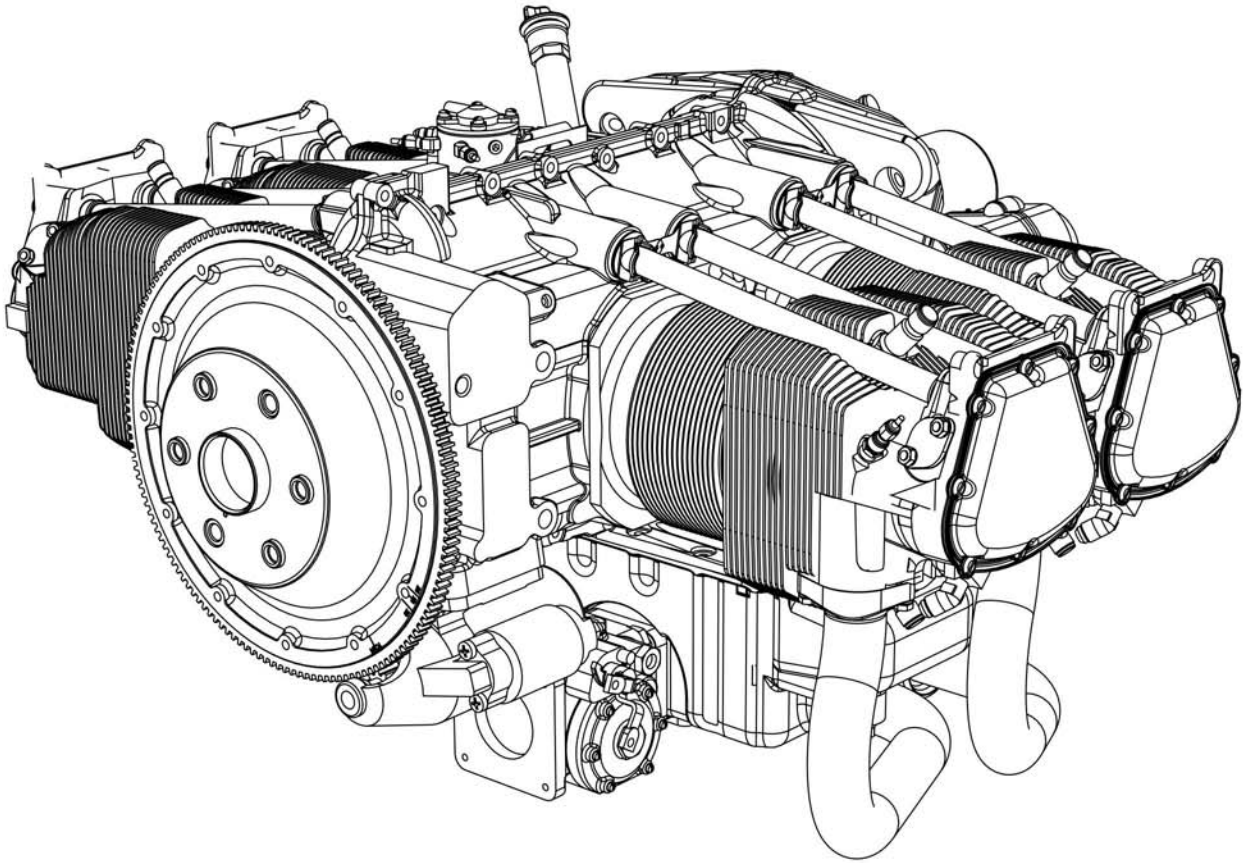


LYCOMING

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Engine Parts Catalog

Y10-390-B Series

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November 2009

Part No. PC-409-2

652 Oliver Street
Williamsport, PA 17701

INTRODUCTION

This illustrated parts catalog contains a complete parts listing for the Lycoming YIO-390-B Series wide cylinder flange crankcase model aircraft engines.

Major assembly and sub-assembly parts of the engine are listed in the Group Assembly sections in the general sequence of engine build-up.

An Oversize and Undersize Parts List are included to aid in ordering parts as necessary during overhaul.

The Numerical Index is provided for convenience in finding parts when only the part number is known.

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

NOTE

This catalog, when used in conjunction with the appropriate overhaul manual, is only to be used for parts identification.

Do not use this catalog as an assembly or installation document.

Any reference in this document to the suppliers/parts manufacturer's product, by name, trademark, part number or other description is solely for the purposes 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.

SERVICE BULLETINS, INSTRUCTIONS AND LETTERS

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. Consult the latest revision of Service Letter No. L114 for subscription information.

HOW TO ORDER PARTS

In ordering parts for your engine, observe the following instructions which will expedite shipment of correct parts required without delay.

- a. Always specify the model and serial number of your engine.
- b. Always specify part number, nomenclature and quantity required.

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OVERSIZE AND UNDERSIZE PARTS LISTING

PART NO.	DESCRIPTION	OVERSIZE (IN.)								UNDERSIZE (IN.)		
		P03 .003	P05 .005	P10 .010	P15 .015	P20 .020	P30 .030	P40 .040	P50 .050	M03 .003	M06 .006	M10 .010
66670	BUSHING		X	X								
LW-11956	GUIDE	X	X									
66796	INSERT	X	X	X								
72155-S	BUSHING		X	X	X	X						
75656-S	BUSHING		X	X	X	X						
75657-S	BUSHING		X	X	X	X						
LW-11958	GUIDE	X	X									
LW-15628	SEAL								X			
72212	SEAT		X	X		X	X					
18E23886	BEARING				X					X*	X*	X*
18M23887	BEARING			X						X♦	X♦	X♦
16T19468	SEAT		X	X		X	X					
18B23885	BEARING				X					X*	X*	X*

* - Also available in P15 oversize.

♦ - Also available in P10 oversize.

NOTE

When ordering oversize and undersize parts, be sure to specify the required oversize and undersize dimension with the proper part number. For example, to order bearing P/N 18E23886 in .003 undersize, order P/N 18E23886-M03. Oversize code letter is "P" while undersize code letter is "M". These letters are then followed by the number designating the size in thousandths of an inch.

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
CRANKCASE ASSEMBLY

FIG. REF. 1	PART NUMBER	DESCRIPTION	QTY.PER ASSY.	
			-B1A6	-B1B6
1	11U20391-1S*	CRANKCASE ASSEMBLY	1	
	11U20392-1S*	CRANKCASE ASSEMBLY		1
2	01A23544	STUD, 1/2-13 x 9-27/32	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	13	13
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	38-22	STUD, 5/8-16 x 2-3/4 long	1	
10	STD-557	DOWEL, 1/2 diameter x 11/16 long, hollow	2	2
11	STD-514	DOWEL, 5/16 diameter x 1/2 long	2	2
12	72158	BUSHING, Governor drive idler shaft	1	1
13	1102	PLUG, 1/8-27 NPT, Allen head	6	5
14	STD-1339	PLUG, 1/6-27 NPT, Allen head		1
15	31C-16	STUD, 5/16-18 x 2.00 long		4
16	12E23021	NOZZLE ASSEMBLY, Piston cooling	4	4

* - These crankcase assemblies are not available as a service item.

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
OIL LEVEL GAGE ASSEMBLY AND CRANKCASE RELATED PARTS

FIG. REF. 2	PART NUMBER	DESCRIPTION	QTY.PER ASSY.	
			-B1A6	-B1B6
1	75736	TUBE, Oil level gage, long	1	1
2	72059	GASKET, Oil level gage	1	1
3	74068	RING, Oil level gage seal	1	1
4	LW-14760	GAGE ASSEMBLY, Oil level	1	1
5	1028-B	BALL, 11/16 diameter	1	1
6	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
7	06E19769-1.25	GASKET, 1-1/4 I.D. x 1-1/2 O.D. x 3/32 annular	1	1
8	77808	VALVE ASSEMBLY, Oil pressure relief valve, adjustable	1	1
9	18E23886	BEARING, Crankshaft	4	4
10	18B23885	BEARING, Crankshaft, front	2	2
11	LW-15628	SEAL, Crankshaft oil	1	1
12	72075	SEAL, Oil, 3/32 section x 7/16 I.D.	2	2
13	72091	RING, Oil seal, 23/64 I.D. x 7/64 diameter	2	2
14	LRT23381	BODY ASSEMBLY, Hydraulic roller tappet	8	8

* - 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.

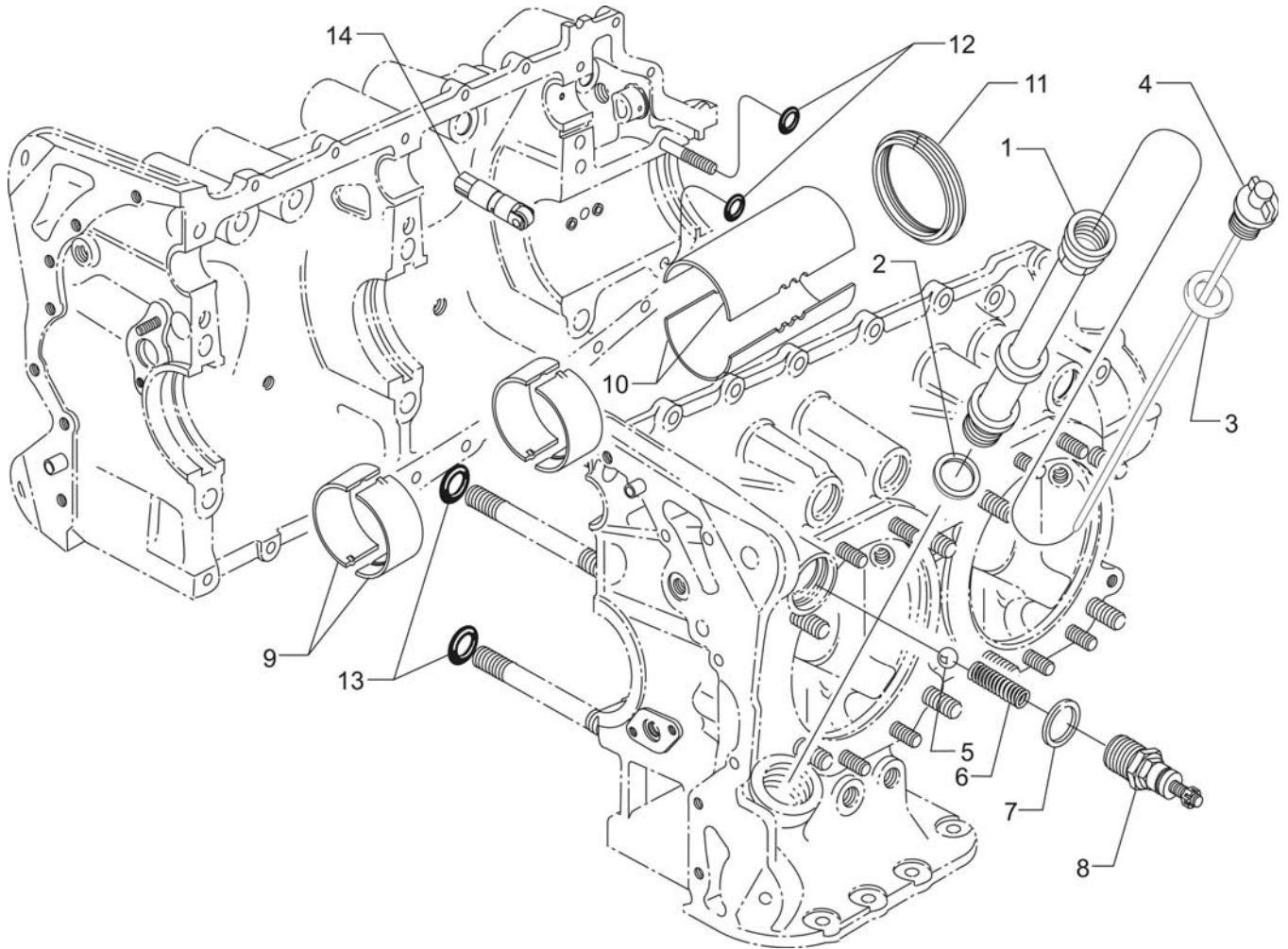


FIGURE 2. OIL LEVEL GAGE ASSEMBLY AND CRANKCASE RELATED PARTS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
CRANKSHAFT AND COUNTERWEIGHT ASSEMBLY AND RELATED PARTS

FIG. REF. 3	PART NUMBER	DESCRIPTION	QTY.PER ASSY.	
			-B1A6	-B1B6
1	13C37318	CRANKSHAFT AND BUSHING ASSEMBLY	1	1
2	74711	PLUG, 1-1/4 O.D.	1	1
3	75656-S	BUSHING, Propeller flange, long	4	4
4	72155-S	BUSHING, Propeller flange, short	1	1
5	75657-S	BUSHING, Propeller flange, indexing	1	1
6	1102	PLUG, 1/8-27 NPT, Allen head	1	1
7	LW-14529	PLUG, 2-1/16 diameter expansion	1	1
8	LW-19227	COUNTERWEIGHT ASSEMBLY	2	2
9	71903-A	BUSHING, Dynamic counterweight	8	8
10	14W21696	ROLLER, Dynamic counterweight, 8 th order	2	2
11	72797	ROLLER, Dynamic counterweight, 6.3 order	2	2
12	LW-14820	RING, Internal retaining	8	8
13	71907	WASHER, Dynamic counterweight	8	8
14	13S19646	GEAR, Crankshaft	1	1
15	LW-18639	LOCKPLATE, Crankshaft gear	1	1
16	STD-2246	BOLT, 5/16-24 x 1.00 long	1	1
17	LW-16471	SUPPORT ASSEMBLY, Starter ring gear, 12/14 pitch	1	1
18	72566	GEAR, Starter ring	1	1

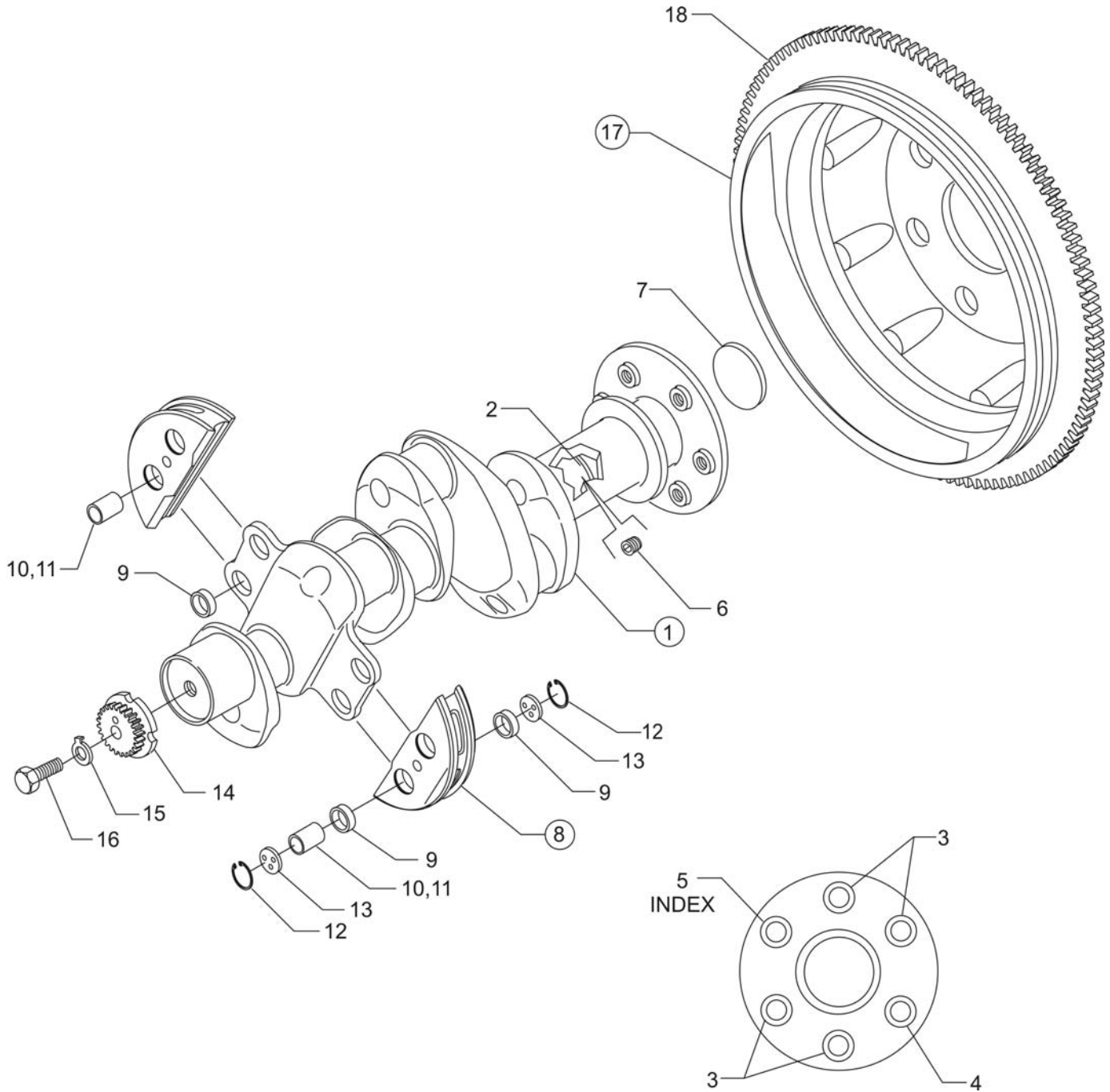


FIGURE 3. CRANKSHAFT AND COUNTERWEIGHT ASSEMBLY AND RELATED PARTS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
CRANKSHAFT IDLER GEARS, TACHOMETER DRIVE AND CAMSHAFT

FIG. REF. 4	PART NUMBER	DESCRIPTION	QTY.PER ASSY.	
			-B1A6	-B1B6
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 2-21/64 long	1	1
8	STD-2231	RING, Internal retaining	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	15M23452	CAMSHAFT ASSEMBLY	1	
	15M23456	CAMSHAFT ASSEMBLY		1
13	76118	SPACER, Tachometer shaft centering	1	1

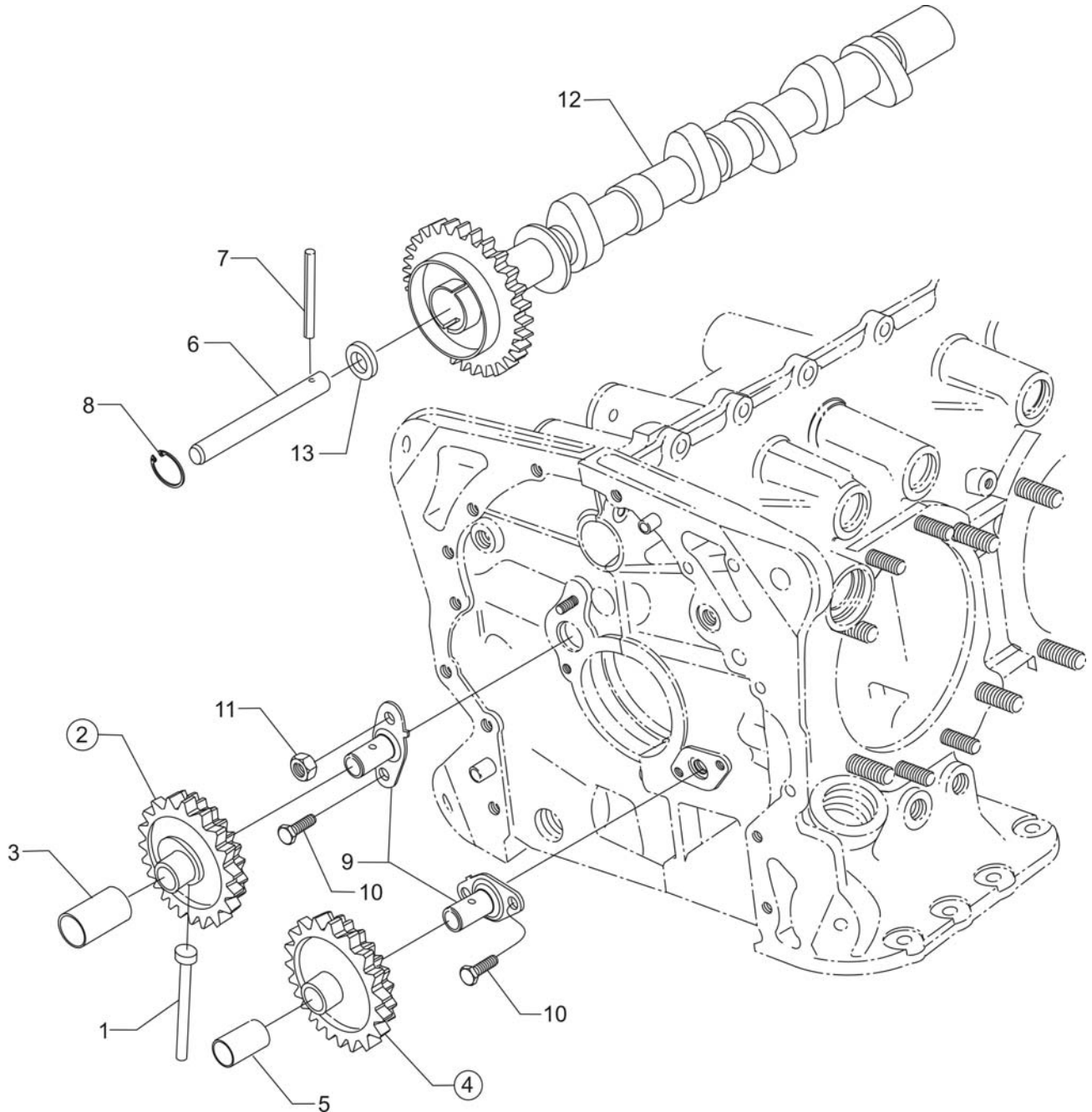


FIGURE 4. CRANKSHAFT IDLER GEARS, TACHOMETER DRIVE AND CAMSHAFT

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
CRANKCASE ATTACHING PARTS

FIG. REF. 5	PART NUMBER	DESCRIPTION	QTY.PER ASSY.	
			-B1A6	-B1B6
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	20	20
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	4	4
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, hex. head, 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, 1/16 thick	1	1
12	AN960-616L	WASHER, 3/8 plain, 1/32 thick	1	1
13	STD-872	NUT, 3/8-24 slotted	1	1
14	AN6-34A	BOLT, 3/8-24 x 3-37/64 long, hex. head	2	1
15	STD-33	WASHER, 3/8 plain	2	2
16	STD-678	WASHER, 3/8 lock, internal teeth	2	2
17	STD-596	NUT, 3/8-24 plain	2	2
18	01A22453	STUD, 1/2-20 x 10-1/2 long	4	
	76220	STUD, 1/2-20 x 10-11/16 long		4

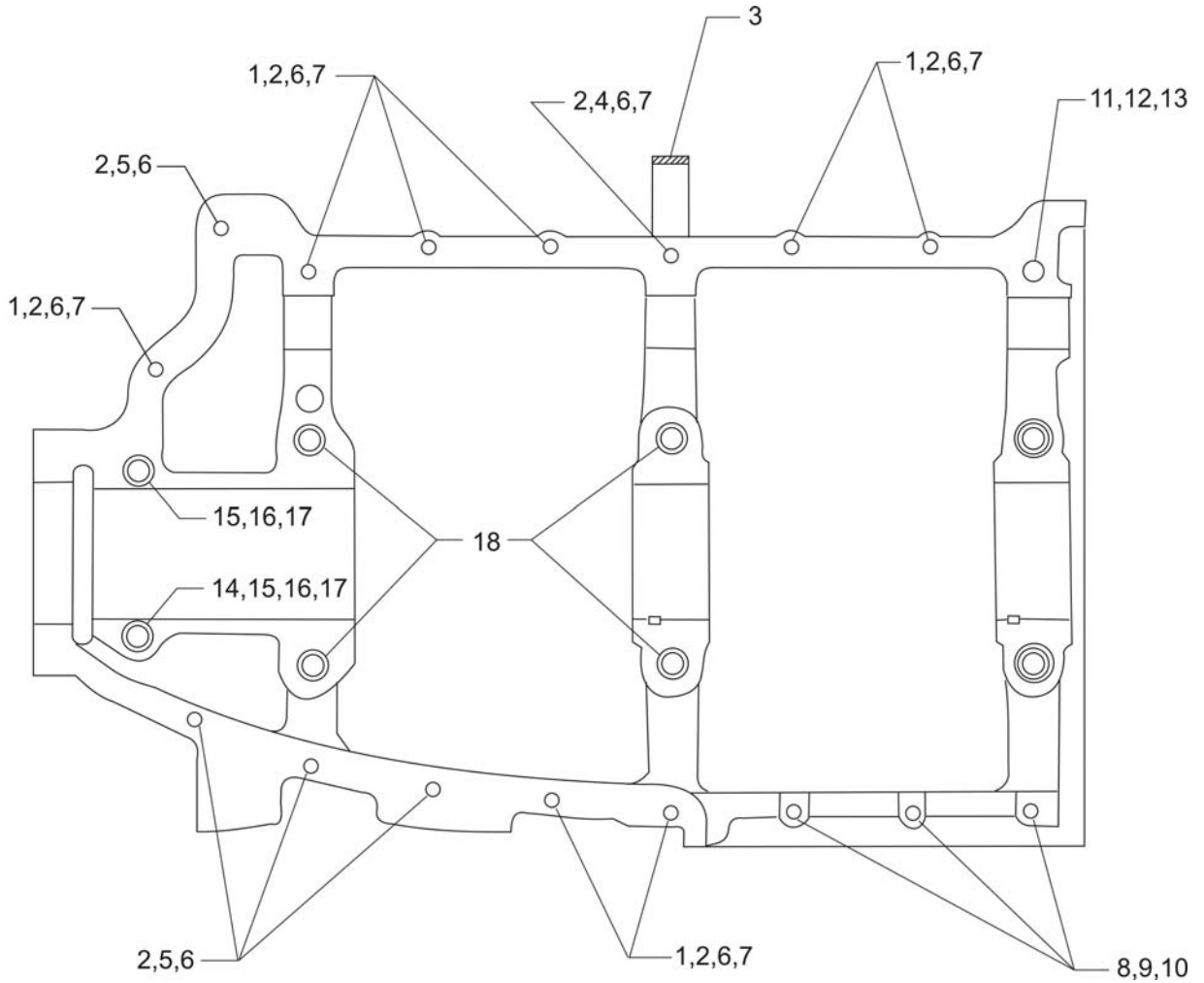


FIGURE 5. CRANKCASE ATTACHING PARTS

ACCESSORY HOUSING AND RELATED PARTS
ACCESSORY HOUSING ASSEMBLY

FIG. REF. 6	PART NUMBER	DESCRIPTION	QTY.PER ASSY.	
			-B1A6	-B1B6
1	73818	GASKET, Accessory housing	1	1
2	21A21533-30	HOUSING ASSEMBLY, Accessory	1	1
3	31C-12	STUD, 5/16-18 x 1-1/2 long	8	8
4	25C-22	STUD, 1/4-20 x 2-3/4 long	4	4
5	31CD-17	STUD, 5/16-18 x 2-1/8 long, drilled	3	3
6	1102	PLUG, 1/8-27 NPT, Allen head	4	4
7	STD-784	PLUG, 3/8-18 NPT, Allen head	1	1

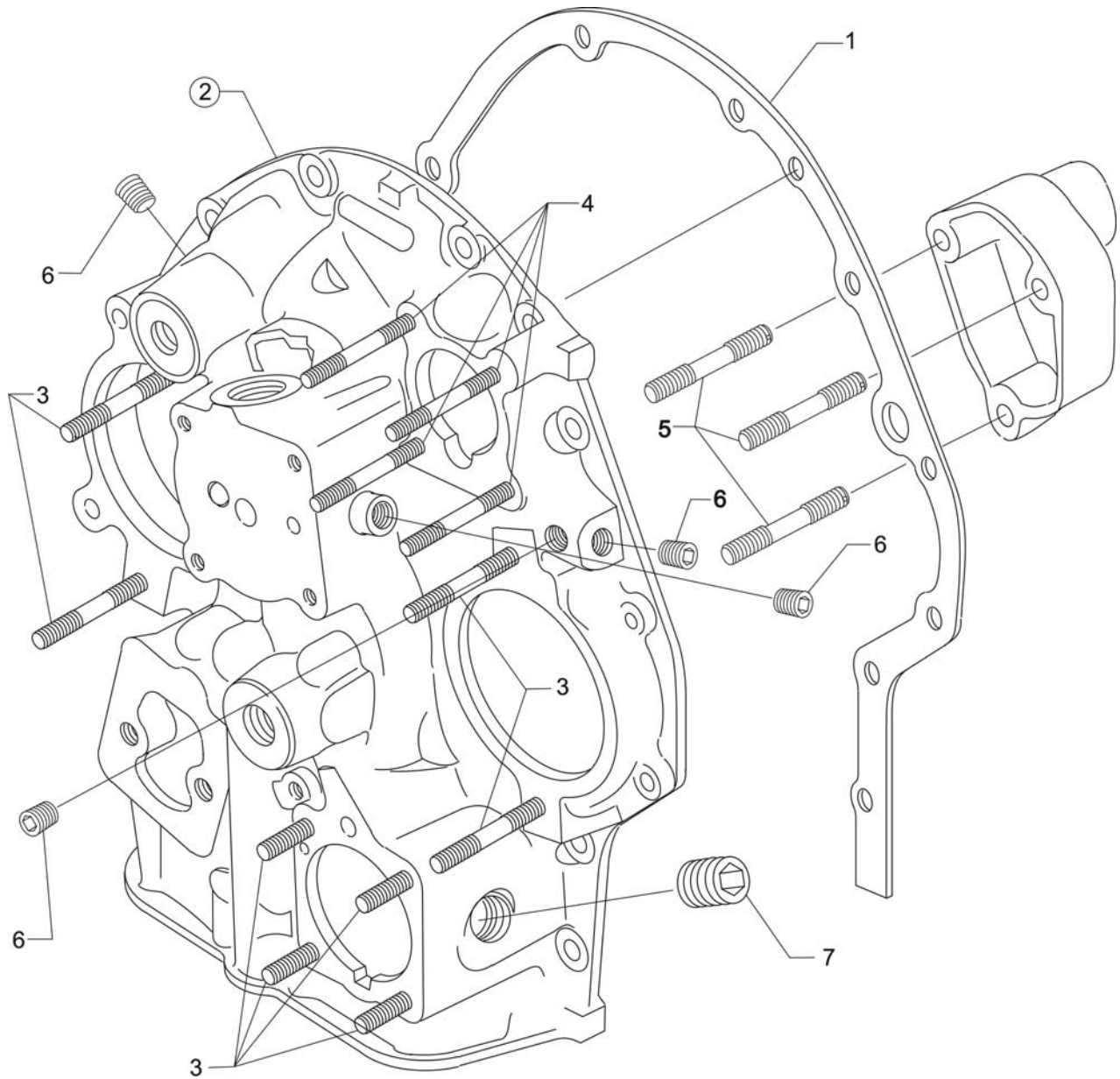


FIGURE 6. ACCESSORY HOUSING ASSEMBLY

ACCESSORY HOUSING AND RELATED PARTS
OIL PUMP AND ACCESSORY HOUSING ATTACHING PARTS

FIG. REF. 7	PART NUMBER	DESCRIPTION	QTY.PER ASSY.	
			-B1A6	-B1B6
1	78531	BODY ASSEMBLY, Oil pump	1	1
2	61174	SHAFT, Oil pump drive	1	1
3	LW-18110*	IMPELLER ASSEMBLY, Oil pump driven	1	1
4	LW-18108	IMPELLER, Oil pump driven	1	1
5	78530	SHAFT, Oil pump drive	1	1
6	LW-18109*	IMPELLER, Oil pump driving	1	1
7	STD-35	WASHER, 5/16 plain	3	3
8	STD-1420	NUT, 5/16-18 slotted	3	3
9	LW-14260	SEAL, Tachometer drive, oil	1	1
10	STD-8	WASHER, 1/4 plain	12	12
11	STD-160	WASHER, 1/4 lock, internal teeth	12	12
12	LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. head	9	9
13	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	1	1
14	LW-25-1.44	BOLT, 1/4-20 x 1-7/16 long, hex. head	2	2

* - Sold in complete sets only (P/N 05K19423-S).

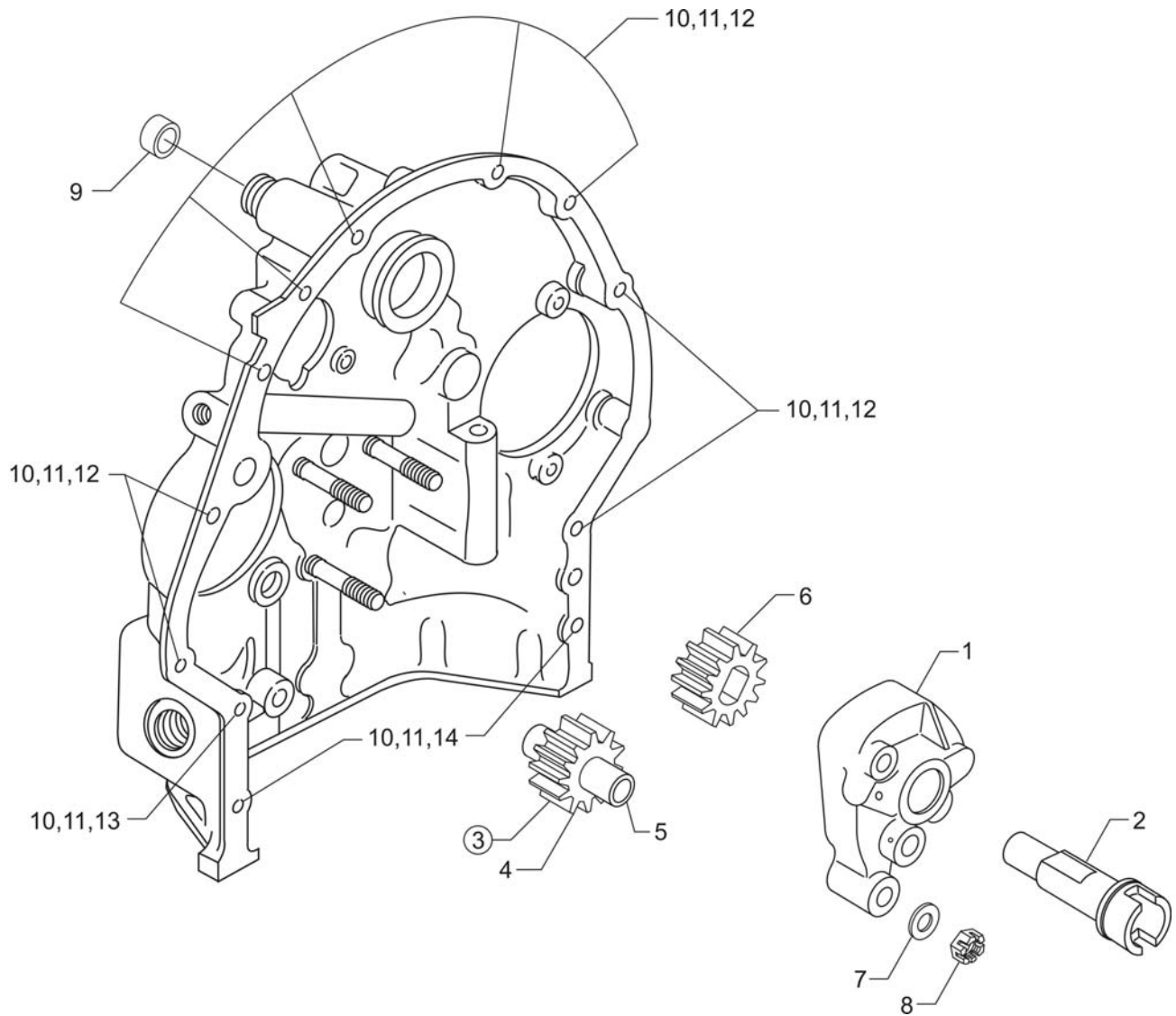


FIGURE 7. OIL PUMP AND ACCESSORY HOUSING ATTACHING PARTS

ACCESSORY HOUSING AND RELATED PARTS
FUEL PUMP, PROPELLER GOVERNOR DRIVES, ADAPTER ASSEMBLY AND COVERS

FIG. REF. 8	PART NUMBER	DESCRIPTION	QTY.PER ASSY.	
			-B1A6	-B1B6
1	60096	GASKET, Fuel pump	1	1
2	LW-15473	FUEL PUMP, Dual diaphragm (6441234)	1	1
3	STD-33	WASHER, 3/8 plain	2	2
4	STD-1882	SCREW, 3/8-16 x 1-9/32 long, socket dr.	2	2
5	68317	SHAFTGEAR, Propeller governor drive	1	
6	71596	WASHER, Accessory drive gear	1	
7	STD-1221	RING, 13/16 diameter x 1/32 thick	1	
8	68315	GASKET, Accessory drive adapter	1	
9	75545	ADAPTER ASSEMBLY, Propeller governor drive	1	
10	31C-14	STUD, 5/16-18 x 1-3/4 long	4	
11	STD-1774	PIN, 1/8 diameter x 1/4 long	1	
12	STD-35	WASHER, 5/16 plain	4	
13	STD-475	WASHER, 5/16 lock, internal teeth	4	
14	STD-1410	NUT, 5/16 plain	8	
15	72053	GASKET, Governor	1	
16	72378	COVER, Governor	1	
17	STD-35	WASHER, 5/16 plain	4	
18	STD-475	WASHER, 5/16 lock, internal teeth	4	

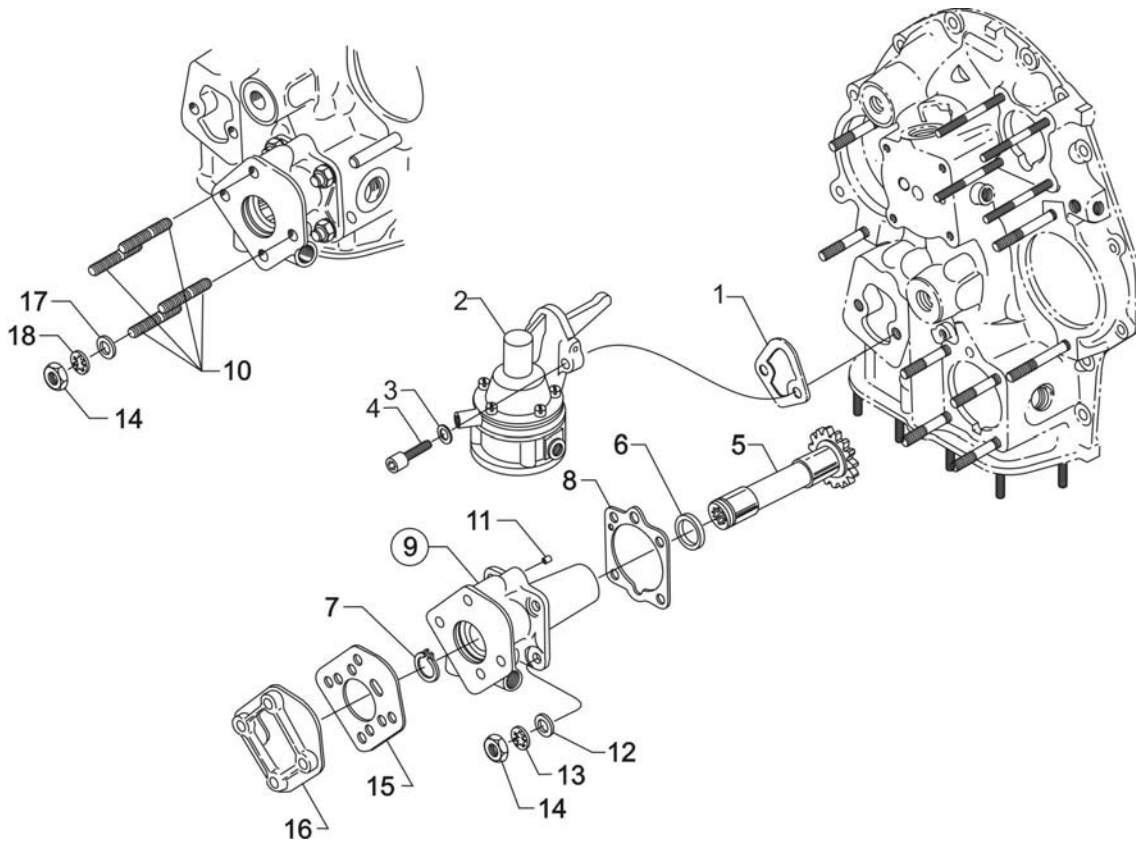


FIGURE 8. FUEL PUMP, PROPELLER GOVERNOR DRIVES, ADAPTER ASSEMBLY AND COVERS

ACCESSORY HOUSING AND RELATED PARTS
FUEL PUMP, PROPELLER GOVERNOR DRIVE (CRANKCASE) AND COVERS

FIG. REF. 9	PART NUMBER	DESCRIPTION	QTY.PER ASSY.	
			-B1A6	-B1B6
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	77872	BUSHING, Propeller governor idler gear		2
5	STD-19	DOWEL, 3/32 diameter x 7/32 long		1
6	STD-798	DOWEL, 3/32 diameter x 9/32 long		1
7	73249	WASHER, Thrust (.0585-.0595 thick)		AR
	73250	WASHER, Thrust (.062-.063 thick)		AR
	73251	WASHER, Thrust (.0655-.0665 thick)		AR
	73252	WASHER, Thrust (.069-.070 thick)		AR
	01L21418	WASHER, Thrust (.055-.056 thick)		AR
8	AN565B1032H5	SET SCREW, No. 10-32 x 5/16 long		1
9	70455	GASKET, 25/32 I.D. x 1-1/8 O.D. x 1/32 thick		1
10	LW-13896	PLUG, 3/4-16 hex. head		1
11	72053	GASKET, Governor drive		1
12	72378	COVER, Governor drive		1
13	STD-35	WASHER, 5/16 plain		32
14	STD-475	WASHER, 5/16 lock, internal teeth		4
15	STD-1410	NUT, 5/16-18 plain		4

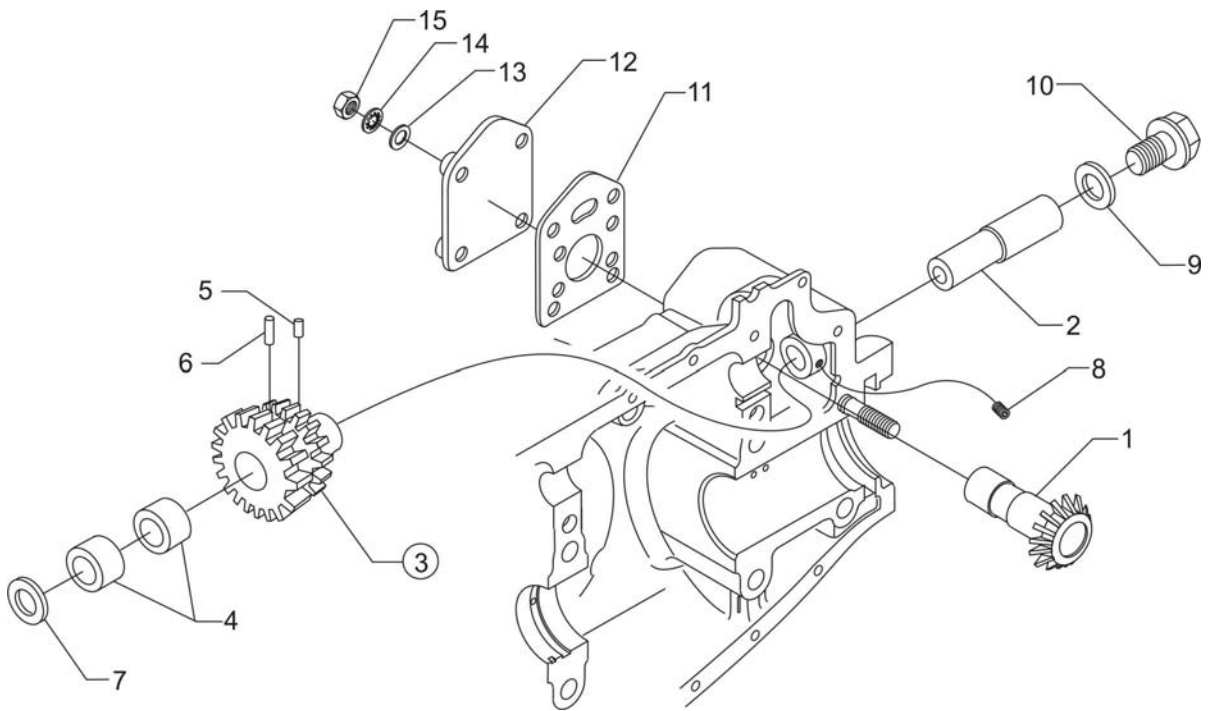


FIGURE 9. FUEL PUMP, PROPELLER GOVERNOR DRIVE (CRANKCASE) AND COVERS

ACCESSORY HOUSING AND RELATED PARTS
PROPELLER GOVERNOR OIL LINES

FIG. REF. 10	PART NUMBER	DESCRIPTION	QTY.PER ASSY.	
			-B1A6	-B1B6
1	LW-12213	TUBE ASSEMBLY, Propeller governor oil line	1	
2	LW-12700	HOSE, 3/8 I.D. x 6.00 long	1	
3	LW-12752	CLAMP, Propeller governor oil tube support	1	
4	STD-35	WASHER, 5/16 plain	2	
5	STD-475	WASHER, 5/16 lock, internal teeth	2	
6	LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex. head	2	
7	LW-16266-25-38	CLAMP, 3/8 I.D. x 1/4 diameter screw	1	
8	MS20822-6	ELBOW, 1/4 NPT to 3/8 flared tube, 90°	1	
9	74070	ELBOW, 3/8 flared tube & 9/16-18 straight thread, adjustable 45°	1	
10	MS29512-06	O-RING, 15/32 I.D. x 5/64	1	

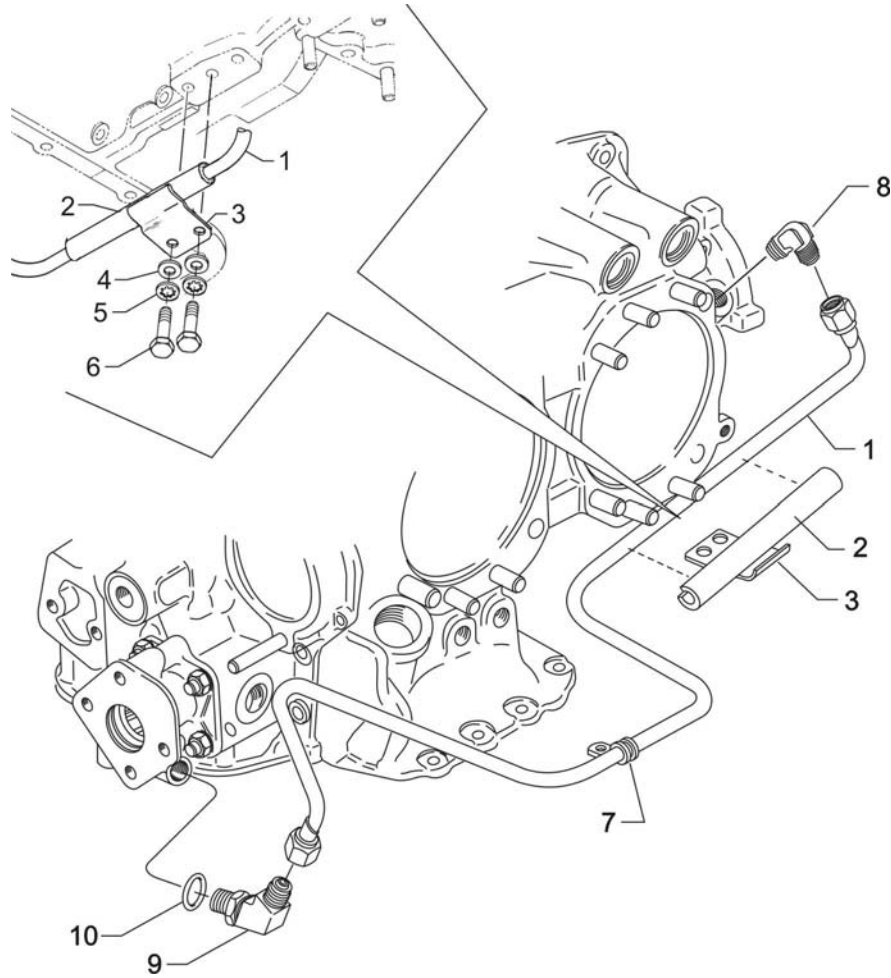


FIGURE 10. PROPELLER GOVERNOR OIL LINES

ACCESSORY HOUSING AND RELATED PARTS
VACUUM PUMP DRIVE AND COVER

FIG. REF. 11	PART NUMBER	DESCRIPTION	QTY.PER ASSY.	
			-B1A6	-B1B6
1	61183	GASKET, Vacuum pump	1	1
2	61098	ADAPTER ASSEMBLY, Vacuum pump	1	1
3	STD-1774	PIN, 1/8 diameter x 1/4 long	1	1
4	06A19956	OIL SEAL, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide	1	1
5	72970	GEAR ASSEMBLY, Vacuum pump driven	1	1
6	71596	WASHER, Accessory drive gear	1	1
7	8313	GASKET, Vacuum pump	1	1
8	60430	COVER, Vacuum pump	1	1
9	STD-8	WASHER, 1/4 plain	4	4
10	STD-160	WASHER, 1/4 lock, internal teeth	4	4
11	STD-1411	NUT, 1/4-20 plain	4	4

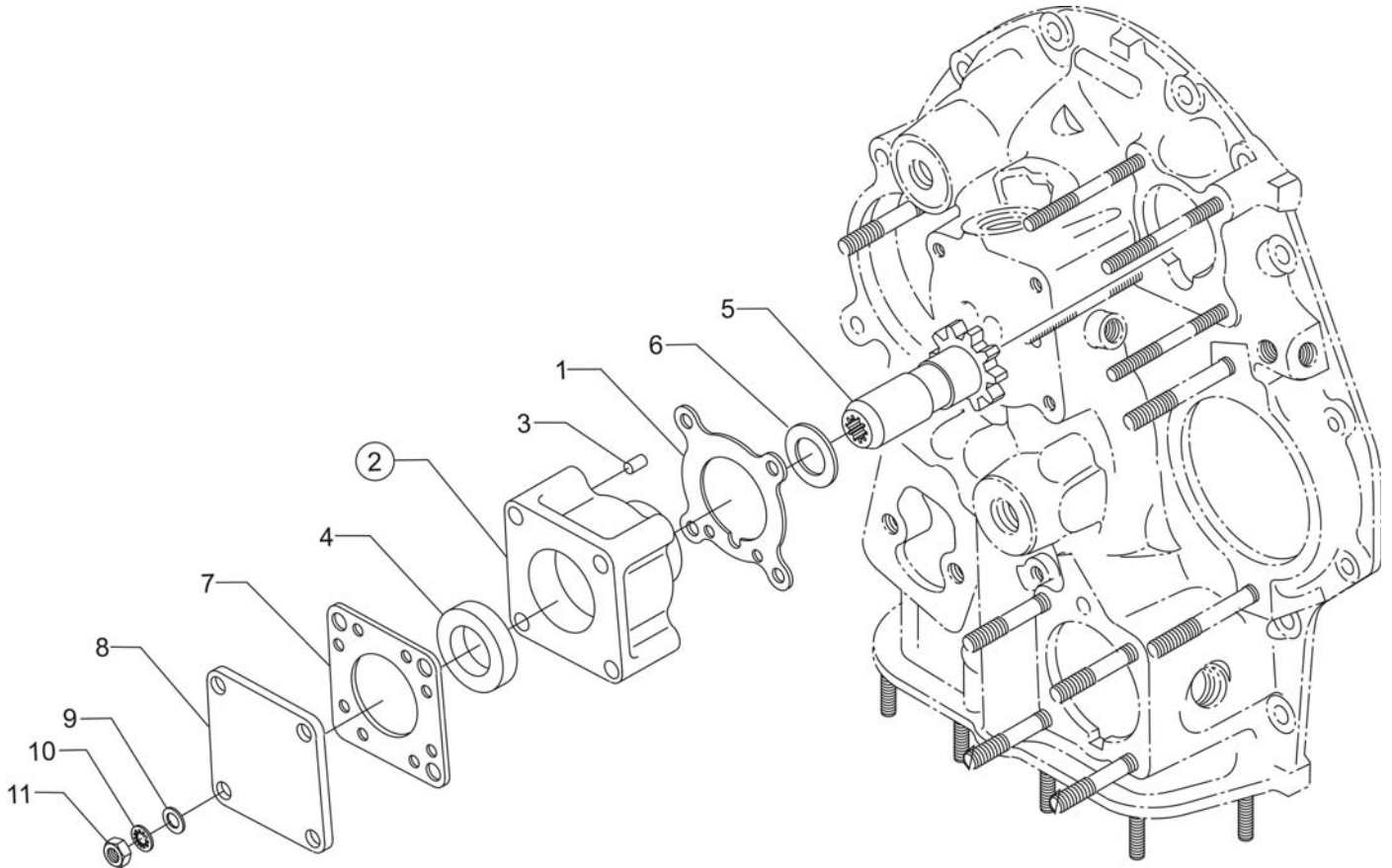


FIGURE 11. VACUUM PUMP DRIVE AND COVER

ACCESSORY HOUSING AND RELATED PARTS
OIL FILTER ASSEMBLY, OIL COOLER BYPASS VALVE AND BREATHER FITTING

FIG. REF. 12	PART NUMBER	DESCRIPTION	QTY.PER ASSY.	
			-B1A6	-B1B6
1	06B23862	GASKET, Oil filter	1	1
2	77852	OIL FILTER BASE ASSEMBLY	1	1
3	LW-13215	OIL FILTER, Short, spin-on	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
11	06E19769-0.63	GASKET, 7/8 O.D. x 5/8 I.D. x 3/32 annular	1	1
12	62417	PLUG, Oil cooler bypass	1	1
13	MS20823-8	ELBOW, 3/8 NPT, 1/2 flared tube	1	1
14	AN816-8	NIPPLE, 1/2 flared tube	1	1
15	AN844-10D	ELBOW, Pipe	1	1
16	62732	CAP, Tachometer drive	1	1

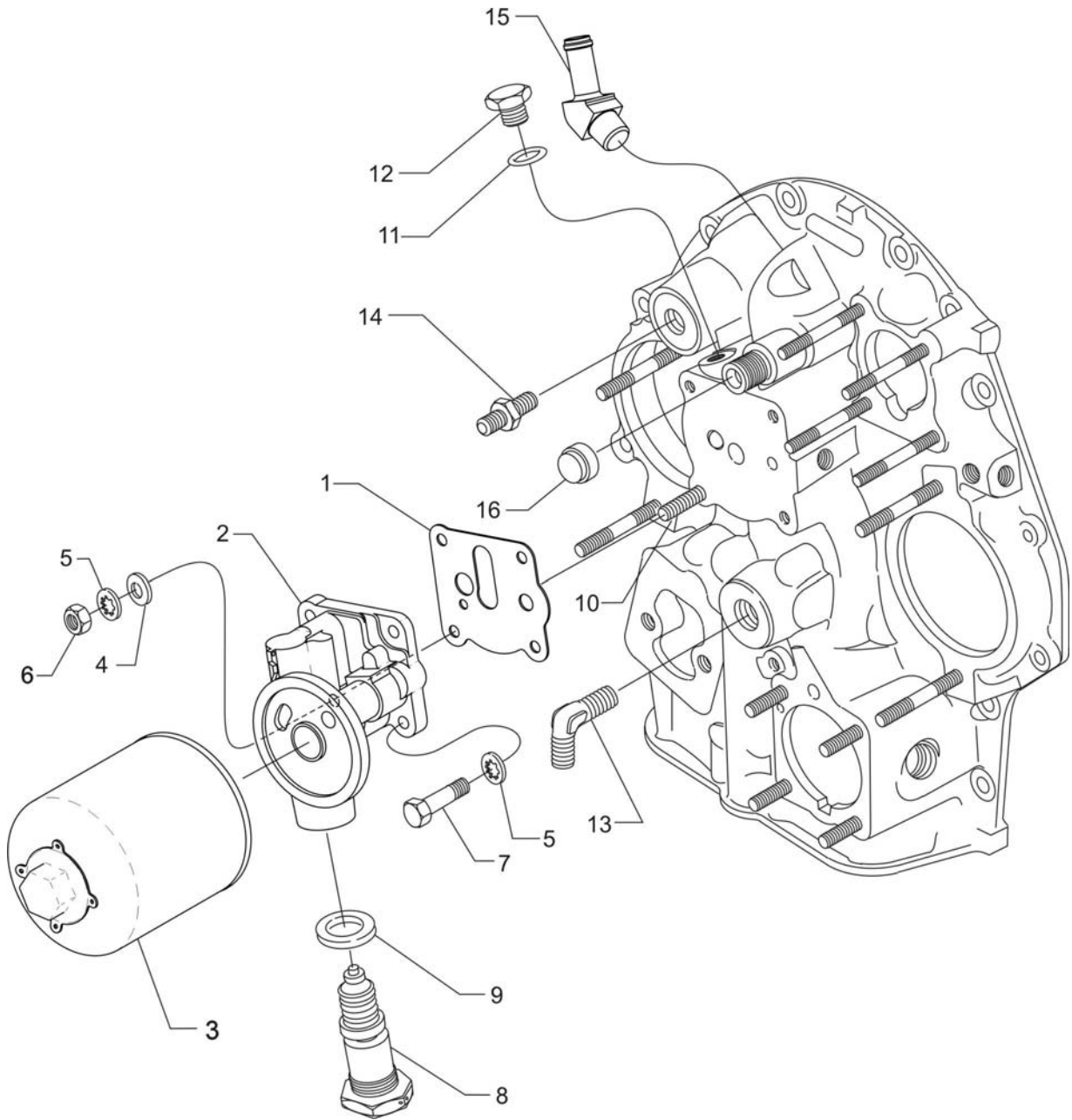


FIGURE 12. OIL FILTER ASSEMBLY, OIL COOLER BYPASS VALVE AND BREATHER FITTING

CYLINDER, PISTON AND VALVE TRAIN
CONNECTING RODS, PISTONS AND RING ASSEMBLIES

FIG. REF. 13	PART NUMBER	DESCRIPTION	QTY.PER ASSY.	
			-B1A6	-B1B6
1	77450	CONNECTING ROD ASSEMBLY	4	4
2	LW-13923	BUSHING, Connecting rod, upper	4	4
3	14S23890*	BOLT, Connecting rod	8	8
	75060**	BOLT, Connecting rod	8	8
4	LW-12186	NUT, Connecting rod	8	8
5	18M23887	BEARING, Connecting rod	8	8
6	14E22396	PISTON, Compression ratio, 8.90:1	4	4
7	14J22048	PIN, Piston	4	4
8	72198	PLUG, Piston pin	8	8
9	14G22050	RING, Piston compression	8	8
10	14H23148	RING, Piston, oil regulating, expander type	4	4

* - Lycoming use only.

** - Service use only.

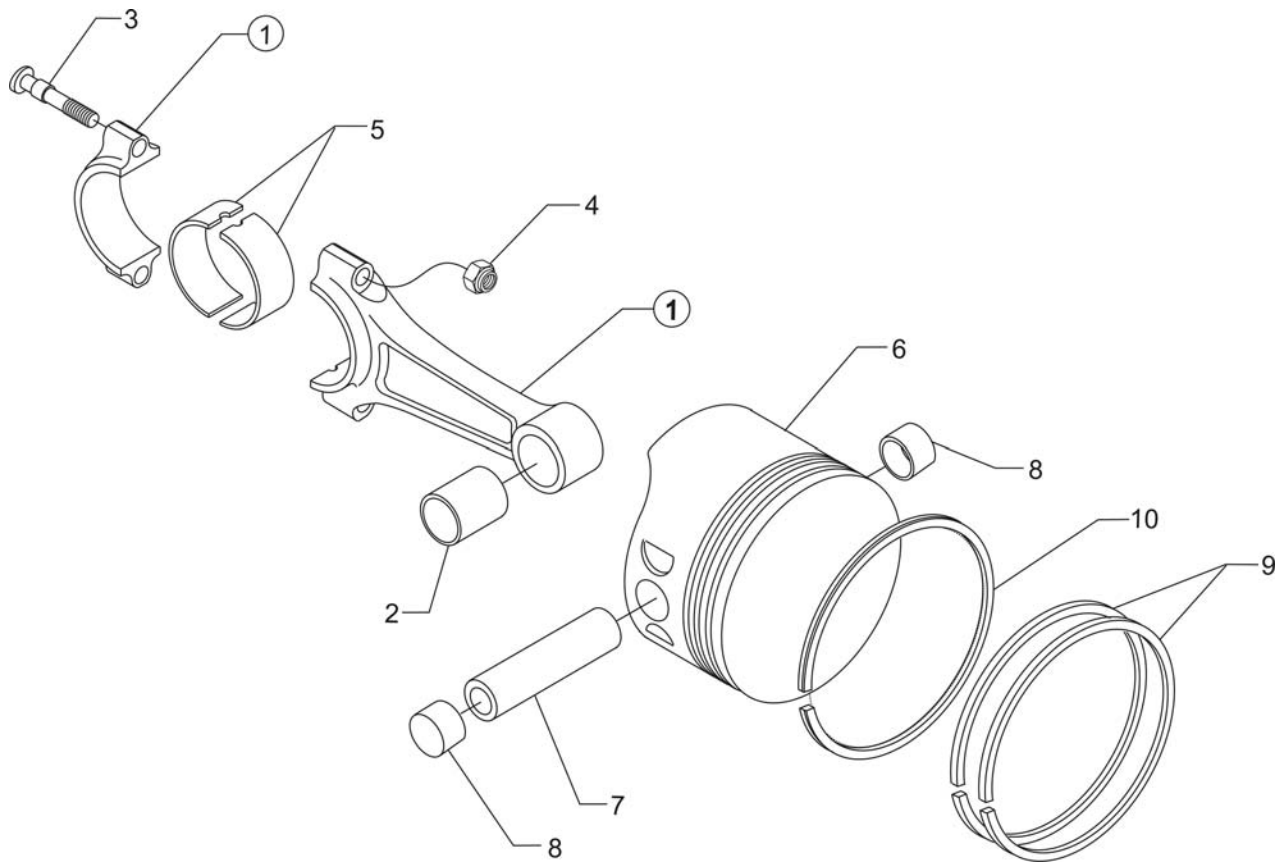


FIGURE 13. CONNECTING RODS, PISTON AND RING ASSEMBLIES

CYLINDER, PISTON AND VALVE TRAIN
CYLINDER ASSEMBLY

FIG. REF. 14	PART NUMBER	DESCRIPTION	QTY.PER ASSY.	
			-B1A6	-B1B6
1	16G23266-19	CYLINDER HEAD AND VALVE ASSEMBLY	4	4
2	72212	SEAT, Intake valve	4	4
3	16T19468	SEAT, Exhaust valve	4	4
4	LW-11956	GUIDE, Valve, intake, flanged	4	4
5	LW-11958	GUIDE, Valve, exhaust, flanged	4	4
6	66796	INSERT, Spark plug, 18-1.5 MM	8	8
7	31C-13	STUD, 5/16-18 x 1-5/8 long	8	8
8	25C-8	STUD, 1/4-20 x 1.00 long	16	16
9	MS20823-6D	ELBOW, 45°, 3/8 flared tube	4	4
10	66670	BUSHING, Rocker shaft	16	16
11	72343	STABILIZER, Cylinder head fins, 15 teeth	4	4
12	72344	STABILIZER, Cylinder head fins, 26 teeth	4	4
13	1102	PLUG, 1/8-27 NPT, Allen head	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

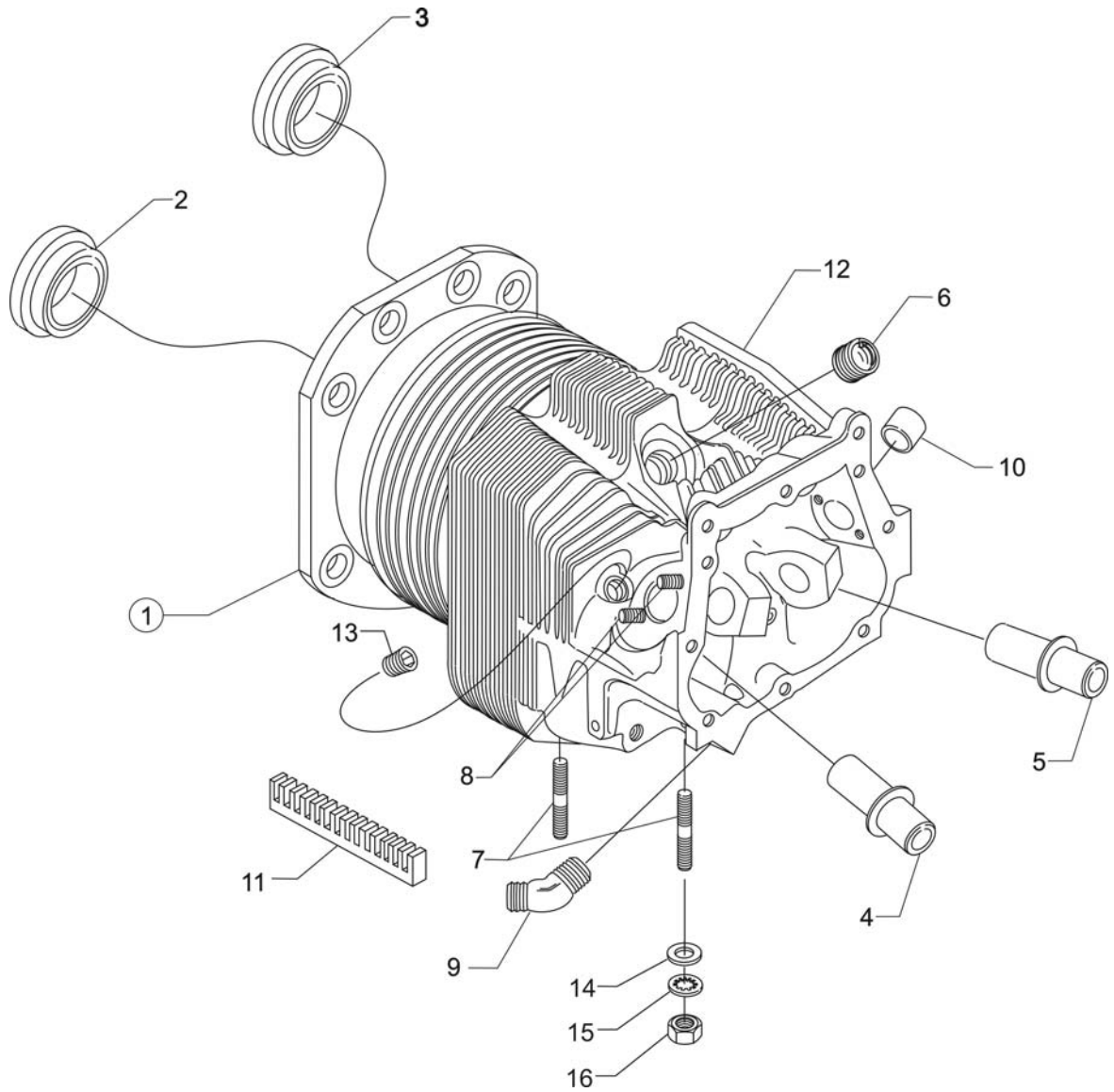


FIGURE 14. CYLINDER ASSEMBLY

CYLINDER, PISTON AND VALVE TRAIN
VALVE ASSEMBLY

FIG. REF. 15	PART NUMBER	DESCRIPTION	QTY.PER ASSY.	
			-B1A6	-B1B6
1	17A23946	VALVE, Intake	4	4
2	17B23935	VALVE, Exhaust	4	4
3	LW-11797	SPRING, Valve, inner	8	8
4	LW-11796	SPRING, Valve, outer	8	8
5	LW-13321	SEAT, Valve spring, lower intake	4	4
6	LW-13322	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	4	4
9	60009	KEY, Valve, intake	8	8
10	17C21191	KEY, Valve, exhaust	8	8
11	17C19386	CAP, Valve stem, exhaust	4	4
12	15B26066	PLUNGER ASSEMBLY, Hydraulic tappet	8	8
13	15B21319	SOCKET, Hydraulic tappet	8	8
14	15G23462	SHROUD TUBE ASSEMBLY, Push rod	8	8
15	15H21201	SPRING, Shroud tube	16	16
16	01L23459	WASHER, 3/4 I.D. x 1-3/8 O.D. x 1/32	8	8
17	61503	SLEEVE, Shroud tube	8	8
18	LW-18661	SEAL, Shroud tube	8	8
19	06A23493	SEAL, Shroud tube	8	8

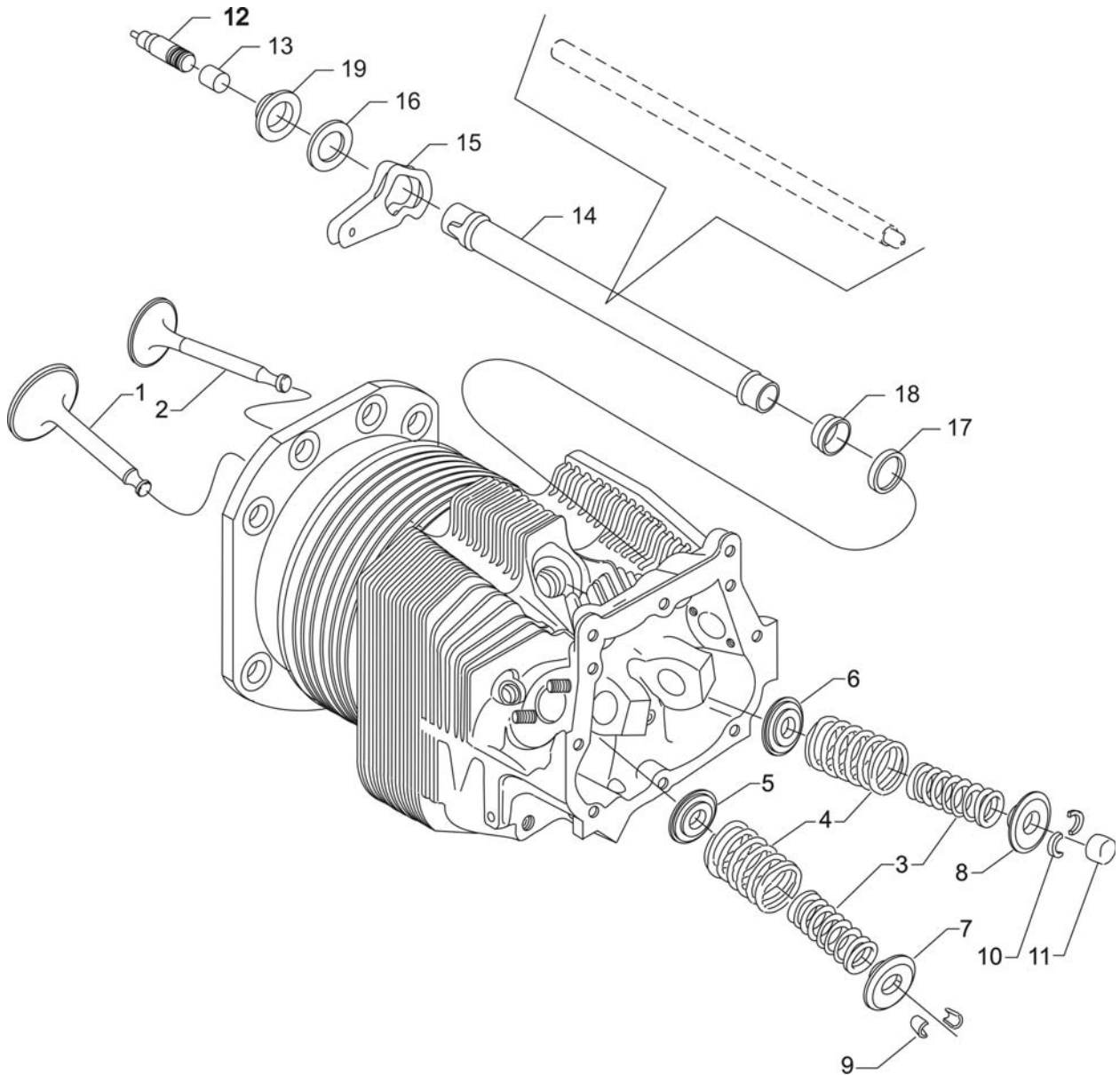


FIGURE 15. VALVE ASSEMBLY

CYLINDER, PISTON AND VALVE TRAIN
CYLINDER RELATED PARTS

FIG. REF. 16	PART NUMBER	DESCRIPTION	QTY.PER ASSY.	
			-B1A6	-B1B6
1	15F19957-51	ROD ASSEMBLY, Push (A total of 8 required)	AR	AR
	15F19957-52	ROD ASSEMBLY, Push (A total of 8 required)	AR	AR
	15F19957-53	ROD ASSEMBLY, Push (A total of 8 required)	AR	AR
	15F19957-54	ROD ASSEMBLY, Push (A total of 8 required)	AR	AR
	15F19957-55	ROD ASSEMBLY, Push (A total of 8 required)	AR	AR
	15F19957-56	ROD ASSEMBLY, Push (A total of 8 required)	AR	AR
	15F21362-17	ROD ASSEMBLY, Push (A total of 8 required)	AR	AR
	15F21362-18	ROD ASSEMBLY, Push (A total of 8 required)	AR	AR
	15F21362-19	ROD ASSEMBLY, Push (A total of 8 required)	AR	AR
	15F21362-20	ROD ASSEMBLY, Push (A total of 8 required)	AR	AR
	15F21362-21	ROD ASSEMBLY, Push (A total of 8 required)	AR	AR
	15F21362-22	ROD ASSEMBLY, Push (A total of 8 required)	AR	AR
2	17F21188*	ROCKER ASSEMBLY, Valve, intake	4	4
3	17F21187*	ROCKER ASSEMBLY, Valve, exhaust	4	4
4	74389	BUSHING, Valve rocker	8	8
5	72626	SHAFT, Valve rocker	8	8
6	71549	WASHER, Valve rocker, thrust	8	8
7	66732	GASKET, Valve rocker shaft cover	8	8
8	72710	COVER, Valve rocker shaft	8	8
9	STD-160	WASHER, 1/4 lock, internal teeth	16	16
10	STD-1411	NUT, 1/4-20 plain	16	16
11	67193	GASKET, Rocker box cover	4	4
12	STD-1925	SCREW, 1/4-20 x 5/8 long, pan. head	32	32
13	74494	PLATE, Spark plug reach caution	4	4
14	71481	RING, Oil seal, 3/32 diameter x 4-27/32 long	4	4
15	74887	SPACER, 33/64 I.D. x 7/8 O.D. x 3/8 thick	2	2
16	71134	NUT, 3/8-24 NF-3	16	16
17	STD-2090	NUT, 1/2-20 plain	2	2
18	71133	NUT, 1/2-20 NF-3	16	16
19	17J26469	COVER ASSEMBLY, Rocker box	4	4

* - Due to the area where the part number is stamped, the last five digits may be all that is shown (21187, 21188).

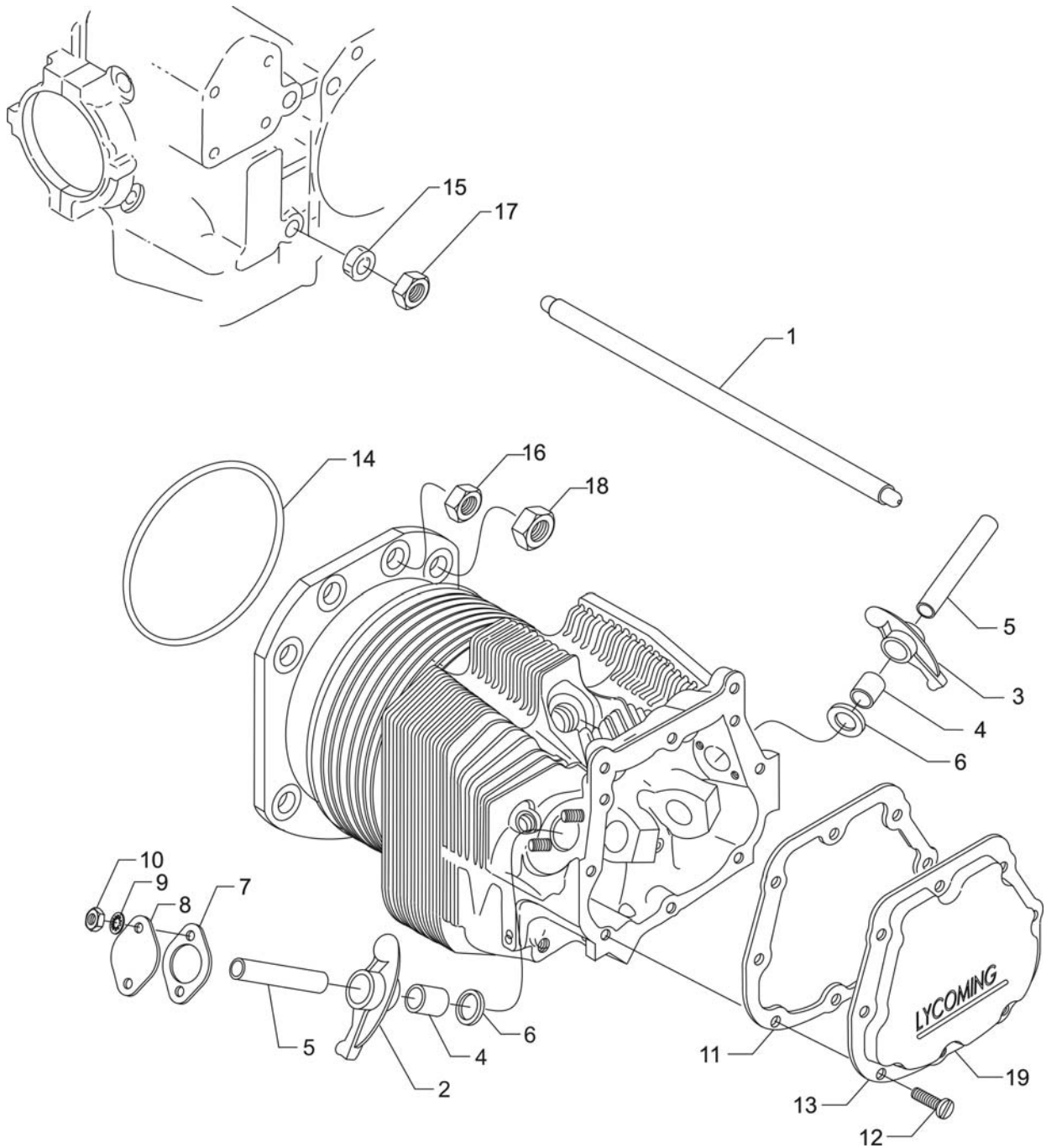


FIGURE 16. CYLINDER RELATED PARTS

CYLINDER, PISTON AND VALVE TRAIN
CYLINDER HEAD DRAIN TUBES AND INTERCYLINDER COOLING BAFFLES

FIG. REF. 17	PART NUMBER	DESCRIPTION	QTY.PER ASSY.	
			-B1A6	-B1B6
1	STD-684	NIPPLE, Straight, 3/8 I.D. hose	4	4
2	STD-2180	HOSE, 3/8 x 1-13/16 long	4	4
3	LW-15592-5-05	CLAMP, Hose	8	8
4	72702	TUBE ASSEMBLY, Cylinder head oil drain, cylinder no. 1	1	1
5	72703	TUBE ASSEMBLY, Cylinder head oil drain, cylinder no. 2	1	1
6	74808	TUBE ASSEMBLY, Cylinder head oil drain, cylinder no. 3	1	1
7	73027	TUBE ASSEMBLY, Cylinder head oil drain, cylinder no. 4	1	1
8	75338	BAFFLE ASSEMBLY, Intercylinder	2	2
9	71611	RETAINER, Intercylinder baffle	2	2
10	17M23284	HOOK, Intercylinder baffle retainer	2	2
11	72834	COVER, Baffle	2	2
12	STD-692	SCREW, No. 10-32 x 1/2 long, round head	4	4
13	STD-670	NUT, No. 10-32 self-locking	4	4
14	65614	PLUG, Baffle attaching	4	4
15	STD-251	WASHER, No. 10 lock, internal teeth	4	4
16	STD-1686	SCREW, No. 10-32 x 7/16 long, fill. head	4	4

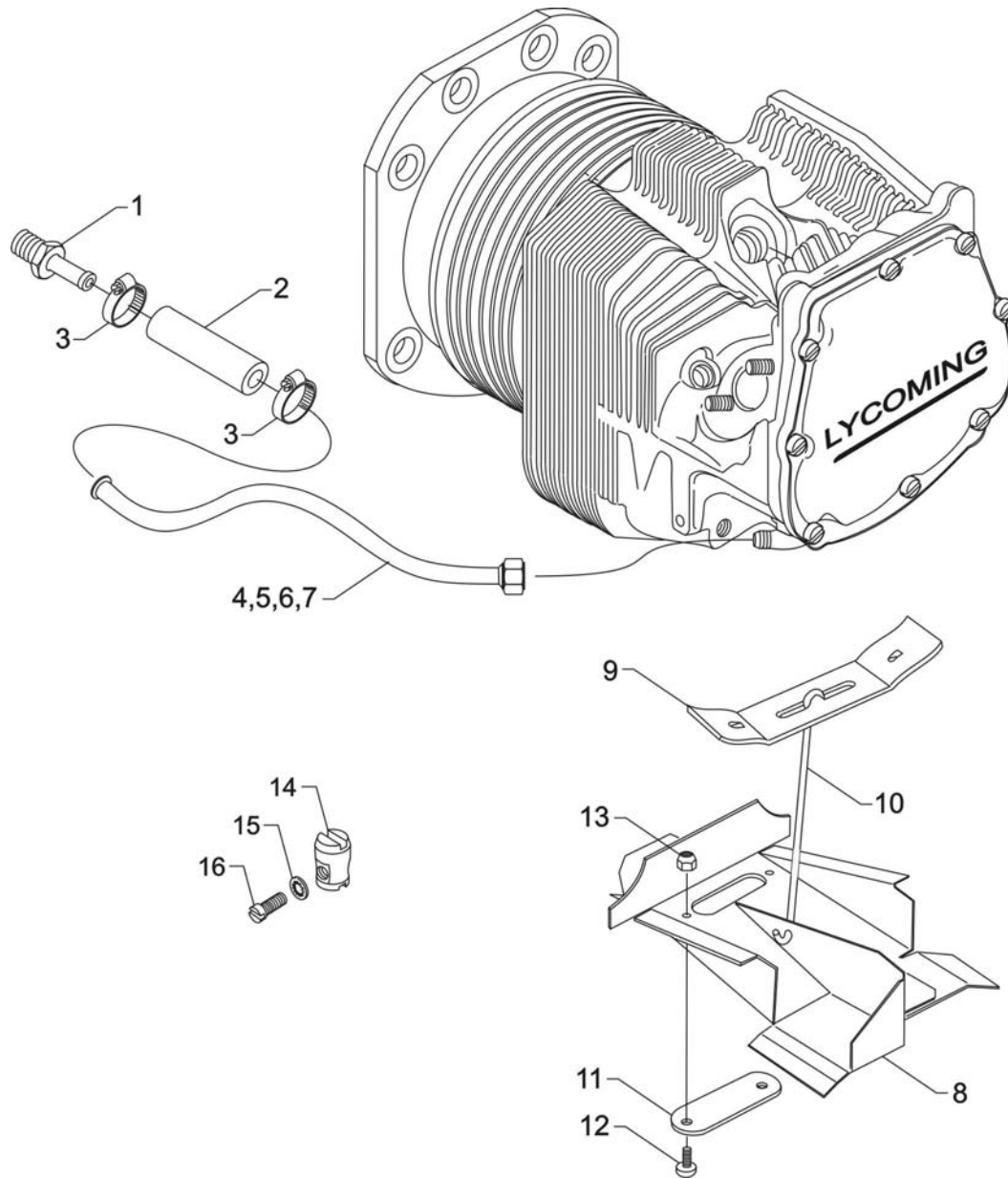


FIGURE 17. CYLINDER HEAD DRAIN TUBES AND INTERCYLINDER COOLING BAFFLES

IGNITION SYSTEM
MAGNETOS, MAGNETO DRIVES, HARNESSES AND SPARK PLUGS

FIG. REF. 18	PART NUMBER	DESCRIPTION	QTY.PER ASSY.	
			-B1A6	-B1B6
1	68C19622	GEAR, Magneto	2	2
2	STD-713	COTTER PIN, 3/32 diameter x 3/4 long	2	2
3	LW-12681	GASKET, Magneto	2	2
4	66GP-0SANN	MAGNETO, Plain, Slick 4370 (Right)	1	1
	66GR15SANN	MAGNETO, Retard, Slick 4345 (Left)	1	1
5	67P20412	HARNESS ASSEMBLY, Right, Slick Model M4020	1	1
	67P20413	HARNESS ASSEMBLY, Left, Slick Model M4019	1	1
6	66M21195	CLAMP, Magneto	4	4
7	STD-475	WASHER, 5/16 lock, internal teeth	4	4
8	STD-1410	NUT, 5/16-18 plain	4	4
9	1182-G7	SPARK PLUG, Champion (REB37E)	8	8
	1182-C5	SPARK PLUG, Unison (UREB37E)	8	8
*	01P19762-1-7	BAG, Magneto harness attaching	1	1

* - See page 4-2 for a breakdown of individual parts contained in the magneto and harness attaching parts bag. These parts to be attached by customer per engine line drawing included in each bag.

ATTACHING HARDWARE
P/N 01P19762-1-7

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, 1/4-20 x 13/16 long	6
76734	ZIP STRAP	8
LW-16266-25-50	CLAMP, Four wire	1
STD-1411	NUT, 1/4-20 plain	2
STD-696	WASHER, 1/4 plain (thin)	4
STD-1916	SCREW, 1/4-20 x 1-1/8 long	3
LW-M-2375	PLATE, Spark plug cable	2

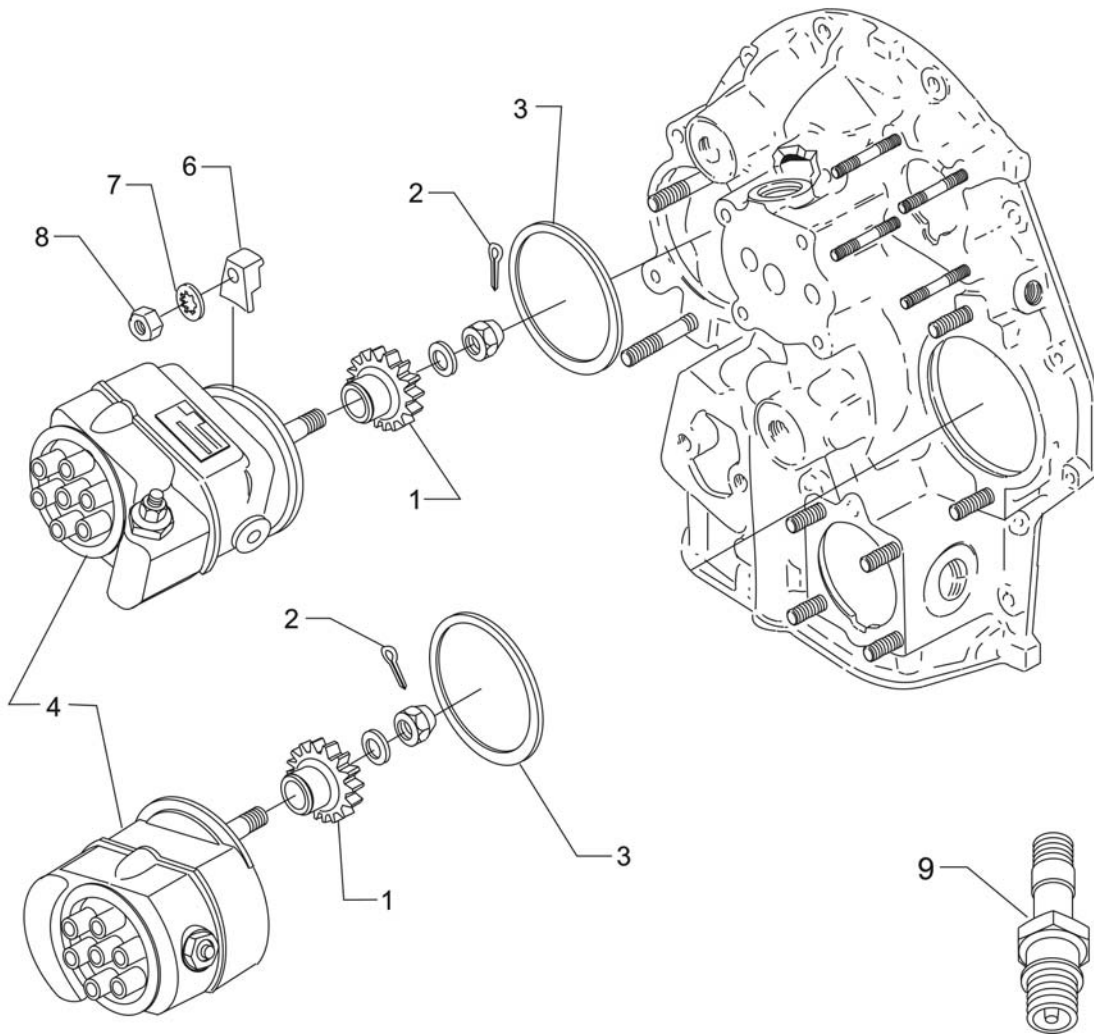
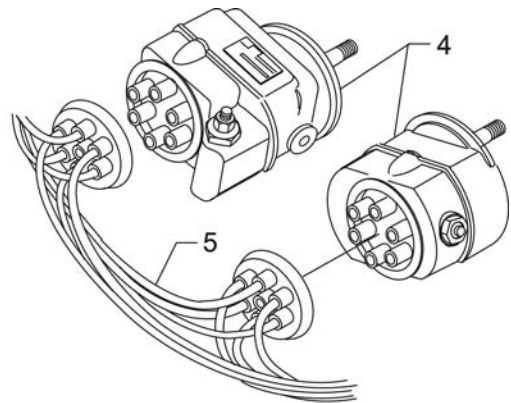


FIGURE 18. MAGNETOS, MAGNETO DRIVES, HARNESES AND SPARK PLUGS

ELECTRICAL SYSTEM
STARTER AND ATTACHING PARTS

FIG. REF. 19	PART NUMBER	DESCRIPTION	QTY. PER ASSY.	
			-B1A6	-B1B6
1	31A26041*	STARTER ASSEMBLY, Kelly (ERZ-8011), 12V., 12/14 pitch	1	1
2	STD-35	WASHER, 5/16 plain	4	4
3	STD-475	WASHER, 5/16 lock, internal teeth	4	4
4	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

* - See latest revision of Service Instruction No. 1154 for complete listing of FAA approved starters.

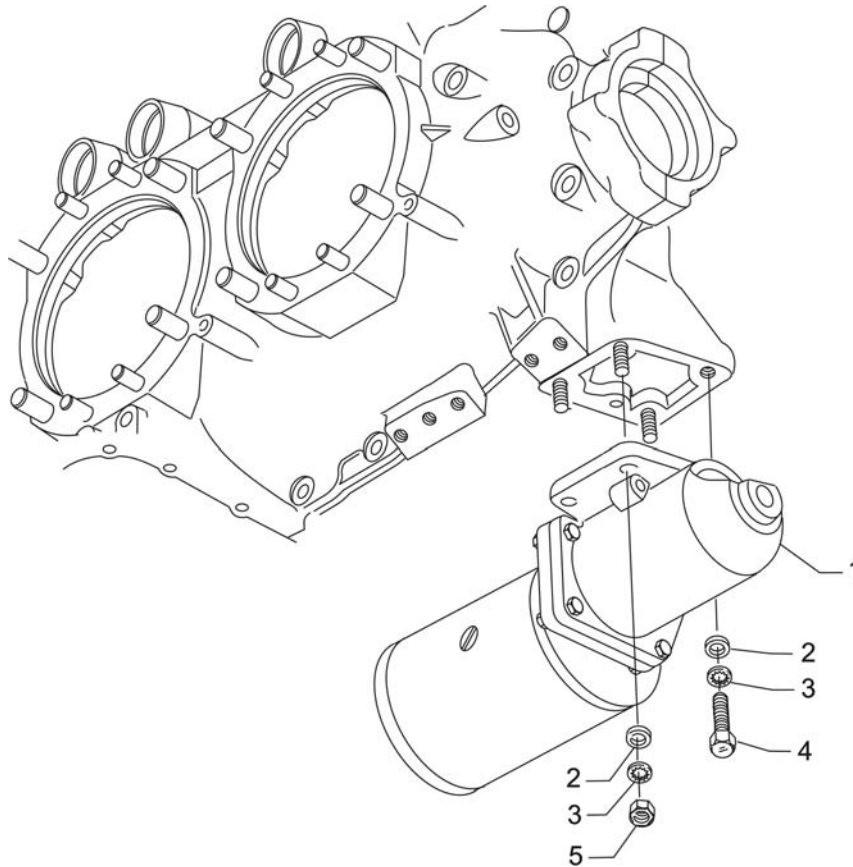


FIGURE 19. STARTER AND ATTACHING PARTS

ELECTRICAL SYSTEM
ALTERNATOR, ALTERNATOR MOUNTING AND ATTACHING PARTS

FIG. REF. 19	PART NUMBER	DESCRIPTION	QTY.PER ASSY.	
			-B1A6	-B1B6

**NOT SUPPLIED
BY
LYCOMING**

FIGURE 20. ALTERNATOR, ALTERNATOR MOUNTING AND ATTACHING PARTS

OIL SUMP AND INDUCTION SYSTEM
OIL SUMP ASSEMBLY AND OIL SUCTION SCREEN

FIG. REF. 21	PART NUMBER	DESCRIPTION	QTY.PER ASSY.	
			-B1A6	-B1B6
1	LW-13353	GASKET, Oil sump	1	1
2	LW-12754	SUMP ASSEMBLY, Oil	1	1
3	61400	STUD, 1/4-20 x 1-3/16 long	6	6
4	31C-12	STUD, 5/16-18 x 1-1/2 long	4	4
5	1102	PLUG, 1/8-27 NPT, Allen head	4	4
6	STD-551	PLUG, 1/2-14 NPT, square head, drilled	1	1
7	STD-8	WASHER, 1/4 plain	26	26
8	STD-160	WASHER, 1/4 lock, internal teeth	20	20
9	LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. head	14	14
10	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	2	2
11	STD-1411	NUT, 1/4-20 plain	12	12
12	70484	SCREEN, Oil suction	1	1
13	06E19769-1.00	GASKET, 1.00 I.D. x 1-1/4 O.D. x 3/32 annular	1	1
14	LW-12545	PLUG, 5/8 hex. head x 1.00-20 thread	1	1

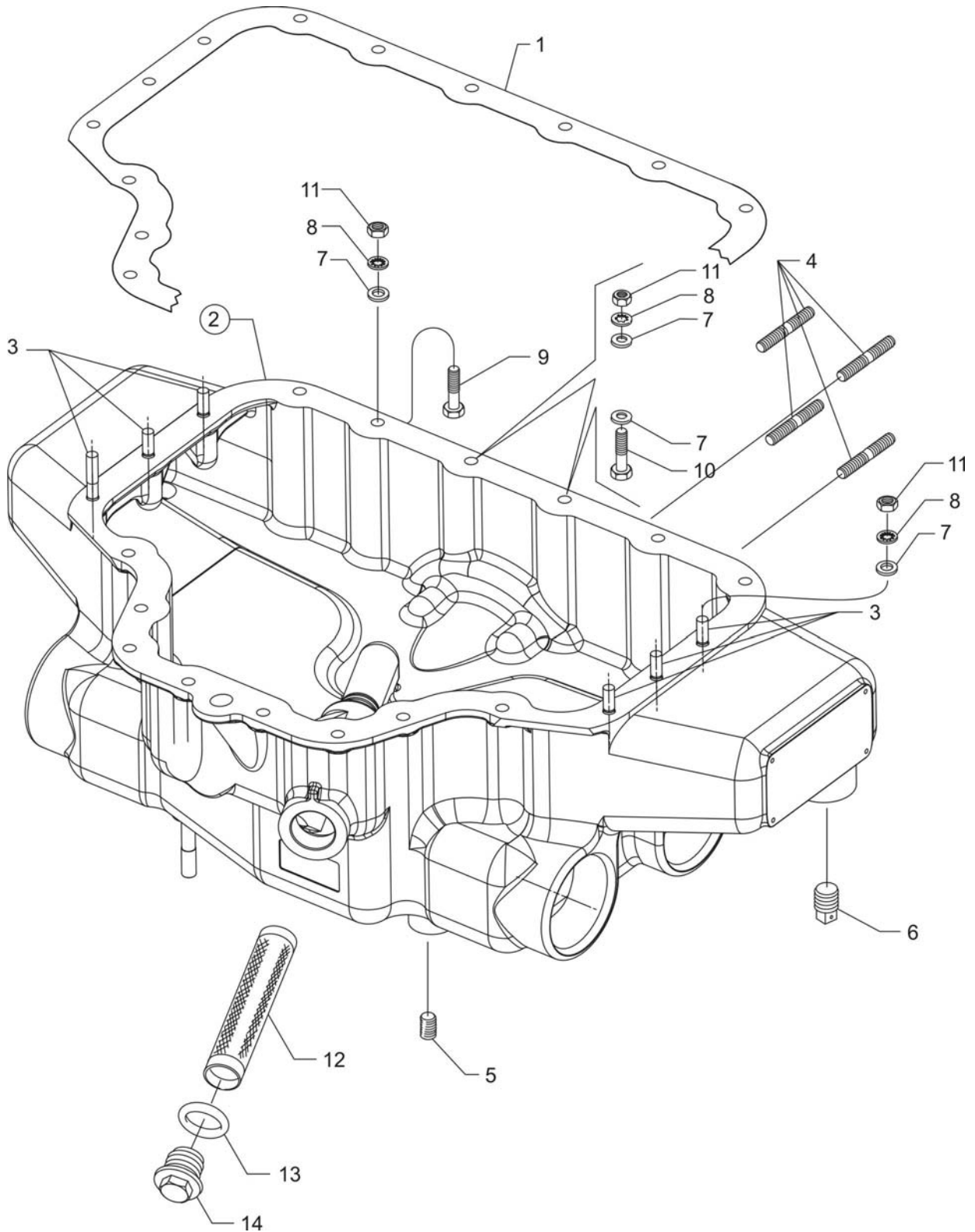


FIGURE 21. OIL SUMP ASSEMBLY AND OIL SUCTION SCREEN

OIL SUMP AND INDUCTION SYSTEM
INTAKE PIPES AND ATTACHING PARTS

FIG. REF. 22	PART NUMBER	DESCRIPTION	QTY.PER ASSY.	
			-B1A6	-B1B6
1	77569	SEAL, Intake pipe	4	4
2	LW-10481	PIPE, Intake, cylinder no. 1	1	1
	79002	PIPE, Intake, cylinder no. 2	1	1
	LW-10483	PIPE, Intake, cylinder no. 3	1	1
	LW-10484	PIPE, Intake, cylinder no. 4	1	1
3	71973	GASKET, 2 bolt flange, 1-3/4 I.D.	4	4
4	STD-8	WASHER, 1/4 plain	8	8
5	STD-160	WASHER, 1/4 lock, internal teeth	8	8
6	LW-25-1.25	BOLT, 1/4-20 x 1-1/4 long, hex. head	8	8
7	1102	PLUG, 1/8-27 NPT, Allen head	4	4

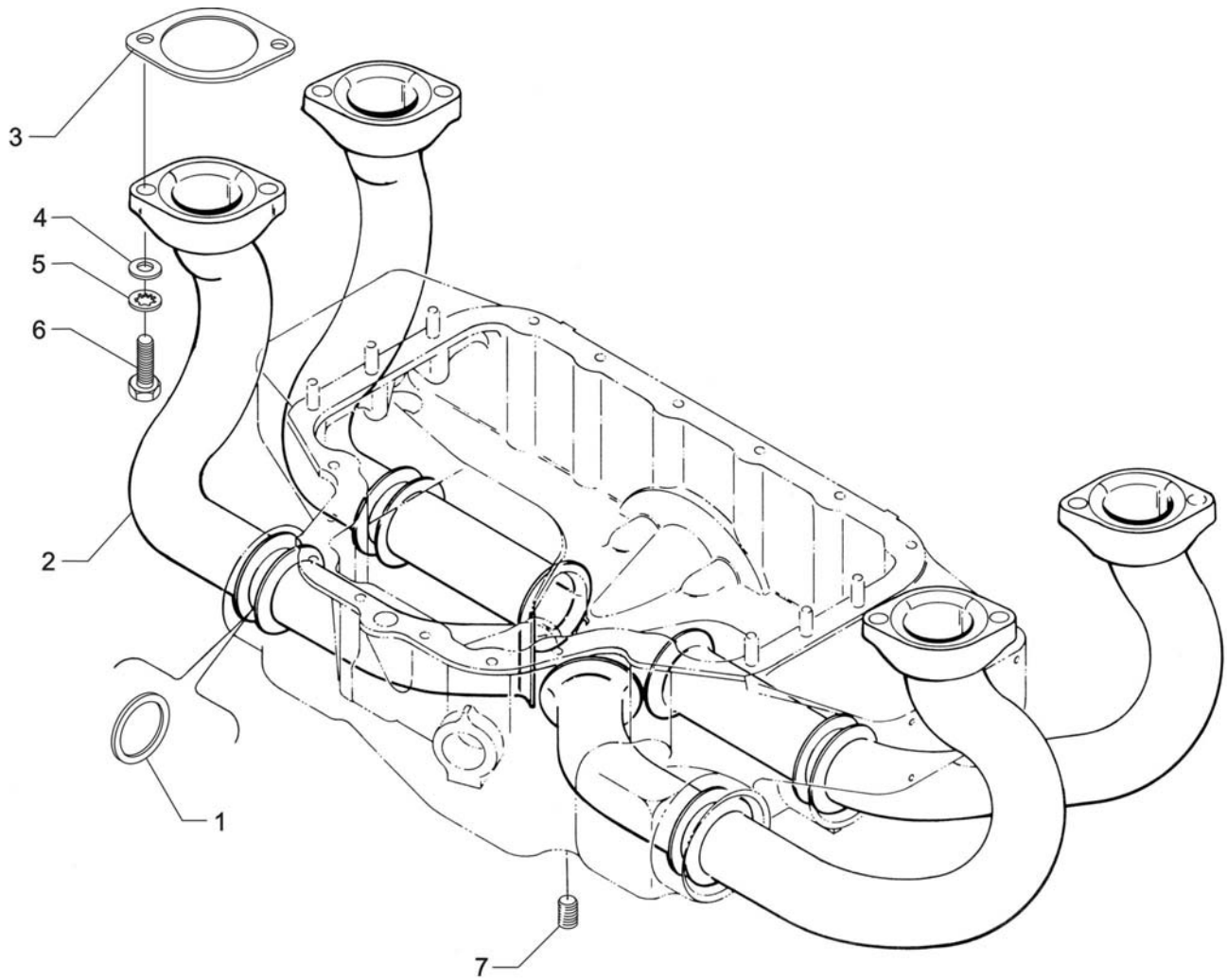


FIGURE 22. INTAKE PIPES AND ATTACHING PARTS

OIL SUMP AND INDUCTION SYSTEM
FUEL INJECTOR, FUEL MANIFOLD AND BRACKETS

FIG. REF. 23	PART NUMBER	DESCRIPTION	QTY.PER ASSY.	
			-B1A6	-B1B6
1	66224	GASKET, Fuel injector	1	1
2	LW-12586	FUEL INJECTOR (2524590-8)	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	LW-18265	NOZZLE, Injection	4	4
7	78805	MANIFOLD ASSEMBLY, Fuel	1	1
8	AN816-4	NIPPLE, 1/8 NPT to 1/4 tube	1	1
9	STD-148	NIPPLE, Union, 1/8 NPT	4	4
10	1102	PLUG, 1/8-27 NPT, Allen head	2	2
11	02G21382	NIPPLE, 3/16 tube to 1/8 NPT, restricted	1	1
12	77547	BRACKET, Fuel manifold	1	1
13	STD-251	WASHER, No. 10, internal lock	4	4
14	STD-82	SCREW, No. 10-24 x 1/2 long, fill. head	4	4
15	STD-160	WASHER, 1/4 lock, internal teeth	1	1
16	LW-25-0.50	BOLT, 1/4-20 x 1/2 long, hex. head	1	1
17	73032	GASKET, Air inlet housing	1	1
18	LW-10493	ELBOW ASSEMBLY, Fuel injector	1	1
19	31C-14	STUD, 5/16-18 x 1-3/4 long	2	2
20	31C-15	STUD, 5/16-18 x 1-7/8 long	2	2
21	73161	SPACER, Fuel injector	1	1

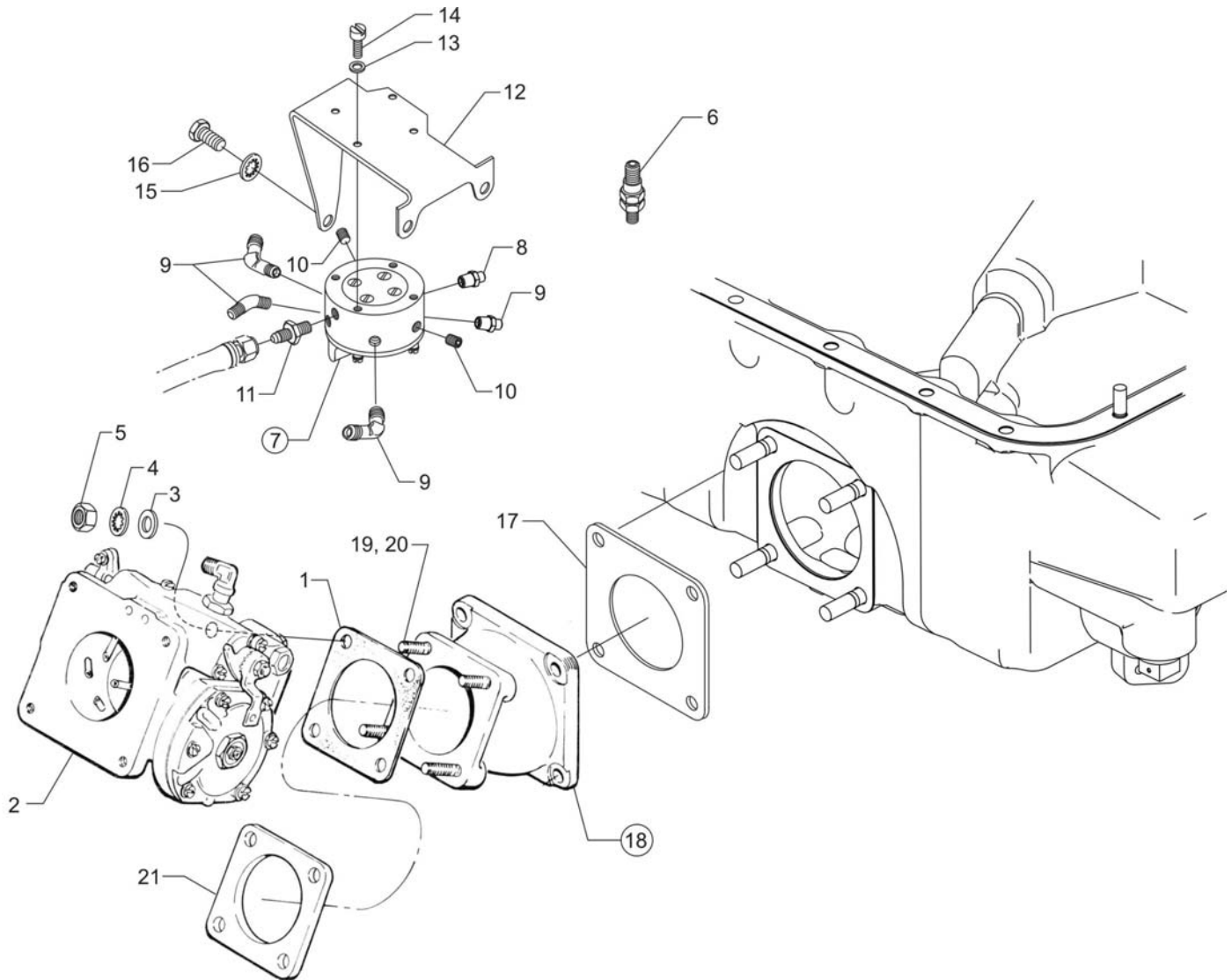


FIGURE 23. FUEL INJECTOR, FUEL MANIFOLD AND BRACKETS

OIL SUMP AND INDUCTION SYSTEM
FUEL LINES, FUEL HOSES AND ATTACHING PARTS

FIG. REF. 24	PART NUMBER	DESCRIPTION	QTY.PER ASSY.	
			-B1A6	-B1B6
1	LW-12098-0-140	TUBE ASSEMBLY, Fuel manifold to nozzles, cylinders no. 2 & 4	2	2
2	LW-12098-0-210	TUBE ASSEMBLY, Fuel manifold to nozzles, cylinders no. 1 & 3	2	2
3	LW-16266-10-75	CLAMP	4	4
4	LW-16266-10-13	CLAMP, 1/8 diameter for no. 10 screw	6	6
5	STD-860	SCREW, No. 10-32 x 5/8 long, fill. head	6	6
6	STD-670	LOCKNUT, No. 10-32	6	6
7	73136	BRACKET, Extension, fuel injector line	1	1
8	LW-16562	NIPPLE, 3/8 flared tube, 9/16-18	1	1
9	LW-12798-4S340	HOSE ASSEMBLY, 1/4 hose, straight (injector to manifold)	1	1
10	LW-12879-6S162	HOSE ASSEMBLY, 3/8 hose, 45° elbow	1	1
11	72815	BRACKET, Support clamp, 90°	1	1
12	LW-16266-25-63	CLAMP, 3/8 I.D. x 1/4 diameter screw	1	1
13	STD-860	SCREW, No. 10-32 x 5/8 long, fill. head	1	1
14	STD-425	WASHER, No. 10 plain	1	1
15	STD-670	LOCKNUT, No. 10-32	1	1
16	74070	ELBOW, 3/8 flared tube & 9/16-18	1	1

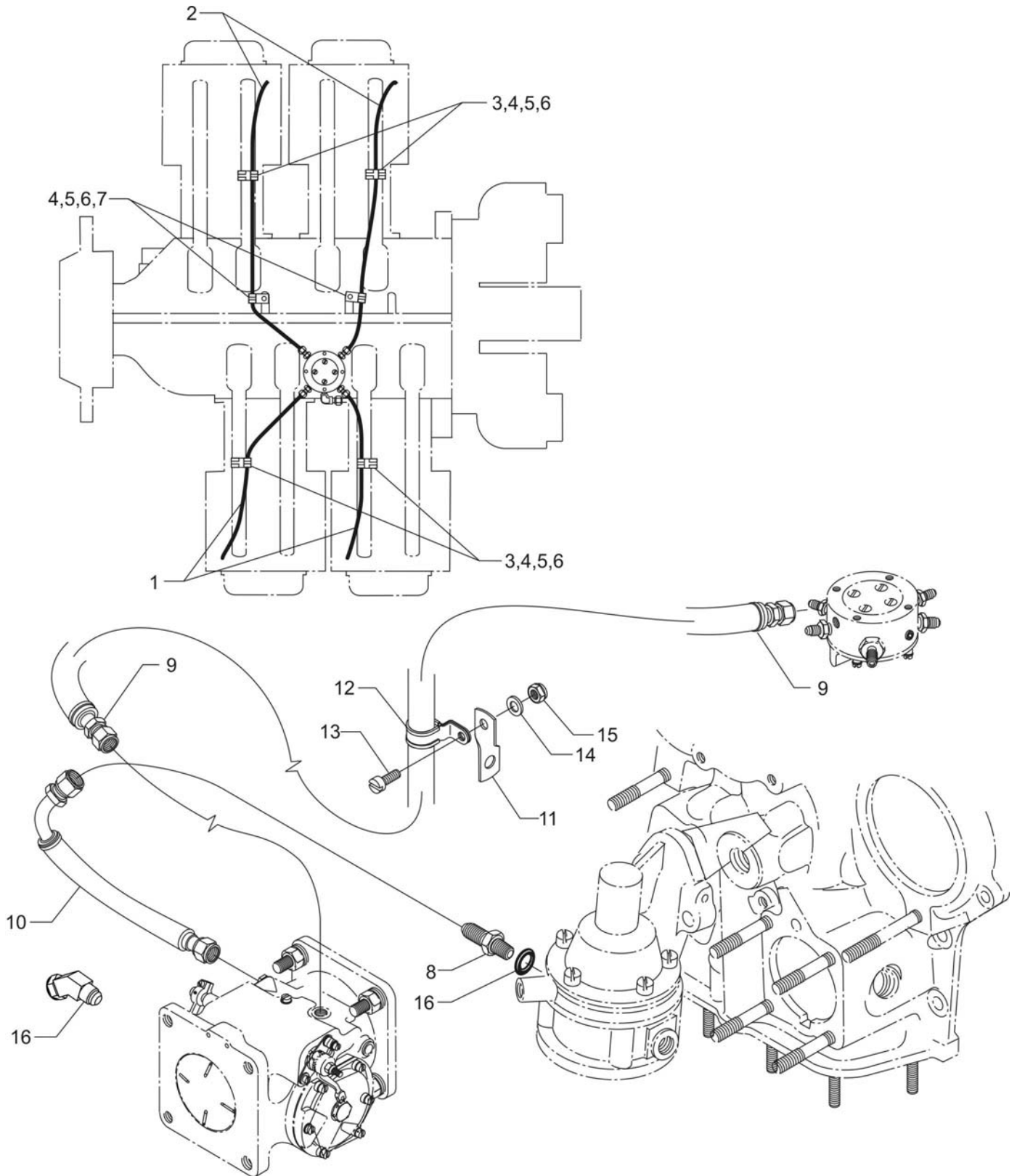


FIGURE 24. FUEL LINES, FUEL HOSES AND ATTACHING PARTS

SECTION 7
NUMERICAL INDEX

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
AN565B1032H5	Set Screw	2-7	LW-13896	Plug	2-7
AN6-34A	Bolt	1-9	LW-13923	Bushing	3-1
AN816-4	Nipple	6-5	LW-14021	Shaft	2-7
AN816-8	Nipple	2-13	LW-14260	Seal	2-3
AN844-10D	Elbow	2-13	LW-14529	Plug	1-5
AN960-616L	Washer	1-9	LW-14760	Gage Assy.	1-3
LRT23381	Body Assy.	1-3	LW-14820	Ring	1-5
LW-25-0.50	Bolt	6-5	LW-15473	Fuel Pump	2-5
LW-25-0.94	Bolt	2-3	LW-15592-5-05	Clamp	3-9
LW-25-0.94	Bolt	6-1	LW-15628	Seal	1-3
LW-25-1.00	Bolt	2-13	LW-16266-10-13	Clamp	6-7
LW-25-1.13	Bolt	1-9	LW-16266-10-75	Clamp	6-7
LW-25-1.13	Bolt	2-3	LW-16266-25-38	Clamp	2-9
LW-25-1.13	Bolt	6-1	LW-16266-25-63	Clamp	6-7
LW-25-1.25	Bolt	6-3	LW-16471	Support Assy.	1-5
LW-25-1.44	Bolt	2-3	LW-16475	Seat	3-5
LW-25-1.50	Bolt	1-9	LW-16562	Nipple	6-2
LW-25-1.75	Bolt	1-9	LW-18085	Spring	1-3
LW-25S1.50	Bolt	1-9	LW-18108	Impeller	2-3
LW-31-0.94	Bolt	2-9	LW-18109	Impeller	2-3
LW-31-1.16	Bolt	5-1	LW-18110	Impeller Assy.	2-3
LW-31H0.88	Bolt	1-7	LW-18265	Nozzle	6-5
LW-10077	Seat	3-5	LW-18639	Lockplate	1-5
LW-10481	Intake Pipe	6-3	LW-18661	Seal	3-5
LW-10483	Intake Pipe	6-3	LW-18667	Pin	1-7
LW-10484	Intake Pipe	6-3	LW-19227	Counterweight Assy.	1-5
LW-10493	Elbow Assy.	6-5	MS20822-6	Elbow	2-9
LW-11713	Spring	1-3	MS20823-6D	Elbow	3-3
LW-11796	Spring	3-5	MS20823-8	Elbow	2-13
LW-11797	Spring	3-5	MS29512-06	"O" Ring	2-9
LW-11956	Guide	3-3	STD-8	Washer	1-9
LW-11958	Guide	3-3	STD-8	Washer	2-3
LW-12098-0-140	Tube Assy.	6-7	STD-8	Washer	2-11
LW-12098-0-210	Tube Assy.	6-7	STD-8	Washer	2-13
LW-12186	Nut	3-1	STD-8	Washer	6-1
LW-12213	Tube Assy.	2-9	STD-8	Washer	6-3
LW-12545	Plug	6-1	STD-19	Dowel	2-7
LW-12586	Fuel Injector	6-5	STD-33	Washer	1-9
LW-12681	Gasket	4-1	STD-33	Washer	2-5
LW-12700	Hose	2-9	STD-35	Washer	2-3
LW-12752	Clamp	2-9	STD-35	Washer	2-5
LW-12754	Sump Assy.	6-1	STD-35	Washer	2-7
LW-12798-4S340	Hose Assy.	6-7	STD-35	Washer	2-9
LW-12879-6S162	Hose Assy.	6-7	STD-35	Washer	3-3
LW-13215	Oil Filter	2-13	STD-35	Washer	5-1
LW-13321	Seat	3-5	STD-35	Washer	6-5
LW-13322	Seat	3-5	STD-82	Screw	6-5
LW-13353	Gasket	6-1	STD-148	Nipple	6-5
LW-13793	Stud	1-1	STD-160	Washer	1-9
LW-13796	Shaft	1-7	STD-160	Washer	2-3

NUMERICAL INDEX (CONT.)

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
STD-160	Washer	2-11	STD-2168	Nut	1-7
STD-160	Washer	2-13	STD-2180	Hose	3-9
STD-160	Washer	3-7	STD-2231	Ring	1-7
STD-160	Washer	6-1	STD-2246	Bolt	1-5
STD-160	Washer	6-3	STD-2249	Nut	1-9
STD-160	Washer	6-5	25C-8	Stud	3-3
STD-251	Washer	3-9	25C-10	Stud	2-13
STD-251	Washer	6-5	25C-22	Stud	2-1
STD-425	Washer	6-7	31C-12	Stud	1-1
STD-475	Washer	2-5	31C-12	Stud	2-1
STD-475	Washer	2-7	31C-12	Stud	6-1
STD-475	Washer	2-9	31C-13	Stud	1-1
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