

O-320-B1A

Illustrated Parts Catalog

May 2016

PC-O-320-B1A

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652 Oliver Street
Williamsport, PA 17701

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Lycoming Part Number: PC-O-320-B1A

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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 O-320-B1A engine model.

How to Use this Catalog

This catalog is based on the Air Transport Association (ATA) Spec 100 format. To clarify illustrations, Lycoming has taken discretion to classify non-system related assemblies and components in the same chapters, because they are physically connected.

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 format specifies the subject matter for each chapter-section. According to the ATA Standards, the following chapters apply to the O-320-B1A Illustrated Parts Catalog:

24 (Electrical Power), 72 (Reciprocating Engine), 73 (Engine and Fuel Control), 74 (Ignition), and 80 (Starting).

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

NOTICE: Refer to the IPC Table of Contents for the subsystems identified 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 below their associated parts grouping or assembly. 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” are for “as required” applicable to bulk items or non-illustrated select-from-range-parts. The letters “RF” identify items for reference.

Vendor Accessories

Parts coverage of Vendor Accessories used on Lycoming engines are in the applicable Vendor's Parts Catalog. A list of vendors' addresses is included in the latest revision of Lycoming Service Letter No. L114.

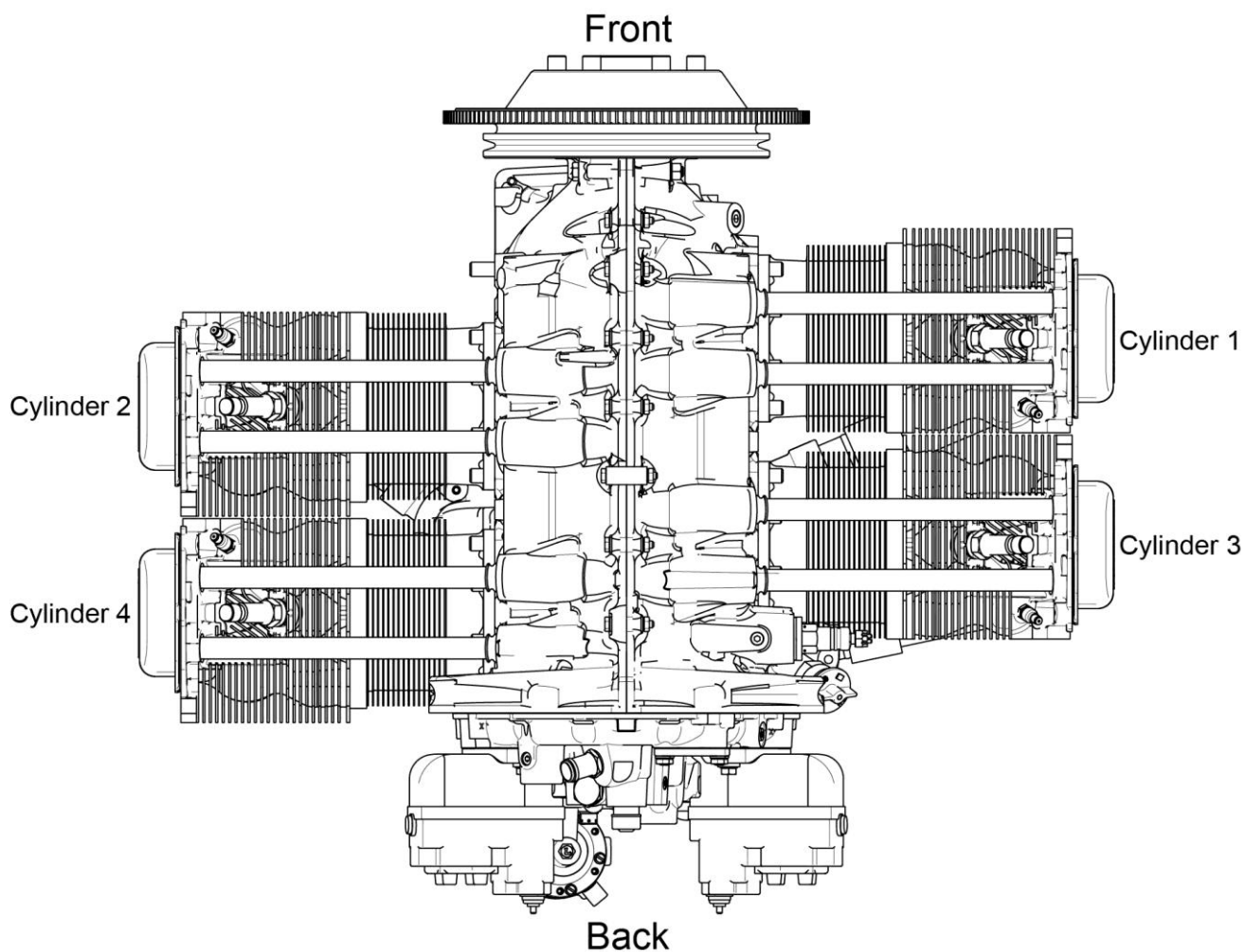
Any reference in this document to the suppliers/part manufacturer's product by name, trademark, part number, or other description is solely for the purpose of identification and does not indicate or infer that Lycoming accepts responsibility for quality control and/or airworthiness of parts, which do 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 the propeller end and the oil sump is 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 four-cylinder engine is 1-3-2-4.

**Top View of Engine**

How to Order Parts and Publications

An Oversize and Undersize Parts List is included in the front section of this catalog as an to order parts.

Although the information contained in this parts catalog is up-to-date at time of publication, users are advised to procure current information through all Lycoming distributors or from the factory by subscription. Refer to the latest revision of Service Letter No. L114 for subscription information.

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

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

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 I writing to:

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

NOTICE: The owner of the manual is responsible for notifying Lycoming Engines for a change of address.

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

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

8:00 A.M. - 5:00 P.M. EST (-5GMT)

Monday - Friday.

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Abbreviations and Acronyms

A	
AR	As Required
Assy.	Assembly
ATA	Air Transport Association
H	
Hex.	Hexagon
I	
I.D.	Inside Diameter
in.	Inch
N	
No.	Number
NPT	National Pipe Taper (thread)
O	
O.D.	Outside Diameter
P	
P/N	Part Number
Q	
Qty.	Quantity
R	
RF	Reference
S	
SB	Service Bulletin
SI	Service Instruction
SSP	Special Service Publication

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Oversize and Undersize Parts Listing

PART NO.	DESCRIPTION	OVERSIZE (IN.)			UNDERSIZE (IN.)
		P05 .005	P10 .010	P50 .050	M03 .003
66796	INSERT	X	X		
69796	DOWEL	X			
72155-S	BUSHING		X		
73810	BUSHING		X		
75656-S	BUSHING		X		
75657-S	BUSHING		X		
LW-11997	SEAL			X	
18M26105	BEARING				X
LW-13792	SEAL			X	
STD-1065	DOWEL	X	X		
18A26093	BEARING				X
18D26098	BEARING				X

NOTICE: 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 Part Number (P/N) 18D26098 bearing in 0.003 in. undersize, order P/N 18D26098-M03. Undersize code letter is "M" while oversize code letter is "P". These letters are then followed by the number designating the size in thousandths of an inch.

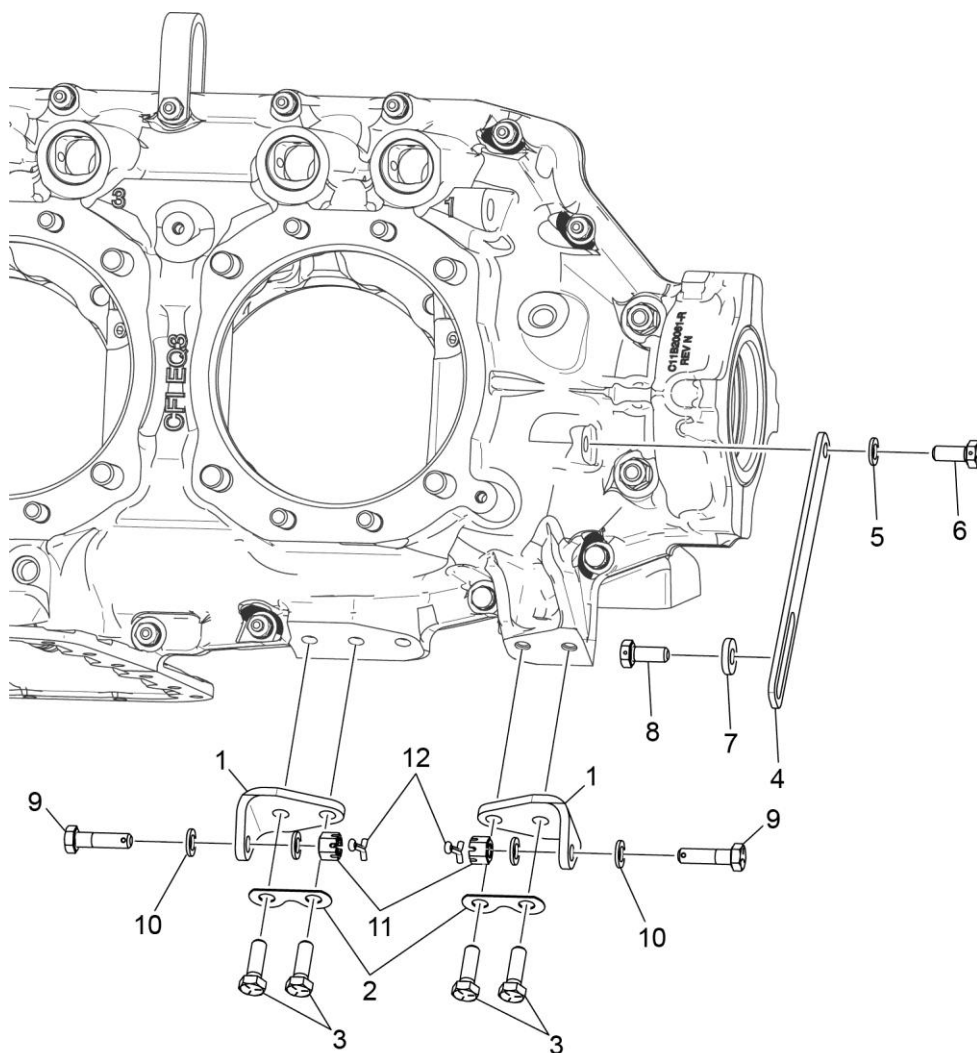


Figure 1
Electrical Power Mounting and Attaching Parts

Figure 1 – Electrical Power Mounting and Attaching Parts

Figure Item	Code	Part Number	Description	Units per Assembly
1		70419	BRACKET, Generator	2
2		73383	LOCKPLATE, 5/16 bolt x 1.00	2
3		LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex. head	4
4		76028	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, 11/32 I.D. x 3/4 O.D.	1
8		LW-31H0.75	BOLT, 5/16-18 x 3/4 long hex. head drilled	1
9		LW-31S1.16	BOLT, 5/16-18 x 1-5/32 long drilled	1
10		STD-35	WASHER, 5/16 plain	1
11		STD-1420	NUT, 5/16-18 slotted	2
12		STD-68	PIN, 1/16 diameter x 1/2 long	2

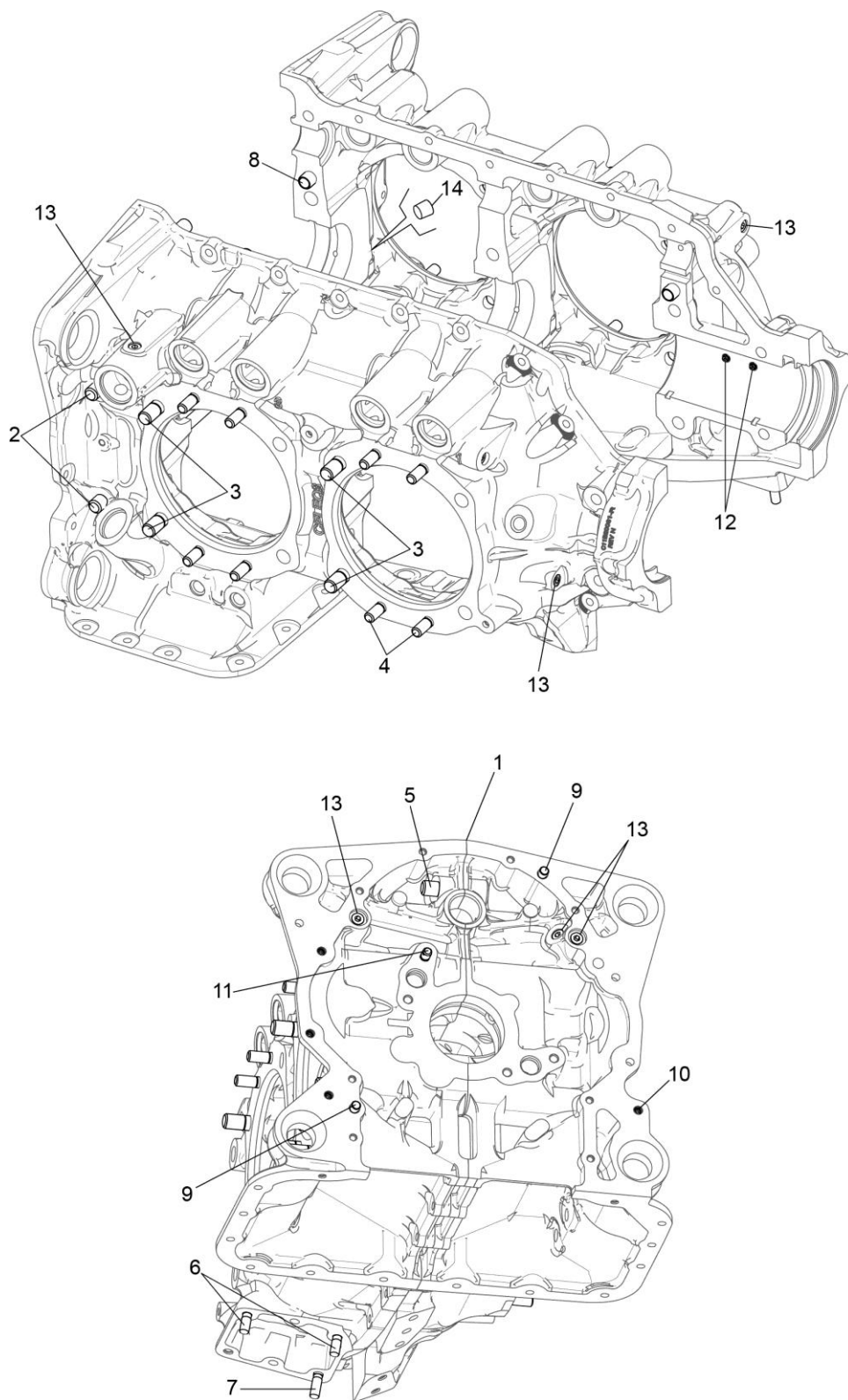


Figure 2
Crankcase Assembly

Figure 2 - Crankcase Assembly

Figure Item	Code	Part Number	Description	Units per Assembly
1	*	11B20061-3SL-S	CRANKCASE ASSEMBLY KIT	1
	P	11B20061-3SL	CRANKCASE ASSEMBLY	1
	*	11B20161-3SL-S	CRANKCASE ASSEMBLY KIT	1
	P	11B20161-3SL	CRANKCASE ASSEMBLY, Roller lifter	1
2		75154	STUD, 1/2-13 x 10-1/32 long	2
3		50-15	STUD, 1/2-13 x 1-7/8 long	8
4		38-13	STUD, 3/8-16 x 1-5/8 long	16
5		38D-17	STUD, 3/8-16 x 2-1/8 long, drilled	1
6		31C-12	STUD, 5/16-18 x 1-1/2 long	2
7		31C-13	STUD, 5/16-18 x 1-5/8 long	1
8		STD-557	DOWEL, 1/2 diameter x 11/16 long, hollow	2
9		STD-514	DOWEL, 5/16 diameter x 1/2 long	2
10		72706	INSERT, 1/4-20 Heli-coil x 3/8 long	4
11		LW-13793	STUD, 5/16-18 x 15/16 long, drilled	1
12		69796	DOWEL, Crankshaft bearing	2
13		1102	PLUG, 1/8-27 pipe	6
14		STD-1339	PLUG, 1/16-27 NPT	4
<p>P Lycoming proprietary part - for reference purposes only, cannot be purchased.</p> <p>* Refer to Service Kits Section for applicable Crankcase Assembly and Governor Thru-Stud Kit Part Numbers.</p>				

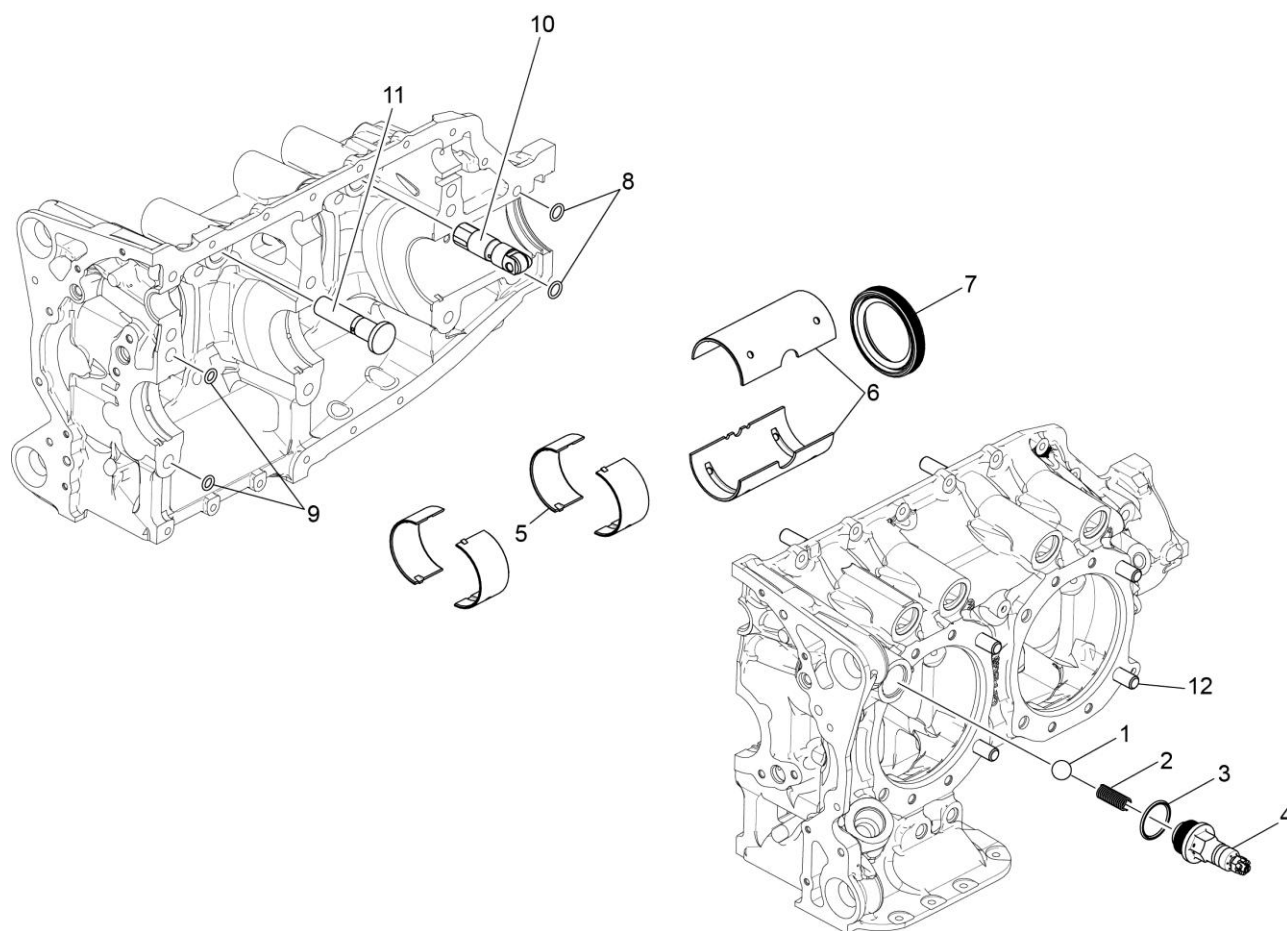


Figure 3
Crankcase Related Parts

Figure 3 - Crankcase Related Parts

Figure Item	Code	Part Number	Description	Units per Assembly
1		1028-B	BALL, 11/16 diameter	1
2	*	61084	SPRING, Oil pressure relief valve	1
	*	68668	SPRING, Oil pressure relief valve	1
	*	77467	SPRING, Oil pressure relief valve	1
	*	LW-11713	SPRING, Oil pressure relief valve	1
	*	LW-18085	SPRING, Oil pressure relief valve	1
3		06E19769-1.25	GASKET, 1-1/4 I.D., annular	1
4		77808	VALVE ASSEMBLY, Oil pressure relief	1
5		18D26098	BEARING, Crankshaft	4
6		18A26093	BEARING, Crankshaft	2
7		LW-13792	SEAL, Crankshaft, oil	1
8		72075	SEAL, Oil, 3/32 section x 15/32 I.D.	2
9		72091	RING, Oil seal, 23/64 ID x 1/10 diameter	2
10	**	LRT23381	BODY ASSEMBLY, Hydraulic tappet - RT	8
11	**	15B26262	BODY ASSEMBLY, Hydraulic tappet	8
12		76220	STUD, 1/2-20 x 10.70 long	4
<p>* Select spring to give a minimum of three threads exposed on the adjusting screw to allow field adjustment. Refer to the latest revision of SSP-1776, Part I for spring identification.</p> <p>** Refer to the latest revision of Service Instruction No. SI 1011 for tappet details and crankcase requirements.</p>				

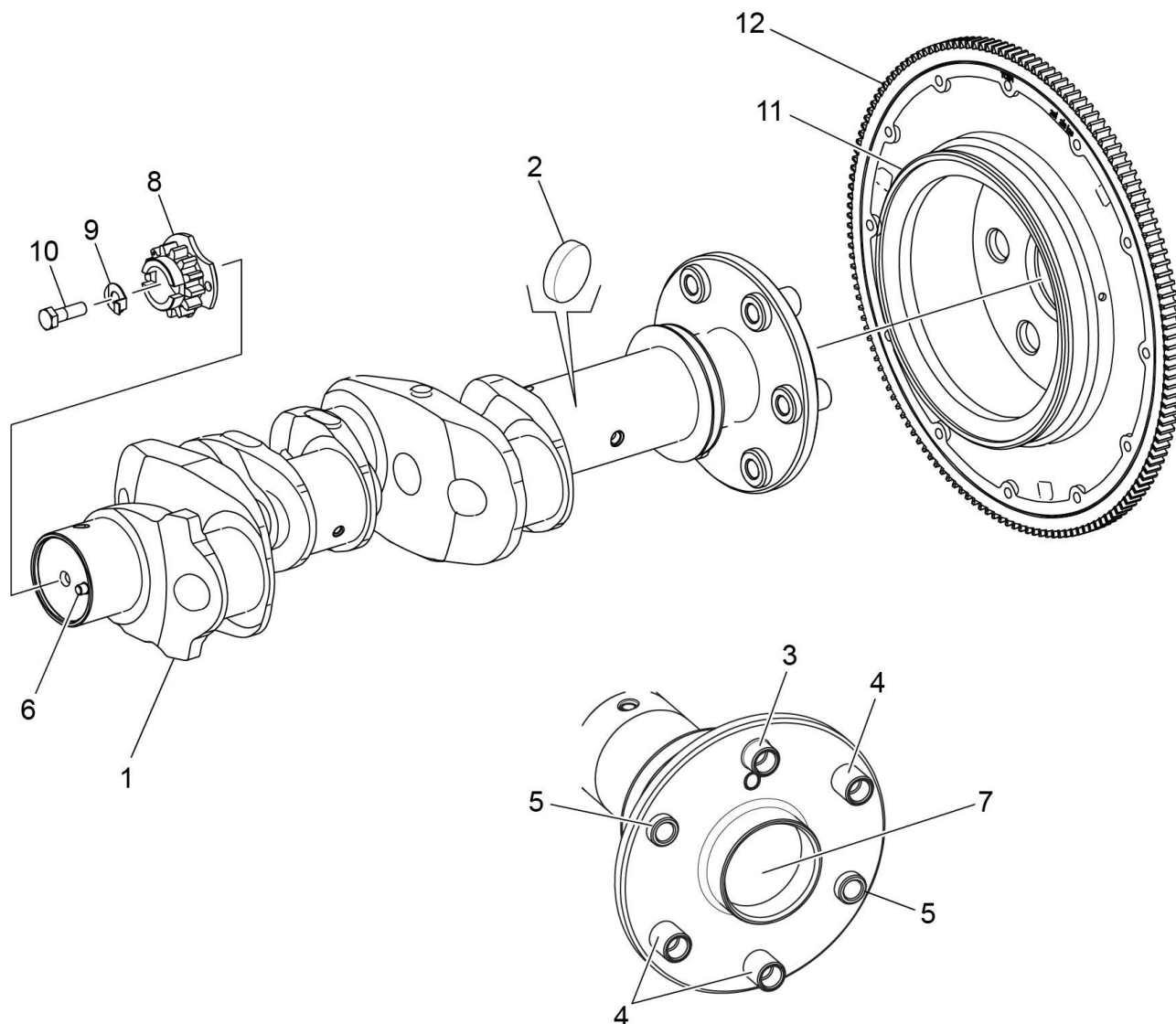


Figure 4 Crankshaft Assembly and Related Parts

Figure 4 - Crankshaft Assembly and Related Parts

Figure Item	Code	Part Number	Description	Units per Assembly
1	*	13B47022	CRANKSHAFT ASSEMBLY	1
2		61510	PLUG, 1-3/4 O.D.	1
3		LW-18817-S	BUSHING, Propeller flange, long	1
4		LW-18815-S	BUSHING, Propeller flange, short	3
5		LW-18816-S	BUSHING, Propeller flange, short	2
6		STD-1065	DOWEL, Stepped, 0.310-0.251 dia.	1
7		STD-1211	PLUG, 2.00 diameter expansion	1
8	**	13S19646	GEAR, Crankshaft	1
9		LW-18639	LOCKPLATE, Crankshaft gear	1
10		STD-2246	BOLT, 5/16-24 x 1.00 long	1
11		68867	SUPPORT ASSEMBLY, Starter ring gear	1
12		60882	GEAR, Starter ring, 10/12 pitch	1
<p>* Crankshaft Kit No. 05K23732 is available.</p> <p>** Refer to latest revision of Lycoming Service Bulletin No. 475 for proper installation.</p>				

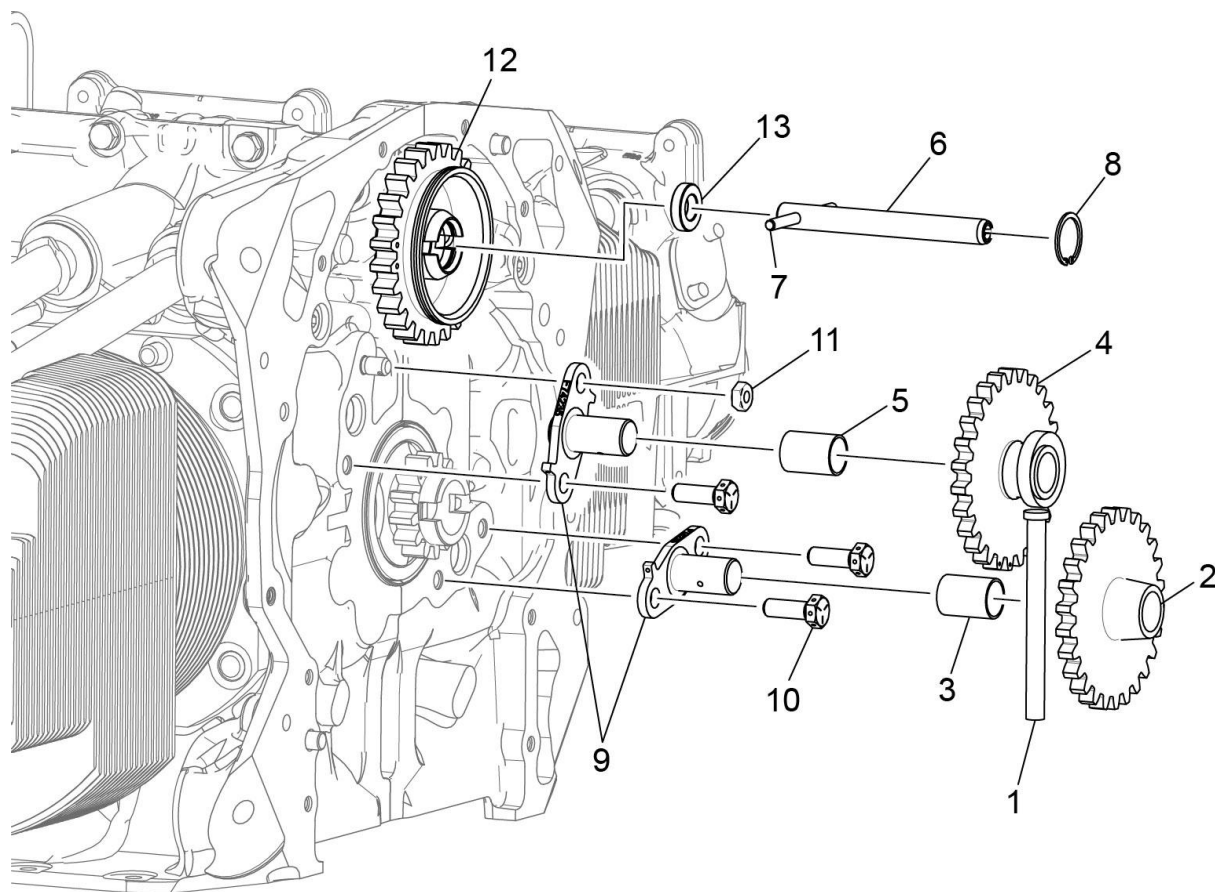


Figure 5
Crankshaft Idler Gears, Tachometer Drive, and Camshaft

Figure 5 - Crankshaft Idler Gears, Tachometer Drive, and Camshaft

Figure Item	Code	Part Number	Description	Units per Assembly
1		23D26777	PLUNGER, Fuel pump, long	1
2		74996	GEAR ASSEMBLY, Crankshaft idler, plain	1
3		77309	BUSHING, Crankshaft idler gear	1
4		75072	GEAR ASSEMBLY, Crankshaft idler	1
5		77309	BUSHING, Crankshaft idler gear	1
6		76121	SHAFT ASSEMBLY, Tachometer	1
7		LW-18667	PIN, 3/16 diameter x 2-11/32 long	1
8		STD-2231	RING, Internal retaining, 13/16	1
9		LW-13796	SHAFT, Crankshaft idler gear	2
10		LW-31H0.88	BOLT, 5/16-18 x 7/8 long hex. head drilled	3
11		STD-2168	NUT, 5/16-18 NC-3 slotted shear	1
12		15M23452	CAMSHAFT ASSEMBLY, Roller Lifter	1
		LW-18840	CAMSHAFT ASSEMBLY, Flat tappet	1
13		76118	SPACER, Tachometer shaft centering	1

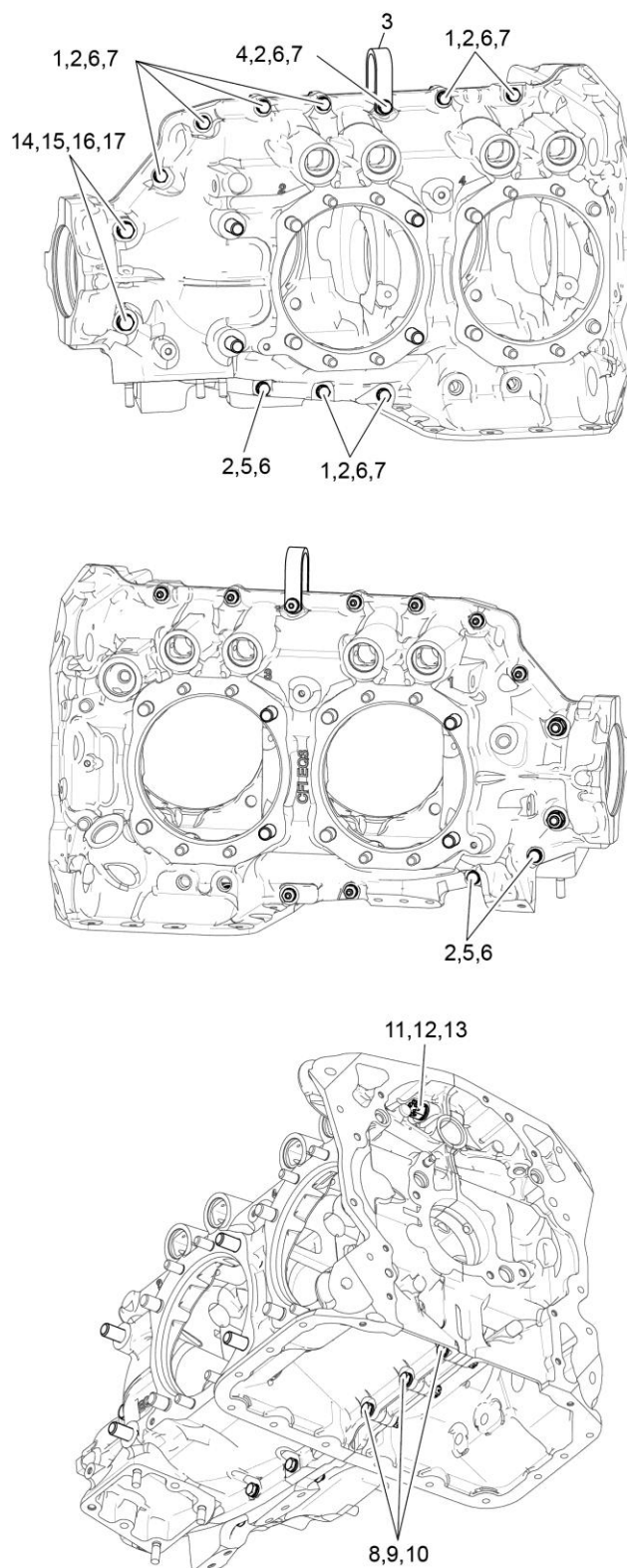


Figure 6
Crankcase Attaching Parts

Figure 6 - 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		STD-8	WASHER, 1/4 plain	19
3		60803	STRAP, Lifting	1
4		LW-25-1.75	BOLT, 1/4-20 x 1-3/4 long, hex. head	1
5		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	3
6		STD-160	WASHER, 1/4 lock, internal teeth	12
7		STD-1411	NUT, 1/4-20 plain	9
8		LW-25S1.50	BOLT, 1/4-20 x 1-1/2 long, drilled end	3
9		STD-8	WASHER, 1/4 plain	9
10		STD-2249	NUT, 1/4-20 slotted	3
11		STD-33	WASHER, 3/8 plain	3
12		AN960-616L	WASHER, 3/8 plain, thin	1
13		STD-872	NUT, 3/8-24 slotted	1
14		AN6-34A	BOLT, 3/8-24 x 3-19/32 long, hex. head	2
15		STD-33	WASHER, 3/8 plain	2
16		STD-678	WASHER, 3/8 lock, internal teeth	2
17		STD-596	NUT, 3/8-24 plain	2

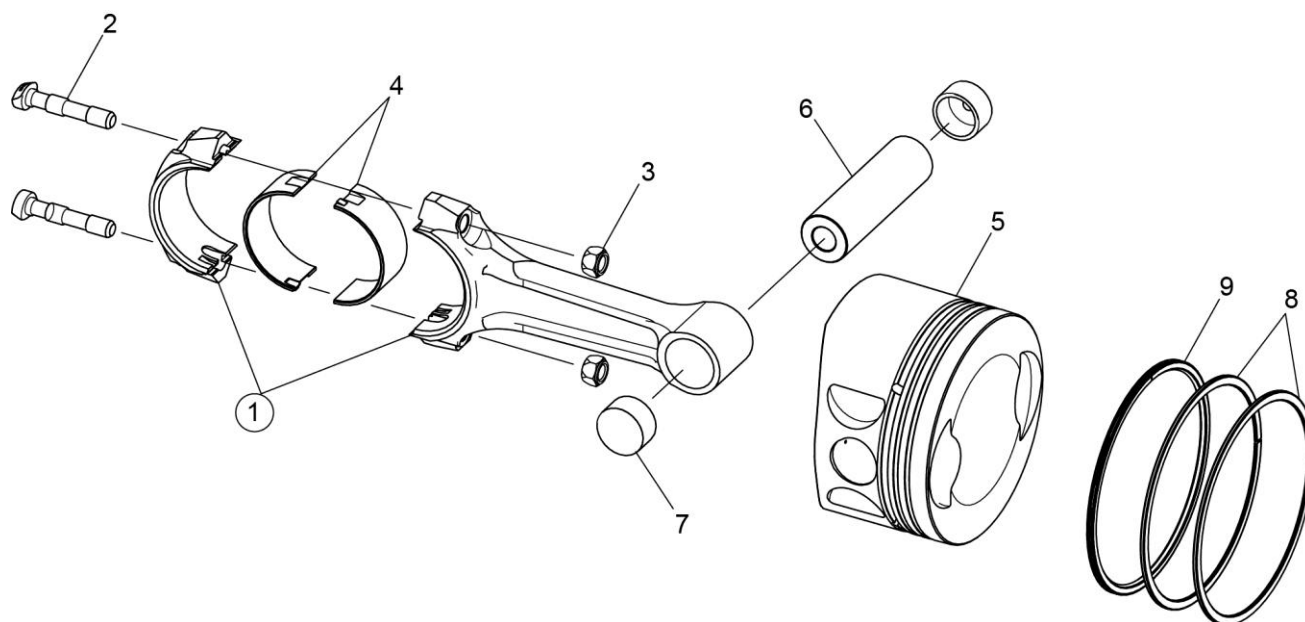


Figure 7
Connecting Rods, Pistons, and Ring Assemblies

Figure 7 - Connecting Rods, Pistons, and Ring Assemblies

Figure Item	Code	Part Number	Description	Units per Assembly
1		78030-S	CONNECTING ROD ASSEMBLY	4
2		78027	BOLT, Connecting rod	8
3		LW-12186	NUT, Connecting rod bolt	8
4		18M26104	BEARING, Connecting rod	8
5		14D23912	PISTON, Compression ratio 8.50:1	4
6		LW-14078	PIN, Piston	4
7		72198	PLUG, Piston pin	8
8		74241	RING, Piston compression	8
9		14H21950	RING, Piston, oil	4

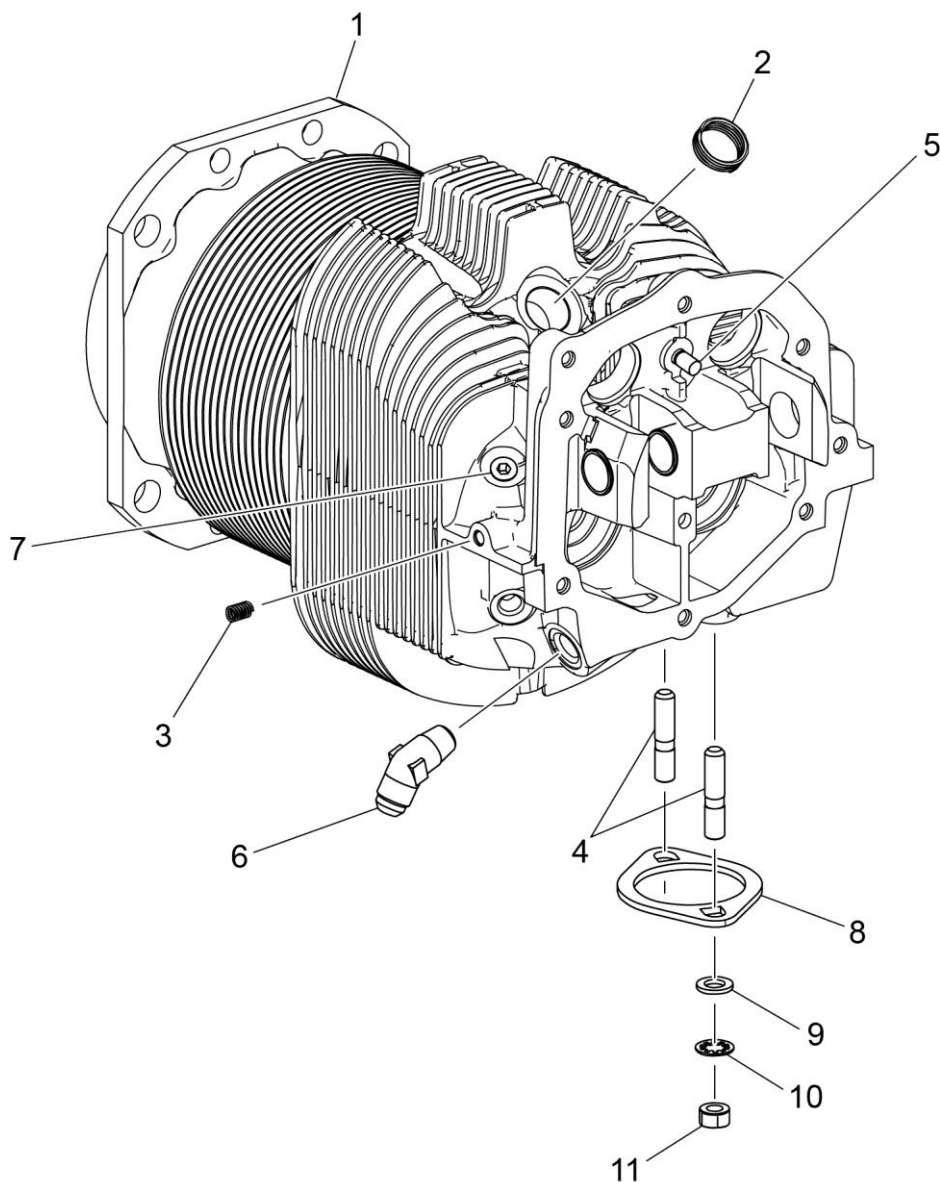


Figure 8
Cylinder Assembly

Figure 8 - Cylinder Assembly

Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-12416	CYLINDER AND HEAD ASSEMBLY, Nitrided	4
2		66796	INSERT, Spark plug, 18-1.5 MM	8
3		STD-1353	INSERT, No. 10-24 Heli-coil x 3/8 long	4
4		31C-12	STUD, 5/16-18 x 1-1/2 long	8
5		25C-8	STUD, 1/4-20 x 1.00 long	4
6		MS20823-6D	ELBOW, 45°, 3/8 flared tube	4
7		1102	PLUG, 1/8-27 NPT, Allen head	4
8		77611	GASKET, Exhaust flange	4
9		STD-35	WASHER, 5/16 plain	8
10		STD-475	WASHER, 5/16 lock, internal teeth	8
11		STD-1410	NUT, 5/16-18 plain	8

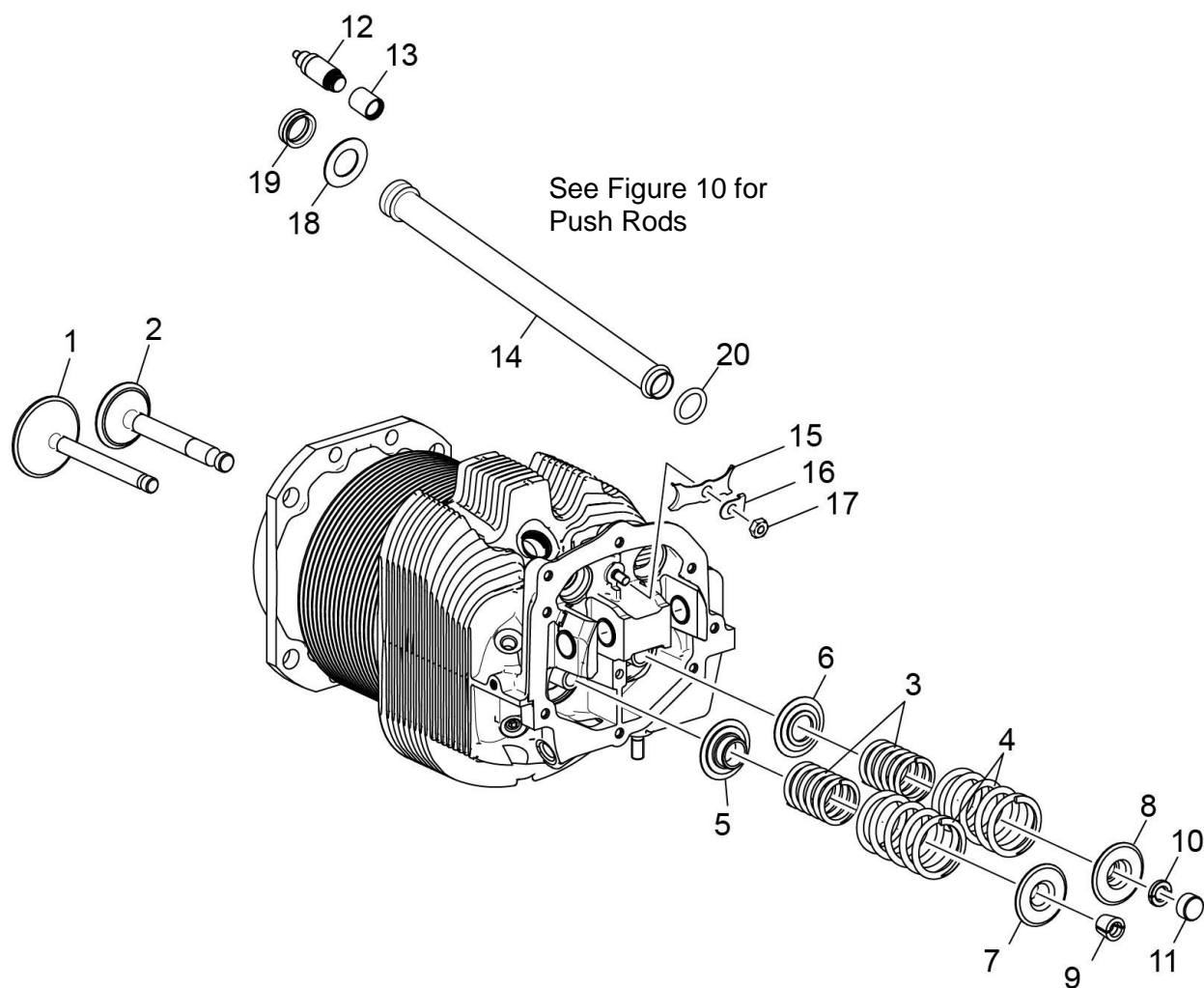


Figure 9
Cylinder Assembly, Valve Assembly, and Related Parts

Figure 9 - Cylinder Assembly, Valve Assembly, and Related Parts

Figure Item	Code	Part Number	Description	Units per Assembly
1		17A23938	VALVE, Intake	4
2		17B23936	VALVE, Exhaust (rotator type)	4
3		LW-11795	SPRING, Valve, inner	8
4		LW-11800	SPRING, Valve, outer	8
5		65441	SEAT, Valve spring, lower intake	4
6		LW-13323	SEAT, Valve spring, lower exhaust	4
7		LW-10077	SEAT, Valve spring, upper intake	4
8		LW-16475	SEAT, Valve spring, upper exhaust (rotator type)	4
9		60009	KEY, Valve, intake	8
10		17C21191	KEY, Valve, exhaust (rotator type)	8
11		17C19386	CAP, Valve stem, exhaust (rotator type)	4
12		15B26066	PLUNGER ASSEMBLY, Hydraulic lifter	8
13		15B21319	SOCKET, Hydraulic tappet	8
14		15G23494	SHROUD TUBE ASSEMBLY, Push rod, RT	8
		68987	SHROUD TUBE ASSEMBLY, Push rod	8
15		LW-14995	SPRING, Shroud tube	4
16		LW-12272	LOCKPLATE, Shroud tube	4
17		STD-1411	NUT, 1/4-20 plain	4
18		01L23459	WASHER, 25/32 I.D. x 3/8 O.D. x 1/32 thick, RT	8
19		06A23493	SEAL, Shroud tube, RT	8
		LW-18661	SEAL, Shroud tube	8
20		70310	SEAL, Shroud tube	8

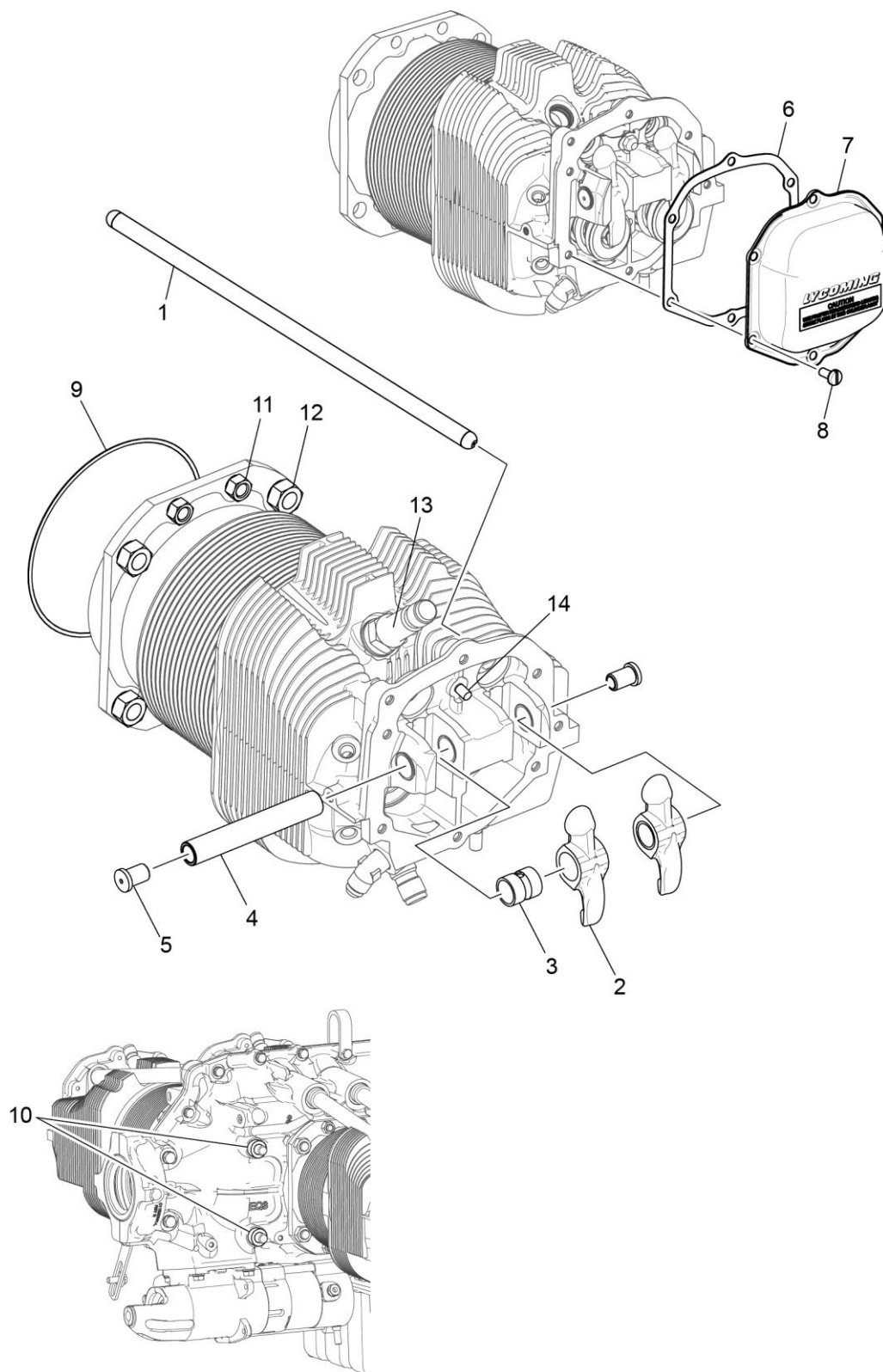


Figure 10
Cylinder Related Parts

Figure 10 - Cylinder Related Parts

Figure Item	Code	Part Number	Description	Units per Assembly
1	*	15F19957-08	ROD ASSEMBLY, Push, RT	AR
	*	15F19957-09	ROD ASSEMBLY, Push, RT	AR
	*	15F19957-10	ROD ASSEMBLY, Push, RT	AR
	*	15F19957-11	ROD ASSEMBLY, Push, RT	AR
	*	15F19957-12	ROD ASSEMBLY, Push, RT	AR
	*	15F19957-13	ROD ASSEMBLY	AR
	*	15F19957-14	ROD ASSEMBLY	AR
	*	15F19957-15	ROD ASSEMBLY	AR
2	**	17F19357	ROCKER ASSEMBLY, Valve	8
3		74637	BUSHING, Valve rocker	8
4		LW-13790	SHAFT, Valve rocker	4
5		LW-12892	THRUST BUTTON, Rocker shaft	8
6		75906	GASKET, Rocker box cover	4
7		61247	COVER, Rocker box	4
8		STD-1925	SCREW, 1/4-20 x 5/8 long, pan. head	24
9		71481	RING, Oil seal, 3/32 dia. x 4-27/32 I.D.	4
10		74887	SPACER, 33/64 I.D. x 7/8 O.D. x 3/8 thick	2
11		383-B	NUT, 3/8-24 plain	16
12		STD-2090	NUT, 1/2-20 plain	18
13	V ***	1182-E7	SPARK PLUG, Champion V REM38E	8
14		25C-8	STUD, 1/4-20, 1.00 long	4

AR as required

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

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

*** Refer to the latest revision of Lycoming Service Instruction No. 1042 for a complete listing of all approved spark plugs.

V Vendor Prime Manufacturer part

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

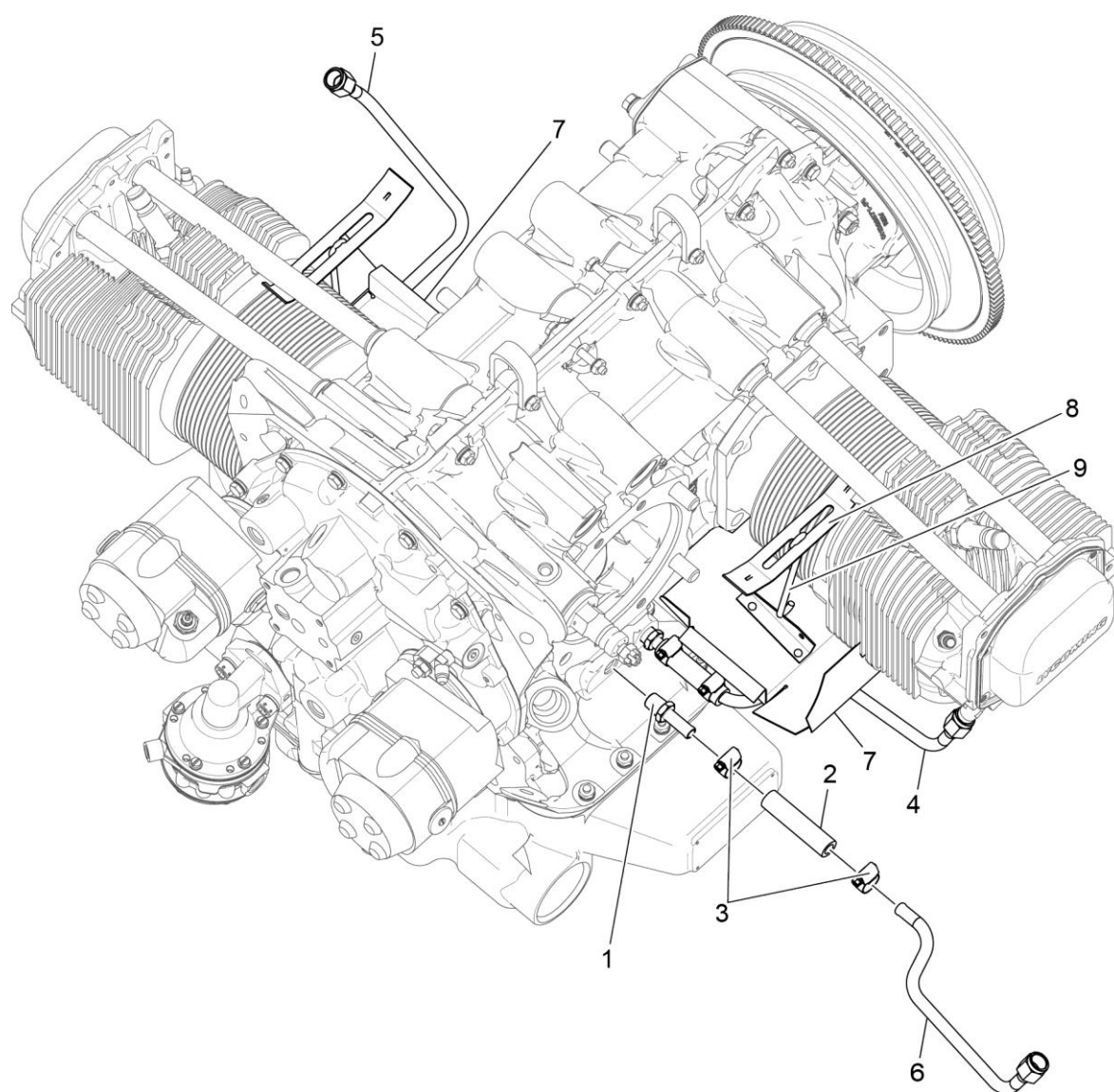


Figure 11
Cylinder Head Drain Tubes and Intercylinder Cooling Baffles

Figure 11 - Cylinder Head Drain Tubes and Intercylinder Cooling Baffles

Figure Item	Code	Part Number	Description	Units per Assembly
1		STD-684	NIPPLE, Straight, 3/8 I.D. hose	4
2		STD-2180	HOSE, 3/8 I.D. x 1-7/8 long	4
3		LW-15592-5-05	CLAMP, Hose	8
4		68759	TUBE ASSEMBLY, Oil drain, cylinder No. 1	1
5		68760	TUBE ASSEMBLY, Oil drain, cylinder No. 2	1
6		68761	TUBE ASSEMBLY, Oil drain, cylinders No. 3 & 4	2
7		72569	BAFFLE ASSEMBLY, Intercylinder	2
8		71611	RETAINER, Intercylinder baffle	2
9		71610	HOOK, Intercylinder baffle retainer	2

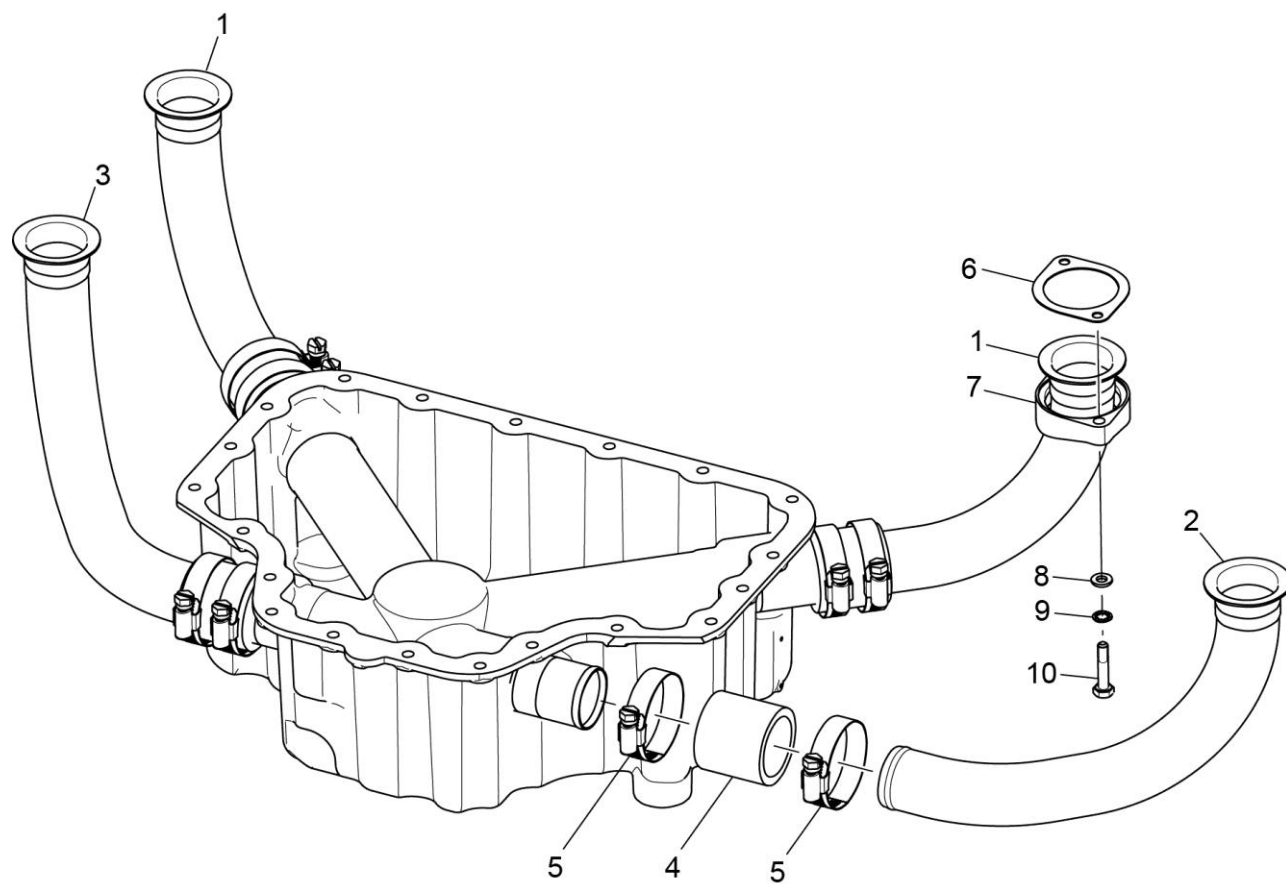


Figure 12
Intake Pipes and Attaching Parts

Figure 12 - Intake Pipes and Attaching Parts

Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-16728	PIPE, Intake, cylinders No. 1 & 2	2
2		LW-16730	PIPE, Intake, cylinder No. 3	1
3		LW-16729	PIPE, Intake, cylinder No. 4	1
4		STD-1196	HOSE, 1-1/2 I.D. x 1-15/16 O.D. x 1-13/16 long	4
5		LW-15592-8-28	CLAMP, Hose	8
6		71973	GASKET, Two bolt flange, 1-13/16 I.D.	4
7		74360	FLANGE, Intake pipe, upper	4
8		STD-8	WASHER, 1/4 plain	8
9		STD-160	WASHER, 1/4 lock, internal teeth	8
10		LW-25-1.25	BOLT, 1/4-20 x 1-1/4 long, hex. head	8

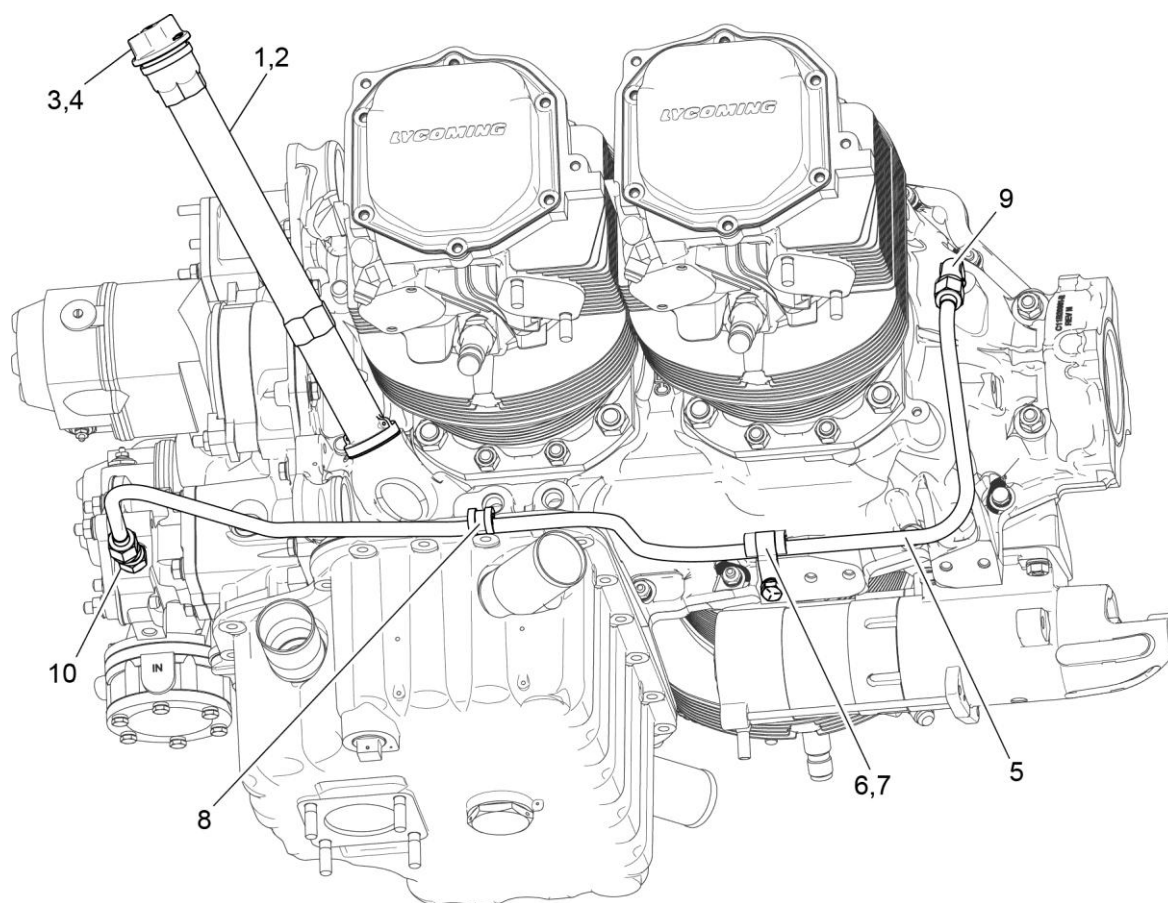


Figure 13
Oil Level Gage and Propeller Governor Oil Line

Figure 13 - Oil Level Gage and Propeller Governor Oil Line

Figure Item	Code	Part Number	Description	Units per Assembly	
1		75736	TUBE, Oil level gage, 11-9/16 long		1
2		72059	GASKET, Oil level gage		1
3		74068	RING, Oil level gage plug		1
4		LW-16783-18	GAGE ASSEMBLY, Oil level		1
5		75166	TUBE ASSEMBLY, Propeller governor oil line		1
6		STD-1930	HOSE, 3/8 I.D. x 1.00 long		1
7		75165	CLIP, Propeller governor oil line support		1
8		LW-16266-25-38	CLAMP, 3/8 I.D. x 1/4 diameter screw		1
9		MS20822-6	ELBOW, 1/4 NPT to 3/8 flared tube		1
10		75739	NIPPLE, 3/8 flared tube		1

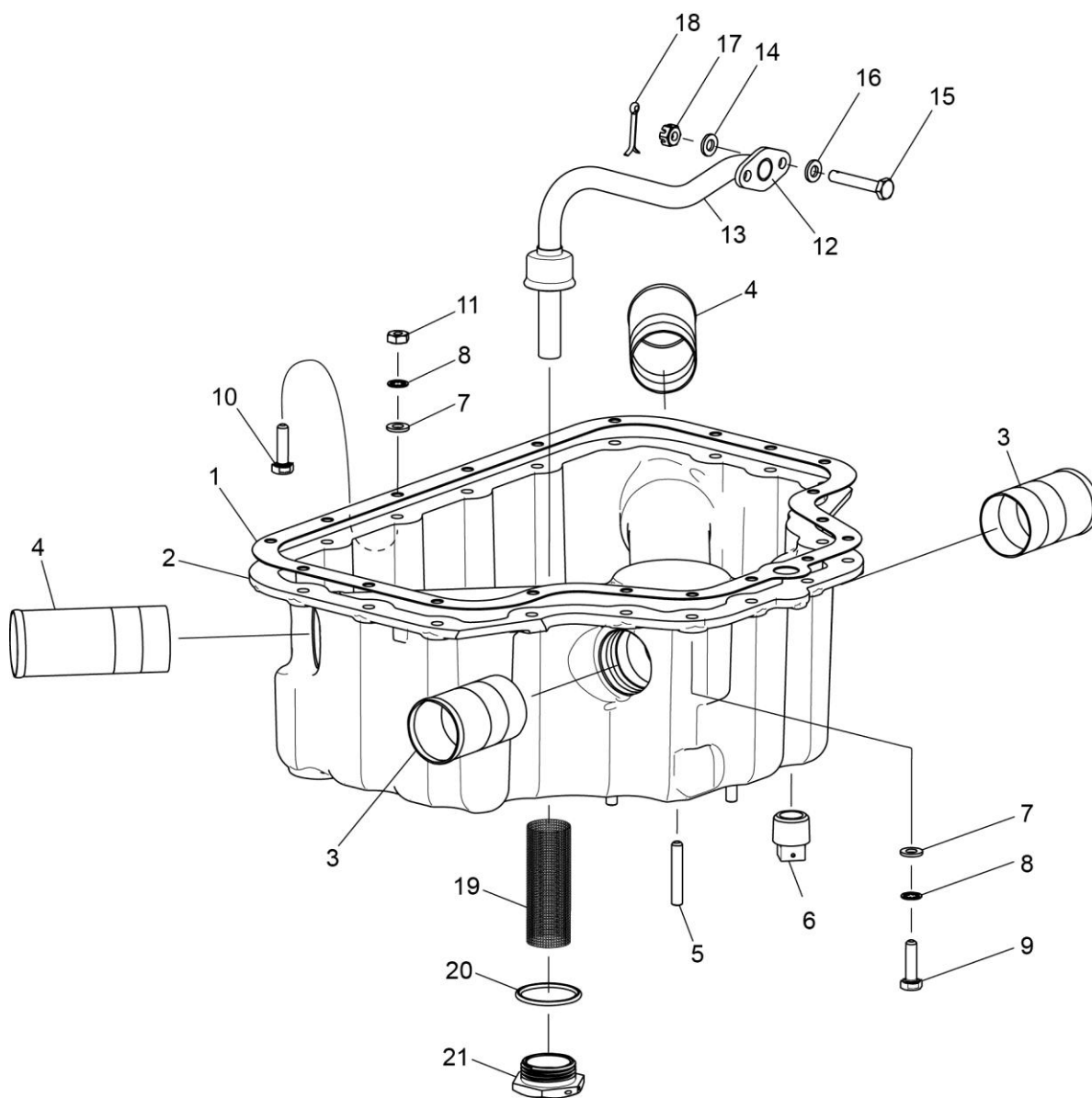


Figure 14
Oil Sump Assembly and Oil Suction Screen

Figure 14 - Oil Sump Assembly and Oil Suction Screen

Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-13353	GASKET, Oil sump	1
2		72362	SUMP ASSEMBLY, Oil	1
3		61376	CONNECTION, Intake pipe, front	2
4		61377	CONNECTION, Intake pipe, rear	2
5		31C-15	STUD, 5/16-18 National Form x 1-7/8 long	4
6		STD-551	PLUG, 1/2-14 NPT, square head, drilled	1
7		STD-8	WASHER, 1/4 plain	32
8		STD-160	WASHER, 1/4 lock, internal teeth	20
9		LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. head	16
10		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	2
11		STD-1411	NUT, 1/4-20 plain	14
12		60820	GASKET, Oil suction tube flange	1
13		61381	TUBE ASSEMBLY, Oil suction	1
14		STD-1227	WASHER, 1/4 plain	2
15		STD-1433	BOLT, 1/4-20 x 1-1/2 long, drilled	2
16		STD-8	WASHER, 1/4 plain	4
17		STD-2249	NUT, 1/4-20 slotted	2
18		STD-68	PIN, 1/16 diameter x 1/2 long	2
19		61378	SCREEN, Oil suction	1
20		06E19769-1.25	GASKET, Annular, 1-1/4 I.D.	1
21		61358	PLUG, 1-1/2 hex. head x 1-1/4-12 thread	1

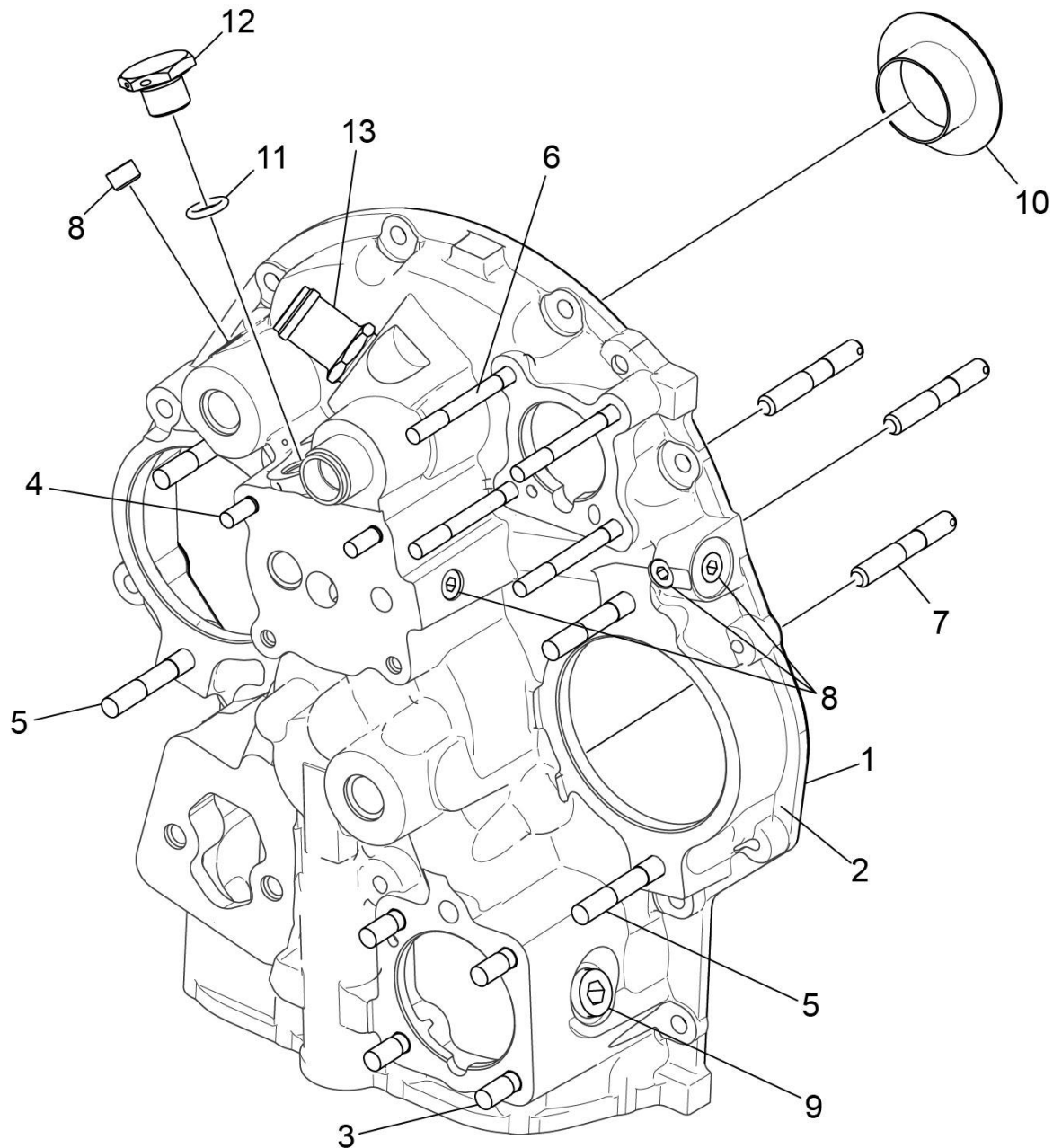


Figure 15
Accessory Housing Assembly

Figure 15 - Accessory Housing Assembly

Figure Item	Code	Part Number	Description	Units per Assembly
1		73818	GASKET, Accessory housing	1
2		21A21536-01	HOUSING ASSEMBLY, Accessory, studding	1
3		31C-12	STUD, 5/16-18 x 1-1/2 long	6
4		61400	STUD, 1/4-20 x 1-3/16 long	2
5		31C-19	STUD, 5/16-18 x 2-3/8 long	2
6		25C-22	STUD, 1/2-20 x 2-3/4 long	4
7		31CD-17	STUD, 5/16-18 x 2-1/8 long, drilled	3
8		1102	PLUG, 1/8-27 NPT, Allen head	4
9		STD-784	PLUG, 3/8-18 NPT, Allen head	1
10		76119	SHIELD, Accessory breather oil	1
11		STD-1006	RING, Oil seal, 7/16 I.D. x 3/32 diameter	1
12		75626	PLUG, 5/8 O.D. x 3/4 long	1
13		71140	FITTING, Breather	1

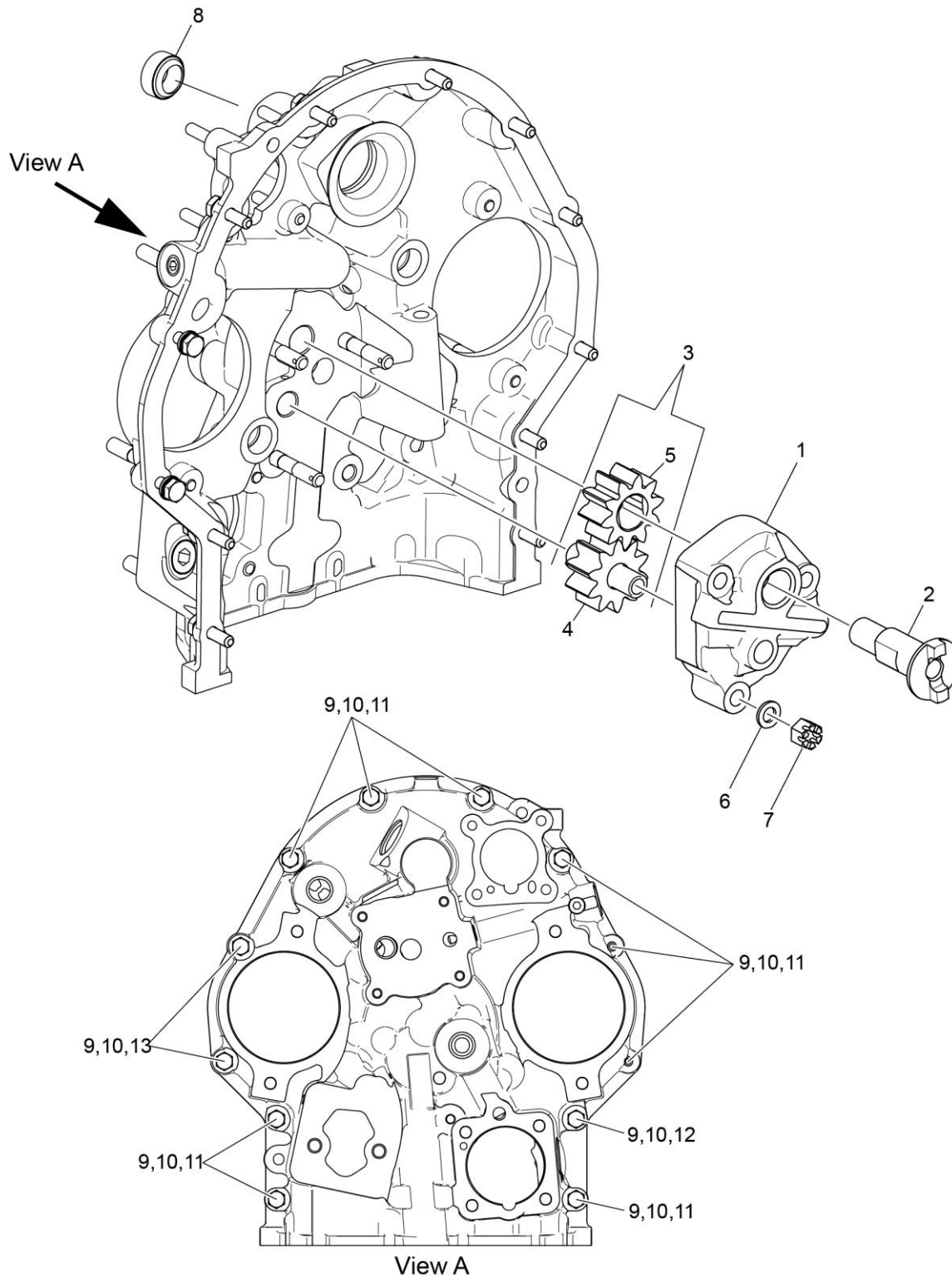


Figure 16
Oil Pump Assembly and Accessory Housing Attaching Parts

Figure 16 - Oil Pump Assembly and Accessory Housing Attaching Parts

Figure Item	Code	Part Number	Description	Units per Assembly
1		78531	BODY ASSEMBLY, Oil pump	1
2		61174	SHAFT, Oil pump drive	1
3		05K19423-S	IMPELLER KIT	1
4	*	LW-18110	IMPELLER ASSEMBLY, Oil pump driven	1
5	*	LW-18109	IMPELLER, Oil pump driven	1
6		STD-35	WASHER, 5/16 plain	3
7		STD-1420	NUT, 5/16-18 slotted	3
8		LW-14260	SEAL, Tachometer drive, oil	1
9		STD-8	WASHER, 1/4 plain	12
10		STD-160	WASHER, 1/4 lock internal teeth	12
11		LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. head	9
12		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	1
13		LW-25-1.44	BOLT, 1/4-20 x 1-7/16 long, hex. head	2
* Sold in complete sets only (Kit P/N 05K19423-S).				

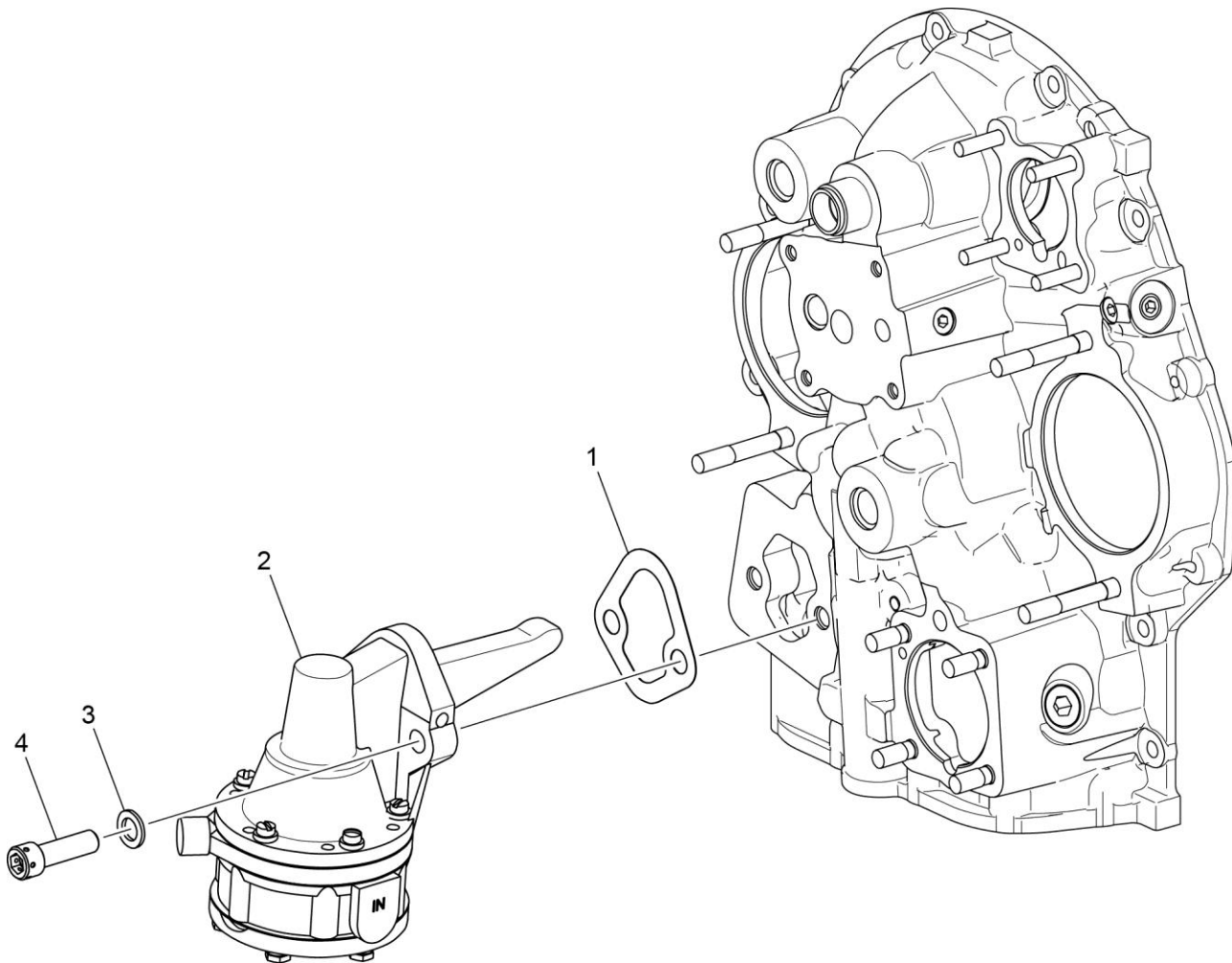


Figure 17
Fuel Pump Assembly and Attaching Parts

Figure 17 - Fuel Pump Assembly and Attaching Parts

Figure Item	Code	Part Number	Description	Units per Assembly
1		60096	GASKET, Fuel pump	1
2		LW-15472	FUEL PUMP, Dual diaphragm, low pressure	1
3		STD-33	WASHER, 3/8 plain	2
4		STD-1882	SCREW, 3/8-16 x 1-9/32 long, socket head, drilled	2

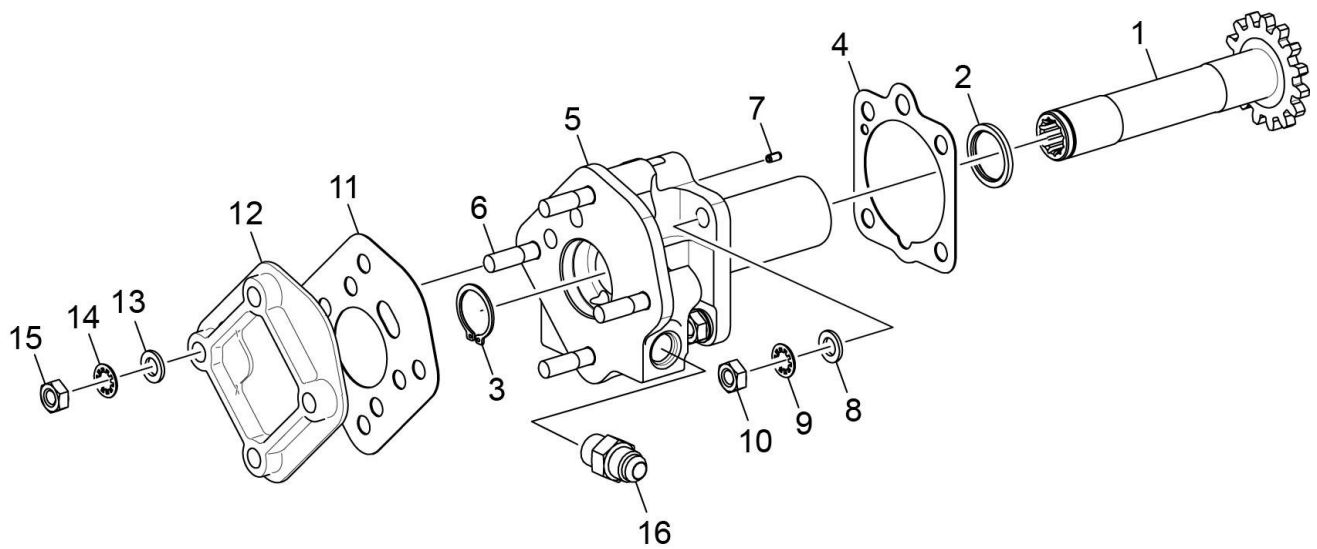


Figure 18
Propeller Governor Drive and Cover

Figure 18 - Propeller Governor Drive and Cover

Figure Item	Code	Part Number	Description	Units per Assembly
1		68317	SHAFTGEAR, Propeller governor drive	1
2		71596	WASHER, Accessory drive gear	1
3		STD-1221	RING, 13/16 diameter x 1/32 thick	1
4		68315	GASKET, Accessory drive adapter	1
5		75153	ADAPTER ASSEMBLY, Propeller governor drive	1
6		31C-16	STUD, 5/16-18 x 2.00 long	4
7		STD-1774	PIN, 1/8 diameter x 1/4 long	1
8		STD-35	WASHER, 5/16 plain	4
9		STD-475	WASHER, 5/16 lock, internal teeth	4
10		STD-1410	NUT, 5/16-18 plain	4
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
16		75739	NIPPLE, 3/8 flared tube	1

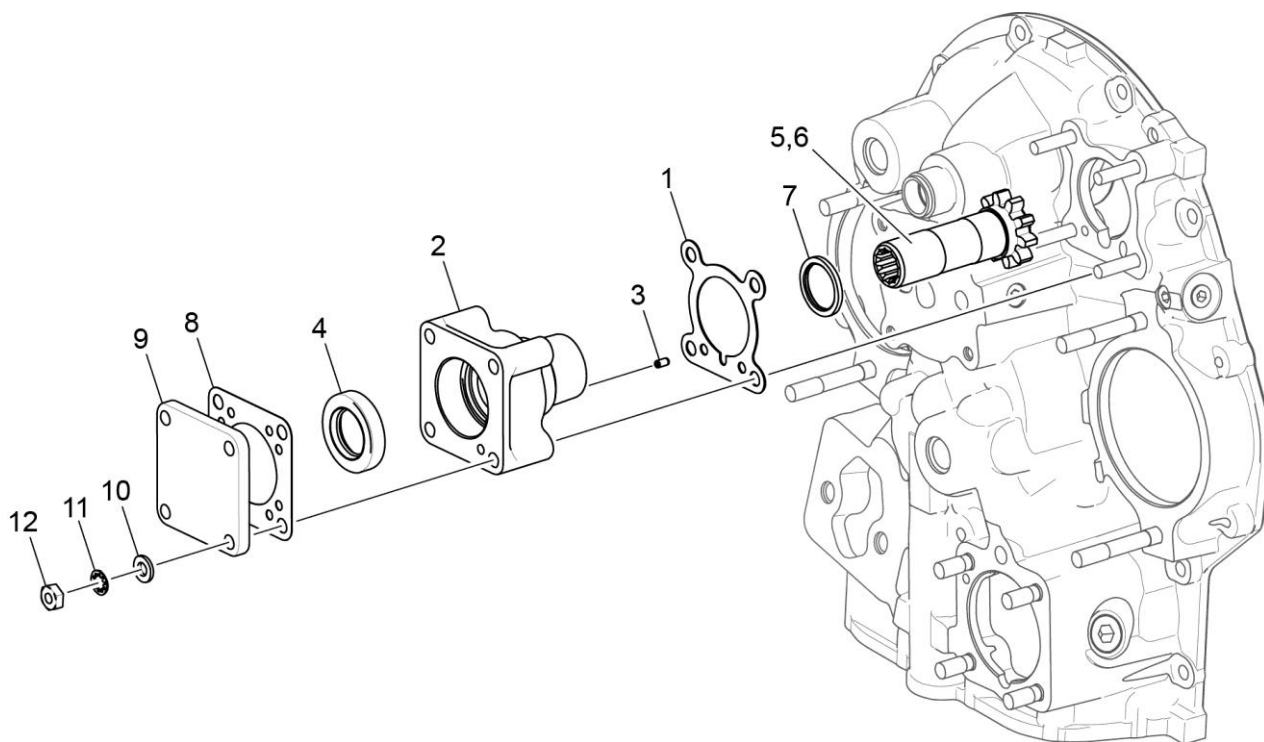


Figure 19
Vacuum Pump Drive and Cover

Figure 19 - Vacuum Pump Drive and Cover

Figure Item	Code	Part Number	Description	Units per Assembly
1		61183	GASKET, Accessory adapter	1
2		61098	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	1
5		72970	GEAR ASSEMBLY, Vacuum pump driven	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

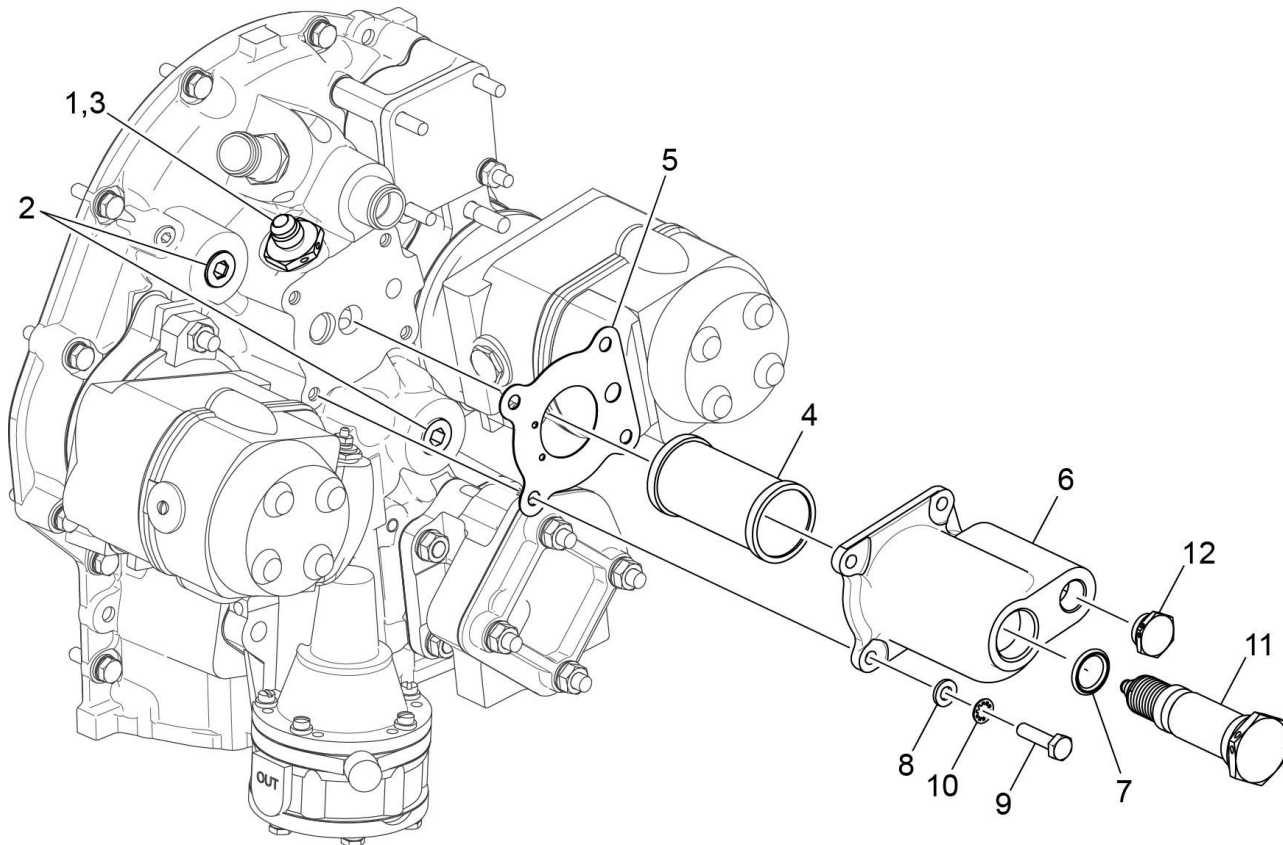


Figure 20
Oil Cooler Bypass and Oil Pressure Screen

Figure 20 - Oil Cooler Bypass and Oil Pressure Screen

Figure Item	Code	Part Number	Description	Units per Assembly
1		06E19769-0.63	GASKET, Annular, 5/8 I.D.	1
2		STD-784	PLUG, 3/8-18 NPT, Allen head	2
3		69675	CONNECTOR, Accessory housing oil cooler	1
4		62817	SCREEN ASSEMBLY, Oil pressure	1
5		61173	GASKET, Oil pressure housing	1
6		69510	HOUSING, Oil pressure screen	1
7		06E19769-0.63	GASKET, Annular, 5/8 I.D.	1
8		STD-8	WASHER, 1/4 plain	4
9		LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. head	4
10		STD-160	WASHER, 1/4 lock, internal teeth	4
11		53E22144	VALVE ASSEMBLY, Temperature control, oil cool	1
12		62417	PLUG, Oil cooler by-pass	1

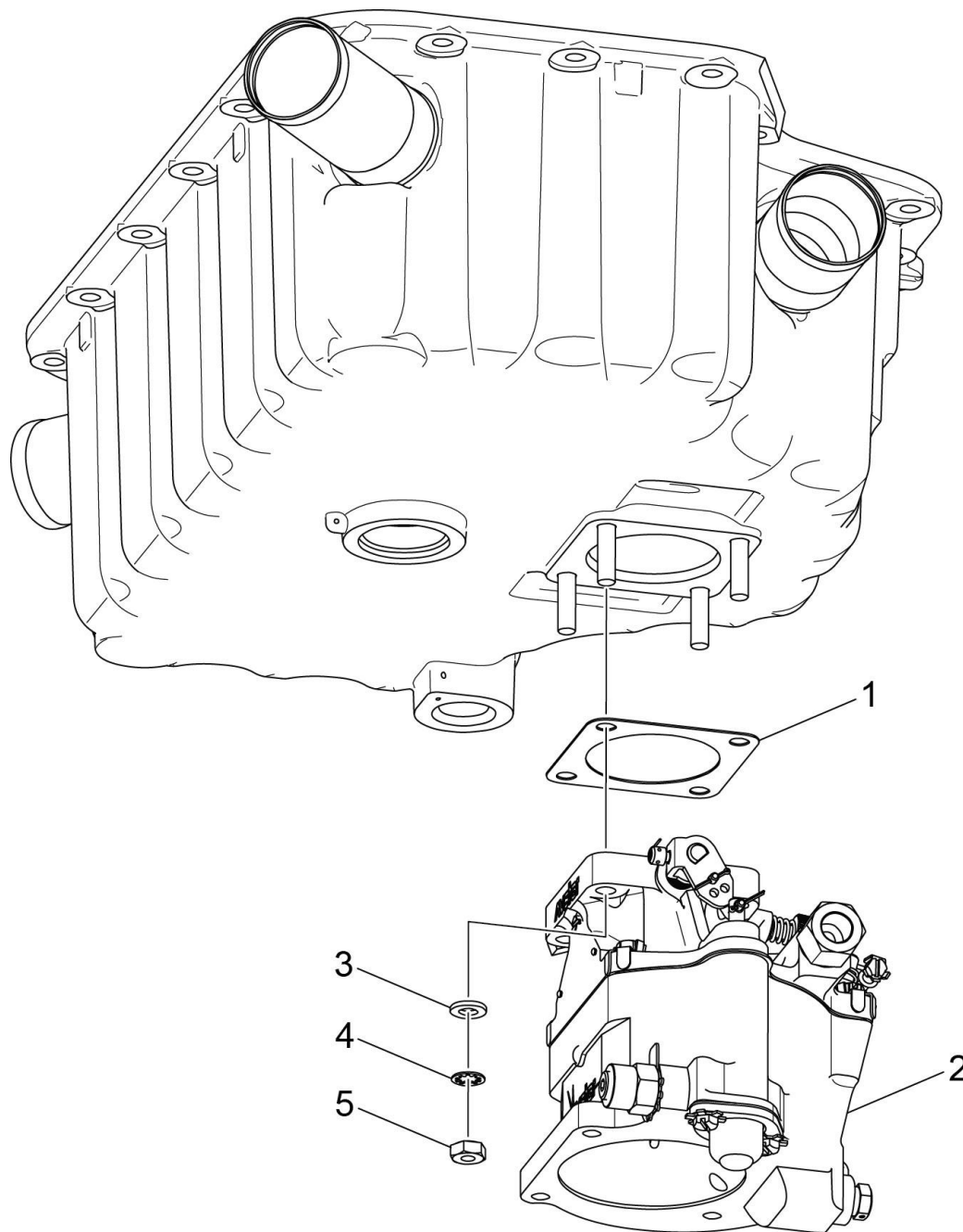
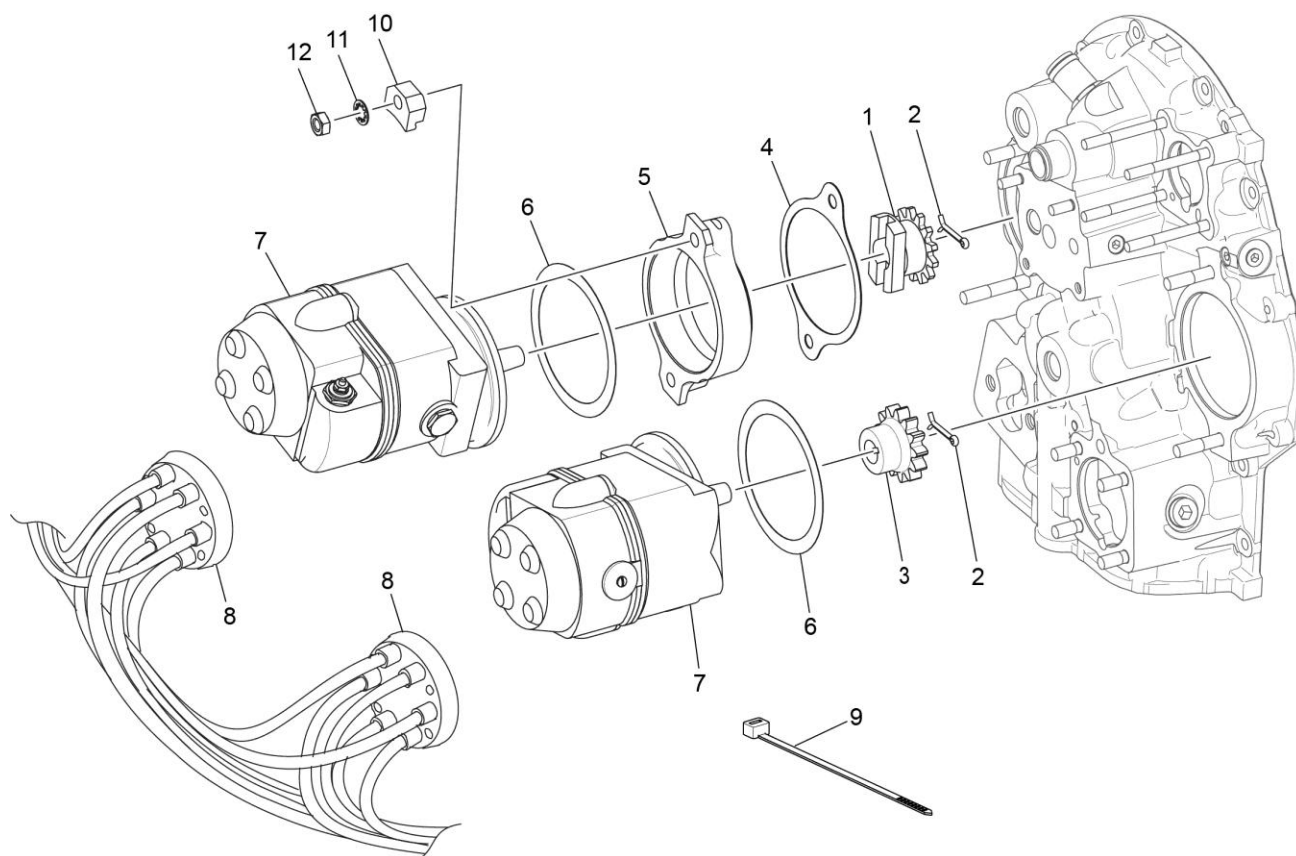


Figure 21
Carburetor Assembly

Figure 21 - Carburetor Assembly

Figure Item	Code	Part Number	Description	Units per Assembly
1		66224	GASKET, Carburetor	1
2	V	69250	CARBURETOR, MA-4SPA V AV 10-3678-12	1
	V *	61B26211	CARBURETOR, MA-4SPA V AV 10-3678-32	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 * Refer to the latest revision of Lycoming Service Instruction No. 1523.				



BAG-HARNESS ATTACHING		P/N 01P19762-1-1
PART NO.	NAME	QTY
LW-16266-25-25	CLAMP-ONE WIRE	4
LW-14060	CLIP-TWO WIRE	3
STD-8	WASHER-.250 PLAIN	8
STD-1874	SCREW-.250-20 X .81 LG. FILL.	6
76734	ZIP STRAP	8
LW-16266-25-50	CLAMP	1
STD-1411	NUT-.250-20 PLAIN	2
STD-696	WASHER-.250 PLAIN (THIN)	4
STD-1916	SCREW-.250-20 X 1.13 LG. FIL HD	3
LW-M-2375	SET OF 2 PLATES-SPARK PLUG CABLE-2 WIRE	2

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

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

Figure Item	Code	Part Number	Description	Units per Assembly
1		61665	GEAR, Magneto, impulse coupling	1
2		MS9245-44	COTTER PIN, 3/32 diameter x 5/8 long	2
3		68C19622	GEAR, Magneto	1
4		62224	GASKET, Magneto adapter	1
5		LW-12706	ADAPTER, Magneto, impulse coupling	1
6		LW-12681	GASKET, Magneto	2
7	V	66GP-0SANN	MAGNETO, Plain, Slick V 4370	1
	V	66GC25SFNN	MAGNETO, Impulse, Slick V 4373	1
8	V	67P20428	HARNESS ASSEMBLY, Right, Slick V M2990	1
	V	67P20429	HARNESS ASSEMBLY, Left, Slick V M2989	1
9		76734	ZIP STRAP	4
10		66M21195	CLAMP, Magneto	4
11		STD-475	WASHER, 5/16 lock, internal teeth	4
12		STD-1410	NUT, 5/16-18 plain	4
	*	01P19762-1-1	BAG, Harness attaching	1
<p>V Vendor Prime Manufacturer part</p> <p>* See page 42 for a breakdown of individual parts contained in the magneto and harness attaching bag. These parts are to be attached by the customer per the engine line drawing included in the bag.</p>				

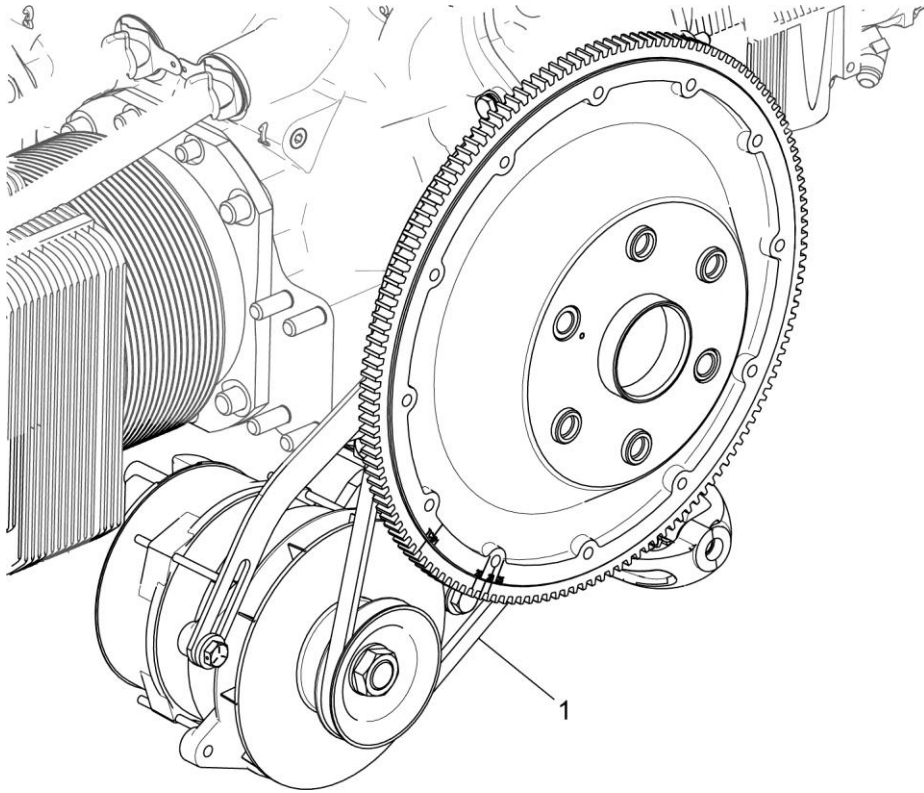


Figure 23
Electrical Power - Belt

Figure 23 –Electrical Power - Belt

Figure Item	Code	Part Number	Description	Units per Assembly
1		37B19774-325	BELT, Generator drive	1
NOTICE: See the latest revision of Lycoming Service Instruction No. 1154 for a complete listing of FAA-approved starters, generators, alternators, regulators, and relays.				

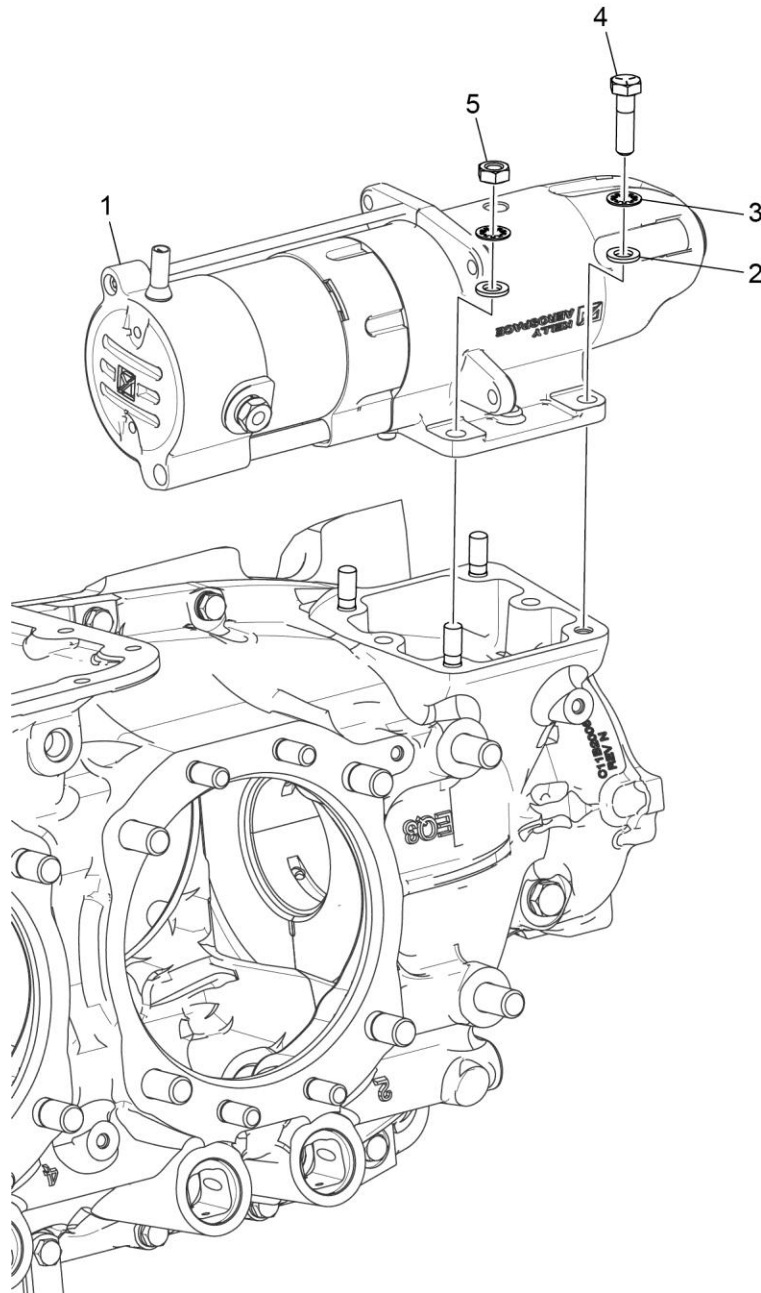


Figure 24
Starter Motor and Attaching Parts

Figure 24 - Starter Motor and Attaching Parts

Figure Item	Code	Part Number	Description	Units per Assembly
1	V	31A26043	STARTER ASSEMBLY, 12V., Kelly V ERZ-8012	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>NOTICE: See the latest revision of Lycoming Service Instruction No. 1154 for a complete listing of FAA-approved starters, generators, alternators, regulators, and relays.</p>				

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Service Kit Section**Seal and Gasket Set**

Part No.	Part Name	Qty.
69371-1	KIT - SEAL AND GASKET SET	1
LW-12272	LOCKPLATE, Shroud tube	4
LW-12681	GASKET, Magneto	2
06B23862	GASKET, Oil filter adapter	1
LW-13353	GASKET, Oil sump	1
LW-13792	CRANKSHAFT, Oil seal	1
LW-14260	SEAL, Tachometer drive, oil	1
LW-14995	SPRING, Shroud tube	4
LW-18639	LOCKPLATE, Crankshaft gear	1
LW-18661	SEAL, Shroud tube	16
77611	GASKET, Exhaust flange	4
MS29512-06	"O" RING, 15/32 I.D. x 5/64 section	1
STD-1006	RING, Oil seal, 7/16 I.D. x 3/32 diameter	1
STD-2072	"O" RING, Static seal	1
STD-213	OIL SEAL, 3/4 I.D. x 1-3/8 O.D.	1
06A19956	OIL SEAL, 7/8 I.D. x 1-1/2 O.D. x 5/16	1
STD-548	OIL SEAL, 7/8 x 1-3/8 x 5/16	1
06E19769-0.63	GASKET, Annular, 5/8 I.D.	2
06E19769-1.00	GASKET, Annular, 1.00 I.D.	1
06E19769-1.25	GASKET, Annular, 1-1/4 I.D.	2
1691-C	GASKET, Fuel pump	1
60096	GASKET, Fuel pump	1
60592	GASKET, Carburetor	1
60820	GASKET, Oil suction tube flange	1
61173	GASKET, Oil pressure housing	1
61183	GASKET, Accessory adapter	1
61531	GASKET, Hydraulic valve	1
62224	GASKET, Magneto adapter	4
66224	GASKET, Carburetor	2
68315	GASKET, Accessory drive adapter	1
69164	GASKET, Fuel pump adapter	1
69345	SPACER	4
69551	GASKET, Accessory drive adapter	1
69720	GASKET, Dual accessory drive	1
69827	GASKET, Governor spacer	1

Service Kit Section (Cont.)**Seal and Gasket Set (Cont.)**

69371-1	KIT - SEAL AND GASKET SET (CONT.)	1
70310	SEAL, Shroud tube	8
70455	GASKET, 25/32 I.D. x 1-1/8 O.D. x 1/32	1
71481	RING, Oil seal, 3/32 diameter x 4-27/32 I.D.	4
71973	GASKET, 2 bolt flange, 1-13/16 I.D.	4
72053	GASKET, Governor	2
72059	GASKET, Oil level gage	1
72075	SEAL, Oil, 3/32 section x 29/64 I.D.	6
72078	LOCKPLATE, 5/16 bolt x 1-21/64 sp	2
72091	RING, Oil seal, 23/64 ID x 1/10 diameter	2
72312	RING, Oil seal, 1.00 x 1-5/16	1
72879	LOCKPLATE, 1/4 bolt x 1-3/4 sp	1
73383	LOCKPLATE, 5/16 bolt x 1.00	2
73817	LOCKPLATE, 1/4 bolt x 1-3/4 sp	2
73818	GASKET, Accessory housing	1
74065	RING, Oil level gage seal	1
74068	RING, Oil level gage plug	1
74524	RING, Oil level gage bushing	1
75906	GASKET, Rocker box cover	4
76510	GASKET, Oil cooler bypass	1
76940	SEAL, Crankshaft oil	1
8313	GASKET, Vacuum pump	2
06A23493	SEAL, Shroud tube	8

Service Kit Section (Cont.)**Cylinder, Piston and Ring Assembly**

Part No.	Part Name	Qty.
05K21237-A	KIT - CYLINDER, PISTON AND RING ASSEMBLY	1
LW-12416	CYLINDER ASSEMBLY	1
17A23938	VALVE, Intake	1
17B23936	VALVE, Exhaust	1
65441	SEAT, Valve spring, lower intake	1
LW-13323	SEAT, Valve spring, lower	1
LW-11800	SPRING, Valve, outer	2
LW-11795	SPRING, Valve inner	2
LW-10077	SEAT, Valve spring, upper	1
LW-16475	SEAT, Valve spring, upper exhaust	1
60009	KEY, Valve, intake	2
17C21191	KEY, Valve, exhaust	2
MS20823-6D	ELBOW, 45°, 3/8 flared tube	1
17C19386	CAP, Valve stem, exhaust (rotator)	1
1102	PLUG, 1/8-27 NPT, Allen head	2
75413	PISTON	1
74241	RING, Piston, compression	2
14H21950	RING, Piston, oil	1
LW-14078	PIN, Piston	1
72198	PLUG, Piston pin	2
71481	RING, Oil seal, 3/32 diameter x 4-27/32 I.D.	1
70310	SEAL, Shroud tube	2
LW-18661	SEAL, Shroud tube	2
75906	GASKET, Rocker box cover	1
SSP-109	TAG, Use of piston pins	1
77611	GASKET, Exhaust flange	1
71973	GASKET, 2 bolt flange	1
LW-12272	LOCKPLATE, Shroud tube	1
SSP-299	TAG, Use of piston pin plugs	1
06A23493	SEAL, Shroud tube	2

Service Kit Section (Cont.)**Crankcase Assembly and Thru-Stud Kit**

Part No.	Part Name	Qty.
11B20161-3SL-S	KIT - CRANKCASE ASSEMBLY AND THRU-STUD	1
11B20161-3SL	CRANKCASE ASSEMBLY	1
76220	THRU-STUD	4
74887	SPACER, 33/64 I.D. x 7/8 O.D. x 3/8 thick	2
STD-2090	NUT, 1/4-20 plain	2
1102	PLUG, 1/8-27 NPT, Allen head	6
STD-1339	PLUG, 1/16-27 NPT, Allen head	4
69796	DOWEL, Crankshaft bearing	1
SSP-582	TAG, Crankcase Assembly and Thin Wall High Crush Bearings	1
SSP-272	TAG, Crankcase Assembly and Piston Cooling Nozzles	1

Crankshaft Kit

Part No.	Part Name	Qty.
05K23732	KIT - CRANKSHAFT	1
13B47022	CRANKSHAFT ASSEMBLY	1
18A26093	BEARING, Crankshaft	2
18D26098	BEARING, Crankshaft	4
STD-2246	BOLT, 5/16-24 x 1.00 long	1
LW-18639	LOCKPLATE, Crankshaft gear	1
LW-13792	SEAL, Crankshaft, oil	1

Numerical Index

Part No.	Part Name	Page No.	Part No.	Part Name	Page No.
AN6-34A	BOLT	11	LW-18109	IMPELLER	31
AN960-616L	WASHER	11	LW-18110	IMPELLER ASSEMBLY	31
LRT23381	BODY ASSEMBLY	5	LW-18639	LOCKPLATE	7
LW-25-0.94	BOLT	27	LW-18661	SEAL	17
LW-25-0.94	BOLT	31	LW-18667	PIN	9
LW-25-1.00	BOLT	39	LW-18815-S	BUSHING	7
LW-25-1.13	BOLT	11	LW-18816-S	BUSHING	7
LW-25-1.13	BOLT	27	LW-18817-S	BUSHING	7
LW-25-1.13	BOLT	31	LW-18840	CAMSHAFT ASSY	9
LW-25-1.25	BOLT	23	MS9245-44	COTTER PIN	43
LW-25-1.44	BOLT	31	MS20822-6	ELBOW	25
LW-25-1.50	BOLT	11	MS20823-6D	ELBOW	15
LW-25-1.75	BOLT	11	STD-8	WASHER	11
LW-25S1.50	BOLT	11	STD-8	WASHER	11
LW-31-0.94	BOLT	1	STD-8	WASHER	23
LW-31-1.16	BOLT	47	STD-8	WASHER	27
LW-31H0.75	BOLT	1	STD-8	WASHER	27
LW-31H0.75	BOLT	1	STD-8	WASHER	31
LW-31H0.88	BOLT	9	STD-8	WASHER	37
LW-31S1.16	BOLT	1	STD-8	WASHER	39
LW-10077	SEAT	17	STD-33	WASHER	11
LW-11713	SPRING	5	STD-33	WASHER	11
LW-11795	SPRING	17	STD-33	WASHER	33
LW-11800	SPRING	17	STD-35	WASHER	1
LW-12186	NUT	13	STD-35	WASHER	1
LW-12272	LOCKPLATE	17	STD-35	WASHER	15
LW-12416	CYLINDER ASSY.	15	STD-35	WASHER	31
LW-12681	GASKET	43	STD-35	WASHER	35
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