

O-360-A1P Series Illustrated Parts Catalog

June 2011

PC-306-6

LYCOMING © 2011

652 Oliver Street
Williamsport, PA 17701

O-360-A1P Series Illustrated Parts Catalog

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SERVICE DOCUMENT LIST

NOTE: The “Incorporation Date” column indicates the latest revision date of this report, due to a Service Document or Service Document revision. The words “No Effect” indicate that the Service Document caused no changes within this report.

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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-360-A1P wide cylinder flange model engine.

How to Use this Catalog

This catalog is based on the Air Transport Association (ATA) Spec 100 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 format specifies the subject matter for each chapter-section. According to the ATA Standards, the following chapters apply to the O-360-A1P 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 can be used to find 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. Attached parts have the same indentation level and are shown 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 Number**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.

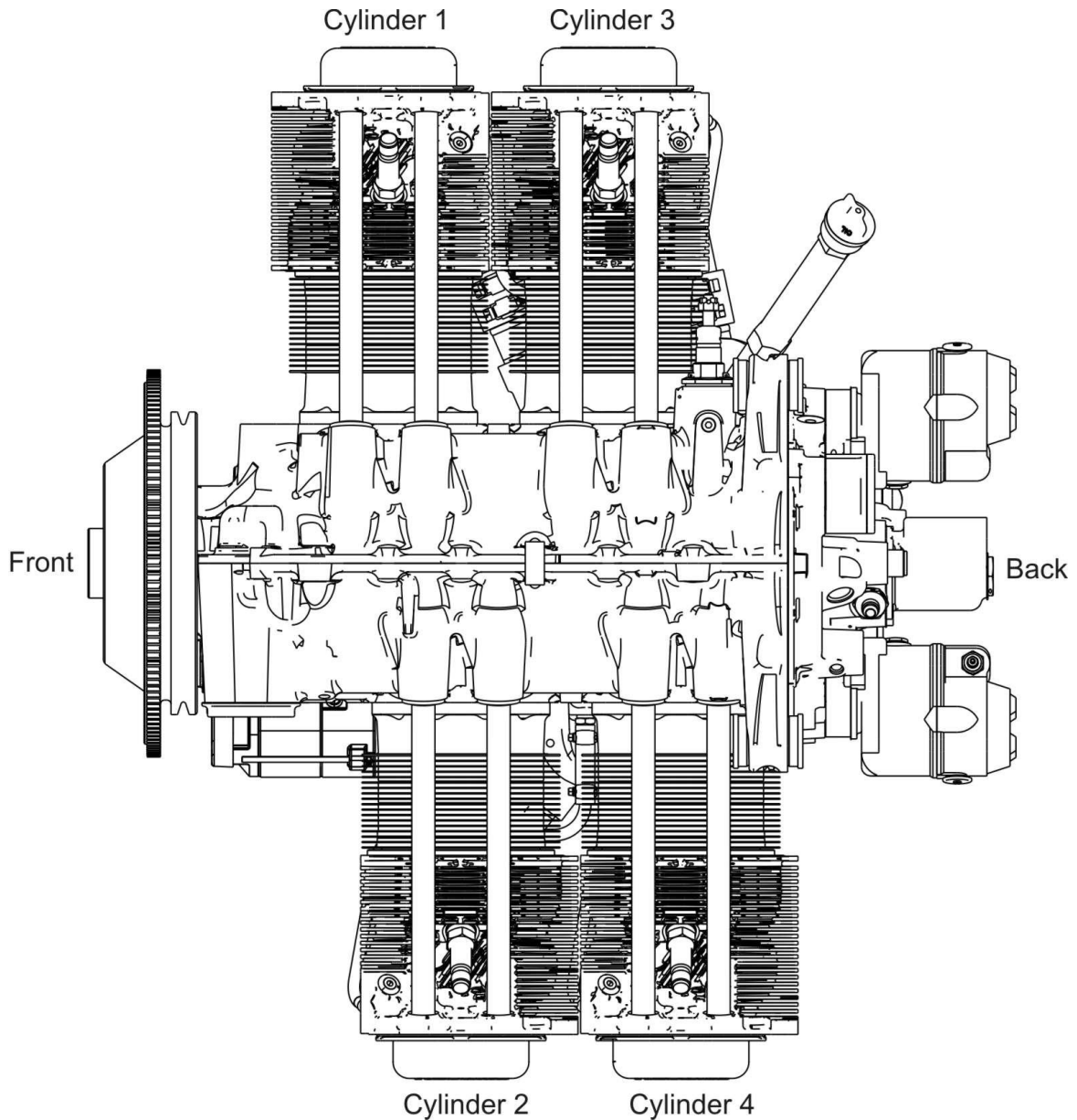
Any reference in this document to the suppliers/part manufacturer's product, by name, trademark, part number or other description is solely for the purpose of identification and does not indicate or infer that Lycoming accepts responsibility for quality control and/or airworthiness of parts, which do 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 are from a rear view of the engine. The front of the engine is the propeller end and the oil sump the bottom of the engine. Cylinders have numbering indications 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 frontal section of this catalog to aid in ordering parts as necessary during overhaul.

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

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

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

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

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

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

NOTE: The owner of the manual 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 **(570) 323-6181**

8:00 A.M. – 5:00 P.M. EST (-5GMT)

Monday – Friday.

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ABBREVIATIONS AND ACRONYMS

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

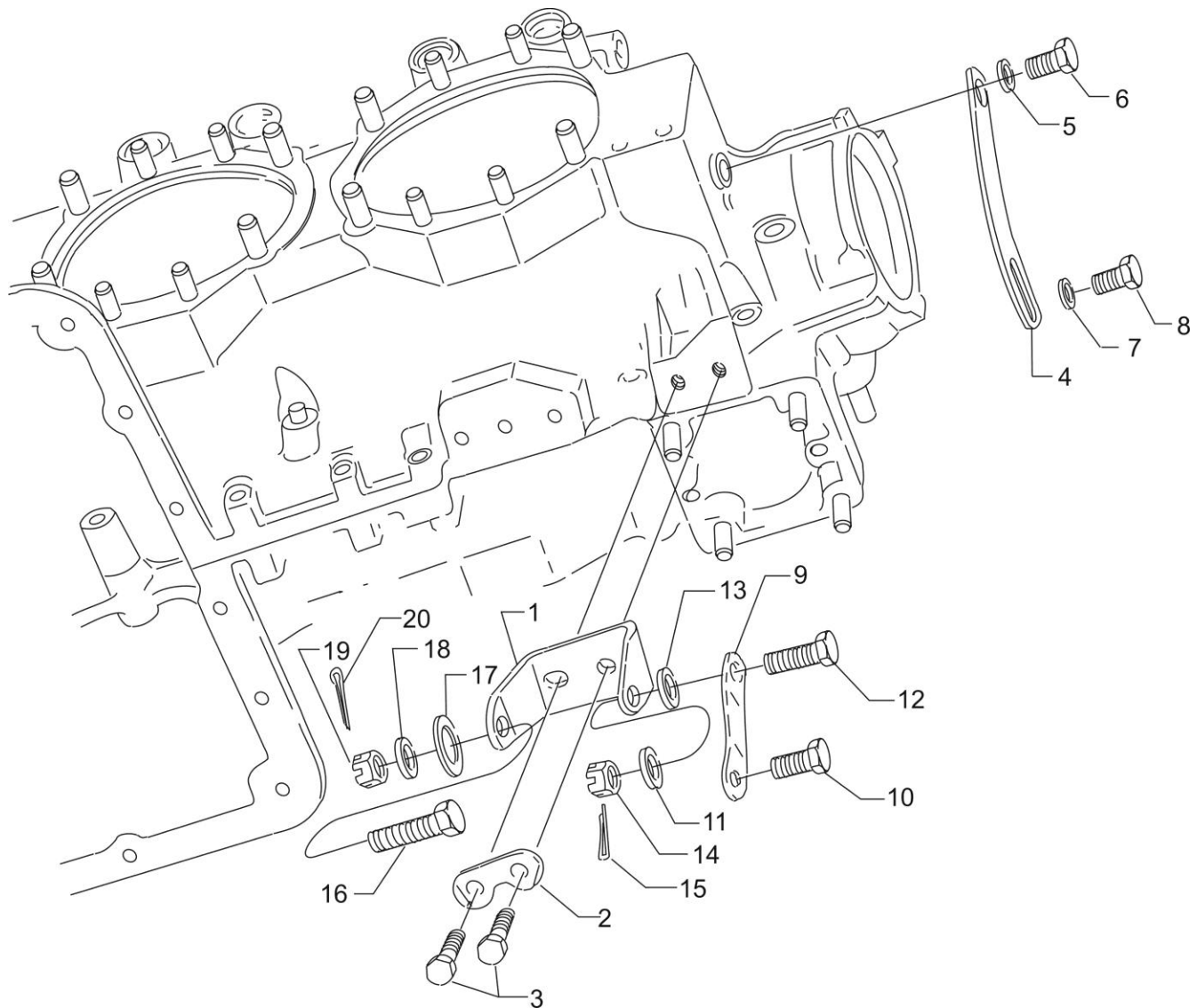
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OVERSIZE AND UNDERSIZE PARTS LISTING

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
61681	GUIDE		X	X		X	X	X				
66610	BUSHING		X	X								
66796	INSERT			X								
69796	DOWEL		X									
72057	SEAT			X		X	X					
72058	SEAT			X		X	X					
72155-S	BUSHING		X	X	X	X						
14H21950	RING			X		X						
74230	GUIDE		X	X		X	X					
74241	RING			X								
75656-S	BUSHING		X	X	X	X						
79024-S	BUSHING		X	X	X	X						
18M26105	BEARING									X	X	X
LW-13792	SEAL	See latest revision of Service Instruction No. 1324.										
18A26093	BEARING									X	X	X
18D26098	BEARING	See latest revision of Service Instruction No. 1512.										
STD-1065	DOWEL	X	X	X	X							

NOTE

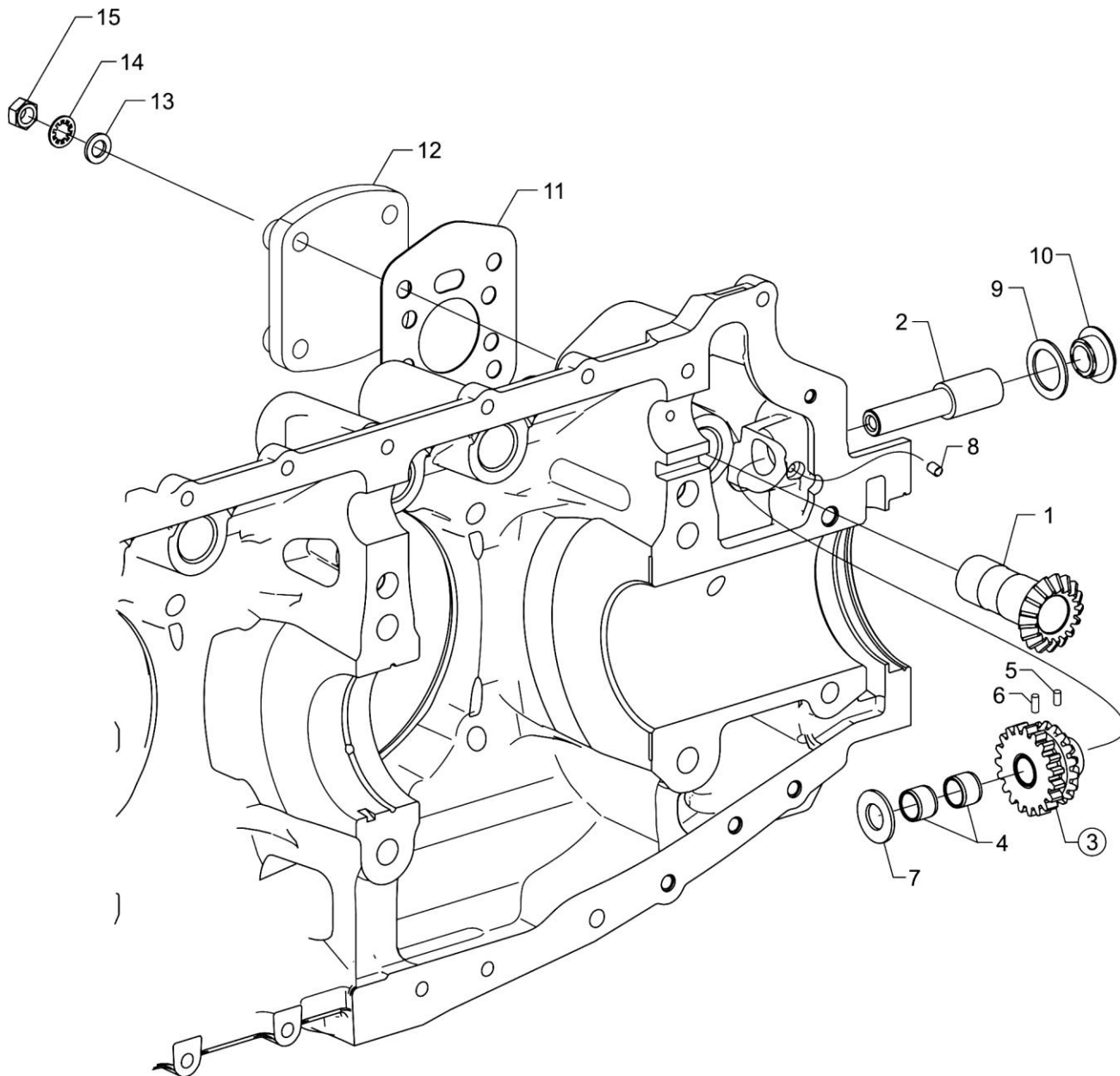
When ordering oversize and undersize parts, be sure to specify the required oversize and undersize dimension along with the proper part number. For example, to order bearing P/N 18D26098 bearing in .003 in. undersize, order P/N 18D26098-M03. Undersize code letter is "M" while oversize code letter is "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**

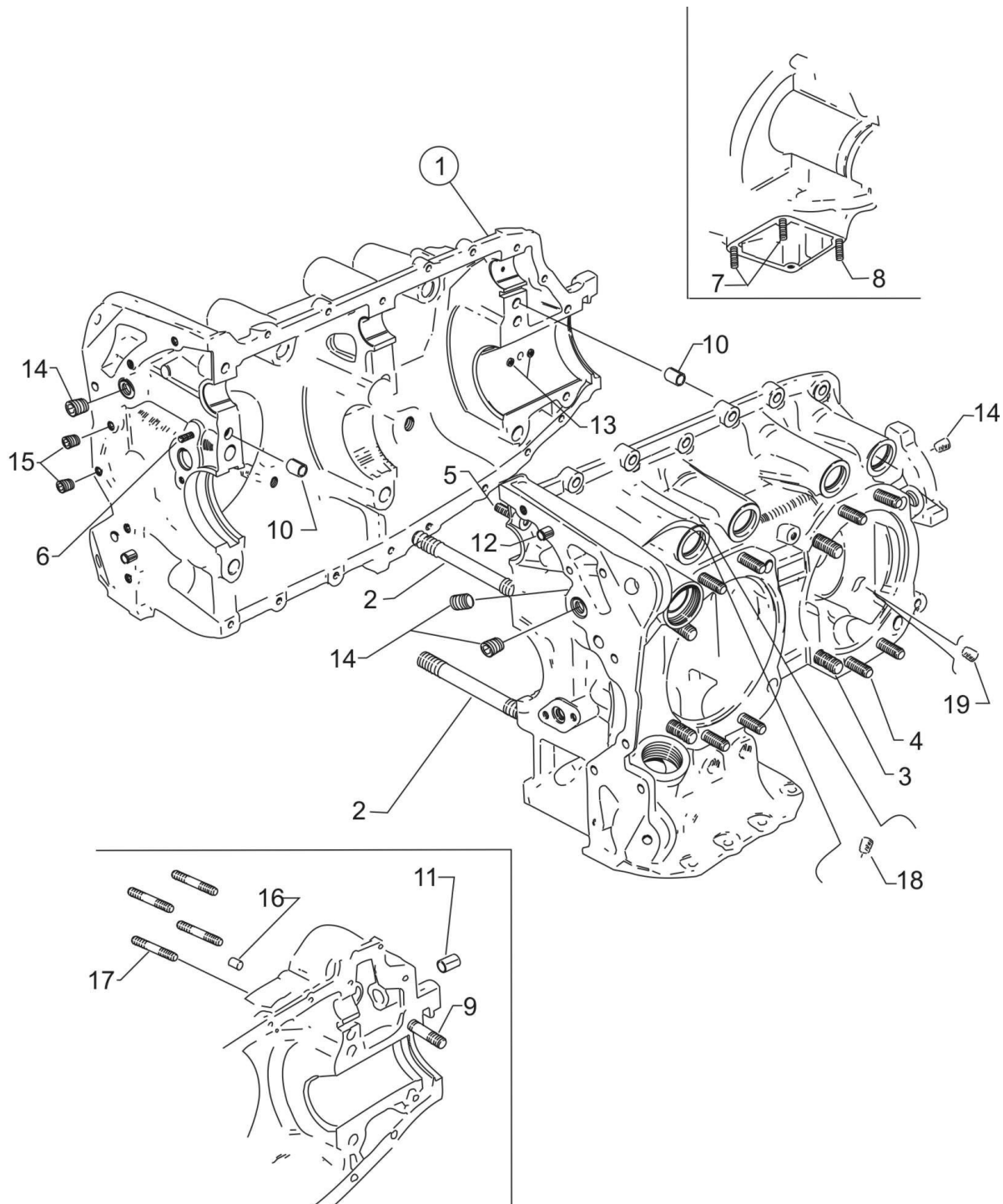
Figure Item	Code	Part Number	Description	Units per Assembly
1		07A19474	BRACKET, Alternator	1
2		73383	LOCKPLATE, 5/16 bolt x 1.00 spacing	1
3		LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex. head	2
4		75380	LINK, Alternator adjusting	1
5		STD-35	WASHER, 5/16 plain	1
6		LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. head, drilled	1
7		STD-1727	WASHER, Plain, 3/4 O.D. x 11/32 I.D. x 1/8 thick	1
8		LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. head, drilled	1
9		07F23268	STRUT, Alternator support	1
10		LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. head, drilled	1
11		STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	1
12	*	AN6-14	BOLT, 3/8-24 x 1-37/64 long, hex. head, drilled	1
		AN6-17	BOLT, 3/8-24 x 1-29/32 long, hex. head, drilled	1
13	*	STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	1
		STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	3
14		STD-872	NUT, 3/8-24 slotted	1
15		STD-713	COTTER PIN, 3/32 diameter x 3/4 long	1
16		AN6-16	BOLT, 3/8-24 x 1-53/64 long, hex. head, drilled	1
17	*	76534	SHIM, 1-1/8 O.D. x 13/32 I.D. x .005 thick	3
		76534	SHIM, 1-1/8 O.D. x 13/32 I.D. x .005 thick	5
18	*	STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	1
		STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	3
19		STD-872	NUT, 3/8-24 slotted	1
20		STD-713	COTTER PIN, 3/32 diameter x 3/4 long	1
* Use with LW-14371 Alternator Assembly only.				



**Propeller Governor Drive
Figure 2**

FRONT SECTION**FIGURE 2 – PROPELLER GOVERNOR DRIVE**

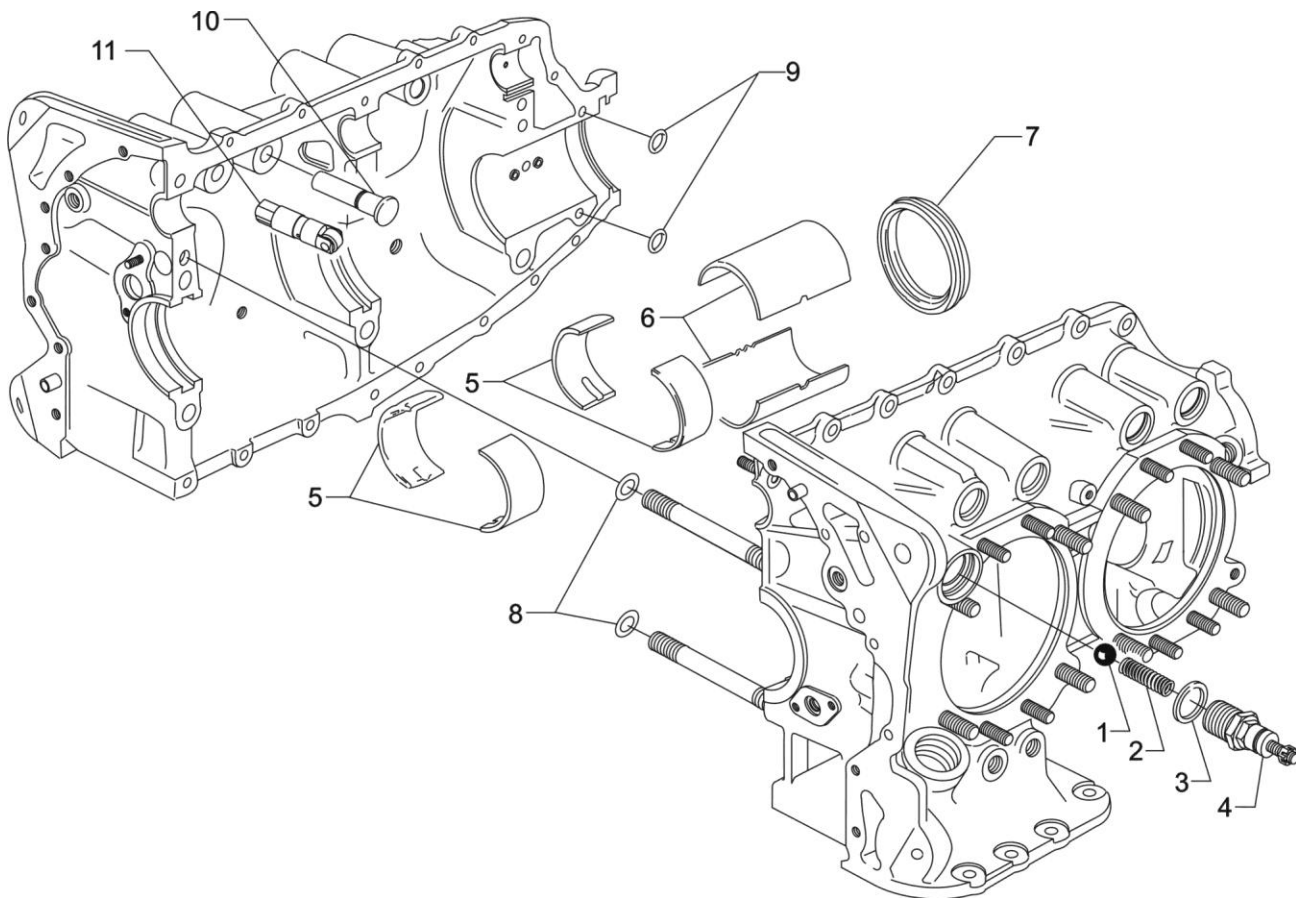
Figure Item	Code	Part Number	Description	Units per Assembly
1		77875	GEAR, Propeller governor drive	1
2		LW-14021	SHAFT, Propeller governor idler gear	1
3		77874	GEAR ASSEMBLY, Propeller governor idler	1
4		77872	BUSHING, Propeller governor idler gear	2
5		STD-19	DOWEL, 3/32 diameter x 7/32 long	1
6		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, Governor	1
12		72378	COVER, Governor drive	1
13		STD-35	WASHER, 5/16 plain	32
14		STD-475	WASHER, 5/16 lock, internal teeth	4
15		STD-1410	NUT, 5/16-18 plain	4
AR as required * For alternate set screw and installation information, refer to latest revision of Service Instruction No. 1343.				



Crankcase Assembly
Figure 3

POWER SECTION**FIGURE 3 - CRANKCASE ASSEMBLY**

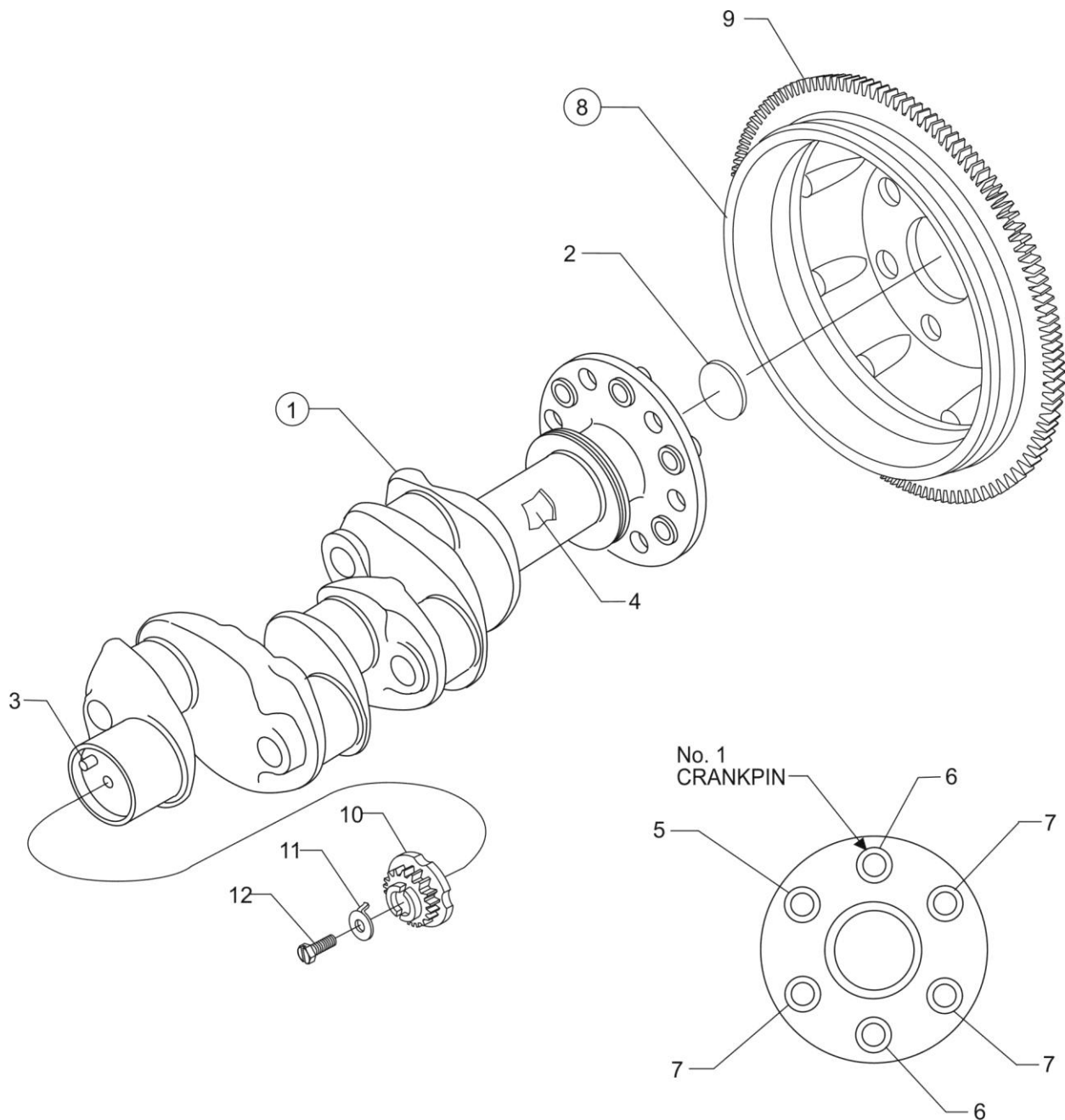
Figure Item	Code	Part Number	Description	Units per Assembly
1	*	LW-18399-1-S	CRANKCASE ASSEMBLY KIT	1
	P	LW-18399-1	CRANKCASE ASSEMBLY	1
	*	LW-18399-5-S	CRANKCASE ASSEMBLY KIT (Roller tappet engines)	1
	P	LW-18399-5	CRANKCASE ASSEMBLY (Roller tappet engines)	1
2		75154	STUD, 1/2-13 x 10-1/32 long	2
3		50-15	STUD, 1/2-20 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		LW-13793	STUD, 5/16-18 x 15/16 long, drilled	1
7		31C-12	STUD, 5/16-18 x 1-1/2 long	2
8		31C-13	STUD, 5/16-18 x 1-5/8 long	1
9		38-22	STUD, 3/8-16 x 2-3/4 long	1
10		STD-557	DOWEL, 1/2 diameter x 19/32 long, hollow	2
11		72158	BUSHING, Governor drive idler shaft	1
12		STD-514	DOWEL, 5/16 diameter x 1/2 long	2
13		69796	DOWEL, Crankshaft bearing	2
14		1102	PLUG, 1/8-27 NPT, allen head	4
15		STD-1623	INSERT, 1/4-20 x 3/8, Heli-coil	2
16		STD-1339	PLUG, 1/16-27 NPT, allen head	1
17		31C-17	STUD, 5/16-18 x 2-1/8 long	4
18		1102	PLUG, 1/8-27 NPT, allen head	1
19		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>				



Crankcase Related Parts
Figure 4

POWER SECTION**FIGURE 4 - CRANKCASE RELATED PARTS**

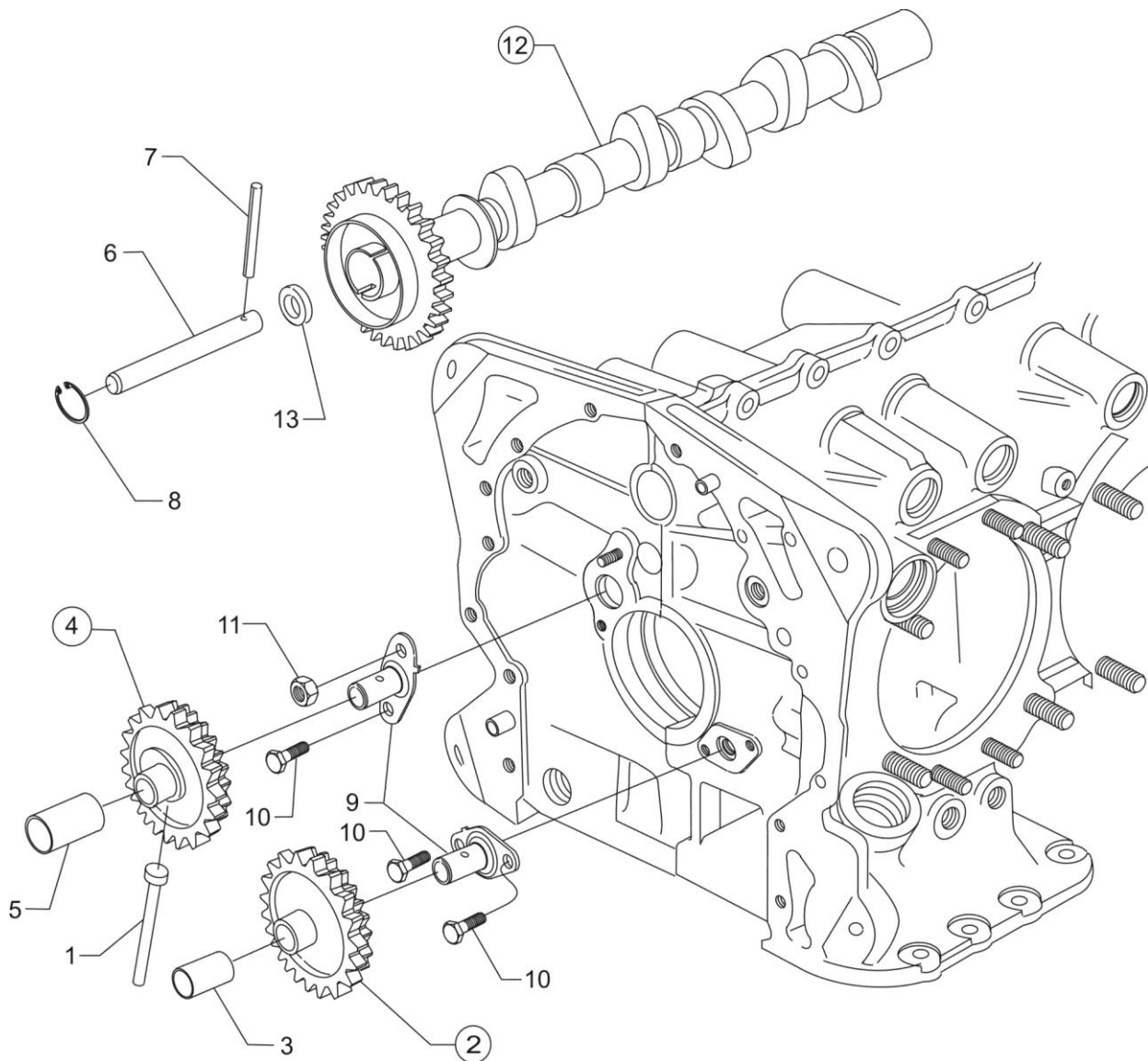
Figure Item	Code	Part Number	Description	Units per Assembly
1		1028-B	BALL, 11/16 diameter	1
2	*	61084	SPRING, Oil pressure relief valve	1
	*	68668	SPRING, Oil pressure relief valve	1
	*	77467	SPRING, Oil pressure relief valve	1
	*	LW-11713	SPRING, Oil pressure relief valve	1
	*	LW-18085	SPRING, Oil pressure relief valve	1
3		06E19769-1.25	GASKET, 1-1/4 I.D. x 1-1/2 O.D. x 3/32 annular	1
4		77808	VALVE ASSEMBLY, Oil pressure relief valve, adj.	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 7/16 I.D.	2
9		72091	RING, Oil seal, 23/64 I.D. x 7/64 diameter	2
10		15B26064	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 5

POWER SECTION**FIGURE 5 - CRANKSHAFT ASSEMBLY AND RELATED PARTS**

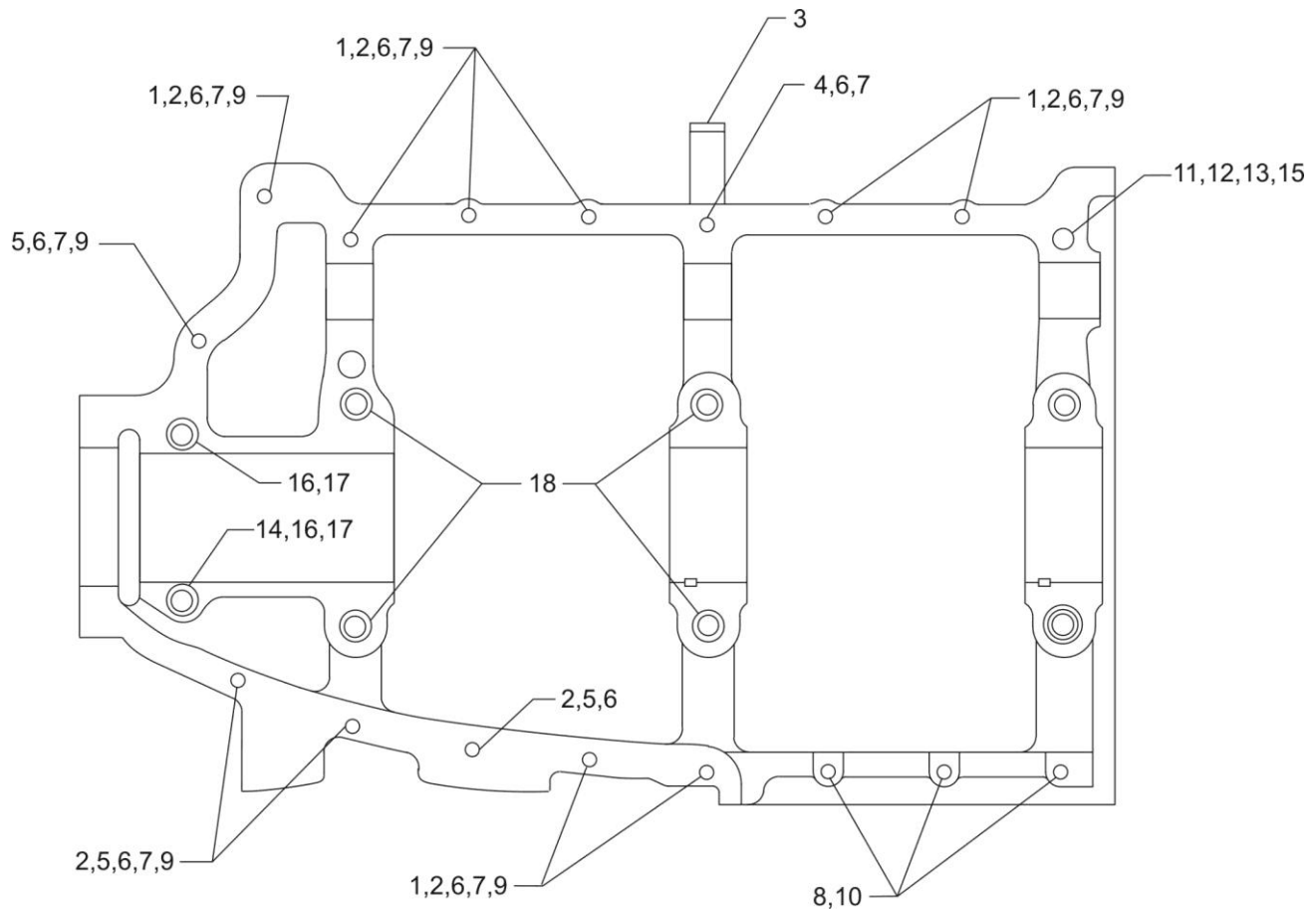
Figure Item	Code	Part Number	Description	Units per Assembly
1		13B47125	CRANKSHAFT ASSEMBLY	1
2		STD-1211	PLUG, 2.00 diameter expansion	1
3		STD-1065	DOWEL, Stepped, 5/16 and 1/4 diameter x 9/16 long	1
4		61510	PLUG, 1-3/4 OD	1
5		79024-S	BUSHING, Propeller flange, indexing	1
6		72155-S	BUSHING, Propeller flange, short	2
7		75656-S	BUSHING, Propeller flange, long	3
8		LW-16471	SUPPORT ASSEMBLY, Starter ring gear, 12/14 pitch	1
9		72566	GEAR, Starter ring, 12/14 pitch	1
10	SB*	13S19646	GEAR, Crankshaft	1
11		LW-18639	LOCKPLATE, Crankshaft gear	1
12		STD-2246	BOLT, 5/16-24 x 1.00 long	1
SB Referencing Service Bulletin * Refer to latest revision of Service Bulletin No. 475 for proper installation.				



Crankshaft Idler Gears, Tachometer Drive and Camshaft
Figure 6

POWER SECTION**FIGURE 6 - CRANKSHAFT IDLER GEARS, TACHOMETER DRIVE AND CAMSHAFT**

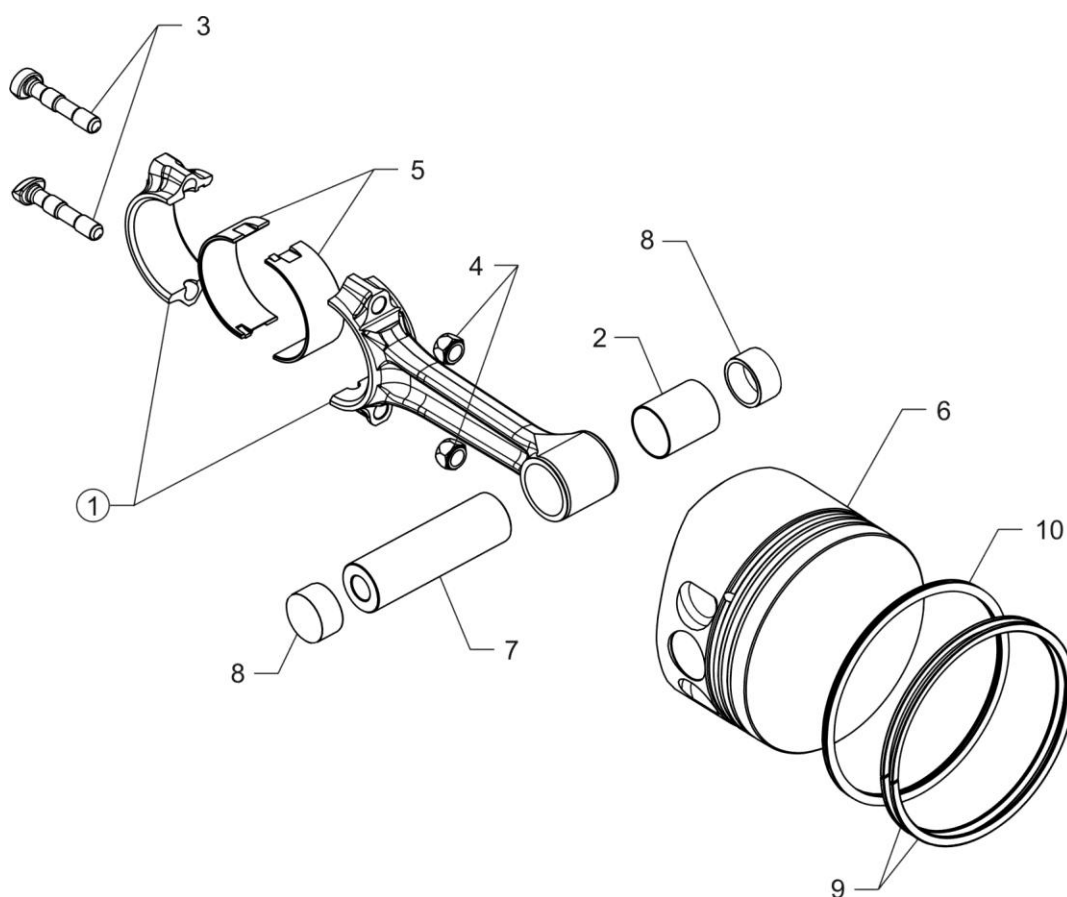
Figure Item	Code	Part Number	Description	Units per Assembly
1		61544	PLUNGER, Fuel pump long	1
2		74996	GEAR ASSEMBLY, Crankshaft idler, plain	1
		74996	GEAR ASSEMBLY, Crankshaft idler, plain	2
3		77309	BUSHING, Crankshaft idler gear	1
4		75072	GEAR ASSEMBLY, Crankshaft idler	1
5		77309	BUSHING, Crankshaft idler gear	1
6		76121	SHAFT ASSEMBLY, Tachometer	1
7		LW-18667	PIN, 3/16 diameter x 2-21/64 long	1
8		STD-2231	RING, Internal retaining	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-18843	CAMSHAFT ASSEMBLY	1
	*	15M23456	CAMSHAFT ASSEMBLY (Roller tappet engines)	1
13		76118	SPACER, Tachometer shaft centering	1
* Only sold as an exchange part.				



Crankcase Attaching Parts
Figure 8

POWER SECTION**FIGURE 7 - CRANKCASE ATTACHING PARTS**

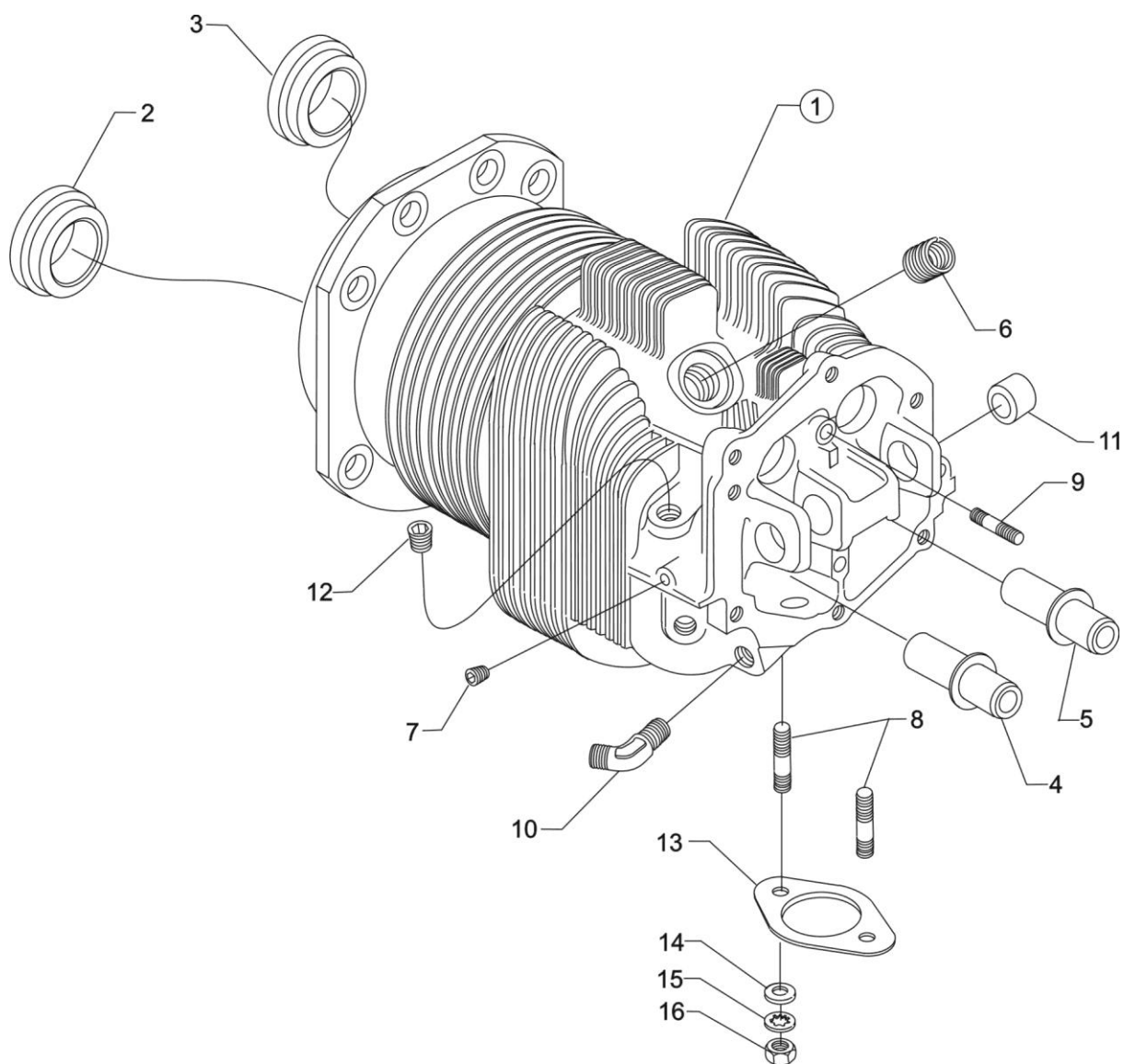
Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-25-1.50	BOLT, 1/4-20 x 1-1/2 long, hex. head	8
2		STD-8	WASHER, 1/4 plain	20
3		60803	STRAP, Lifting	1
4		LW-25-1.75	BOLT, 1/4-20 x 1-3/4 long, hex. head	1
5		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	4
6		STD-160	WASHER, 1/4 lock, 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, hex. head, drilled	3
9		STD-8	WASHER, 1/4 plain	9
10		STD-2249	NUT, 1/4-20 slotted shear	3
11		STD-33	WASHER, 3/8 plain, 1/16 thick	1
12		AN960-616L	WASHER, 3/8 plain, 1/32 thick	1
13		STD-872	NUT, 3/8-24 slotted	1
14		AN6-34A	BOLT, 3/8-24 x 3-37/64 long, hex. head	1
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
18		76220	STUD, 1/2-20 x 10-11/16 long	4



Connecting Rods, Pistons and Ring Assemblies
Figure 8

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

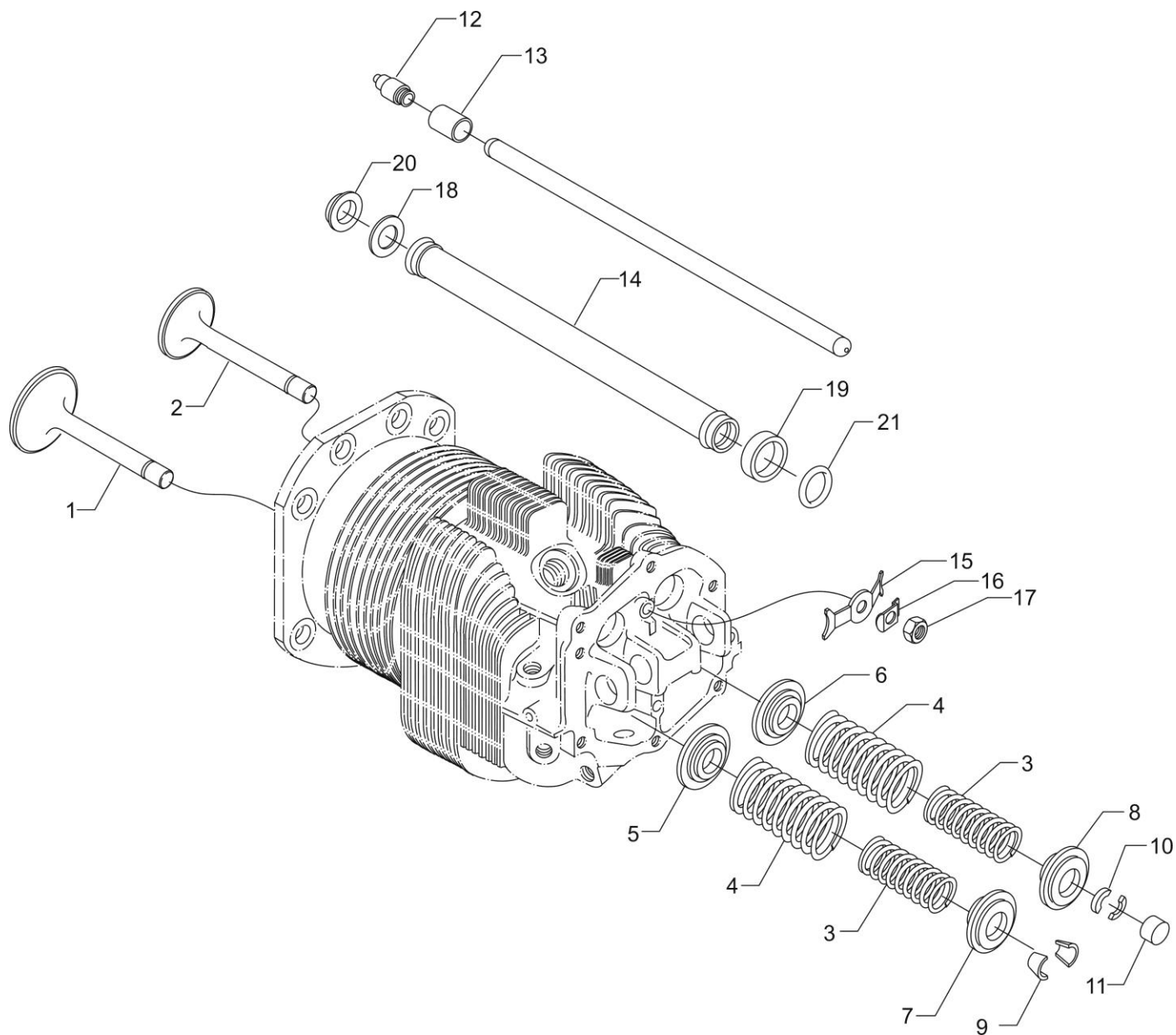
Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-11750-S	CONNECTING ROD ASSEMBLY	4
2		LW-13923	BUSHING, Connecting rod, upper	4
3	* P	75061 14S23890	BOLT, Connecting rod	8
4		LW-12186	NUT, Connecting rod bolt	8
5		18M26105	BEARING, Connecting rod	8
6		75089	PISTON, 8.5:1 compression 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 regulating, expander type	4
P Lycoming proprietary part. Listed for reference purpose only, cannot be purchased. * Service use only. ** See latest revision of Lycoming Service Instruction No. 1267.				



Cylinder Assembly
Figure 9

CYLINDER SECTION
FIGURE 9 - CYLINDER ASSEMBLY

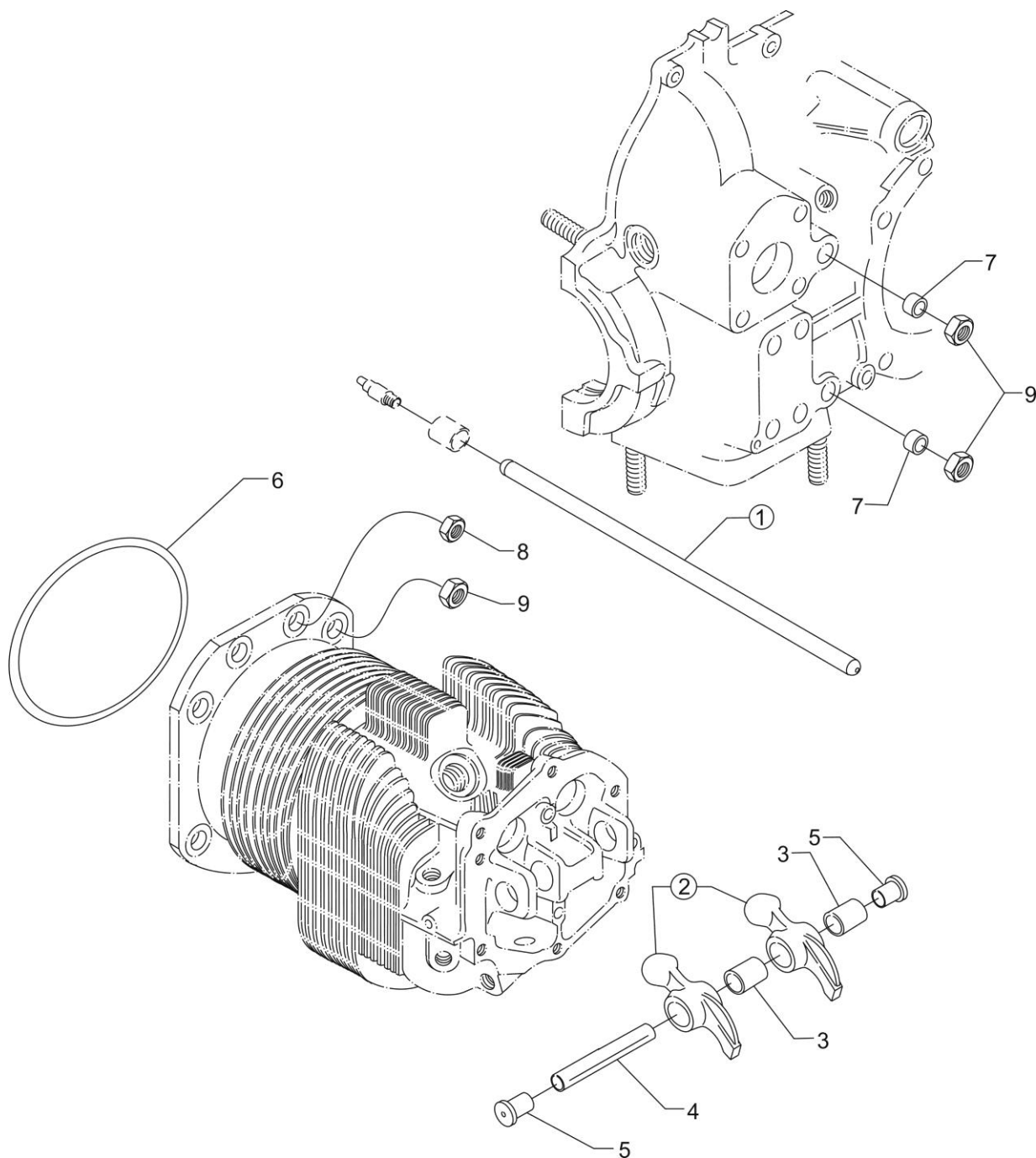
Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-12427	CYLINDER ASSEMBLY, Nitrided	4
2		72057	SEAT, Valve, intake	4
3		72058	SEAT, Valve, exhaust	4
4	P*	76943	GUIDE, Valve, intake	4
5	P*	16R22126	GUIDE, Valve, exhaust	4
6	P	66796	INSERT, Spark plug, 18-1.5MM	8
7		STD-1353	INSERT, No. 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 Lycoming proprietary part. Listed for reference purposes only, cannot be purchased. * See latest revision of Service Instruction No. 1256 for service valve guides. ** Assemble in cylinder head when no priming lines.				



Valve Assembly and Related Parts
Figure 10

CYLINDER SECTION**FIGURE 10 – VALVE ASSEMBLY AND RELATED PARTS**

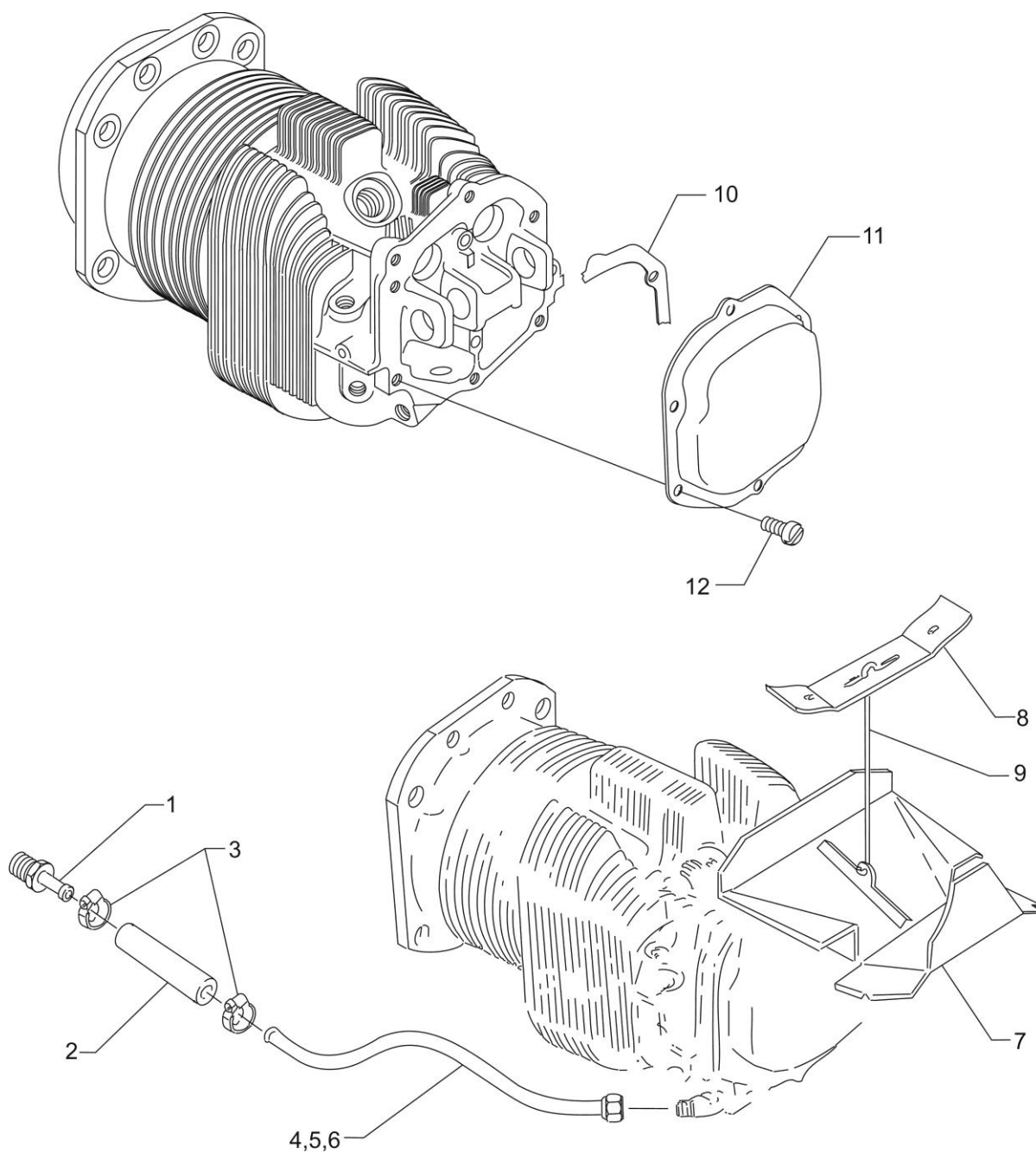
Figure Item	Code	Part Number	Description	Units per Assembly
1		17A23938	VALVE, Intake	4
2		17B23936	VALVE, Exhaust (rotator type)	4
3		LW-11795	SPRING, Valve, inner	8
4		LW-11800	SPRING, Valve, outer	8
5		65441	SEAT, Valve spring, lower intake	4
6		LW-13323	SEAT, Valve spring, lower exhaust	4
7		LW-10077	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		LW-11485	SHROUD TUBE ASSEMBLY, Push rod	8
		15G23461	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 1-3/8 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
* This seal needs to be installed on both roller tappet engines and flat tappet engines				



**Cylinder Related Parts
Figure 11**

CYLINDER SECTION**FIGURE 11 – CYLINDER RELATED PARTS**

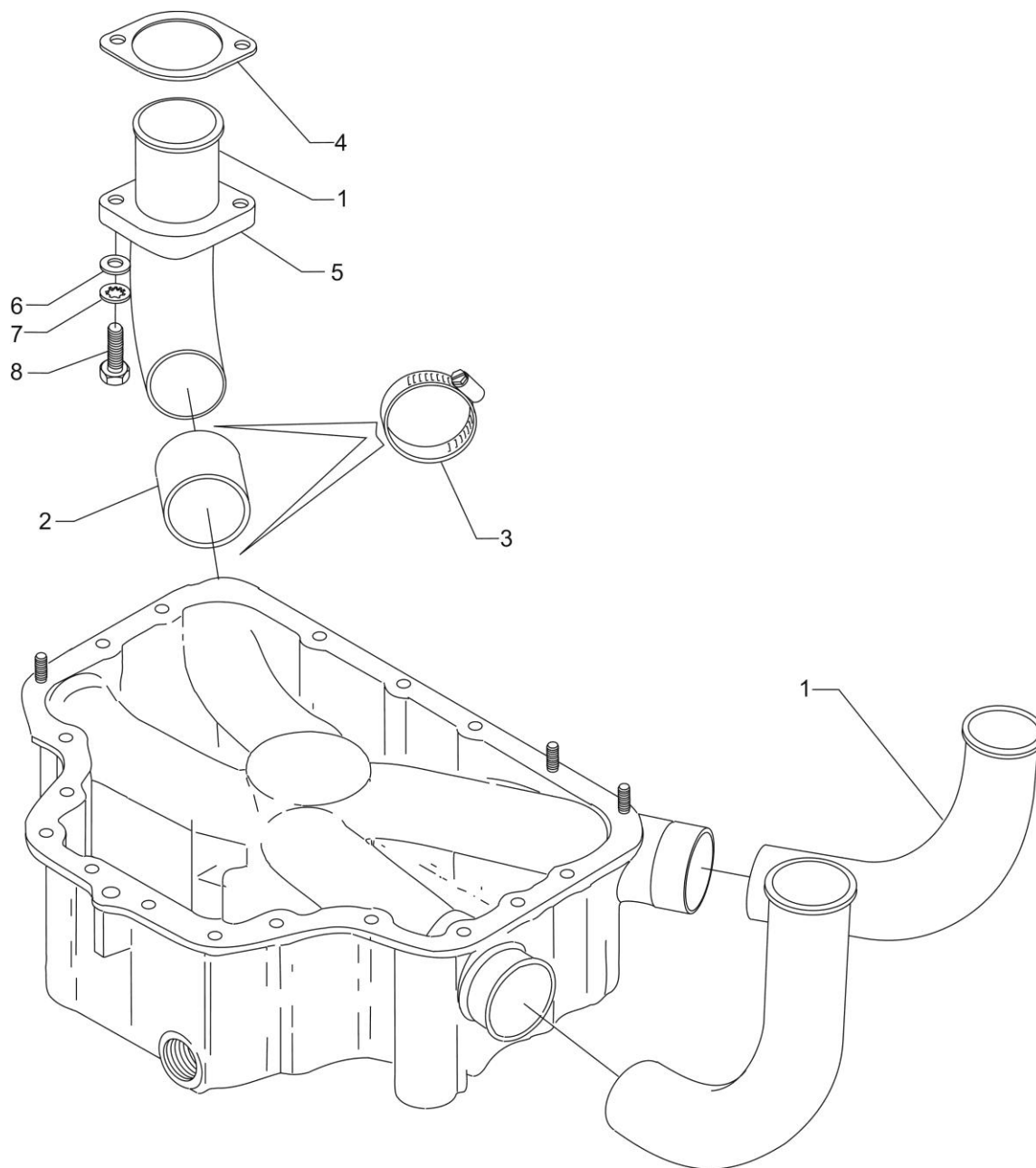
Figure Item	Code	Part Number	Description	Units per Assembly
1	*♦AR	15F19957-28	ROD ASSEMBLY, Push (A total of 8 required)	AR
	*♦AR	15F19957-29	ROD ASSEMBLY, Push (A total of 8 required)	AR
	*♦AR	15F19957-30	ROD ASSEMBLY, Push (A total of 8 required)	AR
	*♦AR	15F19957-31	ROD ASSEMBLY, Push (A total of 8 required)	AR
	*♦AR	15F19957-32	ROD ASSEMBLY, Push (A total of 8 required)	AR
	*♦AR	15F19957-33	ROD ASSEMBLY, Push (A total of 8 required)	AR
	†♦AR	15F19957-34	ROD ASSEMBLY, Push (A total of 8 required)	AR
	♦AR	15F19957-35	ROD ASSEMBLY, Push (A total of 8 required)	AR
	♦AR	15F19957-36	ROD ASSEMBLY, Push (A total of 8 required)	AR
	♦AR	15F19957-37	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		71481	RING, Oil seal, 3/32 diameter x 4-27/32 long	4
7		74887	SPACER, 33/64 I.D. x 7/8 O.D. x 3/8 thick	2
8		383-B	NUT, 3/8-24 plain	16
9		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>† This push rod can be used on both flat tappet and 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>				



**Rocker Box Cover, Cylinder Head Drain Tubes,
and Intercylinder Cooling Baffles
Figure 12**

CYLINDER SECTION**FIGURE 12– ROCKER BOX COVER, CYLINDER HEAD DRAIN TUBES,
AND INTERCYLINDER COOLING BAFFLES**

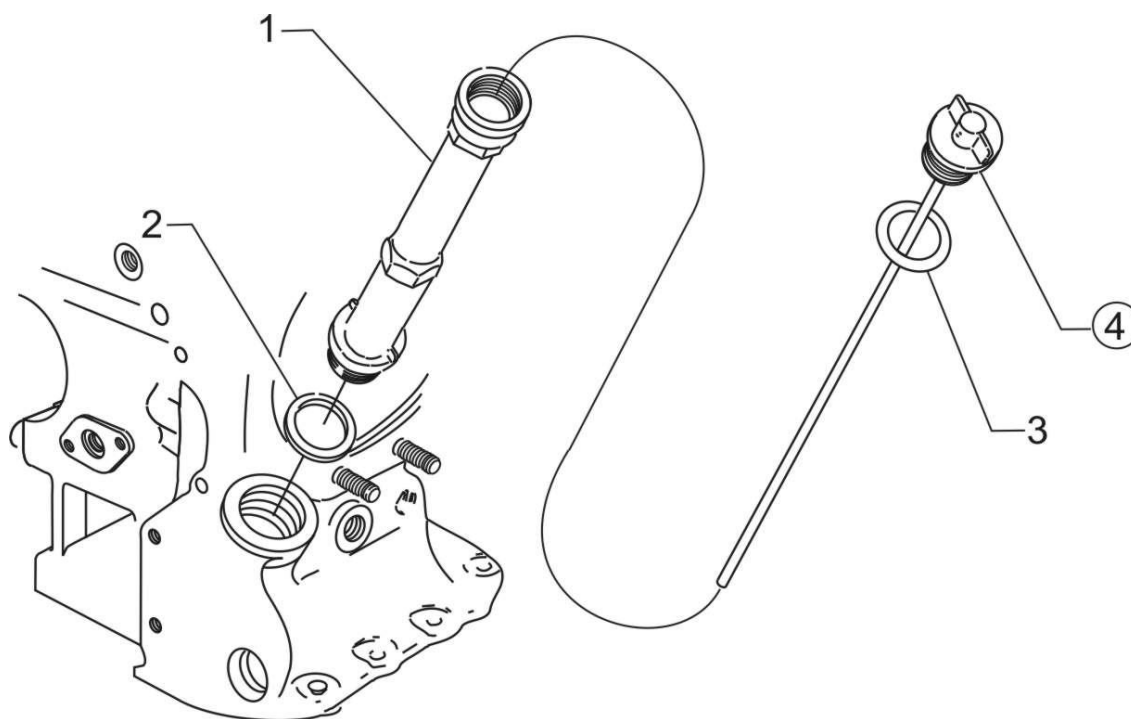
Figure Item	Code	Part Number	Description	Units per Assembly
1		STD-684	NIPPLE, Straight, 3/8 I.D. hose	4
2		STD-1821	HOSE, 3/8 I.D. x 2-1/2 long	4
3		LW-15592-5-05	CLAMP, Hose	8
4		68759	TUBE ASSY., Cylinder head oil drain, cyl. no. 1	1
5		68760	TUBE ASSY., Cylinder head oil drain, cyl. no. 2	1
6		68761	TUBE ASSY., Cylinder head oil drain, cyls. no. 3, 4	2
7		75339	BAFFLE ASSEMBLY, Intercylinder	2
8		71611	RETAINER, Intercylinder baffle	2
9		71610	HOOK, Intercylinder baffle retainer	2
10		75906	GASKET, Rocker box cover	4
11		61247	COVER, Rocker box	4
12		STD-1925	SCREW, 1/4-20 x 5/8 long, pan. head, self-locking	24



Intake Pipes and Attaching Parts
Figure 13

CYLINDER SECTION**FIGURE 13 – INTAKE PIPES AND ATTACHING PARTS**

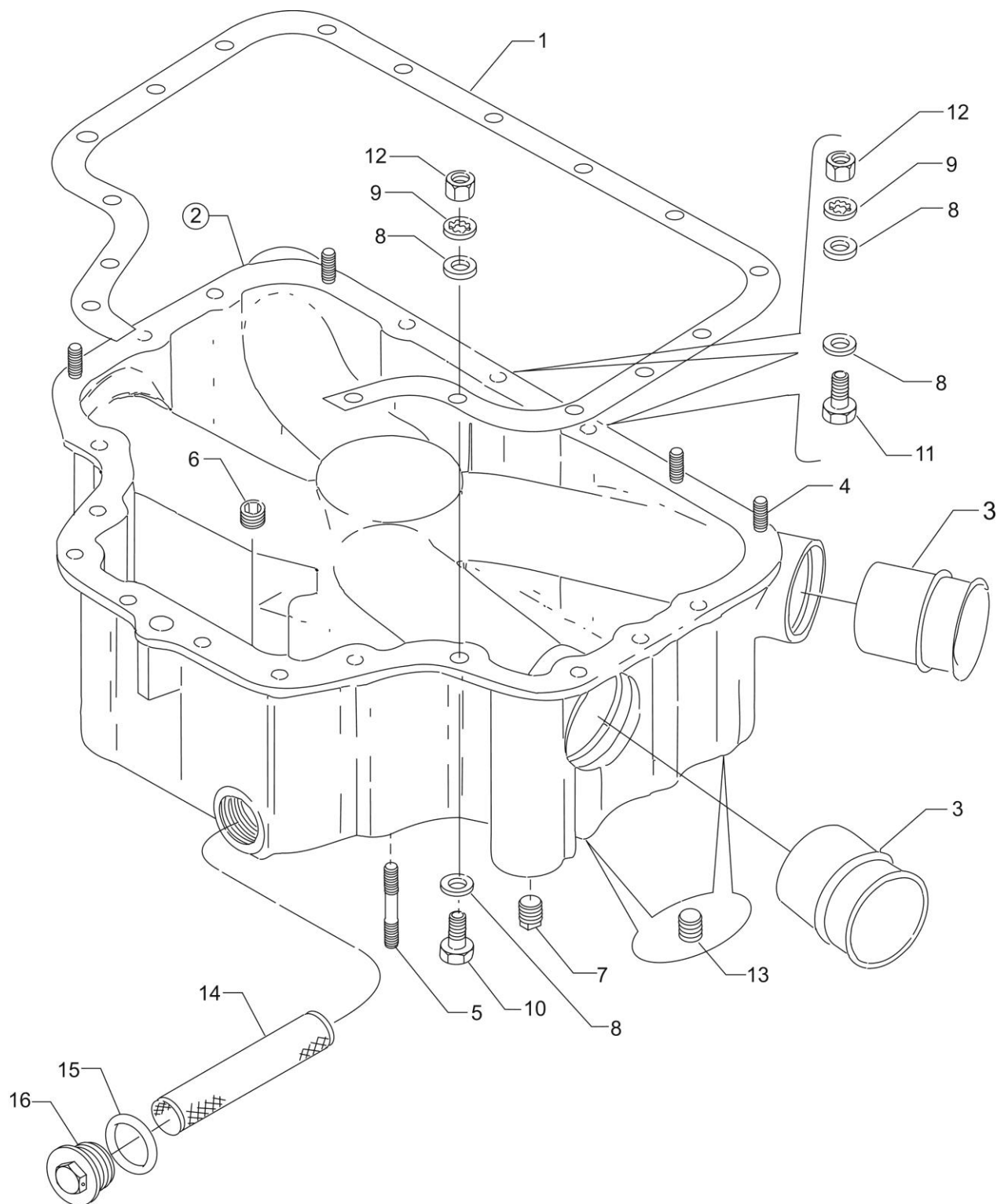
Figure Item	Code	Part Number	Description	Units per Assembly
1		70485	PIPE, Intake	4
2		69603	HOSE, 1-3/4 I.D. x 2-3/16 O.D. x 1-3/4 long	4
3		LW-15592-8-28	CLAMP, Hose	8
4		71973	GASKET, 2 bolt flange, 1-7/8 I.D.	4
5		73346	FLANGE, Intake pipe, upper	4
6		STD-8	WASHER, 1/4 plain	8
7		STD-160	WASHER, 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 Assembly
Figure 14**

LUBRICATION SYSTEM**FIGURE 14 – OIL LEVEL GAGE ASSEMBLY**

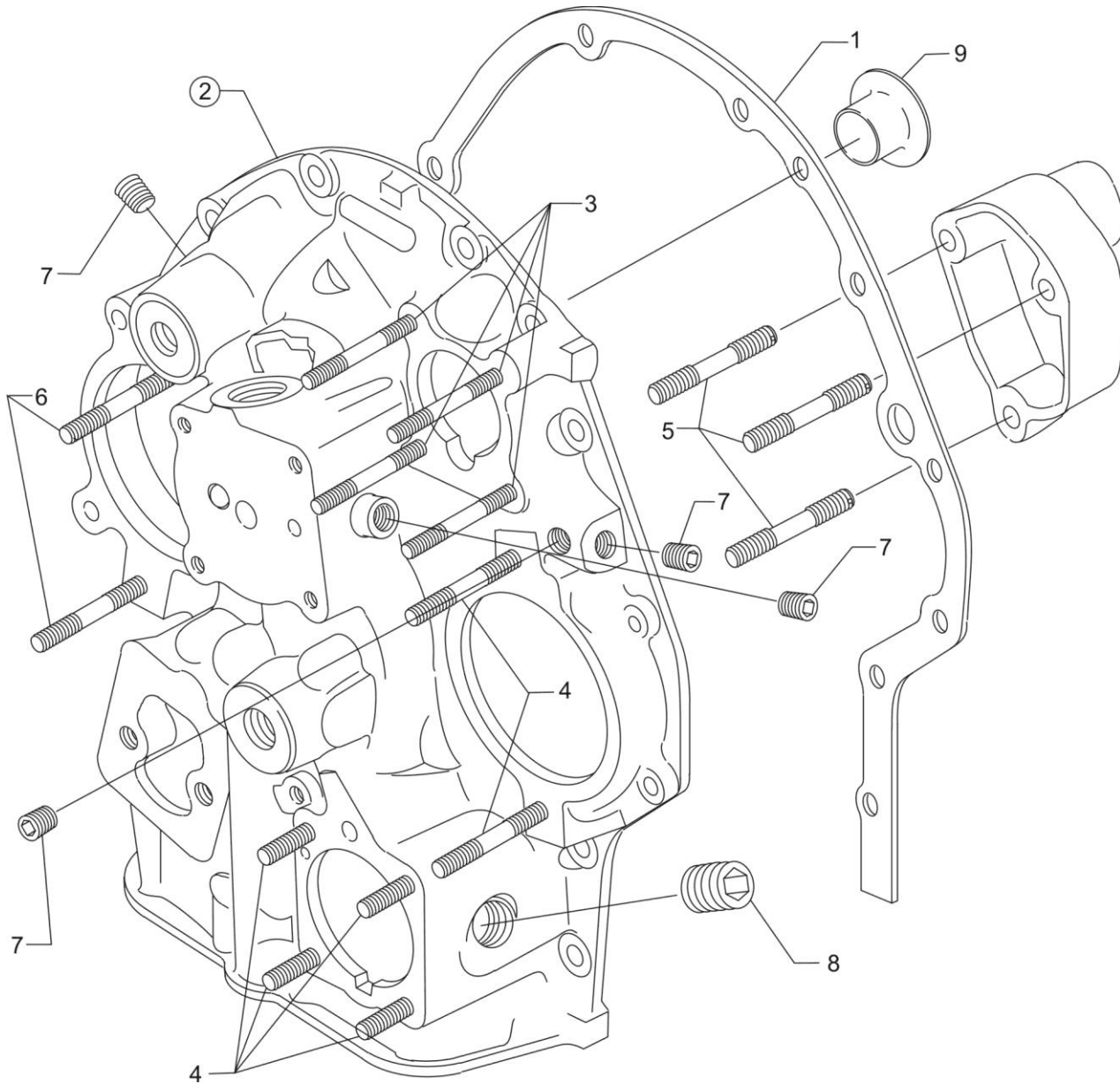
Figure Item	Code	Part Number	Description	Units per Assembly
1		75736	TUBE, Oil level gage, long	1
2		72059	GASKET, Oil level gage	1
3		74068	RING, Oil level gage seal	1
4		LW-16783-18	GAGE ASSEMBLY, Oil level	1



**Oil Sump Assembly and Oil Suction Screen
Figure 15**

LUBRICATION SYSTEM**FIGURE 15 – OIL SUMP ASSEMBLY AND OIL SUCTION SCREEN**

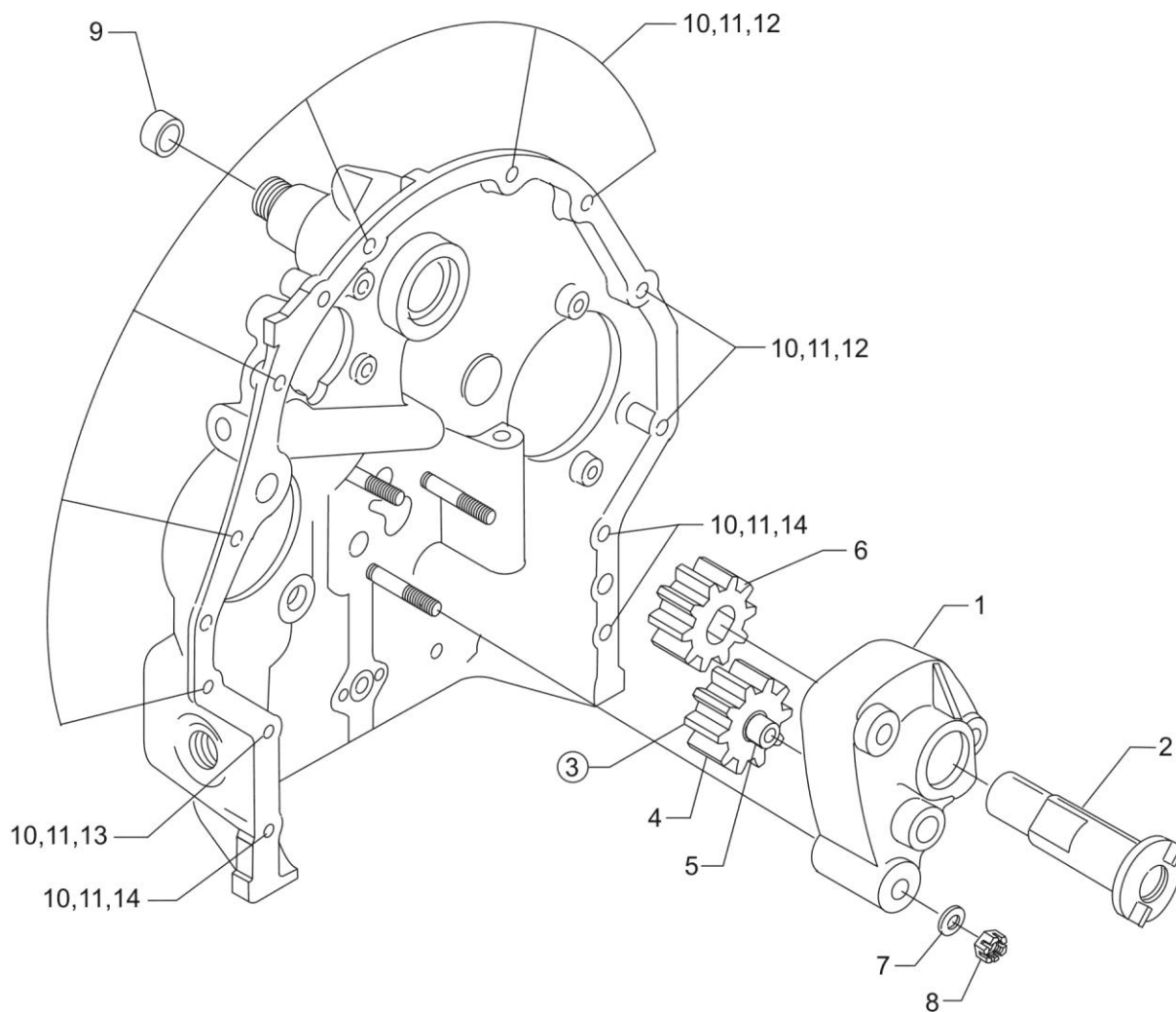
Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-13353	GASKET, Oil sump	1
2		78915	SUMP ASSEMBLY, Oil	1
3		78914	CONNECTION, Intake pipe	4
4		61400	STUD, 1/4-20 x 1-3/16 long	4
5		31C-15	STUD, 5/16-18 x 1-7/8 long	4
6		STD-91	PLUG, 1/2-14 NPT, allen head	1
7		STD-551	PLUG, 1/2-14 NPT, 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		STD-2229	PLUG, 1/2-14 NPT, allen head	2
14		70484	SCREEN, Oil suction	1
15		06E19769-1.00	GASKET, 1.00 I.D. x 1/4 O.D. x 3/32 annular	1
16		LW-12545	PLUG, 5/8 hex. head x 1.00-20 thread	1



**Accessory Housing Assembly
Figure 16**

ACCESSORY DRIVES**FIGURE 16 – ACCESSORY HOUSING ASSEMBLY**

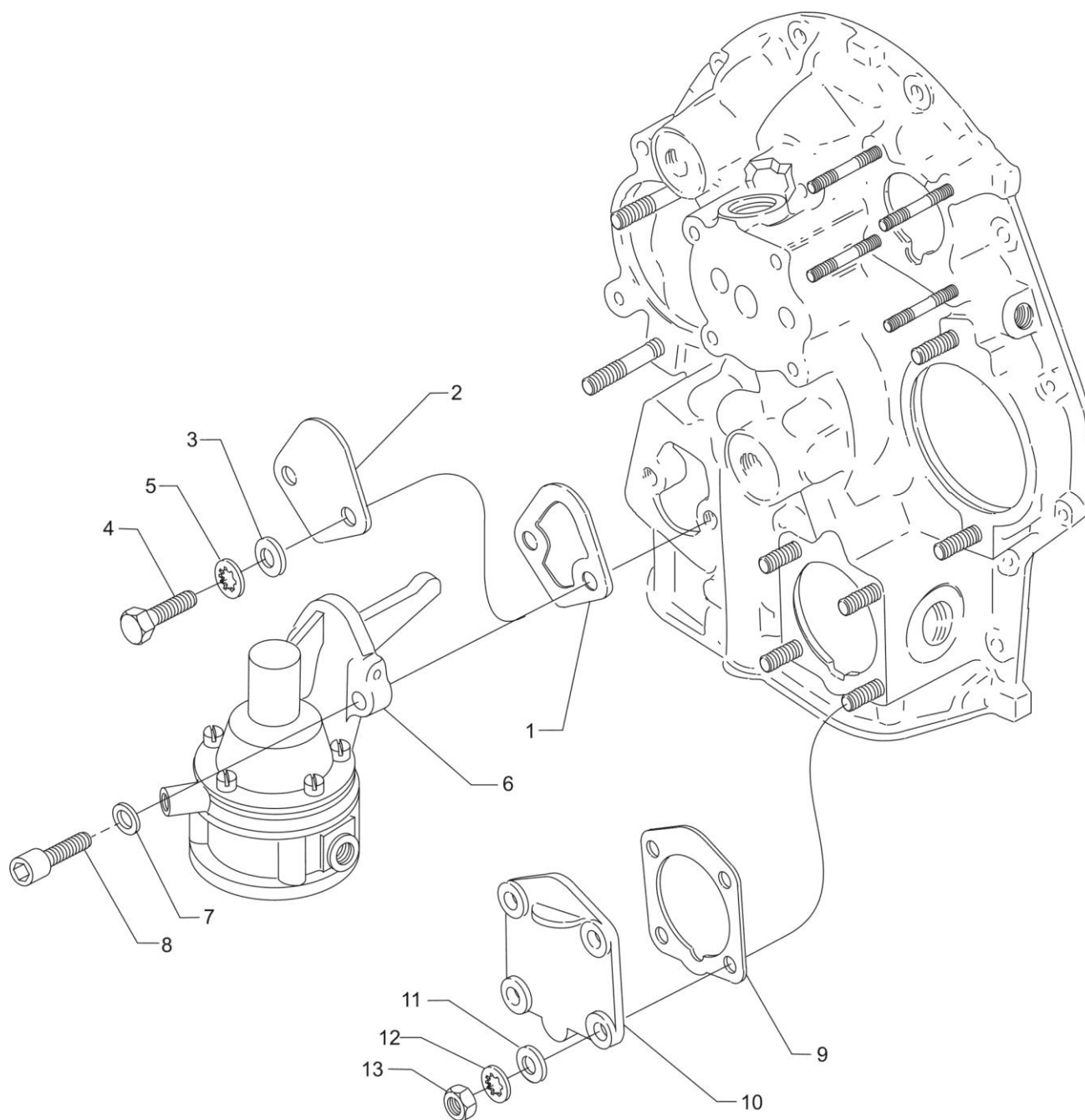
Figure Item	Code	Part Number	Description	Units per Assembly
1		73818	GASKET, Accessory housing	1
2		21A21533-04	HOUSING ASSEMBLY, Accessory	1
3		25C-22	STUD, 1/4-20 x 2-3/4 long	4
4		31C-12	STUD, 5/16-18 x 1-1/2 long	6
5		31C-19	STUD, 5/16-18 x 2-3/8 long	2
6		31CD-17	STUD, 5/16-18 x 2-1/8 long, drilled	3
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 17

ACCESSORY DRIVES**FIGURE 17 – OIL PUMP ASSEMBLY AND ACCESSORY HOUSING ATTACHING PARTS**

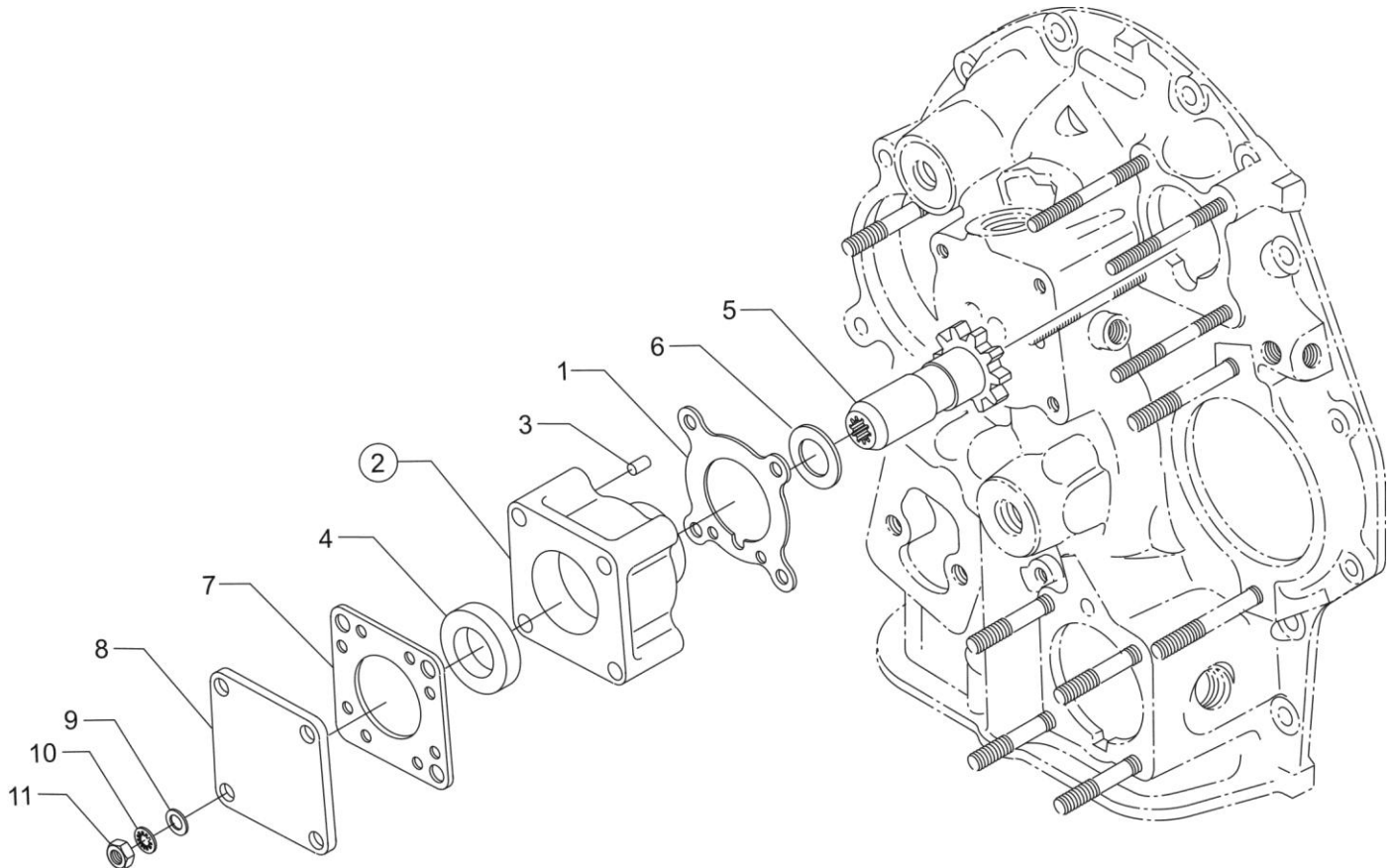
Figure Item	Code	Part Number	Description	Units per Assembly
1		78531	BODY ASSEMBLY, Oil pump	1
2		61174	SHAFT, Oil pump drive	1
3	*	LW-18110	IMPELLER ASSEMBLY, Oil pump driven	1
4		LW-18108	IMPELLER, Oil pump driven	1
5		78530	SHAFT, Oil pump idler	1
6	*	LW-18109	IMPELLER, Oil pump driven	1
7		STD-35	WASHER, 5/16 plain	3
8		STD-1420	NUT, 5/16-18 slotted	3
9		LW-14260	SEAL, Oil, tachometer drive	1
10		STD-8	WASHER, 1/4 plain	12
11		STD-160	WASHER, 1/4 lock, internal teeth	12
12		LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. head	9
13		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	1
14		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 and Propeller Governor Drive Covers
Figure 18

ACCESSORY DRIVES**FIGURE 18 – FUEL PUMP AND PROPELLER GOVERNOR DRIVE COVERS**

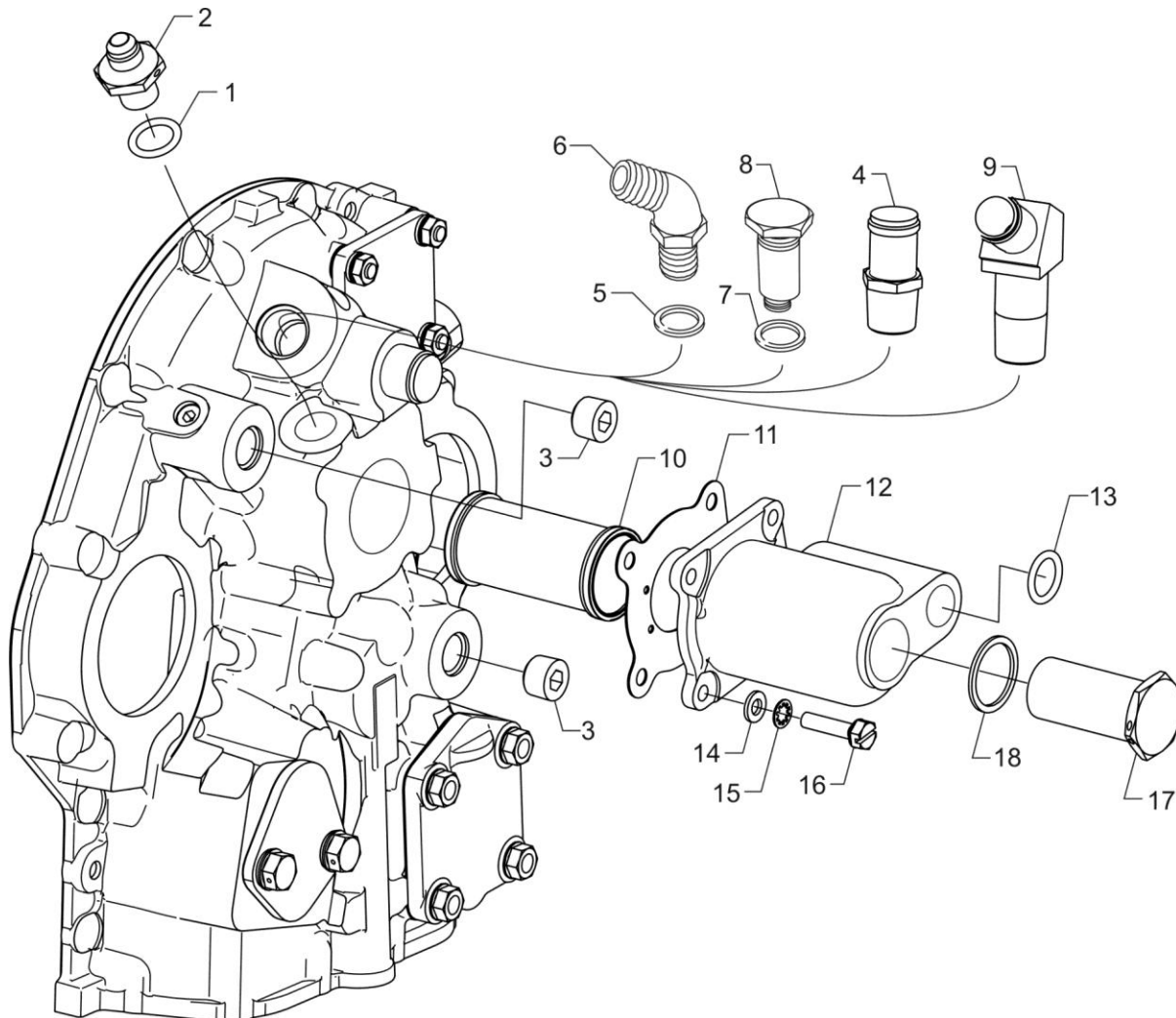
Figure Item	Code	Part Number	Description	Units per Assembly
1		60096	GASKET, Fuel pump	1
2		03D23350	COVER, Fuel pump	1
3		STD-33	WASHER, 3/8 plain	2
4		LW-38-0.75	BOLT, 3/8-16 x 3/4 long, hex. head	2
5		STD-678	WASHER, 3/8 lock, internal teeth	2
6		LW-15472	FUEL PUMP, Low pressure, dual diaphragm	1
7		STD-33	WASHER, 3/8 plain	2
8		STD-1882	SCREW, 3/8-16 x 1-9/32 long, socket head, drilled	2
9		69551	GASKET, Accessory drive adapter	1
10		69106	COVER, Governor drive adapter pad	1
11		STD-35	WASHER, 5/16 plain	4
12		STD-475	WASHER, 5/16 lock, internal teeth	4
13		STD-1410	NUT, 5/16-18 plain	4



Vacuum Pump Drive and Cover
Figure 19

ACCESSORY DRIVES**FIGURE 19 – VACUUM PUMP DRIVE AND COVER**

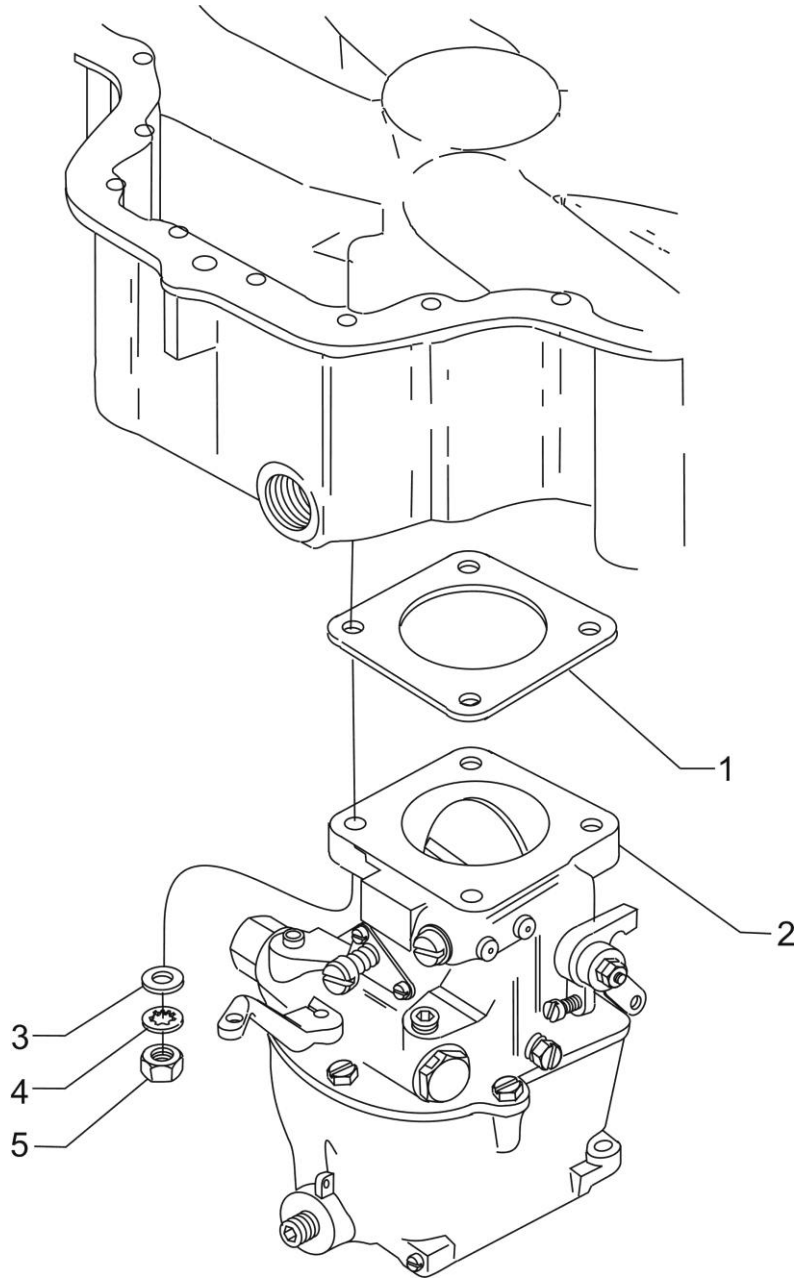
Figure Item	Code	Part Number	Description	Units per Assembly
1		61183	GASKET, Accessory adapter	1
2		61098	ADAPTER ASSEMBLY, Vacuum pump	1
3		STD-1774	PIN, 1/8 diameter x 1/4 long	1
4		06A19956	OIL SEAL, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide	1
5		72970	GEAR ASSEMBLY, Vacuum pump driven	1
6		71596	WASHER, Accessory driven gear	1
7		8313	GASKET, Vacuum pump	1
8		60430	COVER, Vacuum pump	1
9		STD-8	WASHER, 1/4 plain	4
10		STD-160	WASHER, 1/4 lock, internal teeth	4
11		STD-1411	NUT, 1/4-20 plain	4



**Oil Pressure Screen and Oil Cooler Bypass Valve
Figure 20**

ACCESSORY DRIVES**FIGURE 20 – OIL PRESSURE SCREEN AND OIL COOLER BYPASS VALVE**

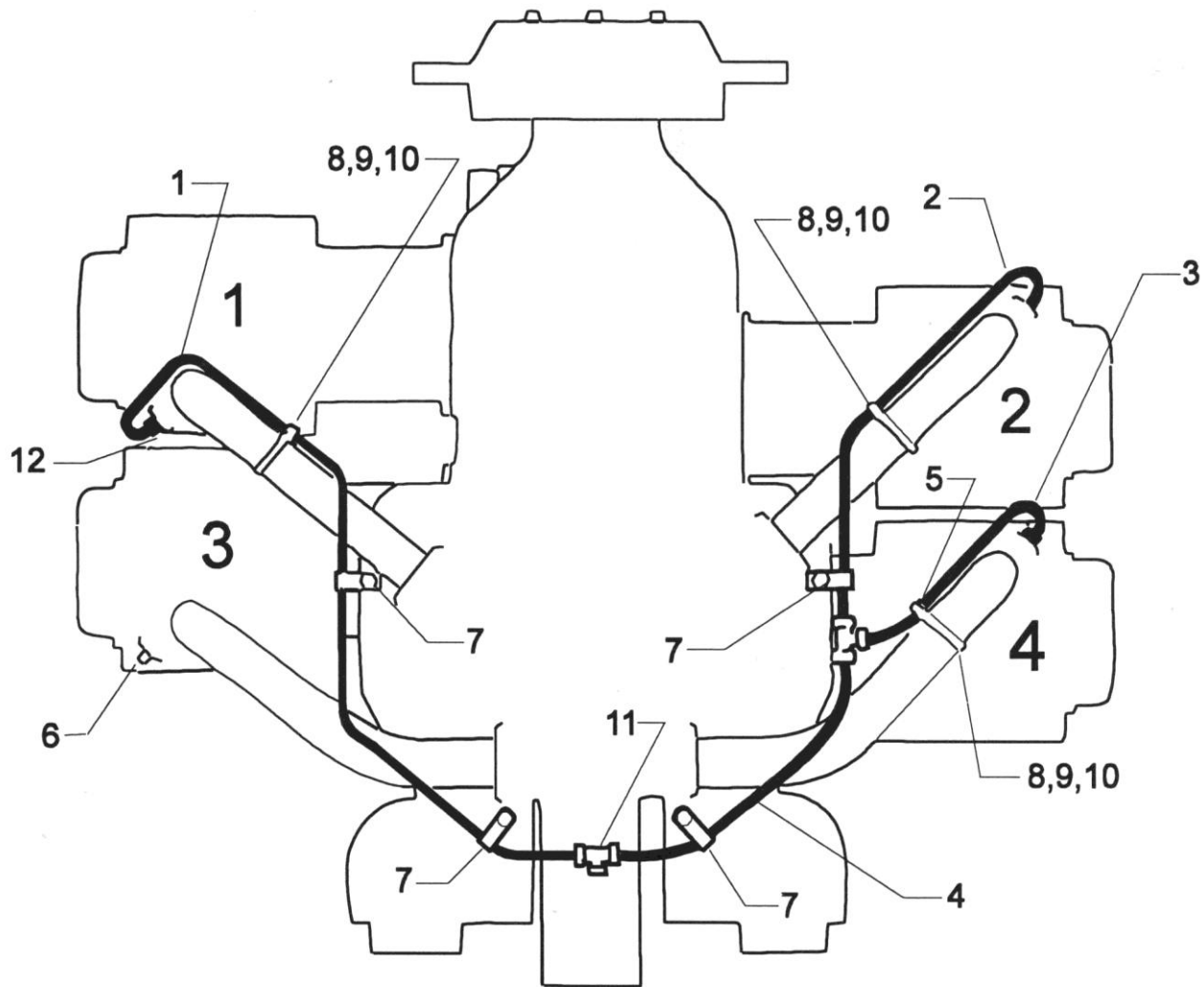
Figure Item	Code	Part Number	Description	Units per Assembly
1		06E19769-0.63	GASKET, 7/8 O.D. x 5/8 I.D. x 3/32 annular	1
2		69675	CONNECTOR, Accessory housing to oil cooler inlet hose	1
3		STD-784	PLUG, 3/8-18 NPT, allen head	2
4		71140	FITTING, Breather	1
5		71623	WASHER, Oil cooler	1
6		AS5163D08	ELBOW	1
7		AN901-8A	GASKET, Metal tube connect seal	1
8		71620	BOLT, 5/8-16 x 1-7/8 long	1
9		72413	FITTING, Breather, 120° elbow	1
10		62817	SCREEN ASSEMBLY, Oil pressure	1
11		61173	GASKET, Oil pressure housing	1
12		69510	HOUSING, Thermostatic valve and oil pressure screen	1
13		06E19769-0.63	GASKET, 7/8 O.D. x 5/8 I.D. x 3/32 annular	1
14		STD-8	WASHER, 1/4 plain	4
15		STD-160	WASHER, 1/4 lock, internal teeth	4
16		LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. head, slotted	4
17		53E22144	VALVE ASSEMBLY, Temperature control oil cooler bypass	1
18		76510	GASKET, Valve assembly	1



Carburetor Assembly
Figure 21

FUEL DISTRIBUTION**FIGURE 21 – CARBURETOR ASSEMBLY**

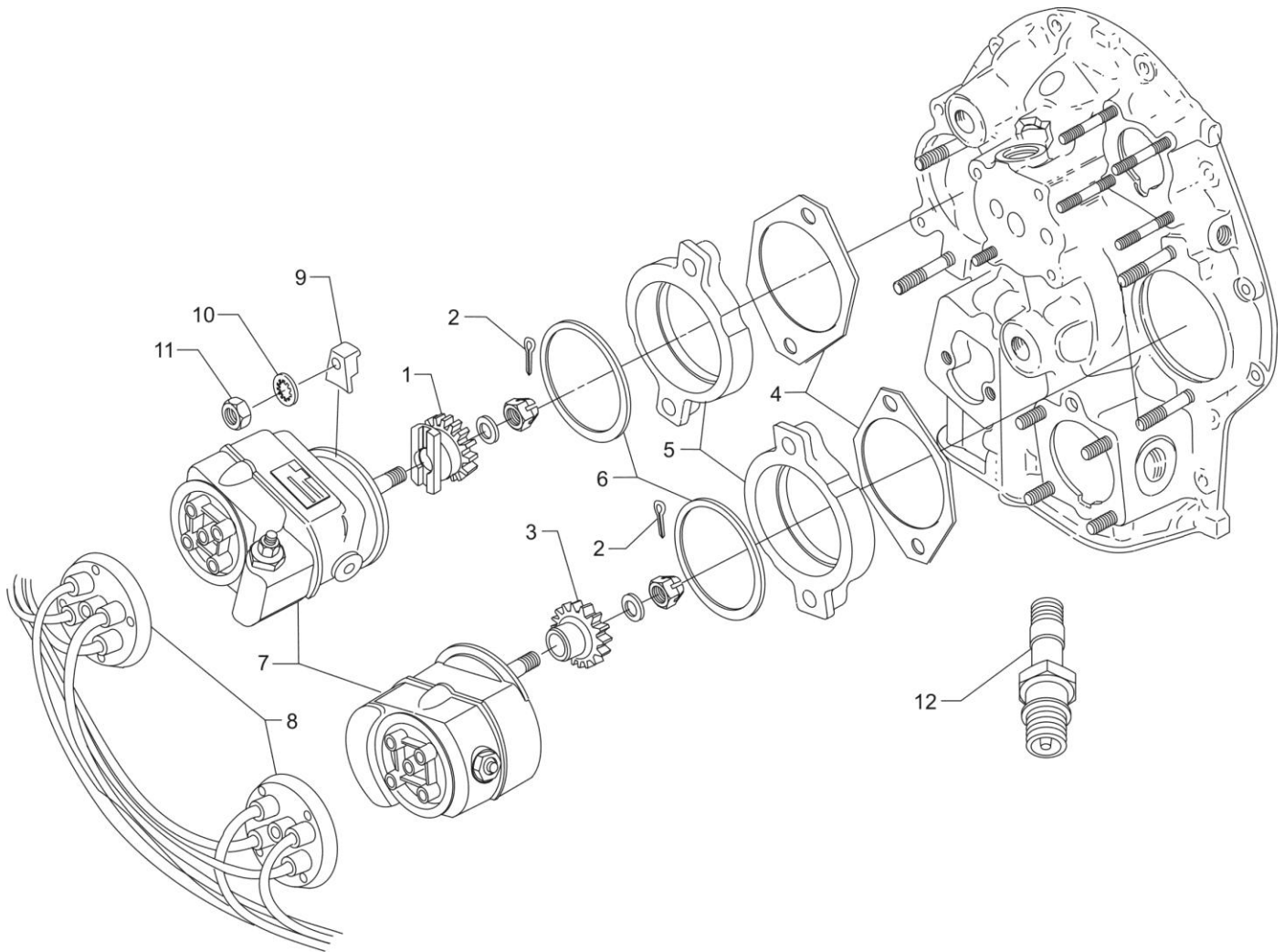
Figure Item	Code	Part Number	Description	Units per Assembly
1		66224	GASKET, Carburetor	1
2	V	61C26052	CARBURETOR, MA-4-5, V AV 10-6054	1
3		STD-35	WASHER, 5/16 plain	4
4		STD-475	WASHER, 5/16 lock, internal teeth	4
5		STD-1410	NUT, 5/16-18 plain	4
V Vendor Prime Manufacturer part				



Priming System
Figure 22

FUEL DISTRIBUTION
FIGURE 22 – PRIMING SYSTEM

Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-12098-0-290	TUBE ASSEMBLY, Primer, cylinder no. 1	1
2		LW-12098-0-180	TUBE ASSEMBLY, Primer, cylinder no. 2	1
3		LW-12098-0-130	TUBE ASSEMBLY, Primer, cylinder no. 4	1
4		LW-12098-0-100	TUBE ASSEMBLY, Primer, intermediate	1
5		LW-12598	SLEEVE, Priming	3
6		1102	PLUG, 1/8-27 NPT, allen head (assemble in cyl. head)	1
7		LW-16266-25-13	CLAMP	4
8		LW-18959-175-25	CLAMP, 1-3/4 I.D. with 1/4 diameter offset	3
9		STD-553	SCREW, No. 6-32 x 1/2 long, round head	3
10		MS21044N06	NUT, No. 6-32 self-locking	3
11		STD-853	TEE, Union, 1/8 tube	2
12		63D21408	NIPPLE ASSEMBLY, Primer	3



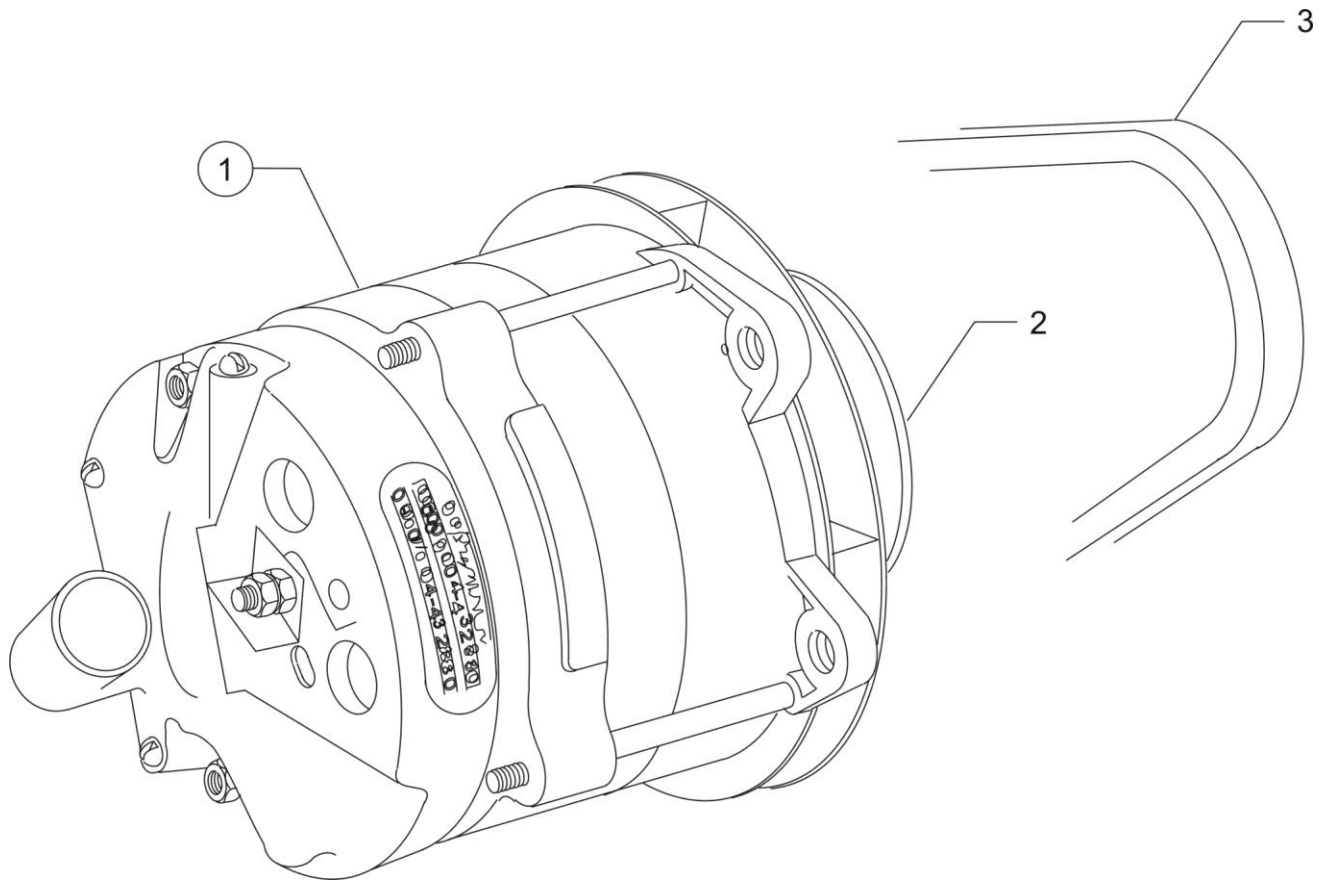
Magneto Drives, Harnesses and Spark Plugs
Figure 23

IGNITION DISTRIBUTION SYSTEM**FIGURE 23 – MAGNETO DRIVES, HARNESES AND SPARK PLUGS**

Figure Item	Code	Part Number	Description	Units per Assembly
1		61665	GEAR, Magneto, impulse coupling	1
2		STD-713	COTTER PIN, 3/32 diameter x 3/4 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, Right, Slick V 4370	1
	V	66GC25SFNN	MAGNETO, Left, Slick V 4374	1
8	V	67P20428	HARNESS ASSEMBLY, Ignition, right, Slick V M2990	1
	V	67P20429	HARNESS ASSEMBLY, Ignition, left, Slick V M2989	1
9		66M21195	CLAMP, Magneto	4
10		STD-475	WASHER, 5/16 lock, internal teeth	4
11		STD-1410	NUT, 5/16-18 plain	8
12	*V	1182-E7	SPARK PLUG, Champion V REM38E	8
	**	01P19762-1-1	BAG, Magneto harness attaching	1
<p>V Vendor Prime Manufacturer part</p> <p>* 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.</p> <p>** See below for breakdown of individual parts contained in the magneto and harness attaching bag. These parts to be added by customer per engine line drawing included in each bag.</p>				

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

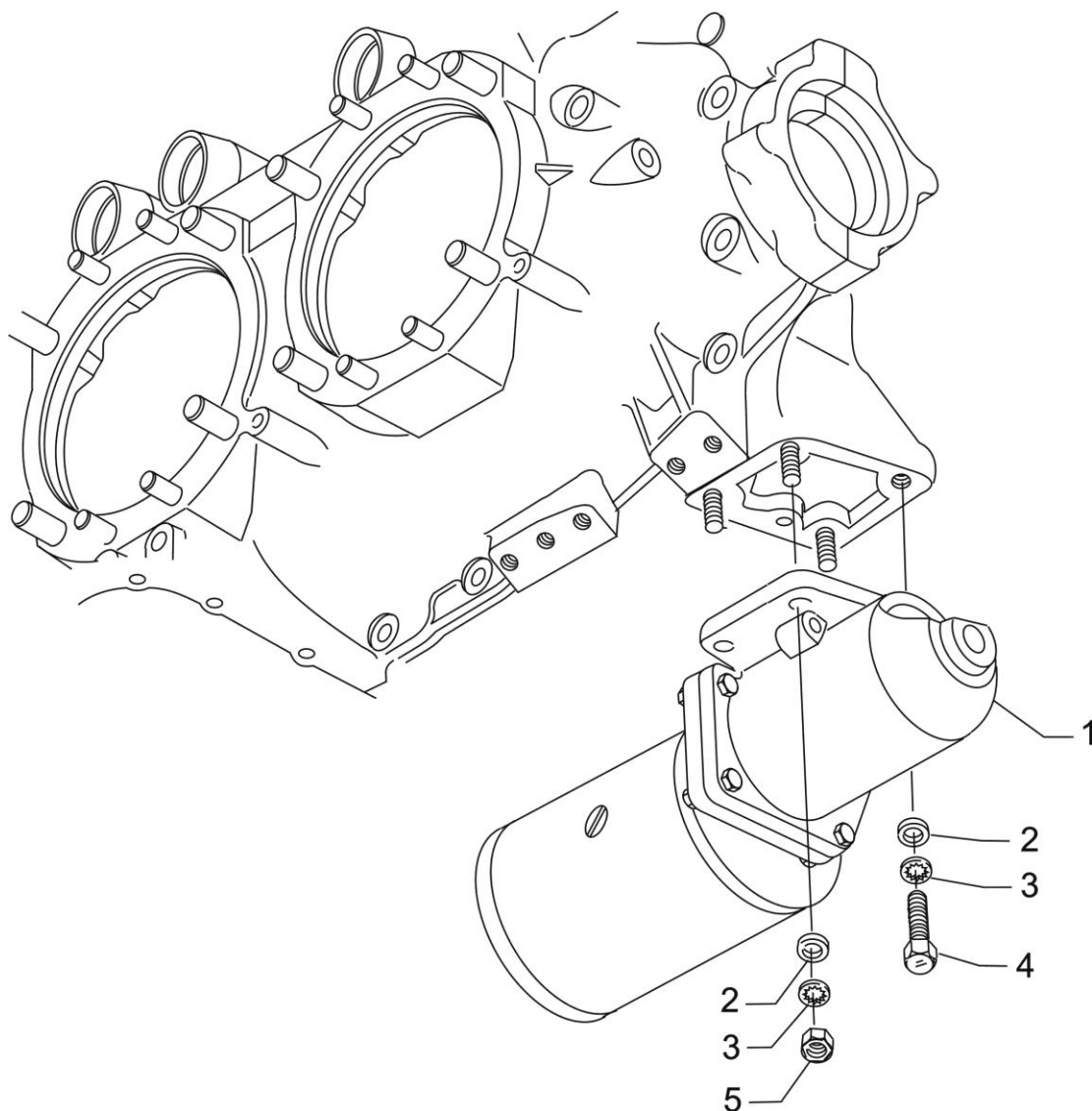
Part No.	Part Name	Qty.
LW-16266-25-25	CLIP, One wire	2
LW-14060	CLIP, Two wire	3
STD-8	WASHER, 1/4 plain	8
STD-1874	SCREW, 1/4 lock (rocker box)	6
76734	ZIP STRAP	8
LW-16266-25-50	CLIP, Four wire	1
STD-1411	NUT, 1/4-20 plain	2
STD-696	WASHER, 1/4 plain	4
STD-1916	SCREW, 1/4-20 x 1-1/8 long, fill. head	3
LW-M-2375	PLATE, Spark plug cable, two wire	2



**Alternator Assembly and Belt
Figure 24**

IGNITION DISTRIBUTION SYSTEM**FIGURE 24 – ALTERNATOR ASSEMBLY AND BELT**

Figure Item	Code	Part Number	Description	Units per Assembly
1	V	LW-14371	ALTERNATOR ASSEMBLY, 12V.-60Amp.	1
	V	32B19549	ALTERNATOR ASSEMBLY, 12V.-70Amp.	1
	V	32B19569	ALTERNATOR ASSEMBLY, 12V.-70Amp.	1
	V	32C19554	ALTERNATOR ASSEMBLY, 24V.-70Amp.	1
2		36B19484	PULLEY, Alternator	1
3		37A19773-396	BELT, Alternator drive, 3/8 wide	
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 25

CRANKING SECTION**FIGURE 25 - 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	31B22101	STARTER, Sky-Tec V 149-24PM	1
	V	31A26041	STARTER, Kelly V ERZ-8011	
2	*	STD-35	WASHER, 5/16 plain	4
3		STD-475	WASHER, 5/16 lock, internal teeth	4
4		LW-31-094	BOLT, 5/16-18 x 3/32 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 31A26041 starter only. NOTE: See latest revision of Lycoming Service Instruction No. 1154 for complete listing of FAA approved starters, generators, regulators and relays.</p>				

SERVICE KIT SECTION
SEAL AND GASKET SET

PART NO.	PART NAME	Qty.
75439-1	KIT - SEAL AND GASKET SET	1
AN901-8A	GASKET, Metal tube connect seal	1
LW-10332	LOCKPLATE, Crankshaft gear	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	SEAL, Crankshaft oil	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	8
STD-475	WASHER, 5/16 lock, internal teeth	4
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
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.	1
1691-C	GASKET, Fuel pump	1
60096	GASKET, Fuel pump	1
61173	GASKET, Oil pressure housing	1
61183	GASKET, Accessory adapter	1
62224	GASKET, Magneto adapter	3
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
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	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, 5/64 section x 29/64 I.D.	6

SERVICE KIT SECTION (CONT.)**SEAL AND GASKET SET (CONT.)**

PART NO.	PART NAME	Qty.
75439-1	KIT - SEAL AND GASKET SET	1
72078	LOCKPLATE, 5/16 bolt x 1-21/64	2
72091	RING, Oil seal, 23/64 I.D. x 7/64 diameter	2
72220	GASEKT, Oil level gage	1
72312	RING, Oil seal, 1.00 x 1-5/16	1
72829	LOCKPLATE, 1/4 bolt x 1-3/4	1
73383	LOCKPLATE, 5/16 bolt x 1.00	2
73817	LOCKPLATE, 1/4 bolt x 1-3/4	2
73818	GASKET, Accessory housing	1
74065	RING, Oil level gage seal	1
74068	RING, Oil level gage plug	1
75906	GASKET, Rocker box cover	4
76510	GASKET, Oil cooler bypass valve	1
76940	SEAL, Crankshaft oil	1
77154	GASKET, Carburetor	1
77611	GASKET, Exhaust flange	4
8313	GASKET, Vacuum pump	1
77569	RING, Seal, intake pipe	4
MS29512-04	"O" RING, 11/32 I.D. x 1/16 section	1
06A23493	SEAL, Shroud tube	8

CYLINDER, PISTON AND RING ASSEMBLY

PART NO.	PART NAME	Qty.
05K21104	KIT - CYLINDER, PISTON AND RING ASSEMBLY	1
LW-12427	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

SERVICE KIT SECTION (CONT.)**CYLINDER PISTON AND RING ASSEMBLY (CONT.)**

PART NO.	PART NAME	Qty.
05K21104	KIT - CYLINDER, PISTON AND RING ASSEMBLY	1
17C19386	CAP, Valve stem, exhaust (rotator)	1
1102	PLUG, 1/8-27 NPT, Allen head	2
75089	PISTON	1
74241	RING, Piston, compression	2
14H21950	RING, Piston, oil	1
LW-14078	PIN, Piston	1
71481	RING, Oil seal, 3/32 diameter x 4-27/43 I.D.	1
LW-18661	SEAL, Shroud tube	2
70310	SEAL, Shroud tube	2
75906	GASKET, Rocker box cover	1
SSP-299	TAG, Use of piston pin plugs	1
72198	PLUG, Piston pin	2
77611	GASKET, Exhaust flange	1
71973	GASKET, 2 bolt flange	1
LW-12272	LOCKPLATE, Shroud tube	1
06A23493	SEAL, Shroud tube	2

CRANKCASE ASSEMBLY AND THRU-STUD KIT

PART NO.	PART NAME	Qty.
LW-18399-1-S	KIT - CRANKCASE ASSEMBLY AND THRU-STUD	1
LW-18399-1	CRANKCASE ASSEMBLY	1
76220	THRU-STUD	4
31C-14	STUD, 5/16-18 x 1-3/4 long	4
74887	SPACER, 33/64 I.D. x 7/8 O.D. x 3/8 thick	2
AN565B1032H4	SET SCREW, No. 10-32 x 1/4 long	1
AN565B1032H5	SET SCREW, No. 10-32 x 15/16 long	1
STD-2090	NUT, 1/4-20 plain	2

SERVICE KIT SECTION (CONT.)**CRANKCASE ASSEMBLY AND THRU-STUD KIT – ROLLER TAPPETS**

PART NO.	PART NAME	Qty.
LW-18399-5-S	KIT - CRANKCASE ASSEMBLY AND THRU-STUD	1
LW-18399-5	CRANKCASE ASSEMBLY (Roller tappet engines)	1
76220	THRU-STUD	4
31C-14	STUD, 5/16-18 x 1-3/4 long	4
74887	SPACER, 33/64 I.D. x 7/8 O.D. x 3/8 thick	2
AN565B1032H4	SET SCREW, No. 10-32 x 1/4 long	1
AN565B1032H5	SET SCREW, No. 10-32 x 15/16 long	1
STD-2090	NUT, 1/4-20 plain	2

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AN6-16	Bolt	1	LW-13896	Plug	3
AN6-17	Bolt	1	LW-13923	Bushing	15
AN6-34A	Bolt	13	LW-14021	Shaft	3
AN901-8A	Gasket	39	LW-14078	Pin	15
AN960-616L	Washer	13	LW-14260	Seal	33
AS5163D08	Elbow	39	LW-14371	Alternator Assy.	47
LRT23381	Body Assy.	7	LW-14995	Spring	19
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LW-25-1.13	Bolt	33	LW-16475	Seat	19
LW-25-1.25	Bolt	25	LW-16783-18	Gage Assy.	27
LW-25-1.44	Bolt	33	LW-18085	Spring	7
LW-25-1.50	Bolt	13	LW-18108	Impeller	33
LW-25S1.50	Bolt	13	LW-18109	Impeller	33
LW-25-1.75	Bolt	13	LW-18110	Impeller Assy.	33
LW-31H0.75	Bolt	1	LW-18399-1	Crankcase Assy.	5
LW-31H0.88	Bolt	11	LW-18399-5	Crankcase Assy.	5
LW-31-0.94	Bolt	1	LW-18399-1-S	Crankcase Assy. Kit	5
LW-31-0.94	Bolt	49	LW-18399-5-S	Crankcase Assy. Kit	5
LW-31-1.16	Bolt	49	LW-18639	Lockplate	9
LW-38-0.75	Bolt	35	LW-18661	Seal	19
LW-10077	Seat	19	LW-18667	Pin	11
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LW-11795	Spring	19	MS21044N06	Nut	43
LW-11800	Spring	19	STD-8	Washer	13
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LW-12098-0-290	Tube Assy.	43	STD-8	Washer	37
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LW-12598	Sleeve	43	STD-35	Washer	1
LW-12681	Gasket	45	STD-35	Washer	3
LW-12706	Adapter	45	STD-35	Washer	17
LW-12892	Thrust Button	21	STD-35	Washer	33
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71596	Washer	37	77467	Spring	7
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73250	Washer	3	07A19474	Bracket	1
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73346	Flange	25	13S19646	Gear	9
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