

O-320-E1A, -E2A Series Illustrated Parts Catalog

November 2011

PC-203-3

LYCOMING © 2011

652 Oliver Street
Williamsport, PA 17701

O-320-E1A, -E2A Illustrated Parts Catalog

Lycoming Part Number: PC-203-3

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This parts catalog is the third of eight other forthcoming parts catalogs associated with O-320 engine model series as shown in the table below.

Parts Catalog Number	Engine Models
PC-203-1	O-320-A2B, -A3B
PC-203-2	O-320-A2C, -A2D
PC-203-3	O-320-E1A, -E2A
PC-203-4	O-320-E1F, -E2F
PC-203-5	O-320-E2B, -E2C
PC-203-6	O-320-E2D, -E3D
PC-203-7	O-320-E2G
PC-203-8	O-320-E2H, -E3H

NOTE: Service documents override parts information in this document.

RECORD OF REVISIONS

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72-50	24-27	11/11
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INTRODUCTION



⚠ CAUTION: DO NOT USE THIS CATALOG AS AN ASSEMBLY OR INSTALLATION DOCUMENT. THIS CATALOG MUST ONLY BE USED TO IDENTIFY PARTS IN CONJUNCTION WITH THE APPLICABLE OVERHAUL MANUAL.

Purpose of this Catalog

This Illustrated Parts Catalog (IPC) contains a complete list of spare parts for the Lycoming O-320-E1A, -E2A wide cylinder flange model engines.

How to Use this Catalog

This catalog is based on the Air Transport Association (ATA) Spec100 format. In order to clarify illustrations, Lycoming has taken discretion to classify non-system related assemblies and components in the same chapters, because they are physically connected.

This catalog is frequently updated by Service Bulletins (SB) and Service Instructions (SI). The updated information will be incorporated into subsequent full revisions of this catalog.

The ATA two element numbering system provides consistency throughout various manuals. The bottom of each page (beyond the frontal section) contains a two element number (##-##). In the two element numbering, the first two digits represent a chapter, and the next two digits subdivide the material into a more specific section.

The ATA 100 format specifies the subject matter for each chapter-section. According to the ATA Standards, the following chapters apply to the O-320-E1A, -E2A Illustrated Parts Catalog.

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

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

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

Numerical Index

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

Description column

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

Units per Assembly Column

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

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

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

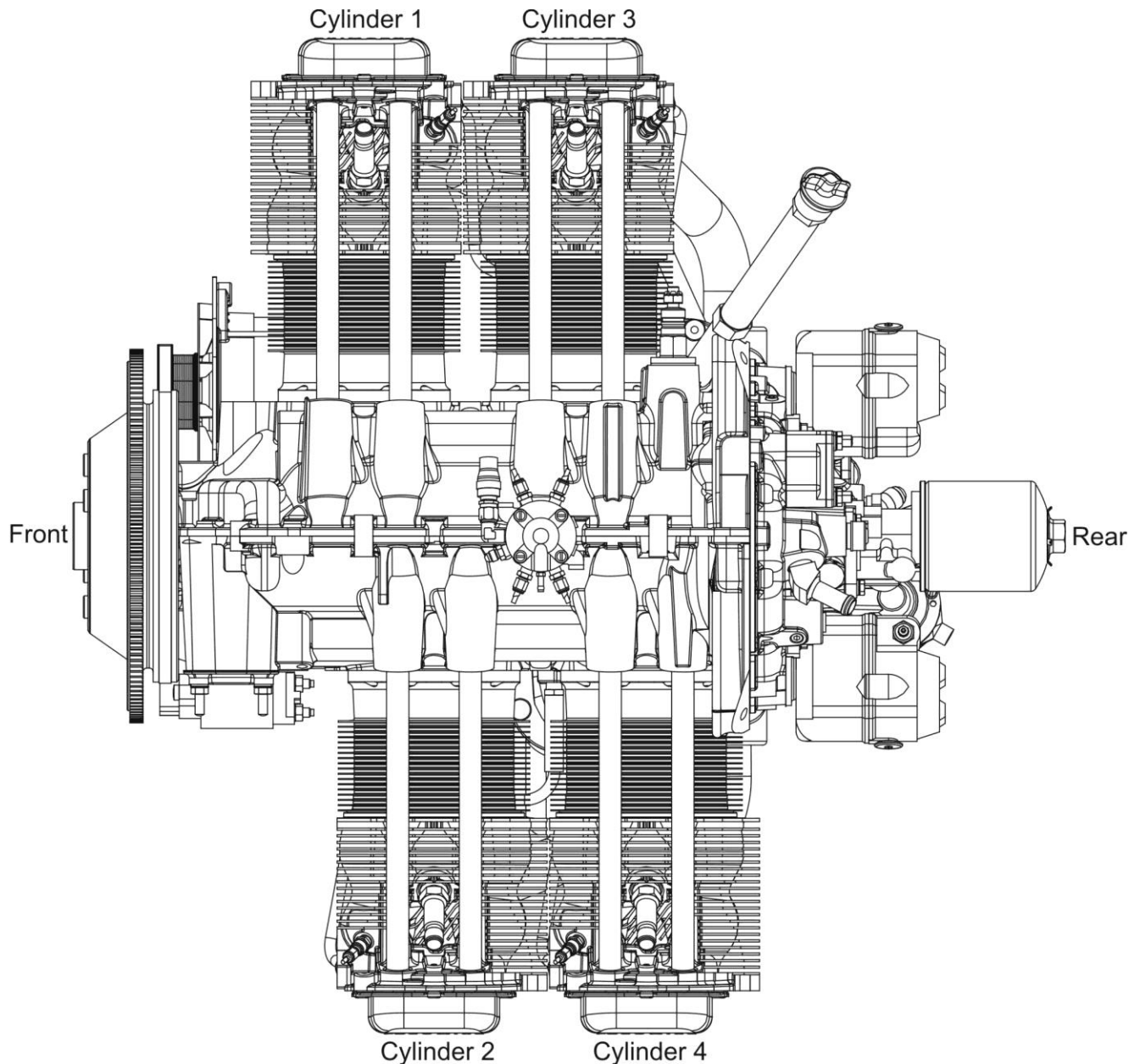
Any reference in this document to the suppliers/part manufacturer's product, by name, trademark, part number or other description is solely for the purpose of identification and does not indicate or infer that Lycoming accepts responsibility for quality control and/or airworthiness of parts, which do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

Environmental Compliance

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

Perspective of References

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

**Top View of Engine**

How to Order Parts and Publications

An Oversize and Undersize Parts List is included in the front section of this catalog, to aid in ordering parts as necessary during overhaul.

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

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

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

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

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

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

NOTE: The owner of the manual must give notification to the factory for a change of address.

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

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8:00 A.M. – 5:00 P.M. EST (-5GMT)

Monday – Friday.

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ABBREVIATIONS AND ACRONYMS

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

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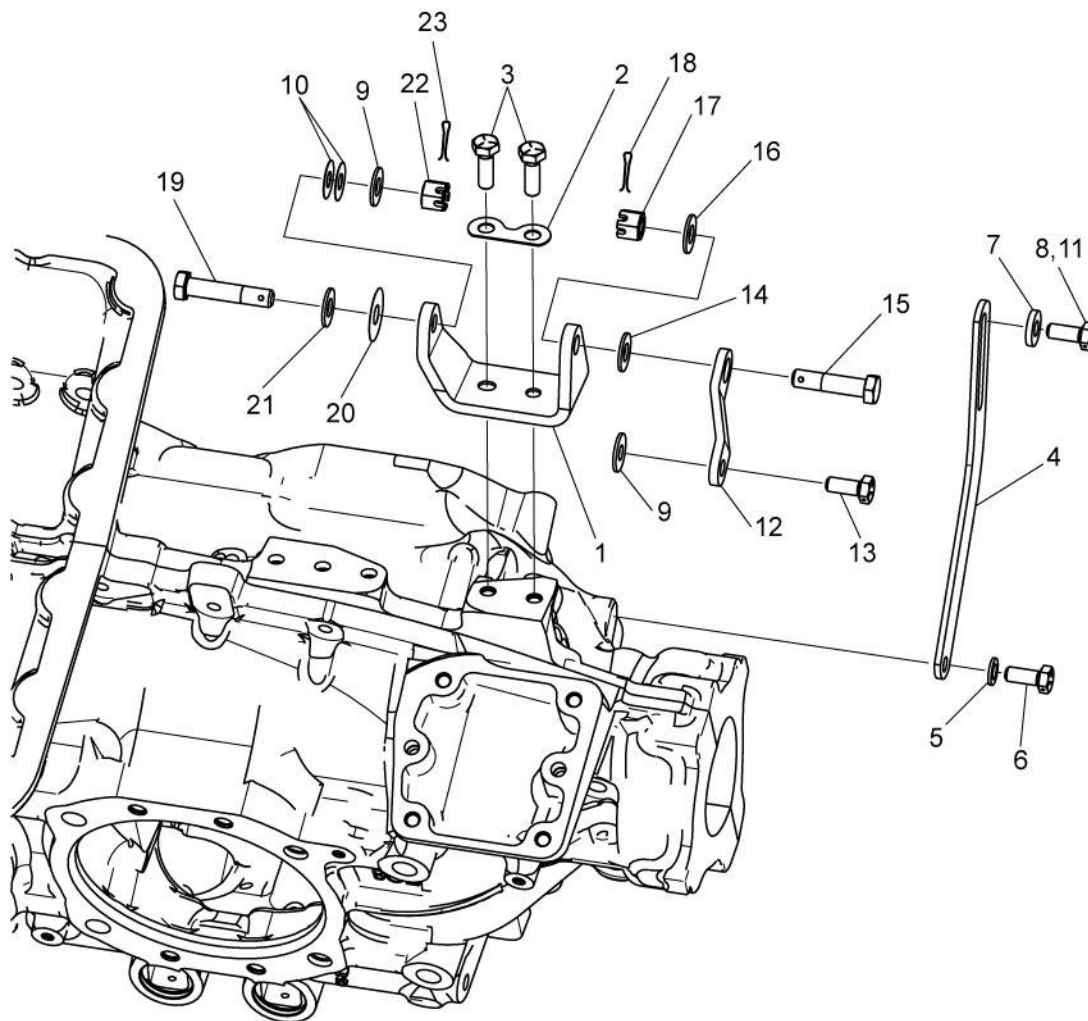
OVERSIZE AND UNDERSIZE PARTS LISTING

Part No.	Description	Oversize (in.)								Undersize (in.)		
		P02 .002	P05 .005	P10 .010	P15 .015	P20 .020	P30 .030	P40 .040	P50 .050	M03 .003	M06 .006	M10 .010
18D26098	BEARING									X	X	X
18A26093	BEARING									X	X	X
18D26096	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								

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

NOTE

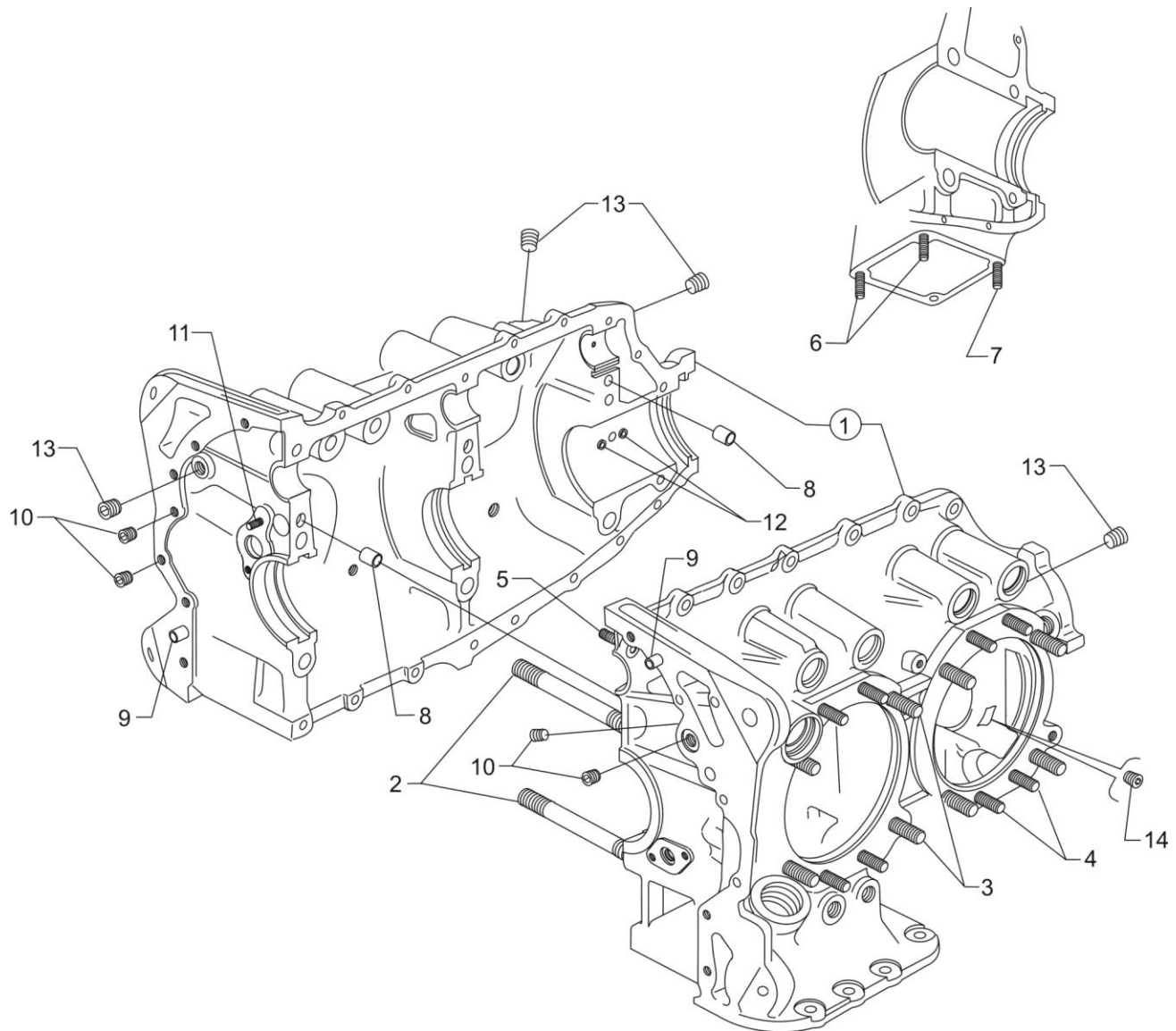
When ordering oversize and undersize parts, be sure to specify the required oversize and undersize dimension along with the proper part number. For example, to order bearing P/N 18D26098 bearing in .003 in. undersize, order P/N 18D26098-M03. Undersize code letter is "M" while oversize code letter is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

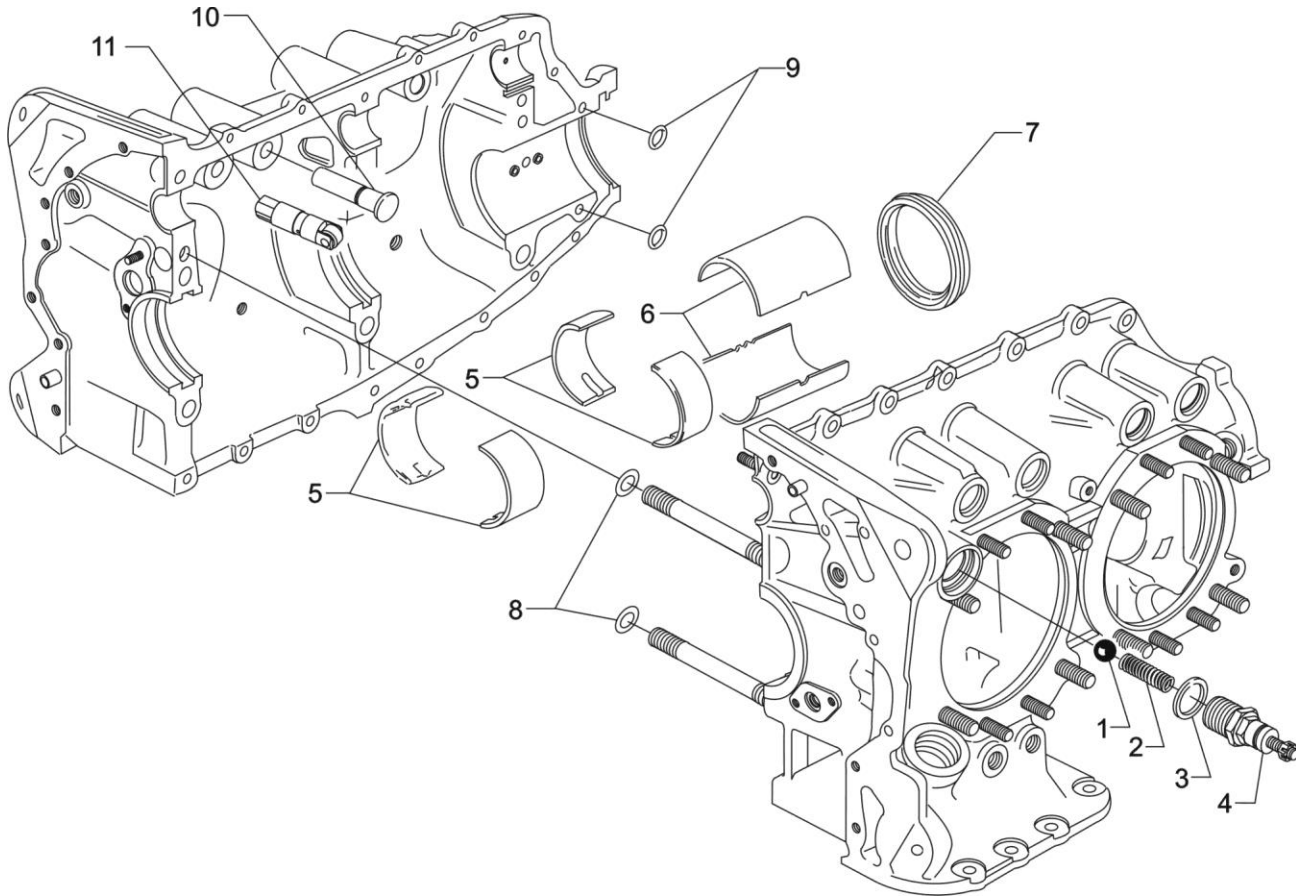
Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1		07A19474	BRACKET, Alternator	1	1
2		73383	LOCKPLATE, 5/16 bolt x 1.00	1	1
3		LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex. head	2	2
4		75380	LINK, Alternator adjusting	1	1
5		STD-35	WASHER, 5/16 plain	1	1
6		LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. head, drilled	1	1
7		STD-1727	WASHER, Plain, 11/32 I.D. x 3/4 O.D.	1	1
8		LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. head, drilled	1	1
9		STD-2197	WASHER, 21/64 I.D. x 13/16 O.D. x 1/16		2
10		LW-14649	SHIM, 13/16 O.D. x 11/32 I.D. x .010 thick		2
11		LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex. head, drilled		1
12		07F23268	STRUT, Alternator support	1	1
13		LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. head, drilled	1	1
14		STD-690	WASHER, 13/16 O.D. x 3/8 I.D. x 1/16 thick	1	1
15		AN6-14	BOLT, 3/8-24 x 1-37/64 long, drilled	1	1
		AN6-17	BOLT, 3/8-24 x 1-15/16 long, hex. head		1
16		STD-690	WASHER, 13/16 O.D. x 3/8 I.D. x 1/16 thick	1	1
17		STD-872	NUT, 3/8-24 slotted	1	1
18		STD-713	COTTER PIN, 3/32 diameter x 3/4 long	1	1
19		AN6-16	BOLT, 3/8-24 x 1-27/32 long, hex. head	1	1
20		76534	SHIM, 1-1/8 O.D. x 13/32 I.D. x .005 thick	1	1
21		STD-690	WASHER, 13/16 O.D. x 3/8 I.D. x 1/16 thick	1	1
22		STD-872	NUT, 3/8-24 slotted	1	1
23		STD-713	COTTER PIN, 3/32 diameter x 3/4 long	1	1



Crankcase Assembly
Figure 2

POWER SECTION**FIGURE 2 - CRANKCASE ASSEMBLY**

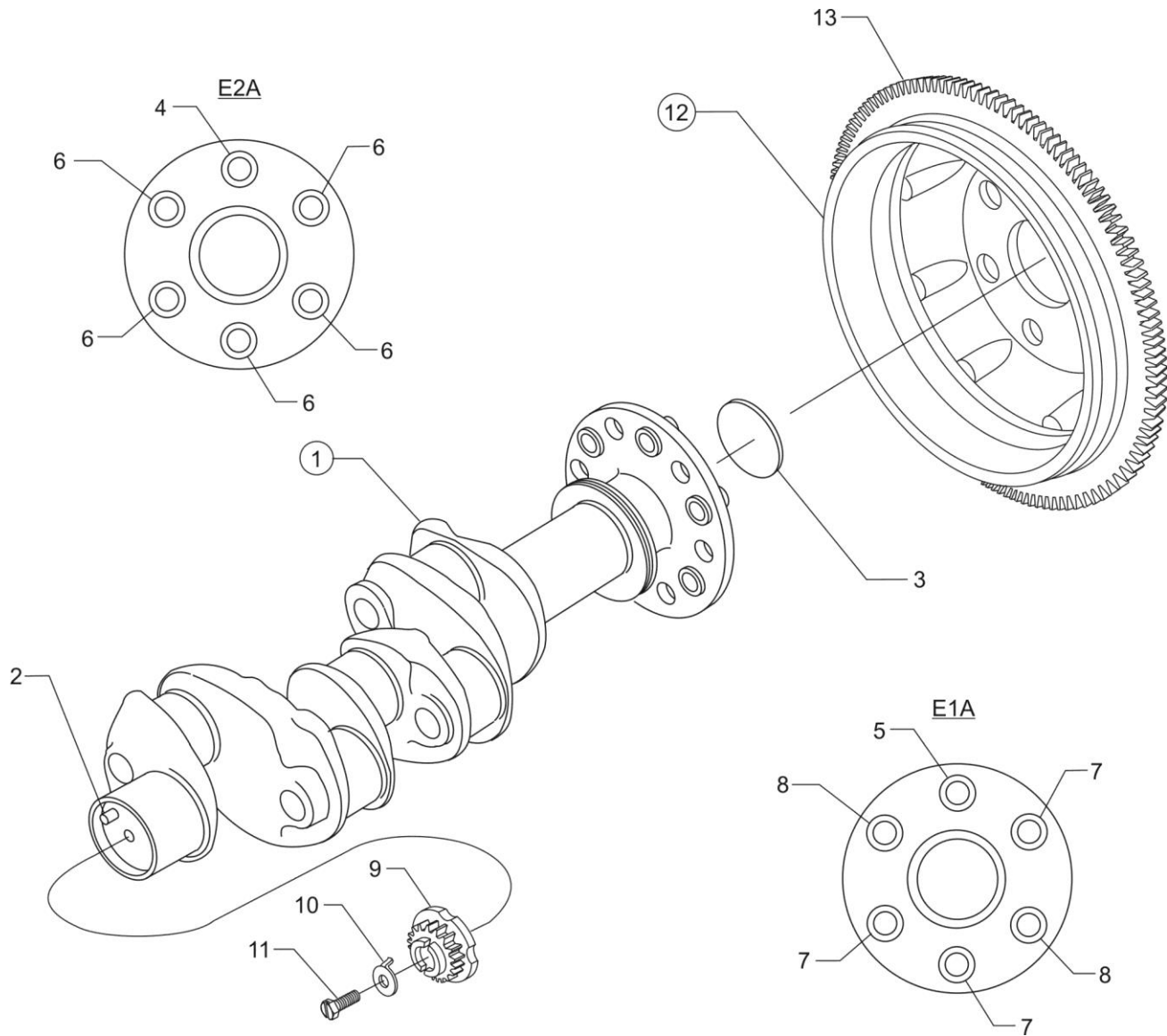
Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1	*	11B20061-1SL-S	CRANKCASE ASSEMBLY KIT	1	1
	P	11B20061-1SL	CRANKCASE ASSEMBLY	1	1
	*	11B20161-1SL-S	CRANKCASE ASSEMBLY KIT (Roller tappet engines)	1	1
	P	11B20161-1SL	CRANKCASE ASSEMBLY (Roller tappet engines)	1	1
2		75154	STUD, 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		31C-12	STUD, 5/16-18 x 1-1/2 long	2	2
7		31C-13	STUD, 5/16-18 x 1-5/8 long	1	1
8		STD-557	DOWEL, 1/2 dia. x 11/16 long, hollow	2	2
9		STD-514	DOWEL, 5/16 dia. x 1/2 long	2	2
10		STD-1623	INSERT, 1/4-20 UNC x 3/8 long	2	2
11		LW-13793	STUD, 5/16-18 x 15/16 long, drilled	1	1
12		69796	DOWEL, Crankshaft bearing	2	2
13		1102	PLUG, 1/8-27 NPT, allen head	6	6
14		STD-1339	PLUG, 1/16-27 NPT, allen head	4	4
<p>P Lycoming proprietary part. Listed for reference purposes only, cannot be purchased.</p> <p>* Refer to Service Kits Section for applicable Crankcase Assembly and Governor Thru-Stud Kit Part Numbers.</p>					



Crankcase Related Parts
Figure 3

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

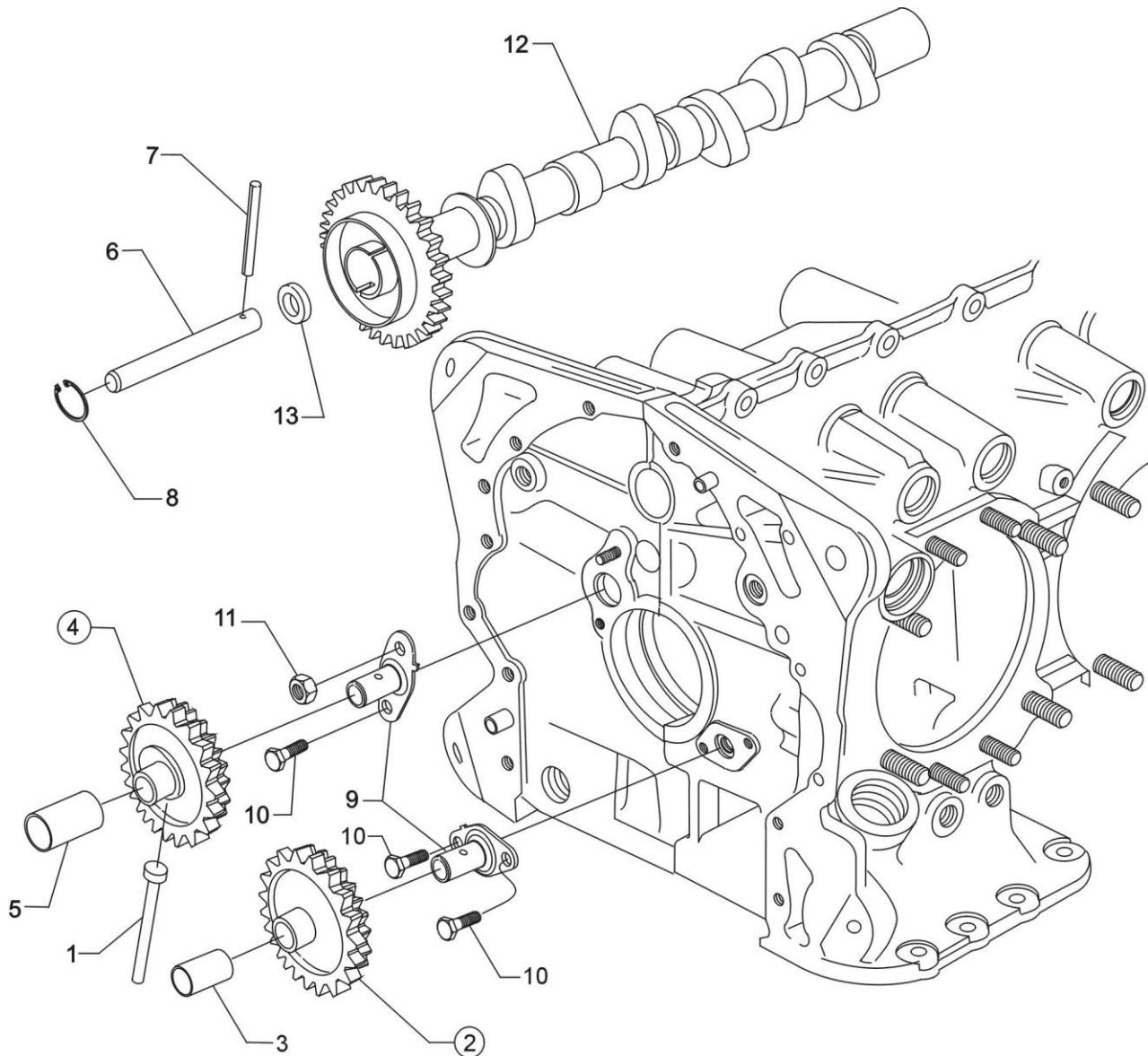
Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1		1028-B	BALL, 11/16 diameter	1	1
2	*	61084	SPRING, Oil pressure relief valve	1	1
	*	68668	SPRING, Oil pressure relief valve	1	1
	*	77467	SPRING, Oil pressure relief valve	1	1
	*	LW-11713	SPRING, Oil pressure relief valve	1	1
	*	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		18D26096	BEARING, Crankshaft	4	
		18D26098	BEARING, Crankshaft		4
6		18A26093	BEARING, Crankshaft	2	2
7	**	LW-13792	SEAL, Crankshaft, oil	1	1
8		72075	SEAL, Oil, 3/32 section x 15/32 I.D.	2	2
9		72091	RING, Oil seal, 23/64 I.D. x 7/64 diameter	2	2
10		15B26064	BODY, Hydraulic tappet	8	8
11		LRT23381	BODY ASSEMBLY, Hydraulic tappet (Roller tappet engines)		8
<p>* Select spring to give a minimum of three threads exposed on adjusting screw to allow field adjustment. Reference latest revision of SSP-1776, Part I for spring identification.</p> <p>** See latest revision of Lycoming Service Instruction No. 1324 for installation.</p>					



Crankshaft Assembly and Related Parts
Figure 4

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

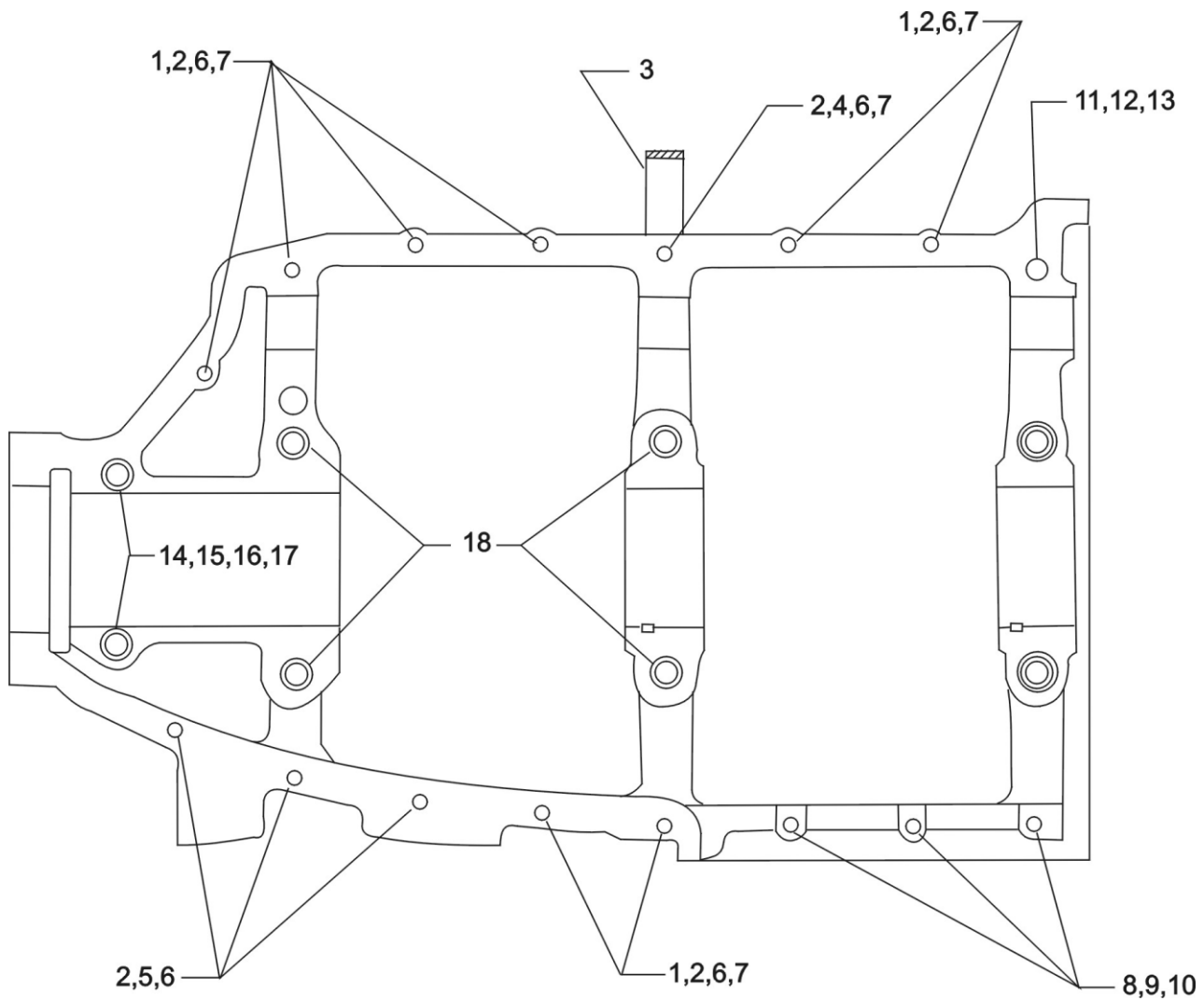
Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1		13B47022	CRANKSHAFT ASSEMBLY	1	
		13B47024	CRANKSHAFT ASSEMBLY		1
2		STD-1065	DOWEL, Stepped, 5/16-14 diameter	1	1
3		STD-1211	PLUG, 2.00 diameter expansion	1	1
4		LW-18921-S	BUSHING, Propeller flange, long		1
5		LW-18817-S	BUSHING, Propeller flange, long	1	
6		LW-18922-S	BUSHING, Propeller flange, short		5
7		LW-18815-S	BUSHING, Propeller flange, short	3	
8		LW-18816-S	BUSHING, Propeller flange, short	2	
9	SB*	13S19646	GEAR, Crankshaft	1	1
10		LW-18639	LOCKPLATE, Crankshaft gear	1	1
11		STD-2246	BOLT, 5/16-24 x 1.00 long	1	1
12		76628	SUPPORT ASSEMBLY, Starter ring gear	1	1
		68867	SUPPORT ASSEMBLY, Starter ring gear		1
13		72566	GEAR, Starter ring, 12/14 pitch	1	1
	**	60882	GEAR, Starter ring, 10/12 pitch		1
SB Referencing Service Bulletin * Refer to latest revision of Service Bulletin No. 475 for proper installation. ** Use with 68867 Support Assembly.					



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

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

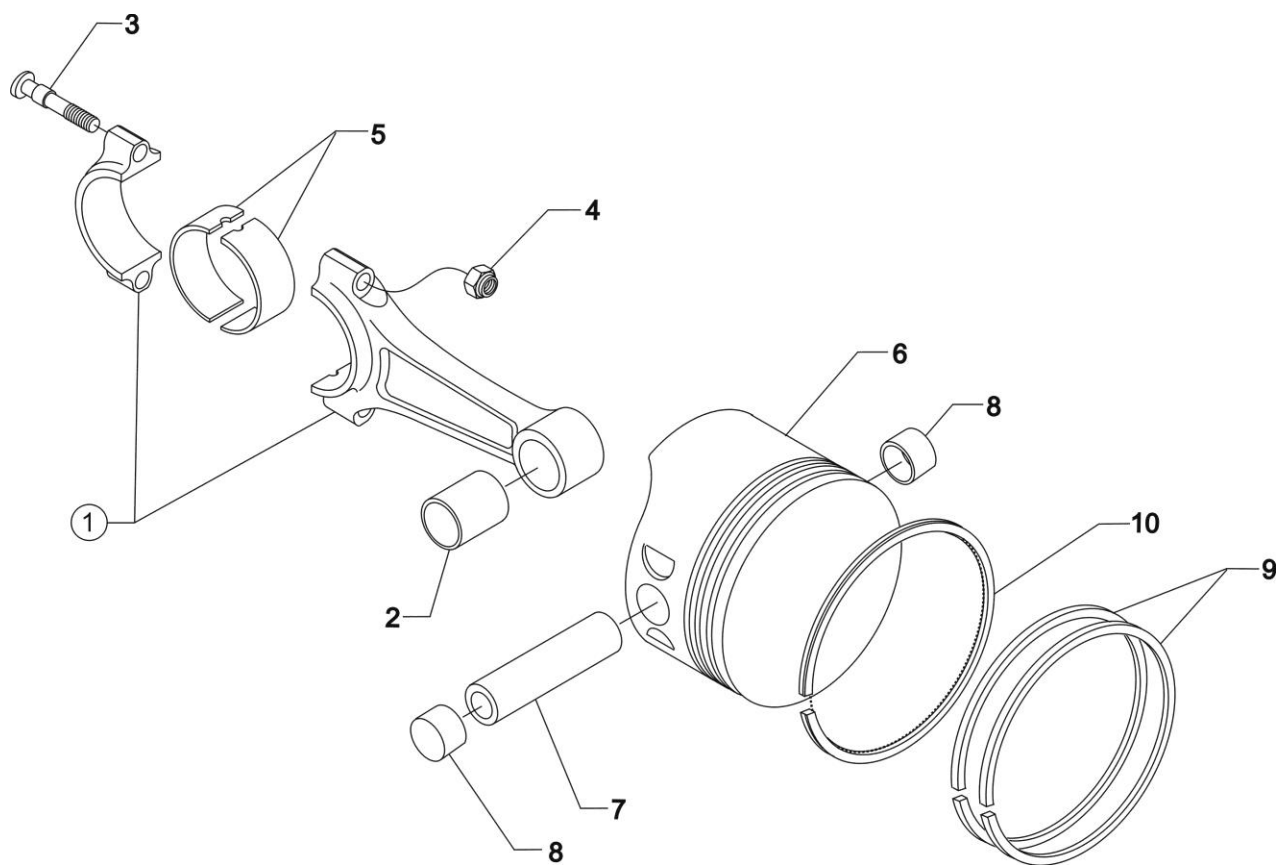
Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1		61544	PLUNGER, Fuel pump, long	1	1
2		74996	GEAR ASSEMBLY, Crankshaft idler, plain	1	1
3		77309	BUSHING, Crankshaft idler gear	1	1
4		75072	GEAR ASSEMBLY, Crankshaft idler	1	1
5		77309	BUSHING, Crankshaft idler gear	1	1
6		76121	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 (Roller tappet engines)		1
13		76118	SPACER, Tachometer shaft, centering	1	1



Crankcase Attaching Parts
Figure 6

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

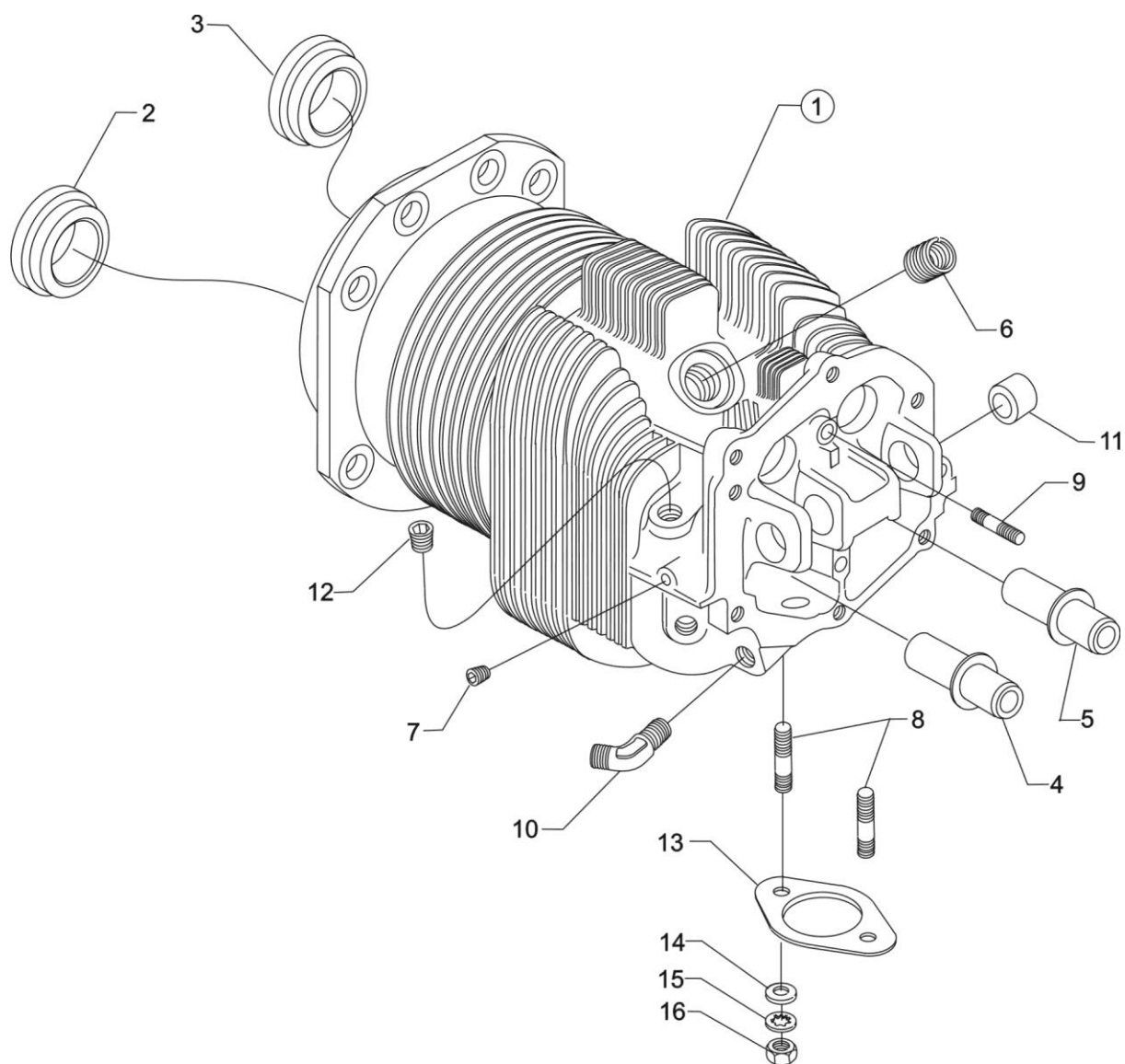
Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1		LW-25-1.50	BOLT, 1/4-20 x 1-1/2 long, hex. head	8	8
2		STD-8	WASHER, 1/4 plain	19	19
3		60803	STRAP, Lifting	1	1
4		LW-25-1.75	BOLT, 1/4-20 x 1-3/4 long, hex. head	1	1
5		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	3	3
6		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		AN6-34A	BOLT, 3/8-24 x 3-19/32 long, hex. head	2	2
15		STD-33	WASHER, 3/8 plain	2	2
	*	STD-33	WASHER, 3/8 plain		5
16		STD-678	WASHER, 3/8 lock, internal teeth	2	2
	*	STD-678	WASHER, 3/8 lock, internal teeth		1
17		STD-596	NUT, 3/8-24 plain	2	2
	*	STD-596	NUT, 3/8-24 plain		1
	*	LW-11866	NUT, Spacer, compressor		1
18		76220	STUD, 1/2-20 x 10-11/16 long	4	4
* Used on installations to provide mounting of a compressor.					



Connecting Rods, Pistons and Ring Assemblies
Figure 7

CYLINDER SECTION**FIGURE 7 - CONNECTING RODS, PISTONS AND RING ASSEMBLIES**

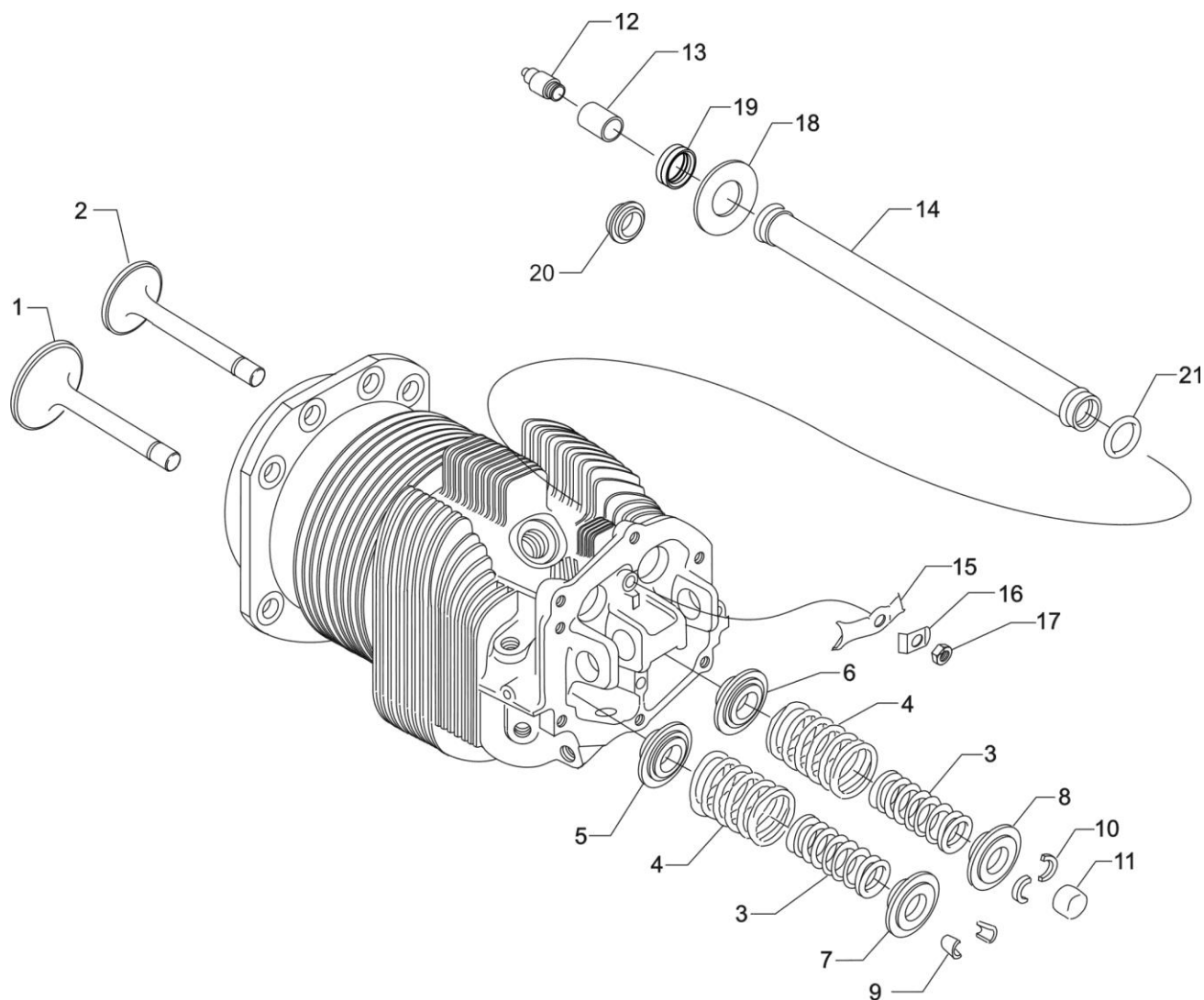
Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1		78030-S	CONNECTING ROD ASSEMBLY	4	4
2		LW-13923	BUSHING, Connecting rod, upper	4	4
3		78027	BOLT, Connecting rod	8	8
4		LW-12186	NUT, Connecting rod bolt	8	8
5		18M26104	BEARING, Connecting rod	8	8
6		14D23915	PISTON, 7.00:1 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**

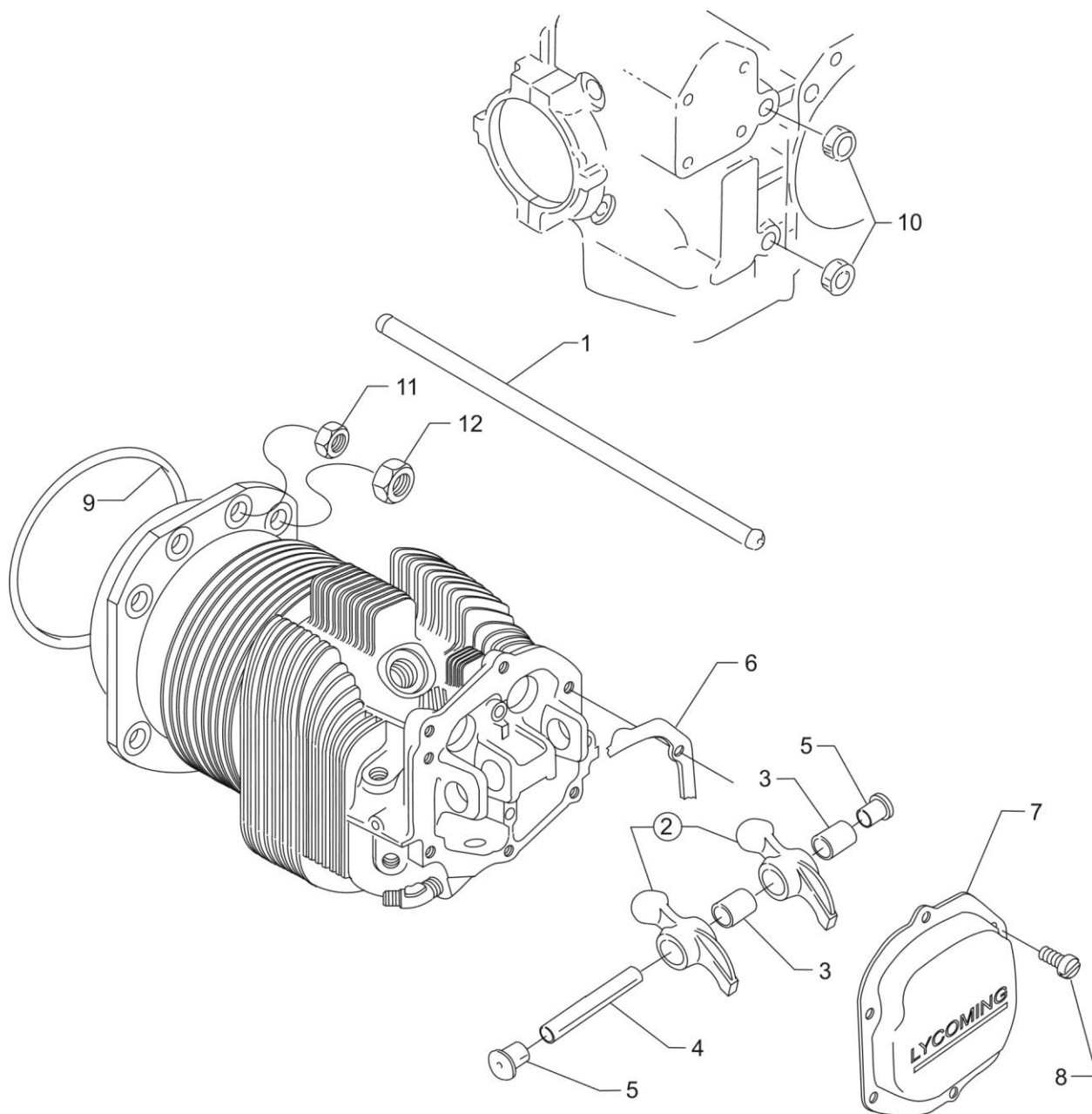
Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1		LW-12416	CYLINDER ASSEMBLY, Nitrided	4	4
2		72057	SEAT, Intake valve	4	4
3		72058	SEAT, Exhaust valve	4	4
4	P*	76943	GUIDE, Valve, intake	4	4
5	P*	16R22126	GUIDE, Valve, exhaust	4	4
6	P	66796	INSERT, Spark plug, 18-1.5 MM	8	8
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>P Lycoming proprietary part. Listed for reference purposes only, cannot be purchased.</p> <p>* See latest revision of Service Instruction No. 1256 for service valve guides.</p> <p>** Used on installations without injector.</p>					



Valve Assembly and Related Parts
Figure 9

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

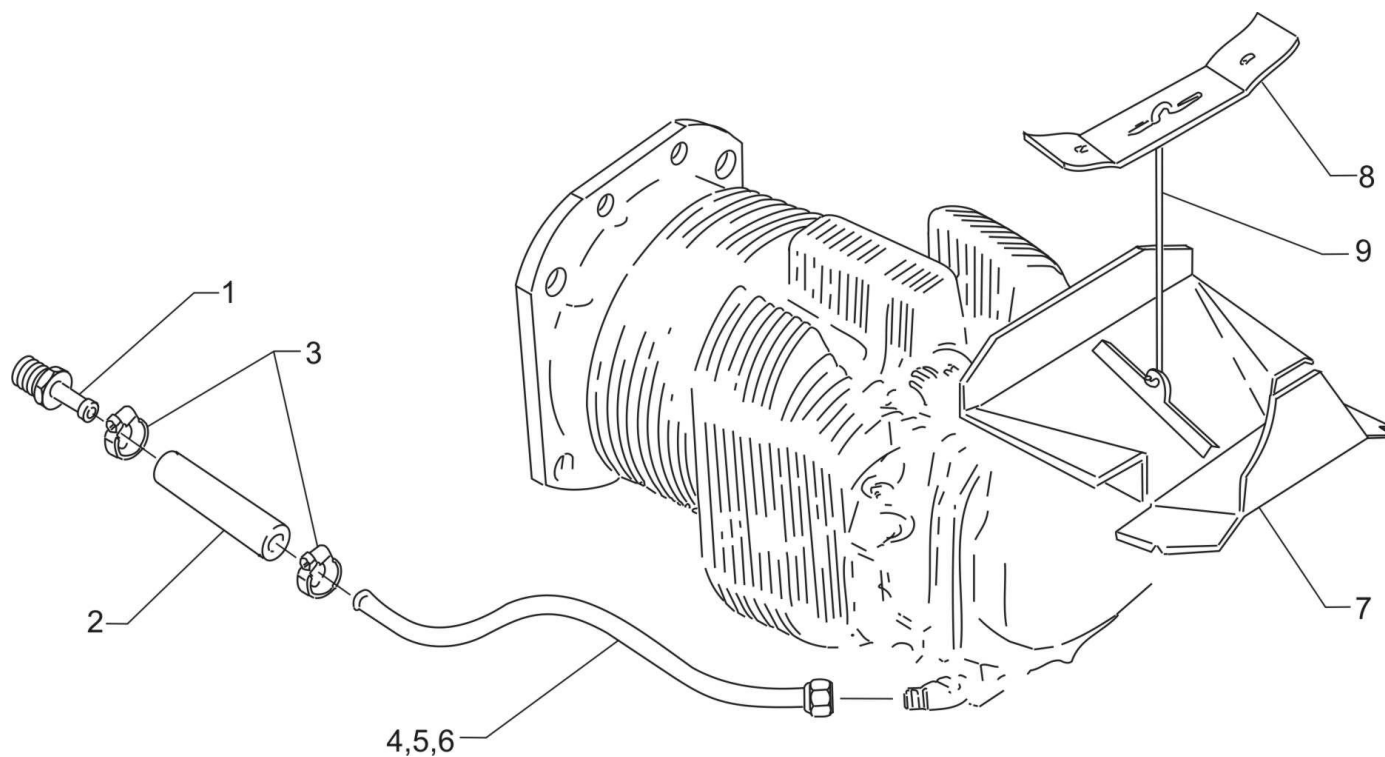
Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1		17A23938	VALVE, Intake	4	4
2		17B23936	VALVE, Exhaust (rotator type)	4	4
3		LW-11795	SPRING, Valve, inner	8	8
4		LW-11800	SPRING, Valve, outer	8	8
5		65441	SEAT, Valve spring, lower intake	4	4
6		LW-13323	SEAT, Valve spring, 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 (Roller tappet engines)		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 (Roller tappet engines)		8
19	*	LW-18661	SEAL, Shroud tube	8	8
20		06A23493	SEAL, Shroud tube (Roller tappet engines)		8
21	**	70310	Seal, Shroud tube	8	8
<p>* This seal is used on flat tappet engines only.</p> <p>** This seal is used on both flat tappet and roller tappet engines.</p>					



Cylinder Related Parts
Figure 10

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

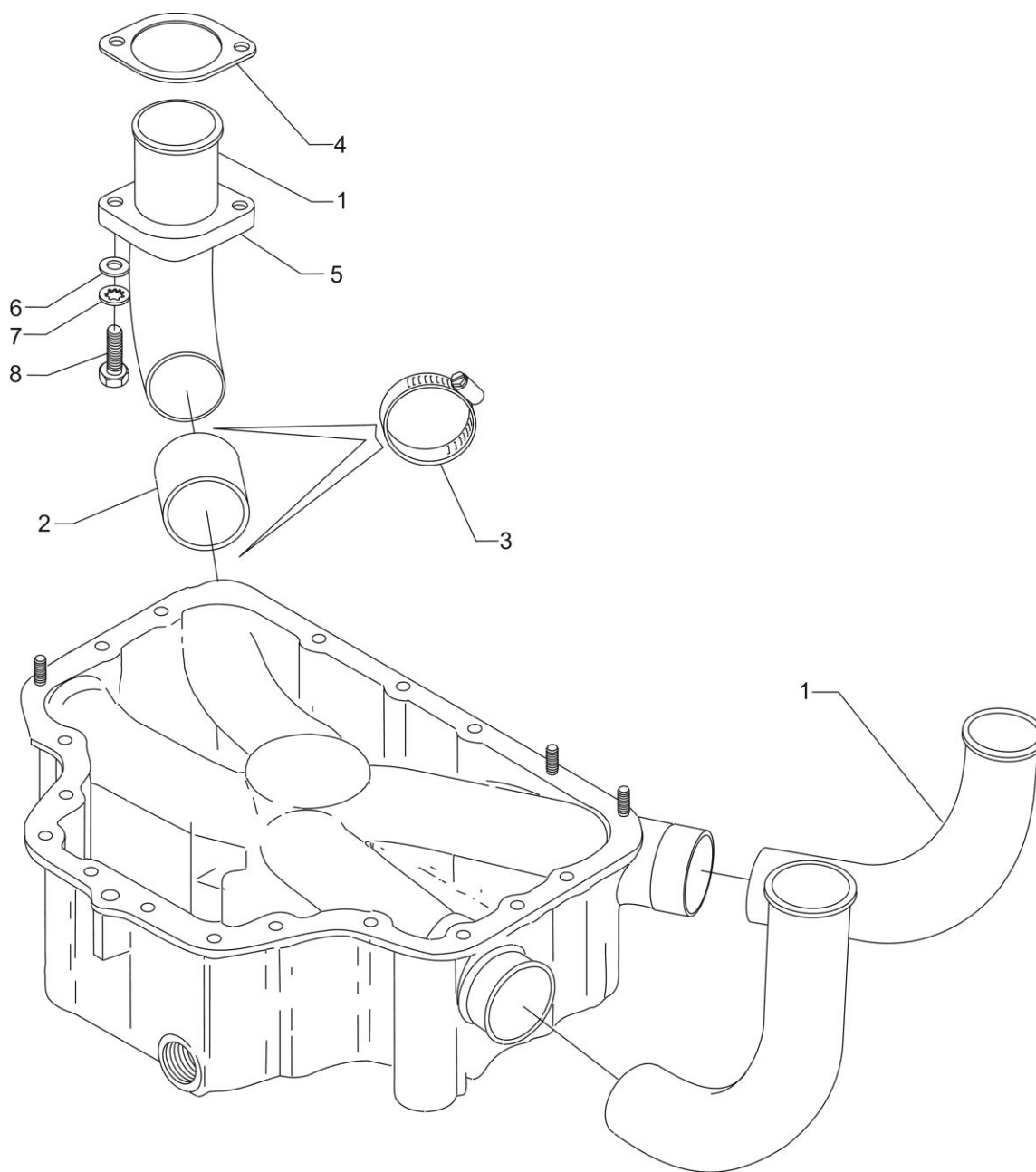
Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1	AR*♦	15F19957-08	ROD ASSEMBLY, Push (A total of 8 required)		AR
	AR*♦	15F19957-09	ROD ASSEMBLY, Push (A total of 8 required)		AR
	AR*♦	15F19957-10	ROD ASSEMBLY, Push (A total of 8 required)		AR
	AR†♦	15F19957-11	ROD ASSEMBLY, 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 dia. 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>AR as required</p> <p>* These push rods are not to be used on flat tappet engines.</p> <p>† These push rods can be used on both flat tappet and roller tappet engines.</p> <p>‡ These push rods are not 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>NOTE: Various push rod lengths are used to set valve clearances.</p>					



Cylinder Head Drain Tubes and Intercylinder Cooling Baffles
Figure 11

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

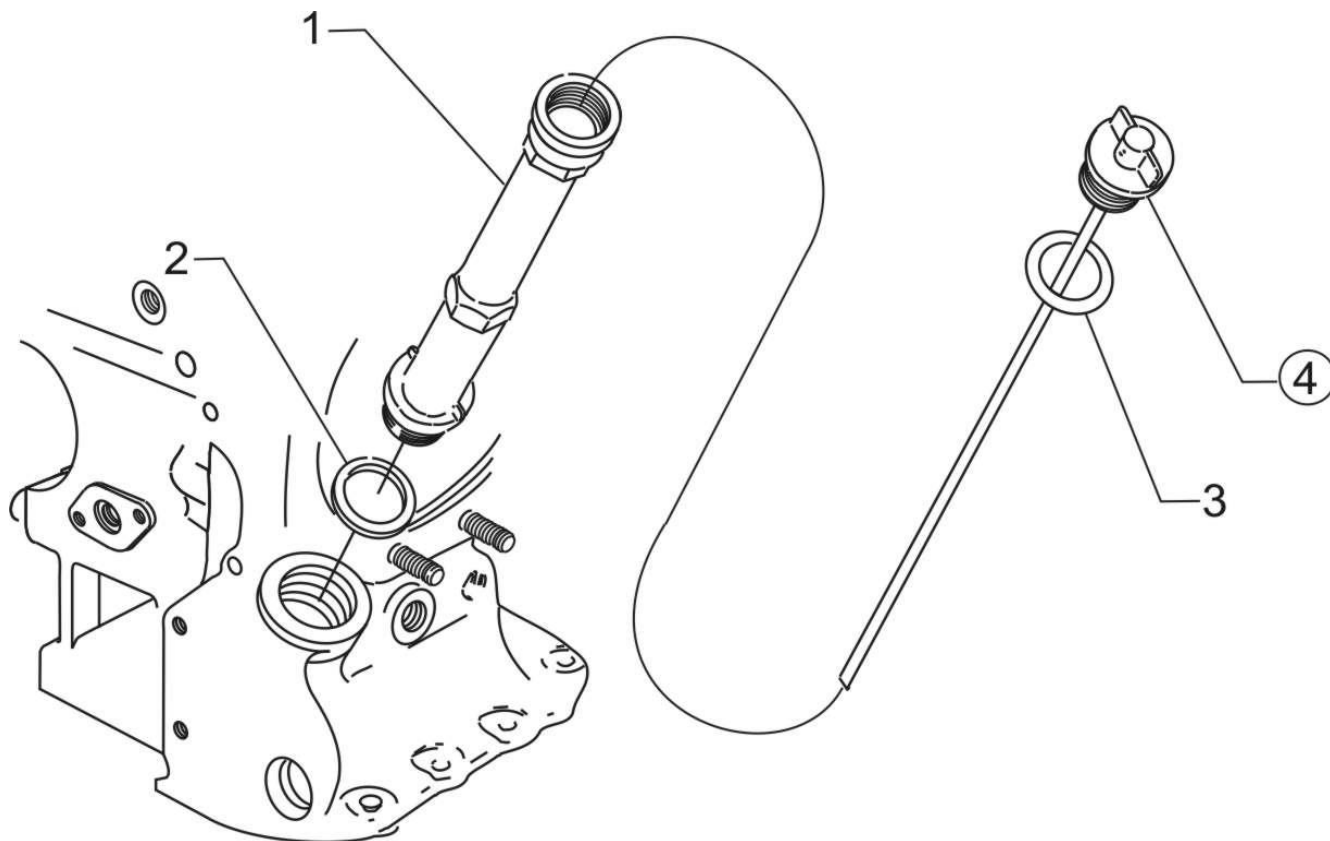
Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1		STD-684	NIPPLE, Straight, 3/8 I.D. hose	4	4
2		STD-2180	HOSE, 3/8 I.D. x 1-7/8 long	4	4
3		LW-15592-5-05	CLAMP, Hose	8	8
4		68759	TUBE ASSEMBLY, Oil drain, cylinder no. 1	1	1
5		68760	TUBE ASSEMBLY, Oil drain, cylinder no. 2	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**

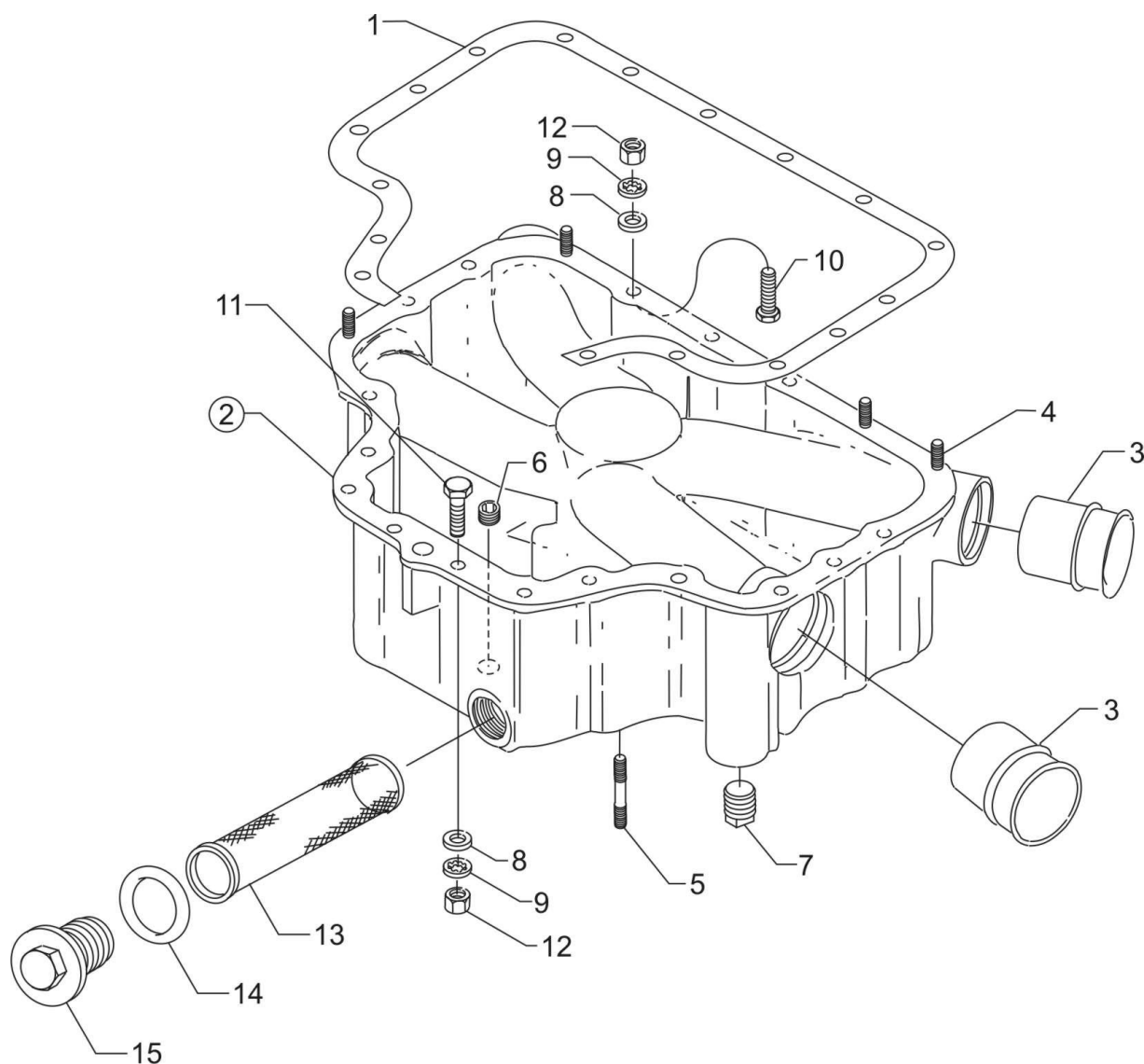
Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1		74084	PIPE, Intake	4	4
2		69603	HOSE, 1-3/4 I.D. x 2-3/16 O.D. x 1-3/4 long	4	4
3		LW-15592-8-28	CLAMP, Hose	8	8
4		71973	GASKET, 2 bolt flange, 1-13/16 I.D.	4	4
5		73346	FLANGE, Intake pipe, upper	4	4
6		STD-8	WASHER, 1/4 plain	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**

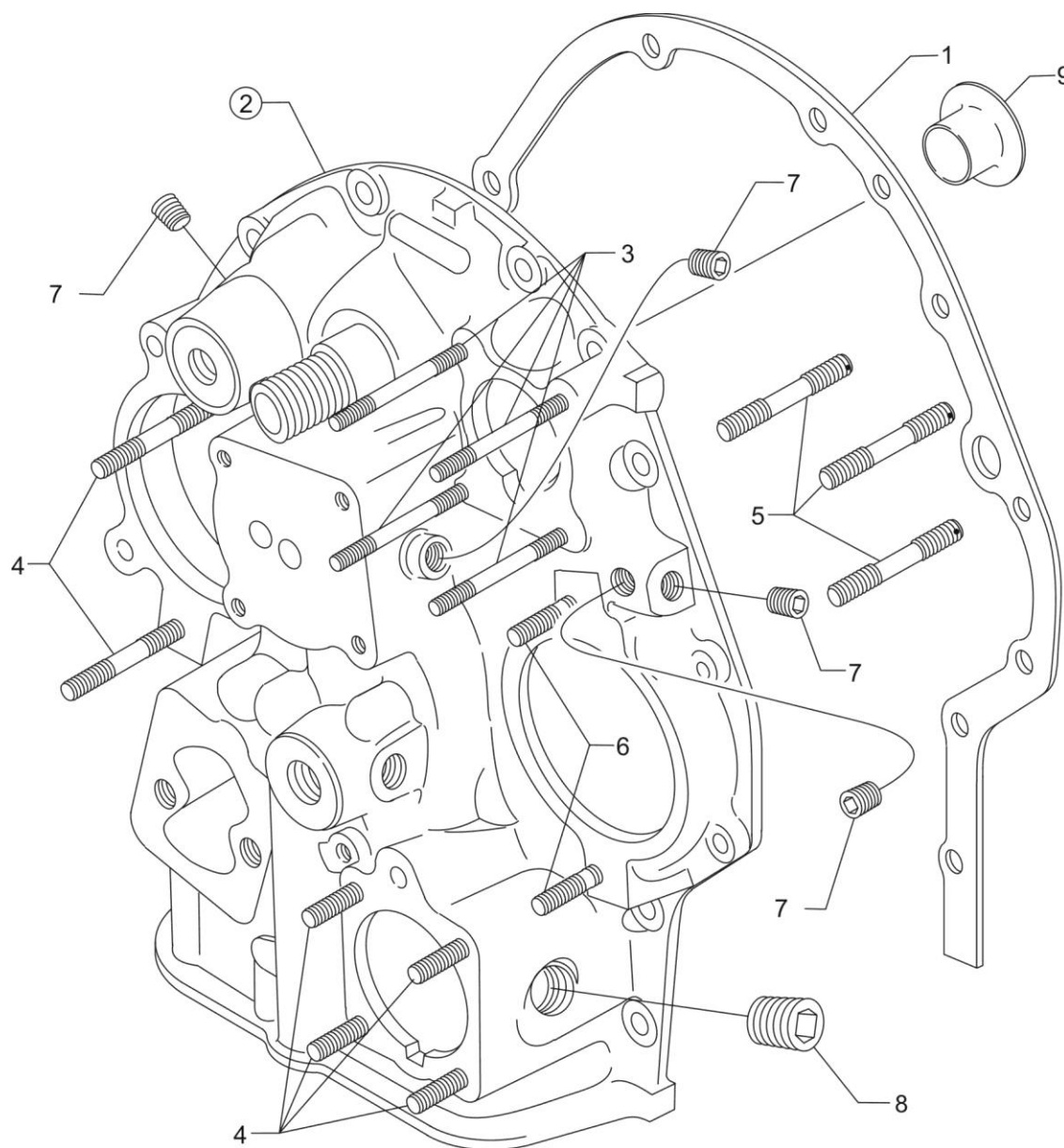
Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1		75736	TUBE, Oil level gage, 11-9/16 long	1	1
		75767	TUBE, Oil level gage, 10-9/16 long		1
2		72059	GASKET, Oil level gage	1	1
3	*	74068	RING, Oil level gage plug	1	1
	**	74065	RING, Oil level gage seal		1
4		LW-16783-18	GAGE ASSEMBLY, Oil level	1	1
		LW-14780	GAGE ASSEMBLY, Oil level		1
* Use with LW-16783-18 Oil Level Gage Assembly. ** Use with LW-14780 Oil Level Gage Assembly.					



Oil Sump Assembly and Oil Suction Screen
Figure 14

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

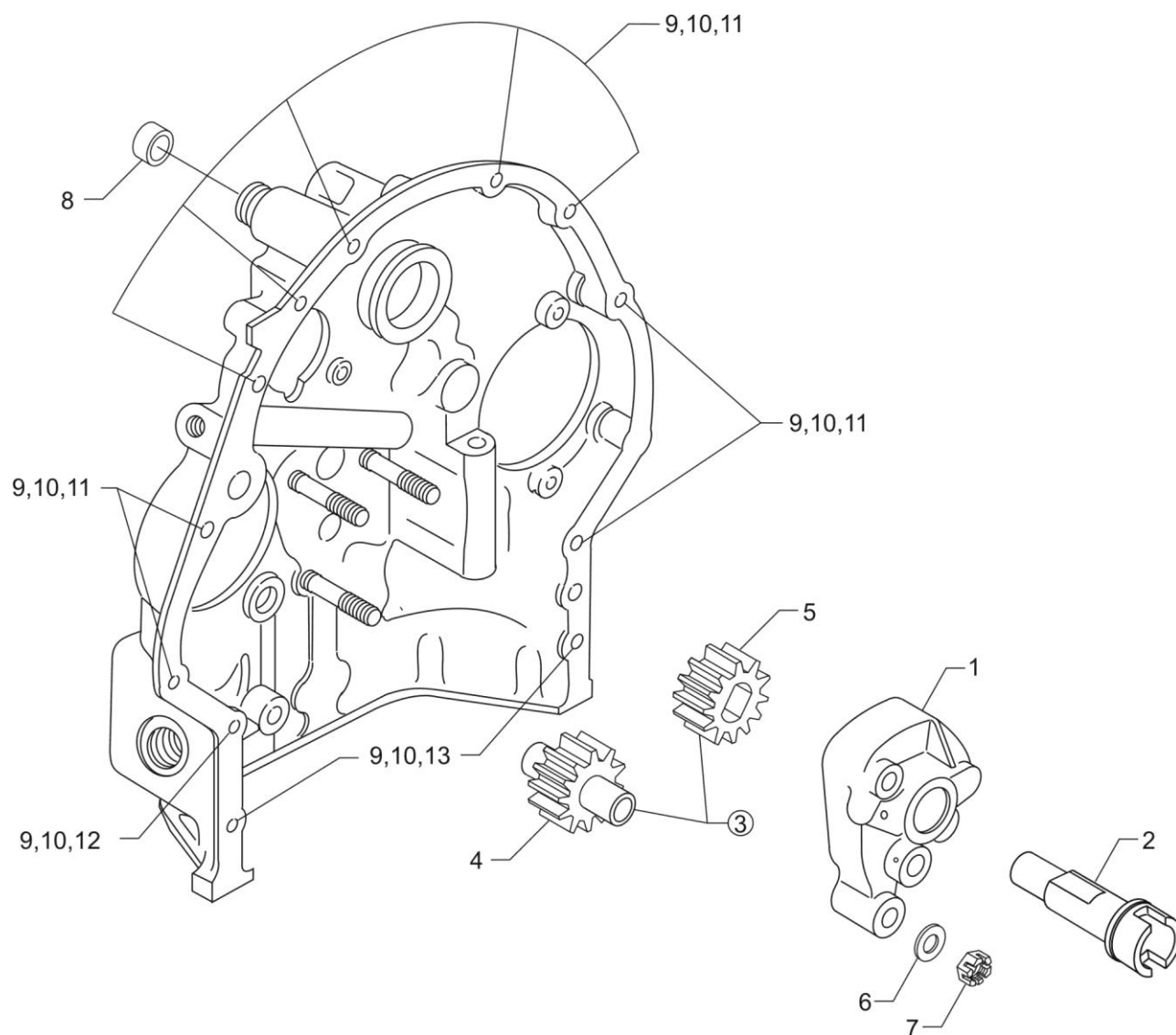
Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1		LW-13353	GASKET, Oil sump	1	1
2		LW-10828	SUMP ASSEMBLY, Oil	1	1
3		78914	CONNECTION, Intake pipe	4	4
4		61400	STUD, 1/4-20 x 1-3/16 long	4	4
5		31C-15	STUD, 5/16-18 x 1-7/8 long	4	4
6		STD-91	PLUG, 1/2-14 NPT, allen head	1	1
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**

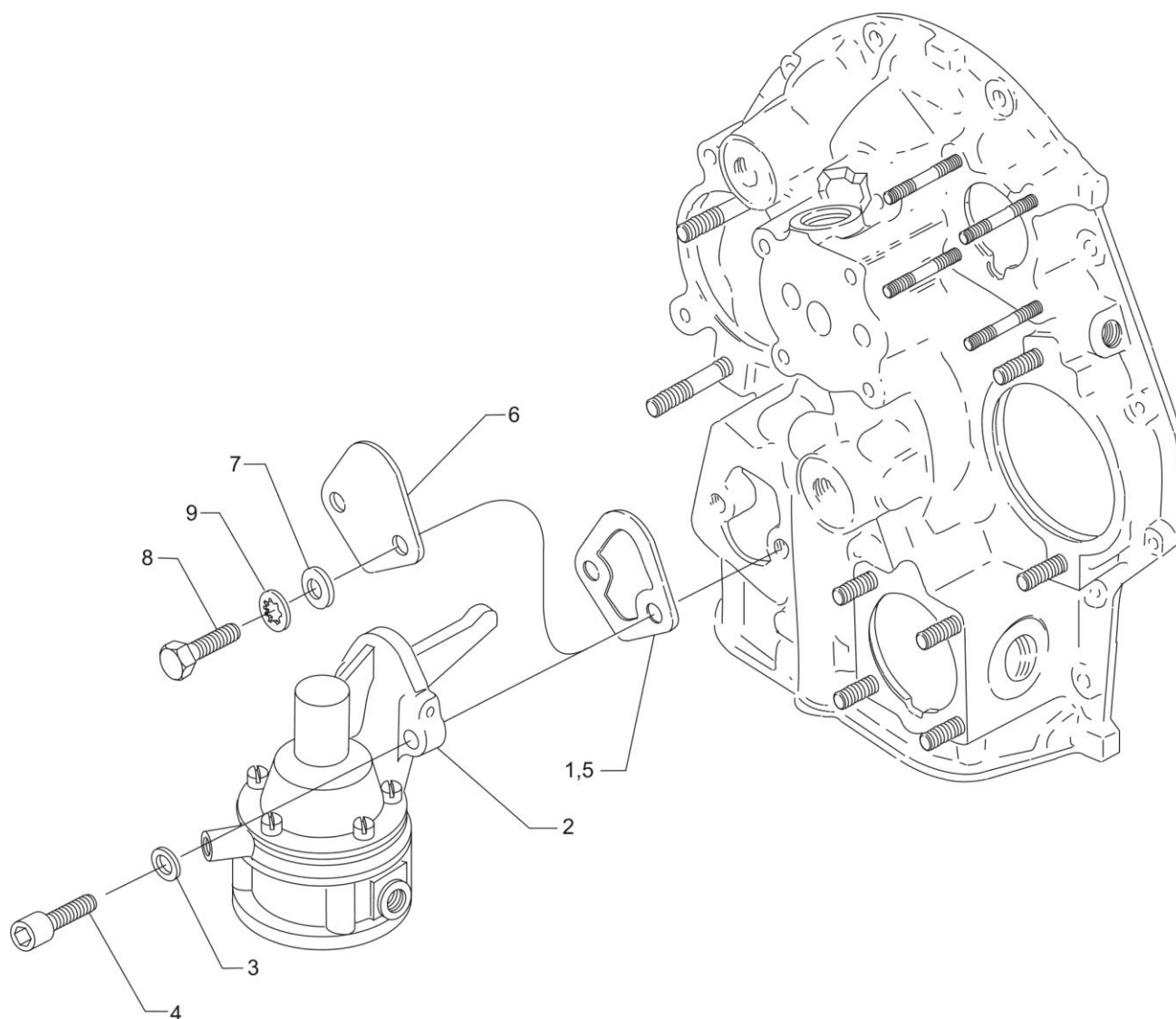
Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1		73818	GASKET, Accessory housing	1	1
2		21A21533-04	HOUSING ASSEMBLY, Accessory	1	1
3		25C-22	STUD, 1/4-20 x 2-3/4 long	4	4
4		31C-12	STUD, 5/16-18 x 1-1/2 long	6	6
5		31CD-17	STUD, 5/16-18 x 2-1/8 long, drilled	3	3
6		31C-19	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**

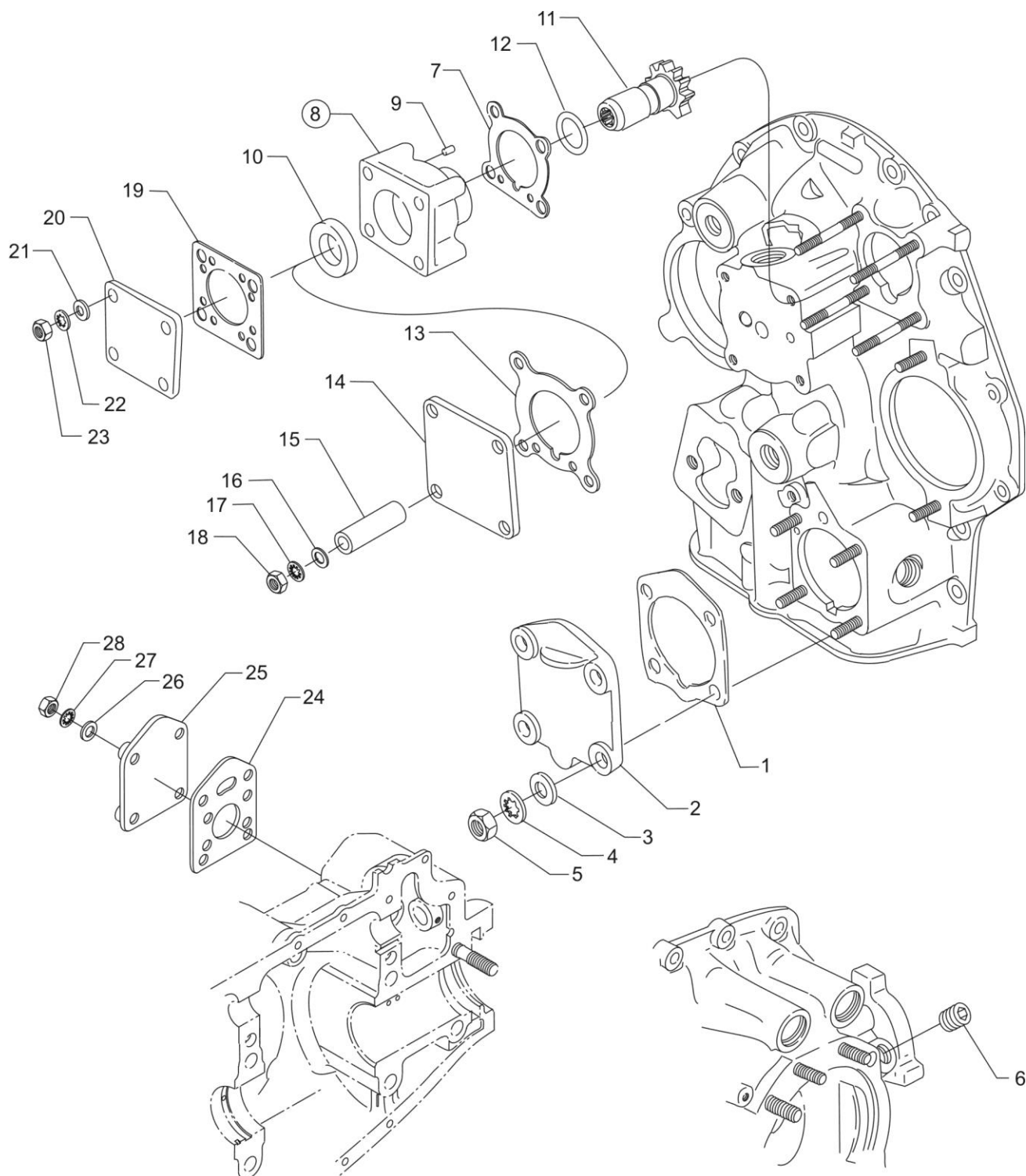
Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1		78531	BODY ASSEMBLY, Oil pump	1	1
2		61174	SHAFT, Oil pump drive	1	1
3		05K19423-S	IMPELLER KIT	1	1
4	*	LW-18110	IMPELLER ASSEMBLY, Oil pump driven	1	1
5	*	LW-18109	IMPELLER, Oil pump driven	1	1
6		STD-35	WASHER, 5/16 plain	3	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**

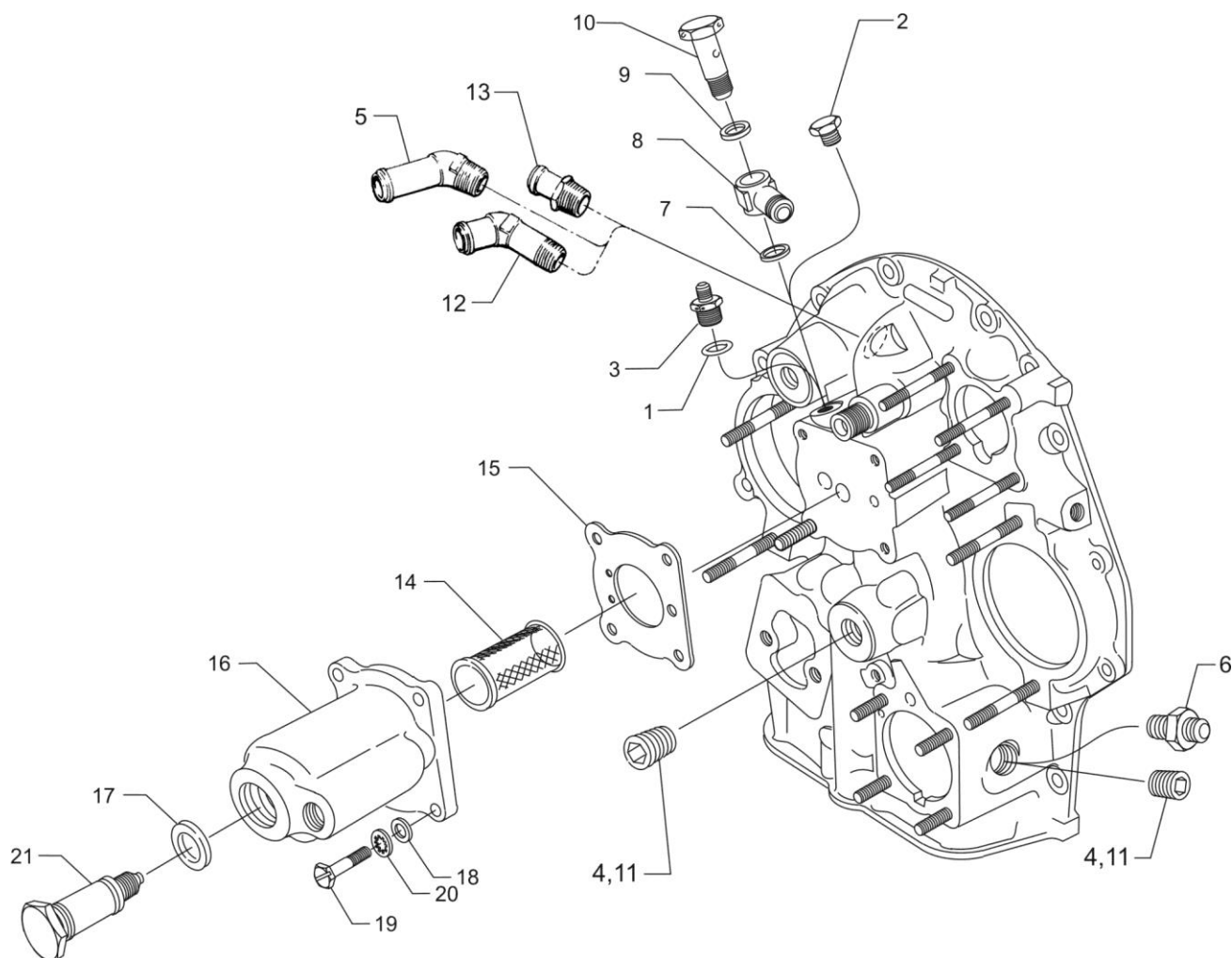
Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1		60096	GASKET, Fuel pump	1	1
2		LW-15472	FUEL PUMP, Dual diaphragm, low pressure	1	1
3		STD-33	WASHER, 3/8 plain	2	2
4		STD-1882	SCREW, 3/8-16 x 1-9/32 long, socket head, drilled	2	2
5		60096	GASKET, Fuel pump	1	1
6		03D23350	COVER, Fuel pump	1	1
7		STD-33	WASHER, 3/8 plain	2	2
8		LW-38-0.75	BOLT, 3/8-16 x 3/4 long, hex. head	2	2
9		STD-678	WASHER, 3/8 lock, internal teeth	2	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**

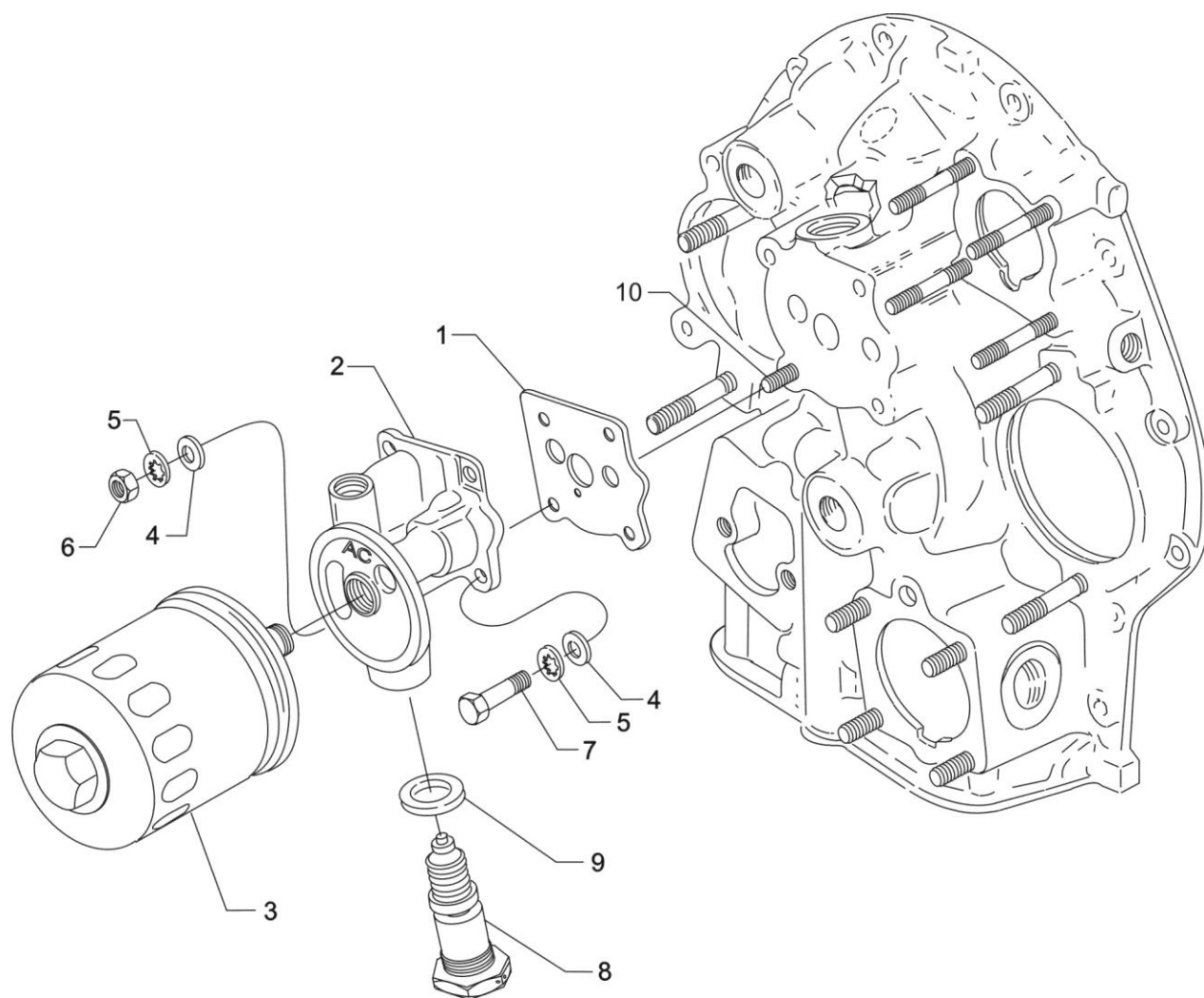
Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1		69551	GASKET, Accessory drive adapter		1
2		69106	COVER, Governor drive adapter pad		1
3		STD-35	WASHER, 5/16 plain		4
4		STD-475	WASHER, 5/16 lock, internal teeth		4
5		STD-1410	NUT, 5/16-18 plain		4
6	*	STD-783	PLUG, 1/4-18 NPT, allen head		1
7		61183	GASKET, Accessory adapter	1	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
24		72053	GASKET, Governor	1	
25		72378	COVER, Governor	1	
26		STD-35	WASHER, 5/16 plain	4	
27		STD-475	WASHER, 5/16 lock, internal teeth	4	
28		STD-1410	NUT, 5/16-18 plain	4	
* Assemble in crankcase, front. ** Used on –E1A 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**

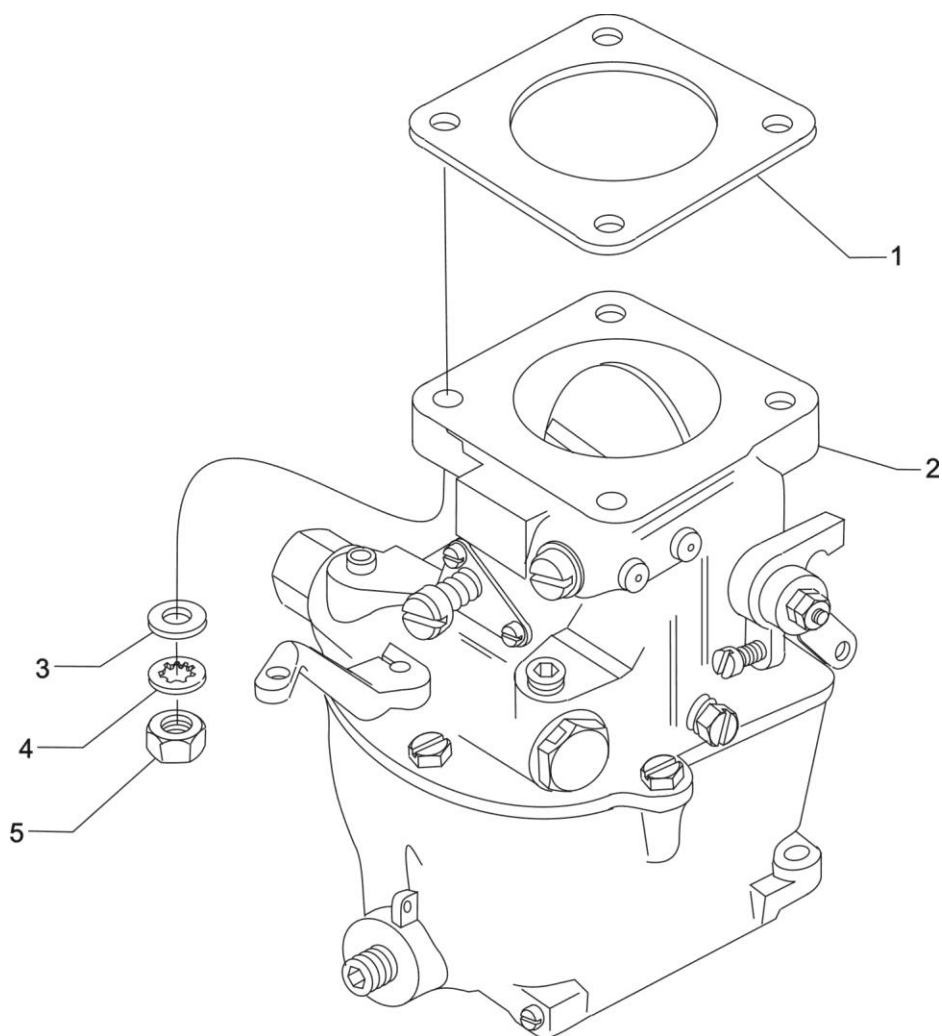
Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1		06E19769-0.63	GASKET, 5/8 I.D. annular	1	1
2		62417	PLUG, Oil cooler bypass		1
3		69675	CONNECTOR, Accessory housing oil cooler	1	1
4		STD-784	PLUG, 3/8-18 NPT, allen head	2	2
5		AN844-10D	ELBOW, Pipe		1
6		AN816-8	NIPPLE, 1/2 flared tube		2
7		71623	WASHER, Oil cooler fitting		1
8		AS5163D08	ELBOW		1
9		AN901-8A	GASKET, Metal tube connect seal		1
10		71620	BOLT, 5/8-18 x 1-7/8 long, special		1
11		STD-784	PLUG, 3/8-18 NPT, allen head		2
12		72413	FITTING, Breather		1
13		71140	FITTING, Breather	1	1
14		62817	SCREEN ASSEMBLY, Oil pressure	1	1
15		61173	GASKET, Oil pressure housing	1	1
16		69510	HOUSING, Oil pressure screen	1	1
17		06E19769-0.63	GASKET, 5/8 I.D. annular	1	1
18		STD-8	WASHER, 1/4 plain	4	4
19		LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. head	4	4
20		STD-160	WASHER, 1/4 lock, internal teeth	4	4
21		53E22144	VALVE ASSEMBLY, Temperature control, oil cooler bypass	1	1



Oil Filter Assembly and Oil Cooler Bypass Valve
Figure 20

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

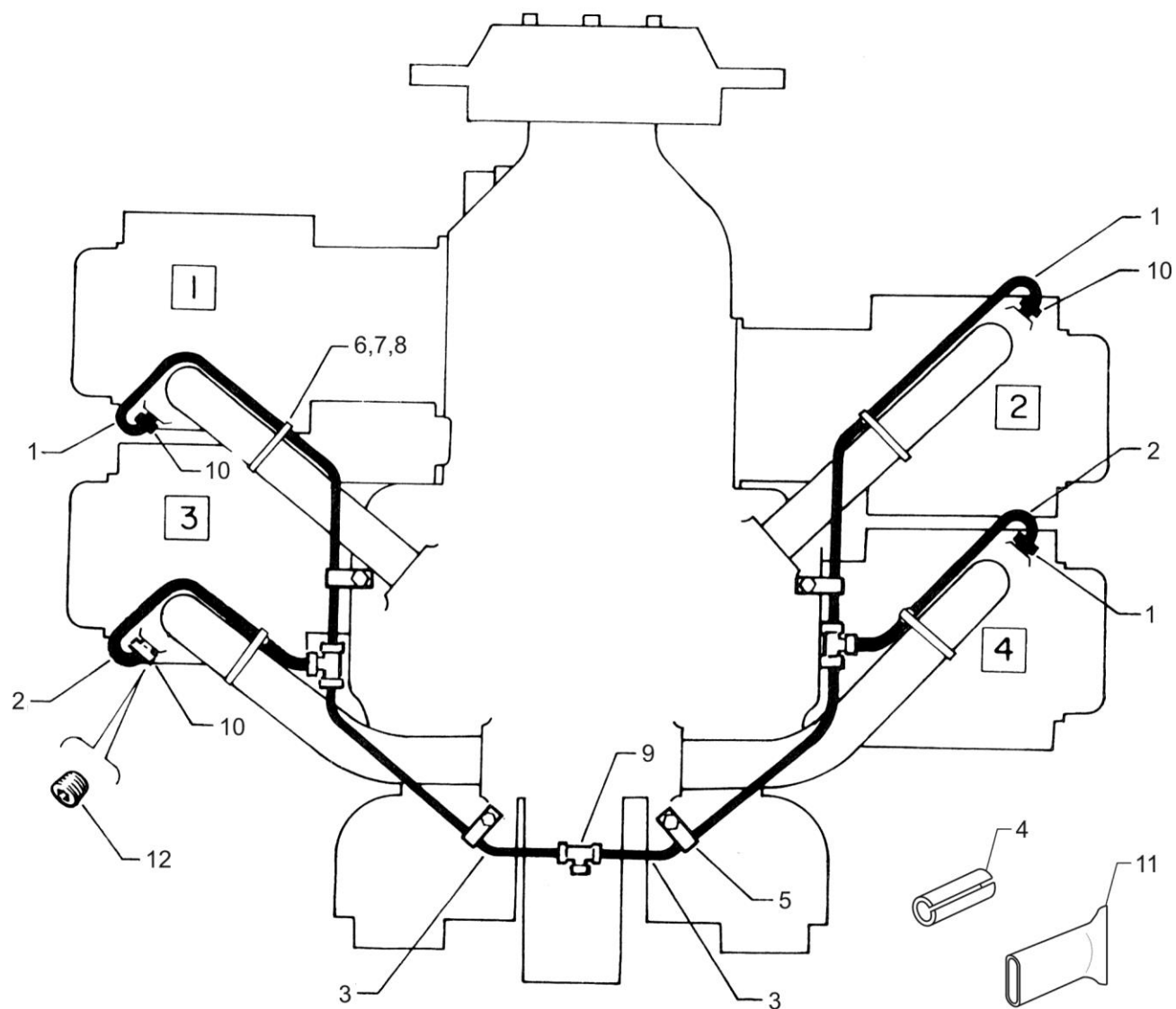
Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1		06B23862	GASKET, Oil filter adapter		1
2		77852	OIL FILTER BASE ASSEMBLY		1
3		LW-13215	OIL FILTER, Short		1
4		STD-8	WASHER, 1/4 plain		4
5		STD-160	WASHER, 1/4 lock, internal teeth		4
6		STD-1411	NUT, 1/4-20 plain		1
7		LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. head		3
8		53E22144	VALVE ASSEMBLY, Temperature control oil cooler bypass		1
9		76510	GASKET, Valve assembly		1
10		25C-10	STUD, 1/4-20 x 1-1/4 long		1
<u>NOTE:</u> Reference latest revision of SSP-885 for oil filters and replacement filters.					



Carburetor Assembly
Figure 21

FUEL DISTRIBUTION**FIGURE 21 – CARBURETOR ASSEMBLY**

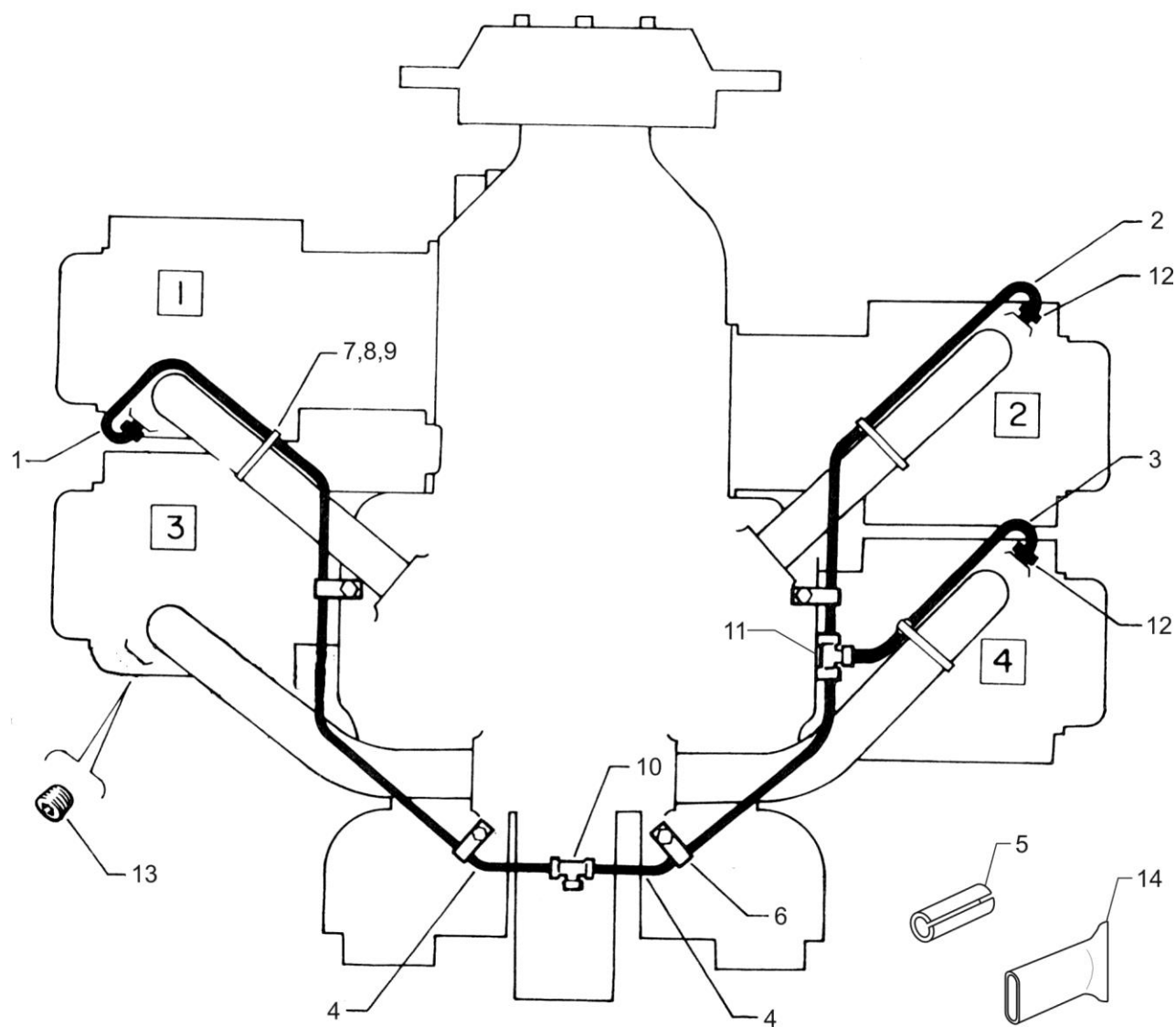
Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1		66224	GASKET, Carburetor	1	1
2	V	61B26211	CARBURETOR, MA-4SPA V AV 10-3678-32	1	1
	V	61B26213	CARBURETOR, MA-4SPA V AV 10-5009		1
	V	61B26214	CARBURETOR, MA-4SPA V AV 10-5217		1
3		STD-35	WASHER, 5/16 plain	4	4
4		STD-475	WASHER, 5/16 lock, internal teeth	4	4
5		STD-1410	NUT, 5/16-18 plain	4	4
V Vendor Prime Manufacturer part					



Priming Lines (-E1A)
Figure 22

FUEL DISTRIBUTION**FIGURE 22 – PRIMING LINES (-E1A)**

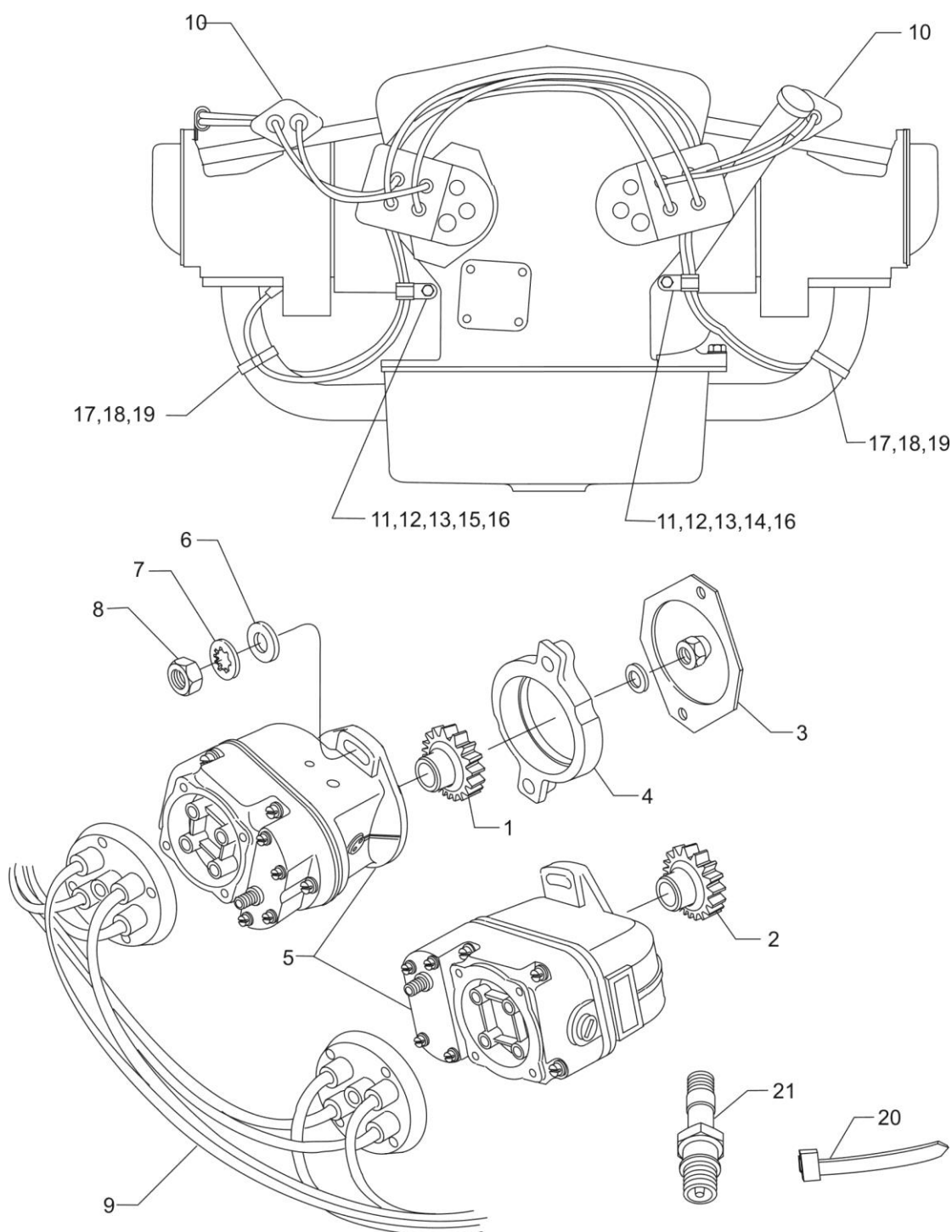
Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1		LW-12098-0-170	TUBE ASSEMBLY, Primer, cyls. no. 1 & 2	2	
2		LW-12098-0-130	TUBE ASSEMBLY, Primer, cyls. no. 3 & 4	2	
3		LW-12098-0-100	TUBE ASSEMBLY, Primer, intermediate	2	
4		LW-12598	SLEEVE, Priming line	4	
5		LW-16266-25-13	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	
* Used when no priming lines.					



Priming Lines (-E2A)
Figure 23

FUEL DISTRIBUTION**FIGURE 23 – PRIMING LINES (-E2A)**

Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
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, 1/8 tube		1
12		63D21408	NIPPLE ASSEMBLY, Primer		3
13	*	1102	PLUG, 1/8-27 NPT, allen head (assemble in cylinder head)		4
14		61597	CAP, Sealing, 5/16 diameter x 1.00 long		1
* Used when no priming lines.					

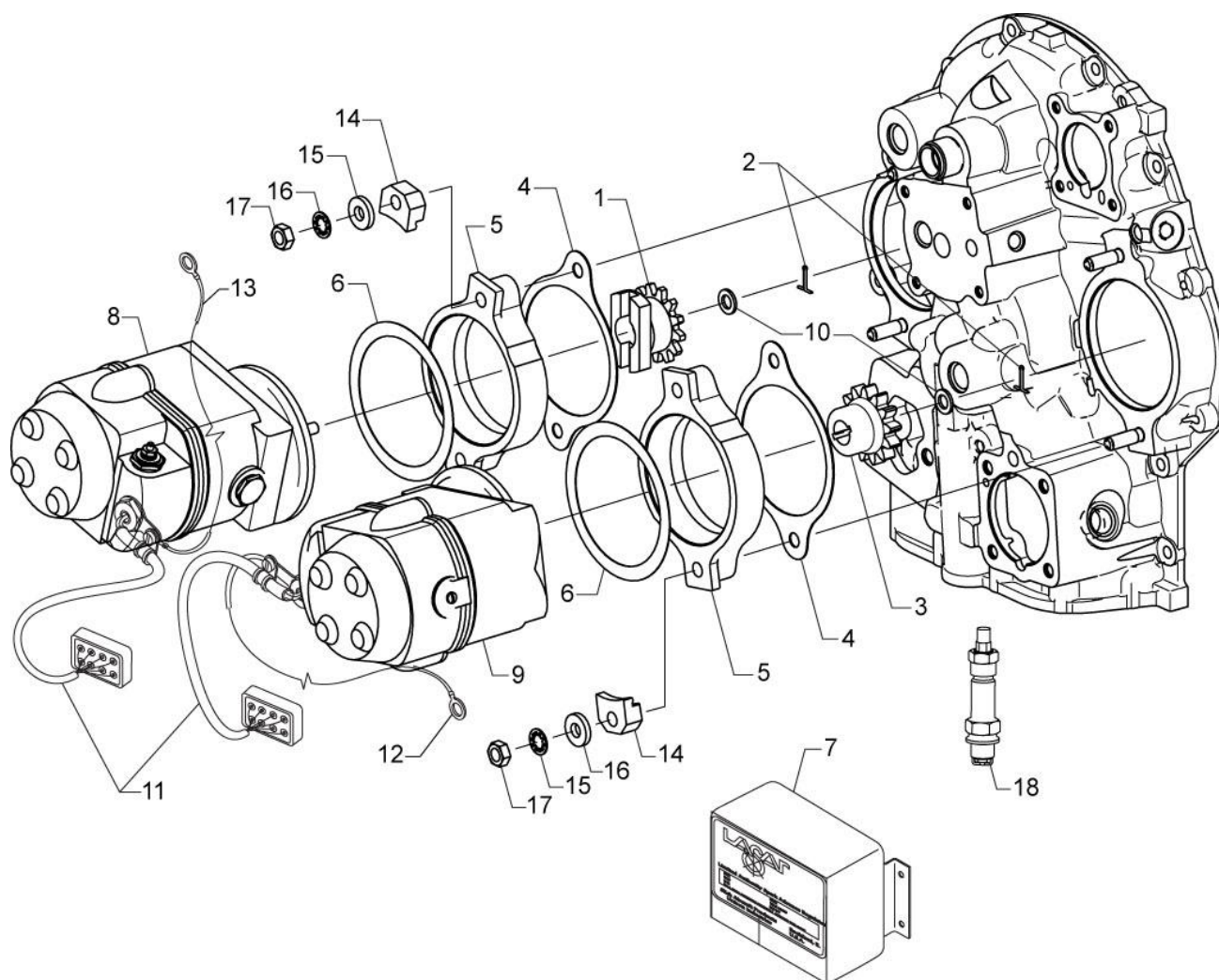


Magnetos, Magneto Drives, Harnesses and Spark Plugs (-E1A)

Figure 24

IGNITION DISTRIBUTION SYSTEM**FIGURE 24 – MAGNETOS, MAGNETO DRIVES, HARNESSSES AND SPARK PLUGS (-E1A)**

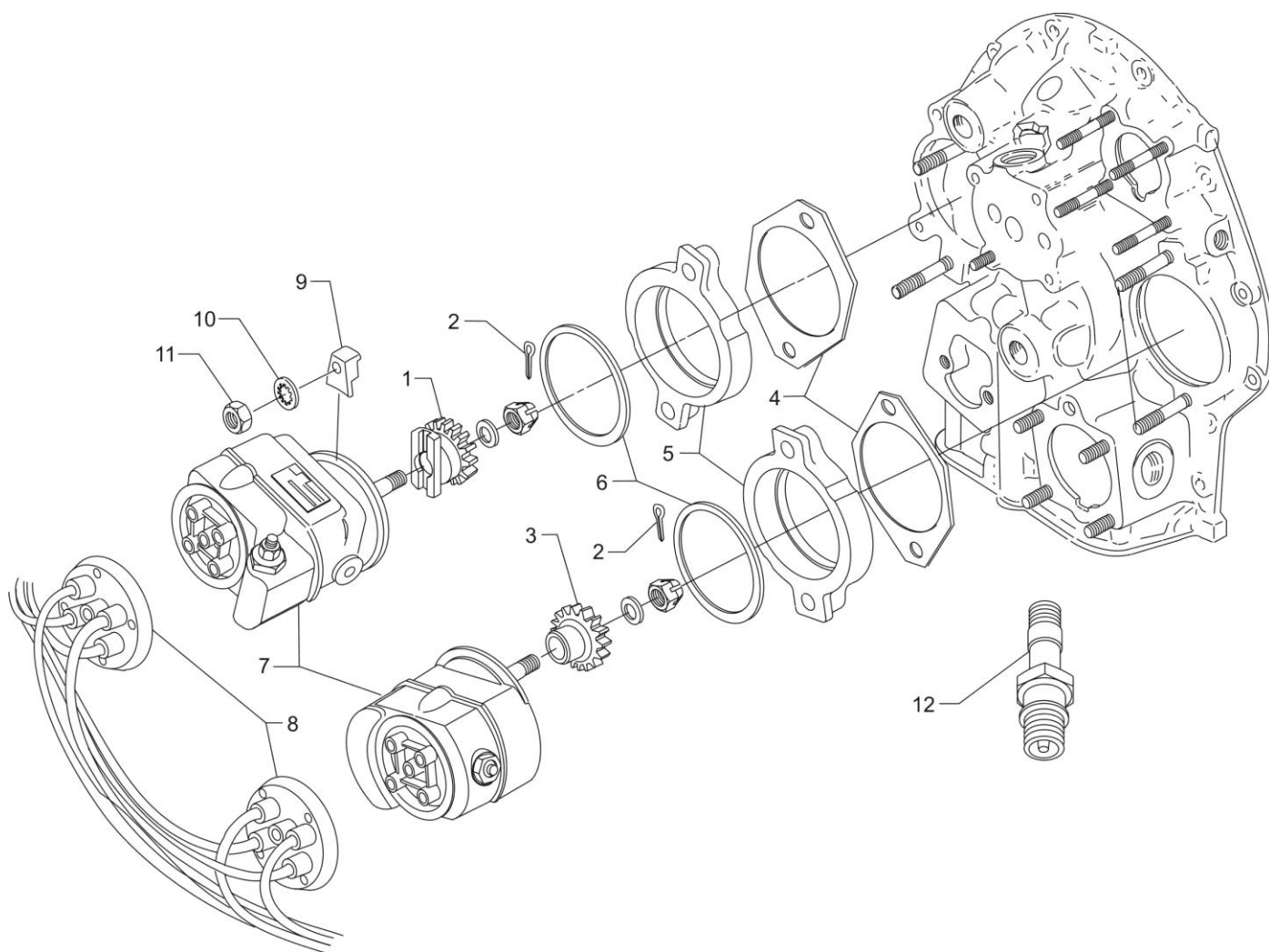
Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1		61665	GEAR, Magneto, impulse	1	
2		68C19622	GEAR, Magneto	1	
3		62224	GASKET, Magneto adapter	3	
4		LW-12706	ADAPTER, Magneto, impulse coupling	1	
5	V	66B21778	MAGNETO, Impulse coupling V S4LSC-204	1	
	V	66A21765	MAGNETO, V S4LSC-21	1	
6		STD-1727	WASHER, Plain, 11/32 I.D. x 3/4 O.D.	4	
7		STD-475	WASHER, 5/16 lock, internal teeth	4	
8		STD-1410	NUT, 5/16-18 plain	4	
9		LW-M-2403	HARNESS ASSEMBLY, Left magneto	1	
		LW-M-2404	HARNESS ASSEMBLY, Right magneto	1	
10		LW-M-2375	PLATE, Spark plug cable	2	
11		LW-14060	CLIP, Two wire	2	
12		STD-8	WASHER, 1/4 plain	2	
13		STD-160	WASHER, 1/4 lock, internal teeth	1	
14		STD-1916	SCREW, 1/4-20 x 1-1/8 long, fill. head	1	
15		LW-25-1.25	BOLT, 1/4-20 x 1-1/14 long, hex. head	1	
16		STD-1411	NUT, 1/4-20 plain	2	
17		LW-18959-150-25	CLAMP, 1-1/2 I.D.	4	
18		STD-553	SCREW, No. 6-32 x 1/2 long, round head	4	
19		MS21044N06	NUT, No. 6-32 self-locking	4	
20		76734	ZIP STRAP	2	
21	V*	1182-E7	SPARK PLUG, Champion V REM-38E	8	
<p>V Vendor Prime Manufacturer part</p> <p>* Item No. 21 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>					



Magnetos (Lasar), Magneto Drives, Harnesses and Spark Plugs (-E2A)
Figure 25

IGNITION DISTRIBUTION SYSTEM**FIGURE 25 – MAGNETOS (LASAR), MAGNETO DRIVES, HARNESSSES
AND SPARK PLUGS (-E2A)**

Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1		61665	GEAR, Magneto, impulse coupling		1
2		STD-713	COTTER PIN, 3/32 diameter x 3/4 long		2
3		68C19622	GEAR, Magneto		1
4		62224	GASKET, Magneto adapter		1
5		LW-12706	ADAPTER, Magneto, impulse coupling		1
6		LW-12681	GASKET, Magneto		2
7		66SLC-1001-01	CONT., Lasar, 12V.		1
8	V	66K22442	MAGNETO, Lasar, left, impulse V 4771		1
9	V	66K22445	MAGNETO, Lasar, right, V 4770		1
10		STD-35	WASHER, 5/16 plain		2
11	V	67Y22441-43	HARNESS ASSEMBLY, Lasar ignition		1
12	V	67P20406	HARNESS ASSEMBLY, Right, V M2992		1
13	V	67P20407	HARNESS ASSEMBLY, Left, V M1795		1
14		66M21195	CLAMP, Magneto		4
15		STD-475	WASHER, 5/16 lock, internal teeth		4
16		STD-1727	WASHER, Plain, 11/32 I.D. x 3/4 O.D.		4
17		STD-1410	NUT, 5/16-18 plain		4
18	V*	1182-E7	SPARK PLUG, Champion V REM38E		8
	**	01P19762-1-43	BAG, Harness attaching		1
<p>V Vendor Prime Manufacturer part</p> <p>* Item No. 18 spark plugs are used in current production only. Additional spark plugs are available for this engine. See latest revision of Lycoming Service Instruction No. 1042 for complete listing of all approved spark plugs.</p> <p>** See page 52 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>					



Magnetos, Magneto Drives, Harnesses and Spark Plugs
Figure 26

IGNITION DISTRIBUTION SYSTEM**FIGURE 26 -MAGNETOS, MAGNETO DRIVES, HARNESES AND SPARK PLUGS**

Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1		61665	GEAR, Magneto, impulse coupling		1
2		STD-713	COTTER PIN, 3/32 diameter x 3/4 long		2
3		68C19622	GEAR, Magneto		1
4		62224	GASKET, Magneto adapter		1
5		LW-12706	ADAPTER, Magneto, impulse coupling		1
6		LW-12681	GASKET, Magneto		2
7	V	66GP-0SANN	MAGNETO, Plain, Slick V 4370		1
	V	66GC25SFNN	MAGNETO, Impulse, Slick V 4373		1
8	V	67P20428	HARNESS ASSEMBLY, Right, Slick V M2990		1
	V	67P20429	HARNESS ASSEMBLY, Left, Slick V M2989		1
	V	67P20414	HARNESS ASSEMBLY, Right, Slick, V M2982		1
	V	67P20415	HARNESS ASSEMBLY, Left, Slick, V M2981		1
9		66M21195	CLAMP, Magneto		4
10		STD-475	WASHER, 5/16 lock, internal teeth		4
11		STD-1410	NUT, 5/16-18 plain		4
12	V*	1182-E7	SPARK PLUG, Champion V REM38E		8
	**	01P19762-1-1	BAG, Harness attaching		1
	◆	01P19762-1-2	Bag, Harness attaching		1
<p>V Vendor Prime Manufacturer part</p> <p>* Item No. 12 spark plugs are used in current production only. Additional spark plugs are available for this engine. See latest revision of Lycoming Service Instruction No. 1042 for complete listing of all approved spark plugs.</p> <p>** See page 52 for breakdown of individual parts contained in the magneto and harness attaching bag (P/N 01P19762-1-1). These parts to be added by customer per engine line drawing included in each bag.</p> <p>◆ See page 52 for break-down of individual parts contained in the magneto and harness attaching bag (P/N 01P19762-1-2). These parts to be added by customer per engine line drawing included in each bag.</p>					

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

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

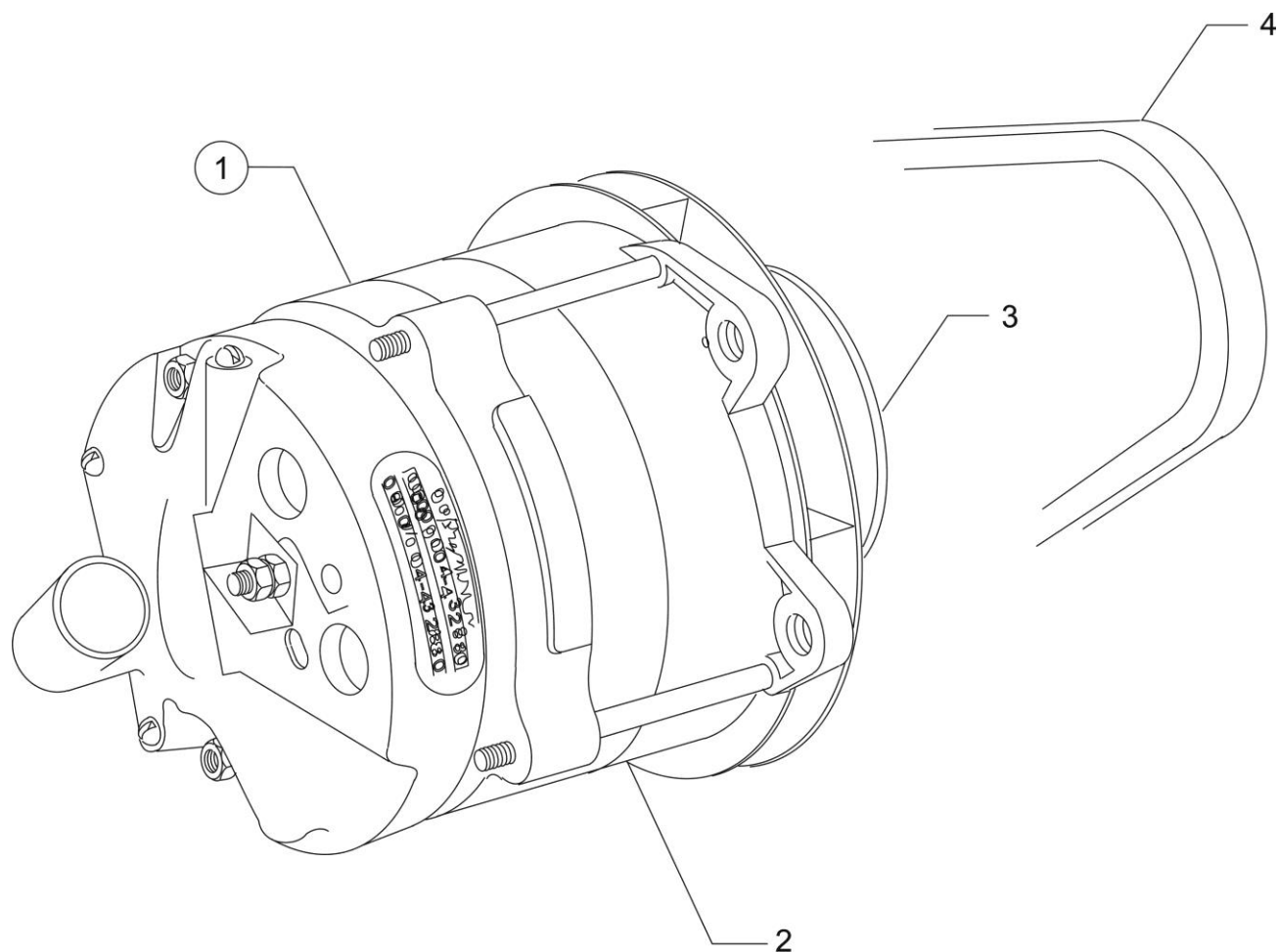
01P19762-1-2 – Bag, Magneto Harness Attaching

Part No.	Part Name	Qty.
LW-16266-25-25	CLIP, One wire	2
LW-14060	CLIP, Two wire	3
STD-8	WASHER, 1/4 plain	8
STD-1874	SCREW, 1/4 lock (rocker box)	6
76734	ZIP STRAP	8
LW-16266-25-50	CLIP, Four wire	1
STD-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

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

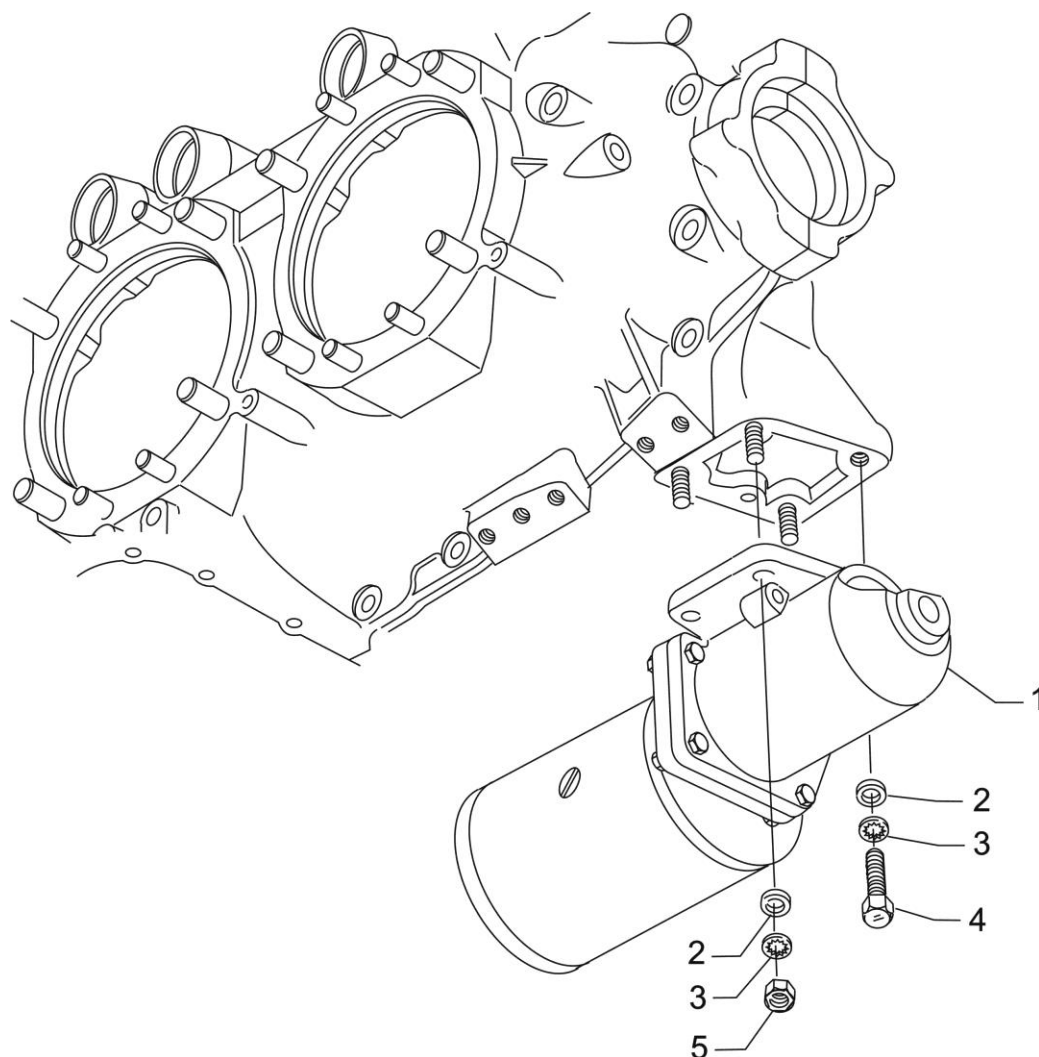
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**Alternator Assembly and Belt
Figure 27**

IGNITION DISTRIBUTION SYSTEM**FIGURE 27 – ALTERNATOR ASSEMBLY AND BELT**

Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1		LW-14371	ALTERNATOR ASSEMBLY, 12V.-60Amp.	1	1
		32C19570	ALTERNATOR ASSEMBLY, 24V.-70Amp.		1
		32B19549	ALTERNATOR ASSEMBLY, 12V.-70Amp.		1
2	V	LW-14313	ALTERNATOR, 12V.-60Amp., V ALY-8520-LS	1	1
	V	LW-14326	ALTERNATOR, 24V.-70Amp., V ALU-8521-LS		1
	V	LW-14318	ALTERNATOR, 12V.-70Amp., V ALX-8521-LS		1
3		36B19484	PULLEY, Alternator	1	1
4		37A19773-376	BELT, Alternator drive, 3/8 wide	1	1
V Vendor Prime Manufacturer part NOTE: See latest revision of Lycoming Service Instruction No. 1154 for complete listing of FAA approved starters, generators, alternators, regulators and relays.					



Starter Motor and Attaching Parts
Figure 28

CRANKING SECTION**FIGURE 28 - STARTER MOTOR AND ATTACHING PARTS**

Figure Item	Code	Part Number	Description	Units per Assembly	
				E1A	E2A
1	V	31A26041	STARTER ASSEMBLY, 12V., Kelly V ERZ-8011	1	1
	V	31B26040	STARTER ASSEMBLY, 24V., Kelly V ERB-8011	1	1
	V	31A22104	STARTER, Sky-Tec V 149-12LS		1
	V	31A22100	STARTER, Sky-Tec V 149-12PM		1
2	*	STD-35	WASHER, 5/16 plain	1	1
3		STD-475	WASHER, 5/16 lock, internal teeth	1	1
4		LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex. head		1
	*	LW-31-1.16	BOLT, 5/16-18 x 1-5/32 long, hex. head	1	1
5		STD-1410	NUT, 5/16-18 plain	1	1
<p>V Vendor Prime Manufacturer part</p> <p>* Use with Kelly and Lightweight starters only.</p> <p>NOTE: See latest revision of Lycoming Service Instruction No. 1154 for complete listing of FAA approved starters, generators, alternators, regulators and relays.</p>					

SERVICE KIT SECTION**SEAL AND GASKET SET**

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

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

69371-1	KIT – SEAL AND GASKET SET (CONT.)	1
70310	SEAL, Shroud tube	8
70455	GASKET, 25/32 I.D. x 1-1/8 O.D. x 1/32	1
71481	RING, Oil seal, 3/32 diameter x 4-27/32 I.D.	4
71973	GASKET, 2 bolt flange, 1-13/16 I.D.	4
72053	GASKET, Governor	2
72059	GASKET, Oil level gage	1
72075	SEAL, Oil, 3/32 section x 29/64 I.D.	6
72078	LOCKPLATE, 5/16 bolt x 1-21/64 sp	2
72091	RING, Oil seal, 3/8 x 7/64 diameter	2
72312	RING, Oil seal, 1.00 x 1-5/16	1
72879	LOCKPLATE, 1/4 bolt x 1-3/4 sp	1
73383	LOCKPLATE, 5/16 bolt x 1.00	2
73817	LOCKPLATE, 1/4 bolt x 1-3/4 sp	2
73818	GASKET, Accessory housing	1
74065	RING, Oil level gage seal	1
74068	RING, Oil level gage plug	1
74524	RING, Oil level gage bushing	1
75906	GASKET, Rocker box cover	4
76510	GASKET, Oil cooler bypass	1
76940	SEAL, Crankshaft oil	1
8313	GASKET, Vacuum pump	2
06A23493	SEAL, Shroud tube	8

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

PART NO.	PART NAME	Qty.
05K21237-A	KIT - CYLINDER, PISTON AND RING ASSEMBLY	1
LW-12416	CYLINDER ASSEMBLY	1
17A23938	VALVE, Intake	1
17B23936	VALVE, Exhaust	1
65441	SEAT, Valve spring, lower intake	1
LW-13323	SEAT, Valve spring, lower	1
LW-11800	SPRING, Valve, outer	2
LW-11795	SPRING, Valve inner	2
LW-10077	SEAT, Valve spring, upper	1
LW-16475	SEAT, Valve spring, upper exhaust	1
60009	KEY, Valve, intake	2
17C21191	KEY, Valve, exhaust	2
MS20823-6D	ELBOW, 45°, 3/8 flared tube	1
17C19386	CAP, Valve stem, exhaust (rotator)	1
1102	PLUG, 1/8-27 NPT, allen head	2
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**

PART NO.	PART NAME	Qty.
11B20061-1SL-S	KIT - CRANKCASE ASSEMBLY AND THRU-STUD	1
11B20061-1SL	CRANKCASE ASSEMBLY	1
76220	THRU-STUD	4
74887	SPACER, 33/64 I.D. x 7/8 O.D. x 3/8 thick	2
STD-2090	NUT, 1/4-20 plain	2
1102	PLUG, 1/8-27 NPT, allen head	6
STD-1339	PLUG, 1/16-27 NPT, allen head	4
69796	DOWEL, Crankshaft bearing	2

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

PART NO.	PART NAME	Qty.
11B20161-1SL-S	KIT - CRANKCASE ASSEMBLY AND THRU-STUD	1
11B20161-1SL	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

NUMERICAL INDEX

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
AN6-14	Bolt	1	LW-12416	Cylinder Assy.	15
AN6-16	Bolt	1	LW-12545	Plug	27
AN6-17	Bolt	1	LW-12598	Sleeve	43
AN6-34A	Bolt	11	LW-12598	Sleeve	45
AN816-8	Nipple	37	LW-12681	Gasket	49
AN844-10D	Elbow	37	LW-12681	Gasket	51
AN901-8A	Gasket	37	LW-12706	Adapter	47
AN960-616L	Washer	11	LW-12706	Adapter	49
AS5163D08	Elbow	37	LW-12706	Adapter	51
LRT23381	Body Assy.	5	LW-12892	Thrust Button	19
LW-M-2375	Plate	47	LW-13215	Oil Filter	39
LW-M-2403	Harness Assy.	47	LW-13323	Seat	17
LW-M-2404	Harness Assy.	47	LW-13353	Gasket	27
LW-25-0.94	Bolt	27	LW-13790	Shaft	19
LW-25-0.94	Bolt	31	LW-13792	Seal	5
LW-25-1.00	Bolt	37	LW-13793	Stud	3
LW-25-1.00	Bolt	39	LW-13796	Shaft	9
LW-25-1.13	Bolt	11	LW-13923	Bushing	13
LW-25-1.13	Bolt	27	LW-14060	Clip	47
LW-25-1.13	Bolt	31	LW-14078	Pin	13
LW-25-1.25	Bolt	23	LW-14260	Seal	31
LW-25-1.25	Bolt	47	LW-14313	Alternator	55
LW-25-1.44	Bolt	31	LW-14318	Alternator	55
LW-25-1.50	Bolt	11	LW-14326	Alternator	55
LW-25-1.75	Bolt	11	LW-14371	Alternator Assy.	55
LW-25S150	Bolt	11	LW-14649	Shim	1
LW-31-0.94	Bolt	1	LW-14780	Gage Assy.	25
LW-31-0.94	Bolt	57	LW-14995	Spring	17
LW-31-1.16	Bolt	57	LW-15472	Fuel Pump	33
LW-31H0.75	Bolt	1	LW-15592-5-05	Clamp	21
LW-31H0.88	Bolt	1	LW-15592-8-28	Clamp	23
LW-31H0.88	Bolt	9	LW-16266-25-13	Clamp	43
LW-38-0.75	Bolt	33	LW-16266-25-13	Clamp	45
LW-10077	Seat	17	LW-16475	Seat	17
LW-10828	Sump Assy.	27	LW-16783-18	Gage Assy.	25
LW-11713	Spring	5	LW-18071	Tee	45
LW-11795	Spring	17	LW-18085	Spring	5
LW-11800	Spring	17	LW-18109	Impeller	31
LW-11866	Nut	11	LW-18110	Impeller Assy.	31
LW-12098-0-100	Tube Assy.	43	LW-18639	Lockplate	7
LW-12098-0-100	Tube Assy.	45	LW-18661	Seal	17
LW-12098-0-130	Tube Assy.	43	LW-18667	Pin	9
LW-12098-0-130	Tube Assy.	45	LW-18815-S	Bushing	7
LW-12098-0-170	Tube Assy.	43	LW-18816-S	Bushing	7
LW-12098-0-170	Tube Assy.	45	LW-18817-S	Bushing	7
LW-12098-0-280	Tube Assy.	45	LW-18840	Camshaft Assy.	9
LW-12186	Nut	13	LW-18921-S	Bushing	7
LW-12272	Lockplate	17	LW-18922-S	Bushing	7

NUMERICAL INDEX (CONT.)

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
LW-18959-150-25	Clamp	47	STD-678	Washer	33
LW-18959-175-25	Clamp	43	STD-684	Nipple	21
LW-18959-175-25	Clamp	45	STD-690	Washer	1
MS20823-6D	Elbow	15	STD-713	Cotter Pin	1
MS21044N06	Nut	43	STD-713	Cotter Pin	49
MS21044N06	Nut	45	STD-713	Cotter Pin	51
MS21044N06	Nut	47	STD-783	Plug	35
STD-8	Washer	11	STD-784	Plug	29
STD-8	Washer	23	STD-784	Plug	37
STD-8	Washer	27	STD-853	Tee	43
STD-8	Washer	31	STD-853	Tee	45
STD-8	Washer	35	STD-872	Nut	1
STD-8	Washer	37	STD-872	Nut	11
STD-8	Washer	39	STD-1065	Dowel	7
STD-8	Washer	47	STD-1211	Plug	7
STD-33	Washer	11	STD-1339	Plug	3
STD-33	Washer	33	STD-1353	Insert	15
STD-35	Washer	1	STD-1410	Nut	15
STD-35	Washer	15	STD-1410	Nut	35
STD-35	Washer	31	STD-1410	Nut	41
STD-35	Washer	35	STD-1410	Nut	47
STD-35	Washer	41	STD-1410	Nut	49
STD-35	Washer	49	STD-1410	Nut	51
STD-35	Washer	57	STD-1410	Nut	57
STD-91	Plug	27	STD-1411	Nut	11
STD-160	Washer	11	STD-1411	Nut	17
STD-160	Washer	23	STD-1411	Nut	27
STD-160	Washer	27	STD-1411	Nut	35
STD-160	Washer	31	STD-1411	Nut	39
STD-160	Washer	35	STD-1411	Nut	47
STD-160	Washer	37	STD-1420	Nut	31
STD-160	Washer	39	STD-1623	Insert	3
STD-160	Washer	47	STD-1727	Washer	1
STD-475	Washer	15	STD-1727	Washer	47
STD-475	Washer	35	STD-1727	Washer	49
STD-475	Washer	41	STD-1774	Pin	35
STD-475	Washer	47	STD-1882	Screw	33
STD-475	Washer	49	STD-1916	Screw	47
STD-475	Washer	51	STD-1925	Screw	19
STD-475	Washer	57	STD-2090	Nut	19
STD-514	Dowel	3	STD-2168	Nut	9
STD-551	Plug	27	STD-2180	Hose	21
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