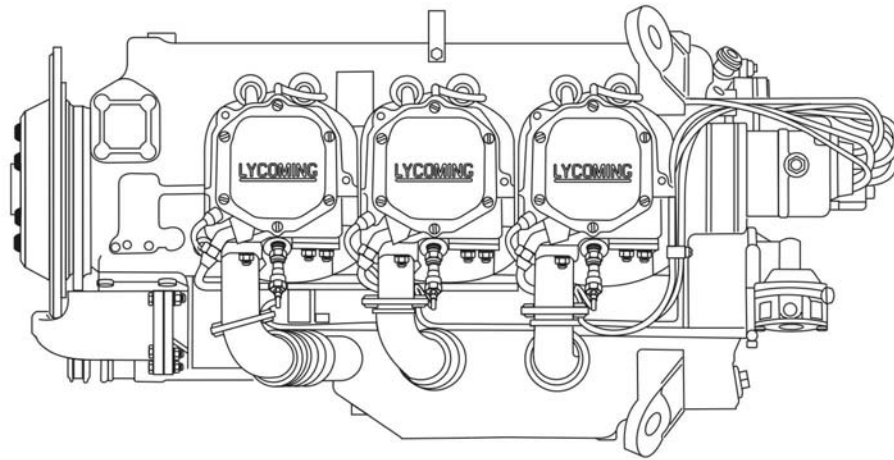


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Engine Parts Catalog O-540-A4B5

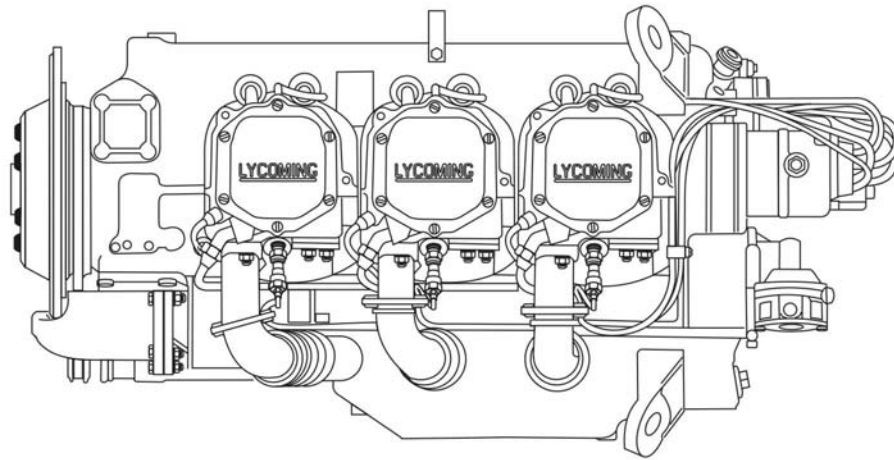
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April 2010

Part No. PC-515-5

652 Oliver Street
Williamsport, PA 17701

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Engine Parts Catalog O-540-A4B5

LYCOMING

April 2010

Part No. PC-515-5

652 Oliver Street
Williamsport, PA 17701

INTRODUCTION

This illustrated parts catalog contains a complete parts listing for the Lycoming O-540-A4B5 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 is 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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TABLE OF CONTENTS

SECTION	PAGE
Introduction.....	i
Table of Contents.....	ii
Oversize and Undersize Parts Listing.....	iii
1. CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP	
Crankcase Assembly.....	1-1
Oil Level Gage and Engine Mounting Brackets.....	1-3
Crankcase Related Parts.....	1-5
Crankshaft and Counterweight Assembly.....	1-7
Camshaft, Tachometer Drive and Crankshaft Idler Gears.....	1-9
Propeller Governor Drive Assembly.....	1-11
Crankcase Attaching Parts.....	1-13
2. ACCESSORY HOUSING AND RELATED PARTS	
Accessory Housing Assembly.....	2-1
Oil Pump Assembly and Accessory Housing Attaching Parts.....	2-3
Fuel Pump Cover.....	2-5
Oil Filter Assembly and Oil Cooler Bypass Valve.....	2-7
Vacuum and Hydraulic Pump Drives and Covers.....	2-9
3. CYLINDER, PISTON AND VALVE TRAIN	
Connecting Rods, Pistons and Ring Assemblies.....	3-1
Cylinder Assembly.....	3-3
Valve Assembly and Related Parts.....	3-5
Cylinder Related Parts.....	3-7
4. IGNITION SYSTEM	
Slick Magnetos, Magneto Drives, Slick Harnesses and Spark Plugs.....	4-1
5. ELECTRICAL SYSTEM	
Starter and Attaching Parts.....	5-1
Alternator Assembly and Belt.....	5-2
Alternator Mounting and Attaching Parts.....	5-3
6. OIL SUMP AND INDUCTION SYSTEM	
Oil Sump Assembly and Oil Suction Screen.....	6-1
Intake Pipe Assembly.....	6-3
Carburetor and Related Parts.....	6-5
7. SERVICE KITS SECTION	7-1
8. NUMERICAL INDEX	8-1

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
76943	GUIDE	See latest revision of Service Instruction No. 1256.										
66610	BUSHING		X	X								
66796	INSERT			X								
69796	DOWEL		X									
71903-A	BUSHING	See latest revision of Service Instruction No. 1143.										
72057	SEAT		X	X		X	X					
72058	SEAT			X		X	X					
72155-S	BUSHING		X	X	X	X						
73810	BUSHING	See latest revision of Service Instruction No. 1142.										
16R22126	GUIDE	See latest revision of Service Instruction No. 1256										
75656-S	BUSHING		X	X	X	X						
75657-S	BUSHING		X	X		X						
LW-13792	SEAL	See latest revision of Service Instruction No. 1324.										
18D26098	BEARING				X					X	X	X
18M26105	BEARING			X						X	X	X
STD-1065	DOWEL	X	X	X	X							
18A26063	BEARING				X					X	X	X

In addition to the above, studs are available in P03, P07 & P12.

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 in .003 undersize, order P/N 18D26098-M03. Oversize code letter is “P” while undersize code letter is “M”. These letters are then followed by the number designating the size in thousandths of an inch.

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
CRANKCASE ASSEMBLY

FIG. REF. 1	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	11E24100-S1*	CRANKCASE ASSEMBLY	1
2	01A23354	STUD, 5/16-18 x 1.00 long, drilled	1
3	31C-12	STUD, 5/16-18 x 1-1/2 long	2
4	31C-13	STUD, 5/16-18 x 1-5/8 long	1
5	38-13	STUD, 3/8-16 x 1-5/8 long	24
6	50-15	STUD, 1/2-13 x 1-7/8 long	12
7	38-22	STUD, 3/8-16 x 2-3/4 long	1
8	38D-17	STUD, 3/8-16 x 2-1/8 long, drilled	1
9	38-16	STUD, 3/8-16 x 2.00 long	8
10	69796	DOWEL, Crankshaft bearing	2
11	STD-514	DOWEL, 5/16 diameter x 1/2 long	2
12	STD-557	DOWEL, 1/2 diameter x 11/16 long	2
13	72158	BUSHING, Governor drive idler shaft	1
14	STD-1339**	PLUG, 1/16-27 NPT, Allen head	7
15	1102	PLUG, 1/8-27 NPT, Allen head	4
16	31C-17	STUD, 5/16-18 x 1-3/4 long	4

* - This part is not available as a service item.

** - One at governor pad, six at piston squirt holes.

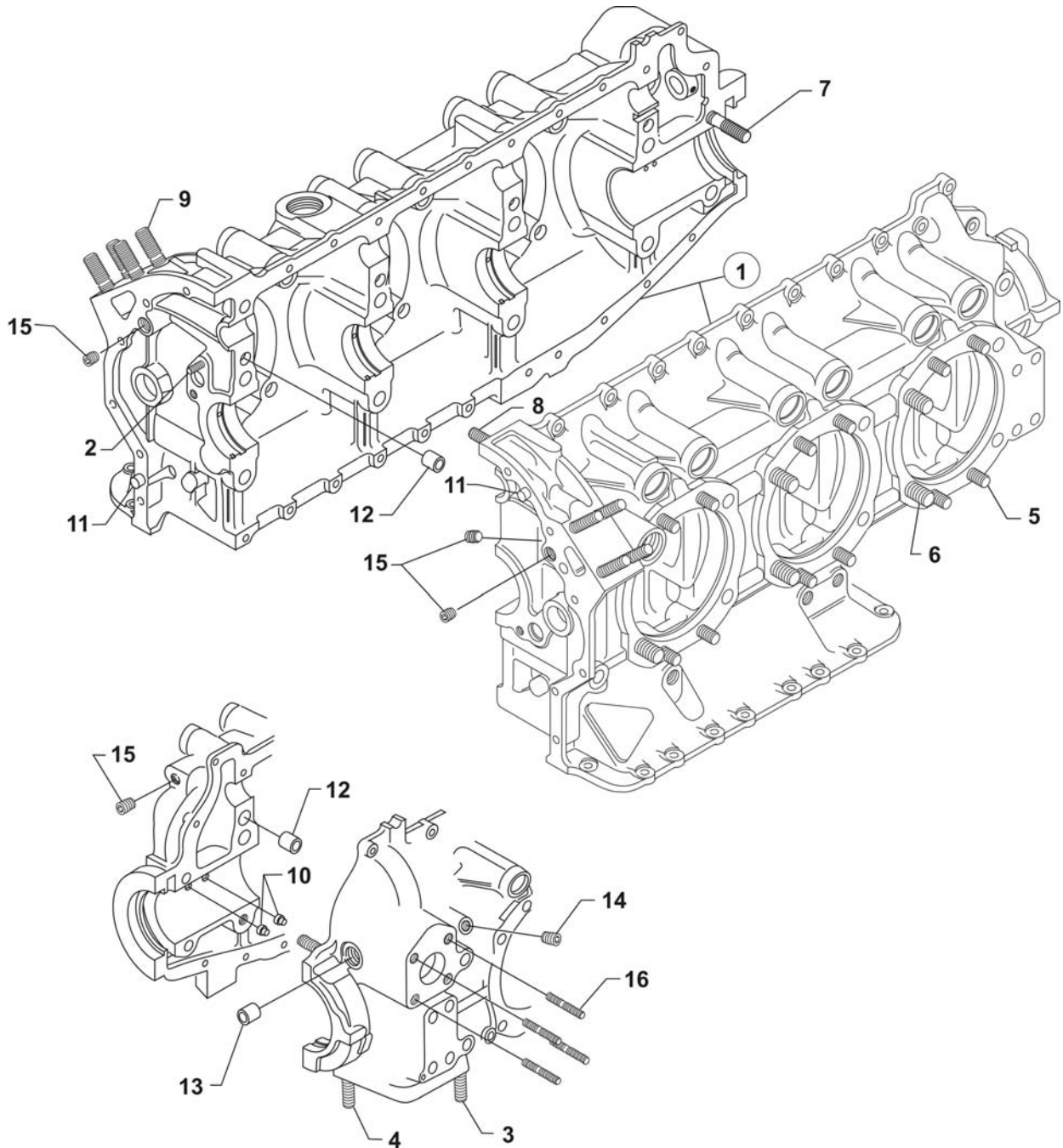


FIGURE 1. CRANKCASE ASSEMBLY

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
OIL LEVEL GAGE AND ENGINE MOUNTING BRACKETS

FIG. REF. 2	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	70457	GASKET, Oil filler extension	1
2	75737	EXTENSION, Oil filler (short), 2-11/16 long	1
3	74068	“O” RING, Oil level gage	1
4	LW-14756	GAGE ASSEMBLY, Oil level	1
5	70456	BRACKET, Engine mounting (dynafocal)	4
6	STD-33	WASHER, 3/8 plain	16
7	STD-678	WASHER, 3/8 lock, internal teeth	16
8	STD-596	NUT, 3/8-24 plain	16

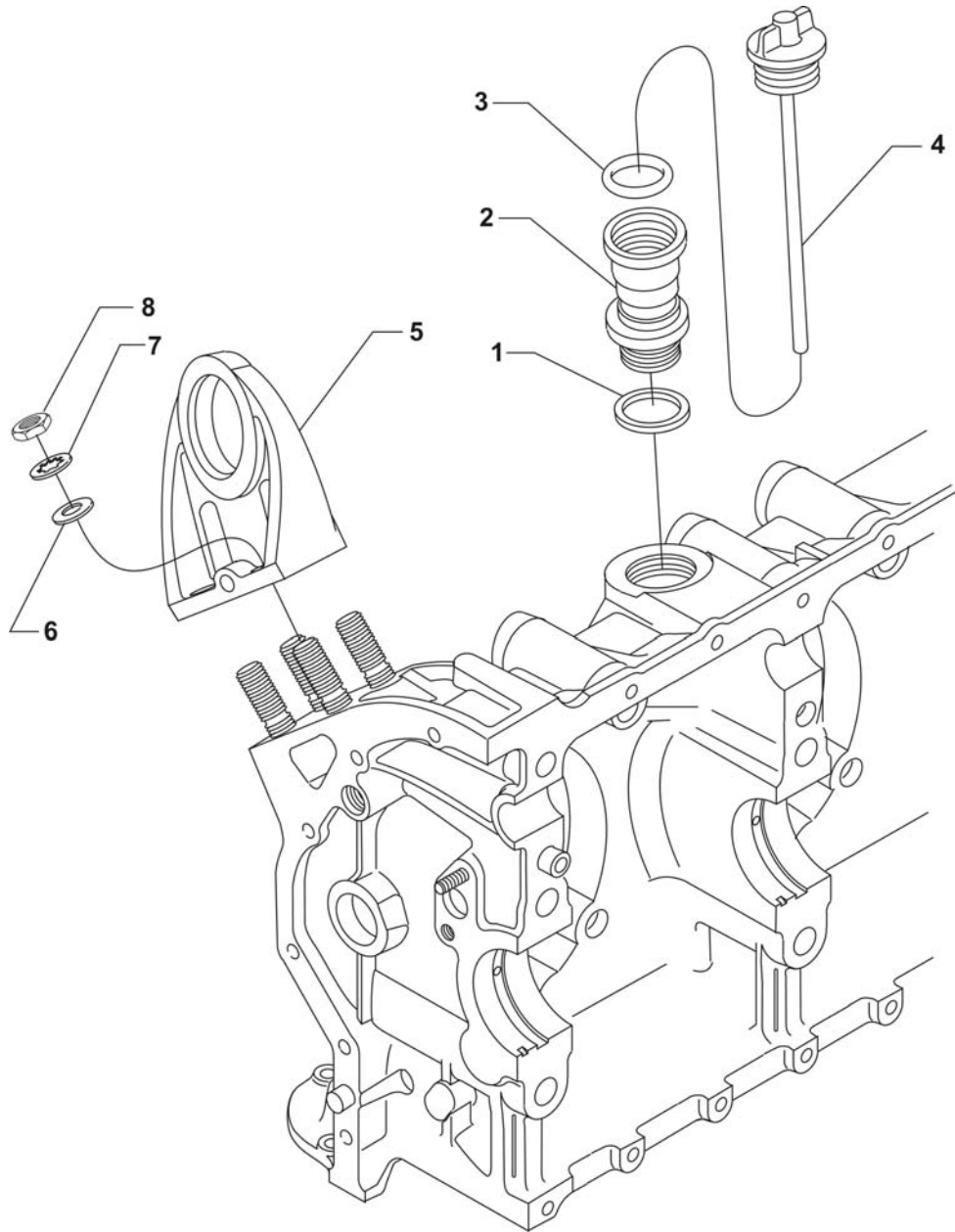


FIGURE 2. OIL LEVEL GAGE AND ENGINE MOUNTING BRACKETS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
CRANKCASE RELATED PARTS

FIG. REF. 3	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	1028-B	BALL, 11/16 diameter	1
2	61084*	SPRING, Oil pressure relief valve	1
	68668*	SPRING, Oil pressure relief valve	1
	77467*	SPRING, Oil pressure relief valve	1
	LW-11713*	SPRING, Oil pressure relief valve	1
	LW-18085*	SPRING, Oil pressure relief valve	1
3	06E19769-1.25	GASKET, 1-1/4 I.D. x 1-1/2 O.D. x 3/32 annular	1
4	77808	VALVE ASSEMBLY, Oil pressure relief, adjustable	1
5	18D26098	BEARING, Crankshaft	6
6	18A26093	BEARING, Crankshaft, front	2
7	LW-13792**	SEAL, Crankshaft oil, solid	1
8	72091	RING, Oil seal, 23/64 I.D. x 7/64 diameter section	2
9	LRT23381	BODY ASSEMBLY, Hydraulic tappet, roller type	12

* - 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.

** - Refer to latest revision of Service Instruction No. 1324 for installation.

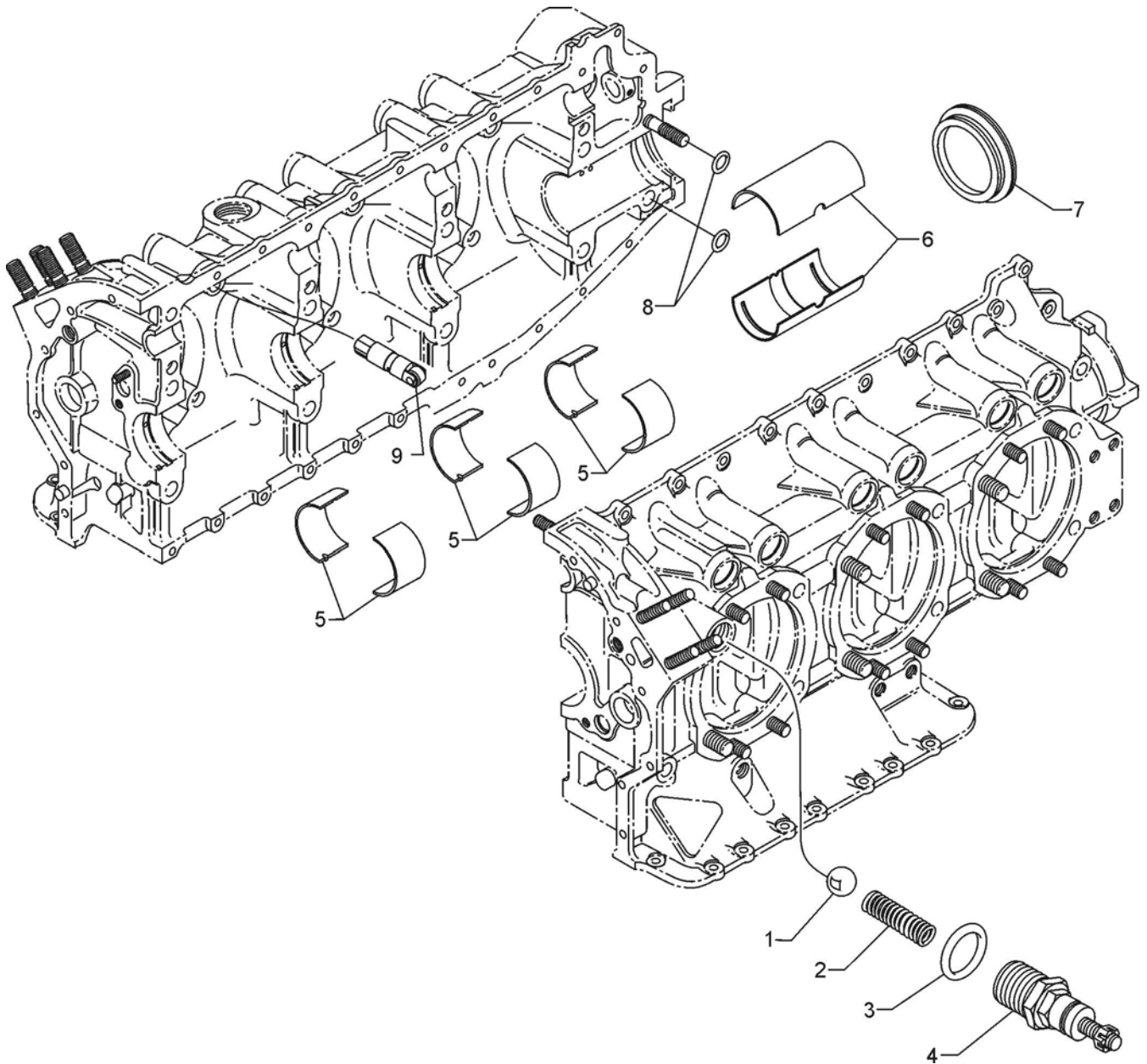


FIGURE 3. CRANKCASE RELATED PARTS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
CRANKSHAFT AND COUNTERWEIGHT ASSEMBLY

FIG. REF. 4	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	13E47622	CRANKSHAFT ASSEMBLY	1
2	STD-1211	PLUG, 2.00 diameter expansion	1
3	73810	BUSHING, Crankshaft dynamic counterweight	4
4	71640	PLUG, 1-3/8 diameter	1
5	75656-S	BUSHING, Propeller flange, long	4
6	72155-S	BUSHING, Propeller flange, short	1
7	75657-S	BUSHING, Propeller flange, indexing	1
8	STD-1065	DOWEL, Stepped, 5/16 x 1/4 diameter x 35/64 long	1
9	LW-19227*	COUNTERWEIGHT ASSEMBLY	2
10	71903-A	BUSHING, Dynamic counterweight	8
11	72797*	ROLLER, Dynamic counterweight, 6.3 order	2
12	72965*	ROLLER, Dynamic counterweight, 5.1 order	2
13	LW-14820	RING, Internal retaining	8
14	71907	WASHER, Dynamic counterweight	8
15	13S19647**	GEAR, Crankshaft	1
16	LW-18638	LOCKPLATE, Crankshaft gear	1
17	STD-2247	BOLT, 5/16-24 UNF-3 x 1-3/4 long, hex. head	1
18	LW-16471	SUPPORT ASSEMBLY, Starter ring gear, 12/14 pitch	1
19	72566	GEAR, Starter ring, 12/14 pitch	1

* - See latest revision of Service Instruction No. 1012 for proper counterweight and roller location.

** - See latest revision of Service Bulletin No. 475 for proper installation.

CRANKSHAFT AND COUNTERWEIGHT ASSEMBLY, KIT P/N 05K23340 AVAILABLE.

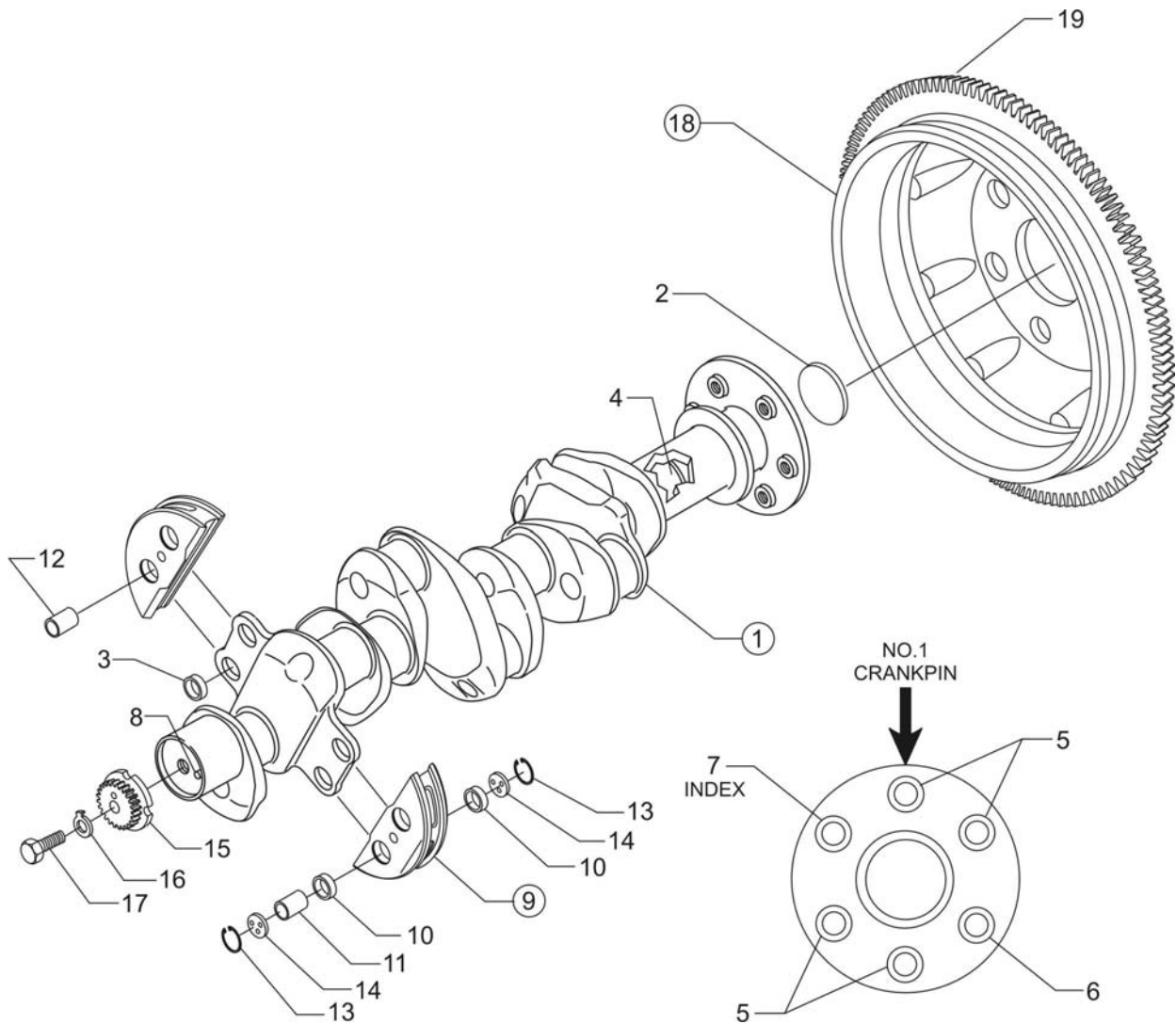


FIGURE 4. CRANKSHAFT AND COUNTERWEIGHT ASSEMBLY

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

FIG. REF. 5	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	15N23374	CAMSHAFT ASSEMBLY	1
2	76118	SPACER, Tachometer shaft centering	1
3	76155	SHAFT ASSEMBLY, Tachometer	1
4	LW-18667	PIN, 3/16 diameter x 2-21/64 long	1
5	STD-2231	RING, Internal retaining	1
6	71668	GEAR ASSEMBLY, Crankshaft idler, plain	2
7	67530	BUSHING, Crankshaft idler gear	2
8	LW-13795	SHAFT, Crankshaft idler gear	2
9	LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex. head, drilled	3
10	STD-2168	NUT, 5/16-18 NC-3 slotted shear	1

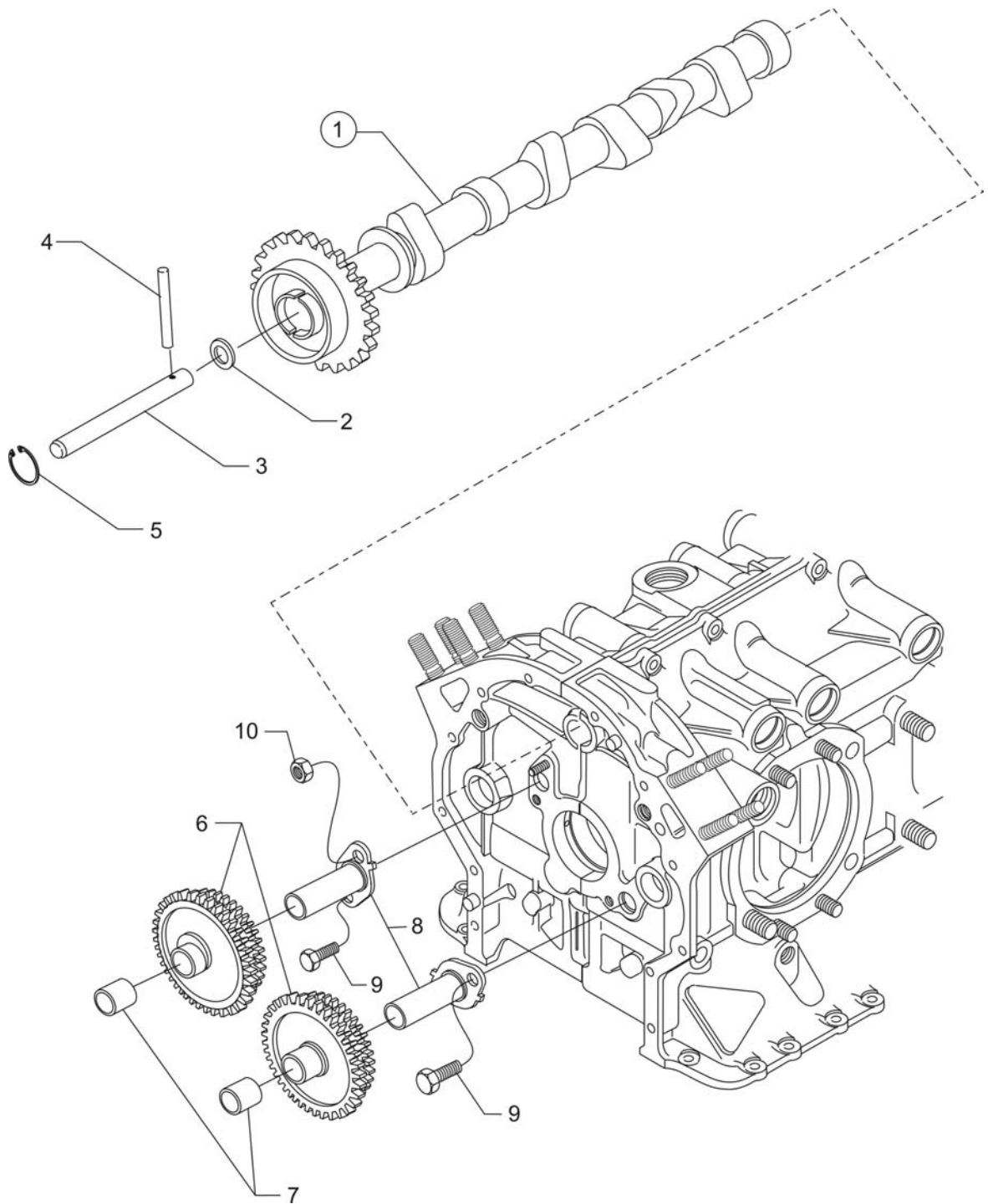


FIGURE 5. CAMSHAFT, TACHOMETER DRIVE AND CRANKSHAFT IDLER GEARS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
PROPELLER GOVERNOR DRIVE ASSEMBLY

FIG. REF. 6	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-10442	GEAR, Propeller governor driven	1
2	LW-14021	SHAFT, Propeller governor idler gear	1
3	LW-10541	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	AR
	73250	WASHER, Thrust	AR
	73251	WASHER, Thrust	AR
	73252	WASHER, Thrust	AR
	01L21418	WASHER, Thrust	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	1
12	72378	COVER, Governor drive	1
13	STD-35	WASHER, 5/16 plain	20
14	STD-475	WASHER, 5/16 lock, internal teeth	4
15	STD-1410	NUT, 5/16-18 plain	4

* - For alternate set screws and installation information, refer to the latest revision of Service Instruction No. 1343.

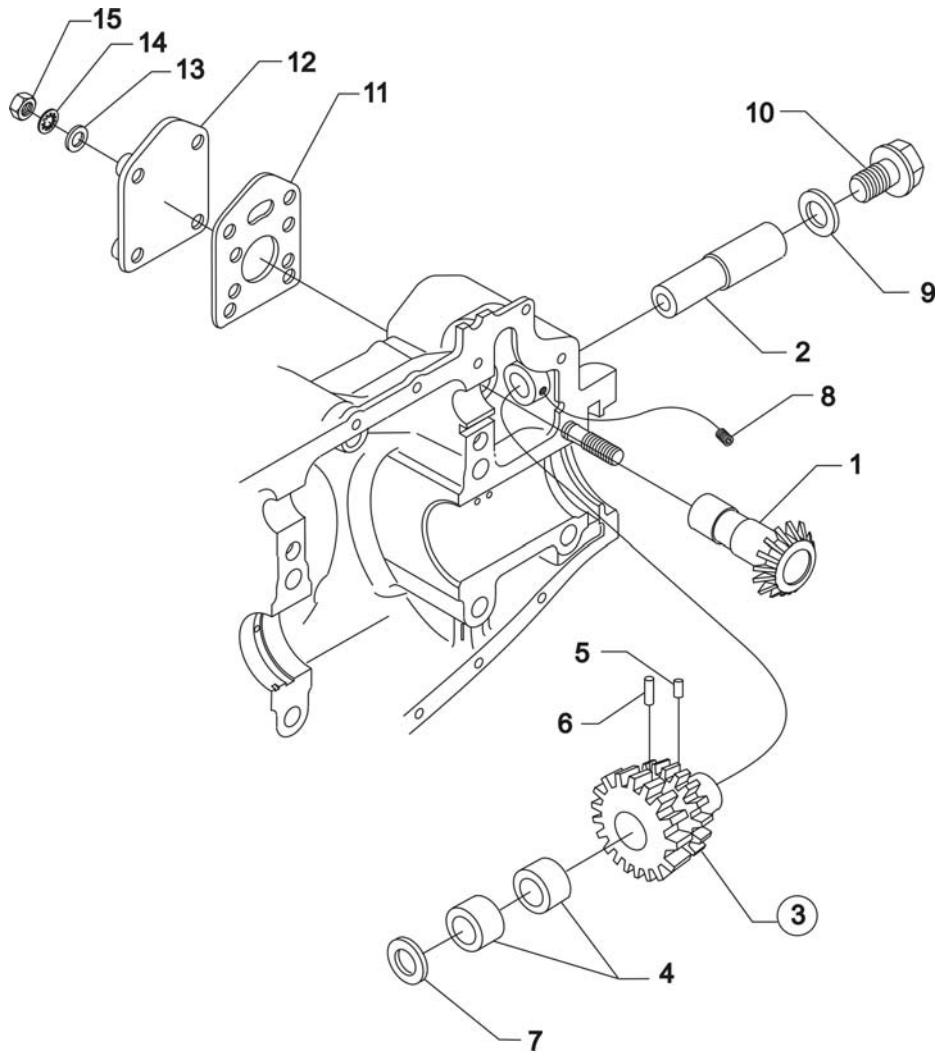


FIGURE 6. PROPELLER GOVERNOR DRIVE ASSEMBLY

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
CRANKCASE ATTACHING PARTS

FIG. REF. 7	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-25-1.50	BOLT, 1/4-20 x 1-1/2 long, hex. head	11
2	STD-8	WASHER, 1/4 plain	24
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	1
6	STD-160	WASHER, 1/4 lock, internal teeth	13
7	STD-1411	NUT, 1/4-20 plain	12
8	LW-25S1.50	BOLT, 1/4-20 x 1-1/2 long, hex. head, drilled end	6
9	STD-8	WASHER, 1/4 plain (max. 18)	AR
10	STD-2249	NUT, 1/4-20 slotted shear	6
11	STD-33	WASHER, 3/8 plain	1
12	STD-872	NUT, 3/8-24 slotted	1
13	AN6-34A	BOLT, 3/8-24 x 3-37/64 long, hex. head	1
14	STD-33	WASHER, 3/8 plain	3
15	STD-678	WASHER, 3/8 lock, internal teeth	2
16	STD-596	NUT, 3/8-24 plain	2
17	76220	STUD, 1/2-20 x 10-45/64 long	8
18	LW-31-2.75	BOLT, 5/16-18 x 2-3/4 long, hex. head	1
19	LW-31-1.16	BOLT, 5/16-18 x 1-5/32 long, hex. head	3
20	STD-35	WASHER, 5/16 plain	4
21	STD-475	WASHER, 5/16 lock, internal teeth	4

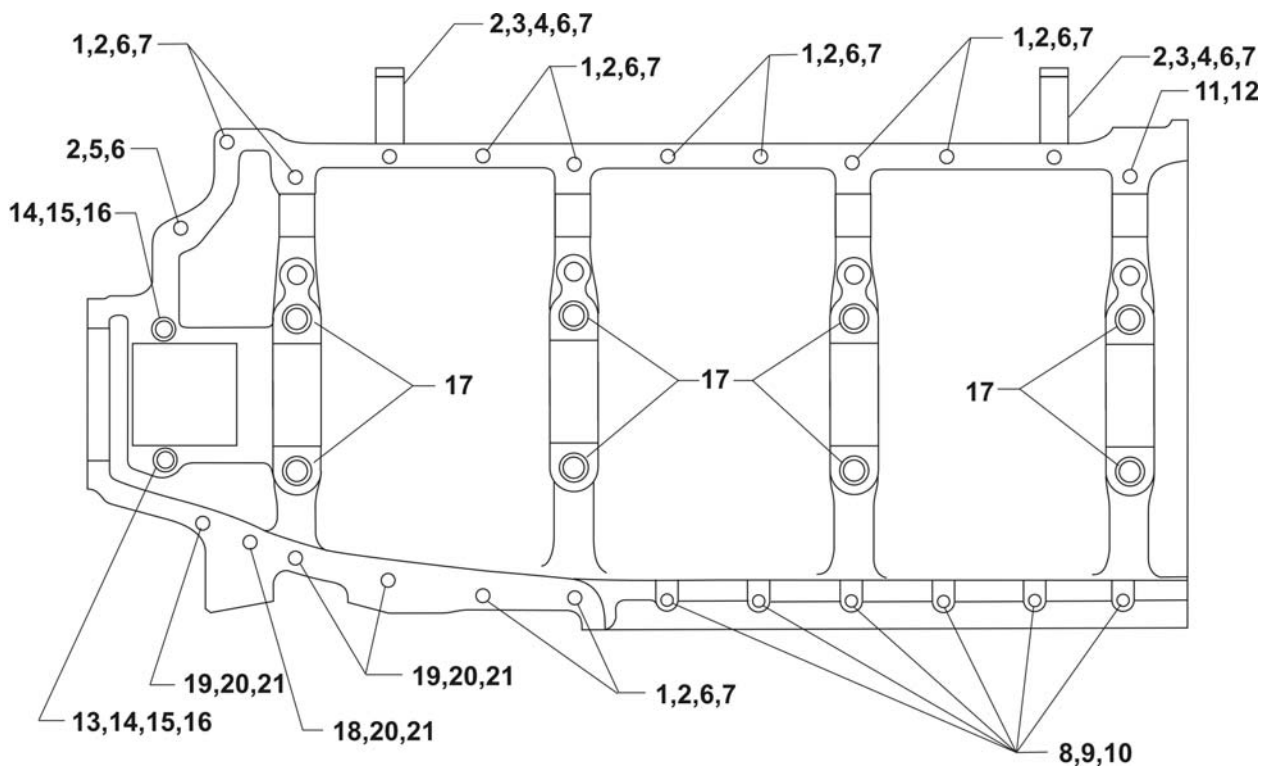


FIGURE 7. CRANKCASE ATTACHING PARTS

ACCESSORY HOUSING AND RELATED PARTS
ACCESSORY HOUSING ASSEMBLY

FIG. REF. 8	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	73818	GASKET, Accessory housing	1
2	21C21539-02	HOUSING ASSEMBLY, Accessory	1
3	31C-12	STUD, 5/16-18 x 1-1/2 long	4
4	31C-21	STUD, 5/16-18 x 2-5/8 long	4
5	25C-21	STUD, 1/4-20 x 2-5/8 long	4
6	31CD-17	STUD, 5/16-18 x 2-1/8 long, drilled	3
7	1102	PLUG, 1/8-27 NPT, Allen head	4
8	STD-784	PLUG, 3/8-18 NPT, Allen head	1

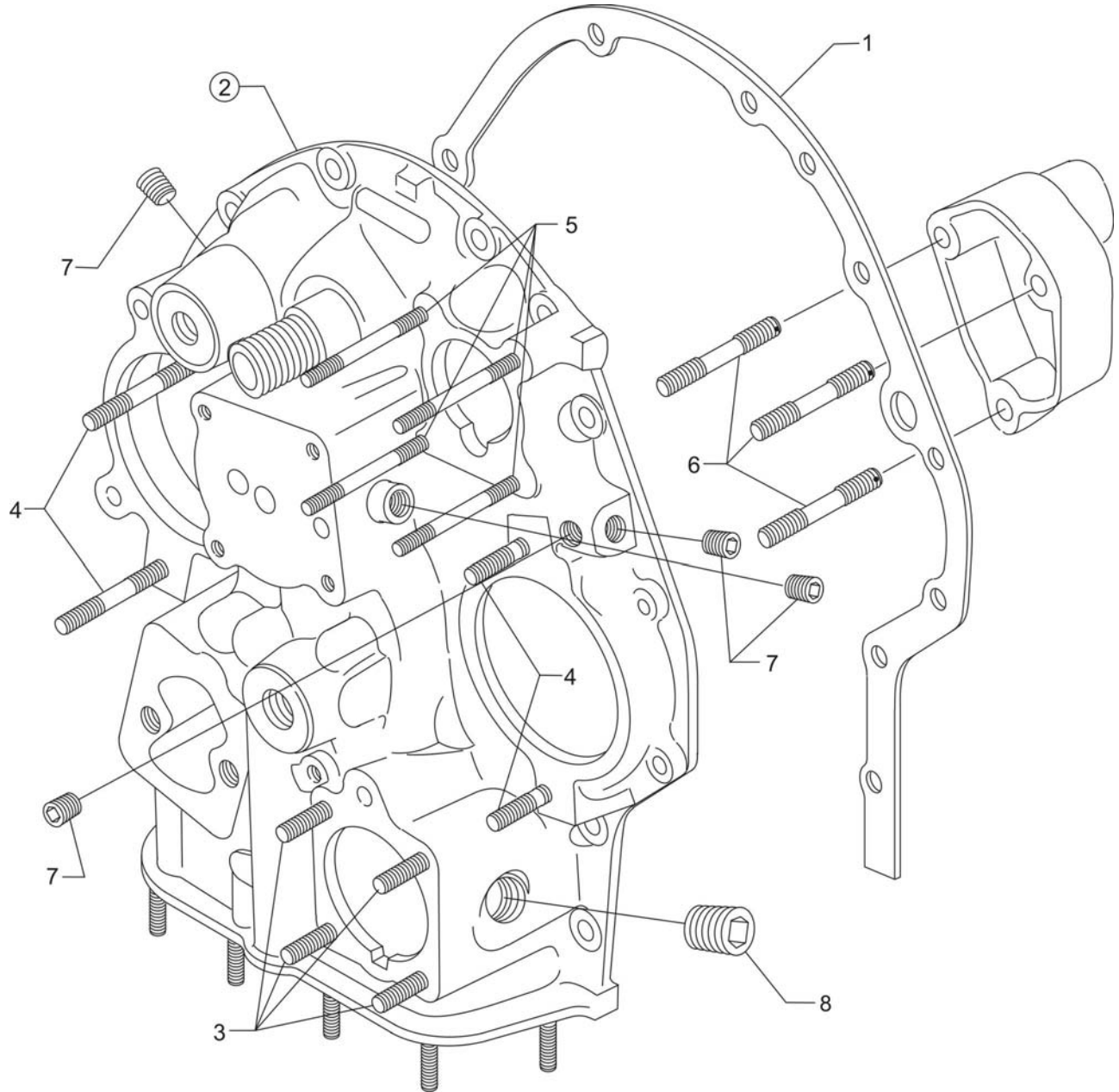


FIGURE 8. ACCESSORY HOUSING ASSEMBLY

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

FIG. REF. 9	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	78531	BODY ASSEMBLY, Oil pump	1
2	74641	SHAFT, Oil pump drive	1
3	LW-18110*	IMPELLER ASSEMBLY, Oil pump driven	1
4	LW-18108	IMPELLER, Oil pump driven	1
5	78530	SHAFT, Oil Pump drive	1
6	LW-18109*	IMPELLER, Oil pump, driven	1
7	STD-35	WASHER, 5/16 plain	3
8	STD-1420	NUT, 5/16-18 slotted	3
9	LW-14260	SEAL, Tachometer drive, oil	1
10	STD-8	WASHER, 1/4 plain	12
11	STD-160	WASHER, 1/4 lock, internal teeth	12
12	LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. head	9
13	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	1
14	LW-25-1.44	BOLT, 1/4-20 x 1-7/16 long, hex. head	2

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

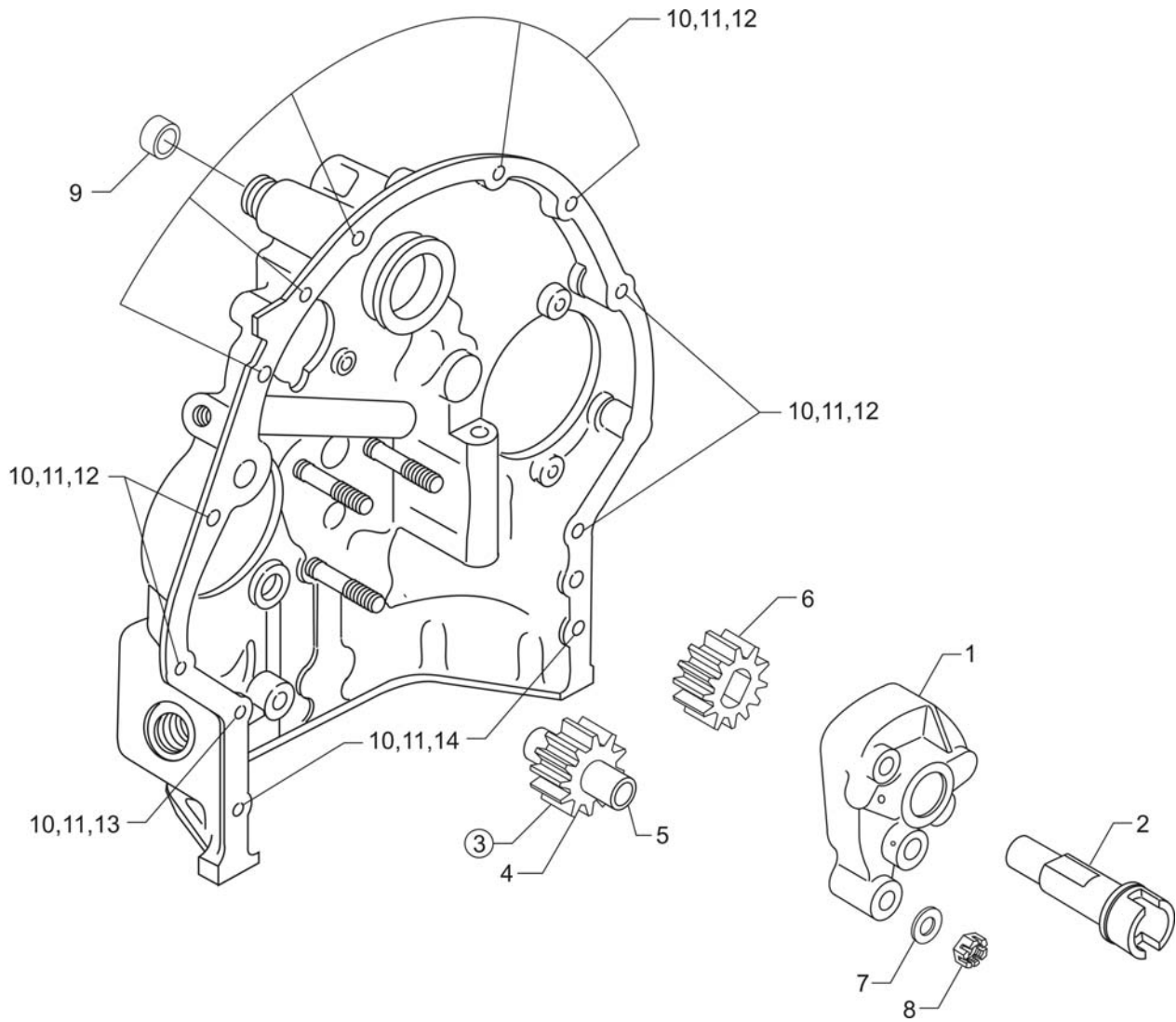


FIGURE 9. OIL PUMP ASSEMBLY AND ACCESSORY HOUSING ATTACHING PARTS

ACCESSORY HOUSING AND RELATED PARTS
FUEL PUMP COVER

FIG. REF. 10	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	60096	GASKET, Fuel pump	1
2	03D23350	COVER, Fuel pump	1
3	STD-33	WASHER, 3/8 plain	2
4	LW-38-0.75	BOLT, 3/8-16 x 3/4 long, hex. head	2
5	STD-678	WASHER, 3/8 lock, internal teeth	2

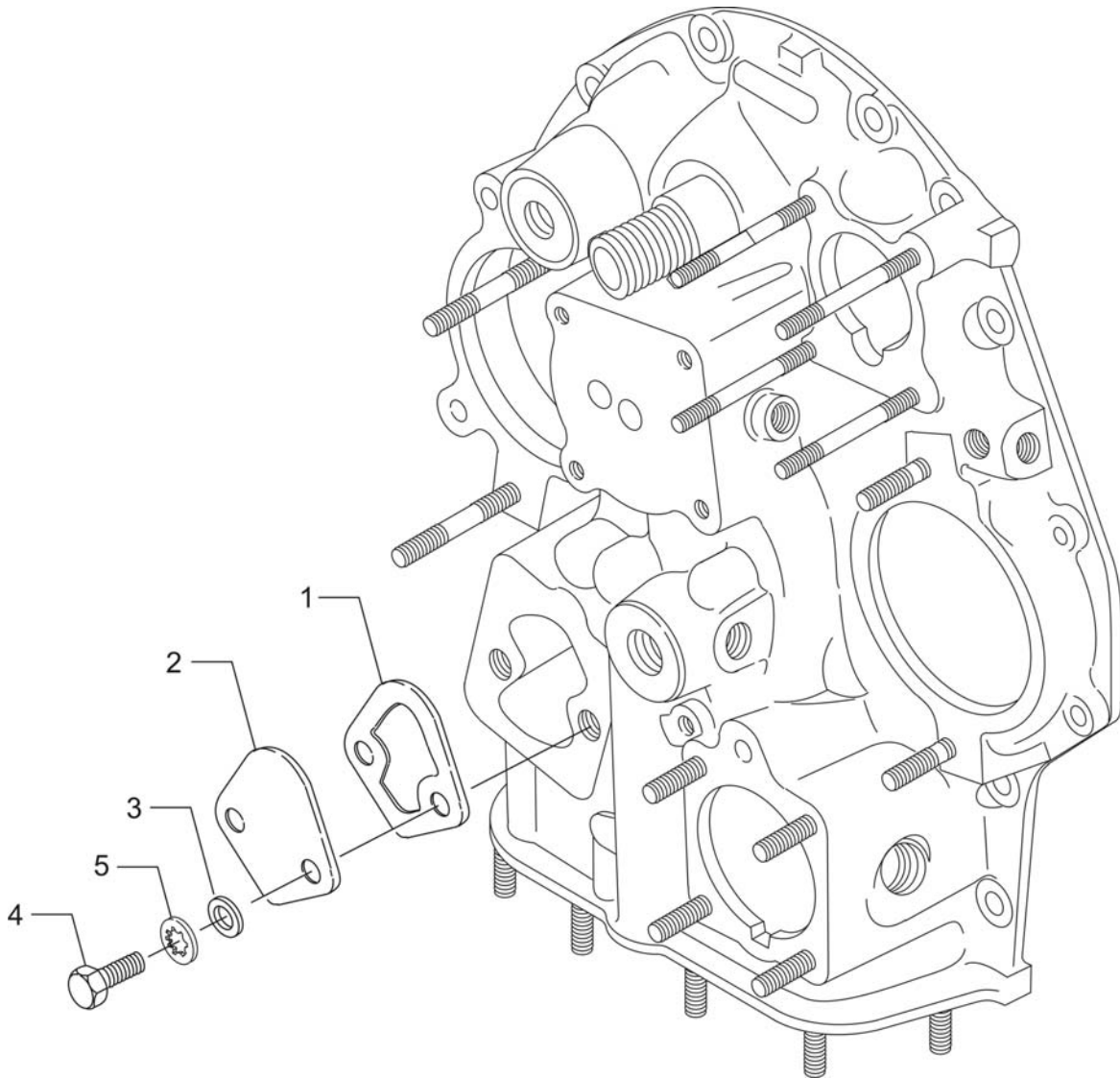


FIGURE 10. FUEL PUMP COVER

ACCESSORY HOUSING AND RELATED PARTS
OIL FILTER ASSEMBLY AND OIL COOLER BYPASS VALVE

FIG. REF. 11	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	06B23862	GASKET, Oil filter adapter	1
2	77852	OIL FILTER BASE ASSEMBLY	1
3	LW-13215	OIL FILTER, Short, spin-on	1
4	STD-8	WASHER, 1/4 plain	4
5	STD-160	WASHER, 1/4 lock, internal teeth	1
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	STD-160	WASHER, 1/4 lock, internal teeth	3
9	53E22144	VALVE ASSEMBLY, Temperature control oil cooler bypass	1
10	76510	GASKET, Valve assembly	1
11	25C-10	STUD, 1/4-20 x 1-1/4 long	1
12	06E19769-0.63	GASKET, Annular, 5/8 I.D.	1
13	62417	PLUG, Oil cooler bypass	1
14	MS20822-8	ELBOW, 1/2 flared tube, 3/8 NPT	1
15	AN816-8	NIPPLE, 1/2 flared tube	1
16	AN912-7D	BUSHING, Reducer	1
17	AN844-10D	ELBOW, Pipe	1

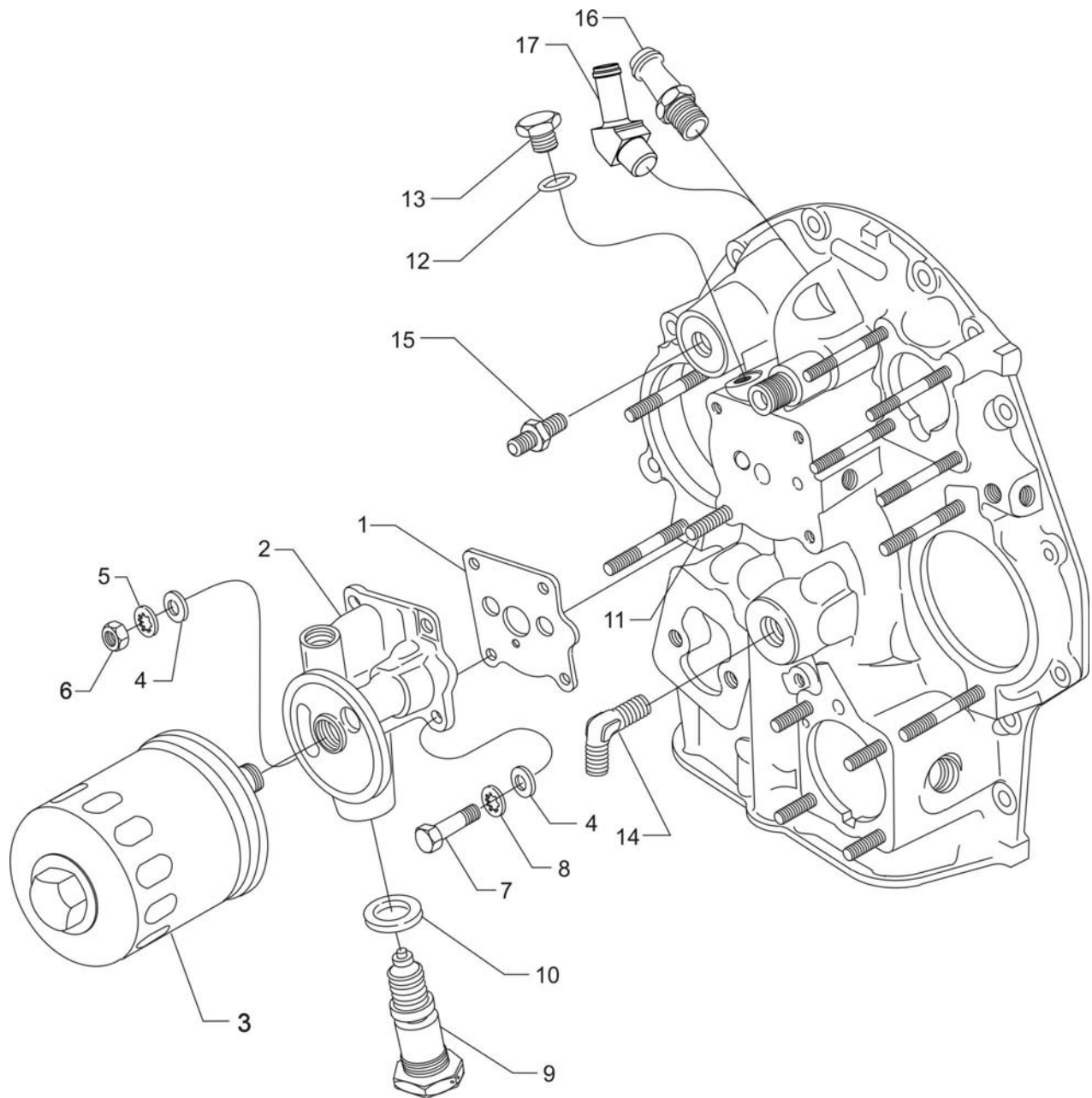


FIGURE 11. OIL FILTER ASSEMBLY AND OIL COOLER BYPASS VALVE

ACCESSORY HOUSING AND RELATED PARTS
VACUUM AND HYDRAULIC PUMP DRIVES AND COVERS

FIG. REF. 12	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	61183	GASKET, Accessory adapter	1
2	67536	ADAPTER ASSEMBLY, Vacuum pump	1
3	STD-1774	PIN, 1/8 diameter x 1/4 long	1
4	06A19956	OIL SEAL, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide	1
5	72974	GEAR ASSEMBLY, Vacuum pump driven	1
6	71596	WASHER, Accessory drive gear	1
7	8313	GASKET, Vacuum pump	1
8	60430	COVER, Vacuum pump	1
9	STD-8	WASHER, 1/4 plain	4
10	STD-160	WASHER, 1/4 lock, internal teeth	4
11	STD-1411	NUT, 1/4-20 plain	4
12	69551	GASKET, Accessory drive adapter	1
13	69106	COVER, Governor drive adapter pad	1
14	STD-35	WASHER, 5/16 plain	4
15	STD-475	WASHER, 5/16 lock, internal teeth	4
16	STD-1410	NUT, 5/16-18 plain	4

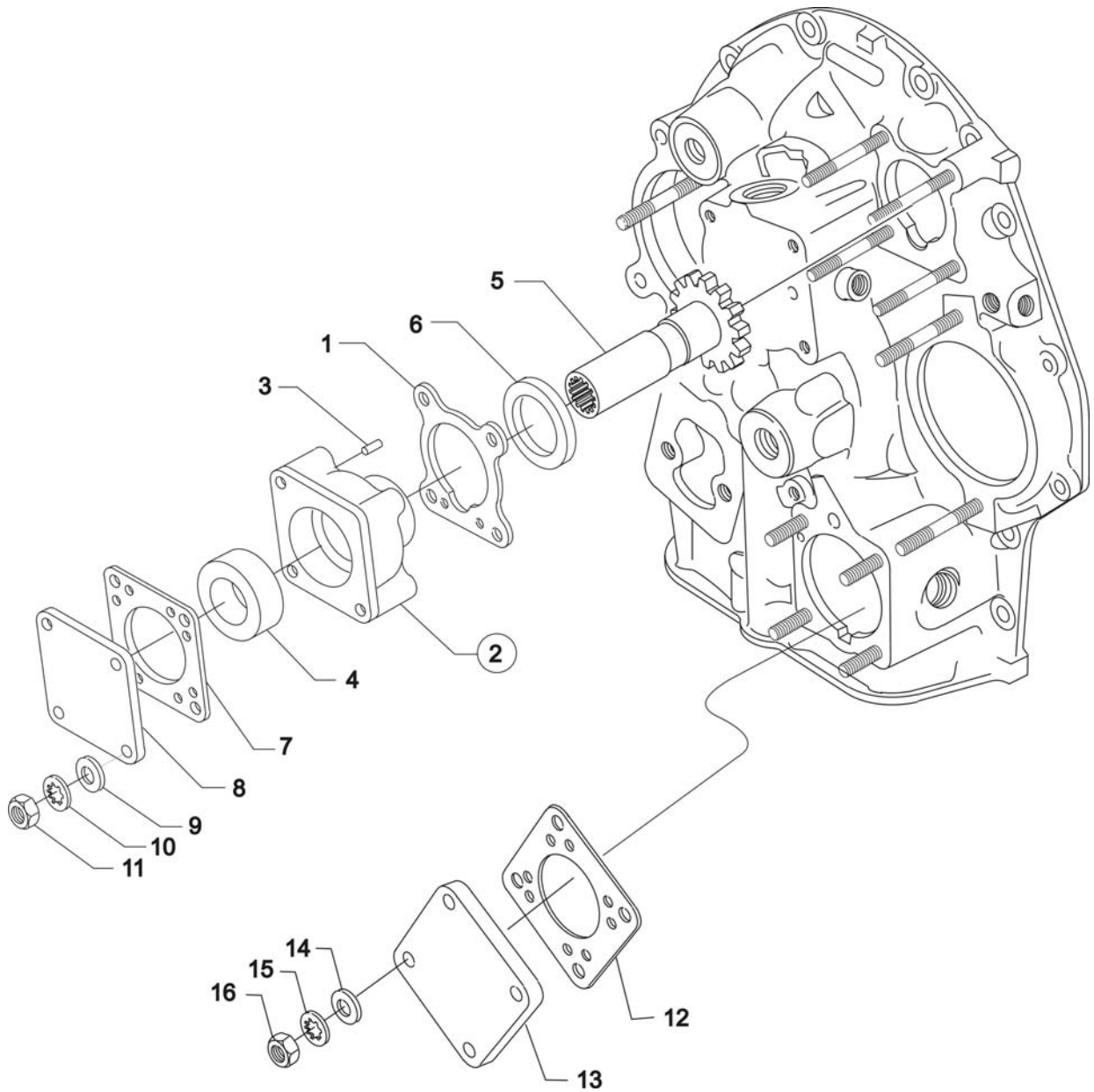


FIGURE 12. VACUUM AND HYDRAULIC PUMP DRIVES AND COVERS

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

FIG. REF. 13	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-11750-S	CONNECTING ROD ASSEMBLY	6
2	LW-13923	BUSHING, Connecting rod, upper	6
3	14S23890*	BOLT, Connecting rod	12
	75061**	BOLT, Connecting rod	12
4	LW-12186	NUT, Connecting rod bolt	12
5	18M26105	BEARING, Connecting rod	12
6	75089	PISTON, Compression ratio 8.50:1	6
7	LW-14078	PIN, Piston	6
8	72198	PLUG, Piston pin	12
9	74241	RING, Piston compression	12
10	14H21950	RING, Piston, oil regulating (expander type)	6

* - Lycoming use only.

** - Service use only.

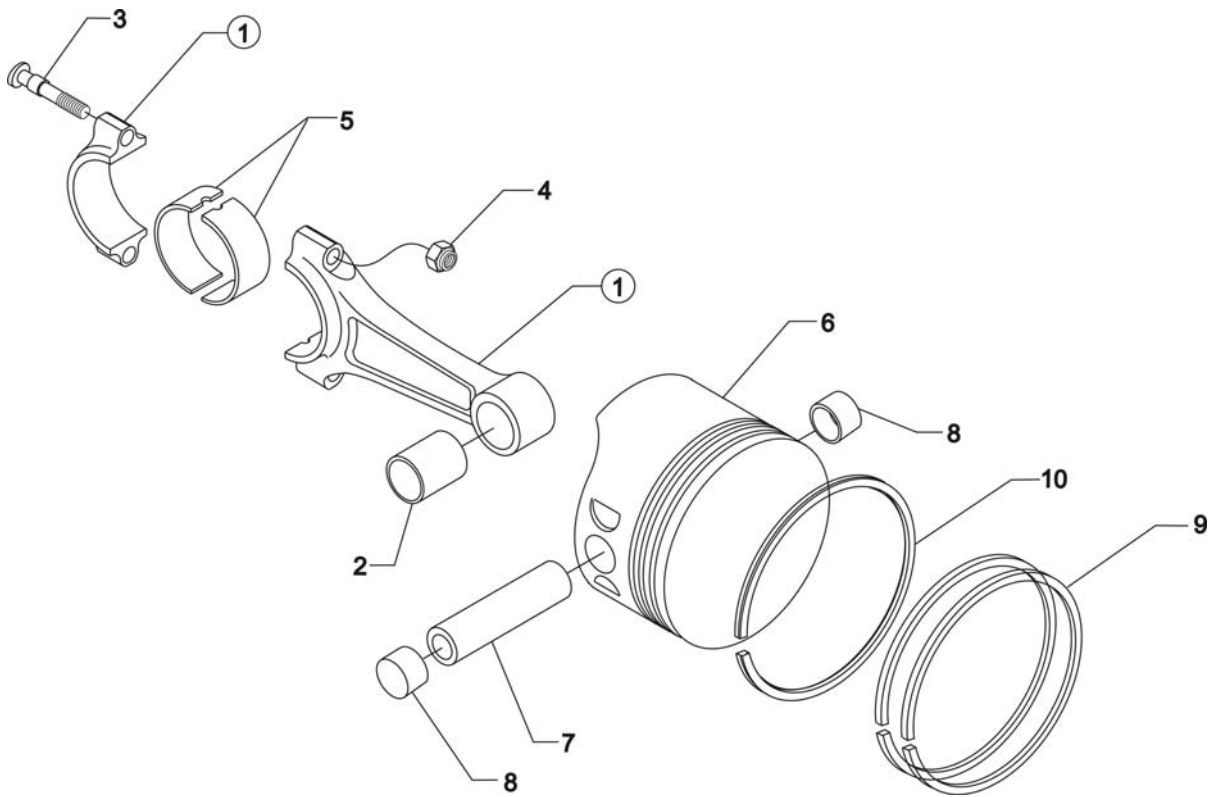


FIGURE 13. CONNECTING RODS, PISTON AND RING ASSEMBLIES

CYLINDER, PISTON AND VALVE TRAIN
CYLINDER ASSEMBLY

FIG. REF. 14	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-12427	CYLINDER AND HEAD ASSEMBLY, Nitrided	6
2	72057	SEAT, Intake valve	6
3	72058	SEAT, Exhaust valve	6
4	76943*	GUIDE, Valve intake, flanged	6
5	16R22126*	GUIDE, Valve exhaust, flanged	6
6	66796	INSERT, Spark plug, 18-1.5 MM	12
7	STD-1353	INSERT, No. 10-24 Hel-coil x 3/8 long	6
8	31C-12	STUD, 5/16-18 x 1-1/2 long	12
9	25C-8	STUD, 1/4-20 x 1.00 long	6
10	MS20823-6D	ELBOW, 45° x 3/8 flared tube	6
11	66610	BUSHING, Rocker shaft	24
12	1102**	PLUG, 1/8-27 NPT, Allen head	6
13	77611	GASKET, Exhaust flange	6
14	STD-35	WASHER, 5/16 plain	12
15	STD-475	WASHER, 5/16 lock, internal teeth	12
16	STD-1410	NUT, 5/16-18 plain	12

* - See latest revision of Service Instruction No. 1256.

** - Assemble in cylinder head.

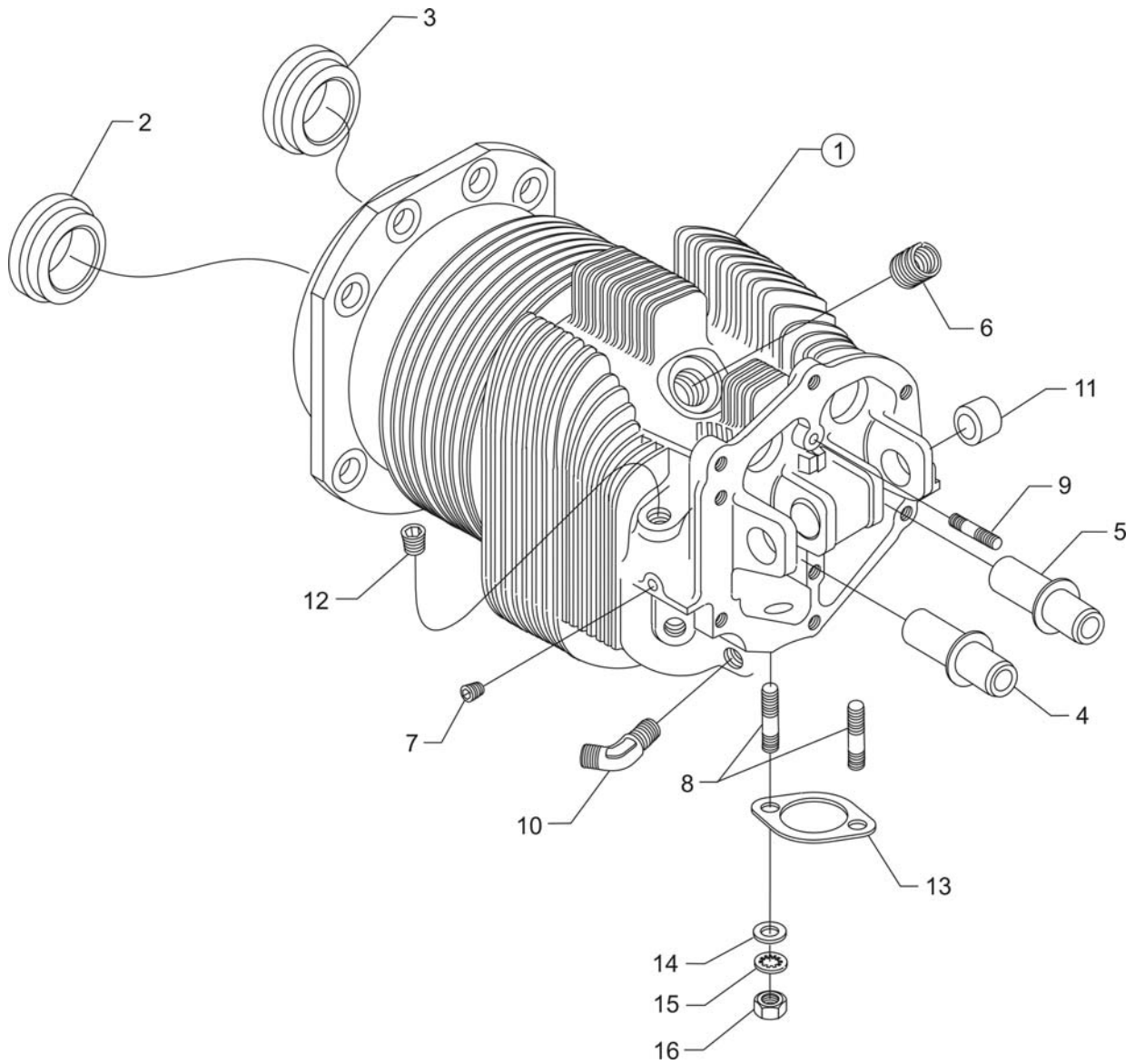


FIGURE 14. CYLINDER ASSEMBLY

CYLINDER, PISTON AND VALVE TRAIN
VALVE ASSEMBLY AND RELATED PARTS

FIG. REF. 15	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	17A23938	VALVE, Intake	6
2	17B23936	VALVE, Exhaust (rotator type)	6
3	LW-11795	SPRING, Valve, inner	12
4	LW-11800	SPRING, Valve, outer	12
5	LW-10077	SEAT, Valve spring, upper intake	6
6	65441	SEAT, Valve spring, lower intake	6
7	LW-13323	SEAT, Valve spring, lower exhaust	6
8	LW-16475	SEAT, Valve spring, upper exhaust (rotator type)	6
9	60009	KEY, Valve, intake	12
10	17C21191	KEY, Valve, exhaust (rotator type)	12
11	17C19386	CAP, Valve stem, exhaust (rotator type)	6
12	MS20823-6D	ELBOW, 45°, 3/8 flared tube	1
13	15B26066	PLUNGER ASSEMBLY, Hydraulic tappet	12
14	15B21319	SOCKET, Push rod, hydraulic tappet	12
15	15G23461	SHROUD TUBE ASSEMBLY, Push rod	12
16	LW-14995	SPRING, Shroud tube	6
17	LW-12272	LOCKPLATE, Shroud tube	6
18	STD-1411	NUT, 1/4-20 plain	6
19	01L23459	WASHER, 25/32 I.D. x 1-3/8 O.D. x 1/32 thick	12
20	06A23493	SEAL, Shroud tube	12
21	70310	SEAL, Shroud tube	12
22	15F19957-28*	ROD ASSEMBLY, Push (A total of 12 required)	AR
	15F19957-29*	ROD ASSEMBLY, Push (A total of 12 required)	AR
	15F19957-30*	ROD ASSEMBLY, Push (A total of 12 required)	AR
	15F19957-31*	ROD ASSEMBLY, Push (A total of 12 required)	AR
	15F19957-32*	ROD ASSEMBLY, Push (A total of 12 required)	AR
	15F19957-33*	ROD ASSEMBLY, Push (A total of 12 required)	AR
	15F19957-34*	ROD ASSEMBLY, Push (A total of 12 required)	AR
23	17F19357	ROCKER ASSEMBLY, Valve, intake and exhaust	12
24	74637	BUSHING, Valve rocker, intake and exhaust	12
25	LW-13790	SHAFT, Valve rocker	6
26	LW-12892	THRUST BUTTON, Rocker shaft	12

* - See latest revision of Service Instruction No. 1060 for complete push rod application.

CYLINDER, PISTON AND VALVE TRAIN
CYLINDER RELATED PARTS

FIG. REF. 16	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	75906	GASKET, Rocker box cover	6
2	61247	COVER, Rocker box	6
3	STD-1925	SCREW, 1/4-20 x 5/8 long, pan. head, self-locking	36
4	71481	RING, Oil seal, 3/32 diameter x 4-27/32 I.D.	6
5	77906	SPACER, 33/64 I.D. x 7/8 O.D. x 1/8 thick	2
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	24
8	STD-2090	NUT, 1/2-20 plain	28
9	STD-684	NIPPLE, Straight, 3/8 I.D. hose	6
10	STD-1821	HOSE, 3/8 I.D. x 2-1/2 long	6
11	LW-15592-5-05	CLAMP, Hose	12
12	68759	TUBE ASSEMBLY, Cylinder head oil drain, cylinder no. 1	1
13	71737	TUBE ASSEMBLY, Cylinder head oil drain, cylinder no. 2	1
14	68761	TUBE ASSEMBLY, Cylinder head oil drain, cylinders no. 3, 4, 5, 6	4
15	75339	BAFFLE ASSEMBLY, Intercylinder	4
16	71611	RETAINER, Intercylinder baffle	4
17	71610	HOOK, Intercylinder baffle retainer	4

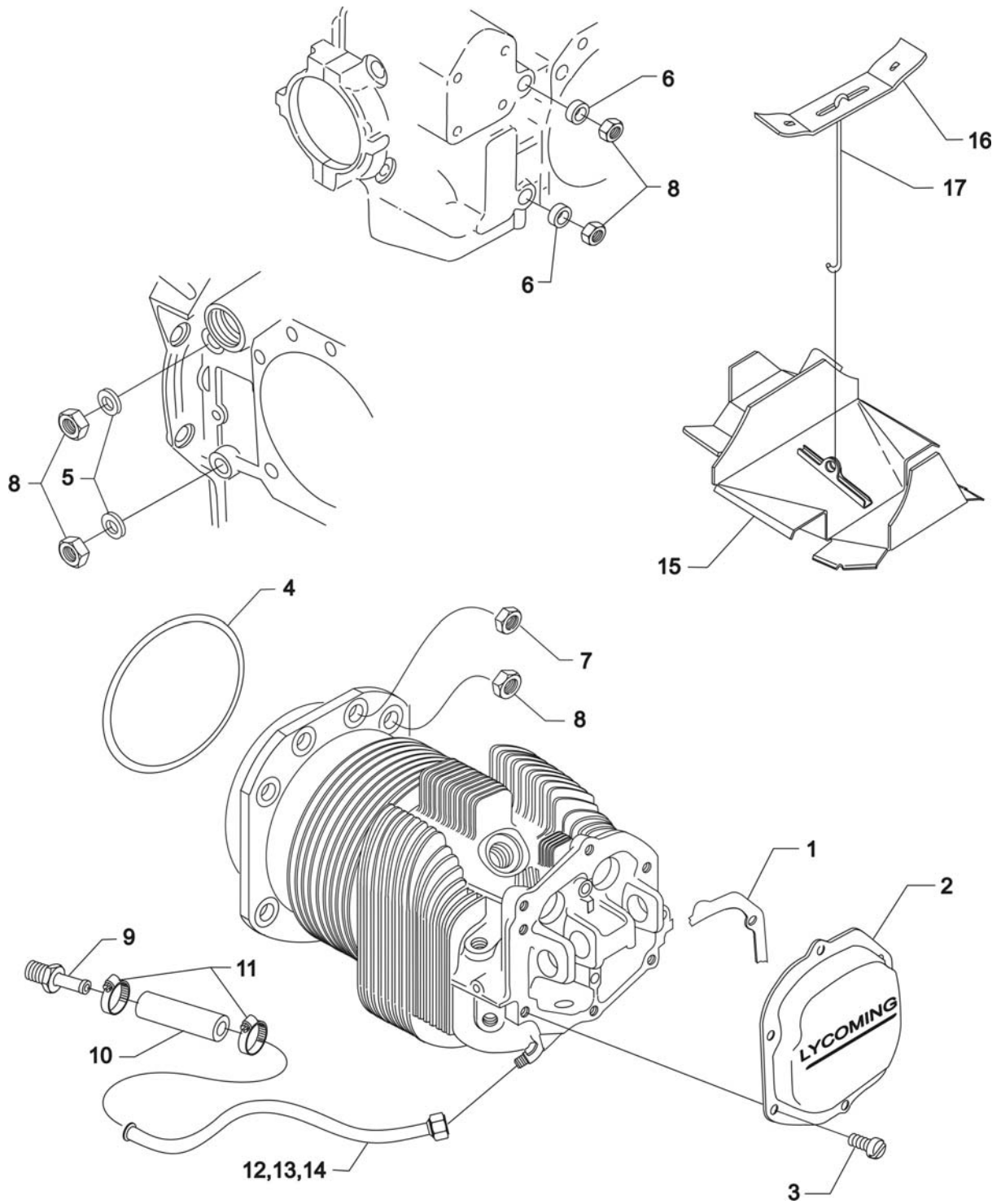


FIGURE 16. CYLINDER RELATED PARTS

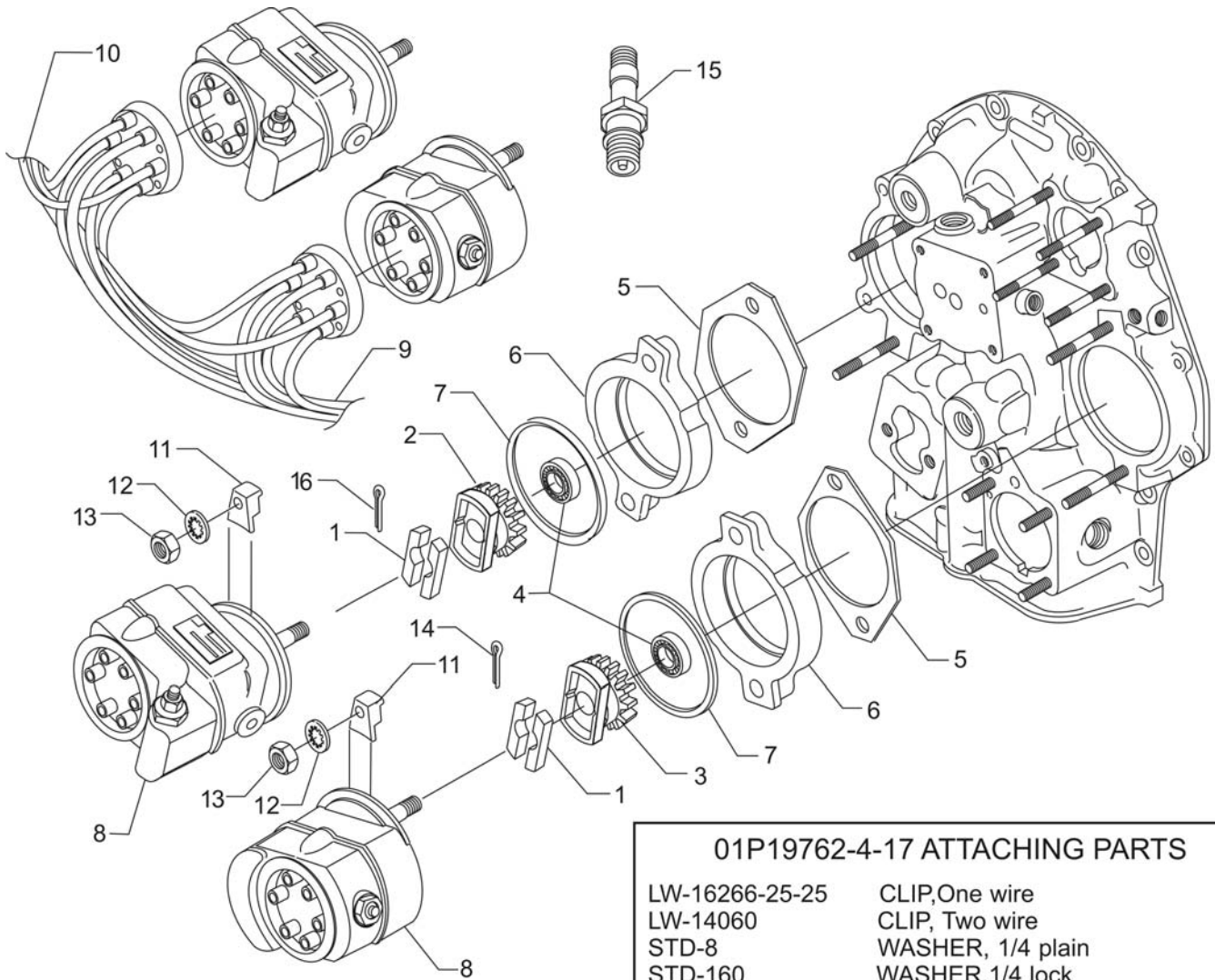
IGNITION SYSTEM

SLICK MAGNETOS, MAGNETO DRIVES, SLICK HARNESSES AND SPARK PLUGS

FIG. REF. 17	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	68H22624	CUSHION, Magneto drive	4
2	LW-19096	GEAR ASSEMBLY, Retainer	1
3	LW-19100	GEAR ASSEMBLY, Retainer	1
4	67542	BALL BEARING	2
5	62224	GASKET, Magneto adapter	2
6	LW-12707	ADAPTER, Magneto	2
7	LW-12681	GASKET, Magneto	2
8	66LC35SDNN	MAGNETO, Impulse, left and right, Slick Model 6351	2
9	67U20638	HARNESS, Right, Slick M-2962	1
10	67U20639	HARNESS, Left, Slick M-2961	1
11	66M21195	CLAMP, Magneto	4
12	STD-475	WASHER, 5/16 lock, internal teeth	4
13	STD-1410	NUT, 5/16-18 plain	4
14	STD-713	COTTER PIN, 3/32 diameter x 3/4 long	2
15	1182-E7*	SPARK PLUG, Champion, REM38E	12
	1182-S4*	SPARK PLUG, Unison, UREM38E	12
**	01P19762-4-17	BAG, Magneto harness attaching	1

* - Item No. 17 spark plugs are used in current production only. Additional spark plugs are available for this engine. See latest revision of Service Instruction No. 1042 for complete listing of all approved spark plugs.

** - 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.



01P19762-4-17 ATTACHING PARTS		
LW-16266-25-25	CLIP,One wire	4
LW-14060	CLIP, Two wire	4
STD-8	WASHER, 1/4 plain	12
STD-160	WASHER, 1/4 lock	8
STD-1874	SCREW, 1/4-20 x 13/16 long	6
76734	ZIP STRAP	12
LW-16266-25-44	CLAMP	5
STD-696	WASHER, 1/4 plain	6
LW-M-2376	PLATE Spark plug cable	2
LW-16266-10-75	CLAMP	1
STD-1916	SCREW, 1/4-20	2
STD-1925	SCREW, 1/4-20	4
72815	BRACKET, SUPPORT	4
STD-692	SCREW, No 10-32	4
STD-425	WASHER, No 10 plain	4
STD-670	LOCKNUT, No 10-32	4

FIGURE 17. SLICK MAGNETOS, MAGNETO DRIVES, SLICK HARNESSES AND SPARK PLUGS

ELECTRICAL SYSTEM
STARTER AND ATTACHING PARTS

FIG. REF. 18	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	31B22101	STARTER, Sky-Tec (149-24 PM)	1
2	STD-475	WASHER, 5/16 lock, internal teeth	4
3	LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex. head	1
4	STD-1410	NUT, 5/16-18 plain	3

NOTE

See latest revision of Service Instruction No. 1154 for complete listing of FAA approved starters, generators, alternators, regulators and relays.

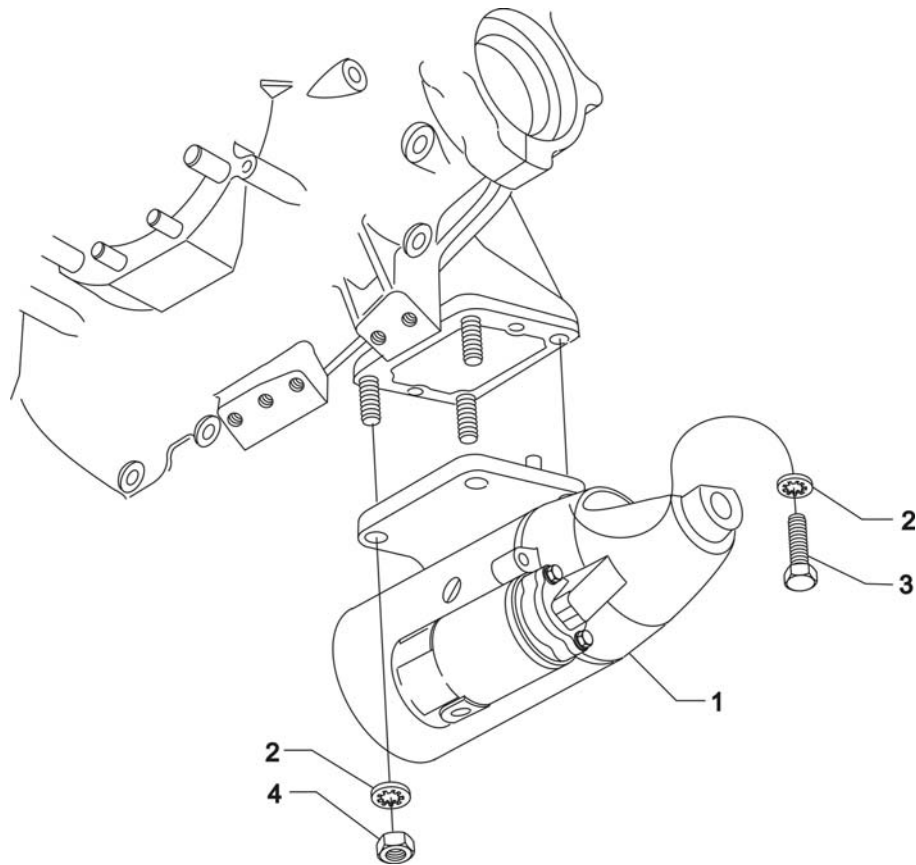


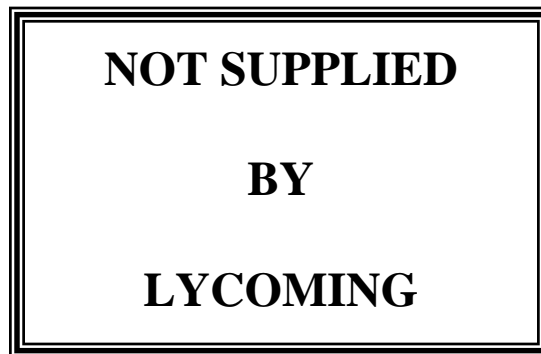
FIGURE 18. STARTER AND ATTACHING PARTS

ELECTRICAL SYSTEM
ALTERNATOR ASSEMBLY AND BELT

FIG. REF. 19	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	37A19773-376	BELT, Alternator drive, 3/8 wide	1

NOTE

See latest revision of Service Instruction No. 1154 for complete listing of FAA approved starters, generators, alternators, regulators and relays.

**FIGURE 19. ALTERNATOR ASSEMBLY AND BELT**

ELECTRICAL SYSTEM
ALTERNATOR MOUNTING AND ATTACHING PARTS

FIG. REF. 20	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	07A19474	BRACKET, Alternator	1
2	73383	LOCKPLATE, 5/16 bolt x 1.00 spacing	1
3	LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex. head	2
4	75380	LINK, Alternator adjusting	1
5	STD-35	WASHER, 5/16 plain	1
6	LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. head, drilled	1
7	STD-1727	WASHER, Plain, 3/4 O.D. x 11/32 I.D. x 1/8 thick	1
8	LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. head, drilled	1
9	07F23268	STRUT, Alternator support	1
10	LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. head, drilled	1
11	STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	1
12	AN6-17	BOLT, 3/8-24 x 1-61/64 long, hex. head	1
13	STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	1
14	STD-872	NUT, 3/8-24 slotted	1
15	STD-713	COTTER PIN, 3/32 diameter x 3/4 long	1
16	AN6-16	BOLT, 3/8-24 x 1-53/64 long, hex. head, drilled end	1
17	76534	SHIM, 1-1/8 O.D. x 13/32 I.D. x .005 thick	AR
18	STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	AR
19	STD-872	NUT, 3/8-24 slotted	1
20	STD-713	COTTER PIN, 3/32 diameter x 3/4 long	1

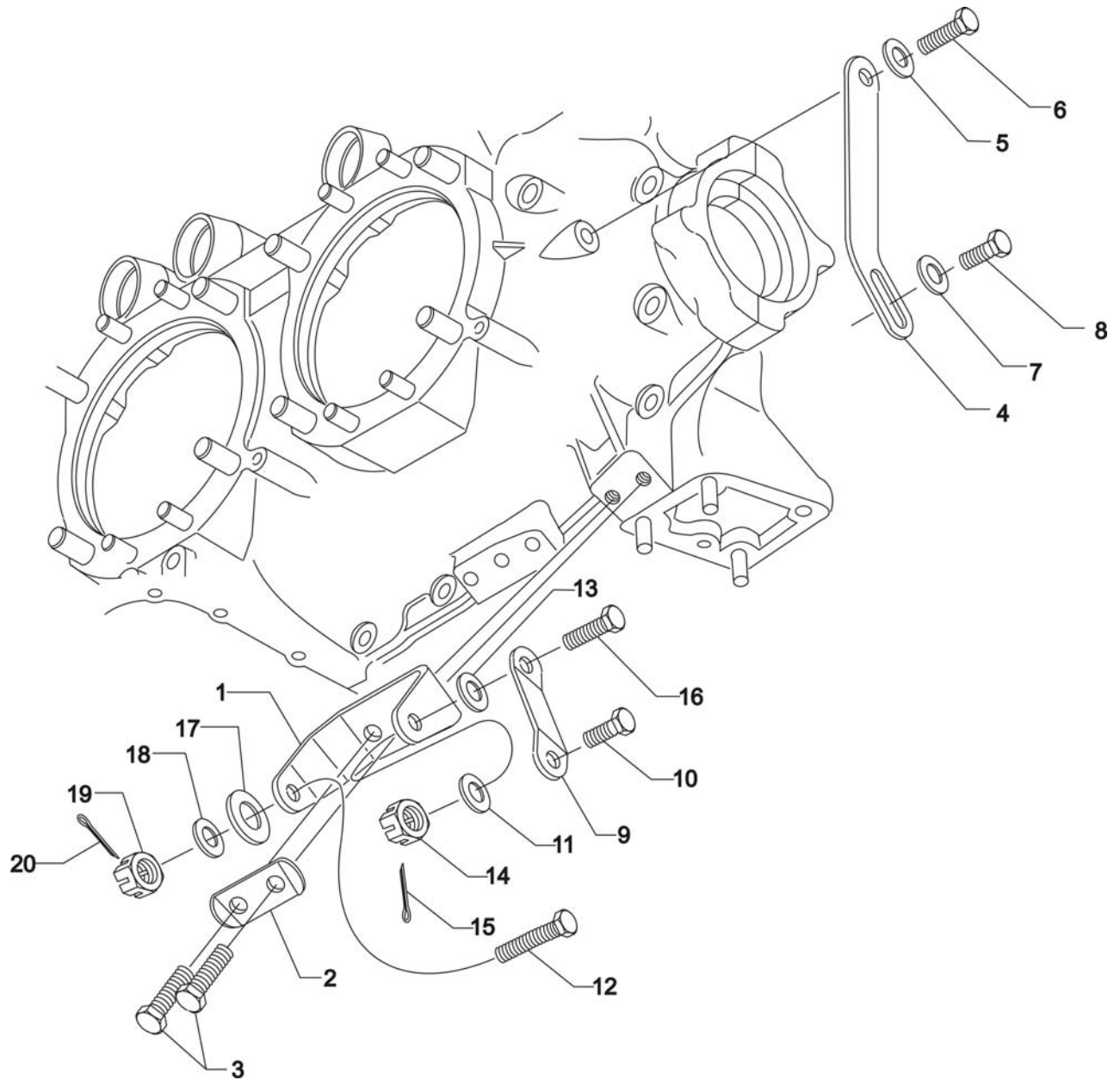


FIGURE 20. ALTERNATOR MOUNTING AND ATTACHING PARTS

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

FIG. REF. 21	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	06B21326	GASKET, Oil sump	1
2	LW-13901	SUMP ASSEMBLY, Oil	1
3	71699	CONNECTION, Intake pipe	6
4	25C-11	STUD, 1/4-20 x 1-3/8 long	14
5	31C-15	STUD, 5/16-18 x 1-7/8 long	4
6	38-15	STUD, 3/8-16 x 1-7/8 long	8
7	STD-1173	INSERT, 1/4-20 Heli-coil x 1/2 long	4
8	STD-8	WASHER, 1/4 plain	34
9	STD-160	WASHER, 1/4 lock, internal teeth	27
10	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	7
11	LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. head	6
12	STD-1411	NUT, 1/4-20 plain	21
13	STD-551	PLUG, 1/2-14 NPT, square head, drilled	2
14	STD-2229	PLUG, 1/2 NPT, Allen head	2
15	70484	SCREEN, Oil suction	1
16	06E19769-1.00	GASKET, Annular, 1.00 I.D.	1
17	LW-12545	PLUG, 5/8 hex. head x 1.00-20 thread	1

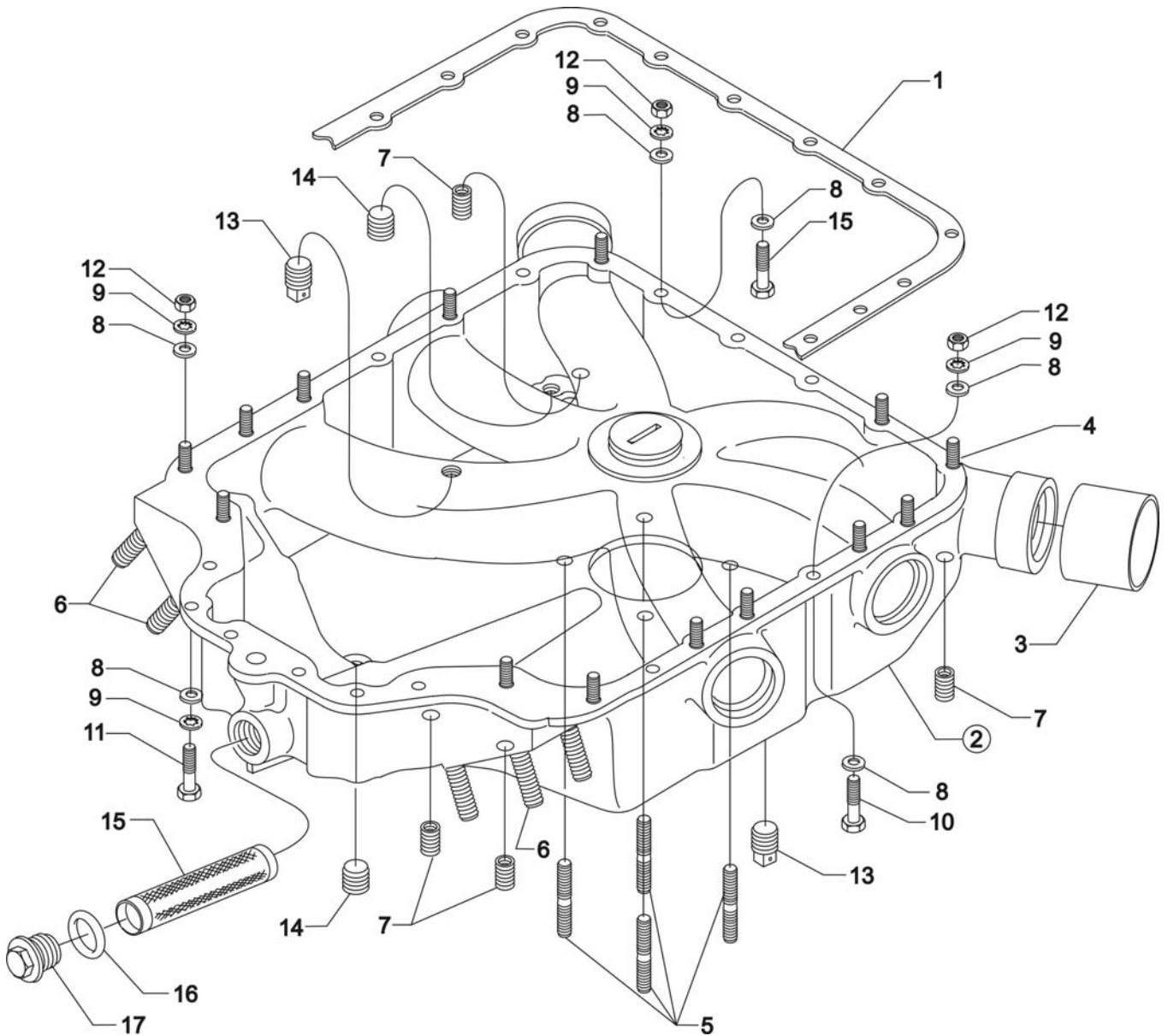


FIGURE 21. OIL SUMP ASSEMBLY AND OIL SUCTION SCREEN

OIL SUMP AND INDUCTION SYSTEM
INTAKE PIPE ASSEMBLY

FIG. REF. 22	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	70485	PIPE, Intake	6
2	69603	HOSE, 1-3/4 I.D. x 2-3/16 O.D. x 1-3/4 long	6
3	LW-15592-8-28	CLAMP, Hose	12
4	71973	GASKET, 2 bolt flange, 1-3/4 I.D.	6
5	73346	FLANGE, Intake pipe, upper	6
6	STD-8	WASHER, 1/4 plain	12
7	STD-160	WASHER, 1/4 lock, internal teeth	12
8	LW-25-1.25	BOLT, 1/4-20 x 1-1/4 long, hex. head	12

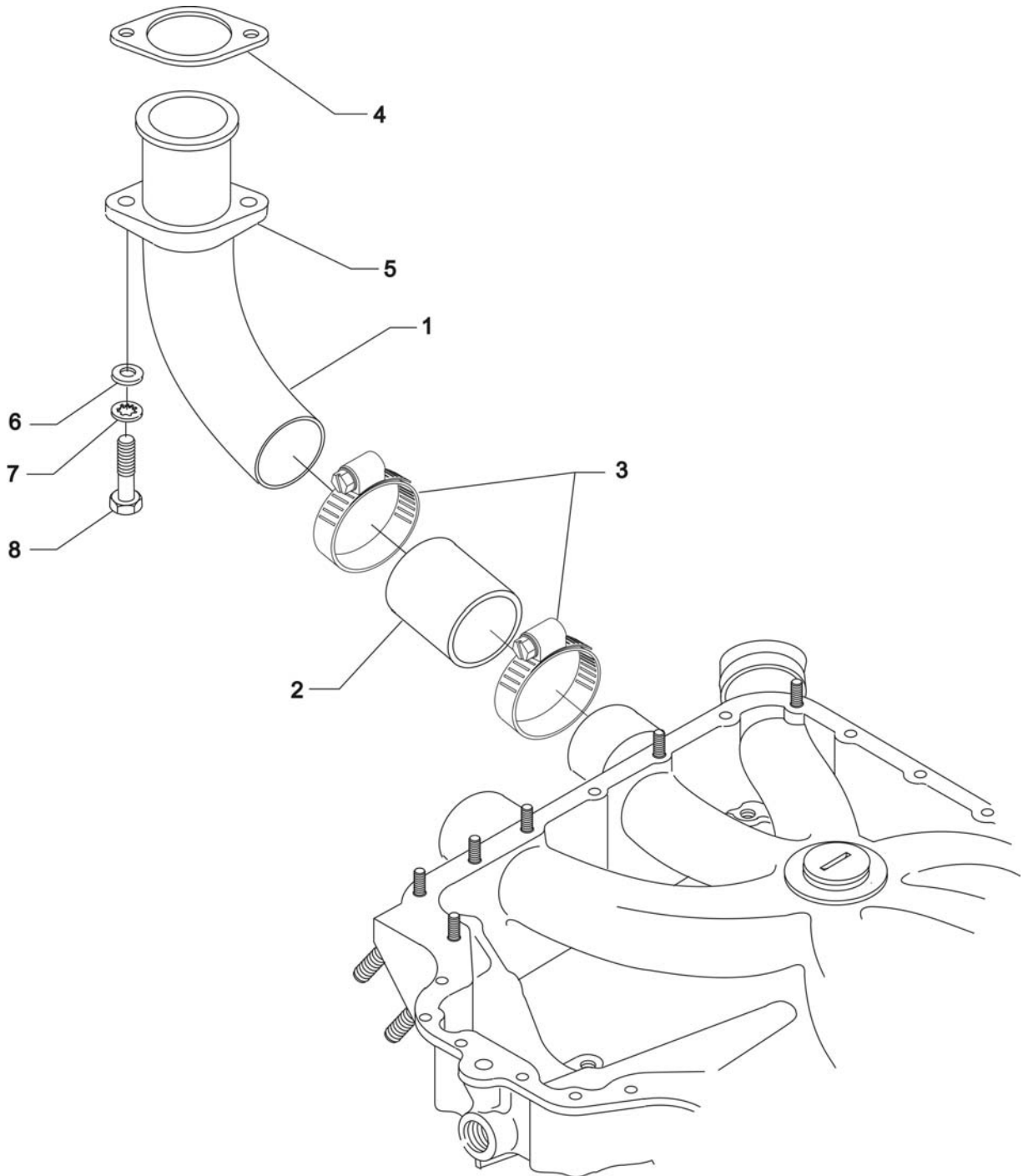


FIGURE 22. INTAKE PIPE ASSEMBLY

OIL SUMP AND INDUCTION SYSTEM
CARBURETOR AND RELATED PARTS

FIG. REF. 23	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	66224	GASKET, Carburetor	1
2	61C26134	CARBURETOR, MA-4-5 (AV 10-4404-1)	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

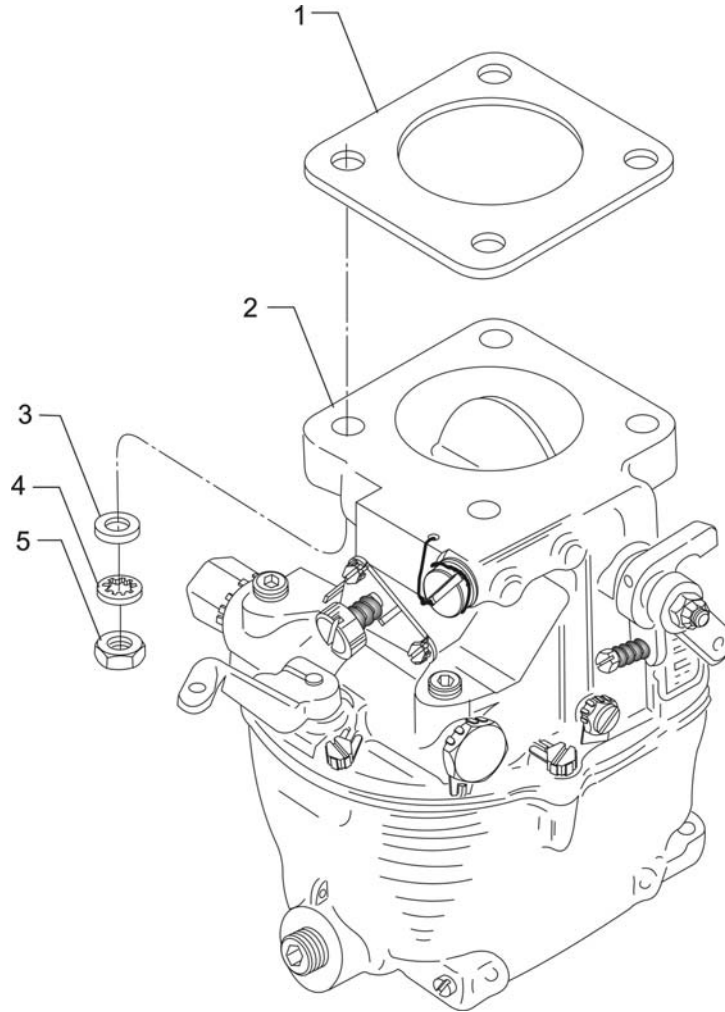


FIGURE 23, CARBURETOR AND RELATED PARTS

SERVICE KIT SECTION

SEAL AND GASKET SET

Part No.	Part Name	Qty.
71569-1	KIT - SEAL AND GASKET SET	1
LW-12272	LOCKPLATE, Shroud tube	6
LW-12681	GASKET, Magneto	2
06B23862	GASKET, Oil filter adapter	1
06B21326	GASKET, Oil sump	1
LW-13792	SEAL, Crankshaft oil	1
LW-14260	SEAL, Tachometer drive oil	1
LW-14995	SPRING, Shroud tube	6
LW-15628	SEAL, Crankshaft	1
LW-18638	LOCKPLATE, Crankshaft gear	1
LW-18661	SEAL, Shroud tube	12
77611	GASKET, Exhaust flange	6
STD-2231	RING, Internal retaining	1
06E19769-1.00	GASKET, Annular	1
STD-213	SEAL, Oil	1
06E19769-0.63	GASKET, Annular	2
06E19769-1.25	GASKET, Annular	1
1691-C	GASKET, Fuel pump	1
60096	GASKET, Fuel pump	1
61173	GASKET, Oil pressure housing	1
61183	GASKET, Accessory adapter	1
62224	GASKET, Magneto adapter	4
66224	GASKET, Carburetor	1
68315	GASKET, Accessory drive adapter	1
69164	GASKET, Fuel pump adapter	1
69345	SPACER	6
69551	GASKET, Accessory drive adapter	1
70310	SEAL, Shroud tube	12
70455	GASKET	1
70457	GASKET	1
71481	RING, Oil seal	6
71667	LOCKPLATE, Fuel pump idler gear	1
71973	GASKET, 2 bolt flange	6
72053	GASKET, Governor	1
72059	GASKET, Oil level gage	1
72075	RING, Oil seal	8
72078	LOCKPLATE, Cam gear	2
72091	RING, Oil seal	2
72210	GASKET	1
72312	RING, Oil seal	1
73383	LOCKPLATE	2
73818	GASKET, Accessory housing	1
74065	"O" RING, Oil level gage	1
74068	"O" RING	1
74305	SEAL	1
75906	GASKET, Rocker box cover	6
76510	GASKET	1
76940	SEAL, Crankshaft oil	1
8313	GASKET, Vacuum pump	2
06A13493	SEAL, Shroud tube	12

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

Part No.	Part Name	Qty.
05K21104	KIT – CYLINDER, PISTON AND RING ASSEMBLY	1
LW-12427	CYLINDER ASSEMBLY	1
17B23936	VALVE, Exhaust	1
17A23938	VALVE, Intake	1
LW-11800	SPRING, Valve, outer	2
LW-11795	SPRING, Valve, inner	2
LW-10077	SEAT, Valve spring, upper intake	1
LW-16475	SEAT, Valve spring, upper exhaust	1
65441	SEAT, Valve spring, lower intake	1
LW-13323	SEAT, Valve spring, lower exhaust	1
60009	KEY, Valve, intake	2
17C21191	KEY, Valve, exhaust	2
17C19386	CAP, Valve stem, exhaust	1
MS20823-6D	ELBOW, 45°, 3/8 flared tube	1
75089	PISTON	1
74241	RING, Piston, compression	2
14H21950	RING, Piston, oil regulating	1
LW-14078	PIN, Piston	1
60828	PLUG, Piston pin	2
71481	RING, Oil seal	1
LW-18661	SEAL, Shroud tube	2
70310	SEAL, Shroud tube	2
75906	GASKET, Rocker box cover	1
72198	PLUG, Piston pin	2
77611	GASKET, Exhaust	1
71973	GASKET, 2 bolt flange	1
LW-12272	LOCKPLATE, Shroud tube	1
06A23493	SEAL, Shroud tube	2
SSP-299	TAG	1

CRANKSHAFT AND COUNTERWEIGHT ASSEMBLY KIT

Part No.	Part Name	Qty.
05K23340	KIT – CRANKSHAFT AND COUNTERWEIGHT ASSEMBLY	1
13E47622	CRANKSHAFT ASSEMBLY	1
14U22539	COUNTERWEIGHT ASSEMBLY	2
14W22647	ROLLER, Counterweight	2
70416	ROLLER, Counterweight	2
71907	WASHER, Dynamic counterweight	8
LW-14820	RING, Internal retaining	8

NUMERICAL INDEX

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
AN565B1032H5	Set Screw	1-11	LW-14260	Tachometer Seal	2-3
AN6-16	Bolt	5-3	LW-14756	Gage Assy.	1-3
AN6-17	Bolt	5-3	LW-14820	Ring	1-7
AN6-34A	Bolt	1-13	LW-14995	Spring	3-5
AN816-8	Nipple	2-7	LW-15592-5-05	Clamp	3-7
AN844-10D	Elbow	2-7	LW-15592-8-28	Clamp	6-3
AN912-7D	Bushing	2-7	LW-16471	Support Assy.	1-7
LRT23381	Body Assy.	1-5	LW-16475	Seat	3-5
LW-25-0.94	Bolt	2-3	LW-18085	Spring	1-5
LW-25-1.00	Bolt	2-7	LW-18108	Impeller	2-3
LW-25-1.00	Bolt	6-1	LW-18109	Impeller	2-3
LW-25-1.13	Bolt	1-13	LW-18110	Impeller Assy.	2-3
LW-25-1.13	Bolt	2-3	LW-18638	Lockplate	1-7
LW-25-1.13	Bolt	6-1	LW-18667	Pin	1-9
LW-25-1.25	Bolt	6-3	LW-19096	Gear Assy.	4-1
LW-25-1.44	Bolt	2-3	LW-19100	Gear Assy.	4-1
LW-25-1.50	Bolt	1-13	LW-19227	Counterweight Assy.	1-7
LW-25-1.75	Bolt	1-13	MS20822-8	Elbow	2-7
LW-25S1.50	Bolt	1-13	MS20823-6D	Elbow	3-3
LW-31-0.94	Bolt	5-1	MS20823-6D	Elbow	3-5
LW-31-0.94	Bolt	5-3	STD-8	Washer	1-13
LW-31-1.16	Bolt	1-13	STD-8	Washer	2-3
LW-31-2.75	Bolt	1-13	STD-8	Washer	2-7
LW-31H0.75	Bolt	5-3	STD-8	Washer	2-9
LW-31H0.88	Bolt	1-9	STD-8	Washer	6-1
LW-38-0.75	Bolt	2-5	STD-8	Washer	6-3
LW-10077	Seat	3-5	STD-19	Dowel	1-11
LW-10442	Gear	1-11	STD-33	Washer	1-3
LW-10541	Gear Assy.	1-11	STD-33	Washer	1-13
LW-11713	Spring	1-5	STD-33	Washer	2-5
LW-11750	Connecting Rod Assy.	3-1	STD-35	Washer	1-11
LW-11795	Spring	3-5	STD-35	Washer	1-13
LW-11800	Spring	3-5	STD-35	Washer	2-3
LW-12186	Nut	3-1	STD-35	Washer	2-9
LW-12272	Lockplate	3-5	STD-35	Washer	3-3
LW-12427	Cylinder & Head Assy.	3-3	STD-35	Washer	5-3
LW-12545	Plug	6-1	STD-35	Washer	6-5
LW-12681	Gasket	4-1	STD-160	Washer	1-13
LW-12707	Adapter	4-1	STD-160	Washer	2-3
LW-12892	Thrust Button	3-5	STD-160	Washer	2-7
LW-13215	Oil Filter	2-7	STD-160	Washer	2-9
LW-13323	Seat	3-5	STD-160	Washer	6-1
LW-13790	Shaft	3-5	STD-160	Washer	6-3
LW-13792	Crankshaft Seal	1-5	STD-475	Washer	1-11
LW-13795	Shaft	1-9	STD-475	Washer	1-13
LW-13896	Plug	1-11	STD-475	Washer	2-9
LW-13901	Sump Assy.	6-1	STD-475	Washer	3-3
LW-13923	Bushing	3-1	STD-475	Washer	4-1
LW-14021	Shaft	1-11	STD-475	Washer	5-1
LW-14078	Piston Pin	3-1	STD-475	Washer	6-5

NUMERICAL INDEX (CONT.)

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
STD-514	Dowel	1-1	31C-13	Stud	1-1
STD-551	Plug	6-1	31C-15	Stud	6-1
STD-557	Dowel	1-1	31C-17	Stud	1-1
STD-596	Nut	1-3	31C-21	Stud	2-1
STD-596	Nut	1-13	31CD-17	Stud	2-1
STD-678	Washer	1-3	38-13	Stud	1-1
STD-678	Washer	1-13	38-15	Stud	6-1
STD-678	Washer	2-5	38-16	Stud	1-1
STD-684	Nipple	3-7	38-22	Stud	1-1
STD-690	Washer	5-3	38D-17	Stud	1-1
STD-713	Cotter Pin	4-1	50-15	Stud	1-1
STD-713	Cotter Pin	5-3	383-B	Nut	3-7
STD-784	Plug	2-1	1028-B	Ball	1-5
STD-798	Dowel	1-11	1102	Plug	1-1
STD-872	Nut	1-13	1102	Plug	2-1
STD-872	Nut	5-3	1102	Plug	3-3
STD-1065	Dowel	1-7	1182-E7	Spark Plug	4-1
STD-1173	Insert	6-1	1182-S4	Spark Plug	4-1
STD-1211	Plug	1-7	8313	Gasket	2-9
STD-1339	Plug	1-1	60009	Key	3-5
STD-1353	Insert	3-3	60096	Gasket	2-5
STD-1410	Nut	1-11	60430	Cover	2-9
STD-1410	Nut	2-9	60803	Lifting Strap	1-13
STD-1410	Nut	3-3	61084	Spring	1-5
STD-1410	Nut	4-1	61183	Gasket	2-9
STD-1410	Nut	5-1	61247	Cover	3-7
STD-1410	Nut	6-5	62224	Gasket	4-1
STD-1411	Nut	1-13	62417	Plug	2-7
STD-1411	Nut	2-7	65441	Seat	3-5
STD-1411	Nut	2-9	66224	Gasket	6-5
STD-1411	Nut	3-5	66610	Bushing	3-3
STD-1411	Nut	6-1	66796	Insert	3-3
STD-1420	Nut	2-3	67530	Bushing	1-9
STD-1727	Washer	5-3	67536	Adapter Assy.	2-9
STD-1774	Pin	2-9	67542	Ball Bearing	4-1
STD-1821	Hose	3-7	68668	Spring	1-5
STD-1925	Screw	3-7	68759	Tube Assy.	3-7
STD-2090	Nut	3-7	68761	Tube Assy.	3-7
STD-2168	Nut	1-9	69106	Cover	2-9
STD-2229	Plug	6-1	69551	Gasket	2-9
STD-2231	Ring	1-9	69603	Hose	6-3
STD-2247	Bolt	1-7	69796	Dowel	1-1
STD-2249	Nut	1-13	70310	Seal	3-5
25C-8	Stud	3-3	70455	Gasket	1-11
25C-10	Stud	2-7	70456	Bracket	1-3
25C-11	Stud	6-1	70457	Gasket	1-3
25C-21	Stud	2-1	70484	Screen	6-1
31C-12	Stud	1-1	70485	Intake Pipe	6-3
31C-12	Stud	2-1	71481	Ring	3-7
31C-12	Stud	3-3	71596	Washer	2-9

NUMERICAL INDEX (CONT.)

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
71610	Hook	3-7	77906	Spacer	3-7
71611	Retainer	3-7	78530	Shaft	2-3
71640	Plug	1-7	78531	Body Assy.	2-3
71668	Gear Assy.	1-9	01A23354	Stud	1-1
71699	Connection	6-1	01L21418	Thrust Washer	1-11
71737	Tube Assy.	3-7	01L23459	Washer	3-5
71903-A	Bushing	1-7	01P19762-4-17	Magneto Attaching	4-1
71907	Washer	1-7	03D23350	Cover	2-5
71973	Gasket	6-3	06A19956	Oil Seal	2-9
72053	Gasket	1-11	06A23493	Seal	3-5
72057	Seat, Intake	3-3	06B21326	Gasket	6-1
72058	Seat, Exhaust	3-3	06B23862	Gasket	2-7
72091	Ring	1-5	06E19769-0.63	Gasket	2-7
72155-S	Bushing	1-7	06E19769-1.00	Gasket	6-1
72158	Bushing	1-1	06E19769-1.25	Gasket	1-5
72198	Plug	3-1	07A19474	Bracket	5-3
72378	Cover	1-11	07F23268	Strut	5-3
72566	Starter Ring Gear	1-7	11E24100-S1	Crankcase Assy.	1-1
72797	Roller	1-7	13E47622	Crankshaft Assy.	1-7
72965	Roller	1-7	13S19647	Gear	1-7
72974	Gear Assy.	2-9	14H21950	Ring	3-1
73249	Thrust Washer	1-11	14S23890	Bolt	3-1
73250	Thrust Washer	1-11	15B21319	Socket	3-5
73151	Thrust Washer	1-11	15B26066	Plunger Assy.	3-5
73252	Thrust Washer	1-11	15F19957-28	Rod Assy.	3-5
73346	Flange	6-3	15F19957-29	Rod Assy.	3-5
73383	Lockplate	5-3	15F19957-30	Rod Assy.	3-5
73810	Bushing	1-7	15F19957-31	Rod Assy.	3-5
73818	Gasket	2-1	15F19957-32	Rod Assy.	3-5
74068	"O" Ring	1-3	15F19957-33	Rod Assy.	3-5
74241	Ring	3-1	15F19957-34	Rod Assy.	3-5
74637	Bushing	3-5	15G23461	Shroud Tube Assy.	3-5
74641	Shaft	2-3	15N23374	Camshaft Assy.	1-9
74887	Spacer	3-7	16R22126	Guide	3-3
75061	Bolt	3-1	17A23938	Intake Valve	3-5
75089	Piston	3-1	17B23936	Exhaust Valve	3-5
75339	Baffle Assy.	3-7	17C19386	Cap	3-5
75380	Link	5-3	17C21191	Key	3-5
75656-S	Bushing	1-7	17F19357	Rocker Assy.	3-5
75657-S	Bushing	1-7	18A26093	Bearing	1-5
75737	Extension	1-3	18D26098	Bearing	1-5
75906	Gasket	3-7	18M26105	Bearing	3-1
76118	Spacer	1-9	21C21539-01	Housing Assy.	2-1
76155	Shaft Assy.	1-9	31B22101	Starter	5-1
76220	Stud	1-13	37A19773-376	Belt	5-2
76510	Gasket	2-7	53E22144	Valve Assy.	2-7
76534	Shim	5-3	61C26134	Carburetor	6-5
76943	Guide	3-3	66LC35SDNN	Magneto	4-1
77467	Spring	1-5	66M21195	Clamp	4-1
77611	Gasket	3-3	67U20638	Harness Assy.	4-1
77808	Valve Assy.	1-5	67U20639	Harness Assy.	4-1
77852	Oil Filter Base Assy.	2-7	68H22624	Cushion	4-1
77872	Bushing	1-11			