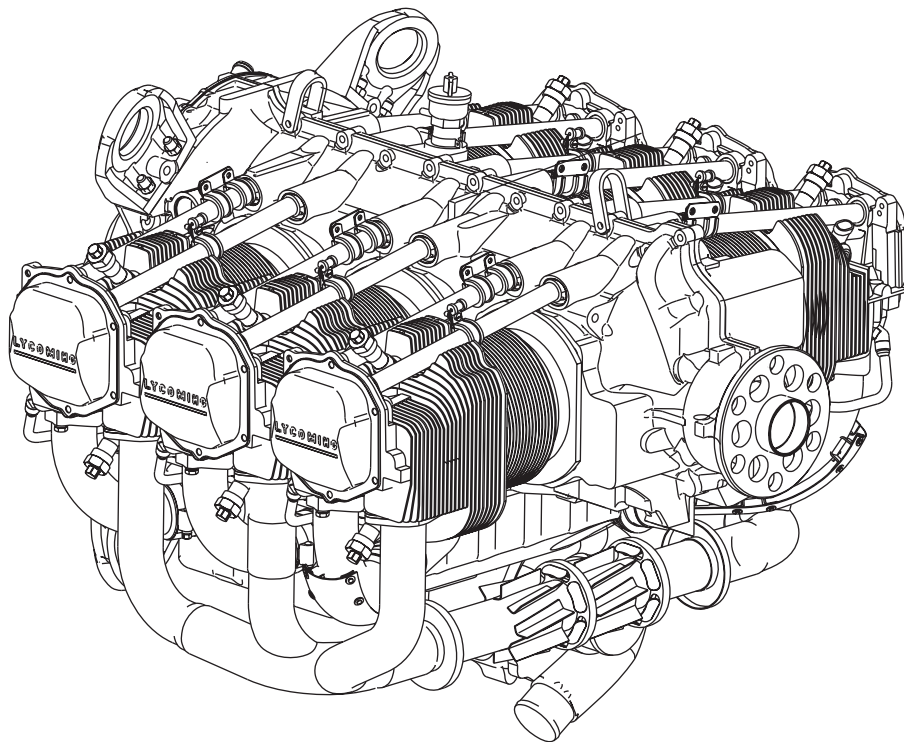


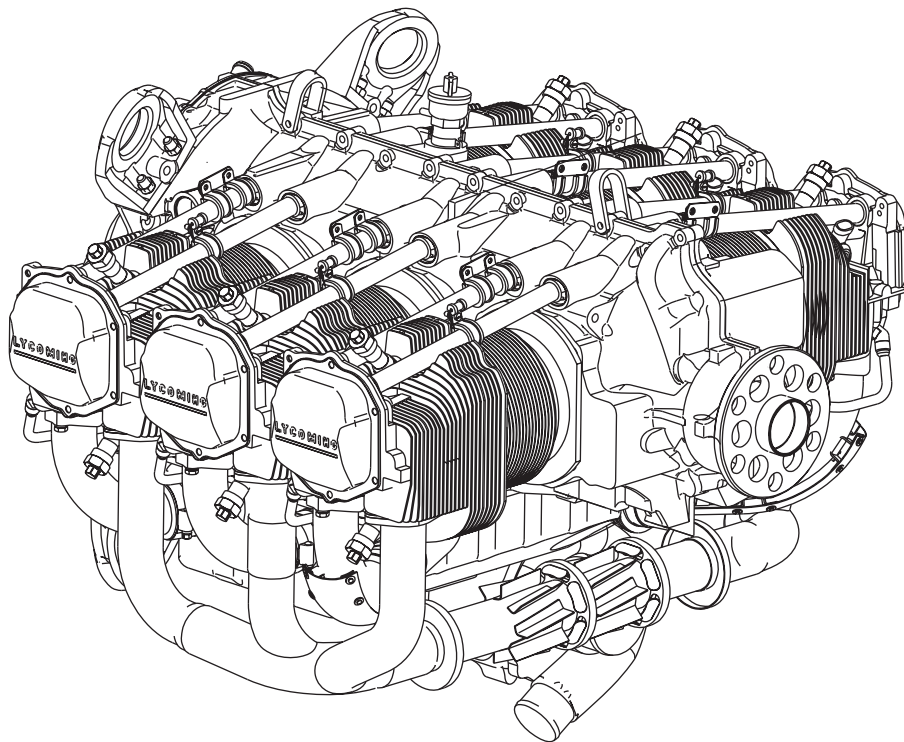
Lycoming Aircraft Engines Parts Catalog



TIO-540 AK1A

LYCOMING

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TIO-540 AK1A

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TECHNICAL PUBLICATION REVISION

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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>DECEMBER, 2002</u> Pages 7-1 & 7-2 Figure 27 Text – Change Nomenclature Figure 27 Illustration -- Slip Joint incorrectly shown on Cyl. # 4 Exhaust Pipe is revised to be correctly shown on Cyl. # 2 Exhaust Pipe Page 7-3 Figure 28 Text – Corrected Part Number for Call-out No. 16 Bolt Page 7-8 Figure 30 Illustration – Correcting Locations of Call-out Nos. 17, 19 & 22 Nipples	

This illustrated parts catalog contains a complete parts listing for the cylinder flange crankcase model aircraft engines.

Lycoming TIO-540-AK1A wide

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 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 Lycoming accepts responsibility for quality control and/or airworthiness of parts which do not pass through the Lycoming quality control system.

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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 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.

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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 LYCOMING SERVICE INSTRUCTION NO. 1256.										
66610	BUSHING		X	X								
69260	INSERT		X	X								
69796	DOWEL		X									
71903-A	BUSHING	SEE LATEST EDITION OF LYCOMING SERVICE INSTRUCTION NO. 1143.										
72057	SEAT		X	X		X	X					
72058	SEAT			X		X	X					
72155-S	BUSHING		X	X	X							
73810	BUSHING	SEE LATEST EDITION OF LYCOMING SERVICE INSTRUCTION NO. 1142.										
74241	RING			X								
75656-S	BUSHING		X	X								
75657-S	BUSHING		X	X								
LW-11997	SEAL	SEE LATEST EDITION OF LYCOMING SERVICE INSTRUCTION NO. 1324.										
LW-13521	BEARING									X *	X *	X *
LW-13792	SEAL	SEE LATEST EDITION OF LYCOMING 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							
16R22291	GUIDE	SEE LATEST EDITION OF LYCOMING SERVICE INSTRUCTION NO. 1256.										
18A19441	BEARING				X					X	X	X

* Also available in P10 oversize. • Also available in P15 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.

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

FIG. REF. 1	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	11E24005-S1	CRANKCASE ASSEMBLY	1
2	LW-13794	STUD, 5/16-18 x 1.00 long, dr.	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	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 dia. x 1/2 long	2
12	STD-557	DOWEL, 1/2 dia. x 11/16 long, hollow	2
13	72158	BUSHING, Governor drive idler shaft	1
14	STD-1339	PLUG, 1/16-27 NPT	1
15	1102	PLUG, 1/8 pipe	4
16	31C-17	STUD, 5/16-18 x 2.13 long	4
17	72772	NOZZLE ASSY., Piston cooling	6
18	MS29512-06	"O" RING, 15/32 I.D. x 5/64 sect.	2
19	AN814-6L	PLUG, 9/16-18 hex. hd.	1
20	75739	NIPPLE, 3/8 flared tube (ship loose)	1

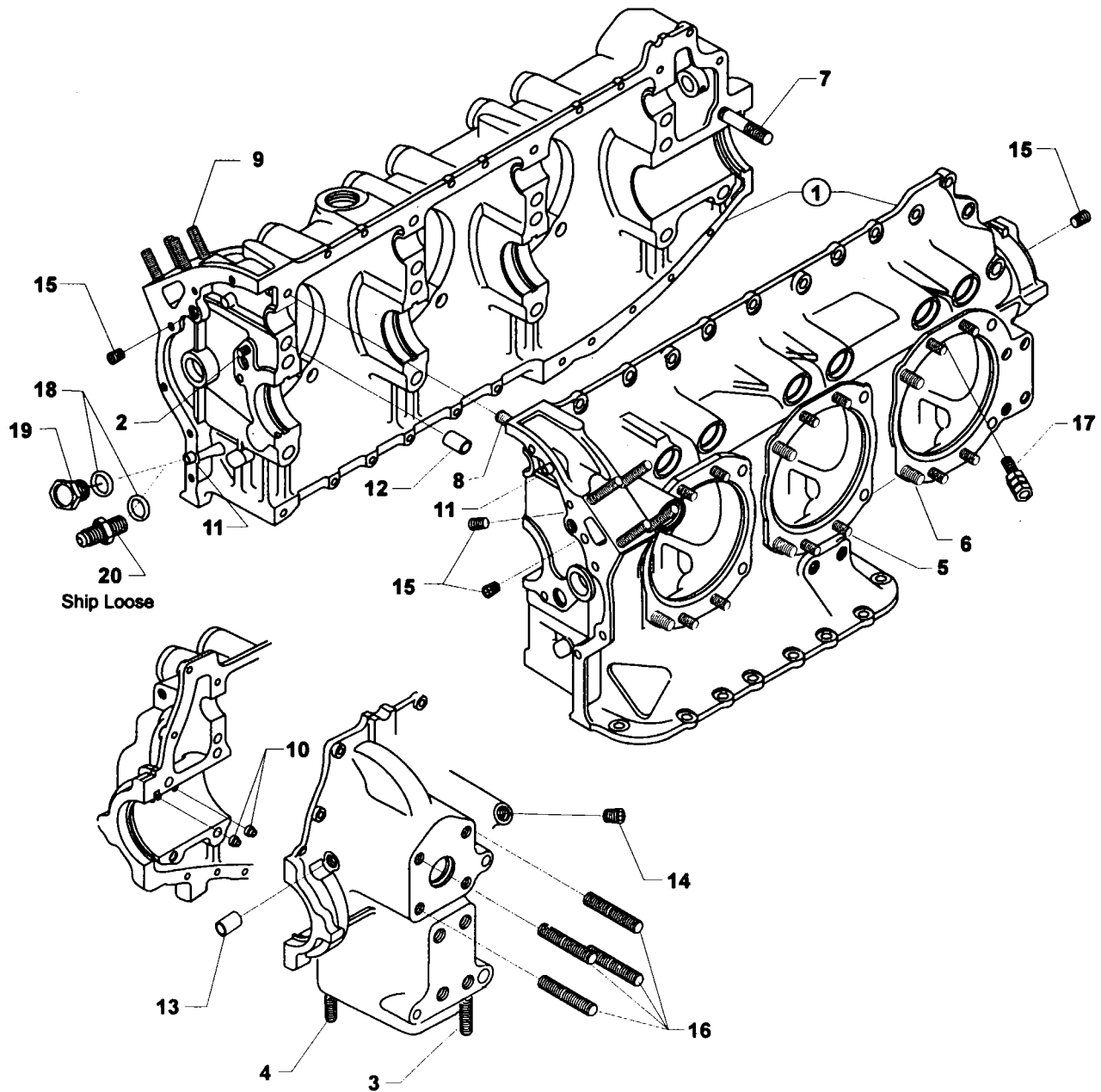


Figure 1. CRANKCASE ASSEMBLY

**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	75675	EXTENSION, Oil filler (2.19 extension)	1
3	74065	"O" RING, Oil level gage	1
4	LW-16783-24	GAGE ASSY., Oil level	1
5	12A19770	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

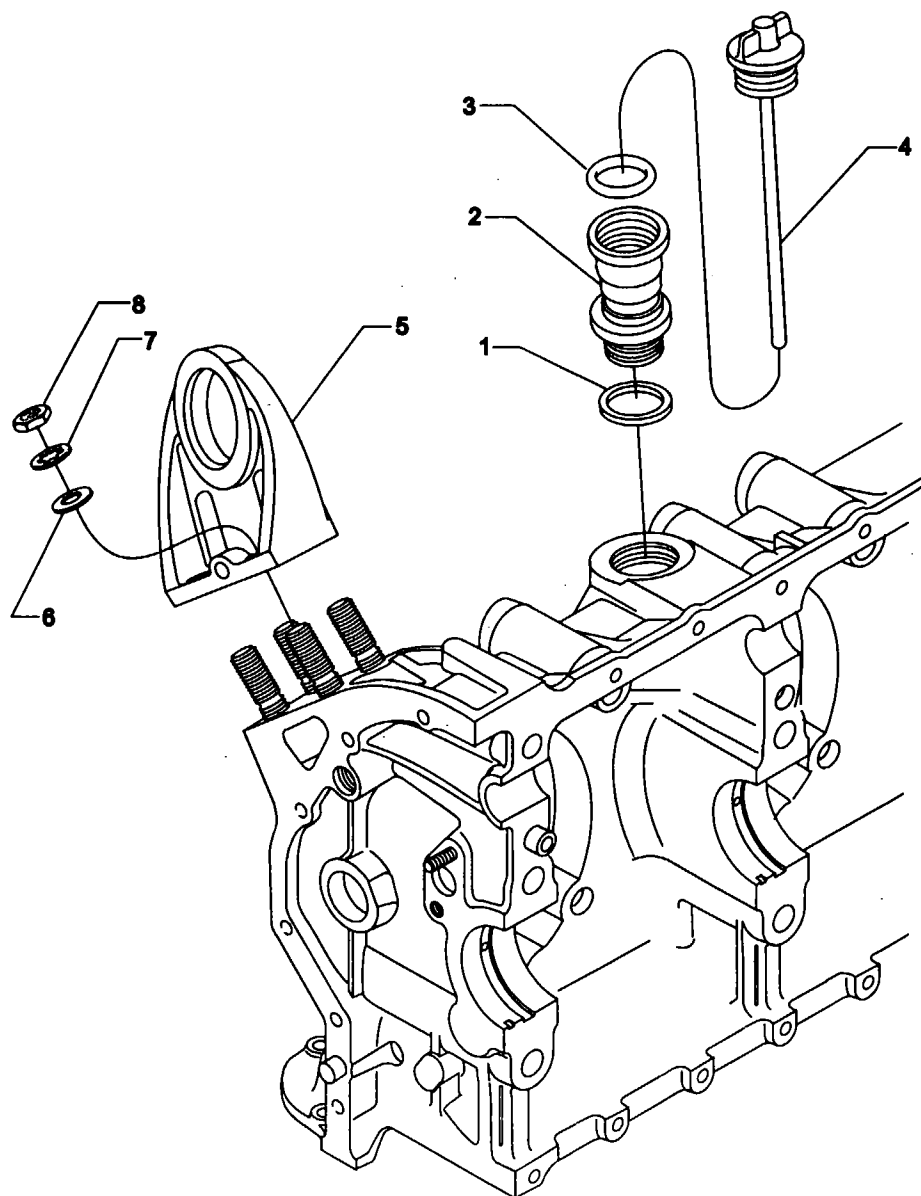


Figure 2. OIL LEVEL GAGE AND ENGINE MOUNTING BRACKETS

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	68668 *	SPRING, Oil pressure relief valve	1
	61084 *	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 O.D. x 1-1/2 O.D. x 3/32 annular	1
4	77808	VALVE ASSY., Oil pressure relief, adjustable	1
5	LW-16711	BEARING, Crankshaft	6
6	LW-13884	BEARING, Crankshaft, front	2
	18A19441	BEARING, Crankshaft, front (alternate)	2
7	LW-13792 **	SEAL, Crankshaft oil, solid	1
	LW-11997 **	SEAL, Crankshaft oil, split	1
8	72091	RING, Oil seal, 23/64 I.D. x 7/64 dia. section	2
9	72877	BODY, Hydraulic tappet	12

* 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.

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

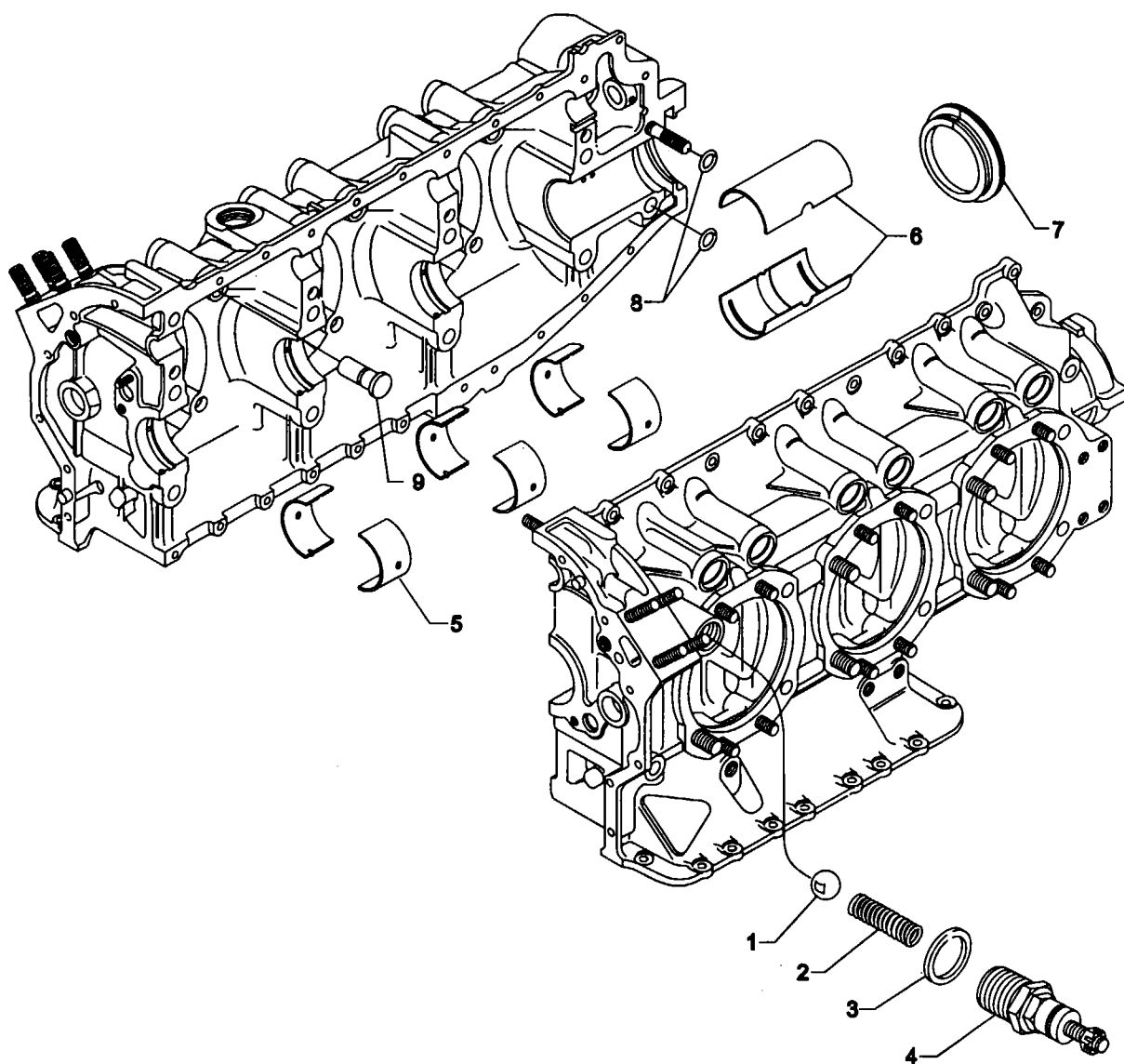


Figure 3. CRANKCASE RELATED PARTS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP

CAMSHAFT, CRANKSHAFT, COUNTERWEIGHT AND RELATED PARTS

FIG. REF. 4	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	13E27622	CRANKSHAFT & BUSHING ASSEMBLY	1
2	73810 *	BUSHING, Crankshaft, dynamic counterweight	4
3	71640	PLUG, 1-3/8 dia.	1
4	75656-S	BUSHING, Prop. flange, long	4
5	72155-S	BUSHING, Prop. flange, short	1
6	75657-S	BUSHING, Prop. flange, indexing	1
7	STD-1211	PLUG, 2.00 dia. expansion	1
8	STD-1065	DOWEL, Stepped, 5/16 & 1/4 dia. x 35/64 long	1
9	LW-19210 **	COUNTERWEIGHT ASSEMBLY	2
10	71903-A ■	BUSHING, Dynamic counterweight	8
11	LW-15558 **	ROLLER, Dynamic counterweight, 4.8 order	2
12	76788 **	ROLLER, Dynamic counterweight, 6.3 order	2
13	71907	WASHER, Dynamic counterweight	8
14	LW-14820	RING, Internal retaining	8
15	13S19648 ●	GEAR, Crankshaft	1
16	LW-18638 ●	LOCKPLATE, Crankshaft gear	1
17	STD-2209 ●	BOLT, 5/16-24 x 1-3/4 long, hex. hd.	1
18	LW-19340	CAMSHAFT ASSEMBLY	1
19	76118	SPACER, Tachometer shaft centering	1
20	76155	SHAFT ASSEMBLY, Tachometer	1
21	LW-18667	PIN, 3/16 dia. x 2-21/64 long	1
22	STD-2231	RING, Internal retaining	1
23	31M22993	SUPPORT ASSEMBLY, Starter ring gear	1
24	72566	GEAR, Starter ring	1

* See latest edition of

** See latest edition of

■ See latest edition of

● See latest edition of

Lycoming Service Instruction No. 1142 for application.

Lycoming Service Instruction No. 1012 for application.

Lycoming Service Instruction No. 1143 for application.

Lycoming Service Bulletin No. 475 for application.

CRANKSHAFT & COUNTERWEIGHT ASSEMBLY, Kit P/N 05K27677 available.

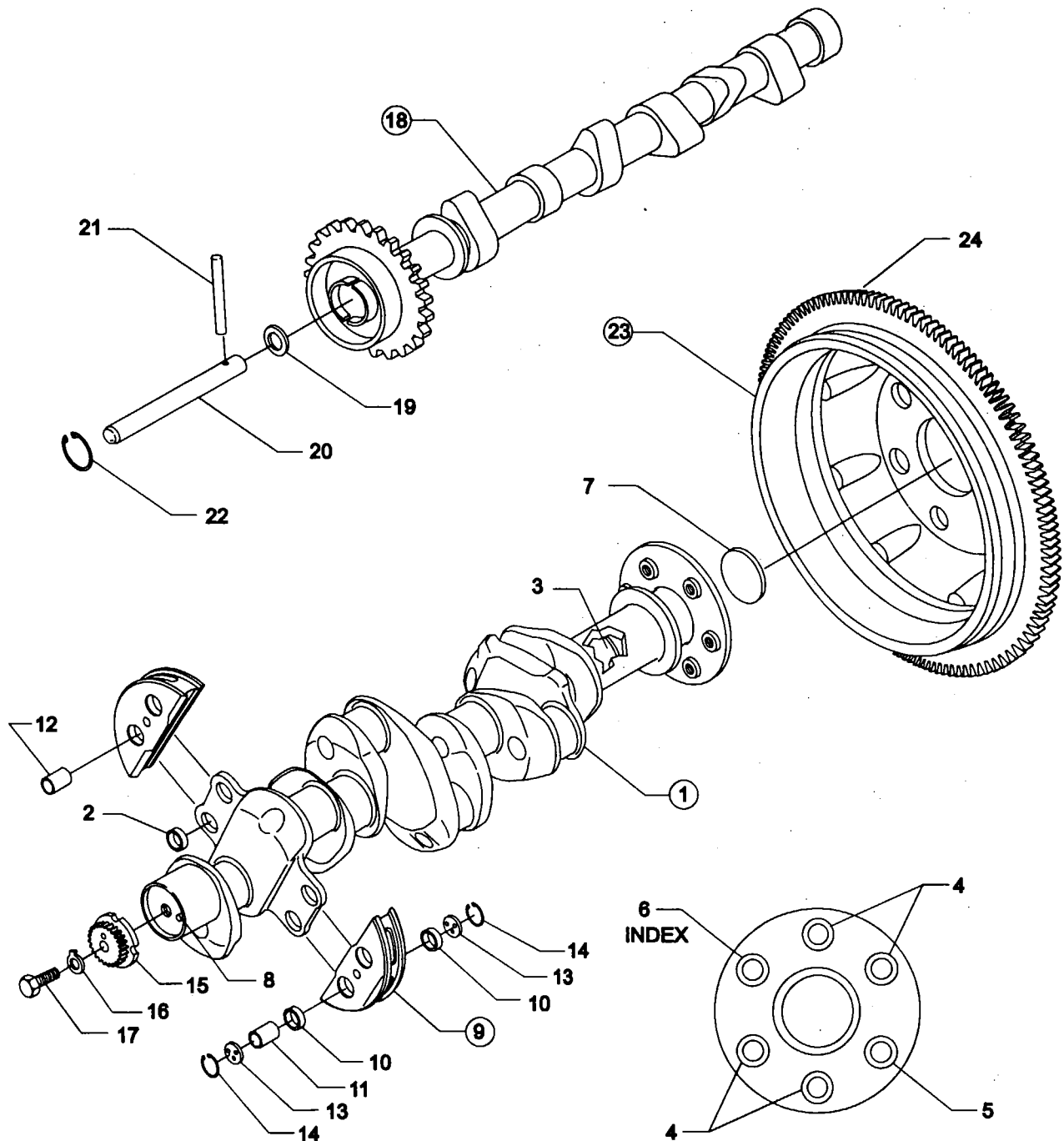


Figure 4. CAMSHAFT, CRANKSHAFT, COUNTERWEIGHT AND RELATED PARTS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP PROPELLER GOVERNOR DRIVE ASSEMBLY

FIG. REF. 5	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-10442	GEAR, Propeller governor drive	1
2	LW-14021	SHAFT, Propeller governor idler gear	1
3	LW-10541	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	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 1/16 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

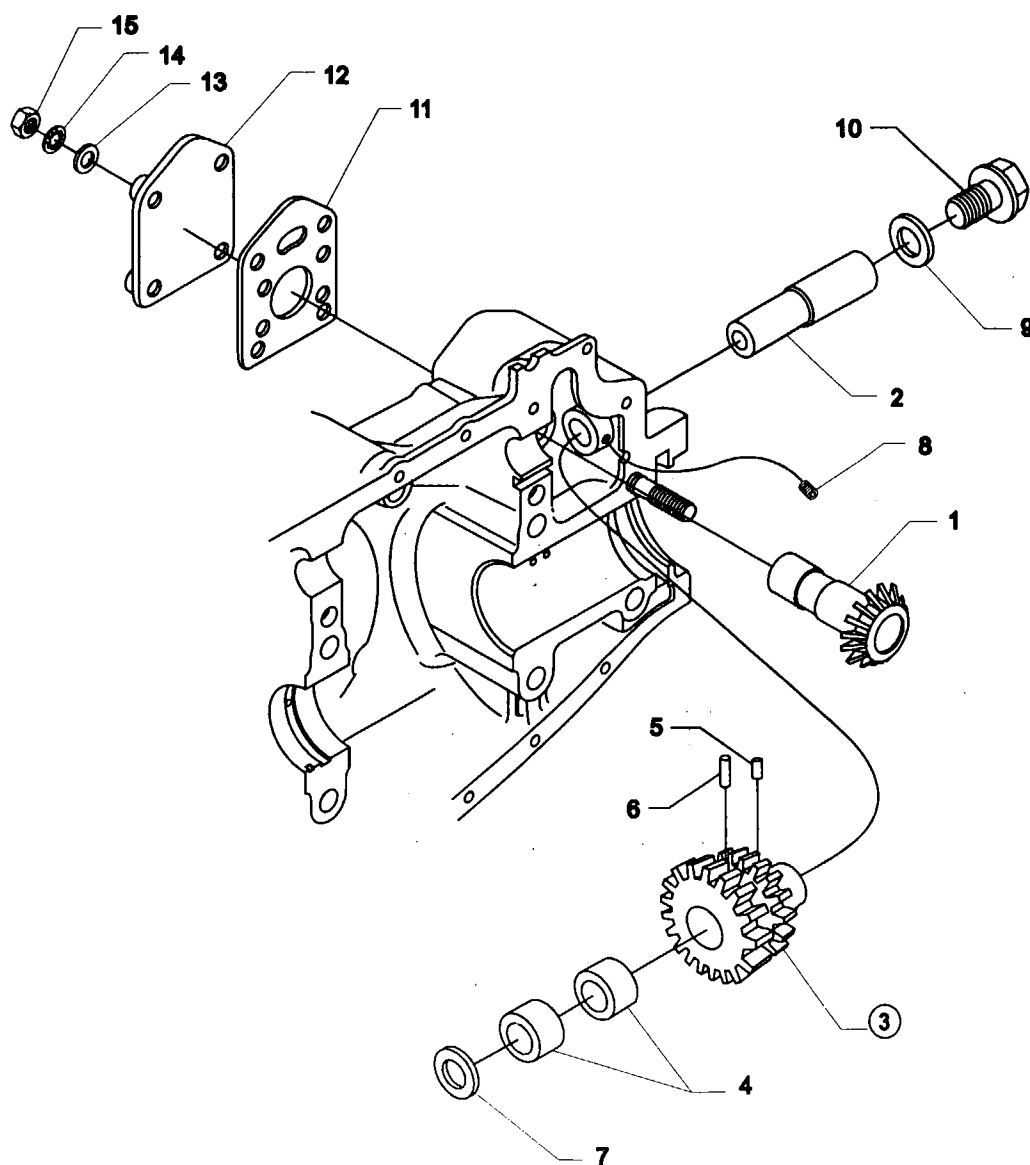


Figure 5. PROPELLER GOVERNOR DRIVE ASSEMBLY

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP CRANKSHAFT AND FUEL PUMP IDLER GEARS

FIG. REF. 6	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-13795	SHAFT, Crankshaft idler gear	2
2	LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex. hd., dr.	3
3	STD-2168	NUT, 5/16-18 NC-3, slotted shear	1
4	72246	SHAFT, Fuel pump idler gear	1
5	71667	LOCKPLATE, 1/4 bolt x 1-3/4 spacing (offset)	1
6	LW-25-0.63	BOLT, 1/4-20 x 5/8 long, hex. hd.	2
7	71664	GEAR ASSY., Fuel pump idler	1
8	77309	BUSHING, Crankshaft idler gear	1
9	70474	WASHER, Fuel pump thrust	1
10	STD-1737	RING, 37/64 dia. x 3/64 thick, external retaining	1
11	71668	GEAR ASSY., Crankshaft idler, plain	2
12	67530	BUSHING, Crankshaft idler gear	2
13	72972	SHAFTGEAR ASSY., Fuel pump drive	1
14	72962	THRUST BUTTON, Shaftgear	1
15	69164	GASKET, Fuel pump adapter	1
16	69159	ADAPTER ASSY., Fuel pump drive	1
17	STD-1774	PIN, 1/8 dia. x 1/4 long	1
18	STD-213	SEAL, Oil, 3/4 I.D. x 1-3/8 O.D.	1

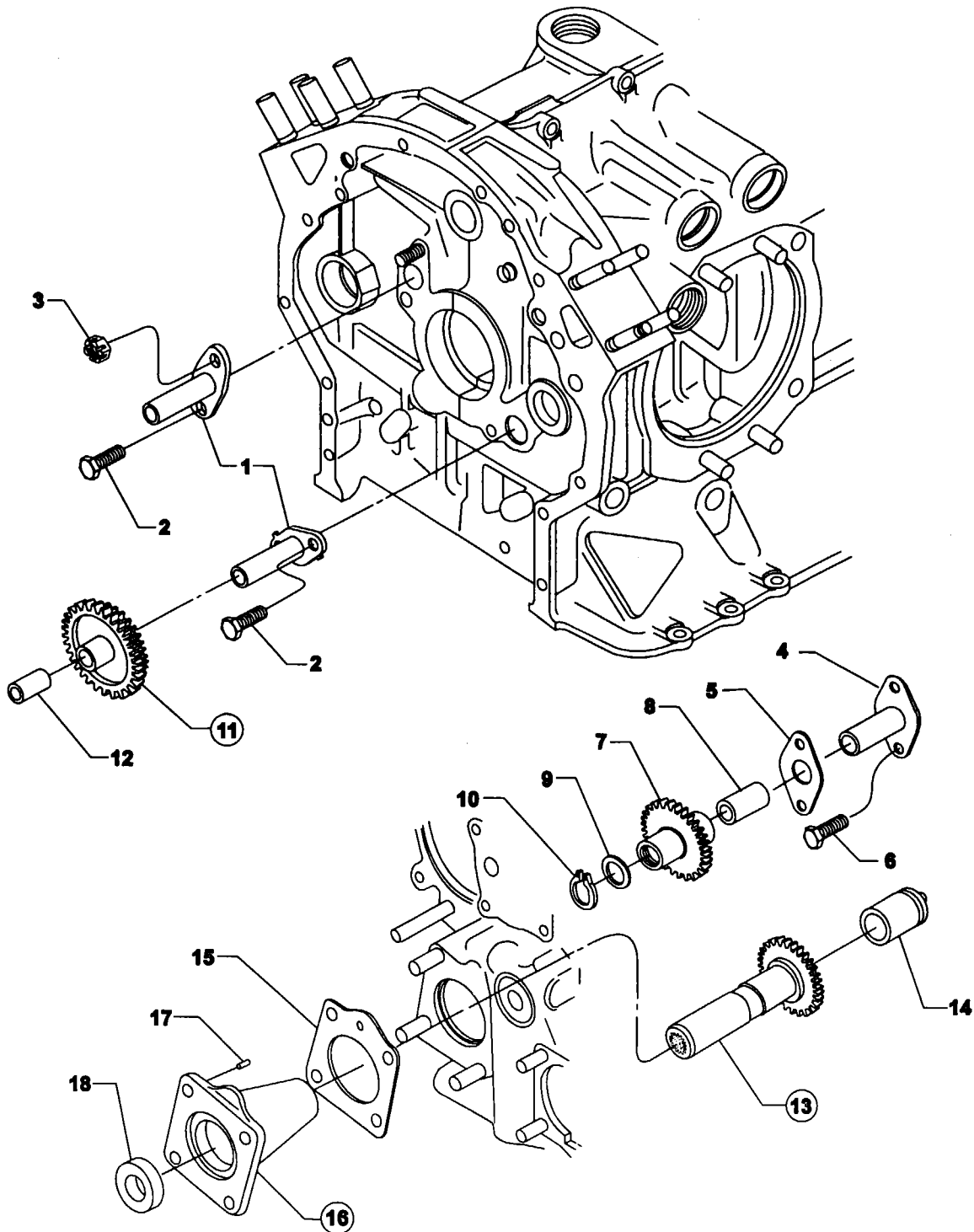


Figure 6. CRANKSHAFT AND FUEL PUMP IDLER GEARS

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. hd.	8
2	STD-8	WASHER, 1/4 plain	24
3	60803	STRAP, Lifting	2
4	LW-25-2.00	BOLT, 1/4-20 x 2.00 long, hex. hd.	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.	1
7	73966	SPACER, Fuel manifold bracket	2
8	STD-160	WASHER, 1/4 lock, internal teeth	13
9	STD-1411	NUT, 1/4-20 plain	12
10	LW-25S1.50	BOLT, 1/4-20 x 1-1/2 long, hex. hd., dr. end	6
11	STD-8	WASHER, 1/4 plain (max. 6)	AR
12	STD-1409	NUT, 1/4-20 slotted shear	6
13	STD-33	WASHER, 3/8 plain	1
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	3
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	8
20	LW-31-2.75	BOLT, 5/16-18 x 2-3/4 long, hex. hd.	1
21	LW-31-1.16	BOLT, 5/16-18 x 1-5/32 long, hex. hd.	3
22	STD-35	WASHER, 5/16 plain	4
23	STD-475	WASHER, 5/16 lock, internal teeth	4

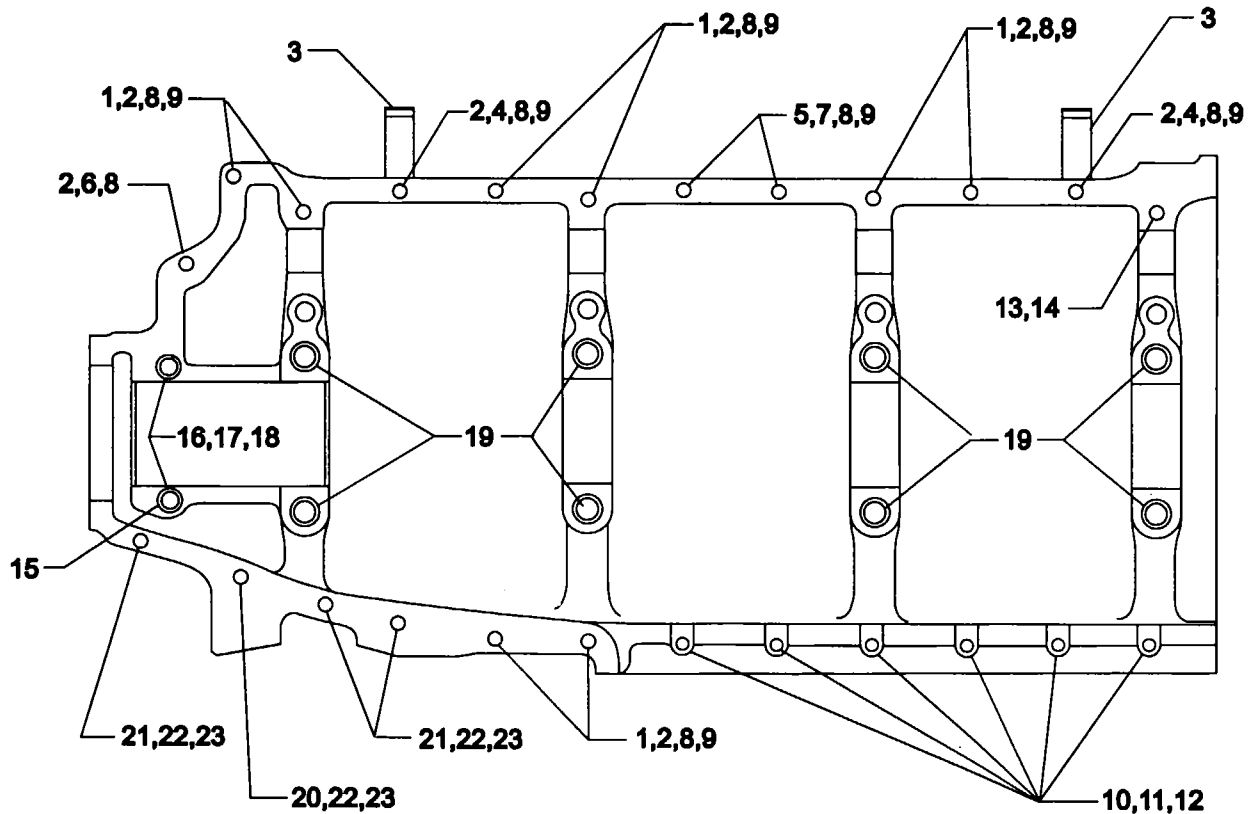


Figure 7. CRANKCASE ATTACHING PARTS

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

FIG. REF. 8	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	73818	GASKET, Accessory housing	1
2	21C21542-06	HOUSING ASSEMBLY, Accessory	1
3	31C-19	STUD, 5/16-18 x 2-3/8 long	4
4	31C-12	STUD, 5/16-18 x 1-1/2 long	4
5	31C-21	STUD, 5/16-18 x 2-5/8 long	4
6	25C-14	STUD, 1/4-20 x 1-3/4 long	3
7	25C-31	STUD, 1/4-20 x 3-7/8 long	1
8	MS20822-4 *	ELBOW, 1/8 NPT to 1/4 tube, 90°	1
9	1102	PLUG, 1/8 NPT	3
10	31CD-20	STUD, 5/16-18 x 2-1/2 long, drilled	3

* Install 35° below horizontal centerline of engine.

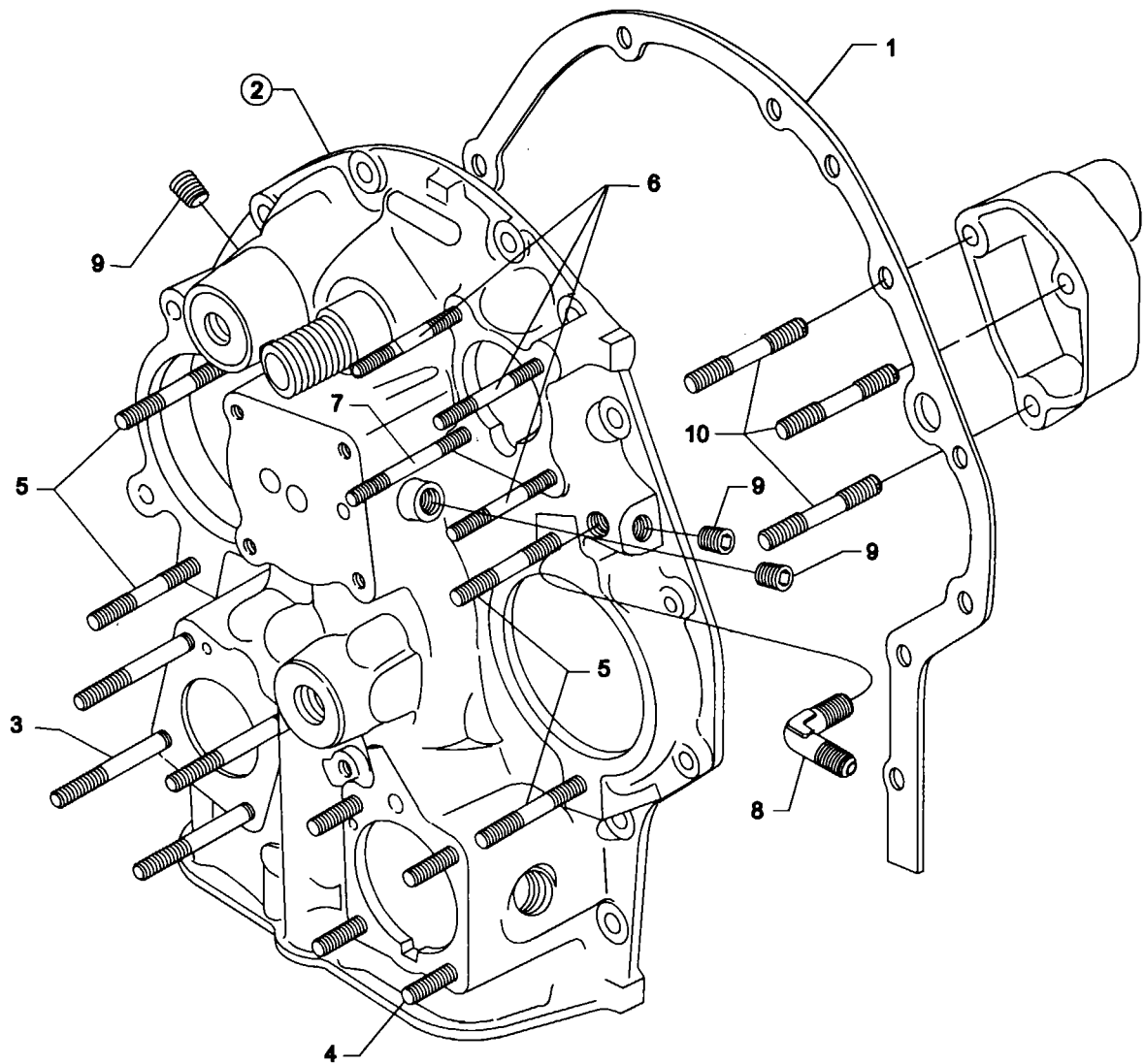


Figure 8. ACCESSORY HOUSING ASSEMBLY

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

FIG. REF. 9	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	51A22618	BODY ASSEMBLY, Oil pump	1
2	51D22617	SHAFT, Oil pump idler	1
3	STD-714	PIN, 1/8 diameter x 1.00 long, cotter	1
4	STD-1339	PLUG, 1/16-27 NPT, Allen head	1
5	76784	SHAFT, Oil pump drive	1
6	61297	IMPELLER, Oil pump, driving	1
7	61298	IMPELLER, Oil pump, driven	1
8	STD-35	WASHER, 5/16 plain	3
9	STD-1420	NUT, 5/16-18 slotted	3
10	LW-14260	SEAL, Tachometer drive, oil	1
11	STD-8	WASHER, 1/4 plain	12
12	STD-160	WASHER, 1/4 lock, internal teeth	12
13	LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. head	9
14	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	1
15	LW-25-1.50	BOLT, 1/4-20 x 1-1/2 long, hex. head	2

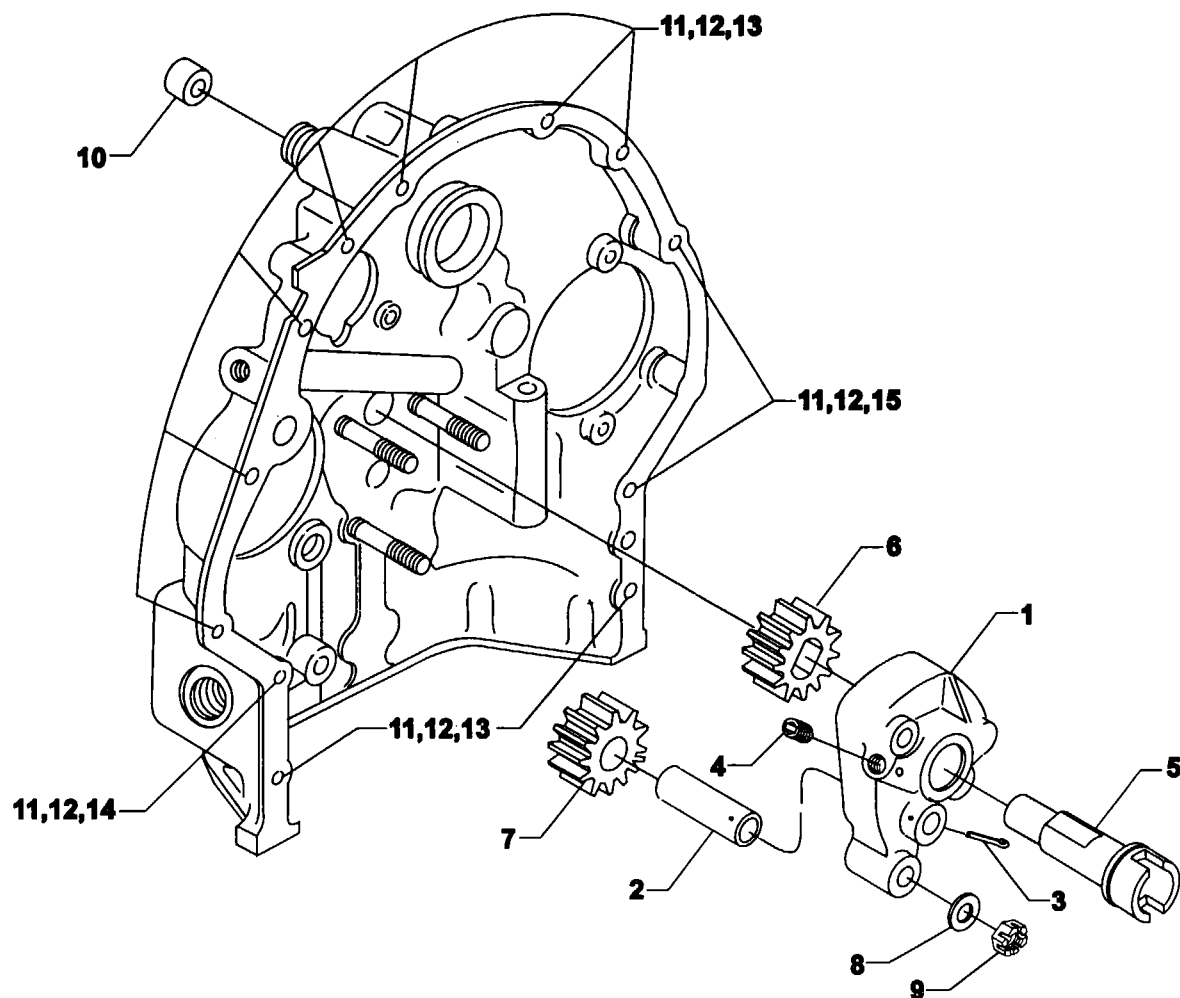


Figure 9. OIL PUMP ASSEMBLY AND ACCESSORY HOUSING ATTACHING PARTS

ACCESSORY HOUSING AND RELATED PARTS
FUEL PUMP ASSEMBLY AND ATTACHING PARTS

FIG. REF. 10	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-10799	SPACER, Fuel pump insulating	1
2	62D22573	FUEL PUMP, RG 17980 U/M	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	02G21379	NIPPLE, 1/8 NPT to 1/4 tube (fuel pump vent)	1
7	MS20822-6	ELBOW, 1/4 NPT to 3/8 flared tube (inlet & outlet)	2

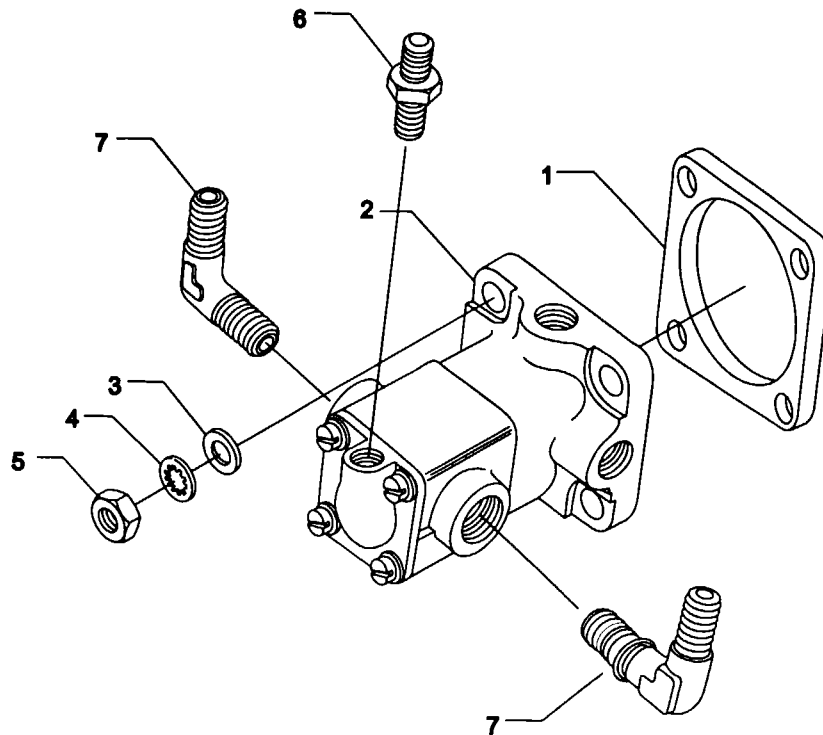


Figure 10. FUEL PUMP ASSEMBLY AND ATTACHING PARTS

ACCESSORY HOUSING AND RELATED PARTS
HYDRAULIC PUMP DRIVE AND COVER

FIG. REF. 11	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	72964	GEAR ASSY., Hydraulic pump driven	1
2	72962	THRUST BUTTON, Hydraulic pump gear	1
3	71596	WASHER, Accessory drive gear	1
4	68315	GASKET, Accessory drive adapter	1
5	27D21250	ADAPTER ASSY., Hydraulic pump	1
6	06A19956	OIL SEAL, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide	1
7	25C-12	STUD, 1/4-20 x 1-1/2 long	4
8	STD-1774	PIN, 1/8 dia. x 1/4 long	1
9	STD-35	WASHER, 5/16 plain	4
10	STD-475	WASHER, 5/16 lock, internal teeth	4
11	STD-1410	NUT, 5/16-18 plain	4
12	8313	GASKET, Hydraulic pump	1
13	60430	COVER, Hydraulic pump	1
14	STD-8	WASHER, 1/4 plain	4
15	STD-160	WASHER, 1/4 lock, internal teeth	4
16	STD-1411	NUT, 1/4-20 plain	4

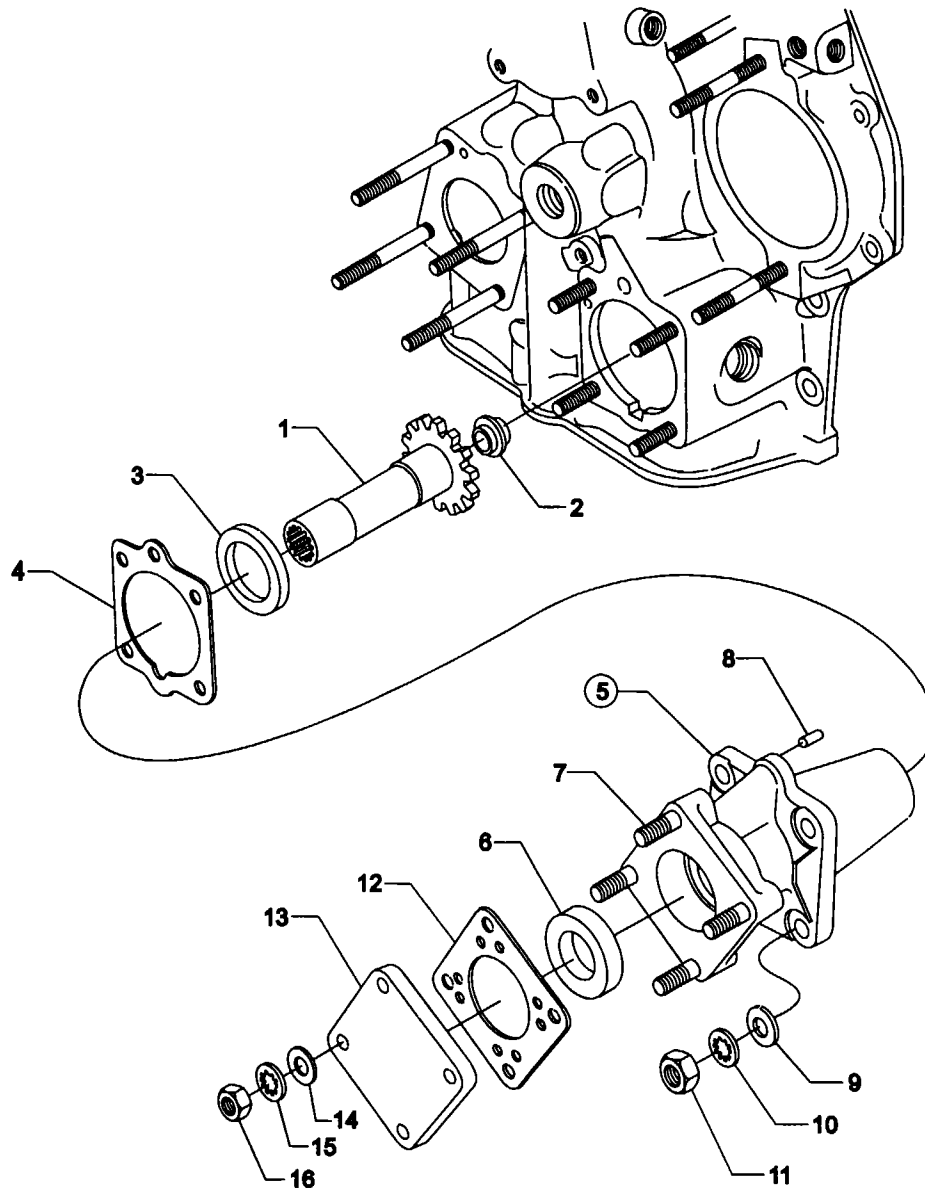


Figure 11. HYDRAULIC PUMP DRIVE AND COVER

**ACCESSORY HOUSING AND RELATED PARTS
TURBO SCAVENGE PUMP, HYDRAULIC PUMP DRIVE AND COVER**

FIG. REF. 12	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	61183	GASKET, Accessory drive adapter	1
2	29A22457	DRIVE ASSY., Turbo scavenge & hydraulic pump	1
3	29A22456	ADAPTER ASSY., Turbo scavenge pump	1
4	25C-11	STUD, 1/4-20 x 1-3/8 long	3
5	STD-1774	PIN, 1/8 dia. x 1/4 long	2
6	29D22366	ADAPTER, Hydraulic pump	1
7	MS28775-137	"O" RING, 2-1/16 I.D. x 7/64 dia. sect.	1
8	29E22367	SHAFT, Hydraulic pump drive	1
9	STD-95	KEY, 1/8 x 1/2 Woodruff	1
10	LW-15550	GEROTOR PUMP	1
11	06A19956	OIL SEAL, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide	1
12	29H22368	SHAFTGEAR, Hydraulic pump drive	1
13	77708	WASHER, Retaining shaftgear	1
14	MS16562-28	PIN, 3/32 dia. x 3/4 long, slotted	1
15	25C-10	STUD, 1/4-20 x 1-1/4 long	4
16	STD-8	WASHER, 1/4 plain	3
17	STD-160	WASHER, 1/4 lock, internal teeth	3
18	STD-1411	NUT, 1/4-20 plain	3
19	STD-8	WASHER, 1/4 plain	4
20	STD-160	WASHER, 1/4 lock, internal teeth	4
21	STD-1411	NUT, 1/4-20 plain	4
22	8313	GASKET, Hydraulic pump	1
23	60430	COVER, Hydraulic pump	1
24	STD-8	WASHER, 1/4 plain	4
25	STD-160	WASHER, 1/4 lock, internal teeth	4
26	STD-1411	NUT, 1/4-20 plain	4

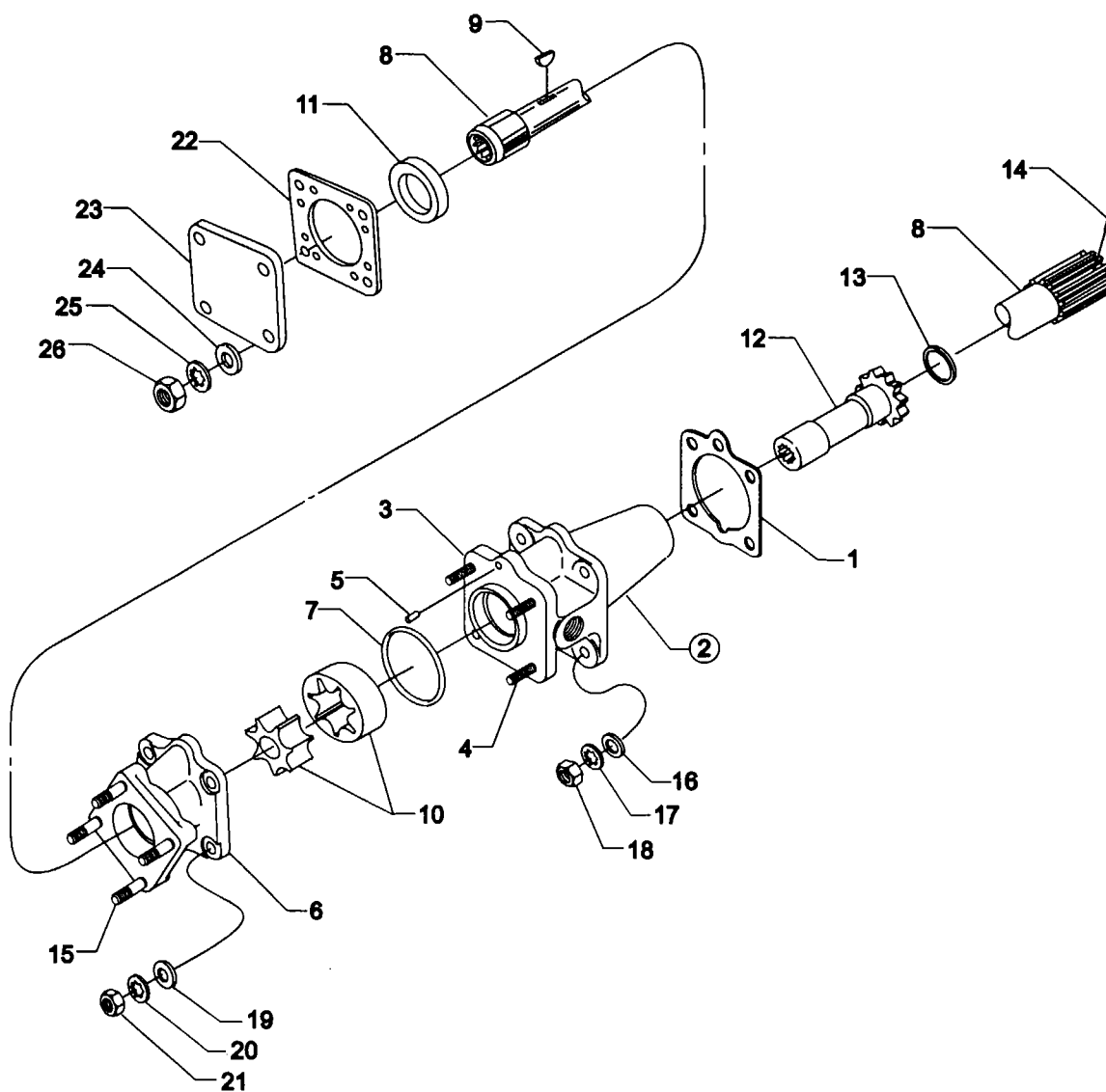


Figure 12. TURBO SCAVENGE PUMP, HYDRAULIC PUMP DRIVE AND COVER

ACCESSORY HOUSING AND RELATED PARTS

OIL FILTER ASSEMBLY, OIL COOLER BYPASS VALVE AND BREATHER FITTING

FIG. REF. 13	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-12795 *	GASKET, Oil filter adapter	2
2	77852	OIL FILTER BASE ASSEMBLY	1
3	LW-13215 **	OIL FILTER	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	1
9	76510	GASKET, Valve assembly	1
10	25C-10	STUD, 1/4-20 x 1-1/4 long	1
11	AN840-12D	FITTING, Breather	1
12	STD-2238 •	NIPPLE, -10 to -6 special	2
13	02A23027	ELBOW, 45°, 3/8 NPT to 5/8 flared tube	1
14	06E19769-0.63	GASKET, Annular, 5/8 I.D.	1
15	62417	PLUG, Oil cooler bypass	1

- * Extra gasket, shipped as loose part, with engine.
- ** See latest edition of Lycoming SSP-885 for oil filter kits and replacement filters.
- Extra nipple, shipped as loose part, with engine.

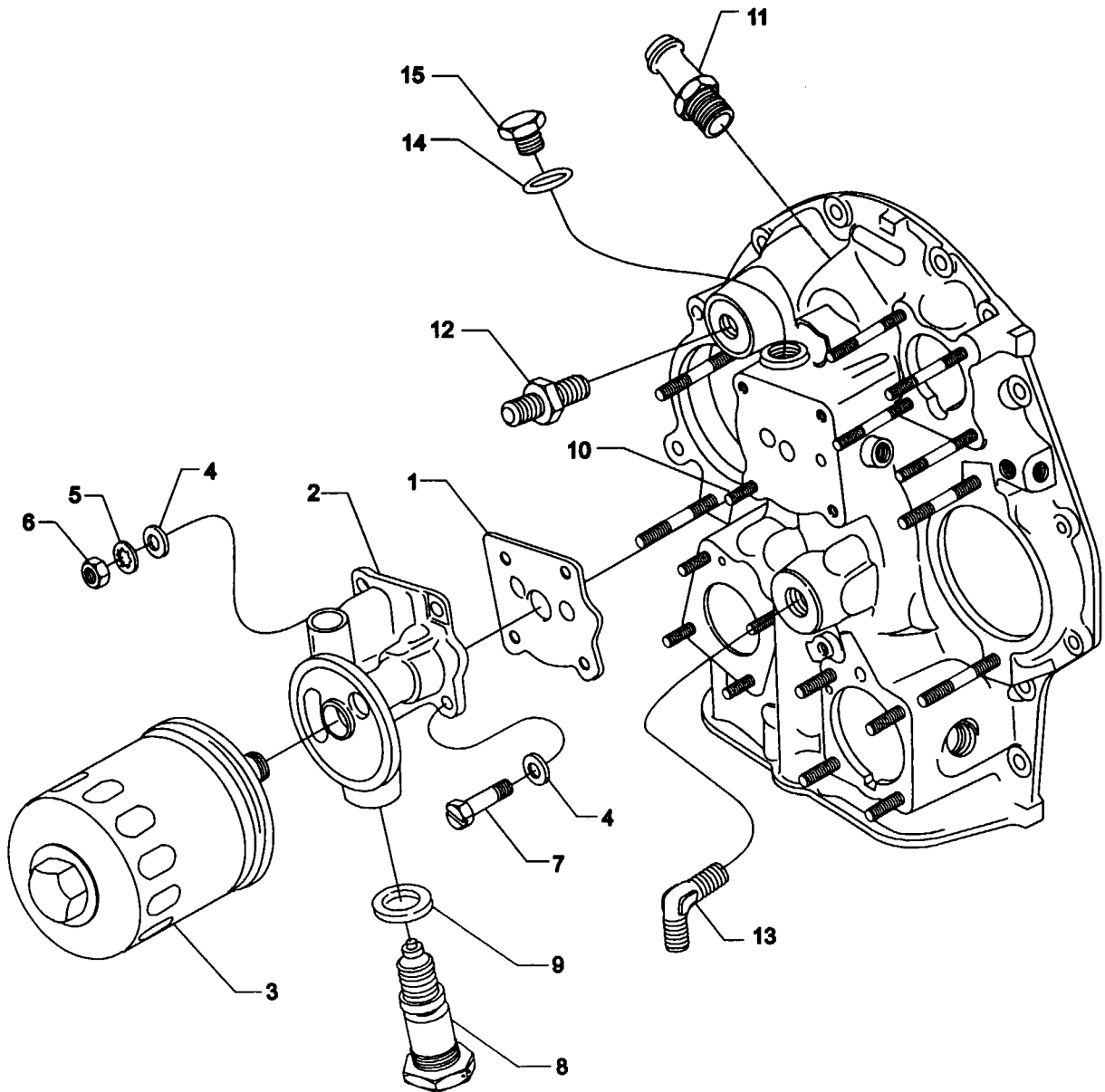


Figure 13. OIL FILTER ASSEMBLY, OIL COOLER BYPASS VALVE AND BREATHER FITTING

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

FIG. REF. 14	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-11750-S	CONNECTING ROD ASSEMBLY	6
2	LW-13923	BUSHING, Connecting rod, upper	6
3	75061	BOLT, Connecting rod	12
4	LW-12186	NUT, Connecting rod bolt	12
5	LW-13521	BEARING, Connecting rod	12
6	LW-12733	PISTON, Compression ratio 8.0:1	6
7	LW-14078 *	PIN, Piston	6
8	72198 *	PLUG, Piston pin	12
9	74241	RING, Piston compression	12
10	14H21990	RING, Piston, oil regulating, expander type	6

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

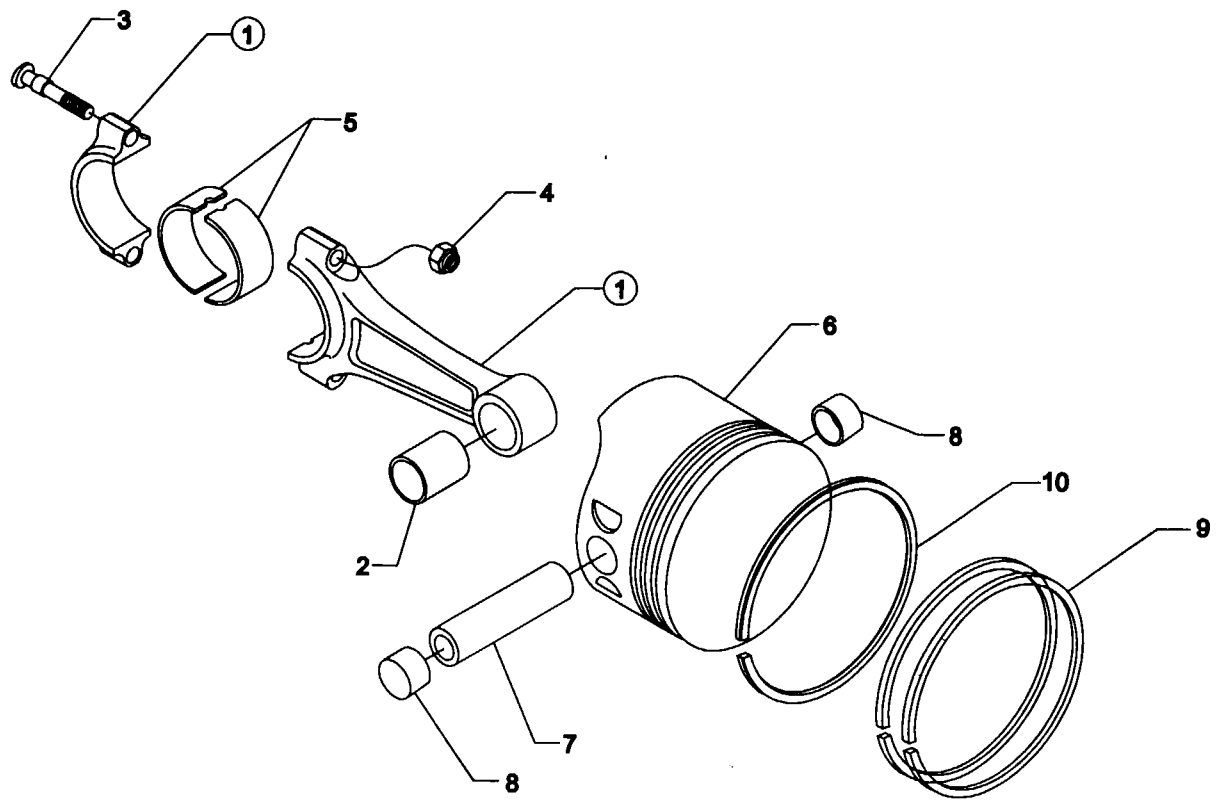


Figure 14. CONNECTING RODS, PISTONS AND RING ASSEMBLIES

CYLINDER, PISTON AND VALVE TRAIN CYLINDER ASSEMBLY

FIG. REF. 15	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	16A22130	CYLINDER AND HEAD ASSY., Nitrided	6
2	72057	SEAT, Intake valve	6
3	72058	SEAT, Exhaust valve	6
4	61681 *, ■	GUIDE, Valve, intake, flanged	6
5	16R22291 *, ■	GUIDE, Valve, exhaust, flanged	6
6	69260	INSERT, Spark plug, 18- 1.5 MM	12
7	STD-1353	INSERT, No. 10-24 Helicoil x 3/8 long	6
8	31C-12	STUD, 5/16-18 x 1-1/2 long (Exh.)	12
9	25C-8	STUD, 1/4-20 x 1.00 long	6
10	MS20823-6D	ELBOW, 45°, 3/8 flared tube	6
11	66610	BUSHING, Rocker shaft	24
12	1102	PLUG, 1/2-27 NPT, Allen head	6

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

■ Service Replacement Guides.

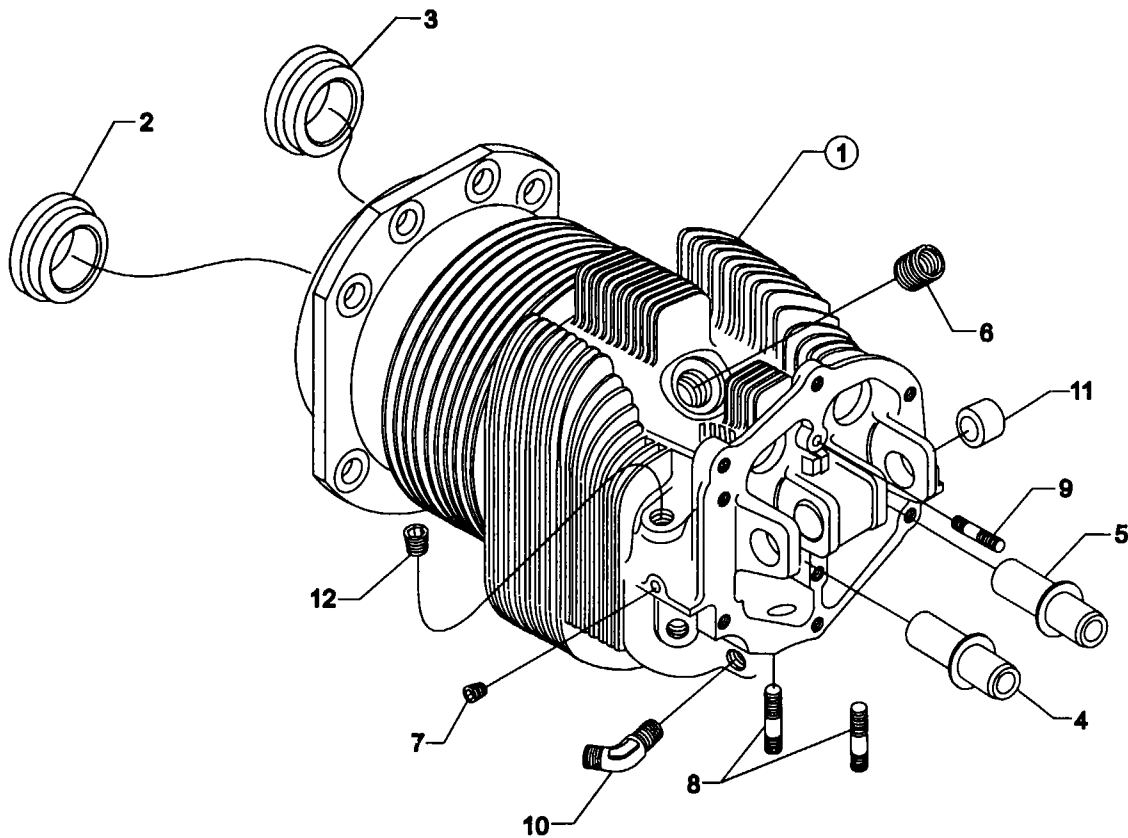


Figure 15. CYLINDER ASSEMBLY

CYLINDER, PISTON AND VALVE TRAIN VALVE ASSEMBLY AND RELATED PARTS

FIG. REF. 16	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	73938	VALVE, Intake	6
2	LW-19001	VALVE, Exhaust (rotator type)	6
3	LW-11795	SPRING, Valve inner	12
4	LW-11800	SPRING, Valve outer	12
5	65441	SEAT, Valve spring, lower intake	6
6	LW-13323	SEAT, Valve spring, lower exhaust	6
7	LW-10077	SEAT, Valve spring, upper intake	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	78290	PLUNGER ASSY., Hydraulic tappet	12
13	15B21319	SOCKET, Hydraulic tappet	12
14	LW-11485	SHROUD TUBE ASSY., Push rod	12
15	LW-14995	SPRING, Shroud tube	6
16	LW-12272	LOCKPLATE, Shroud tube	6
17	STD-1411	NUT, 1/4-20 plain	6
18	LW-18661	SEAL, Shroud tube	12
19	70310	SEAL, Shroud tube	12
20	15F19957-34 *	ROD ASSY., Push (A total of 12 reqd.)	AR
	15F19957-35 *	ROD ASSY., Push (A total of 12 reqd.)	AR
	15F19957-36 *	ROD ASSY., Push (A total of 12 reqd.)	AR
	15F19957-37 *	ROD ASSY., Push (A total of 12 reqd.)	AR
21	17F19357 **	ROCKER ASSY., Valve	12
22	74637	BUSHING, Valve rocker	12
23	LW-13790	SHAFT, Valve rocker	6
24	LW-12892	THRUST BUTTON, Rocker shaft	12
25	71481	RING, Oil seal, 3/32 dia. x 4-27/32 long	6

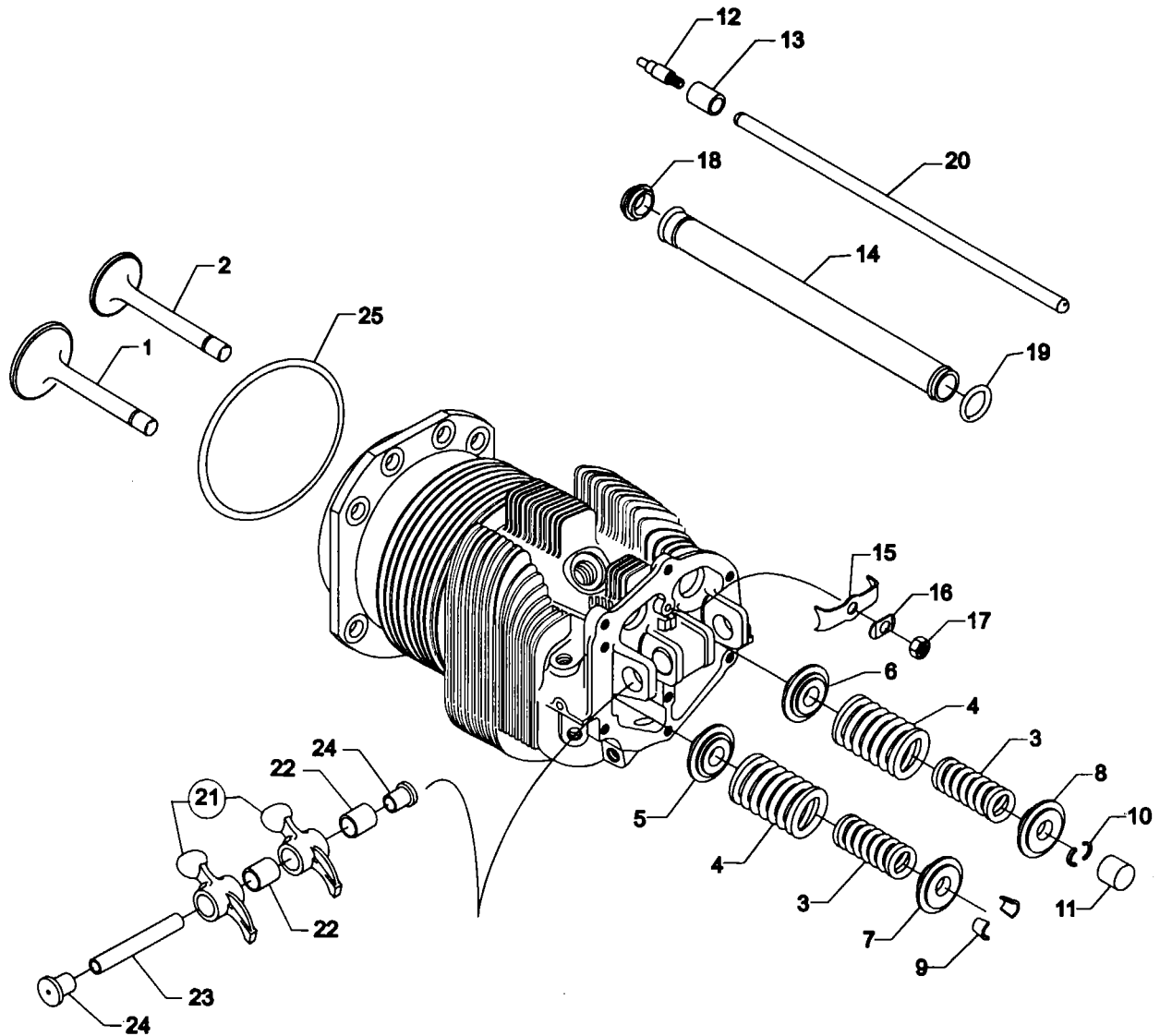


Figure 16. VALVE ASSEMBLY AND RELATED PARTS

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

FIG. REF. 17	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	STD-684	NIPPLE, Straight, 3/8 I.D. hose	6
2	STD-1821	HOSE, 3/8 x 2-1/2 long	6
3	LW-15592-5-05	CLAMP, Hose	12
4	68759	TUBE ASSY., Cyl. head oil drain, cyl. no. 1	1
5	71737	TUBE ASSY., Cyl. head oil drain, cyl. no. 2	1
6	68761	TUBE ASSY., Cyl. head oil drain, cyls. no. 3,4,5,6	4
7	75339 *	BAFFLE ASSY., Intercylinder	2
	LW-13389 **	BAFFLE ASSY., Intercylinder	2
8	71611	RETAINER, Intercylinder baffle	4
9	71610	HOOK, Intercylinder baffle retainer	4
10	MS35489-20X	GROMMET	2
11	75906	GASKET, Rocker box cover	6
12	61247	COVER, Rocker box	6
13	STD-1925	SCREW, 1/4-20 x 5/8 long, pan. hd., self-locking	36
14	74494	PLATE, Spark plug reach caution	6
15	77906	SPACER, 33/64 I.D. x 7/8 O.D. x 1/8 thick	2
16	74887	SPACER, 33/64 I.D. x 7/8 O.D. x 3/8 thick	2
17	383-B	NUT, 3/8-24 plain	24
18	STD-2090	NUT, 1/2-20 plain	28

* Left side of the engine.

** Right side of the engine.

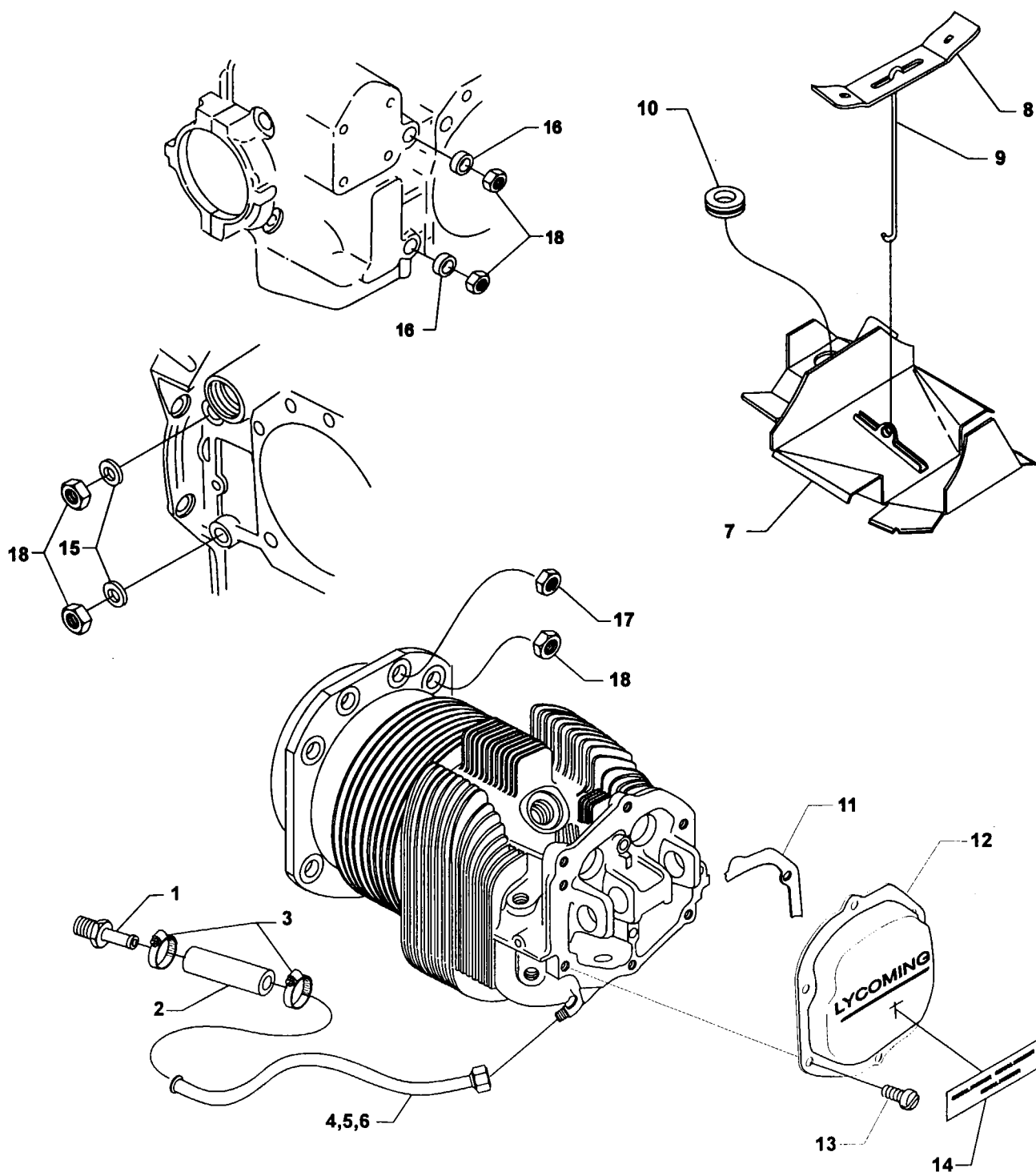


Figure 17. CYLINDER HEAD OIL DRAIN TUBES, INTERCYLINDER COOLING BAFFLES AND ROCKER BOX COVERS

IGNITION SYSTEM

PRESSURIZED MAGNETOS (SLICK), MAGNETO DRIVES, HARNESSSES AND SPARK PLUGS

FIG. REF. 18	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-13641	CUSHION, Magneto drive	4
2	STD-713	COTTER PIN, 3/32 dia. x 3/4 long	2
3	LW-19096	GEAR RETAINER ASSEMBLY	2
4	67542	BALL BEARING	2
5	62224	GASKET, Magneto adapter	2
6	LW-12707	ADAPTER, Magneto, right	1
7	LW-13926	ADAPTER, Magneto, left	1
8	LW-12681	GASKET, Magneto	2
9	66LC35SDNP	MAGNETO, Lt. & Rt., Slick Model No. 6361	2
10	67J20608-P	HARNESS ASSY., Right, Slick P/N M-2966	1
11	67J20609-P	HARNESS ASSY., Left, Slick P/N M-2965	1
12	66M21195	CLAMP, Magneto	4
13	STD-475	WASHER, 5/16 lock, internal teeth	4
14	STD-1410	NUT, 5/16-18 plain	4
15	STD-2007	WASHER, 3/8 dia. seal	1
16	STD-33	WASHER, 3/8 plain	7
17	LW-13227	ADAPTER, Magneto pressurization	1
18	LW-13226	NUT, 3/8-16 plain	1
19	AN825-4	TEE, 1/4 flared tube x 1/8 NPT	1
20	LW-12798-4S204	HOSE ASSY., 1/4 hose, straight	1
21	LW-12798-4S303	HOSE ASSY., 1/4 hose, straight	1
22	66N21020	VALVE ASSY., Relief	1
23	MS29512-04	"O" RING	1
24	MS20822-4	ELBOW, 1/4 tube to 1/8 NPT, 90°	2
25	1182-H7 *	SPARK PLUG, Champion RHB37E or Auburn 273	12

* Item No. 25 spark plugs are used in current production. See latest edition of No. 1042 for complete listing of all approved spark plugs.

Lycoming Service Instruction

ATTACHING PARTS

76734	ZIP STRAP	4
LW-16266-25-25	CLIP, One wire	2
LW-14060	CLIP, Two wire	2
LW-16266-25-44	CLAMP	2
STD-1925	SCREW, 1/4-20	2
73136	BRACKET, Ext.	2

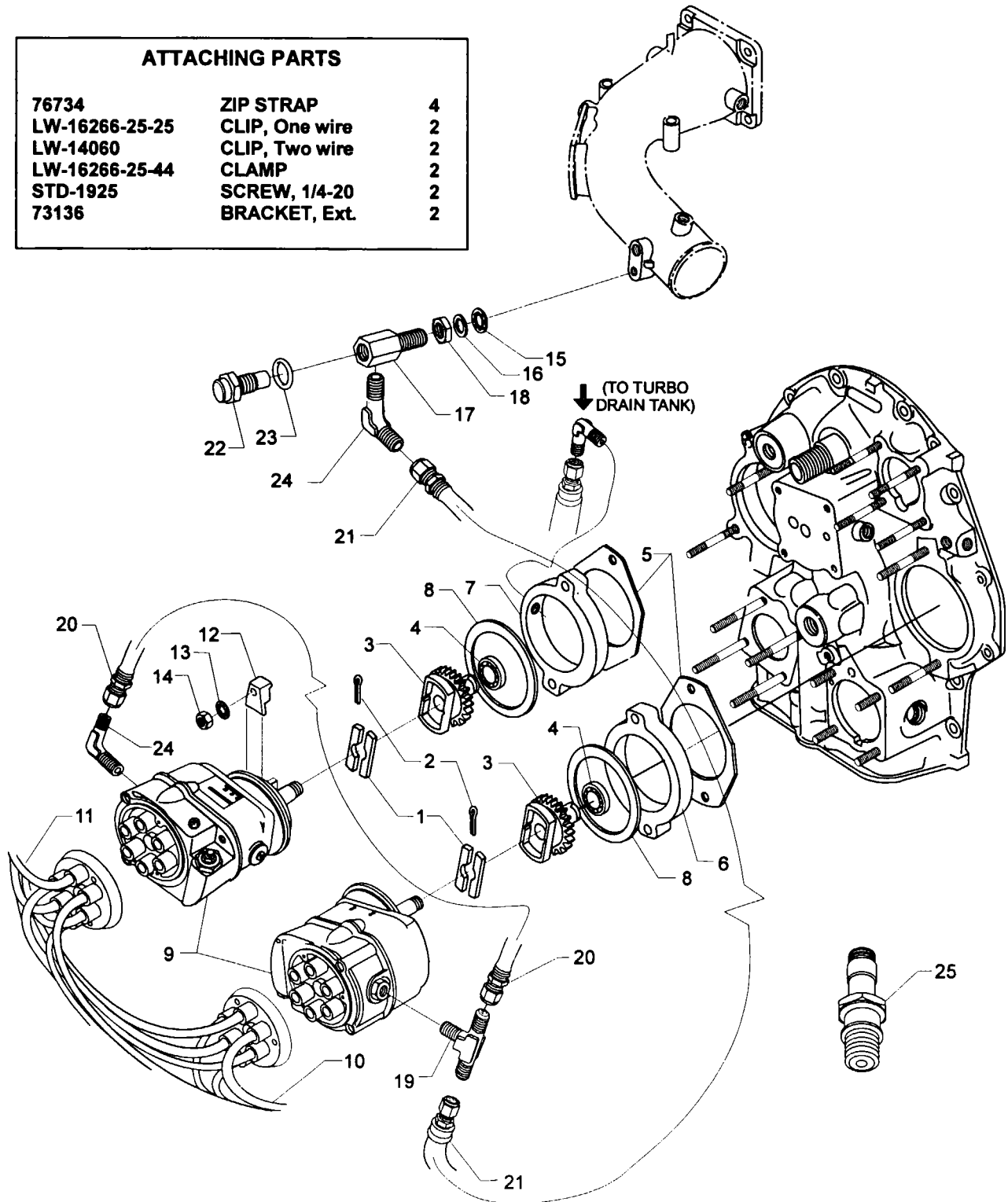


Figure 18. PRESSURIZED MAGNETOS (SLICK), MAGNETO DRIVES, HARNESSES AND SPARK PLUGS

ELECTRICAL SYSTEM LAMAR STARTER AND ATTACHING PARTS

FIG. REF. 19	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	31B22207	STARTER, Lamar, 24 volt, 12/14 pitch	1
2	STD-35	WASHER, 5/16 plain	4
3	STD-475	WASHER, 5/16 lock, internal teeth	4
4	LW-31-1.16	BOLT, 5/16-18 x 1-5/32 long, hex. hd.	1
5	STD-1410	NUT, 5/16-18 plain	3

NOTE

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

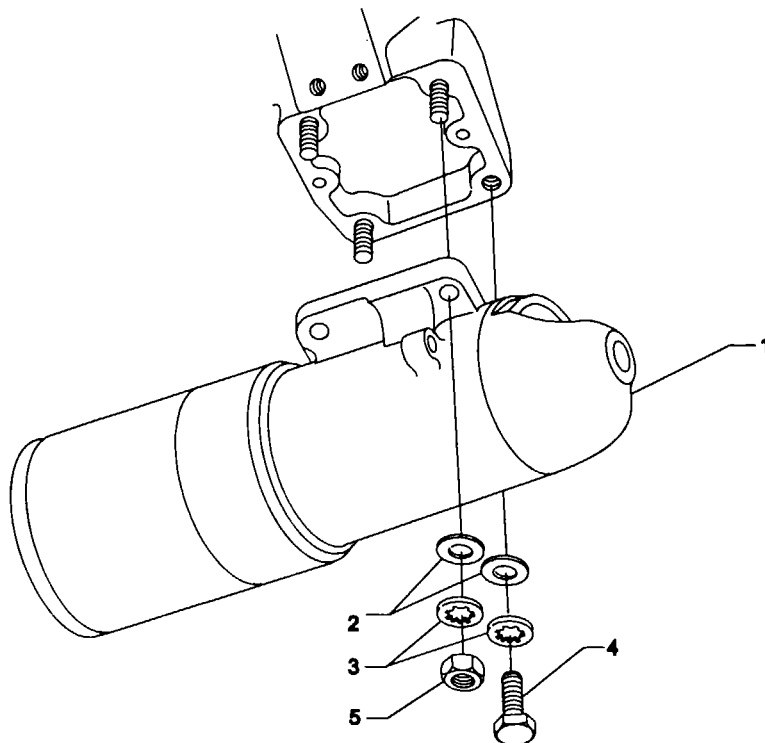


Figure 19. LAMAR STARTER AND ATTACHING PARTS

**ELECTRICAL SYSTEM
ALTERNATOR ASSEMBLY AND BELT**

FIGURE 20

**NOT
SUPPLIED
BY
LYCOMING**

ELECTRICAL SYSTEM
ALTERNATOR MOUNTING AND ATTACHING PARTS

FIG. REF. 21	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	07A21443	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	LW-10729	LINK, Alternator adjusting	1
5	STD-35	WASHER, 5/16 plain	1
6	LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex. hd. dr.	1
7	76908	STRUT, Alternator support	1
8	LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex. hd. dr.	1

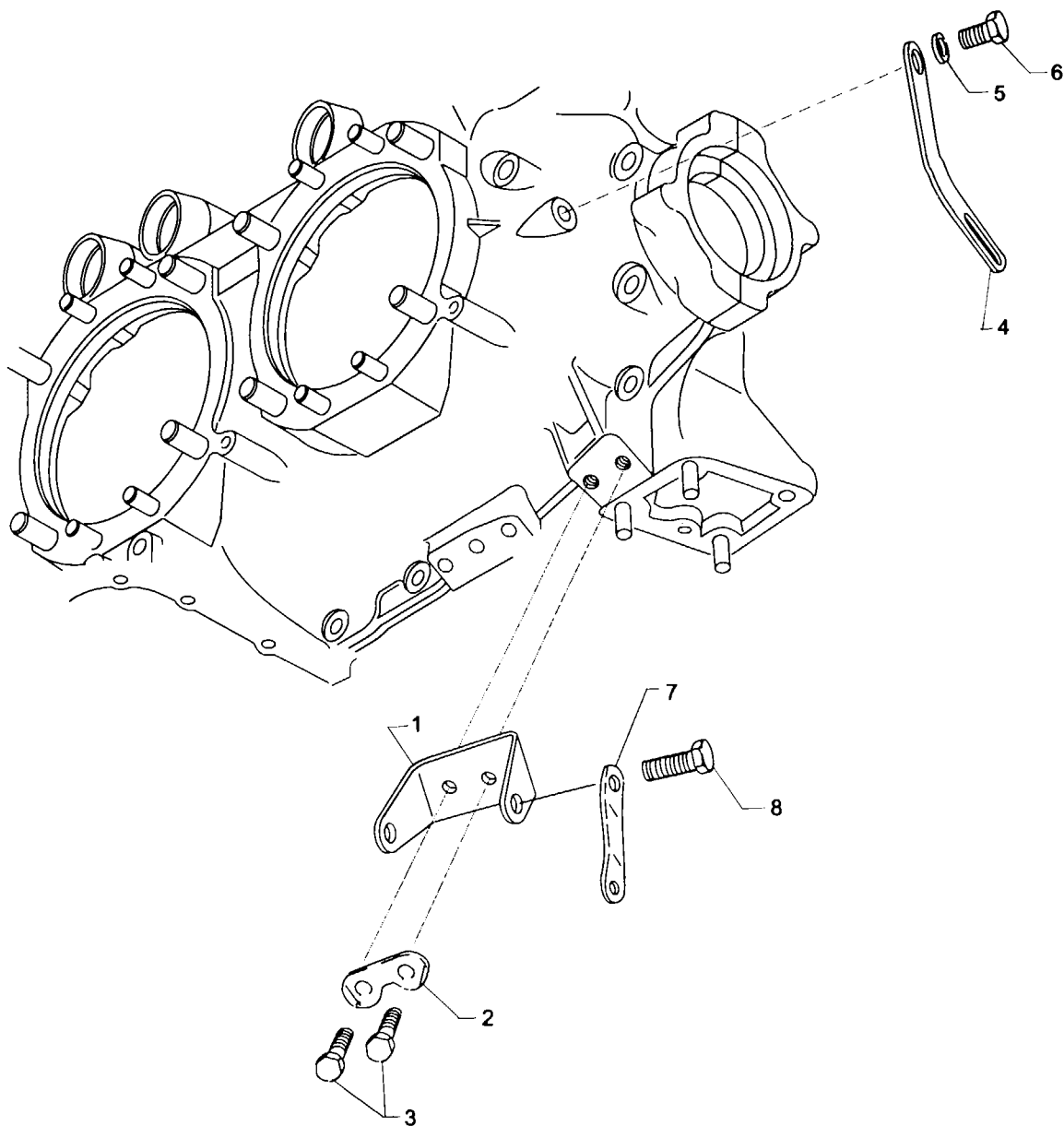


Figure 21. ALTERNATOR MOUNTING AND ATTACHING PARTS

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

FIG. REF. 22	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	06B21326	GASKET, Oil sump	1
2	LW-19168	SUMP ASSEMBLY, Oil	1
3	71699	CONNECTION, Intake pipe	6
4	25C-11	STUD, 1/4-20 x 1-3/8 long	13
5	25C-14	STUD, 1/4-20 x 1-3/4 long	1
6	STD-1164	INSERT, 5/16-18 x 5/8 long, Helicoil	4
7	38-15	STUD, 3/8-16 x 1-7/8 long	8
8	STD-1173	INSERT, 1/4-20 x .500 long	4
9	STD-1171	INSERT, 3/8-16 x 3/4 Helicoil	3
10	1102	PLUG, 1/8-27 NPT, Allen head	1
11	STD-8	WASHER, 1/4 plain	34
12	STD-160	WASHER, 1/4 lock, internal teeth	27
13	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. hd.	5
14	LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. hd.	6
15	STD-1411	NUT, 1/4-20 plain	21
16	STD-551	PLUG, 1/2-14 NPT, Sq. hd.	2
17	74655	SPACER, Exhaust manifold bracket	1
18	07H21150	BRACKET, Exhaust manifold cable retainer	1
19	70484	SCREEN, Oil suction	1
20	06E19769-1.00	GASKET, 1.00 I.D. x 1-1/4 O.D. x 3/32 annular	1
21	LW-12545	PLUG, 5/8 hex. hd. x 1.00-20 thread	1
22	LW-25-1.25	BOLT, 1/4-20 x 1-1/4 long, hex. hd.	2
23	73152	BRACKET, Support	4

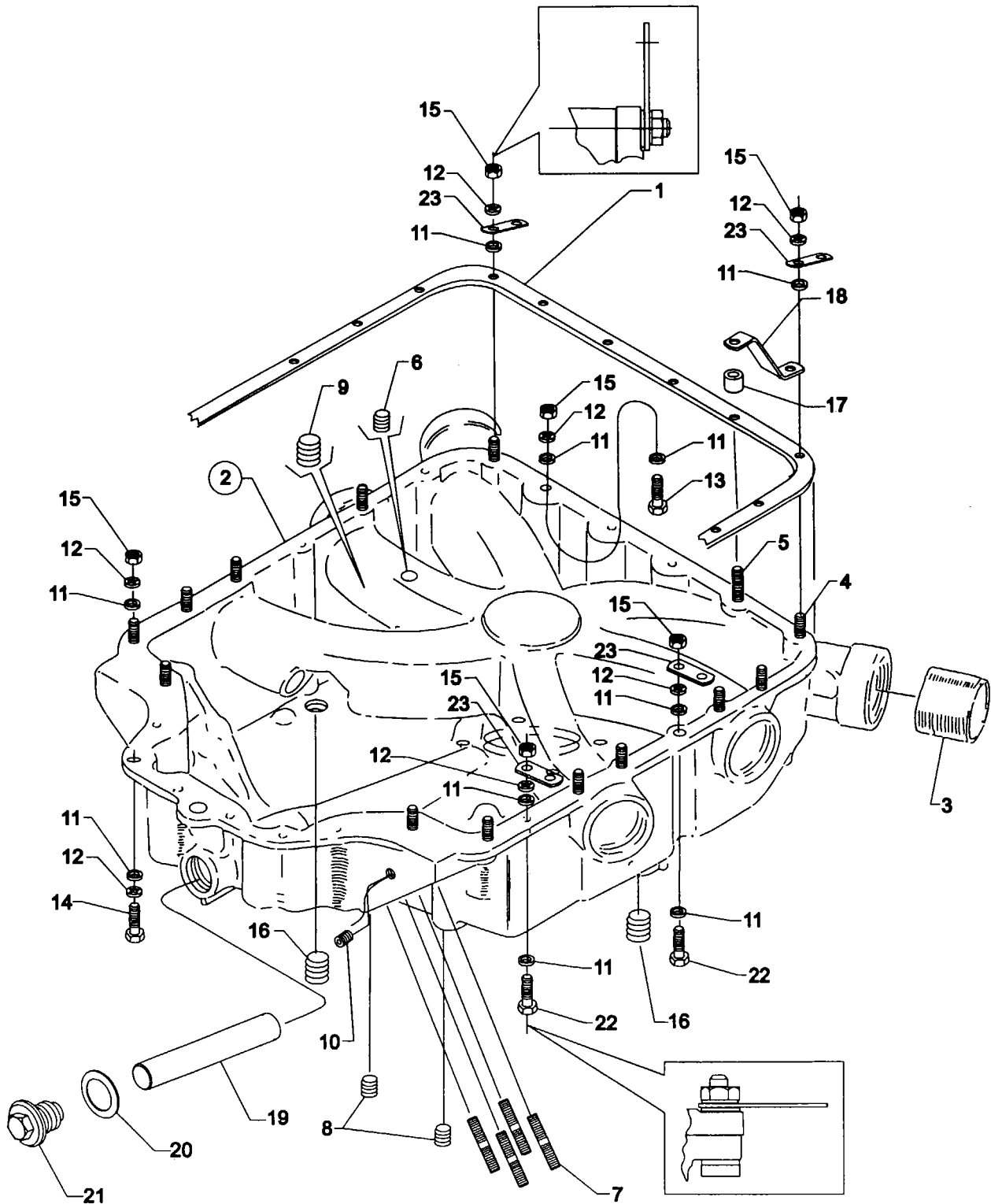


Figure 22. OIL SUMP ASSEMBLY AND OIL SUCTION SCREEN

OIL SUMP AND INDUCTION SYSTEM INTAKE PIPES AND AIR INLET HOUSING

FIG. REF. 23	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. hd.	12
9	78366	HEAT SHIELD, (1, 2, 4 & 6 intake pipes)	4
10	LW-15592-8-24	CLAMP, Hose, 1-13/16 dia. x 9/16 wide	8
11	02M22920	HOSE, 2.00 to 2-1/2 I.D. x 2-7/8 long	1
12	LW-15858-62-294	CLAMP, "T" bolt	1
13	LW-15858-62-244	CLAMP, "T" bolt	1
14	77504	GASKET, Fuel injector	1
15	41A22811	HOUSING, Air inlet	1
16	02A22460	ELBOW, Street, 1/8-27 NPT, 45°	1
17	LW-13807	ADAPTER ASSY., Fuel drain valve	1
18	LW-14445-10	VALVE ASSY., Abs. pressure relief	1
19	MS29513-138	"O" RING	1
20	STD-28	WASHER, No. 10 plain	4
21	STD-251	WASHER, No. 10, internal lock	4
22	STD-375	SCREW, No. 10-24 x 5/8 long, fill. hd.	4
23	STD-8	WASHER, 1/4 plain	4
24	STD-160	WASHER, 1/4 long, internal teeth	4
25	LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. hd.	3
26	LW-25-0.81	BOLT, 1/4-20 x 13/16 long, hex. hd.	1

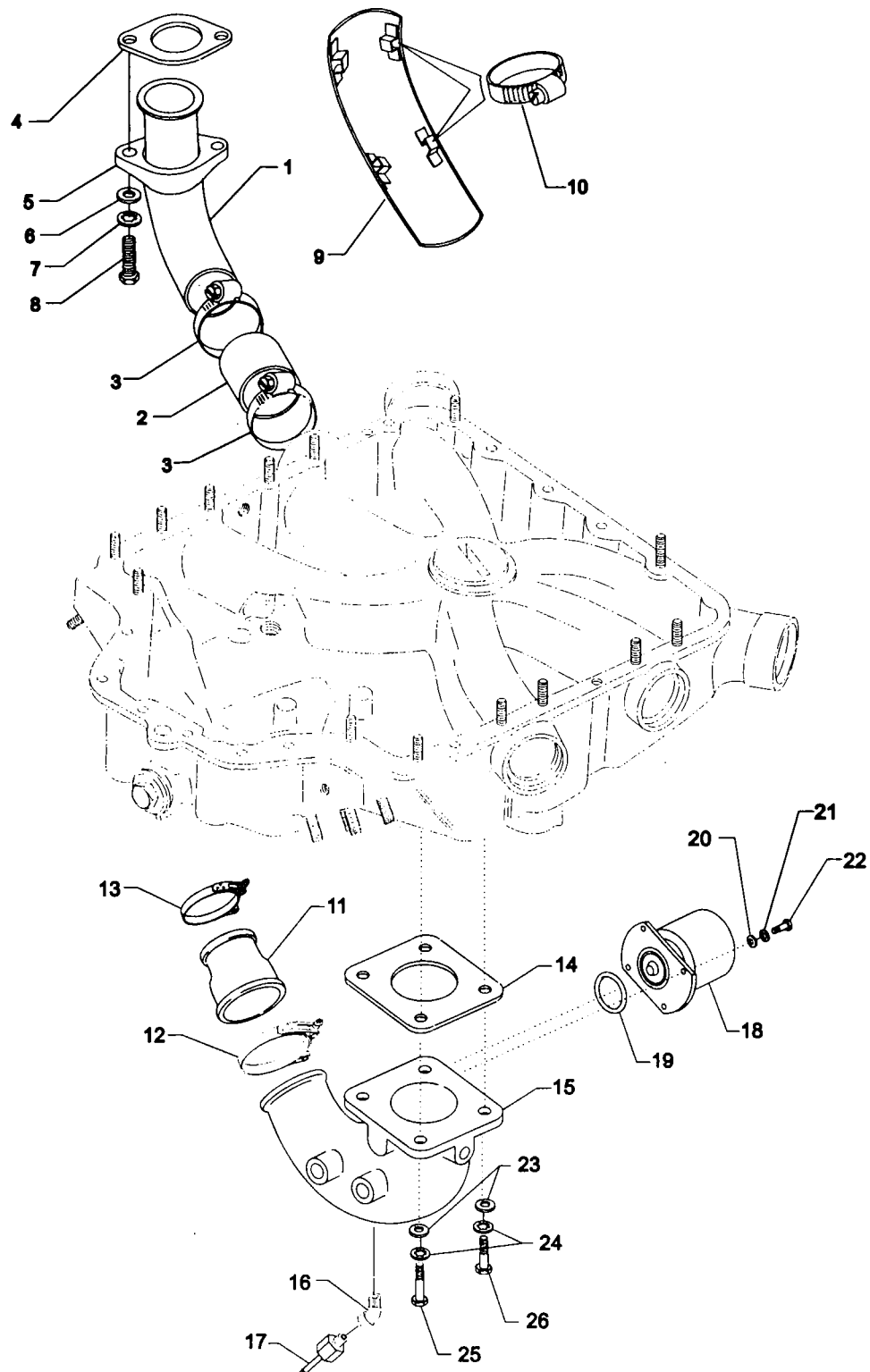


Figure 23. INTAKE PIPES AND AIR INLET HOUSING

OIL SUMP AND INDUCTION SYSTEM FUEL INJECTOR, FUEL MANIFOLD AND AIR BLEED NOZZLES

FIG. REF. 24	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	66224	GASKET, Fuel injector	1
2	61J22989	FUEL INJECTOR, RSA5 (2576592-1)	1
3	STD-35	WASHER, 5/16 plain	4
4	STD-475	WASHER, 5/16 lock, internal teeth	4
5	LW-31-1.31	BOLT, 5/16-18 x 1-5/16 long, hex. hd.	4
6	LW-18854	NOZZLE ASSY., Manifold air bleed	6
7	63B22999	MANIFOLD ASSY., Fuel	1
8	MS20822-4	ELBOW, 1/8 NPT to 1/4 tube, 90°	1
9	STD-148	NIPPLE, Union, 1/8 NPT	6
10	1102	PLUG, 1/8 pipe	1
11	73966	SPACER, Fuel manifold bracket	2
12	07A22995	BRACKET, Fuel manifold	2
13	STD-251	WASHER, No. 10 internal lock	4
14	STD-82	SCREW, No. 10-24 x 1/2 long, fill. hd.	4
15	02G22973	NIPPLE, 1/4 tube to 7/16-20 straight	1
16	LW-12798-4S303	HOSE ASSY., 1/4 hose, straight	1
17	AN815-4	UNION, 1/4 flared tube	1
18	LW-12798-4S150	HOSE ASSY., 1/4 hose, straight	1
19	74655	SPACER, Exhaust manifold	1
20	LW-16266-25-63	CLAMP, 5/8 I.D. x 1/4 dia. screw	1
21	STD-8	WASHER, 1/4 plain	1
22	STD-160	WASHER, 1/4 lock, internal teeth	1
23	LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. hd.	1
24	74278	BRACKET ASSY., Fuel line support (between 1 & 3 cyl.)	1
25	STD-1891	CLINCH NUT, No. 10-32 self-locking	2
26	LW-16266-10-63	CLAMP, 5/8 I.D. x No. 10 screw	1
27	STD-692	SCREW, No. 10-32 x 1/2 long, rd. hd.	2
28	STD-860	SCREW, No. 10-32 x 5/8 long, fill. hd.	1
29	STD-425	WASHER, No. 10 plain	2
30	STD-670	LOCKNUT, No. 10-32	1
31	LW-12879-6S262	HOSE ASSY., 3/8 hose, 45° elbow	1

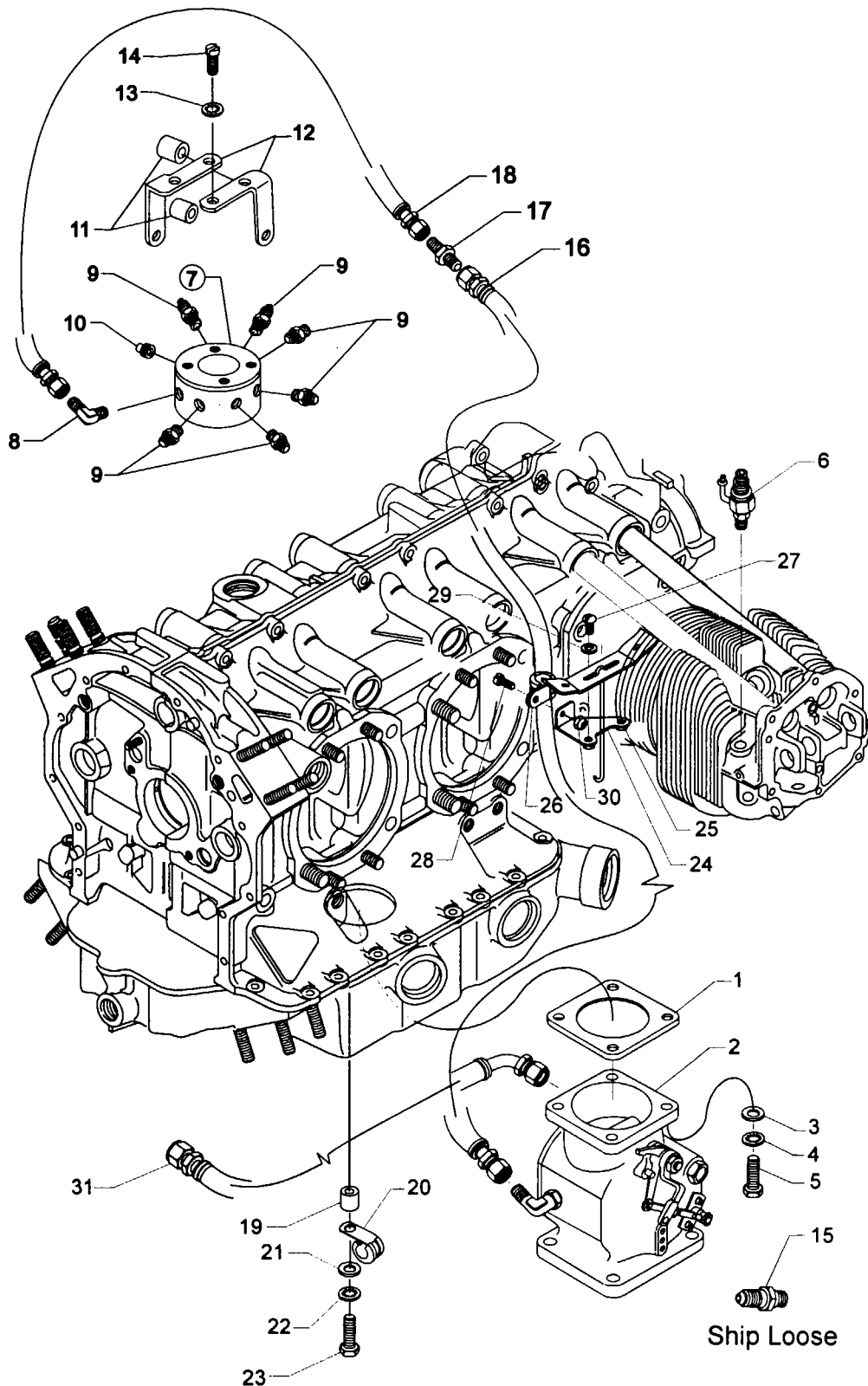


Figure 24. FUEL INJECTOR, FUEL MANIFOLD AND AIR BLEED NOZZLES

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

FIG. REF. 25	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-12098-0-210	TUBE ASSY., Fuel injector line (cylinders 1, 2, 5 & 6)	4
2	LW-12098-0-170	TUBE ASSY., Fuel injector line (cylinders 3 & 4)	2
3	LW-16266-10-75	CLAMP	12
4	LW-16266-10-13	CLAMP	12
5	STD-860	SCREW, No. 10-32 x 5/8 long, fill. hd.	12
6	STD-425	WASHER, No. 10 plain	2
7	STD-670	LOCKNUT, No. 10-32	12
8	73136	BRACKET, Extension	2

WHERE CLEARANCE REQUIRES -
THE CLAMP MAY BE ANGLED TO
FIT SECURELY.

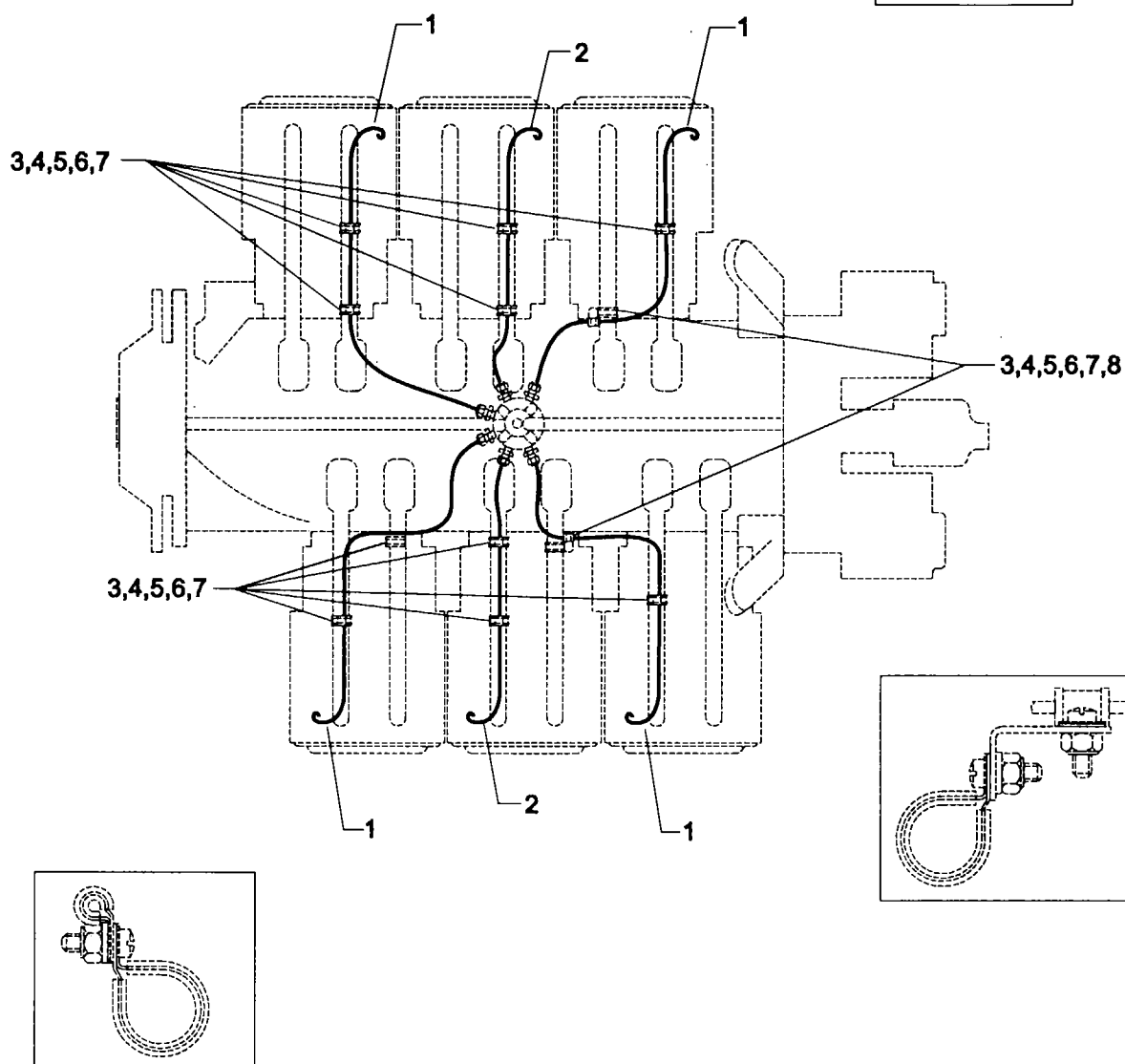


Figure 25. FUEL LINES AND ATTACHING PARTS

OIL SUMP AND INDUCTION SYSTEM NOZZLE VENT MANIFOLDS AND ATTACHMENTS

FIG. REF. 26	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	63E21054	MANIFOLD, Right, injector nozzle vent	1
2	78109	MANIFOLD, Injector nozzle vent	1
3	LW-18737	HOSE, 3/16 I.D. x 7/16 O.D. x 2.00 long	6
4	LW-15592-5-04	CLAMP, 7/16 O.D. hose	12
5	LW-16266-10-25	CLIP, 1/4 I.D. for No. 10 screw	4
6	73152	BRACKET, Support clamp	4
7	STD-1856	SCREW, 1/4-20 x 1.00 long, hex. hd.	4
8	STD-2079	NUT, 1/4-20 UNC	4
9	STD-692	SCREW, No. 10-32 x 1/2 long, rd. hd.	4
10	STD-670	LOCKNUT, No. 10-32	4
11	STD-1339	PLUG, 1/16-27 NPT	4
12	63A22481	TUBE, Crossover, nozzle vent manifold	1
13	63A22482	TUBE, Crossover, nozzle vent manifold	1
14	AN824-4	TEE, 1/4 flared tube	1
15	STD-2048	HOSE, 1/4 I.D. x 19/32 O.D. x 2-7/16 long	2
16	LW-15592-5-04	CLAMP, 7/16 O.D. hose	4
17	78753	BRACKET, Injector nozzle vent crossover	1
18	LW-16266-10-25	CLIP, 1/4 I.D. for No. 10 screw	1
19	STD-692	SCREW, No. 10-32 x 1/2 long, rd. hd.	1
20	STD-670	LOCKNUT, No. 10-32	1
21	LW-12798-4S340	HOSE ASSY., Straight, 1/4 hose	1
22	73944 *	ELBOW, 1/4 tube, 45° adj.	1
23	74278	BRACKET ASSY., Fuel line support	1
24	STD-1891	CLINCH NUT, No. 10-32 self-locking	2
25	LW-16266-10-63	CLAMP, 5/8 I.D. x No. 10 screw	1
26	STD-860	SCREW, No. 10-32 x 5/8 long, fill. hd.	1
27	STD-692	SCREW, No. 10-32 x 1/2 long, rd. hd.	2
28	STD-425	WASHER, No. 10 plain	2
29	STD-670	LOCKNUT, No. 10-32	1

* Uses a P/N MS29512-04 O-ring.

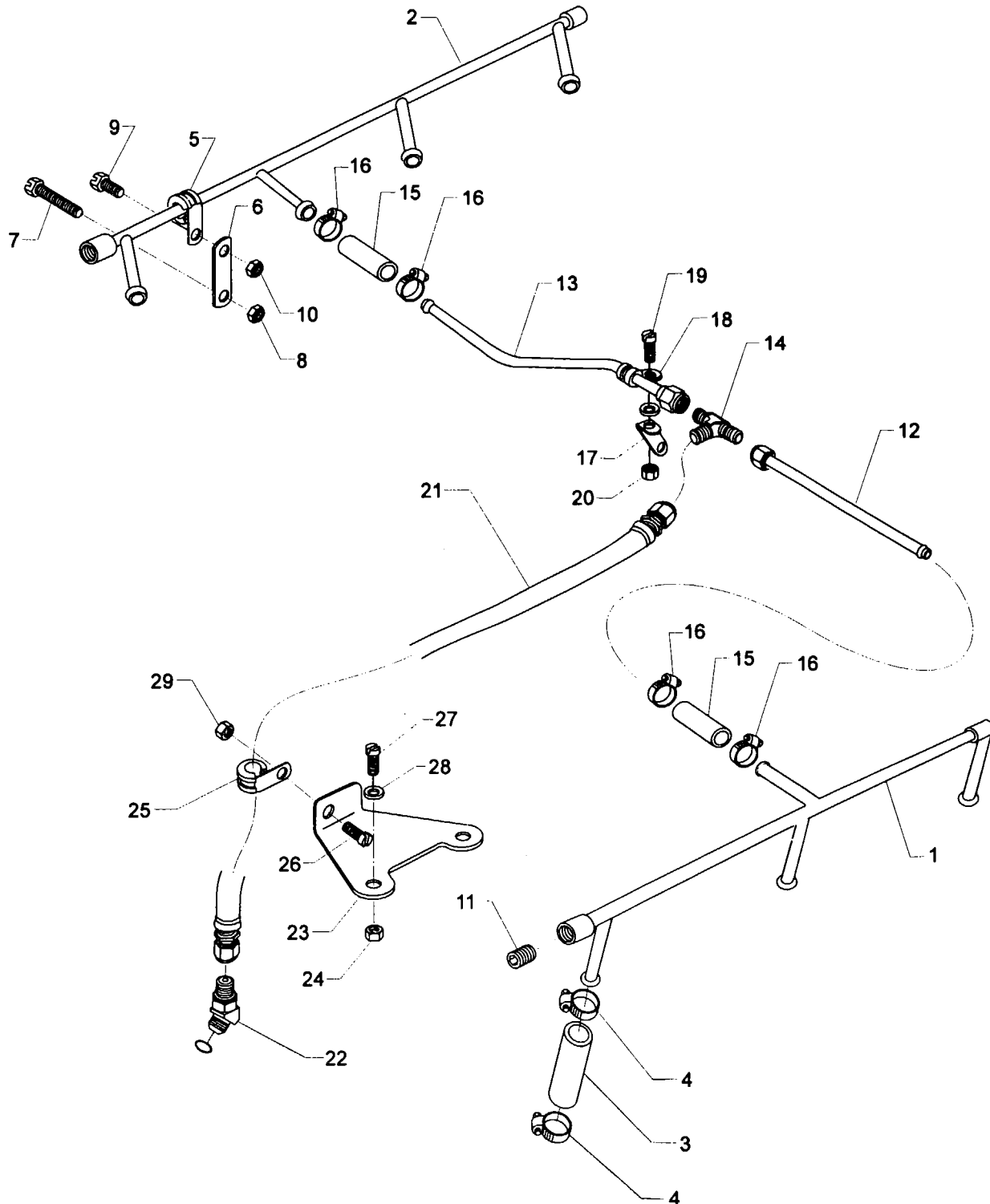
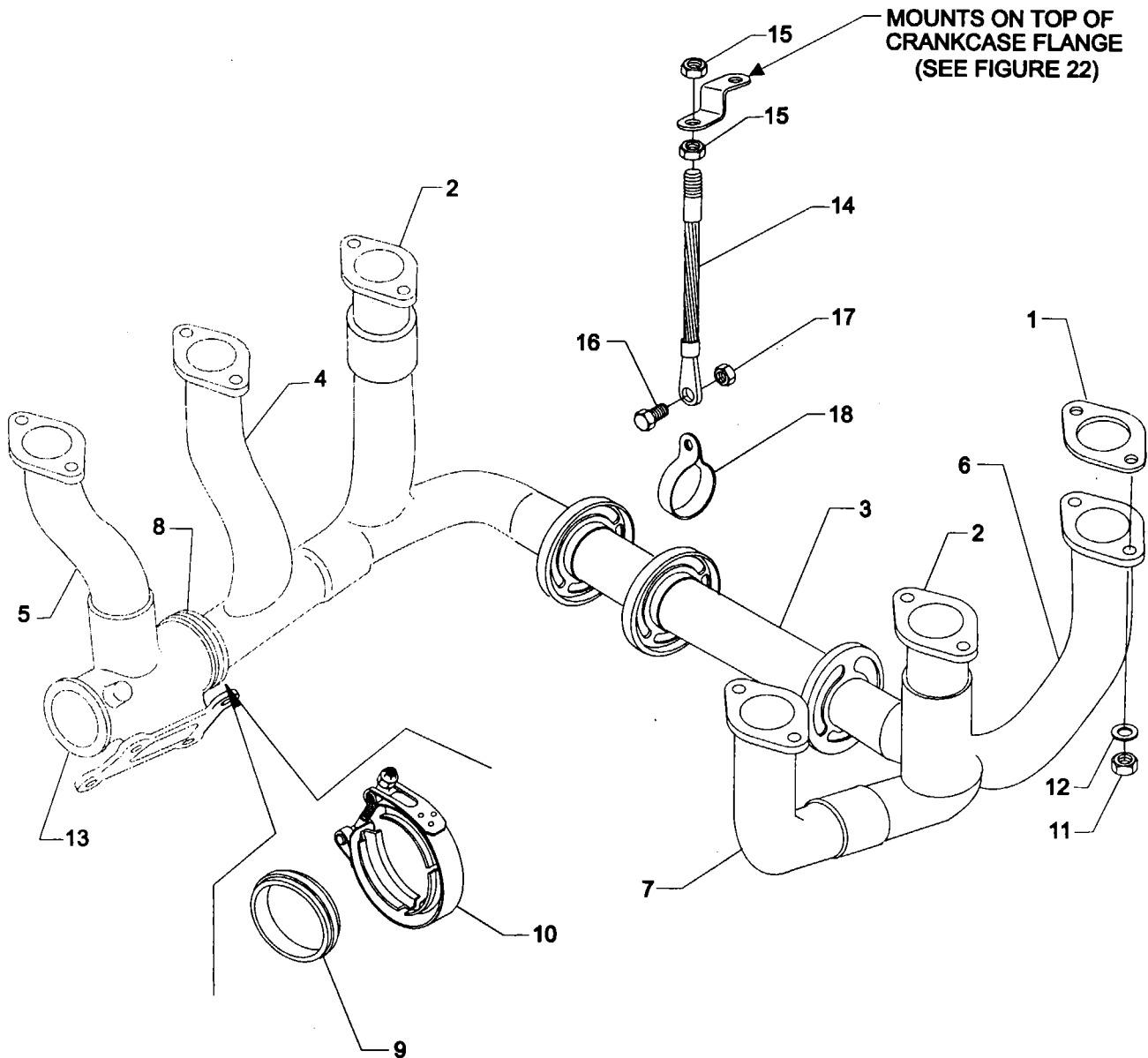


Figure 26. NOZZLE VENT MANIFOLDS AND ATTACHMENTS

TURBOCHARGER AND EXHAUST SYSTEMS
EXHAUST PIPES AND TRANSITION ASSEMBLY

FIG. REF. 27	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	77611	GASKET, Exhaust flange	6
2	40G22959	PIPE, Exhaust adapter (# 2 & # 3)	2
3	40B22962	PIPE, Exhaust, cylinder no. 2	1
4	40B22964	PIPE, Exhaust, cylinder no. 4	1
5	40B22966	PIPE, Exhaust, cylinder no. 6	1
6	40B22961	PIPE, Exhaust, cylinder nos. 1 & 3	1
7	40B22965	PIPE, Exhaust, cylinder no. 5	1
8	40C22960	FLANGE, Exhaust transition (slip joint)	1
9	78084	GASKET, V-band coupling, 2.00 tube	1
10	40D23026	COUPLING, V-band	1
11	STD-2233	LOCKNUT, 5/16-18 hex	12
12	AN960C516	WASHER, 5/16 plain	12
13	47C22923	TRANSITION, Exhaust	1
14	LW-19189	CABLE, Exhaust manifold retainer	1
15	STD-1411	NUT, 1/4-20 plain	2
16	LW-25SS-0.75	BOLT, 1/4-20 x 3/4 long, hex. hd.	1
17	STD-2044	NUT, 1/4-20 self-locking	1
18	07C23103	CLAMP, Exhaust pipe	1

**Figure 27. EXHAUST PIPES AND TRANSITION ASSEMBLY**

**TURBOCHARGER AND EXHAUST SYSTEMS
TURBOCHARGER, SUPPORT AND ATTACHING PARTS**

FIG. REF. 28	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	07A22810	BRACKET, Turbocharger	1
2	STD-33	WASHER, 3/8 plain	2
3	STD-678	WASHER, 3/8 lock, internal teeth	2
4	LW-38-2.75	BOLT, 3/8-16 x 2-3/4 long, hex. hd.	1
5	LW-38-3.50	BOLT, 3/8-16 x 3-1/2 long, hex. hd.	1
6	46C22924	TURBOCHARGER, TA0411 (466642-6)	1
7	AN960C616	WASHER, 3/8 plain	4
8	MS9321-12	WASHER, 3/8 I.D. x 75 O.D. x 5/64	4
9	AN6C12A	BOLT, 3/8-24 x 1-21/64 long	4
10	MS20500-624	NUT, 3/8-24 self-locking	4
11	LW-12960	VALVE, Exhaust bypass (470954-1)	1
12	40D22382 *	COUPLING, V-band (NM115002-0225)	1
13	40D22383	COUPLING, V-band	1
14	75845 **	GASKET, V-band coupling	2
15	AN960C516	WASHER, 5/16 plain	2
16	LW-31SSH-0.88	BOLT, 5/16-18 x 7/8 long, hex. hd., drilled	2

* Ship loose with engine.

** Ship (1) loose with engine.

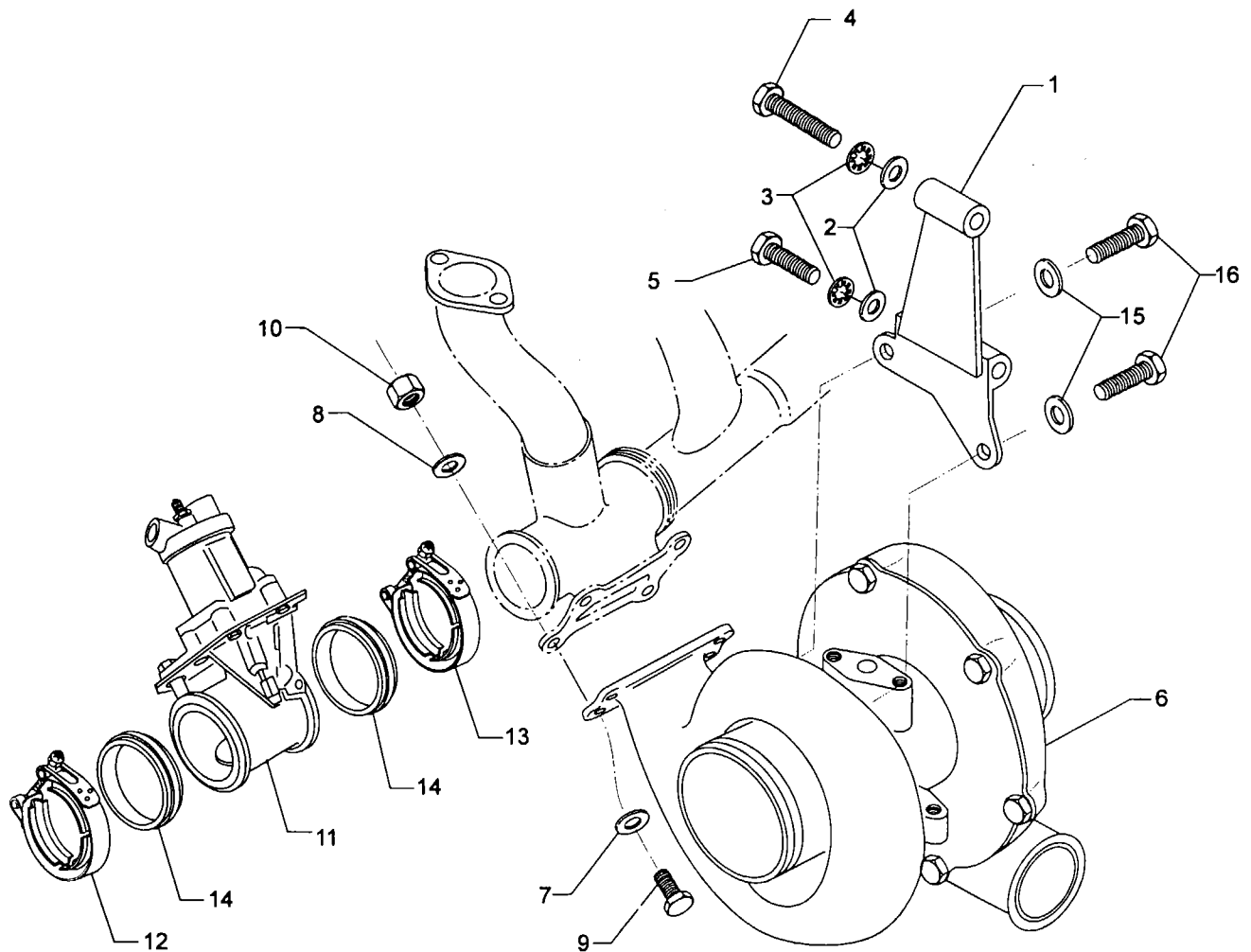


Figure 28. TURBOCHARGER, SUPPORT AND ATTACHING PARTS

TURBOCHARGER AND EXHAUST SYSTEMS

TURBO OIL DRAIN TANK, HOSES AND ATTACHING PARTS

FIG. REF. 29	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	MS20822-4	ELBOW, 1/8 NPT to 1/4 tube, 90°	1
2	LW-12878-4S373	HOSE ASSY., 1/4 hose, 45° elbow	1
3	LW-16266-25-63	CLAMP, 5/8 I.D. x 1/4 dia. screw	1
4	78212	CHECK VALVE ASSY.	1
5	77813	GASKET, Turbo oil inlet	1
6	LW-12287	ADAPTER, Turbo oil inlet	1
7	STD-35	WASHER, 5/16 plain	2
8	STD-475	WASHER, 5/16 lock, internal teeth	2
9	LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex. hd.	2
10	LW-18038	GASKET, Turbo oil drain adapter	1
11	58B22954	TANK, Turbo oil drain	1
12	STD-33	WASHER, 3/8 plain	2
13	STD-678	WASHER, 3/8 lock, internal teeth	2
14	LW-38-0.75	BOLT, 3/8-16 x 3/4 long, hex. hd.	2
15	MS20823-8	ELBOW, 1/2 flared tube, 3/8 NPT	1
16	LW-14848-8S360	HOSE ASSY., 1/2 hose, 90° elbow	1
17	MS29512-08	"O" RING	1
18	LW-14685	ELBOW, 3/4-16 x 1/2 tube	1
19	MS20822-4	ELBOW, 1/8 NPT to 1/4 tube, 90°	2
20	LW-12878-4S373	HOSE ASSY., 1/4 hose, 45° elbow	1
21	76734	ZIP STRAP	2
22	07A22955	BRACKET, Turbo oil drain tank	1
23	AN960C516	WASHER, 5/16 plain	1
24	STD-475	WASHER, 5/16 lock, internal teeth	1
25	LW-31SS-0.75	BOLT, 5/16-18 x 3/4 long, hex. hd.	1
26	STD-425	WASHER, No. 10 plain	2
27	AN3-5	BOLT, No. 10-32 x 21/32 long, hex. hd.	1
28	MS21042-3	NUT, Self-lock	1

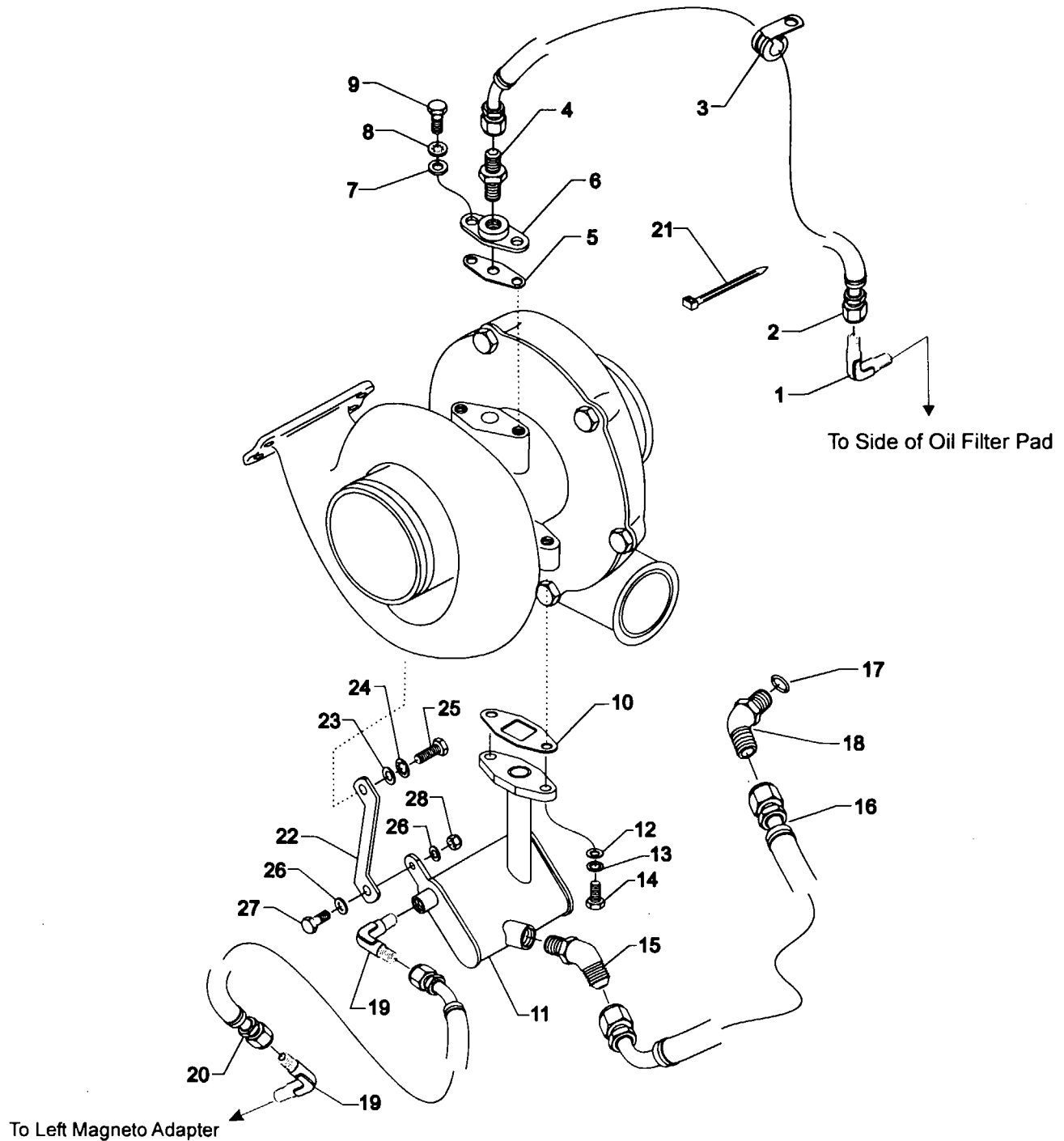


Figure 29. TURBO OIL DRAIN TANK, HOSES AND ATTACHING PARTS

TURBOCHARGER AND EXHAUST SYSTEMS SLOPE CONTROLLER AND ATTACHING PARTS

FIG. REF. 30	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-12798-4S274	HOSE ASSY., 1/4 hose, straight	1
2	73152	BRACKET, Support clamp	2
3	LW-16266-10-63	CLAMP, 5/8 I.D. x No. 10 screw	2
4	STD-692	SCREW, No. 10-32 x 1/2 long, rd. hd.	2
5	STD-670	LOCKNUT, No. 10-32	2
6	72376 *	ELBOW, 90°, 1/4 tube	1
7	72377 **	ELBOW, 3/8 flared tube, adj.	1
8	48B22970	CONTROLLER, Slope	1
9	LW-12877-6S161	HOSE ASSY., 3/8 hose, 90° elbow	1
10	LW-16562 **	NIPPLE, 9/16-18, 3/8 flared tube	1
11	74070 **	ELBOW, 9/16-18, 3/8 flared tube	1
12	LW-12799-6S180	HOSE ASSY., 3/8 hose, straight	1
13	AN912-9	BUSHING, Reducer, 3/4 NPT	1
14	MS20823-6	ELBOW, 1/4 NPT to 3/8 flared tube	1
15	LW-16561 **	NIPPLE, 1/4 tube to 9/16-18	1
16	LW-12798-4S111	HOSE ASSY., 1/4 hose, straight	1
17	02G22466 ***	NIPPLE, 5/16-24 to 7/16-20	1
18	78303	TEE, 1/4 O.D.	1
19	02G22988	NIPPLE, 1/4 flared tube to 1/8-27 NPT (Rest. .03)	1
20	LW-12798-4S130	HOSE ASSY., 1/4 hose, straight	1
21	LW-12798-4S303	HOSE ASSY., 1/4 hose, straight	1
22	LW-16561 **	NIPPLE, 1/4 tube to 9/16-18	1
23	02A22992	TEE, 1/4 tube	1
24	MS29512-04	"O" RING	1
25	AN814-4L	PLUG & BLEEDER, 7/16-20	1

* Requires a P/N MS29512-04 O-ring.

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

*** Requires a P/N MS29512-02 O-ring.

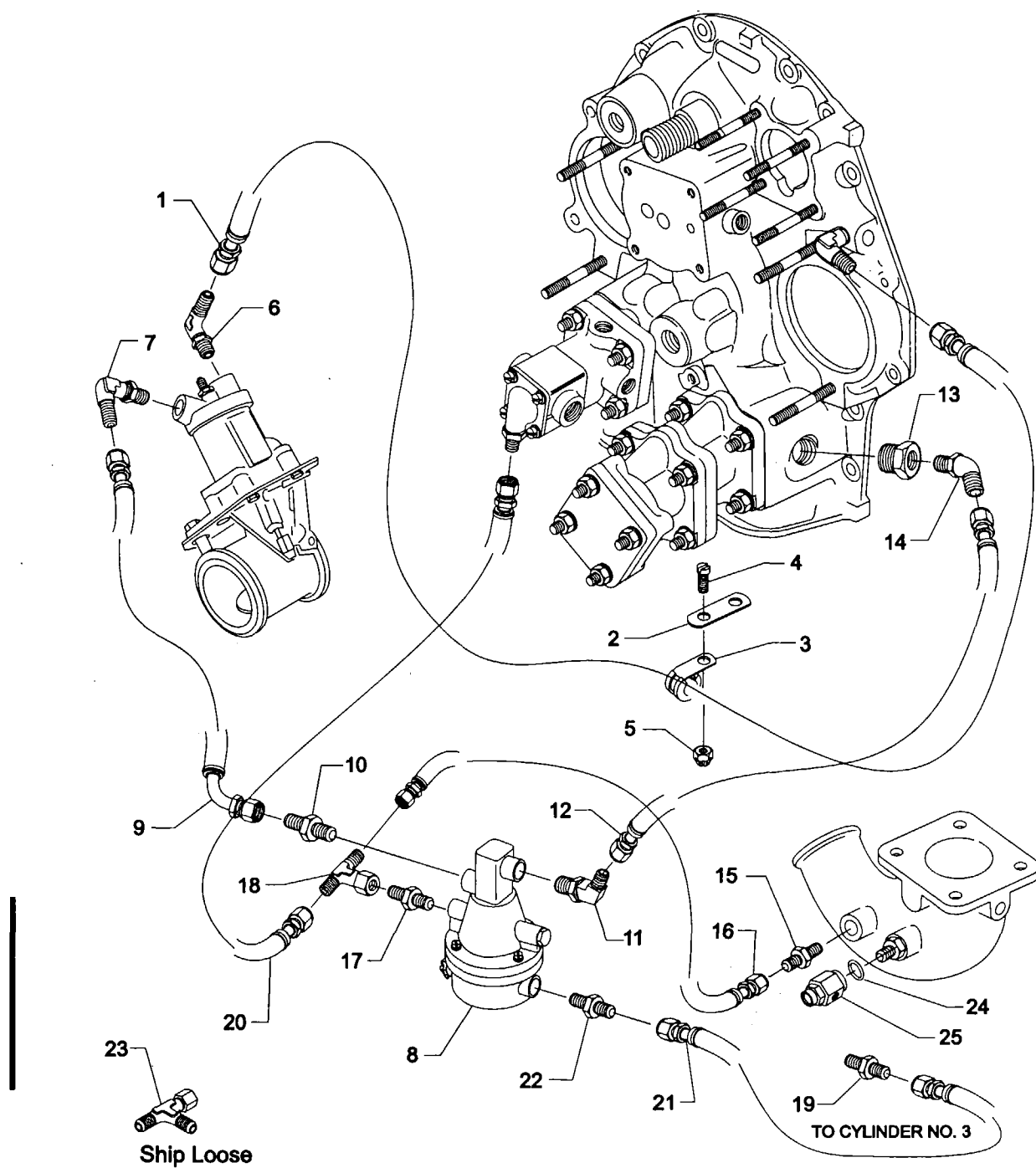


Figure 30. SLOPE CONTROLLER AND ATTACHING PARTS

SERVICE KIT SECTION SEAL AND GASKET SET

Part No.	Part Name	Qty.
05K23204	SEAL AND GASKET SET	1
LW-11997	SEAL, Crankshaft – oil (split)	1
LW-12272	LOCKPLATE, Shroud tube	6
LW-12681	GASKET, Magneto	2
LW-12795	GASKET, Oil filter adapter	1
LW-13641	CUSHION, Magneto	4
LW-13792	SEAL, Crankshaft – oil (solid)	1
LW-14260	SEAL, Tachometer drive	1
LW-14820	RING, Internal retaining	8
LW-14995	SPRING, Shroud tube	6
LW-18038	GASKET, Turbo oil drain adapter	1
LW-18638	LOCKPLATE, Crankshaft gear	1
LW-18661	SEAL, Shroud tube	12
MS28775-137	“O” RING	1
MS29512-02	SEAL, “O” ring	1
MS29512-04	SEAL, “O” ring	4
MS29512-06	SEAL, “O” ring	7
MS29512-08	SEAL, “O” ring	2
MS29513-138	SEAL, “O” ring	1
STD-1737	RING, External retaining	1
STD-1821	HOSE, Drain back tube	6
STD-213	SEAL, Fuel pump adapter	1
STD-2231	RING, Internal retaining	1
02M22920	HOSE, Air inlet housing	1
06A19956	SEAL, Vacuum and hydraulic pump adapter	2
06B21326	GASKET, Sump	1
06E19769-0.63	GASKET, Oil cooler by-pass	1
06E19769-1.00	GASKET, Oil suction screen	1
06E19769-1.25	GASKET, Oil pressure relief	1
61183	GASKET, Accessory adapter	1
62224	GASKET, Magneto adapter	2
66224	GASKET, Fuel injector	1
68315	GASKET, Accessory drive adapter	1
69164	GASKET, Fuel pump adapter	1
69603	HOSE, Intake pipe	6
70310	SEAL, Shroud tube	12
70455	GASKET, Propeller drive plug	1
70457	GASKET, Oil filler adapter	1
71481	RING, Seal, cylinder base	6
71667	LOCKPLATE, Fuel idler gear shaft	1
71973	GASKET, Intake flange	6
72053	GASKET, Governor	1
72091	RING, Oil seal	2
73383	LOCKPLATE, Alternator bracket	1

SERVICE KIT SECTION SEAL AND GASKET SET (Continued)

Part No.	Part Name	Qty.
05K23204	SEAL AND GASKET SET (Continued)	
73818	GASKET, Accessory housing	1
74065	RING, Oil level gage seal	1
75845	GASKET, V-band (2.25 tube)	1
75906	GASKET, Rocker box cover	6
77504	GASKET, Fuel injector	1
77611	GASKET, Exhaust flange	6
77813	GASKET, Turbo oil inlet adapter	1
78084	GASKET, V-band (2.00 tube)	1
8313	GASKET, Vacuum pump	2

SERVICE KIT SECTION CYLINDER, PISTON & RING ASSY. KIT

Part No.	Part Name	Qty.
05K23161	KIT - CYLINDER, PISTON AND RING ASSY.	1
16A22130	CYLINDER & HEAD ASSEMBLY	1
LW-10077	SEAT, Valve spring, upper	1
LW-11795	SPRING, Valve, inner	2
LW-11800	SPRING, Valve, outer	2
LW-12733	PISTON, 8.0:1 compression ratio	1
LW-13323	SEAT, Valve spring, lower	1
LW-14078	PIN, Piston	1
LW-16475	SEAT, Valve spring, upper exhaust	1
LW-18661	SEAL, Shroud tube	2
LW-19001	VALVE, Exhaust, rotator type	1
MS20823-6D	ELBOW, 45°, 3/8 flared tube	1
STD-1353	INSERT, No. 10-24 x 3/8 long	1
14H21990	RING, Piston oil	1
16R22126	GUIDE, Valve, exhaust	1
17C19386	CAP, Valve stem exhaust (rotator)	1
17C21191	KEY, Valve, exhaust	2
25C-8	STUD, 1/4-20 x 1.00 long	1
31C-12	STUD, 5/16-18 x 1-1/2 long	2
60009	KEY, Valve, intake	2
65441	SEAT, Valve spring, lower intake	1
66610	BUSHING, Rocker shaft	4
69260	INSERT, Spark plug	2
70310	SEAL, Shroud tube	2
71481	RING, Oil seal	1
71973	GASKET, 2 bolt flange, 1-3/4 I.D.	1
72057	SEAT, Valve, intake	1
72058	SEAT, Valve, exhaust	1

SERVICE KIT SECTION CYLINDER, PISTON & RING ASSY. KIT (Continued)

Part No.	Part Name	Qty.
05K23161	KIT – CYLINDER, PISTON AND RING ASSY. (Continued)	
72198	PLUG, Piston pin	2
73938	VALVE, Intake	1
74241	RING, Piston compression	2
75906	GASKET, Rocker box cover	1
76943	GUIDE, Valve, intake	1
77611	GASKET, Exhaust flange	1
951391	“O” RING	2
SSP-299	TAG	1

SERVICE KIT SECTION CRANKCASE ASSY. AND THRU STUD KIT

Part No.	Part Name	Qty.
11E24005-S1-S	CRANKCASE ASSY. AND THRU STUD KIT	1
11E24005-S1	CRANKCASE ASSEMBLY	1
AN565B1032H4	SET SCREW	1
AN565B1032H5	SET SCREW	1
LW-13794	STUD, 5/16-18 x 1.00 long, dr.	1
SSP-272	TAG, Piston cooling nozzles	1
SSP-514	DOWEL	2
SSP-557	DOWEL	2
SSP-1339	PLUG, 1/16-27 NPT	7
SSP-1576	TAG, Gov. dr. idler shaft	1
31C-12	STUD, 5/16-18 x 1-1/2 long	2
31C-13	STUD, 5/16-18 x 1-5/8 long	1
31C-17	STUD, 5/16-18 x 2-1/8 long	4
38-13	STUD, 3/8-16 x 1-5/8 long	24
38-16	STUD, 3/8-16 x 2.00 long	8
38-22	STUD, 3/8-16 x 2-3/4 long	1
38D-17	STUD, 3/8-16 x 2-1/8 long	1
50-15	STUD, 1/2-13 x 1-7/8 long	12
1102	PLUG, 1/8 pipe	4
69796	DOWEL, Crankshaft bearing	2
72158	BUSHING, Gov. dr. idler shaft	1
76220	THRU STUD	8

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LW-25-1.25	Bolt	6-3	LW-12798-4S204	Hose Assy.	4-1
LW-25-1.50	Bolt	1-13	LW-12798-4S274	Hose Assy.	7-7
LW-25-1.50	Bolt	2-3	LW-12798-4S303	Hose Assy.	4-1
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LW-16266-10-63	Clamp	6-9	STD-8	Washer	2-7
LW-16266-10-63	Clamp	7-7	STD-8	Washer	2-9
LW-16266-10-75	Clamp	6-7	STD-8	Washer	2-11
LW-16266-25-63	Clamp	6-5	STD-8	Washer	6-1
LW-16266-25-63	Clamp	7-5	STD-8	Washer	6-3
LW-16475	Scat, Exhaust	3-5	STD-8	Washer	6-5
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LW-16711	Bearing	1-5	STD-33	Washer	1-3
LW-16783-24	Gage Assy.	1-3	STD-33	Washer	1-13
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