

# **O-360-C1G Series Illustrated Parts Catalog**

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**April 2011**

**PC-306-4**

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***LYCOMING*** © 2011

652 Oliver Street  
Williamsport, PA 17701

## **O-360-C1G Series Illustrated Parts Catalog**

Lycoming Part Number: PC-306-4

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### **For additional information:**

#### **Mailing address:**

Lycoming Engines  
652 Oliver Street  
Williamsport, PA 17701 U.S.A.

#### **Phone:**

Factory: 570-323-6181  
Sales Department: 570-327-7278  
Fax: 570-327-7101

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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-C1G 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 specified the subject matter for each chapter-section. According to the ATA Standards, the following chapters apply to the O-360-C1G 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 is an indication of a lower level of assembly. Attached parts have the same indentation level and are shown below the parts grouping or assembly where they attach.

**Units per Assembly Column**

Where more than one assembly exists, this column contains the quantity of a specific part necessary in the build sequence of the next higher assembly. The "AR" designation is necessary for "as required" for bulk items or non-illustrated select-from-range-parts. The "RF" designation is for 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 are in the applicable Vendor's Parts Catalog. A list of vendor's addresses is included in the latest revision of Lycoming Service Letter No. L114.

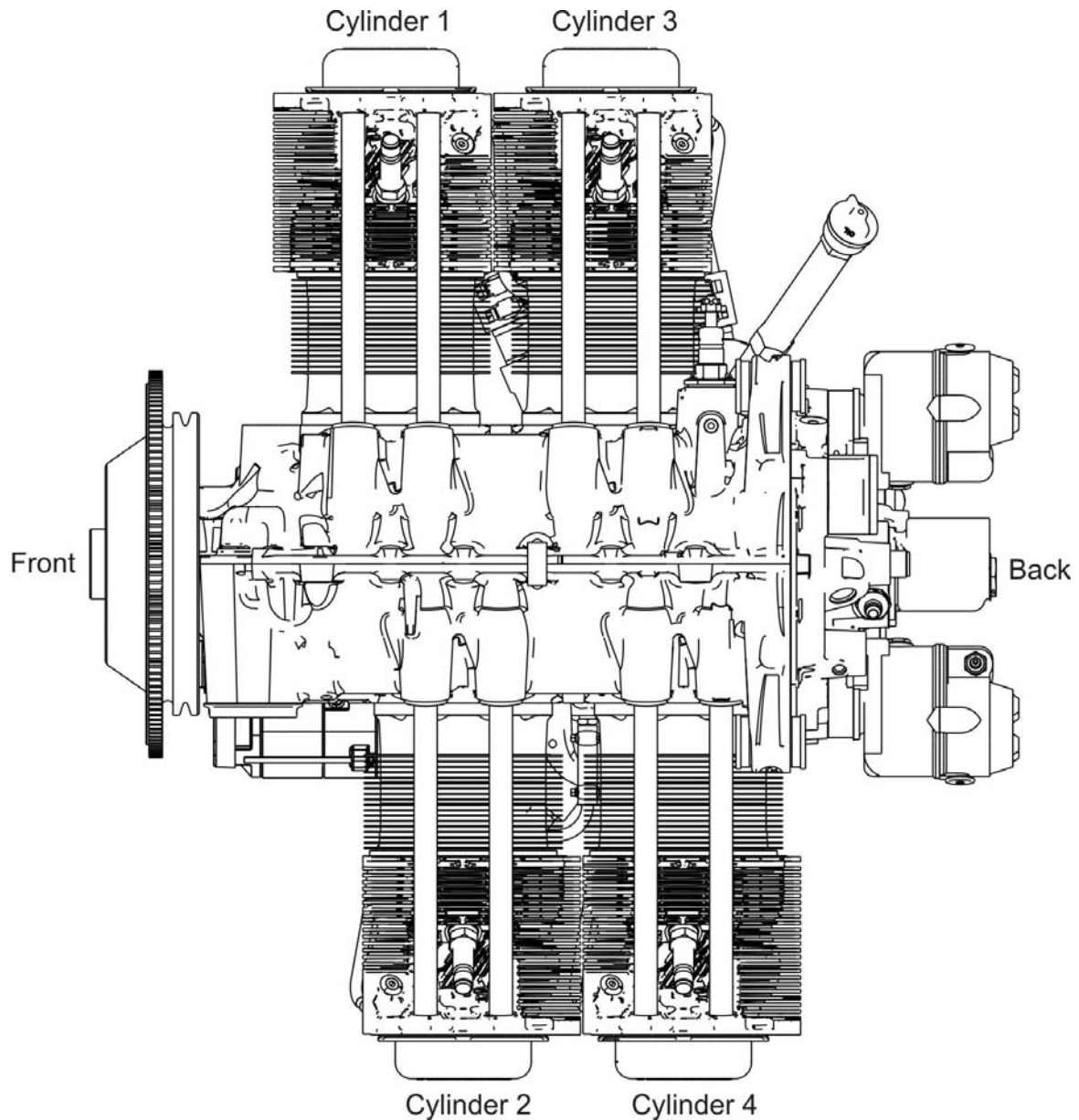
Any reference in this document to the suppliers/part manufacturer's product, by name, trademark, part number or other description is solely for the purpose of identification and does not indicate or infer that Lycoming accepts responsibility for quality control and/or airworthiness of parts, which do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

Although the information contained in this parts catalog is up-to-date at time of publication, get 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, 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 to make this manual as accurate as possible. Send any comments, suggestions, or corrections to this manual 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**

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Monday – Friday.

**ABBREVIATIONS AND ACRONYMS**

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

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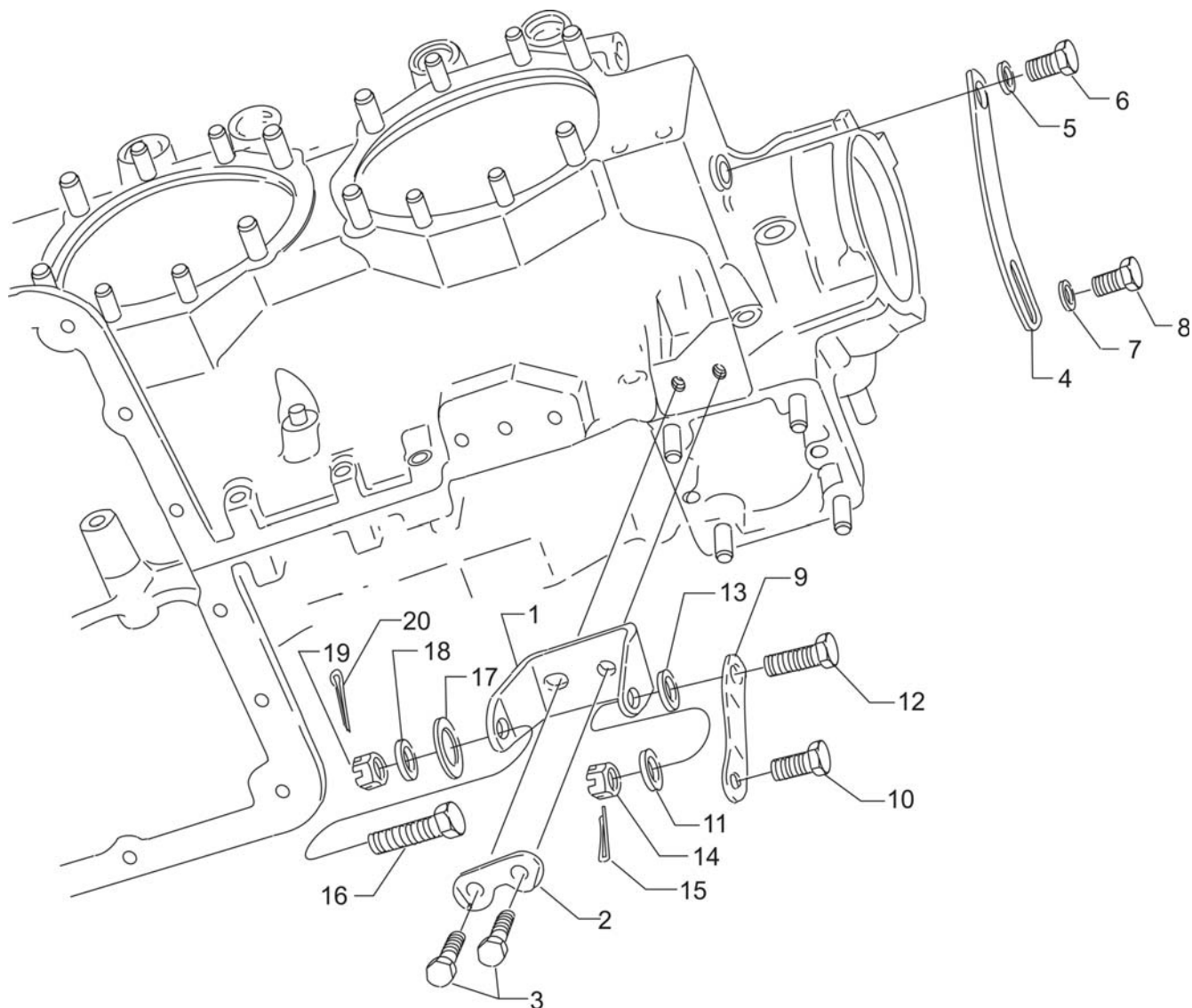
**OVERSIZE AND UNDERSIZE PARTS LISTING**

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	X
18A26093	BEARING				X					X	X	X
18M26105	BEARING									X	X	X
LW-13792	SEAL								X			
75656-S	BUSHING		X	X	X	X						
72155-S	BUSHING		X	X	X	X						
79024-S	BUSHING		X	X	X	X						
STD-1065	DOWEL	X	X	X	X							
74241	RING			X								
72057	SEAT		X	X		X	X					
72058	SEAT		X	X		X	X					
76943	GUIDE		X*									
16R22126	GUIDE		X*									
66610	BUSHING		X	X								

\* - Also available in P03 (.003 in.) oversize.

**NOTE**

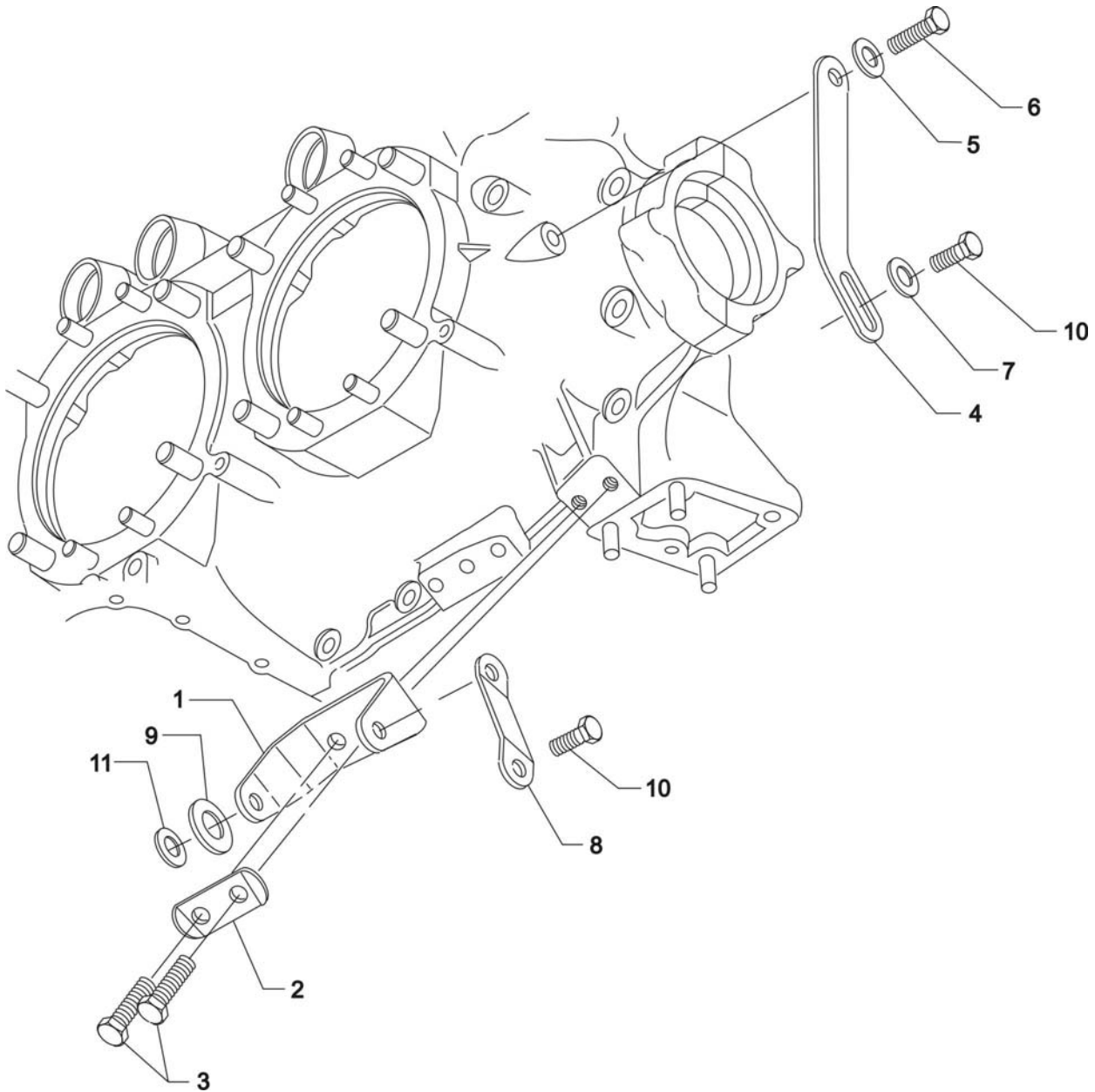
When ordering oversize and undersize parts, be sure to specify the required oversize and undersize dimension along with the proper part number. For example, to order bearing P/N 18D26098 bearing in .003 in. undersize, order P/N 18D26098-M03. Oversize code letter is "P" while undersize code letter is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

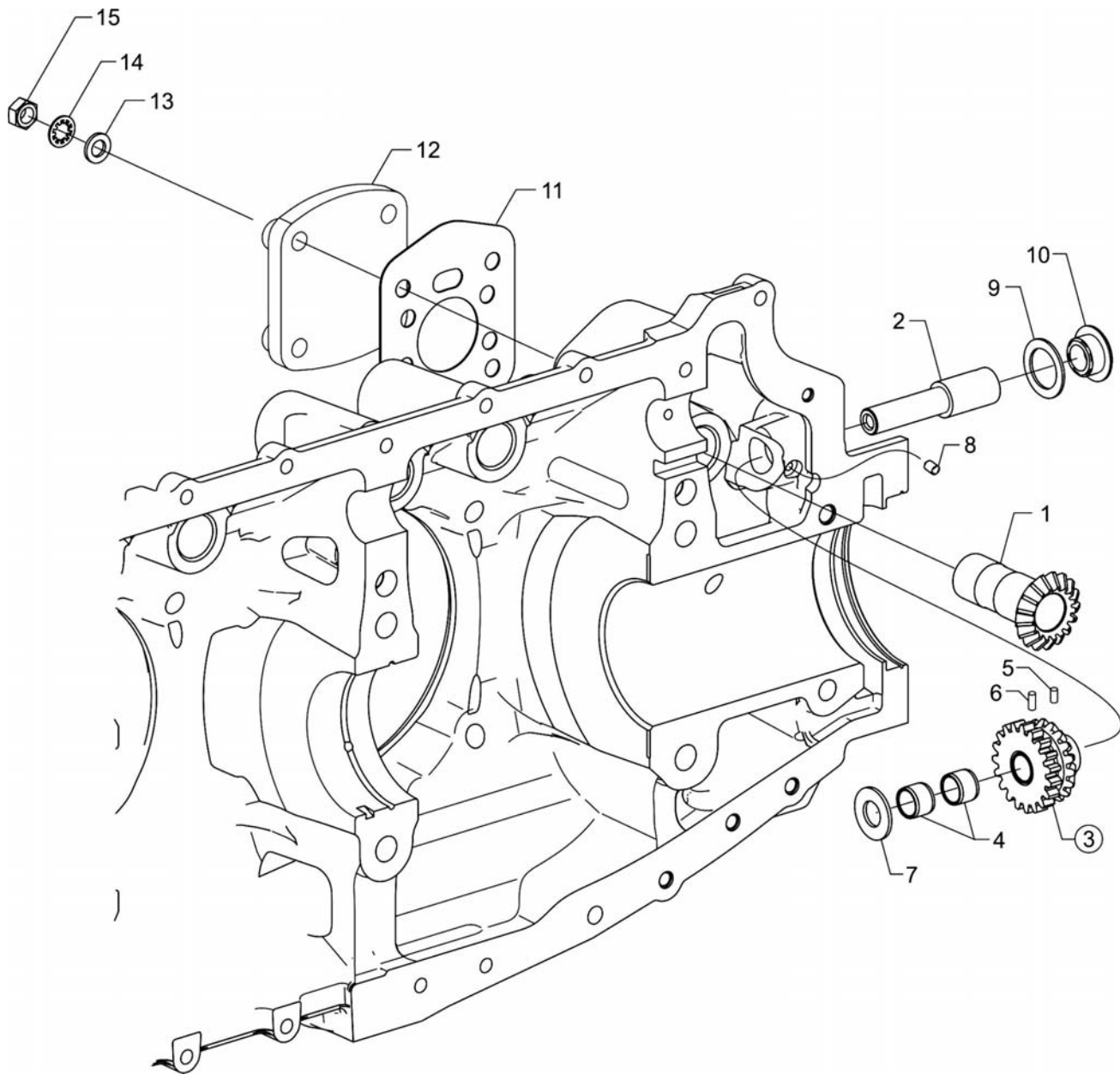
<b>Figure Item</b>	<b>Code</b>	<b>Part Number</b>	<b>Description</b>	<b>Units per Assembly</b>
1		07A19474	BRACKET, Alternator	1
2		73383	LOCKPLATE, 5/16 bolt x 1.00 spacing	1
3		LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex. head	2
4		75380	LINK, Alternator adjusting	1
5		STD-35	WASHER, 5/16 plain	1
6		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	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	5
18		STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	3
19		STD-872	NUT, 3/8-24 slotted	1
20		STD-713	COTTER PIN, 3/32 diameter x 3/4 long	1



**Alternator Mounting and Attaching Parts (P/N 32B23992 Alternator)**  
**Figure 2**

**ELECTRICAL POWER****FIGURE 2 – ALTERNATOR MOUNTING AND ATTACHING PARTS****(P/N 32B23992 ALTERNATOR)**

<b>Figure Item</b>	<b>Code</b>	<b>Part Number</b>	<b>Description</b>	<b>Units per Assembly</b>
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		07F23268	STRUT, Alternator support	1
9		76534	SHIM, 1-1/8 O.D. x 13/32 I.D. x 1/16 thick	2
10		LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. head, drilled	2
11		STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	1

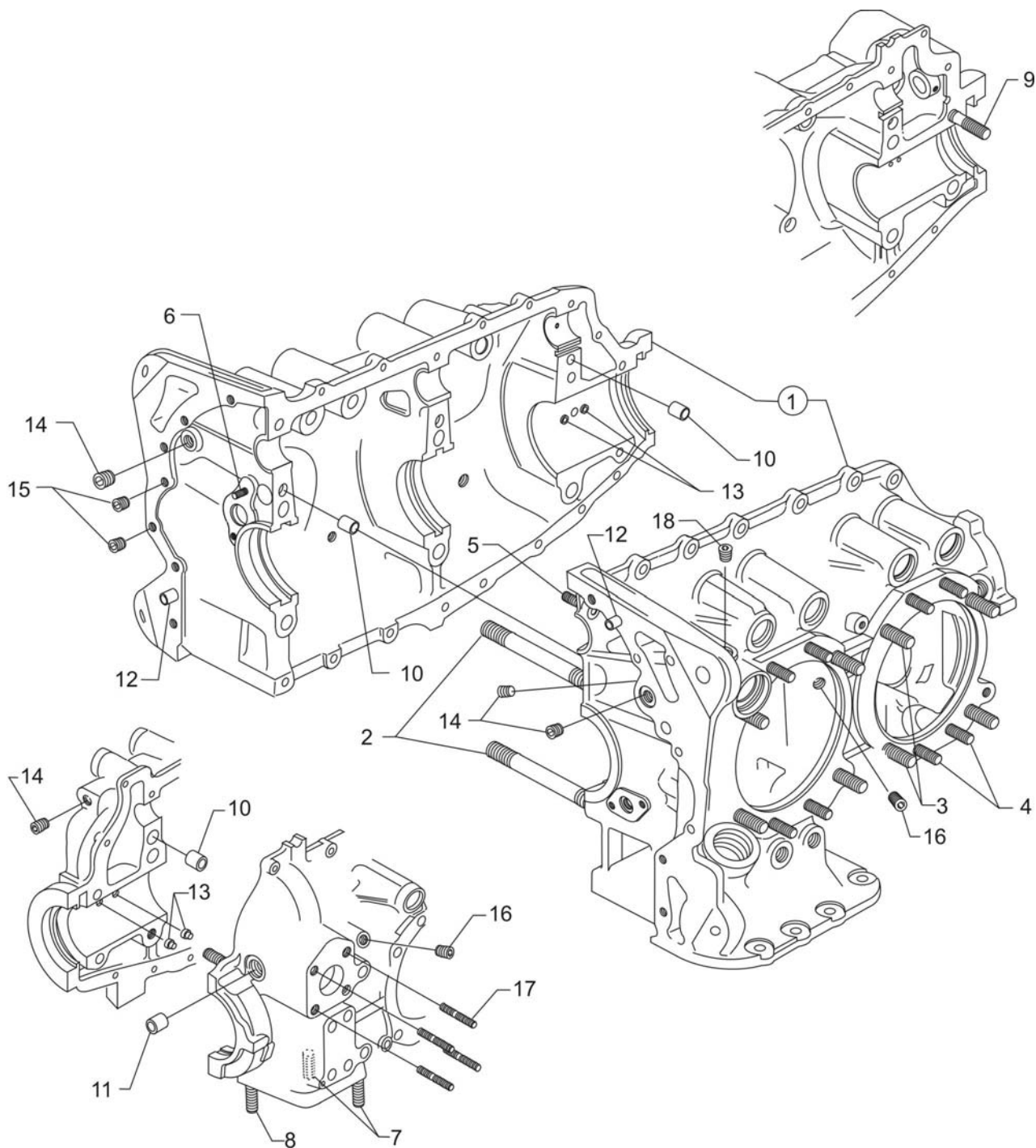


**Propeller Governor Drive**  
**Figure 3**

**FRONT SECTION****FIGURE 3 – PROPELLER GOVERNOR DRIVE**

<b>Figure Item</b>	<b>Code</b>	<b>Part Number</b>	<b>Description</b>	<b>Units per Assembly</b>
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	<b>AR</b>	73249	WASHER, Thrust (.0585-.0595 thick)	AR
	<b>AR</b>	73250	WASHER, Thrust (.062-.063 thick)	AR
	<b>AR</b>	73251	WASHER, Thrust (.0655-.0665 thick)	AR
	<b>AR</b>	73252	WASHER, Thrust (.069-.070 thick)	AR
	<b>AR</b>	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
<b>AR as required</b>				



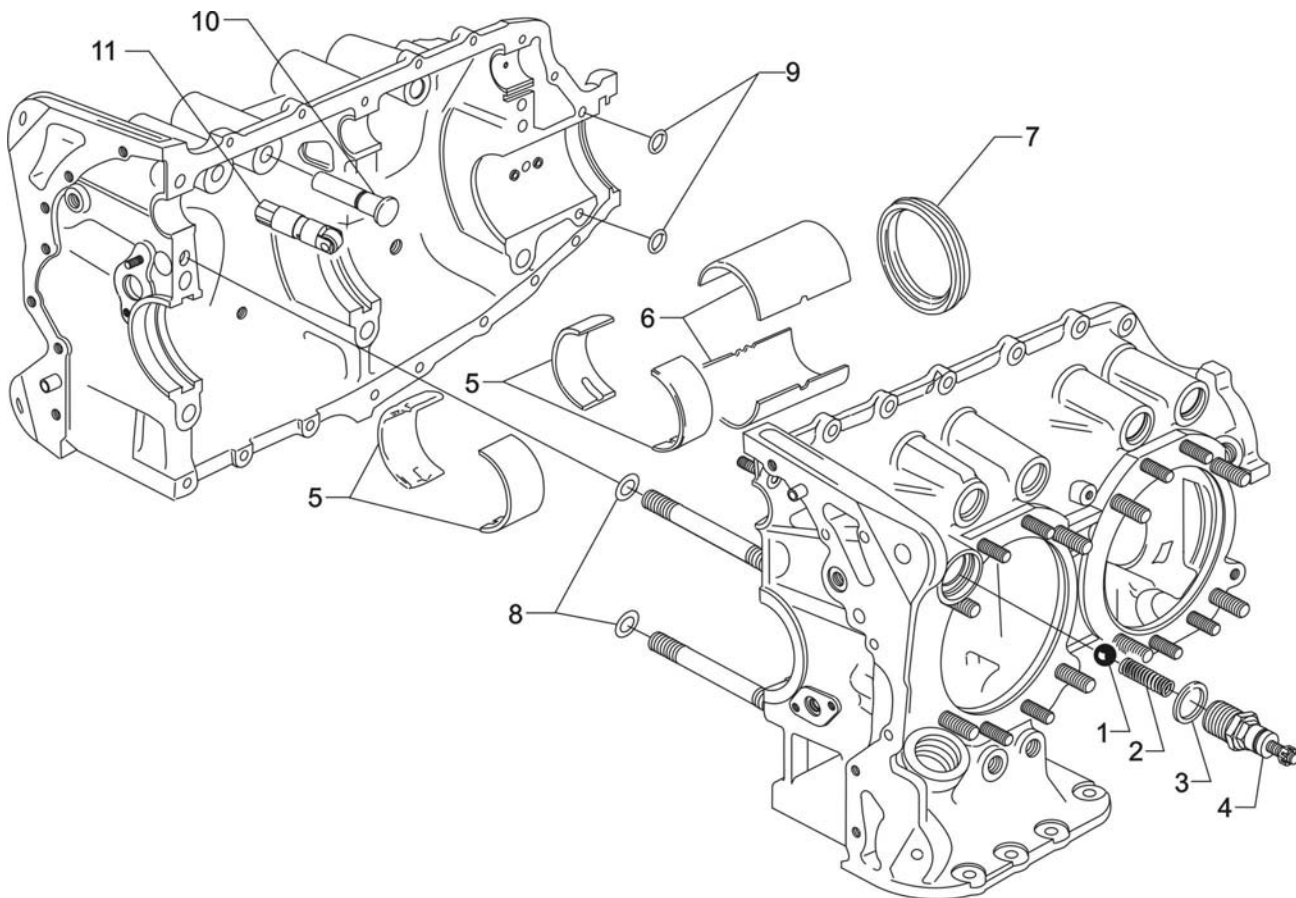


**Crankcase Assembly**  
**Figure 4**



**POWER SECTION****FIGURE 4 - CRANKCASE ASSEMBLY**

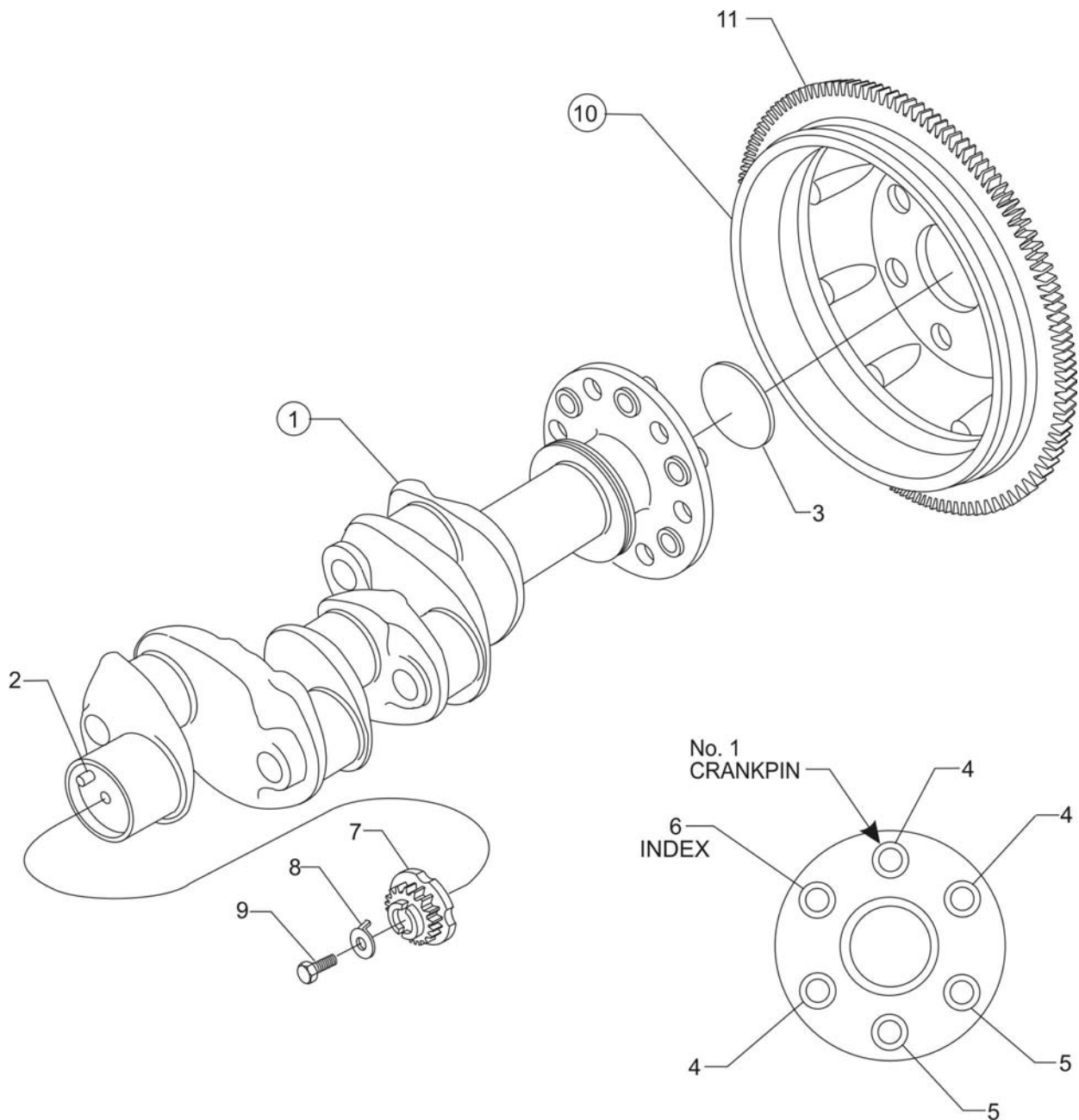
<b>Figure Item</b>	<b>Code</b>	<b>Part Number</b>	<b>Description</b>	<b>Units per Assembly</b>
1	*	11B19524-1-S	CRANKCASE ASSEMBLY KIT	1
	<b>P</b>	11B19524-1	CRANKCASE ASSEMBLY	1
	*	11B19524-5-S	CRANKCASE ASSEMBLY KIT ( <b>Roller tappet engines</b> )	1
	<b>P</b>	11B19524-5	CRANKCASE ASSEMBLY ( <b>Roller tappet engines</b> )	1
2		72154	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	5
17		31C-17	STUD, 5/16-18 x 2-1/8 long	4
18		1102	PLUG, 1/8-27 NPT, allen head	1
<p><b>P</b> 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 5**

**POWER SECTION****FIGURE 5 - CRANKCASE RELATED PARTS**

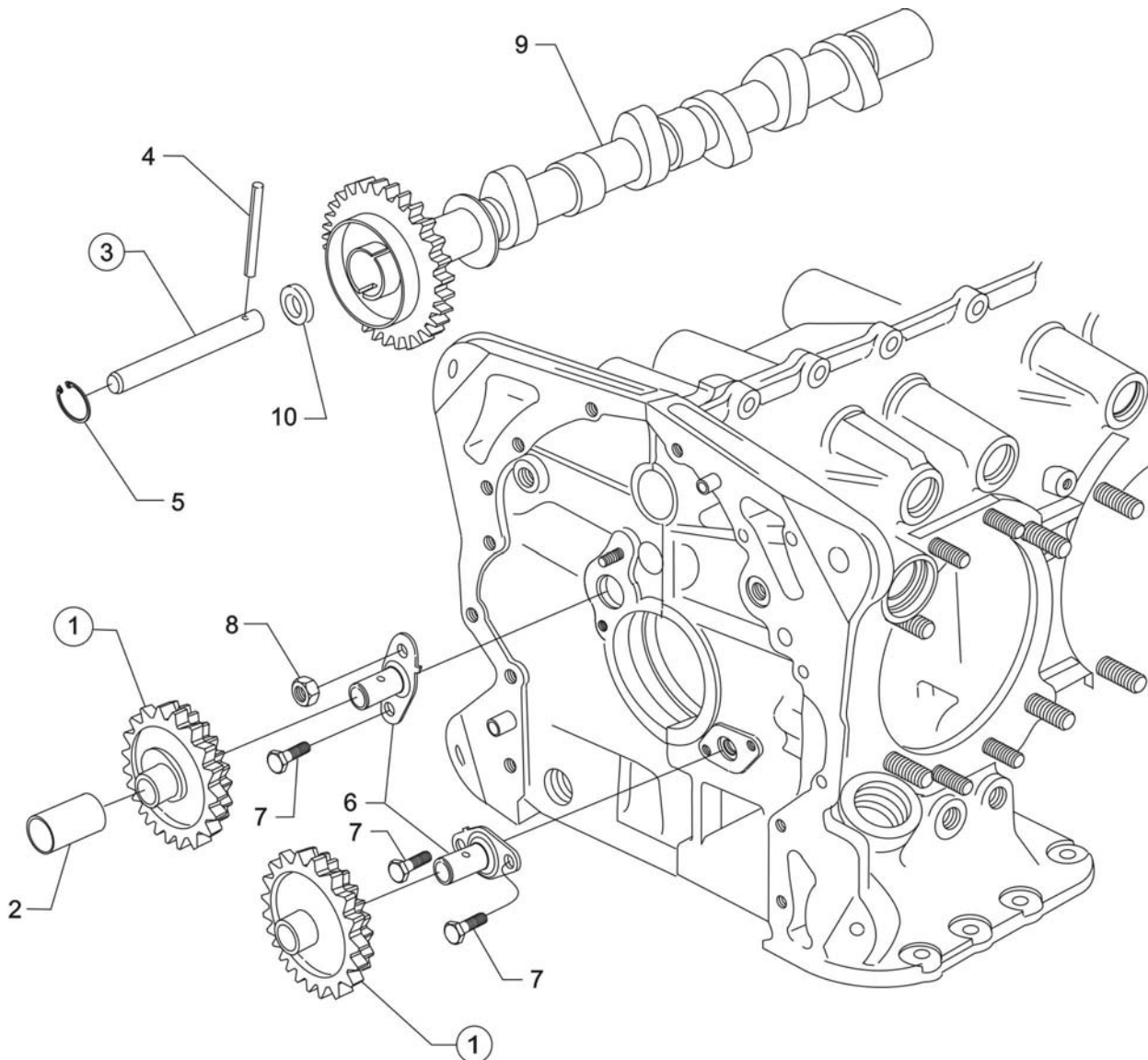
<b>Figure Item</b>	<b>Code</b>	<b>Part Number</b>	<b>Description</b>	<b>Units per Assembly</b>
1		1028-B	BALL, 11/16 diameter	1
2	*	61084	SPRING, Oil pressure relief valve	1
	*	68668	SPRING, Oil pressure relief valve	1
	*	77467	SPRING, Oil pressure relief valve	1
	*	LW-11713	SPRING, Oil pressure relief 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 <b>(Roller tappet engines)</b>	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 6**

**POWER SECTION****FIGURE 6 - CRANKSHAFT ASSEMBLY AND RELATED PARTS**

<b>Figure Item</b>	<b>Code</b>	<b>Part Number</b>	<b>Description</b>	<b>Units per Assembly</b>
1		13B47125	CRANKSHAFT ASSEMBLY	1
2		STD-1065	DOWEL, Stepped, 5/16 & 1/4 diameter x 35/64	1
3		STD-1211	PLUG, 2.00 diameter expansion	1
4		75656-S	BUSHING, Propeller flange, long	4
5		72155-S	BUSHING, Propeller flange, short	1
6		79024-S	BUSHING, Propeller flange, indexing	1
7	<b>SB*</b>	13S19646	GEAR, Crankshaft	1
8		LW-18639	LOCKPLATE, Crankshaft gear	1
9		STD-2246	BOLT, 5/16-24 x 1.00 long	1
10		LW-16741	SUPPORT ASSEMBLY, Starter ring gear, 12/14 pitch	1
		LW-16064	SUPPORT ASSEMBLY, Starter ring gear, 12/14 pitch	
11		72566	GEAR, Starter ring, 12/14 pitch	1
<b>SB</b> Referencing Service Bulletin * Refer to latest revision of Service Bulletin No. 475 for proper installation.				

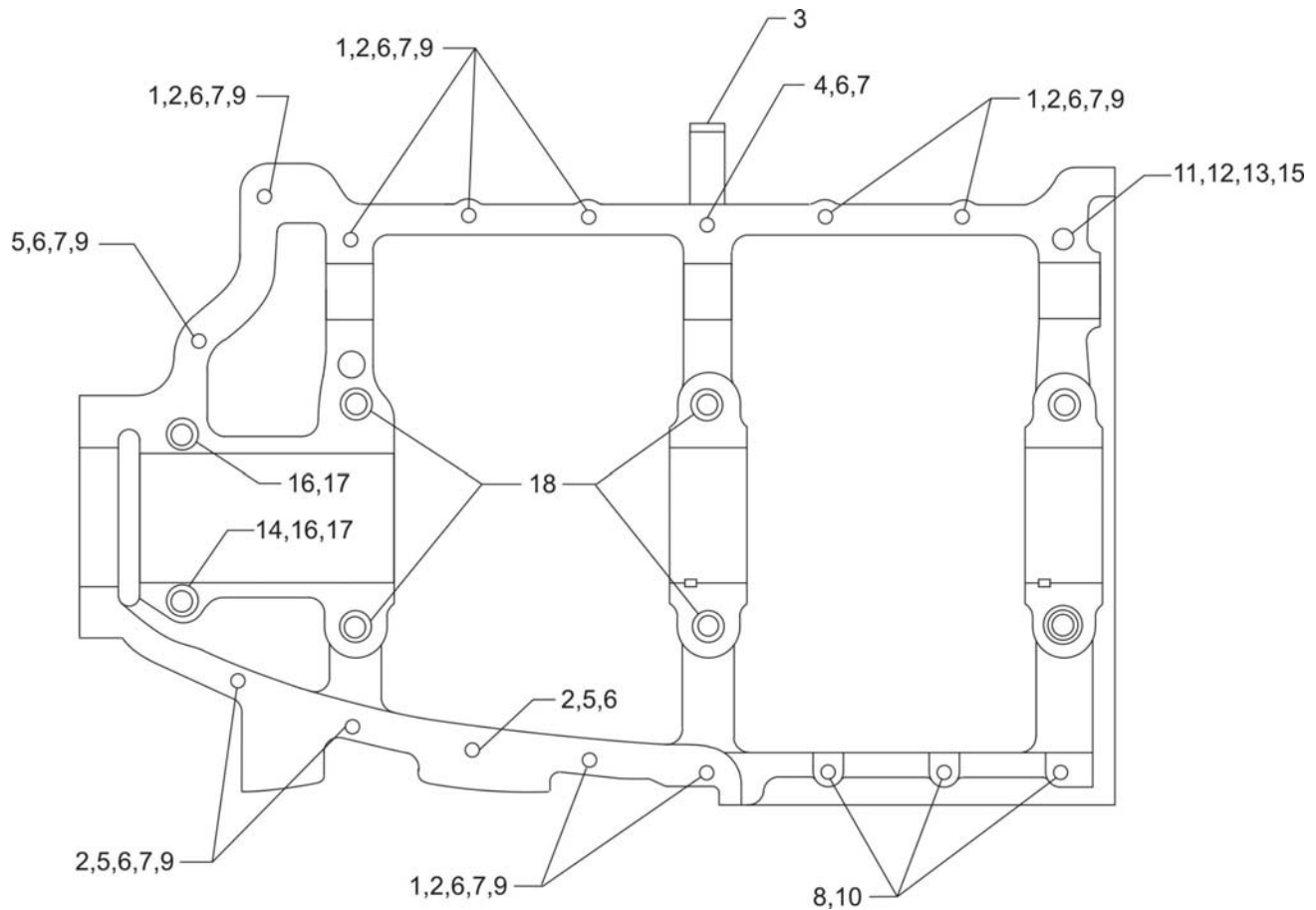


**Crankshaft Idler Gears, Tachometer Drive and Camshaft  
Figure 7**

**POWER SECTION****FIGURE 7 - CRANKSHAFT IDLER GEARS, TACHOMETER DRIVE AND CAMSHAFT**

<b>Figure Item</b>	<b>Code</b>	<b>Part Number</b>	<b>Description</b>	<b>Units per Assembly</b>
1		74996	GEAR ASSEMBLY, Crankshaft idler, plain	2
2		77309	BUSHING, Crankshaft idler gear	1
3		76121	SHAFT ASSEMBLY, Tachometer	1
4		LW-18667	PIN, 3/16 diameter x 2-21/64 long	1
5		STD-2231	RING, Internal retaining	1
6		LW-13796	SHAFT, Crankshaft idler gear	2
7		LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex. head, drilled	3
8		STD-2168	NUT, 5/16-18 NC-3 slotted shear	1
9		LW-18843	CAMSHAFT ASSEMBLY	1
	*	15M23456	CAMSHAFT ASSEMBLY ( <b>Roller tappet engines</b> )	1
10		76118	SPACER, Tachometer shaft, centering	1
* Only sold as an exchange part.				



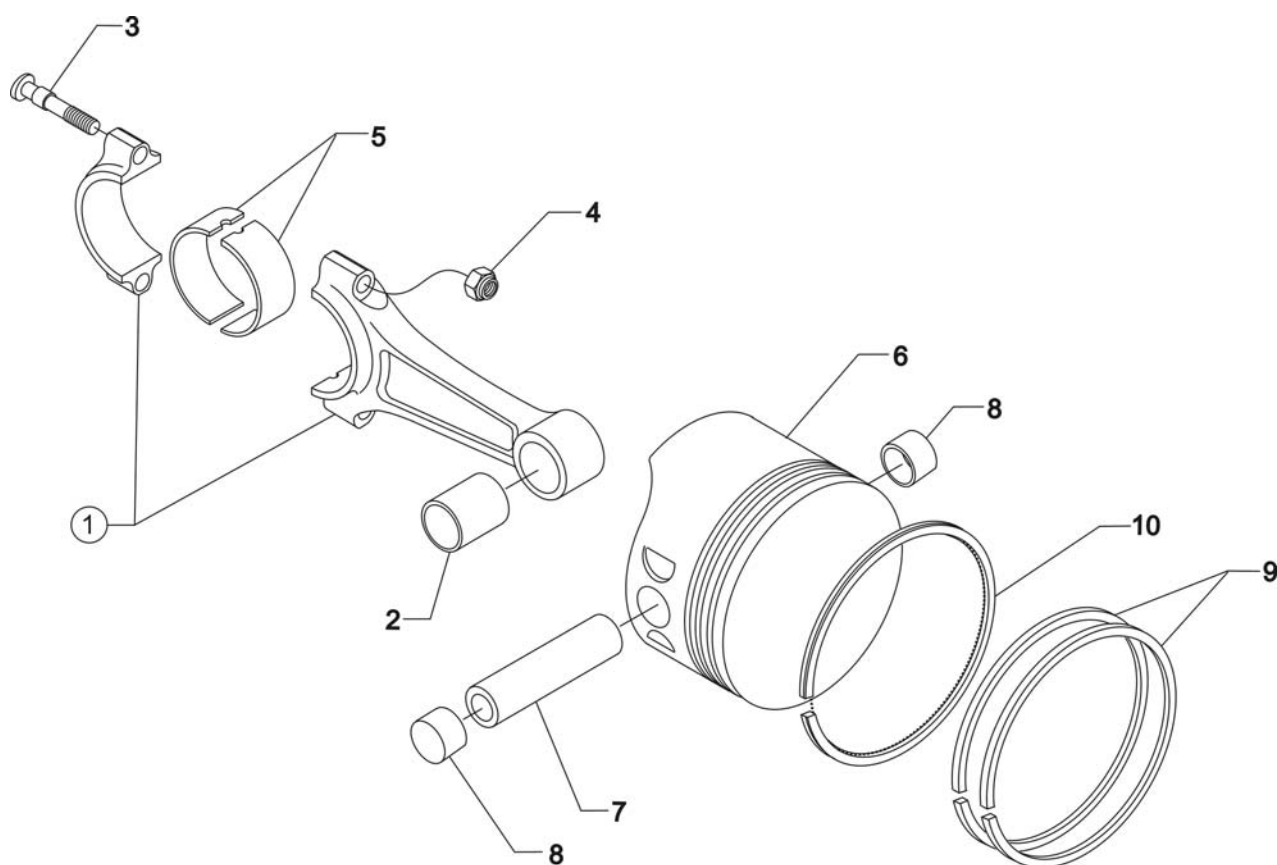


**Crankcase Attaching Parts**  
**Figure 8**



**POWER SECTION****FIGURE 8 - CRANKCASE ATTACHING PARTS**

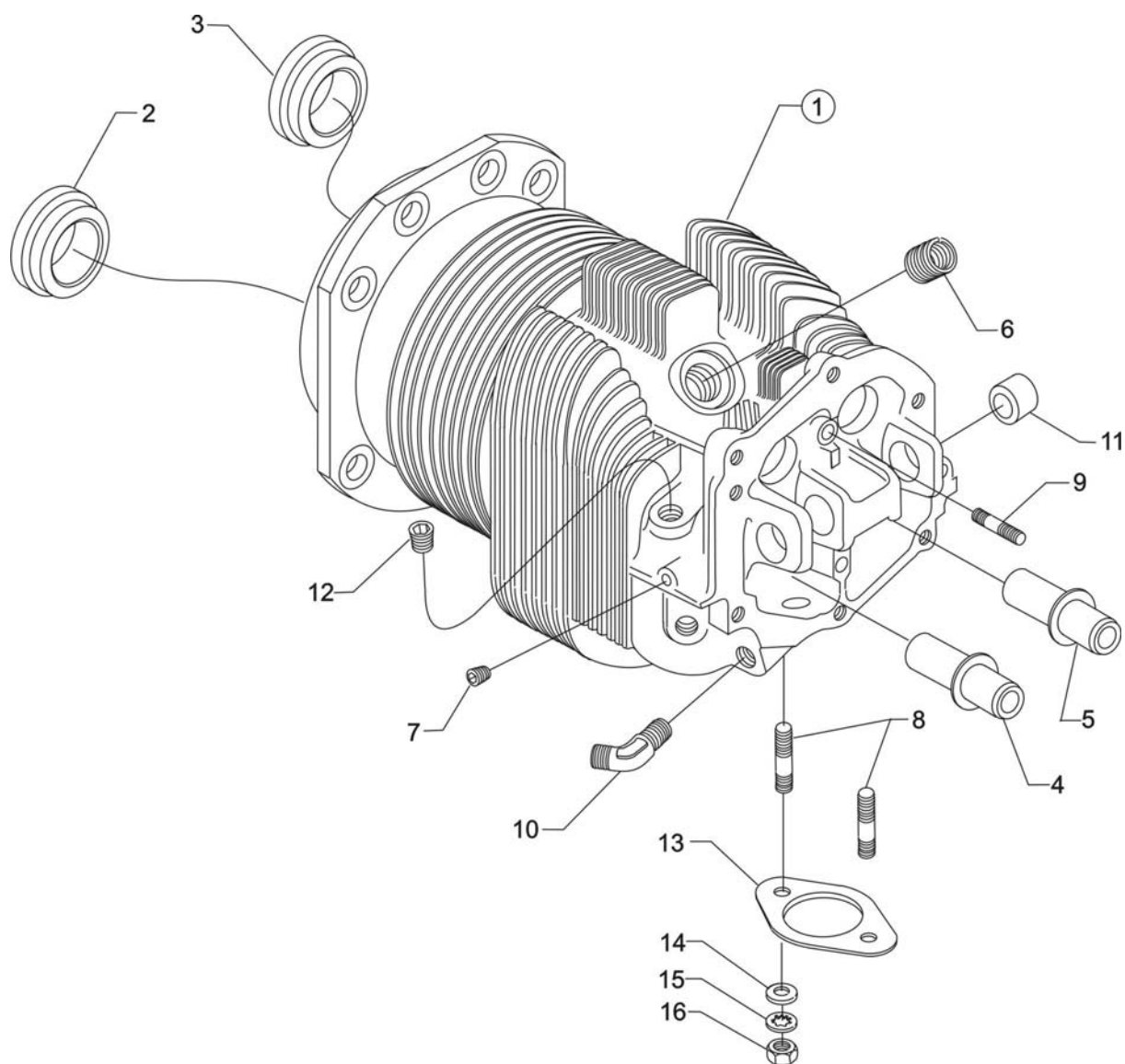
<b>Figure Item</b>	<b>Code</b>	<b>Part Number</b>	<b>Description</b>	<b>Units per Assembly</b>
1		LW-25-1.50	BOLT, 1/4-20 x 1-1/2 long, hex. head	8
2		STD-8	WASHER, 1/4 plain	20
3		60803	STRAP, Lifting	1
4		LW-25-1.75	BOLT, 1/4-20 x 1-3/4 long, hex. head	1
5		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. 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 9**

**CYLINDER SECTION****FIGURE 9 - CONNECTING RODS, PISTONS AND RING ASSEMBLIES**

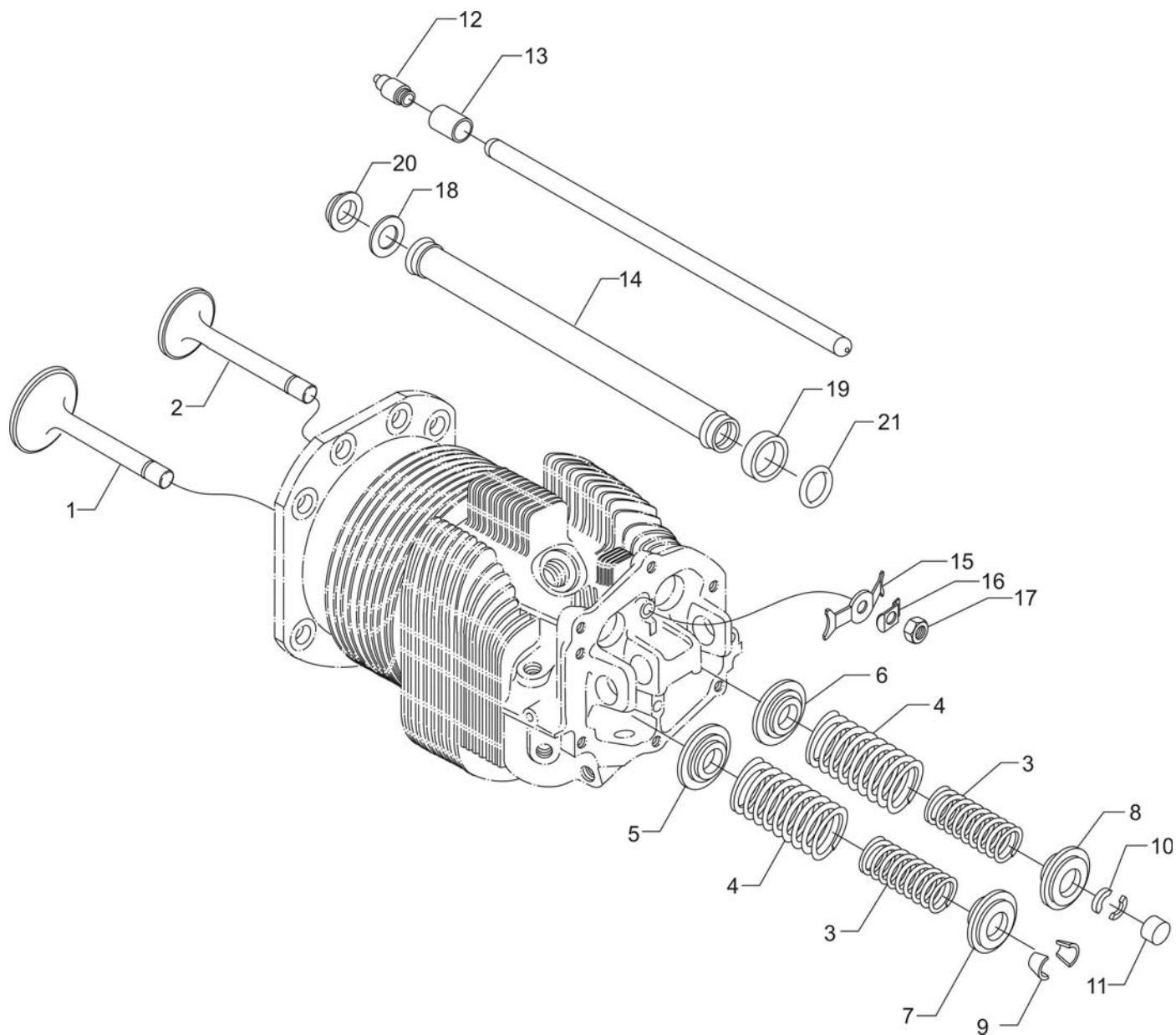
Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-11750-S	CONNECTING ROD ASSEMBLY	4
2		LW-13923	BUSHING, Connecting rod, upper	4
3	* <b>P</b>	75061 14S23890	BOLT, Connecting rod	8
4		LW-12186	NUT, Connecting rod bolt	8
5		18M26105	BEARING, Connecting rod	8
6		75089	PISTON, 8.5:1 compression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



**Cylinder Assembly**  
**Figure 10**

**CYLINDER SECTION****FIGURE 10 - CYLINDER ASSEMBLY**

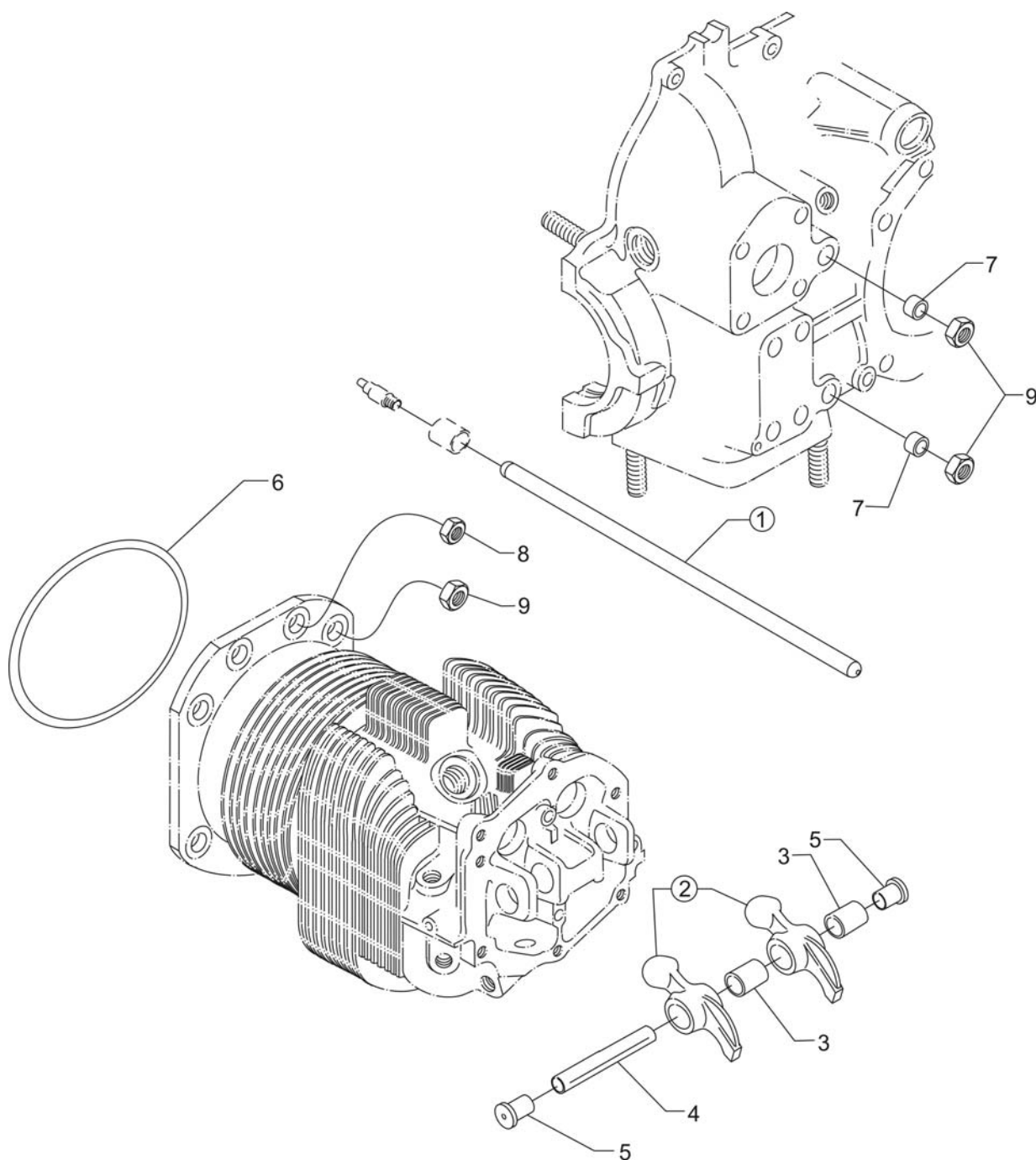
<b>Figure Item</b>	<b>Code</b>	<b>Part Number</b>	<b>Description</b>	<b>Units per Assembly</b>
1		LW-12427	CYLINDER ASSEMBLY, Nitrided	4
2		72057	SEAT, Valve, intake	4
3		72058	SEAT, Valve, exhaust	4
4	<b>P*</b>	76943	GUIDE, Valve, intake	4
5	<b>P*</b>	16R22126	GUIDE, Valve, exhaust	4
6	<b>P</b>	66796	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
<b>P</b> Lycoming proprietary part. Listed for reference purposes only, cannot be purchased. <b>*</b> See latest revision of Service Instruction No. 1256 for service valve guides.				



**Valve Assembly and Related Parts**  
**Figure 11**

**CYLINDER SECTION****FIGURE 11 – VALVE ASSEMBLY AND RELATED PARTS**

<b>Figure Item</b>	<b>Code</b>	<b>Part Number</b>	<b>Description</b>	<b>Units per Assembly</b>
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 <b>(Roller tappet engines)</b>	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 <b>(Roller tappet engines)</b>	8
19		LW-18661	SEAL, Shroud tube	8
20		06A23493	SEAL, Shroud tube <b>(Roller tappet engines)</b>	8
21	*	70310	SEAL, Shroud tube	8
* This seal needs to be installed on both roller tappet engines and flat tappet engines				

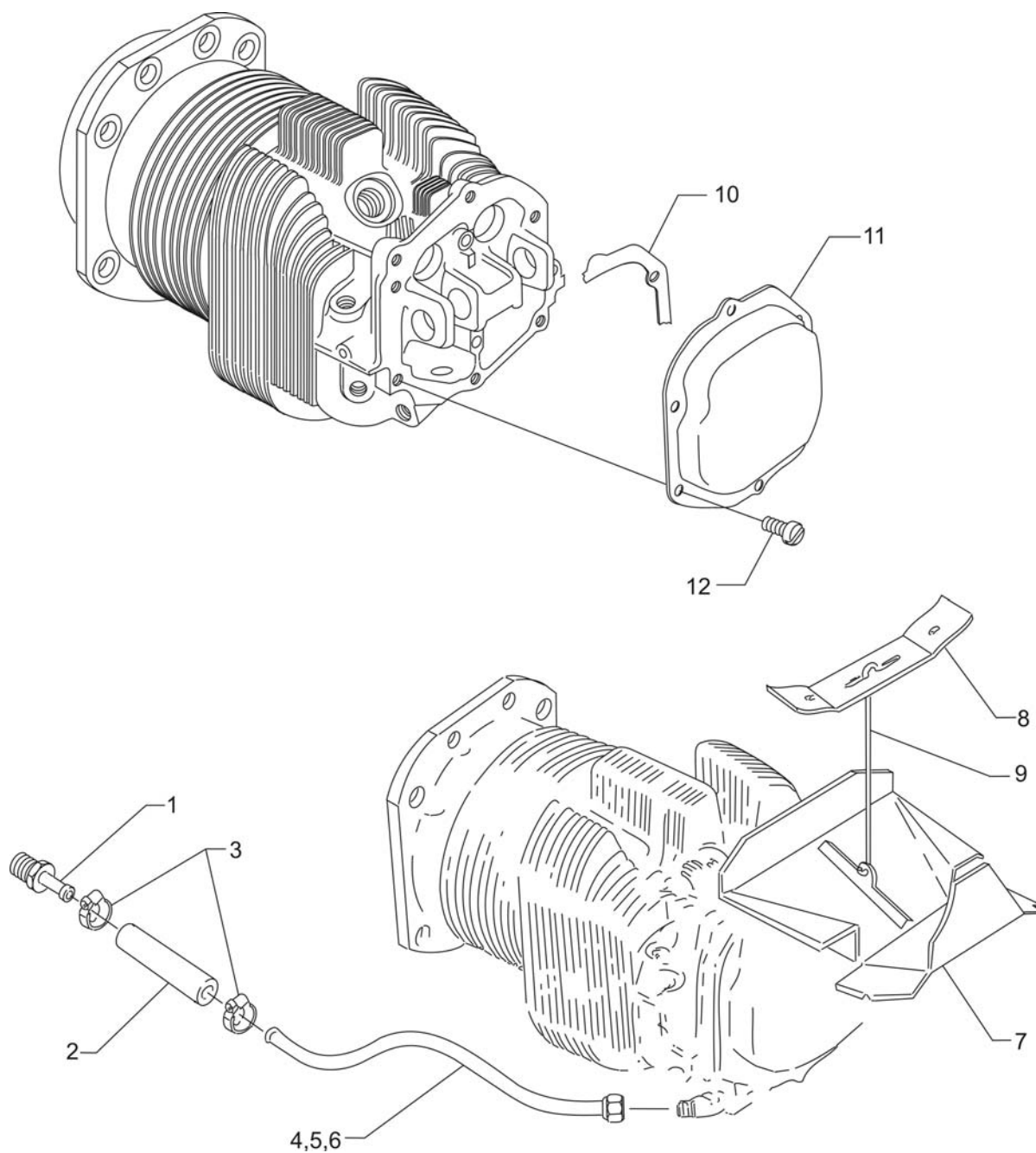


**Cylinder Related Parts**  
**Figure 12**



**CYLINDER SECTION****FIGURE 12 – CYLINDER RELATED PARTS**

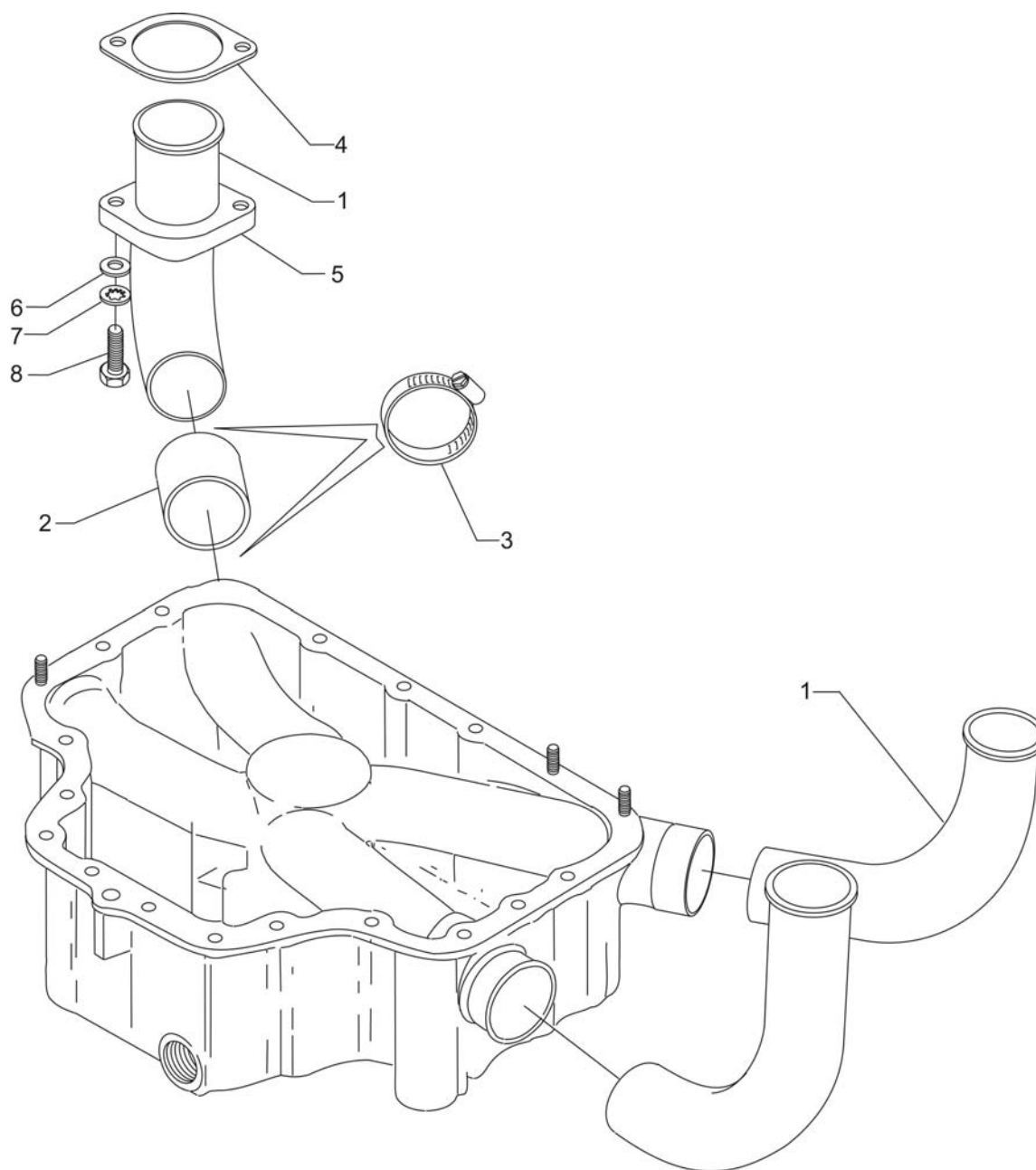
Figure Item	Code	Part Number	Description	Units per Assembly
1	*♦AR	15F19957-28	ROD ASSEMBLY, Push (A total of 8 required)	AR
	*♦AR	15F19957-29	ROD ASSEMBLY, Push (A total of 8 required)	AR
	*♦AR	15F19957-30	ROD ASSEMBLY, Push (A total of 8 required)	AR
	*♦AR	15F19957-31	ROD ASSEMBLY, Push (A total of 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	15F19937-37	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><b>AR</b> 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><b>NOTE:</b> Various push rod lengths are used to set valve clearances.</p>				



**Rocker Box Cover, Cylinder Head Drain Tubes,  
and Intercylinder Cooling Baffles**  
**Figure 13**

**CYLINDER SECTION****FIGURE 13– ROCKER BOX COVER, CYLINDER HEAD DRAIN TUBES,  
AND INTERCYLINDER COOLING BAFFLES**

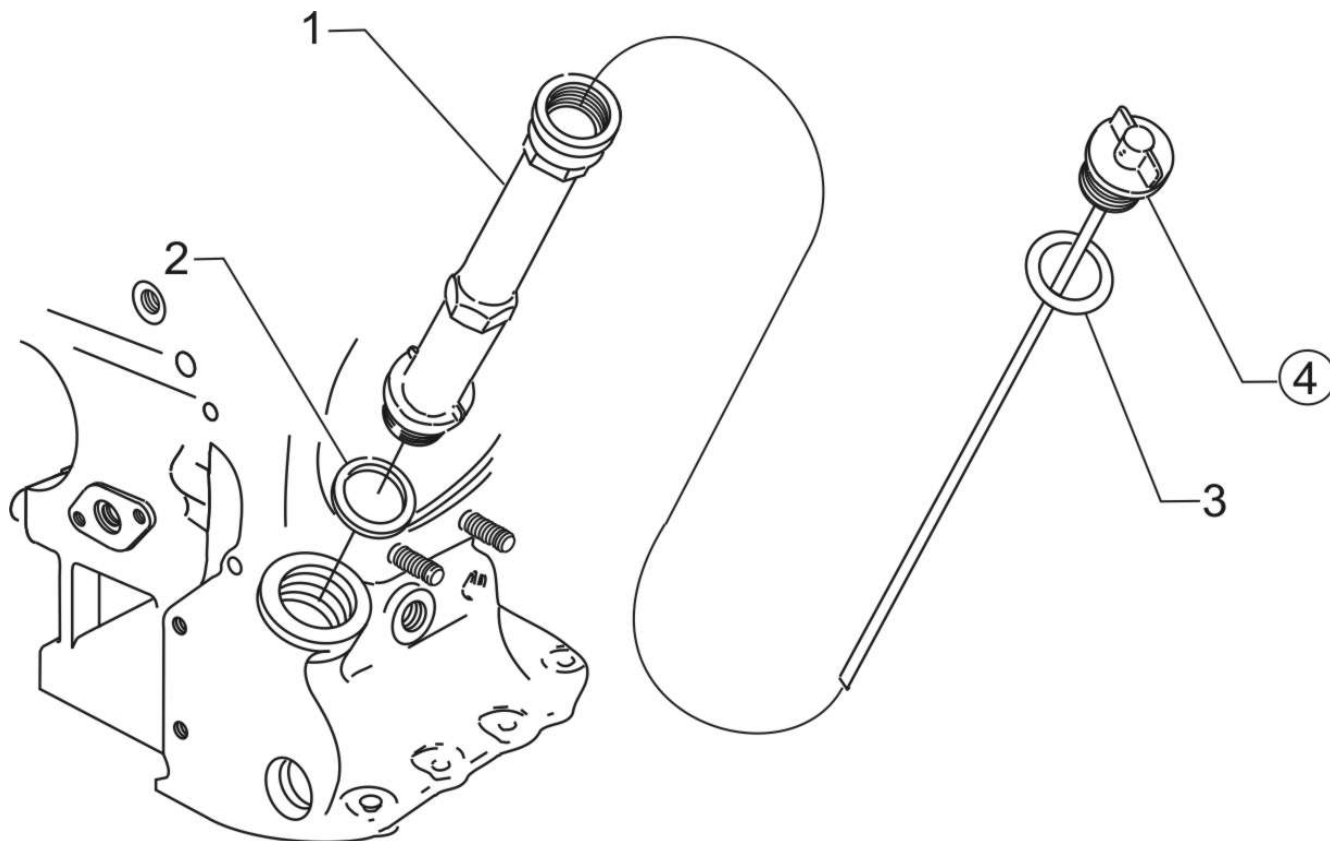
<b>Figure Item</b>	<b>Code</b>	<b>Part Number</b>	<b>Description</b>	<b>Units per Assembly</b>
1		STD-684	NIPPLE, Straight, 3/8 I.D. hose	4
2		STD-1821	HOSE, 3/8 x 2-1/2 long	4
3		LW-15592-5-05	CLAMP, Hose	8
4		68759	TUBE ASSY., Cylinder head oil drain, cyl. no. 1	1
5		68760	TUBE ASSY., Cylinder head 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 14**

**CYLINDER SECTION****FIGURE 14 – INTAKE PIPES AND ATTACHING PARTS**

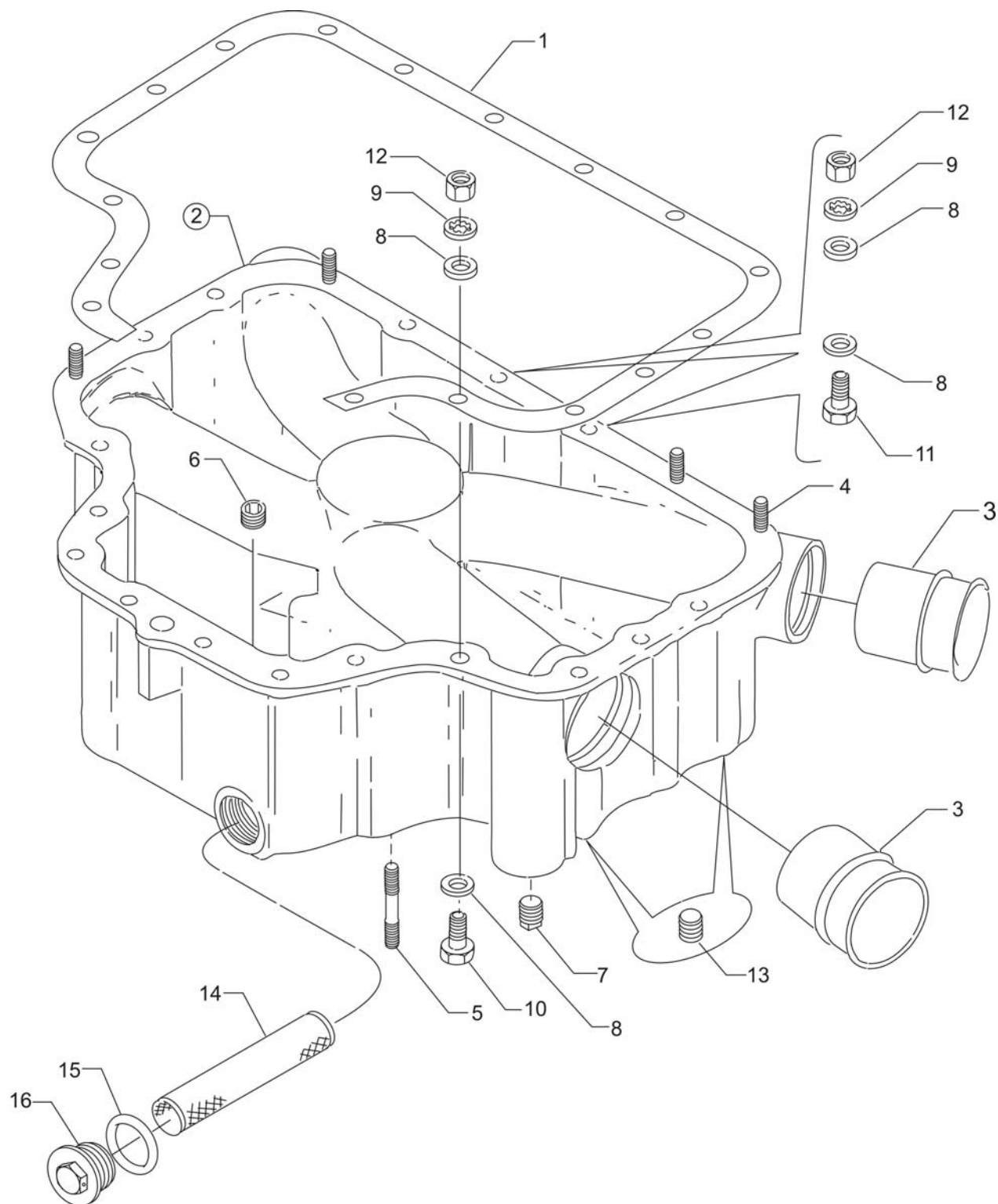
<b>Figure Item</b>	<b>Code</b>	<b>Part Number</b>	<b>Description</b>	<b>Units per Assembly</b>
1		70485	PIPE, Intake	4
2		69603	HOSE, 1-3/4 I.D. x 2-3/16 O.D. x 1-3/4 long	4
3		LW-15592-8-28	CLAMP, Hose	8
4		71973	GASKET, 2 bolt flange, 1-7/8 I.D.	4
5		73346	FLANGE, Intake pipe, upper	4
6		STD-8	WASHER, 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 15**

**LUBRICATION SYSTEM****FIGURE 15 – OIL LEVEL GAGE ASSEMBLY**

<b>Figure Item</b>	<b>Code</b>	<b>Part Number</b>	<b>Description</b>	<b>Units per Assembly</b>
1		75767	TUBE, Oil level gage , short	1
2		72059	GASKET, Oil level gage	1
3		74065	RING, Oil level gage seal	1
4		LW-14780	GAGE ASSEMBLY, Oil level	1

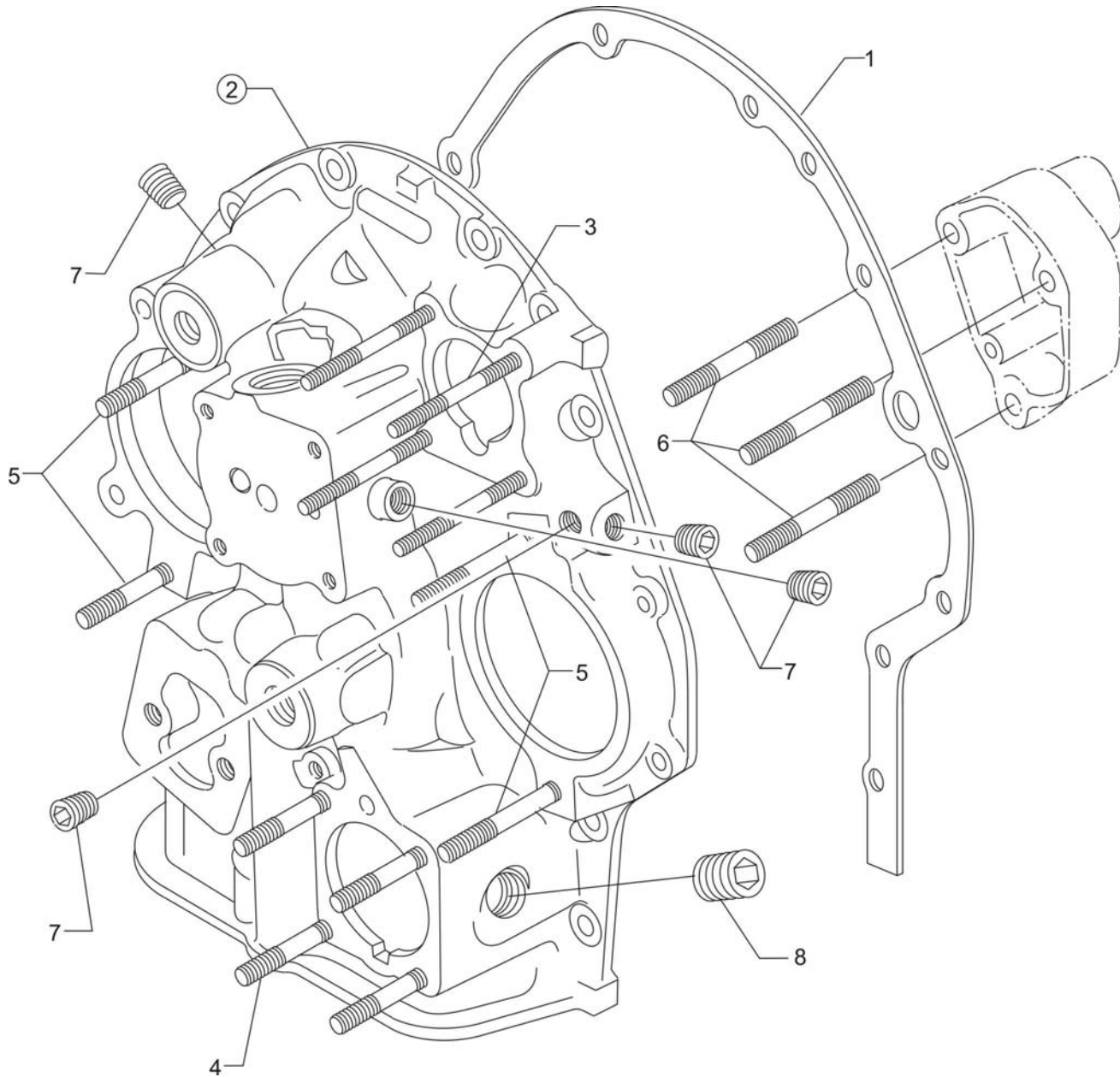


**Oil Sump Assembly and Oil Suction Screen  
Figure 16**



**LUBRICATION SYSTEM****FIGURE 16 – OIL SUMP ASSEMBLY AND OIL SUCTION SCREEN**

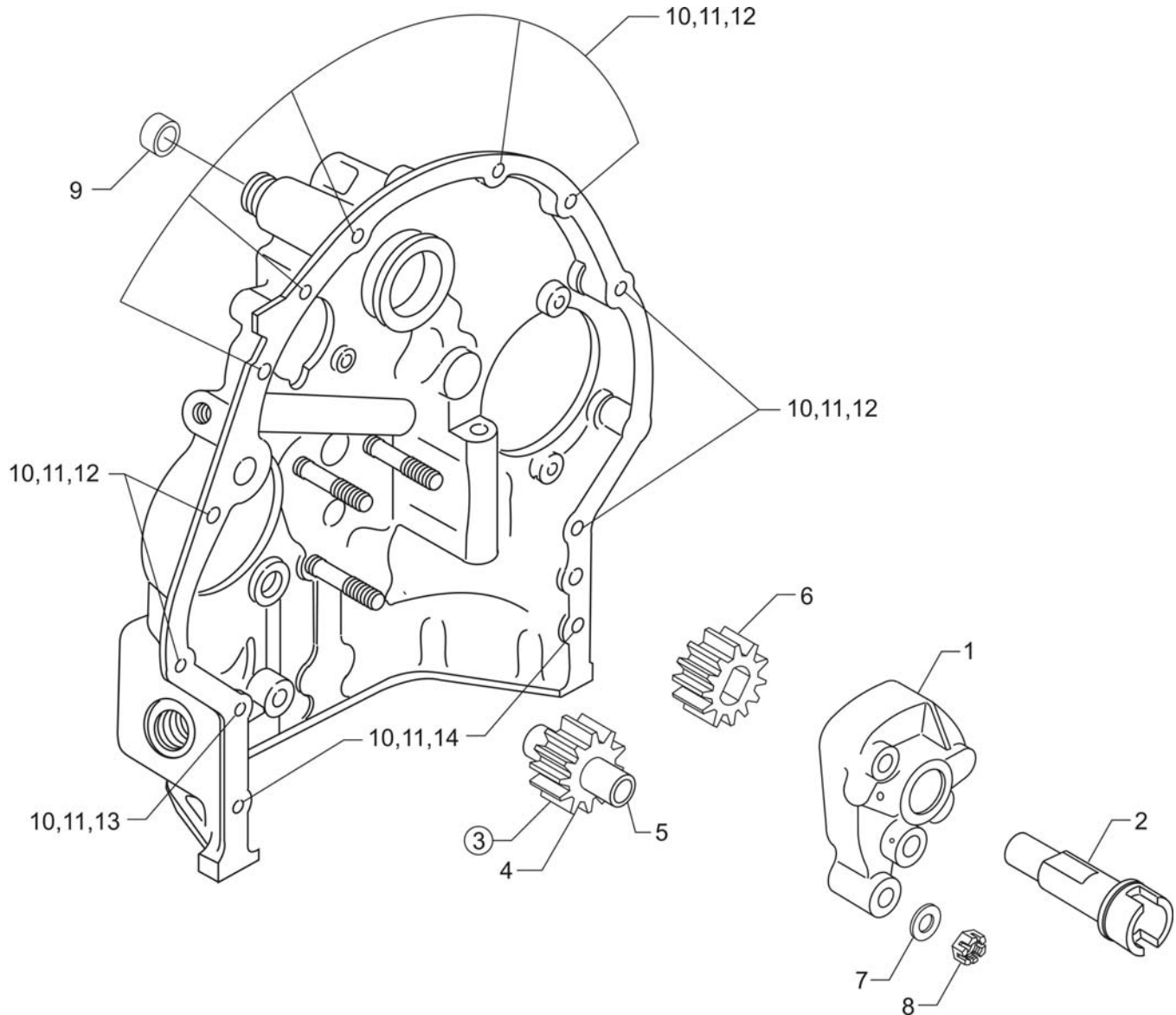
<b>Figure Item</b>	<b>Code</b>	<b>Part Number</b>	<b>Description</b>	<b>Units per Assembly</b>
1		LW-13353	GASKET, Oil sump	1
2		78915	SUMP ASSEMBLY, Oil	1
3		78914	CONNECTION, Intake pipe	4
4		61400	STUD, 1/4-20 x 1-3/16 long	4
5		31C-15	STUD, 5/16-18 x 1-7/8 long	4
6		STD-91	PLUG, 1/2-14 NPT, allen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



**Accessory Housing Assembly  
Figure 17**

**ACCESSORY DRIVES****FIGURE 17 – ACCESSORY HOUSING ASSEMBLY**

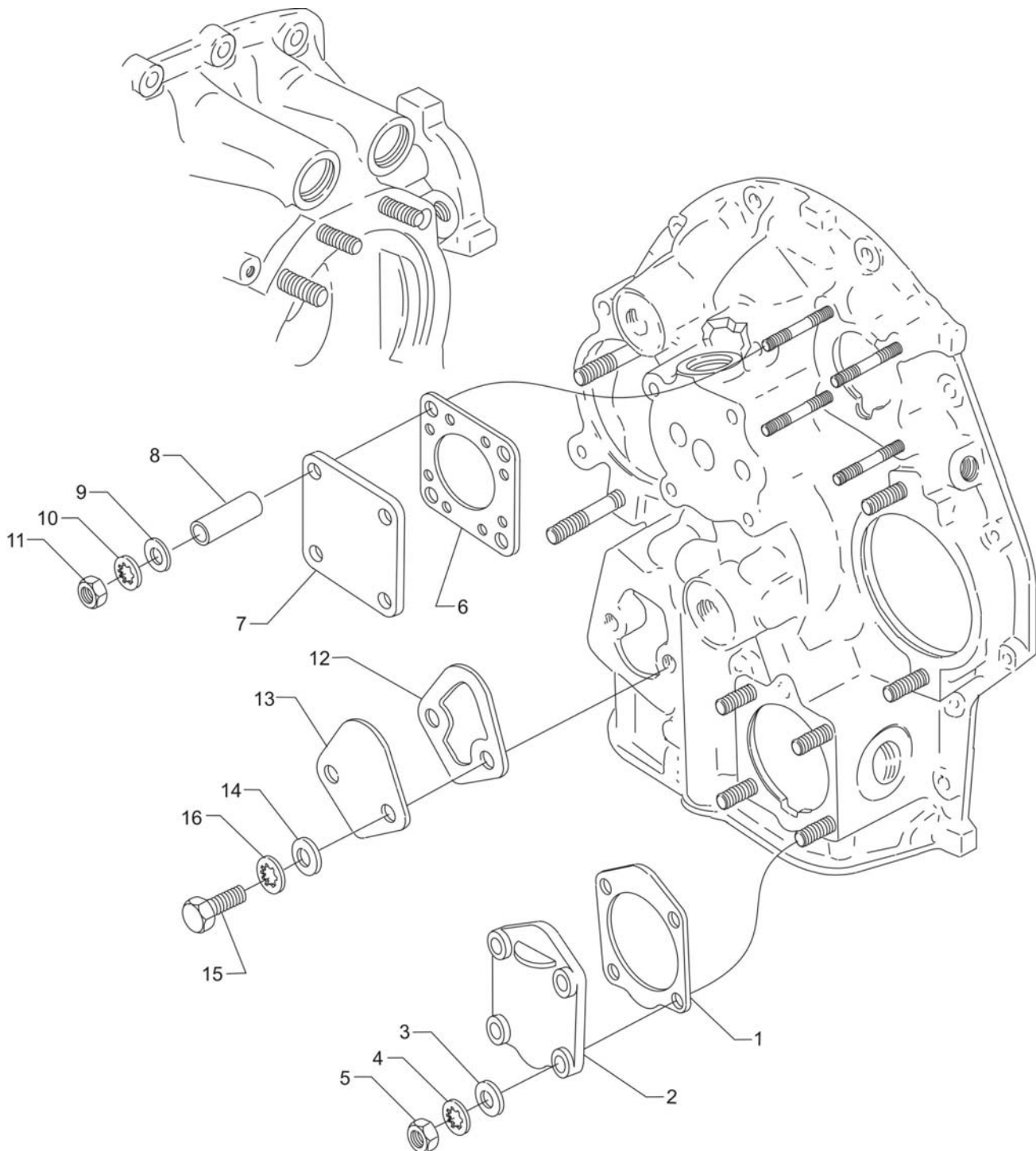
<b>Figure Item</b>	<b>Code</b>	<b>Part Number</b>	<b>Description</b>	<b>Units per Assembly</b>
1		73818	GASKET, Accessory housing	1
2		21A21533-05	HOUSING ASSEMBLY, Accessory	1
3		25C-22	STUD, 1/4-20 x 2-3/4 long	4
4		31C-12	STUD, 5/16-18 x 1-1/2 long	4
5		31C-19	STUD, 5/16-18 x 2-3/8 long	4
6		31CD-17	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



**Oil Pump Assembly and Accessory Housing Attaching Parts  
Figure 18**

**ACCESSORY DRIVES****FIGURE 19 – OIL PUMP ASSEMBLY AND ACCESSORY HOUSING ATTACHING PARTS**

<b>Figure Item</b>	<b>Code</b>	<b>Part Number</b>	<b>Description</b>	<b>Units per Assembly</b>
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 drive	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).				

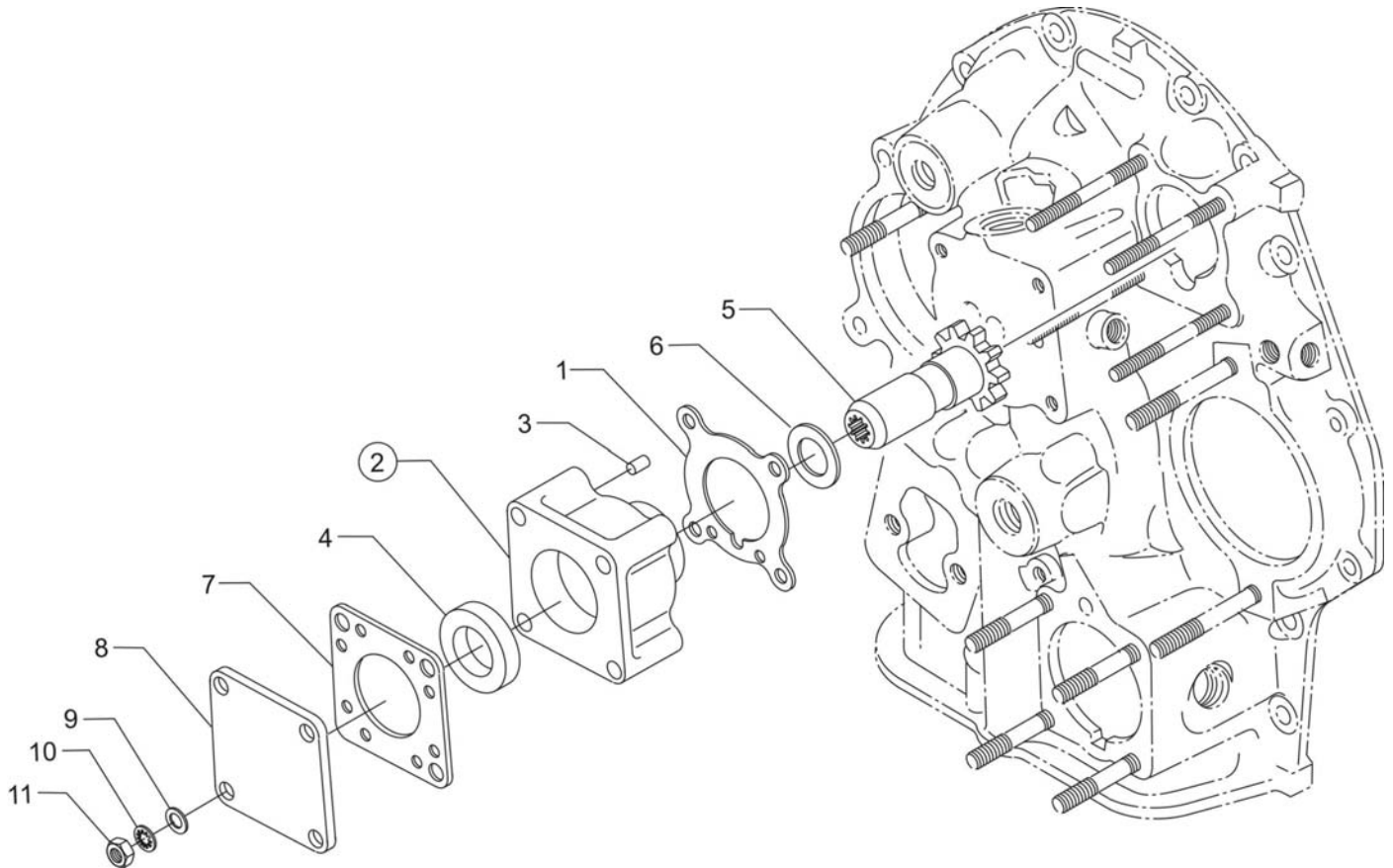


**Propeller Governor Drive Cover, Vacuum Pump Drive Cover and Fuel Pump Cover  
Figure 20**

**ACCESSORY DRIVES****FIGURE 20 – PROPELLER GOVERNOR DRIVE COVER, VACUUM PUMP DRIVE COVER  
AND FUEL PUMP DRIVE COVER**

<b>Figure Item</b>	<b>Code</b>	<b>Part Number</b>	<b>Description</b>	<b>Units per Assembly</b>
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		61183	GASKET, Vacuum pump	1
7		60430	COVER, Vacuum pump	1
8		68593	SPACER, Vacuum pump stud	4
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
12		60096	GASKET, Fuel pump	1
13		03D23350	COVER, Fuel pump	1
14		STD-33	WASHER, 3/8 plain	2
15		LW-38-0.75	BOLT, 3/8-16 x 3/4 long	2
16		STD-678	WASHER, 3/8 lock, internal teeth	2



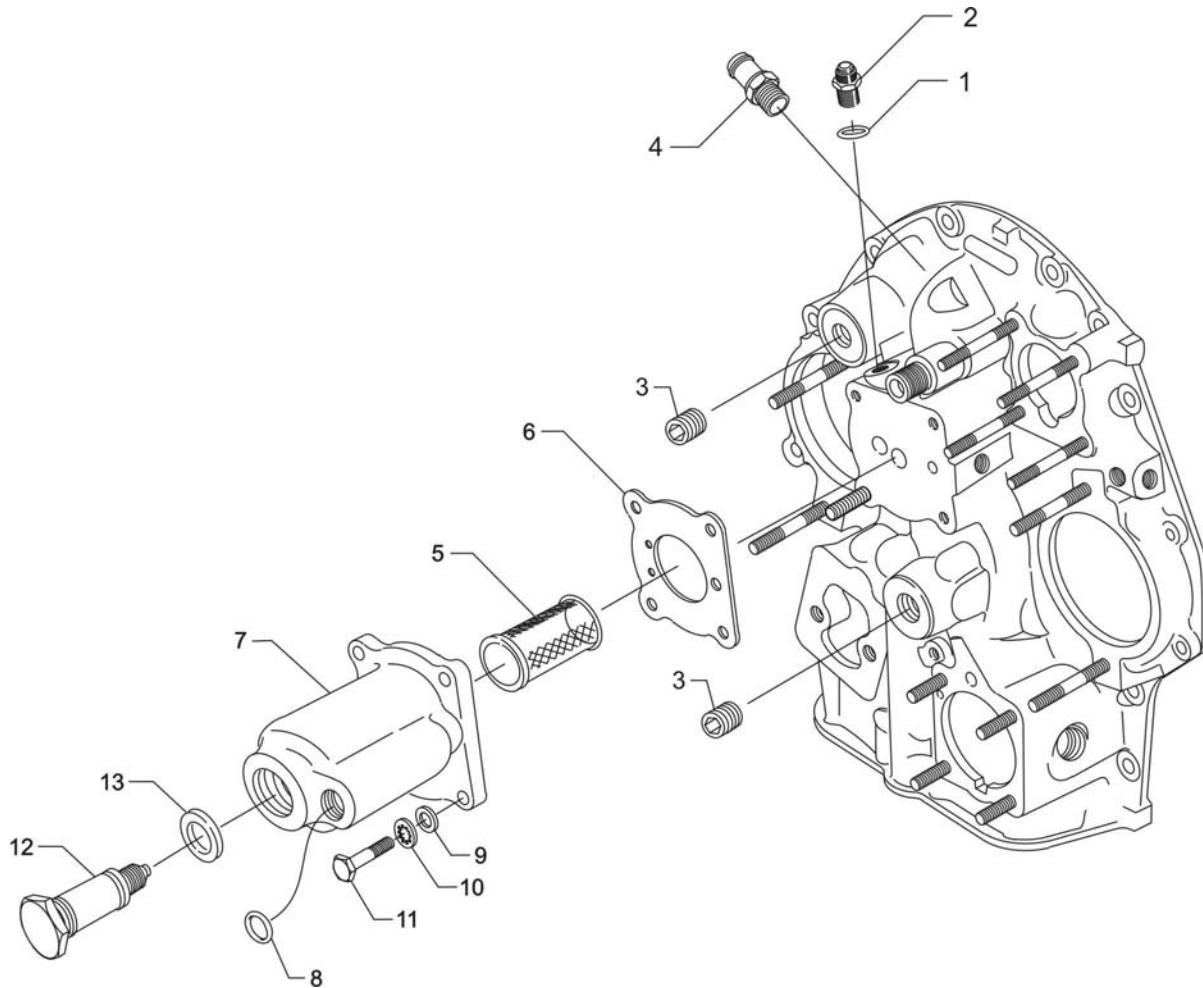


**Vacuum Pump Drive and Cover**  
**Figure 21**



**ACCESSORY DRIVES****FIGURE 21 – VACUUM PUMP DRIVE AND COVER**

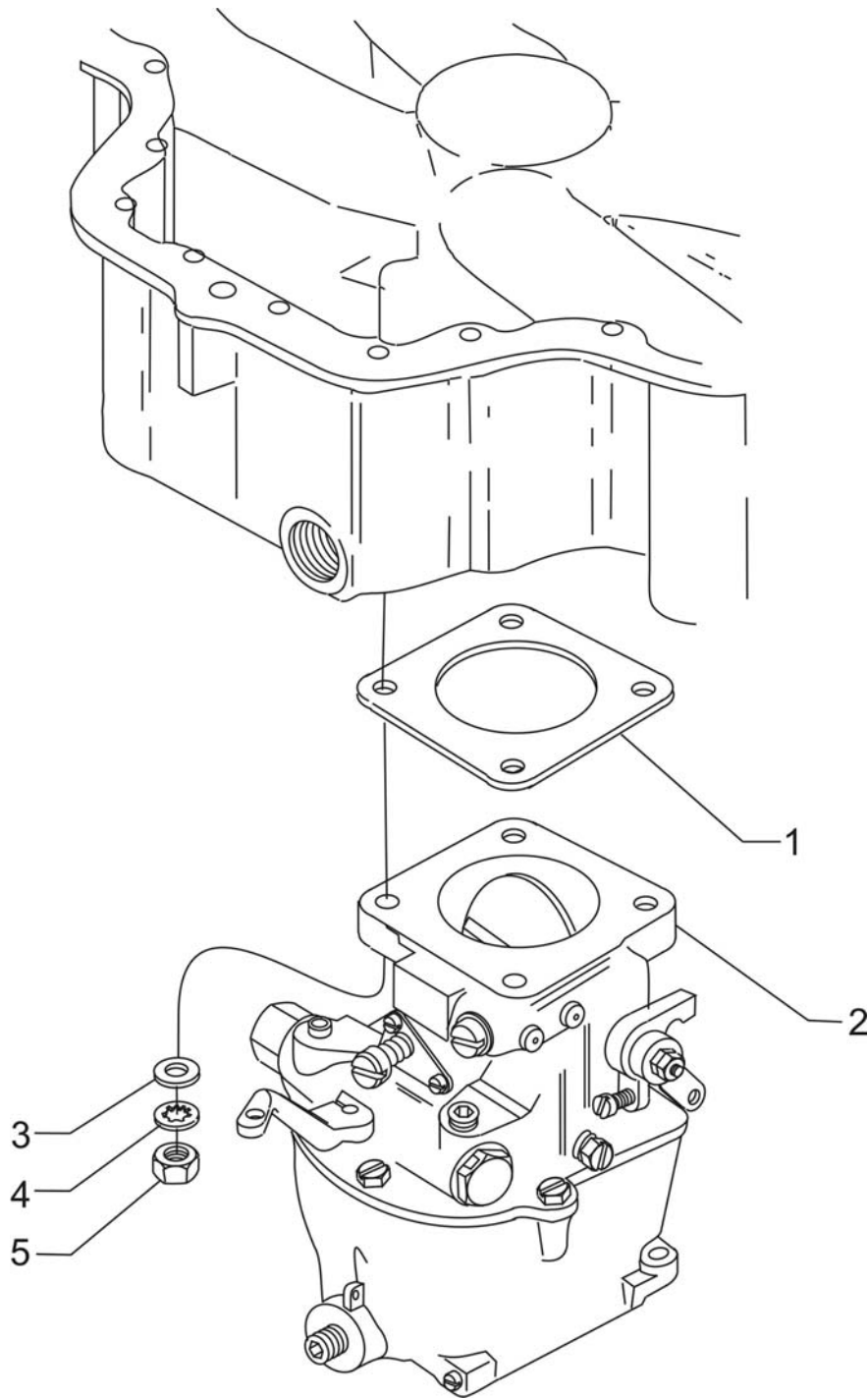
<b>Figure Item</b>	<b>Code</b>	<b>Part Number</b>	<b>Description</b>	<b>Units per Assembly</b>
1		61183	GASKET, Accessory adapter	1
2		61098	ADAPTER ASSEMBLY, Vacuum pump	1
3		STD-1774	PIN, 1/8 diameter x 1/4 long	1
4		06A19956	OIL SEAL, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide	1
5		72970	GEAR ASSEMBLY, Vacuum 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 22**

**ACCESSORY DRIVES****FIGURE 22 – OIL PRESSURE SCREEN AND OIL COOLER BYPASS VALVE**

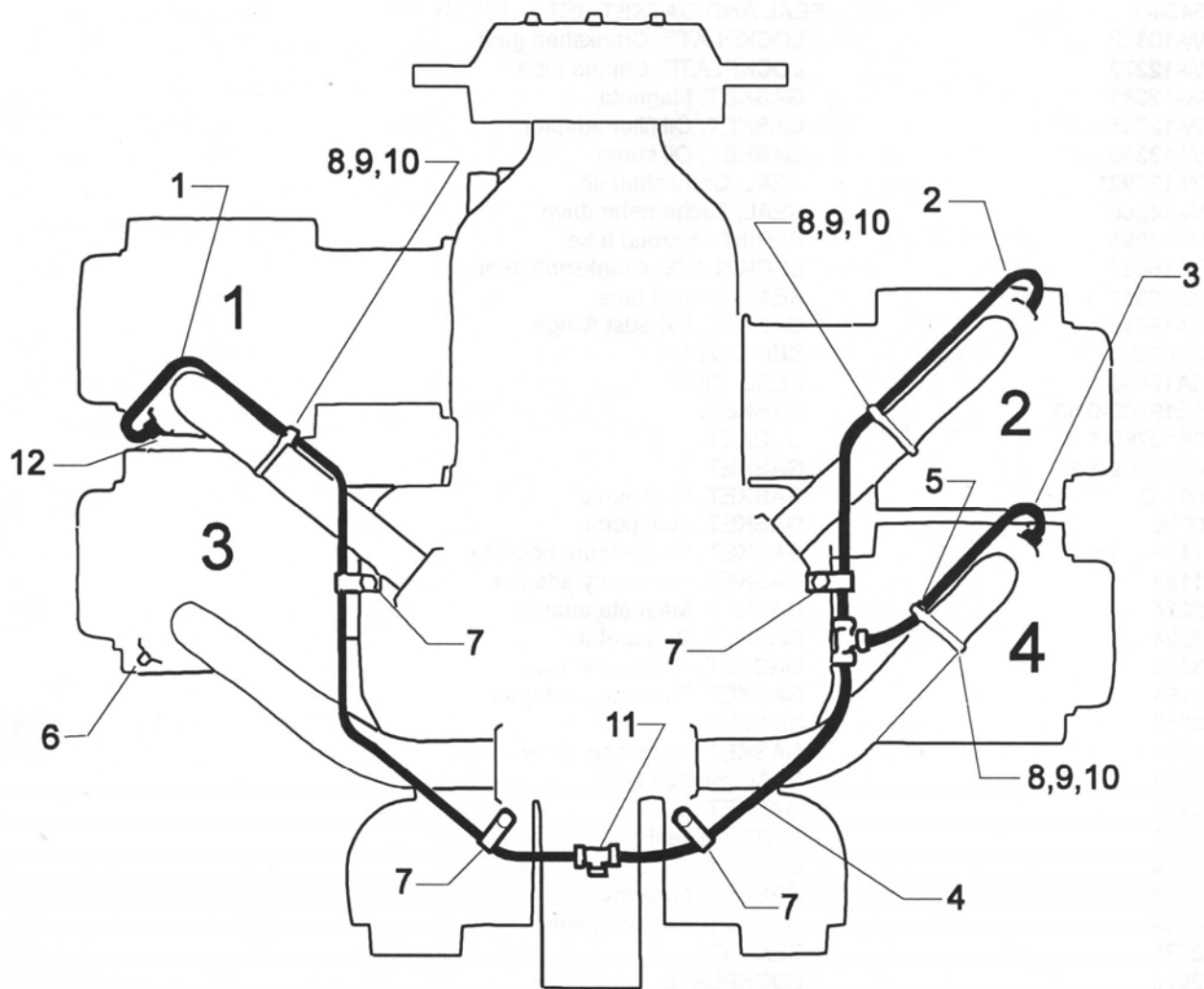
<b>Figure Item</b>	<b>Code</b>	<b>Part Number</b>	<b>Description</b>	<b>Units per Assembly</b>
1		06E19769-0.63	GASKET, Annular, 5/8 I.D.	1
2		69675	CONNECTOR, Accessory housing to oil cooler inlet hose	1
3		STD-784	PLUG, 3/8-18 NPT, allen head	2
4		71140	FITTING, Breather	1
5		62817	SCREEN ASSEMBLY, Oil pressure	1
6		61173	GASKET, Oil pressure housing	1
7		69510	HOUSING, Thermostatic valve and oil cooler pressure screen	1
8		06E19769-0.63	GASKET, Annular, 5/8 I.D.	1
9		STD-8	WASHER, 1/4 plain	4
10		STD-160	WASHER, 1/4 lock, internal teeth	4
11		LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. head	4
12		53E22144	VALVE ASSEMBLY, Temperature control, oil cooler bypass	1
13		76510	GASKET, Valve assembly	1



**Carburetor Assembly  
Figure 23**

**FUEL DISTRIBUTION****FIGURE 23 – CARBURETOR ASSEMBLY**

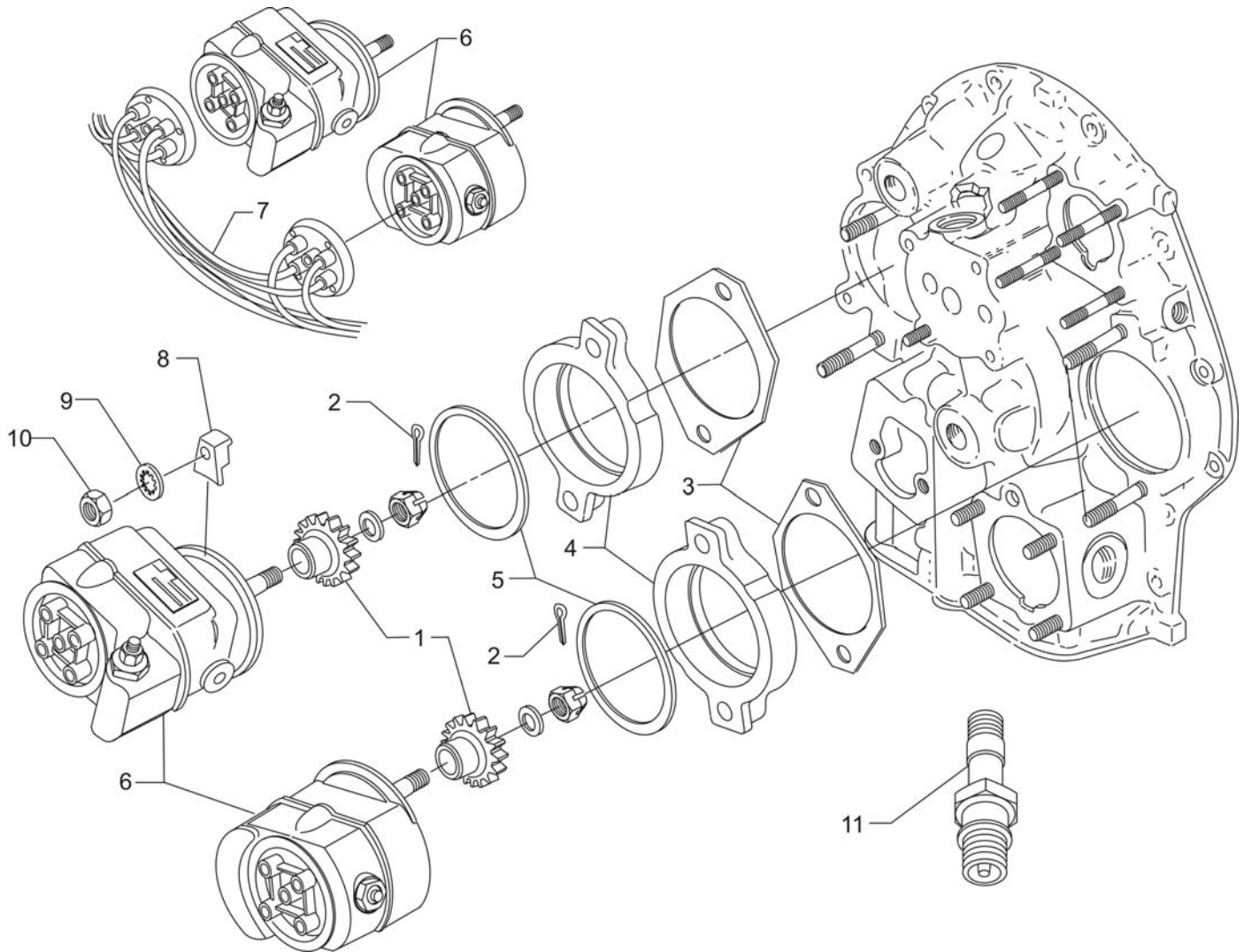
<b>Figure Item</b>	<b>Code</b>	<b>Part Number</b>	<b>Description</b>	<b>Units per Assembly</b>
1		66224	GASKET, Carburetor	1
2	<b>V</b>	61C26047	CARBURETOR, MA-4-5, <b>V</b> AV 10-4164-1	1
	<b>V</b>	61C26049	CARBURETOR, MA-4-5, <b>V</b> AV 10-5193	1
3		STD-35	WASHER, 5/16 plain	4
4		STD-475	WASHER, 5/16 lock, internal teeth	4
5		STD-1410	NUT, 5/16-18 plain	4
<b>V</b> Vendor Prime Manufacturer part				



**Priming System**  
**Figure 24**

**FUEL DISTRIBUTION**  
**FIGURE 24 – 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
		LW-12098-0-130	TUBE ASSEMBLY, Primer, cylinders no. 2 and 4	2
4		LW-12098-0-100	TUBE ASSEMBLY, Primer, intermediate	1
		LW-12098-0-050	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 25**

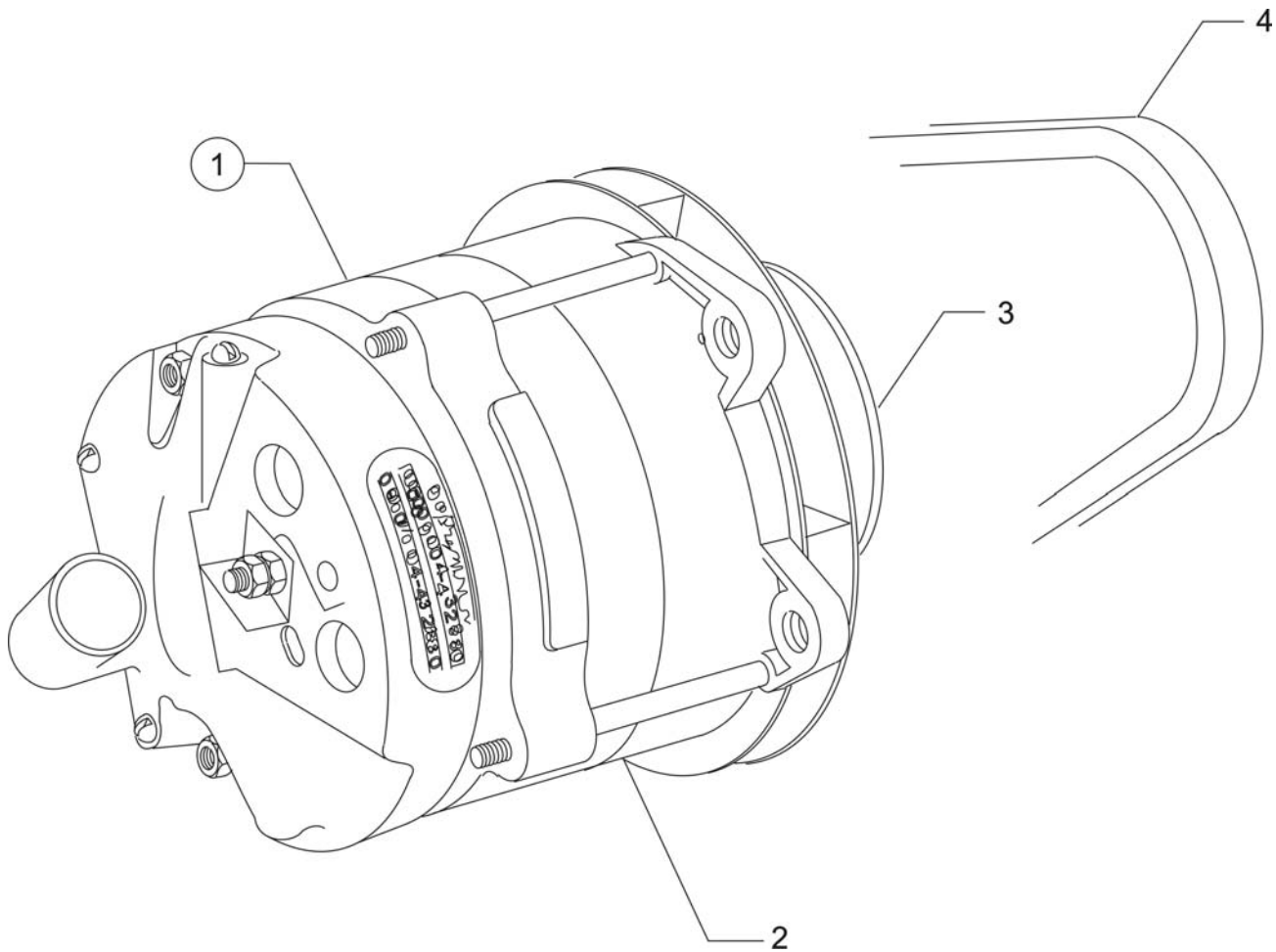


**IGNITION DISTRIBUTION SYSTEM****FIGURE 25 – MAGNETO DRIVES, HARNESES AND SPARK PLUGS**

Figure Item	Code	Part Number	Description	Units per Assembly
1		61665	GEAR, Magneto, impulse coupling	2
2		STD-713	COTTER PIN, 3/32 diameter x 3/4 long	2
3		66224	GASKET, Magneto adapter and magneto	2
4		LW-12706	ADAPTER, Magneto, impulse coupling	2
5		LW-12681	GASKET, Magneto	2
6	<b>V</b>	66GC20SFNN	MAGNETO, Impulse, Slick <b>V</b> 4371	2
7	<b>V</b>	67P20407	HARNESS ASSEMBLY, Left, Slick <b>V</b> M1795	1
	<b>V</b>	67P20406	HARNESS ASSEMBLY, Right, Slick <b>V</b> M2992	1
8		66M21195	CLAMP, Harness	4
9		STD-475	WASHER, 5/16 lock, internal teeth	4
10		STD-1410	NUT, 5/16-18 plain	4
11	<b>*V</b>	1182-E7	SPARK PLUG, Champion <b>V</b> REM38E	8
	<b>**</b>	01P19762-1-43	BAG, Magneto harness attaching	1
<p><b>V</b> Vendor Prime Manufacturer part</p> <p><b>*</b> Item No. 11 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><b>**</b> 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>				

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

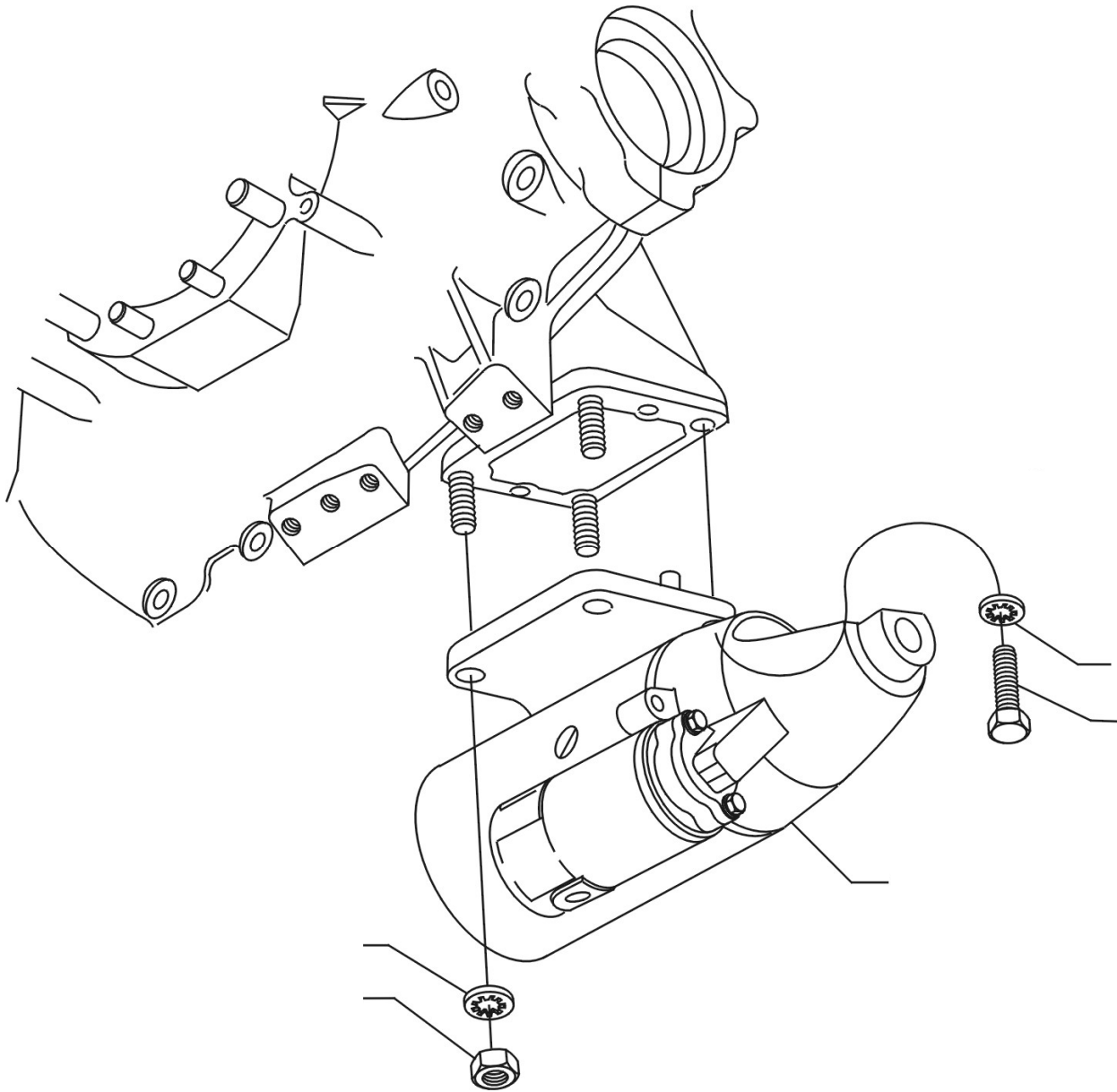
Part No.	Part Name	Qty.
LW-16266-25-25	CLIP, One wire	4
LW-14060	CLIP, Two wire	3
STD-8	WASHER, 1/4 plain	8
STD-1874	SCREW, 1/4-20 x 13/16 long, fill. head	6
LW-16266-25-50	CLAMP	1
STD-696	WASHER, 1/4 plain	4
STD-1916	SCREW, 1/4-20 x 1-1/8 long, fill. head	3
LW-M-2375	PLATE, Spark plug cable, two wire	2
76734	ZIP STRAP	8



**Alternator Assembly and Belt**  
**Figure 26**

**IGNITION DISTRIBUTION SYSTEM****FIGURE 26 – ALTERNATOR ASSEMBLY AND BELT**

<b>Figure Item</b>	<b>Code</b>	<b>Part Number</b>	<b>Description</b>	<b>Units per Assembly</b>
1		32B23992	ALTERNATOR ASSEMBLY, 12V.-70Amp.	1
		32B19549	ALTERNATOR ASSEMBLY, 12V.-70Amp.	1
2	<b>V</b>	LW-14318	ALTERNATOR, <b>V</b> ALX-8521-LS	1
3		36B19484	PULLEY, Alternator	1
4		37A19773-376	BELT, Alternator, 3/8 wide	1
<b>V</b> Vendor Prime Manufacturer part <b>NOTE:</b> 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 27**

**CRANKING SECTION****FIGURE 27 - STARTER MOTOR AND ATTACHING PARTS**

<b>Figure Item</b>	<b>Code</b>	<b>Part Number</b>	<b>Description</b>	<b>Units per Assembly</b>
1	<b>V</b>	31A22104	STARTER, Sky-Tec <b>V</b> 149-12LS	1
	<b>V</b>	31A22110	STARTER, Sky-Tec <b>V</b> 149-12HT	1
2		STD-475	WASHER, 5/16-18 lock, internal teeth	4
3		LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex. head	1
4		STD-1410	NUT, 5/16-18 plain	3
<b>V</b> Vendor Prime Manufacturer part <b><u>NOTE:</u></b> See latest revision of Lycoming Service Instruction No. 1154 for complete listing of FAA approved starters, generators, regulators and relays.				

**SERVICE KIT SECTION**  
**SEAL AND GASKET SET**

<b>PART NO.</b>	<b>PART NAME</b>	<b>Qty.</b>
<b>75439-1</b>	<b>KIT - SEAL AND GASKET SET</b>	<b>1</b>
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

**SEAL AND GASKET SET (CONT.)**

<b>PART NO.</b>	<b>PART NAME</b>	<b>Qty.</b>
<b>75439-1</b>	<b>KIT - SEAL AND GASKET SET</b>	<b>1</b>
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**

<b>PART NO.</b>	<b>PART NAME</b>	<b>Qty.</b>
<b>05K21104</b>	<b>KIT - CYLINDER, PISTON AND RING ASSEMBLY</b>	<b>1</b>
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
17C19386	CAP, Valve stem, exhaust (rotator)	1

**CYLINDER PISTON AND RING ASSEMBLY (CONT.)**

<b>PART NO.</b>	<b>PART NAME</b>	<b>Qty.</b>
<b>05K21104</b>	<b>KIT - CYLINDER, PISTON AND RING ASSEMBLY</b>	<b>1</b>
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 KITS**

<b>PART NO.</b>	<b>PART NAME</b>	<b>Qty.</b>
<b>11B19524-1-S</b>	<b>KIT - CRANKCASE ASSEMBLY AND THRU-STUD</b>	<b>1</b>
11B19524-1	CRANKCASE ASSEMBLY	1
76220	THRU-STUD	4
31C-14	STUD, 5/16-18 x 1-3/4 long	4
31C-16	STUD, 5/16-18 x 2.00 long	4
74887	SPACER, 33/64 ID x 7/8 OD 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, 1/2-20 plain	2



**CRANKCASE ASSEMBLY AND THRU-STUD KITS – ROLLER TAPPETS**

<b>PART NO.</b>	<b>PART NAME</b>	<b>Qty.</b>
<b>11B19524-5-S</b>	<b>KIT - CRANKCASE ASSEMBLY AND THRU-STUD</b>	<b>1</b>
11B19524-5	CRANKCASE ASSEMBLY (Roller tappet engines)	1
76220	THRU-STUD	4
31C-14	STUD, 5/16-18 x 1-3/4 long	4
31C-16	STUD, 5/16-18 x 2.00 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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PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
AN565B1032H5	Set Screw	5	LW-13793	Stud	7
AN6-14	Bolt	1	LW-13796	Shaft	13
AN6-16	Bolt	1	LW-13896	Plug	5
AN6-17	Bolt	1	LW-13923	Bushing	17
AN6-34A	Bolt	15	LW-14021	Shaft	5
AN960-616L	Washer	15	LW-14078	Pin	17
LRT23381	Body	9	LW-14260	Seal	35
LW-25-0.94	Bolt	31	LW-14318	Alternator	49
LW-25-0.94	Bolt	35	LW-14780	Gage Assy.	29
LW-25-1.00	Bolt	41	LW-14995	Spring	21
LW-25-1.13	Bolt	15	LW-15592-5-05	Clamp	25
LW-25-1.13	Bolt	31	LW-15592-8-28	Clamp	27
LW-25-1.13	Bolt	35	LW-16064	Support Assy.	11
LW-25-1.25	Bolt	27	LW-16266-25-13	Clamp	45
LW-25-1.44	Bolt	35	LW-16471	Support Assy.	11
LW-25-1.50	Bolt	15	LW-16475	Seat	21
LW-25-1.75	Bolt	15	LW-18085	Spring	9
LW-25S1.50	Bolt	15	LW-18108	Impeller	35
LW-31-0.94	Bolt	1	LW-18109	Impeller	35
LW-31-0.94	Bolt	3	LW-18110	Impeller Assy.	35
LW-31-0.94	Bolt	51	LW-18639	Lockplate	11
LW-31H0.75	Bolt	1	LW-18661	Seal	21
LW-31H0.75	Bolt	3	LW-18667	Pin	13
LW-31H0.88	Bolt	13	LW-18843	Camshaft Assy.	13
LW-38-0.75	Bolt	37	LW-18959-175-25	Clamp	45
LW-10077	Seat	21	MS20823-6D	Elbow	19
LW-11485	Shroud Tube Assy.	21	MS21044N06	Nut	45
LW-11713	Spring	9	STD-8	Washer	15
LW-11750-S	Conn. Rod Assy.	17	STD-8	Washer	27
LW-11795	Spring	21	STD-8	Washer	31
LW-11800	Spring	21	STD-8	Washer	35
LW-12098-050	Tube Assy.	45	STD-8	Washer	37
LW-12098-100	Tube Assy.	45	STD-8	Washer	39
LW-12098-130	Tube Assy.	45	STD-8	Washer	41
LW-12098-180	Tube Assy.	45	STD-19	Dowel	5
LW-12098-290	Tube Assy.	45	STD-33	Washer	15
LW-12186	Nut	17	STD-33	Washer	37
LW-12272	Lockplate	21	STD-35	Washer	1
LW-12427	Cylinder Assy.	19	STD-35	Washer	3
LW-12545	Plug	31	STD-35	Washer	5
LW-12598	Sleeve	45	STD-35	Washer	19
LW-12681	Gasket	47	STD-35	Washer	35
LW-12706	Adapter	47	STD-35	Washer	37
LW-12892	Thrust Button	23	STD-35	Washer	43
LW-13323	Seat	21	STD-91	Plug	31
LW-13353	Gasket	31	STD-160	Washer	15
LW-13790	Shaft	23	STD-160	Washer	27
LW-13792	Seal	9	STD-160	Washer	31

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STD-160	Washer	39	STD-2090	Nut	23
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STD-475	Washer	19	STD-2231	Ring	13
STD-475	Washer	37	STD-2246	Bolt	11
STD-475	Washer	43	STD-2249	Nut	15
STD-475	Washer	47	25C-8	Stud	19
STD-475	Washer	51	25C-22	Stud	33
STD-514	Dowel	7	31C-12	Stud	7
STD-551	Plug	31	31C-12	Stud	19
STD-553	Screw	45	31C-12	Stud	33
STD-557	Dowel	7	31C-13	Stud	7
STD-596	Nut	15	31C-15	Stud	31
STD-678	Washer	15	31C-17	Stud	7
STD-678	Washer	37	31C-19	Stud	33
STD-684	Nipple	25	31CD-17	Stud	33
STD-690	Washer	1	38-13	Stud	7
STD-690	Washer	3	38-22	Stud	7
STD-713	Cotter Pin	1	38D-17	Stud	7
STD-713	Cotter Pin	47	50-15	Stud	7
STD-784	Plug	33	383-B	Nut	23
STD-784	Plug	41	1028-B	Ball	9
STD-798	Dowel	5	1102	Plug	7
STD-853	Tee	45	1102	Plug	19
STD-872	Nut	1	1102	Plug	33
STD-872	Nut	15	1102	Plug	45
STD-1065	Dowel	9	1182-E7	Spark Plug	47
STD-1211	Plug	9	8313	Gasket	39
STD-1339	Plug	7	60009	Key	21
STD-1353	Insert	19	60096	Gasket	37
STD-1410	Nut	5	60430	Cover	37
STD-1410	Nut	19	60430	Cover	39
STD-1410	Nut	37	60803	Strap	15
STD-1410	Nut	43	61084	Spring	9
STD-1410	Nut	47	61098	Adapter Assy.	39
STD-1410	Nut	51	61173	Gasket	41
STD-1411	Nut	15	61174	Shaft	35
STD-1411	Nut	21	61183	Gasket	37
STD-1411	Nut	31	61183	Gasket	39
STD-1411	Nut	37	61247	Cover	25
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68668	Spring	9	75339	Baffle Assy.	25
68759	Tube Assy.	25	75380	Link	1
68760	Tube Assy.	25	75380	Link	3
68761	Tube Assy.	25	75656-S	Bushing	11
69106	Cover	37	75767	Tube	29
69510	Housing	41	75906	Gasket	25
69551	Gasket	37	76118	Spacer	13
69603	Hose	27	76121	Shaft Assy.	13
69675	Connector	41	76220	Stud	15
69796	Dowel	7	76510	Gasket	41
70310	Seal	21	76534	Shim	1
70455	Gasket	5	76534	Shim	3
70484	Screen	31	76943	Guide	19
70485	Pipe	27	77309	Bushing	13
71140	Fitting	41	77467	Spring	9
71481	Ring	23	77611	Gasket	19
71596	Washer	39	77808	Valve Assy.	9
71610	Hook	25	77872	Bushing	5
71611	Retainer	25	77874	Gear Assy.	5
71973	Gasket	27	77875	Gear	5
72053	Gasket	5	78530	Shaft	35
72057	Seat	19	78531	Body Assy.	35
72058	Seat	19	78914	Connection	31
72059	Gasket	29	78915	Sump Assy.	31
72075	Seal	9	79024-S	Bushing	11
72091	Ring	9	01L21418	Washer	5
72155-S	Bushing	11	01L23454	Washer	21
72158	Bushing	7	01P19762-1-43	Bag, Harness Attach.	47
72198	Plug	17	03D23350	Cover	37
72378	Cover	5	06A19956	Oil Seal	39
72566	Gear	11	06A23493	Seal	21
72970	Gear Assy.	39	06E19769-0.63	Gasket	41
73249	Washer	5	06E19769-1.00	Gasket	31
73250	Washer	5	06E19769-1.25	Gasket	9
73251	Washer	5	07A19474	Bracket	1
73252	Washer	5	07A19474	Bracket	3
73346	Flange	27	07F23268	Strut	1
73383	Lockplate	1	07F23268	Strut	3
73383	Lockplate	3	11B19524-1	Crankcase Assy.	7
73818	Gasket	33	11B19524-1-S	Crankcase Assy. Kit	7
74065	Ring	29	11B19524-5	Crankcase Assy.	7
74241	Ring	17	11B19524-5-S	Crankcase Assy. Kit	7
74637	Bushing	23	13B47125	Crankshaft Assy.	11
74887	Spacer	23	13S19646	Gear	11
74996	Gear Assy.	13	14H21950	Ring	17

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15B26064	Body	9	18A26093	Bearing	9
15B26066	Plunger Assy.	21	18D26098	Bearing	9
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15F19957-31	Rod Assy.	23	31A22110	Starter	51
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15F19957-33	Rod Assy.	23	32B23992	Alternator Assy.	49
15F19957-34	Rod Assy.	23	36B19484	Pulley	49
15F19957-35	Rod Assy.	23	37A19773-376	Belt	49
15F19957-36	Rod Assy.	23	53E22144	Valve Assy.	41
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15G23461	Shroud Tube Assy.	21	61C26049	Carburetor	43
15M23456	Camshaft Assy.	13	63D21408	Nipple Assy.	45
16R22126	Guide	19	66GC20SFNN	Magneto	47
17A23938	Valve	21	66M21195	Clamp	47
17B23936	Valve	21	67P20406	Harness Assy.	47
17C19386	Cap	21	67P20407	Harness Assy.	47