

# O-320-E2D, -E3D Series Illustrated Parts Catalog

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October 2011

PC-203-6

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**LYCOMING** © 2011

652 Oliver Street  
Williamsport, PA 17701

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## **O-320-E2D, -E3D Illustrated Parts Catalog**

Lycoming Part Number: PC-203-6

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**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.

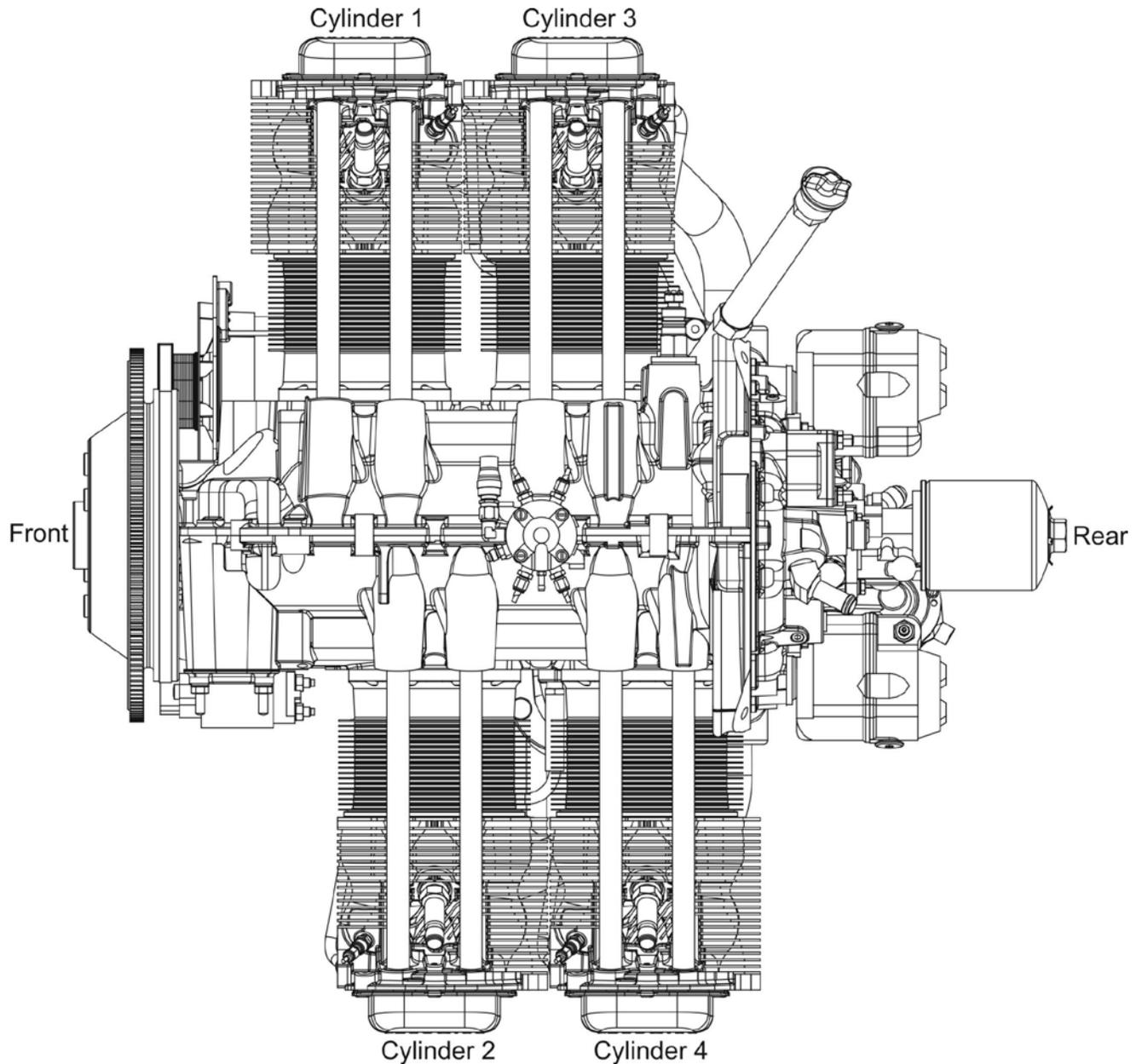
Any reference in this document to the suppliers/part manufacturer's product, by name, trademark, part number or other description is solely for the purpose of identification and does not indicate or infer that Lycoming accepts responsibility for quality control and/or airworthiness of parts, which do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

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**ABBREVIATIONS AND ACRONYMS**

<b>A</b>	
Adj.	Adjustable
<b>C</b>	
Cyl.	Cylinder
<b>D</b>	
Dia.	Diameter
<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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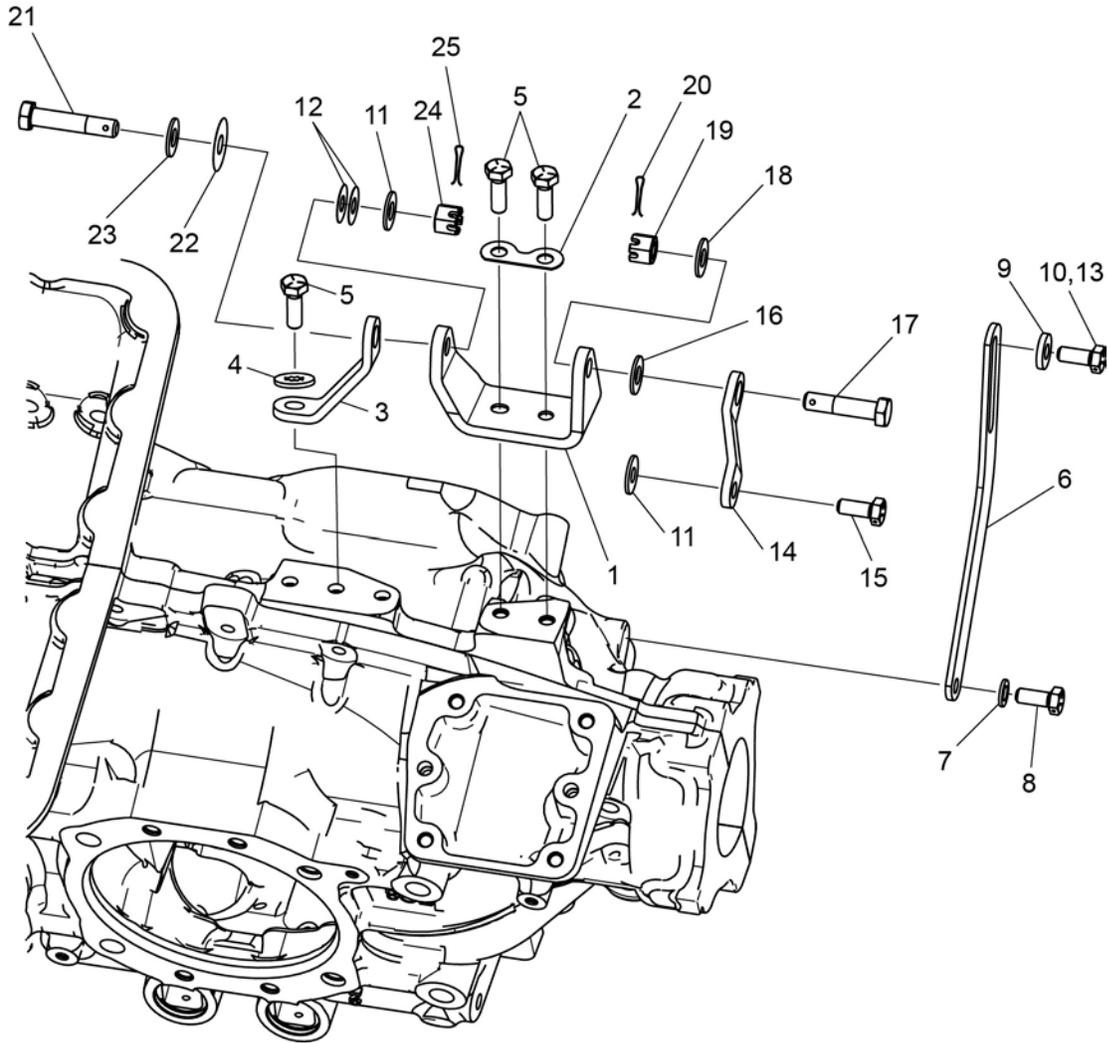
**OVERSIZE AND UNDERSIZE PARTS LISTING**

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
18M26104	BEARING									X	X	X
LW-13792	SEAL								X			
LW-18815-S	BUSHING		X	X	X	X						
LW-18816-S	BUSHING		X	X	X	X						
LW-18817-S	BUSHING		X	X	X	X						
LW-18921-S	BUSHING			X	X	X						
LW-18922-S	BUSHING			X	X	X						
STD-1065	DOWEL	X	X	X	X							
74241	RING			X								
14H21950	RING			X		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

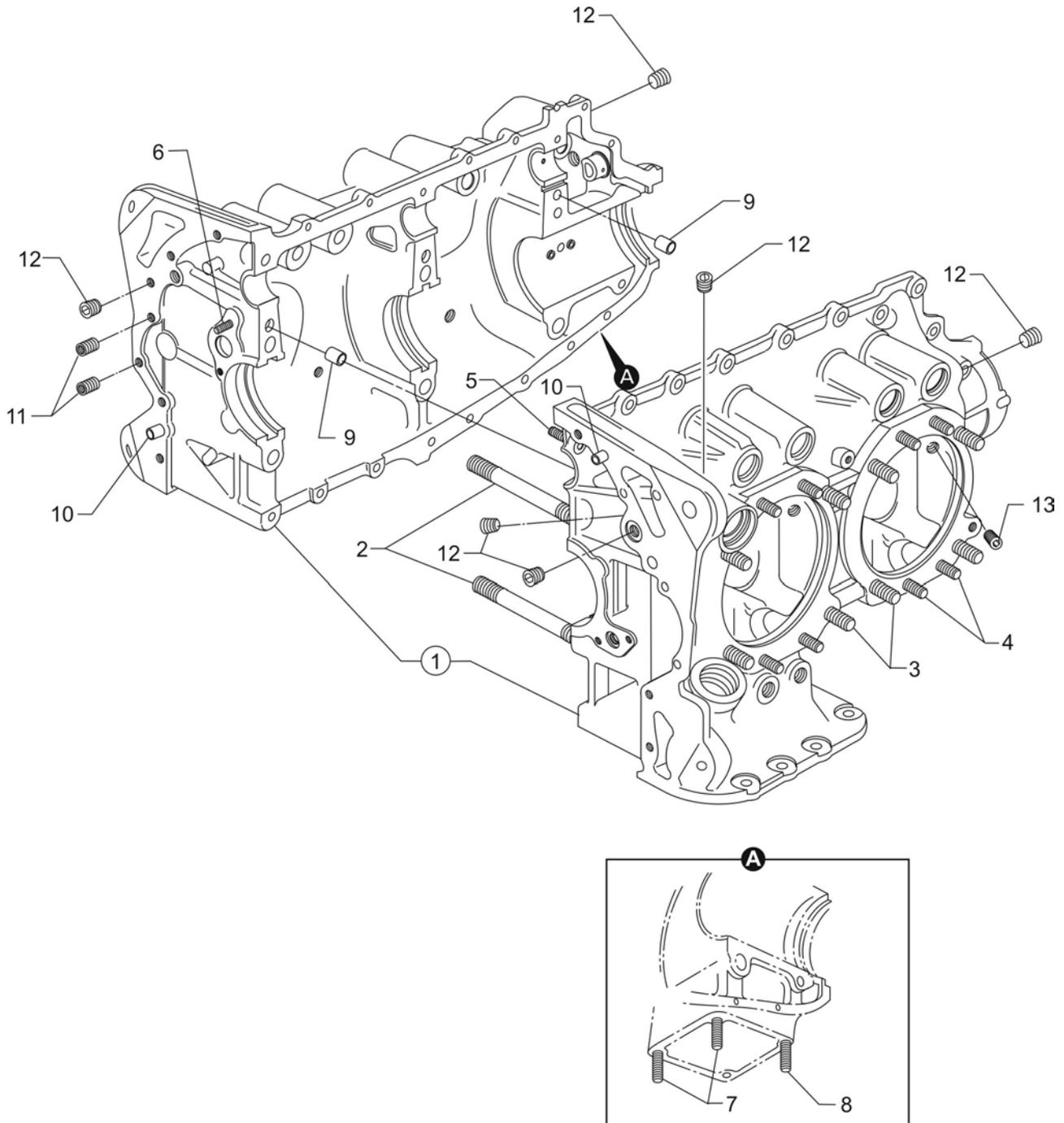
When ordering oversize and undersize parts, be sure to specify the required oversize and undersize dimension along with the proper part number. For example, to order bearing P/N 18D26098 bearing in .003 in. undersize, order P/N 18D26098-M03. Undersize code letter is "M" while oversize code letter is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

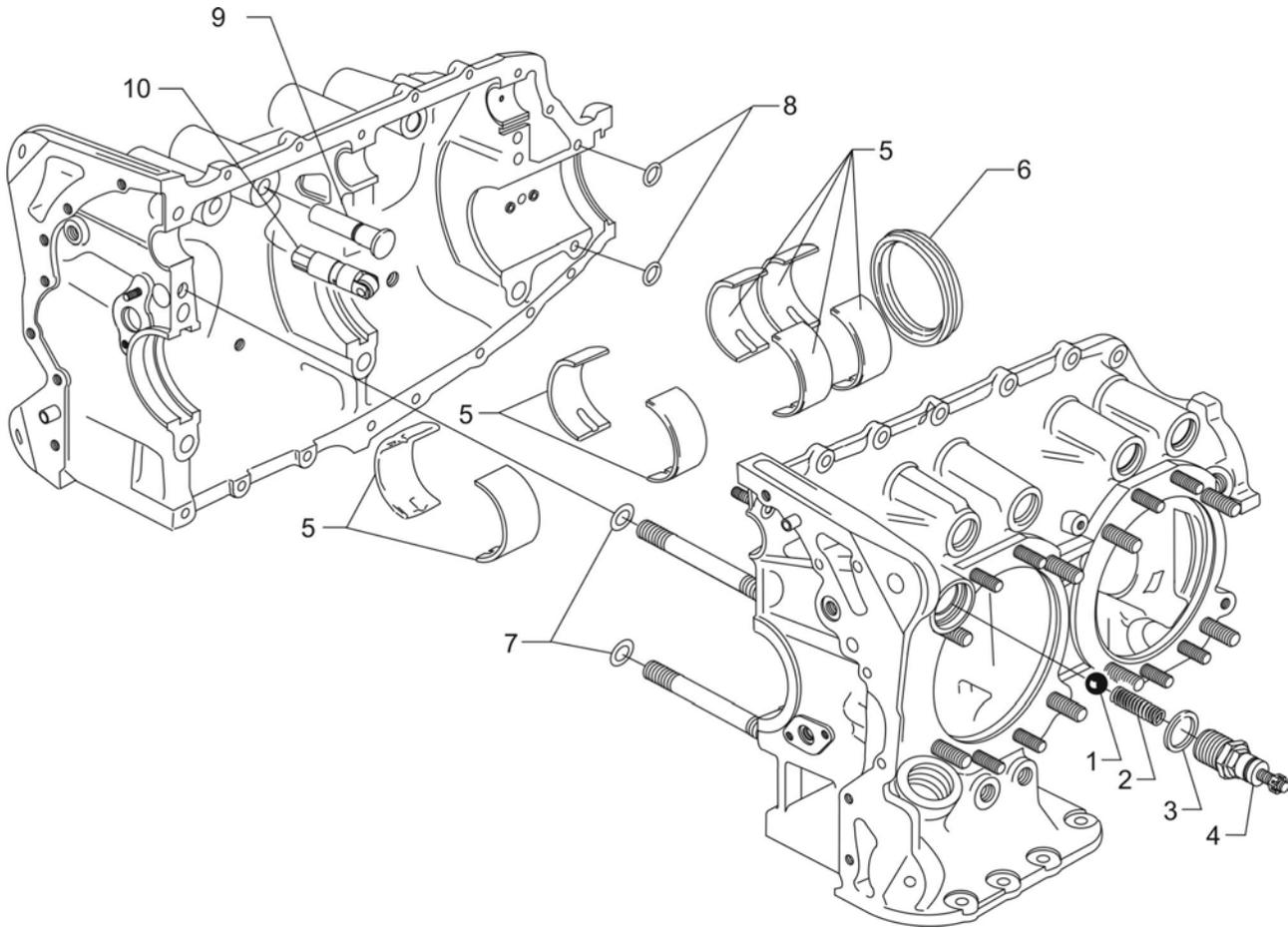
Figure Item	Code	Part Number	Description	Units per Assembly	
				E2D	E3D
1		07A21443	BRACKET, Alternator	1	1
		07A19474	BRACKET, Alternator	1	
2		73383	LOCKPLATE, 5/16 bolt x 1.00	1	1
3		LW-13365	BRACE, Alternator bracket		1
4		STD-475	WASHER, 5/16 lock, internal teeth		1
5		LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex. head	2	3
6		LW-10729	LINK, Alternator adjusting	1	1
		75380	LINK, Alternator adjusting	1	
7		STD-35	WASHER, 5/16 plain	1	1
8		LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex. head, drilled	1	1
		LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. head, drilled	1	
9		STD-1727	WASHER, Plain, 3/4 O.D. x 11/32 I.D.	1	
10		LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. head, drilled	1	
		LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex. head, drilled	1	1
11		STD-2197	WASHER, 21/64 I.D. x 13/64 O.D. x 1/16	2	
12		LW-14649	SHIM, 13/16 O.D. x 11/32 I.D. x .010 thick	2	
13		LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex. head, drilled	1	
14		07F23268	STRUT, Alternator support	1	
		76908	STRUT, Alternator support	1	
15		LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. head, drilled	1	
16		STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	1	
17		AN6-14	BOLT, 3/8-24 x 1-37/64 long, drilled	1	
		AN6-17	BOLT, 3/8-24 x 1-61/64 long, hex. head	1	
18		STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	1	
19		STD-872	NUT, 3/8-24 slotted	1	
20		STD-713	COTTER PIN, 3/32 diameter x 3/4 long	1	
21		AN6-16	BOLT, 3/8-24 x 1-53/64 long, hex. head	1	
22	<b>AR</b>	76534	SHIM, 1-1/8 O.D. x 13/32 I.D. x .005 thick	AR	
23	<b>AR</b>	STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	AR	
24		STD-872	NUT, 3/8-24 slotted	1	
25		STD-713	COTTER PIN, 3/32 diameter x 3/4 long	1	
<b>AR as required</b>					



**Crankcase Assembly  
Figure 2**

**POWER SECTION****FIGURE 2 - CRANKCASE ASSEMBLY**

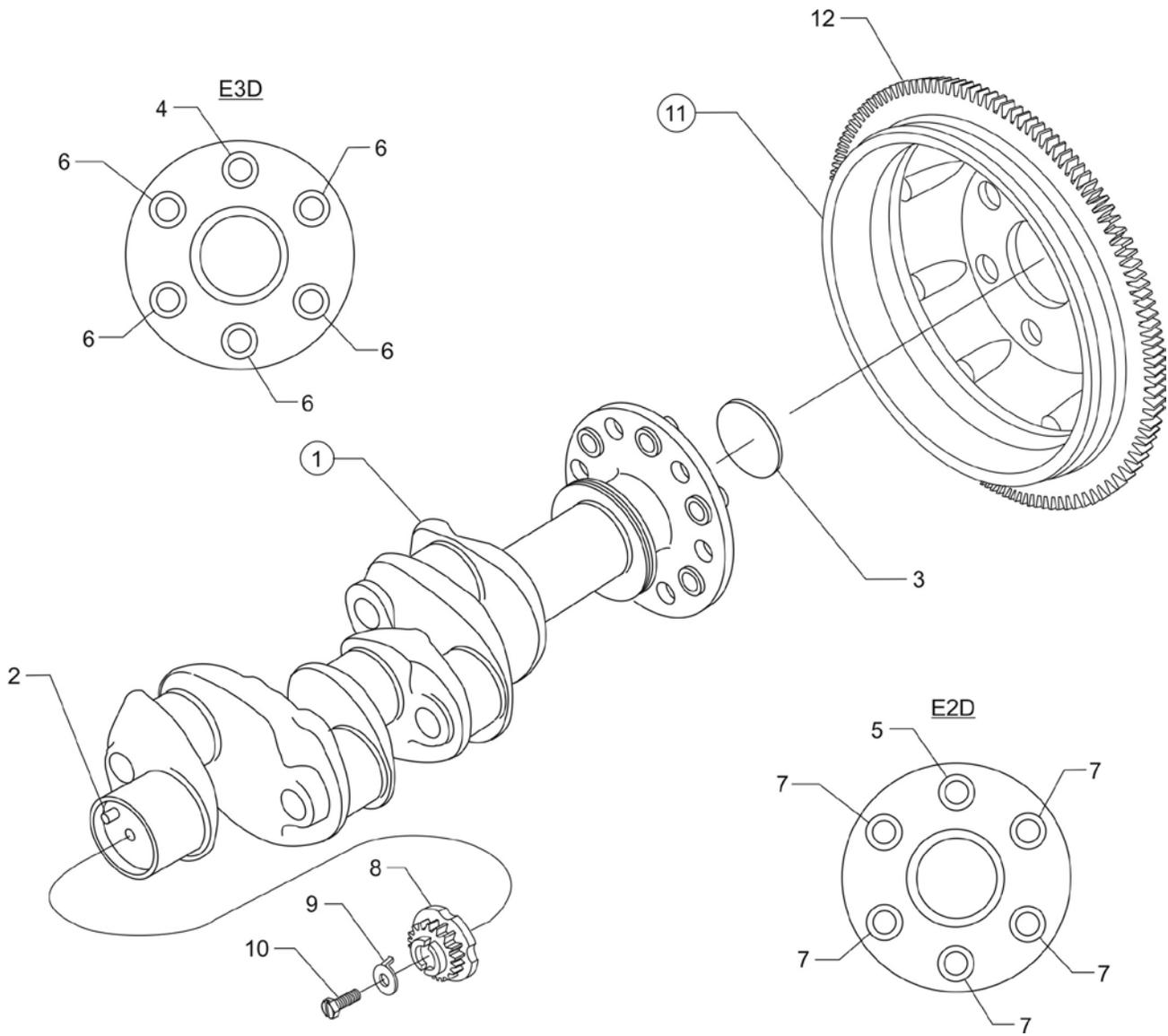
Figure Item	Code	Part Number	Description	Units per Assembly	
				E2D	E3D
1	*	11B20061-1SB-S	CRANKCASE ASSEMBLY KIT	1	1
	<b>P</b>	11B20061-1SB	CRANKCASE ASSEMBLY	1	1
	*	11B20161-1SB-S	CRANKCASE ASSEMBLY KIT ( <b>Roller tappet engines</b> )	1	1
	<b>P</b>	11B20161-1SB	CRANKCASE ASSEMBLY ( <b>Roller tappet engines</b> )	1	1
2		75154	STUD, 1/2-13 x 10-1/32 long	2	2
3		50-15	STUD, 1/2-13 x 1-7/8 long	8	8
4		38-13	STUD, 3/8-16 x 1-5/8 long	16	16
5		38D-17	STUD, 3/8-16 x 2-1/8 long, drilled	1	1
6		LW-13793	STUD, 5/16-18 x 15/16 long, drilled	1	1
7		31C-12	STUD, 5/16-18 x 1-1/2 long	2	2
8		31C-13	STUD, 5/16-18 x 1-5/8 long	1	1
9		STD-557	DOWEL, 1/2 dia. x 19/32 long, hollow	2	2
10		STD-514	DOWEL, 5/16 dia. x 1/2 long	2	2
11		STD-1623	INSERT, 1/4-20 UNC x 3/8 long	2	2
12		1102	PLUG, 1/8-27 NPT, allen head	6	6
13		STD-1339	PLUG, 1/16-27 NPT, allen head	4	4
<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 3**

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

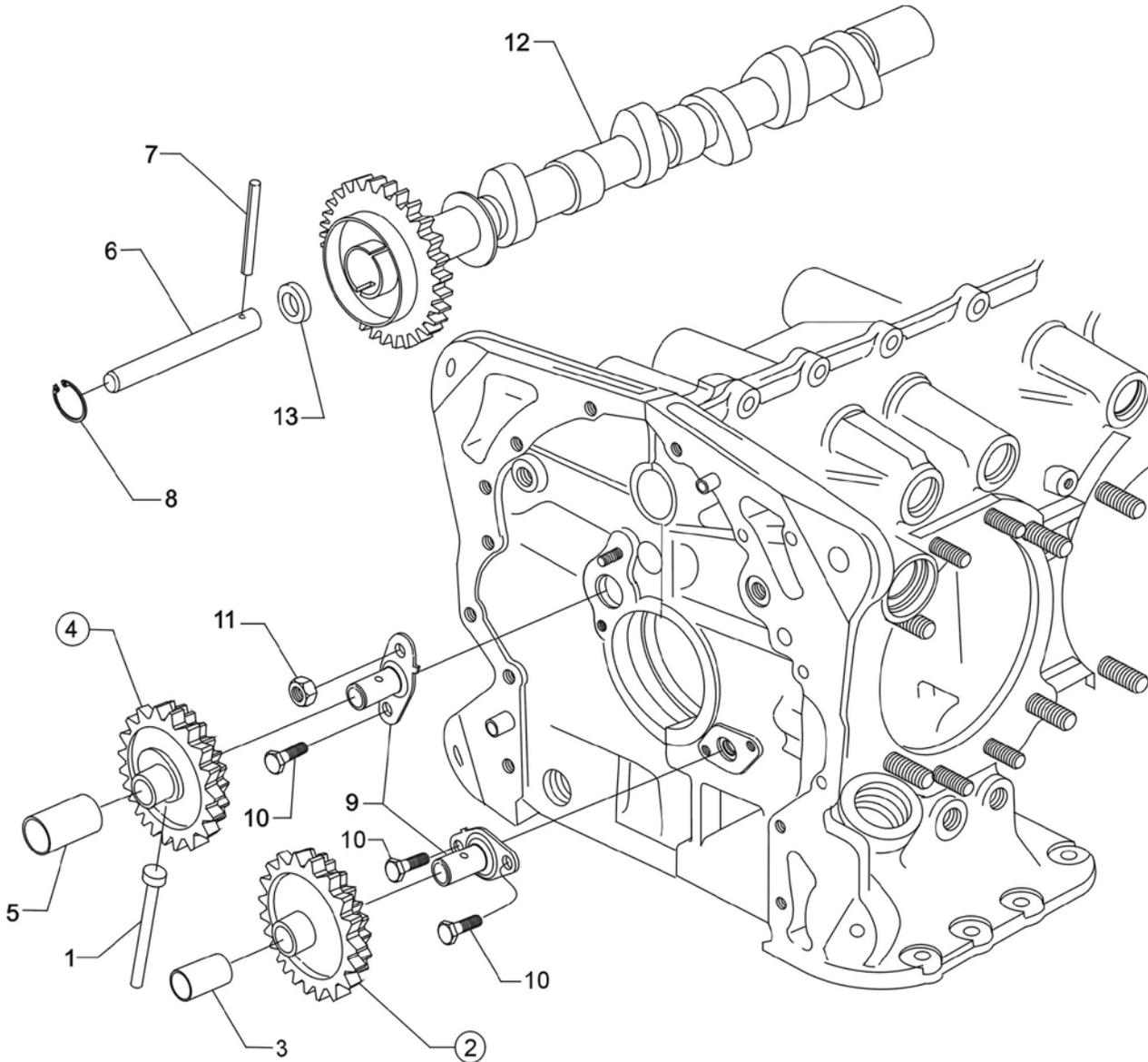
Figure Item	Code	Part Number	Description	Units per Assembly	
				E2D	E3D
1		1028-B	BALL, 11/16 diameter	1	1
2	*	61084	SPRING, Oil pressure relief valve	1	1
	*	68668	SPRING, Oil pressure relief valve	1	1
	*	77467	SPRING, Oil pressure relief valve	1	1
	*	LW-11713	SPRING, Oil pressure relief valve	1	1
	*	LW-18085	SPRING, Oil pressure relief valve	1	1
3		06E19769-1.25	GASKET, 1-1/4 I.D., annular	1	1
4		77808	VALVE ASSEMBLY, Oil pressure relief	1	1
5		18D26098	BEARING, Crankshaft	8	8
6	**	LW-13792	SEAL, Crankshaft oil	1	1
7		72075	SEAL, Oil, 3/32 section x 15/32 I.D.	2	2
8		72091	RING, Oil seal, 23/64 I.D. x 7/64 diameter	2	2
9		15B26064	BODY, Hydraulic tappet	8	8
10		LRT23381	BODY ASSEMBLY, Hydraulic tappet ( <b>Roller tappet engines</b> )	8	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>					



**Crankshaft Assembly and Related Parts  
Figure 4**

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

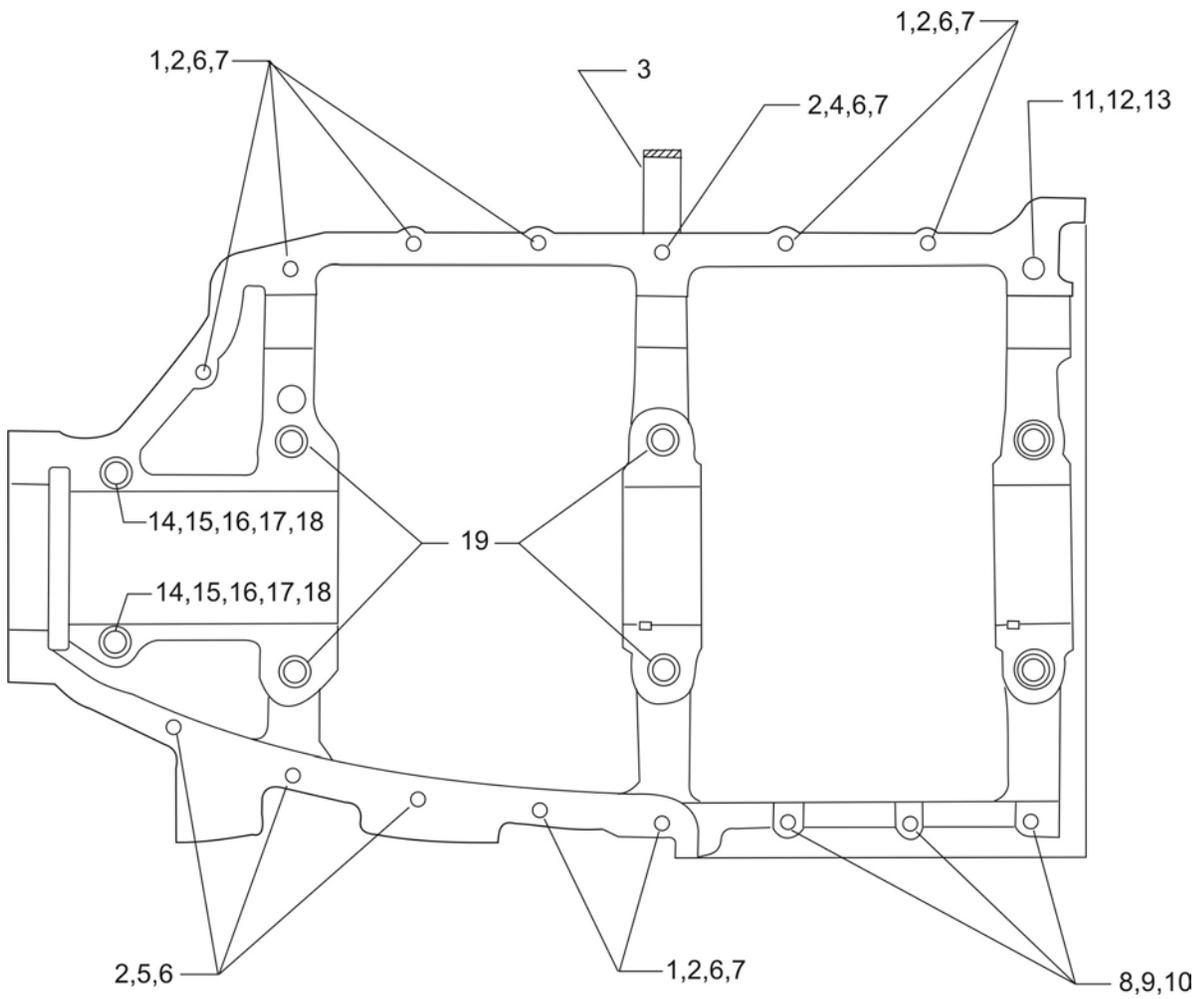
Figure Item	Code	Part Number	Description	Units per Assembly	
				E2D	E3D
1		13B47020	CRANKSHAFT ASSEMBLY	1	
		13B47024	CRANKSHAFT ASSEMBLY		1
2		STD-1065	DOWEL, Stepped, 5/16-14 diameter	1	1
3		STD-1211	PLUG, 2.00 diameter expansion	1	1
4		LW-18921-S	BUSHING, Propeller flange, long		1
5		LW-18817-S	BUSHING, Propeller flange, long	1	
6		LW-18922-S	BUSHING, Propeller flange, short		5
7		LW-18815-S	BUSHING, Propeller flange, short	5	
8	<b>SB*</b>	13S19646	GEAR, Crankshaft	1	1
9		LW-18639	LOCKPLATE, Crankshaft gear	1	1
10		STD-2246	BOLT, 5/16-24 x 1.00 long	1	1
11		76628	SUPPORT ASSEMBLY, Starter ring gear	1	1
		74414	SUPPORT ASSEMBLY, Starter ring gear		1
		68867	SUPPORT ASSEMBLY, Starter ring gear		1
12	**	72566	GEAR, Starter ring, 12/14 pitch	1	1
	◆	60882	GEAR, Starter ring, 10/12 pitch		1
<p><b>SB</b> Referencing Service Bulletin</p> <p>* Refer to latest revision of Service Bulletin No. 475 for proper installation.</p> <p>** Use with 76628 and 74414 Support Assemblies.</p> <p>◆ Use with 68867 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	
				E2D	E3D
1		61544	PLUNGER, Fuel pump, long	1	1
2		74996	GEAR ASSEMBLY, Crankshaft idler, plain	1	1
3		77309	BUSHING, Crankshaft idler gear	1	1
4		75072	GEAR ASSEMBLY, Crankshaft idler	1	1
5		77309	BUSHING, Crankshaft idler gear	1	1
6		76121	SHAFT ASSEMBLY, Tachometer	1	1
7		LW-18667	PIN, 3/16 diameter x 2-11/32 long	1	1
8		STD-2231	RING, Internal retaining (13/16)	1	1
9		LW-13796	SHAFT, Crankshaft idler gear	2	2
10		LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex. head, drilled	3	3
11		STD-2168	NUT, 5/16-18 NC-3 slotted shear	1	1
12		LW-18840	CAMSHAFT ASSEMBLY	1	1
		15M23452	CAMSHAFT ASSEMBLY ( <b>Roller tappet engines</b> )	1	1
13		76118	SPACER, Tachometer shaft, centering	1	1

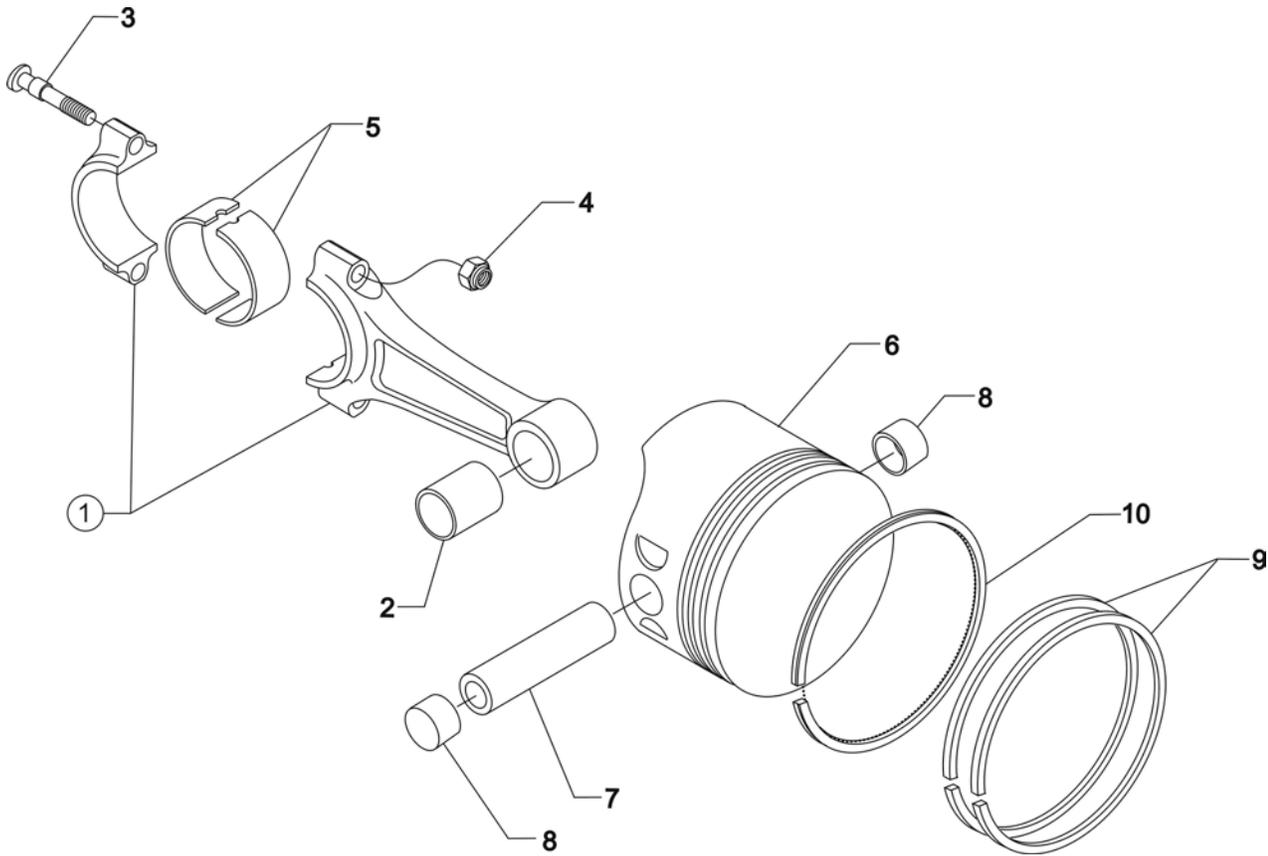


**Crankcase Attaching Parts  
Figure 6**

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

Figure Item	Code	Part Number	Description	Units per Assembly	
				E2D	E3D
1		LW-25-1.50	BOLT, 1/4-20 x 1-1/2 long, hex. head	8	8
2		STD-8	WASHER, 1/4 plain	19	19
3		60803	STRAP, Lifting	1	1
4		LW-25-1.75	BOLT, 1/4-20 x 1-3/4 long, hex. head	1	1
5		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	3	3
6		STD-160	WASHER, 1/4 lock, internal teeth	12	12
7		STD-1411	NUT, 1/4-20 plain	9	9
8		LW-25S1.50	BOLT, 1/4-20 x 1-1/2 long, drilled end	3	3
9		STD-8	WASHER, 1/4 plain	9	9
10		STD-2249	NUT, 1/4-20 slotted	3	3
11		STD-33	WASHER, 3/8 plain	3	3
12		AN960-616L	WASHER, 3/8 plain (thin)	1	1
13		STD-872	NUT, 3/8-24 slotted	1	1
14		LW-11866	SPACER, Nut compressor		2
15		AN6-34A	BOLT, 3/8-24 x 3-19/32 long, hex. head	2	2
16		STD-33	WASHER, 3/8 plain	2	2
		STD-33	WASHER, 3/8 plain		6
17	*	STD-678	WASHER, 3/8 lock, internal teeth	2	2
18	*	STD-596	NUT, 3/8-24 plain	2	2
19		76220	STUD, 1/2-20 x 10-11/16 long	4	4

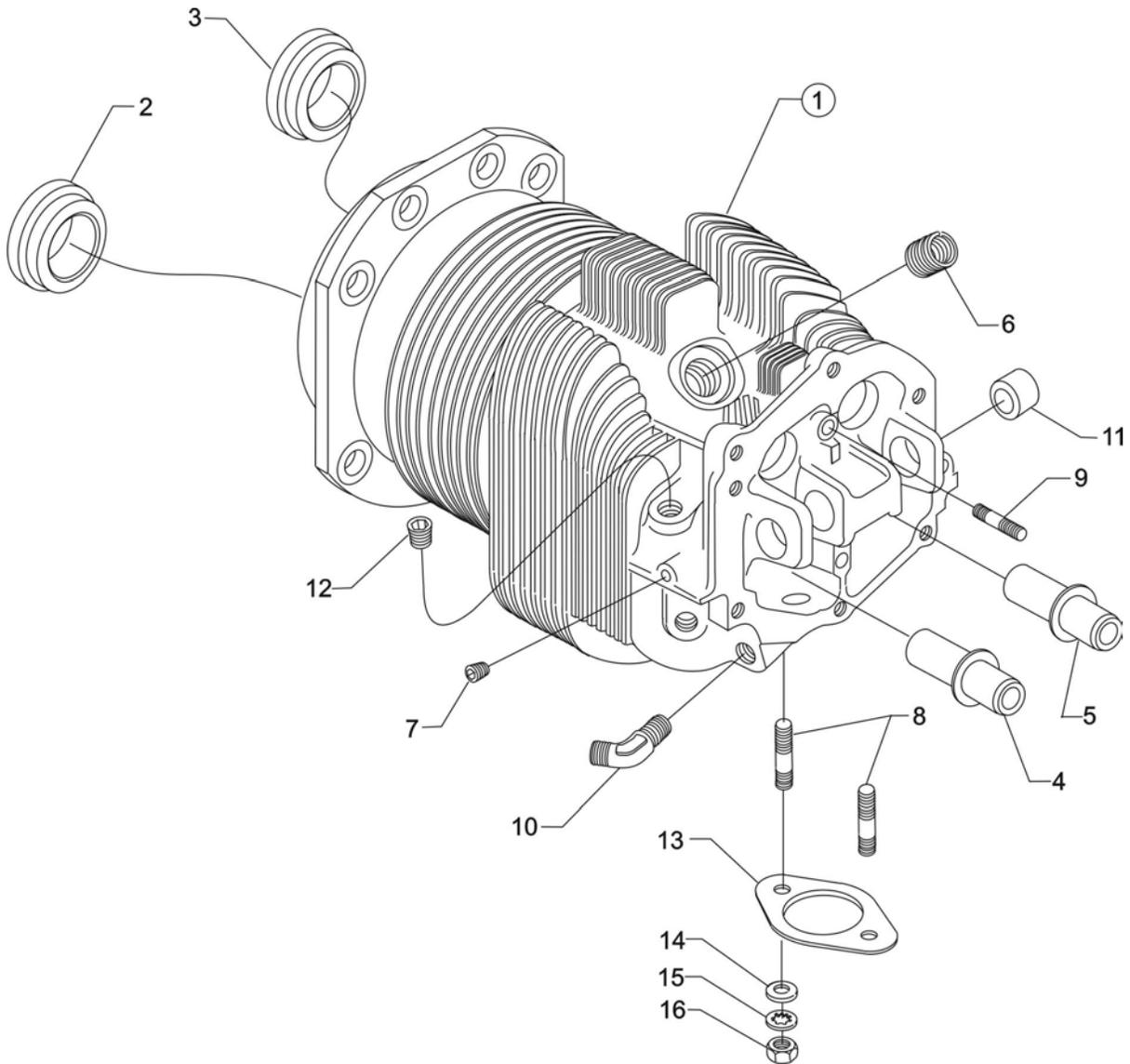
\* These parts are not used on the -E3D model configuration when LW-11866 Spacer and 6 of the STD-33 Washers are used.



**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	
				E2D	E3D
1		78030-S	CONNECTING ROD ASSEMBLY	4	4
2		LW-13923	BUSHING, Connecting rod, upper	4	4
3		78027	BOLT, Connecting rod	8	8
4		LW-12186	NUT, Connecting rod bolt	8	8
5		18M26104	BEARING, Connecting rod	8	8
6		14D23915	PISTON, 7.00:1 compression ratio	4	4
7		LW-14078	PIN, Piston	4	4
8		72198	PLUG, Piston pin	8	8
9		74241	RING, Piston compression	8	8
10		14H21950	RING, Piston, oil	4	4



**Cylinder Assembly  
Figure 8**

**CYLINDER SECTION**  
**FIGURE 8 - CYLINDER ASSEMBLY**

Figure Item	Code	Part Number	Description	Units per Assembly	
				E2D	E3D
1		LW-12416	CYLINDER ASSEMBLY, Nitrided	4	4
2		72057	SEAT, Intake valve	4	4
3		72058	SEAT, Exhaust valve	4	4
4	<b>P*</b>	76943	GUIDE, Valve, intake	4	4
5	<b>P*</b>	16R22126	GUIDE, Valve, exhaust	4	4
6	<b>P</b>	66796	INSERT, Spark plug, 18-1.5 MM	8	8
7		STD-1353	INSERT, No. 10-24 UNC x 3/8 long	4	4
8		31C-12	STUD, 5/16-18 x 1-1/2 long	8	8
9		25C-8	STUD, 1/4-20 x 1.00 long	4	4
10		MS20823-6D	ELBOW, 45°, 3/8 flared tube	4	4
11		66610	BUSHING, Rocker shaft	16	16
12	**	1102	PLUG, 1/8-27 NPT, allen head	4	4
13		77611	GASKET, Exhaust flange	4	4
14		STD-35	WASHER, 5/16 plain	8	8
15		STD-475	WASHER, 5/16 lock, internal teeth	8	8
16		STD-1410	NUT, 5/16-18 plain	8	8

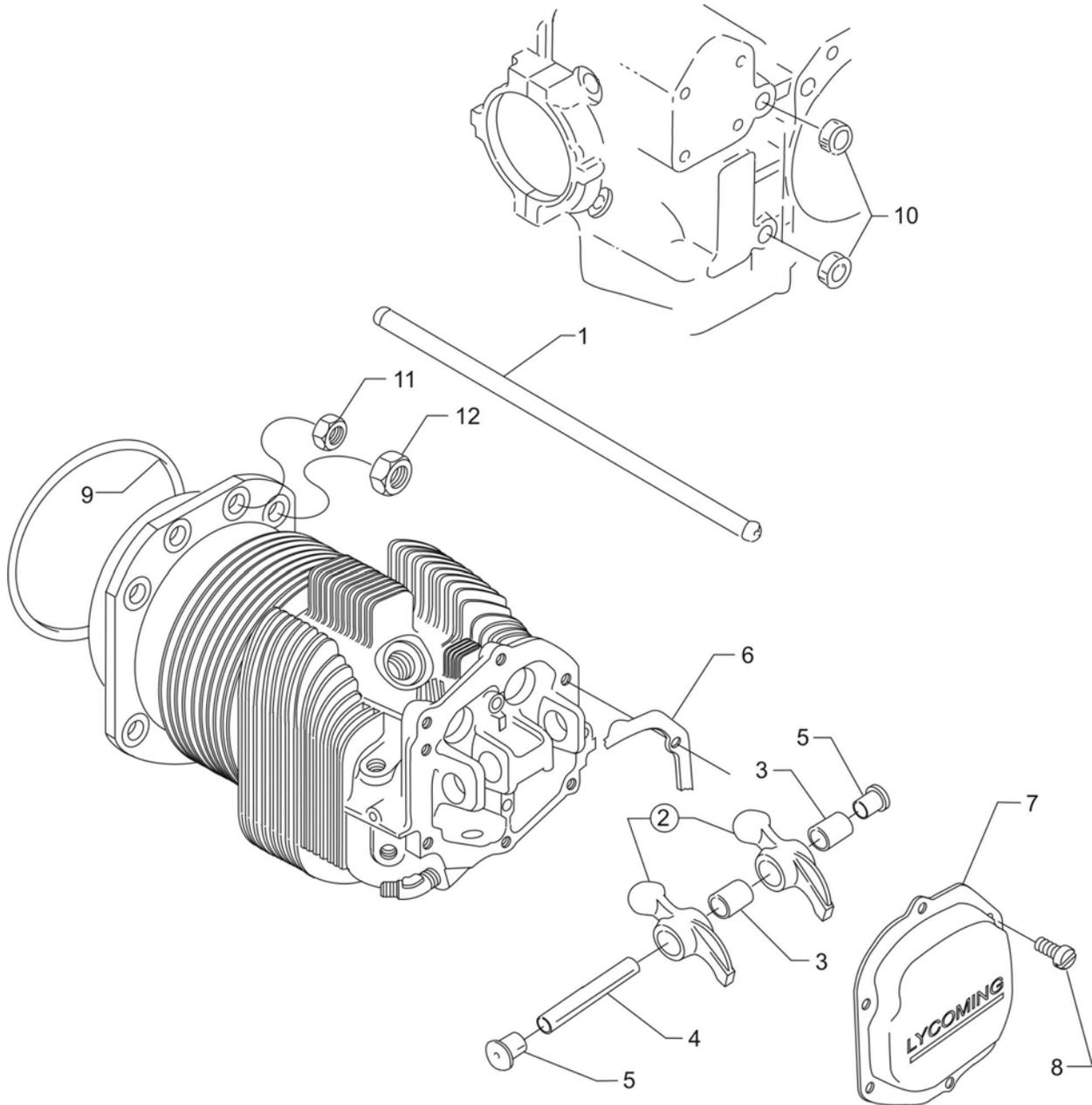
**P** Lycoming proprietary part. Listed for reference purposes only, cannot be purchased.  
**\*** See latest revision of Service Instruction No. 1256 for service valve guides.  
**\*\*** Used on installations without injector or priming system.



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

Figure Item	Code	Part Number	Description	Units per Assembly	
				E2D	E3D
1		17A23938	VALVE, Intake	4	4
2		17B23936	VALVE, Exhaust (rotator type)	4	4
3		LW-11795	SPRING, Valve, inner	8	8
4		LW-11800	SPRING, Valve, outer	8	8
5		65441	SEAT, Valve spring, lower intake	4	4
6		LW-13323	SEAT, Valve, spring, lower exhaust	4	4
7		LW-10077	SEAT, Valve spring, upper intake	4	4
8		LW-16475	SEAT, Valve spring, upper exhaust (rotator type)	4	4
9		60009	KEY, Valve, intake	8	8
10		17C21191	KEY, Valve, exhaust (rotator type)	8	8
11		17C19386	CAP, Valve stem, exhaust (rotator type)	4	4
12		15B26066	PLUNGER ASSEMBLY, Hydraulic lifter	8	8
13		15B21319	SOCKET, Hydraulic tappet	8	8
14		68987	SHROUD TUBE ASSEMBLY, Push rod	8	8
		15G23494	SHROUD TUBE ASSEMBLY, Push rod <b>(Roller tappet engines)</b>	8	8
15		LW-14995	SPRING, Shroud tube	4	4
16		LW-12272	LOCKPLATE, Shroud tube	4	4
17		STD-1411	NUT, 1/4-20 plain	4	4
18		01L23459	WASHER, 25/32 I.D. x 3/8 O.D. x 1/32 thick <b>(Roller tappet engines)</b>	8	8
19	*	LW-18661	SEAL, Shroud tube	8	8
20		06A23493	SEAL, Shroud tube <b>(Roller tappet engines)</b>	8	8
21	**	70310	SEAL, Shroud tube	8	8

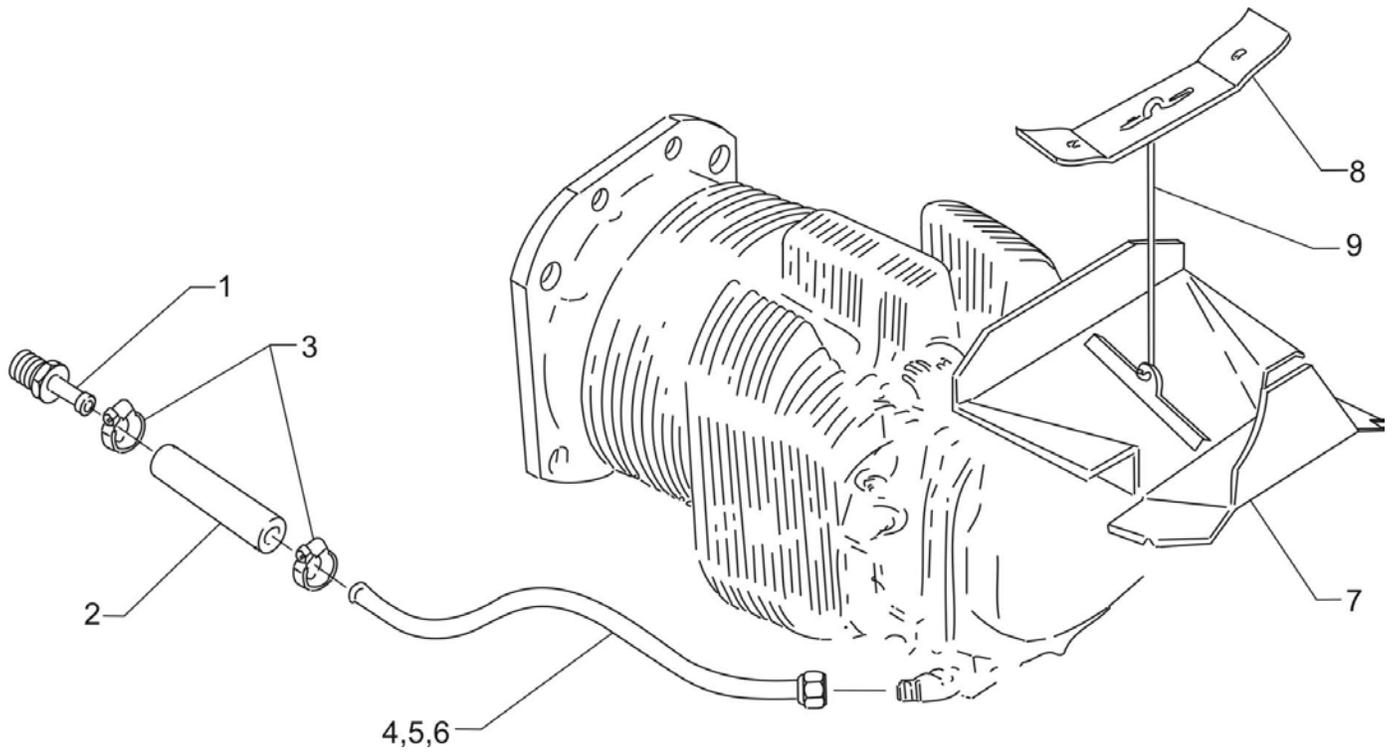
\* This seal is used on flat tappet engines only.  
\*\* This seal is used on both flat tappet engines and roller tappet engines.



**Cylinder Related Parts  
Figure 10**

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

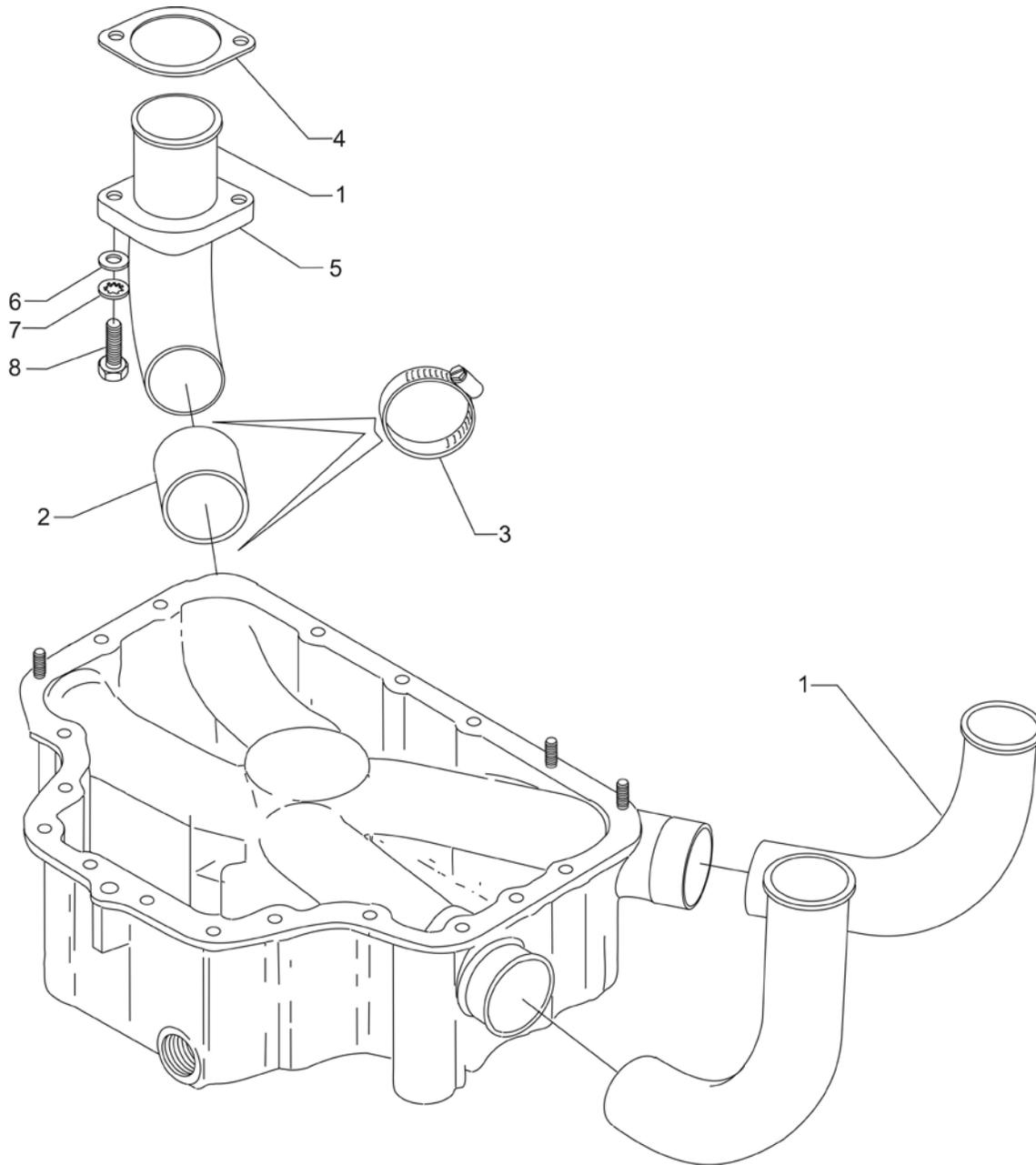
Figure Item	Code	Part Number	Description	Units per Assembly	
				E2D	E3D
1	AR*♦	15F19957-08	ROD ASSEMBLY, Push (A total of 8 required)	AR	AR
	AR*♦	15F19957-09	ROD ASSEMBLY, Push (A total of 8 required)	AR	AR
	AR*♦	15F19957-10	ROD ASSEMBLY, Push (A total of 8 required)	AR	AR
	AR†♦	15F19957-11	ROD ASSEMBLY, Push (A total of 8 required)	AR	AR
	AR†♦	15F19957-12	ROD ASSEMBLY, Push (A total of 8 required)	AR	AR
	AR‡♦	15F19957-13	ROD ASSEMBLY, Push (A total of 8 required)	AR	AR
	AR‡♦	15F19957-14	ROD ASSEMBLY, Push (A total of 8 required)	AR	AR
	AR‡♦	15F19957-15	ROD ASSEMBLY, Push (A total of 8 required)	AR	AR
2	**	17F19357	ROCKER ASSEMBLY, Valve	8	8
3		74637	BUSHING, Valve rocker	8	8
4		LW-13790	SHAFT, Valve rocker	4	4
5		LW-12892	THRUST BUTTON, Rocker shaft	8	8
6		75906	GASKET, Rocker box cover	4	4
7		61247	COVER, Rocker box	4	4
8		STD-1925	SCREW, 1/4-20 x 5/8 long, pan. head	24	24
9		71481	RING, Oil seal, 3/32 diameter x 4-27/32 I.D.	4	4
10		74887	SPACER, 33/64 I.D. x 7/8 O.D. x 3/8 thick	2	2
11		383-B	NUT, 3/8-24 plain	16	16
12		STD-2090	NUT, 1/2-20 plain	18	18
<p><b>AR</b> 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 to 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><b>NOTE:</b> 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**

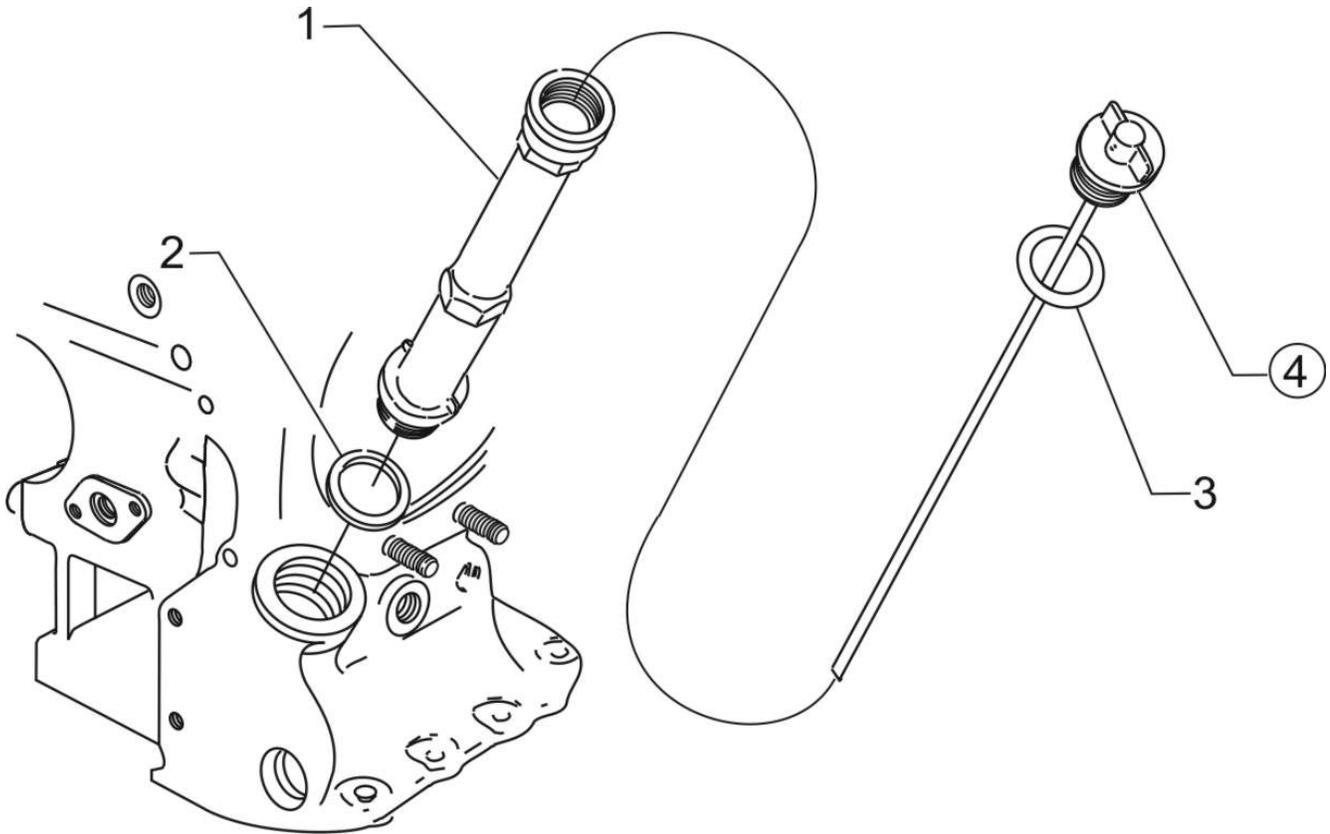
Figure Item	Code	Part Number	Description	Units per Assembly	
				E2D	E3D
1		STD-684	NIPPLE, Straight, 3/8 I.D. hose	4	4
2		STD-2180	HOSE, 3/8 I.D. x 1-7/8 long	4	4
3		LW-15592-5-05	CLAMP, Hose	8	8
4		68759	TUBE ASSEMBLY, Oil drain, cylinder no. 1	1	1
5		68760	TUBE ASSEMBLY, Oil drain, cylinder no. 2	1	1
6		68761	TUBE ASSEMBLY, Oil drain, cylinders no. 3 & 4	2	2
7		72569	BAFFLE ASSEMBLY, Intercylinder	2	2
8		71611	RETAINER, Intercylinder baffle	2	2
9		71610	HOOK, Intercylinder baffle retainer	2	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	
				E2D	E3D
1		74084	PIPE, Intake	4	4
2		69603	HOSE, 1-3/4 I.D. x 2-3/16 O.D. x 1-3/4 long	4	4
3		LW-15592-8-28	CLAMP, Hose	8	8
4		71973	GASKET, 2 bolt flange, 1-13/16 I.D.	4	4
5		73346	FLANGE, Intake pipe, upper	4	4
6		STD-8	WASHER, 1/4 plain	8	8
7		STD-160	WASHER, 1/4 lock, internal teeth	8	8
8		LW-25-1.25	BOLT, 1/4-20 x 1-1/4 long, hex. head	8	8



**Oil Level Gage  
Figure 13**

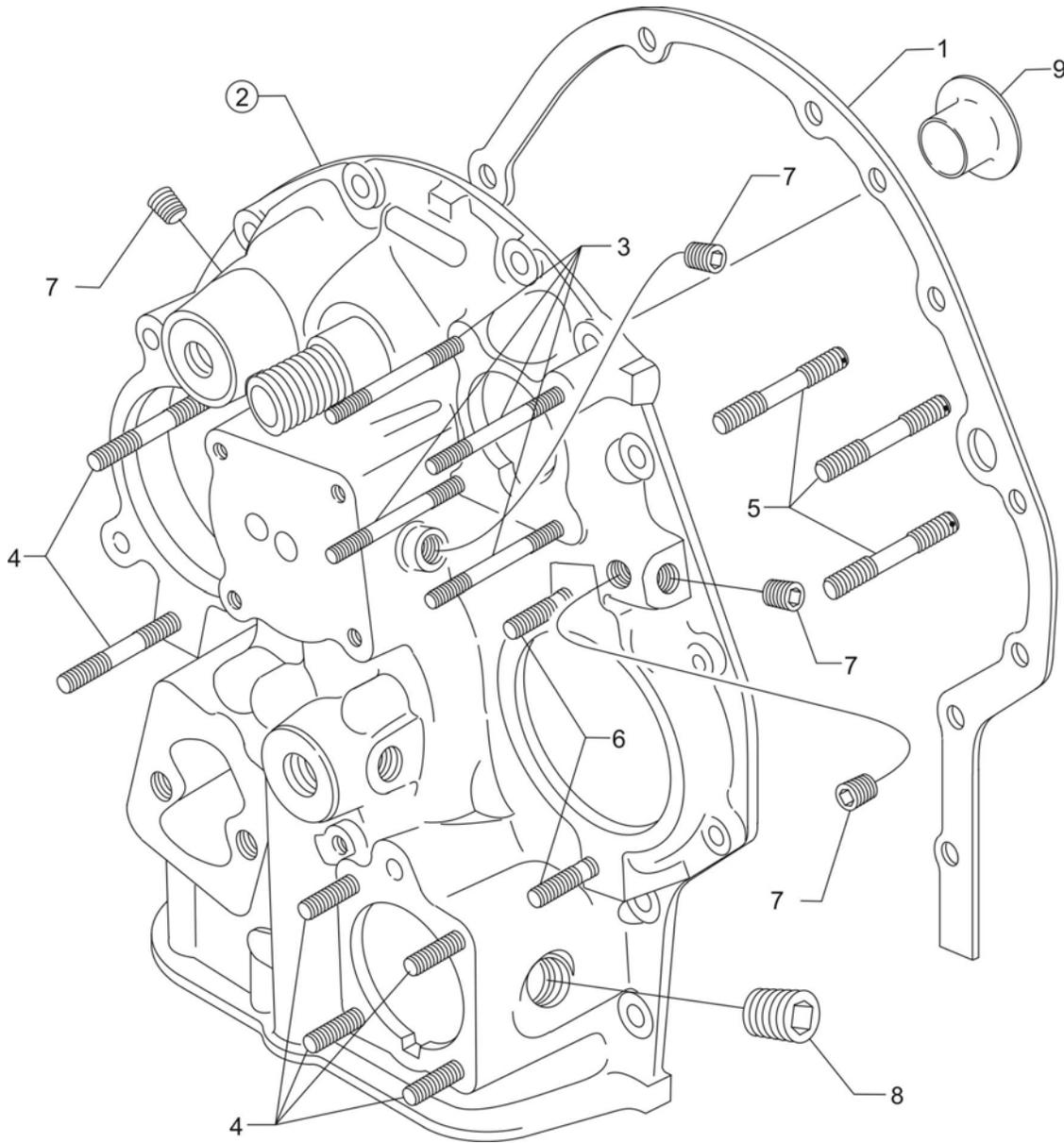
**LUBRICATION SYSTEM**  
**FIGURE 13 – OIL LEVEL GAGE**

Figure Item	Code	Part Number	Description	Units per Assembly	
				E2D	E3D
1		56C23075	TUBE, Oil level gage, 15-1/8 long	1	
		LW-12789	TUBE, Oil level gage, 12-13/16 long		1
		75736	TUBE, Oil level gage, 11-9/16 long		1
2		72059	GASKET, Oil level gage	1	1
3	*	74065	RING, Oil level gage seal	1	
	**	72312	RING, Oil seal, 1.00 x 1-5/16		1
	◆	74068	RING, Oil level gage plug		1
4		LW-14768	GAGE ASSEMBLY, Oil level	1	
		LW-14780	GAGE ASSEMBLY, Oil level	1	
		LW-14735	GAGE ASSEMBLY, Oil level		1
		LW-16783-18	GAGE ASSEMBLY, Oil level		1
<p>* Use with LW-14768 and LW-14780 Oil Level Gage Assemblies.  ** Use with LW-14735 Oil Level Gage Assembly.  ◆ Use with LW-16783-18 Oil Level Gage Assembly.</p>					



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

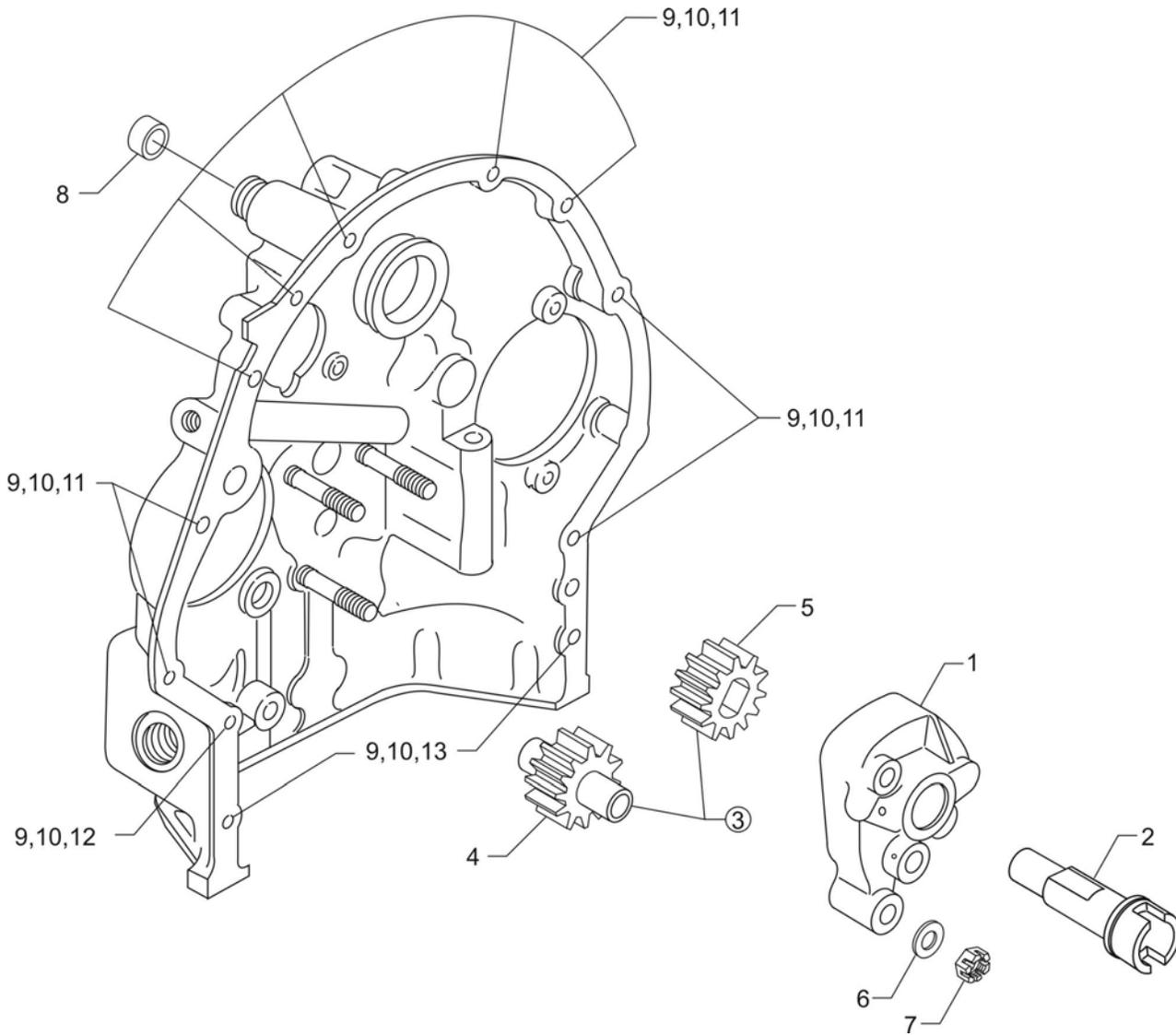
Figure Item	Code	Part Number	Description	Units per Assembly	
				E2D	E3D
1		LW-13353	GASKET, Oil sump	1	1
2		LW-10828	SUMP ASSEMBLY, Oil	1	1
3		78914	CONNECTION, Intake pipe	4	4
4		61400	STUD, 1/4-20 x 1-3/16 long	4	4
5		31C-15	STUD, 5/16-18 x 1-7/8 long	4	4
6		STD-91	PLUG, 1/2-14 NPT, allen head	1	1
7		STD-551	PLUG, 1/2-14 NPT, square head, drilled	2	2
8		STD-8	WASHER, 1/4 plain	28	28
9		STD-160	WASHER, 1/4 lock, internal teeth	20	20
10		LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. head	14	14
11		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	2	2
12		STD-1411	NUT, 1/4-20 plain	12	12
13		70484	SCREEN, Oil suction	1	1
14		06E19769-1.00	GASKET, Annular, 1.00 I.D.	1	1
15		LW-12545	PLUG, 5/8 hex. head x 1.00-20 thread	1	1



**Accessory Housing Assembly  
Figure 15**

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

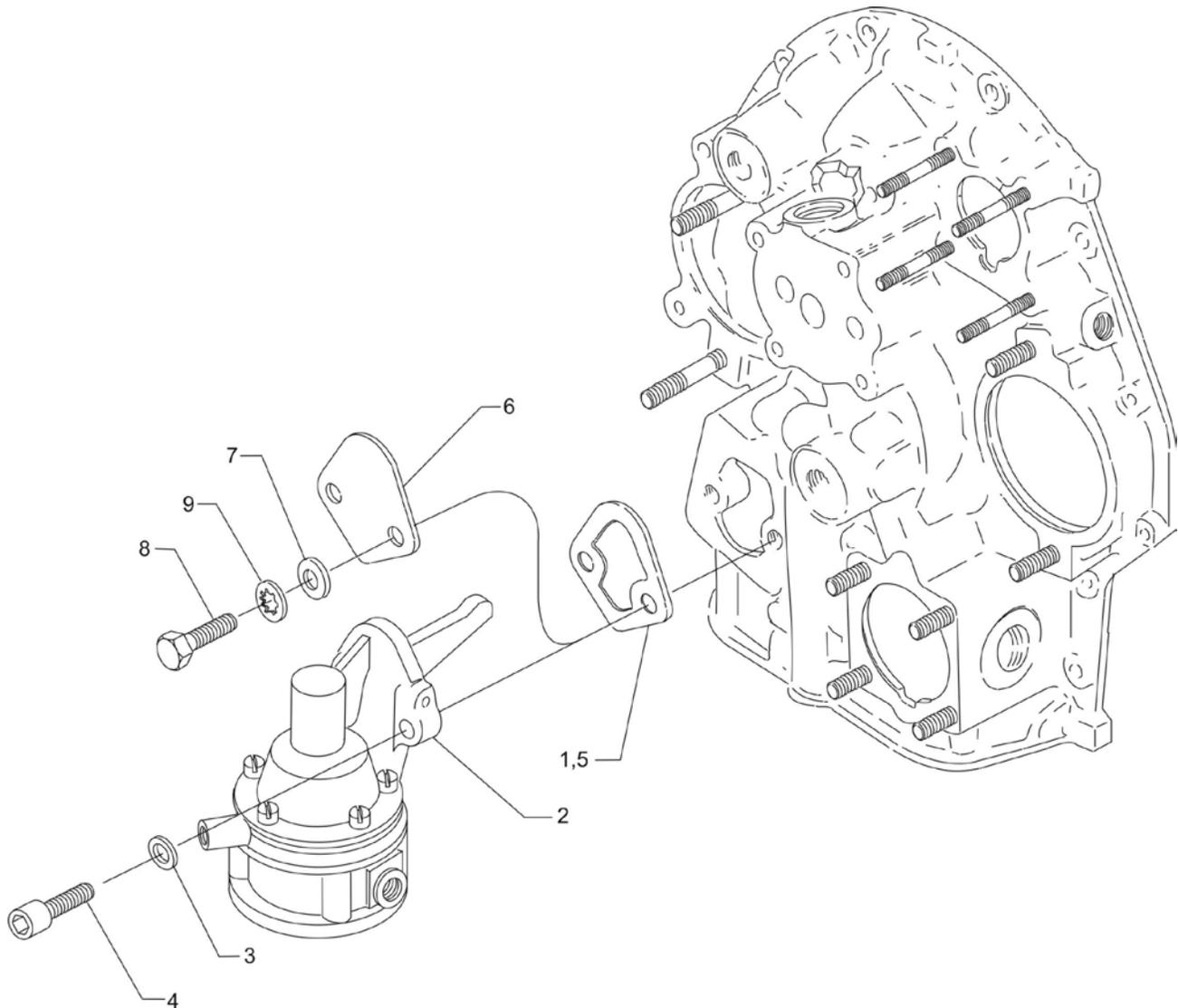
Figure Item	Code	Part Number	Description	Units per Assembly	
				E2D	E3D
1		73818	GASKET, Accessory housing	1	1
2		21A21533-04	HOUSING ASSEMBLY, Accessory	1	1
		21A21533-05	HOUSING ASSEMBLY, Accessory	1	
3		25C-22	STUD, 1/4-20 x 2-3/4 long	4	4
4		31C-12	STUD, 5/16-18 x 1-1/2 long	6	6
5		31CD-17	STUD, 5/16-18 x 2-1/8 long, drilled	3	3
6		31C-19	STUD, 5/16-18 x 2-3/8 long	2	2
7		1102	PLUG, 1/8-27 NPT, allen head	4	4
8		STD-784	PLUG, 3/8-18 NPT, allen head	1	1
9		76119	SHIELD, Accessory breather oil	1	1



**Oil Pump Assembly and Accessory Housing Attaching Parts  
Figure 16**

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

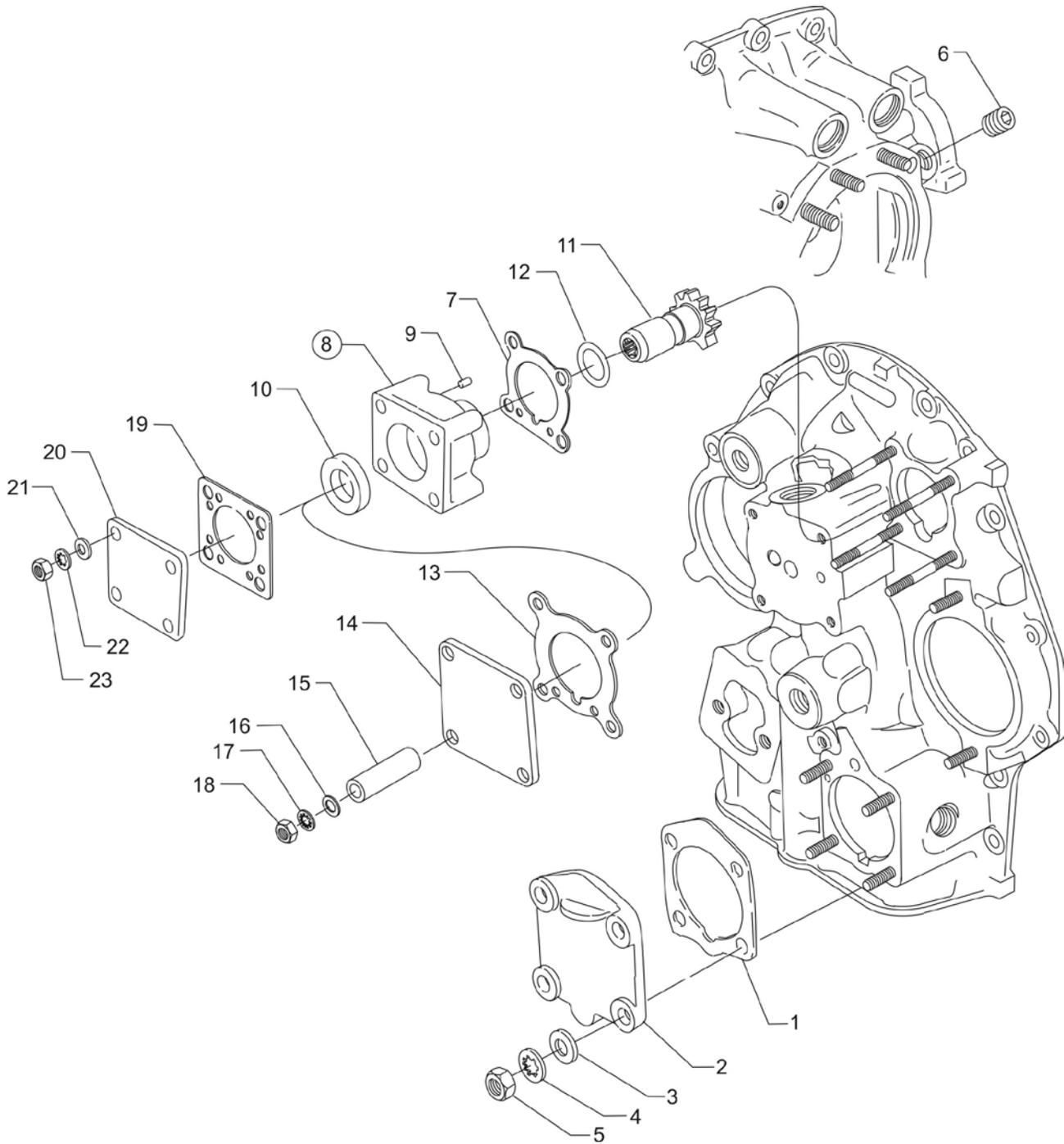
Figure Item	Code	Part Number	Description	Units per Assembly	
				E2D	E3D
1		78531	BODY ASSEMBLY, Oil pump	1	1
2		61174	SHAFT, Oil pump drive	1	1
3		05K19423-S	IMPELLER KIT	1	1
4	*	LW-18110	IMPELLER ASSEMBLY, Oil pump driven	1	1
5	*	LW-18109	IMPELLER, Oil pump driven	1	1
6		STD-35	WASHER, 5/16 plain	3	3
7		STD-1420	NUT, 5/16-18 slotted	3	3
8		LW-14260	SEAL, Oil, tachometer drive	1	1
9		STD-8	WASHER, 1/4 plain	12	12
10		STD-160	WASHER, 1/4 lock, internal teeth	12	12
11		LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. head	9	9
12		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	1	1
13		LW-25-1.44	BOLT, 1/4-20 x 1-7/16 long, hex. head	2	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**

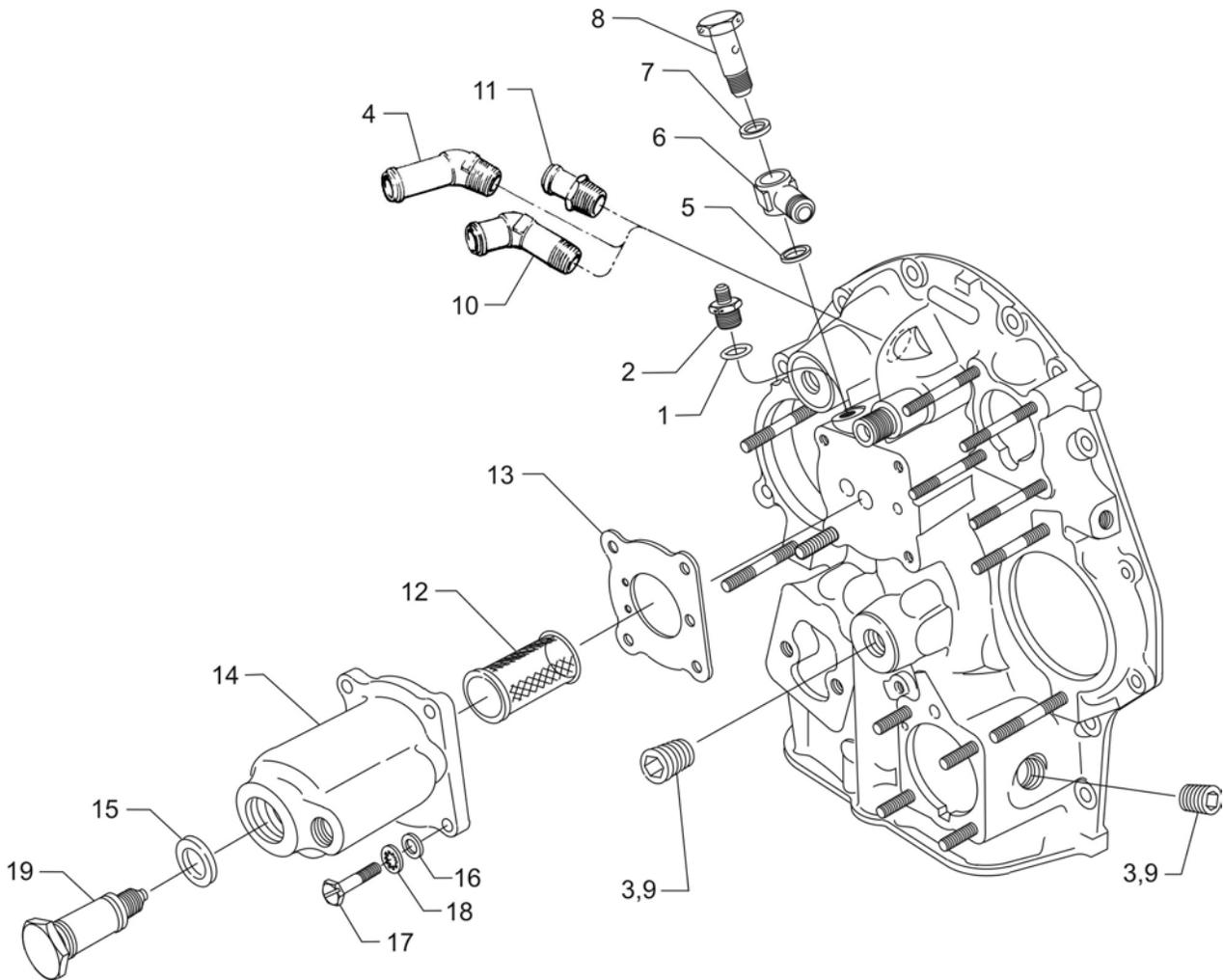
Figure Item	Code	Part Number	Description	Units per Assembly	
				E2D	E3D
1		60096	GASKET, Fuel pump	1	1
2		LW-15472	FUEL PUMP, Dual diaphragm, low pressure	1	1
3		STD-33	WASHER, 3/8 plain	2	2
4		STD-1882	SCREW, 3/8-16 x 1-9/32 long, socket head, drilled	2	2
5		60096	GASKET, Fuel pump	1	
6		03D23350	COVER, Fuel pump	1	
7		STD-33	WASHER, 3/8 plain	2	
8		LW-38-0.75	BOLT, 3/8-16 x 3/4 long, hex. head	2	
9		STD-678	WASHER, 3/8 lock, internal teeth	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**

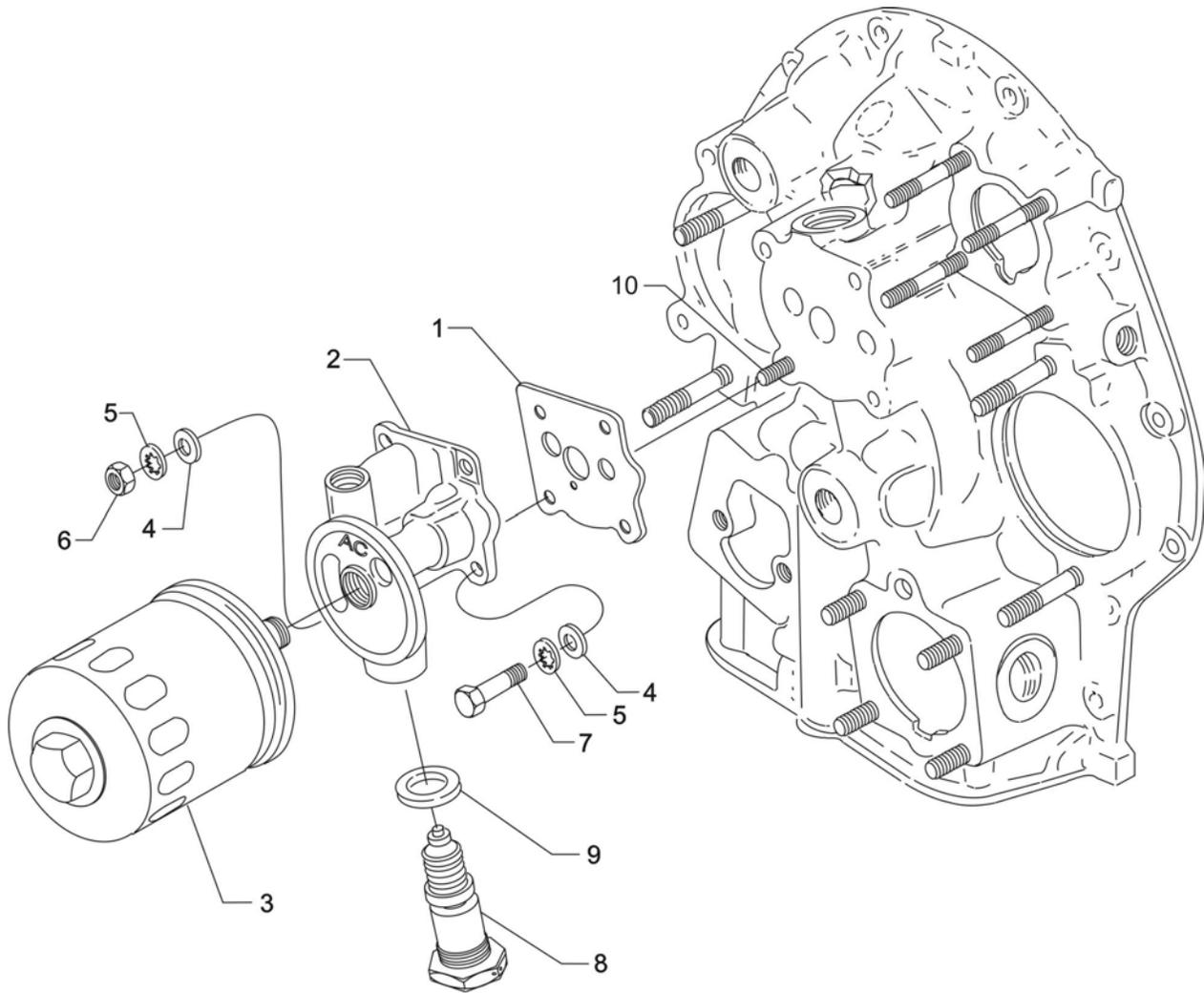
Figure Item	Code	Part Number	Description	Units per Assembly	
				E2D	E3D
1		69551	GASKET, Accessory drive adapter	1	1
2		69106	COVER, Governor drive adapter pad	1	1
3		STD-35	WASHER, 5/16 plain	4	4
4		STD-475	WASHER, 5/16 lock, internal teeth	4	4
5		STD-1410	NUT, 5/16-18 plain	4	4
6	*	STD-783	PLUG, 1/4-18 NPT, allen head	1	1
7		61183	GASKET, Accessory adapter	1	1
8		61098	ADAPTER ASSEMBLY, Vacuum pump	1	1
9		STD-1774	PIN, 1/8 diameter x 1/4 long	1	1
10		06A19956	OIL SEAL, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide	1	1
11		72970	GEAR ASSEMBLY, Vacuum pump driven	1	1
12		71596	WASHER, Accessory drive gear	1	1
13	**	61183	GASKET, Accessory adapter		1
14	**	60430	COVER, Vacuum pump		1
15	**	68593	SPACER, Vacuum pump stud		4
16	**	STD-8	WASHER, 1/4 plain		4
17	**	STD-160	WASHER, 1/4 lock, internal teeth		4
18	**	STD-1411	NUT, 1/4-20 plain		4
19		8313	GASKET, Vacuum pump	1	1
20		60430	COVER, Vacuum pump	1	1
21		STD-8	WASHER, 1/4 plain	4	4
22		STD-160	WASHER, 1/4 lock, internal teeth	4	4
23		STD-1411	NUT, 1/4-20 plain	4	4
* Assemble in crankcase, front.					
** Used on -E3D model with stud in accessory housing.					



**Oil Cooler Bypass Valve, Oil Pressure Screen and Breather Fitting  
Figure 19**

**ACCESSORY DRIVES****FIGURE 19 – OIL COOLER BYPASS VALVE, OIL PRESSURE SCREEN  
AND BREATHER FITTING**

Figure Item	Code	Part Number	Description	Units per Assembly	
				E2D	E3D
1		06E19769-0.63	GASKET, 5/8 I.D. annular	1	
2		69675	CONNECTOR, Accessory housing oil cooler	1	
3		STD-784	PLUG, 3/8-18 NPT, allen head	2	
4		AN844-10D	ELBOW, Pipe	1	
5		71623	WASHER, Oil cooler fitting		1
6		AS5163D08	ELBOW		1
7		AN901-8A	GASKET, Metal tube connect seal		1
8		71620	BOLT, 5/18-18 x 1-7/8 long, special		1
9		STD-784	PLUG, 3/8-18 NPT, allen head		2
10		72413	FITTING, Breather		1
11		71140	FITTING, Breather	1	
12		62817	SCREEN ASSEMBLY, Oil pressure	1	1
13		61173	GASKET, Oil pressure housing	1	1
14		69510	HOUSING, Oil pressure screen	1	1
15		06E19769-0.63	GASKET, 5/8 I.D. annular	1	1
16		STD-8	WASHER, 1/4 plain	4	4
17		LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. head	4	4
18		STD-160	WASHER, 1/4 lock, internal teeth	4	4
19		53E22144	VALVE ASSEMBLY, Temperature control, oil cooler bypass valve	1	1

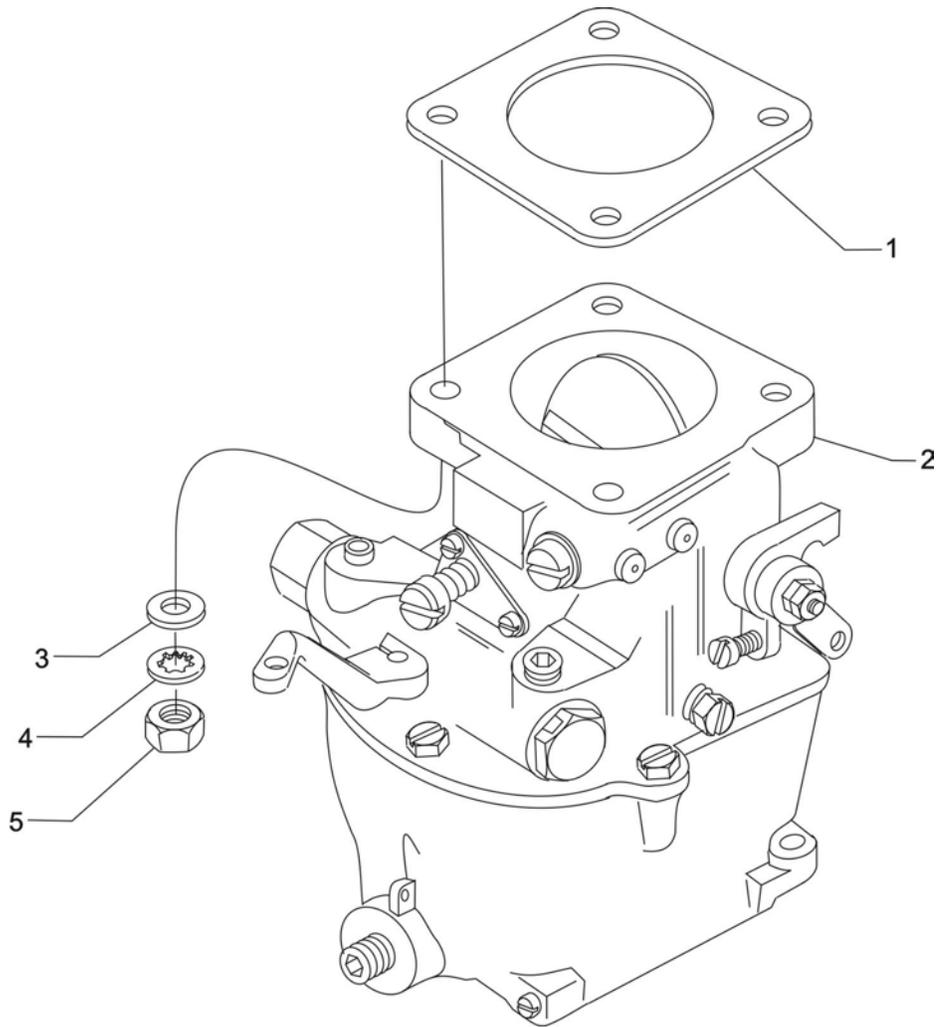


**Oil Filter Assembly and Oil Cooler Bypass Valve  
Figure 20**

**ACCESSORY DRIVES****FIGURE 20 – OIL FILTER ASSEMBLY AND OIL COOLER BYPASS VALVE**

Figure Item	Code	Part Number	Description	Units per Assembly	
				E2D	E3D
1		06B23862	GASKET, Oil filter adapter	1	1
2		77852	OIL FILTER BASE ASSEMBLY	1	1
3		LW-13215	OIL FILTER, Short	1	1
4		STD-8	WASHER, 1/4 plain	4	4
5		STD-160	WASHER, 1/4 lock, internal teeth	4	4
6		STD-1411	NUT, 1/4-20 plain	1	1
7		LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. head	3	3
8		53E22144	VALVE ASSEMBLY, Temperature control oil cooler bypass	1	1
9		76510	GASKET, Valve assembly	1	1
10		25C-10	STUD, 1/4-20 x 1-1/4 long	1	1

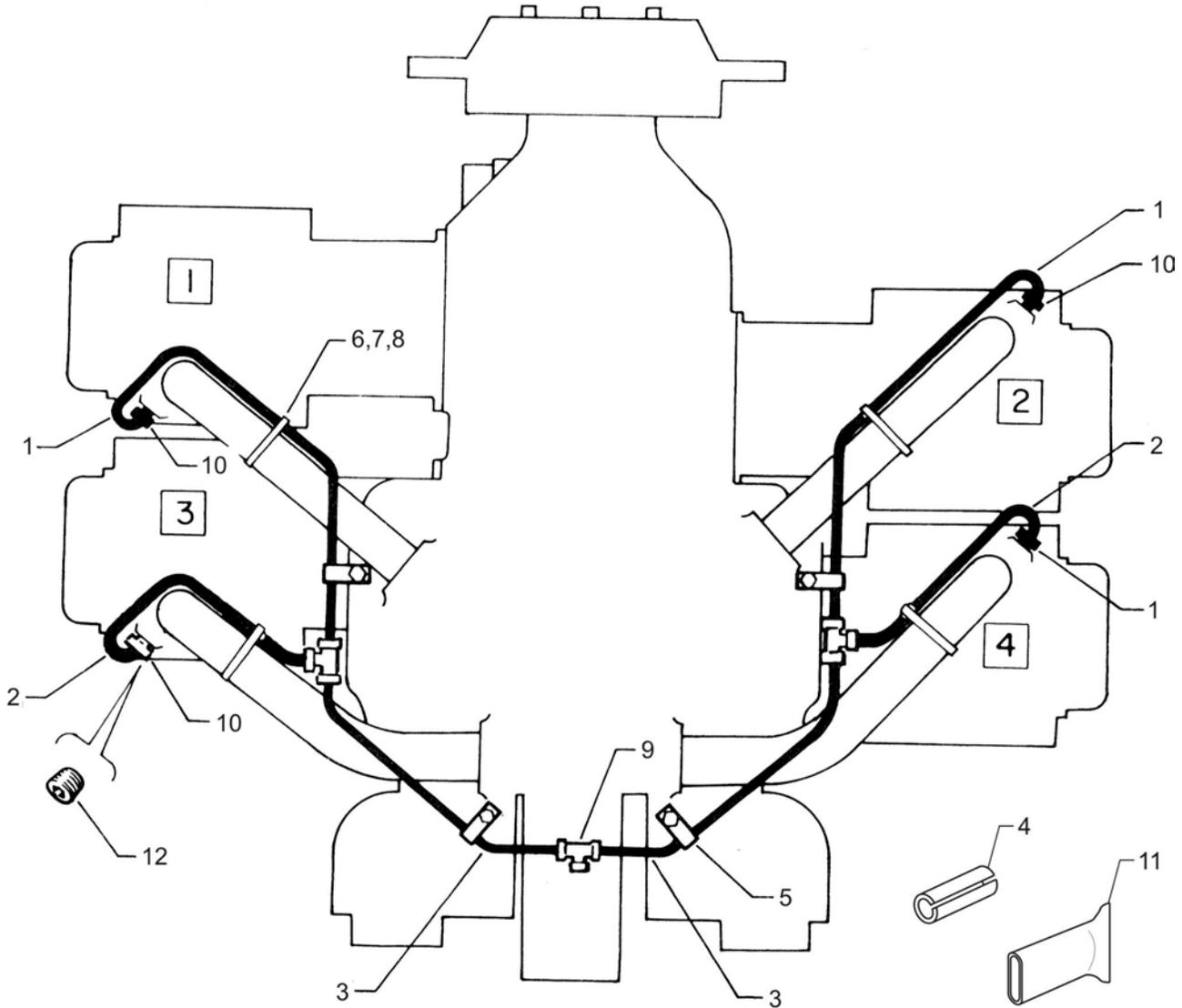
**NOTE:** Reference latest revision of SSP-885 for oil filters and replacement filters.



**Carburetor Assembly  
Figure 21**

**FUEL DISTRIBUTION****FIGURE 21 – CARBURETOR ASSEMBLY**

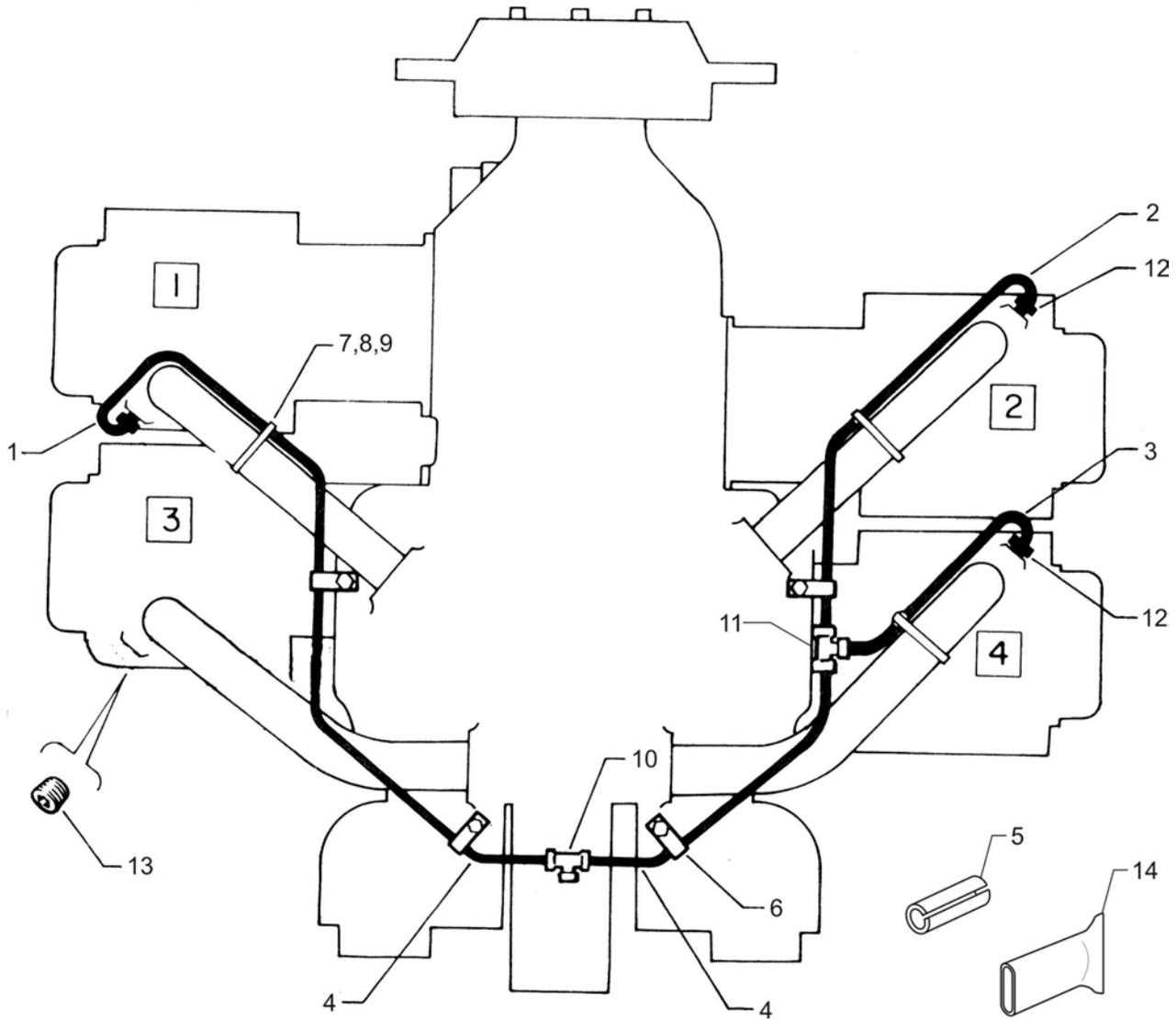
Figure Item	Code	Part Number	Description	Units per Assembly	
				E2D	E3D
1		66224	GASKET, Carburetor	1	1
2	<b>V</b>	61B26214	CARBURETOR, MA-4SPA <b>V</b> AV 10-5217	1	
	<b>V</b>	61B26213	CARBURETOR, MA-4SPA <b>V</b> AV 10-5009		1
3		STD-35	WASHER, 5/16 plain	4	4
4		STD-475	WASHER, 5/16 lock, internal teeth	4	4
5		STD-1410	NUT, 5/16-18 plain	4	4
<b>V</b> Vendor Prime Manufacturer part					



**Priming Lines  
Figure 22**

**FUEL DISTRIBUTION****FIGURE 22 – PRIMING LINES**

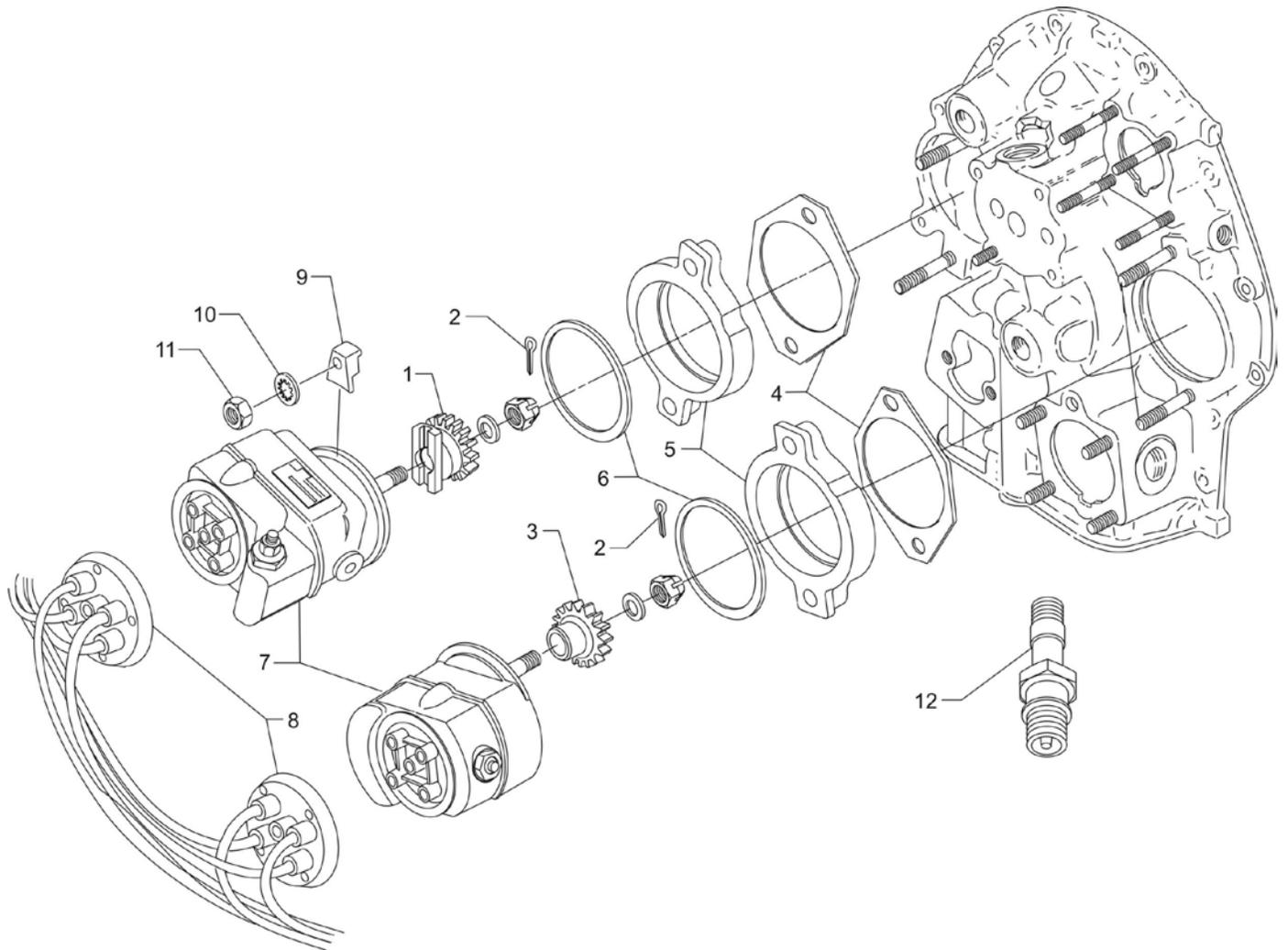
Figure Item	Code	Part Number	Description	Units per Assembly	
				E2D	E3D
1		LW-12098-0-170	TUBE ASSEMBLY, Primer, cyls. no. 1 & 2	2	
2		LW-12098-0-130	TUBE ASSEMBLY, Primer, cyls. no. 3 & 4	2	
3		LW-12098-0-100	TUBE ASSEMBLY, Primer, intermediate	2	
4		LW-12598	SLEEVE, Priming line	4	
5		LW-16266-25-13	CLAMP	4	
6		LW-18959-175-25	CLAMP, 1-3/4 I.D.	4	
7		STD-553	SCREW, No. 6-32 x 1/2 long, round head	4	
8		MS21044N06	NUT, No. 6-32 self-locking	4	
9		STD-853	TEE, Union, 1/8 tube	3	
10		63D21408	NIPPLE ASSEMBLY, Primer	4	
11		61597	CAP, Sealing, 5/16 diameter x 1.00 long	1	
12	*	1102	PLUG, 1/8-27 NPT, allen head (assemble in cylinder head)	4	4
* Used when no priming lines.					



**Priming Lines  
Figure 23**

**FUEL DISTRIBUTION****FIGURE 23 – PRIMING LINES**

Figure Item	Code	Part Number	Description	Units per Assembly	
				E2D	E3D
1		LW-12098-0-170	TUBE ASSEMBLY, Primer, cylinder no. 1	1	
2		LW-12098-0-130	TUBE ASSEMBLY, Primer, cylinder no. 2	1	
3		LW-12098-0-280	TUBE ASSEMBLY, Primer, cylinder no. 4	1	
4		LW-12098-0-100	TUBE ASSEMBLY, Primer, intermediate	1	
5		LW-12598	SLEEVE, Priming line	3	
6		LW-16266-25-13	CLAMP	3	
7		LW-18959-175-25	CLAMP, 1-3/4 I.D.	3	
8		STD-553	SCREW, No. 6-32 x 1/2 long, round head	3	
9		MS21044N06	NUT, No. 6-32 self-locking	3	
10		STD-853	TEE, Union, 1/8 tube	1	
11		LW-18071	TEE, Union, 1/8tube	1	
12		63D21408	NIPPLE ASSEMBLY, Primer	3	
13	*	1102	PLUG, 1/8-27 NPT, allen head (assemble in cylinder head)	4	4
14		61597	CAP, Sealing, 5/16 diameter x 1.00 long	1	
* Used when no priming lines.					



**Magnetos, Magneto Drives, Harnesses and Spark Plugs  
Figure 24**

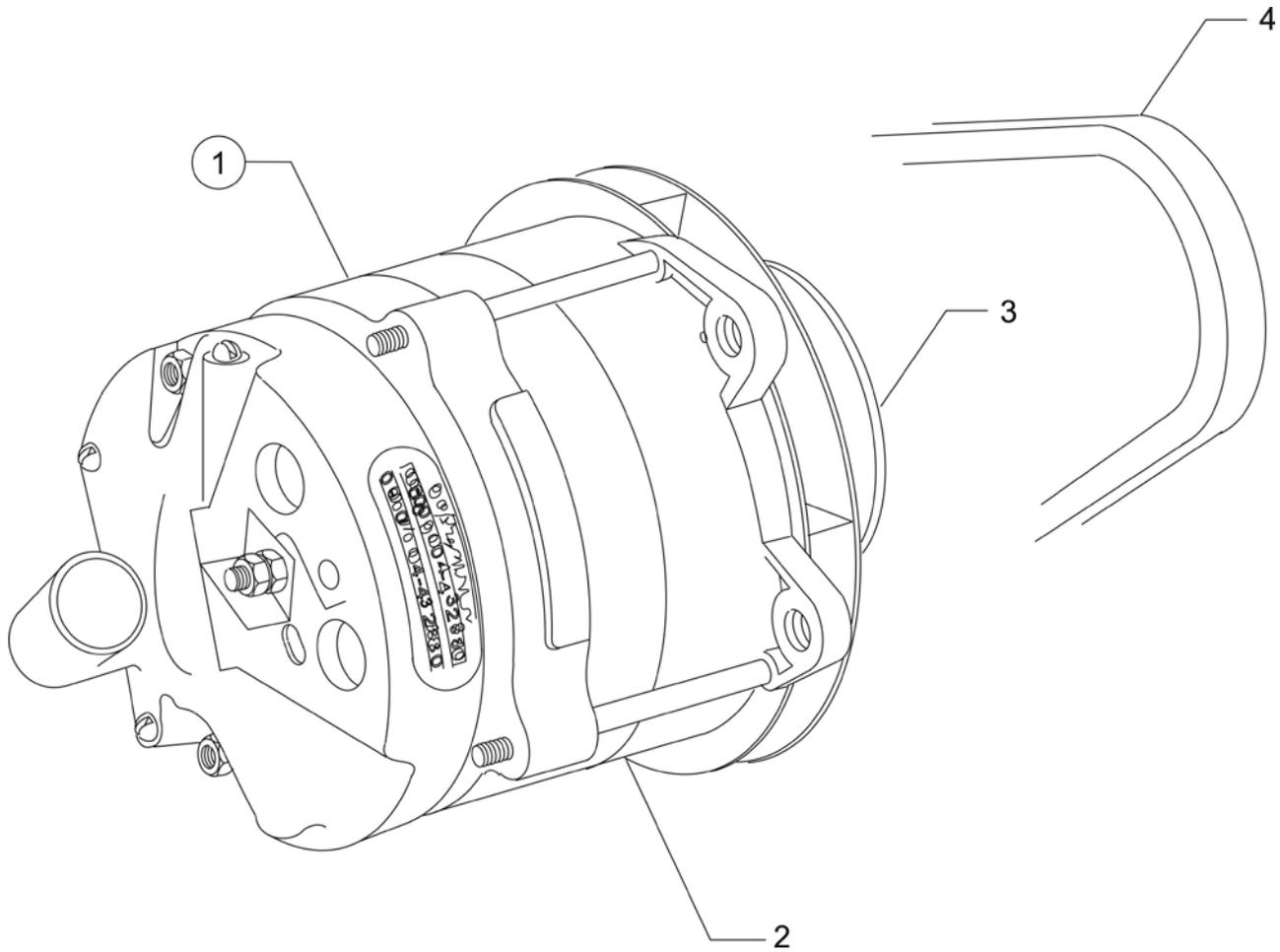
**IGNITION DISTRIBUTION SYSTEM****FIGURE 24 -MAGNETOS, MAGNETO DRIVES, HARNESSSES AND SPARK PLUGS**

Figure Item	Code	Part Number	Description	Units per Assembly	
				E2D	E3D
1		61665	GEAR, Magneto, impulse coupling	1	1
		61665	GEAR, Magneto, impulse coupling	2	
2		STD-713	COTTER PIN, 3/32 diameter x 3/4 long	2	2
3		68C19622	GEAR, Magneto	1	1
4		62224	GASKET, Magneto adapter	1	1
		62224	GASKET, Magneto adapter	2	
5		LW-12706	ADAPTER, Magneto, impulse coupling	1	1
		LW-12706	ADAPTER, Magneto, impulse coupling	2	
6		LW-12681	GASKET, Magneto	2	2
7	<b>V</b>	66GP-0SANN	MAGNETO, Plain, Slick <b>V</b> 4370	1	1
	<b>V</b>	66GC20SFNN	MAGNETO, Impulse, Slick <b>V</b> 4371	1	1
	<b>V</b>	66GC20SFNN	MAGNETO, Impulse, Slick <b>V</b> 4371	2	
8	<b>V</b>	67P20406	HARNESS ASSEMBLY, Right, Slick <b>V</b> M2992	1	1
	<b>V</b>	67P20407	HARNESS ASSEMBLY, Left, Slick <b>V</b> M1795	1	1
9		66M21195	CLAMP, Magneto	4	4
10		STD-475	WASHER, 5/16 lock, internal teeth	4	4
11		STD-1410	NUT, 5/16-18 plain	4	4
12	<b>V*</b>	1182-E7	SPARK PLUG, Champion <b>V</b> REM38E	8	8
	<b>**</b>	01P19762-1-43	BAG, Harness attaching	1	1
<p><b>V</b> Vendor Prime Manufacturer part</p> <p><b>*</b> 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><b>**</b> See page 48 for breakdown of individual parts contained in the magneto and harness attaching bag (P/N 01P19762-1-43). 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 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

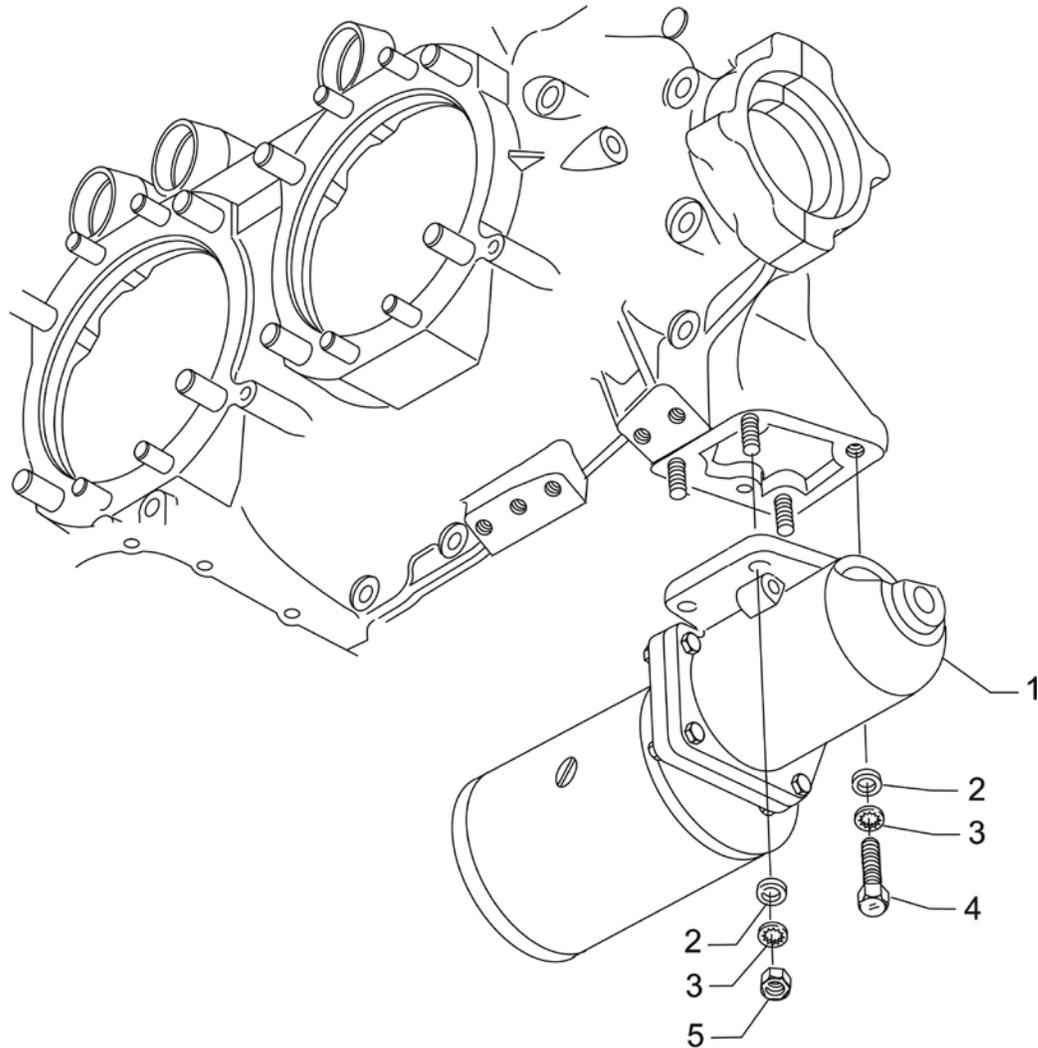
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**Alternator Assembly and Belt  
Figure 25**

**IGNITION DISTRIBUTION SYSTEM****FIGURE 25 – ALTERNATOR ASSEMBLY AND BELT**

Figure Item	Code	Part Number	Description	Units per Assembly	
				E2D	E3D
1		LW-14371	ALTERNATOR ASSEMBLY, 12V.-60Amp.	1	
2	<b>V</b>	LW-14313	ALTERNATOR, <b>V</b> ALY-8520LS	1	
3		36B19484	PULLEY, Alternator	1	
4		37A19773-376	BELT, Alternator drive, 3/8 wide	1	
<p><b>V</b> Vendor Prime Manufacturer part</p> <p><b>NOTE:</b> See latest revision of Lycoming Service Instruction No. 1154 for complete listing of FAA approved starters, generators, alternators, regulators and relays.</p>					



**Starter Motor and Attaching Parts  
Figure 26**

**CRANKING SECTION****FIGURE 26 - STARTER MOTOR AND ATTACHING PARTS**

Figure Item	Code	Part Number	Description	Units per Assembly	
				E2D	E3D
1	V	31A26041	STARTER ASSEMBLY, 12V., Kelly V ERZ-8011	1	1
	V	31B23592	STARTER, 12/24V., Sky-Tec V 149NL	1	
	V	31B26040	STARTER ASSEMBLY, 24V., Kelly V ERB-8011	1	
	V	31A22100	STARTER, Sky-Tec V 149-12PM	1	1
	V	31A22110	STARTER, Sky-Tec V 149-12HT	1	
	V	31A22104	STARTER, Sky-Tec V 149-12LS	1	
	V	31A26043	STARTER ASSEMBLY, 12V., Kelly V ERZ-8012		1
2	*	STD-35	WASHER, 5/16 plain	4	4
3		STD-475	WASHER, 5/16 lock, internal teeth	4	4
4		LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex. head	1	1
	*	LW-31-1.16	BOLT, 5/16-18 x 1-5/32 long, hex. head	1	1
5		STD-1410	NUT, 5/16-18 plain	3	3
<p>V Vendor Prime Manufacturer part  * Use with Kelly starters only.</p> <p><b>NOTE:</b> 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**

<b>PART NO.</b>	<b>PART NAME</b>	<b>Qty.</b>
<b>69371-1</b>	<b>KIT - SEAL AND GASKET SET</b>	<b>1</b>
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.)**

<b>69371-1</b>	<b>KIT – SEAL AND GASKET SET (CONT.)</b>	<b>1</b>
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**

<b>PART NO.</b>	<b>PART NAME</b>	<b>Qty.</b>
<b>05K21237-A</b>	<b>KIT - CYLINDER, PISTON AND RING ASSEMBLY</b>	<b>1</b>
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
14D23915	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**

<b>PART NO.</b>	<b>PART NAME</b>	<b>Qty.</b>
<b>11B20061-1SB-S</b>	<b>KIT - CRANKCASE ASSEMBLY AND THRU-STUD</b>	<b>1</b>
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)**

<b>PART NO.</b>	<b>PART NAME</b>	<b>Qty.</b>
<b>11B20161-1SB-S</b>	<b>KIT - CRANKCASE ASSEMBLY AND THRU-STUD</b>	<b>1</b>
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-12789	Tube	25
AN6-34A	Bolt	11	LW-12892	Thrust Button	19
AN844-10D	Elbow	37	LW-13215	Oil Filter	39
AN901-8A	Gasket	37	LW-13323	Seat	17
AN960-616L	Washer	11	LW-13353	Gasket	27
AS5163D08	Elbow	37	LW-13364	Brace	1
LRT23381	Body Assy.	5	LW-13790	Shaft	19
LW-25-0.94	Bolt	27	LW-13792	Seal	5
LW-25-0.94	Bolt	31	LW-13793	Stud	3
LW-25-1.00	Bolt	37	LW-13796	Shaft	9
LW-25-1.00	Bolt	39	LW-13923	Bushing	13
LW-25-1.13	Bolt	11	LW-14078	Pin	13
LW-25-1.13	Bolt	27	LW-14260	Seal	31
LW-25-1.13	Bolt	31	LW-14313	Alternator	51
LW-25-1.25	Bolt	23	LW-14371	Alternator Assy.	51
LW-25-1.44	Bolt	31	LW-14649	Shim	1
LW-25-1.50	Bolt	11	LW-14735	Gage Assy.	25
LW-25-1.75	Bolt	11	LW-14768	Gage Assy.	25
LW-25S1.50	Bolt	11	LW-14780	Gage Assy.	25
LW-31-0.94	Bolt	1	LW-14995	Spring	17
LW-31-0.94	Bolt	53	LW-15472	Fuel Pump	33
LW-31-1.16	Bolt	53	LW-15592-5-05	Clamp	21
LW-31H0.75	Bolt	1	LW-15592-8-28	Clamp	23
LW-31H0.88	Bolt	1	LW-16266-25-13	Clamp	43
LW-31H0.88	Bolt	9	LW-16266-25-13	Clamp	45
LW-38-0.75	Bolt	33	LW-16475	Seat	17
LW-10077	Seat	17	LW-16783-18	Gage Assy.	25
LW-10729	Link	1	LW-18071	Tee	45
LW-10828	Sump Assy.	27	LW-18085	Spring	5
LW-11713	Spring	5	LW-18109	Impeller	31
LW-11795	Spring	17	LW-18110	Impeller Assy.	31
LW-11800	Spring	17	LW-18639	Lockplate	7
LW-11866	Spacer	11	LW-18661	Seal	17
LW-12098-0-100	Tube Assy.	43	LW-18667	Pin	9
LW-12098-0-100	Tube Assy.	45	LW-18815-S	Bushing	7
LW-12098-0-130	Tube Assy.	43	LW-18817-S	Bushing	7
LW-12098-0-130	Tube Assy.	45	LW-18840	Camshaft Assy.	9
LW-12098-0-170	Tube Assy.	43	LW-18921-S	Bushing	7
LW-12098-0-170	Tube Assy.	45	LW-18922-S	Bushing	7
LW-12098-0-280	Tube Assy.	45	LW-18959-175-25	Clamp	43
LW-12186	Nut	13	LW-18959-175-25	Clamp	45
LW-12272	Lockplate	17	MS20823-6D	Elbow	15
LW-12416	Cylinder Assy.	15	MS21044N06	Nut	43
LW-12545	Plug	27	MS21044N06	Nut	45
LW-12598	Sleeve	43	STD-8	Washer	11
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STD-160	Washer	11	STD-1774	Pin	35
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STD-160	Washer	31	STD-2090	Nut	19
STD-160	Washer	35	STD-2168	Nut	9
STD-160	Washer	37	STD-2180	Hose	21
STD-160	Washer	39	STD-2197	Washer	1
STD-475	Washer	1	STD-2231	Ring	9
STD-475	Washer	15	STD-2246	Bolt	7
STD-475	Washer	35	STD-2249	Nut	11
STD-475	Washer	41	STD-2353	Insert	15
STD-475	Washer	47	25C-8	Stud	15
STD-475	Washer	53	25C-10	Stud	39
STD-514	Dowel	3	25C-22	Stud	29
STD-551	Plug	27	31C-12	Stud	3
STD-553	Screw	43	31C-12	Stud	15
STD-553	Screw	45	31C-12	Stud	29
STD-557	Dowel	3	31C-13	Stud	3
STD-596	Nut	11	31C-15	Stud	27
STD-678	Washer	11	31C-19	Stud	29
STD-678	Washer	33	31CD-17	Stud	29
STD-684	Nipple	21	38-13	Stud	3
STD-690	Washer	1	38D-17	Stud	3
STD-713	Cotter Pin	1	50-15	Stud	3
STD-713	Cotter Pin	47	383-B	Nut	19
STD-783	Plug	35	1028	Ball	5
STD-784	Plug	29	1102	Plug	3
STD-784	Plug	37	1102	Plug	15
STD-853	Tee	43	1102	Plug	29
STD-853	Tee	45	1102	Plug	43
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61084	Spring	5	72569	Baffle Assy.	21
61098	Adapter Assy.	35	72970	Gear Assy.	35
61173	Gasket	37	73346	Flange	23
61174	Shaft	31	73383	Lockplate	1
61183	Gasket	35	73818	Gasket	29
61247	Cover	19	74065	Ring	25
61400	Stud	27	74068	Ring	25
61544	Plunger	9	74084	Pipe	23
61597	Cap	43	74241	Ring	13
61597	Cap	45	74414	Support Assy.	7
61665	Gear	47	74637	Bushing	19
62224	Gasket	47	74887	Spacer	19
62817	Screen Assy.	37	74996	Gear Assy.	9
65441	Seat	17	75072	Gear Assy.	9
66224	Gasket	41	75154	Stud	3
66610	Bushing	15	75380	Link	1
66796	Insert	15	75736	Tube	25
68593	Spacer	35	75906	Gasket	19
68668	Spring	5	76118	Spacer	9
68759	Tube Assy.	21	76119	Shield	29
68760	Tube Assy.	21	76121	Shaft Assy.	9
68761	Tube Assy.	21	76220	Stud	11
68867	Support Assy.	7	76510	Gasket	39
68987	Shroud Tube Assy.	17	76534	Shim	1
69106	Cover	35	76628	Support Assy.	7
69510	Housing	37	76943	Guide	15
69551	Gasket	35	77309	Bushing	9
69603	Hose	23	77467	Spring	5
69675	Connector	37	77611	Gasket	15
70310	Seal	17	77808	Valve Assy.	5
70484	Screen	27	77852	Oil Filter Base Assy.	39
71140	Fitting	37	78027	Bolt	13
71481	Ring	19	78030-S	Conn. Rod Assy.	13
71596	Washer	35	78531	Body Assy.	31
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71973	Gasket	23	05K19423-S	Impeller Kit	31
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07A21443	Bracket	1	17F19357	Rocker Assy.	19
07F23268	Strut	1	18D26098	Bearing	5
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11B20161-1SB-S	Crankcase Assy. Kit	3	31A22100	Starter	53
13B47020	Crankshaft Assy.	7	31A22104	Starter	53
13B47024	Crankshaft Assy.	7	31A22110	Starter	53
13S19646	Gear	7	31A26041	Starter Assy.	53
14D23915	Piston	13	31A26043	Starter Assy.	53
14H21950	Ring	13	31B23592	Starter	53
15B21319	Socket	17	31B26040	Starter Assy.	53
15B26064	Body	5	36B19484	Pulley	51
15B26066	Plunger Assy.	17	37A19773-376	Belt	51
15F19957-08	Rod Assy.	19	53E22144	Valve Assy.	37
15F19957-09	Rod Assy.	19	53E22144	Valve Assy.	39
15F19957-10	Rod Assy.	19	56C23075	Tube	25
15F19957-11	Rod Assy.	19	61B26213	Carburetor	41
15F19957-12	Rod Assy.	19	61B26214	Carburetor	41
15F19957-13	Rod Assy.	19	63D21408	Nipple Assy.	43
15F19957-14	Rod Assy.	19	63D21408	Nipple Assy.	45
15F19957-15	Rod Assy.	19	66GC20SFNN	Magneto	47
15G23494	Shroud Tube Assy.	17	66GP-0SANN	Magneto	47
15M23452	Camshaft Assy.	9	66M21195	Clamp	47
16R22126	Guide	15	67P20406	Harness Assy.	47
17A23928	Intake Valve	17	67P20407	Harness Assy.	47
17B23926	Exhaust Valve	17	68C19622	Gear	47