

O-320-D3G Series Illustrated Parts Catalog

AUGUST 2012

PC-203-D3G

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652 Oliver Street
Williamsport, PA 17701

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Lycoming Part Number: PC-203-D3G

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This parts catalog, PC-320-D3G (model O-320-D3G) supersedes the previous O-320-D3G model engine which is covered in PC-203-9.

RECORD OF REVISIONS

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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-D3G wide cylinder flange model engines.

How to Use this Catalog

This catalog is based on the Air Transport Association (ATA) Spec100 format. In order 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 100 format specifies the subject matter for each chapter-section. According to the ATA Standards, the following chapters apply to the O-320-D3G Illustrated Parts Catalog.

72 (Reciprocating Engine), 73 (Engine and Fuel Control), 74 (Ignition), and 76 (Engine Controls).

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

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

Numerical Index

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

Description column

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

Units per Assembly Column

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

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

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

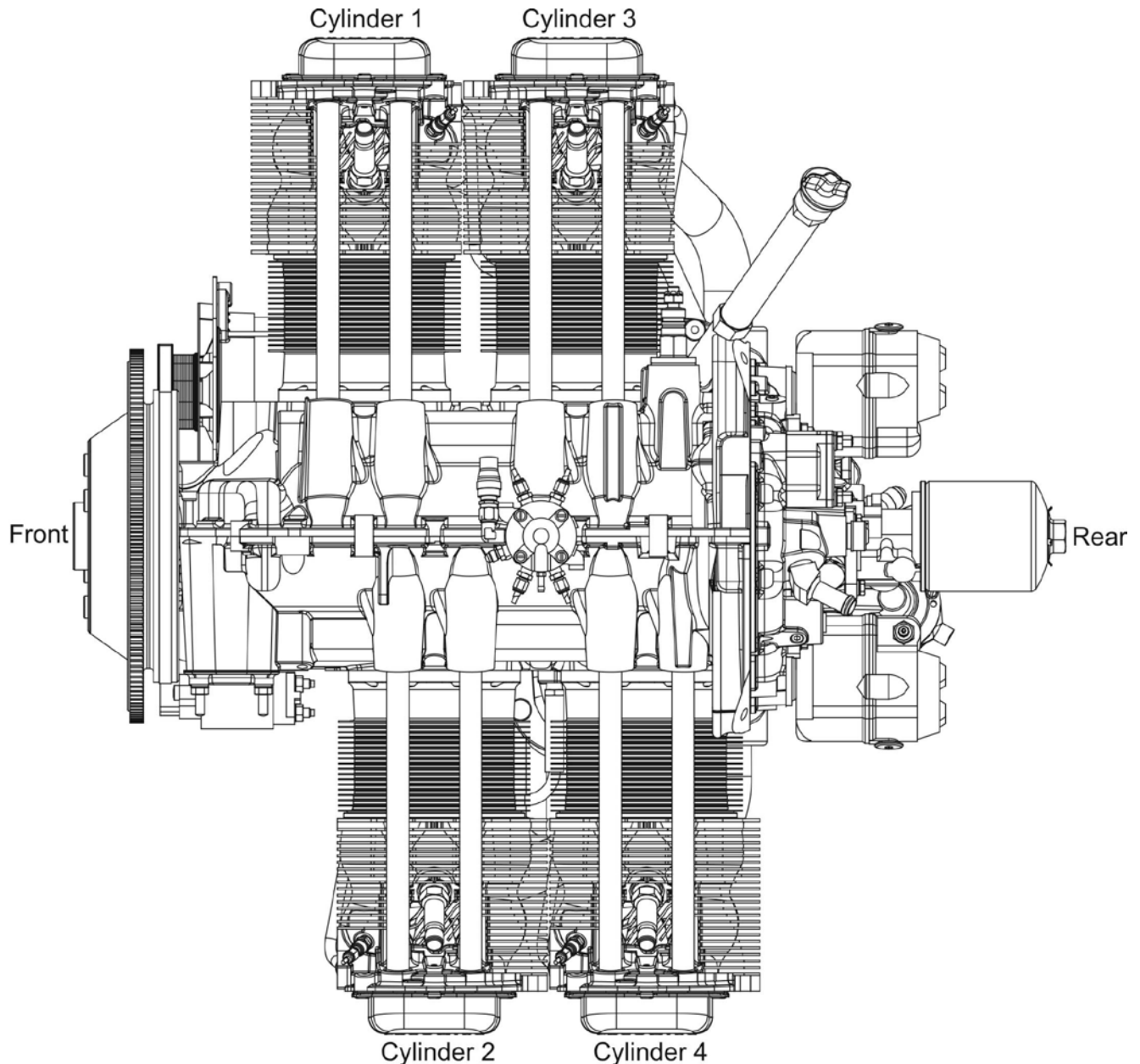
Any reference in this document to the suppliers/part manufacturer's product, by name, trademark, part number or other description is solely for the purpose of identification and does not indicate or infer that Lycoming accepts responsibility for quality control and/or airworthiness of parts, which do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

Environmental Compliance

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

Perspective of References

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

**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, to aid in ordering parts as necessary during overhaul.

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

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

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 in writing to:

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

NOTE: The owner of the manual must give notification to the factory 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: 1-800-258-3279 (U.S. and Canada)
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ABBREVIATIONS AND ACRONYMS

A	
Adj.	Adjustable
C	
Cyl.	Cylinder
D	
Dia.	Diameter
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
V	
Vac.	Vacuum

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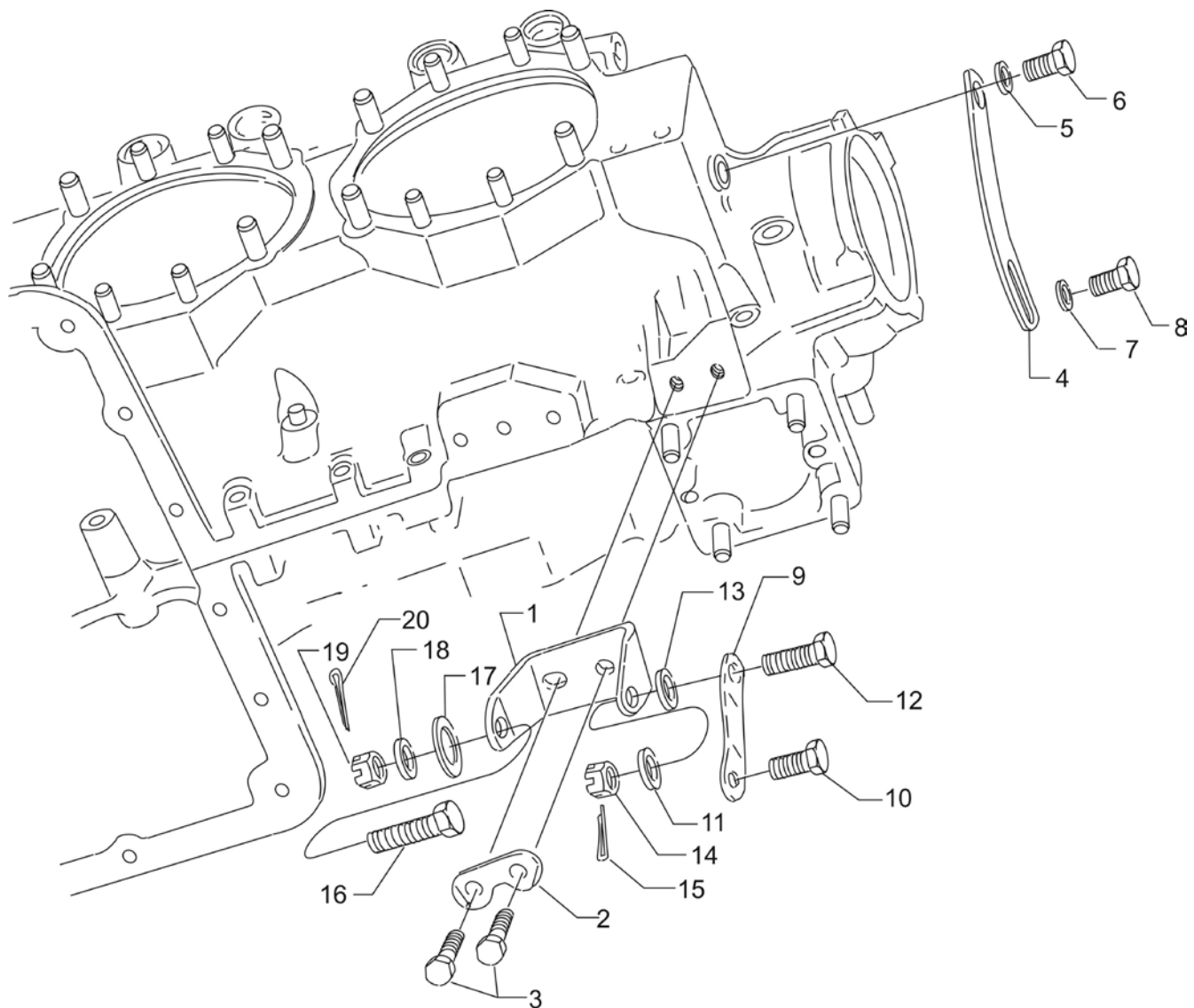
OVERSIZE AND UNDERSIZE PARTS LISTING

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
18D26098	BEARING									X	X	X
18A26093	BEARING									X	X	X
18M26104	BEARING									X	X	X
LW-13792	SEAL								X			
LW-18921-S	BUSHING			X	X	X						
LW-18922-S	BUSHING			X	X	X						
STD-1065	DOWEL	X	X	X	X							
14H21950	RING			X		X						
74241	RING			X								
72057	SEAT		X	X		X	X					
72058	SEAT		X	X		X	X					
61681*	GUIDE		X	X		X	X	X				
16R22291*	GUIDE		X	X		X	X	X				
66610	BUSHING		X	X								

* - Reference Figure 8 items no. 4 and 5 for valve guides.

NOTE

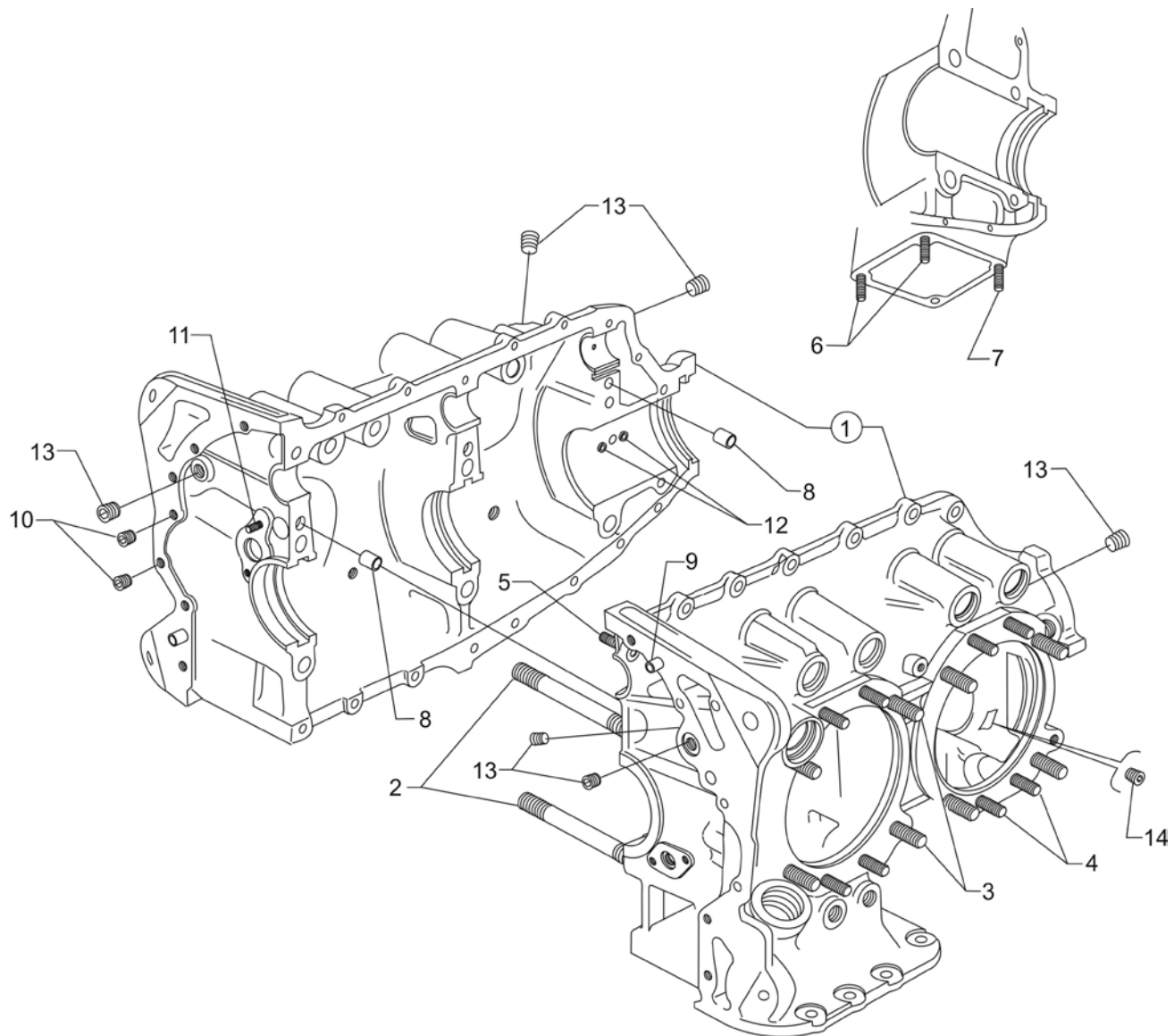
When ordering oversize and undersize parts, be sure to specify the required oversize and undersize dimension along with the proper part number. For example, to order bearing P/N 18D26098 bearing in .003 in. undersize, order P/N 18D26098-M03. Undersize code letter is "M" while oversize code letter is "P". These letters are then followed by the number designating the size in thousandths of an inch.



Alternator Mounting and Attaching Parts
Figure 1

ELECTRICAL POWER**FIGURE 1 – ALTERNATOR MOUNTING AND ATTACHING PARTS**

Figure Item	Code	Part Number	Description	Units per Assembly
1		07A19474	BRACKET, Alternator	1
2		73383	LOCKPLATE, 5/16 bolt x 1.00	1
3		LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex. head	2
4		75380	LINK, Alternator adjusting	1
5		STD-35	WASHER, 5/16 plain	1
6		LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. head, drilled	1
7		STD-1727	WASHER, Plain, 3/4 O.D. x 11/32 I.D.	1
8		LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. head, drilled	1
9		07F23268	STRUT, Alternator support	1
10		LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. head, drilled	1
11		STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	1
12		AN6-17	BOLT, 3/8-24 x 1-61/64 long, hex. head	1
13		STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	1
14		STD-872	NUT, 3/8-24 slotted	1
15		STD-713	COTTER PIN, 3/32 diameter x 3/4 long	1
16		AN6-16	BOLT, 3/8-24 x 1-53/64 long, hex. head	1
17	AR	76534	SHIM, 1-1/8 O.D. x 13/32 I.D. x .005 thick	AR
18	AR	STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	AR
19		STD-872	NUT, 3/8-24 slotted	1
20		STD-713	COTTER PIN, 3/32 diameter x 3/4 long	1
AR as required				



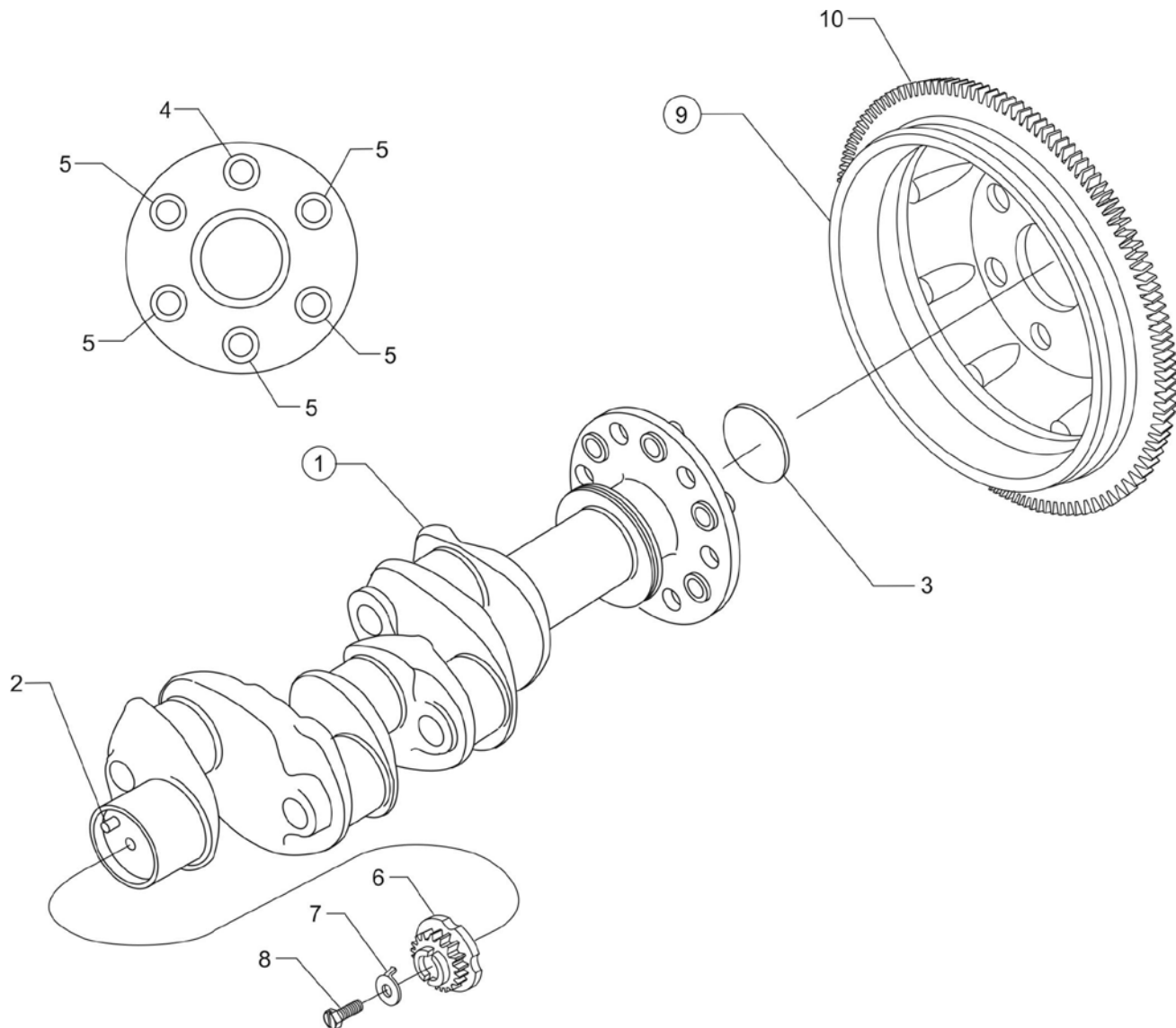
**Crankcase Assembly
Figure 2**

POWER SECTION**FIGURE 2 - CRANKCASE ASSEMBLY**

Figure Item	Code	Part Number	Description	Units per Assembly
1	*	11B20061-1SL-S	CRANKCASE ASSEMBLY KIT	1
	P	11B20061-1SL	CRANKCASE ASSEMBLY	1
	*	11B20161-1SL-S	CRANKCASE ASSEMBLY KIT (Roller tappet engines)	1
	P	11B20161-1SL	CRANKCASE ASSEMBLY (Roller tappet engines)	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		STD-1623	INSERT, 1/4-20 Heli-coil x 3/8 long	2
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 NPT, allen head	6
14		STD-1339	PLUG, 1/16-27 NPT, allen head	4
<p>P Lycoming proprietary part. Listed 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>				

POWER SECTION**FIGURE 3 - CRANKCASE RELATED PARTS**

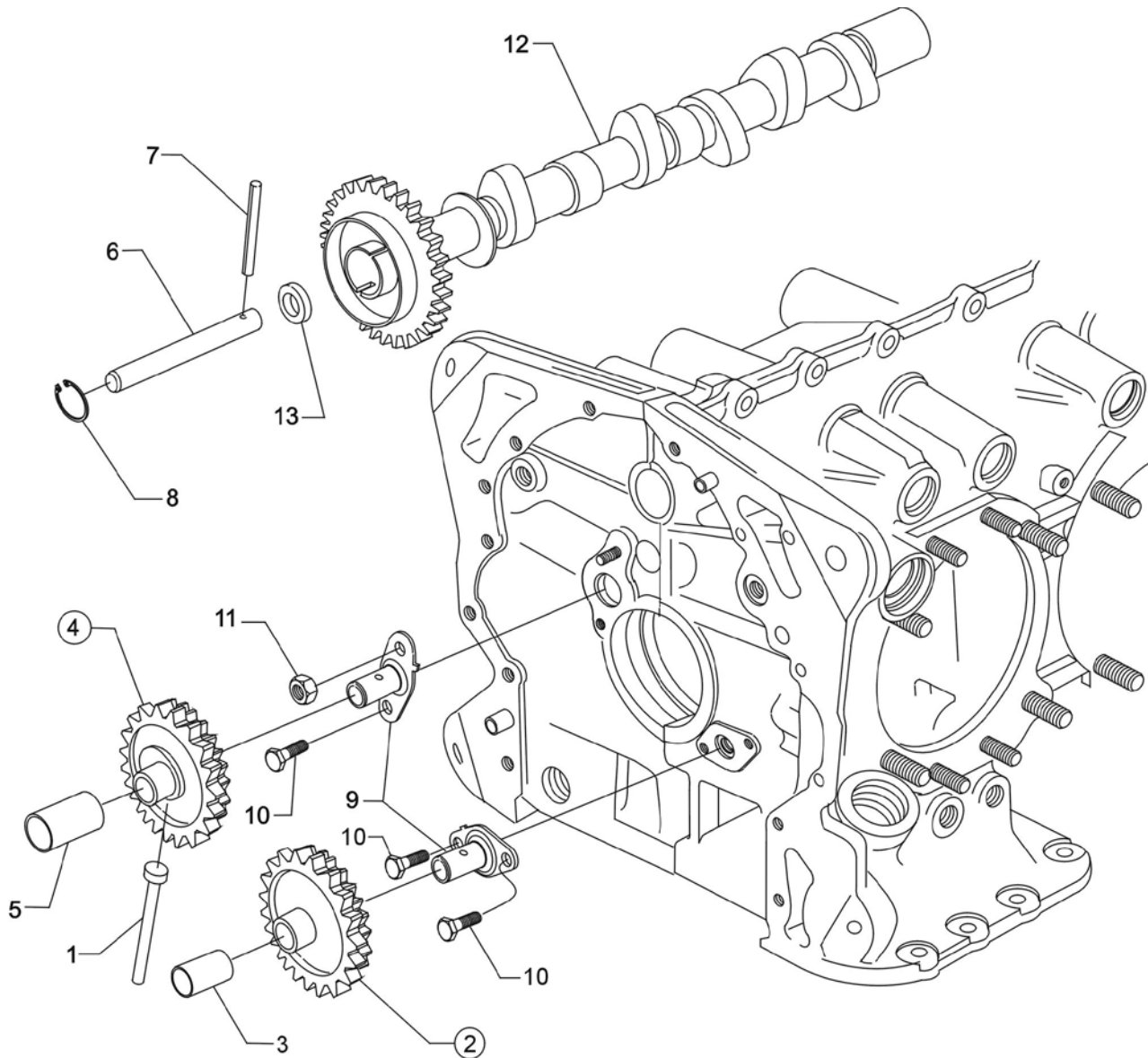
Figure Item	Code	Part Number	Description	Units per Assembly
1		1028-B	BALL, 11/16 diameter	1
2	*	61084	SPRING, Oil pressure relief valve	1
	*	68668	SPRING, Oil pressure relief valve	1
	*	LW-11713	SPRING, Oil pressure relief valve	1
	*	LW-18085	SPRING, Oil pressure relief valve	1
	*	77467	SPRING, Oil 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 I.D. x 7/64 diameter	2
10		15B26262	BODY, Hydraulic tappet	8
11	♦	LRT23381	BODY ASSEMBLY, Hydraulic tappet (Roller tappet engines)	8
<p>* Select spring to give a minimum of three threads exposed on adjusting screw to allow field adjustment. Reference latest revision of SSP-1776, Part I for spring identification.</p> <p>** See latest revision of Lycoming Service Instruction No. 1324 for installation.</p> <p>♦ Only sold as an exchange part.</p>				



Crankshaft Assembly and Related Parts
Figure 4

POWER SECTION**FIGURE 4 - CRANKSHAFT ASSEMBLY AND RELATED PARTS**

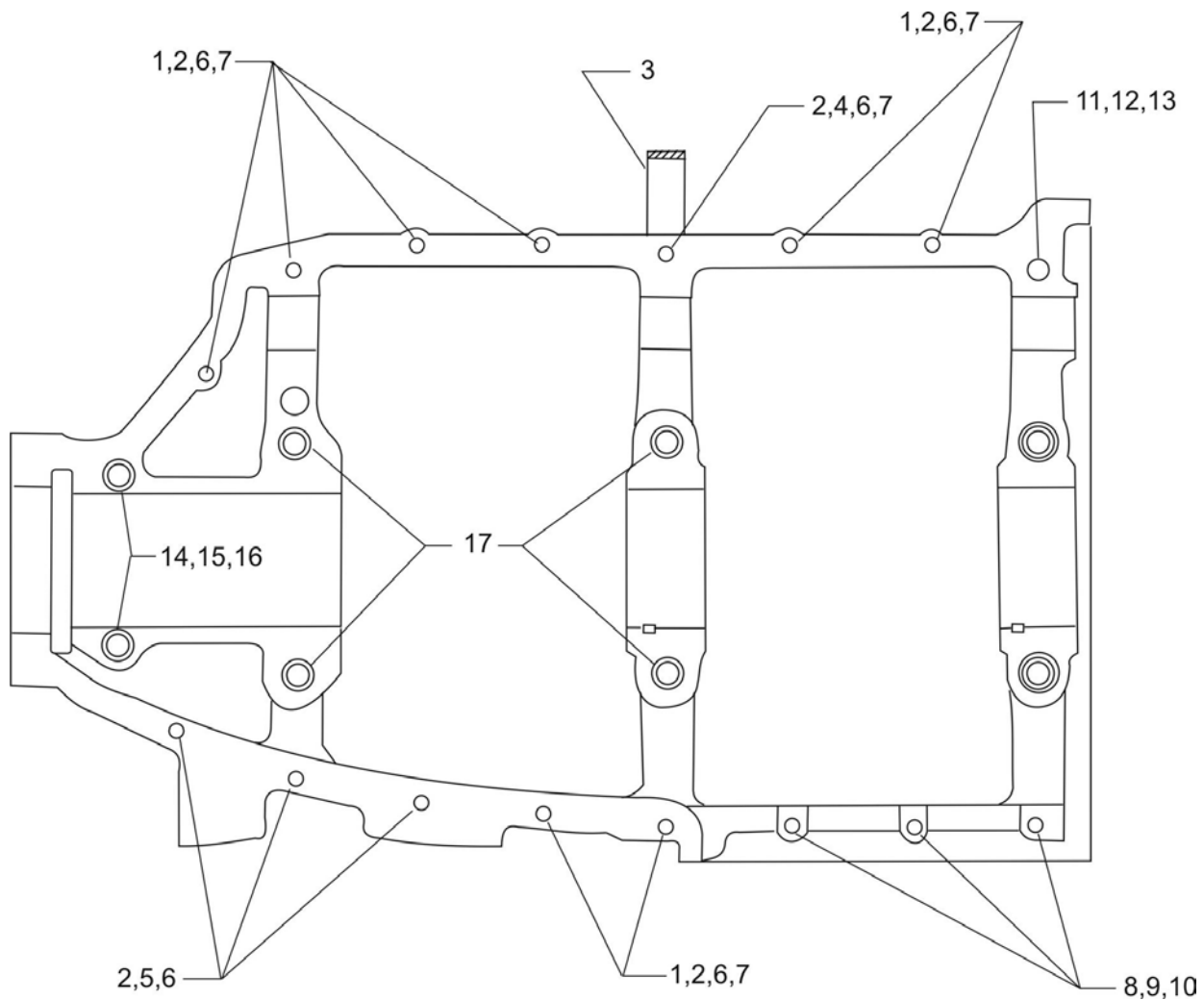
Figure Item	Code	Part Number	Description	Units per Assembly
1		13B47024	CRANKSHAFT ASSEMBLY	1
2		STD-1065	DOWEL, Stepped, 5/16-1/4 diameter	1
3		STD-1211	PLUG, 2.00 diameter, expansion	1
4		LW-18921-S	BUSHING, Propeller flange, long	1
5		LW-18922-S	BUSHING, Propeller flange, short	5
6	SB*	13S19646	GEAR, Crankshaft	1
7		LW-18639	LOCKPLATE, Crankshaft gear	1
8		STD-2246	BOLT, 5/16-24 x 1.00 long	1
9		68867	SUPPORT ASSEMBLY, Starter ring gear	1
		74414	SUPPORT ASSEMBLY, Starter ring gear	1
		76628	SUPPORT ASSEMBLY, Starter ring gear	1
		31M26698	SUPPORT ASSEMBLY, Starter ring gear	1
10	**	60882	GEAR, Starter ring, 10/12 pitch	1
	◆	72566	GEAR, Starter ring, 12/14 pitch	1
<p>SB Referencing Service Bulletin</p> <p>* Refer to latest revision of Service Bulletin No. 475 for proper installation.</p> <p>** Use with 68867 Support Assembly.</p> <p>◆ Use with 76628, 74414, or 31M26698 Support Assembly.</p>				



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

POWER SECTION**FIGURE 5 - CRANKSHAFT IDLER GEARS, TACHOMETER DRIVE AND CAMSHAFT**

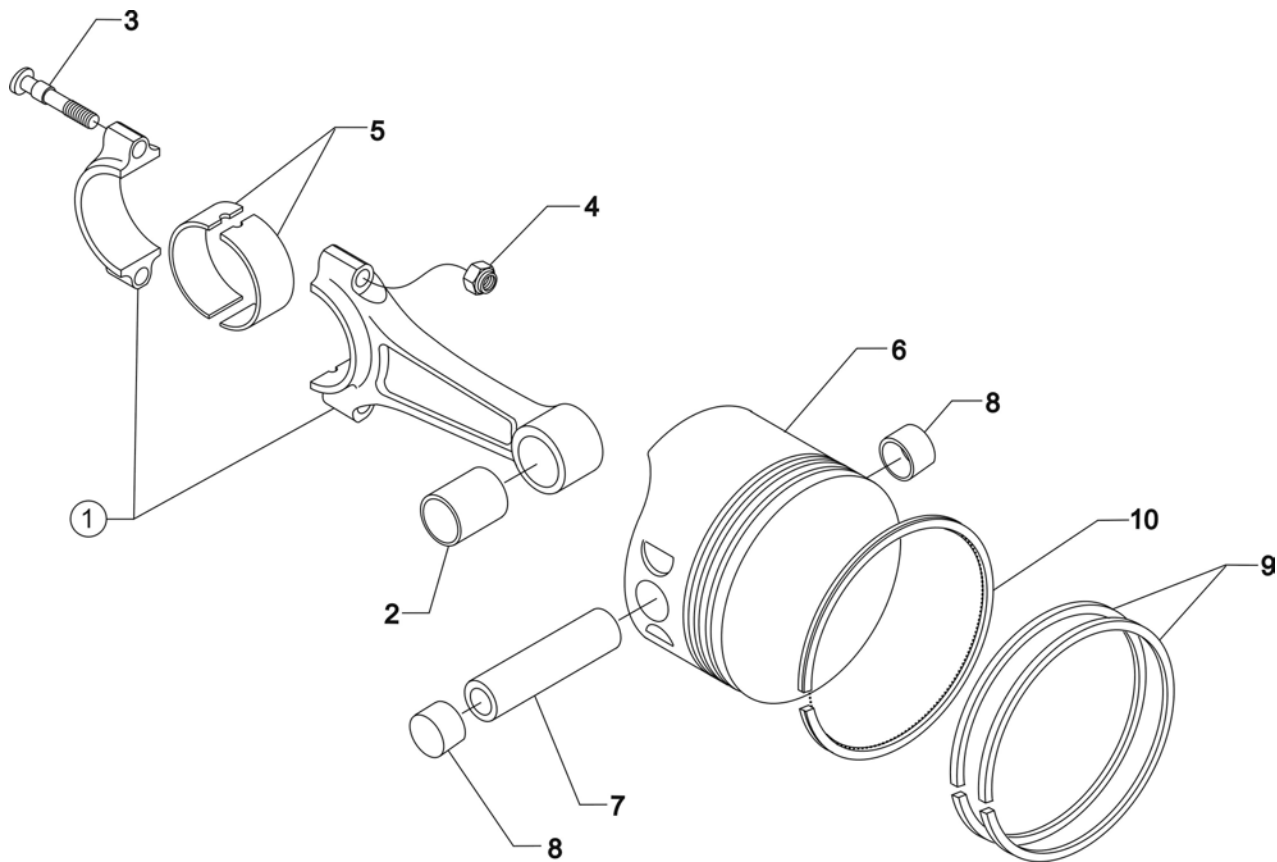
Figure Item	Code	Part Number	Description	Units per Assembly
1		23D26777	PLUNGER, Fuel pump, long	1
2		74996	GEAR ASSEMBLY, Crankshaft idler, plain	1
3		77309	BUSHING, Crankshaft idler gear	1
4		75072	GEAR ASSEMBLY, Crankshaft idler	1
5		77309	BUSHING, Crankshaft idler gear	1
6		76121	SHAFT ASSEMBLY, 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		LW-18840	CAMSHAFT ASSEMBLY	1
		15M23452	CAMSHAFT ASSEMBLY (Roller tappet engines)	1
13		76118	SPACER, Tachometer shaft centering	1



Crankcase Attaching Parts
Figure 6

POWER SECTION**FIGURE 6 - CRANKCASE ATTACHING PARTS**

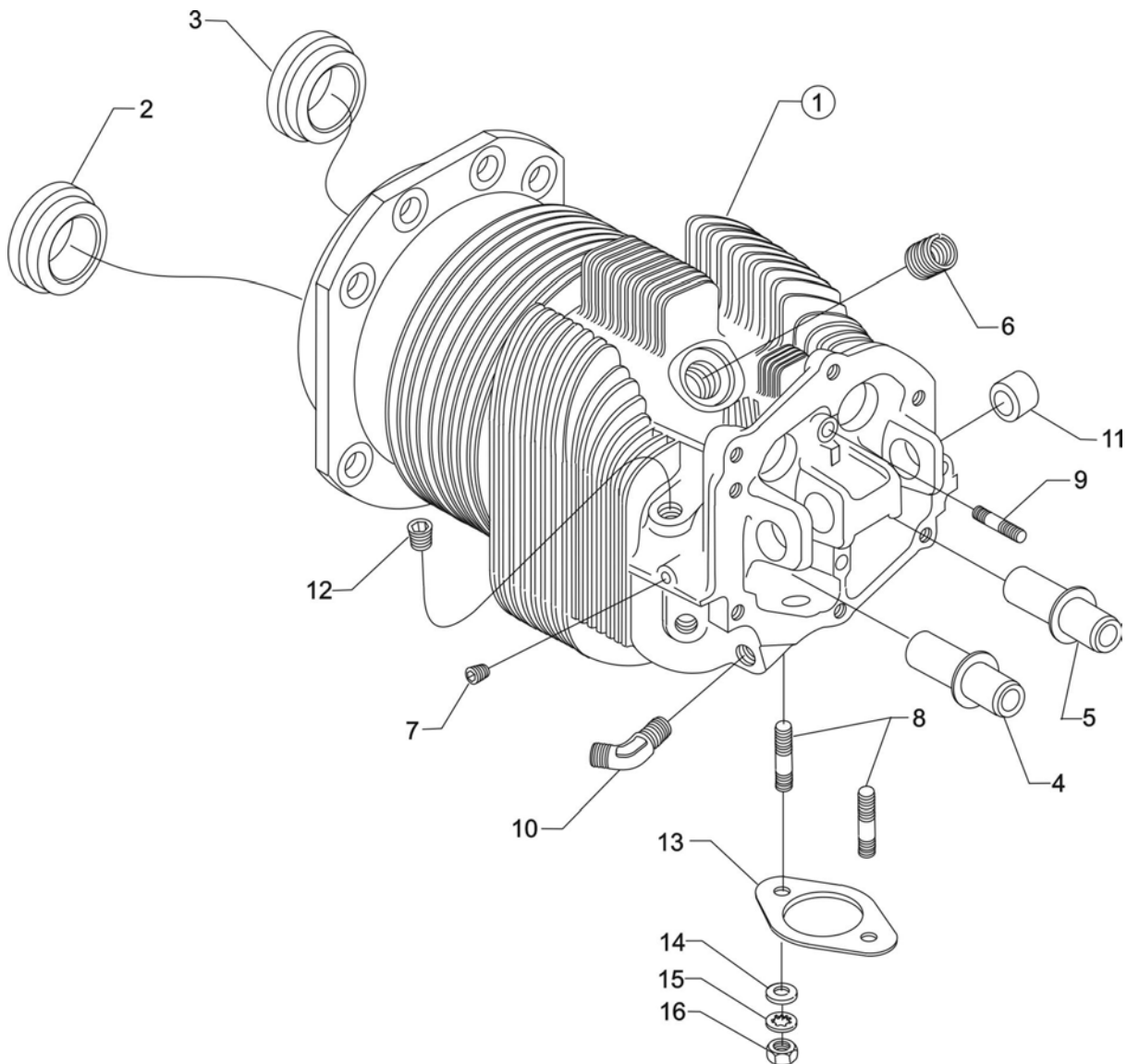
Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-25-1.50	BOLT, 1/4-20 x 1-1/2 long, hex. head	8
2		STD-8	WASHER, 1/4 plain	19
3		60803	STRAP, Lifting	1
4		LW-25-1.75	BOLT, 1/4-20 x 1-3/4 long, hex. head	1
5		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	3
6		STD-160	WASHER, 1/4 lock, 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)	6
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	6
16		LW-11866	SPACER -Nut Compressor	2
17		76220	STUD, 1/2-20 x 10-11/16 long	4



Connecting Rods, Pistons and Ring Assemblies
Figure 7

CYLINDER SECTION**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		LW-13923	BUSHING, Connecting rod, upper	4
3		78027	BOLT, Connecting rod	8
4		LW-12186	NUT, Connecting rod	8
5		18M26104	BEARING, Connecting rod	8
6		14D23912	PISTON, 8.50:1 compression ratio	4
7		LW-14078	PIN, Piston	4
8		72198	PLUG, Piston pin	8
9		74241	RING, Piston compression	8
10		14H21950	RING, Piston, oil	4



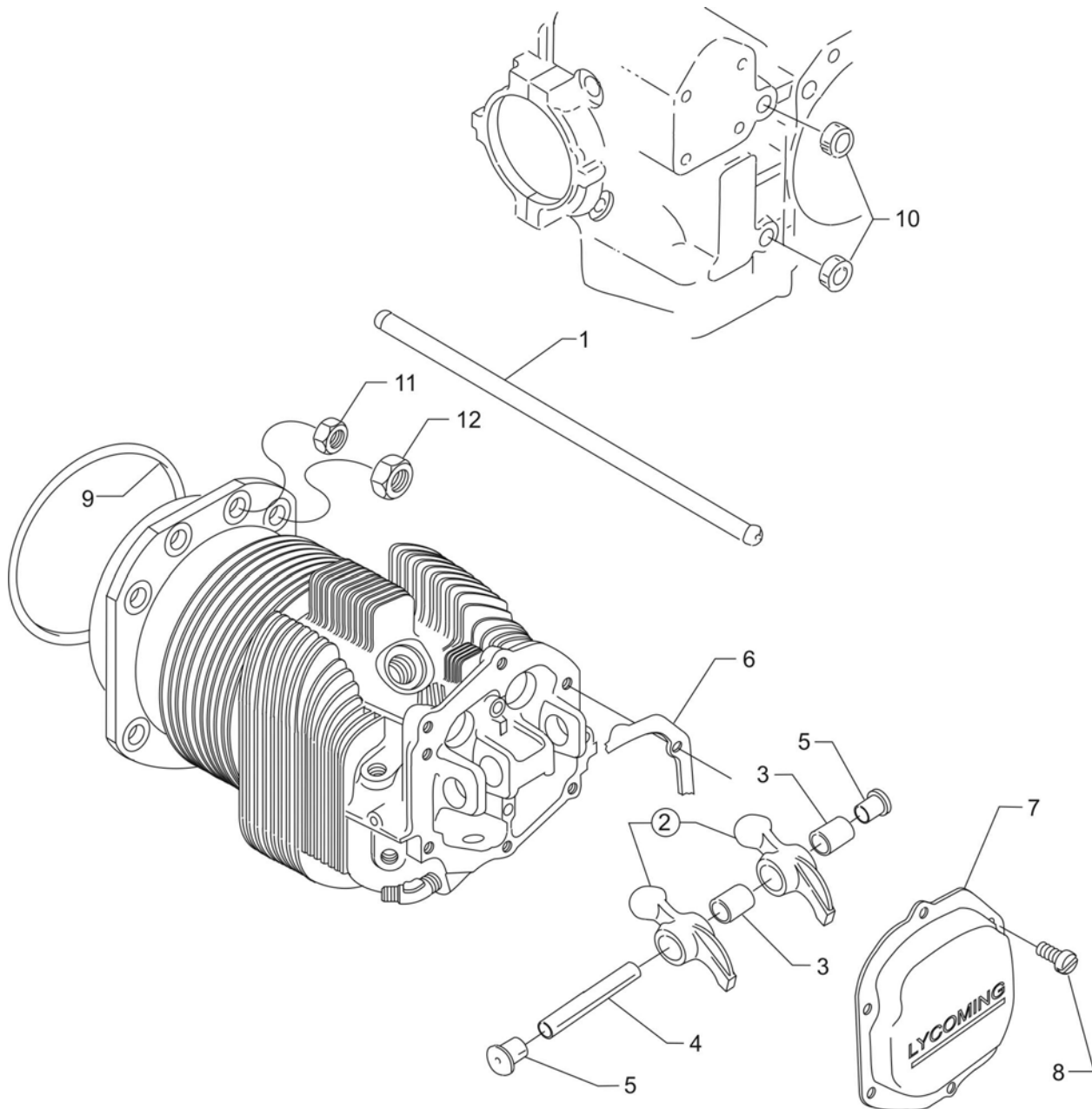
Cylinder Assembly
Figure 8

CYLINDER SECTION
FIGURE 8 - CYLINDER ASSEMBLY

Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-12416	CYLINDER ASSEMBLY, Nitrided	4
2		72057	SEAT, Intake valve	4
3		72058	SEAT, Exhaust valve	4
4	P*	76943	GUIDE, Valve, intake	4
5	P*	16R22126	GUIDE, Valve, exhaust	4
6	P	66796	INSERT, Spark plug, 1.5 MM	8
7		STD-1353	INSERT, No. 10-24 UNC x 3/8 long	4
8		31C-12	STUD, 5/16-18 x 1-1/2 long	8
9		25C-8	STUD, 1/4-20 x 1.00 long	4
10		MS20823-6D	ELBOW, 45°, 3/8 flared tube	4
11		66610	BUSHING, Rocker shaft	16
12	**	1102	PLUG, 1/8-27 NPT, allen head	4
13		77611	GASKET, Exhaust flange	4
14		STD-35	WASHER, 5/16 plain	8
15		STD-475	WASHER, 5/16 lock, internal teeth	8
16		STD-1410	NUT, 5/16-18 plain	8
<p>P Lycoming proprietary part. Listed for reference purposes only, cannot be purchased.</p> <p>* See latest revision of Service Instruction No. 1256 for service valve guides.</p> <p>** Used on installations without injector or priming lines.</p>				

CYLINDER SECTION**FIGURE 9 – VALVE ASSEMBLY AND RELATED PARTS**

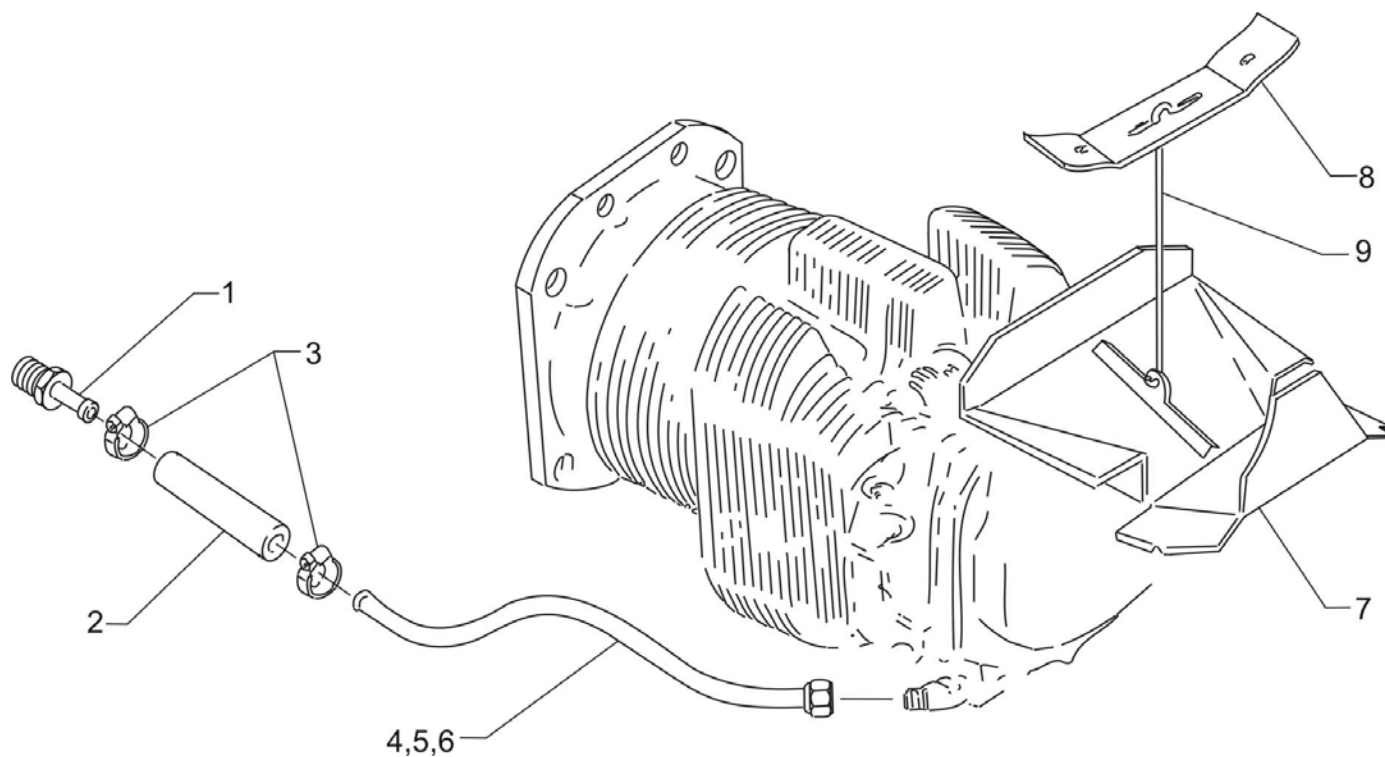
Figure Item	Code	Part Number	Description	Units per Assembly
1		17A23938	VALVE, Intake	4
2		17B23936	VALVE, Exhaust	4
3		LW-11795	SPRING, Valve, inner	8
4		LW-11800	SPRING, Valve, outer	8
5		65441	SEAT, Valve spring, lower intake	4
6		LW-13323	SEAT, Valve spring, lower exhaust	4
7		LW-10077	SEAT, Valve 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		68987	SHROUD TUBE ASSEMBLY, Push rod	8
		15G23494	SHROUD TUBE ASSEMBLY, Push rod (Roller tappet engines)	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 (Roller tappet engines)	8
19	*	LW-18661	SEAL, Shroud tube	8
20		06A23493	SEAL, Shroud tube (Roller tappet engines)	8
21	**	70310	SEAL, Shroud tube	8
<p>* This seal is used on flat tappet engines only.</p> <p>** This seal is used on both flat tappet and roller tappet engines.</p>				



Cylinder Related Parts
Figure 10

CYLINDER SECTION**FIGURE 10 – CYLINDER RELATED PARTS**

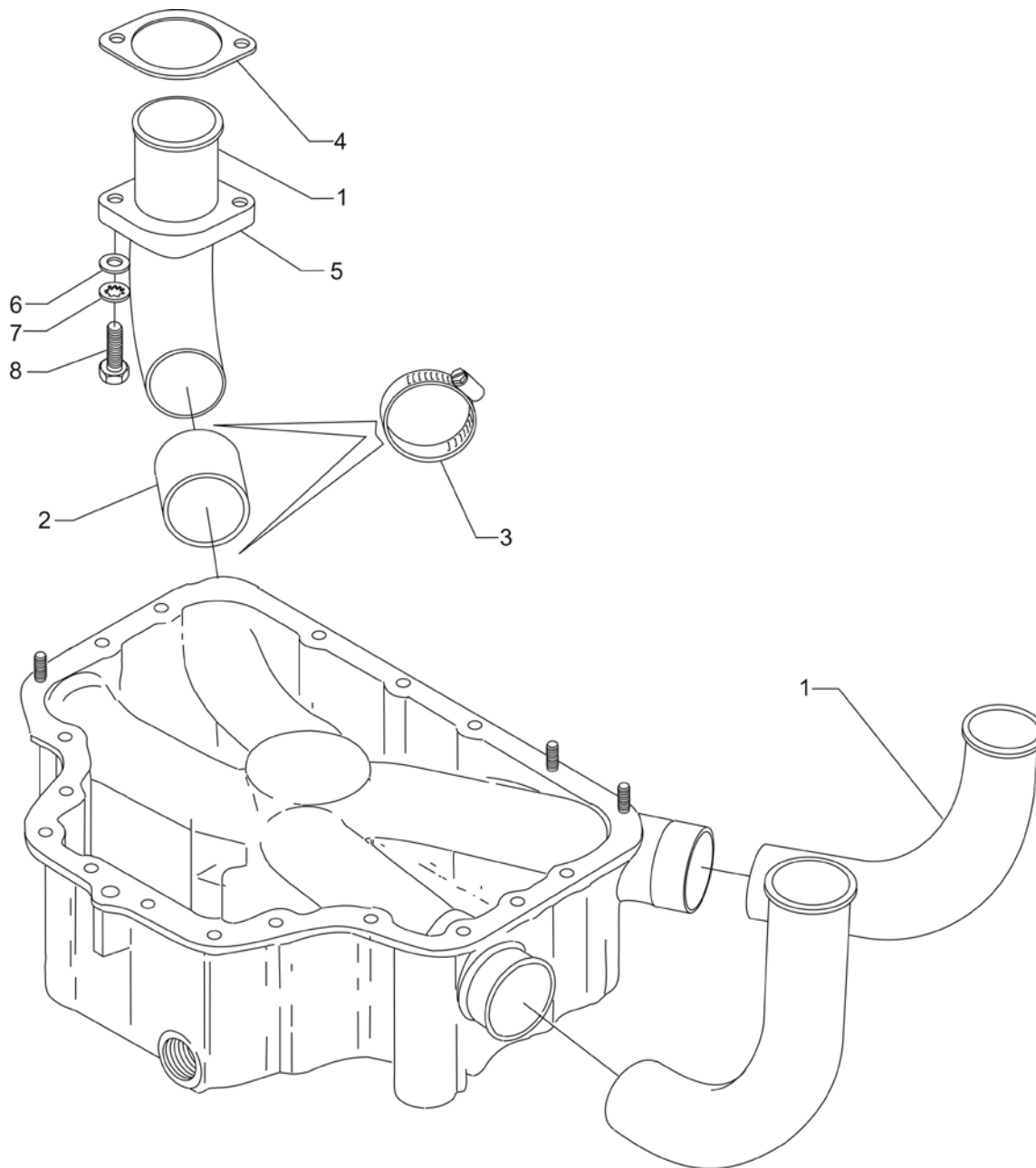
Figure Item	Code	Part Number	Description	Units per Assembly
1	AR*♦	15F19957-08	ROD ASSEMBLY, Push (A total of 8 required)	AR
	AR*♦	15F19957-09	ROD ASSEMBLY, Push (A total of 8 required)	AR
	AR*♦	15F19957-10	ROD ASSEMBLY, Push (A total of 8 required)	AR
1	AR†♦	15F19957-11	ROD ASSEMBLY, Push (A total of 8 required)	AR
	AR†♦	15F19957-12	ROD ASSEMBLY, Push (A total of 8 required)	AR
	AR‡♦	15F19957-13	ROD ASSEMBLY, Push (A total of 8 required)	AR
	AR‡♦	15F19957-14	ROD ASSEMBLY, Push (A total of 8 required)	AR
	AR‡♦	15F19957-15	ROD ASSEMBLY, Push (A total of 8 required)	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
<p>AR as required</p> <p>* These push rods are not to be used on flat tappet engines.</p> <p>† These push rods can be used on both flat tappet and roller tappet engines.</p> <p>‡ These push rods are not be used on roller tappet engines.</p> <p>♦ See latest revision of Service Instruction No. 1060 for complete push rod application.</p> <p>** Due to the size of the area where the part number is stamped, the last five digits may be all that is shown (19357).</p> <p>NOTE: Various push rod lengths are used to set valve clearances.</p>				



Cylinder Head Drain Tubes and Intercylinder Cooling Baffles
Figure 11

CYLINDER SECTION**FIGURE 11 –CYLINDER HEAD DRAIN TUBES AND INTERCYLINDER COOLING BAFFLES**

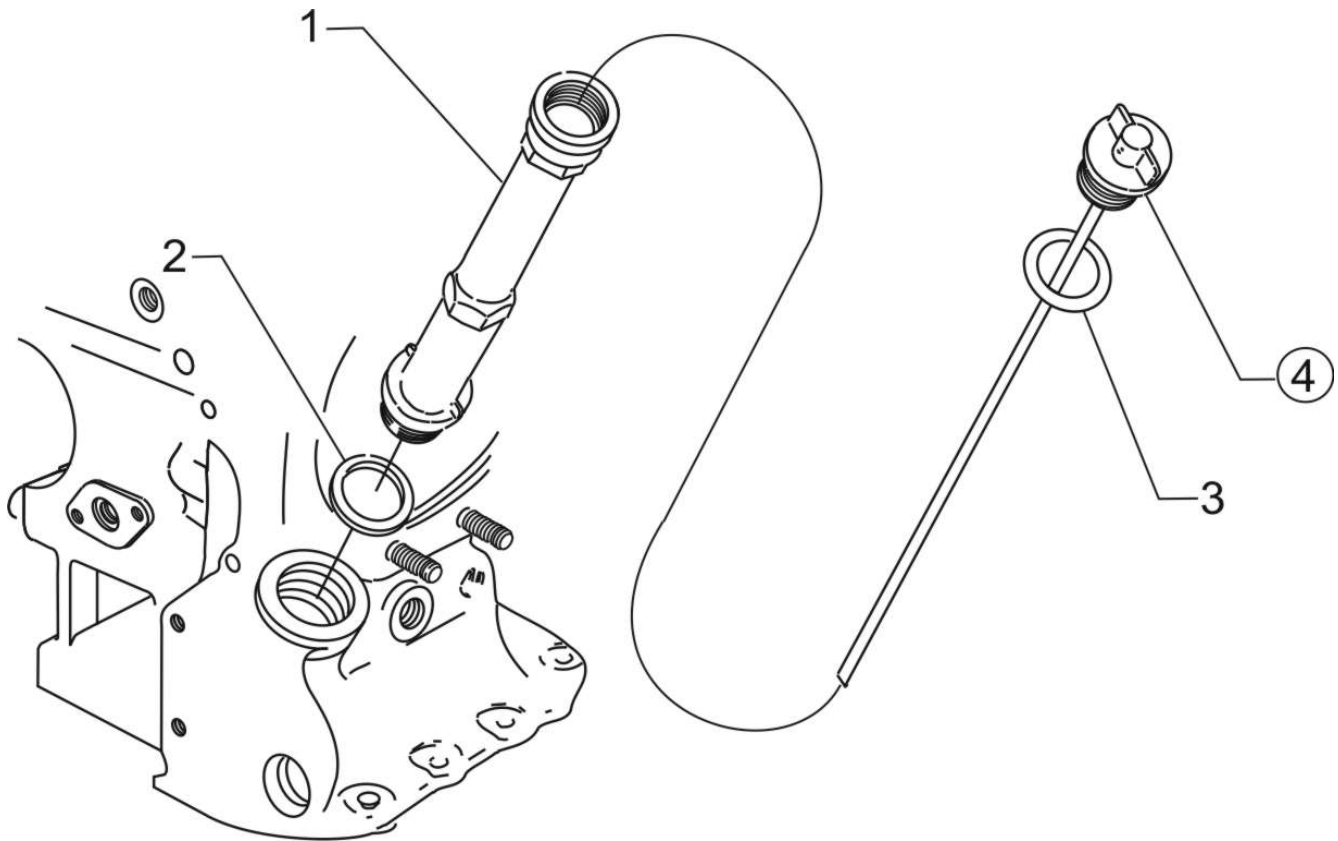
Figure Item	Code	Part Number	Description	Units per Assembly
1		STD-684	NIPPLE, Straight, 3/8 I.D. hose	4
2		STD-2180	HOSE, 3/8 I.D. x 1-7/8 long	4
3		LW-15592-5-05	CLAMP, Hose	8
4		68759	TUBE ASSEMBLY, Oil drain, cylinder no. 1	1
5		68760	TUBE ASSEMBLY, Oil drain, cylinder no. 2	1
6		68761	TUBE ASSEMBLY, 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



Intake Pipes and Attaching Parts
Figure 12

CYLINDER SECTION**FIGURE 12 – INTAKE PIPES AND ATTACHING PARTS**

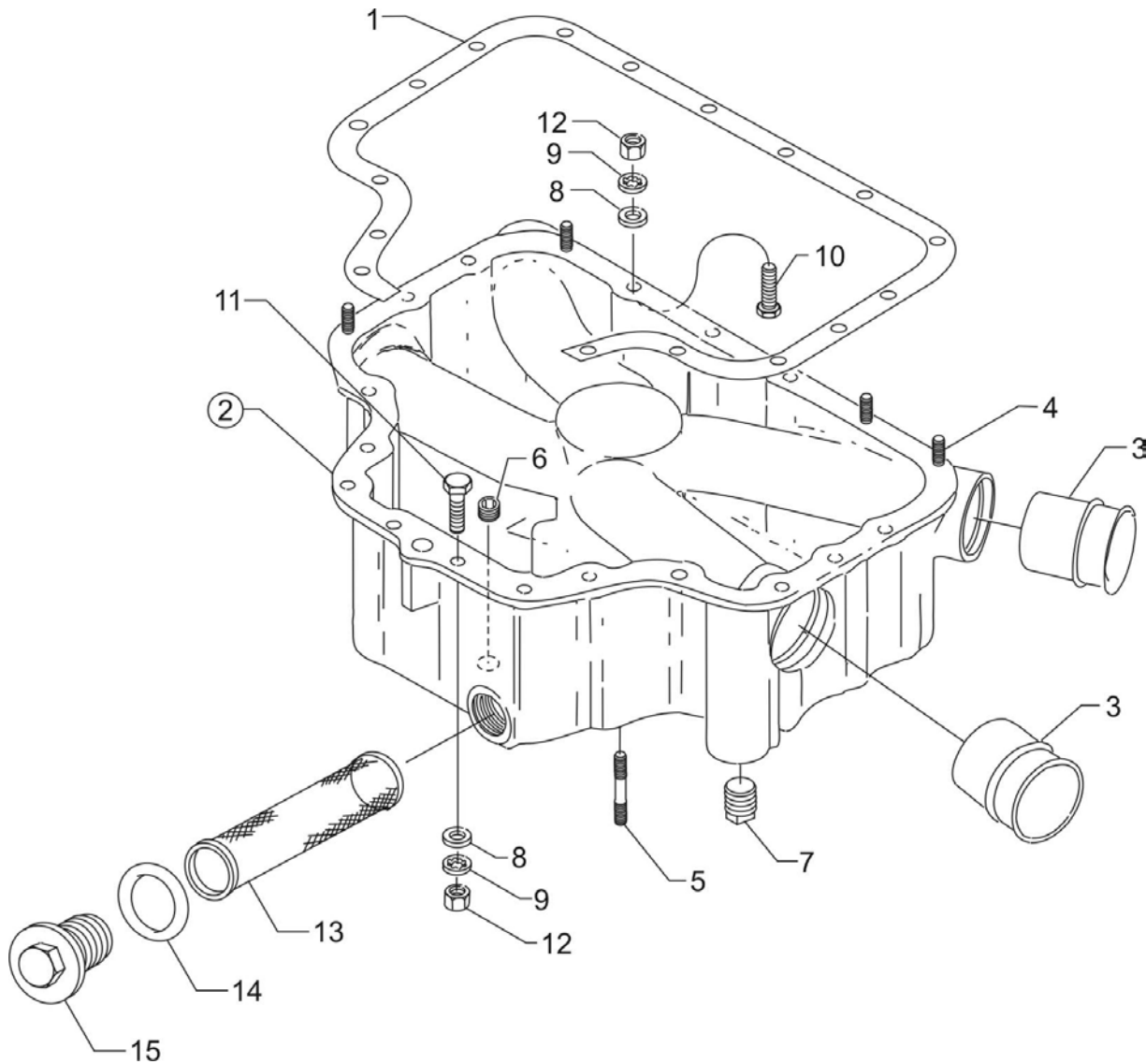
Figure Item	Code	Part Number	Description	Units per Assembly
1		74084	PIPE, Intake	4
2		69603	HOSE, 1-3/4 I.D. x 2-3/16 O.D. x 1-3/4 long	4
3		LW-15592-8-28	CLAMP, Hose	8
4		71973	GASKET, 2 bolt flange, 1-13/16 I.D.	4
5		73346	FLANGE, Intake pipe, upper	4
6		STD-8	WASHER, 1/4 plain	8
7		STD-160	WASHER, 1/4 lock, internal teeth	8
8		LW-25-1.25	BOLT, 1/4-20 x 1-1/4 long, hex. head	8



**Oil Level Gage
Figure 13**

LUBRICATION SYSTEM**FIGURE 13 – OIL LEVEL GAGE**

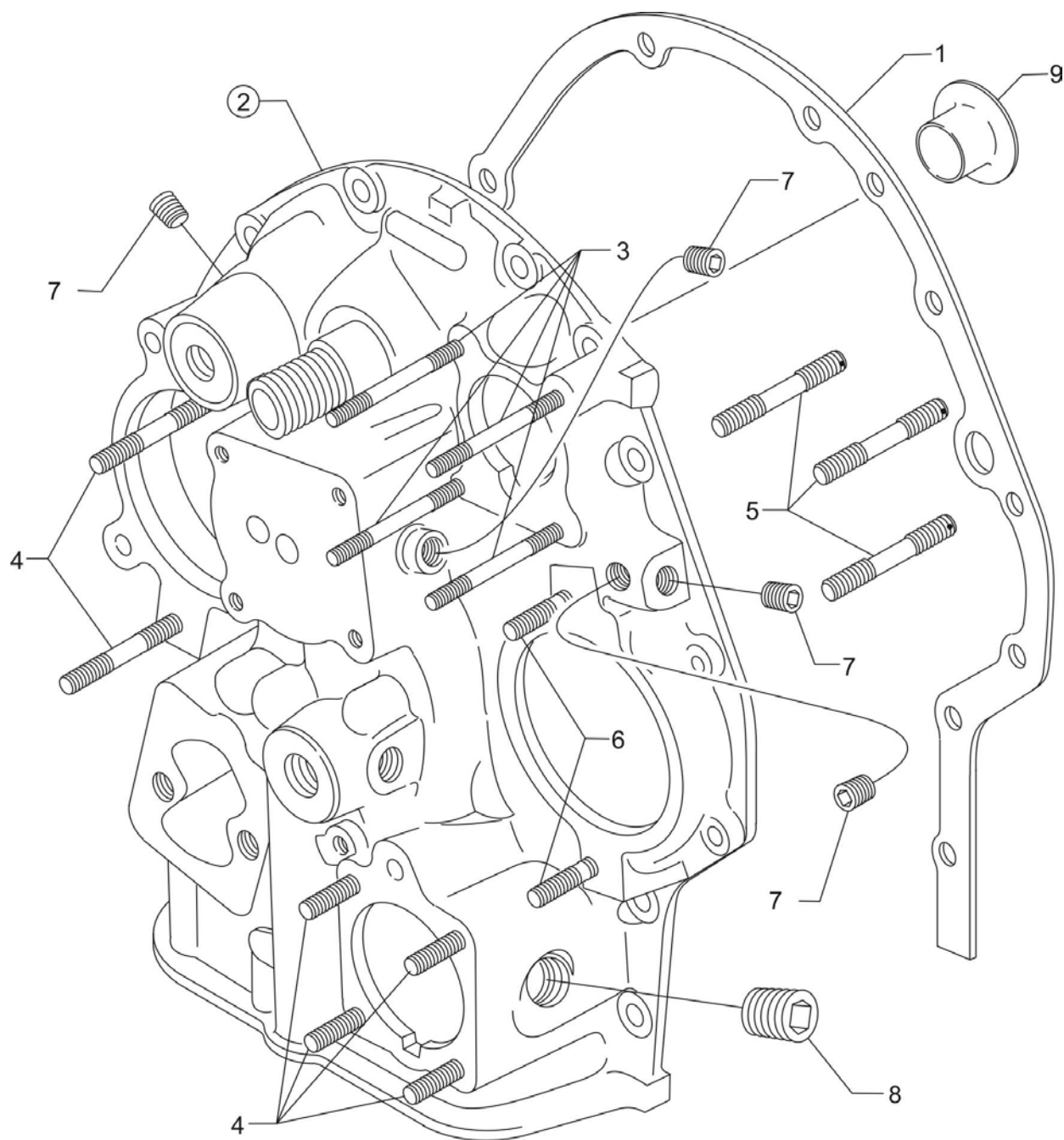
Figure Item	Code	Part Number	Description	Units per Assembly
1		75736	TUBE, Oil level gage, 11-9/16 long	1
2		72059	GASKET, Oil level gage	1
3		74068	RING, Oil level gage plug	1
4		LW-16783-18	GAGE ASSEMBLY, Oil level	1



Oil Sump Assembly and Oil Suction Screen
Figure 14

LUBRICATION SYSTEM**FIGURE 14 – OIL SUMP ASSEMBLY AND OIL SUCTION SCREEN**

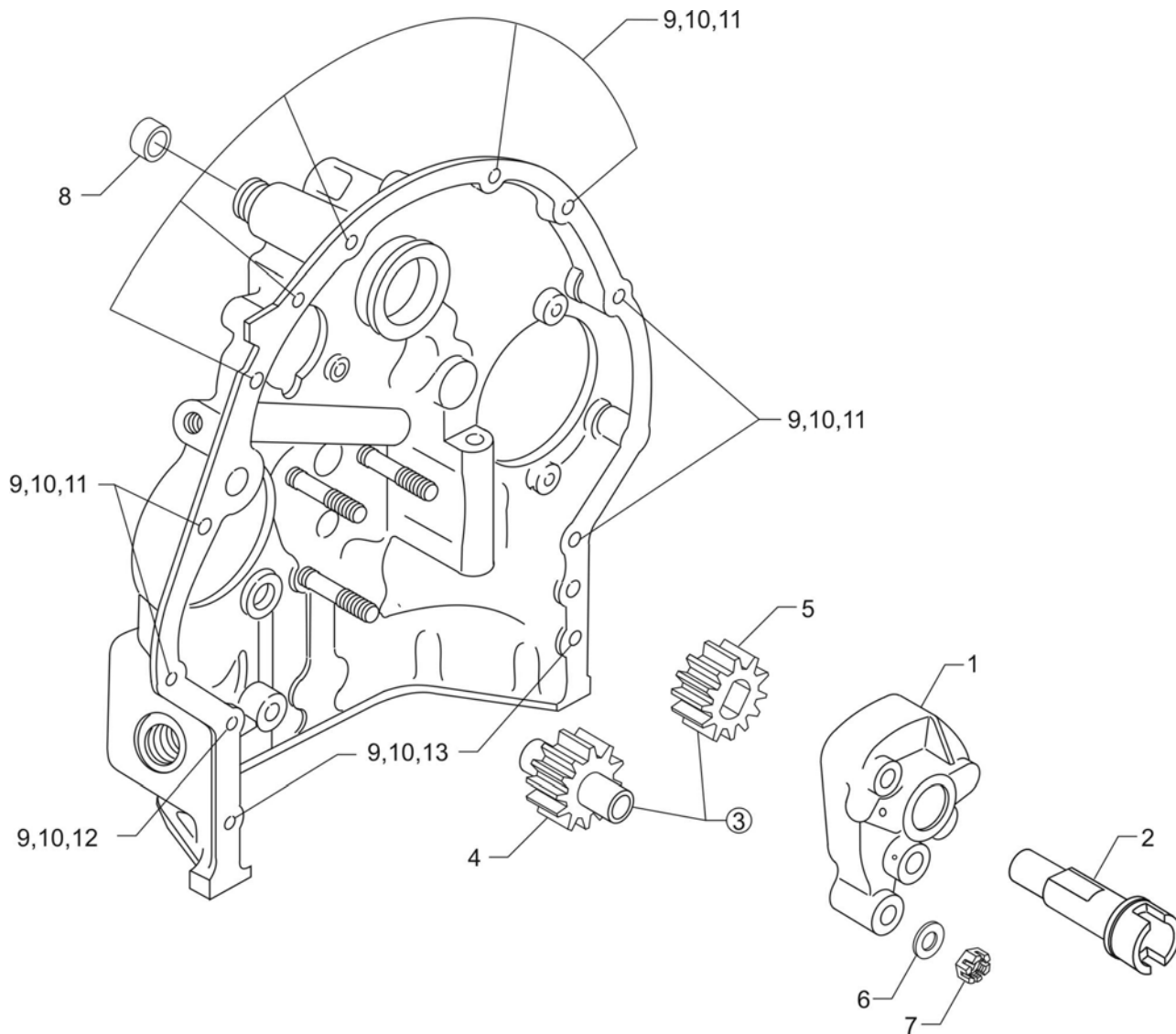
Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-13353	GASKET, Oil sump	1
2		LW-10828	SUMP ASSEMBLY, Oil	1
3		78914	CONNECTION, Intake pipe	4
4		61400	STUD, 1/4-20 x 1-3/16 long	4
5		31C-15	STUD, 5/16-18 x 1-7/8 long	4
6		STD-91	PLUG, 1/2-14 NPT, allen head	1
7		STD-551	PLUG, 1/2-14 NPT, square head, drilled	2
8		STD-8	WASHER, 1/4 plain	28
9		STD-160	WASHER, 1/4 lock, internal teeth	20
10		LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. head	14
11		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	2
12		STD-1411	NUT, 1/4-20 plain	12
13		70484	SCREEN, Oil suction screen	1
14		06E19769-1.00	GASKET, Annular, 1.00 I.D.	1
15		LW-12545	PLUG, 5/8 hex. head x 1.00-20 thread	1



Accessory Housing Assembly
Figure 15

ACCESSORY DRIVES**FIGURE 15 – ACCESSORY HOUSING ASSEMBLY**

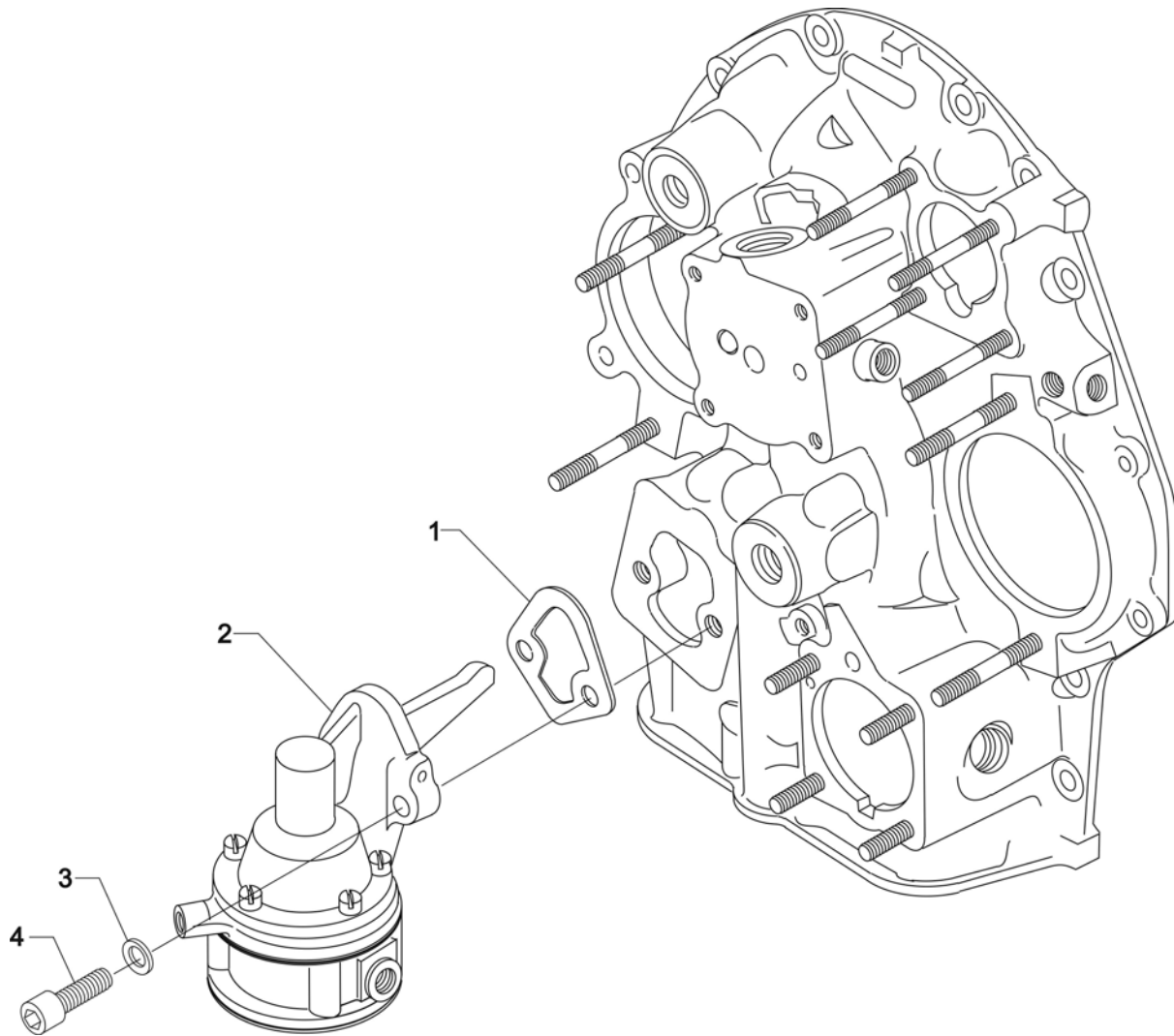
Figure Item	Code	Part Number	Description	Units per Assembly
1		73818	GASKET, Accessory housing	1
2		21A21533-04	HOUSING ASSEMBLY, Accessory	1
3		25C-22	STUD, 1/4-20 x 2-3/4 long	4
4		31C-12	STUD, 5/16-18 x 1-1/2 long	6
5		31CD-17	STUD, 5/16-18 x 2-1/8 long, drilled	3
6		31C-19	STUD, 5/16-18 x 2-3/8 long	2
7		1102	PLUG, 1/8-27 NPT, allen head	4
8		STD-784	PLUG, 3/8-18 NPT, allen head	1
9		76119	SHIELD, Accessory breather oil	1



Oil Pump Assembly and Accessory Housing Attaching Parts
Figure 16

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

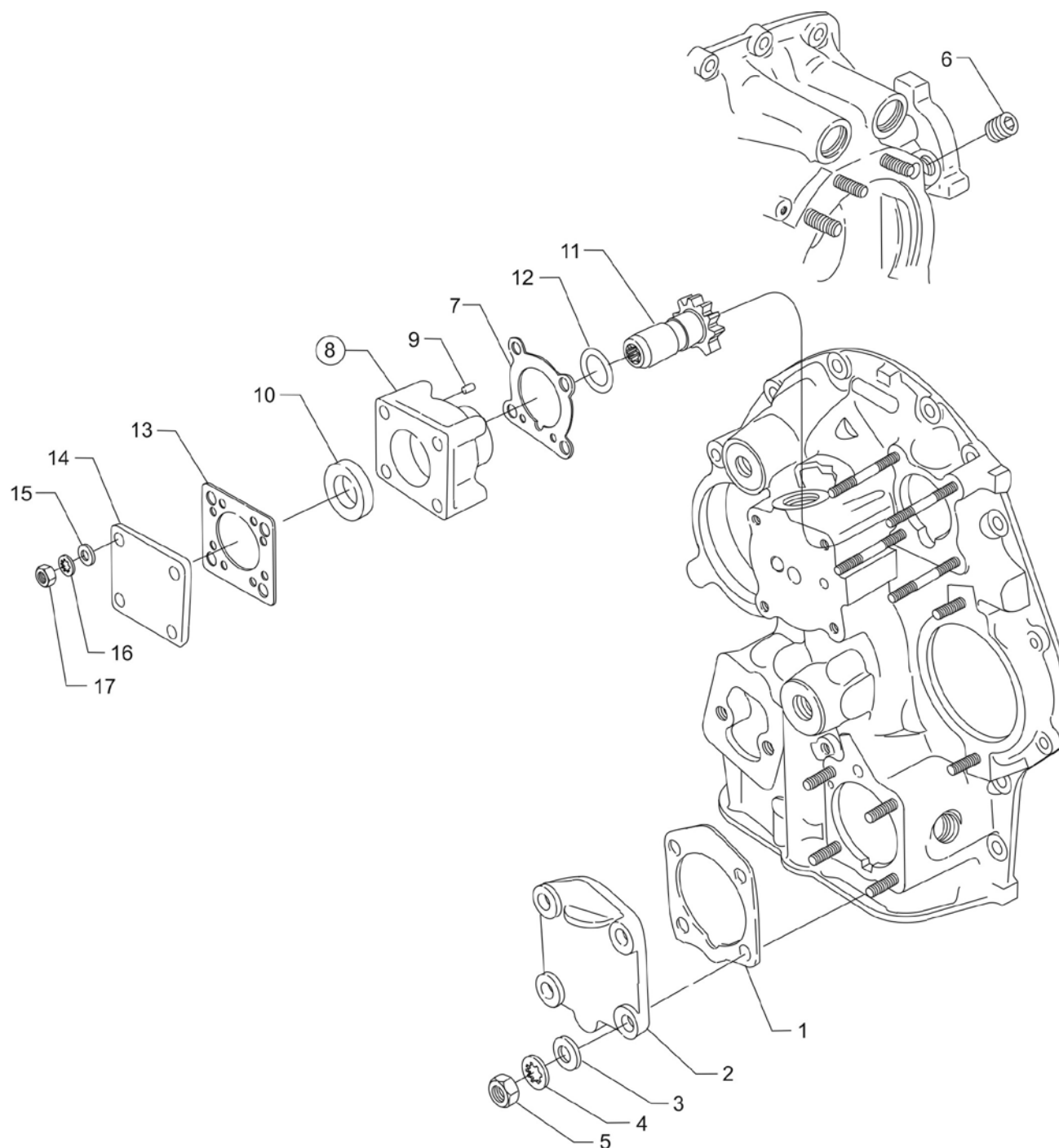
Figure Item	Code	Part Number	Description	Units per Assembly
1		78531	BODY ASSEMBLY, Oil pump	1
2		61174	SHAFT, Oil pump drive	1
3		05K19423-S	IMPELLER KIT	1
4	*	LW-18110	IMPELLER ASSEMBLY, Oil pump driven	1
5	*	LW-18109	IMPELLER, Oil pump driven	1
6		STD-35	WASHER, 5/16 plain	3
7		STD-1420	NUT, 5/16-18 slotted	3
8		LW-14260	SEAL, Oil, tachometer drive	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).				



Fuel Pump Assembly and Attaching Parts
Figure 17

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

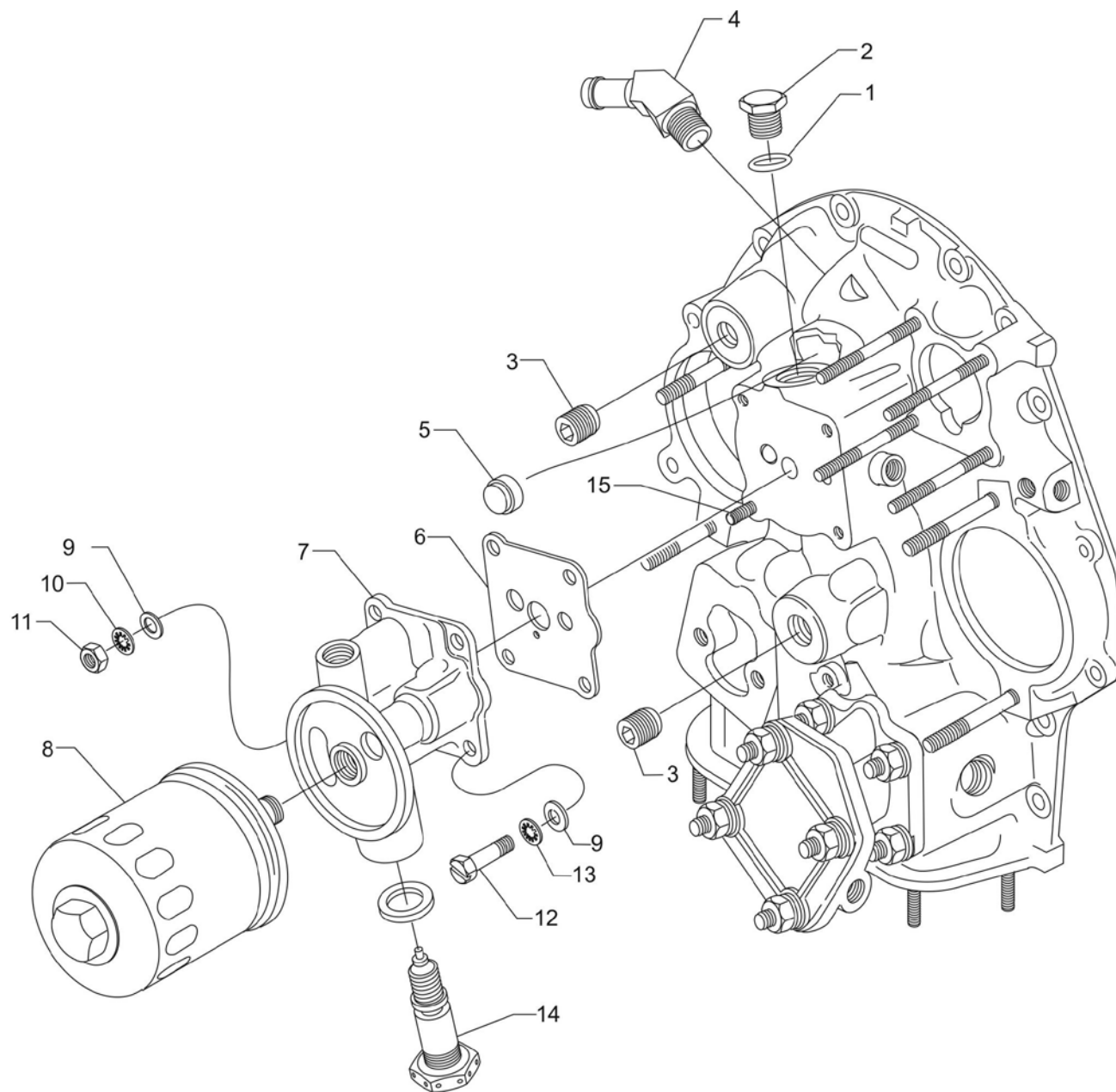
Figure Item	Code	Part Number	Description	Units per Assembly
1		60096	GASKET, Fuel pump	1
2		LW-15472	FUEL PUMP, Dual diaphragm, low pressure	1
3		STD-33	WASHER, 3/8 plain	2
4		STD-1882	SCREW, 3/8-16 x 1-9/32 long, socket head, drilled	2



Propeller Governor Drive Cover, Vacuum Pump Drive and Cover
Figure 18

ACCESSORY DRIVES**FIGURE 18 – PROPELLER GOVERNOR DRIVE COVER, VACUUM PUMP DRIVE AND COVER**

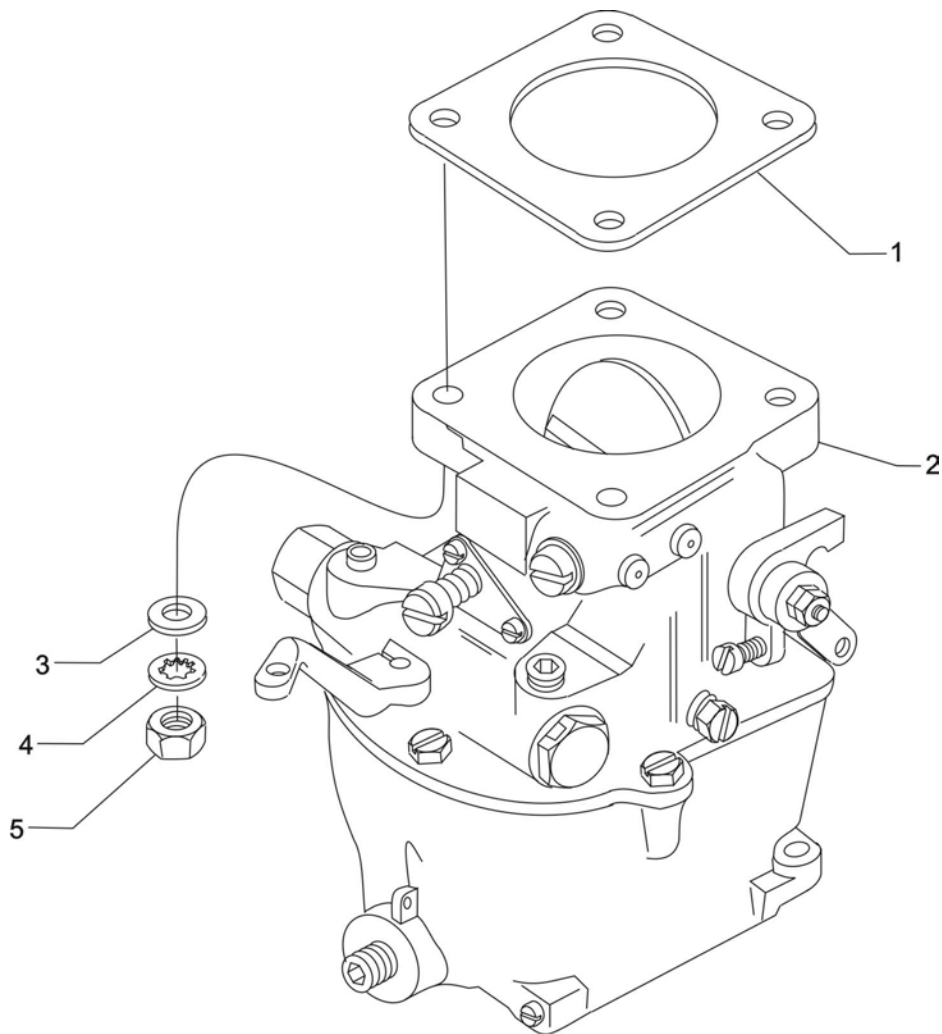
Figure Item	Code	Part Number	Description	Units per Assembly
1		69551	GASKET, Accessory drive adapter	1
2		69106	COVER, Governor drive adapter pad	1
3		STD-35	WASHER, 5/16 plain	4
4		STD-475	WASHER, 5/16 lock, internal teeth	4
5		STD-1410	NUT, 5/16-18 plain	4
6	*	STD-783	PLUG, 1/4-18 NPT, allen head	1
7		61183	GASKET, Accessory adapter	1
8		61098	ADAPTER ASSEMBLY, Vacuum pump	1
9		STD-1774	PIN, 1/8 diameter x 1/4 long	1
10		06A19956	OIL SEAL, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide	1
11		72970	GEAR ASSEMBLY, Vacuum pump driven	1
12		71596	WASHER, Accessory drive gear	1
13		8313	GASKET, Vacuum pump	1
14		60430	COVER, Vacuum pump	1
15		STD-8	WASHER, 1/4 plain	4
16		STD-160	WASHER, 1/4 lock, internal teeth	4
17		STD-1411	NUT, 1/4-20 plain	4
* Assemble in crankcase, front.				



**Oil Filter Assembly, Oil Cooler and Breather Fittings
Figure 19**

ACCESSORY DRIVES**FIGURE 19 – OIL FILTER ASSEMBLY, OIL COOLER AND BREATHER FITTINGS**

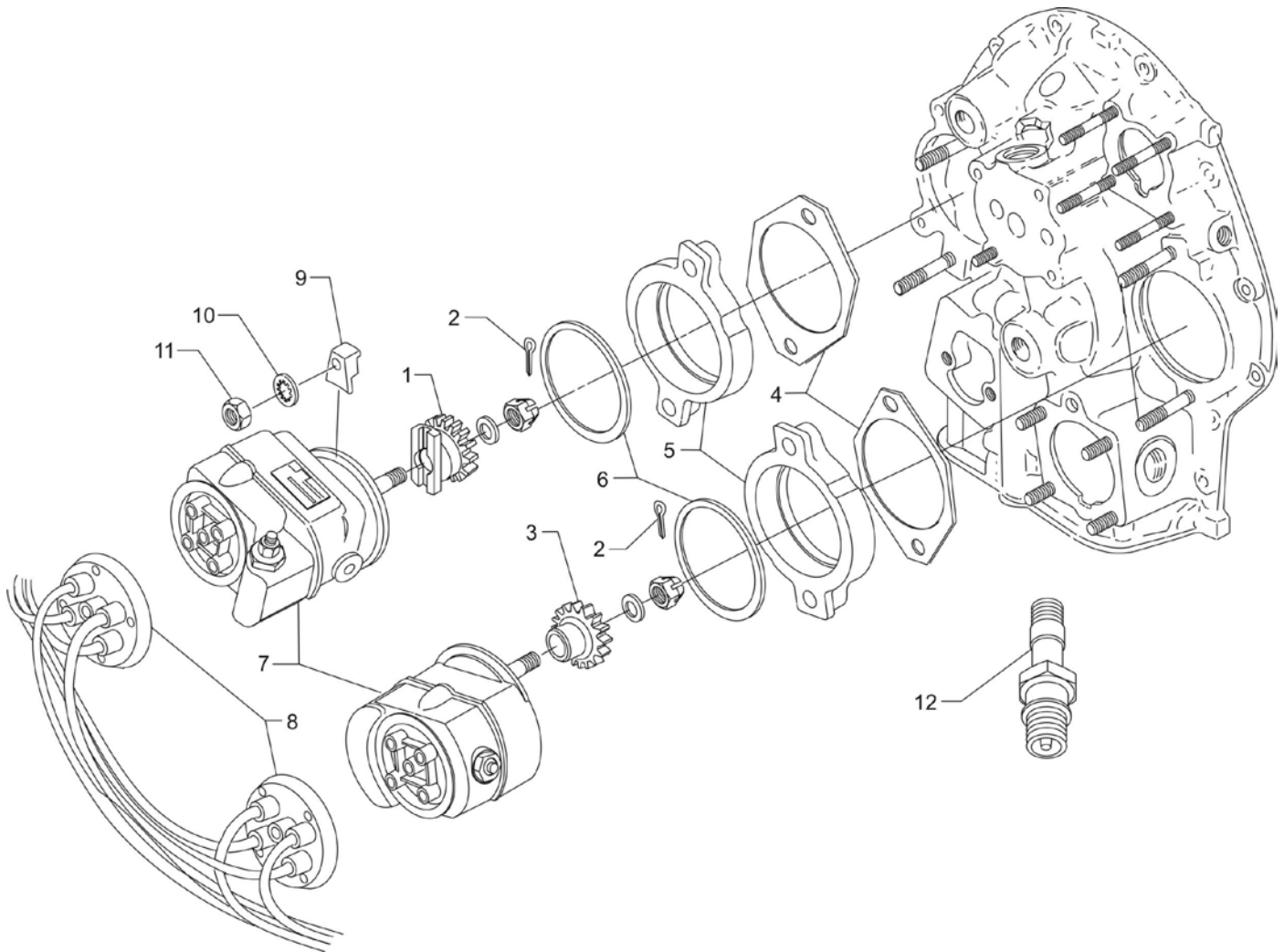
Figure Item	Code	Part Number	Description	Units per Assembly
1		06E19769-0.63	GASKET, Annular, 5/8 I.D.	1
2		62417	PLUG, Oil cooler bypass	1
3		STD-784	PLUG, 3/8-18 NPT, Allen head	2
4		AN844-10D	ELBOW, Pipe	1
5		62732	CAP, Tachometer drive	1
6		06B23862	GASKET, Oil filter adapter	1
7		77852	OIL FILTER BASE ASSEMBLY	1
8		LW-13215	OIL FILTER, Short	1
9		STD-8	WASHER, 1/4 plain	4
10		STD-160	WASHER, 1/4 lock, internal teeth	1
11		STD-1411	NUT, 1/4-20 plain	1
12		LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. head	3
13		STD-160	WASHER, 1/4 lock, internal teeth	3
14		53E22144	VALVE ASSEMBLY, Temperature control, oil cooler bypass	1
15		25C-10	STUD, 1/4-20 x 1-1/4 long	1



Carburetor Assembly
Figure 20

FUEL DISTRIBUTION**FIGURE 20 – CARBURETOR ASSEMBLY**

Figure Item	Code	Part Number	Description	Units per Assembly
1		66224	GASKET, Carburetor	1
2	V	61B26214	CARBURETOR, MA-4SPA, V AV 10-5217	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.				



Magnetos, Magneto Drives, Harnesses and Spark Plugs
Figure 21

IGNITION DISTRIBUTION SYSTEM**FIGURE 21 -MAGNETOS, MAGNETO DRIVES, HARNESES AND SPARK PLUGS**

Figure Item	Code	Part Number	Description	Units per Assembly
1		61665	GEAR, Magneto, impulse coupling	1
2		MS-9245-44	COTTER PIN, 3/32 diameter x 5/8 long	2
3		68C19622	GEAR, Magneto	1
4		62224	GASKET, Magneto adapter	2
5		LW-12706	ADAPTER, Magneto, impulse coupling	2
6		LW-12681	GASKET, Magneto	2
7	V	66GP-0SANN	MAGNETO, Plain, Slick V 4370	1
	V	66GC20SFNN	MAGNETO, Impulse, Slick V 4371	1
8	V	67P20406	HARNESS ASSEMBLY, Right, Slick V M2992	1
	V	67P20407	HARNESS ASSEMBLY, Left, Slick V M1795	1
9		66M21195	CLAMP, Magneto	4
10		STD-475	WASHER, 5/16 lock, internal teeth	4
11		STD-1410	NUT, 5/16-18 plain	4
12	V*	1182-E7	SPARK PLUG, Champion V REM38E	8
	V*	1182-B7	SPARK PLUG, Champion V REM37BY	8
	**	01P19762-1-43	BAG, Harness attaching	1

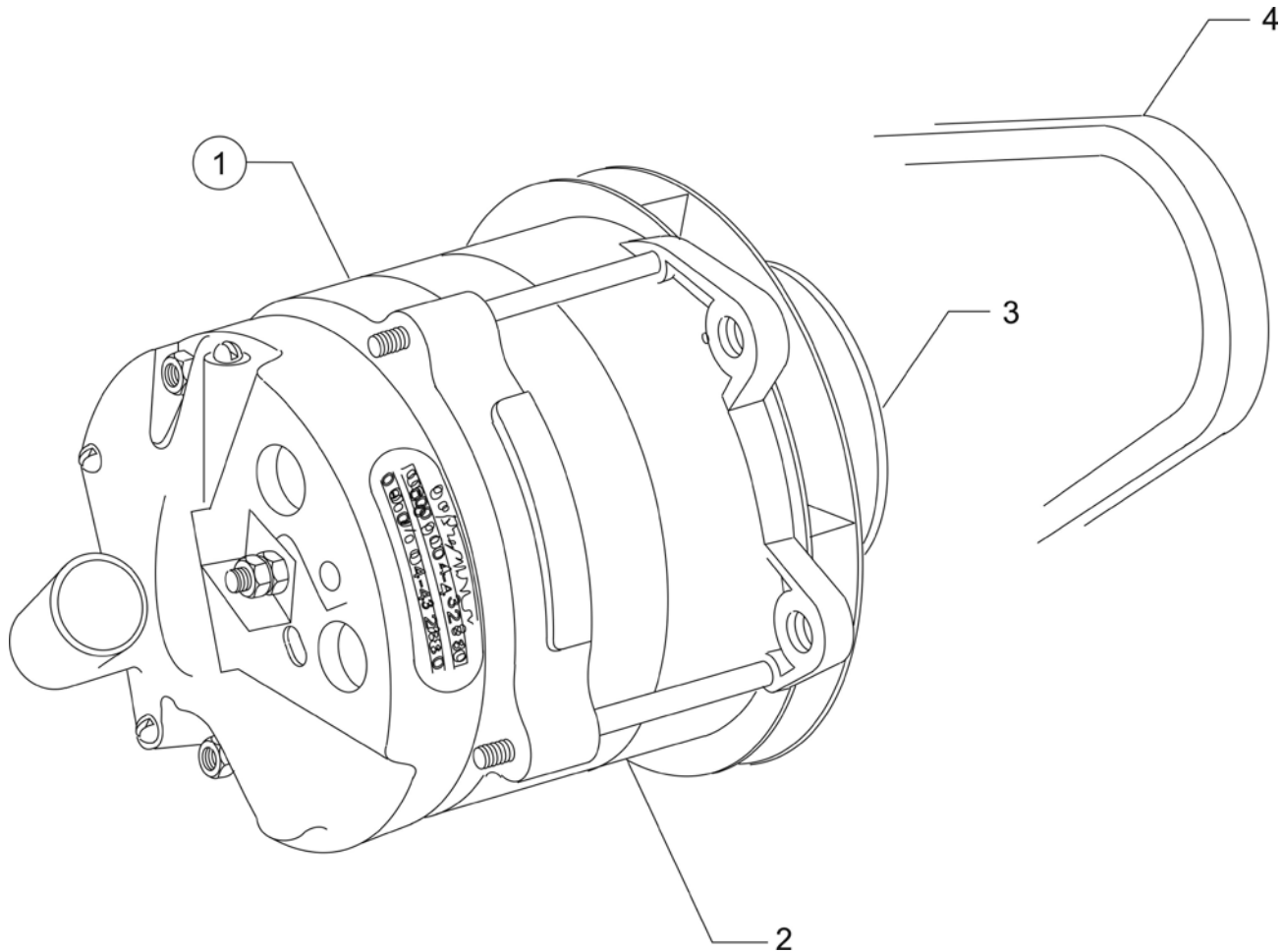
V Vendor Prime Manufacturer part

***** Item No. 12 spark plugs are used in current production only. Additional spark plugs are available for this engine. See latest revision of Lycoming Service Instruction No. 1042 for complete listing of all approved spark plugs.

****** See below for breakdown of individual parts contained in the magneto and harness attaching bag. These parts are to be added by customer per engine line drawing included in each bag.

01P19762-1-43 – Bag, Magneto Harness Attaching

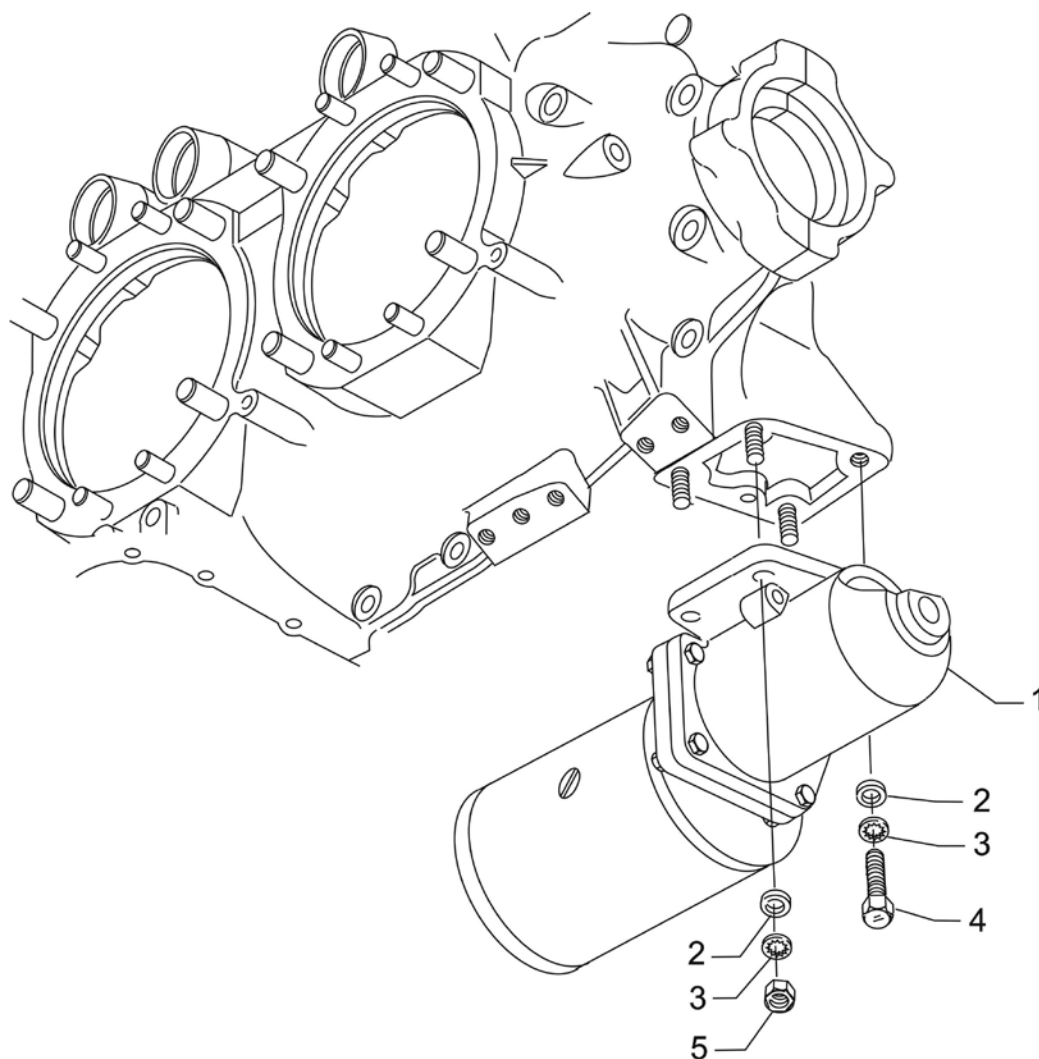
Part No.	Part Name	Qty.
LW-16266-25-25	CLIP, One wire	4
LW-14060	CLIP, Two wire	3
STD-8	WASHER, 1/4 plain	8
STD-1874	SCREW, 1/4 lock (rocker box)	6
76734	ZIP STRAP	8
LW-16266-25-50	CLIP, Four wire	1
STD-696	WASHER, 1/4 plain	4
STD-1916	SCREW, 1/4-20 x 1-1/8 long, fill. head	3
LW-M-2375	PLATE, Spark plug cable, two wire	2



Alternator Assembly , Pulley and Belt
Figure 22

IGNITION DISTRIBUTION SYSTEM**FIGURE 22 – ALTERNATOR ASSEMBLY, PULLEY AND BELT**

Figure Item	Code	Part Number	Description	Units per Assembly
1		32B19549	ALTERNATOR ASSEMBLY, 24V.-70Amp.	1
		32C19553	ALTERNATOR ASSEMBLY, 24V.-70Amp.	1
		32C19570	ALTERNATOR ASSEMBLY, 24V.-70Amp.	1
		32C21997	ALTERNATOR ASSEMBLY, 24V.-75Amp.	1
2	V	LW-14318	ALTERNATOR, 12V.-70A., V ALX-8521-LS	1
	V	LW-14326	ALTERNATOR, 24V.-70A., V ALU-8521-LS	1
	V	LW-14339	ALTERNATOR, 24V.-70A., V ALU-8521-LS	1
3		36B19484	PULLEY, Alternator	1
4		37A19773-376	BELT, Alternator drive, 3/8 wide	1
V Vendor Prime Manufacturer part NOTE: See latest revision of Lycoming Service Instruction No. 1154 for complete listing of FAA approved starters, generators, alternators, regulators and relays.				



Starter Motor and Attaching Parts
Figure 23

CRANKING SECTION**FIGURE 23 - STARTER MOTOR AND ATTACHING PARTS**

Figure Item	Code	Part Number	Description	Units per Assembly
1	V	31A22100	STARTER, Sky-Tec, V 149-12PM	1
	V	31A22102	STARTER, Sky-Tec, V 122-12PM	1
	V	31A22104	STARTER, Sky-Tec, V 149-12LS	1
	V	31A22106	STARTER, Sky-Tec, V 149-24PM	1
	V	31B22101	STARTER, Sky-Tec, V 149-12PM	1
	V	31B22105	STARTER, Sky-Tec, V 149-24LS	1
	V	31A22206	STARTER ASSEMBLY, Lamar V 12V PM1201	1
	V	31A26041	STARTER ASSEMBLY, 12V., Kelly V ERZ-8011	1
2	*	STD-35	WASHER, 5/16 plain	4
3		STD-475	WASHER, 5/16 lock, internal teeth	4
4		LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex. head	1
	*	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 * Use with Kelly and Lamar starters only. NOTE: See latest revision of Lycoming Service Instruction No. 1154 for complete listing of FAA approved starters, generators, alternators, regulators and relays.</p>				

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, 3/8 x 7/64 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.
05K21100	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
14D23912	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.
11B20061-1SB-S	KIT - CRANKCASE ASSEMBLY AND THRU-STUD	1
11B20061-1SB	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	2

CRANKCASE ASSEMBLY AND THRU-STUD KIT (ROLLER TAPPET ENGINES)

PART NO.	PART NAME	Qty.
11B20161-1SB-S	KIT - CRANKCASE ASSEMBLY AND THRU-STUD	1
11B20161-1SB	CRANKCASE ASSEMBLY (Roller tappet engines)	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	2

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AN6-17	Bolt	1	LW-15472	Fuel Pump	33
AN6-34A	Bolt	11	LW-15592-5-05	Clamp	21
AN844-10D	Elbow	37	LW-15592-8-28	Clamp	23
AN960-616L	Washer	11	LW-16475	Seat	17
LRT23381	Body Assy.	5	LW-16783-18	Gage Assy.	25
LW-25-0.94	Bolt	27	LW-18085	Spring	7
LW-25-0.94	Bolt	31	LW-18109	Impeller	31
LW-25-1.00	Bolt	37	LW-18110	Impeller Assy.	31
LW-25-1.13	Bolt	11	LW-18639	Lockplate	7
LW-25-1.13	Bolt	27	LW-18661	Seal	17
LW-25-1.13	Bolt	31	LW-18667	Pin	9
LW-25-1.25	Bolt	23	LW-18840	Camshaft Assy.	9
LW-25-1.44	Bolt	31	LW-18921-S	Bushing	7
LW-25-1.50	Bolt	11	LW-18922-S	Bushing	7
LW-25-1.75	Bolt	11	MS20823-6D	Elbow	15
LW-25S1.50	Bolt	11	MS9245-44	Cotter Pin	41
LW-31-0.94	Bolt	1	STD-8	Washer	11
LW-31-0.94	Bolt	45	STD-8	Washer	23
LW-31-1.16	Bolt	45	STD-8	Washer	27
LW-31H0.75	Bolt	1	STD-8	Washer	31
LW-31H0.88	Bolt	9	STD-8	Washer	35
LW-10077	Seat	17	STD-8	Washer	37
LW-10828	Sump Assy.	27	STD-33	Washer	11
LW-11713	Spring	5	STD-33	Washer	33
LW-11795	Spring	17	STD-35	Washer	1
LW-11800	Spring	17	STD-35	Washer	15
LW-11866	Spacer	11	STD-35	Washer	31
LW-12186	Nut	13	STD-35	Washer	35
LW-12272	Lockplate	17	STD-35	Washer	39
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LW-12706	Adapter	41	STD-160	Washer	23
LW-12892	Thrust Button	19	STD-160	Washer	27
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LW-13323	Seat	17	STD-160	Washer	35
LW-13353	Gasket	27	STD-160	Washer	37
LW-13790	Shaft	19	STD-475	Washer	15
LW-13792	Seal	5	STD-475	Washer	35
LW-13793	Stud	3	STD-475	Washer	39
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STD-872	Nut	11	60009	Key	17
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STD-2180	Hose	21	68867	Support Assy.	7
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