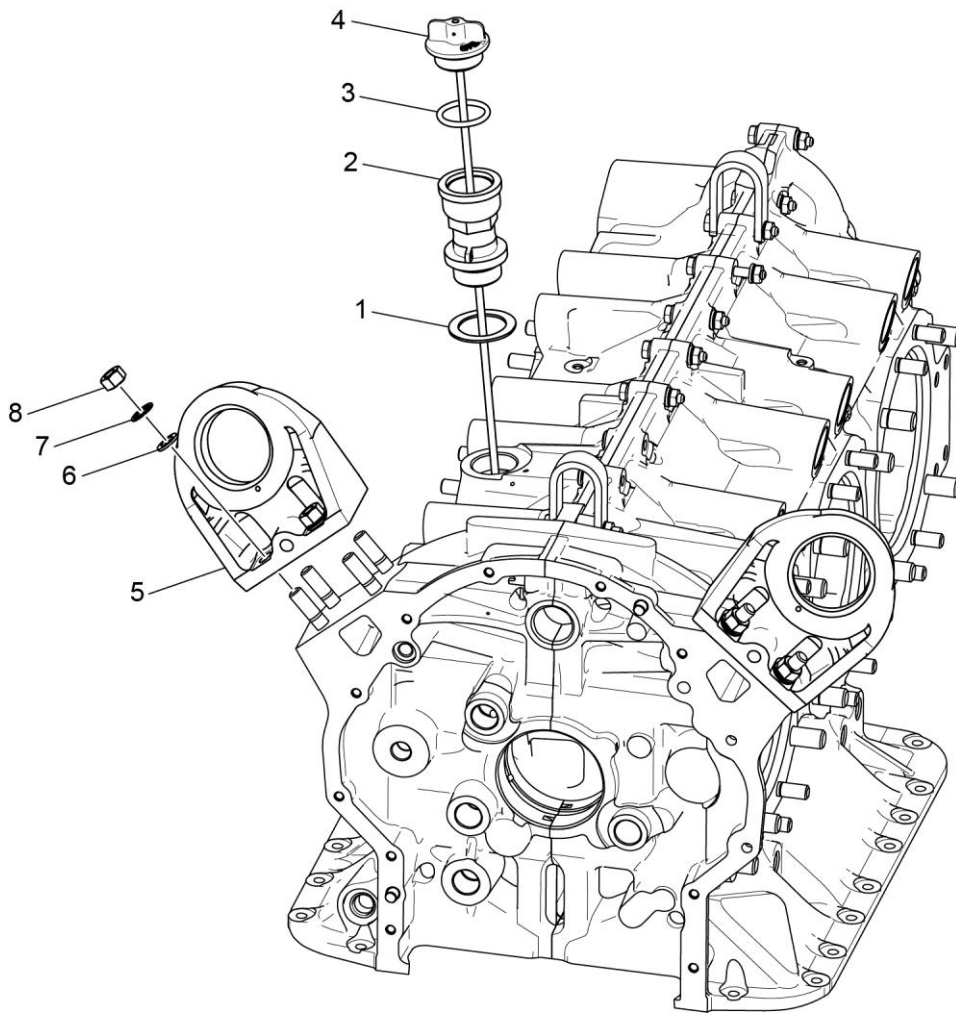
Figure Item	Code	Part Number	Description	Units per Assembly
1		66732	GASKET, Valve rocker shaft cover	12
2		72710	COVER, Valve rocker shaft	12
3		STD-160	WASHER, 1/4 lock, internal teeth	24
4		STD-1411	NUT, 1/4-20 plain	24
5		67193	GASKET, Rocker box cover	6
6		68795	COVER ASSEMBLY, Rocker box	6
7		STD-1925	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 13

FIGURE 13 – INTAKE PIPES AND AIR INLET HOUSING

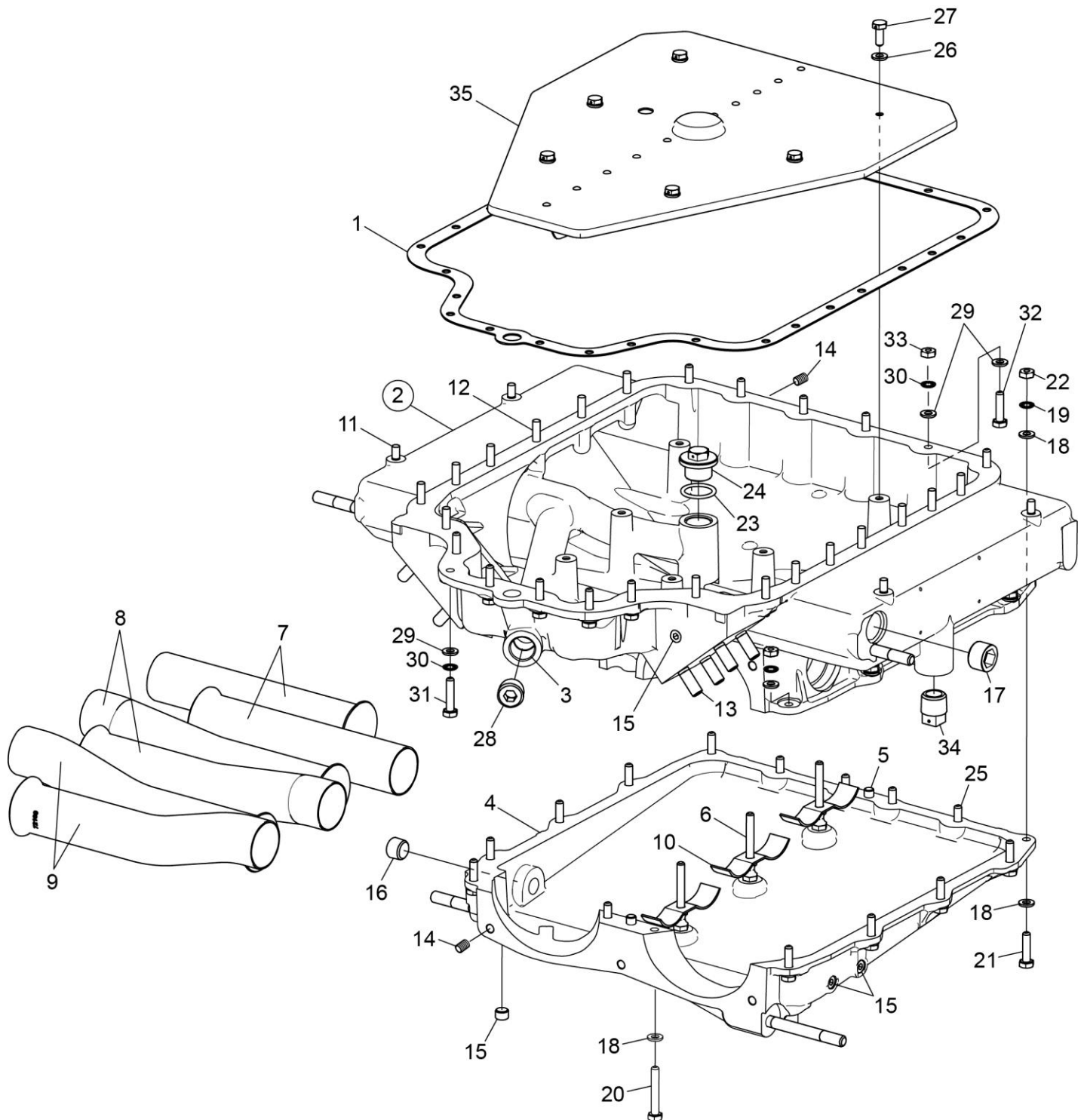
Figure Item	Code	Part Number	Description	Units per Assembly
1		72711	RING, Seal, intake pipes	6
2		LW-12191	PIPE, Intake, cylinder no. 1	1
3		LW-12192	PIPE, Intake, cylinder no. 2	1
4		LW-12193	PIPE, Intake, cylinder no. 3	1
5		LW-12194	PIPE, Intake, cylinders no. 4 and 5	2
6		LW-12195	PIPE, Intake, 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		56F19765	ELBOW ASSY, Sump oil suction and screen	1
20		LW-18127	ELBOW, Sump oil suction	1
21		70484	SCREEN, Oil suction	1
22		257-B	PLUG	1
23		LW-18128	NUT, 1.00-20 x 9/32 thick	1
24		06E19769-1.00	GASKET, Annular, 1.00 I.D.	1
25		LW-14247	FITTING, Nipple, sump oil return	1
26		LW-15484-6	PLUG	1
27		57A21009	SEPARATOR, Oil	1
28		57B19829	VALVE, Oil	1
* Assemble with pipe tap on right side of engine.				



Oil Level Gage and Engine Mounting Brackets
Figure 14

FIGURE 14 – OIL LEVEL GAGE AND ENGINE MOUNTING BRACKETS

Figure Item	Code	Part Number	Description	Units per Assembly
1		70457	GASKET, Oil filler extension	1
2		75675	TUBE ASSEMBLY, Oil level gage (2-3/16 long)	1
3		74065	"O" RING, Oil level gage	1
4		LW-14770	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



Oil Sump and Induction Housing Assembly
Figure 15

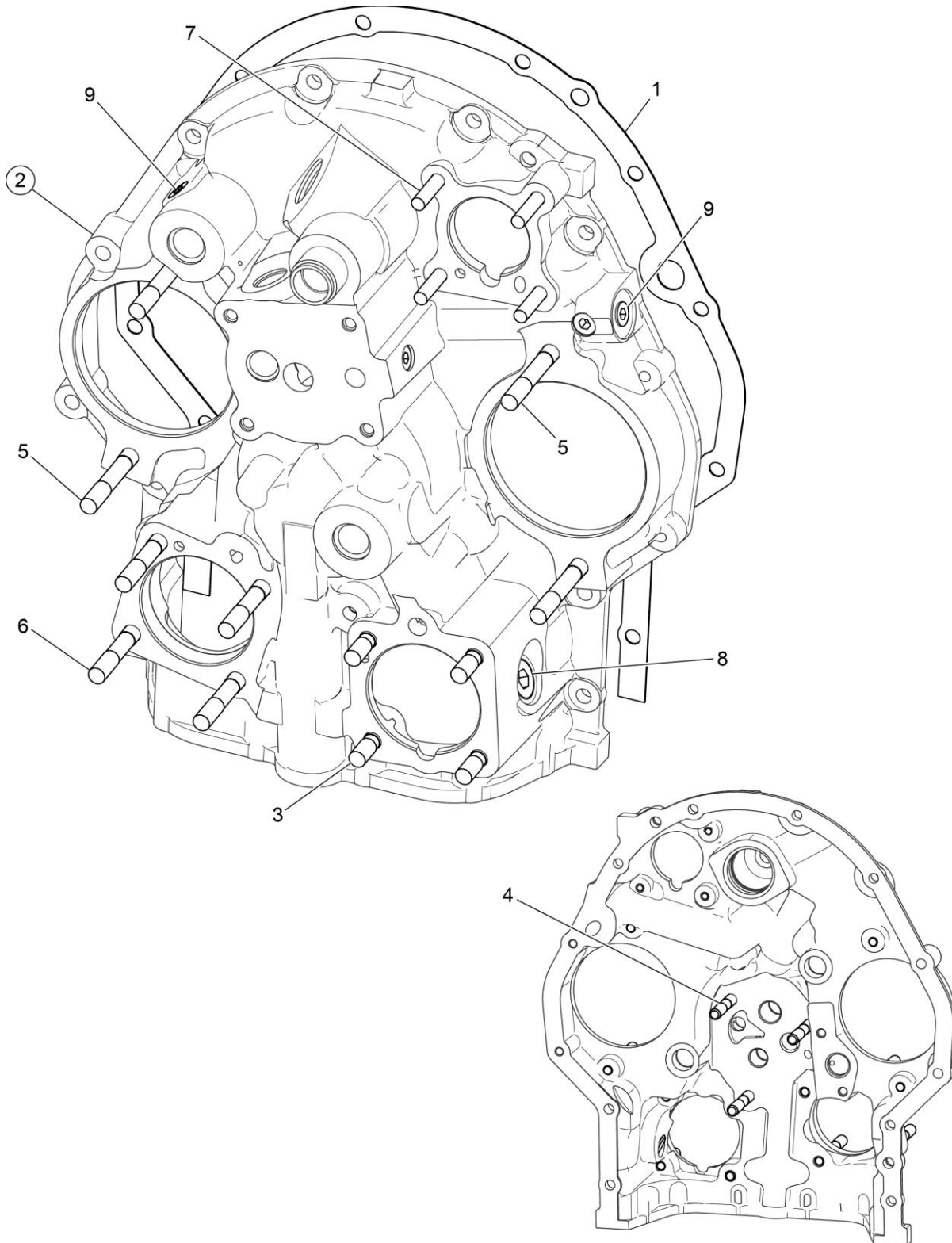
FIGURE 15 – OIL SUMP AND INDUCTION HOUSING ASSEMBLY

Figure Item	Code	Part Number	Description	Units per Assembly
1		06B21326	GASKET, Oil sump	1
2		56A26071-05	HOUSING ASSEMBLY, Oil sump & induction	1
3		LW-18065	INSERT, 1/2-14 NPT	1
4		LW-18291	COVER, Induction housing	1
5		STD-514	DOWEL, 5/16 diameter x 1/2 long	2
6		72179	STUD, Intake pipe, extension pipe	3
7		72167	PIPE, Extension, intake, cylinders no. 1 & 2	2
8		72168	PIPE, Extension, intake, cylinders no. 3 & 4	2
9		72169	PIPE, Extension, intake, cylinders no. 5 & 6	2
10		LW-11273	CLAMP, Intake pipe extension	3
11		25C-9	STUD, 1/4-20 x 1-1/8 long	4
12		25C-11	STUD, 1/4-20 x 1-3/8 long	15
13		38-15	STUD, 3/8-16 x 1-7/8 long	8
14		72706	INSERT, 1/4-20 UNC x 3/8 long	14
15		1102	PLUG, 1/8-27 NPT, allen head	5
16		STD-784	PLUG, 3/8-18 NPT, allen head	1
17		STD-355	PLUG, 3/4-14 NPT, allen head	2
18		STD-8	WASHER, 1/4 plain	29
19		STD-160	WASHER, 1/4 lock, internal teeth	23
20		LW-25-2.00	BOLT, 1/4-20 x 2.00 long, hex. head	2
21		LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. head	10
22		STD-1411	NUT, 1/4-20 plain	13
23		06E19769-0.91	GASKET, Annular, 29/32 I.D.	1
24		72960	PLUG, 7/8-14 x 5/8, hex. Head	1
25		LW-25-0.81	BOLT, 1/4-20 x 13/16 long, hex. head	4
26		STD-8	WASHER, 1/4 plain	6
27		LW-25-H0.63	BOLT, 1/4-20 x 5/8 long, hex. head, drilled	6
28		STD-91	PLUG, 1/2-14, NPT, allen head	1
29		STD-8	WASHER, 1/4 plain	37
30		STD-160	WASHER, 1/4 lock, internal teeth	23
31		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	6
32		LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. head	6
33		STD-1411	NUT, 1/4-20 plain	25

FIGURE 15 – OIL SUMP AND INDUCTION HOUSING ASSEMBLY (CONT)

Figure Item	Code	Part Number	Description	Units per Assembly
34		STD-551	PLUG, 1/2-14 NPT, square head, drilled	2
35		56G26069	BAFFLE, Oil sump	1
Reference S.I. 1279 for baffle information				

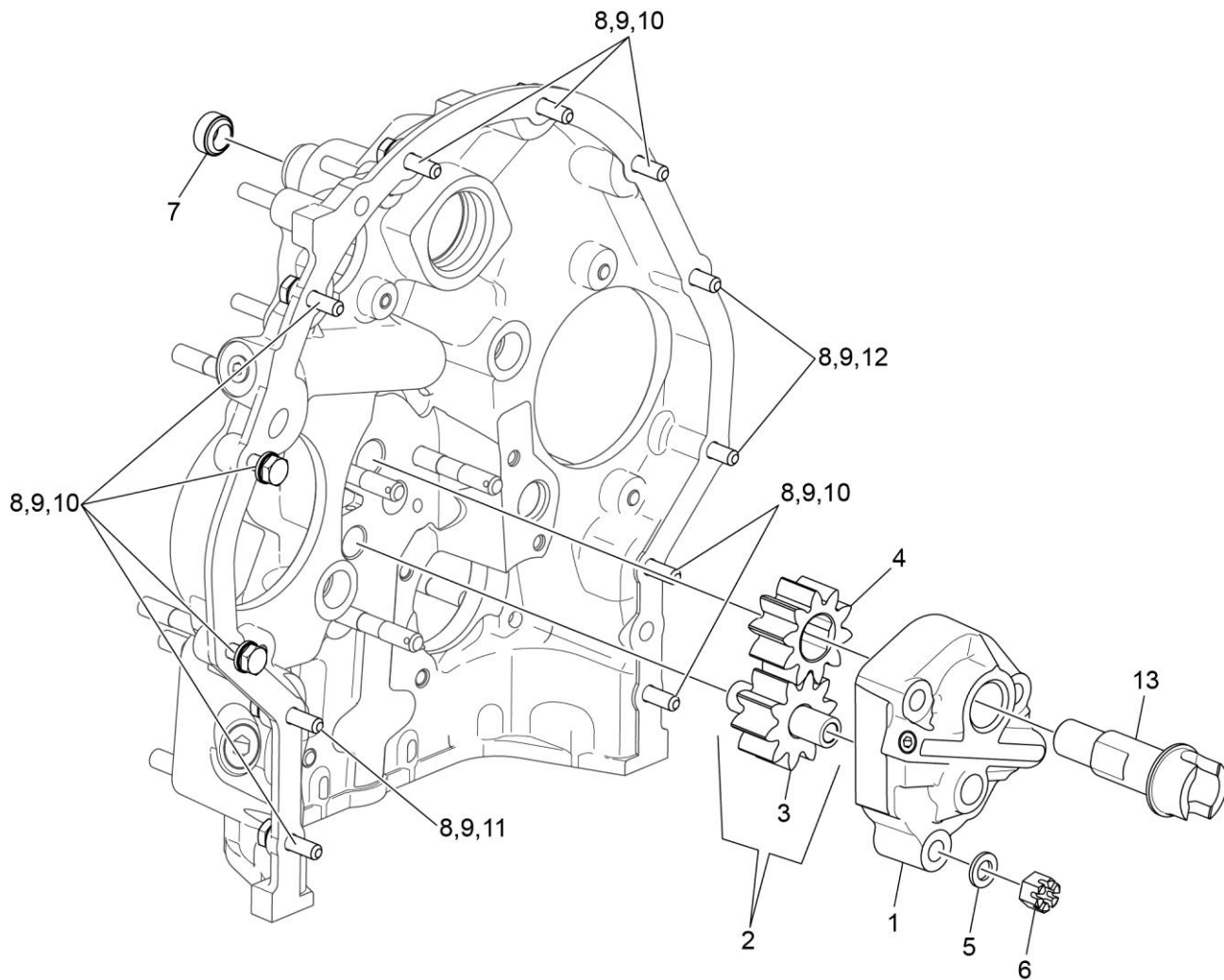
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Accessory Housing Assembly
Figure 16

FIGURE 16 – ACCESSORY HOUSING ASSEMBLY

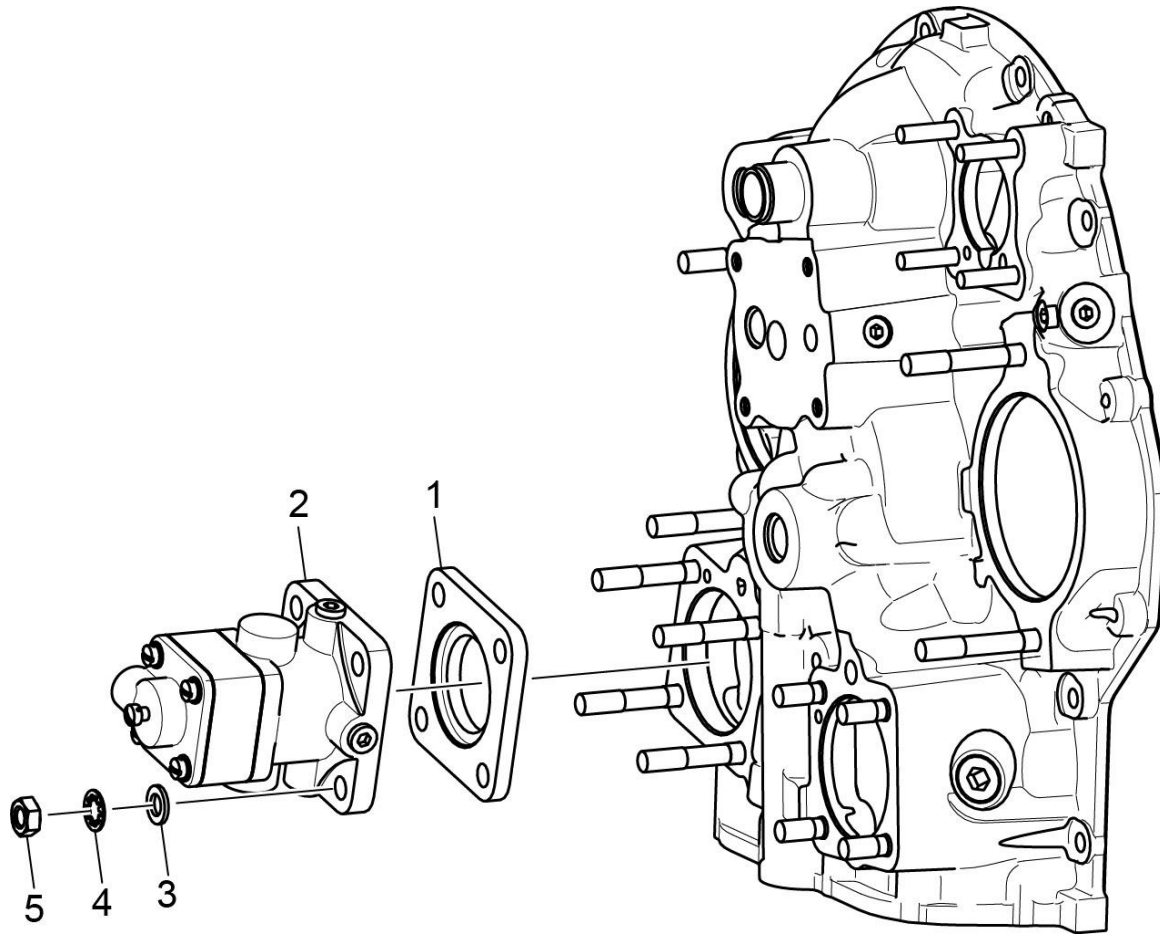
Figure Item	Code	Part Number	Description	Units per Assembly
1		73818	GASKET, Accessory housing	1
2		21C21541-04	HOUSING ASSEMBLY, Accessory	1
3		31C-12	STUD, 5/16-18 x 1-1/2 long	4
4		31CD-17	STUD, 5/16-18 x 2-1/8 long, drilled	3
5		31C-21	STUD, 5/16-18 x 2-5/8 long	4
6		31C-19	STUD, 5/16-18 x 2-3/8 long	4
7		25C-12	STUD, 1/4-20 x 1-1/2 long	4
8		STD-784	PLUG, 3/8-18 NPT, allen head	1
9		1102	PLUG, 1/8-27 NPT, allen head	4



Oil Pump Assembly and Accessory Housing Attaching Parts
Figure 17

FIGURE 17 – OIL PUMP ASSEMBLY AND ACCESSORY HOUSING ATTACHING PARTS

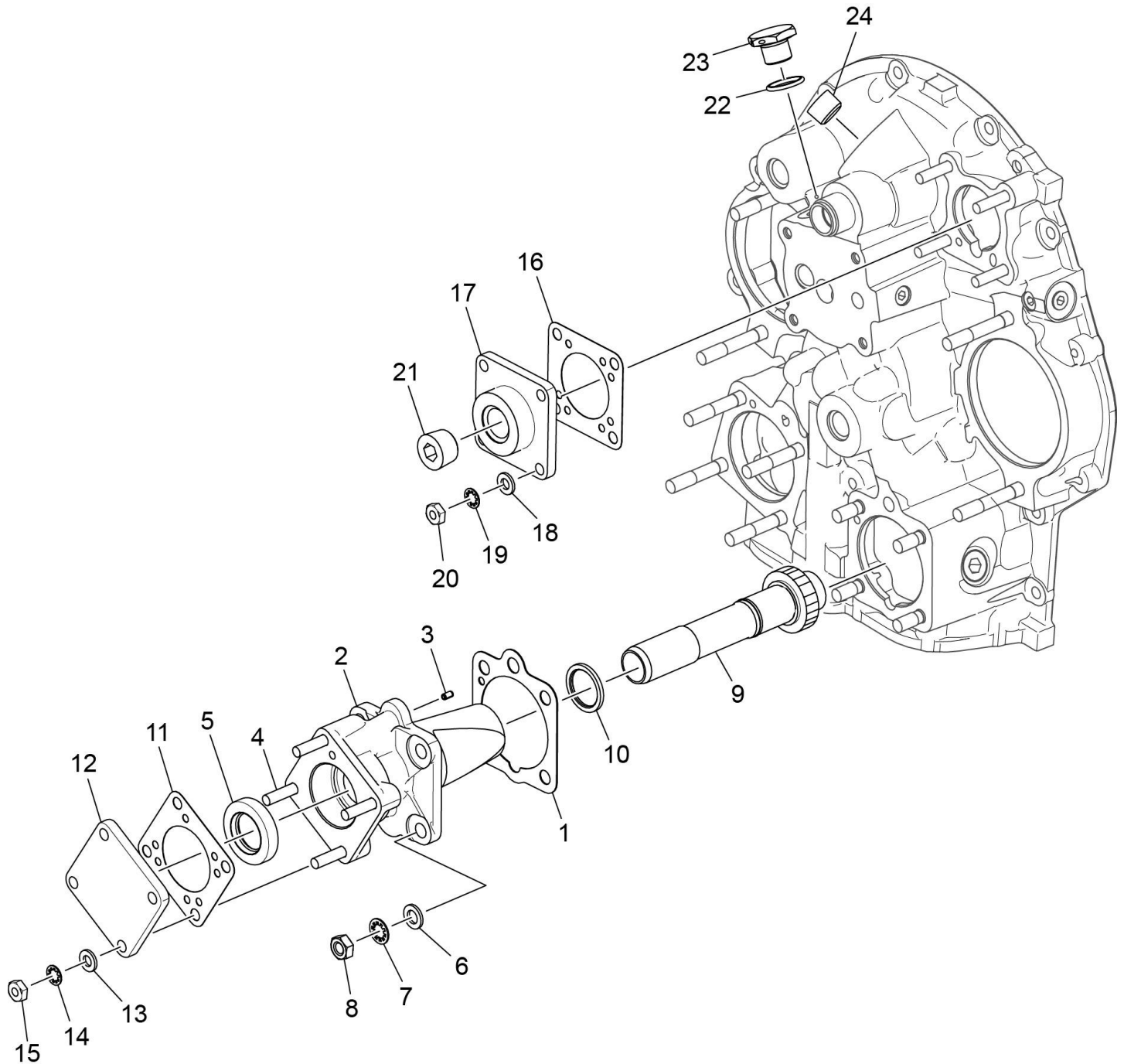
Figure Item	Code	Part Number	Description	Units per Assembly
1		78528	BODY ASSEMBLY, Oil pump	1
2		05K19423-S	IMPELLER KIT	1
3	*	LW-18110	IMPELLER, Oil pump driven	1
4	*	LW-18109	IMPELLER ASSEMBLY, Oil pump driving	1
5		STD-35	WASHER, 5/16 plain	3
6		STD-1420	NUT, 5/16-18 slotted	3
7		LW-14260	SEAL, Tachometer 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		74641	SHAFT, Oil pump drive	1
* Sold in complete sets only (Kit P/N 05K19423-S).				



Fuel Pump Assembly and Attaching Parts
Figure 18

FIGURE 18 – FUEL PUMP ASSEMBLY AND ATTACHING PARTS

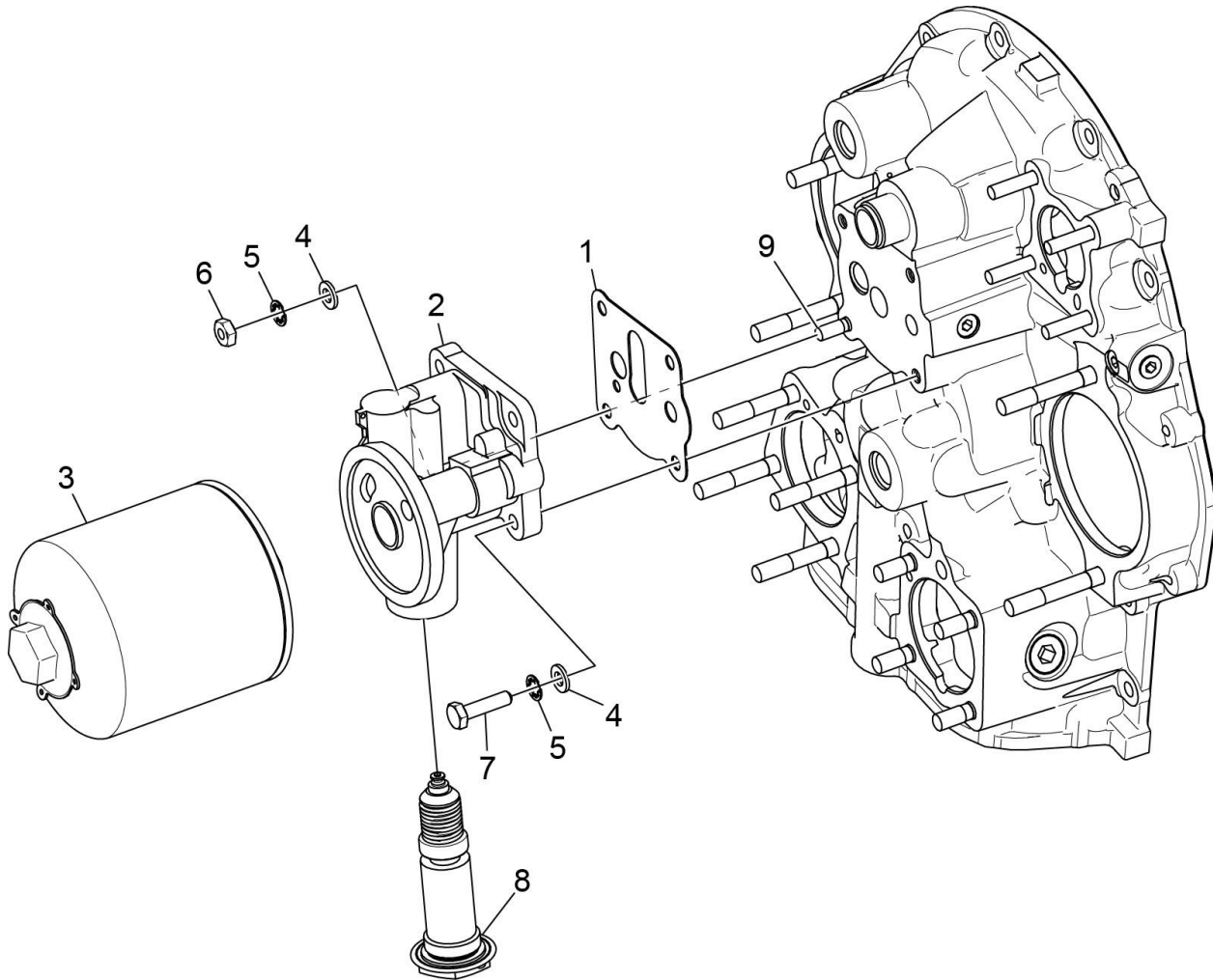
Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-10799	SPACER, Fuel pump insulating	1
2	V	62D26032	FUEL PUMP (V HET 201F-5003)	1
3		STD-35	WASHER, 5/16 plain	4
4		STD-475	WASHER, 5/16 lock, internal teeth	4
5		STD-1410	NUT, 5/16-18 plain	4
V Vendor Prime Manufacturer part				



Vacuum Pump Drive, Oil Cooler and Breather Fittings
Figure 19

FIGURE 19 – VACUUM PUMP DRIVE, OIL COOLER AND BREATHER FITTINGS

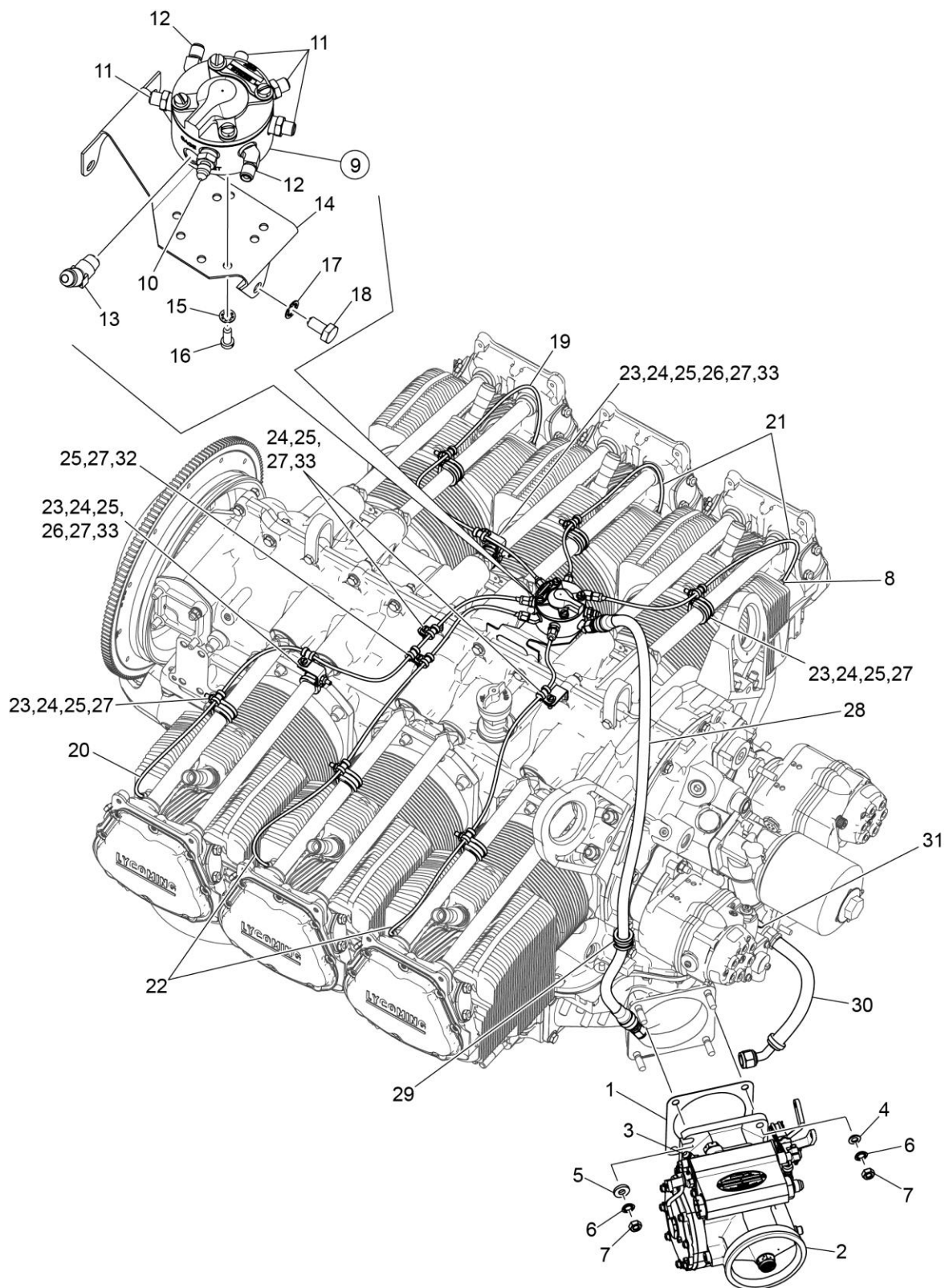
Figure Item	Code	Part Number	Description	Units per Assembly
1		68315	GASKET, Accessory drive adapter	1
2		71675	ADAPTER ASSEMBLY, Hydraulic pump	1
3		STD-1774	PIN, 1/8 diameter x 1/4 long	1
4		25C-12	STUD, 1/4-20 x 1-1/2 long	4
5		06A19956	SEAL, Oil, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide	1
6		STD-35	WASHER, 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		LW-16878	BREATHER, Adapter	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		STD-2229	PLUG, 1/2 NPT, allen head	1
22		06E19769-0.63	GASKET, Annular, 5/8 I.D.	1
23		62417	PLUG, Oil cooler bypass	1
24		STD-784	PLUG, 3/8-18 NPT allen head	2



Oil Filter Assembly and Oil Cooler Bypass Valve
Figure 20

FIGURE 20 – OIL FILTER ASSEMBLY AND OIL COOLER BYPASS VALVE

Figure Item	Code	Part Number	Description	Units per Assembly
1		06B23862	GASKET, Oil filter adapter	1
2		77852	BASE ASSEMBLY, Oil filter	1
3	V	LW-13215	OIL FILTER, Short, (V 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
V Vendor Prime Manufacturer part				



Fuel Injector, Fuel Lines, Manifold Assembly and Pressure Line

FIGURE 21 – FUEL INJECTOR, FUEL LINES, MANIFOLD ASSEMBLY AND PRESSURE LINE

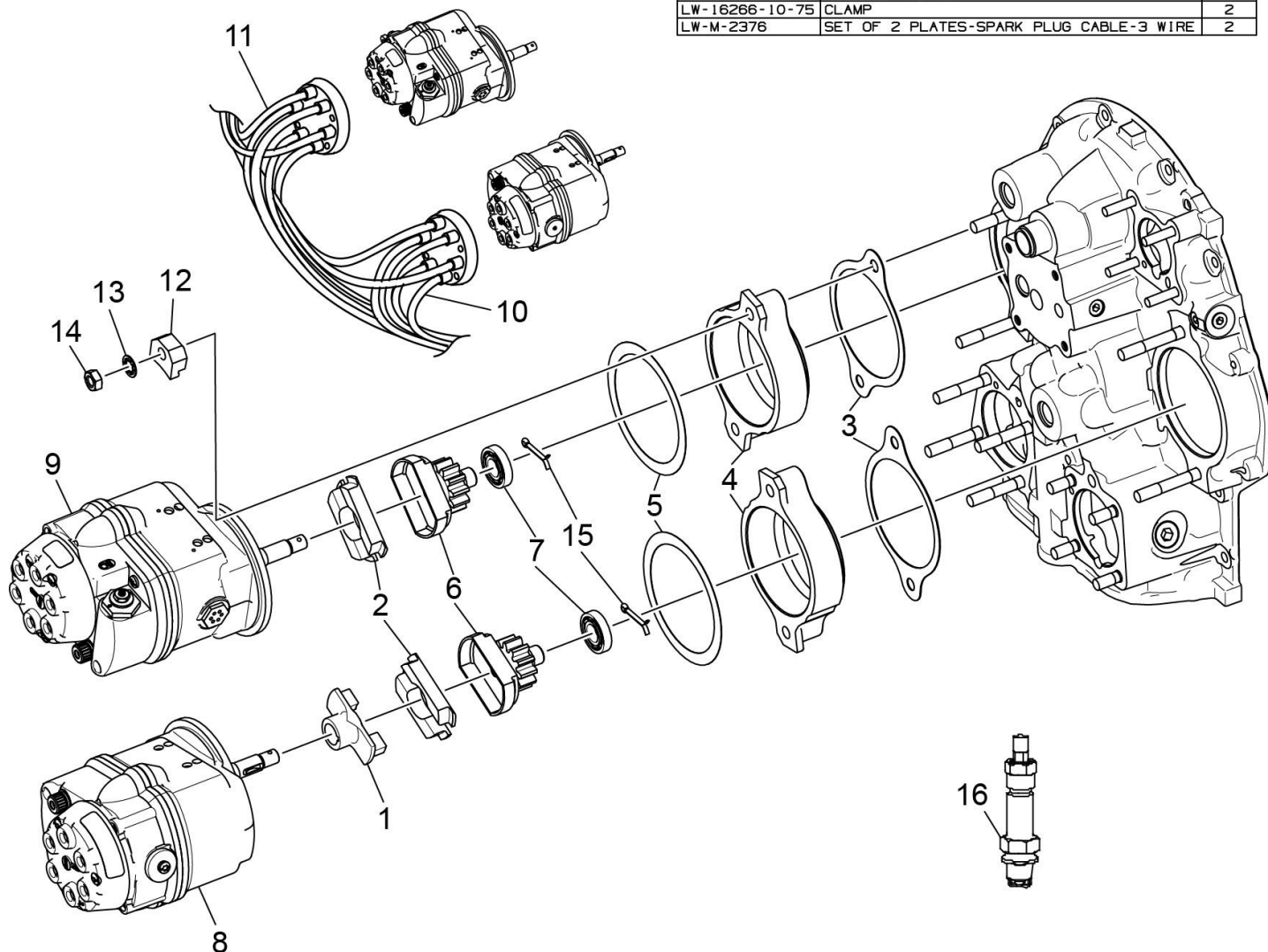
Figure Item	Code	Part Number	Description	Units per Assembly
1		73032	GASKET, Air inlet	1
2		61M26410	FUEL INJECTOR (2524273-12)	1
3		76304	ELBOW, 45°	1
4		STD-35	WASHER, 5/16 plain	2
5		STD-1727	WASHER, Plain, 3/4 O.D. x 11/32 I.D. x 1/8 thick	2
6		STD-475	WASHER, 5/16 lock, internal teeth	4
7		STD-1410	NUT, 5/16-18, plain	4
8		63C26450	NOZZLE, Injection (2524864-2)	6
9		63B26719	MANIFOLD ASSEMBLY, Fuel	1
10		02G21446	NIPPLE, 1/8 NPT to 1/4 tube	1
11		STD-148	NIPPLE, Union, 1/8 NPT	4
12		AN791-2	ELBOW, Union, 45 °, 1/8 tube	2
13		MS20823-4	ELBOW, 1/8 NPT to 1/4 fl tube	1
14		75009	BRACKET, Fuel manifold	1
15		STD-251	WASHER, #10, internal lock	4
16		STD-82	SCREW, #10-24 x 1/2 long, fill. head	4
17		STD-160	WASHER, 1/4 lock, internal teeth	1
18		LW-25-0.50	BOLT, 1/4-20 x 1/2 long, hex head	1
19		LW-12098-0-210	TUBE ASSEMBLY, Fuel injector line, cylinder no. 1	1
20		LW-12098-0-280	TUBE ASSEMBLY, Fuel injector line, cylinder no. 2	1
21		LW-12098-0-140	TUBE ASSEMBLY, Fuel injector line, cylinders no. 3 and 5	2
22		LW-12098-0-210	TUBE ASSEMBLY, Fuel injector line, cylinders no. 4 and 6	2
23		LW-16266-10-75	CLAMP	8
24		LW-16266-10-13	CLAMP, 1/8 diameter for #10 screw	10
25		STD-860	SCREW, No. 10-32 x 5/8 long, fill. head	13
26		STD-425	WASHER, #10 plain	2

FIGURE 21 – FUEL INJECTOR, FUEL LINES, MANIFOLD ASSEMBLY
AND PRESSURE LINE (CONT)

Figure Item	Code	Part Number	Description	Units per Assembly
27		STD-670	LOCKNUT, No. 10-32	13
28		LW-12798-4S340	HOSE ASSEMBLY, 1/4 hose, straight	1
29		LW-16266-25-63	CLAMP, 5/8 I.D. x 1/4 diameter screw	1
30		LW-12879-6S120	HOSE ASSEMBLY, 3/8 hose, 45 ° elbow	1
31		MS20822-6	ELBOW, 1/4 NPT to 3/8 fl tube-9	1
32		LW-16266-10-13	CLAMP, 1/8 diameter for #10 screw	2
33		73136	BRACKET, extension, fuel injection line	4

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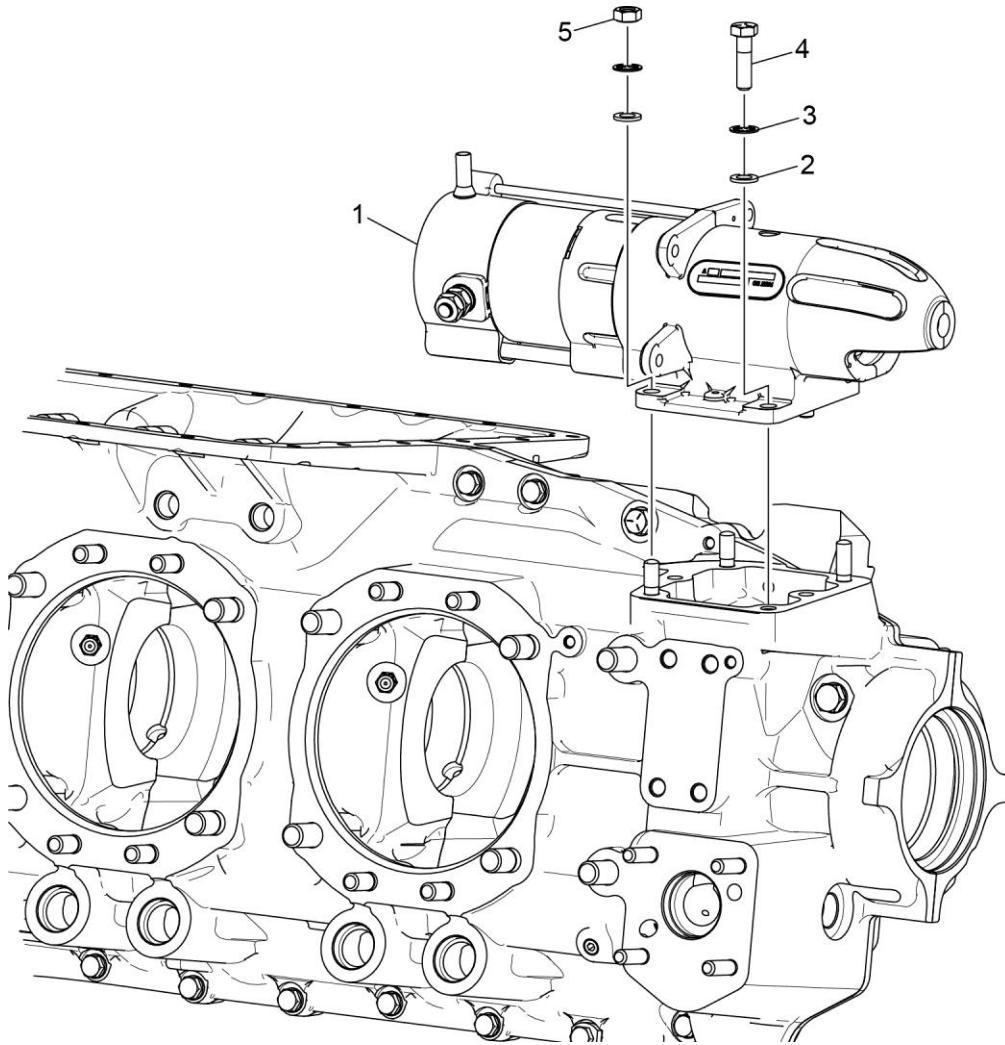
BAG-HARNESS ATTACHING		P/N 01P19762-4-16
PART NO.	NAME	QTY
LW-16266-25-25	CLAMP-ONE WIRE	4
LW-14060	CLIP-TWO WIRE	4
STD-8	WASHER-.250 PLAIN	12
STD-160	WASHER-.250 LOCK INT. TEETH	8
STD-1874	SCREW-.250-20 X .81 LG. FILL.	6
76734	ZIP STRAP	12
LW-16266-25-44	CLAMP-.44 ID X .250 DIA. SCREW	5
STD-696	WASHER-.250 PLAIN (THIN)	6
STD-1916	SCREW-.250-20 X 1.13 LG. FIL HD	2
STD-1925	SCREW-.250-20 X .63 LG. PAN HD	4
72815	BRACKET-SUPPORT CLAMP-90 DEGRE	4
STD-692	SCREW-#10-32 X .50 LG. RD. HD.	4
STD-425	WASHER-#10 PLAIN	4
STD-670	LOCKNUT-#10-32	4
LW-16266-10-75	CLAMP	2
LW-M-2376	SET OF 2 PLATES-SPARK PLUG CABLE-3 WIRE	2



Magnetos, Magneto Drives and Spark Plugs
Figure 22

FIGURE 22 - MAGNETOS, MAGNETO DRIVES AND SPARK PLUGS

Figure Item	Code	Part Number	Description	Units per Assembly
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
17		01P19762-4-16	BAG, Magneto harness attaching	1
V Vendor Prime Manufacturer part				



Starter Motor and Attaching Parts
Figure 23

FIGURE 23 - STARTER MOTOR 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
2		STD-35	WASHER, 5/16 plain	4
3		STD-475	WASHER, 5/16 lock, internal teeth	4
4		LW-31-1.16	BOLT, 5/16-18 x 1-5/32 long, hex.head	1
5		STD-1410	NUT, 5/16-18 plain	3
<p>V Vendor Prime Manufacturer part</p> <p>NOTE: 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**

PART NO.	PART NAME	Qty.
73185-1	KIT - SEAL AND GASKET SET	1
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

PART NO.	PART NAME	Qty.
05K21120	KIT - CYLINDER, PISTON AND RING ASSEMBLY	1
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.
05K47777	KIT - CRANKSHAFT AND COUNTERWEIGHT ASSEMBLY	1
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.
11F24020-S1-S	KIT - CRANKCASE ASSEMBLY AND THRU-STUD	1
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.
11F24120-S1-S	KIT - CRANKCASE ASSEMBLY AND THRU-STUD	1
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
LW-31H0.75	BOLT	1	LW-13923	BUSHING	17
LW-31H0.75	BOLT	1	LW-14021	SHAFT	5
LW-31H0.75	BOLT	1	LW-14078	PIN	17
LW-31H0.88	BOLT	13	LW-14247	ITTING	31
LW-10442	GEAR	5	LW-14260	SEAL	41
LW-10541	GEAR ASSEMBLY	5	LW-14326	ALTERNATOR	3
LW-10799	SPACER	43	LW-14339	ALTERNATOR	3
LW-11273	CLAMP	35	LW-14770	GAGE ASSEMBLY	33
LW-11713	SPRING	9	LW-14820	RING	11
LW-11796	SPRING	21	LW-15484-6	PLUG	31
LW-11796	SPRING	25	LW-15592-5-05	CLAMP	29

NUMERICAL INDEX (CONT.)

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
LW-15628	SEAL	9	STD-19	DOWEL	5
LW-16266-10-13	CLAMP	49	STD-33	WASHER	15
LW-16266-10-13	CLAMP	50	STD-33	WASHER	15
LW-16266-10-75	CLAMP	49	STD-33	WASHER	33
LW-16266-25-63	CLAMP	50	STD-35	WASHER	1
LW-16471	SUPPORT ASSY	11	STD-35	WASHER	5
LW-16475	SEAT	21	STD-35	WASHER	15
LW-16475	SEAT	25	STD-35	WASHER	19
LW-16878	BREATHER	45	STD-35	WASHER	41
LW-16956	HOUSING ASSY	31	STD-35	WASHER	43
LW-18065	INSERT	35	STD-35	WASHER	45
LW-18085	SPRING	9	STD-35	WASHER	49
LW-18109	IMPELLER ASSY	41	STD-35	WASHER	55
LW-18110	IMPELLER	41	STD-82	SCREW	49
LW-18127	ELBOW	31	STD-91	PLUG	35
LW-18291	COVER	35	STD-148	NIPPLE	49
LW-18638	LOCKPLATE	11	STD-160	WASHER	15
LW-18661	SEAL	21	STD-160	WASHER	29
LW-18661	SEAL	25	STD-160	WASHER	31
LW-18667	PIN	11	STD-160	WASHER	35
LW-19096	GEAR RETAIN ASSY	53	STD-160	WASHER	35
LW-19210	CNTRWEIGHT ASSY	11	STD-160	WASHER	41
LW-19332-S	CONN ROD ASSY	17	STD-160	WASHER	45
LW-19340	CAMSHAFT ASSY	11	STD-160	WASHER	45
MS20822-6	ELBOW	50	STD-160	WASHER	47
MS20823-4	ELBOW	49	STD-160	WASHER	49
MS20823-6D	ELBOW	19	STD-213	SEAL	13
MS9245-44	COTTER PIN	53	STD-251	WASHER	49
STD-8	WASHER	15	STD-355	PLUG	35
STD-8	WASHER	15	STD-425	WASHER	9
STD-8	WASHER	31	STD-425	WASHER	49
STD-8	WASHER	31	STD-475	WASHER	5
STD-8	WASHER	35	STD-475	WASHER	15
STD-8	WASHER	35	STD-475	WASHER	19
STD-8	WASHER	35	STD-475	WASHER	43
STD-8	WASHER	41	STD-475	WASHER	45
STD-8	WASHER	45	STD-475	WASHER	49
STD-8	WASHER	45	STD-475	WASHER	53
STD-8	WASHER	47	STD-475	WASHER	55

NUMERICAL INDEX (CONT.)

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
STD-514	DOWEL	7	STD-1411	NUT	35
STD-514	DOWEL	35	STD-1411	NUT	45
STD-551	PLUG	36	STD-1411	NUT	45
STD-557	DOWEL	7	STD-1411	NUT	47
STD-596	NUT	15	STD-1420	NUT	41
STD-596	NUT	33	STD-1727	WASHER	1
STD-670	LOCKNUT	29	STD-1727	WASHER	49
STD-670	LOCKNUT	50	STD-1737	RING	13
STD-678	WASHER	15	STD-1774	PIN	13
STD-678	WASHER	33	STD-1774	PIN	45
STD-684	NIPPLE	29	STD-1925	SCREW	29
STD-690	WASHER	1	STD-2090	NUT	29
STD-690	WASHER	1	STD-2168	NUT	13
STD-690	WASHER	1	STD-2180	HOSE	29
STD-692	SCREW	29	STD-2197	WASHER	1
STD-713	COTTER PIN	1	STD-2229	PLUG	45
STD-713	COTTER PIN	1	STD-2231	RING	11
STD-784	PLUG	35	STD-2247	BOLT	11
STD-784	PLUG	39	STD-2249	NUT	15
STD-784	PLUG	45	25C-10	STUD	47
STD-798	DOWEL	5	25C-11	STUD	35
STD-860	SCREW	49	25C-12	STUD	39
STD-872	NUT	1	25C-12	STUD	45
STD-872	NUT	1	25C-8	STUD	19
STD-872	NUT	15	25C-9	STUD	35
STD-1065	DOWEL	11	31C-12	STUD	7
STD-1211	PLUG	11	31C-12	STUD	19
STD-1339	PLUG	7	31C-12	STUD	39
STD-1353	INSERT	31	31C-13	STUD	7
STD-1410	NUT	5	31C-14	STUD	7
STD-1410	NUT	19	31C-14	STUD	31
STD-1410	NUT	43	31C-19	STUD	39
STD-1410	NUT	45	31C-21	STUD	39
STD-1410	NUT	49	31CD-17	STUD	39
STD-1410	NUT	53	38-13	STUD	7
STD-1410	NUT	55	38-15	STUD	35
STD-1411	NUT	15	38-16	STUD	7
STD-1411	NUT	29	38-22	STUD	7
STD-1411	NUT	35	383-B	NUT	29

NUMERICAL INDEX (CONT.)

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
38D-17	STUD	7	70474	WASHER	13
50-15	STUD	7	70484	SCREEN	31
257-B	PLUG	31	71481	RING	29
1028-B	BALL	9	71549	WASHER	22
1102	PLUG	7	71549	WASHER	26
1102	PLUG	19	71596	WASHER	45
1102	PLUG	31	71610	HOOK	29
1102	PLUG	35	71611	RETAINER	29
1102	PLUG	39	71664	GEAR ASSEMBLY	13
1182-E7	SPARK PLUG	53	71667	LOCKPLATE	13
8313	GASKET	45	71668	GEAR ASSEMBLY	13
8313	GASKET	45	71675	ADAPTER ASSY	45
60430	COVER	45	71903-A	BUSHING	11
60803	STRAP	15	71907	WASHER	11
60945	PLUG	11	71973	GASKET	31
61084	SPRING	9	72050	KEY	21
61503	SLEEVE	21	72050	KEY	25
61503	SLEEVE	25	72053	GASKET	5
62224	GASKET	53	72091	RING	9
62388	CAP	21	72155-S	BUSHING	11
62388	CAP	25	72158	BUSHING	7
62417	PLUG	45	72167	PIPE	35
66670	BUSHING	19	72168	PIPE	35
66728	WASHER	25	72169	PIPE	35
66732	GASKET	29	72179	STUD	35
66796	INSERT	19	72198	PLUG	17
67193	GASKET	29	72210	GASKET	31
67530	BUSHING	13	72246	SHAFT	13
67542	BALL BEARING	53	72255	SHRD TUBE ASSY	25
68315	GASKET	45	72343	STABILIZER	19
68668	SPRING	9	72344	STABILIZER	19
68795	COVER ASSEMBLY	29	72378	COVER	5
69159	ADAPTER ASSY	13	72566	GEAR	11
69164	GASKET	13	72626	SHAFT	22
69532	SEAT	21	72626	SHAFT	26
69532	SEAT	25	72702	TUBE ASSEMBLY	29
69796	DOWEL	7	72703	TUBE ASSEMBLY	29
70455	GASKET	5	72706	INSERT	35
70457	GASKET	33	72710	COVER	29

NUMERICAL INDEX (CONT.)

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
72711	RING	31	77808	VALVE ASSEMBLY	9
72834	COVER	29	77852	BASE ASSEMBLY	47
72960	PLUG	35	77872	BUSHING	5
72962	THRUST BUTTON	13	77906	SPACER	29
72964	GEAR ASSEMBLY	45	78528	BODY ASSEMBLY	41
72972	SHAFTGEAR ASSY	13	01A23354	STUD	7
73000	COUPLING	53	01L21418	WASHER	5
73027	TUBE ASSEMBLY	29	01L23459	WASHER	21
73032	GASKET	49	01P19762-4-16	BAG	53
73136	BRACKET	50	02G21446	NIPPLE	49
73249	WASHER	5	05K19423-S	IMPELLER KIT	41
73250	WASHER	5	06A19956	SEAL	45
73251	WASHER	5	06A23493	SEAL	21
73252	WASHER	5	06B21326	GASKET	35
73383	LOCKPLATE	1	06B23862	GASKET	47
73648	ROLLER	11	06E19769-0.63	GASKET	45
73772	NOZZLE ASSEMBLY	7	06E19769-0.91	GASKET	35
73810	BUSHING	11	06E19769-1.25	GASKET	9
73818	GASKET	39	07A19474	BRACKET	1
74065	"O" RING	33	07F23268	STRUT	1
74241	RING	17	11F24020-S1	CRANKCASE ASSY	7
74360	FLANGE	31	11F24120-S1	CRANKCASE ASSY	7
74494	PLATE	29	12A19770	BRACKET	33
74641	SHAFT	41	13F47727	CRANKSHAFT ASSY	11
74887	SPACER	29	13S19647	GEAR	11
75009	BRACKET	49	14D23908	PISTON	17
75118	GASKET	19	14H21950	RING	17
75338	BAFFLE ASSEMBLY	29	14S23889	BOLT	17
75380	LINK	1	15B21319	SOCKET	21
75656-S	BUSHING	11	15B21319	SOCKET	25
75657-S	BUSHING	11	15B26066	PLUNGER ASSY	21
75675	TUBE ASSEMBLY	33	15B26066	PLUNGER ASSY	25
76118	SPACER	11	15B26262	BODY ASSEMBLY	9
76155	SHAFT ASSEMBLY	11	15F19957-52	ROD ASSEMBLY	22
76220	STUD	15	15F19957-52	ROD ASSEMBLY	26
76304	ELBOW	49	15F19957-53	ROD ASSEMBLY	22
76534	SHIM	1	15F19957-53	ROD ASSEMBLY	26
76788	ROLLER	11	15F19957-54	ROD ASSEMBLY	22
77309	BUSHING	13	15F19957-54	ROD ASSEMBLY	26

NUMERICAL INDEX (CONT.)

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
15F19957-55	ROD ASSEMBLY	22	17F21186	ROCKER ASSY	26
15F19957-55	ROD ASSEMBLY	26	18B23885	BEARING	9
15F19957-56	ROD ASSEMBLY	22	18E23886	BEARING	9
15F19957-56	ROD ASSEMBLY	26	18N26106	BEARING	17
15F19957-57	ROD ASSEMBLY	22	21C21541-04	HOUSING ASSY	39
15F19957-57	ROD ASSEMBLY	26	31B26040	STARTER	55
15F19957-58	ROD ASSEMBLY	22	32C19553	ALTERNATOR ASSY	3
15F19957-58	ROD ASSEMBLY	26	32C19570	ALTERNATOR ASSY	3
15F21362-18	ROD ASSEMBLY	22	36B19484	PULLEY	3
15F21362-18	ROD ASSEMBLY	26	37A19773-376	BELT	3
15F21362-19	ROD ASSEMBLY	22	53E22144	VALVE ASSEMBLY	47
15F21362-19	ROD ASSEMBLY	26	56A26071-05	HOUSING ASSY	35
15F21362-20	ROD ASSEMBLY	22	56F19765	ELBOW ASSY	31
15F21362-20	ROD ASSEMBLY	26	56G26069	BAFFLE	36
15F21362-21	ROD ASSEMBLY	22	57A21009	SEPARATOR	31
15F21362-21	ROD ASSEMBLY	26	57B19829	VALVE	31
15F21362-22	ROD ASSEMBLY	22	61M26410	FUEL INJECTOR	49
15F21362-22	ROD ASSEMBLY	26	62D26032	FUEL	43
15F21362-23	ROD ASSEMBLY	22	63B26719	MANIFOLD ASSY	49
15F21362-23	ROD ASSEMBLY	26	63C26450	NOZZLE	49
15F21362-24	ROD ASSEMBLY	22	66LC35SDNN	MAGNETO	53
15F21362-24	ROD ASSEMBLY	26	66LP-0SCNN	MAGNETO	53
15G23462	SHRD TUBE ASSY	21	66M21195	CLAMP	53
15H21201	SPRING	21	67U20636	HARNESS	53
15H21201	SPRING	25	67U20637	HARNESS	53
15N23374	CAMSHAFT ASSY	11	68H22624	CUSHION	53
16T19468	SEAT	19			
17A23937	VALVE	21			
17A23937	VALVE	25			
17B23935	VALVE	21			
17B23935	VALVE	25			
17C19386	CAP	21			
17C19386	CAP	25			
17C21191	KEY	21			
17C21191	KEY	25			
17F21185	ROCKER ASSY	22			
17F21185	ROCKER ASSY	26			
17F21186	ROCKER ASSY	22			