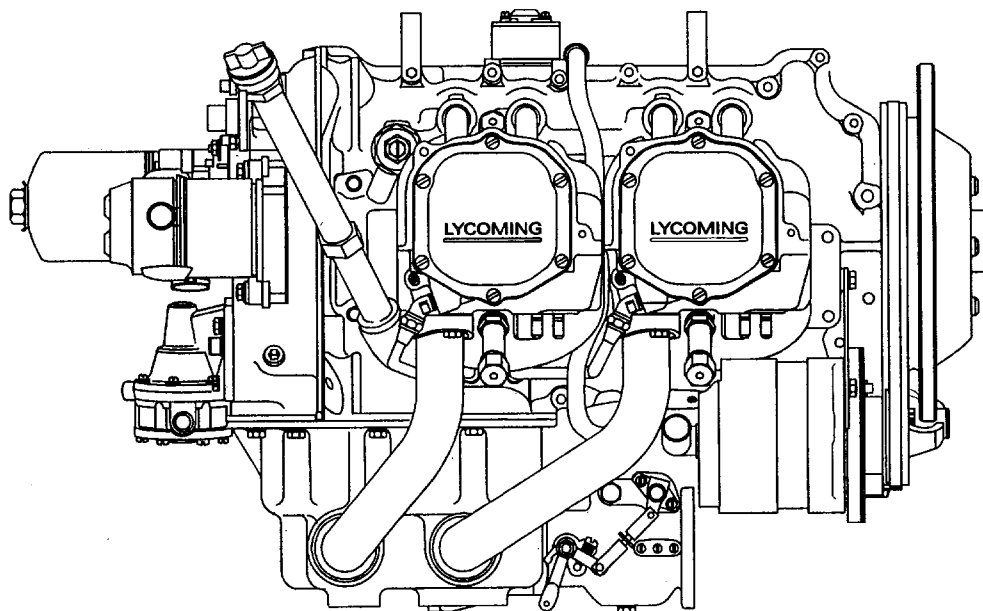


TEXTRON Lycoming AIRCRAFT ENGINES

IO-360-M1A Wide Cylinder Flange Crankcase Model Engine

PARTS CATALOG PC-306-14



JANUARY 2000

TEXTRON Lycoming

652 Oliver Street
Williamsport, PA 17701 U.S.A.
570/323-6181

652 Oliver Street
Williamsport, PA 17701 U.S.A.
570/323-6181

TECHNICAL PUBLICATION REVISION

REVISION No.	PUBLICATION	PUBLICATION No.	PUBLICATION DATE
PC-306-14A	IO-360-M1A Engines	PC-306-14	JANUARY 2000
This page(s) furnished herewith are intended to replace the corresponding page(s) of the publication indicated above.			
Previous revisions to the publication	This revision consists of: -		
<u>None</u>	<u>October, 2000</u> Pages 4-3 & 4-4 Figure 18 – Added Part Numbers for Shipped Loose Parts		

This illustrated parts catalog contains a complete parts listing for the Textron Lycoming IO-360-M1A 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.

A Service Kits section and 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 Textron 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 edition of Service Letter No. L114.

NOTE

The illustrations, pictures and drawings shown in the publication are typical of the subject matter they portray.

This catalog, when used in conjunction with the appropriate overhaul manual, shall be used for parts identification only. **Under no circumstances shall this catalog be used as an assembly or installation document.**

Any reference in this document to a 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 Textron Lycoming accepts responsibility for quality control and/or airworthiness of parts which do not pass through the Textron Lycoming quality control system.

© 2000 by Textron Lycoming, "All Rights Reserved." All Textron Lycoming publications are to be considered copyrighted and may not be reproduced without permission of the company.

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 Textron Lycoming distributors or from the factory by subscription. Consult the latest edition 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.

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 Assembly and Crankcase Related Parts	1-3
Crankcase Assembly and Related Parts	1-5
Crankshaft Idler Gears, Tachometer Drive and Camshaft	1-7
Propeller Governor Drive Assembly (Crankcase)	1-9
Crankcase Attaching Parts	1-11
2. ACCESSORY HOUSING AND RELATED PARTS	
Accessory Housing Assembly	2-1
Oil Pump and Accessory Housing Attaching Parts	2-3
Fuel Pump and Propeller Governor Drive Cover	2-5
Vacuum Pump Drive and Cover	2-7
Oil Filter Assembly, Oil Cooler Bypass Valve and Fittings	2-9
3. CYLINDER, PISTON AND VALVE TRAIN	
Connecting Rods, Pistons and Ring Assemblies	3-1
Cylinder Assembly	3-3
Cylinder Related Parts	3-5
Valve Assembly	3-7
Cylinder Head Drain Tubes, Intercylinder Cooling Baffles and Rocker Box Covers	3-9
4. IGNITION SYSTEM	
Slick Magnetos, Magneto Drives, Slick Harnesses and Spark Plugs	4-1
Laser Magnetos, Magneto Drives, Slick Harnesses and Spark Plugs	4-3
5. ELECTRICAL SYSTEM	
Sky-Tec 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 Pipes and Attaching Parts	6-3
Fuel Injector, Fuel Manifold and Brackets	6-5
Fuel Lines, Fuel Hoses and Attaching Parts	6-7
7. SERVICE KITS SECTION	7-1
8. NUMERICAL KITS SECTION	8-1

Oversize and Undersize Parts Listing

Part No.	Description	Oversize								Undersize		
		P02 .002	P05 .005	P10 .010	P15 .015	P20 .020	P30 .030	P40 .040	P50 .050	M03 .003	M06 .006	M10 .010
61681	GUIDE	See Latest Edition of Service Instruction No. 1256.										
66610	BUSHING		X	X								
66796	INSERT			X								
69796	DOWEL		X									
72057	SEAT			X		X	X					
72058	SEAT			X		X	X					
72155-S	BUSHING		X	X	X							
74230	GUIDE	See Latest Edition of Service Instruction No. 1256.										
74241	RING			X								
75656-S	BUSHING		X	X								
75657-S	BUSHING		X	X								
14H21950	RING			X		X						
18A19441	BEARING				X					X	X	X
LW-11997	SEAL	See Latest Edition of Service Instruction No. 1324.										
LW-13521	BEARING			X						X*	X*	X*
LW-13792	SEAL	See Latest Edition of Service Instruction No. 1324.										
LW-13884	BEARING				X					X	X	X
LW-16711	BEARING				X					X	X	X
STD-1065	DOWEL	X	X	X	X							

* Also available in P10 oversize.

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 with the proper part number. For example, to order bearing LW-13884 in .003 undersize, order part number LW-13884-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.

SECTION

1

**CRANKCASE,
CRANKSHAFT AND
CAMSHAFT GROUP**

**CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
CRANKCASE ASSEMBLY**

FIG REF. 1	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	11D22549	CRANKCASE ASSEMBLY	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	STD-557	DOWEL, 1/2 dia. x 11/16 long, hollow	2
10	STD-514	DOWEL, 5/16 dia. x 1/2 long	2
11	STD-1623	INSERT, 1/4-20 Helicoil x 3/8 long	2
12	LW-13793	STUD, 5/16-18 x 15/16 long, drilled	1
13	69796	DOWEL, Crankshaft bearing	2
14	1102	PLUG, 1/8-27 NPT, Allen head	4
15	STD-1339	PLUG, 1/16-27 NPT, Allen head	1
16	31C-17	STUD, 5/16-18 x 2-1/8 long	4
17	1102	PLUG, 1/8 pipe	1
18	STD-1339	PLUG, 1/16-27 NPT, Allen head	4

This crankcase assembly is not available as a service item. Refer to Service Kits, Section 7, for applicable Crankcase Assembly and Governor Stud Kit Part Number.

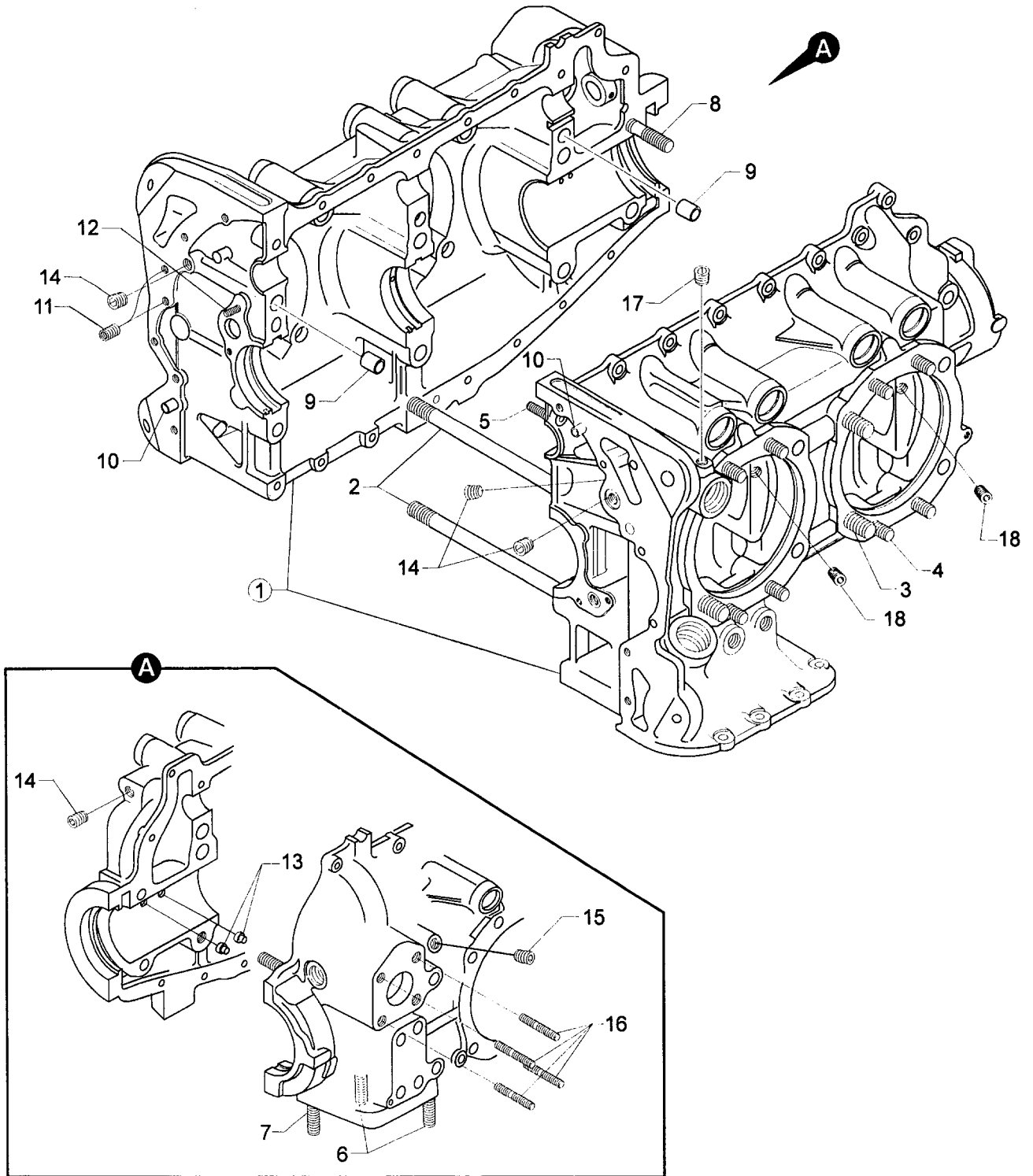


Figure 1. CRANKCASE ASSEMBLY

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

FIG REF. 2	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	75736	TUBE, Oil level gage	1
2	72059	GASKET, Oil level gage	1
3	74068	RING, Oil level gage seal	1
4	LW-16783-18	GAGE ASSEMBLY, Oil level	1
5	1028-B	BALL, 11/16 diameter	1
6	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
7	06E19769-1.25	GASKET, 1-1/4 I.D. x 1-1/2 O.D. x 3/32 annular	1
8	77808	VALVE ASSY., Oil pressure relief valve, adj.	1
9	LW-16711	BEARING, Crankshaft	4
10	LW-13884	BEARING, Crankshaft, front	2
	18A19441	BEARING, Crankshaft, front (alternate)	2
11	LW-13792**	SEAL, Crankshaft oil, solid	1
	LW-11997**	SEAL, Crankshaft oil, split	1
12	72075	SEAL, Oil, 3/32 section x 7/16 I.D.	2
13	72091	RING, Oil seal, 23/64 I.D. x 7/64 dia.	2
14	72877	BODY, Hydraulic tappet	8

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

** See latest edition of Textron Lycoming Service Instruction No. 1324 for installation.

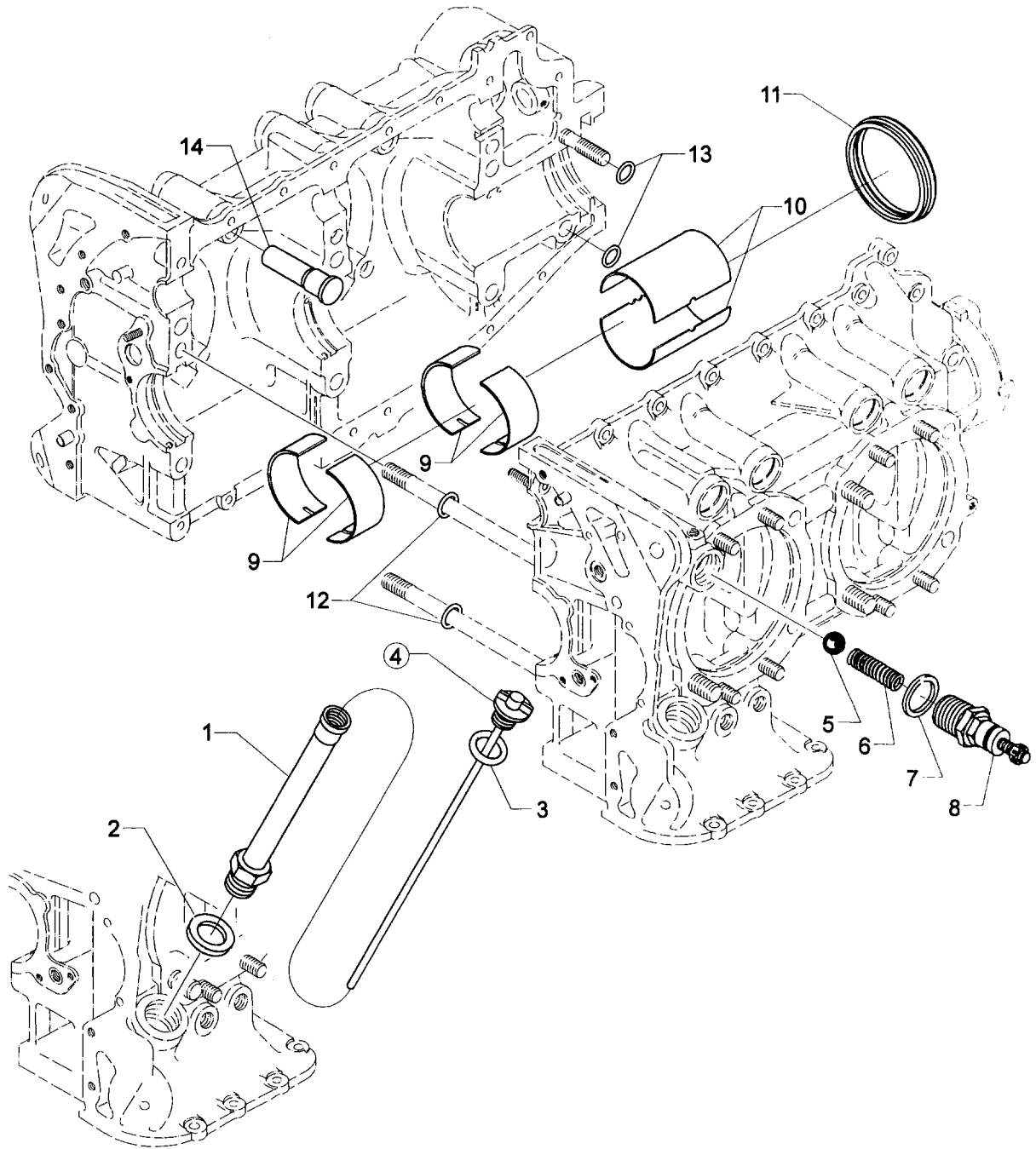


Figure 2. OIL LEVEL GAGE ASSEMBLY AND CRANKCASE RELATED PARTS

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

FIG REF. 3	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	13B27120	CRANKSHAFT AND BUSHING ASSEMBLY	1
2	STD-1211	PLUG, 2.00 dia. expansion	1
3	STD-1065	DOWEL, Stepped, 5/16 & 1/4 dia. x 35/64 long	1
4	61510	PLUG, 1-3/4 O.D.	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	13S19646*	GEAR, Crankshaft	1
9	LW-18639	LOCKPLATE, Crankshaft gear	1
10	STD-2213	BOLT, 5/16-24 x 1.00 long	1
11	LW-16471	SUPPORT ASSY., Starter ring gear, 12/14 pitch	1
12	72566	GEAR, Starter ring	1

* See latest edition of Textron Lycoming Service Bulletin No. 475 for proper installation.

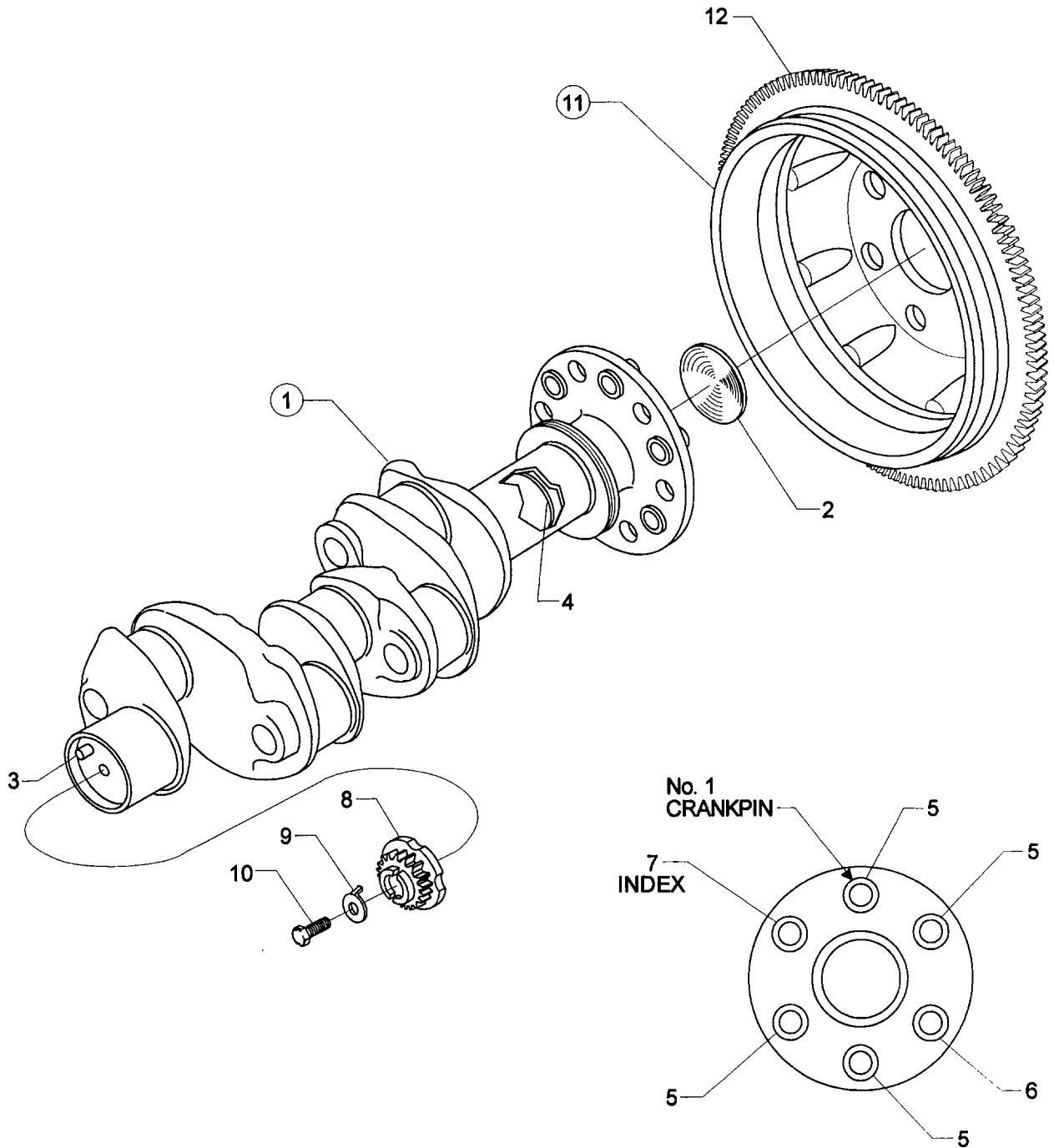


Figure 3. CRANKSHAFT ASSEMBLY AND RELATED PARTS

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

FIG REF. 4	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	61544	PLUNGER, Fuel pump, long	1
2	74996	GEAR ASSY., Crankshaft idler, plain	1
3	77309	BUSHING, Crankshaft idler gear	1
4	75072	GEAR ASSY., Crankshaft idler	1
5	77309	BUSHING, Crankshaft idler gear	1
6	76121	SHAFT ASSY., Tachometer	1
7	LW-18667	PIN, 3/16 dia. x 2-21/64 long	1
8	STD-2231	RING, Internal retaining	1
9	LW-13796	SHAFT, Crankshaft idler gear	2
10	LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex. hd., dr.	3
11	STD-2168	NUT, 5/16-18 NC-3 slotted shear	1
12	LW-18843	CAMSHAFT ASSEMBLY	1
13	76118	SPACER, Tach. shaft centering	1

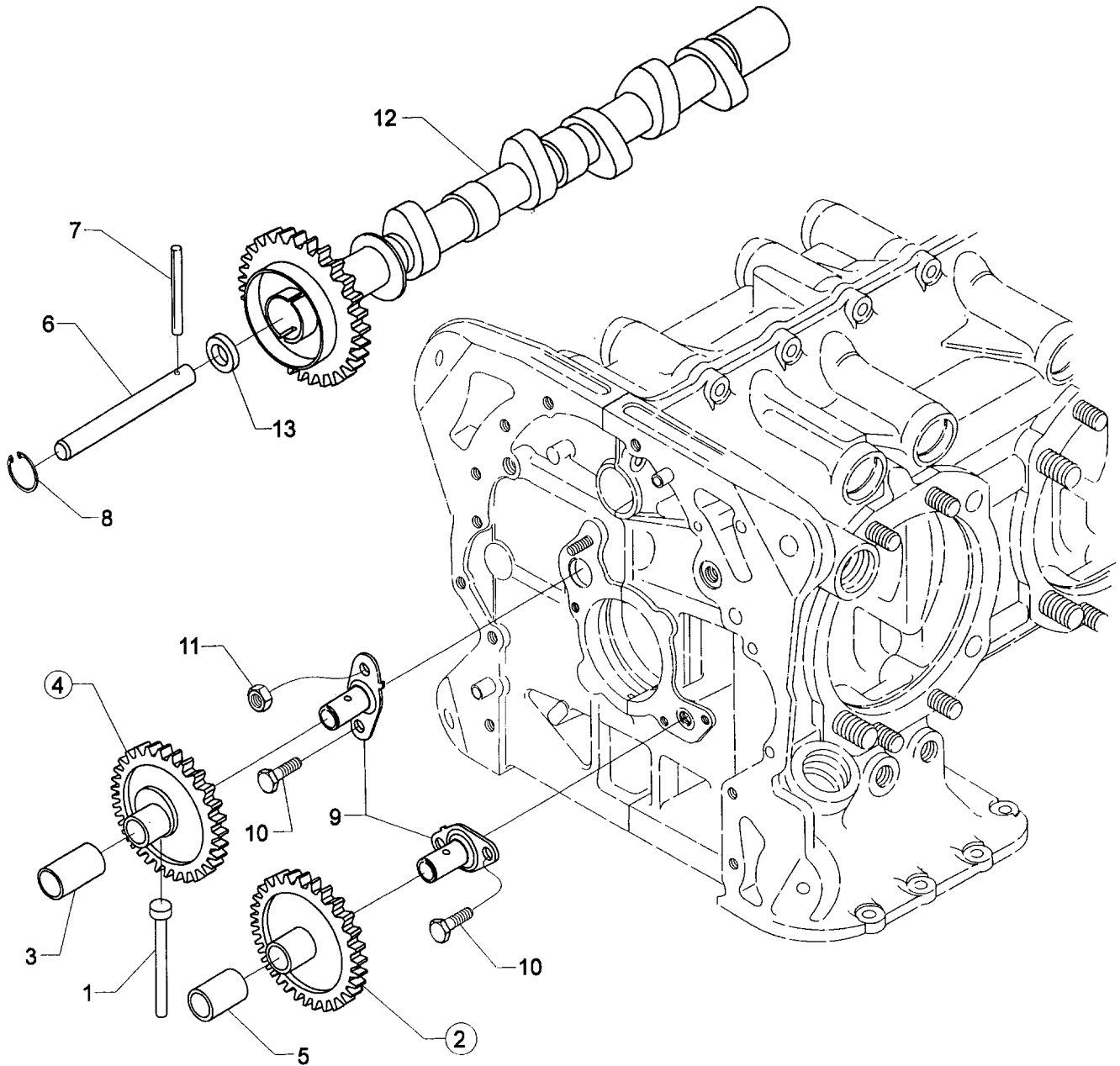


Figure 4. CRANKSHAFT IDLER GEARS, TACHOMETER DRIVE AND CAMSHAFT

**CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
PROPELLER GOVERNOR DRIVE ASSEMBLY (CRANKCASE)**

FIG REF. 5	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	77875	GEAR, Propeller governor driven	1
2	LW-14021	SHAFT, Propeller governor idler gear	1
3	77874	GEAR ASSY., Propeller governor idler	1
4	77872	BUSHING, Propeller governor idler gear	2
5	STD-19	DOWEL, 3/32 dia. x 7/32 long	1
6	STD-798	DOWEL, 3/32 dia. 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 - .065 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 1/16 thick	1
10	LW-13896	PLUG, 3/4-16 hex. hd.	1

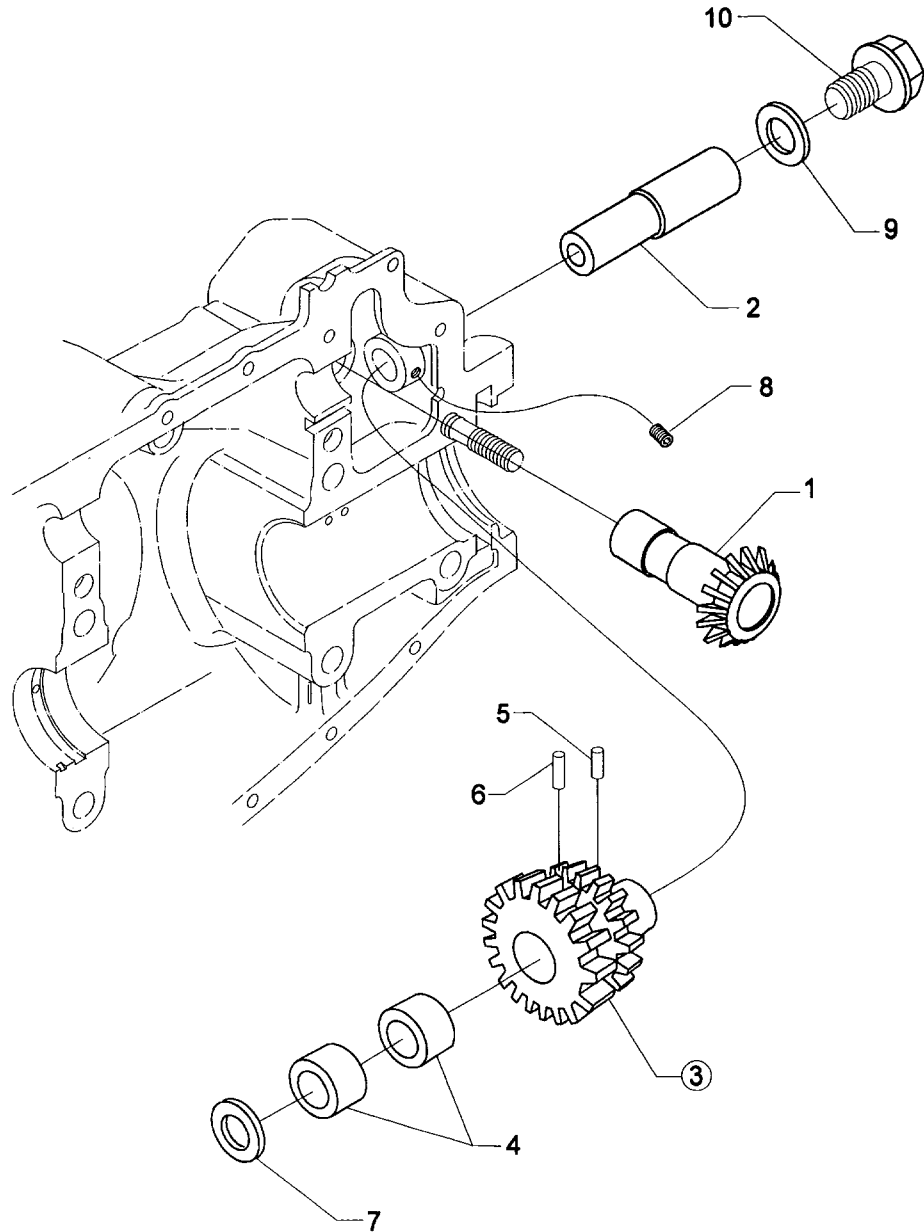


Figure 5. PROPELLER GOVERNOR DRIVE ASSEMBLY (CRANKCASE)

**CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
CRANKCASE ATTACHING PARTS**

FIG REF. 6	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	LW-25-1.50	BOLT, 1/4-20 x 1-1/2 long, hex. hd.	6
2	LW-25-1.63	BOLT, 1/4-20 x 1-5/8 long, hex. hd.	1
3	STD-8	WASHER, 1/4 plain	22
4	60803	STRAP, Lifting	2
5	LW-25-1.88	BOLT, 1/4-20 x 1-7/8 long, hex. hd.	2
6	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. hd.	4
7	STD-160	WASHER, 1/4 lock, internal teeth	12
8	STD-1411	NUT, 1/4-20 plain	9
9	LW-25S1.50	BOLT, 1/4-20 x 1-1/2 long, hex. hd., dr. end	3
10	STD-8	WASHER, 1/4 plain (Max. 9)	AR
11	STD-1409	NUT, 1/4-20 slotted shear	3
12	STD-33	WASHER, 3/8 plain, 1/16 thick	3
13	AN960-616L	WASHER, 3/8 plain, 1/32 thick	3
14	STD-872	NUT, 3/8-24 slotted	1
15	AN6-34A	BOLT, 3/8-24 x 3-37/64 long, hex. hd.	1
16	STD-33	WASHER, 3/8 plain	2
17	STD-678	WASHER, 3/8 lock, internal teeth	2
18	STD-596	NUT, 3/8-24 plain	2
19	76220	STUD, 1/2-20 x 10-45/64 long	4
20	STD-35*	WASHER, 5/16 plain	5
21	STD-475*	WASHER, 5/16 lock, internal teeth	1
22	LW-31-0.94*	BOLT, 5/16-18 x 15/16 long	1

* These parts are shipped loose.

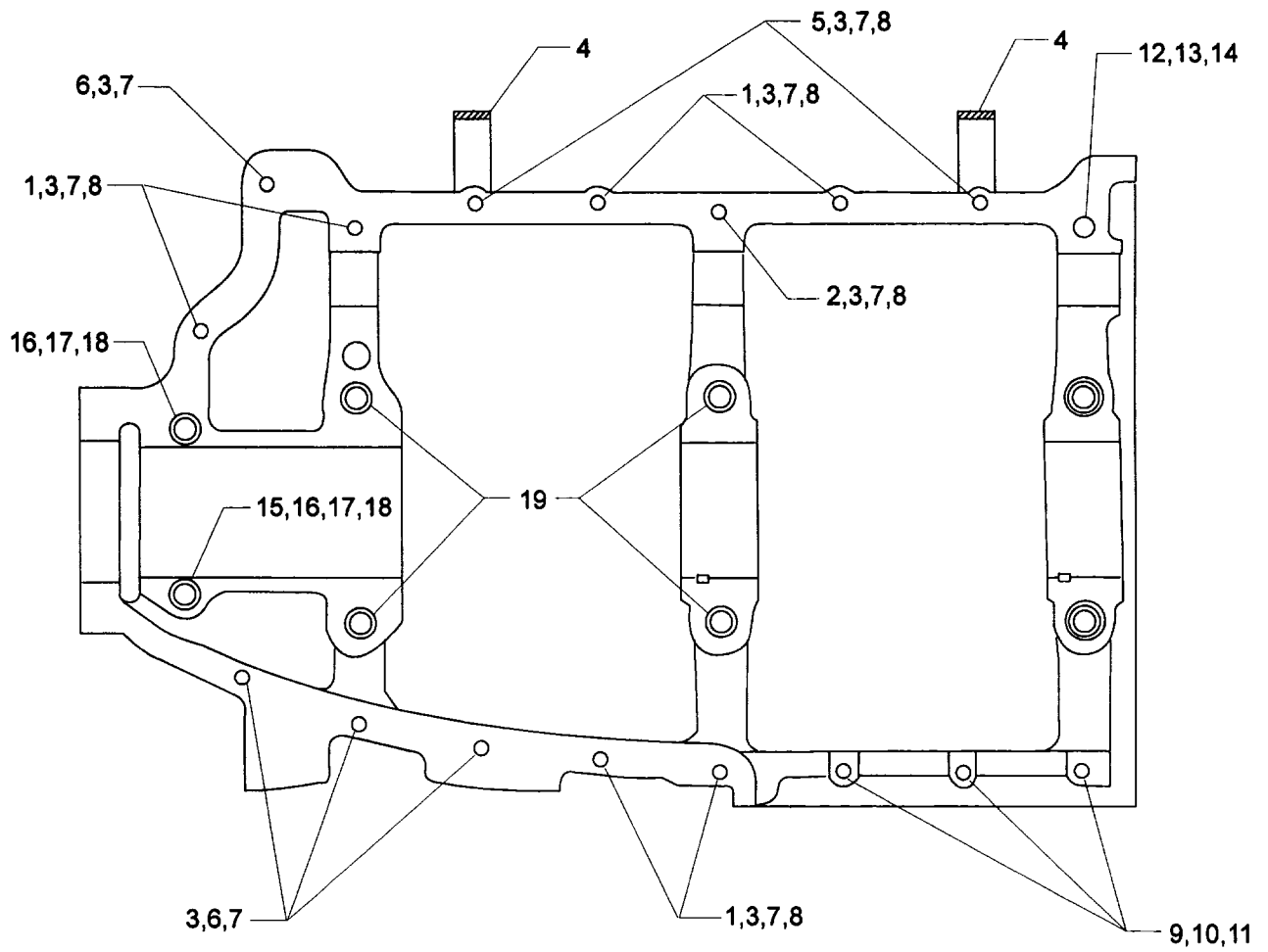


Figure 6. CRANKCASE ATTACHING PARTS

SECTION

2

**ACCESSORY
HOUSING AND
RELATED PARTS**

**ACCESSORY HOUSING AND RELATED PARTS
ACCESSORY HOUSING ASSEMBLY**

FIG REF. 7	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	73818	GASKET, Accessory housing	1
2	21A21533-02	HOUSING ASSY., Accessory	1
3	25C-22	STUD, 1/4-20 x 2-3/4 long	4
4	31C-12	STUD, 5/16-18 x 1-1/2 long	6
5	31C-19	STUD, 5/16-18 x 2-3/8 long	2
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
9	75888	STUD, 1/4-20 x 1-1/4 long	6

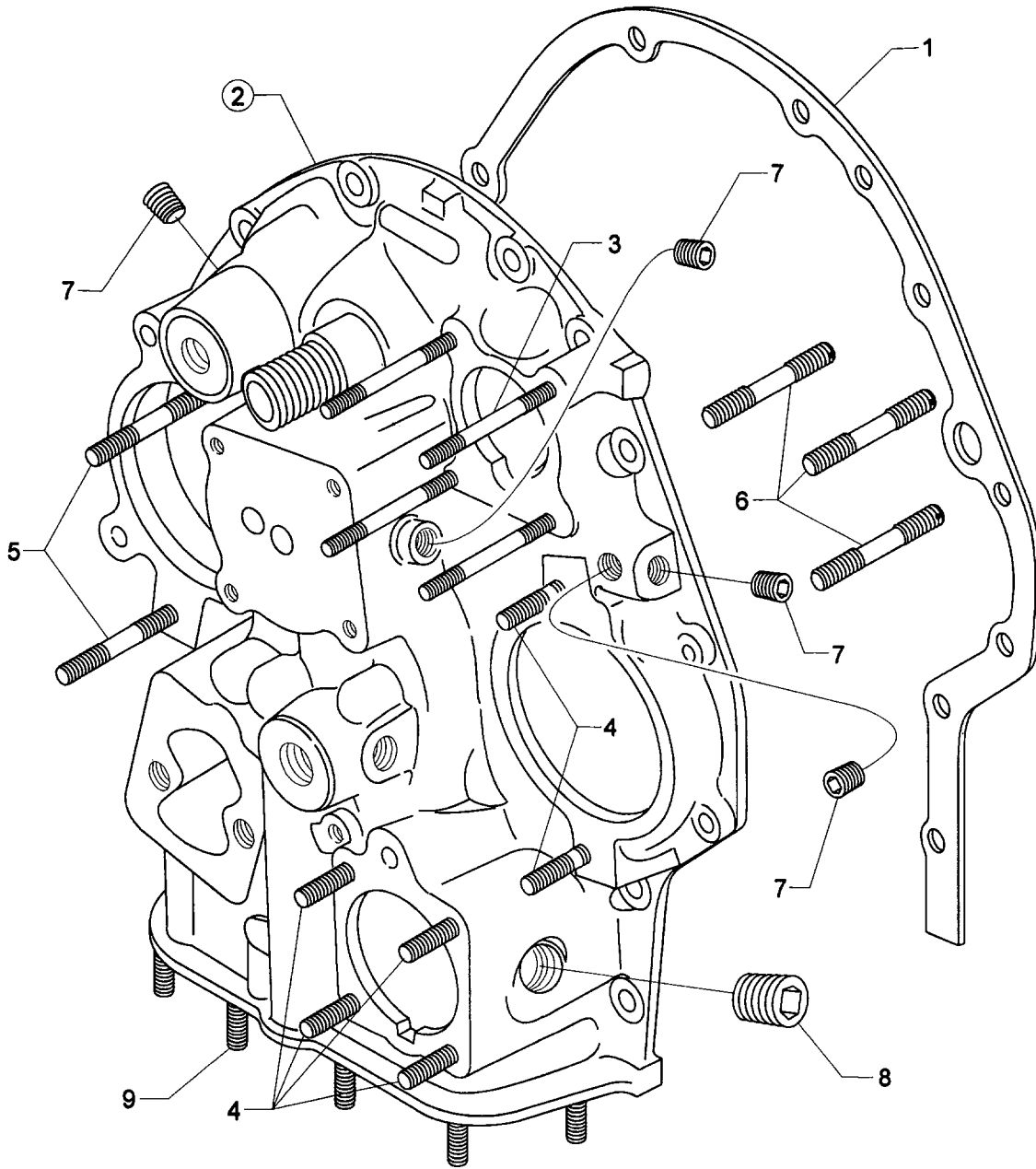


Figure 7. ACCESSORY HOUSING ASSEMBLY

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

FIG REF. 8	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	78531	BODY, Oil pump	1
2	05K19423-S*	OIL PUMP IMPELLER KIT	1
3	61174	SHAFT, Oil pump drive	1
4	STD-35	WASHER, 5/16 plain	3
5	STD-1420	NUT, 5/16-18 slotted	3
6	LW-14260	SEAL, Tachometer drive, oil	1
7	STD-8	WASHER, 1/4 plain	12
8	STD-160	WASHER, 1/4 lock, internal teeth	12
9	LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. hd.	9
10	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. hd.	1
11	LW-25-1.50	BOLT, 1/4-20 x 1-1/2 long, hex. hd.	2

* See latest edition of Textron Lycoming Service Bulletin No. 524.

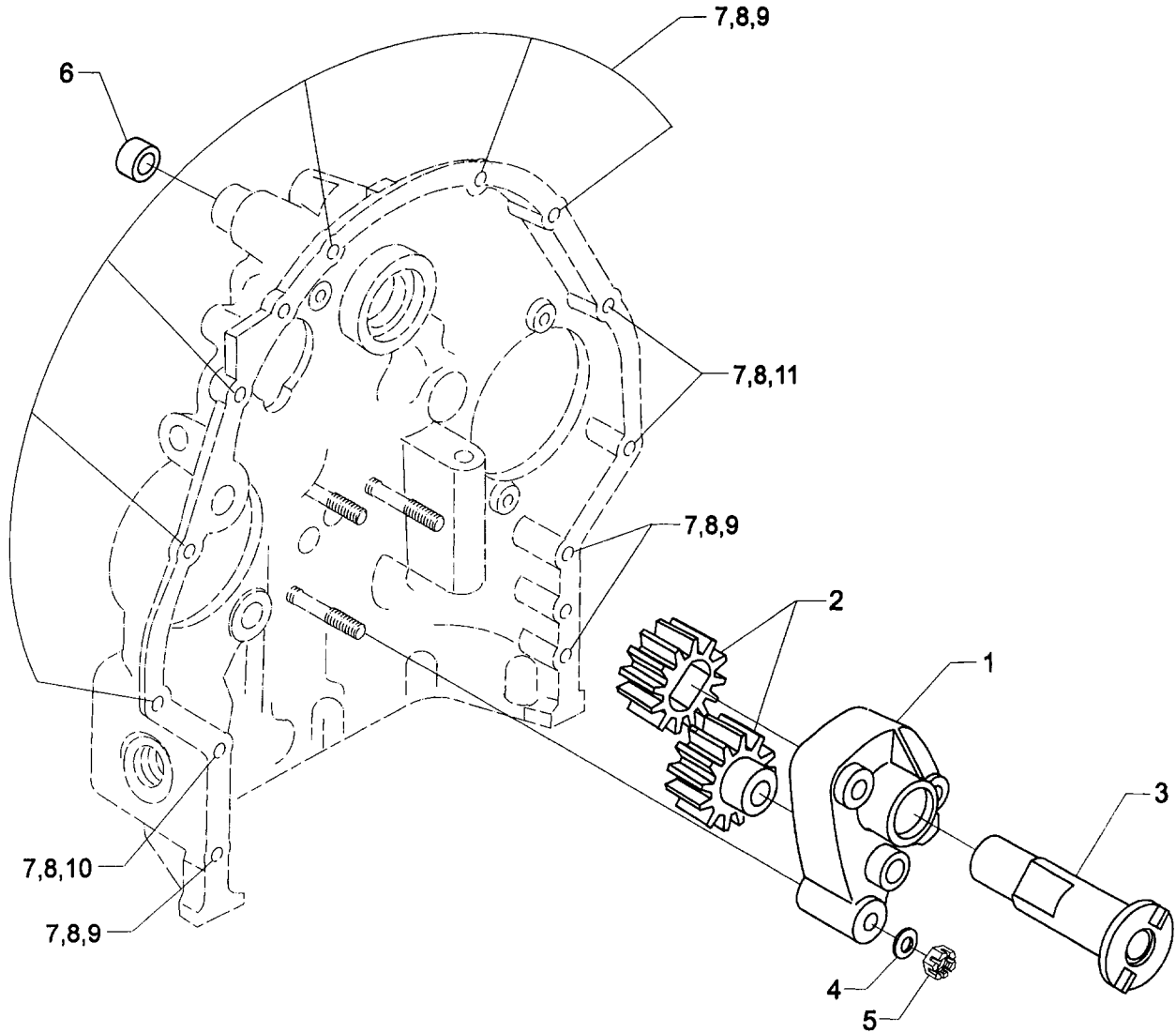


Figure 8. OIL PUMP AND ACCESSORY HOUSING ATTACHING PARTS

**ACCESSORY HOUSING AND RELATED PARTS
FUEL PUMP AND PROPELLER GOVERNOR DRIVE COVER**

FIG REF. 9	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	60096	GASKET, Fuel pump	1
2	LW-15473	FUEL PUMP, Dual diaphragm (6441234)	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
10	72053	GASKET, Governor	1
11	72378	COVER, Governor drive	1
12	STD-35	WASHER, 5/16 plain	32
13	STD-475	WASHER, 5/16 lock, internal teeth	4
14	STD-1410	NUT, 5/16 -18 plain	4

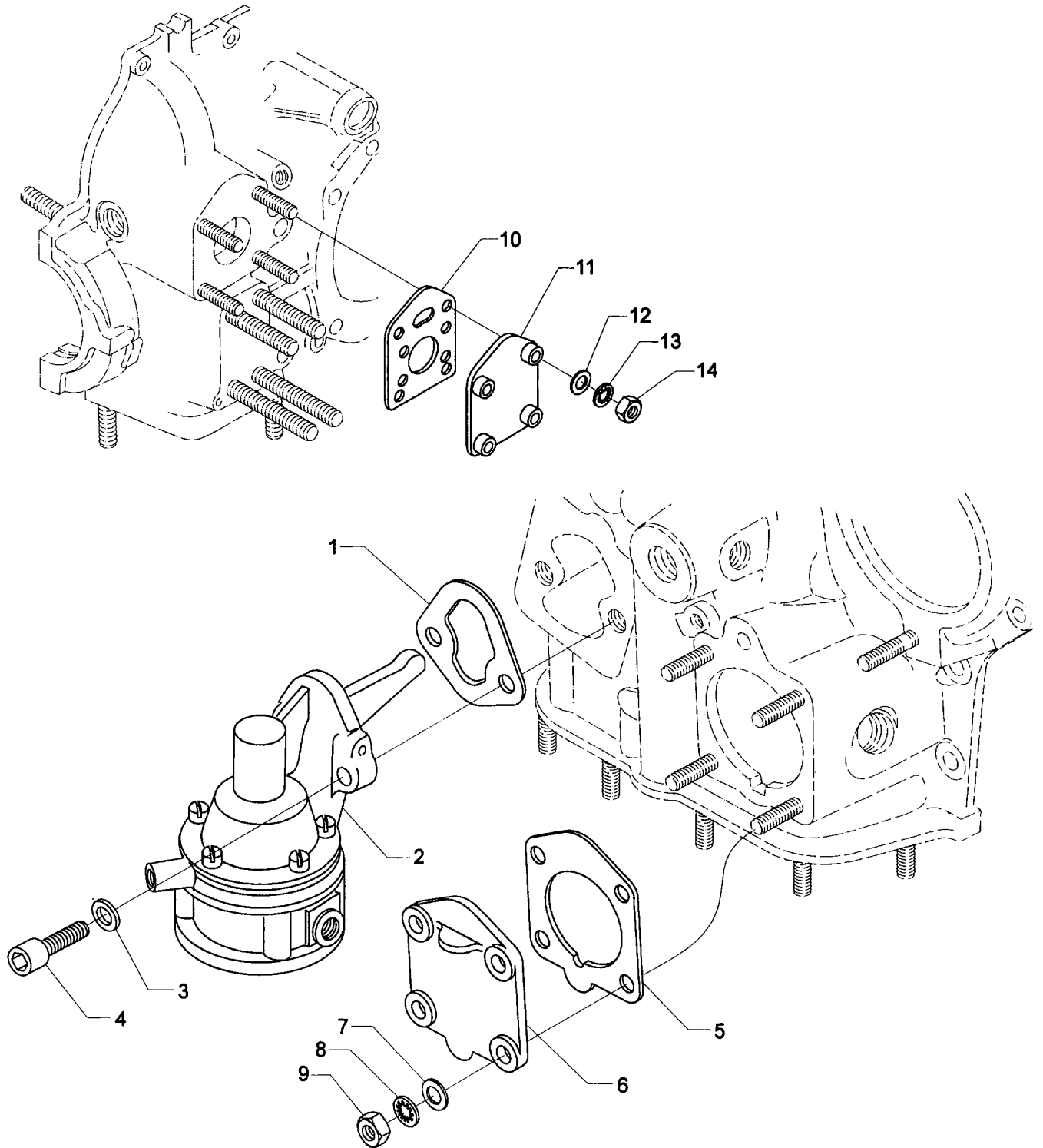


Figure 9. FUEL PUMP AND PROPELLER GOVERNOR DRIVE COVER

**ACCESSORY HOUSING AND RELATED PARTS
VACUUM PUMP DRIVE AND COVER**

FIG REF. 10	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	61183	GASKET, Vacuum pump	1
2	61098	ADAPTER ASSY., Vacuum pump	1
3	STD-1774	PIN, 1/8 dia. 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	72970	GEAR ASSY., 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

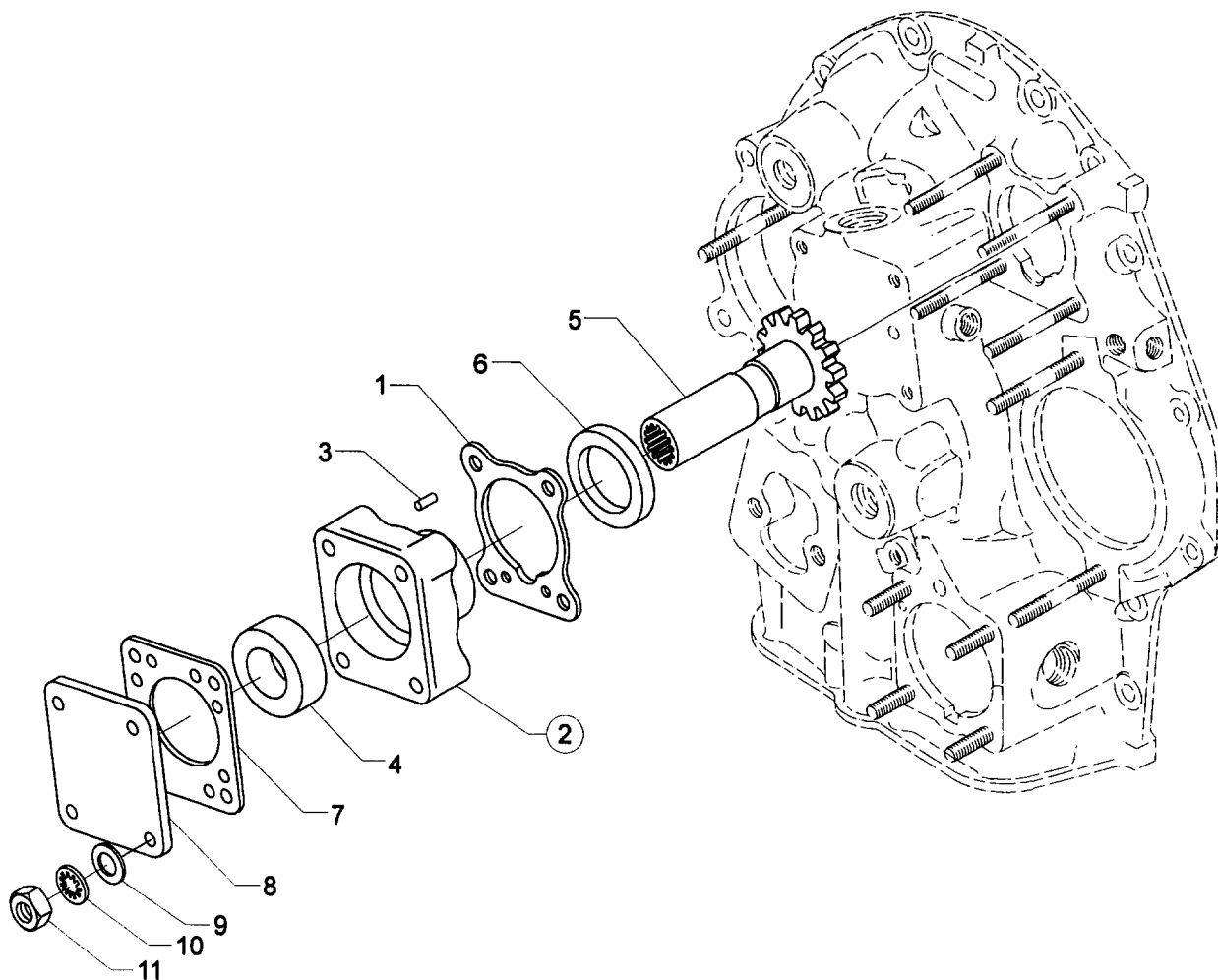


Figure 10. VACUUM PUMP DRIVE AND COVER

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

FIG REF. 11	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	LW-12795	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	STD-1856	SCREW, 1/4-20 x 1.00 long, hex. hd.	3
8	53E22144	VALVE ASSY., Temp. control oil cooler bypass	1
9	76510	GASKET, Valve assembly	1
10	25C-10	STUD, 1/4-20 x 1-1/4 long	1
11	06E19769-0.63	GASKET, 7/8 O.D. x 5/8 I.D. x 3/32 annular	1
12	62417	PLUG, Oil cooler bypass	1
13	STD-784	PLUG, 3/8-18 NPT, Allen	1
14	MS20823-8	ELBOW, 3/8 NPT, 1/2 flared tube	1
15	AN844-10D	ELBOW, Pipe	1

NOTE

Reference latest edition of Textron Lycoming SSP-885 for oil filter kits and replacement filters.

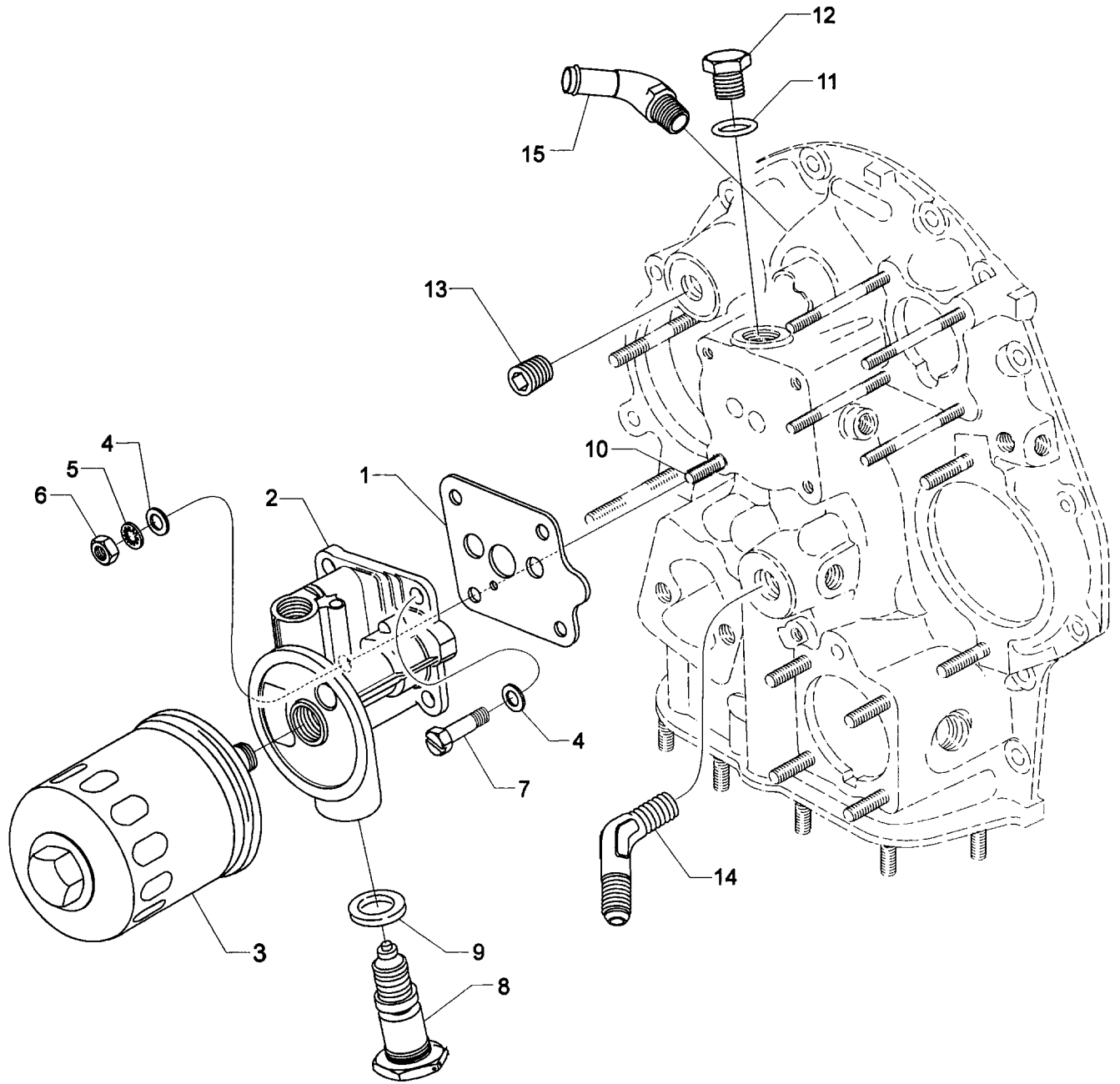


Figure 11. OIL FILTER ASSEMBLY, OIL COOLER BYPASS VALVE AND FITTINGS

SECTION

3

**CYLINDER, PISTON
AND VALVE TRAIN**

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

FIG REF. 12	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	LW-11750-S	CONNECTING ROD ASSEMBLY	4
2	LW-13923	BUSHING, Connecting rod, upper	4
3	75061	BOLT, Connecting rod	8
4	LW-12186	NUT, Connecting rod bolt	8
5	LW-13521	BEARING, Connecting rod	8
6	75089	PISTON, Compression ratio, 8.50:1	4
7	LW-14077*	PIN, Piston	4
8	72198*	PLUG, Piston pin	8
9	74241	RING, Piston compression	8
10	14H21950	RING, Piston, oil regulating, expander type	4

* See latest edition of Textron Lycoming Service Instruction No. 1267.

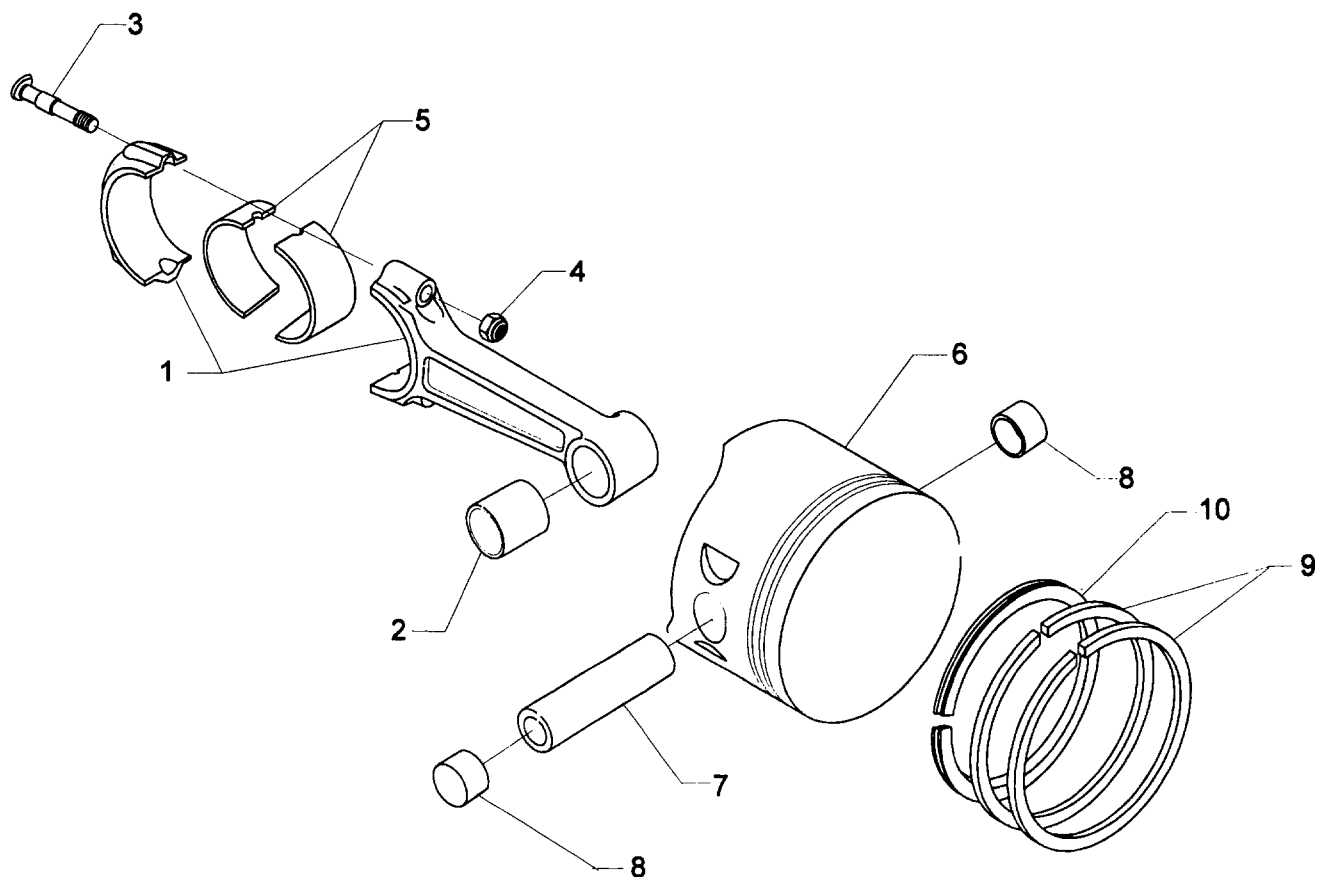


Figure 12. CONNECTING RODS, PISTONS AND RING ASSEMBLIES

**CYLINDER, PISTON AND VALVE TRAIN
CYLINDER ASSEMBLY**

FIG REF. 13	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	LW-12427	CYLINDER AND HEAD ASSY., Nitrided	4
2	72057	SEAT, Intake valve	4
3	72058	SEAT, Exhaust valve	4
4	61681*	GUIDE, Valve, intake, flanged	4
5	74230*	GUIDE, Valve, exhaust, flanged	4
6	66796	INSERT, Spark plug, 18 - 1.5 MM	8
7	STD-1353	INSERT, No. 10-24 Helicoil 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	MS20823-6D	ELBOW, 45°, 3/8 flared tube	4
11	66610	BUSHING, Rocker shaft	16
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

* See latest edition of Textron Lycoming Service Instruction No. 1256.

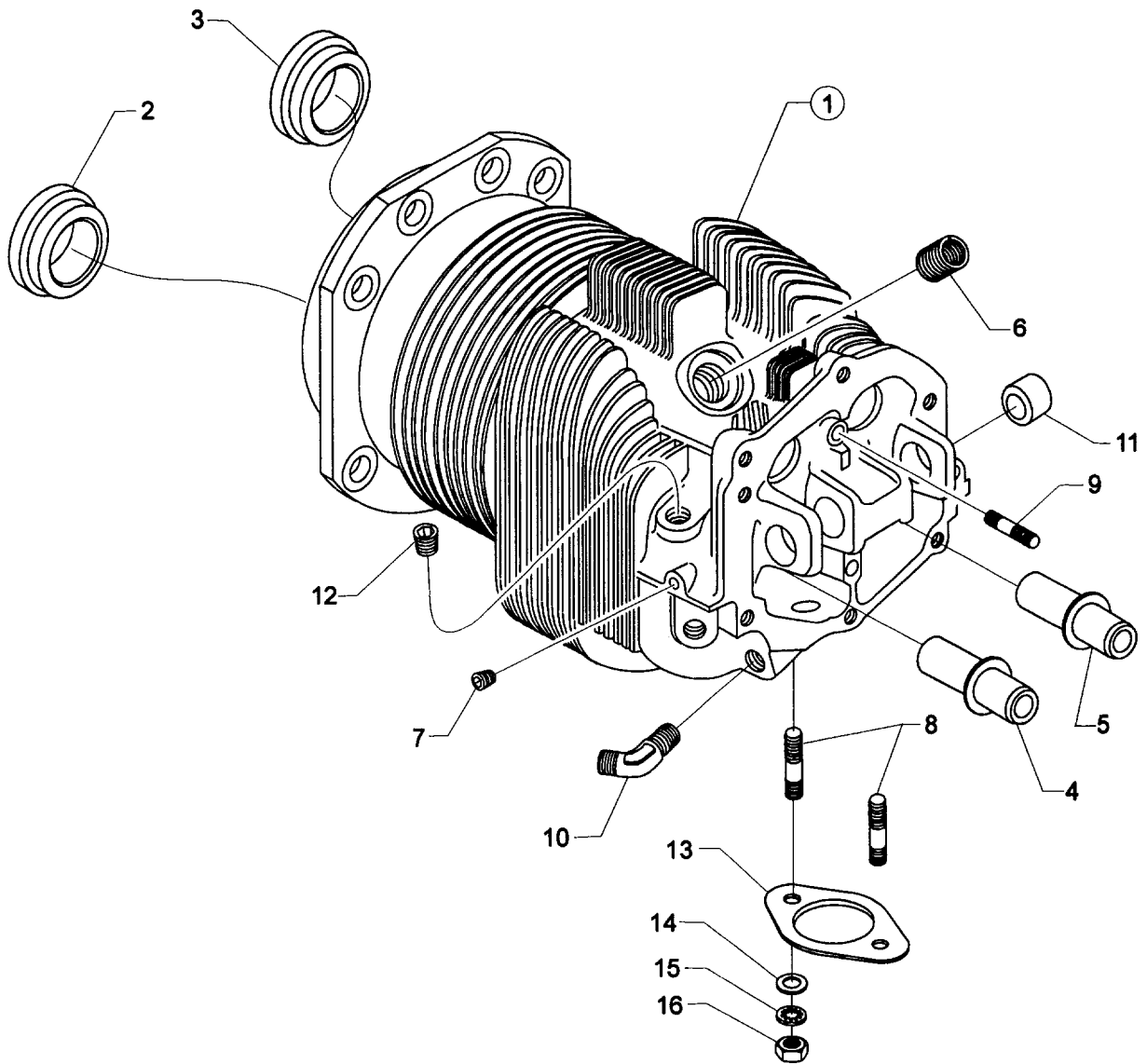


Figure 13. CYLINDER ASSEMBLY

**CYLINDER, PISTON AND VALVE TRAIN
CYLINDER RELATED PARTS**

FIG REF. 14	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	15F19957-34*	ROD ASSY., Push (A total of 8 required)	AR
	15F19957-35*	ROD ASSY., Push (A total of 8 required)	AR
	15F19957-36*	ROD ASSY., Push (A total of 8 required)	AR
	15F19957-37*	ROD ASSY., Push (A total of 8 required)	AR
2	17F19357**	ROCKER ASSY., Valve	8
3	74637	BUSHING, Valve rocker	8
4	LW-13790	SHAFT, Valve rocker	4
5	LW-12892	THRUST BUTTON, Rocker shaft	8
6	71481	RING, Oil seal, 3/32 dia. x 4-27/32 long	4
7	74887	SPACER, 33/64 I.D. x 7/8 O.D. x 3/8 thick	2
8	383-B	NUT, 3/8-24 plain	16
9	STD-2090	NUT, 1/2-20 plain	18

* See latest edition of Textron Lycoming Service Instruction No. 1060 for complete push rod application.

** Due to the size of the area where the part number is stamped, the last five digits may be all that is shown (19357).

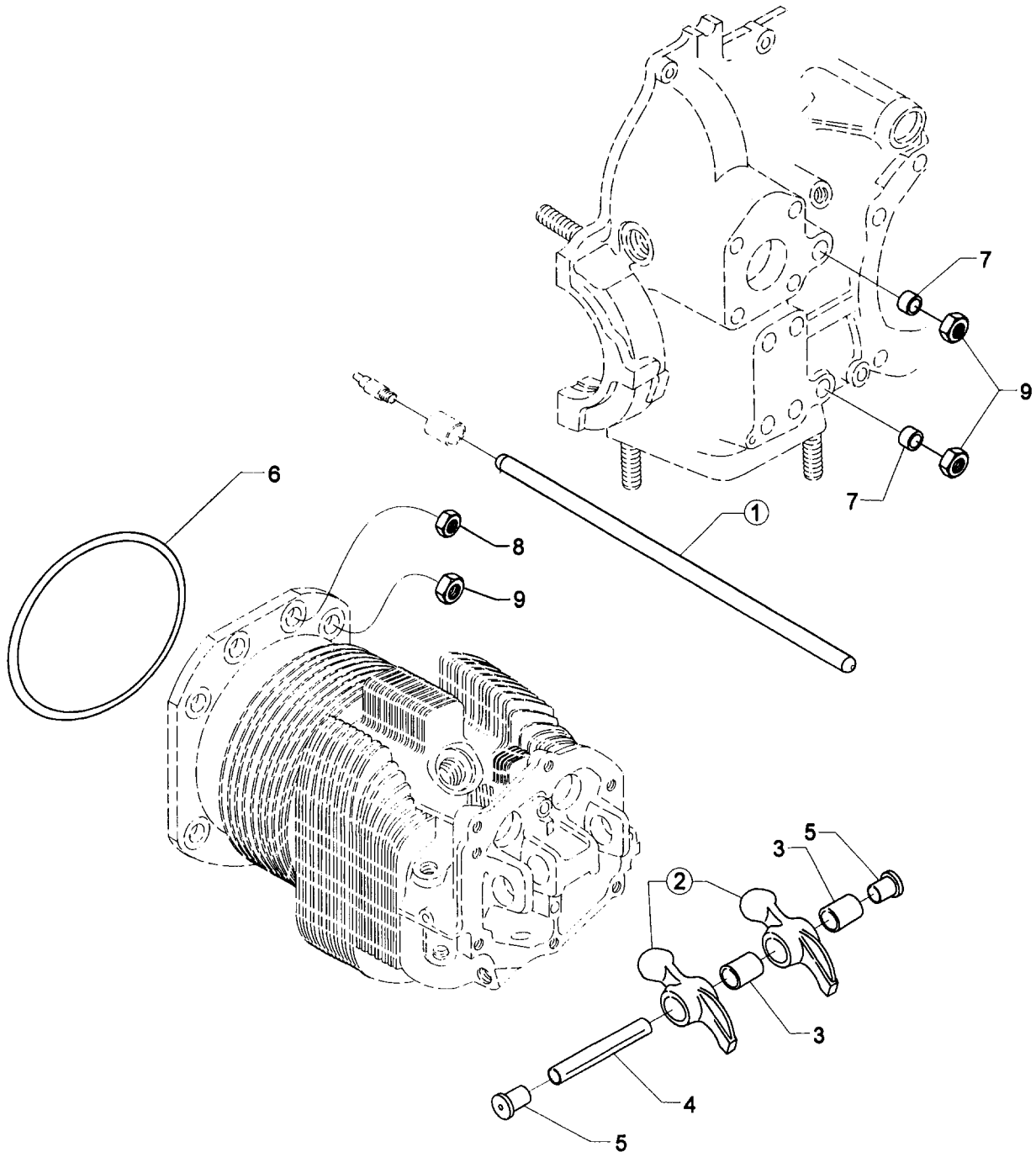


Figure 14. CYLINDER RELATED PARTS

**CYLINDER, PISTON AND VALVE TRAIN
VALVE ASSEMBLY**

FIG REF. 15	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	73938	VALVE, Intake	4
2	LW-19001	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, intake	8
10	17C21191	KEY, Valve, exhaust (rotator type)	8
11	17C19386	CAP, Valve stem, exhaust (rotator type)	4
12	78290	PLUNGER ASSY., Hydraulic tappet	8
13	15B21319	SOCKET, Hydraulic tappet	8
14	LW-11485	SHROUD TUBE ASSY., 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	LW-18661	SEAL, Shroud tube	8
19	70310	SEAL, Shroud tube	8

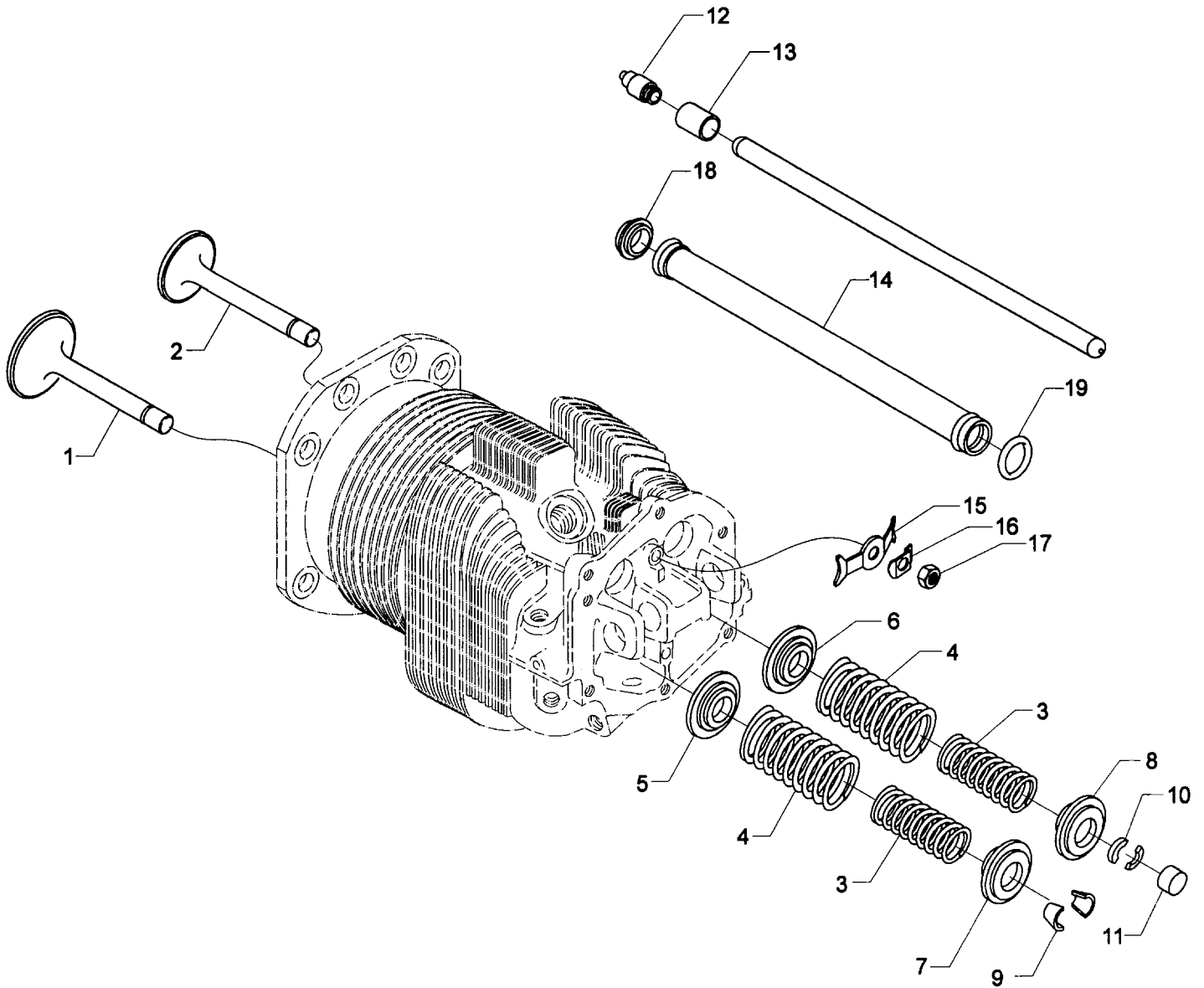


Figure 15. VALVE ASSEMBLY

**CYLINDER, PISTON AND VALVE TRAIN
CYLINDER HEAD DRAIN TUBES, INTERCYLINDER COOLING BAFFLES
AND ROCKER BOX COVERS**

FIG REF. 16	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
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 ASSY., Cyl. head oil drain, cyl. no. 1	1
5	68760	TUBE ASSY., Cyl. head oil drain, cyl. no. 2	1
6	68761	TUBE ASSY., Cyl. head oil drain, cys. no. 3 & 4	2
7	75339 **	BAFFLE ASSY., Intercylinder	1
	LW-13389 *	BAFFLE ASSY., Intercylinder	1
8	71611	RETAINER, Intercylinder baffle	2
9	71610	HOOK, Intercylinder baffle retainer	2
10	MS35489-20X	GROMMET	1
11	75906	GASKET, Rocker box cover	4
12	61247	COVER, Rocker box	4
13	STD-1925	SCREW, 1/4-20 x 5/8 long, pan. hd., self-locking	24

* Install on right side between no. 1 and no. 3 cylinders.

** Install on left side between no. 2 and no. 4 cylinders.

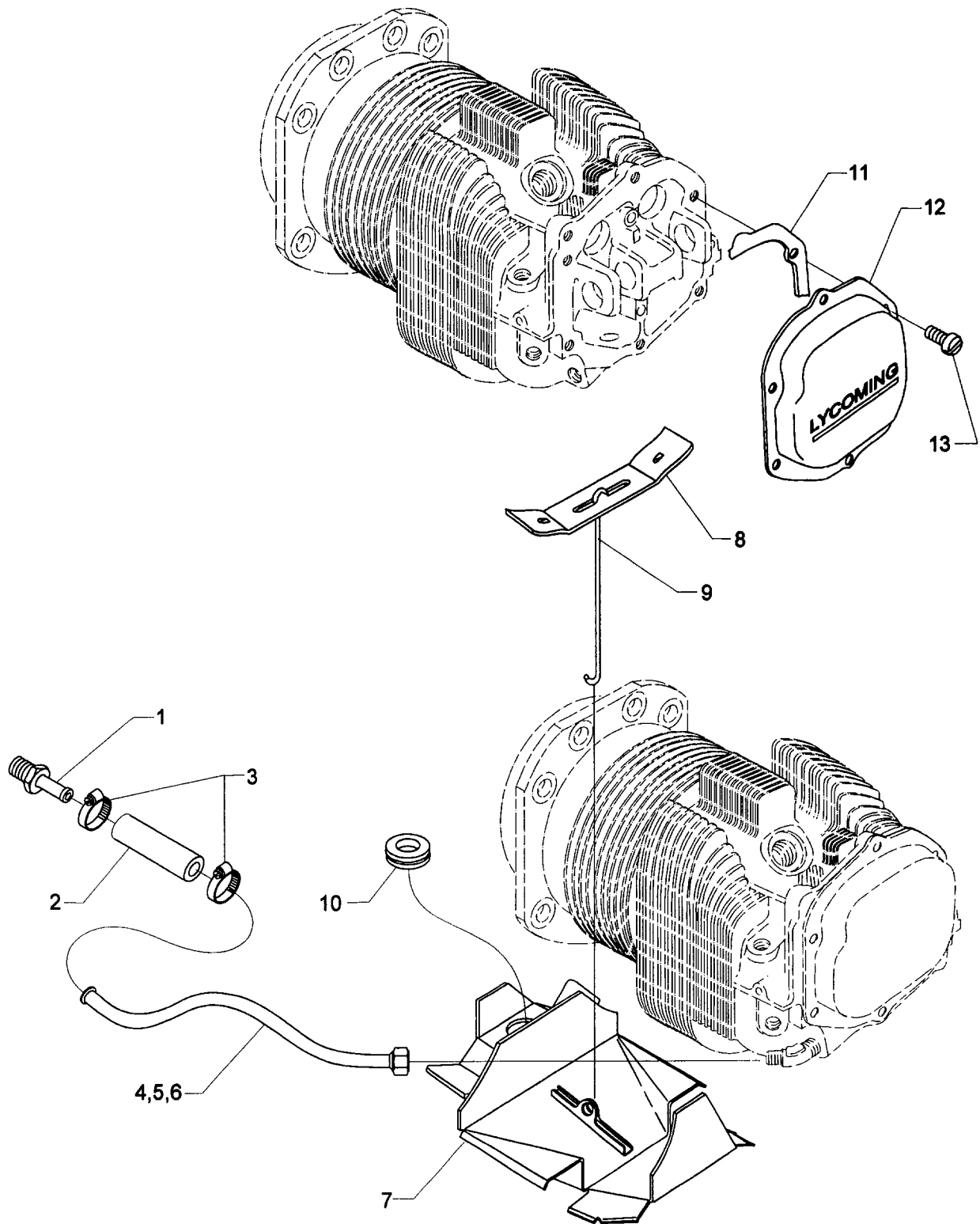


Figure 16. CYLINDER HEAD DRAIN TUBES, INTERCYLINDER COOLING BAFFLES AND ROCKER BOX COVERS

SECTION

4

IGNITION SYSTEM

IGNITION SYSTEM
SLICK MAGNETOS, MAGNETO DRIVES, SLICK HARNESSES AND SPARK PLUGS

FIG REF. 17	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	61665	GEAR, Magneto, impulse coupling	1
2	68C19622	GEAR, Magneto	1
3	STD-713	COTTER PIN, 3/32 dia. x 3/4 long	2
4	62224	GASKET, Magneto adapter	1
5	LW-12706	ADAPTER, Magneto, impulse coupling	1
6	LW-12681	GASKET, Magneto	2
7	66GP-0SANN	MAGNETO, Plain, Slick Model 4370	1
7A	66GC25SFNN	MAGNETO, Impulse, Slick Model 4373	1
8	67P20416	HARNESS ASSY., Right, Slick Model M-2984	1
8A	67P20417	HARNESS ASSY., Left, Slick Model M-2983	1
9	66M21195	CLAMP, Magneto	4
10	STD-475	WASHER, 5/16 lock, internal teeth	4
11	STD-1410	NUT, 5/16-18 plain	4
12	1182-E7*	SPARK PLUG, Champion (REM38E) or Auburn (SR8)	8
**	01P19762-2-9	BAG, Magneto harness attaching	1

* Item No. 12 spark plugs are used in current production only. Additional spark plugs are available for this engine. See latest edition of Textron Lycoming 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.

P/N 01P19762-2-9		
LW-16266-25-25	CLIP, One wire	4
LW-14060	CLIP, Two wire	4
STD-8	WASHER, ¼ plain	8
STD-1874	SCREW, ¼-20 x 13/16 long	4
76734	ZIP STRAP	12
LW-16266-25-50	CLAMP	3
STD-1411	NUT, ¼-20 plain	1
STD-696	WASHER, ¼ plain (thin)	4
STD-1916	SCREW, ¼-20 x 1-1/8 long	1
STD-1925	SCREW, ¼-20 x 5/8 long	2
72815	BRACKET	3
73152	BRACKET	2
STD-692	SCREW, No. 10-32 x ½ long	5
STD-425	WASHER, No. 10 plain	5
STD-670	LOCKNUT, No. 10-32	5
LW-M-2375	PLATE, Spark plug cable	2

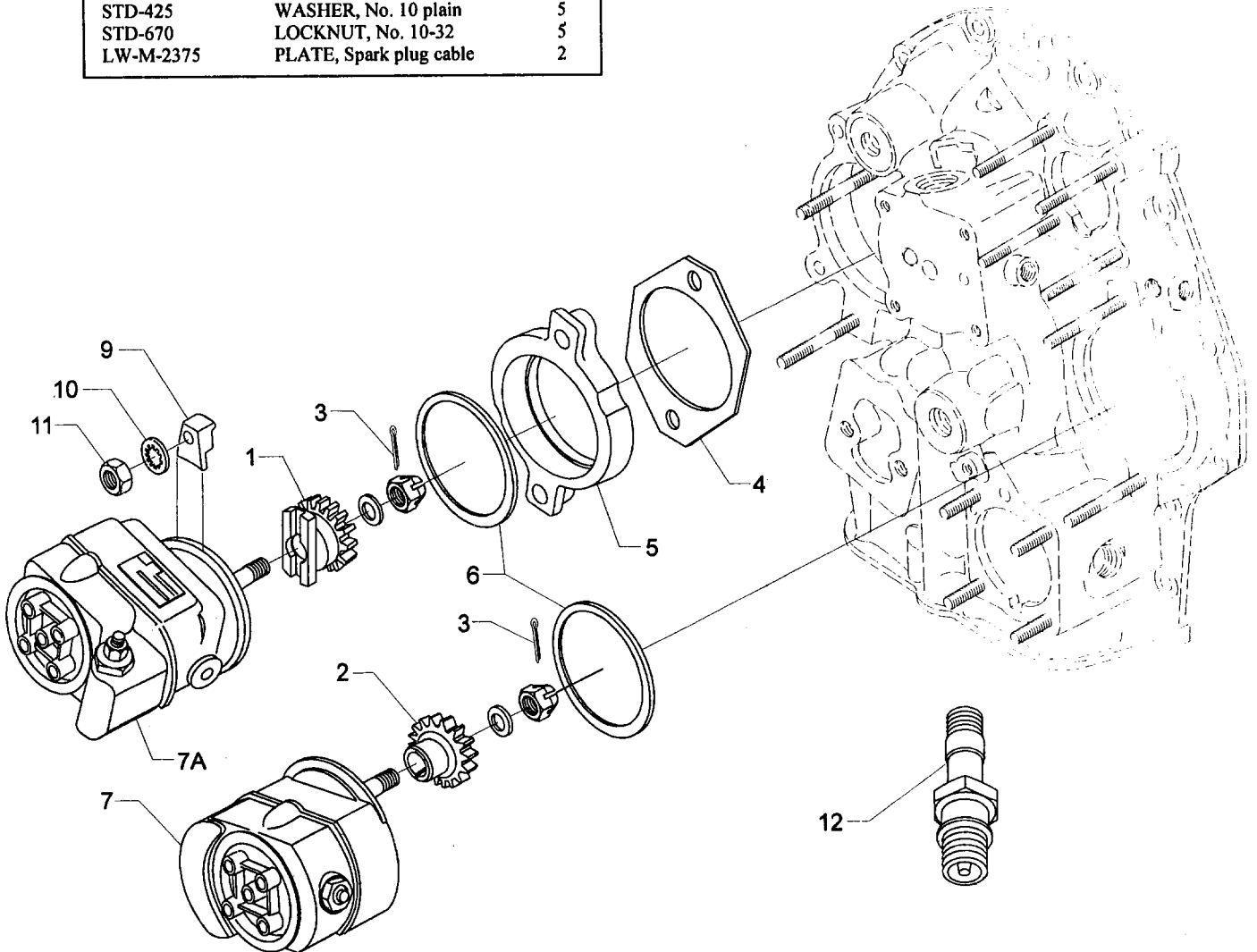
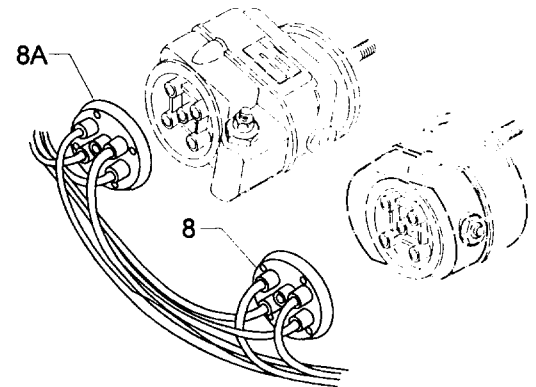


Figure 17. SLICK MAGNETOS, MAGNETO DRIVES, SLICK HARNESSSES AND SPARK PLUGS

IGNITION SYSTEM

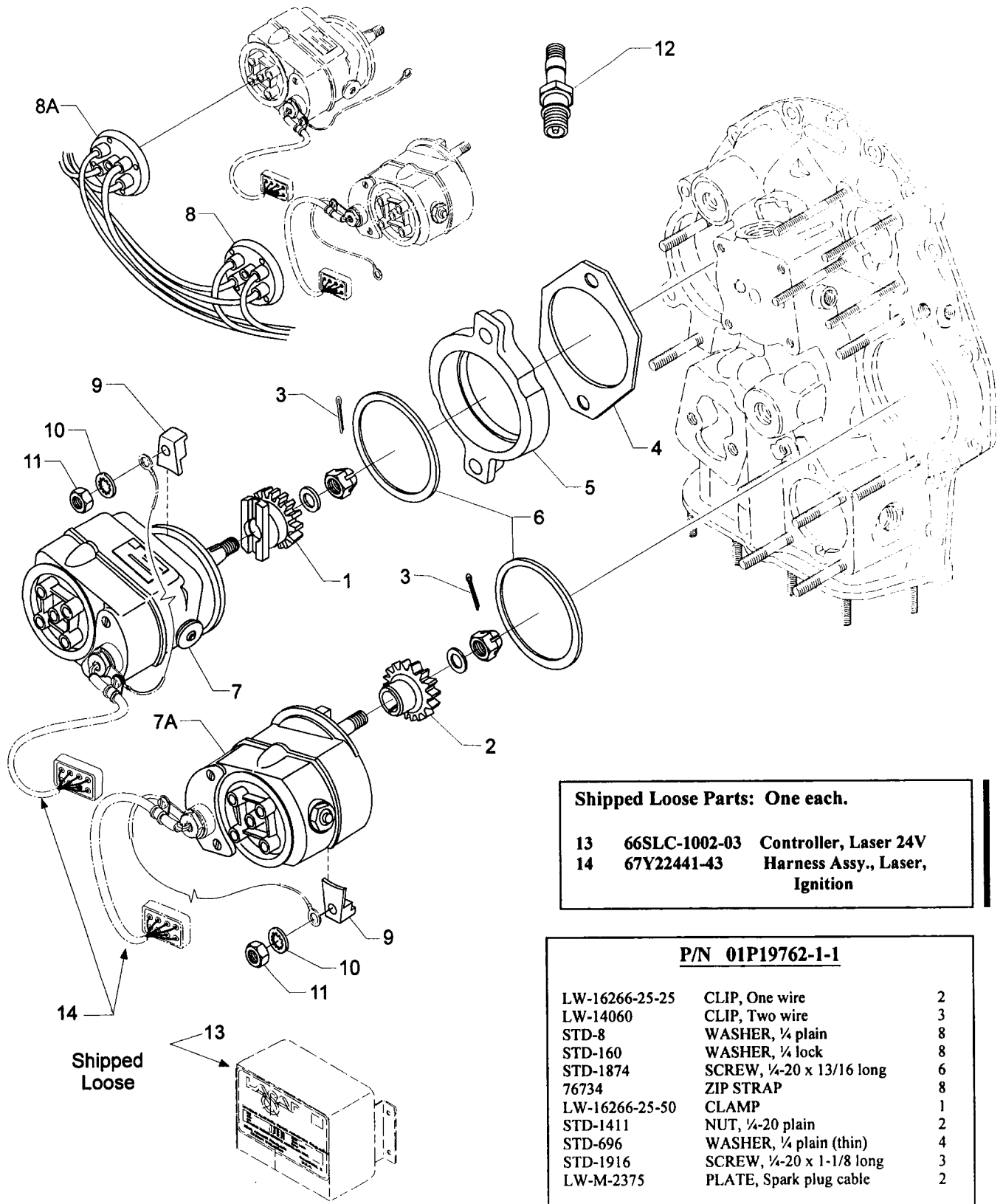
LASER MAGNETOS, MAGNETO DRIVES, SLICK HARNESSES AND SPARK PLUGS

FIG REF. 18	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	61665	GEAR, Magneto, impulse coupling	1
2	68C19622	GEAR, Magneto	1
3	STD-713	COTTER PIN, 3/32 dia. x 3/4 long	2
4	62224	GASKET, Magneto adapter	1
5	LW-12706	ADAPTER, Magneto, impulse coupling	1
6	LW-12681	GASKET, Magneto	2
7	66K22442	MAGNETO, Left, Laser Model 4771	1
7A	66K22445	MAGNETO, Right, Laser Model 4770	1
8	67P20428	HARNESS ASSY., Right, Slick Model M-2990	1
8A	67P20429	HARNESS ASSY., Left, Slick Model M-2989	1
9	66M21195	CLAMP, Magneto	4
10	STD-475	WASHER, 5/16 lock, internal teeth	4
11	STD-1410	NUT, 5/16-18 plain	4
12	1182-E7*	SPARK PLUG, Champion (REM38E) or Auburn (SR8)	8
13	66SLC-1002-03+	CONTROLLER, Laser 24V	1
14	67Y22441-43+	HARNESS ASSY., Laser, ignition	1
**	01P19762-1-1	BAG, Magneto harness attaching	1

* Item No. 12 spark plugs are used in current production only. Additional spark plugs are available for this engine. See latest edition of Textron Lycoming 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.

+ These parts are shipped loose.



Shipped Loose Parts: One each.

13	66SLC-1002-03	Controller, Laser 24V
14	67Y22441-43	Harness Assy., Laser, Ignition

P/N 01P19762-1-1

LW-16266-25-25	CLIP, One wire	2
LW-14060	CLIP, Two wire	3
STD-8	WASHER, 1/4 plain	8
STD-160	WASHER, 1/4 lock	8
STD-1874	SCREW, 1/4-20 x 13/16 long	6
76734	ZIP STRAP	8
LW-16266-25-50	CLAMP	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. LASER MAGNETOS, MAGNETO DRIVES, SLICK HARNESSES AND SPARK PLUGS

SECTION

5

ELECTRICAL SYSTEM

**ELECTRICAL SYSTEM
SKY-TEC STARTER AND ATTACHING PARTS**

FIG REF. 19	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	31A22104	STARTER, Sky-Tec (149-12LS)	1
	31B22105	STARTER, Sky-Tec (149-24LS)	1
2	STD-475	WASHER, 5/16 lock, internal teeth	4
3	LW-31-1.09	BOLT, 5/16-18 x 1-3/32 long, hex head	1
4	STD-1410	NUT, 5/16-18 plain	3

NOTE

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

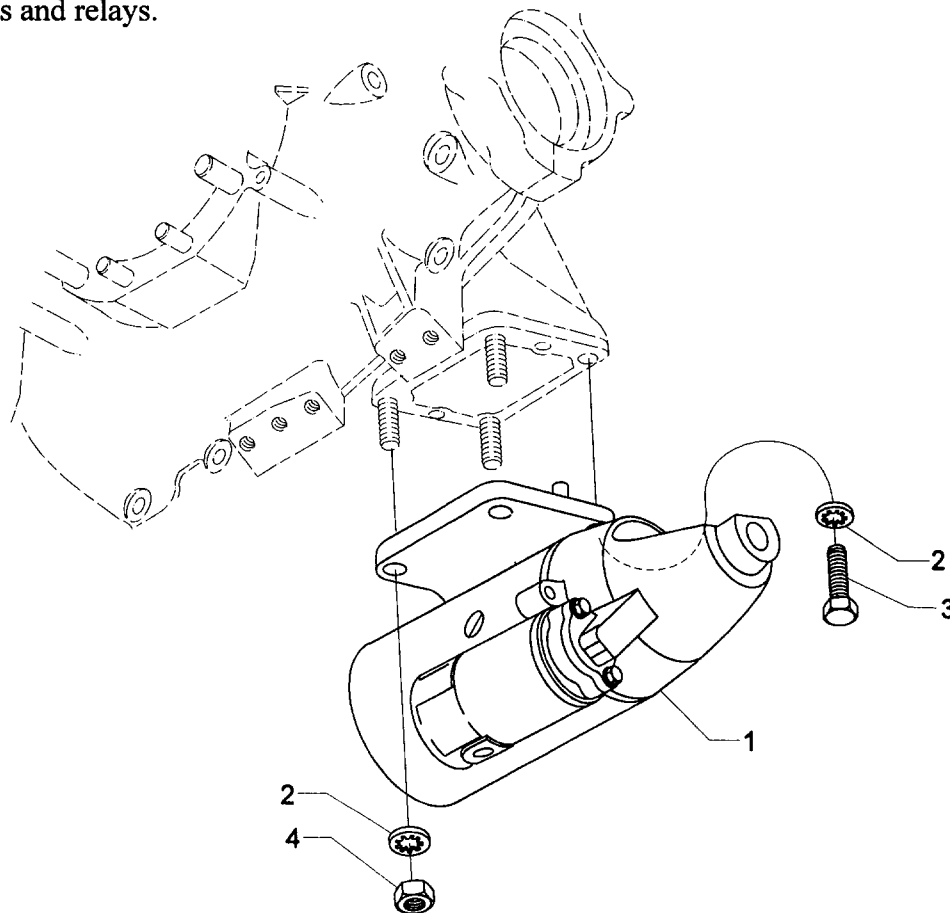


Figure 19. SKY-TEC STARTER AND ATTACHING PARTS

**ELECTRICAL SYSTEM
ALTERNATOR ASSEMBLY AND BELT**

FIG. REF. 20	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	32C19553	ALTERNATOR ASSY., 24 volt, 70 amp	1
2	LW-14326	ALTERNATOR, (ALU-8421-LS)	1
3	36B19484	PULLEY, Alternator	1
4	37A19773-376	BELT, Alternator, 3/8 wide	1

NOTE

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

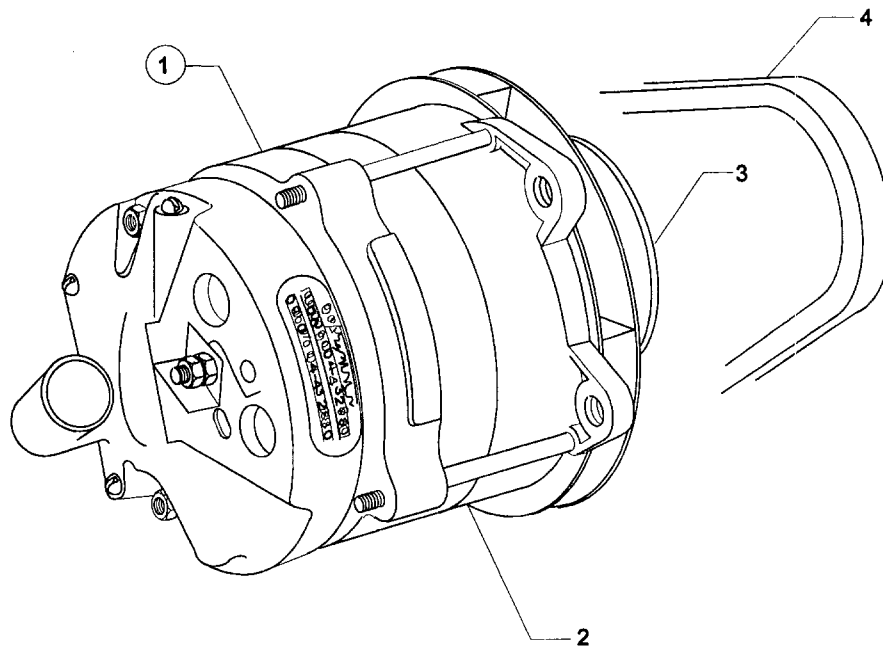


Figure 20. ALTERNATOR ASSEMBLY AND BELT

ELECTRICAL SYSTEM
ALTERNATOR MOUNTING AND ATTACHING PARTS

FIG REF. 21	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
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. hd.	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. hd.	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. hd.	1
9	74323	STRUT, Alternator support	1
10	LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. hd.	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. hd., drilled end	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 dia. x 3/4 long	1
16	AN6-16	BOLT, 3/8-24 x 1-53/64 long, hex. hd., 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 dia. x 3/4 long	1

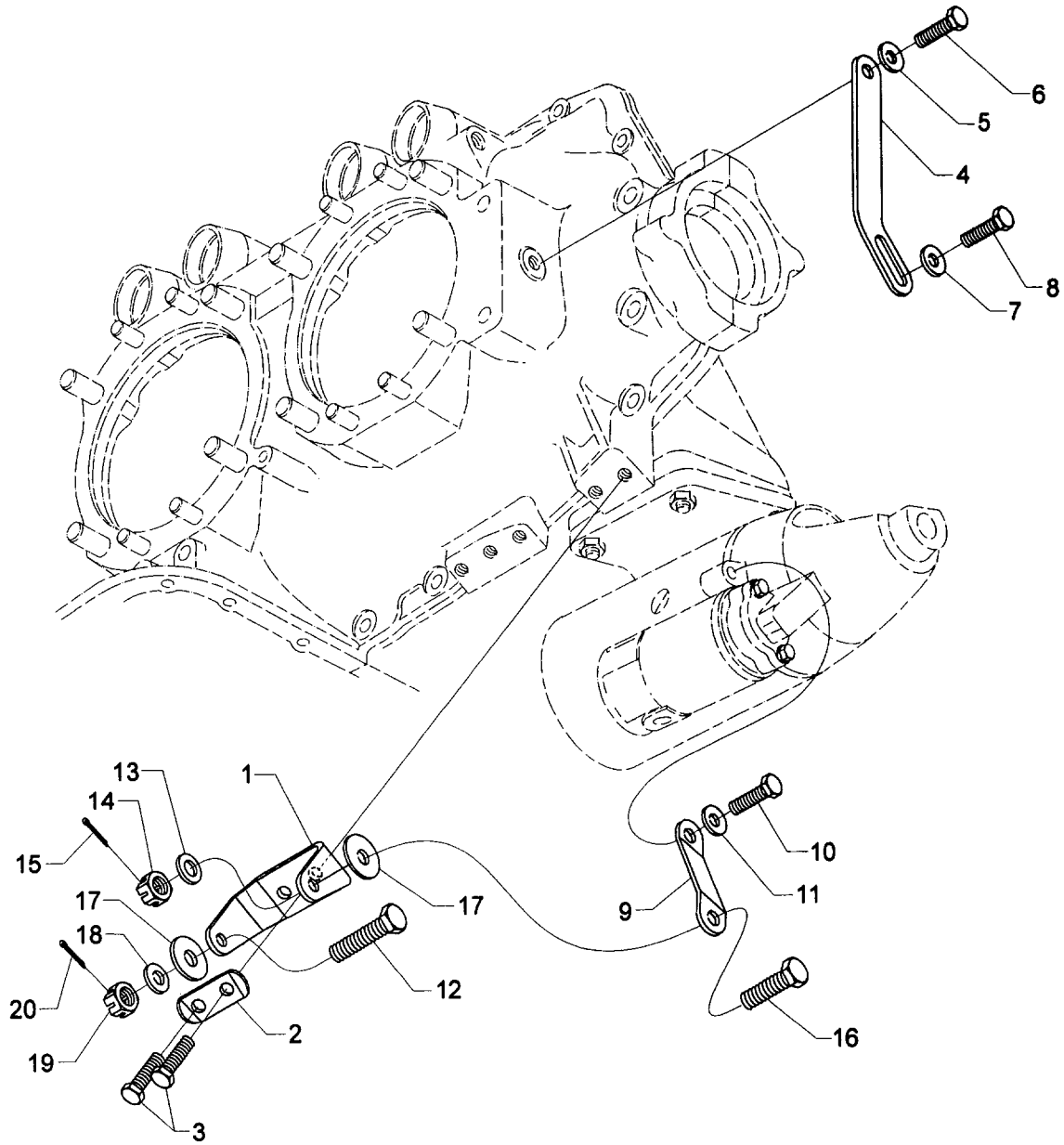


Figure 21. ALTERNATOR MOUNTING AND ATTACHING PARTS

SECTION

6

**OIL SUMP AND
INDUCTION SYSTEM**

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

FIG REF. 22	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
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, Sq. hd., 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. hd.	12
10	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. hd.	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, 1.00 I.D. x 1-1/4 O.D. x 3/32 annular	1
15	LW-12545	PLUG, 5/8 hex. hd. x 1.00-20 thread	1

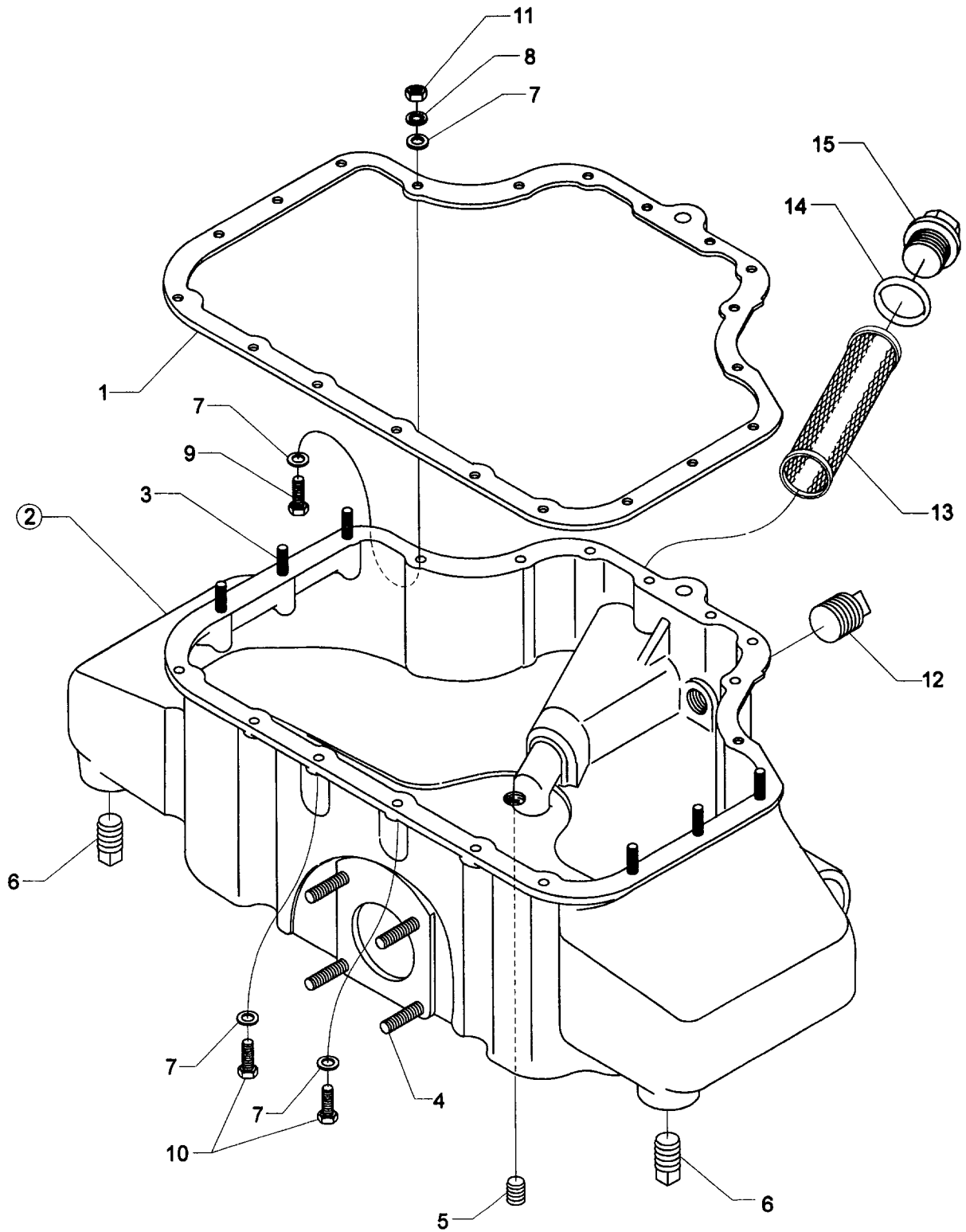


Figure 22. OIL SUMP ASSEMBLY AND OIL SUCTION SCREEN

**OIL SUMP AND INDUCTION SYSTEM
INTAKE PIPES AND ATTACHING PARTS**

FIG REF. 23	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	77569	RING, Seal, intake pipes	4
2	42E22611	PIPE, Intake, cyl. no. 1	1
3	42E22612	PIPE, Intake, cyl. no. 2	1
4	42E22613	PIPE, Intake, cyl. no. 3	1
5	42E22614	PIPE, Intake, cyl. 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

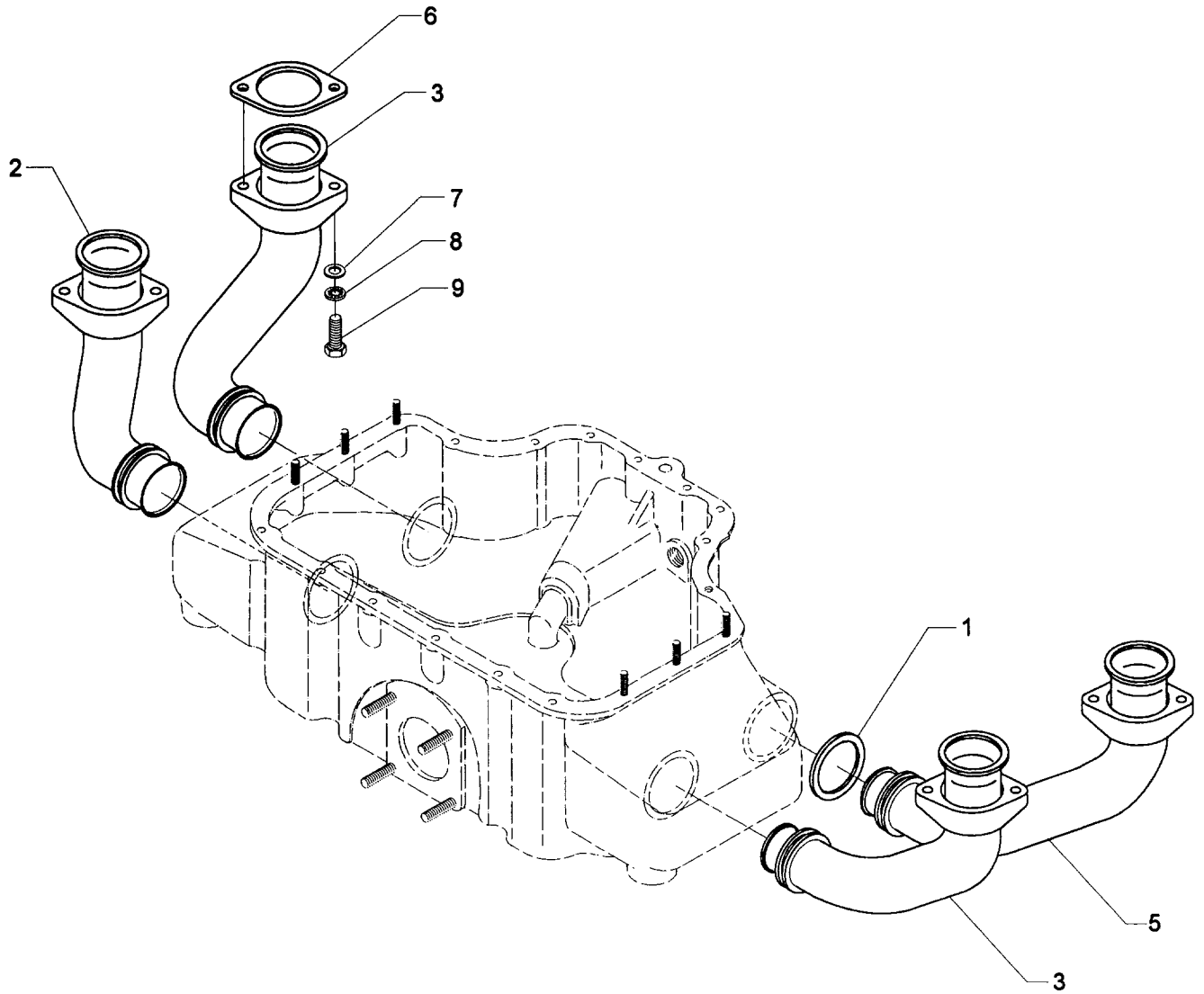


Figure 23. INTAKE PIPES AND ATTACHING PARTS

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

FIG REF. 24	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	66224	GASKET, Fuel injector	2
2	61J22633	FUEL INJECTOR (2576568-1)	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	LW-18265	NOZZLE, Injection (2524864)	4
7	63B22623	MANIFOLD ASSEMBLY, Fuel	1
8	MS20822-4	ELBOW, 1/4 tube, 1/8 NPT, 90°	1
9	02G21382	NIPPLE, Nozzle pressure	1
10	STD-148	NIPPLE, Union, 1/8 NPT	4
11	1102	PLUG, 1/8 pipe	2
12	73966	SPACER, Fuel manifold bracket	2
13	74597	BRACKET, Fuel manifold	1
14	74598	BRACKET, Fuel manifold	1
15	STD-1907	SCREW, No. 10-24 x 9/16 long, flat hd.	4
16	STD-1908	WASHER, No. 10 lock, external teeth	4

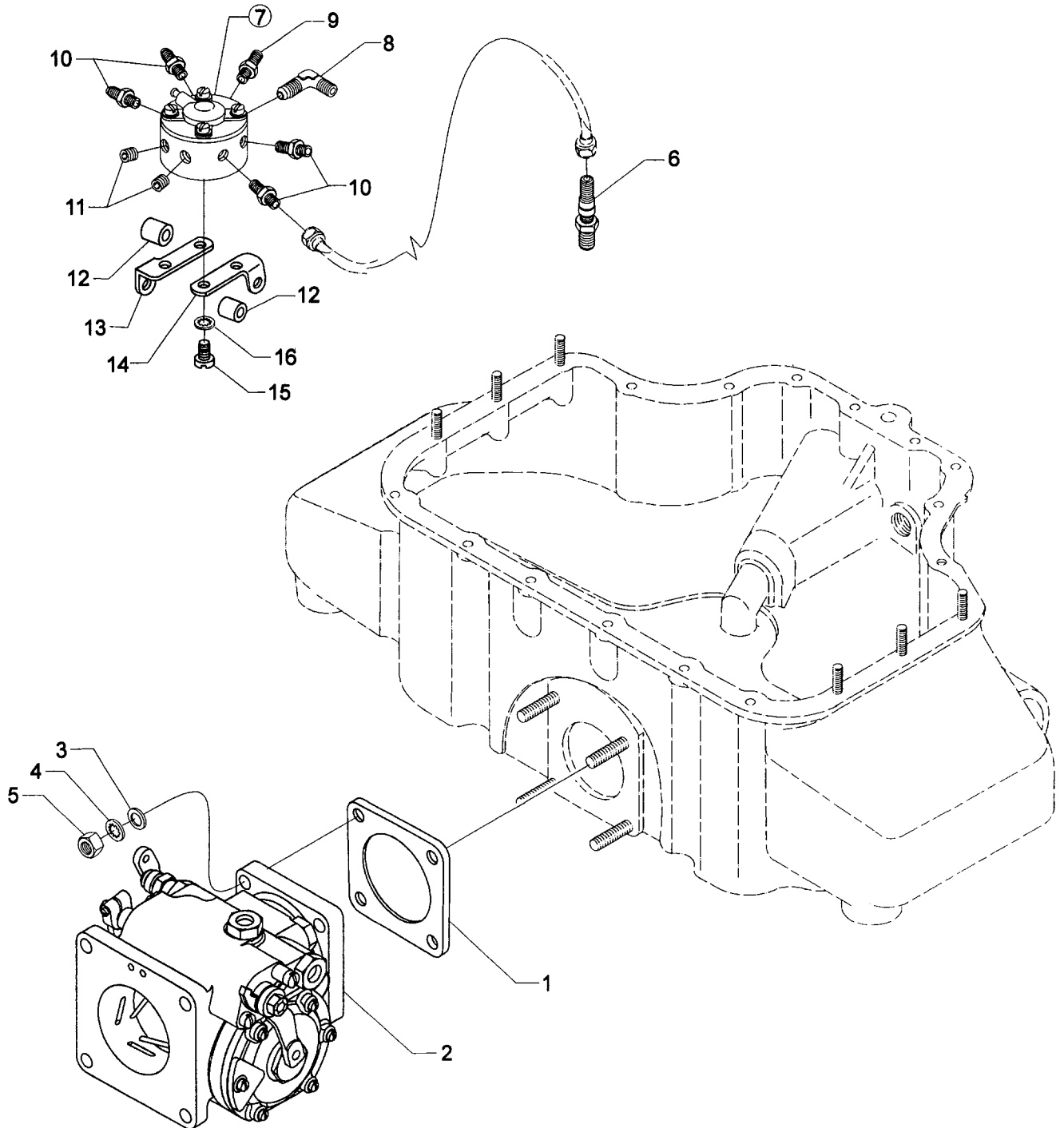


Figure 24. FUEL INJECTOR, FUEL MANIFOLD AND BRACKETS

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

FIG REF. 25	PART NUMBER	DESCRIPTION	QTY. PER ASSY.
1	LW-12098-0-180	TUBE ASSY., Fuel manifold to nozzles	4
2	LW-16266-10-75	CLAMP	8
3	LW-16266-10-13	CLAMP, 1/8 dia. for No. 10 screw	8
4	STD-860	SCREW, No. 10-32 x 5/8 long, fill. hd.	8
5	STD-670	LOCKNUT, No. 10-32	8
6	LW-12876-4S224	HOSE ASSY., 1/4 hose, 90° elbow	1
7	74278	BRACKET ASSY., Fuel line support	1
8	STD-692	SCREW, No. 10-32 x 1/2 long, rd. hd.	2
9	STD-425	WASHER, No. 10 plain	3
10	STD-670	LOCKNUT, No. 10-32	1
11	STD-860	SCREW, No. 10-32 x 5/8 long, fill. hd.	1
12	LW-16266-25-63	CLAMP, 5/8 I.D. x 1/4 dia.	1
13	75739*	NIPPLE, 3/8 flared tube (fuel pump outlet)	1
14	LW-12799-6S222	HOSE ASSY., 3/8 hose, Straight	1
15	73152	BRACKET, Support clamp	1
16	LW-16266-10-75	CLAMP	1
17	STD-860	SCREW, No. 10-32 x 5/8 long, fill. hd.	1
18	STD-1908	LOCKNUT, No. 10-32	1

* Requires P/N MS29512-06 O-ring.

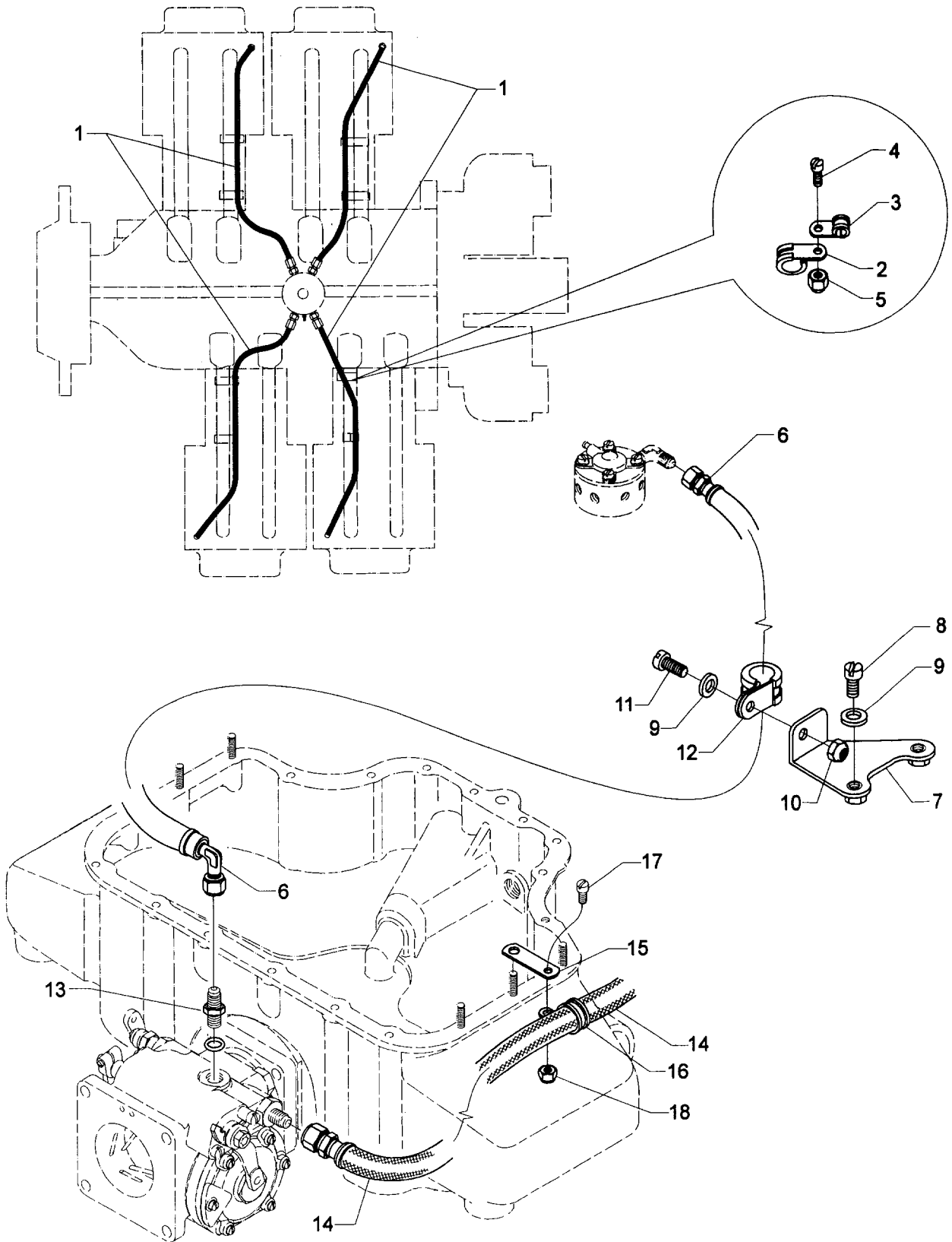


Figure 25. FUEL LINES, FUEL HOSES AND ATTACHING PARTS

SECTION

7

**SERVICE KIT
SECTION**

SERVICE KIT SECTION SEAL AND GASKET SET

Part No.	Part Name	Qty.
75439-1	SEAL AND GASKET SET	1
AN901-8A	GASKET, Metal tube connect seal	1
LW-10332	LOCKPLATE, Crankshaft gear	1
LW-11997*	SEAL, Crankshaft oil	1
LW-12272	LOCKPLATE, Shroud tube	4
LW-12681	GASKET, Magneto	2
LW-12795	GASKET, Oil filter adapter	1
LW-13353	GASKET, Oil sump	1
LW-13792*	SEAL, Crankshaft oil	1
LW-14260	SEAL, Tachometer drive oil	1
LW-14995	SPRING, Shroud tube	4
LW-18639	LOCKPLATE, Crankshaft gear	1
LW-18661	SEAL, Shroud tube	8
LW-19296	GASKET, Exhaust flange	4
STD-475	WASHER, 5/16 lock, internal teeth	4
STD-213	SEAL, Oil	1
06A19956	SEAL, Oil	1
06E19769-0.63	GASKET	2
06E19769-1.00	GASKET	1
06E19769-1.25	GASKET	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	3
66224	GASKET, Carburetor	2
68315	GASKET, Accessory drive adapter	1
69164	GASKET, Fuel pump adapter	1
69345	SPACER	4
69551	GASKET, Accessory drive adapter	1
70310	SEAL, Shroud tube	8
70455	GASKET	1
71481	RING, Oil seal	4
71973	GASKET, 2 bolt flange	4
72053	GASKET, Governor	2
72059	GASKET, Oil level gage	1
72075	SEAL, Oil	6
72078	LOCKPLATE	2
72091	RING, Oil seal	2
72220	GASKET, Oil level gage	1
72312	RING, Oil seal	1
72829	LOCKPLATE	1
73189	GASKET	1
73383	LOCKPLATE	2
73817	LOCKPLATE	2

* Refer to latest edition of Textron Lycoming Service Instruction No. 1324 for application.

SERVICE KIT SECTION SEAL AND GASKET SET

Part No.	Part Name	Qty.
75439-1	SEAL AND GASKET SET (CONT.)	
73818	GASKET, Accessory housing	1
74065	RING, Oil level gage seal	1
74068	RING, Oil level gage plug	1
75906	GASKET, Rocker box cover	4
76510	GASKET, Oil cooler bypass valve	1
77154	GASKET, Carburetor	1
77611	GASKET, Exhaust flange	4
8313	GASKET, Vacuum pump	1
77569	RING SEAL, Intake pipe	4
76940	SEAL, Crankshaft oil	1
MS29512-04	O-RING	1

SERVICE KIT SECTION CYLINDER, PISTON AND RING ASSEMBLY KIT

Part No.	Part Name	Qty.
05K21104	KIT - CYLINDER, PISTON AND RING ASSY.	1
LW-12427	CYLINDER AND HEAD ASSY.	1
LW-19001	VALVE, Exhaust	1
73938	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
75089	PISTON	1
74241	RING, Piston, compression	2
14H21950	RING, Piston, oil regulating	1
LW-14077	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 flange	1
71973	GASKET, 2 bolt	1
LW-12272	LOCKPLATE, Shroud tube	1
SSP-299	TAG	1

SERVICE KIT SECTION CRANKCASE ASSY. AND THRU STUD KIT

Part No.	Part Name	Qty.
11D22549-S	CRANKCASE ASSY. AND THRU STUD KIT	1
11D22549	CRANKCASE ASSY.	1
STD-2090	NUT, 1/2-20 plain	2
31C-17	STUD, 5/16-18 x 2-1/8 long	4
74887	SPACER	2
76220	STUD, 1/2-20 x 10-45/64 long	4
AN565B1032H4	SET SCREW	1
AN565B1032H5	SET SCREW	1
SSP-582	TAG	1
SSP-1576	TAG	1

SECTION

8

NUMERICAL INDEX

NUMERICAL INDEX

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
AN565B1032H5	Set Screw	1-9	LW-12892	Thrust Button	3-5
AN6-16	Bolt	5-3	LW-13215	Oil Filter	2-9
AN6-17	Bolt	5-3	LW-13323	Seat	3-7
AN6-34A	Bolt	1-11	LW-13353	Gasket	6-1
AN844-10D	Elbow	2-9	LW-13389	Baffle Assy.	3-9
AN960-616L	Washer	1-11	LW-13521	Bearing	3-1
LW-25-0.94	Bolt	2-3	LW-13790	Shaft	3-5
LW-25-0.94	Bolt	6-1	LW-13792	Seal	1-3
LW-25-1.13	Bolt	1-11	LW-13793	Stud	1-1
LW-25-1.13	Bolt	2-3	LW-13796	Shaft	1-7
LW-25-1.13	Bolt	6-1	LW-13864	Sump Assy.	6-1
LW-25-1.25	Bolt	6-3	LW-13884	Bearing	1-3
LW-25-1.50	Bolt	1-11	LW-13896	Plug	1-9
LW-25-1.50	Bolt	2-3	LW-13923	Bushing	3-1
LW-25-1.63	Bolt	1-11	LW-14021	Shaft	1-9
LW-25-1.88	Bolt	1-11	LW-14077	Piston Pin	3-1
LW-25S1.50	Bolt	1-11	LW-14260	Seal	2-3
LW-31-0.94	Bolt	1-11	LW-14326	Alternator	5-2
LW-31-0.94	Bolt	5-3	LW-14995	Spring	3-7
LW-31-1.09	Bolt	5-1	LW-15473	Fuel Pump	2-5
LW-31H0.75	Bolt	5-3	LW-15592-5-05	Clamp	3-9
LW-31H0.88	Bolt	1-7	LW-16266-10-13	Clamp	6-7
LW-10077	Seat	3-7	LW-16266-10-75	Clamp	6-7
LW-11485	Shroud Tube Assy.	3-7	LW-16266-10-75	Clamp	6-7
LW-11713	Spring	1-3	LW-16266-25-63	Clamp	6-7
LW-11750-S	Conn. Rod Assy.	3-1	LW-16471	Support Assy.	1-5
LW-11795	Spring	3-7	LW-16475	Seat	3-7
LW-11800	Spring	3-7	LW-16711	Bearing	1-3
LW-11997	Seal	1-3	LW-16783-18	Gage Assy.	1-3
LW-12098-0-180	Tube Assy.	6-7	LW-18085	Spring	1-3
LW-12186	Nut	3-1	LW-18265	Injection Nozzle	6-5
LW-12272	Lockplate	3-7	LW-18639	Lockplate	1-5
LW-12427	Cyl. & Head Assy.	3-3	LW-18661	Seal	3-7
LW-12545	Plug	6-1	LW-18667	Pin	1-7
LW-12681	Gasket	4-1	LW-18843	Camshaft Assy.	1-7
LW-12681	Gasket	4-3	LW-19001	Exhaust Valve	3-7
LW-12706	Adapter	4-1	MS20822-4	Elbow	6-5
LW-12706	Adapter	4-3	MS20823-6D	Elbow	3-3
LW-12795	Gasket	2-9	MS20823-8	Elbow	2-9
LW-12799-6S222	Hose Assy.	6-7	MS35489-20X	Grommet	3-9
LW-12876-4S224	Hose Assy.	6-7	STD-8	Washer	1-11

NUMERICAL INDEX (Continued)

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
STD-8	Washer	2-3	STD-784	Plug	2-9
STD-8	Washer	2-7	STD-798	Dowel	1-9
STD-8	Washer	2-9	STD-860	Screw	6-7
STD-8	Washer	6-1	STD-872	Nut	1-11
STD-8	Washer	6-3	STD-872	Nut	5-3
STD-19	Dowel	1-9	STD-1065	Dowel	1-5
STD-33	Washer	1-11	STD-1211	Plug	1-5
STD-33	Washer	2-5	STD-1339	Plug	1-1
STD-35	Washer	1-11	STD-1353	Insert	3-3
STD-35	Washer	2-3	STD-1409	Nut	1-11
STD-35	Washer	2-5	STD-1410	Nut	2-5
STD-35	Washer	3-3	STD-1410	Nut	3-3
STD-35	Washer	5-3	STD-1410	Nut	4-1
STD-148	Nipple	6-5	STD-1410	Nut	4-3
STD-160	Washer	1-11	STD-1410	Nut	5-1
STD-160	Washer	2-7	STD-1410	Nut	6-5
STD-160	Washer	2-9	STD-1411	Nut	1-11
STD-160	Washer	6-1	STD-1411	Nut	2-7
STD-160	Washer	6-3	STD-1411	Nut	2-9
STD-160	Washer	6-5	STD-1411	Nut	3-7
STD-425	Washer	6-7	STD-1411	Nut	6-1
STD-475	Washer	1-11	STD-1623	Insert	1-1
STD-475	Washer	2-5	STD-1727	Washer	5-3
STD-475	Washer	3-3	STD-1774	Pin	2-7
STD-475	Washer	4-1	STD-1821	Hose	3-9
STD-475	Washer	4-3	STD-1856	Screw	2-9
STD-475	Washer	5-1	STD-1882	Screw	2-5
STD-475	Washer	6-5	STD-1907	Screw	6-5
STD-514	Dowel	1-1	STD-1908	Washer	6-5
STD-551	Plug	6-1	STD-1908	Locknut	6-7
STD-557	Dowel	1-1	STD-1925	Screw	3-9
STD-596	Nut	1-11	STD-2090	Nut	3-5
STD-670	Locknut	6-7	STD-2168	Nut	1-7
STD-678	Washer	1-11	STD-2213	Screw	1-5
STD-684	Nipple	3-9	STD-2229	Plug	6-1
STD-690	Washer	5-3	STD-2231	Ring	1-7
STD-692	Screw	6-7	25C-8	Stud	3-3
STD-713	Cotter Pin	4-1	25C-10	Stud	2-9
STD-713	Cotter Pin	4-3	25C-22	Stud	2-1
STD-713	Cotter Pin	5-3	31C-12	Stud	1-1
STD-784	Plug	2-1	31C-12	Stud	2-1

NUMERICAL INDEX (Continued)

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
31C-12	Stud	3-3	66796	Insert	3-3
31C-13	Stud	1-1	68668	Spring	1-3
31C-14	Stud	6-1	68759	Tube Assy.	3-9
31C-17	Stud	1-1	68760	Tube Assy.	3-9
31C-19	Stud	2-1	68761	Tube Assy.	3-9
31CD-17	Stud	2-1	69106	Cover	2-5
38-13	Stud	1-1	69551	Gasket	2-5
38-22	Stud	1-1	69796	Dowel	1-1
38D-17	Stud	1-1	70310	Seal	3-7
50-15	Stud	1-1	70455	Gasket	1-9
383-B	Nut	3-5	70484	Screen	6-1
1028-B	Ball	1-3	71481	Ring	3-5
1102	Plug	1-1	71596	Washer	2-7
1102	Plug	2-1	71610	Hook	3-9
1102	Plug	3-3	71611	Retainer	3-9
1102	Plug	6-1	71973	Gasket	6-3
1102	Plug	6-5	72053	Gasket	2-5
1182-E7	Spark Plug	4-1	72057	Valve Seat, Intake	3-3
1182-E7	Spark Plug	4-3	72058	Valve Seat, Exhaust	3-3
8313	Gasket	2-7	72059	Gasket	1-3
60009	Key	3-7	72075	Seal	1-3
60096	Gasket	2-5	72091	Ring	1-3
60430	Cover	2-7	72155-S	Bushing	1-5
60803	Lifting Strap	1-11	72198	Piston Pin Plug	3-1
61084	Spring	1-3	72378	Cover	2-5
61098	Adapter Assy.	2-7	72566	Gear	1-5
61174	Shaft	2-3	72877	Body	1-3
61183	Gasket	2-7	72970	Gear Assy.	2-7
61247	Cover	3-9	73152	Bracket	6-7
61400	Stud	6-1	73249	Washer, Thrust	1-9
61510	Plug	1-5	73250	Washer, Thrust	1-9
61544	Plunger	1-7	73251	Washer, Thrust	1-9
61665	Magneto Gear	4-1	73252	Washer, Thrust	1-9
61665	Magneto Gear	4-3	73383	Lockplate	5-3
61681	Valve Guide, Intake	3-3	73818	Gasket	2-1
62224	Gasket	4-1	73938	Intake Valve	3-7
62224	Gasket	4-3	73966	Spacer	6-5
62417	Plug	2-9	74068	Ring	1-3
65441	Seat	3-7	74230	Valve Guide, Exhaust	3-3
66224	Gasket	6-5	74241	Ring	3-1
66610	Bushing	3-3	74278	Bracket Assy.	6-7

NUMERICAL INDEX (Continued)

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
74323	Strut	5-3	06E19769-1.00	Gasket	6-1
74597	Bracket	6-5	06E19769-1.25	Gasket	1-3
74598	Bracket	6-5	07A19474	Bracket	5-3
74637	Bushing	3-5	11D22549	Crankcase Assy.	1-1
74887	Spacer	3-5	13B27120	Crksht & Bush. Assy.	1-5
74996	Gear Assy.	1-7	13S19646	Gear	1-5
75061	Bolt	3-1	14H21950	Ring	3-1
75072	Gear Assy.	1-7	15B21319	Socket	3-7
75089	Piston	3-1	15F19957-34	Rod Assy.	3-5
75154	Stud	1-1	15F19957-35	Rod Assy.	3-5
75339	Baffle Assy.	3-9	15F19957-36	Rod Assy.	3-5
75380	Link	5-3	15F19957-37	Rod Assy.	3-5
75656-S	Bushing	1-5	17C19386	Cap	3-7
75657-S	Bushing	1-5	17C21191	Key	3-7
75736	Tube	1-3	17F19357	Rocker Assy.	3-5
75739	Nipple	6-7	18A19441	Bearing	1-3
75888	Stud	2-1	21A21533-02	Housing Assy.	2-1
75906	Gasket	3-9	31A22104	Starter, Sky-Tec	5-1
76118	Spacer	1-7	31B22105	Starter, Sky-Tec	5-1
76121	Shaft Assy.	1-7	32C19553	Alternator Assy.	5-2
76220	Stud	1-11	36B19484	Pulley	5-2
76510	Gasket	2-9	37A19773-376	Alternator Belt	5-2
76534	Shim	5-3	42E22611	Intake Pipe	6-3
77309	Bushing	1-7	42E22612	Intake Pipe	6-3
77467	Spring	1-3	42E22613	Intake Pipe	6-3
77569	Ring	6-3	42E22614	Intake Pipe	6-3
77611	Gasket	3-3	53E22144	Valve Assy.	2-9
77808	Valve Assy.	1-3	61J22633	Fuel Injector	6-5
77852	Oil Filter Base Assy.	2-9	63B22623	Manifold Assy.	6-5
77872	Bushing	1-9	66GC25SFNN	Magneto, Slick	4-1
77874	Gear Assy.	1-9	66GP-OSANN	Magneto, Slick	4-1
77875	Gear	1-9	66K22442	Magneto, Laser	4-3
78290	Plunger Assy.	3-7	66K22445	Magneto, Laser	4-3
78531	Body	2-3	66M21195	Clamp	4-1
01L21418	Washer, Thrust	1-9	66M21195	Clamp	4-3
01P19762-1-1	Bag Attaching	4-3	67P20416	Harness Assy., Slick	4-1
01P19762-2-9	Bag Attaching	4-1	67P20417	Harness Assy., Slick	4-1
02G21382	Nipple	6-5	67P20428	Harness Assy., Slick	4-3
05K19423-S	Impeller Kit	2-3	67P20429	Harness Assy., Slick	4-3
06A19956	Oil Seal	2-7	68C19622	Magneto Gear	4-1
06E19769-0.63	Gasket	2-9	68C19622	Magneto Gear	4-3