

TIO-540-AE2A Illustrated Parts Catalog

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PC-315-7

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652 Oliver Street
Williamsport, PA 17701

TIO-540-AE2A Illustrated Parts Catalog

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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 (IPC) contains a complete list of spare parts for the Lycoming TIO-540-AE2A 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 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 this 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.

Vendor Accessories

For Vendor Accessories used on Lycoming engines, refer to the appropriate Vendor’s Parts Catalog. A list of vendor’s addresses appears in the latest revision of Lycoming Service Letter No. L114.

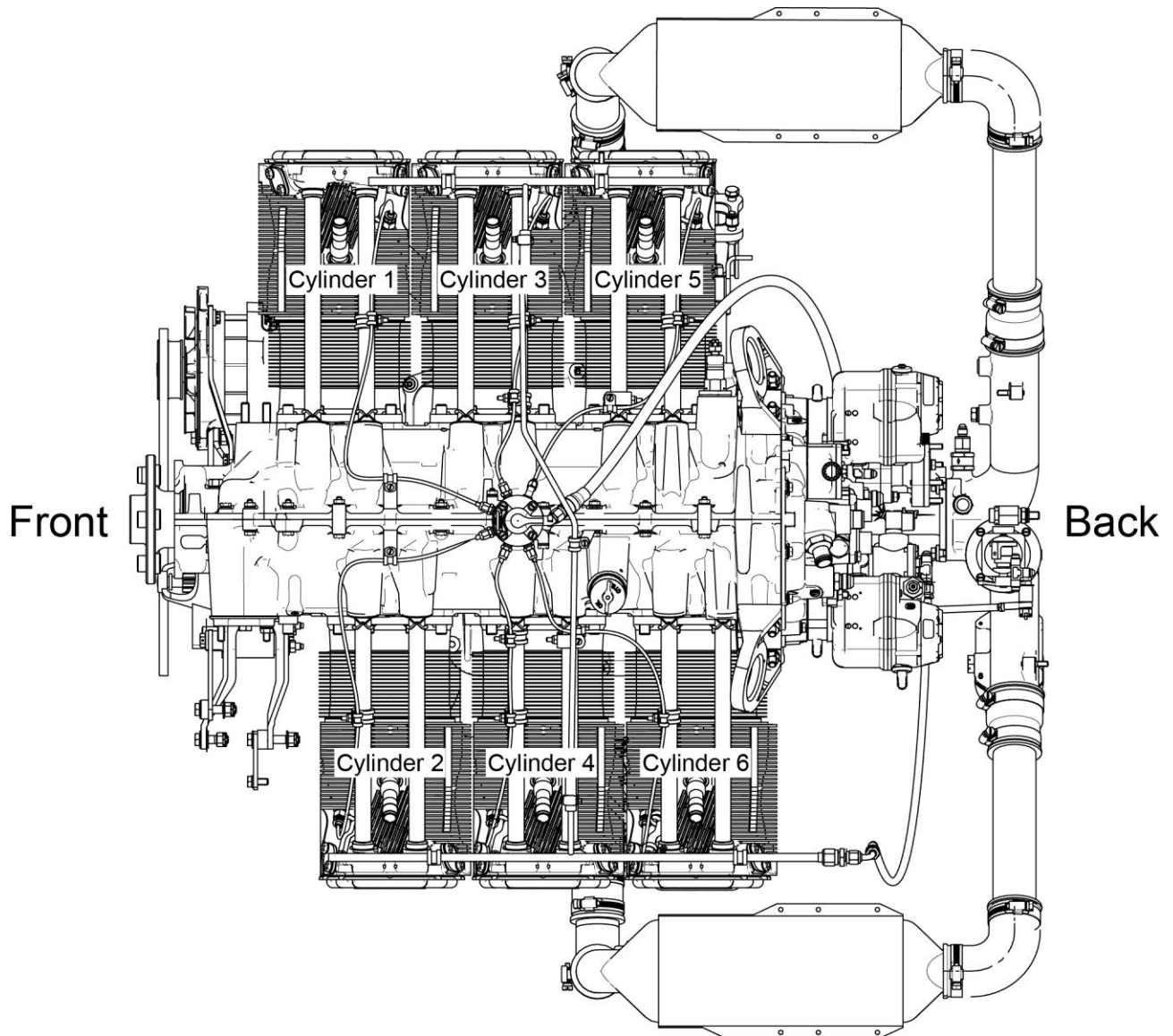
Any reference in this document to the suppliers/part manufacturer’s product, by name, trademark, part number or other description is solely for the purpose of identification and does not indicate or infer that Lycoming accepts responsibility for quality control and/or airworthiness of parts, which do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

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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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.)		
			P02 .002	P05 .005	P10 .010	P15 .015	P20 .020	P30 .030	P40 .040	P50 .050	M03 .003	M06 .006	M10 .010
66670	BUSHING			X	X								
66713 **	GUIDE			X	X		X	X					
69260	INSERT				X								
69796	DOWEL			X									
71903-B	BUSHING	X											
72155-S	BUSHING			X	X	X							
73810	BUSHING				X	X♦							
75656-S	BUSHING			X	X	X	X						
75838 **	GUIDE			X	X		X	X					
LW-15628 ***	SEAL									X			
79024-S	BUSHING			X	X	X							
LW-15628	SEAL									X			
STD-1065	DOWEL			X	X	X							
16T19468	SEAT				X		X						
18B23885	BEARING										X	X	X
18E23886	BEARING										X	X	X
05K23463 *	IMPELLER KIT												

* - Sold in complete sets only

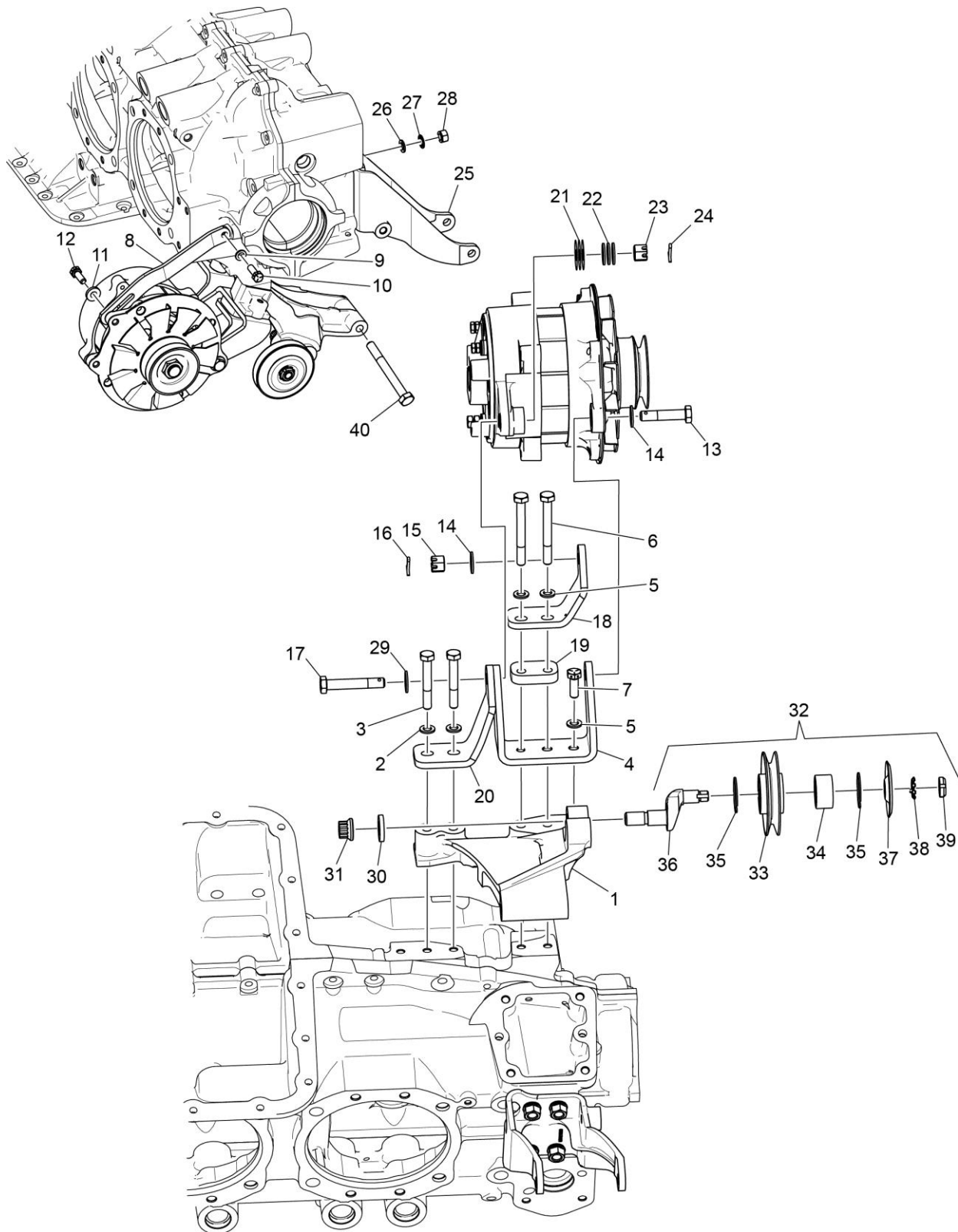
** - See latest revision of Service Instruction No. 1256. Reference Figure 10 items no. 4 and 5 for valve guides

*** - See latest revision of Service Instruction No. 1324

♦ - Also available in P125 (.0125 in.) oversize

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 followed by the number designating the size in thousandths of an inch.



**Dual Alternator Mounting and Attaching
Figure 1**

FIGURE 1 – DUAL ALTERNATOR MOUNTING AND ATTACHING

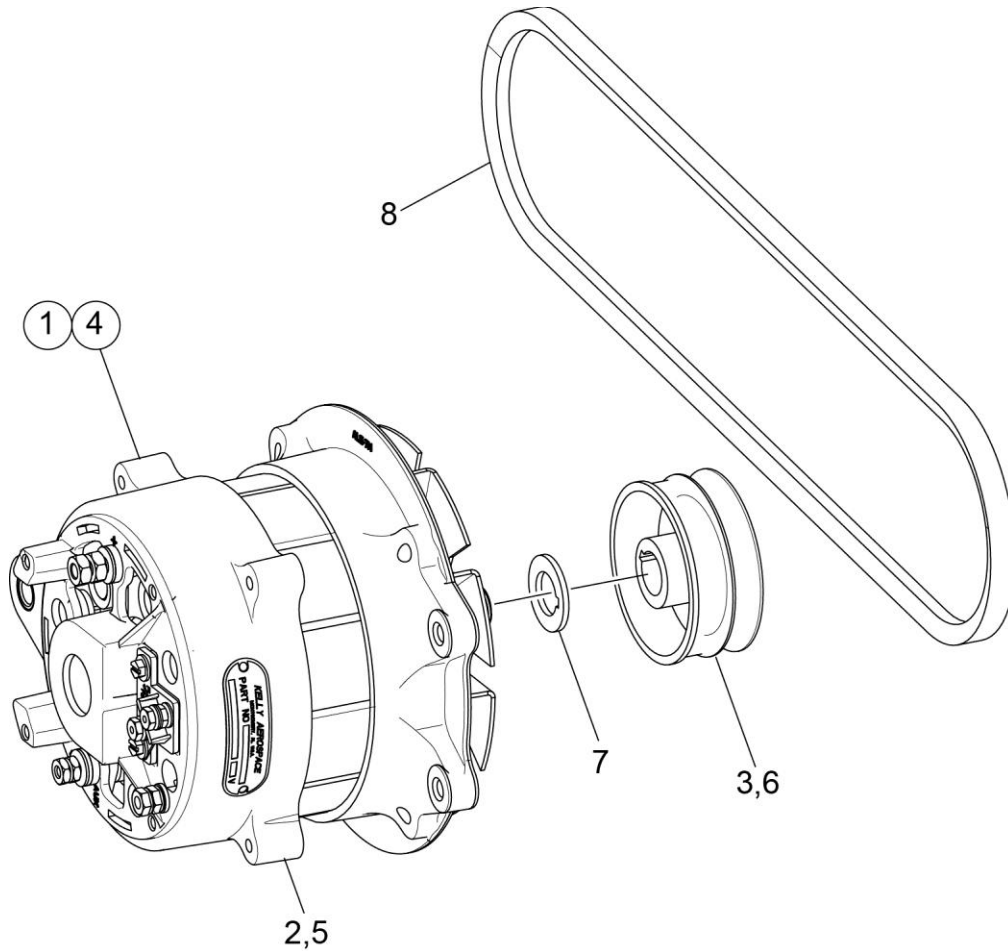
Figure Item	Code	Part Number	Description	Units per Assembly
1		07A26688	BRACKET, Alternator	1
2		STD-35	WASHER, 5/16 plain	2
3		LW-31H2.13	BOLT, 5/16-18 x 2-1/8 long, hex head,dr.head,right side	2
4		07A19880	BRACKET, Alternator, right	1
5		STD-35	WASHER, 5/16 plain	3
6		LW-31H2.75	BOLT, 5/16-18 x 2-3/4 long, hex head,dr.head	2
7		LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex head,dr.head	1
8		07F21298	LINK, Alternator adjusting	1
9		STD-35	WASHER, 5/16 plain	1
10		LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex head,dr.head	1
11		STD-1727	WASHER, Plain, 3/4 O.D. x 11/32 I.D. x 1/8 thick	1
12		LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex head,dr.head	1
13		AN6-15	BOLT, 3/8-24 x1-11/16 long, hex head,dr.head	1
14		STD-690	WASHER,13/16 O.D. x 25/64 I.D. x 1/16 thick	2
15		STD-872	NUT, 3/8-24 slotted	1
16		STD-713	COTTER PIN, 3/32 diameter x 3/4 long	1
17		AN6-21	BOLT, 3/8-24 x2-3/16 long, hex head,dr.head	1
18		07A21908	BRACKET, Alternator, inner	1
19		01L21909	SPACER, Alternator bracket, inner	1
20		07A21910	BRACKET, Alternator, aft	1
21	AR	76534	SHIM, 1-1/8 O.D. x 13/32 I.D. x .005 thick	AR
22		STD-690	WASHER,13/16 O.D. x 25/64 I.D. x 1/16 thick	3
23		STD-872	NUT, 3/8-24 slotted	1
24		STD-713	COTTER PIN, 3/32 diameter x 3/4 long	1
25		07A21030	BRACKET, Compressor	1
26		STD-33	WASHER, 3/8 plain	4
27		STD-678	WASHER, 3/8 internal lock	4
28		383-B	NUT, 3/8-24 plain	4
29		STD-690	WASHER,13/16 O.D. x 25/64 I.D. x 1/16 thick	2
30		STD-669	WASHER, 33/64 I.D. x 1.00 O.D. x 1/8 thick	1
AR as required				

(continued on next page)

FIGURE 1 - DUAL ALTERNATOR MOUNTING AND ATTACHING (CONT)

Figure Item	Code	Part Number	Description	Units per Assembly
31		STD-2221	NUT, 1/2-20 self-locking	1
32		36A19951	PULLEY AND SHAFT ASSEMBLY, idler	1
33		78614	PULLEY, idler	1
34		78629	BALL BEARING, Alternator idler pulley	1
35		MS16625-1125	RING, Internal retaining	2
36		LW-19238	SHAFT, Idler, alternator adjusting	1
37		LW-11635	SHIELD, Alternator idler bearing	1
38		76768	LOCKWASHER, Alternator idler pulley bearing	1
39		76769	LOCKNUT, Alternator idler pulley bearing	1
40		AN6-44	BOLT, 3/8-24 x4-9/16 long, hex head,drilled	1

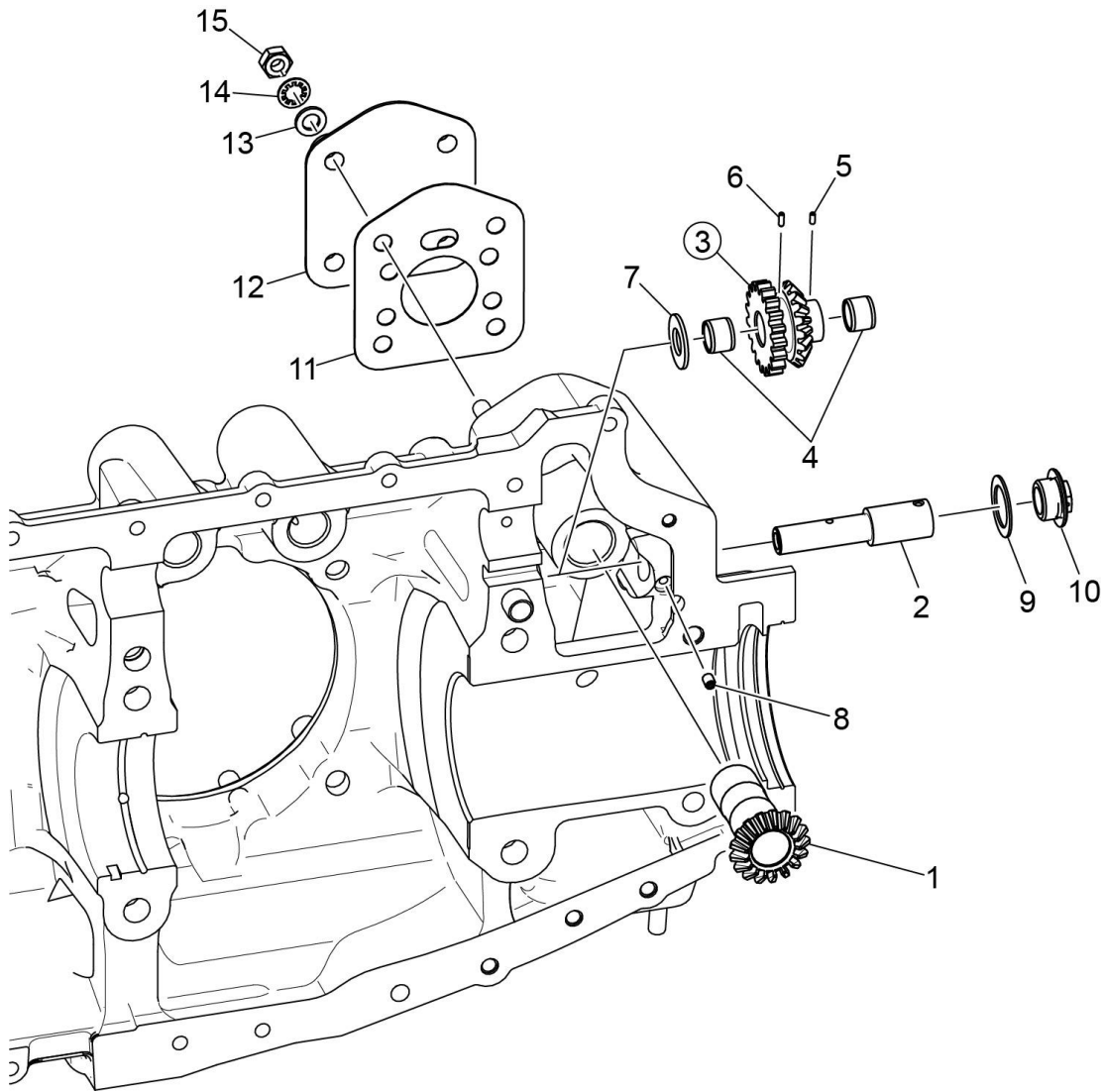
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Alternator Assemblies and Belts
Figure 2

FIGURE 2 – ALTERNATOR ASSEMBLIES AND BELTS

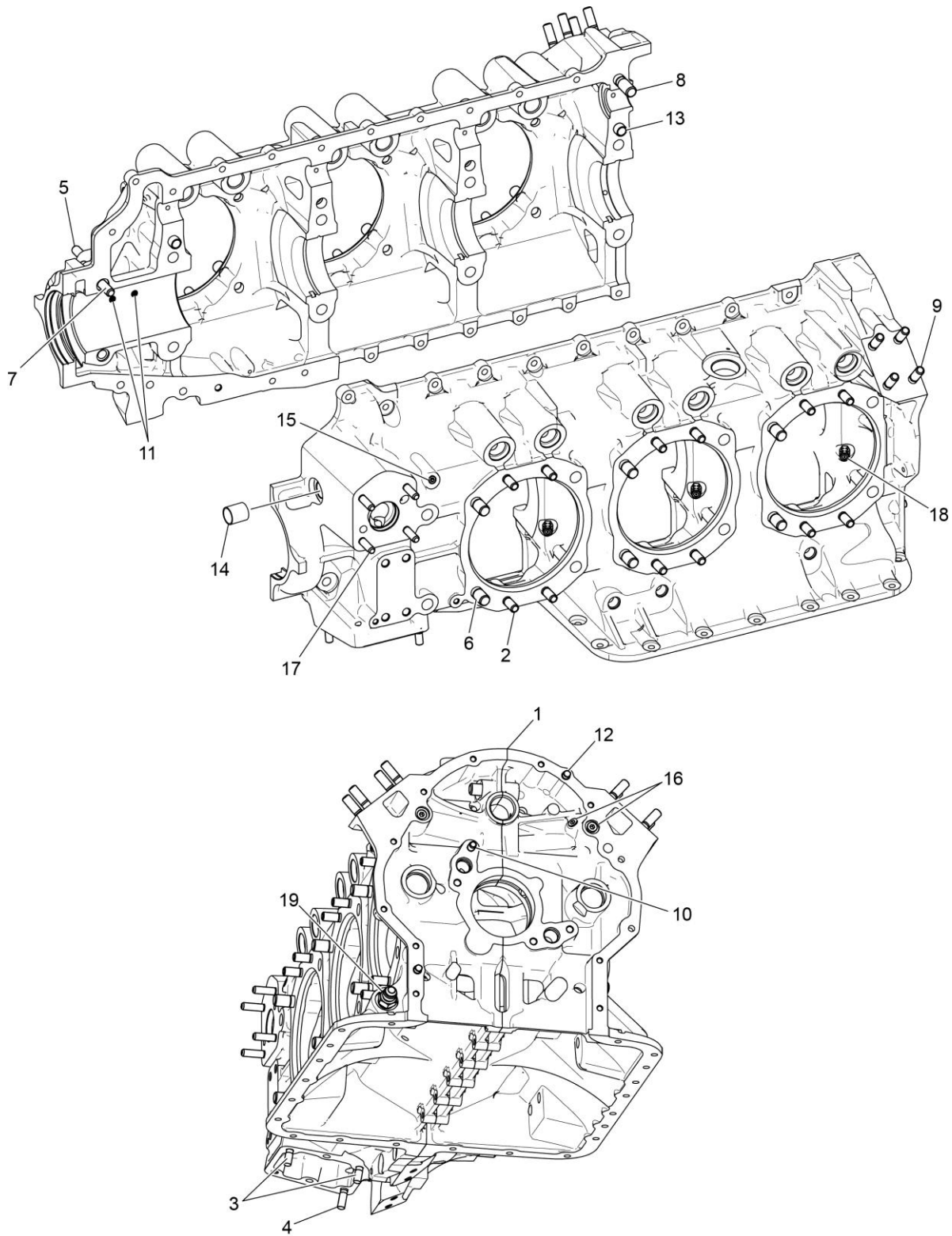
Figure Item	Code	Part Number	Description	Units per Assembly
1		32C19558	ALTERNATOR ASSEMBLY, 24V-70A (Right)	1
		32C22528	ALTERNATOR ASSEMBLY, 24V-75A (Right)	1
2	V	LW-14326	ALTERNATOR, 24V-70A (ALU-8521-LS)	1
	V	32C22515	ALTERNATOR, 24V-75A ESI (ALU-6539-LS)	1
3		36B19889	PULLEY, Alternator	1
4		32C19562	ALTERNATOR ASSEMBLY, 24V-70A (Left)	1
		32C22527	ALTERNATOR ASSEMBLY, 24V-75A (Left)	1
5	V	LW-14326	ALTERNATOR, 24V-70A (ALU-8521-LS)	1
	V	32C22515	ALTERNATOR, 24V-75A ES (ALU-6539-LS)	1
6		36B19900	PULLEY, Alternator	1
7		LW-15403	WASHER, Alternator (located behind pulley)	1
8		37A19773-382	BELT, Alternator, 3/8 in. (Right)	1
		37A19773-464	BELT, Alternator, 3/8 in. (Left)	1
V Vendor Prime Manufacturer part NOTE: Refer to the latest revision of Service Instruction No. 1154 for complete listing of FAA-approved starters, alternators, generators, regulators and relays.				



Propeller Governor Drive Assembly
Figure 3

FIGURE 3 - PROPELLER GOVERNOR DRIVE ASSEMBLY

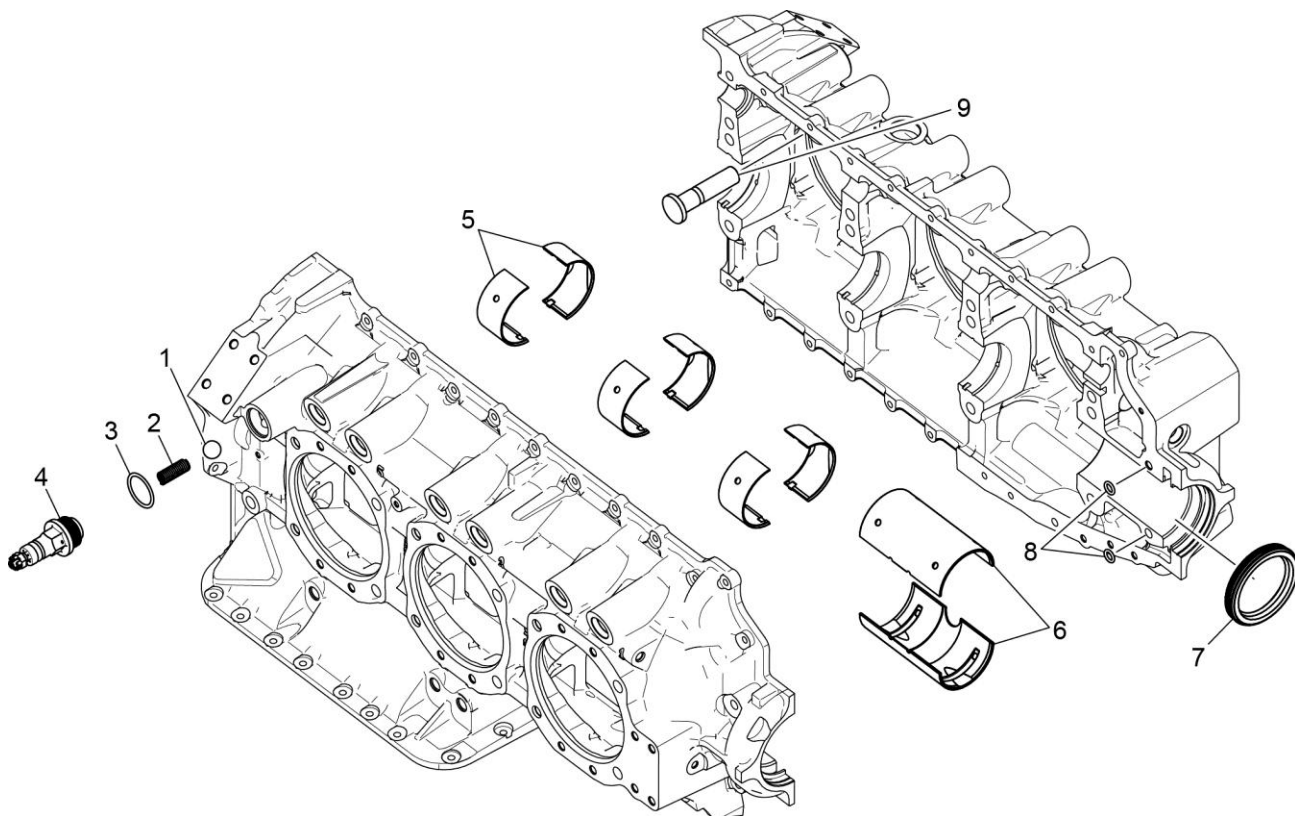
Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-10442	GEAR, Propeller governor driven	1
2		LW-14021	SHAFT, Propeller governor idler gear	1
3		LW-10541	GEAR ASSEMBLY, Propeller governor idler	1
4		77872	BUSHING, Propeller governor idler gear	2
5		STD-19	DOWEL, 3/32 diameter x 7/32 long	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 1/16 thick	1
10		LW-13896	PLUG, 3/4-16 hex. head	1
11		72053	GASKET, Propeller	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

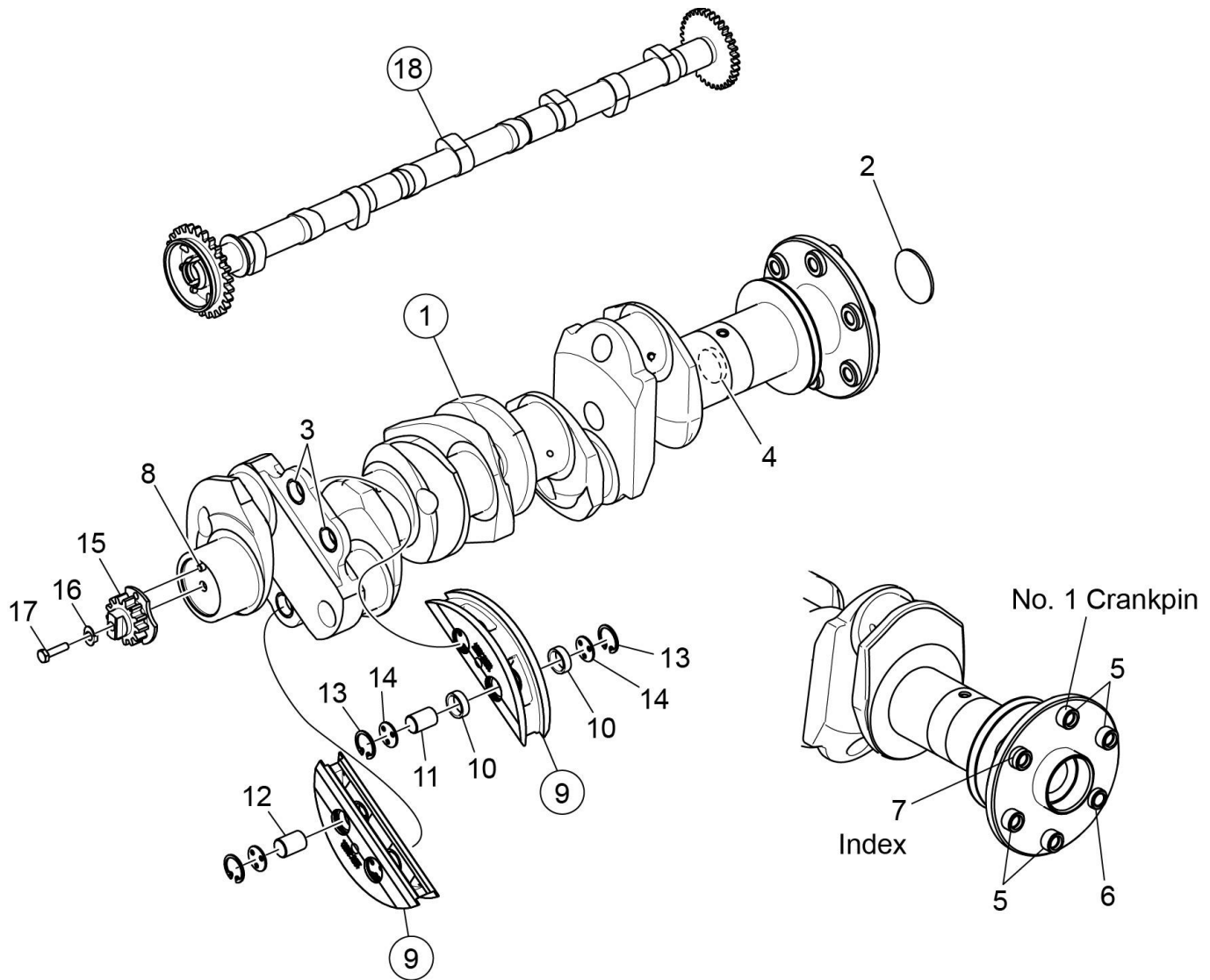
Figure Item	Code	Part Number	Description	Units per Assembly
1		11F24023-S3-S	CRANKCASE ASSEMBLY	1
2		38-13	STUD, 3/8-16 x 1-5/8 long	24
3		31C-12	STUD, 5/16-18 x 1-1/2 long	2
4		31C-13	STUD, 5/16-18 x 1-5/8 long	1
5		38-13	STUD, 3/8-16 x 1-5/8 long	4
6		50-15	STUD, 1/2-13 x 1-7/8 long	12
7		38-22	STUD, 3/8-16 x 2-3/4 long	1
8		38D-17	STUD, 3/8-16 x 2-1/8 long	1
9		38-16	STUD, 3/8-16 x 2.00 long	8
10		01A23354	STUD, 5/16-18 x 1.00 long drilled	1
11		69796	DOWEL, Crankshaft, front bearing	2
12		STD-514	DOWEL, 5/16 diameter x 1/2 long	2
13		STD-557	DOWEL, 1/2 diameter x 11/16 long	2
14		72158	BUSHING, Governor drive idler shaft	1
15		STD-1339	PLUG, 1/16-27 NPT, allen head	1
16		1102	PLUG, 1/8 pipe, allen head	4
17		31C-17	STUD, 5/16-18 x 2-1/8 long	4
18		73772	NOZZLE ASSEMBLY, Piston cooling	6
19		75739	NIPPLE, 3/8 tube	1



Crankcase Related Parts
Figure 5

FIGURE 5 - CRANKCASE RELATED PARTS

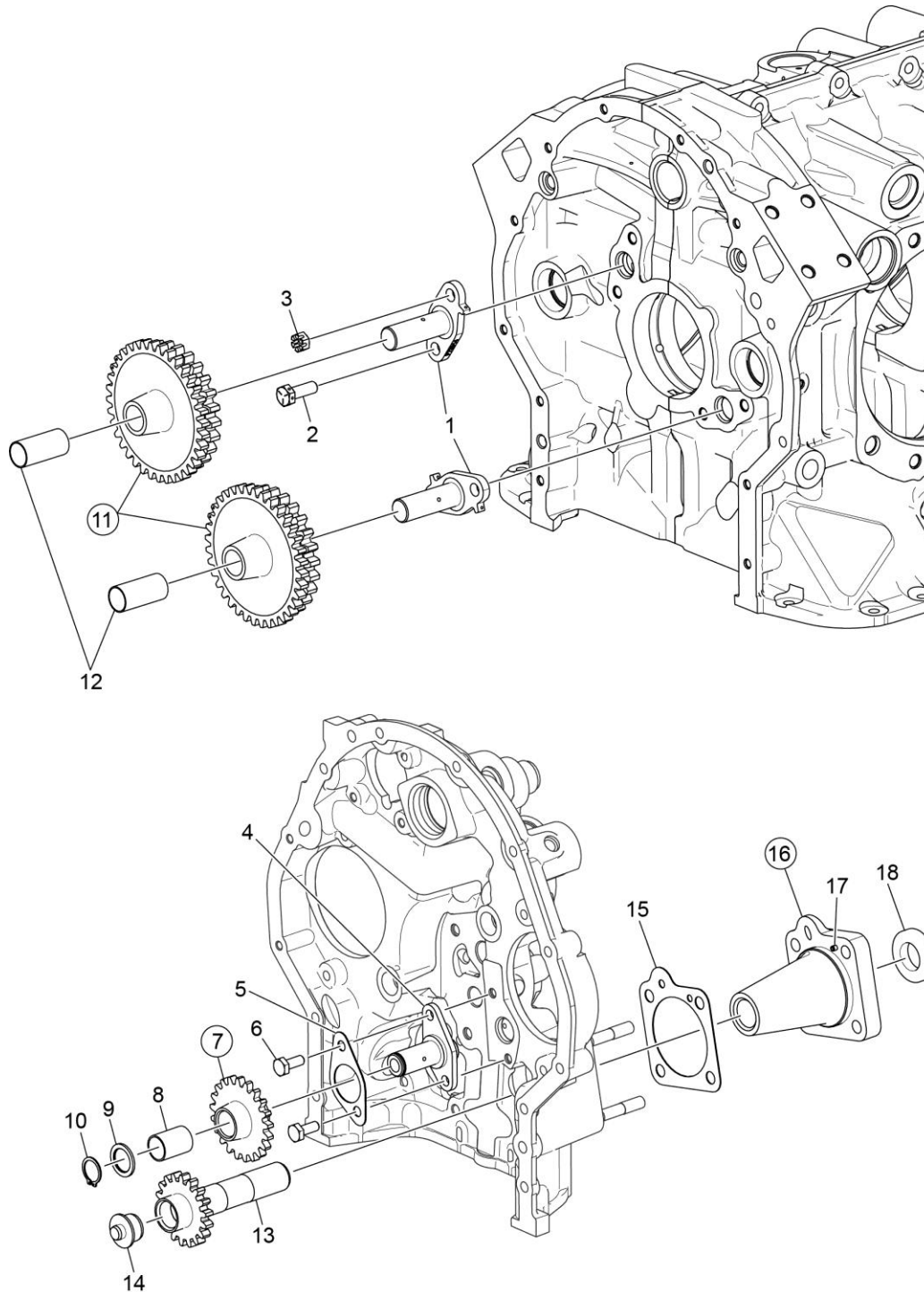
Figure Item	Code	Part Number	Description	Units per Assembly
1		1028-B	BALL, 11/16 diameter	1
2	*	68668	SPRING, Oil pressure relief valve	1
	*	61084	SPRING, Oil pressure relief valve	1
	*	77467	SPRING, Oil pressure relief valve	1
	*	LW-11713	SPRING, Oil pressure relief valve	1
	*	LW-18085	SPRING, Oil pressure relief valve	1
3		06E19769-1.25	GASKET, 1-1/4 I.D. annular	1
4		77808	VALVE ASSEMBLY, Oil pressure relief, adj.	1
5		18E23886	BEARING, Crankshaft	6
6		18B23885	BEARING, Crankshaft, front	2
7	♦	LW-15628	SEAL, Crankshaft oil	1
8		72091	RING, Oil seal, 23/64 I.D. x 7/64 dia. section	2
9		15B26262	BODY, Hydraulic tappet	12
* Select the appropriate 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. ♦ See latest revision of Service Instruction No. 1324 for installation.				



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		13F47738	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		79024-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		13S19648	GEAR, Crankshaft	1
16		LW-18638	LOCKPLATE, Crankshaft gear	1
17		STD-2247	BOLT, 5/16-24 x 1.75	1
18		LW-13908	CAMSHAFT ASSEMBLY	1

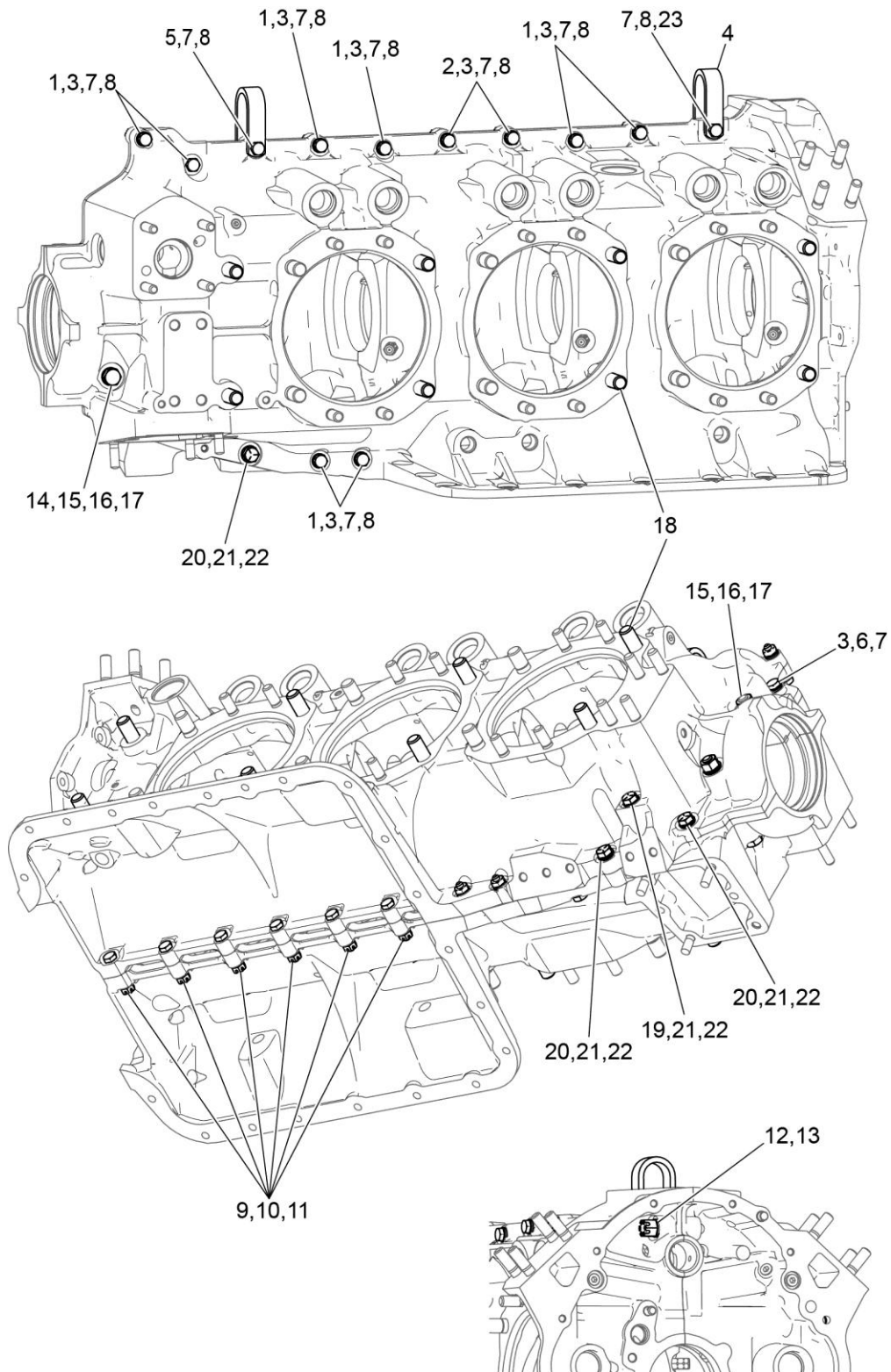


Crankshaft and Fuel Pump Idler Gears

Figure 7

FIGURE 7 – CRANKSHAFT AND FUEL PUMP IDLER GEARS

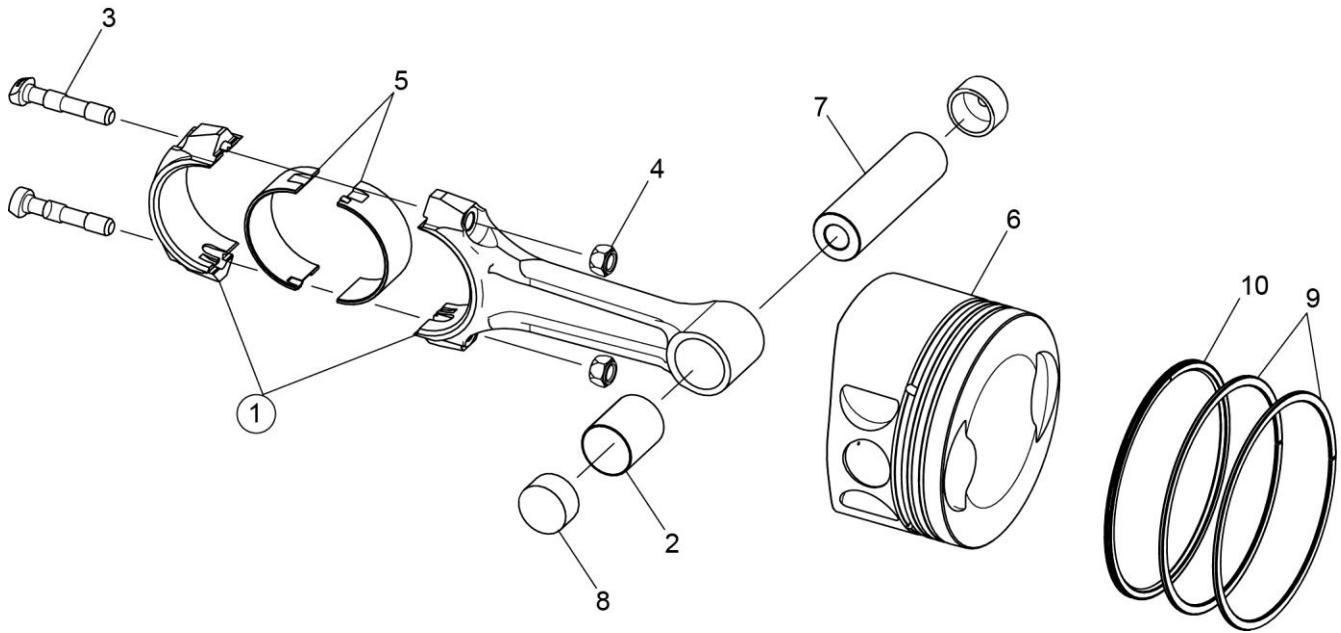
Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-13795	SHAFT, Crankshaft idler gear	2
2		LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex head, dr.	3
3		STD-2168	NUT, 5/16-18 x NC-3, slotted shear	1
4		72246	SHAFT, Fuel pump idler gear	1
5		71667	LOCKPLATE, 1/4 bolt x 1.75 spacing	1
6		LW-25-0.63	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, 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

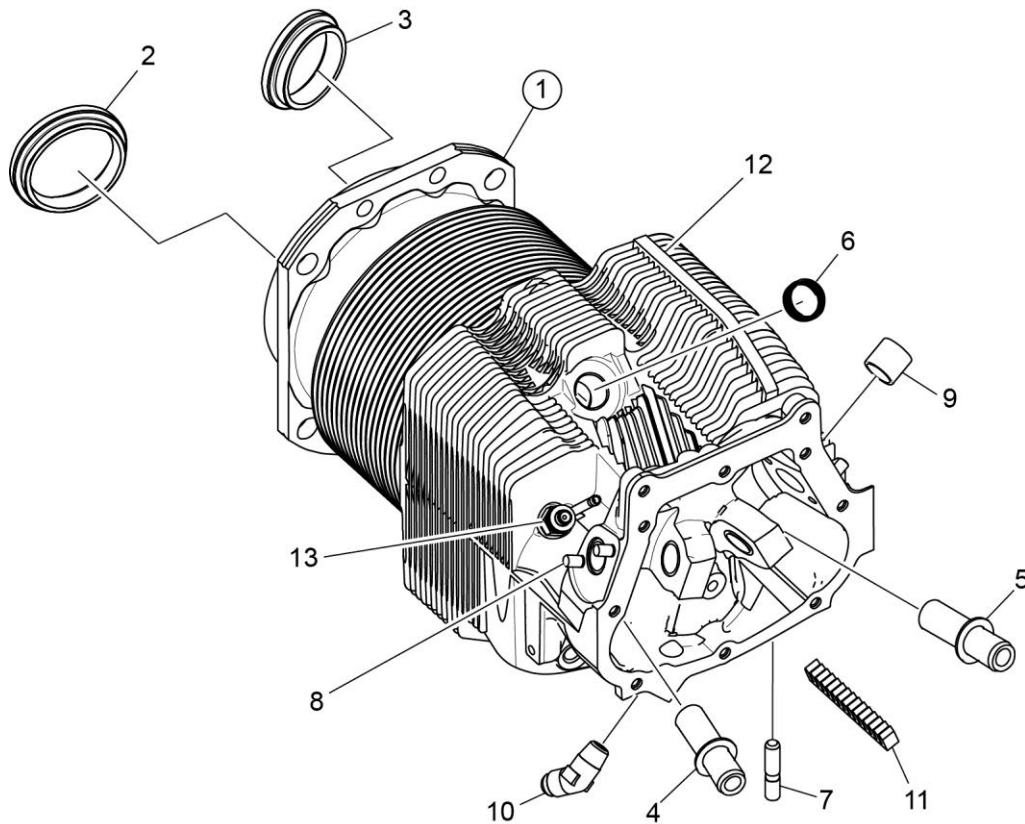
Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-25-1.50	BOLT, 1/4-20 x 1-1/2 long, hex. head	8
2		LW-25-2.00	BOLT, 1/4-20 x 2.00 long, hex. head	2
3		STD-8	WASHER, 1/4 plain	24
4		60803	STRAP, Lifting	2
5		LW-25-1.75	BOLT, 1/4-20 x 1-3/4 long, hex. head	1
6		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	1
7		STD-160	WASHER, 1/4 lock, internal teeth	13
8		STD-1411	NUT, 1/4-20 plain	12
9		LW-25S1.50	BOLT, 1/4-20 x 1-1/2 long, hex. head, drilled	6
10		STD-8	WASHER, 1/4 plain	6
11		STD-2249	NUT, 1/4-20 slotted shear	6
12		STD-33	WASHER, 3/8 plain	1
13		STD-872	NUT, 3/8-24 slotted	1
14		AN6-34A	BOLT, 3/8-24 x 3-9/16 long, hex. head	1
15		STD-33	WASHER, 3/8 plain	3
16		STD-678	WASHER, 3/8 lock, internal teeth	2
17		STD-596	NUT, 3/8-24 plain	2
18		76220	STUD, 1/2-20 x 10-45/64 long	8
19		LW-31-2.75	BOLT, 5/16-18 x 2-3/4 long, hex. head	1
20		LW-31.1.16	BOLT, 5/16-18 x 1-5/32 long, hex. head	3
21		STD-35	WASHER, 5/16 plain	4
22		STD-475	WASHER, 5/16 lock, internal teeth	4
23		LW-25-1.88	BOLT, 1/4-20 x 1-7/8 long, hex. head	1



Connecting Rods, Pistons and Ring Assemblies
Figure 9

FIGURE 9 - CONNECTING RODS, PISTONS AND RING ASSEMBLIES

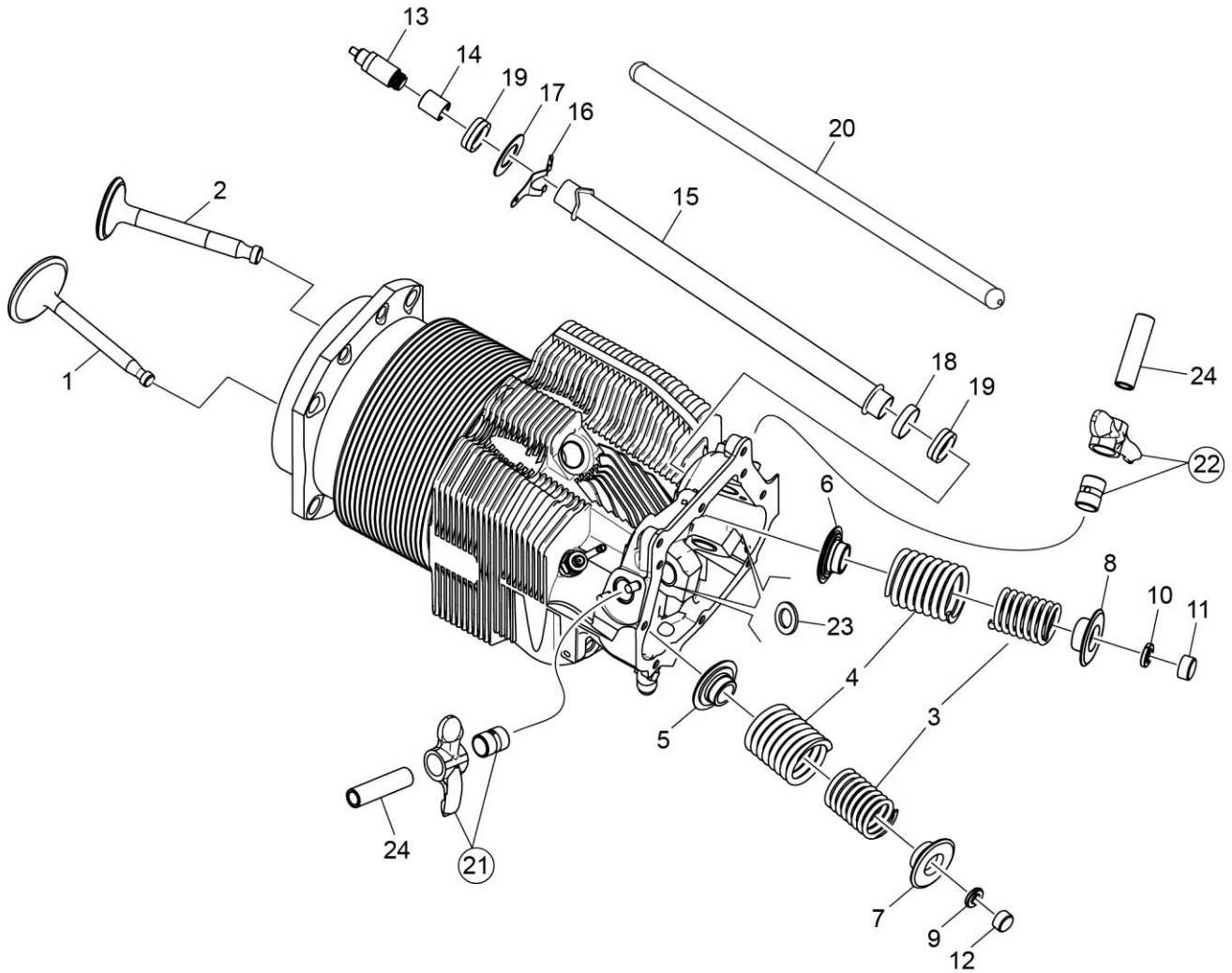
Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-13422-S	CONNECTING ROD ASSEMBLY	6
2		LW-13923	BUSHING, Connecting rod, upper	6
3	P	14S23889	BOLT, Connecting rod	12
	*	LW-12596	BOLT, Connecting rod	12
4		LW-12186	NUT, Connecting rod bolt	12
5		18M23887	BEARING, Connecting rod	12
6		14D23907	PISTON, Compression ratio, 7.30:1	6
7		LW-14078	PIN, Piston	6
8		72198	PLUG, Piston pin	12
9		74241	RING, Piston compression	12
10		14H21990	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-12988	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		69260	INSERT, Spark plug, 18-1.5 mm	12
7		31C-13	STUD, 5/16-18 x 1-5/8 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, 1/4 pipe thd. 45°	6
11		72343	STABILIZER, Cylinder head fins, 15 teeth	6
12		72344	STABILIZER, Cylinder head fins, 26 teeth	6
13		63C26452	NOZZLE ASSEMBLY	6
P Lycoming proprietary part. Listed for reference purposes only, cannot be purchased. * Refer to latest revision of Service Instruction No. 1256 for service valve guides.				



Valve Assembly and Related Parts
Figure 11

FIGURE 11 – VALVE ASSEMBLY AND RELATED PARTS

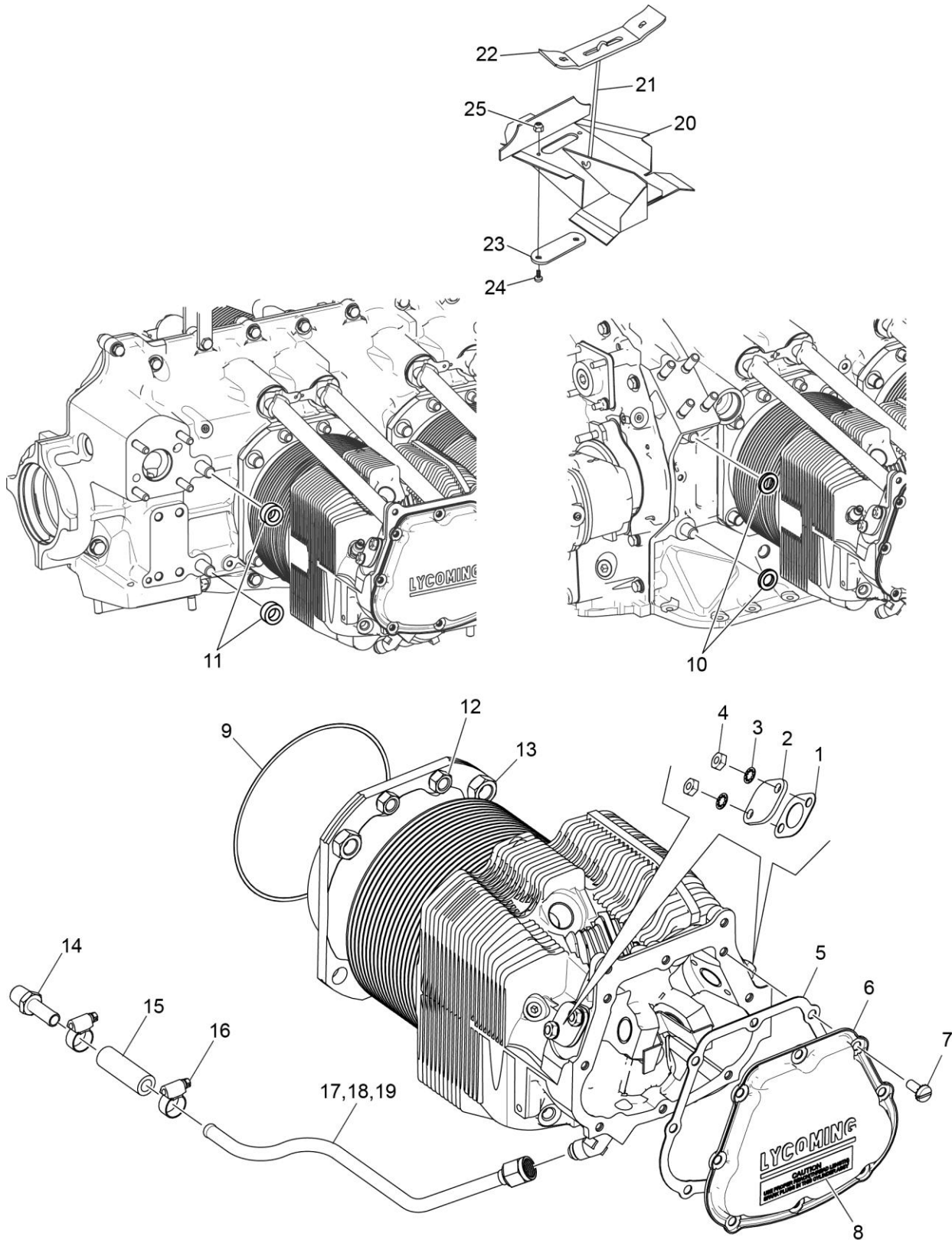
Figure Item	Code	Part Number	Description	Units per Assembly
1		17A23937	VALVE, Intake	6
2		17B23935	VALVE, Exhaust	6
3		LW-11797	SPRING, Valve, inner	12
4		LW-11796	SPRING, Valve, outer	12
5		LW-13321	SEAT, Valve spring, lower intake	6
6		LW-13322	SEAT, Valve spring, lower exhaust	6
7		69532	SEAT, Valve spring, upper intake	6
8		LW-16475	SEAT, Valve spring, upper exhaust	6
9		72050	KEY, Valve, intake	12
10		17C21191	KEY, Valve, exhaust	12
11		17C19386	CAP, Valve stem, exhaust (rotator type)	6
12		62388	CAP, Valve stem	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
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 as required * Refer to the latest revision of Service Instruction No. 1060 for complete push rod application. NOTE: Various push rod lengths are used to set valve clearances.				

(continued on next page)

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

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

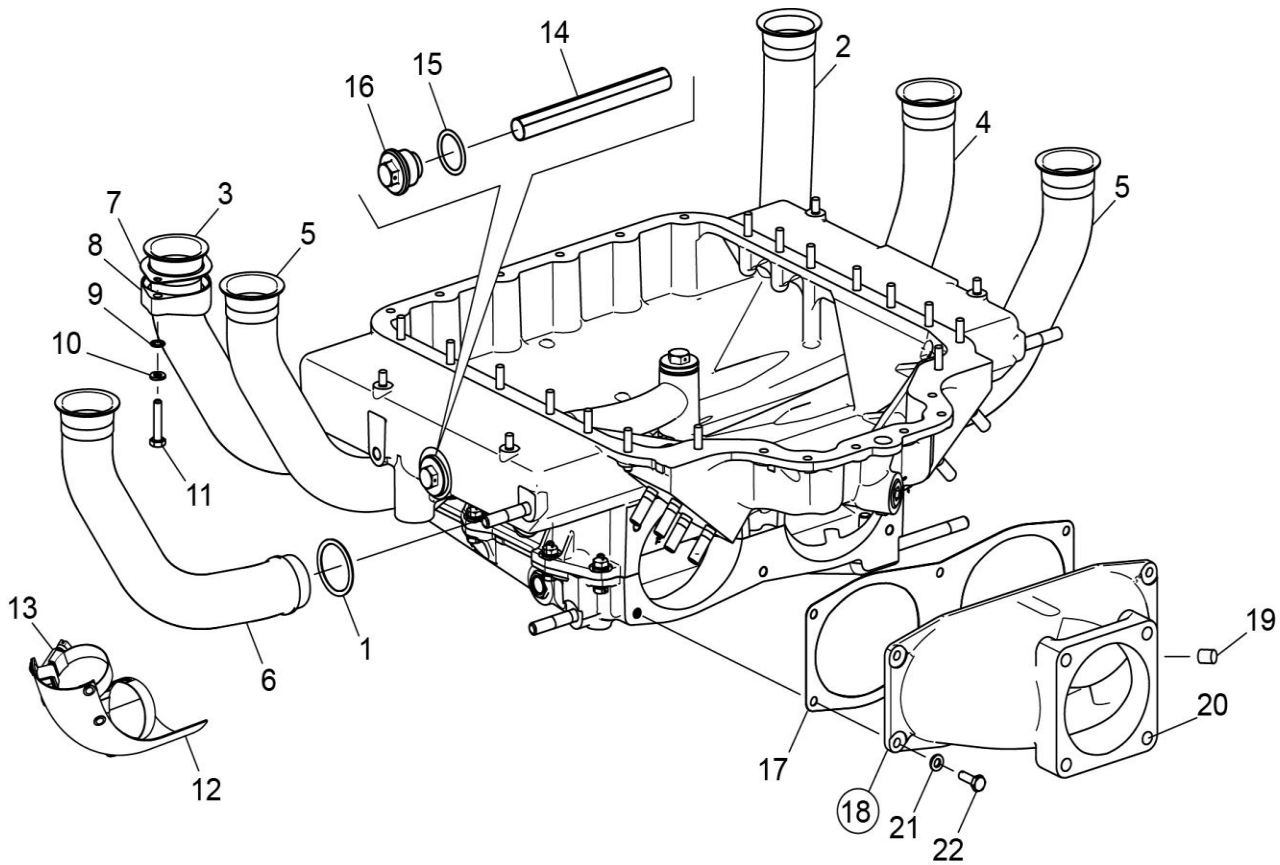
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Cylinder Related Parts
Figure 12

FIGURE 12 – CYLINDER RELATED PARTS

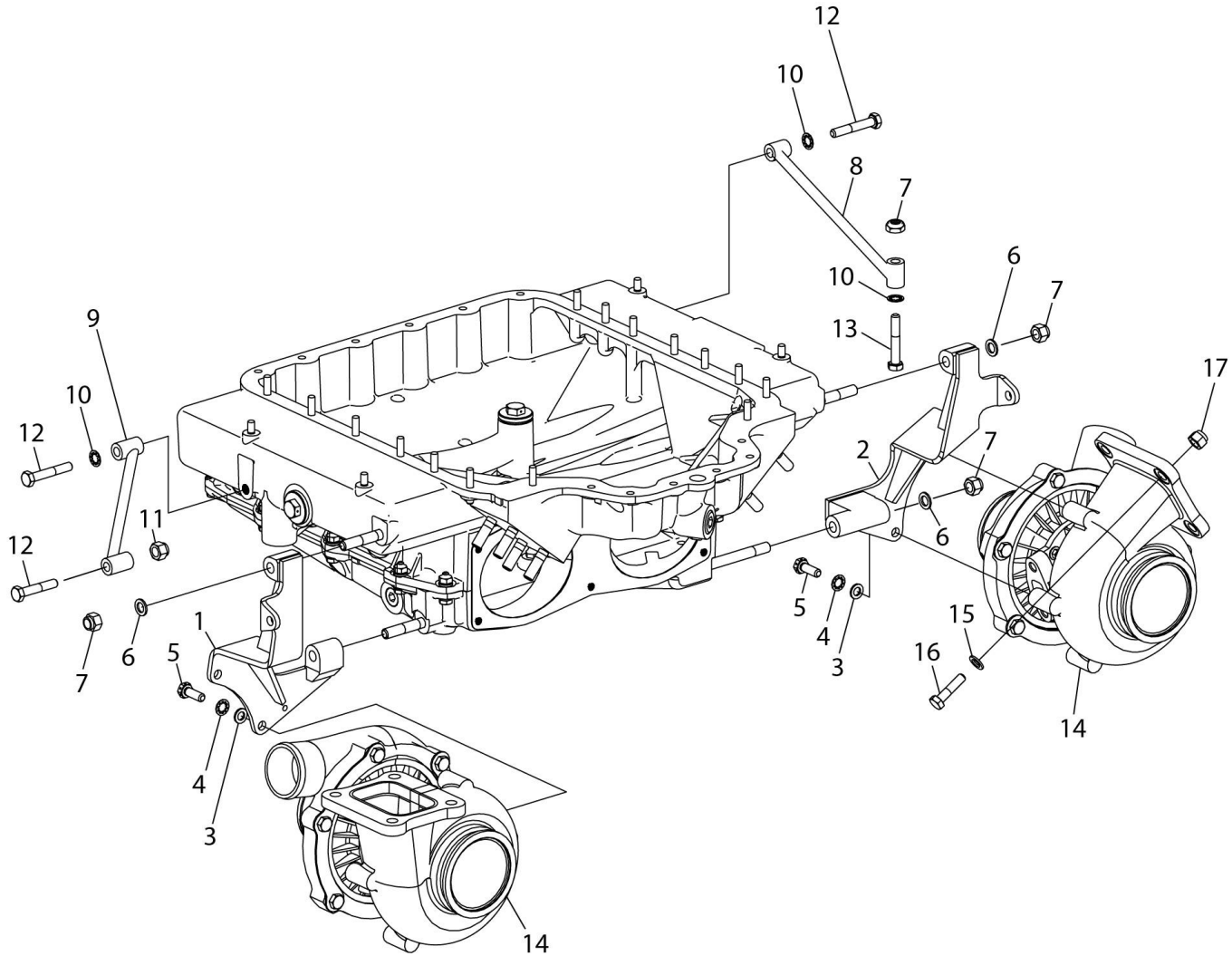
Figure Item	Code	Part Number	Description	Units per Assembly
1		66732	GASKET, Valve rocker shaft cover	12
2		72710	COVER, Valve rocker shaft	12
3		STD-160	WASHER, 1/4 lock, internal teeth	24
4		STD-1411	NUT, 1/4-20 plain	24
5		67193	GASKET, Rocker box cover	6
6		68795	COVER ASSEMBLY, Rocker box	6
7		STD-1925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

FIGURE 13 – INTAKE PIPES, OIL SUCTION SCREEN, AND AIR INLET HOUSING

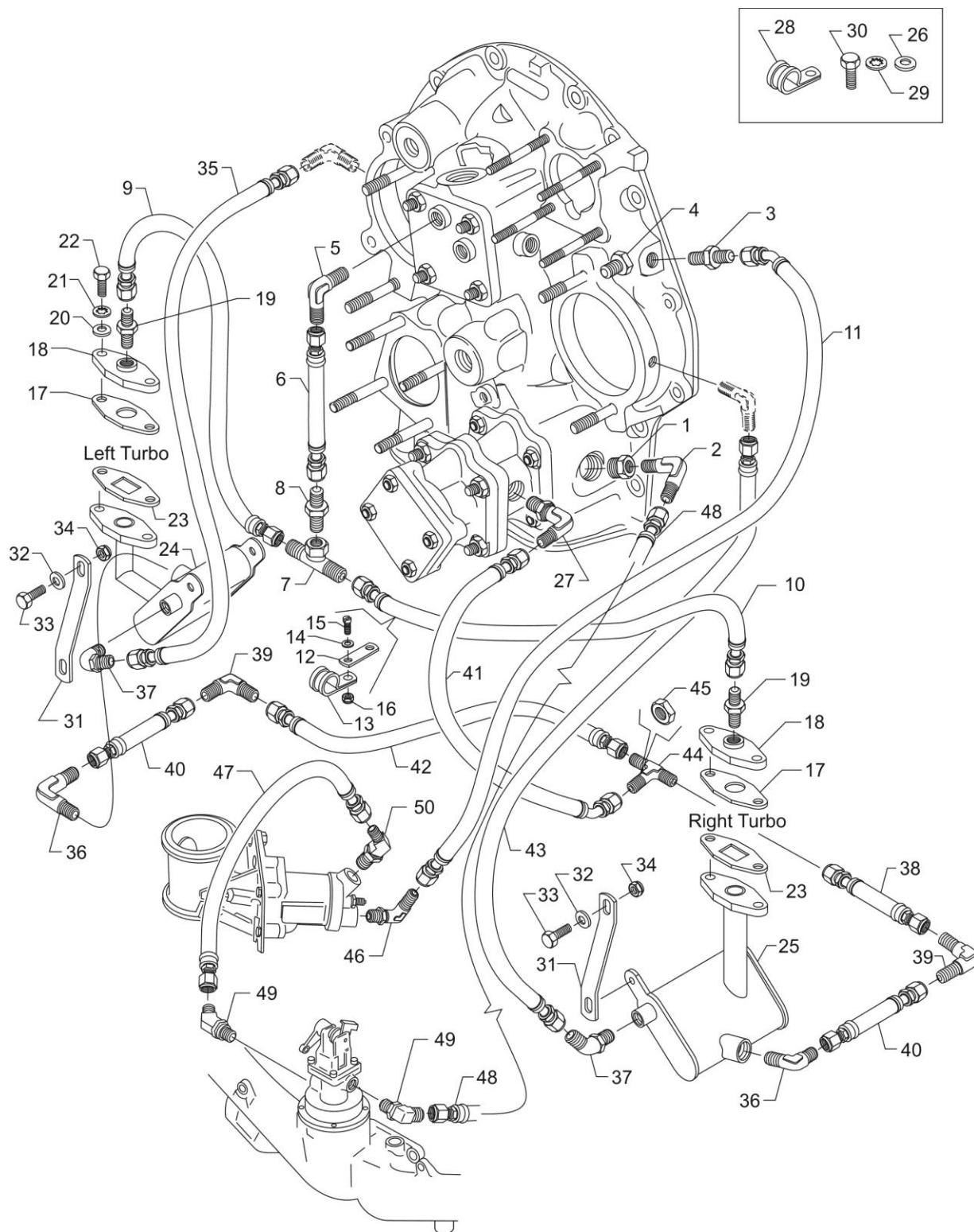
Figure Item	Code	Part Number	Description	Units per Assembly
1		72711	RING, Seal, intake pipes	6
2		LW-12191	PIPE, Intake, cylinder no. 1	1
3		LW-12192	PIPE, Intake, cylinder no. 2	1
4		LW-12193	PIPE, Intake, cylinder no. 3	1
5		LW-12194	PIPE, Intake, cylinders no. 4 and 5	2
6		LW-12195	PIPE, Intake, 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		40J19947	HEAT SHIELD, No. 5 and 6 intake pipe	2
13		LW-15592-8-24	CLAMP, Hose, 1-13/16 diameter x 9/16 wide	4
14		60422	SCREEN, Oil suction	1
15		06E19769-1.00	GASKET, Annular, 1.00 I.D.	1
16		LW-12545	PLUG, 5/8 hex. head x 1.00-20 thread	1
17		72210	GASKET, Air throttle housing	1
18	*	LW-18981	HOUSING ASSEMBLY, Air inlet	1
19		1102	PLUG, 1/8-27 NPT, allen head	1
20		STD-1164	INSERT, 5/16-18 x 5/8 long	4
21		STD-8	WASHER, 1/4 plain	6
22		LW-25-0.81	BOLT, 1/4-20 x 13/16 long, hex. head	6
* Assemble with pipe tap on right side of engine.				



Turbochargers, Supports and Attaching Parts
Figure 14

FIGURE 14 – TURBOCHARGERS, SUPPORTS AND ATTACHING PARTS

Figure Item	Code	Part Number	Description	Units per Assembly
1		07A22543	BRACKET, Turbo mounting, left	1
2		07A22544	BRACKET, Turbo mounting, right	1
3		AN960C516	WASHER, 5/16 plain	4
4		STD-475	WASHER, 5/16 lock, internal teeth	4
5		LW-31SS-0.88	BOLT, 5/16-18 x 7/8 long, hex. head	4
6		AN960C616	WASHER, 3/8 plain	4
7		MS20500-624	NUT, 3/8-24 self-locking	4
8		07F19871	STRUT, Turbo, right	1
9		07F19872	STRUT, Turbo, left	1
10		STD-475	WASHER, 5/16 lock, internal teeth	3
11		STD-2043	NUT, 5/16-18 self-locking	1
12		LW-31-1.88	BOLT, 5/16-18 x 1-7/8 long, hex. head	3
13		LW-31-1.31	BOLT, 5/16-18 x 1-5/16 long, hex. head	1
14	V	46C19839	TURBOCHARGER (TA0411) V 466642-5	2
15		AN960C616	WASHER, 3/8 plain	16
16		AN6C12A	BOLT, 3/8-24 UNF x 1-5/16 long	8
17		MS20500-624	NUT, 3/8-24 self-locking	8
V Vendor Prime Manufacturer part				



**Turbocharger Hoses, Drain Tanks and Related Parts
Figure 15**

FIGURE 15 – TURBOCHARGER HOSES, DRAIN TANKS AND RELATED PARTS

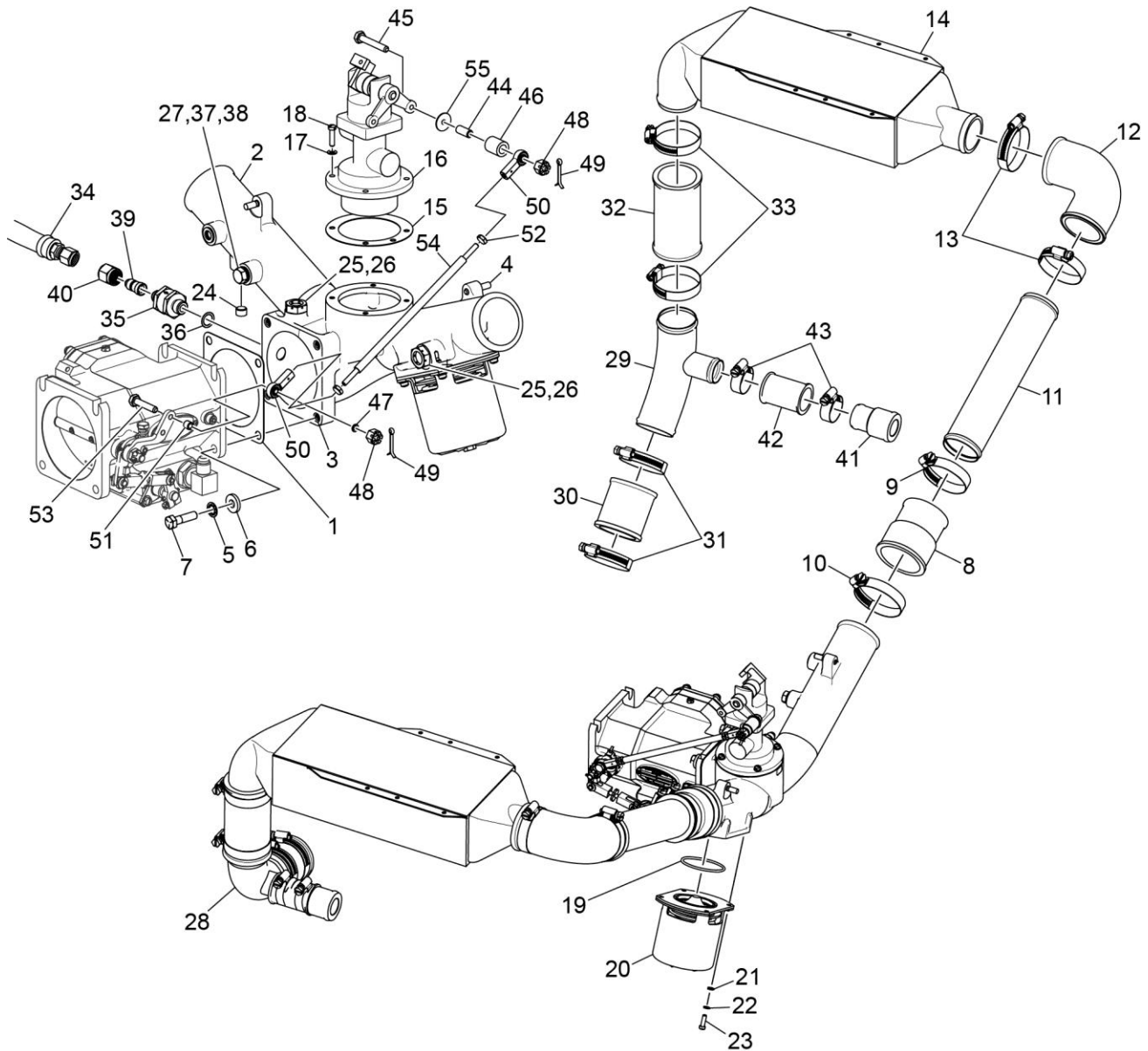
Figure Item	Code	Part Number	Description	Units per Assembly
1		AN912-9	BUSHING, 3/4 NPT to 1/4 NPT	1
2		MS20822-6	ELBOW, 3/8 tube, 90°	1
3		AN816-4	NIPPLE, 1/8 NPT to 1/4 tube	1
4		LW-14914	NIPPLE, 1/8 NPT to 1/4 tube	1
5		MS20822-6-2	ELBOW, 3/8 tube to 1/8 NPT	1
6		LW-12799-6S070	HOSE ASSEMBLY, 3/8 straight	1
7		02A21047	TEE, 1/4 tube to 1/8 NPT	1
8		AN816-6-2	NIPPLE, 1/8 NPT to 3/8 tube	1
9		LW-12878-4S200	HOSE ASSEMBLY, 1/4 hose, 45° elbow	1
10		LW-12878-4S260	HOSE ASSEMBLY, 1/4 hose, 45° elbow	1
11		LW-12878-4S334	HOSE ASSEMBLY, 1/4 hose, 90° elbow	1
12		73152	BRACKET, Support	1
13		LW-16266-25-63	CLAMP, 5/8 I.D. x 1/4 diameter screw	1
14		STD-425	WASHER, No. 10 plain	1
15		STD-969	SCREW, No. 10-32 x 1/2 long, fill. head	1
16		STD-670	LOCKNUT, No. 10-32	1
17		77813	GASKET, Turbo oil inlet	2
18		LW-12287	ADAPTER, Turbo oil inlet	2
19		78212	CHECK VALVE ASSEMBLY	2
20		STD-35	WASHER, 5/16 plain	4
21		STD-475	WASHER, 5/16 lock, internal teeth	4
22		LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex. head	4
23		LW-18038	GASKET, Turbo oil drain adapter	2
24		58B22629	TANK, Turbo oil drain, left	1
25		58B22630	TANK, Turbo oil drain, right	1
26		MS9321-12	WASHER, 3/8 I.D. x 3/4 O.D.	4
27		LW-10637	ELBOW, 1/2 tube, 90°	1
28		LW-16266-10-63	CLAMP, 5/8 I.D. x no. 10 screw	1

(continued on next page)

FIGURE 15 – TURBOCHARGER HOSES, DRAIN TANKS AND RELATED PARTS (CONT)

Figure Item	Code	Part Number	Description	Units per Assembly
29		STD-678	WASHER, 3/8 internal lock	4
30		LW-38-0.75	BOLT, 3/8-16 x 3/4 long, hex. head	4
31		07A19895	BRACKET, Turbo oil drain tank	2
32		STD-425	WASHER, No. 10 plain	6
33		STD-1650	BOLT, No. 10-32 x 21/32 long	4
34		MS21042-3	NUT, Self-locking	4
35		LW-12798-4S204	HOSE ASSEMBLY, 1/4 straight	1
36		MS20822-8	ELBOW, 1/2 tube, 90°	2
37		MS20823-4	ELBOW, 1/4 tube, 45°	2
38		LW-13176-8S050	HOSE ASSEMBLY, straight	1
39		AN821-8	ELBOW, 1/2 flared tube, 90°	2
40		LW-13176-8S050	HOSE ASSEMBLY, straight	2
41		02M19935-8S284	HOSE ASSEMBLY, 1/2 hose, 45° elbow	1
42		LW-13176-8S134	HOSE ASSEMBLY, straight	1
43		LW-12798-4S204	HOSE ASSEMBLY, 1/4 hose, straight	1
44		AN834-8	TEE, Bulkhead, 1/2 flared tube	1
45		AN924-8	NUT, 1/2 tube, bulkhead	1
46		72376	ELBOW, 1/4 tube, 90°	1
47		LW-12799-6S070	HOSE ASSEMBLY, 3/8 hose, straight	1
48		LW-12799-6S130	HOSE ASSEMBLY, 3/8 hose, straight	1
49		74070	ELBOW, 3/8 flared tube and 9/16-18	2
50		72377	ELBOW, 3/8 flared tube, adjustable	1

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Intercoolers, Controller and Air Inlet Housing
Figure 16

FIGURE 16 – INTERCOOLERS, CONTROLLER AND AIR INLET HOUSING

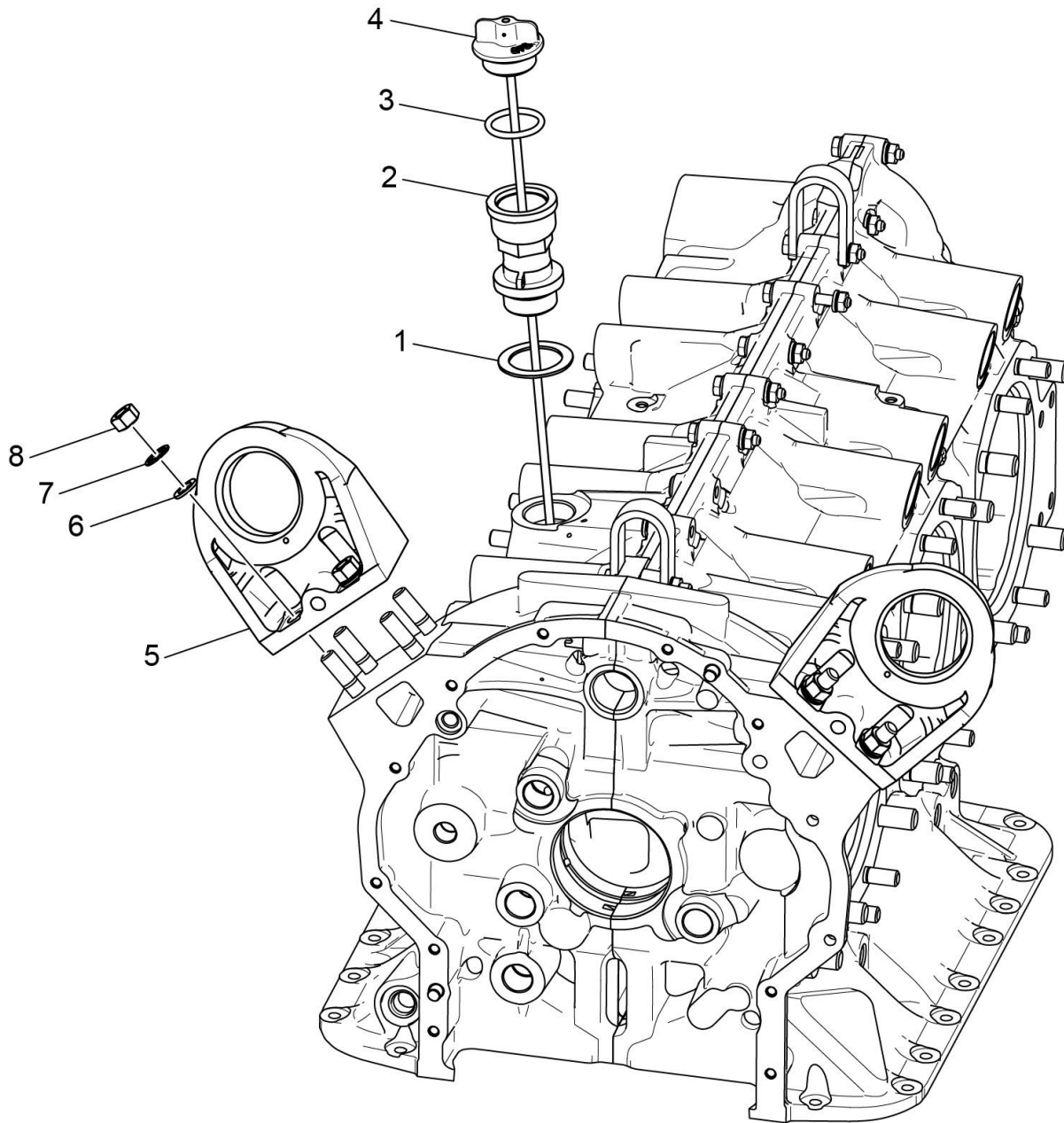
Figure Item	Code	Part Number	Description	Units per Assembly
1		74944	GASKET, Turbocharger controller	1
2		41A19907	HOUSING ASSEMBLY, Air inlet	1
3		STD-1164	INSERT, 5/16 x 18 Heli-coil x 5/8 long	4
4		25C-10-P03	STUD, 1/4-20 x 1.25 long	2
5		STD-475	WASHER, 5/16 lock, internal teeth	4
6		STD-1727	WASHER, Plain, 11/32 I.D. x 3/4 O.D. x 1/8	4
7		LW-31-1.16	BOLT, 5/16-18 x 1-5/32 long, hex. head	4
8		02M19899	HOSE, 2.00 to 2-1/4 I.D. x 3-1/32 long	2
9		LW-15592-8-32	CLAMP, Hose, 2-1/8 - 2-3/4 x 9/16 wide	2
10		LW-15592-8-36	CLAMP, Hose	2
11		42L19892	PIPE, Intercooler, air inlet housing	2
12		02M19896	HOSE, 2.00 I.D., 90° elbow, formed	2
13		LW-15592-8-32	CLAMP, Hose	4
14		42K19867	INTERCOOLER	2
15		73314	GASKET, Density and differential cover	1
16		48E21383	CONTROLLER ASSEMBLY, Absolute pressure relief	1
17		STD-28	WASHER, No. 10 plain	4
18		STD-1566	SCREW, No. 10-24 x 3/4 long, fill. head, drilled	4
19		MS29513-138	O-RING, 2-1/8 I.D. x 7/64 section	1
20		LW-14445-2	VALVE ASSEMBLY, Absolute pressure relief	1
21		STD-28	WASHER, No. 10 plain	4
22		STD-251	WASHER, No. 10 lock, internal teeth	4
23		STD-2248	SCREW, No. 10-24 x 5/8 long, fill. Head	4
24		1102	PLUG, 1/8-27 NPT, allen head	1
25		AN814-6L	PLUG, 9/16-18, hex. head	2
26		MS29512-06	O-RING, 15/32 I.D. x 5/64 section	2
27		STD-2220	BOLT, 3/8-24 x 9/16 long	1
28		02P19884	TUBE, Air inlet housing to intercooler, right	1

(continued on next page)

FIGURE 16 –INTERCOOLERS, CONTROLLER AND AIR INLET HOUSING (CONT.)

Figure Item	Code	Part Number	Description	Units per Assembly
29		02P19885	TUBE, Air inlet housing to intercooler, left	1
30		LW-16217	HOSE, 2.00 I.D. x 19 wall x 2-9/16	2
31		LW-15858 -62-244	CLAMP, T bolt	4
32		02M19906	HOSE, 2.00 I.D x 4 ½ long	2
33		LW-15592-8-32	CLAMP, Hose, 2-1/8 - 2-3/4 x 9/16 wide	4
34		LW-12798-4S204	HOSE ASSEMBLY, Fuel pump to check valve	1
35		02J26673	CHECK VALVE, Fuel pump vent line	1
36		MS29512-06	O-RING, 15/32 I.D. x 5/64 section	1
37		STD-678	WASHER, 3/8, lock, internal teeth	1
38		STD-33	WASHER, 3/8 plain	1
39		LW-12975	ADAPTER, Reducer, 3/8 to ¼ tube	1
40		AN818-6	NUT, Flared tube coupling, 3/8	1
41		48H21010	NOZZLE, Sonic	2
42		02M19973	HOSE, Sonic nozzle	2
43		LW-15592-8-16	CLAMP, Hose	4
44		78370	SPACER, Controller connecting linkage	1
45		AN3-14	BOLT, 10-32 x 1-17/32 long, hex head	1
46		LW-18627	HOSE, Linkage adapter	1
47		STD-122	WASHER, No. 10 Plain, 5/16 O.D. x 1/32	1
48		STD-303	NUT, 10-32 Slotted shear	2
49		STD-68	COTTER PIN, 1/16 diameter x 1/2 long	2
50		05R19950	ROD END, 10-32 Female	2
51		01L19942	SPACER, Controller linkage	1
52		STD-63	NUT, 10-32 Plain	2
53		AN3-11	BOLT, 10-32 x 1-5/32 long, hex head	1
54		49B19893	ROD, Connecting, Injector linkage	1
55		STD-1756	WASHER, 13/64 I.D. x 3/4 O.D. x 1/32	1

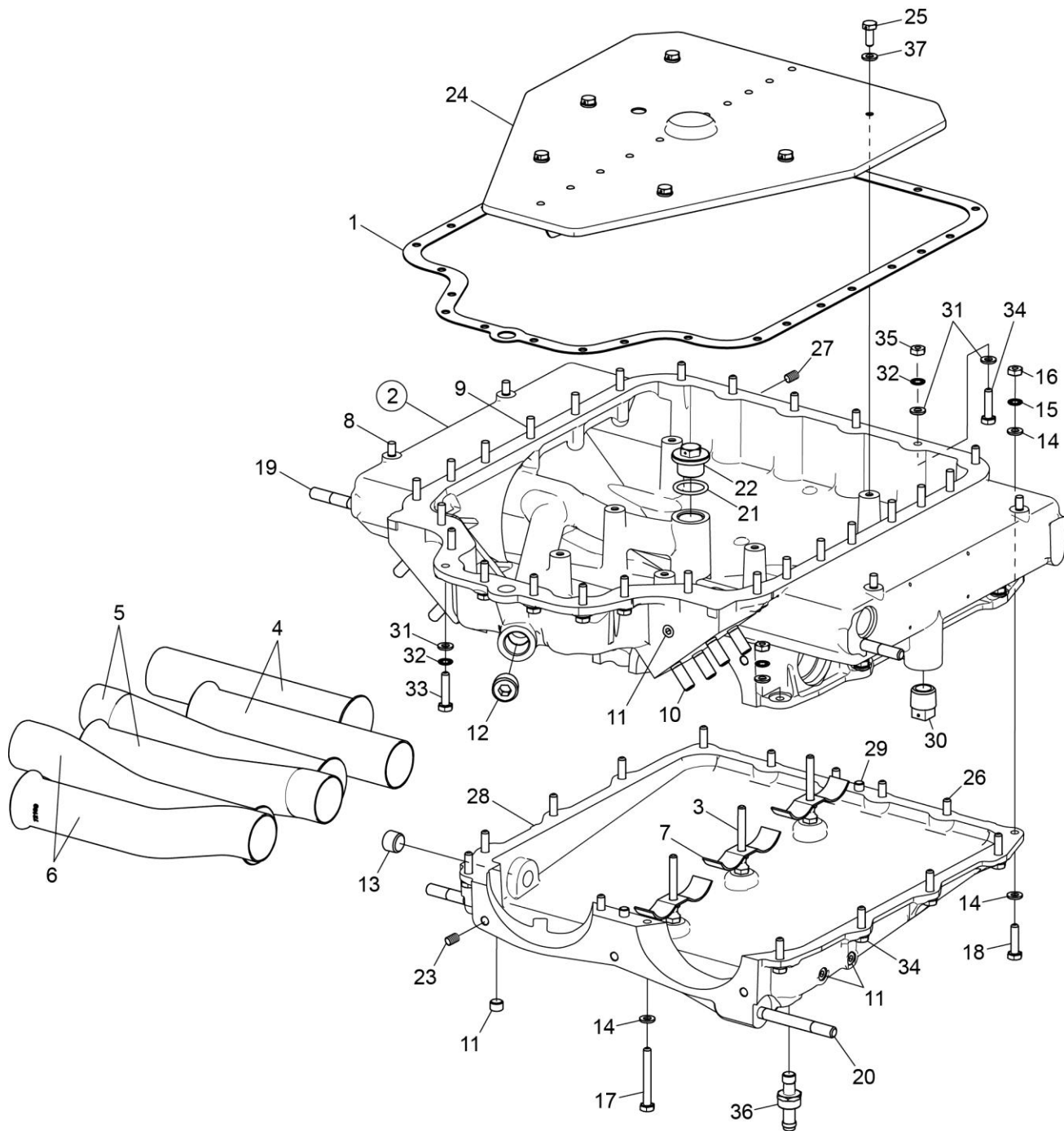
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Oil Level Gage and Engine Mounting Brackets
Figure 17

FIGURE 17 – 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	EXTENSION, Oil filler (2-3/16 long)	1
3		74065	O-RING, Oil level gage	1
4		LW-16783-12	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 18

FIGURE 18 – OIL SUMP AND INDUCTION HOUSING ASSEMBLY

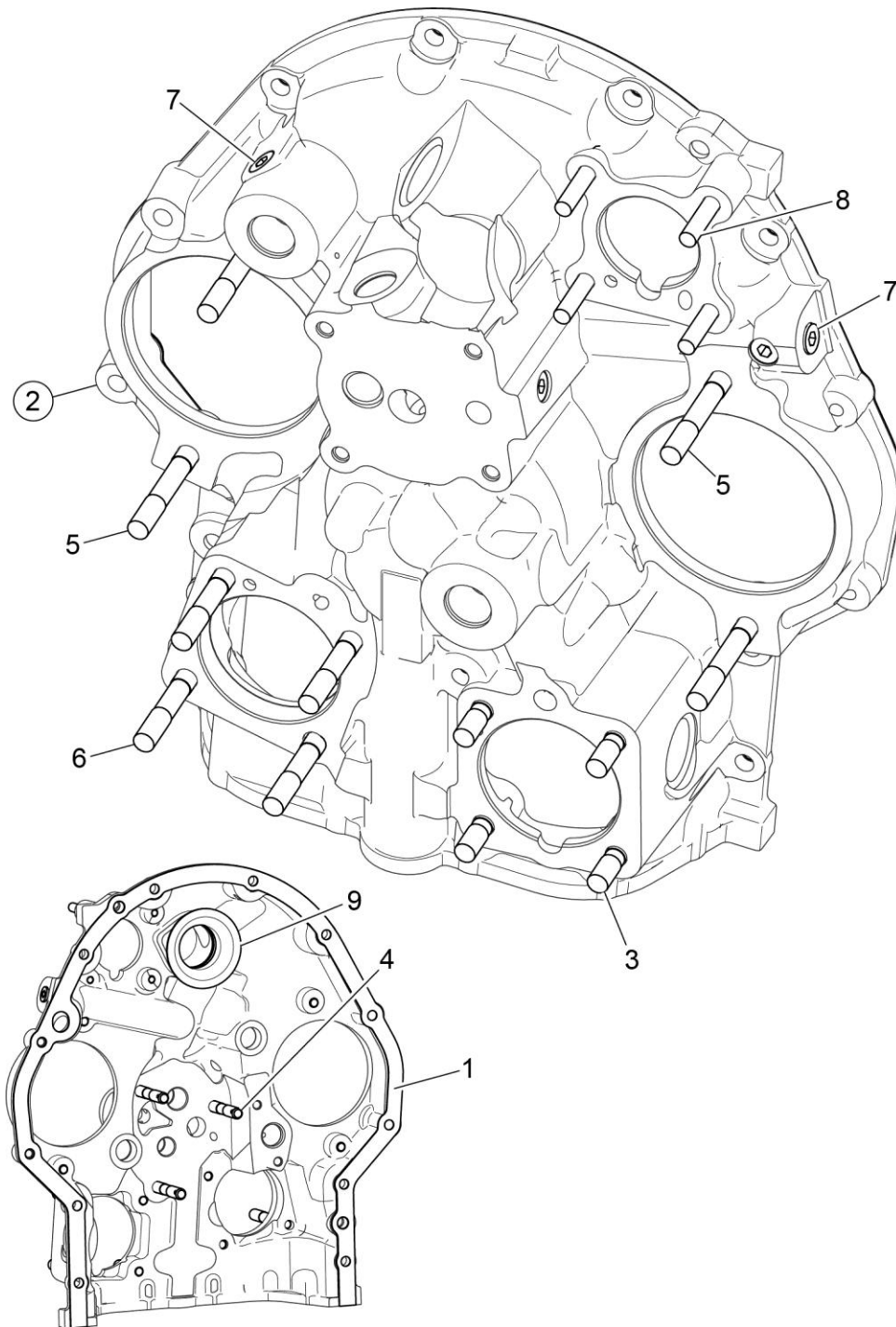
Figure Item	Code	Part Number	Description	Units per Assembly
1		06B21326	GASKET, Oil sump	1
2		56A26070-01	HOUSING ASSEMBLY, Oil sump & induction	1
3		72179	STUD, Intake pipe, extension pipe	3
4		72167	PIPE, Extension, intake, cylinders no. 1 & 2	2
5		72168	PIPE, Extension, intake, cylinders no. 3 & 4	2
6		72169	PIPE, Extension, intake, cylinders no. 5 & 6	2
7		LW-11273	CLAMP, Intake pipe extension	3
8		25C-9	STUD, 1/4-20 x 1-1/8 long	4
9		25C-11	STUD, 1/4-20 x 1-3/8 long	15
10		38-17	STUD, 3/8-16 x 2-1/8 long	8
11		1102	PLUG, 1/8-27 NPT, allen head	5
12		STD-91	PLUG, 1/2-14 NPT, allen head	1
13		STD-784	PLUG, 3/8-18 NPT, allen head	1
14		STD-8	WASHER, 1/4 plain	29
15		STD-160	WASHER, 1/4 lock, internal teeth	27
16		STD-1411	NUT, 1/4-20 plain	13
17		LW-25-2.00	BOLT, 1/4-20 x 2.00 long, hex. head	2
18		LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. head	10
19		38-21	STUD, 3/8-16 x 2-5/8 long	3
20		38-31	STUD, 3/8-16 x 3-7/8 long	1
21		06E19769-0.91	GASKET, Annular, 1-1/8 O.D. x 29/32 I.D.	1
22		72960	PLUG, 7/8-14 x 5/8, hex. head	1
23		72706	INSERT, Heli-coil, 1/4-20 x 3/8 long	14
24		56G26069	BAFFLE, Oil sump	1
25		LW-25H-0.63	BOLT, 1/4-20 x 5/8 long, drilled	6
26		LW-25-0.81	BOLT, 1/4-20 x 13/16 long, hex. head	4
27		STD-1164	INSERT, Heli-coil, 5/16-18 x 5/8 long	2
28	P	42B22658	COVER, Induction housing	1
29		STD-514	DOWEL, 5/16 diameter x 1/2 long	2
30		STD-551	PLUG, 1/2-14 NPT, square head, drilled	2
P Lycoming proprietary part. Listed for reference purposes only, cannot be purchased. Sold with 56A26070-01 as a matched set				

(continued on next page)

FIGURE 18 – OIL SUMP AND INDUCTION HOUSING ASSEMBLY (CONT)

Figure Item	Code	Part Number	Description	Units per Assembly
31		STD-8	WASHER, 1/4 plain	37
32		STD-160	WASHER, 1/4 lock, internal teeth	23
33		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	6
34		LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. head	6
35		STD-1411	NUT, 1/4-20 plain	25
36		LW-13807	ADAPTER ASSEMBLY, Fuel drain valve	1
37		STD-8	WASHER, 1/4 plain	6
Reference S.I. 1279 for baffle information				

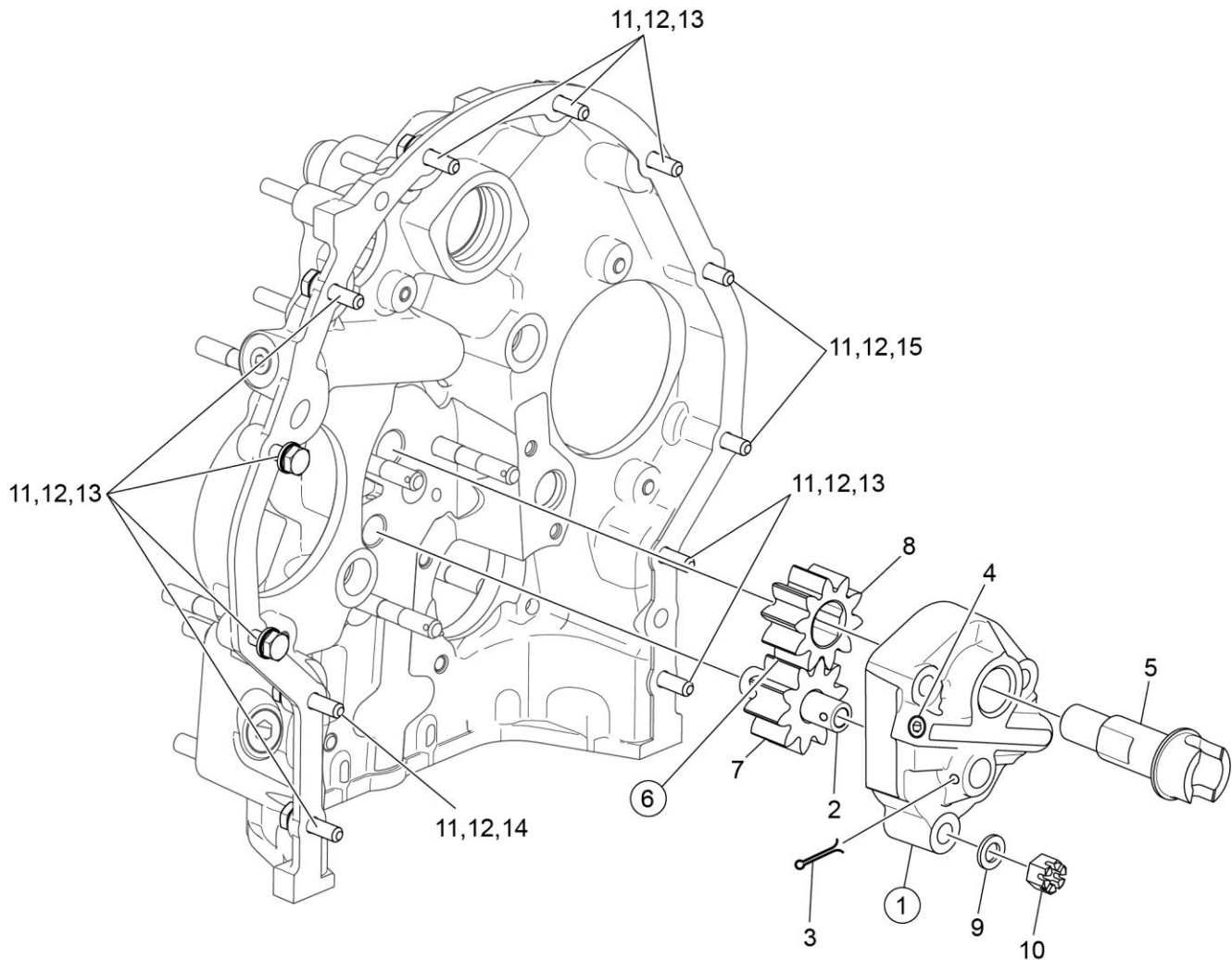
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Accessory Housing Assembly
Figure 19

FIGURE 19 – ACCESSORY HOUSING ASSEMBLY

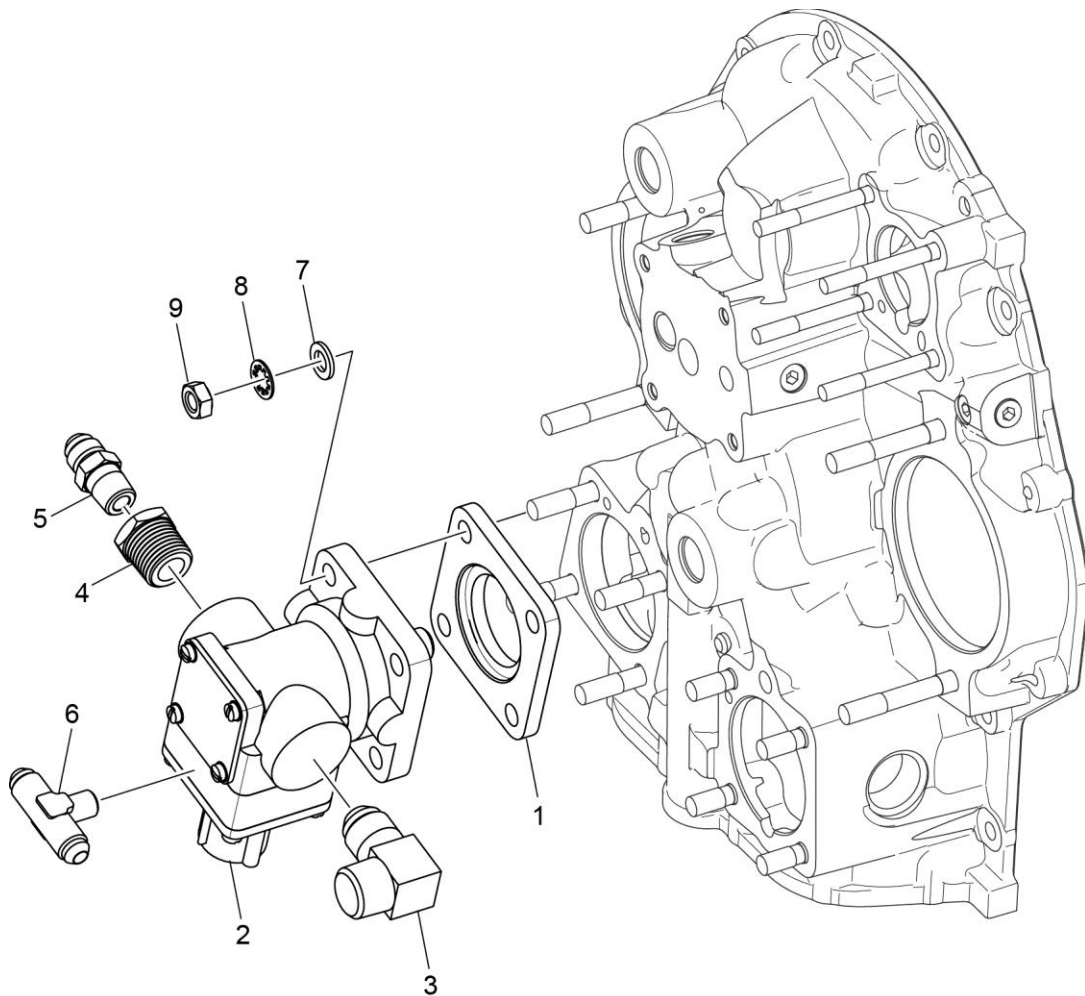
Figure Item	Code	Part Number	Description	Units per Assembly
1		73818	GASKET, Accessory housing	1
2		21C21543-01	HOUSING ASSEMBLY, Accessory	1
3		31C-12	STUD, 5/16-18 x 1-1/2 long	4
4		31CD-20	STUD, 5/16-18 x 2-1/2 long, drilled	3
5		31C-21	STUD, 5/16-18 x 2-5/8 long	4
6		31C-19	STUD, 5/16-18 x 2-3/8 long	4
7		1102	PLUG, 1/8-27 NPT, allen head	4
8		25C-21	STUD, 1/4-20 x 2-5/8 long	4
9		76156	SHIELD, Oil accessory breather	1



Oil Pump Assembly and Accessory Housing Attaching Parts
Figure 20

FIGURE 20 – OIL PUMP ASSEMBLY AND ACCESSORY HOUSING ATTACHING PARTS

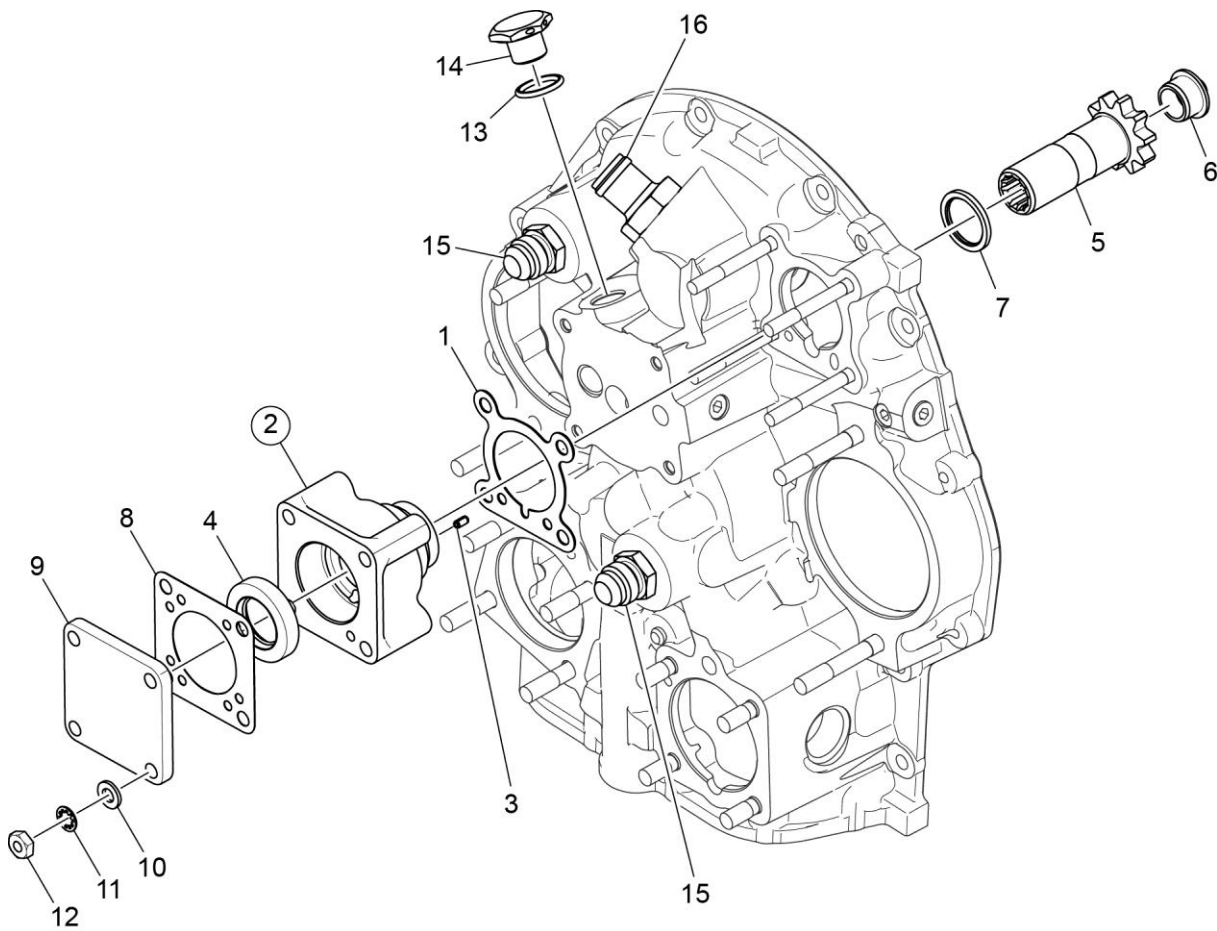
Figure Item	Code	Part Number	Description	Units per Assembly
1		51A22618	BODY ASSEMBLY, Oil pump	1
2		51D22617	SHAFT, Oil pump	1
3		STD-714	COTTER PIN, 1/8 diameter x 1.00 long	1
4		STD-1339	PLUG, 1/16-27 NPT, Allen head	1
5		76784	SHAFT, Oil pump drive	1
6		05K23463	IMPELLER KIT	1
7	*	51C23290	IMPELLER ASSEMBLY, Oil pump driven	1
8	*	51B23274	IMPELLER, Oil pump driving	1
9		STD-35	WASHER, 5/16 plain	3
10		STD-1420	NUT, 5/16-18 slotted	3
11		STD-8	WASHER, 1/4 plain	12
12		STD-160	WASHER, 1/4 lock, internal teeth	12
13		LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. head	9
14		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	1
15		LW-25-1.44	BOLT, 1/4-20 x 1-7/16 long, hex. head	2
* Sold in complete sets only (Kit P/N 05K23463).				



Fuel Pump Assembly and Attaching Parts
Figure 21

FIGURE 21 – FUEL PUMP ASSEMBLY AND ATTACHING PARTS

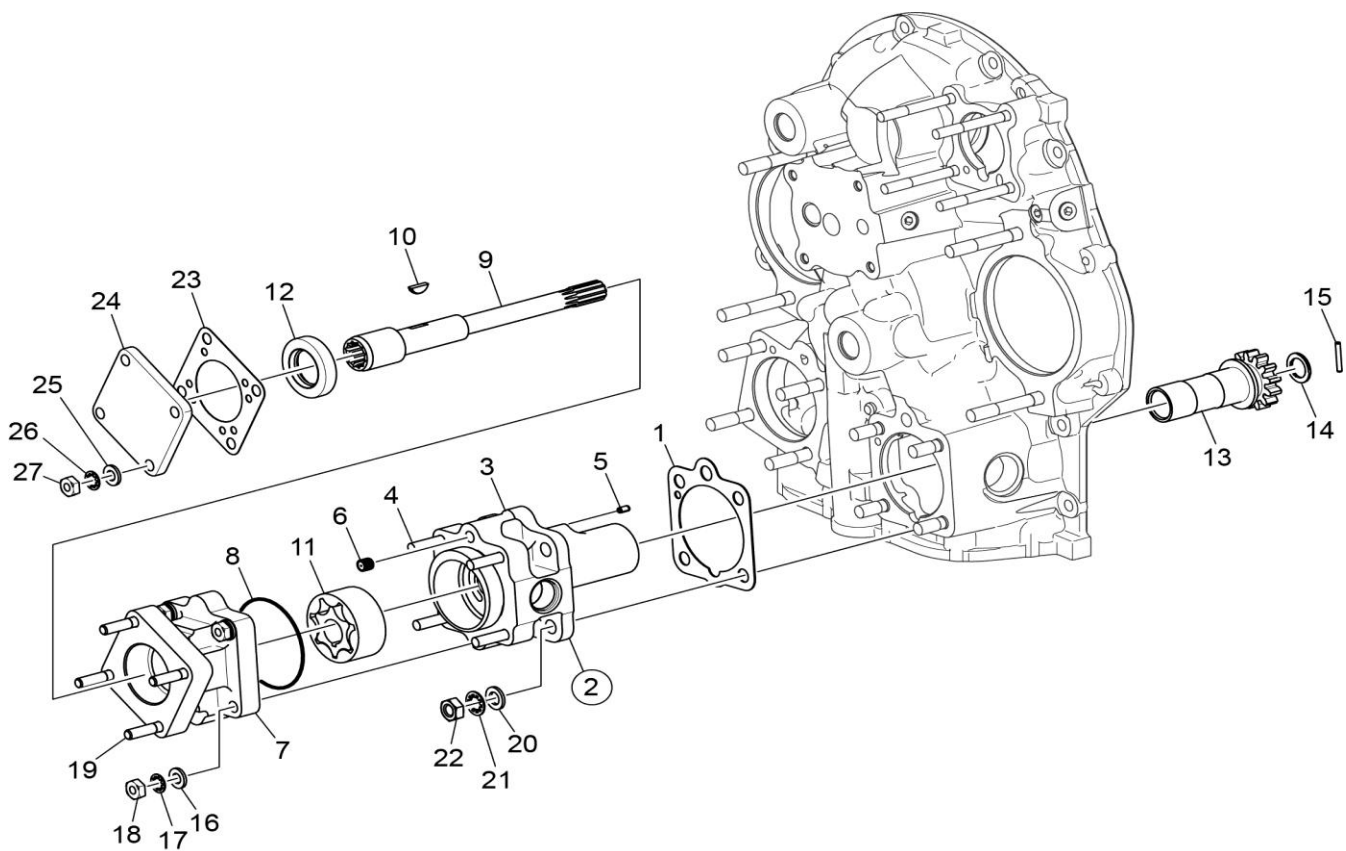
Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-10799	SPACER, Fuel pump insulating	1
2	V	62E23186	FUEL PUMP (V 200F-5002)	1
3		LW-18171	ELBOW, tube to male pipe	1
4		AN912-5	REDUCER, 1/2 NPT to 1/4 NPT	1
5		AN816-6	NIPPLE, 1/4 ANPT to 3/8 tube	1
6		02A21171	TEE, 1/4 tube with 1/8 NPT	1
7		STD-35	WASHER, 5/16 plain	4
8		STD-475	WASHER, 5/16 lock, internal teeth	4
9		STD-1410	NUT, 5/16-18 plain	4
V Vendor Prime Manufacturer part				



**Vacuum Pump Drive and Oil Cooler
Figure 22**

FIGURE 22 – VACUUM PUMP DRIVE AND OIL COOLER

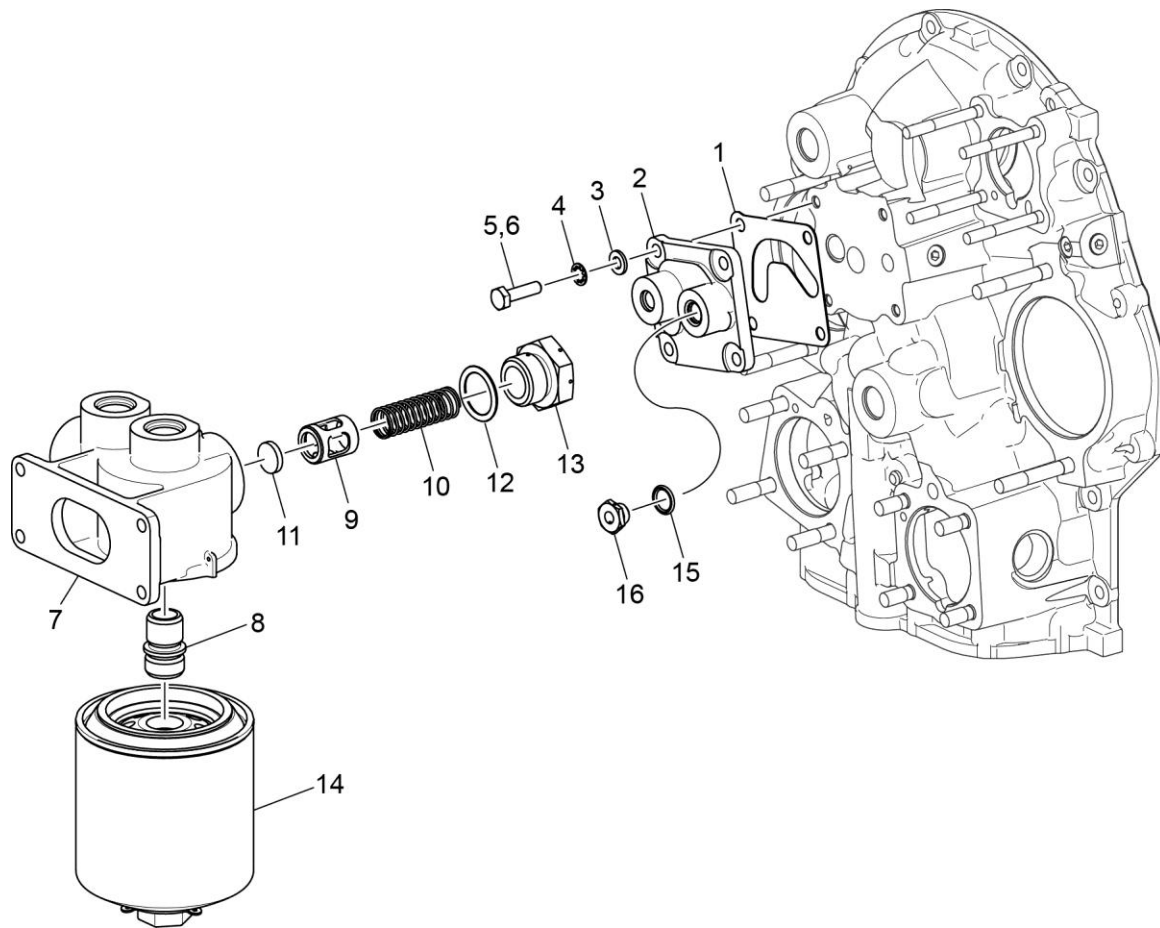
Figure Item	Code	Part Number	Description	Units per Assembly
1		61183	GASKET, Accessory adapter	1
2		67536	ADAPTER ASSEMBLY, Vacuum pump	1
3		STD-1774	PIN, 1/8 diameter x 1/4 long	1
4		06A19956	OIL SEAL, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide	1
5		72974	GEAR ASSEMBLY, Vacuum pump drive	1
6		72962	THRUST BUTTON, Vacuum pump gear	1
7		71596	WASHER, Accessory drive gear	1
8		8313	GASKET, Vacuum pump	1
9		60430	COVER, Vacuum pump	1
10		STD-8	WASHER, 1/4 plain	4
11		STD-160	WASHER, 1/4 lock, internal teeth	4
12		STD-1411	NUT, 1/4-20 plain	4
13		06E19769-0.63	GASKET, Annular 5/8 I.D.	1
14		62417	PLUG, Oil cooler bypass	1
15		AN816-8	NIPPLE, 1/2 flared tube	2
16		LW-18575	NIPPLE, 3/4 diameter hose to 13/16-14 pipe, breather	1



Turbo Scavenge Pump and Hydraulic Pump Drive and Cover
Figure 23

FIGURE 23 – TURBO SCAVENGE PUMP AND HYDRAULIC PUMP DRIVE AND COVER

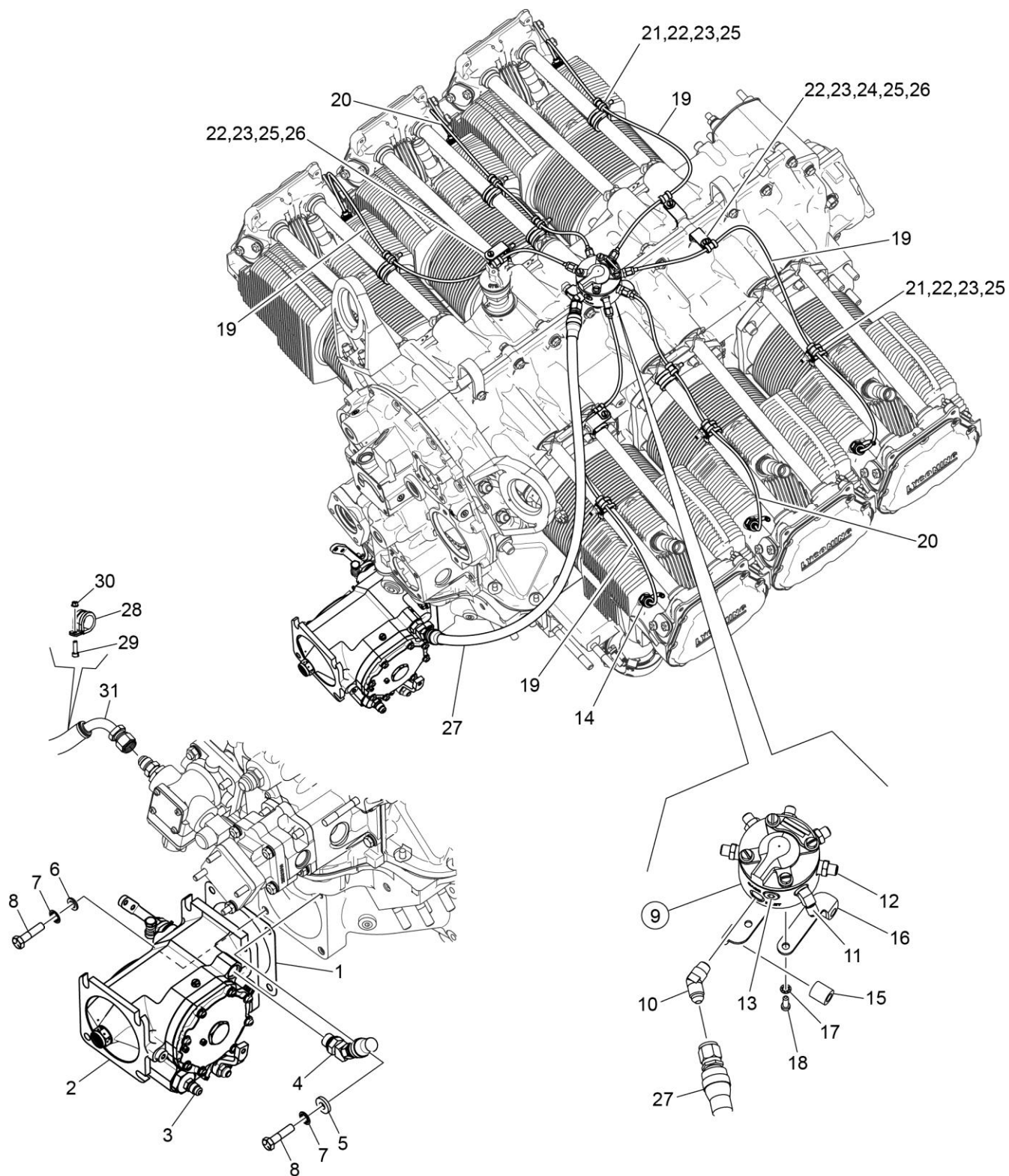
Figure Item	Code	Part Number	Description	Units per Assembly
1		68315	GASKET, Accessory drive adapter	1
2		29A21372	DRIVE ASSEMBLY, Turbo scavenge & hydraulic pump	1
3		29A21358	ADAPTER ASSEMBLY, Turbo scavenge pump	1
4		25C-11	STUD, 1/4-20 x 1-3/8 long	4
5		STD-1774	PIN, 1/8 diameter x 1/4 long	2
6		01N19833-281	PLUG, Pin, adapter	1
7		29D21310	ADAPTER, Hydraulic pump	1
8		LW-RF2.239-.070	RING, Oil seal	1
9		LW-15853	SHAFT, Hydraulic drive	1
10		STD-95	KEY, 1/8 x 1/2 Woodruff	1
11		LW-15550	GEROTOR PUMP	1
12		06A19956	OIL SEAL, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide	1
13		77825	SHAFTGEAR, Hydraulic pump drive	1
14		77708	WASHER, Retaining, shaftgear	1
15		MS16562-28	PIN, Spring, 3/32 diameter x 3/4 long	1
16		STD-8	WASHER, 1/4 plain	4
17		STD-160	WASHER, 1/4 lock, internal teeth	4
18		STD-1411	NUT, 1/4-20 plain	4
19		25C-12	STUD, 1/4-20 x 1-1/2 long	4
20		STD-35	WASHER, 5/16 plain	4
21		STD-475	WASHER, 5/16 lock, internal teeth	4
22		STD-1410	NUT, 5/16-18 plain	4
23		8313	GASKET, Vacuum pump	1
24		60430	COVER, Vacuum pump	1
25		STD-8	WASHER, 1/4 plain	4
26		STD-160	WASHER, 1/4 lock, internal teeth	4
27		STD-1411	NUT, 1/4-20 plain	4



**Oil Filter Assembly and Adapter
Figure 24**

FIGURE 24 – OIL FILTER ASSEMBLY AND ADAPTER

Figure Item	Code	Part Number	Description	Units per Assembly
1		06B21644	GASKET, Oil filter base cover	1
2		21M23737	COVER, Oil filter base	1
3		STD-8	WASHER, 1/4 Plain	4
4		STD-160	WASHER, 1/4 Lock, internal teeth	4
5		LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex head	3
6		LW-25H1.00	BOLT, 1/4-20 x 1.00 long, hex head, drilled head	1
7		54J21078	ADAPTER ASSEMBLY, Oil filter	1
8		LW-16306	STUD, Oil filter adapter	1
9		77607	SLEEVE, Oil filter adapter	1
10		76542	SPRING, Oil filter adapter	1
11		76539	SEAT, Oil filter adapter	1
12		MS29512-12	SEAL, Oil, 0.116 diameter section x 59/64	1
13		03C21076	PLUG, Oil relief valve	1
14	V	LW-13906	OIL FILTER, Short, V CH48103-1	1
15		06E19769-0.44	GASKET, Annular, 7/16 I.D.	1
16		MS24391-4	PLUG AND BLEEDER, 7/16-20	1
V Vendor Prime Manufacturer part				



Fuel Injector, Fuel Lines, Manifold Assembly and Pressure Line
Figure 25

FIGURE 25 – FUEL INJECTOR, FUEL LINES, MANIFOLD ASSEMBLY AND PRESSURE LINE

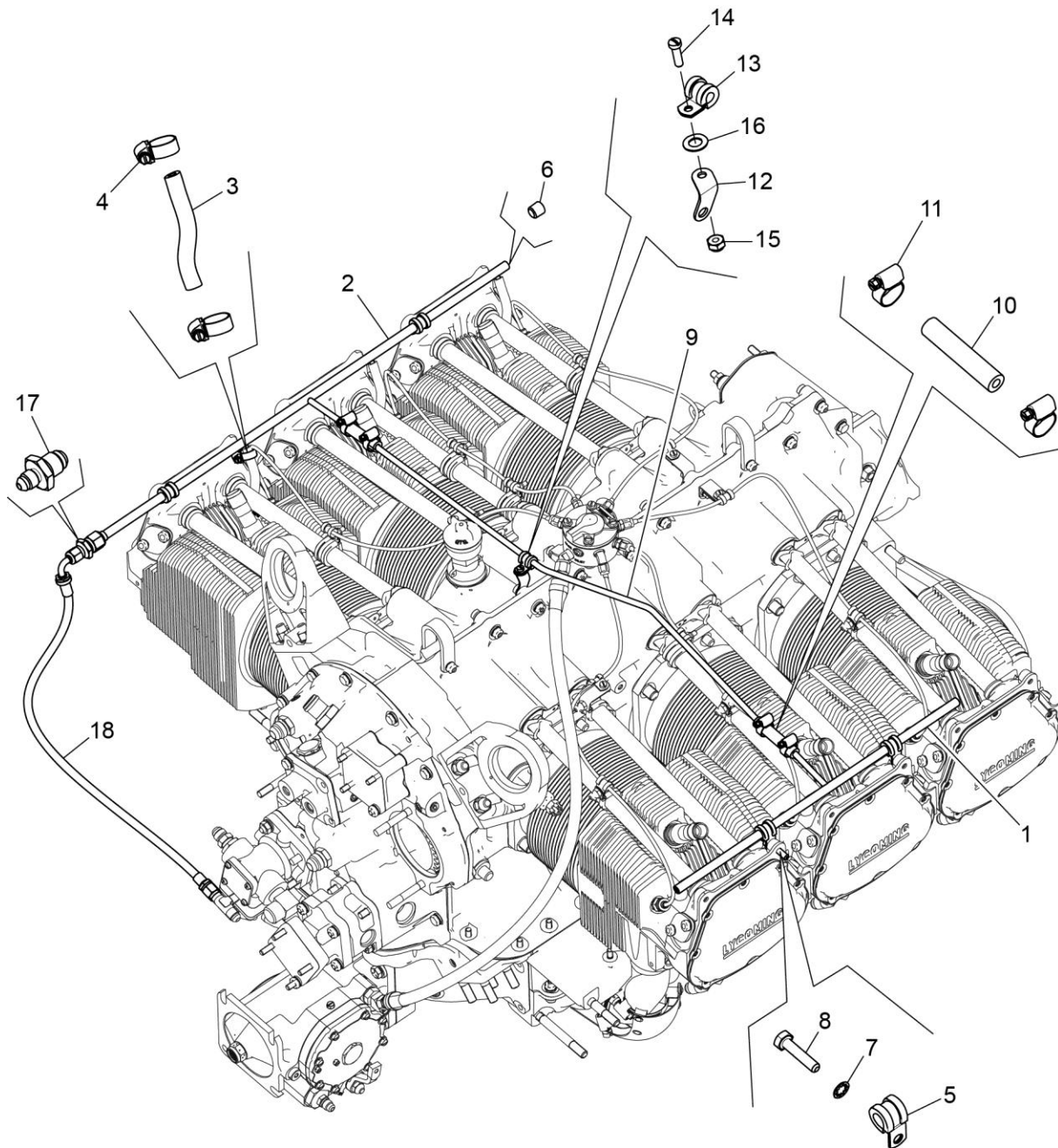
Figure Item	Code	Part Number	Description	Units per Assembly
1		73032	GASKET, Air inlet housing	1
2		61M26612	FUEL INJECTOR, (AV2549038-4)	1
3		02G21379	NIPPLE, 1/8 NPT to 1/4 tube	1
4		76304	ELBOW, 1/4 tube, 45° (on fuel injector)	1
5		STD-1727	WASHER, 3/4 O.D. x 11/32 I.D. x 1/8 thick	3
6		STD-35	WASHER, 5/16 plain	1
7		STD-475	WASHER, 5/16 lock, internal teeth	4
8		LW-31-1.31	BOLT, 5/16-18 x1-5/16 long, hex. head	4
9		63B26718	MANIFOLD ASSEMBLY, Fuel	1
10		MS20823-4	ELBOW, 1/4 tube, 45°	1
11		AN791-2	ELBOW, 1/8 NPT, 45°	1
12		STD-148	NIPPLE, Union 1/8 NPT	5
13		1102	PLUG, 1/8 NPT, Allen head	1
14		63C26452	NOZZLE ASSEMBLY, Manifold air bleed	6
15		73966	SPACER, Fuel Manifold bracket	2
16		07A23031	BRACKET, Fuel manifold	2
17		STD-251	WASHER, No. 10, internal lock	4
18		STD-82	SCREW, 10-24 x 1/2 long, fill. head	4
19		LW-12098-0-210	TUBE ASSEMBLY, Fuel manifold to nozzle, cylds. 1,2,5 and 6	4
20		LW-12098-0-170	TUBE ASSEMBLY, Fuel manifold to nozzle, cylds. 3 and 4	2
21		LW-16266-10-75	CLAMP	10
22		LW-16266-10-13	CLAMP	12
23		STD-860	SCREW, No. 10-32 x 5/8 long, fill. head	14
24		STD-425	WASHER, No. 10 plain	2
25		STD-670	NUT, No. 10-32, self-locking	14
26		73136	BRACKET, 90°	4
27		LW-12798-4S340	HOSE ASSEMBLY, Fuel injector to manifold	1
28		LW-16266-10-63	CLAMP	1
29		STD-860	SCREW, No. 10-32 x 5/8 long, fill. head	1

(continued on next page)

**FIGURE 25 – FUEL INJECTOR, FUEL LINES, MANIFOLD ASSEMBLY AND PRESSURE LINE
(CONT.)**

Figure Item	Code	Part Number	Description	Units per Assembly
30		STD-670	NUT, No. 10-32, self-locking	1
31		LW-12877-6S161	HOSE ASSEMBLY, Fuel pump to injector, 90° (fuel pump end)	1

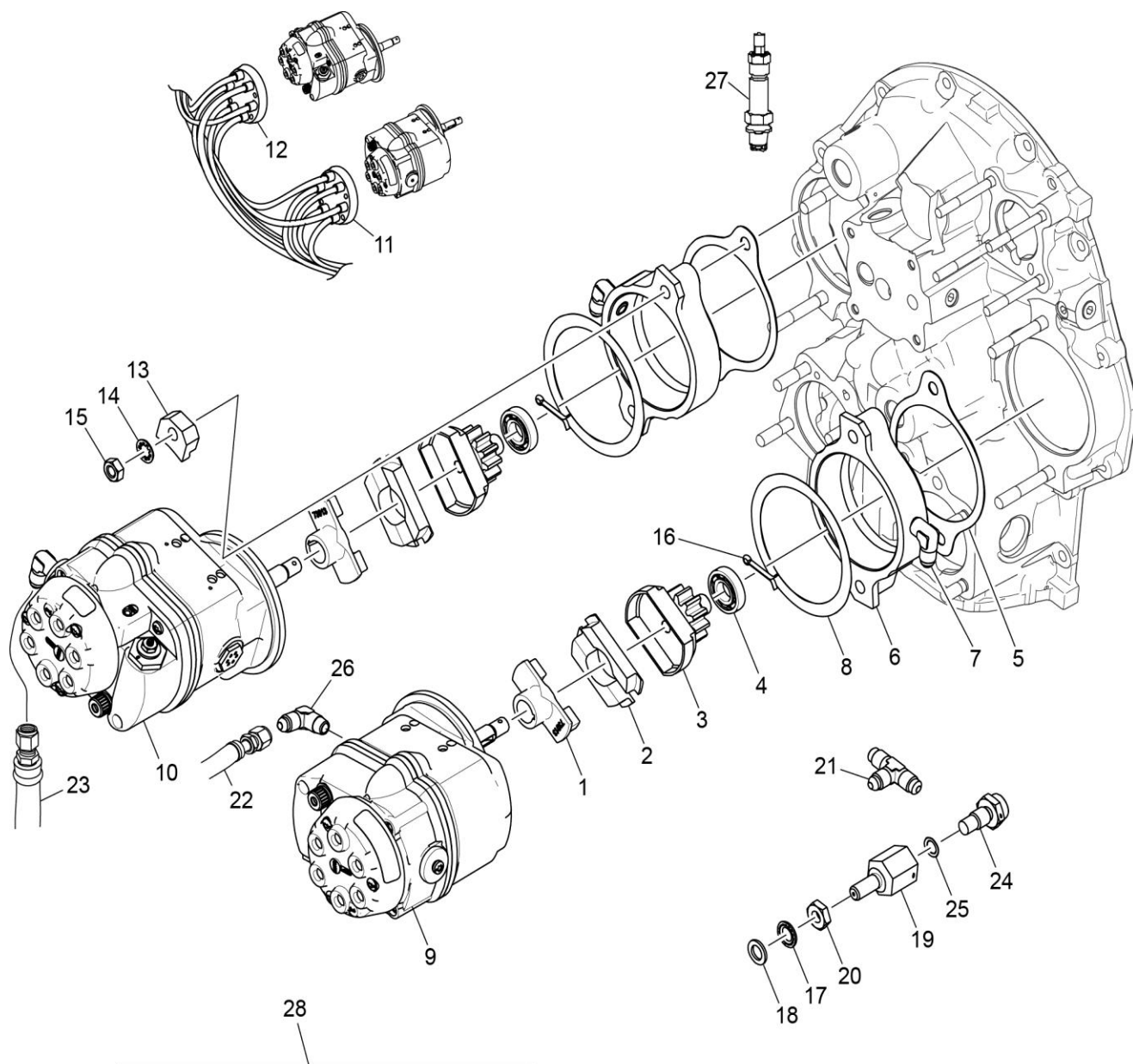
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Injector Nozzle Vent Manifolds, Hoses and Attachments
Figure 26

FIGURE 26 – INJECTOR NOZZLE VENT MANIFOLDS, HOSES AND ATTACHMENTS

Figure Item	Code	Part Number	Description	Units per Assembly
1		63E19934	MANIFOLD, Injector nozzle vent, right	1
2		63E19933	MANIFOLD, Injector nozzle vent, left	1
3		LW-18724	HOSE, 3/16 I.D. x 7/16 O.D. x 3-1/4 long	6
4		LW-15592-5-04	CLAMP, Hose	12
5		LW-16266-25-38	CLIP, 3/8 I.D. x 1/4 screw	4
6		STD-1339	PLUG, 1/16-27 NPT	3
7		STD-160	WASHER, 1/4 lock, internal teeth	4
8		STD-2029	BOLT, 1/4-20 x 1-1/8 long, hex head	4
9		78127	TUBE, Crossover, injector nozzle vent	1
10		STD-2048	HOSE, 1/4 I.D. x 19/32 O.D. x 2-7/16 long	2
11		LW-15592-5-04	CLAMP, Hose	4
12		78753	BRACKET, Injector nozzle vent crossover	1
13		LW-16266-10-25	CLAMP	1
14		STD-860	SCREW, 10-32 x 5/8 long, fill. Head	1
15		STD-670	NUT, 10-32 self-locking	1
16		STD-425	WASHER, No. 10 plain	3
17		AN919-6	NIPPLE, 3/8 tube to 1/4 tube	1
18		LW-12876-4S172	HOSE ASSEMBLY, Left manifold to tee	1

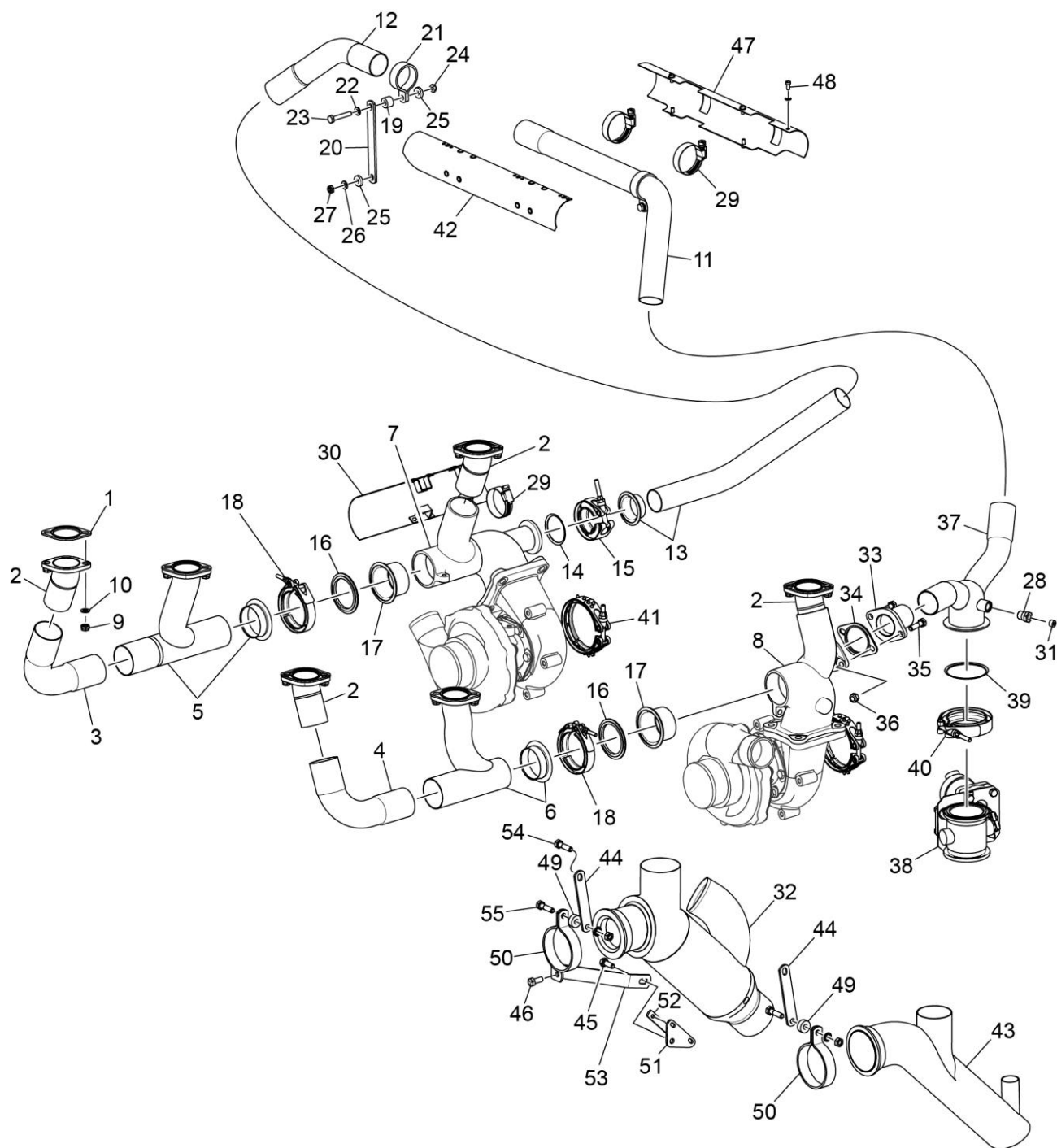


BAG-HARNESS ATTACHING		P/N 01P19762-4
PART NO.	NAME	QTY
LW-16266-25-25	CLAMP-ONE WIRE	4
LW-14060	CLIP-TWO WIRE	4
STD-8	WASHER-.250 PLAIN	12
STD-160	WASHER-.250 LOCK INT. TEETH	8
STD-1874	SCREW-.250-20 X .81 LG. FILL.	6
76734	ZIP STRAP	12
LW-16266-25-44	CLAMP-.44 ID X .250 DIA. SCREW	5
STD-696	WASHER-.250 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	2
LW-16266-10-75	CLAMP	2
LW-M-2376	SET OF 2 PLATES-SPARK PLUG CABLE-3 WIRE	2

Magnetos, Magneto Drives, Harness and Spark Plugs
Figure 27

FIGURE 27 - MAGNETOS, MAGNETO DRIVES, HARNESS AND SPARK PLUGS

Figure Item	Code	Part Number	Description	Units per Assembly
1		73000	COUPLING, Magneto drive	2
2		68H22624	CUSHION, Magneto drive	4
3		LW-19096	GEAR RETAINER ASSEMBLY	2
4		67542	BEARING, Ball	2
5		62224	GASKET, Magneto adapter	2
6		LW-13926	ADAPTER, Magneto	2
7		MS20822-4	ELBOW, 1/4 tube, 90°	2
8		LW-12681	GASKET, Magneto	2
9	V	66LP-0SCNP	MAGNETO, Right, Slick model no. 6360	1
10	V	66LR30SCNP	MAGNETO, Left (retard), Slick model no. 6363	1
11	V	67J20608-P	HARNESS ASSEMBLY, Right, Slick P/N M-2966	1
12	V	67J20609-P	HARNESS ASSEMBLY, Left, Slick P/N M-2965	1
13		66M21195	CLAMP, Magneto	4
14		STD-475	WASHER, 5/16 lock, internal teeth	4
15		STD-1410	NUT, 5/16-18 plain	4
16		MS9245-44	COTTER PIN, 3/32 diameter x 3/4 long	2
17		STD-2007	WASHER, 3/8 diameter seal	1
18		STD-33	WASHER, 3/8 plain	1
19		LW-13227	ADAPTER, Magneto pressurization	1
20		LW-13226	NUT, 3/8-16 NC, plain	1
21		AN826-4	TEE, 1/4 tube	1
22		LW-12798-4S111	HOSE, Right magneto to tee	1
23		LW-12798-4S204	HOSE, Left magneto to tee	1
24		66N21020	VALVE, ASSEMBLY, Relief	1
25		MS29512-04	O-RING	1
26		MS20822-4	ELBOW, 1/4 tube to 1/8 NPT	2
27	V *	1182-L7	SPARK PLUG, Champion (RHB 36S)	12
28		01P19762-4-16	BAG, Magneto harness attaching	1
* Refer to the latest revision of Lycoming Service Instruction No. 1042 for complete listing of all approved spark plugs. V Vendor Prime Manufacturer part				



Exhaust Crossover Pipes and Transition Assembly
Figure 28

FIGURE 28 - EXHAUST CROSSOVER PIPES AND TRANSITION ASSEMBLY

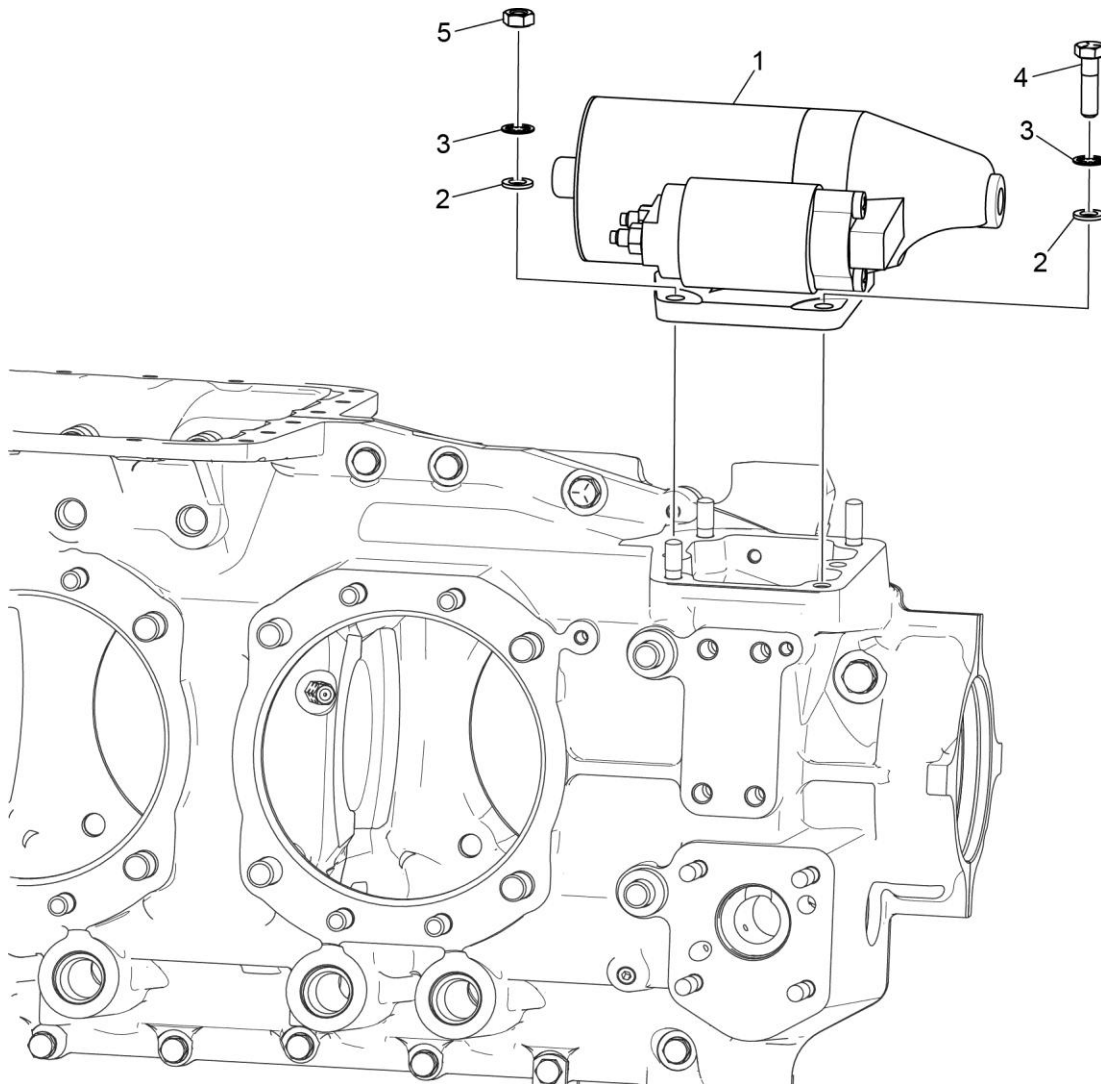
Figure Item	Code	Part Number	Description	Units per Assembly
1		77611	GASKET, Exhaust flange	6
2		40B19840	ADAPTER, Exhaust pipe, cylinders no. 1,2,5,6	4
3		40B19844	PIPE, Exhaust, cylinder no. 1	1
4		40B19841	PIPE, Exhaust, cylinder no. 2	1
5		40B19827	PIPE, Exhaust, cylinder no. 3	1
6		40B19842	PIPE, Exhaust, cylinder no. 4	1
7		47C22532	TRANSITION, Exhaust, right	1
8		47C22533	TRANSITION, Exhaust, left	1
9		STD-2233	NUT, 5/16-18 self-locking	12
10		AN960C516	WASHER, 5/16 plain	12
11		40B19850	PIPE, Exhaust, crossover, left	1
12		40B19974	PIPE, Exhaust, crossover, intermediate	1
13		40B19975	PIPE, Exhaust, crossover, right (short)	1
14		06B19913	GASKET, V-band coupling, 1-1/2 tube	1
15		LW-12093-3	COUPLING, V-band, 1-1/2 tube	1
16		78084	GASKET, V-band coupling, 2.00 tube	2
17		40C19819	FLANGE, V-band coupling, 2.00 tube	2
18		LW-12093-5	COUPLING, V-band, 2.00 tube	2
19		LW-16759	SPACER, 9/32 I.D. x 5/8 O.D. x 15/32 long	2
20		07A19981	BRACKET, Crossover pipe support	2
21		40G19982	CLAMP, 1-1/2 O.D. x 5/8 wide	2
22		STD-8	WASHER, 1/4 plain	2
23		LW-25-1.50	BOLT, 1/4-20 x 1-1/2 long, hex. head	2
24		STD-2079	NUT, 1/4-20 plain	2
25		68018	WASHER, 1/4 x 5/32 thick	4
26		STD-8	WASHER, 1/4 plain	4
27		STD-2079	NUT, 1/4-20 plain	2
28		STD-1932	BUSHING, 1/4 to 1/8 NPT	1
29		LW-15592-8E24	CLAMP, Hose	4
30		40J19953	HEAT SHIELD, Sonic nozzle, right	1
31		1102	PLUG, 1/8-27 NPT, allen head	1

(continued on next page)

FIGURE 28 - EXHAUST CROSSOVER PIPES AND TRANSITION ASSEMBLY (CONT.)

Figure Item	Code	Part Number	Description	Units per Assembly
32		40B22295	TAILPIPE, Heater assembly	1
33		40B19851	ADAPTER, Exhaust transition	1
34		77611	GASKET, Exhaust flange	1
35		LW-31SS-1.19	BOLT, 5/16-18 x 1-3/16 long, hex. head	2
36		STD-2043	NUT, 5/16-18 self-locking	2
37		47C21952	TRANSITION, Exhaust	1
38		47E21296	VALVE ASSEMBLY, Exhaust bypass	1
39		75845	GASKET, V-band coupling, 2-1/4 tube	2
40		LW-12093-6	COUPLING, V-band, 2-1/4 tube	2
41		40D23255-340M	COUPLING, V-band	2
42		40J22416	HEAT SHIELD, Exhaust crossover, ins.	1
43		40B21147	PIPE, Exhaust, tail, left	1
44		40G22646	LINK, Tailpipe support, right	2
45		LW-31-0.81	BOLT, 5/16-18 x 13/16 long, hex. head	3
46		LW-31SS-0.75	BOLT, 5/16-18 x 3/4 long, hex. head	1
47		40J21019	HEAT SHIELD, Exhaust crossover, rear	1
48		MS35276-261	SCREW, #10-32 x 3/8 long, fill. head	5
49		01L21139	SPACER, Tail pipe	2
50		07C21135	CLAMP, Tail pipe, 2.75 I.D.	2
51		07A21136	BRACKET, Right tail pipe	1
52		07A21137	BRACKET, Right tail pipe	1
53		07F21138	LINK, Right tail pipe	1
54		AN3-7	BOLT, #10-32 x 29/32 long, hex. head	2
55		AN3-5	BOLT, #10-32 x 21/32 long, hex. head	2

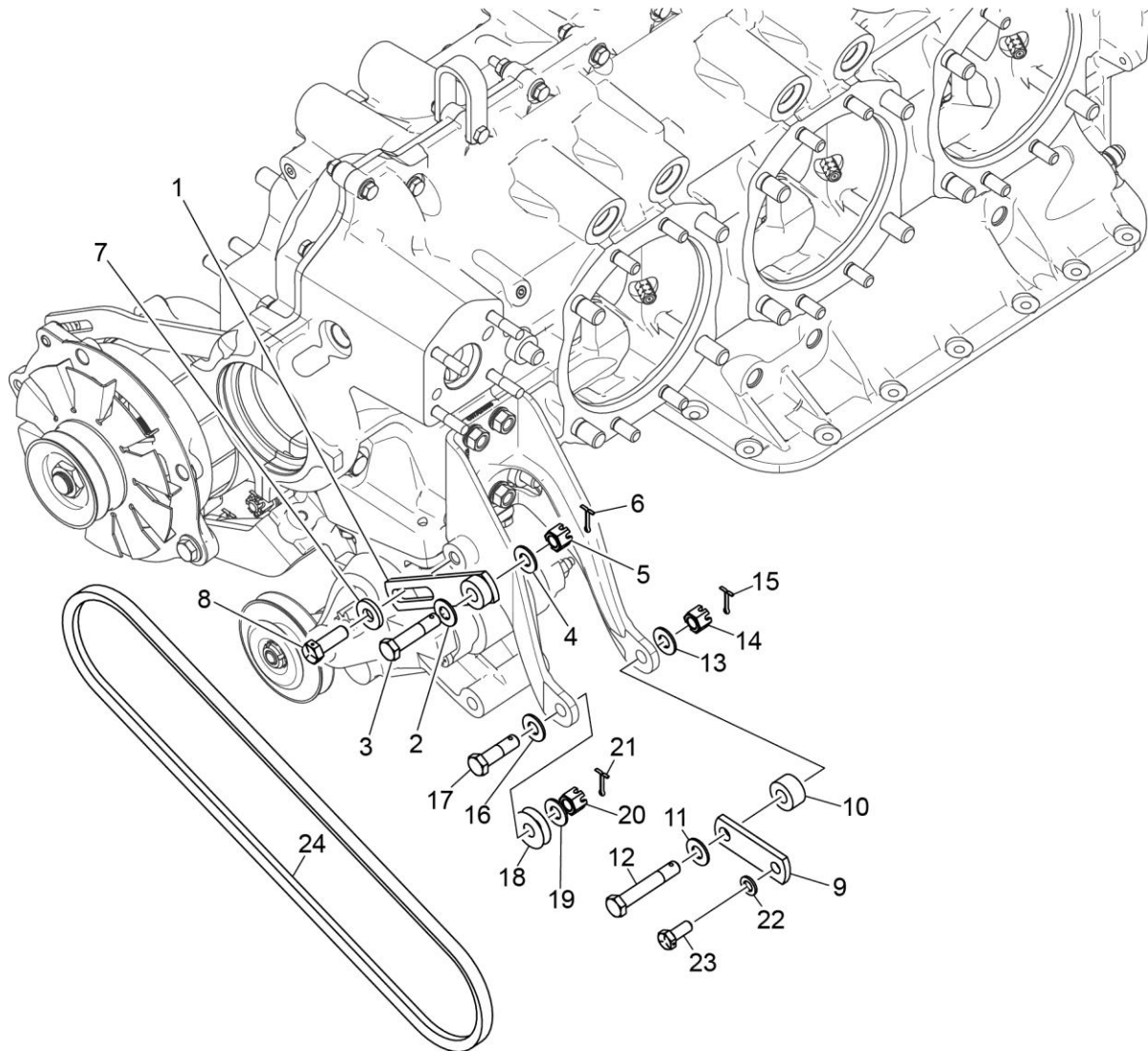
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Starter Motor and Attaching Parts
Figure 29

FIGURE 29 - STARTER MOTOR AND ATTACHING PARTS

Figure Item	Code	Part Number	Description	Units per Assembly
1	V	31B26040	STARTER, 24V., 12/14 pitch pinion, (Kelly Aerospace) V ERB-8011	1
	V	31B23592	STARTER, 12/24V., 12/14 pitch pinion, (Sky-Tech) V 149 NL	1
	V	31B26554	STARTER, 24V., 12/14 pitch pinion, (Sky-Tech) V 149 NL/EC	1
	V	31A22104	STARTER, 12V. , 12/14 pitch pinion, (Sky-Tech) V 149-12LS	1
2		STD-35	WASHER, 5/16 plain	4
3		STD-475	WASHER, 5/16 lock, internal teeth	4
4		LW-31-1.16	BOLT, 5/16-18 x 1-5/32 long, hex.head	1
		LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex.head	1
5		STD-1410	NUT, 5/16-18 plain	3
V Vendor Prime Manufacturer part NOTE: Refer to the latest revision of Service Instruction No. 1154 for complete listing of FAA approved starters, alternators, generators, regulators and relays.				



Compressor Mounting and Attaching Parts
Figure 30

FIGURE 30 – COMPRESSOR MOUNTING AND ATTACHING PARTS

Figure Item	Code	Part Number	Description	Units per Assembly
1		07F21724	LINK, Compressor adjusting	1
2		STD-690	WASHER, 3/8 plain	1
3		AN6-15	BOLT, 3/8-24 x 1-45/64 long, hex head, drilled end	1
4		STD-690	WASHER, 3/8 plain	1
5		STD-872	NUT, 3/8-24 slotted	1
6		STD-713	COTTER PIN, 3/32 diameter x 3/4 long	1
7		STD-1342	WASHER, Plain, 7/8 O.D. x 25/64 I.D. x 1/8 thick	1
8		LW-38H1.09	BOLT, 3/8-16 x 1-3/32 long, hex head, drilled end	1
9		07F21903	BRACE, Alternator	1
10		01L21916	SPACER, Alternator	1
11		STD-690	WASHER, 3/8 plain	2
12		AN6-21	BOLT, 3/8-24 x 2-13/64 long hex head, drilled end	1
13		STD-690	WASHER, 3/8 plain	2
14		STD-872	NUT, 3/8-24 slotted	1
15		STD-713	COTTER PIN, 3/32 diameter x 3/4 long	1
16		STD-690	WASHER, 3/8 plain	1
17		AN6-12	BOLT, 3/8-24 x 1-21/64 long, hex head, drilled end	1
18		76534	SHIM, 1-1/8 O.D. x 13/32 I.D. x .005 thick	AR
19		STD-690	WASHER, 3/8 plain	1
20		STD-872	NUT, 3/8-24 slotted	1
21		STD-713	COTTER PIN, 3/32 diameter x 3/4 long	1
22		STD-35	WASHER, 5/16 plain	1
23		LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex head, drilled end	1
24		37B19774-460	BELT, Compressor drive	1

SERVICE KIT SECTION**SEAL AND GASKET SET**

PART NO.	PART NAME	Qty.
05K21002	KIT - SEAL AND GASKET SET	1
06A19956	SEAL, Oil, 7/8 I.D. x 1-1/2 O.D. x 5/16	2
06B21326	GASKET, Oil sump	1
06B19913	GASKET, V-band coupling- 1-1/2	1
06B21644	GASKET, Oil filter base cover	1
06E19769-0.44	GASKET, Annular 7/16 I.D.	1
06E19769-0.63	GASKET, Annular 5/8 I.D.	1
06E19769-0.91	GASKET, Annular, 0.906 I.D.	2
06E19769-1.00	GASKET, Annular, 1.00 I.D.	1
06E19769-1.25	GASKET, Annular, 1.25 I.D.	1
61183	GASKET, Accessory adapter	1
62224	GASKET, Magneto adapter	2
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
70455	GASKET, 25/32 I.D. x 1-1/8 O.D. x 1/32 thick	1
70457	GASKET, Oil filler extension	1
71481	RING, Oil seal, 3/32 diameter x 4-27/32 I.D.	6
71973	GASKET, 2 bolt flange, 1-13/16 I.D.	6
72053	GASKET, Governor	1
72091	RING, Oil seal, 0.36 I.D. x 7/64 diameter	2
72210	GASKET, Air throttle housing	1
72711	RING, Seal, intake pipes	6
73032	GASKET, Air inlet housing	1
73314	GASKET, Density and differential	1
73818	GASKET, Accessory housing	1
74065	RING, Oil level gage seal	1
74944	GASKET, Turbocharger controller	1
75845	GASKET, V-band coupling- 2-1/4	2
77611	GASKET, Exhaust flange	7
77813	GASKET, Turbo oil inlet	2
78084	GASKET, V-coupling- 2.00	2
8313	GASKET, Vacuum pump	2
15H21201	SPRING, Shroud tube	24
LW-12681	GASKET, Magneto	2
LW-15628	SEAL, Crankshaft oil	1

SEAL AND GASKET SET (CONT.)

PART NO.	PART NAME	Qty.
LW-18038	GASKET, Turbo oil drain	1
LW-18638	LOCKPLATE, Crankshaft gear	1
LW-18661	SEAL, Shroud tube	24
MS29512-04	O-RING, 23/64 I.D. x 5/64 section	1
MS29512-06	O-RING, 15/32 I.D. x 5/64 section	2
MS29512-08	O-RING, 41/64 I.D. x 0.087 section	4
MS29513-227	O-RING, 2-7/64 I.D. x 9/64 section	1
MS29512-009	O-RING, .203-.213 I.D. x 5/64 section	1
STD-1737	RING, Internal retaining (9/16)	1
STD-213	SEAL, Oil, 3/4 I.D. x 1-3/8 O.D.	1

CYLINDER, PISTON AND RING ASSEMBLY

PART NO.	PART NAME	Qty.
05K21262	KIT - CYLINDER, PISTON AND RING ASSEMBLY	1
14D23907	PISTON, 7.30:1	1
14H21990	RING, Piston, oil regulating	1
17A23937	VALVE, Intake	1
17B23935	VALVE, Exhaust (rotator type)	1
17C19386	CAP, Valve stem, exhaust (rotator type)	1
17C21191	KEY, Valve exhaust	2
1102	PLUG, 1/8-27 NPT, allen head	2
62388	CAP, Valve stem	1
66732	GASKET, Valve rocker shaft cover	2
67193	GASKET, Rocker box cover	1
69532	SEAT, Valve spring, upper intake	1
71481	RING, Oil seal, 3/32 diameter x 4-27/32 I.D.	1
71973	GASKET, 2 bolt flange, 1-13/16 I.D.	1
72050	KEY, Valve intake	2
72198	PLUG, Piston pin	2
72343	STABILIZER, Cylinder head fins, 15 teeth	1
72344	STABILIZER, Cylinder head fins, 26 teeth	1
74241	RING, Piston, compression	2
77611	GASKET, Exhaust flange	1
LW-11796	SPRING, Valve, outer	2
LW-11797	SPRING, Valve, inner	2
LW-12988	CYLINDER HEAD & VALVE ASSEMBLY	1
LW-13321	SEAT, Valve spring, lower intake	1
LW-13322	SEAT, Valve spring, lower exhaust	1
LW-14078	PIN, Piston	1
LW-16475	SEAT, Valve spring, upper exhaust (rotator type)	1
LW-18661	SEAL, Shroud tube	4
MS20823-6D	ELBOW, 45 degree, 3/8 flared tube	1
SSP-299	TAG, Use of piston pin plugs	1

CRANKCASE ASSEMBLY AND THRU-STUD KITS

PART NO.	PART NAME	Qty.
11F24023-S3-S	KIT - CRANKCASE ASSEMBLY AND THRU-STUD	1
11F24023-S3	CRANKCASE ASSEMBLY	1
31C-14	STUD, 5/16-18 x 1-3/4 long	4
31C-16	STUD, 5/16-18 x 2.00 long	4
1102	PLUG, 1/8-27 NPT, Allen head	4
76220	STUD, 1/2-20 x 10-45/64 long	8
AN565B1032H4	SETSCREW, No. 10-32 x 1/4 long	1
AN565B1032H5	SETSCREW, No. 10-32 x 5/16 long	1
LW-31-2.75	BOLT, 5/16-18 x 2-3/4 long, hex head	1
LW-31-1.16	BOLT, 5/16-18 x 1-3/16 long, hex head	1
STD-35	WASHER, 5/16, plain	4
STD-475	WASHER, 5/16, lock, internal teeth	4
STD-1339	PLUG, 1/16-27 NPT, Allen head	7

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STD-160	WASHER	49	STD-35	WASHER	1
STD-160	WASHER	53	STD-35	WASHER	7
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STD-690	WASHER	73	31C-13	STUD	21
STD-690	WASHER	73	31C-17	STUD	9
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