

IO-360-P1A Engine Illustrated Parts Catalog

July 2017

PC-IO-360-P1A

LYCOMING[™]

© 2017

652 Oliver Street
Williamsport, PA 17701

IO-360-P1A Engine Illustrated Parts Catalog

Lycoming Part Number: PC-IO-360-P1A

For additional information:

Mailing address:

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

Phone:

Factory: U.S. and Canada toll free: +1(800) 258-3279
International Customers: +1(570) 323-6181

Lycoming's regular business hours are Monday through Friday from 8:00 A.M. through 5:00 P.M. Eastern Time (-5 GMT)

Visit us online at:

www.lycoming.com

LYCOMING™

©2017 Lycoming. All Rights Reserved.

Lycoming and "Powered by Lycoming" are trademarks or registered trademarks of Lycoming.
Lycoming Engines, a division of AVCO Corporation.

All brand and product names referenced in this publication are trademarks or registered trademarks of their respective companies.

This page intentionally left blank.

Table of Contents

<u>Subject</u>	<u>Chapter - Section</u>	<u>Page</u>
Frontal		
Record of Revisions		i
Table of Contents		iii
Introduction		v
Abbreviations and Acronyms		ix
Oversize and Undersize Part Listing		xi
Reciprocating Engine	72-00	
Front Section	72-10	
1. Propeller Governor Drive Assembly		0-1
Power Section	72-20	
1. Crankcase Assembly		2-3
2. Crankcase Related Parts		4-5
3. Crankshaft Assembly and Related Parts		6-7
4. Crankshaft Idler Gears, Tachometer Drive, and Camshaft		8-9
5. Crankcase Attaching Parts		10-11
Cylinder Section	72-30	
1. Connecting Rods, Pistons, and Ring Assemblies		12-13
2. Cylinder Assembly		14-15
3. Valve Assembly and Related Parts		16-17
4. Cylinder Related Parts		18-19
5. Cylinder Head Drain Tubes, Intercylinder Cooling Baffles, and Rocker Box Covers ...		20-21
6. Intake Pipes Assembly		22-23
Lubrication System	72-50	
1. Oil Level Gage		24-25
2. Oil Sump		26-27
Accessory Drives	72-60	
1. Accessory Housing Assembly		28-29
2. Oil Pump Assembly and Accessory Housing Attaching Parts		30-31
3. Fuel Pump Assembly, Governor Drive Cover, and Attaching Parts		32-33
4. Oil Filter Assembly, Oil Cooler Bypass Valve, and Fittings		34-35

<u>Subject</u>	<u>Chapter - Section</u>	<u>Page</u>
Engine and Fuel Control _____	73-00 _____	
Fuel Distribution	73-10	
1. Fuel Injector, Fuel Manifold, and Injection Nozzles		36-37
2. Fuel Lines and Attaching Parts		38-39
Ignition Distribution System _____	74-00 _____	
Distribution	74-20	
1. Magnetos, Magneto Drives, and Harnesses		40-42
Back Section _____		
Service Kit Section		43-44
Numerical Index		45-48

Roller Tappets

As a product improvement, Lycoming is installing roller tappets on its aircraft engines. Wide deck engines with roller tappets are identified with an “E” suffix after the serial number dash number (Example – L-*****-48E.) On rebuilt and Lycoming overhauled wide deck engines with roller tappets, the letter “A” suffix is replaced with the letter “E” suffix on the engine serial number.

The new parts include roller tappet body assembly, crankcase, camshaft, shorter push rods, shroud tubes and shroud tube seal. The engines use the same hydraulic units and the dry tappet clearance does not change. Refer to Reference 618 in the Table of Limits (SSP-1776) for dry tappet clearance values.

At this time, roller tappets are not installed in narrow deck engines.

ROLLER TAPPET PARTS ARE NOT INTERCHANGEABLE WITH CURRENT FLAT FACED TAPPETS.

If it is necessary to remove the roller tappet bodies prior to overhaul, they **must be reinstalled in the same location in the crankcase**. The roller tappets are indexed with flats in the new crankcase. It is possible to assemble the roller tappet bodies in two different orientations 180 degrees apart. Either orientation is acceptable while reinstalling. Lubricate all tappet bores, cam lobes and roller tappets with engine oil mixture only. (Refer to the latest revision of Service Instruction No. 1059.) Install the shroud tube seal in the crankcase, then install the shroud tube.

THE ROLLER TAPPETS ARE NOT FIELD REPAIRABLE AND NO DISASSEMBLY IS ALLOWED. THEREFORE, MAGNAFLUX OR ZYGLO INSPECTIONS ARE NOT ALLOWED. A VISUAL INSPECTION FOR INTEGRITY AND FREE ROTATION OF THE ROLLER ACTION IS ACCEPTABLE TO RETURN AN IN-USE ROLLER TAPPET TO SERVICE; HOWEVER, IT IS MANDATORY TO REPLACE ROLLER TAPPETS AT OVERHAUL.

Vendor Accessories

Parts coverage of Vendor Accessories used on Lycoming engines are found in the applicable Vendor's Parts Catalog. A list of vendors' addresses is included in the latest revision of Lycoming Service Letter No. L114.

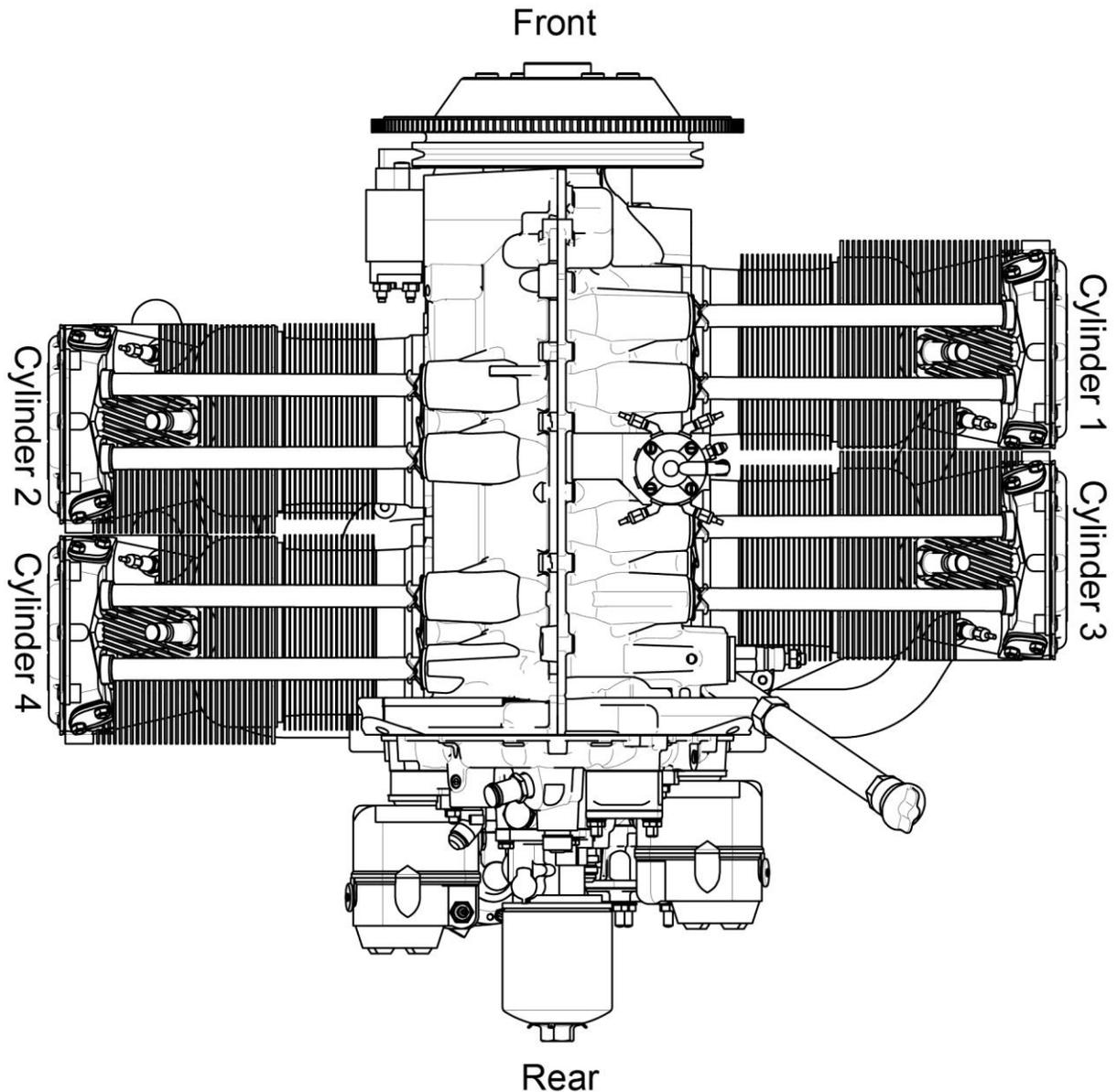
Any reference in this document to the supplier's/part manufacturer's product, by name, trademark, part number or other description is solely for the purpose of identification and does not indicate or infer that Lycoming accepts responsibility for quality control and/or airworthiness of parts, which do 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 the propeller end and the oil sump is 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 four-cylinder engine is 1-3-2-4.

**Top View of Engine**

How to Order Parts and Publications

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

To order parts:

1. Contact the applicable Customer Service Hot Lines:
U.S. and Canada toll free - +1-800-258-3279
International Customers - +1-570-323-6181
8:00 A.M. – 5:00 P.M. EST (-5GMT) Monday through Friday
2. Give the model and serial number of your engine.
3. Give the part number, nomenclature, and quantity.

This publication eventually will be available for viewing and download on the Lycoming.com website.

To supply any comments, suggestions, or corrections to this parts catalog, go online to the Lycoming.com website on the internet.

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

©2017 by Lycoming. "All Rights Reserved." All Lycoming publications are to be considered copyrighted and may not be reproduced without permission of the company.

Abbreviations and Acronyms

A	
amp.	Ampere
AR	As Required
Assy.	Assembly
ATA	Air Transport Association
C	
Cyl.	Cylinder
F	
Fill.	Fillister
H	
Hex.	Hexagon
I	
I.D.	Inside Diameter
in.	Inch
IPC	Illustrated Parts Catalog
M	
mm	Millimeter
N	
No.	Number
NPT	National Pipe Taper (thread)
O	
O.D.	Outside Diameter
P	
P/N	Part Number
Q	
Qty.	Quantity
R	
RF	Reference
S	
SB	Service Bulletin
SI	Service Instruction
SSP	Special Service Publication
U	
UNF	Unified National Fine

This page intentionally left blank.

Oversize and Undersize Parts Listing

PART NO.	DESCRIPTION	OVERSIZE (IN.)					UNDERSIZE (IN.)	
		P05 .005	P10 .010	P20 .020	P30 .030	P50 .050	M03 .003	M06 .006
18D26098	BEARING, Front Crankshaft						X	
18A26093	BEARING, Crankshaft						X	
18M26105	BEARING, Connecting Rod						X	
72155-S	BUSHING, Prop Flange	X						
75656-S	BUSHING, Prop Flange	X						
75657-S	BUSHING, Prop Flange	X						
66610	BUSHING, Rocker Shaft		X					
STD-1065	DOWEL, Crankshaft		X					
61681	GUIDE, Intake Valve				X			
16R22291	GUIDE, Exhaust Valve				X			
66796	INSERT, Spark Plug		X					
72057	SEAT, Intake Valve			X				
72058	SEAT, Exhaust Valve			X				
LW-13792	SEAL, Crankshaft Oil					X		

NOTICE: 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 Part Number (P/N) 18D26098 bearing in 0.003 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.

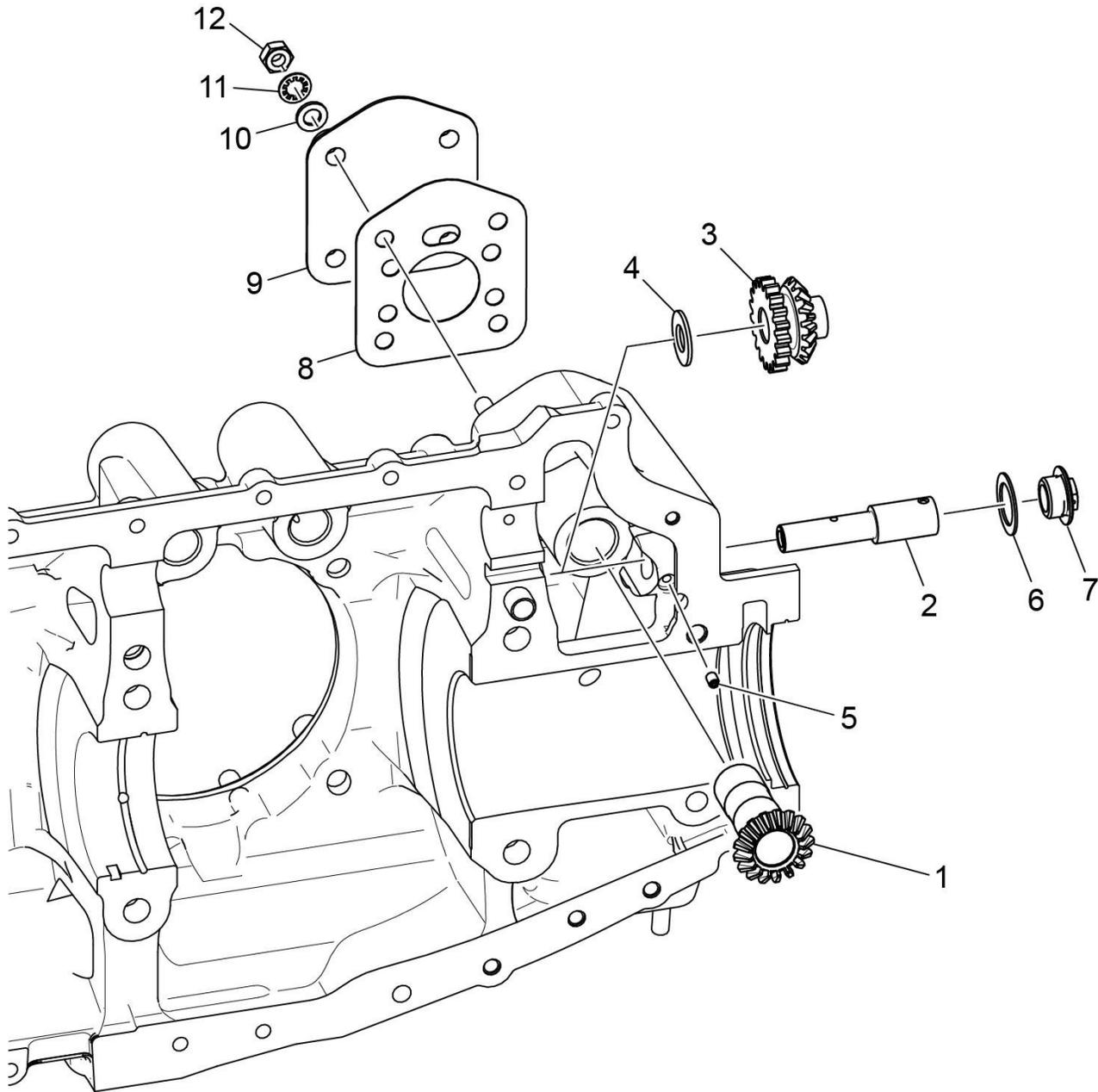


Figure 1
Propeller Governor Drive Assembly

FRONT SECTION**Figure 1 - Propeller Governor Drive Assembly**

Figure Item	Code	Part Number	Description	Units per Assembly
1		77875	GEAR, Propeller governor driven	1
2		LW-14021	SHAFT, Propeller governor idler gear	1
3		77874	GEAR ASSEMBLY, Propeller governor idler	1
4		73249	WASHER, Thrust (0.0585 - 0.0595 thick)	AR
		73250	WASHER, Thrust (0.062 - 0.063 thick)	AR
		73251	WASHER, Thrust (0.0655 - 0.0665 thick)	AR
		73252	WASHER, Thrust (0.069 - 0.070 thick)	AR
		01L21418	WASHER, Thrust (0.055 - 0.056 thick)	AR
5		AN565B1032H5	SET SCREW, No. 10-32 x 5/16 long	1
6		70455	GASKET, 25/32 I.D. x 1-1/8 O.D. x 1/32 thick	1
7		LW-13896	PLUG, 3/4-16 hex. head	1
8		72053	GASKET, Governor	1
9		72378	COVER, Governor drive	1
10		STD-35	WASHER, 5/16 plain	4
11		STD-475	WASHER, 5/16 lock, internal teeth	4
12		STD-1410	NUT, 5/16-18 plain	4
AR - as required				

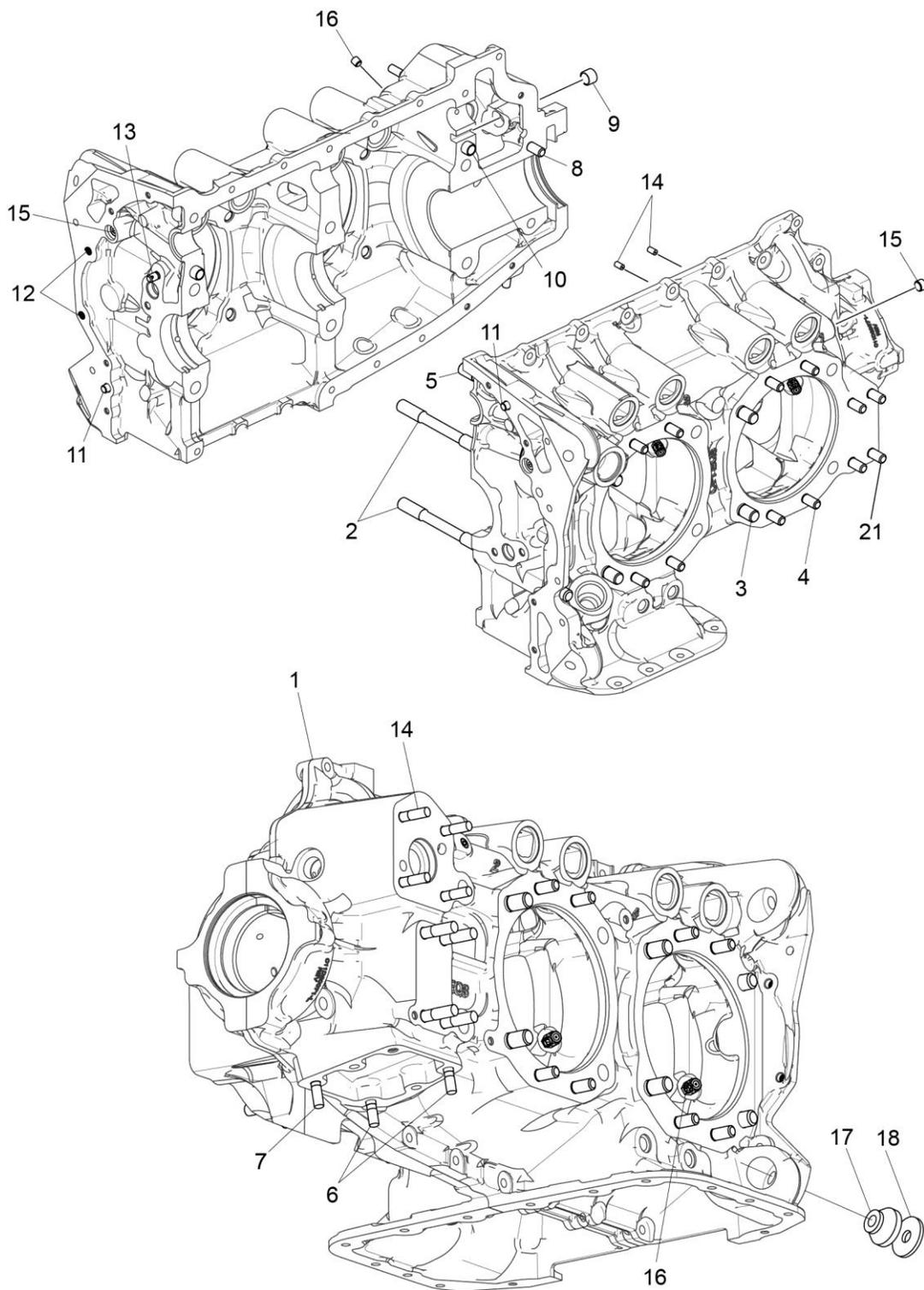


Figure 2
Crankcase Assembly

POWER SECTION**Figure 2 - Crankcase Assembly**

Figure Item	Code	Part Number	Description	Units per Assembly
1		11B19524-5	Crankcase Assembly, Roller Lifters	1
2		75154	STUD, 1/2-13 x 10-1/32 long	2
3		50-15	STUD, 1/2-13 x 1-7/8 long	8
4		38-13	STUD, 3/8-16 x 1-5/8 long	16
5		38D-17	STUD, 3/8-16 x 2-1/8 long, drilled	1
6		31C-12	STUD, 5/16-18 x 1-1/2 long	2
7		31C-13	STUD, 5/16-18 x 1-5/8 long	1
8		38-22	STUD, 3/8-16 x 2-3/4 long	1
9		72158	BUSHING, Governor drive idler shaft	1
10		STD-557	DOWEL, 1/2 diameter x 11/16 long, hollow	2
11		STD-514	DOWEL, 5/16 diameter x 1/2 long	2
12		STD-1623	INSERT, 1/4-20 Heli-coil x 3/8 long	2
13		LW-13793	STUD, 5/16-18 x 15/16 long, drilled	1
14		31C-17	STUD, 5/16-18 x 2-1/8 long	4
15		1102	PLUG, 1/8-27 NPT, Allen head	5
16		STD-1339	PLUG, 1/16-27 NPT, Allen head	5
17		71032	BUSHING, Engine support	8
18		STD-619	WASHER, 217/32 I.D. x 1-3/4 O.D. x 5/32 thick	8

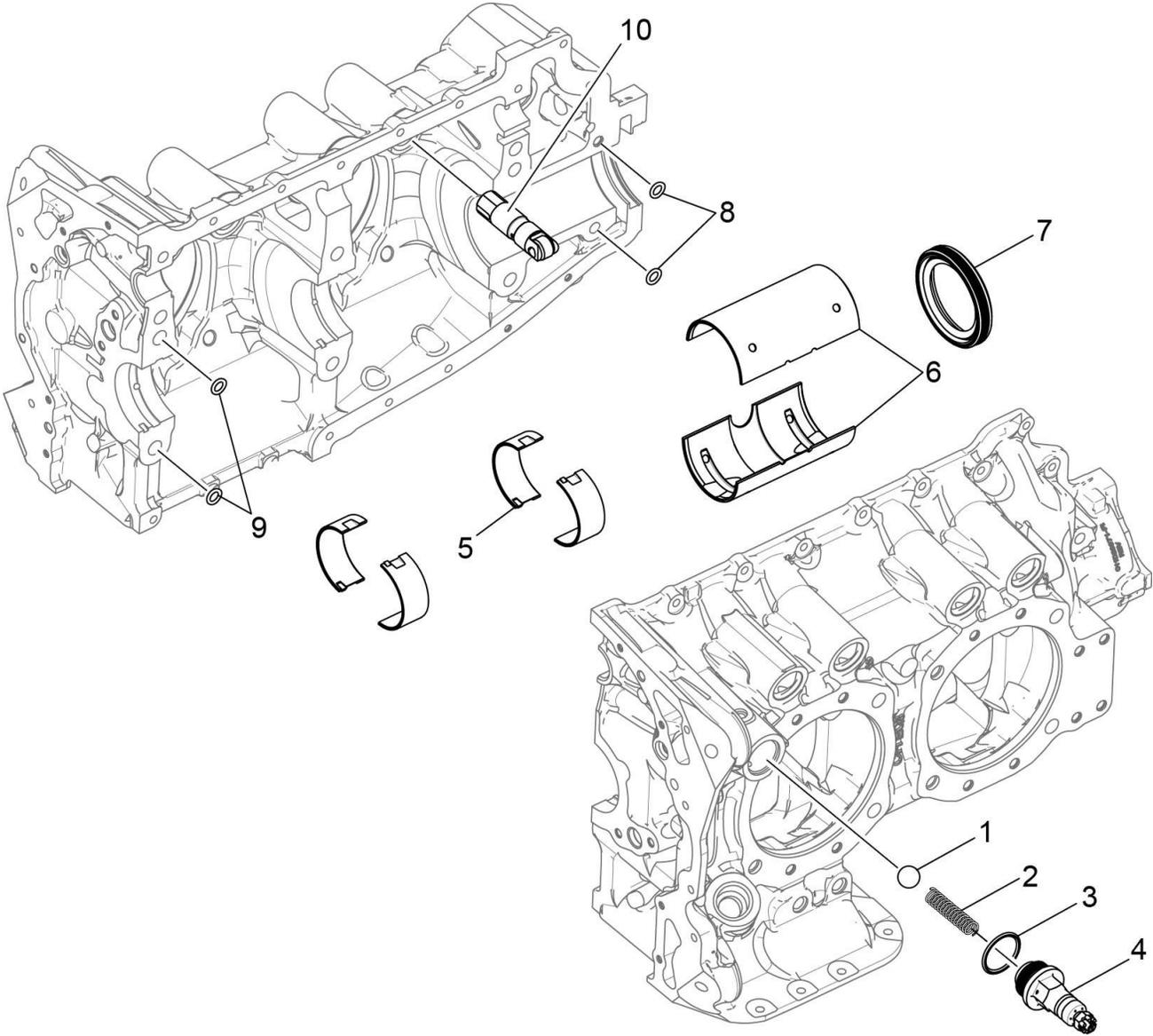


Figure 3
Crankcase Related Parts

POWER SECTION**Figure 3 - Crankcase Related Parts**

Figure Item	Code	Part Number	Description	Units per Assembly
1		1028-B	BALL, 11/16 diameter	1
2	❖	61084	SPRING, Oil pressure relief valve	AR
	❖	68668	SPRING, Oil pressure relief valve	AR
	❖	77467	SPRING, Oil pressure relief valve	AR
	❖	LW-11713	SPRING, Oil pressure relief valve	AR
	❖	LW-18085	SPRING, Oil pressure relief valve	AR
3		06E19769-1.25	GASKET, 1-1/4 I.D. x 1-1/2 O.D. x 3/32 annular	1
4		77808	VALVE ASSEMBLY, Oil pressure relief valve, adj	1
5		18D26098	BEARING, Crankshaft	4
6		18A26093	BEARING, Crankshaft	2
7	▲	LW-13792	SEAL, Crankshaft, Oil	1
8		72075	SEAL, Oil, 3/32 section x 7/16 I.D.	2
9		72091	RING, Oil seal, 0.36 ID x 0.10 diameter	2
10		LRT23381	BODY ASSEMBLY, Hydraulic roller tappet	8

AR - as required

❖ Select spring to give a minimum of three threads exposed on adjusting screw to allow field adjustment. Reference latest revision of Lycoming Table of Limits SSP-1776, Part I for spring identification.

▲ Refer to latest revision of Lycoming Service Instruction No. 1324 for installation.

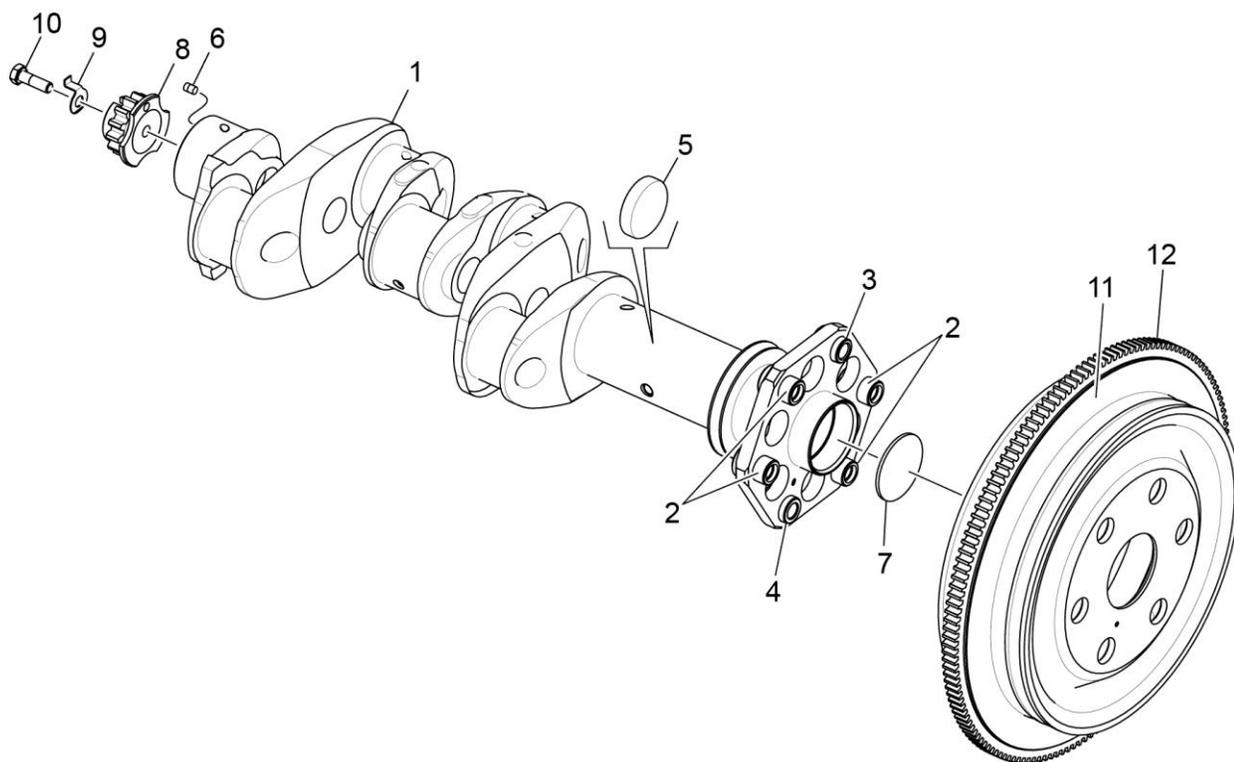


Figure 4
Crankshaft Assembly and Related Parts

POWER SECTION**Figure 4 - Crankshaft Assembly and Related Parts**

Figure Item	Code	Part Number	Description	Units per Assembly
1		13B47146	CRANKSHAFT AND BUSHING ASSEMBLY	1
2		75656-S	BUSHING, Propeller flange, long	4
3		72155-S	BUSHING, Propeller flange 0.7505 - 0.7510	1
4		75657-S	BUSHING, Propeller flange 0.7818 - 0.7823	1
5		61510	PLUG, 1-3/4 diameter	1
6		STD-1065	DOWEL, Stepped, 0.310-0.251 diameter	1
7		STD-1211	PLUG, 2.00 diameter expansion	1
8	❖	13S19646	GEAR, Crankshaft	1
9		LW-18639	LOCKPLATE, Crankshaft gear	1
10		STD-2246	BOLT, 5/16-24 x 1.00 long	1
11		LW-16471	SUPPORT ASSEMBLY, Starter ring gear	1
12		72566	GEAR, Starter ring, 12/14 pitch	1

❖ Refer to the latest revision of Service Bulletin No. 475 for proper installation.

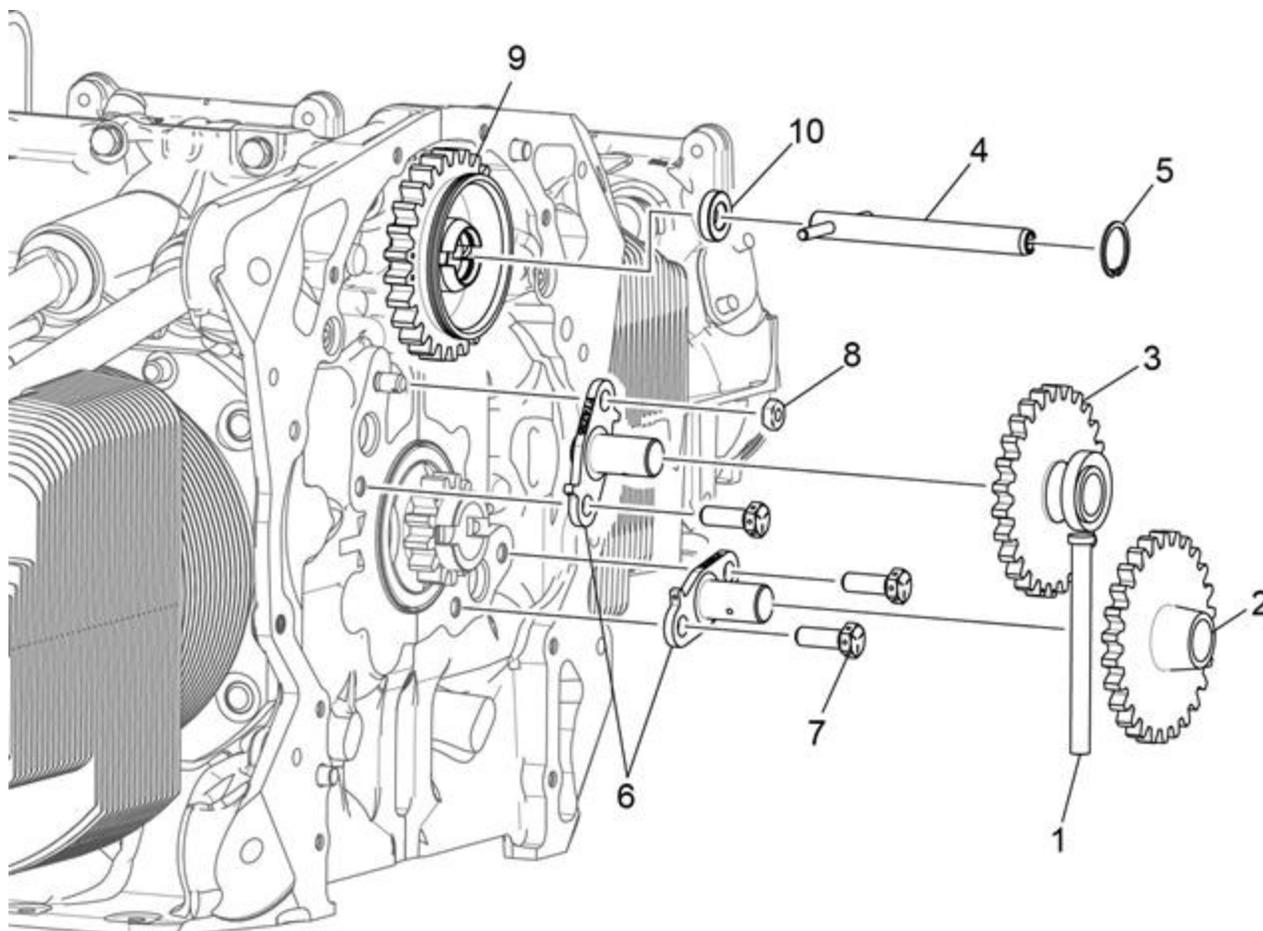


Figure 5
Crankshaft Idler Gears, Tachometer Drive, and Camshaft

POWER SECTION**Figure 5 - Crankshaft Idler Gears, Tachometer Drive, and Camshaft**

Figure Item	Code	Part Number	Description	Units per Assembly
1		23D26777	PLUNGER, Fuel pump, long	1
2		74996	GEAR ASSEMBLY, Crankshaft idler, plain	1
3		75072	GEAR ASSEMBLY, Crankshaft idler	1
4		76121	SHAFT ASSY, Tachometer	1
5		STD-2231	RING, Internal Retaining	1
6		LW-13796	SHAFT, Crankshaft idler gear	2
7		LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex. head, drilled	3
8		STD-2168	NUT, 5/16-18 NC-3 slotted shear	1
9		15M23456	CAMSHAFT ASSEMBLY, Roller lifter	1
10		76118	SPACER, Tachometer shaft centering	1

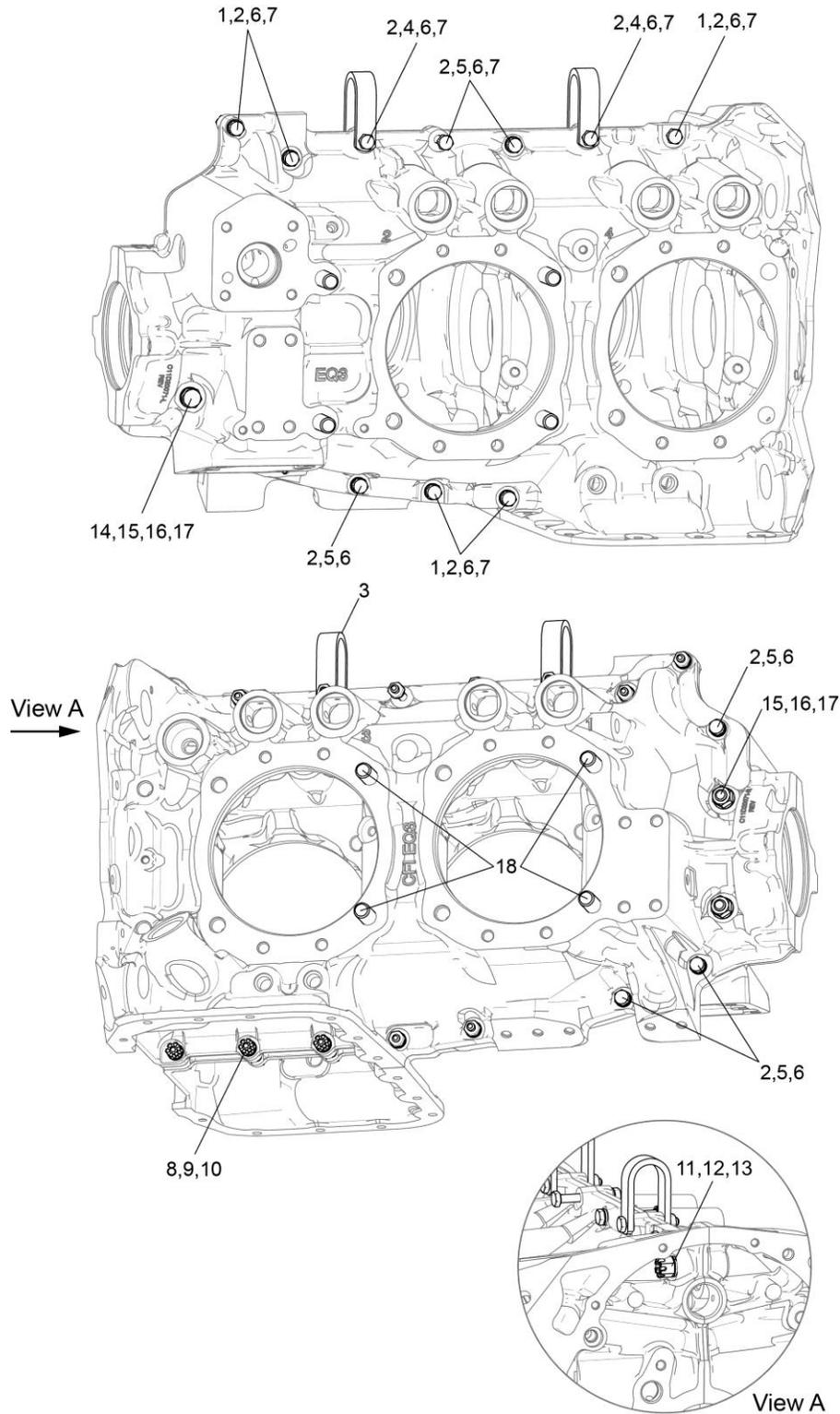


Figure 6
Crankcase Attaching Parts

POWER SECTION**Figure 6 - Crankcase Attaching Parts**

Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-25-1.50	BOLT, 1/4-20 x 1-1/2 long, hex. head	5
2		STD-8	WASHER, 1/4 plain	17
3		60803	STRAP, Lifting	2
4		LW-25-1.75	BOLT, 1/4-20 x 1-3/4 long, hex. head	2
5		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	4
6		STD-160	WASHER, 1/4 lock, internal teeth	13
7		STD-1411	NUT, 1/4-20 plain	9
8		LW-25S1.50	BOLT, 1/4-20 x 1-1/2 long, hex. head, drilled	3
9		STD-8	WASHER, 1/4 plain	AR
10		STD-2249	NUT, 1/4-20 slotted	3
11		STD-33	WASHER, 3/8 plain	2
12		AN960-616L	WASHER, 3/8 plain (thin)	3
13		STD-872	NUT, 3/8-24 slotted	1
14		AN6-34A	BOLT, 3/8-24 x 3-37/64 long, hex. head	1
15		STD-33	WASHER, 3/8 plain	3
16		STD-678	WASHER, 3/8 lock, internal teeth	2
17		STD-596	NUT, 3/8-24 plain	2
18		76220	STUD, 1/2-20 x 10-45/64 long	4
AR - as required				

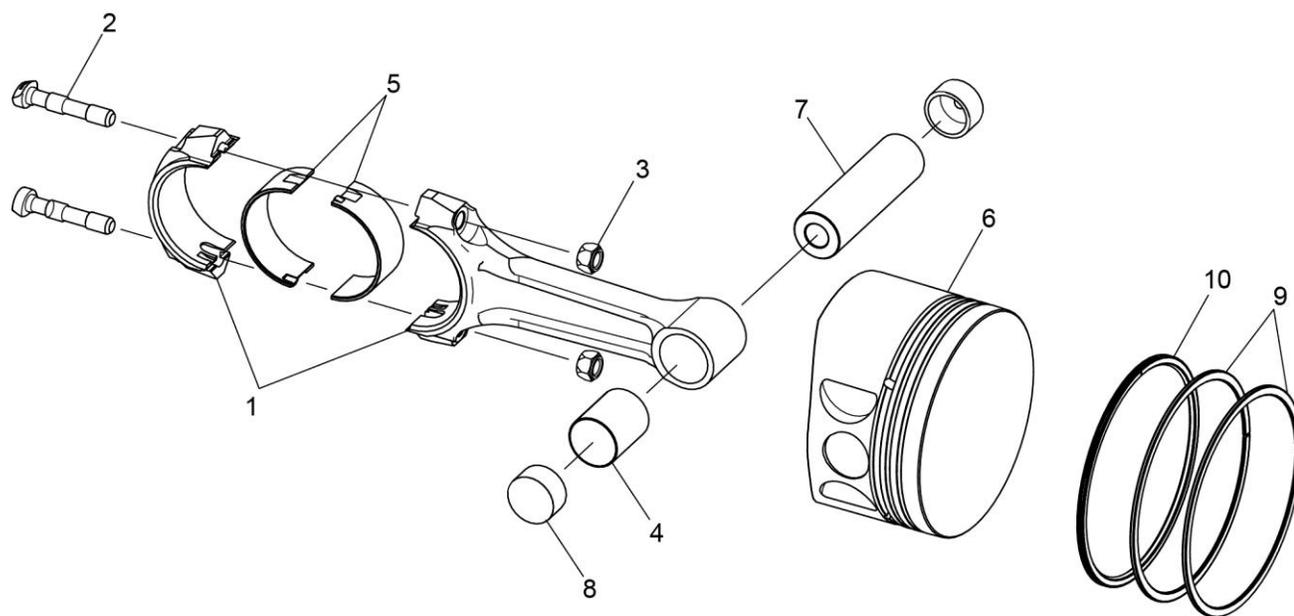


Figure 7
Connecting Rods, Pistons, and Ring Assemblies

CYLINDER SECTION**Figure 7 - Connecting Rods, Pistons, and Ring Assemblies**

Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-11750-S	CONNECTING ROD ASSEMBLY	4
2		75061	BOLT, Connecting rod	8
3		LW-12186	NUT, Connecting rod bolt	8
4		LW-13923	BUSHING, Connecting rod upper	4
5		18M26105	BEARING, Connecting rod	8
6		14D23912	PISTON, Compression ratio 8.50:1	4
7	❖	LW-14078	PIN, Piston	4
8		72198	PLUG, Piston pin	8
9		74241	RING, Piston, compression, 5-1/8 bore	8
10		14H21950	RING, Piston, oil, 5-1/8 bore	4
❖ Refer to the latest revision of Lycoming Service Instruction No. 1267.				

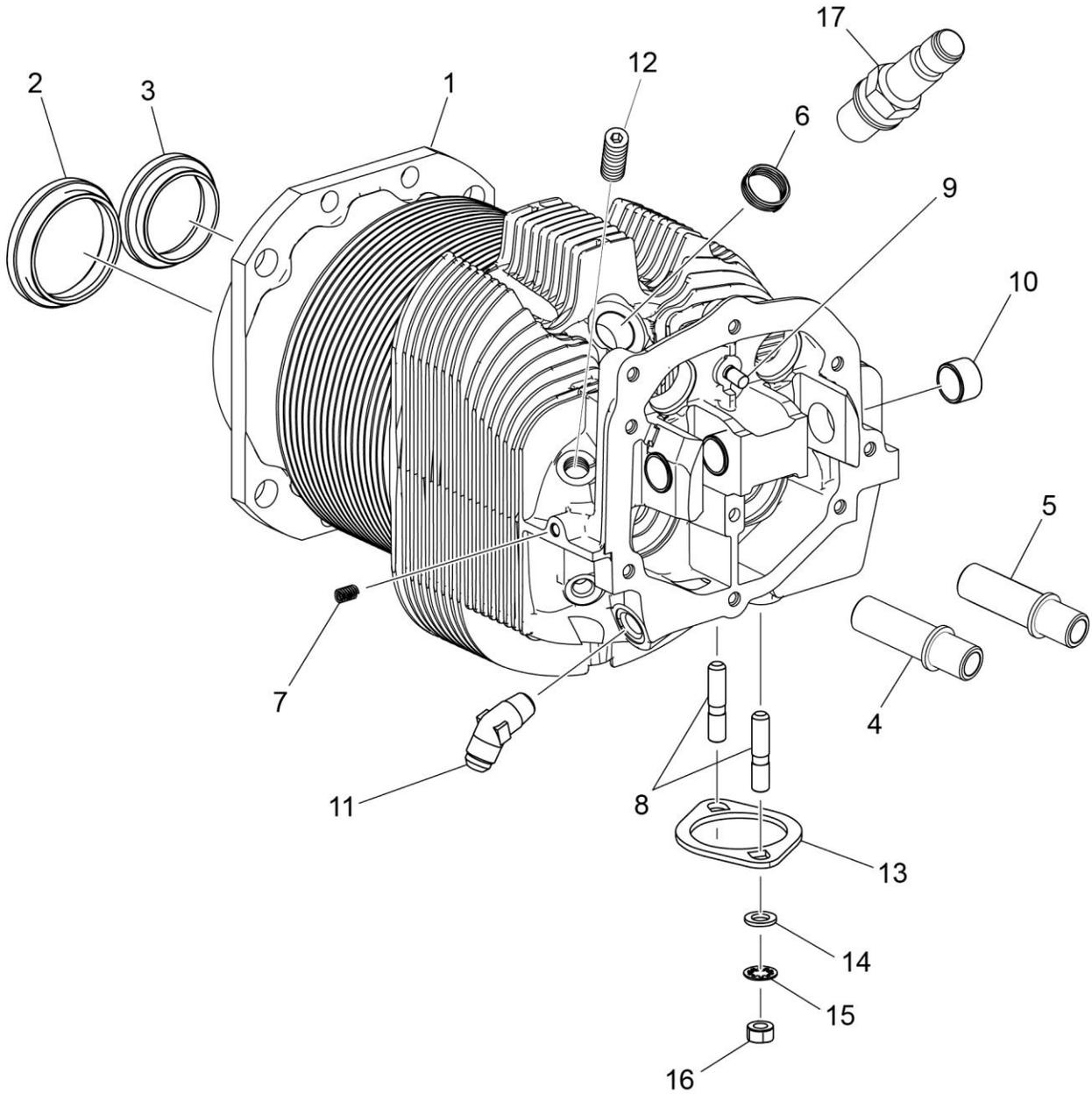


Figure 8
Cylinder Assembly

CYLINDER SECTION**Figure 8 - Cylinder Assembly**

Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-12427	CYLINDER ASSEMBLY	4
2		72057-P20	SEAT, Intake valve	4
3		72058-P20	SEAT, Exhaust valve	4
4		61681-P30	GUIDE, Valve, intake, flanged	4
5		16R22291-P30	GUIDE, Valve, exhaust, flanged	4
6		66796-P10	INSERT, Spark Plug, 18-1.5 MM	1
7		STD-1353	INSERT, No. 10-24 Heli-coil x 3/8 long	4
8		31C-12	STUD, 5/16-18 x 1-1/2 long	8
9		25C-8	STUD, 1/4-20 x 1.00 long	4
10		66610	BUSHING, Rocker shaft	16
11		MS20823-6D	ELBOW, 45°, 3/8 flared tube	4
12	●	1102	PLUG, 1/8-27 NPT, Allen head	4
13		77611	GASKET, Exhaust flange	4
14		STD-35	WASHER, 5/16 plain	8
15		STD-475	WASHER, 5/16 lock, internal teeth	8
16		STD-1410	NUT, 5/16-18 plain	8
17	▲	1182-B7	SPARK PLUG	8

▲ Refer to the latest revision of Lycoming Service Instruction No. 1042 for complete listing of all approved spark plugs.

● Used on installations without injector or priming lines

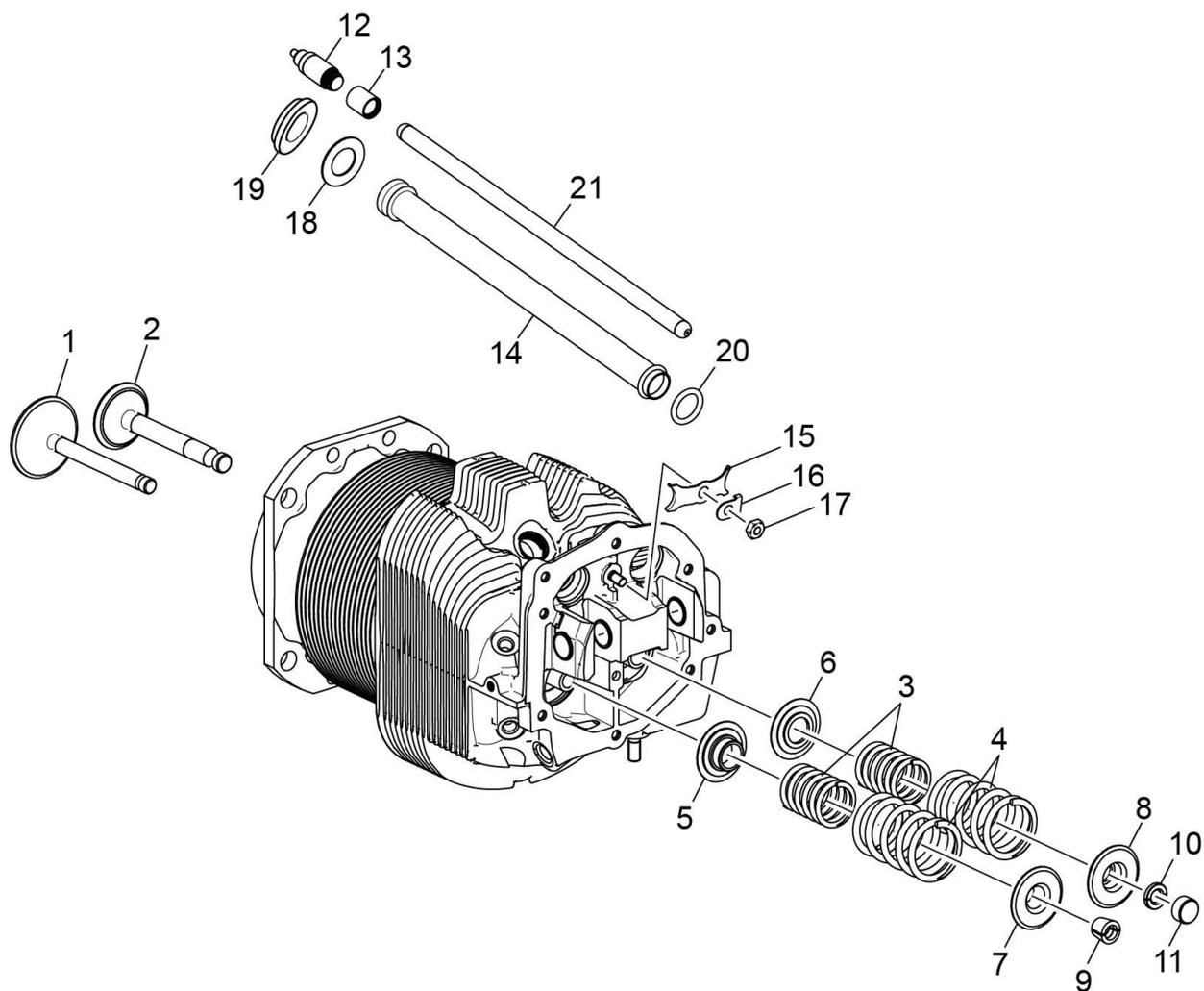


Figure 9
Valve Assembly and Related Parts

CYLINDER SECTION**Figure 9 - Valve Assembly and Related Parts**

Figure Item	Code	Part Number	Description	Units per Assembly
1		17A23938	VALVE, Intake	4
2		17B23936	VALVE, Exhaust (rotator type)	4
3		LW-11795	SPRING, Valve, inner	8
4		LW-11800	SPRING, Valve, outer	8
5		65441	SEAT, Valve spring, lower intake	4
6		LW-13323	SEAT, Valve spring, lower exhaust	4
7		LW-10077	SEAT, Valve spring, upper intake	4
8		LW-16475	SEAT, Valve spring, upper, exhaust (rotator type)	4
9		60009	KEY, Valve	8
10		17C21191	KEY, Valve, exhaust	8
11		17C19386	CAP, Valve stem, exhaust (rotator type)	4
12		15B26066	PLUNGER ASSEMBLY, Hydraulic lifter	8
13		15B21319	SOCKET, Hydraulic tappet	8
14		15G23461	SHROUD TUBE ASSEMBLY, Push rod	8
15		LW-14995	SPRING, Shroud tube	4
16		LW-12272	LOCKPLATE, Shroud tube	4
17		STD-1411	NUT, 1/4-20 plain	4
18		01L23459	WASHER, 25/32 I.D. x 1-3/8 O.D. x 1/32 thick	8
19		06A23493	SEAL, Shroud tube	8
20		70310	SEAL, Shroud tube	8
21	❖	15F19957-28	ROD ASSEMBLY, Push	AR
	❖	15F19957-29	ROD ASSEMBLY, Push	AR
	❖	15F19957-30	ROD ASSEMBLY, Push	AR
	❖	15F19957-31	ROD ASSEMBLY, Push	AR
	❖	15F19957-32	ROD ASSEMBLY, Push	AR
	❖	15F19957-33	ROD ASSEMBLY, Push	AR
	❖	15F19957-34	ROD ASSEMBLY, Push	AR

AR - as required
❖ See latest revision of Service Instruction No. 1060 for complete push rod application.

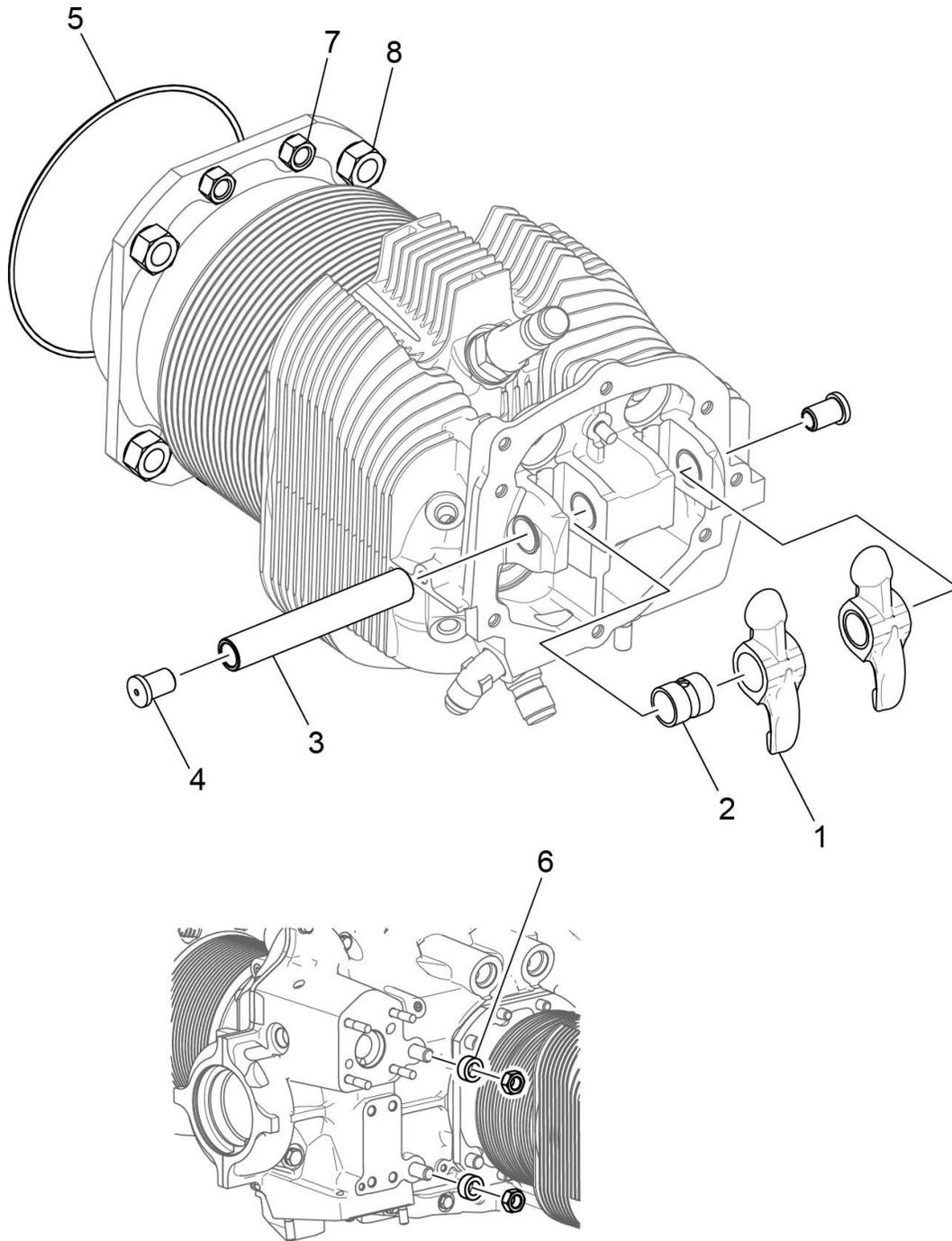


Figure 10
Cylinder Related Parts

CYLINDER SECTION**Figure 10 - Cylinder Related Parts**

Figure Item	Code	Part Number	Description	Units per Assembly
1	❖	17F19357	ROCKER ASSEMBLY, Valve	8
2		74637	BUSHING, Valve rocker	1
3		LW-13790	SHAFT, Valve rocker	4
4		LW-12892	THRUST BUTTON, Rocker shaft	8
5		71481	RING, Oil seal, 4-27/32 ID x 3/32 diameter section	4
6		74887	SPACER, 33/64 I.D. x 7/8 O.D. x 3/8 thick	2
7		383-B	NUT, 3/8-24 plain	16
8		STD-2090	NUT, 1/2-20 plain	18
❖ Due to the size of the area where the part number is stamped, the last five digits (19357) could be all that is shown of the part number.				

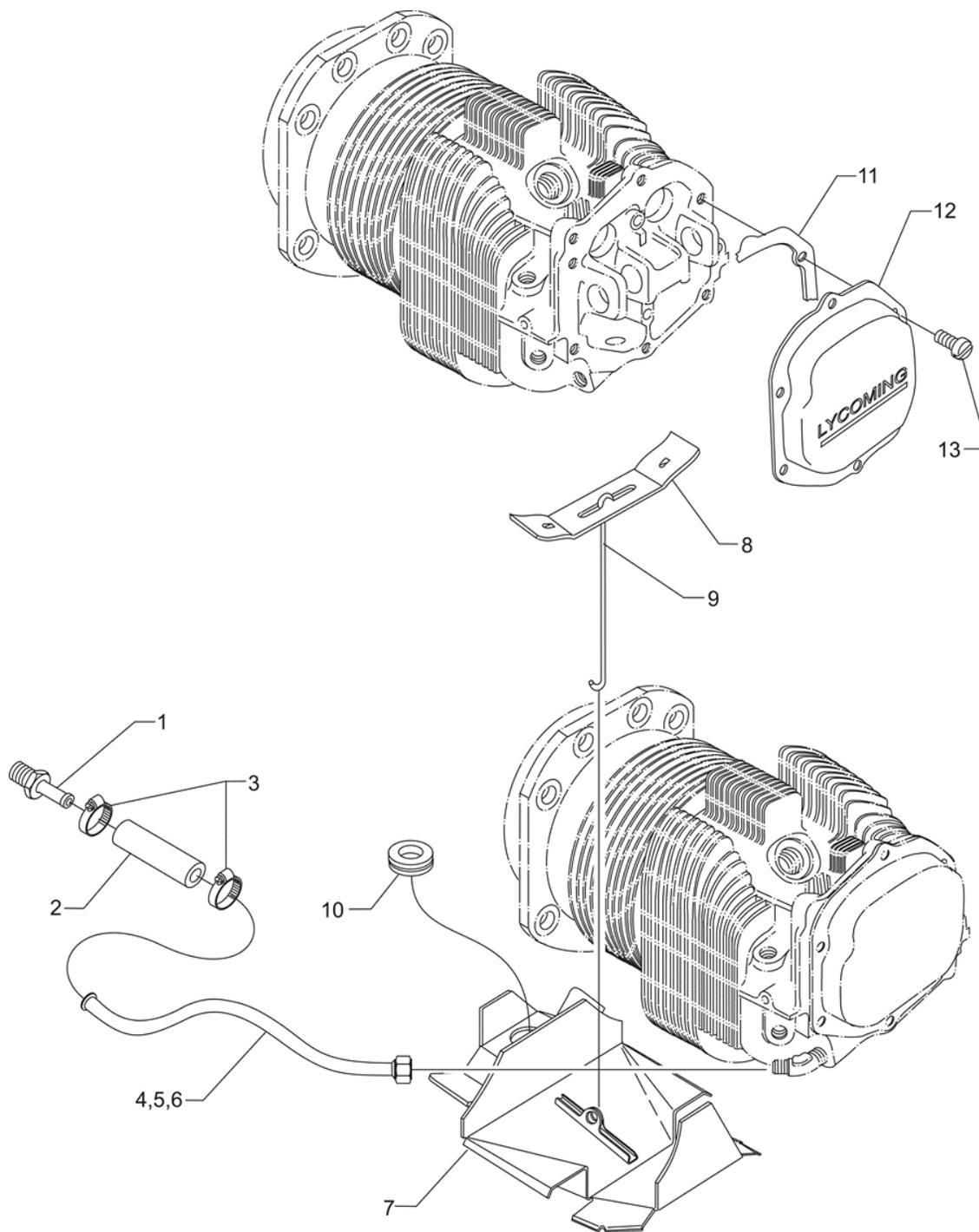


Figure 11
Cylinder Head Drain Tubes, Intercylinder Cooling Baffles, and Rocker Box Covers

CYLINDER SECTION**Figure 11 - Cylinder Head Drain Tubes, Intercylinder Cooling Baffles,
and Rocker Box Covers**

Figure Item	Code	Part Number	Description	Units per Assembly
1		STD-684	NIPPLE, Straight, 3/8 I.D. hose	4
2		STD-1821	HOSE, 3/8 x 2-1/2 long	4
3		LW-15592-5-05	CLAMP, Hose	8
4		68759	TUBE ASSEMBLY, Cylinder head oil drain, cyl. No. 1	1
5		68760	TUBE ASSEMBLY, Cylinder head oil drain, cyl. No. 2	1
6		68761	TUBE ASSEMBLY, Cylinder head oil drain, cyl. No. 3 & 4	2
7	❖	75339	BAFFLE ASSEMBLY, Intercylinder	1
	▲	LW-13389	BAFFLE ASSEMBLY, Intercylinder	1
8		71611	RETAINER, Intercylinder baffle	2
9		71610	HOOK, Intercylinder baffle retainer	2
10	▲	MS35489-20X	GROMMET (on baffle)	1
11		06B26669	GASKET, Rocker box cover	4
12		61247	COVER, Rocker box	4
13		STD-1925	SCREW, 1/4-20 x 5/8 long, pan head, self-locking	24
❖ Install on left side cylinders No. 2 and 4				
▲ Install on right side between cylinders No. 1 and 3				

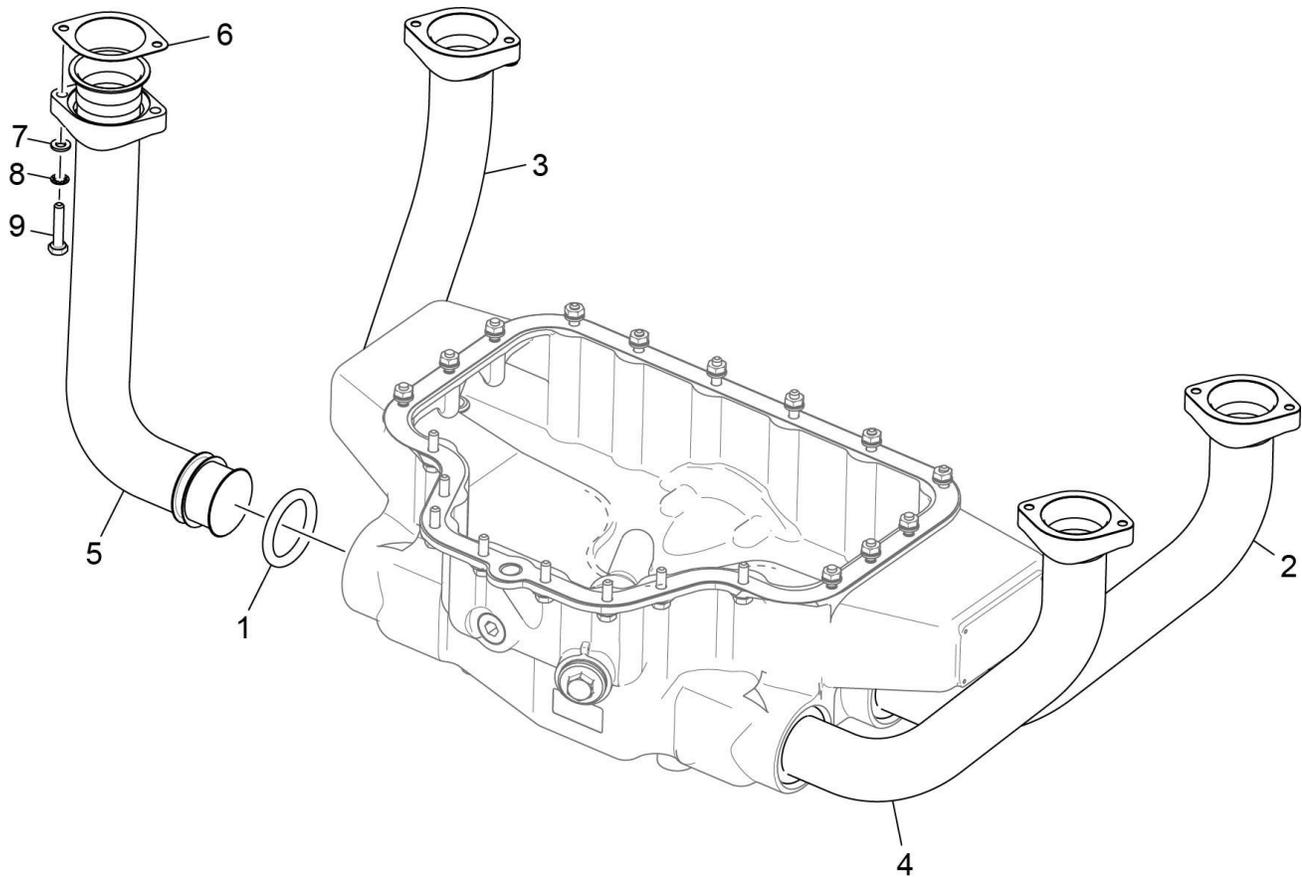


Figure 12
Intake Pipes Assembly

CYLINDER SECTION**Figure 12 - Intake Pipes Assembly**

Figure Item	Code	Part Number	Description	Units per Assembly
1		77569	RING, Seal, intake pipe	4
2		42E22611	PIPE, Intake, cylinder No. 1	1
3		42E22612	PIPE, Intake, cylinder No. 2	1
4		42E22613	PIPE, Intake, cylinder No. 3	1
5		42E22614	PIPE, Intake, cylinder No. 4	1
6		71973	GASKET, 2 bolt flange, 1-3/4 I.D.	4
7		STD-8	WASHER, 1/4 plain	8
8		STD-160	WASHER, 1/4 lock, internal teeth	8
9		LW-25-1.25	BOLT, 1/4-20 x 1-1/4 long	8

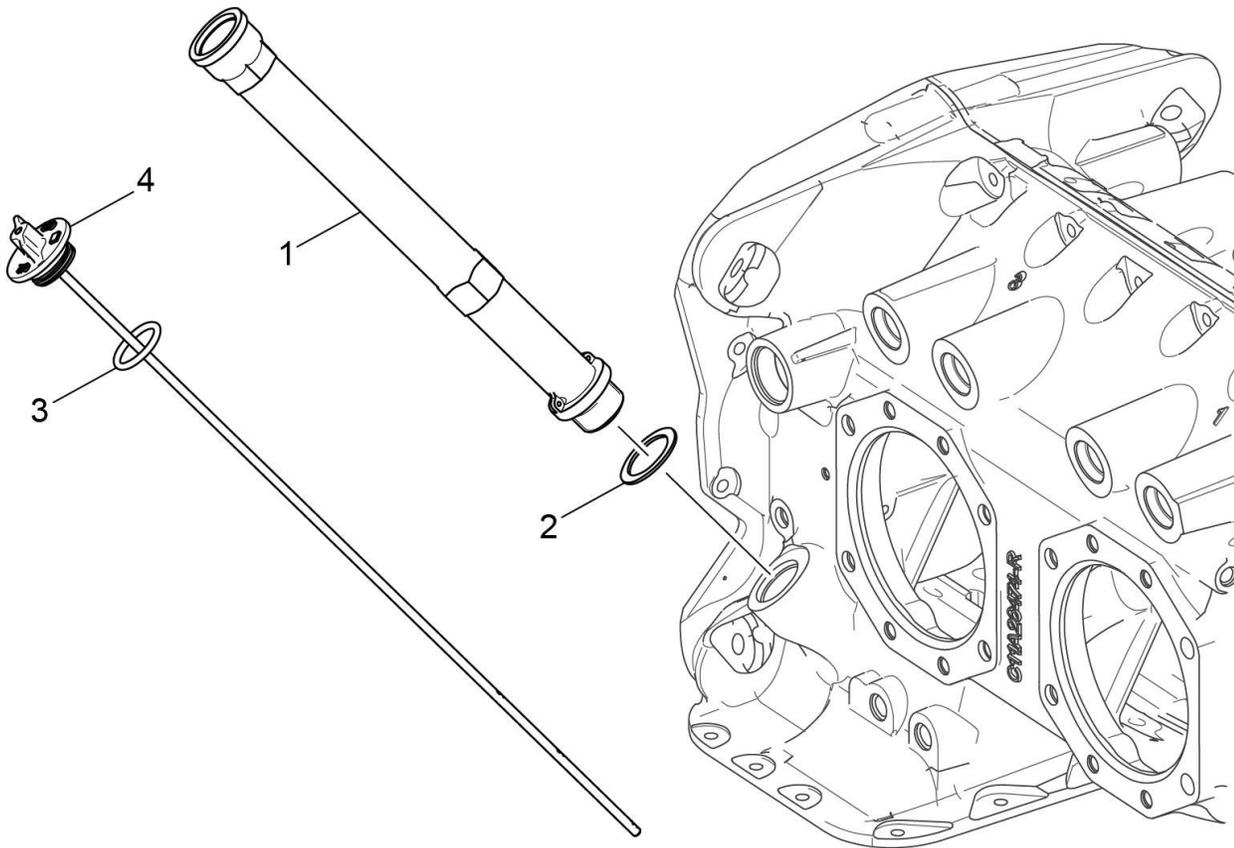


Figure 13
Oil Level Gage

LUBRICATION SYSTEM**Figure 13 - Oil Level Gage**

Figure Item	Code	Part Number	Description	Units per Assembly
1		75767	TUBE, Oil level gage (long)	1
2		72059	GASKET, Oil level gage	1
3		74065	RING, Oil level gage seal	1
4		LW-14769	GAGE ASSEMBLY, Oil level	1

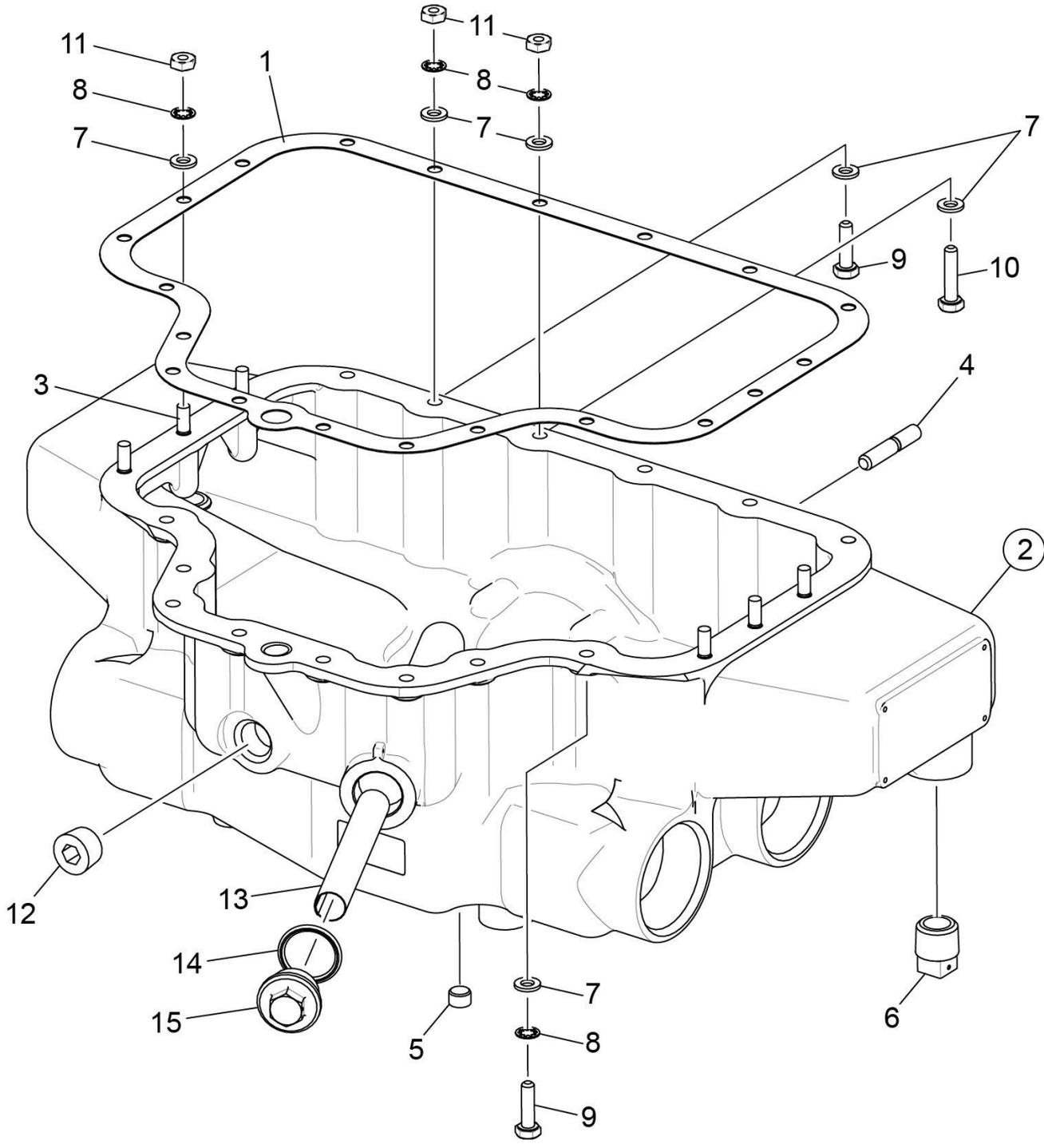


Figure 14
Oil Sump

LUBRICATION SYSTEM**Figure 14 - Oil Sump**

Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-13353	GASKET, Oil sump	1
2		LW-13864	SUMP ASSEMBLY, Oil	1
3		61400	STUD, 1/4-20 x 1-3/16 long	6
4		31C-14	STUD, 5/16-18 X 1-3/4 long	4
5		1102	PLUG, 1/8 pipe	1
6		STD-551	PLUG, 1/2-14 NPT, square head, drilled	2
7		STD-8	WASHER, 1/4 plain	26
8		STD-160	WASHER, 1/4 lock, internal teeth	20
9		LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. head	12
10		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	2
11		STD-1411	NUT, 1/4-20 plain	12
12		STD-2229	PLUG, 1/2 NPT, Allen head	1
13		70484	SCREEN, Oil suction	1
14		06E19769-1.00	GASKET, Annular, 1.00 I.D.	1
15		LW-12545	PLUG, 5/8 hex. head x 1.00-20 thread	1

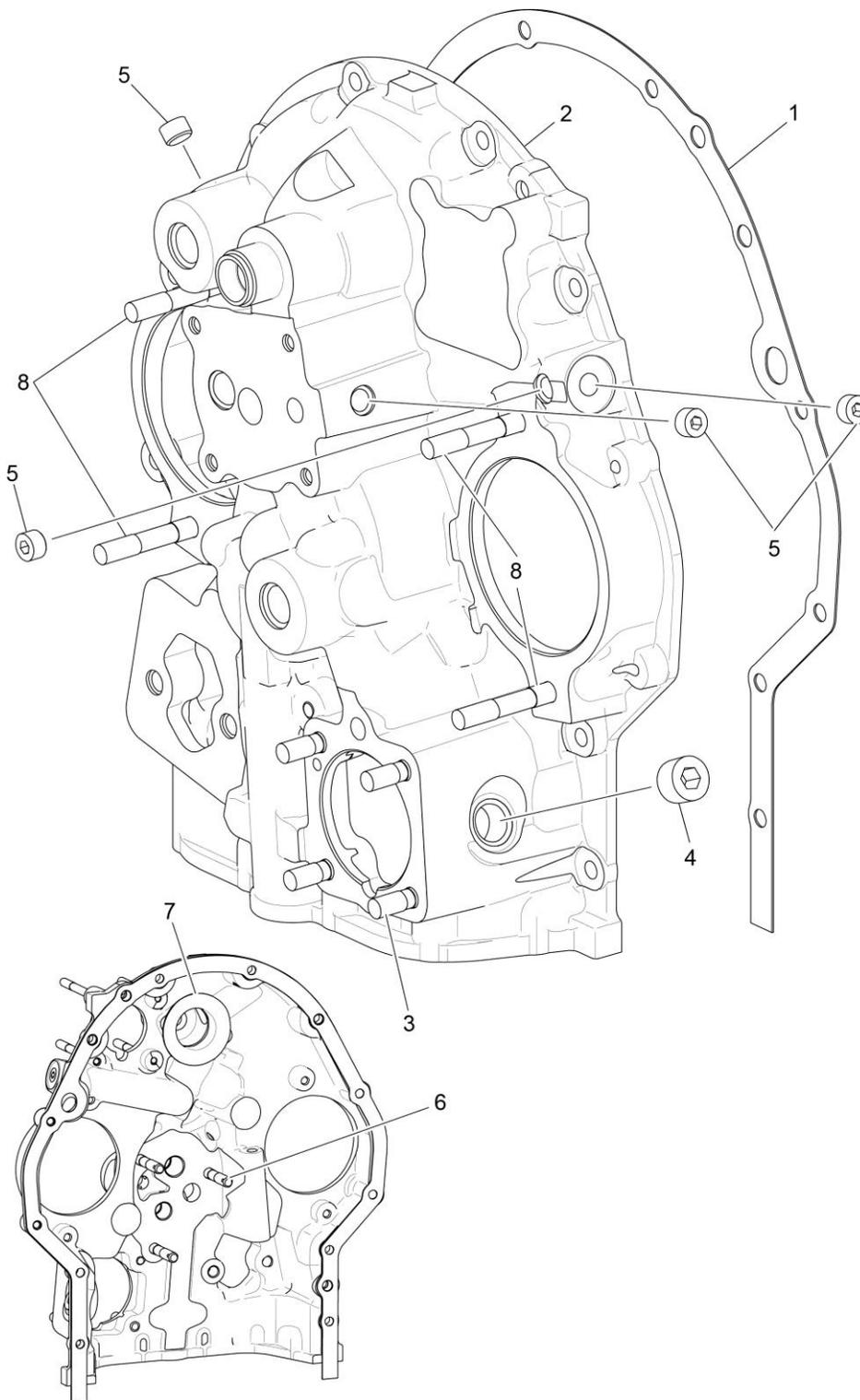


Figure 15
Accessory Housing Assembly

ACCESSORY DRIVES**Figure 15 - Accessory Housing Assembly**

Figure Item	Code	Part Number	Description	Units per Assembly
1		73818	GASKET, Accessory housing	1
2		21A21537-05	ACCESSORY HOUSING ASSEMBLY, Studding	1
3		31C-12	STUD, 5/16-18 x 1-1/2 long	4
4		STD-784	PLUG, 3/8-18 NPT, Allen head	1
5		1102	PLUG, 1/8 pipe	4
6		31CD-17	STUD, 5/16-18 x 2-1/8 long drilled	3
7		76119	SHIELD, Accessory breather oil	1
8		31C-19	STUD, 5/16-18 x 2.38 long	4

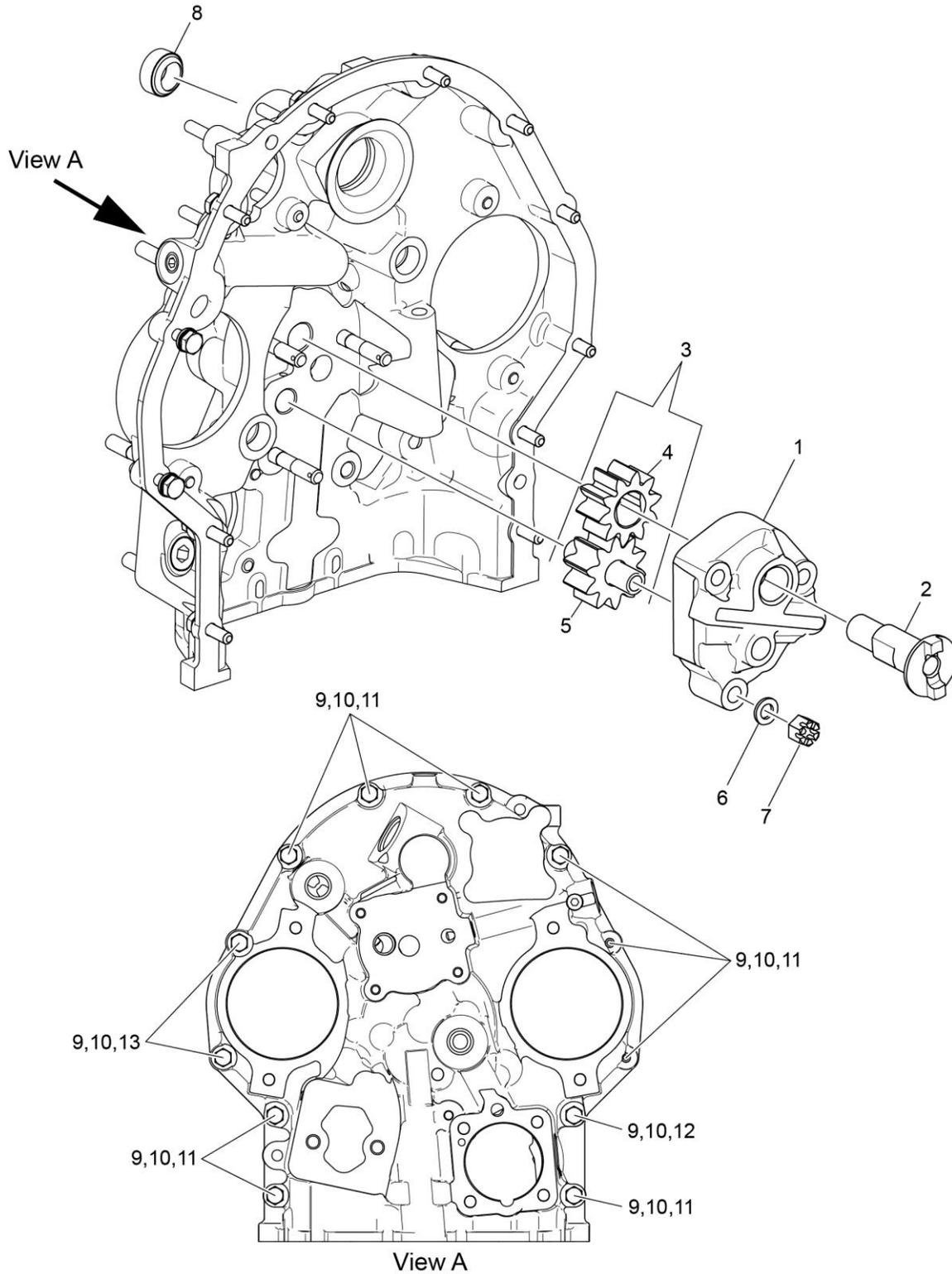


Figure 16
Oil Pump Assembly and Accessory Housing Attaching Parts

ACCESSORY DRIVES**Figure 16 - Oil Pump Assembly and Accessory Housing Attaching Parts**

Figure Item	Code	Part Number	Description	Units per Assembly
1		78531	BODY ASSEMBLY, Oil pump	1
2		61174	SHAFT, Oil pump drive	1
3		05K19423-S	IMPELLER KIT	1
4	❖	LW-18109	IMPELLER, Oil pump, driving	1
5	❖	LW-18110	IMPELLER ASSEMBLY, Oil pump, driven	1
6		STD-35	WASHER, 5/16 plain	3
7		STD-1420	NUT, 5/16-18 slotted	3
8		LW-14260	SEAL, Tachometer drive, oil	1
9		STD-8	WASHER, 1/4 plain	12
10		STD-160	WASHER, 1/4 lock, internal teeth	12
11		LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. head	9
12		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	1
13		LW-25-1.44	BOLT, 1/4-20 x 1-7/16 long, hex. head	2
❖ To ensure impellers are replaced together, oil pump impellers available in kit form only.				

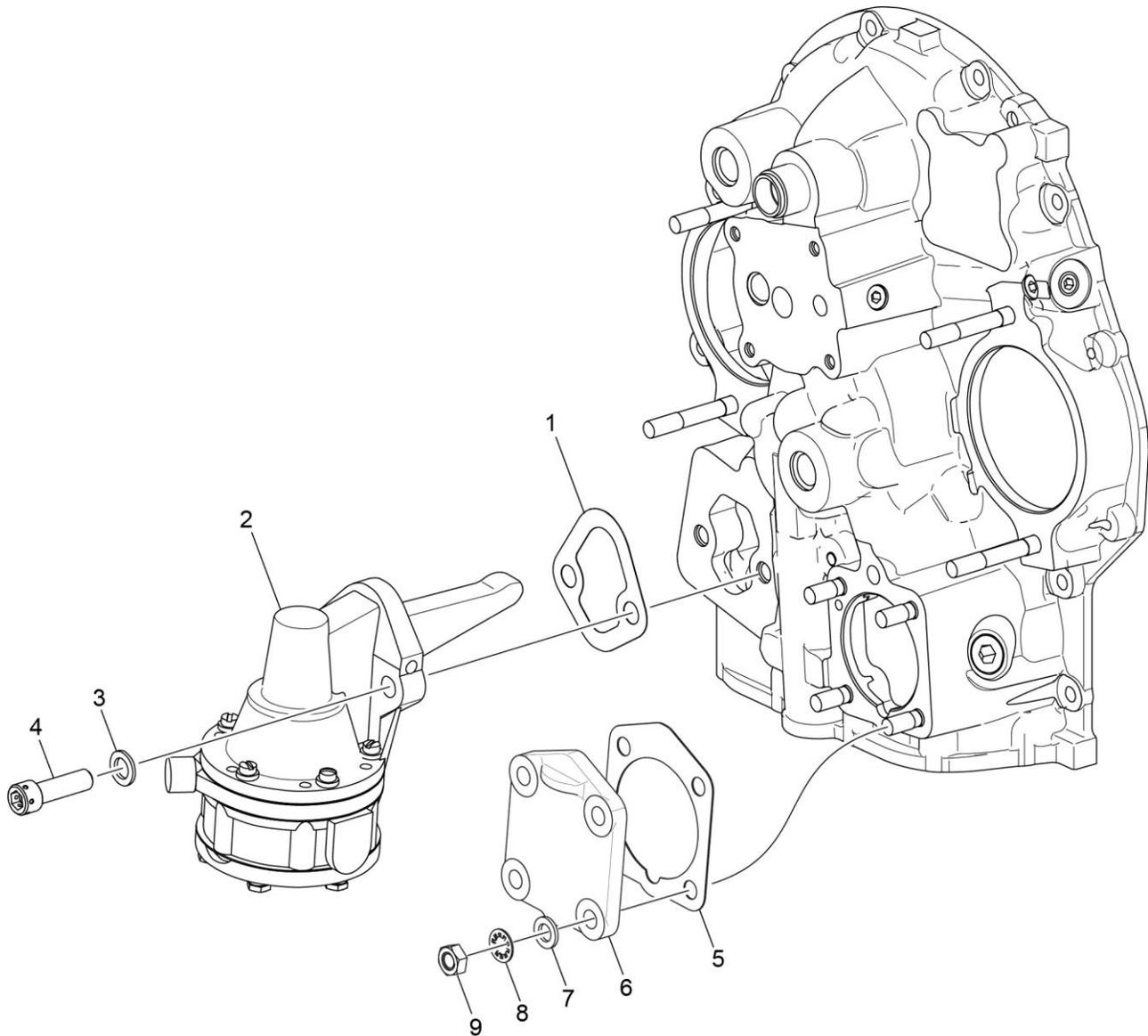


Figure 17
Fuel Pump Assembly, Governor Drive Cover and Attaching Parts

ACCESSORY DRIVES**Figure 17 - Fuel Pump Assembly, Governor Drive Cover, and Attaching Parts**

Figure Item	Code	Part Number	Description	Units per Assembly
1		60096	GASKET, Fuel pump	1
2		62B26931	FUEL PUMP, (High Pressure)	1
3		STD-33	WASHER, 3/8 plain	2
4		STD-1882	SCREW, 3/8-16 x 1-9/32 long, socket dr.	2
5		69551	GASKET, Accessory drive adapter	1
6		69106	COVER, Governor drive adapter pad	1
7		STD-35	WASHER, 5/16 plain	4
8		STD-475	WASHER, 5/16 lock, internal teeth	4
9		STD-1410	NUT, 5/16-18 plain	4

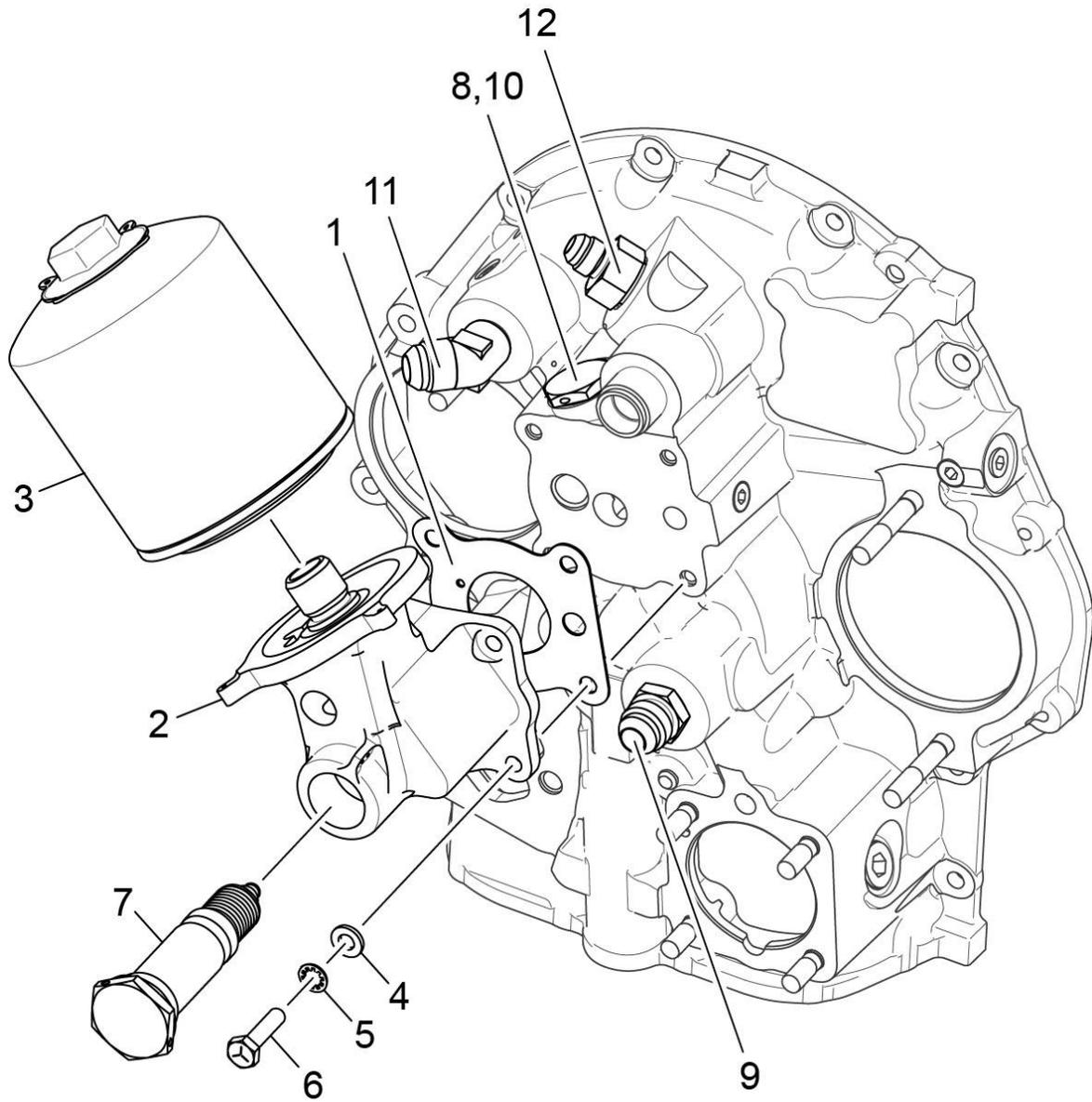


Figure 18
Oil Filter Assembly, Oil Cooler Bypass Valve, and Fittings

ACCESSORY DRIVES**Figure 18 - Oil Filter Assembly, Oil Cooler Bypass Valve, and Fittings**

Figure Item	Code	Part Number	Description	Units per Assembly
1		61173	GASKET, Oil filter adapter	2
2		54B28395	OIL FILTER BASE ASSEMBLY, adapter	1
3		54D28353	OIL FILTER, Short, internal bypass (Spin on) CH48108-1	1
4		STD-8	WASHER, 1/4 plain	4
5		STD-160	WASHER, 1/4 lock, internal teeth	4
6		LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. head	4
7		53E22144	VALVE ASSEMBLY, Temp. control, oil cooler bypass	1
8		06E19769-0.63	GASKET, Annular, 5/8 I.D.	1
9		AN816-8D	NIPPLE, 3/8 ANPT to 1/2 tube	1
10		62417	PLUG, Oil cooler bypass	1
11		MS20823-8D	ELBOW, 3/8 NPT, 1/2 flared tube	1
12		AN816-6-8D	NIPPLE, 1/2 ANPT to 3/8 tube	1

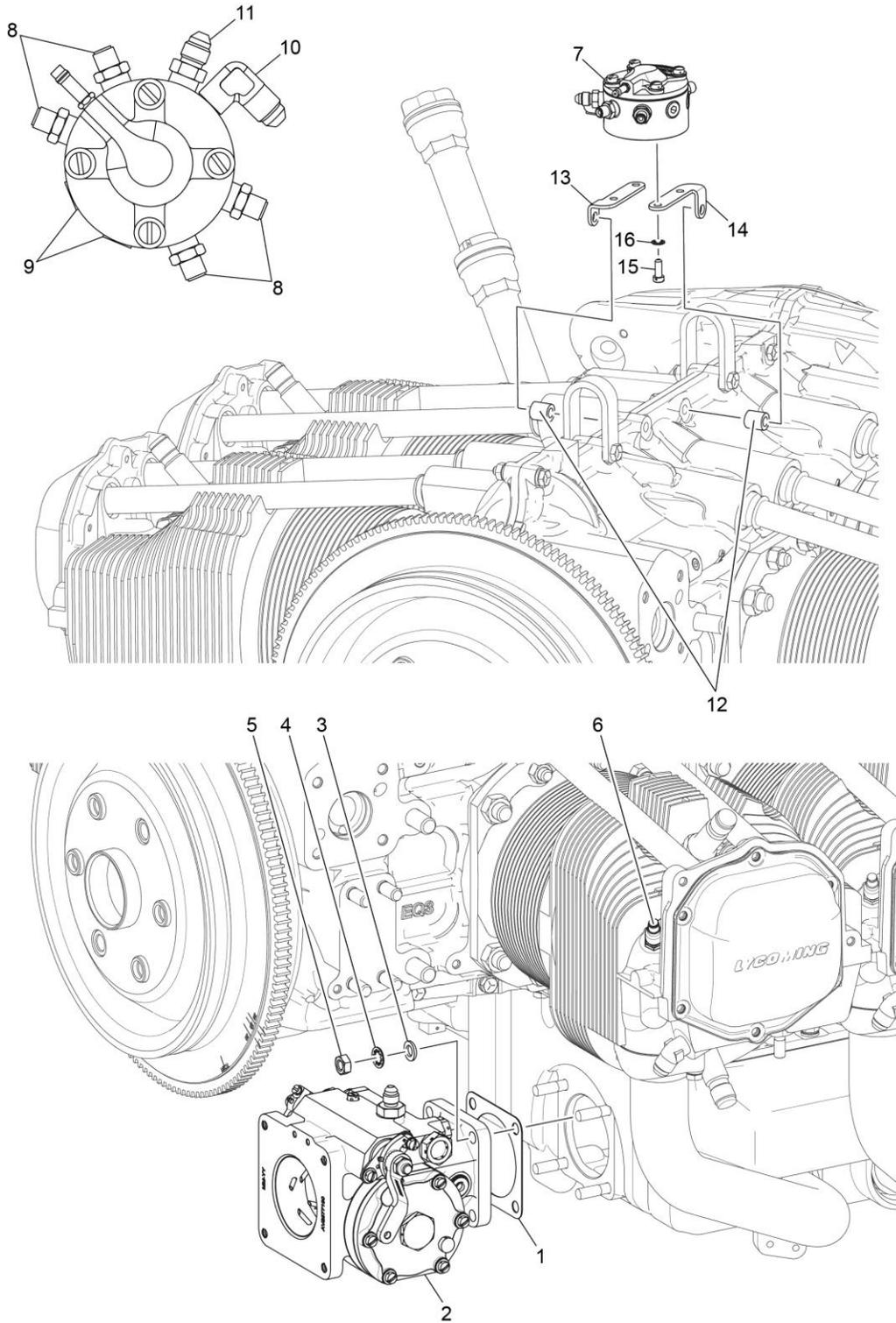


Figure 19
Fuel Injector, Fuel Manifold, and Injection Nozzles

FUEL DISTRIBUTION**Figure 19 - Fuel Injector, Fuel Manifold, and Injection Nozzles**

Figure Item	Code	Part Number	Description	Units per Assembly
1		66224	GASKET, Carburetor	2
2		61J26423	FUEL INJECTOR, RSA-5AD1 AV2576568-1	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		63C26450	NOZZLE, Injection, low (AV2524864-2), One groove on jet OD	4
7		63B28106	MANIFOLD ASSEMBLY, Fuel	1
8		STD-148	NIPPLE, Union, 1/8 NPT	4
9		1102	PLUG, 1/8-27 NPT, Allen head	2
10		MS20822-4	ELBOW, 0.125 NPT to 0.250 tube 90 deg	1
11		02G21382	NIPPLE, nozzle pressure gage	1
12		73966	SPACER, Fuel manifold bracket	2
13		07A23031	BRACKET, Fuel manifold	1
14		07A23032	BRACKET, Fuel manifold	1
15		STD-82	SCREW, No.10-24 x 1/2 long, fill. head	4
16		STD-251	WASHER, No.10, internal lock	4

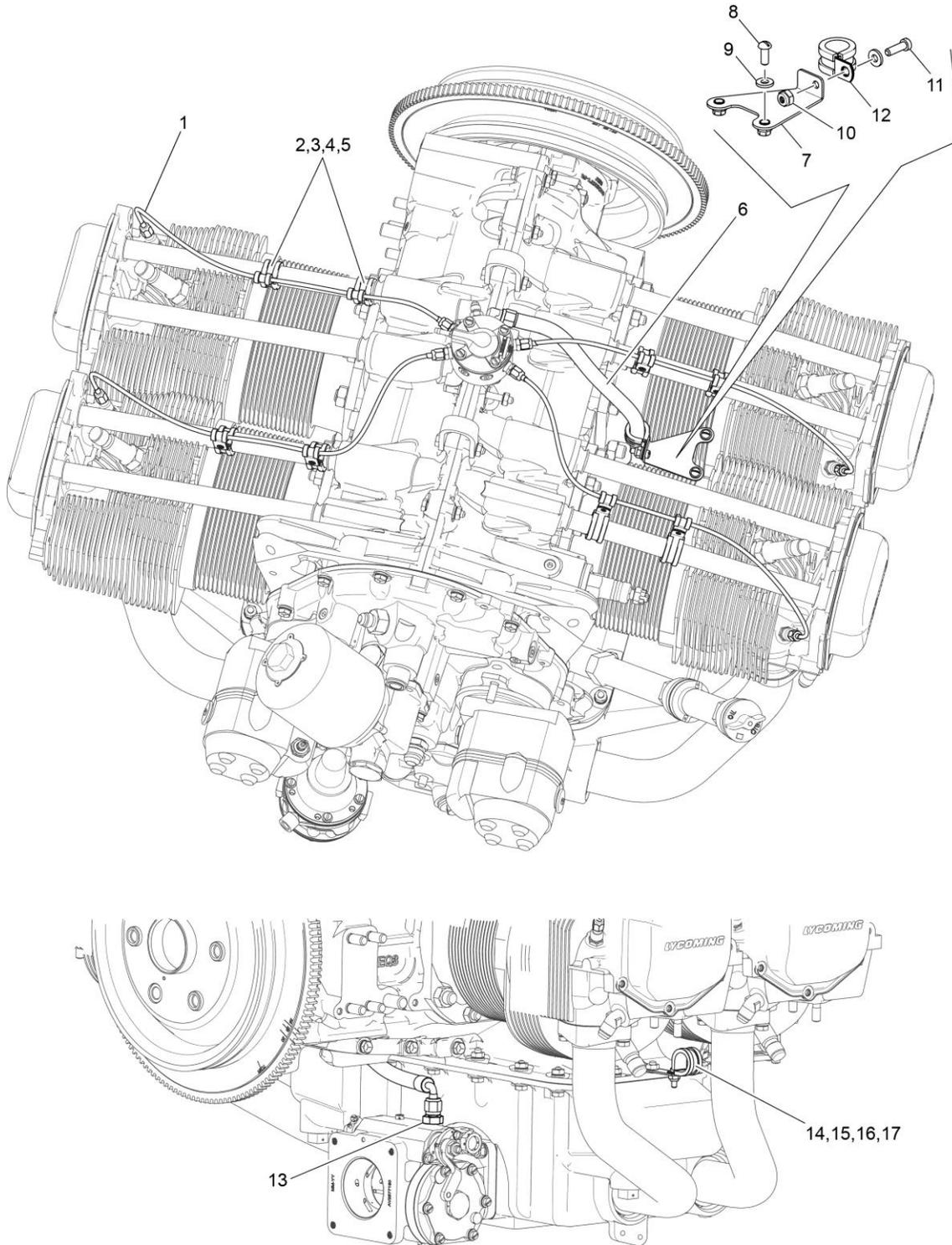
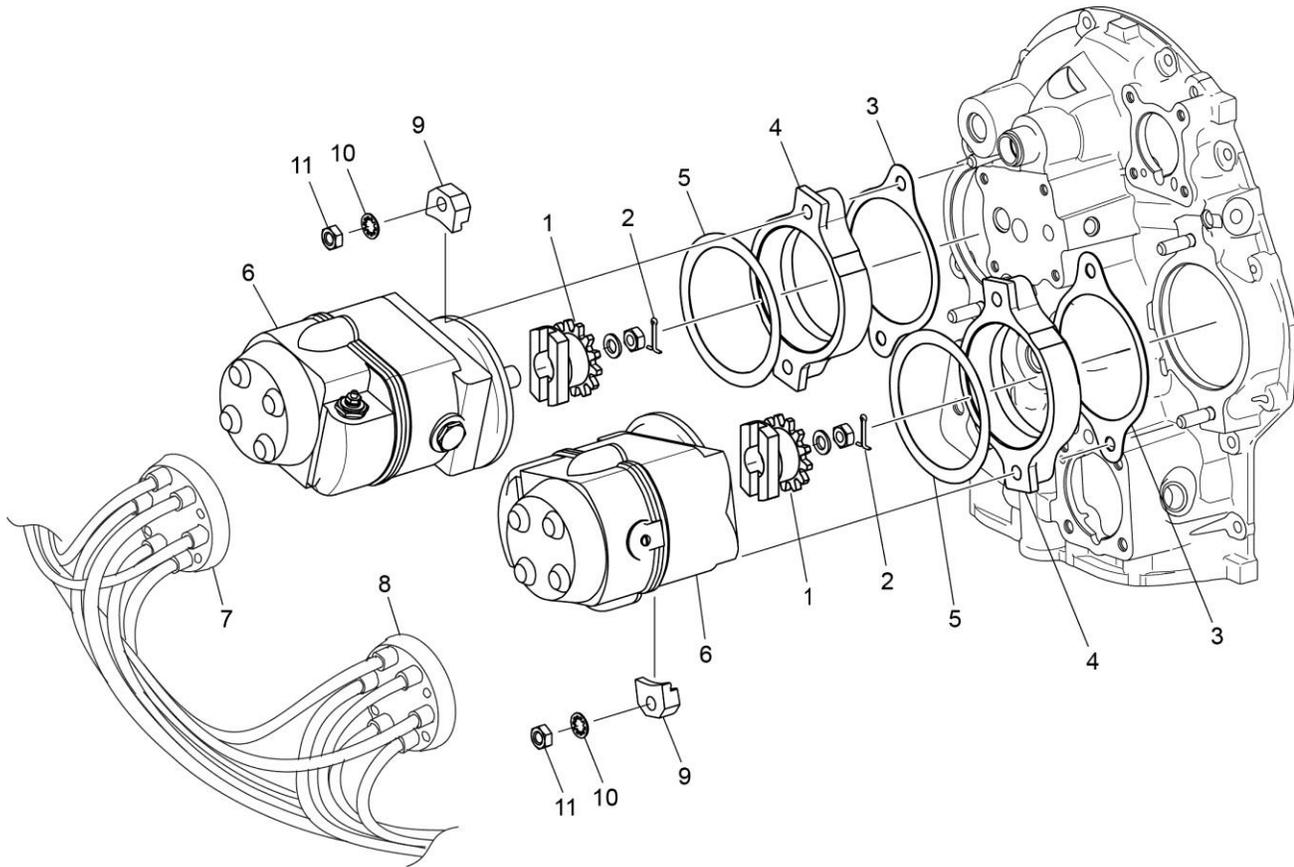


Figure 20
Fuel Lines and Attaching Parts

FUEL DISTRIBUTION**Figure 20 - Fuel Lines and Attaching Parts**

Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-12098-0-180	TUBE ASSEMBLY, Fuel	4
2		LW-16266-10-75	CLAMP, 3/4 ID x No. 10 screw	8
3		LW-16266-10-13	CLAMP, 1/8 diameter for No.10 screw	8
4		STD-860	SCREW, No. 10-32 x 5/8 long, fill. head	8
5		STD-670	LOCK NUT, No. 10-32	8
6		LW-12876-4S224	HOSE ASSEMBLY, 1/4 hose, 90° elbow	1
7		07A28507	BRACKET ASSEMBLY, Fuel line support	1
8		STD-692	SCREW, No. 10-32 x 1/2 long, round head	2
9		STD-425	WASHER, No. 10 plain	3
10		STD-670	LOCK NUT, No. 10-32	1
11		STD-860	SCREW, No. 10-32 x 5/8 long, fill. head	1
12		LW-16266-25-63	CLAMP, 0.63 I.D. X 0.250 dia screw	1
13		75739	NIPPLE, 3/8 flared tube, 9/16-18	1
14		73152	BRACKET, Support clamp	1
15		LW-16266-10-75	CLAMP, 3/4 ID x No. 10 screw	1
16		STD-860	SCREW, No. 10-32 x 5/8 long, fill. head	1
17		STD-670	LOCK NUT, No. 10-32	1



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	SET OF 2 PLATES, spark plug cable-2 wire	2

Figure 21
Magnetos, Magneto Drives and Harnesses

DISTRIBUTION**Figure 21 - Magnetos, Magneto Drives and Harnesses**

Figure Item	Code	Part Number	Description	Units per Assembly
1		61665	GEAR, Magneto impulse coupling	2
2		MS9245-44	PIN, 3/32 diameter x 5/8 long, cotter style D	2
3		62224	GASKET, Magneto adapter	2
4		LW-12706	Adapter, Magneto Imp coupling	2
5		LW-12681	GASKET, Magneto	2
6		66GC20SFNN	MAGNETO, Impulse 4371	2
7	V	67P20407	HARNESS ASSEMBLY, Slick, Left, V M1795	1
8	V	67P20406	HARNESS ASSEMBLY, Slick, Right, V M2992	1
9		66M21195	CLAMP, Magneto M3741	4
10		STD-475	WASHER, 5/16 lock, internal teeth	4
11		STD-1410	NUT, 5/16-18 plain	4
		01P19762-1-43	BAG, Harness attaching	1
V Vendor Prime Manufacturer part				

This page intentionally left blank

Service Kit Section**Seal and Gasket Set**

PART NO.	PART NAME	Qty.
05K28420	KIT - SEAL AND GASKET SET	1
AN901-8A	GASKET, Metal tube connect seal	1
LW-12272	LOCKPLATE, Shroud tube	4
LW-12681	GASKET, Magneto	2
06B23862	GASKET, Oil filter adapter	1
LW-13353	GASKET, Oil sump	1
LW-13792	SEAL, Crankshaft, oil	1
LW-14995	SPRING, Shroud tube	4
LW-18639	LOCKPLATE, Crankshaft gear	1
STD-475	WASHER, 5/16 lock, internal teeth	24
STD-713	COTTER PIN, 3/32 diameter x 3/4 long	2
06A23493	SEAL, Shroud tube	8
06B26669	GASKET, Rocker box cover	4
06E19769-0.63	GASKET, Annular, 5/8 I.D.	2
06E19769-1.00	GASKET, Annular, 1.00 I.D.	1
06E19769-1.25	GASKET, 1-1/4 I.D. x 1-1/2 O.D. x 3/32 annular	1
60096	GASKET, Fuel pump	1
66224	GASKET, Carburetor	2
70310	SEAL, Shroud tube	8
70455	GASKET, 25/32 I.D. x 1-1/8 O.D. x 1/32 thick	1
71481	RING, Oil seal, 4-27/32 ID x 3/32 diameter section	4
71973	GASKET, 2 bolt flange, 1-3/4 I.D.	4
72053	GASKET, Governor	2
72059	GASKET, Oil level gage	1
72075	SEAL, Oil, 3/32 section x 7/16 I.D.	6
72091	RING, Oil seal, 0.36 ID x 0.10 diameter	2
72220	GASKET, Oil level gage	1
73818	GASKET, Accessory housing	1
74065	RING, Oil level gage seal	1
77504	GASKET, Fuel injector	1
77611	GASKET, Exhaust flange	4
77569	RING, Seal, intake pipe	4
MS16625-1125	RING, Internal retaining, 1-1/4 diameter	2
MS9245-44	PIN, 3/32 diameter x 5/8 long, cotter style D	2

Cylinder, Piston and Ring Assembly

PART NO.	PART NAME	Qty.
05K21104	KIT – CYLINDER, PISTON AND RING ASSEMBLY	1
LW-12427	CYLINDER AND HEAD ASSEMBLY	1
14D23912	PISTON	1
74241	RING, Piston, compression	2
14H21950	RING, Piston, oil regulating	1
LW-14078	PIN, Piston	1
71481	RING, Oil seal	1
LW-18661	SEAL, Shroud tube	2
70310	SEAL, Shroud tube	2
06A23493	SEAL, Shroud tube	2
75906	GASKET, Rocker box cover	1
72198	PLUG, Piston pin	2
77611	GASKET, Exhaust flange	1
71973	GASKET, 2 bolt	1
LW-12272	LOCKPLATE, Shroud tube	1
1102	PLUG, 1/8 pipe	2
SSP-115	STICKER	1
SSP-299	TAG	1

Numerical Index

Part No.	Part Name	Page No.	Part No.	Part Name	Page No.
01L21418	WASHER	1	16R22291-P30	GUIDE	15
01L23459	WASHER	17	17A23938	VALVE	17
01P19762-1-43	BAG	41	17A23938	VALVE	44
02G21382	NIPPLE	37	17B23936	VALVE	17
05K19423-S	IMPELLER KIT	31	17B23936	VALVE	44
05K21104	KIT	44	17C19386	CAP	17
05K28420	KIT	43	17C19386	CAP	44
06A23493	SEAL	17	17C21191	KEY	17
06A23493	SEAL	43	17C21191	KEY	44
06A23493	SEAL	44	17F19357	ROCKER ASSY.	19
06B23862	GASKET	43	18A26093	BEARING	5
06B26669	GASKET	21	18D26098	BEARING	5
06B26669	GASKET	43	18M26105	BEARING	13
06E19769-0.63	GASKET	35	21A21537-05	ACCY HSG ASSY	29
06E19769-0.63	GASKET	43	23D26777	PLUNGER	9
06E19769-1.00	GASKET	27	25C-8	STUD	15
06E19769-1.00	GASKET	43	25C-8	STUD	44
06E19769-1.25	GASKET	5	31C-12	STUD	3
06E19769-1.25	GASKET	43	31C-12	STUD	15
07A23031	BRACKET	37	31C-12	STUD	29
07A23032	BRACKET	37	31C-12	STUD	44
07A28507	BRACKET ASSY.	39	31C-13	STUD	3
1028-B	BALL	5	31C-14	STUD	27
1102	PLUG	3	31C-17	STUD	3
1102	PLUG	15	31C-19	STUD	29
1102	PLUG	27	31CD-17	STUD	29
1102	PLUG	29	38-13	STUD	3
1102	PLUG	37	38-22	STUD	3
1102	PLUG	44	383-B	NUT	19
1182-B7	SPARK PLUG	15	38D-17	STUD	3
11B19524-5	CRANKCASE ASSY	3	42E22611	PIPE	23
13B47146	CRSHFT & BUSH ASY	7	42E22612	PIPE	23
13S19646	GEAR	7	42E22613	PIPE	23
14D23912	PISTON	13	42E22614	PIPE	23
14D23912	PISTON	44	50-15	STUD	3
14H21950	RING	13	53E22144	VALVE ASSY.	35
14H21950	RING	44	54B28395	OIL FILT BASE ASSY	35
15B21319	SOCKET	17	54D28353	OIL FILTER	35
15B26066	PLUNGER ASSY.	17	60009	KEY	17
15F19957-28	ROD ASSY.	17	60009	KEY	44
15F19957-29	ROD ASSY.	17	60096	GASKET	33
15F19957-30	ROD ASSY.	17	60096	GASKET	43
15F19957-31	ROD ASSY.	17	60803	STRAP	11
15F19957-32	ROD ASSY.	17	61084	SPRING	5
15F19957-33	ROD ASSY.	17	61173	GASKET	35
15F19957-34	ROD ASSY.	17	61174	SHAFT	31
15G23461	SHROUD TUBE ASSY	17	61247	COVER	21
15M23456	CAMSHAFT ASSY.	9	61400	STUD	27
16R22126	GUIDE	44	61510	PLUG	7

Part No.	Part Name	Page No.
61665	GEAR	41
61681-P30	GUIDE	15
61J26423	FUEL INJECTOR	33
62224	GASKET	41
62417	PLUG	35
62B26931	FUEL PUMP	33
63B28106	MANIFOLD ASSY.	37
63C26450	NOZZLE	37
65441	SEAT	17
65441	SEAT	44
66224	GASKET	37
66224	GASKET	43
66610	BUSHING	15
66796	INSERT	44
66796-P10	INSERT	11
66GC20SFNN	MAGNETO	41
66M21195	CLAMP	41
67P20406	HARNESS ASSY.	41
67P20407	HARNESS ASSY.	41
68668	SPRING	5
68759	TUBE ASSY.	21
68760	TUBE ASSY.	21
68761	TUBE ASSY.	21
69106	COVER	33
69551	GASKET	33
70310	SEAL	17
70310	SEAL	43
70310	SEAL	44
70455	GASKET	1
70455	GASKET	43
70484	SCREEN	27
71032	BUSHING	3
71195	CONTAINER	44
71481	RING	19
71481	RING	43
71481	RING	44
71610	HOOK	21
71611	RETAINER	21
71973	GASKET	23
71973	GASKET	43
71973	GASKET	44
72053	GASKET	1
72053	GASKET	43
72057	SEAT	44
72057-P20	SEAT	15
72058	SEAT	44
72058-P20	SEAT	15
72059	GASKET	25
72059	GASKET	43
72075	SEAL	5
72075	SEAL	43

Part No.	Part Name	Page No.
72091	RING	5
72091	RING	43
72155-S	BUSHING	7
72158	BUSHING	3
72198	PLUG	13
72198	PLUG	44
72220	GASKET	43
72378	COVER	1
72566	GEAR	7
73152	BRACKET	39
73249	WASHER	1
73250	WASHER	1
73251	WASHER	1
73252	WASHER	1
73818	GASKET	29
73818	GASKET	43
73966	SPACER	37
74065	RING	25
74065	RING	43
74241	RING	13
74241	RING	44
74637	BUSHING	19
74887	SPACER	19
74996	GEAR ASSY.	9
75061	BOLT	13
75072	GEAR ASSY.	9
75154	STUD	3
75339	BAFFLE ASSY.	21
75656-S	BUSHING	7
75657-S	BUSHING	7
75739	NIPPLE	39
75767	TUBE	25
75906	GASKET	44
76118	SPACER	9
76119	SHIELD	29
76121	SHAFT ASSY	9
76220	STUD	11
76943	GUIDE	44
77467	SPRING	5
77504	GASKET	43
77569	RING	23
77569	RING	43
77611	GASKET	15
77611	GASKET	43
77611	GASKET	44
77808	VALVE ASSY.	5
77872	BUSHING	1
77874	GEAR ASSY.	1
77875	GEAR	1
78531	BODY ASSY.	31
AN4076-1	FITTING	15

Numerical Index

Page 46
July 2017

Effectivity: IO-360-P1A Engine
Copyright, Lycoming Engines

Lycoming Engines is a division of Avco Corporation

Part No.	Part Name	Page No.
AN565B1032H5	SET SCREW	1
AN6-34A	BOLT	11
AN816-6-8D	NIPPLE	35
AN816-8	NIPPLE	35
AN901-8A	GASKET	43
AN960-616L	WASHER	11
LRT23381	BODY ASSY.	5
LW-10077	SEAT	17
LW-10077	SEAT	44
LW-11713	SPRING	5
LW-11750-S	CONN. ROD ASSY.	13
LW-11795	SPRING	17
LW-11795	SPRING	44
LW-11800	SPRING	17
LW-11800	SPRING	44
LW-12098-0-180	TUBE ASSY.	39
LW-12186	NUT	13
LW-12272	LOCKPLATE	17
LW-12272	LOCKPLATE	43
LW-12272	LOCKPLATE	44
LW-12427	CYLINDER ASSY.	15
LW-12427	CYL & HEAD ASSY	44
LW-12545	PLUG	27
LW-12681	GASKET	41
LW-12681	GASKET	43
LW-12706	ADAPTER	41
LW-12876-4S224	HOSE	39
LW-12892	THRUST BUTTON	19
LW-13323	SEAT	17
LW-13323	SEAT	44
LW-13353	GASKET	27
LW-13353	GASKET	43
LW-13389	BAFFLE ASSY.	21
LW-13790	SHAFT	19
LW-13792	SEAL	5
LW-13792	SEAL	43
LW-13793	STUD	3
LW-13796	SHAFT	9
LW-13864	SUMP ASSY.	27
LW-13896	PLUG	1
LW-13923	BUSHING	9
LW-14021	SHAFT	1
LW-14078	PIN	13
LW-14078	PIN	44
LW-14260	SEAL	31
LW-14769	GAGE ASSEMBLY	25
LW-14995	SPRING	17
LW-14995	SPRING	43
LW-15592-5-05	CLAMP	21
LW-16266-10-13	CLAMP	39
LW-16266-10-75	CLAMP	39

Part No.	Part Name	Page No.
LW-16266-25-63	CLAMP	39
LW-16471	SUPPORT ASSY	3
LW-16475	SEAT	17
LW-16475	SEAT	44
LW-18085	SPRING	5
LW-18109	IMPELLER	31
LW-18110	IMPELLER ASSY.	31
LW-18639	LOCKPLATE	7
LW-18639	LOCKPLATE	43
LW-18661	SEAL	44
LW-25-0.94	BOLT	27
LW-25-0.94	BOLT	31
LW-25-1.00	BOLT	35
LW-25-1.13	BOLT	11
LW-25-1.13	BOLT	27
LW-25-1.13	BOLT	31
LW-25-1.25	BOLT	23
LW-25-1.44	BOLT	31
LW-25-1.50	BOLT	11
LW-25-1.75	BOLT	11
LW-25S1.50	BOLT	11
LW-31H0.88	BOLT	9
MS16625-1125	RING	43
MS20822-4	ELBOW	37
MS20823-6D	ELBOW	15
MS20823-6D	ELBOW	44
MS20823-8D	ELBOW	35
MS35489-20X	GROMMET	21
MS9245-44	PIN	41
MS9245-44	PIN	43
SSP-115	STICKER	44
SSP-299	TAG	44
STD-1065	DOWEL	7
STD-1211	PLUG	7
STD-1339	PLUG	3
STD-1353	INSERT	15
STD-1353	INSERT	44
STD-1410	NUT	1
STD-1410	NUT	15
STD-1410	NUT	33
STD-1410	NUT	37
STD-1410	NUT	41
STD-1411	NUT	11
STD-1411	NUT	17
STD-1411	NUT	27
STD-1420	NUT	31
STD-148	NIPPLE	37
STD-160	WASHER	11
STD-160	WASHER	23
STD-160	WASHER	27
STD-160	WASHER	31

Part No.	Part Name	Page No.
STD-160	WASHER	35
STD-1623	INSERT	3
STD-1821	HOSE	21
STD-1882	SCREW	33
STD-1925	SCREW	21
STD-2090	NUT	19
STD-2168	NUT	9
STD-2229	PLUG	27
STD-2231	RING	9
STD-2246	BOLT	7
STD-2249	NUT	11
STD-251	WASHER	37
STD-33	WASHER	11
STD-33	WASHER	33
STD-35	WASHER	1
STD-35	WASHER	15
STD-35	WASHER	31
STD-35	WASHER	33
STD-35	WASHER	37
STD-425	WASHER	39
STD-475	WASHER	1
STD-475	WASHER	15
STD-475	WASHER	33

Part No.	Part Name	Page No.
STD-475	WASHER	37
STD-475	WASHER	41
STD-475	WASHER	43
STD-514	DOWEL	3
STD-551	PLUG	27
STD-557	DOWEL	3
STD-596	NUT	11
STD-619	WASHER	3
STD-670	LOCK NUT	39
STD-678	WASHER	11
STD-684	NIPPLE	21
STD-692	SCREW	39
STD-713	COTTER PIN	43
STD-784	PLUG	29
STD-8	WASHER	11
STD-8	WASHER	23
STD-8	WASHER	27
STD-8	WASHER	31
STD-8	WASHER	35
STD-82	SCREW	37
STD-860	SCREW	39
STD-872	NUT	11