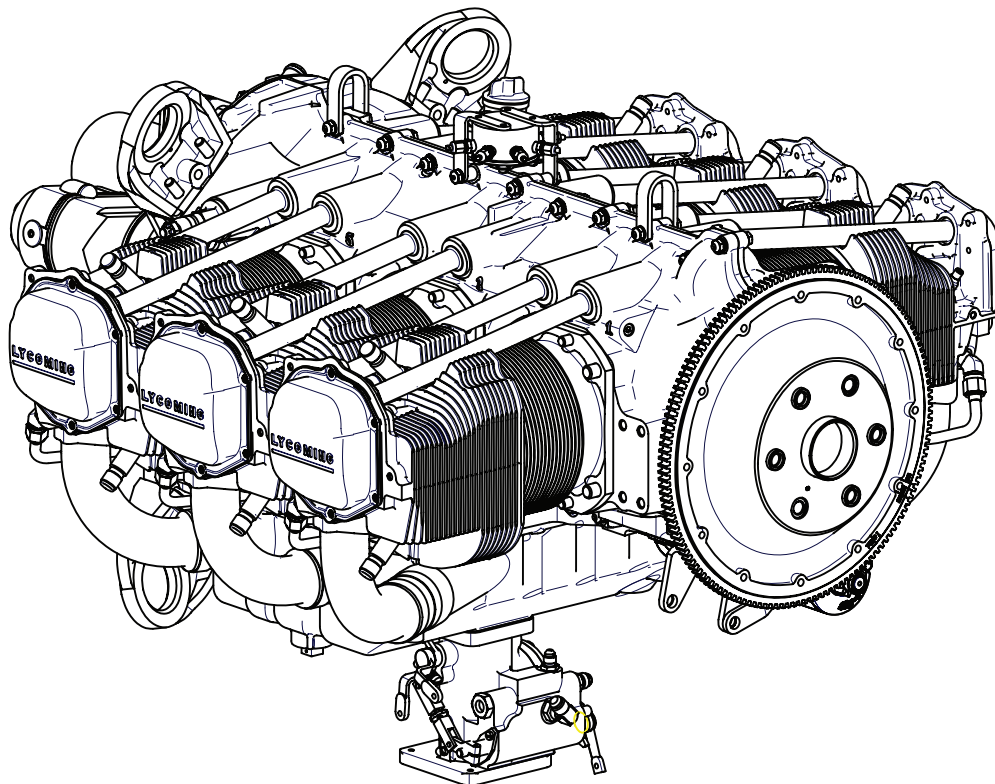


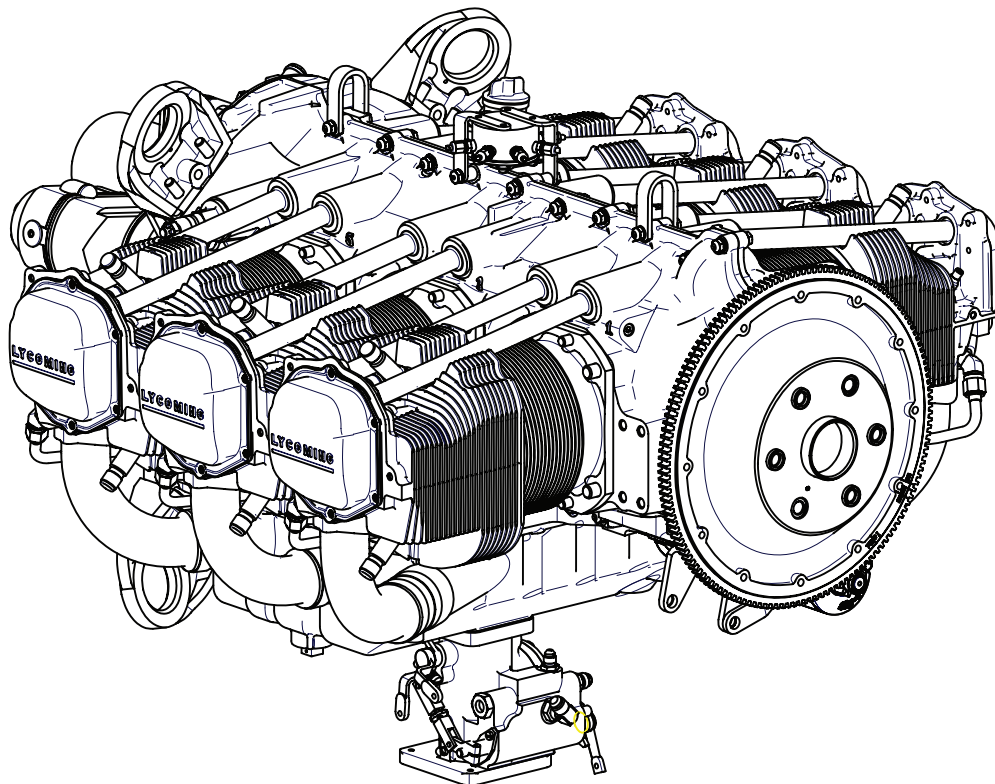
Lycoming Aircraft Engines Parts Catalog



O-540-J and L Series **Wide Cylinder Flange Crankcase Model Engines**

LYCOMING

Lycoming Aircraft Engines Parts Catalog



O-540-J and L Series Wide Cylinder Flange Crankcase Model Engines

LYCOMING

This illustrated parts catalog contains a complete parts listing for the Lycoming O-540-J1A5D, -J3A5, -J3A5D, -J3C5D and -L3C5D wide cylinder flange crankcase model aircraft engines.

Major assembly and sub-assembly parts of the engines 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 Service Instruction No. 1256. | | | | | | | | | | |
| 66610 | BUSHING | | X | X | | | | | | | | |
| 66796 | INSERT | | | X | | | | | | | | |
| 69796 | DOWEL | | X | | | | | | | | | |
| 71903-A,-B | BUSHING | See Latest Edition of Service Instruction No. 1143. | | | | | | | | | | |
| 72057 | SEAT | | X | X | | X | X | | | | | |
| 72058 | SEAT | | | X | | X | X | | | | | |
| 72060-S | BUSHING | | X | X | X | X | | | | | | |
| 72061-S | BUSHING | | X | X | X | X | | | | | | |
| 72062-S | BUSHING | | X | X | X | X | | | | | | |
| 73810 | BUSHING | See Latest Edition of Service Instruction No. 1142. | | | | | | | | | | |
| 74230 | GUIDE | See Latest Edition of Service Instruction No. 1256. | | | | | | | | | | |
| LW-11997 | SEAL | See Latest Edition of Service Instruction No. 1324. | | | | | | | | | | |
| LW-13792 | SEAL | See Latest Edition of Service Instruction No. 1324. | | | | | | | | | | |
| LW-13884 | BEARING | | | | X | | | | | X* | X* | X* |
| LW-15278 | BEARING | | | | X | | | | | X | X | X |
| STD-1065 | DOWEL | X | X | X | X | | | | | | | |
| STD-2078 | DOWEL | X | X | X | X | | | | | | | |
| 18A19441 | BEARING | | | | X | | | | | X | X | X |

* 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 along 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. | PART NUMBER | DESCRIPTION | ON ALL | J 1 A 5 D | J 3 A 5 | J 3 A 5 D | J 3 C 5 D | L 3 C 5 D |
|-----------|-------------|--|--------|-----------|---------|-----------|-----------|-----------|
| 1 | 11E20000-D1 | CRANKCASE ASSEMBLY (See Note) | | 1 | | 1 | | |
| | 11E20000-D2 | CRANKCASE ASSEMBLY (See Note) | | | | | 1 | 1 |
| | 11E20000-S1 | CRANKCASE ASSEMBLY (See Note) | | | 1 | | | |
| 2 | 31C-12 | STUD, 5/16-18 x 1-1/2 long | 2 | | | | | |
| 3 | 31C-13 | STUD, 5/16-18 x 1-5/8 long | 1 | | | | | |
| 4 | 38-13 | STUD, 3/8-16 x 1-5/8 long | 24 | | | | | |
| 5 | 50-15 | STUD, 1/2-13 x 1-7/8 long | 12 | | | | | |
| 6 | 38-22 | STUD, 3/8-16 x 2-3/4 long | 1 | | | | | |
| 7 | 38D-17 | STUD, 3/8-16 x 2-1/8 long | 1 | | | | | |
| 8 | 38-16 | STUD, 3/8-16 x 2.00 long | 8 | | | | | |
| 9 | 69796 | DOWEL, Crankshaft bearing | 2 | | | | | |
| 10 | STD-514 | DOWEL, 5/16 dia. x 1/2 long | 2 | | | | | |
| 11 | STD-557 | DOWEL, 1/2 dia. x 11/16 long | 2 | | | | | |
| 12 | 72158 | BUSHING, Gov. drive idler shaft | 1 | | | | | |
| 13 | STD-1339 * | PLUG, 1/16-27 NPT | 7 | | | | | |
| 14 | 1102 | PLUG, 1/8 pipe | 4 | | | | | |
| 15 | 31C-14 | STUD, 5/16-18 x 1-3/4 long (AN Governor) | | | 4 | 4 | | |
| | 31C-16 | STUD, 5/16-18 x 2.00 long (Woodward Governor) | | 4 | 4 | | 4 | 4 |
| 16 | 65007 ** | RETAINER, Shroud tube seal | 12 | | | | | |
| 17 | 73772 | NOZZLE ASSY., Piston cooling | | | | | | 6 |

* 1 at governor pad, 6 at piston squirt holes.

** Early crankcases used item no. 16 retainer, P/N 65007, installed in shroud tube bosses. Later crankcases are machined as a product improvement to accept shroud tube without retainers. This part is a service item only.

NOTE

This part is not available as a service item. Refer to Section 7, Service Kits for applicable Crankcase Assy. and Governor and Thru Stud Kit part numbers.

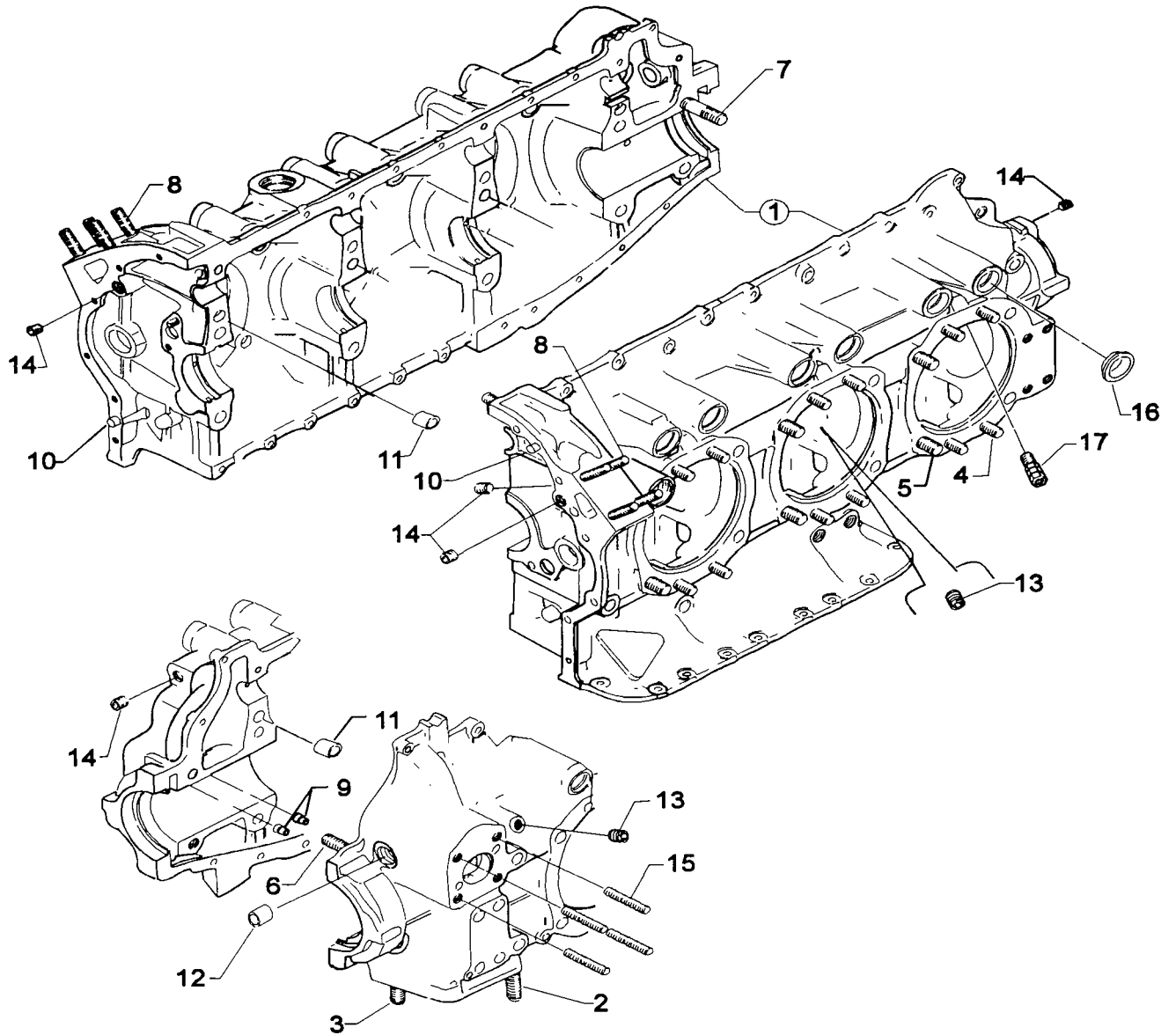


Figure 1. CRANKCASE ASSEMBLY

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

| FIG. REF. | PART NUMBER | DESCRIPTION | ON ALL | J | J | J | J | L |
|-----------|----------------|--|--------|---|---|---|---|---|
| | | | | 1 | 3 | 3 | 3 | 3 |
| 2 | | | | A | A | A | C | C |
| | | | | 5 | 5 | 5 | 5 | 5 |
| | | | | D | | D | D | D |
| 1 | 70457 | GASKET, Oil filler extension | | 1 | 1 | 1 | | |
| 2 | 75675 | EXTENSION, Oil filler (short) | | 1 | 1 | | | |
| | 77527 | EXTENSION, Oil filler | | | 1 | 1 | | |
| 3 | 72312 | RING, Oil seal, 1.00 I.D. x 1/8 section | | | 1 | 1 | | |
| | 74065 | RING, Oil level gage seal | | 1 | | | | |
| 4 | LW-14747 | GAGE ASSY., Oil level (cam action) | | | 1 | 1 | | |
| | LW-14771 | GAGE ASSY., Oil level | | 1 | 1 | | | |
| 5 | 06E19769-0.63 | GASKET, 7/8 O.D. x 5/8 I.D. x 3/32 annular | | | | | 1 | 1 |
| 6 | LW-16254 | ADAPTER, Oil level gage | | | | | 1 | 1 |
| 7 | LW-16255 | TUBE ASSY., Oil level gage | | | | | 1 | 1 |
| 8 | 75414 * | BRACKET, Fuel manifold | | | | | 1 | 1 |
| 9 | STD-8 * | WASHER, 1/4 plain | | | | | 2 | 2 |
| 10 | STD-1874 * | SCREW, 1/4-20 x 7/8 long | | | | | 1 | 1 |
| 11 | LW-16266-25-38 | CLAMP | | | | | 1 | 1 |
| 12 | STD-160 | WASHER, 1/4 lock, internal teeth | | | | | 1 | 1 |
| 13 | LW-25-0.50 | BOLT, 1/4-20 x 1/2 long | | | | | 1 | 1 |
| 14 | STD-1411 | NUT, 1/4-20 plain | | | | | 1 | 1 |
| 15 | STD-1733 | RING, Oil seal, 1/4 x 1/16 | | | | | 1 | 1 |
| 16 | LW-16256 | GAGE ASSY., Oil level (side mounted) | | | | | 1 | 1 |
| 17 | 70457 | GASKET, Oil filler extension | | | | | 1 | 1 |
| 18 | LW-15556 | PLUG, Oil filler hole | | | | | 1 | 1 |
| 19 | 75737 | EXTENSION, Oil filler | | | | | 1 | 1 |
| 20 | 74068 | RING, Oil level gage plug | | | | | 1 | 1 |
| 21 | 12A19770 | BRACKET, Engine mounting (dynafocal) | 4 | | | | | |
| 22 | STD-33 | WASHER, 3/8 plain | 16 | | | | | |
| 23 | STD-678 | WASHER, 3/8 lock, internal teeth | 16 | | | | | |
| 24 | STD-596 | NUT, 3/8-24 plain | 16 | | | | | |

* Assemble at rocker box cover hole.

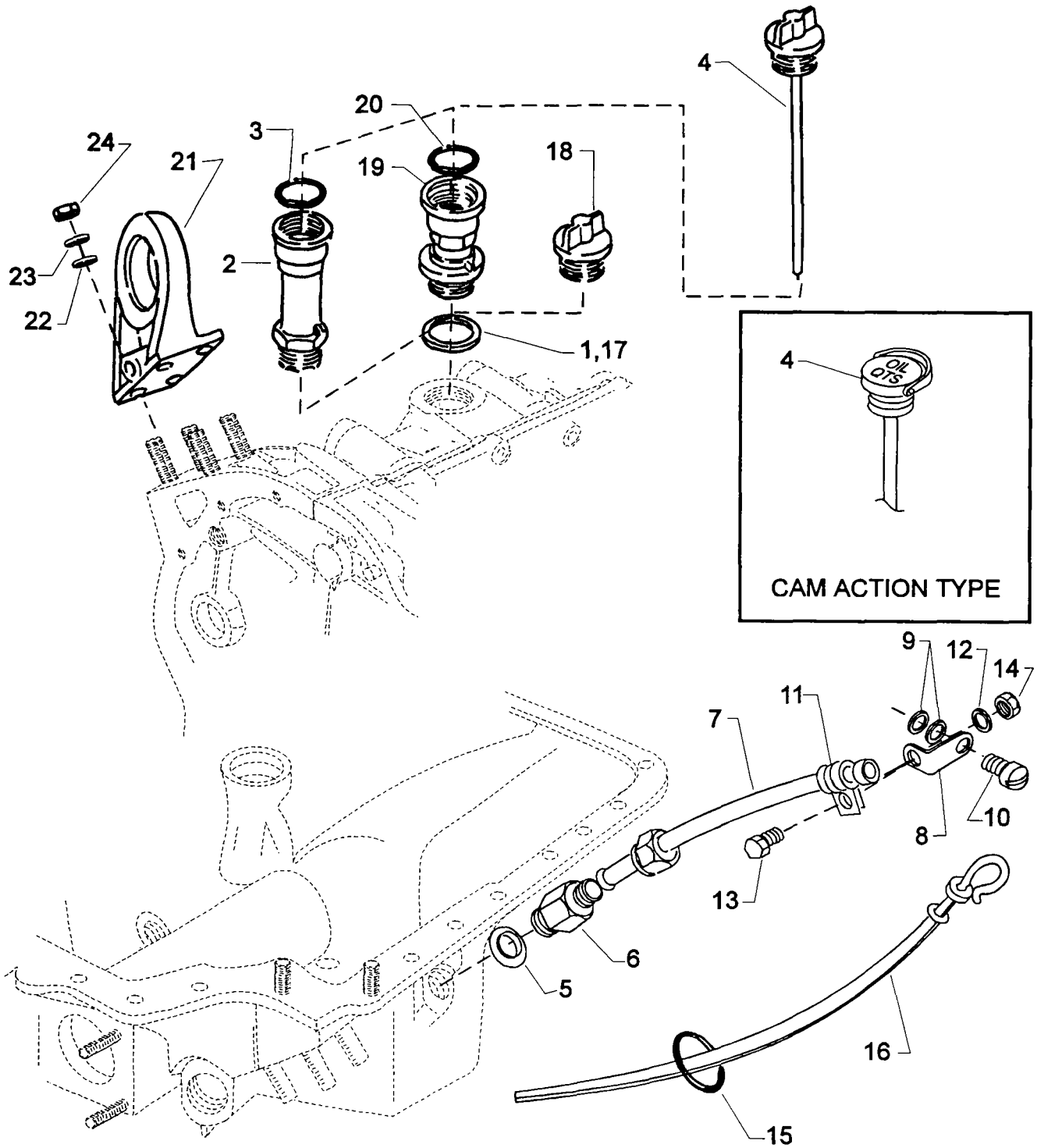


Figure 2. OIL LEVEL GAGE AND ENGINE MOUNTING BRACKET

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP CRANKCASE RELATED PARTS

| FIG. REF. | PART NUMBER | DESCRIPTION | ON ALL | J 1 A 5 D | J 3 A 5 | J 3 A 5 D | J 3 C 5 D | L 3 C 5 D |
|-----------|---------------|--|--------|-----------|---------|-----------|-----------|-----------|
| 3 | | | | | | | | |
| 1 | 1028-B | BALL, 11/16 dia. | 1 | | | | | |
| 2 | 61084 * | SPRING, Oil pressure relief valve | AR | | | | | |
| | 68668 * | SPRING, Oil pressure relief valve | AR | | | | | |
| | 77467 * | SPRING, Oil pressure relief valve | AR | | | | | |
| | LW-11713 * | SPRING, Oil pressure relief valve | AR | | | | | |
| | LW-18085 * | SPRING, Oil pressure relief valve | AR | | | | | |
| 3 | 06E19769-1.25 | GASKET, 1-1/4 I.D. x 1-1/2 O.D. x 3/32 annular | 1 | | | | | |
| 4 | 77808 | VALVE ASSY., Oil pressure relief, adjustable | 1 | | | | | |
| 5 | LW-15278 | 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. | 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.

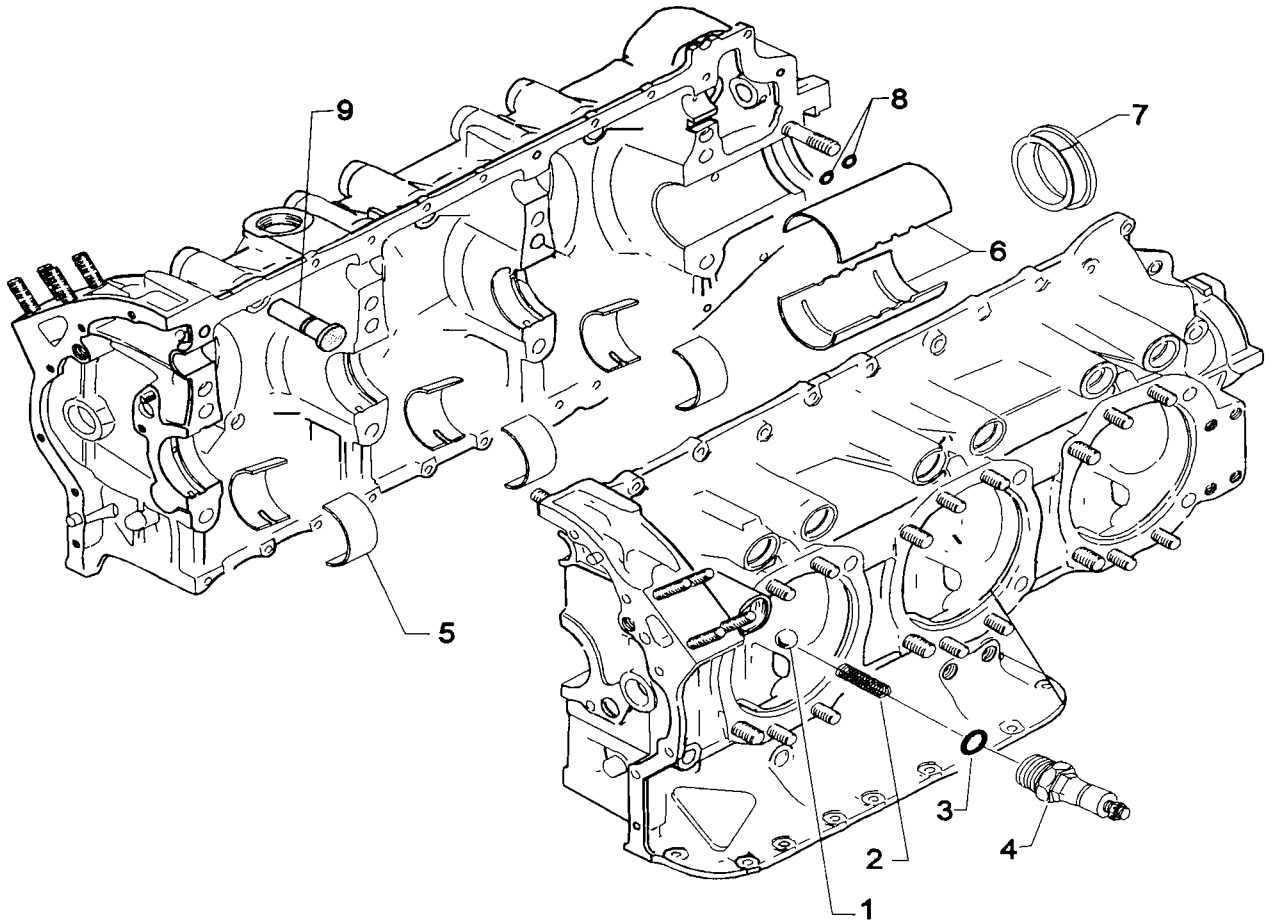


Figure 3. CRANKCASE RELATED PARTS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP CRANKSHAFT AND RELATED PARTS

| FIG. REF. | PART NUMBER | DESCRIPTION | ON ALL | J 1 A 5 D | J 3 A 5 | J 3 A 5 D | J 3 C 5 D | L 3 C 5 D |
|-----------|-------------|---|--------|-----------|---------|-----------|-----------|-----------|
| 1 | 13E17682 | CRANKSHAFT & COUNTERWEIGHT ASSY. | | 1 | | | | |
| | 13E17683 | CRANKSHAFT & COUNTERWEIGHT ASSY. | | | | 1 | 1 | 1 |
| | 13E17687 | CRANKSHAFT & COUNTERWEIGHT ASSY. | | | 1 | | | |
| 2 | 13E17626 | CRANKSHAFT & BUSHING ASSY. | | 1 | | | | |
| | 13E17652 | CRANKSHAFT & PLUG ASSY. | | | | 1 | 1 | 1 |
| | 13E17656 | CRANKSHAFT & PLUG ASSY. | | | 1 | | | |
| 3 | STD-1211 | PLUG, 2.00 dia. expansion | 1 | | | | | |
| 4 | 73810* | BUSHING, Crankshaft, dyn. cwt. | 4 | | | | | |
| 5 | 61510 | PLUG, 1-3/4 O.D. | 1 | | | | | |
| 6 | 72060-S | BUSHING, Prop. flange, indexing | 1 | | | | | |
| 7 | 72061-S | BUSHING, Prop. flange, short | 1 | | | | | |
| 8 | 72062-S | BUSHING, Prop. flange, long | 4 | | | | | |
| 9 | STD-1065 | DOWEL, Stepped, 5/16 x 1/4 dia. x 35/64 long | | | 1 | | | |
| 10 | STD-2078 | DOWEL, 3/8 O.D. x 1/2 long | | 1 | | 1 | 1 | 1 |
| 11 | LW-19210** | COUNTERWEIGHT ASSY. | | | 2 | 2 | 2 | 2 |
| | LW-19227** | COUNTERWEIGHT ASSY., | | 2 | | | | |
| 12 | 71903 | BUSHING, Dynamic counterweight | 4 | | | | | |
| 13 | 76788 | ROLLER, Dyn. cwt., 6.3 order | | | 2 | 2 | 2 | 2 |
| | 72797 | ROLLER, Dyn. cwt., 6.3 order | | 2 | | | | |
| 14 | LW-15558 | ROLLER, Dyn. cwt., 4.8 order | | | 2 | 2 | 2 | 2 |
| | 72965 | ROLLER, Dyn. cwt., 5.1 order | | 2 | | | | |
| 15 | LW-14820 | RING, Internal retaining | 8 | | | | | |
| 16 | 71907 | WASHER, Dynamic counterweight | 8 | | | | | |
| 17 | 13S19647★ | GEAR, Crankshaft | | | 1 | | | |
| | 13S19649★ | GEAR, Crankshaft | | 1 | | 1 | 1 | 1 |
| 18 | LW-18638 | LOCKPLATE, Crankshaft gear | | | 1 | | | |
| | LW-10332 | LOCKPLATE, Crankshaft gear | | 1 | | 1 | 1 | 1 |
| 19 | STD-2209 | BOLT, 5/16-24 x 1-3/4 long | | | 1 | | | |
| | AN8-14A | BOLT, 1/2-20 x 1-19/32 long | | 1 | | 1 | 1 | 1 |
| 20 | LW-16064 | SUPPORT ASSY., Starter ring gear, 12/14 pitch | | | | 1 | | |
| | LW-16471 | SUPPORT ASSY., Starter ring gear, 12/14 pitch | 1 | | | | | |
| 21 | 72566 | GEAR, Starter ring | 1 | | | | | |

- * See latest edition of
- ** See latest edition of
- ★ See latest edition of

Lycoming Service Instruction No. 1142.
Lycoming Service Instruction No. 1012.
Lycoming Service Bulletin No. 475.

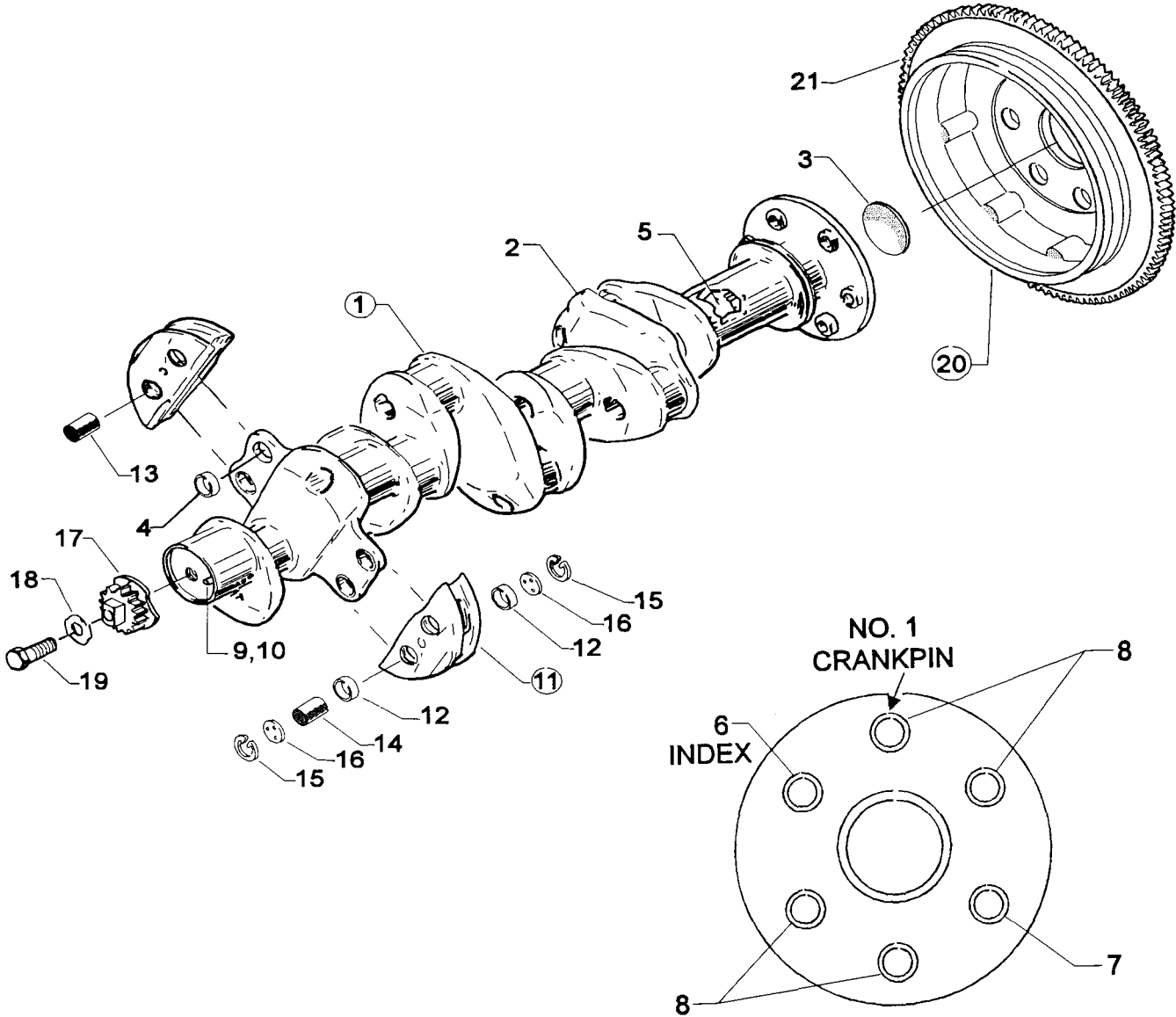


Figure 4. CRANKSHAFT AND RELATED PARTS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP CAMSHAFT AND RELATED PARTS

| FIG. REF. 5 | PART NUMBER | DESCRIPTION | ON ALL | J 1 A 5 D | J 3 A 5 | J 3 A 5 D | J 3 C 5 D | L 3 C 5 D |
|-------------------|----------------|------------------------------------|-----------|-----------------------|------------------|-----------------------|-----------------------|-----------------------|
| 1 | LW-19340 | CAMSHAFT ASSEMBLY | 1 | | | | | |
| 2 | 76118 | SPACER, Tachometer shaft centering | 1 | | | | | |
| 3 | 76155 | SHAFT ASSEMBLY, Tachometer | 1 | | | | | |
| 4 | LW-18667 | PIN, 3/16 dia. x 2-21/64 long | 1 | | | | | |
| 5 | STD-2231 | RING, Internal retaining | 1 | | | | | |

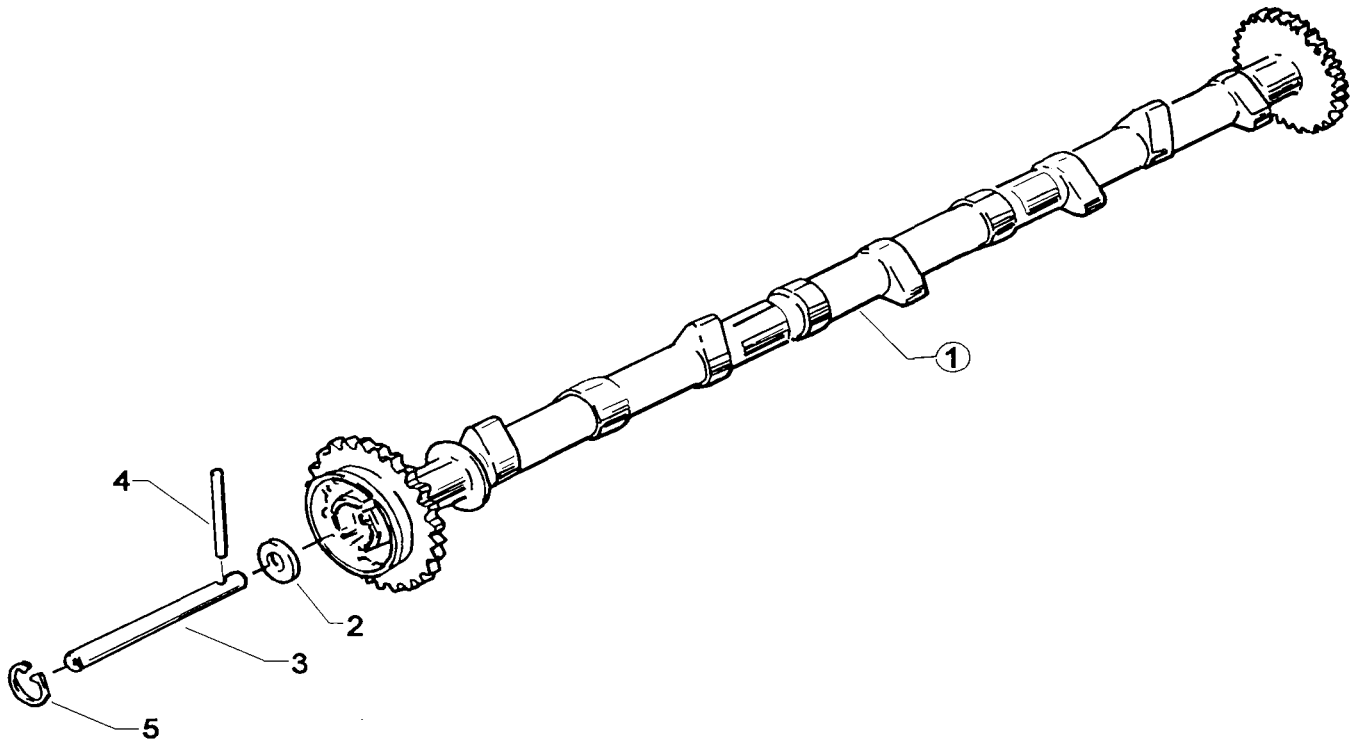


Figure 5. CAMSHAFT ASSEMBLY

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

| FIG. REF. | PART NUMBER | DESCRIPTION | ON ALL | J 1 A 5 D | J 3 A 5 | J 3 A 5 D | J 3 C 5 D | L 3 C 5 D |
|-----------|---------------|--|--------|-----------|---------|-----------|-----------|-----------|
| 6 | | | | | | | | |
| 1 | LW-10442 | GEAR, Prop. governor driven | 1 | | | | | |
| 2 | LW-14021 | SHAFT, Prop. governor idler gear | 1 | | | | | |
| 3 | LW-10541 | GEAR ASSY., Prop. governor idler | 1 | | | | | |
| 4 | 77872 | BUSHING, Prop. gov. 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 1/32 thick | 1 | | | | | |
| 10 | LW-13896 | PLUG, 3/4-16 hex. hd. | 1 | | | | | |
| 11 | 72053 | GASKET, Governor | 1 | | | | | |
| 12 | 72378 | COVER, Governor drive | 1 | | | | | |
| 13 | STD-35 | WASHER, 5/16 plain (Woodward governor) | 20 | | | | | |
| | STD-35 | WASHER, 5/16 plain (AN governor) | 4 | | | | | |
| 14 | STD-475 | WASHER, 5/16 lock, internal teeth | 4 | | | | | |
| 15 | STD-1410 | NUT, 5/16-18 plain | 4 | | | | | |

* See latest edition of Lycoming Service Instruction No. 1343 for application.

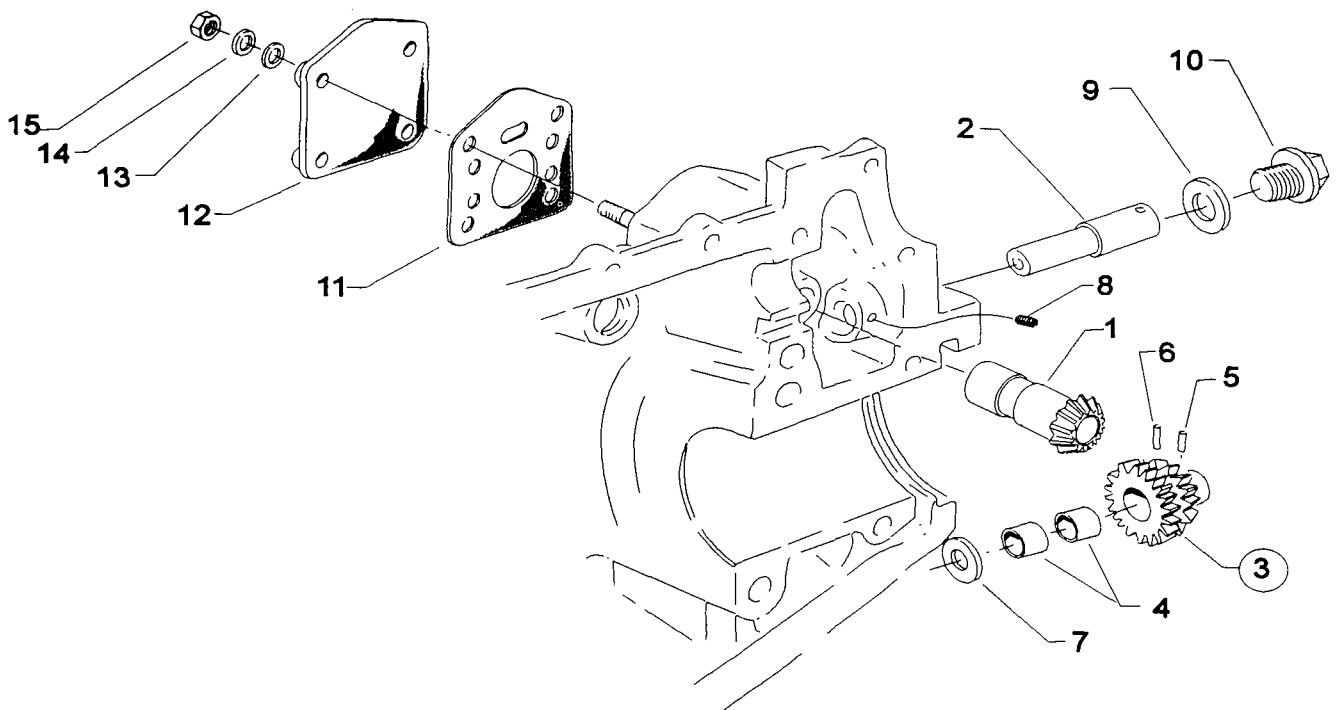


Figure 6. PROPELLER GOVERNOR DRIVE (CRANKCASE)

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP CRANKSHAFT IDLER GEARS

| FIG. REF. | PART NUMBER | DESCRIPTION | ON ALL | J 1 A 5 D | J 3 A 5 | J 3 A 5 D | J 3 C 5 D | L 3 C 5 D |
|-----------|-------------|--|--------|-----------|---------|-----------|-----------|-----------|
| 7 | | | | | | | | |
| 1 | 61544 | PLUNGER, Fuel pump, long | 1 | | | | | |
| 2 | LW-10290 | GEAR ASSY., Crankshaft idler | | 1 | | 1 | 1 | 1 |
| 3 | LW-10299 | BUSHING, Crankshaft idler gear | | 1 | | 1 | 1 | 1 |
| 4 | LW-10659 | GEAR ASSY., Crankshaft idler | | 1 | | 1 | 1 | |
| 5 | LW-10299 | SHAFT, Crankshaft idler gear | | 1 | | 1 | 1 | |
| 6 | LW-10325 | SPACER, Idler gear | | 1 | | 1 | 1 | |
| 7 | LW-10297 | GEAR ASSY., Crankshaft idler | | | | | | 1 |
| 8 | LW-10300 | SHAFT, Crankshaft idler gear | | | | | | 1 |
| 9 | LW-10325 | SPACER, Idler gear | | | | | | 1 |
| 10 | 71652 | GEAR ASSY., Crankshaft idler | | | 1 | | | |
| 11 | 67530 | BUSHING, Crankshaft idler gear | | | 1 | | | |
| 12 | 71668 | GEAR ASSY., Crankshaft idler | | | 1 | | | |
| 13 | 67530 | BUSHING, Crankshaft idler gear | | | 1 | | | |
| 14 | LW-13795 | SHAFT, Crankshaft idler gear | | | 2 | | | |
| 15 | STD-2167 | SCREW, 5/16-18 x 7/8 long, hex. hd., dr. | | | 3 | | | |
| 16 | STD-2168 | NUT, 5/16-18 NC-3 slotted shear | | | 1 | | | |

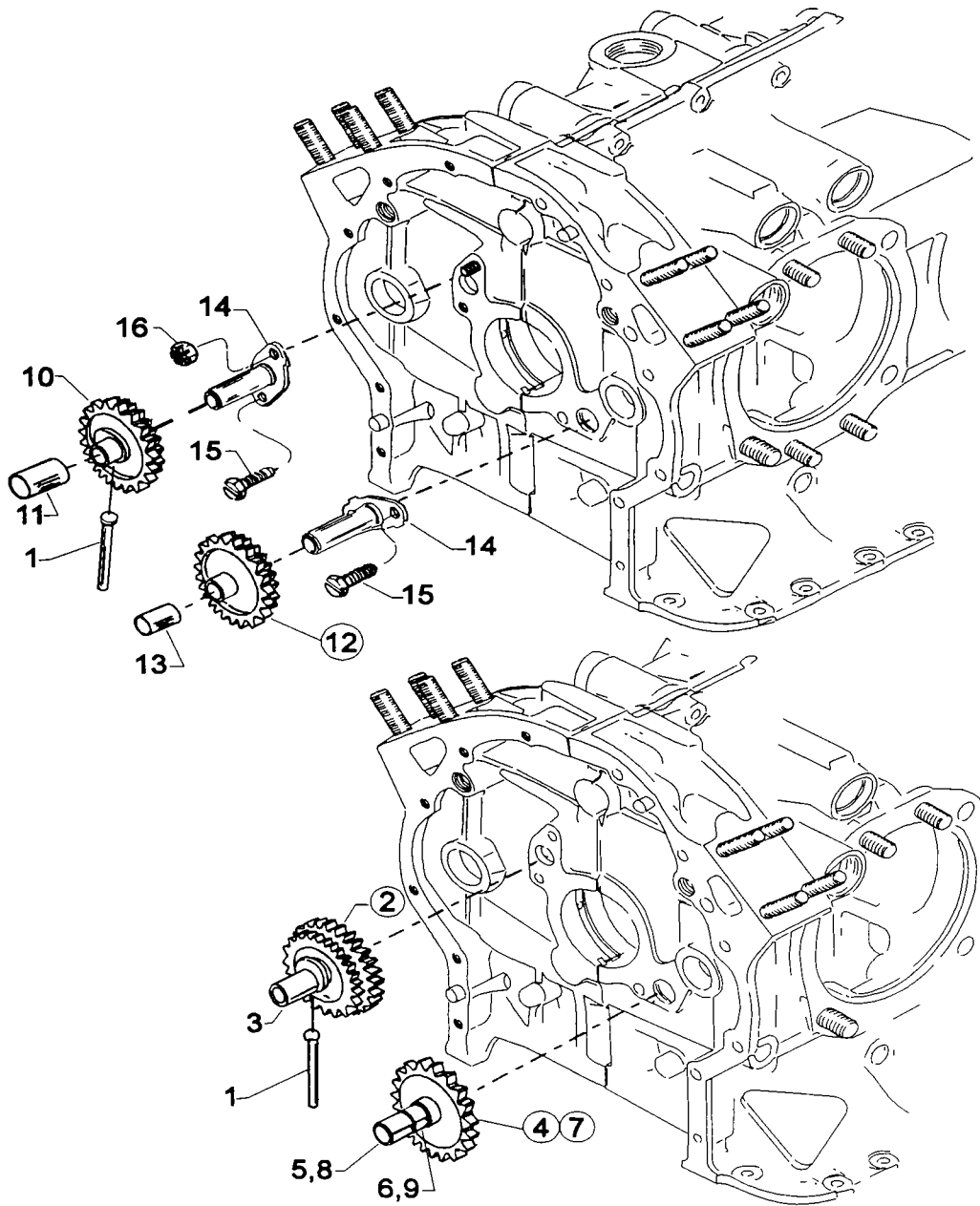


Figure 7. CRANKSHAFT IDLER GEARS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP CRANKCASE ATTACHING PARTS

| FIG. REF. 8 | PART NUMBER | DESCRIPTION | ON ALL | J 1 A 5 D | J 3 A 5 | J 3 A 5 D | J 3 C 5 D | L 3 C 5 D |
|----------------|-------------|---------------------------------------|--------|-----------|---------|-----------|-----------|-----------|
| 1 | LW-25-1.50 | BOLT, 1/4-20 x 1-1/2 long. hex. hd. | 11 | | | | | |
| 2 | STD-8 | WASHER, 1/4 plain | 27 | | | | | |
| 3 | 60803 | STRAP, Lifting | | | | 1 | 1 | 1 |
| | 60803 | STRAP, Lifting | | 2 | 2 | 2 | 2 | 2 |
| 4 | LW-25-1.75 | BOLT, 1/4-20 x 1-3/4 long. hex. hd. | | | | 1 | 1 | 1 |
| | LW-25-1.75 | BOLT, 1/4-20 x 1-3/4 long. hex. hd. | | 2 | 2 | 2 | 2 | 2 |
| 5 | LW-25-1.13 | BOLT, 1/4-20 x 1-1/8 long. hex. hd. | 4 | | | | | |
| 6 | STD-160 | WASHER, 1/4 lock, internal teeth | 16 | | | | | |
| 7 | STD-1411 | NUT, 1/4-20 plain | 12 | | | | | |
| 8 | LW-25S1.50 | BOLT, 1/4-20 x 1-1/2 long. hex. hd. | 6 | | | | | |
| 9 | STD-8 | WASHER, 1/4 plain | 18 | | | | | |
| 10 | STD-1409 | 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. hd. | 1 | | | | | |
| 14 | STD-33 | WASHER, 3/8 plain | | 3 | 3 | 3 | 3 | 3 |
| | STD-33 | WASHER, 3/8 plain | | | | 4 | | |
| 15 | LW-11866 | SPACER, Nut compressor | | | | 2 | | |
| 16 | STD-678 | WASHER, 3/8 lock, internal teeth | | 2 | 2 | 2 | 2 | 2 |
| 17 | STD-596 | NUT, 3/8-24 plain | | 2 | 2 | 2 | 2 | 2 |
| 18 | 76220 | STUD, 1/2-20 x 10-11/16 long | 8 | | | | | |

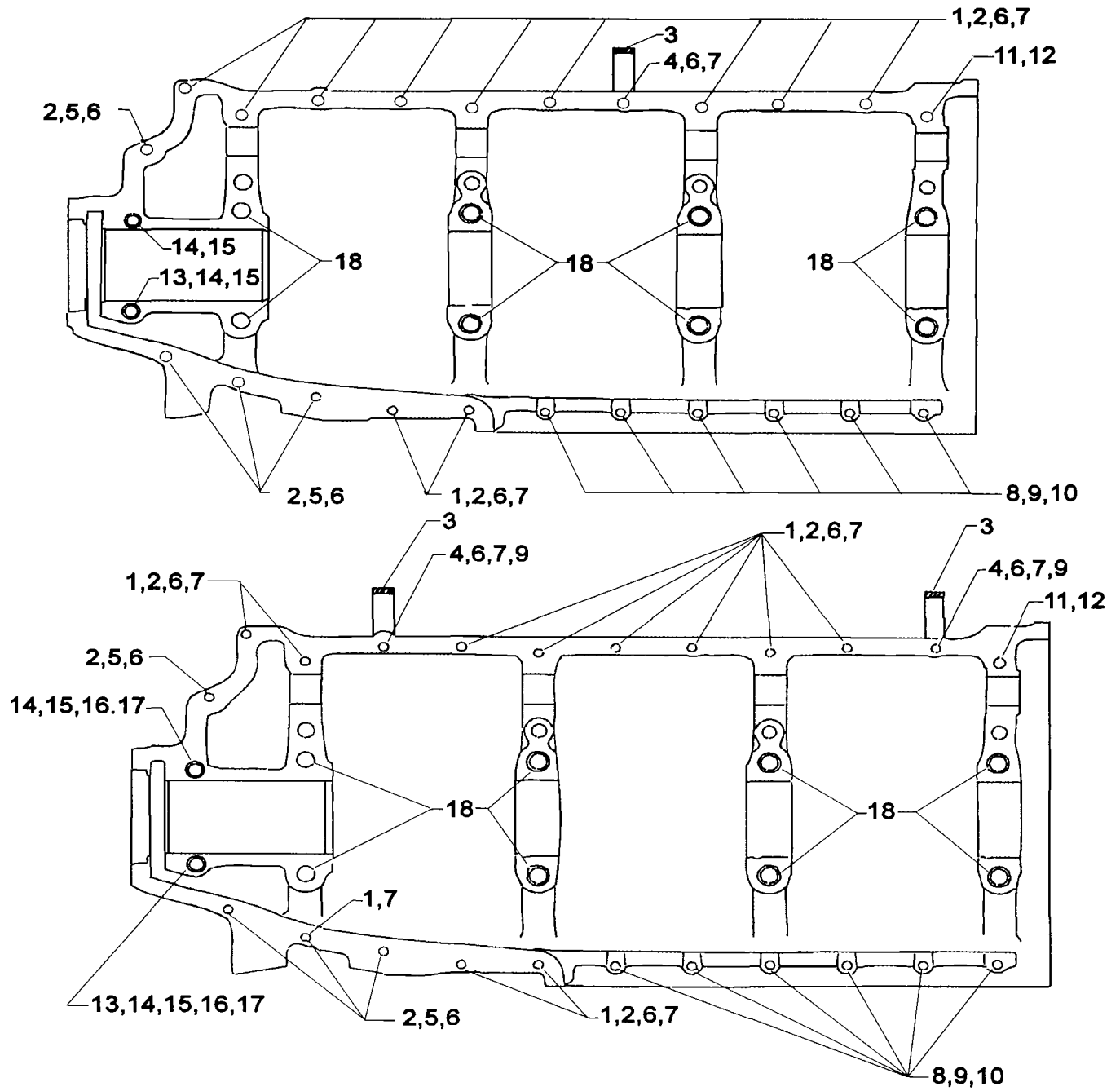


Figure 8. CRANKCASE ATTACHING PARTS

ACCESSORY HOUSING AND RELATED PARTS ACCESSORY HOUSING ASSEMBLY

| FIG. REF. | PART NUMBER | DESCRIPTION | ON ALL | J 1 A 5 D | J 3 A 5 | J 3 A 5 D | J 3 C 5 D | L 3 C 5 D |
|-----------|-------------|---------------------------------------|--------|-----------|---------|-----------|-----------|-----------|
| 1 | 73818 | GASKET, Accessory housing | 1 | | | | | |
| 2 | 21C21539-02 | HOUSING ASSY., Accessory | | | 1 | | | |
| | 21D21607-02 | HOUSING ASSY., Accessory | | 1 | | 1 | 1 | |
| | 21D21607-03 | HOUSING ASSY., Accessory | | | | | | 1 |
| 3 | LW-12589 | INSERT, Helicoil, 5/8-18 x 3/8 long | | 1 | | 1 | 1 | 1 |
| 4 | MS124703 | INSERT, Helicoil, 3/4-16 x 1-1/8 long | | 1 | | 1 | 1 | 1 |
| 5 | LW-10341 | INSERT, Helicoil, 1.00-14 x 3/8 long | | 1 | | 1 | 1 | 1 |
| 6 | 25C-12 | STUD, 1/4-20 x 1-1/2 long | | | | | | 4 |
| | 25C-12 | STUD, 1/4-20 x 1-1/2 long | | 8 | | 8 | 8 | |
| 7 | 25C-19 | STUD, 1/4-20 x 2-3/8 long | | | | | | 3 |
| 8 | 25C-21 | STUD, 1/4-20 x 2-5/8 long | | | 4 | | | |
| 9 | 25C-39 | STUD, 1/4-20 x 4-7/8 long | | | | | | 1 |
| 10 | 31C-12 | STUD, 5/16-18 x 1-1/2 long | | | 4 | | | |
| 11 | 31C-13 | STUD, 5/16-18 x 1-5/8 long | | 2 | | 2 | 2 | 2 |
| 12 | 31C-21 | STUD, 5/16-18 x 1-1/2 long | | | 4 | | | |
| 13 | 31CD-17 | STUD, 5/16-18 x 2-1/8 long, drilled | | | 3 | | | |
| | 31CD-20 | STUD, 5/16-18 x 2-1/2 long, drilled | | 3 | | 3 | 3 | 3 |
| 14 | STD-784 | PLUG, 3/8-18 NPT, Allen hd. | | | 1 | | | |
| 15 | 1102 | PLUG, 1/8-27 NPT, Allen hd. | | 1 | 4 | 1 | 1 | 1 |

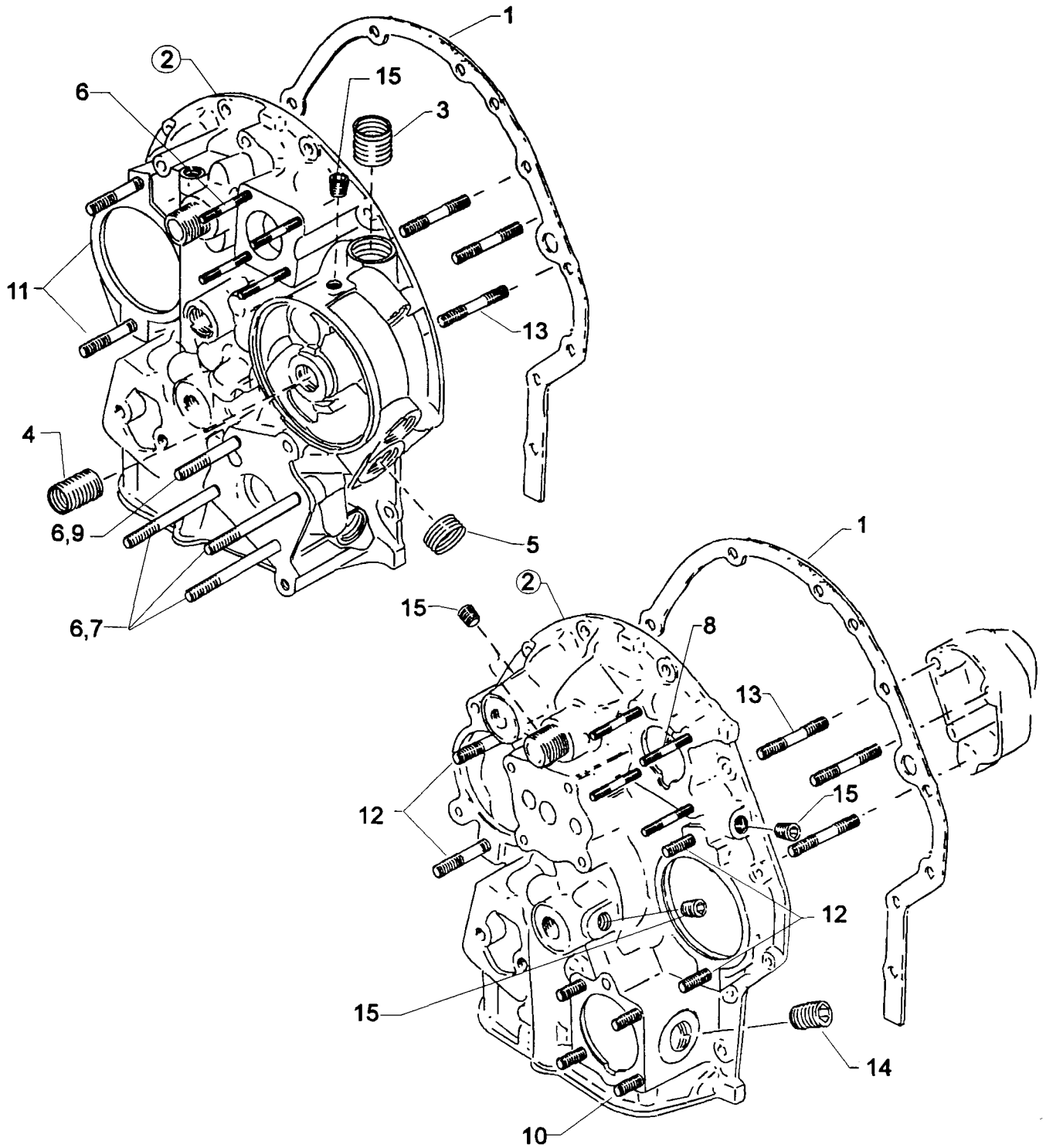


Figure 9. ACCESSORY HOUSING ASSEMBLY

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

| FIG. REF. | PART NUMBER | DESCRIPTION | ON ALL | J 1 A 5 D | J 3 A 5 | J 3 A 5 D | J 3 C 5 D | L 3 C 5 D |
|-----------|--------------|-------------------------------------|--------|-----------|---------|-----------|-----------|-----------|
| 10 | | | | | | | | |
| 1 | 78531 | BODY ASSY., Oil pump | | | 1 | | | |
| 2 | LW-10344 | BODY ASSY., Oil pump | | 1 | | 1 | 1 | 1 |
| 3 | 60329 | SHAFT, Oil pump | | 1 | | 1 | 1 | 1 |
| 4 | STD-714 | PIN, 1/8 dia. x 1.00 long, cotter | | 1 | | 1 | 1 | 1 |
| 5 | 05K19423-S * | OIL PUMP IMPELLER KIT | | | 1 | | | |
| 6 | 74641 | SHAFT, Oil pump drive | | | 1 | | | |
| 7 | LW-10318 | GEAR ASSY., Oil pump drive | | 1 | | 1 | 1 | 1 |
| 8 | 61166 | THRUST BUTTON, Vacuum pump gear | | 1 | | 1 | 1 | 1 |
| 9 | 61297 | IMPELLER, Oil pump driving | | 1 | | 1 | 1 | 1 |
| 10 | 61298 | IMPELLER, Oil pump driven | | 1 | | 1 | 1 | 1 |
| 11 | STD-35 | WASHER, 5/16 plain | 3 | | | | | |
| 12 | STD-1420 | NUT, 5/16-18 slotted | 3 | | | | | |
| 13 | LW-14260 | SEAL, Tachometer drive, oil | 1 | | | | | |
| 14 | STD-8 | WASHER, 1/4 plain | | | 10 | | | |
| 15 | STD-8 | WASHER, 1/4 plain | | 12 | | 12 | 12 | 12 |
| 16 | STD-160 | WASHER, 1/4 lock, internal teeth | 12 | | | | | |
| 17 | LW-25-0.94 | BOLT, 1/4-20 x 15/16 long, hex. hd. | 9 | | | | | |
| 18 | LW-25-1.25 | BOLT, 1/4-20 x 1-1/4 long, hex. hd. | | 1 | | 1 | 1 | 1 |
| 19 | LW-25-0.81 | BOLT, 1/4-20 x 13/16 long, hex. hd. | | 2 | | 2 | 2 | 2 |
| 20 | LW-25-1.13 | BOLT, 1/4-20 x 1-1/8 long, hex. hd. | | | 1 | | | |
| 21 | LW-25-1.50 | BOLT, 1/4-20 x 1-1/2 long, hex. hd. | | | 2 | | | |

* See latest edition of Lycoming Service Bulletin No. 456.

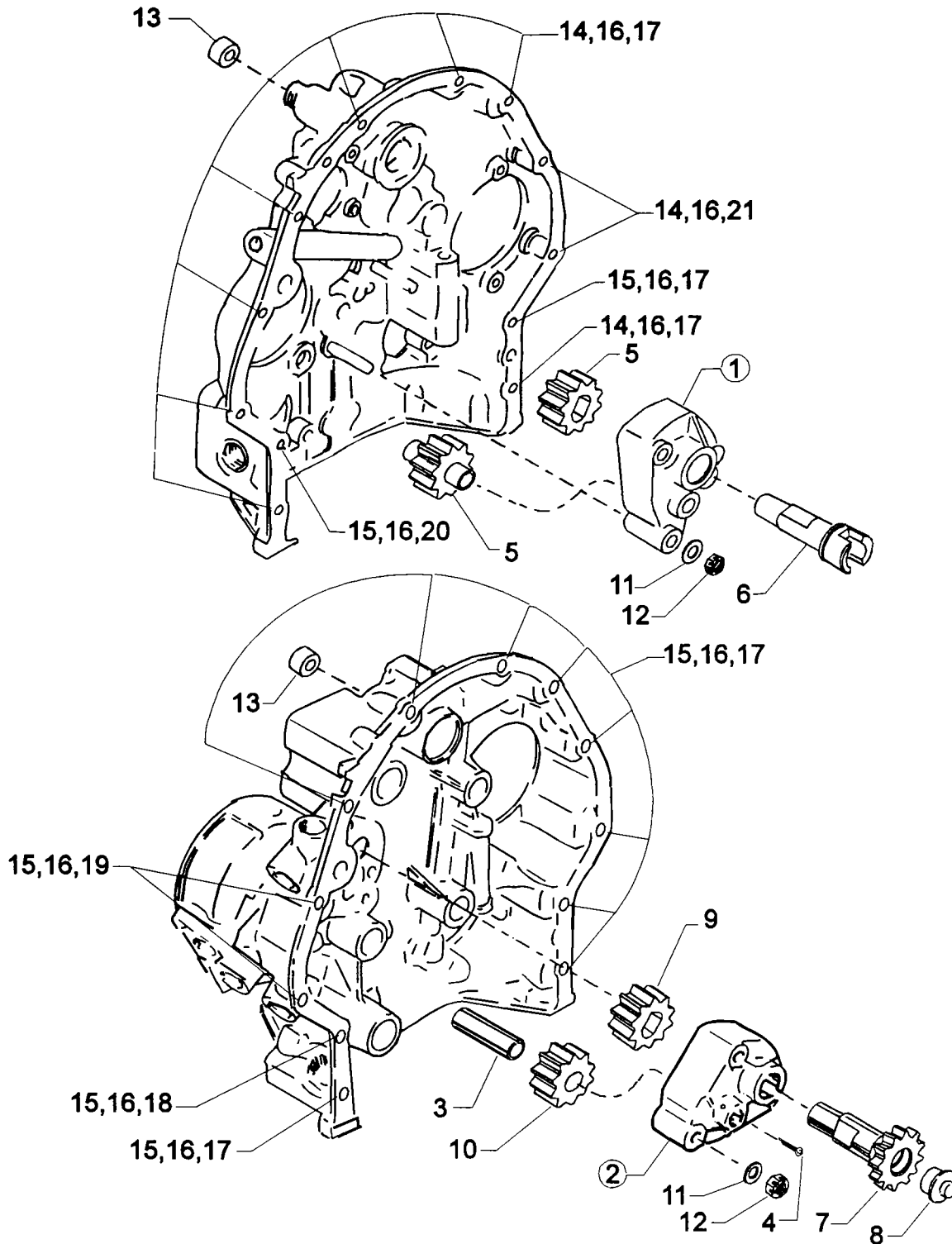


Figure 10. OIL PUMP AND ACCESSORY HOUSING ATTACHING PARTS

ACCESSORY HOUSING AND RELATED PARTS FUEL PUMP ASSEMBLY AND ATTACHING PARTS

| FIG. REF. 11 | PART NUMBER | DESCRIPTION | ON ALL | J | J | J | J | L |
|--------------------|----------------|--|-----------|------------------|-------------|------------------|------------------|------------------|
| | | | | 1 A 5 D | 3 A 5 | 3 A 5 D | 3 C 5 D | 3 C 5 D |
| 1 | 60096 | GASKET, Fuel pump | 1 | | | | | |
| 2 | LW-15472 | FUEL PUMP, Dual diaphragm (6441271) | | 1 | 1 | 1 | 1 | |
| | 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 hd., dr. hd. | 2 | | | | | |
| 5 | 72377 * | ELBOW, 3/8 flared tube, adj. 90° | | | | | 1 | 1 |
| | 72377 | ELBOW, 3/8 flared tube, adj. 90° | | 2 | 2 | | | |

* Assemble in fuel pump inlet only.

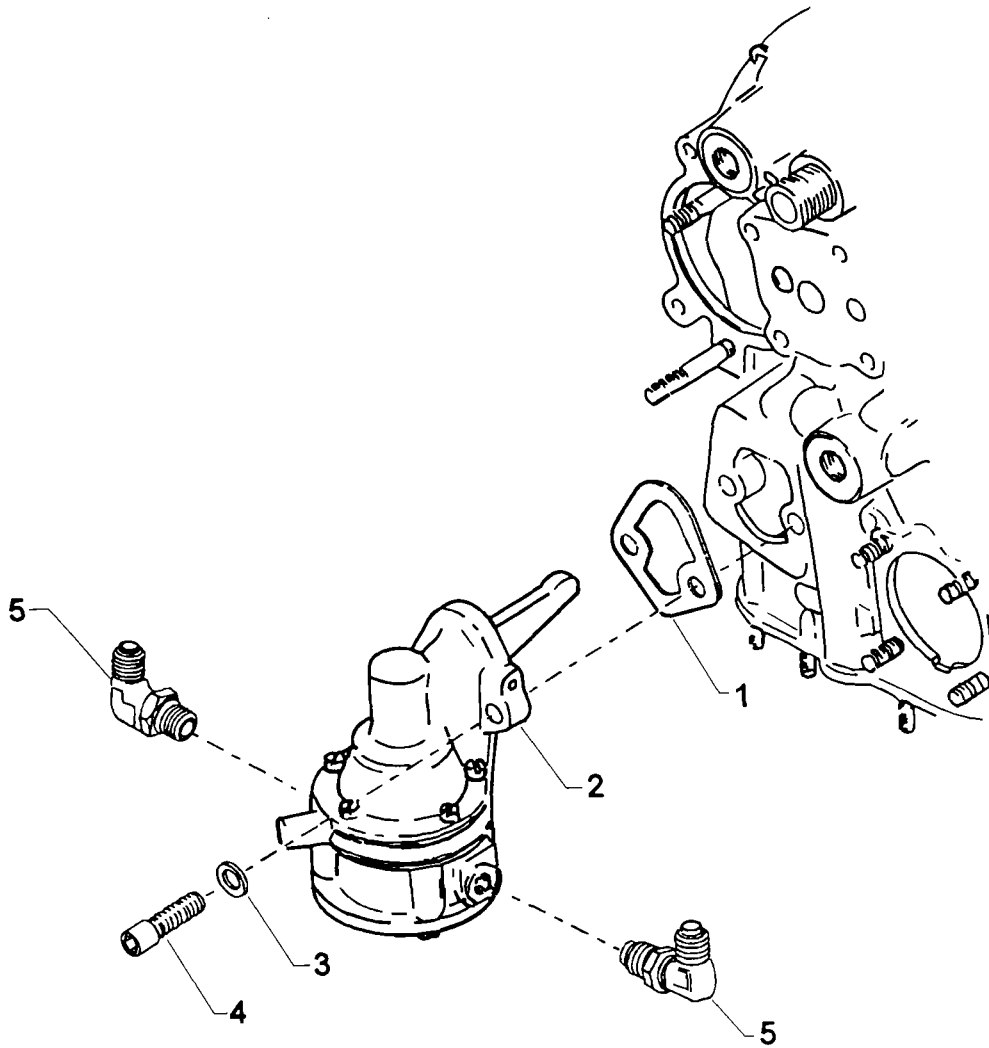


Figure 11. FUEL PUMP ASSEMBLY AND ATTACHING PARTS

ACCESSORY HOUSING AND RELATED PARTS

VACUUM PUMP DRIVE, COVERS, OIL COOLER AND BREATHER FITTINGS (O-540-J3A5)

| FIG. REF. | PART NUMBER | DESCRIPTION | ON ALL | J 1 A 5 D | J 3 A 5 | J 3 A 5 D | J 3 C 5 D | L 3 C 5 D |
|-----------|---------------|---|--------|-----------|---------|-----------|-----------|-----------|
| 1 | 61183 | GASKET, Accessory adapter | | | 1 | | | |
| 2 | 67536 | ADAPTER ASSY., Vacuum pump | | | 1 | | | |
| 3 | STD-1774 | DOWEL, 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 | 72974 | 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 | | | |
| 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 | | | |
| 17 | 71623 | WASHER, Oil cooler fitting | | | 1 | | | |
| 18 | AN777-8D * | ELBOW, Universal, 75° | | | 1 | | | |
| 19 | AN901-8A | GASKET, Metal tube connect seal | | | 1 | | | |
| 20 | 71620 | BOLT, Oil cooler fitting | | | 1 | | | |
| 21 | STD-784 | PLUG, 3/8-18 NPT, Allen head | | | 2 | | | |
| 22 | 71651 | FITTING, Breather | | | 1 | | | |
| | 72996 | FITTING, Breather (short) | | | 1 | | | |
| 23 | 06E19769-0.63 | GASKET, 7/8 O.D. x 5/8 I.D. x 3/32 annular | | | 1 | | | |
| 24 | 69675 | CONNECTOR, Acc. hsg. to oil cooler inlet hose | | | 1 | | | |
| 25 | 62417 | PLUG, Oil cooler bypass | | | 1 | | | |
| 26 | MS20822-8 | ELBOW, 1/2 flared tube, 3/8 NPT, 90° | | | 1 | | | |
| 27 | AN816-8 | NIPPLE, 1/2 flared tube | | | 1 | | | |

* Assemble with outlet in down position.

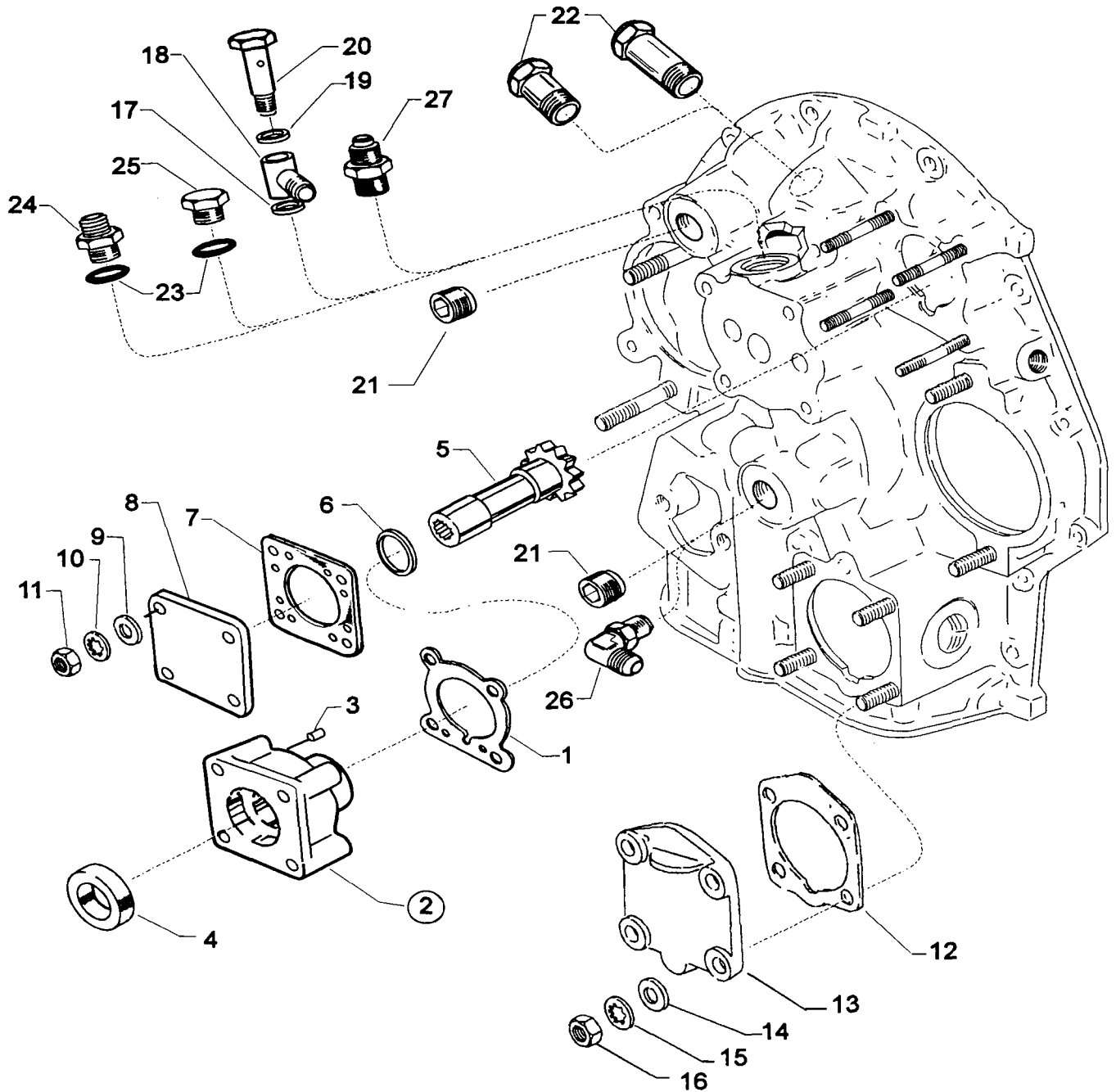


Figure 12. VACUUM PUMP DRIVE, COVERS, OIL COOLER AND BREATHER FITTINGS (O-540-J3A5)

ACCESSORY HOUSING AND RELATED PARTS VACUUM PUMP DRIVES, COVERS, OIL COOLER AND BREATHER FITTINGS (O-540-J1A5D, -J3A5D, -J3C5D)

| FIG. REF. 13 | PART NUMBER | DESCRIPTION | ON ALL | J | J | J | J | L |
|--------------------|----------------|---|-----------|---|---|---|---|---|
| | | | | 1 | 3 | 3 | 3 | 3 |
| | | | | A | A | A | C | C |
| | | | | 5 | 5 | 5 | 5 | 5 |
| | | | | D | | D | D | D |
| 1 | LW-10307 | GEAR ASSY., Accessory driven | | 1 | | 1 | 1 | |
| 2 | 71596 | WASHER, Accessory drive gear | | 1 | | 1 | 1 | |
| 3 | 06A19956 | OIL SEAL, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide | | 1 | | 1 | 1 | |
| 4 | 8313 | GASKET, Vacuum pump | | 1 | | 1 | 1 | |
| 5 | 60430 | COVER, Vacuum pump | | 1 | | 1 | 1 | |
| 6 | STD-8 | WASHER, 1/4 plain | | 4 | | 4 | 4 | |
| 7 | STD-160 | WASHER, 1/4 lock, internal teeth | | 4 | | 4 | 4 | |
| 8 | STD-1411 | NUT, 1/4-20 plain | | 4 | | 4 | 4 | |
| 9 | LW-10303 | PLUG, Hydraulic pump drive | | 1 | | 1 | 1 | |
| 10 | 8313 | GASKET, Hydraulic pump | | 1 | | 1 | 1 | |
| 11 | 60430 | COVER, Hydraulic pump | | 1 | | 1 | 1 | |
| 12 | STD-8 | WASHER, 1/4 plain | | 4 | | 4 | 4 | |
| 13 | STD-160 | WASHER, 1/4 lock, internal teeth | | 4 | | 4 | 4 | |
| 14 | STD-1411 | NUT, 1/4-20 plain | | 4 | | 4 | 4 | |
| 15 | 71651 | FITTING, Breather | | | | 1 | | |
| | 72996 | FITTING, Breather (short) | | 1 | | | 1 | |
| 16 | MS29512-10 | SEAL, Oil, 3/32 section x 46/64 I.D. | | 1 | | 1 | 1 | |
| 17 | AN814-10L | PLUG, Turbo drain back | | 1 | | 1 | 1 | |
| 18 | MS29512-10 | SEAL, Oil, 3/32 section x 45/64 I.D. | | 2 | | | | |
| 19 | AN919-15 | REDUCER, External, 5/8 to 1/2 flared | | 2 | | | | |
| 20 | 06E19769-0.63 | GASKET, 7/8 O.D. X 5/8 I.D. x 3/32 annular | | 2 | | | | |
| 21 | 1540 | PLUG, Thermometer well | | 2 | | | | |

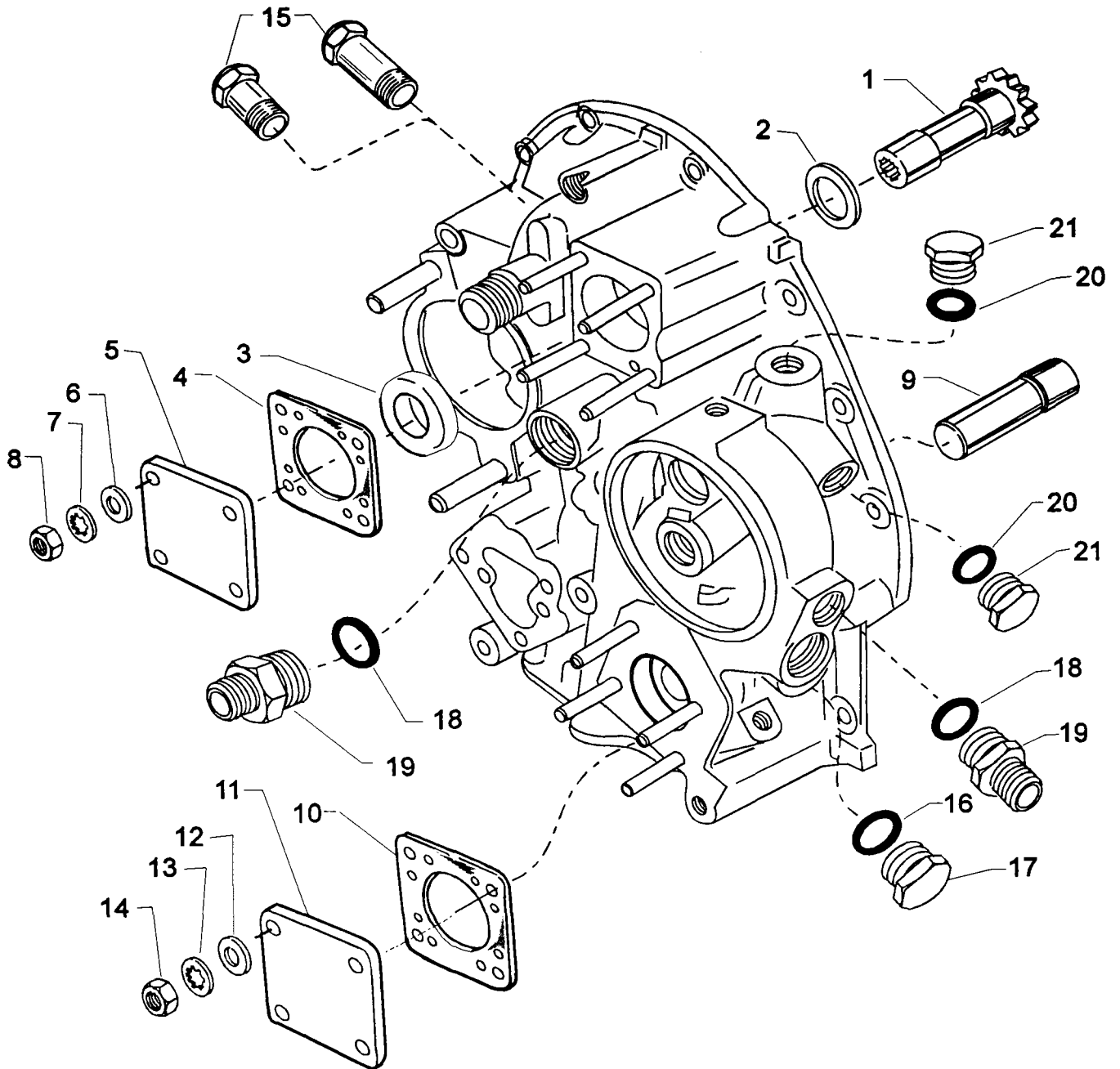


Figure 13. VACUUM PUMP DRIVES, COVERS, OIL COOLER AND BREATHER FITTINGS
(O-540-J1A5D, -J3A5D, -J3C5D)

ACCESSORY HOUSING AND RELATED PARTS

TURBO SCAVENGE, VACUUM PUMP DRIVE, COVERS AND BREATHER FITTING (O-540-L3C5D)

| FIG. REF. | PART NUMBER | DESCRIPTION | ON ALL | J 1 A 5 D | J 3 A 5 | J 3 A 5 D | J 3 C 5 D | L 3 C 5 D |
|-----------|-------------|--|--------|-----------|---------|-----------|-----------|-----------|
| 14 | | | | | | | | |
| 1 | LW-10307 | GEAR ASSY., Accessory driven | | | | | | 1 |
| 2 | 71596 | WASHER, Accessory drive gear | | | | | | 1 |
| 3 | 06A19956 | OIL SEAL, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide | | | | | | 1 |
| 4 | 8313 | GASKET, Vacuum pump | | | | | | 1 |
| 5 | 60430 | COVER, Vacuum pump | | | | | | 1 |
| 6 | STD-8 | WASHER, 1/4 plain | | | | | | 4 |
| 7 | STD-160 | WASHER, 1/4 lock, internal teeth | | | | | | 4 |
| 8 | STD-1411 | NUT, 1/4-20 plain | | | | | | 4 |
| 9 | LW-16448 | GEAR ASSY., Accessory driven | | | | | | 1 |
| 10 | 71596 | WASHER, Accessory drive gear | | | | | | 1 |
| 11 | 8313 | GASKET, Turbo, scav. & vac. pump drive assy. | | | | | | 1 |
| 12 | LW-19069 | DRIVE ASSY., Turbo scavenge & vacuum pump | | | | | | 1 |
| 13 | LW-19068 | ADAPTER ASSY., Vacuum pump | | | | | | 1 |
| 14 | 25C-12 | STUD, 1/4-20 x 1-1/2 long | | | | | | 3 |
| 15 | STD-1003 | DOWEL, Oil, 3/16 I.D. x 1/2 long | | | | | | 1 |
| 16 | 78612 | SHAFT, Hydraulic pump | | | | | | 1 |
| 17 | STD-95 | KEY, 1/8 x 1/2 Woodruff | | | | | | 1 |
| 18 | LW-15550 | PUMP, Gerator | | | | | | 1 |
| 19 | LW-19066 | ADAPTER, Turbo scavenge pump | | | | | | 1 |
| 20 | 70474 | WASHER, Vac. pump drive shaft | | | | | | 1 |
| 21 | STD-1737 | RING, External retaining, 9/16 dia. | | | | | | 1 |
| 22 | AN500-10-16 | SCREW, No. 10-24 x 1.00 fill. hd. | | | | | | 2 |
| 23 | STD-122 | WASHER, 13/64 I.D. x 5/16 O.D. | | | | | | 2 |
| 24 | STD-178 | WASHER, No. 10, spring lock | | | | | | 2 |
| 25 | 06A19956 | OIL SEAL, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide | | | | | | 1 |
| 26 | STD-8 | WASHER, 1/4 plain | | | | | | 3 |
| 27 | STD-160 | WASHER, 1/4 lock, internal teeth | | | | | | 3 |
| 28 | STD-1411 | NUT, 1/4-20 plain | | | | | | 3 |
| 29 | 8313 | GASKET, pump | | | | | | 1 |
| 30 | 60430 | COVER, pump | | | | | | 1 |
| 31 | STD-8 | WASHER, 1/4 plain | | | | | | 4 |
| 32 | STD-160 | WASHER, 1/4 lock, internal teeth | | | | | | 4 |
| 33 | STD-1411 | NUT, 1/4-20 plain | | | | | | 4 |
| 34 | 72996 | FITTING, Breather | | | | | | 1 |
| 35 | MS29512-10 | SEAL, Oil, 3/32 section x 45/64 I.D. | | | | | | 1 |
| 36 | AN814-10L | PLUG, Turbo drain back | | | | | | 1 |

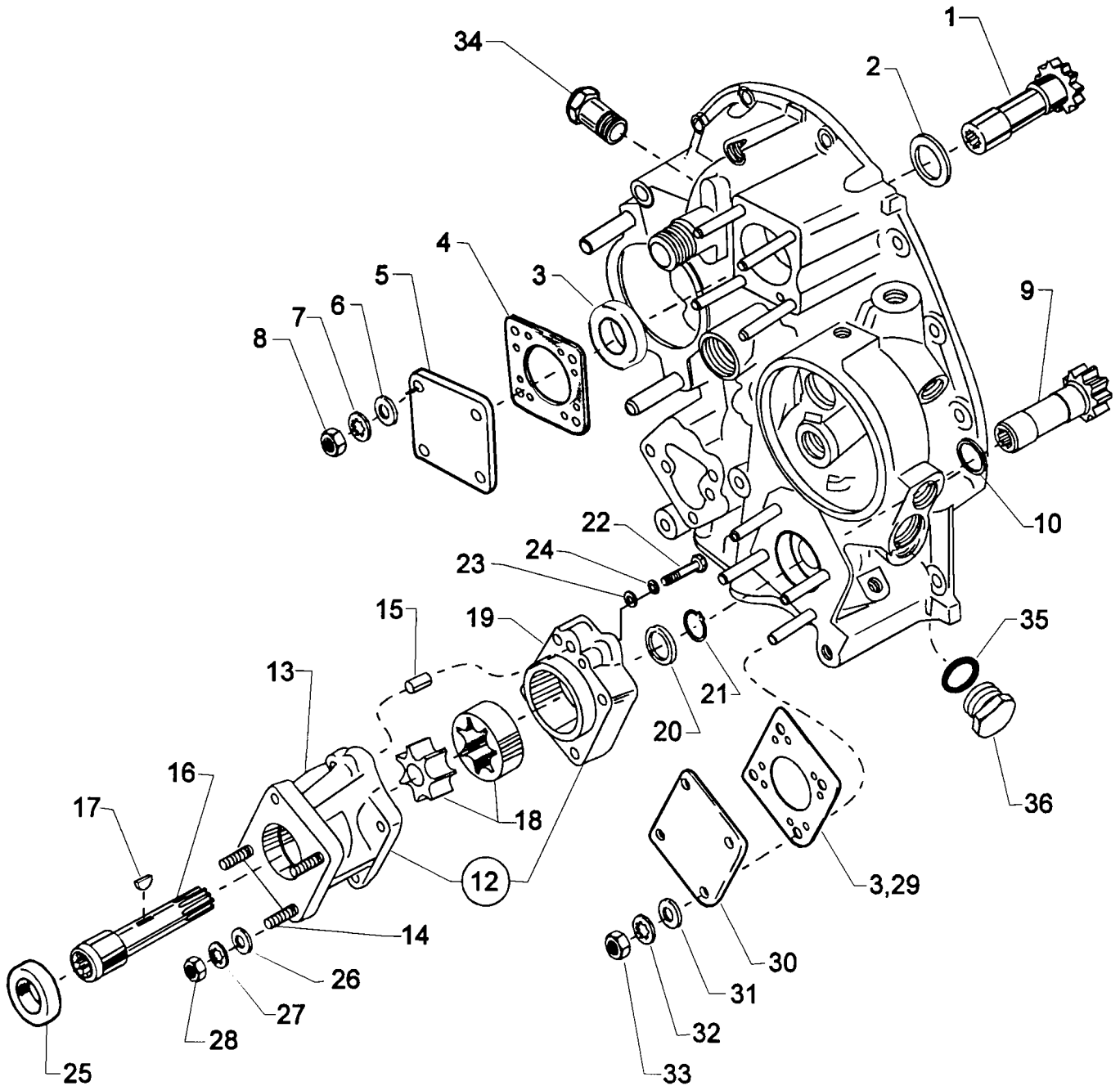


Figure 14. TURBO SCAVENGE, VACUUM PUMP DRIVE, COVERS AND BREATHER FITTING (O-540-L3C5D)

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

| FIG. REF. 15 | PART NUMBER | DESCRIPTION | ON ALL | J | J | J | J | L |
|--------------------|----------------|--|-----------|---|---|---|---|---|
| | | | | 1 | 3 | 3 | 3 | 3 |
| | | | | A | A | A | C | C |
| | | | | 5 | 5 | 5 | 5 | 5 |
| | | | | D | | D | D | D |
| 1 | LW-12795 | GASKET, Oil filter adapter | | | 2 | | | |
| 2 | 77852 | OIL FILTER BASE ASSEMBLY | | | 1 | | | |
| 3 | 54D19625 | OIL FILTER, (short w/ stud) | | | 1 | | | |
| | 54D19626 | OIL FILTER, (long w/ stud) | | | 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 | 53E19600 | 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 | 55C21021 | SPRING, Oil pressure bypass | | 1 | | 1 | 1 | 1 |
| 12 | 55K21022 | SPACER, Oil pressure bypass valve | | 1 | | 1 | 1 | 1 |
| 13 | 76539 | SEAT, Oil relief valve | | 1 | | 1 | 1 | 1 |
| 14 | LW-10320 | SLEEVE, Oil filter bypass valve | | 1 | | 1 | 1 | 1 |
| 15 | MS16625-1100 | RING, Internal retaining | | 1 | | 1 | 1 | 1 |
| 16 | 54D19627 | OIL FILTER, (short, no stud) | | 1 | | 1 | 1 | 1 |
| 17 | LW-13904 | KIT, Converter plate, oil filter | | 1 | | 1 | 1 | 1 |
| 18 | 53E19600 | VALVE ASSY., Temp. control oil cooler bypass | | 1 | | 1 | 1 | 1 |
| 19 | 76510 | GASKET, Valve assembly | | 1 | | 1 | 1 | 1 |

NOTE

Reference latest edition of
replacement filters.

Lycoming SSP-885 for oil filter kits and

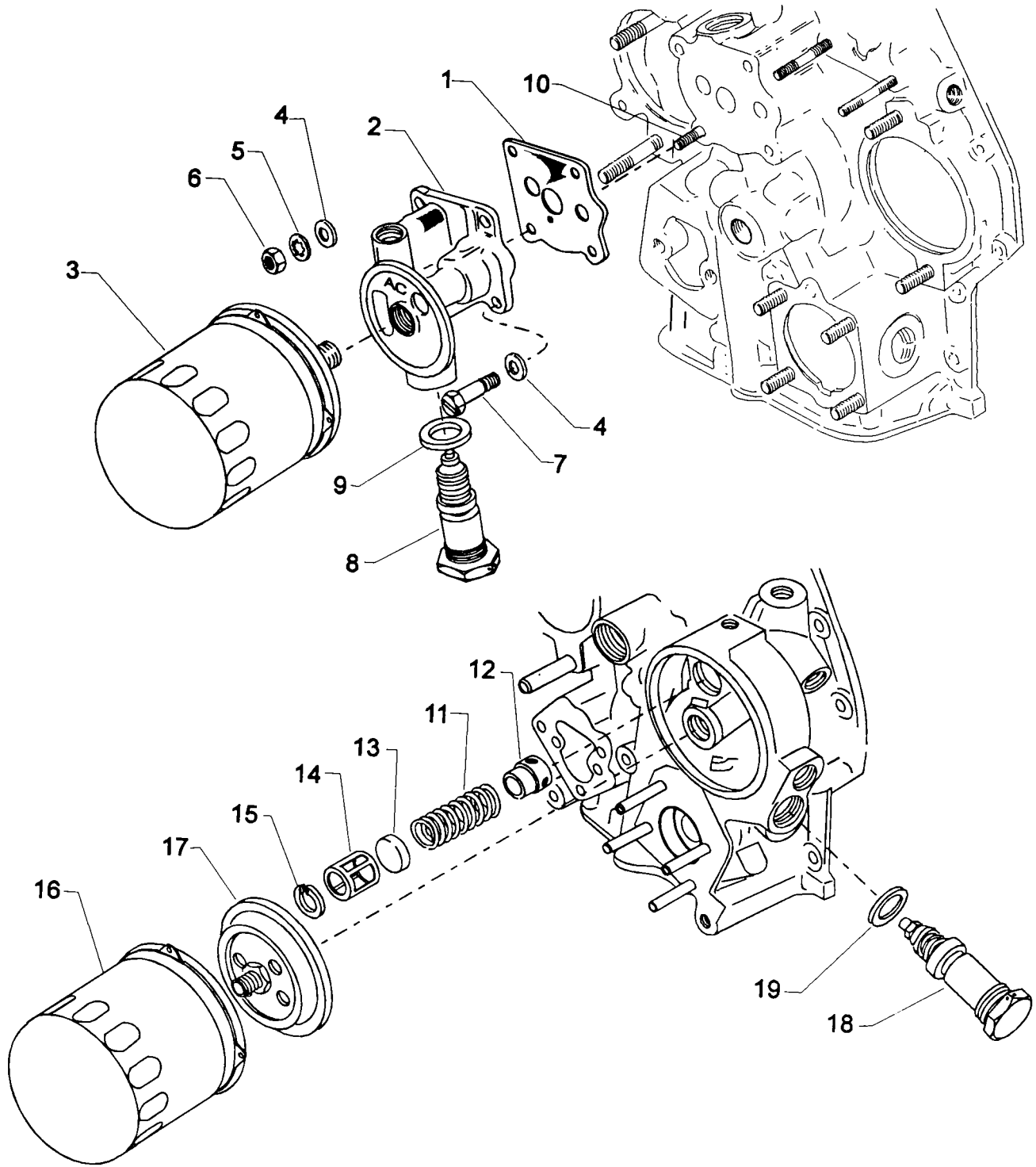


Figure 15. OIL FILTER ASSEMBLY AND OIL COOLER BYPASS VALVE

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

| FIG. REF. 16 | PART NUMBER | DESCRIPTION | ON ALL | J 1 A 5 D | J 3 A 5 | J 3 A 5 D | J 3 C 5 D | L 3 C 5 D |
|-----------------|-------------|-----------------------------------|--------|-----------|---------|-----------|-----------|-----------|
| 1 | LW-13865 | CONNECTING ROD ASSEMBLY | 6 | | | | | |
| 2 | LW-13923 | BUSHING, Connecting rod | 6 | | | | | |
| 3 | 75061 | BOLT, Connecting rod | 12 | | | | | |
| 4 | LW-12186 | NUT, Connecting rod bolt | 12 | | | | | |
| 5 | LW-13521 | BEARING, Connecting rod | 12 | | | | | |
| 6 | 75089 | PISTON, Compression ratio, 8.50:1 | | | | | | 6 |
| | LW-13396 | PISTON, Compression ratio, 8.50:1 | | 6 | 6 | 6 | 6 | |
| 7 | LW-14068 | PIN, Piston | | 6 | | 6 | 6 | 6 |
| | LW-14077 * | PIN, Piston | | | 6 | | | |
| 8 | 60828 | PLUG, Piston pin | | 12 | | 12 | 12 | 12 |
| | LW-11775 * | PLUG, Piston pin | | | 12 | | | |
| 9 | 74241 | RING, Piston, compression | 12 | | | | | |
| 10 | 73857 | RING, Piston, oil regulating | 6 | | | | | |

* Piloted piston pin (Use in complete sets only). See latest edition of Instruction No. 1267.

Lycoming Service

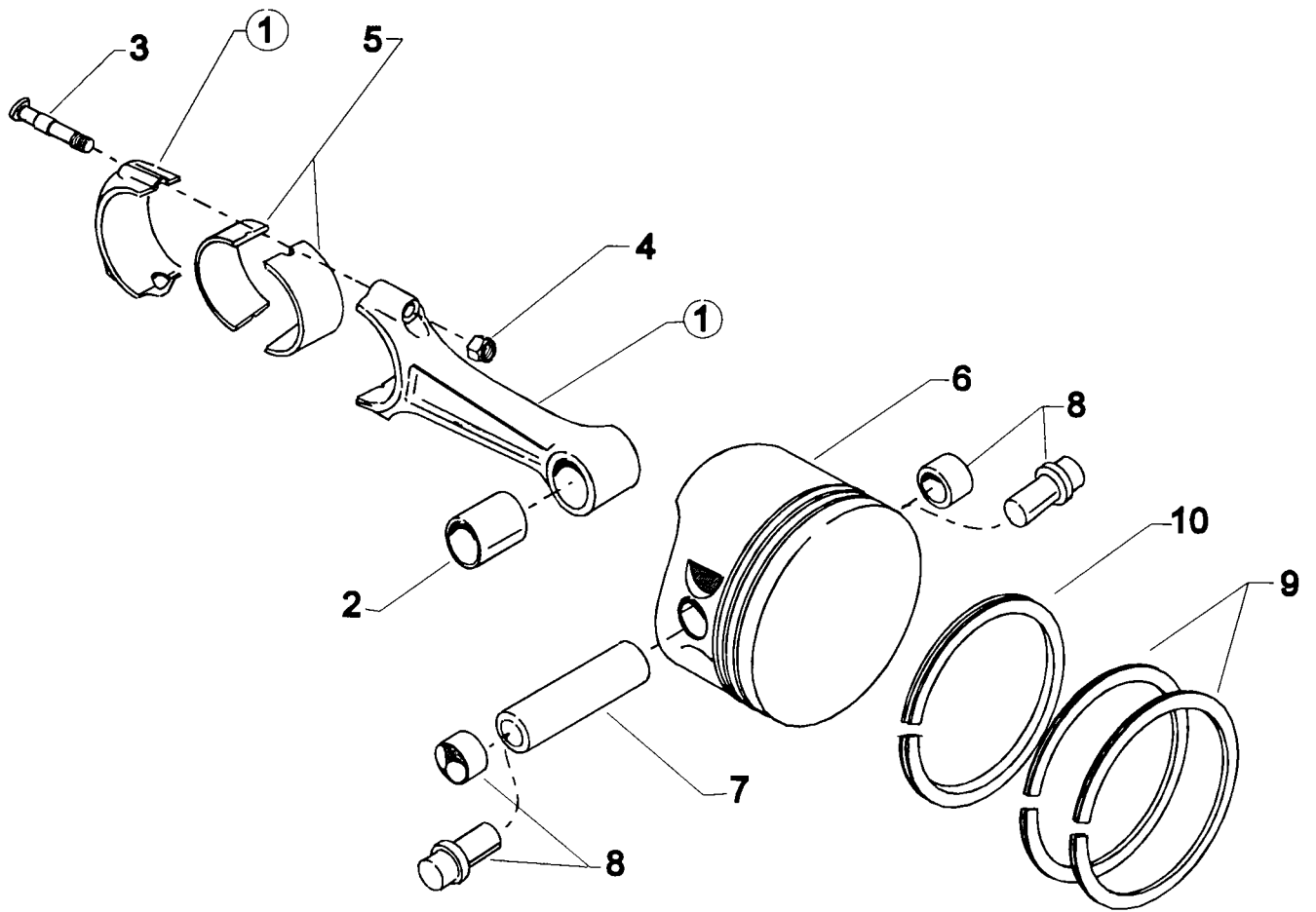


Figure 16. CONNECTING RODS, PISTONS AND RING ASSEMBLIES

CYLINDER, PISTON AND VALVE TRAIN CYLINDER ASSEMBLY

| FIG. REF. 17 | PART NUMBER | DESCRIPTION | ON ALL | J 1 A 5 D | J 3 A 5 | J 3 A 5 D | J 3 C 5 D | L 3 C 5 D |
|-----------------|-------------|---------------------------------------|--------|-----------|---------|-----------|-----------|-----------|
| 1 | LW-13870 | CYLINDER AND HEAD ASSY., Nitrided | | 6 | 6 | 6 | 6 | |
| | LW-15605 | 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 | 74230 * | GUIDE, Valve, exhaust, flanged | 6 | | | | | |
| 6 | 66796 | 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 | 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, 1/8-27 NPT, Allen hd. | | | 6 | | | |
| | 1102 ** | PLUG, 1/8-27 NPT, Allen hd. | 12 | | | | | |
| 13 | LW-19296 | GASKET, Exhaust flange | | 6 | 6 | 6 | 6 | |
| | LW-16567 | GASKET, Exhaust flange | | | | | | 12 |
| 14 | 61260 | FLANGE, Exhaust (Stainless) | | | 6 | | | |
| 15 | STD-35 | WASHER, 5/16 plain | 12 | | | | | |
| 16 | STD-475 | WASHER, 5/16 lock, internal teeth | | 12 | 12 | 12 | 12 | |
| 17 | STD-1410 | NUT, 5/16-18 plain | | 12 | 12 | 12 | 12 | |
| 18 | STD-2043 | NUT, 5/16-18 self-locking | | | | | | 12 |

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

** Quantity of twelve (12) when no priming lines are installed.

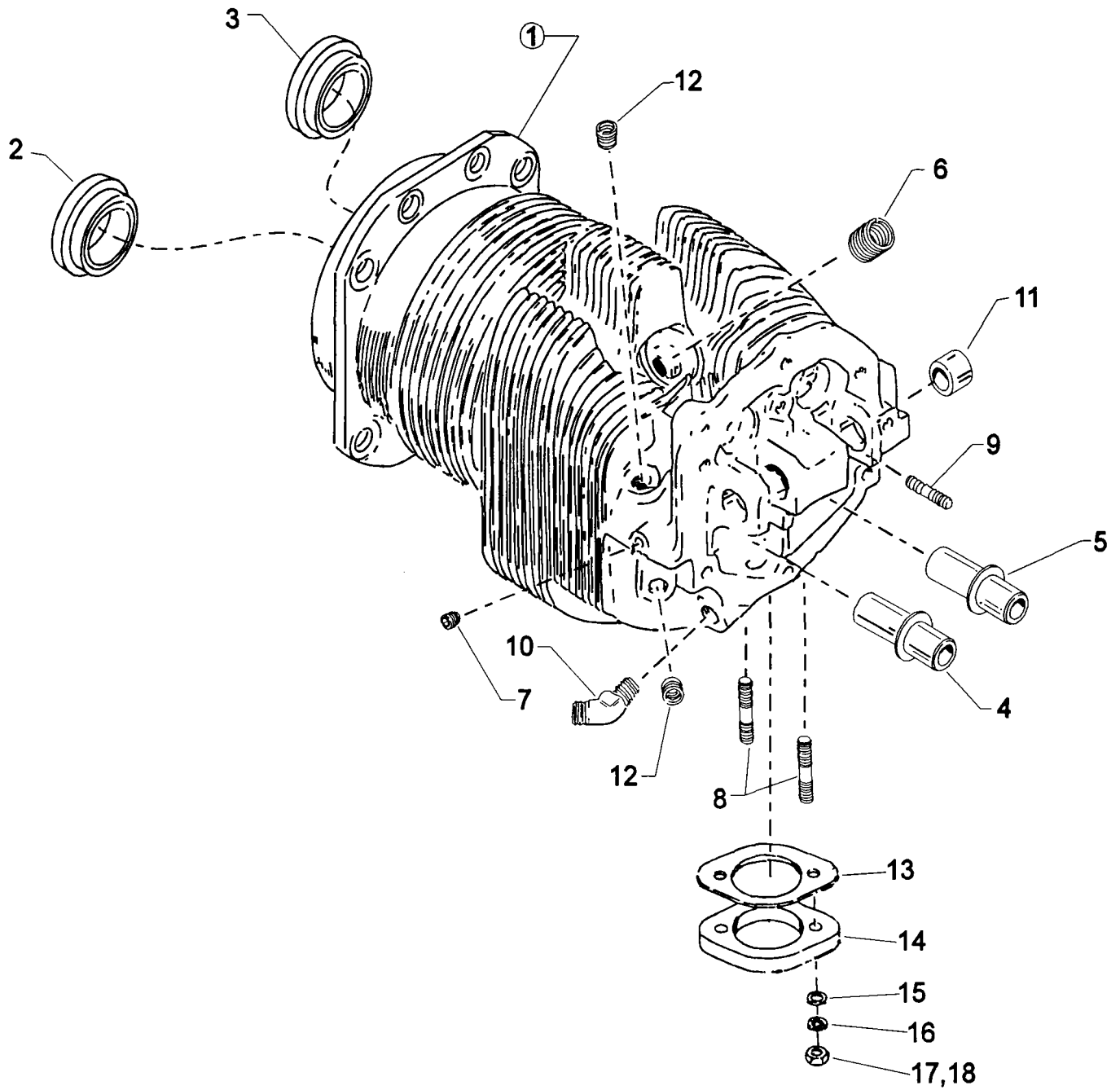


Figure 17. CYLINDER ASSEMBLY

CYLINDER, PISTON AND VALVE TRAIN VALVE ASSEMBLY

| FIG. REF. 18 | PART NUMBER | DESCRIPTION | ON ALL | J 1 A 5 D | J 3 A 5 | J 3 A 5 D | J 3 C 5 D | L 3 C 5 D |
|--------------------|----------------|---|-----------|-----------------------|------------------|-----------------------|-----------------------|-----------------------|
| 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 | 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 | 6 | | | | | |
| 9 | 60009 | KEY, Valve, intake | 12 | | | | | |
| 10 | 17C21191 | KEY, Valve, exhaust | 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 | | | | | |

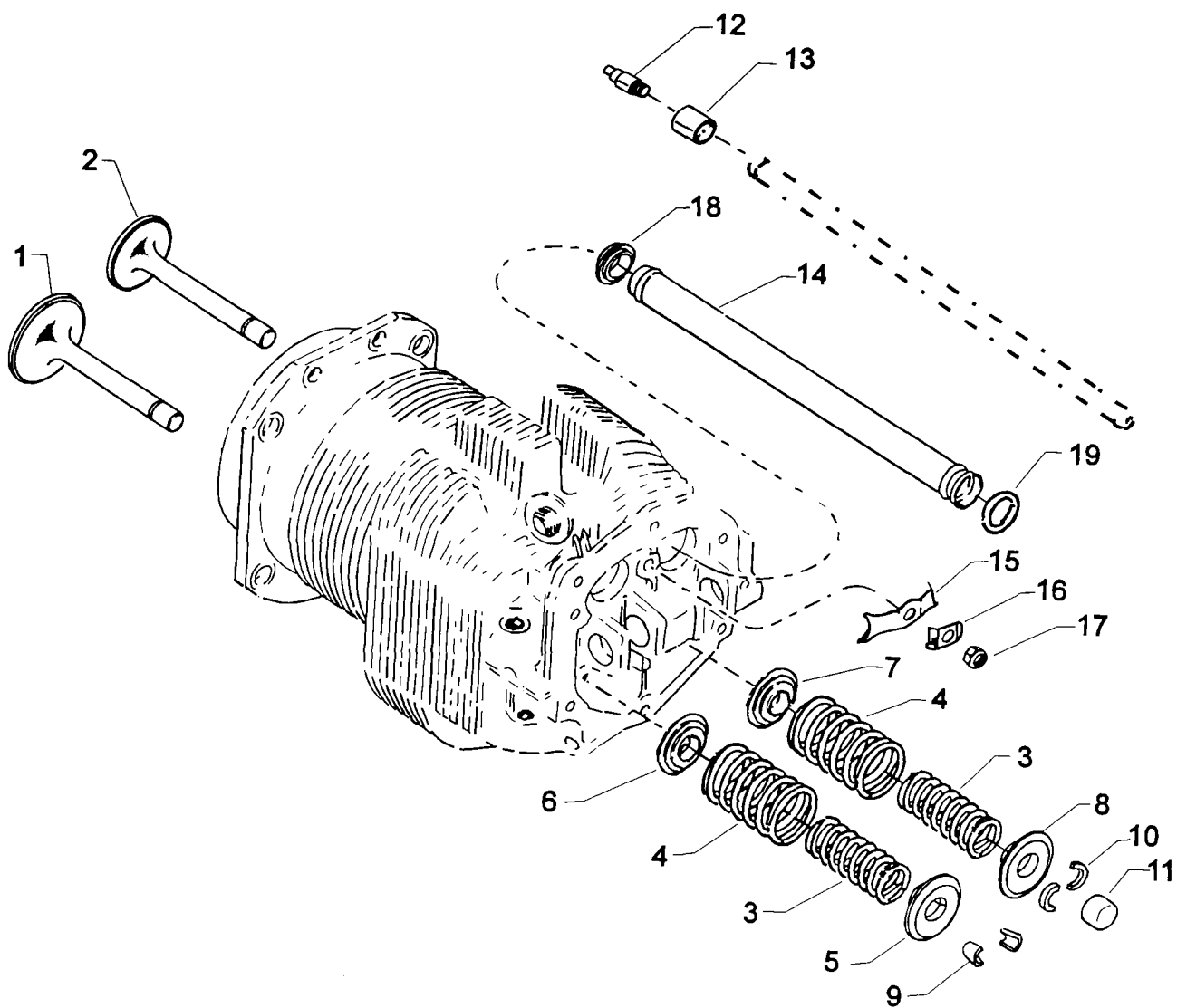


Figure 18. VALVE ASSEMBLY

CYLINDER, PISTON AND VALVE TRAIN CYLINDER RELATED PARTS

| FIG. REF. 19 | PART NUMBER | DESCRIPTION | ON ALL | J 1 A 5 D | J 3 A 5 | J 3 A 5 D | J 3 C 5 D | L 3 C 5 D |
|-----------------|---------------|---|--------|-----------|---------|-----------|-----------|-----------|
| 1 | 73434 * | ROD ASSY., Push (A total of 12 required) | AR | | | | | |
| | 15F19957-35 * | ROD ASSY., Push (A total of 12 required) | AR | | | | | |
| | 15F19957-36 * | ROD ASSY., Push (A total of 12 required) | AR | | | | | |
| | 73437 * | ROD ASSY., Push (A total of 12 required) | AR | | | | | |
| 2 | 17F19357 ** | ROCKER ASSY., Valve | 12 | | | | | |
| 3 | 74637 | BUSHING, Valve rocker | 12 | | | | | |
| 4 | LW-13790 | SHAFT, Valve rocker | 6 | | | | | |
| 5 | LW-12892 | THRUST BUTTON, Rocker shaft | 12 | | | | | |
| 6 | 71481 | RING, Oil seal, 3/32 dia. x 4-27/32 I.D. | 6 | | | | | |
| 7 | 77906 | SPACER, 33/64 I.D. x 7/8 O.D. x 1/8 thick | 2 | | | | | |
| 8 | 74887 | SPACER, 33/64 I.D. x 7/8 O.D. x 3/8 thick | 2 | | | | | |
| 9 | 383-B | NUT, 3/8-24 plain | 24 | | | | | |
| 10 | STD-2090 | NUT, 1/2-20 plain | 28 | | | | | |

* See latest edition of 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).

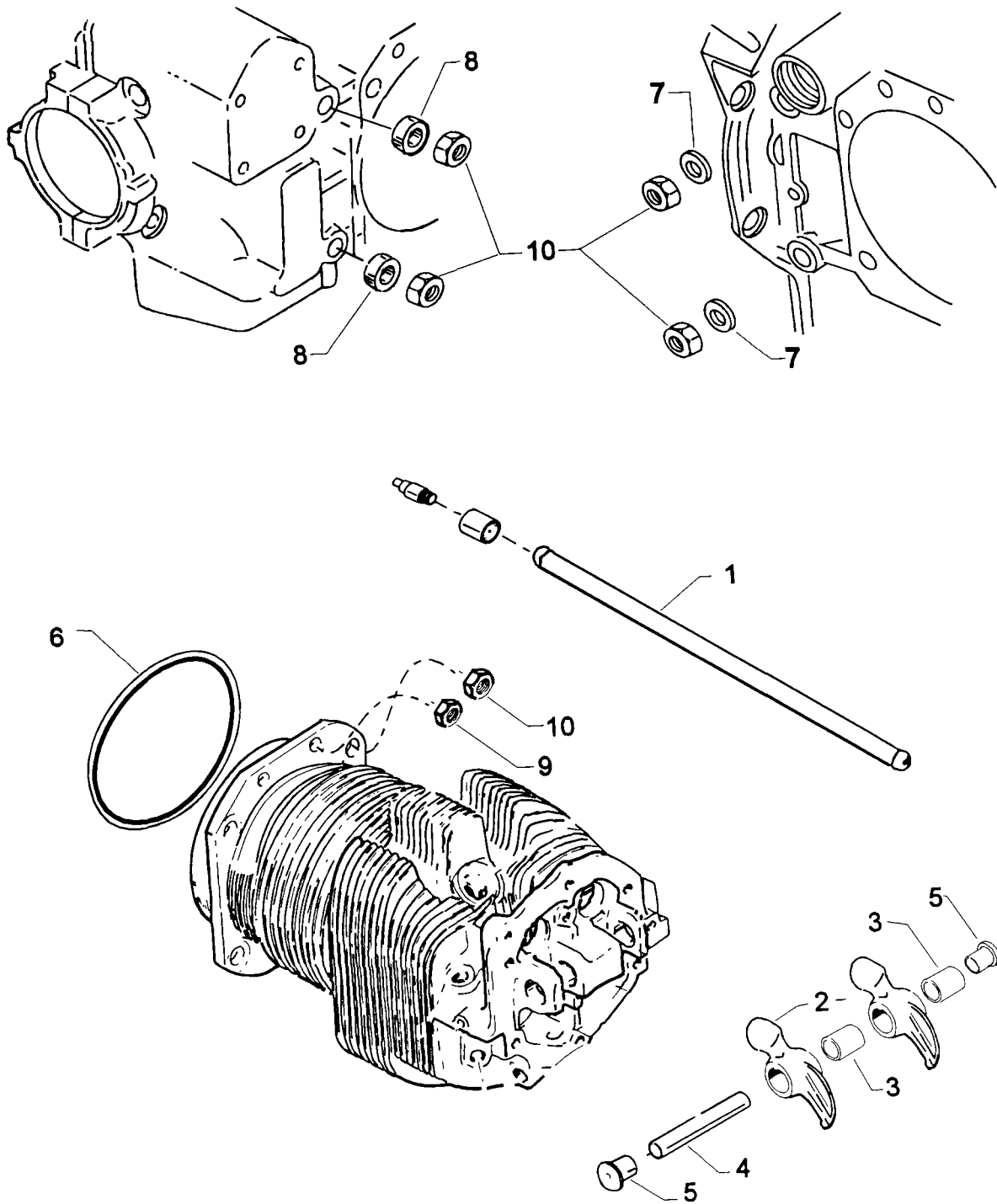


Figure 19. CYLINDER RELATED PARTS

CYLINDER, PISTON AND VALVE TRAIN

CYLINDER HEAD DRAIN TUBES, INTERCYLINDER COOLING BAFFLES AND RELATED PARTS

| FIG. REF. | PART NUMBER | DESCRIPTION | ON ALL | J 1 A 5 D | J 3 A 5 | J 3 A 5 D | J 3 C 5 D | L 3 C 5 D |
|-----------|---------------|--|--------|-----------|---------|-----------|-----------|-----------|
| 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. hd. | 36 | | | | | |
| 4 | 74494 | PLATE, Caution, spark plug reach | | | | | | 6 |
| 5 | STD-684 | NIPPLE, Straight, 3/8 I.D. hose | 6 | | | | | |
| 6 | STD-1821 | HOSE, 3/8 x 2-1/2 long | 6 | | | | | |
| 7 | LW-15592-5-05 | CLAMP, Hose | 12 | | | | | |
| 8 | 68759 | TUBE ASSY., Cyl. head oil drain, cyl. no. 1 | 1 | | | | | |
| 9 | 71737 | TUBE ASSY., Cyl. head oil drain, cyl. no. 2 | 1 | | | | | |
| 10 | 68761 | TUBE ASSY., Cyl. head oil drain, cyls. 3,4,5,6 | 4 | | | | | |
| 11 | LW-15839 | BAFFLE ASSY., Intercylinder | 4 | | | | | |
| 12 | 71611 | RETAINER, Intercylinder baffle | 4 | | | | | |
| 13 | 71629 | HOOK, Intercylinder baffle retainer | 4 | | | | | |

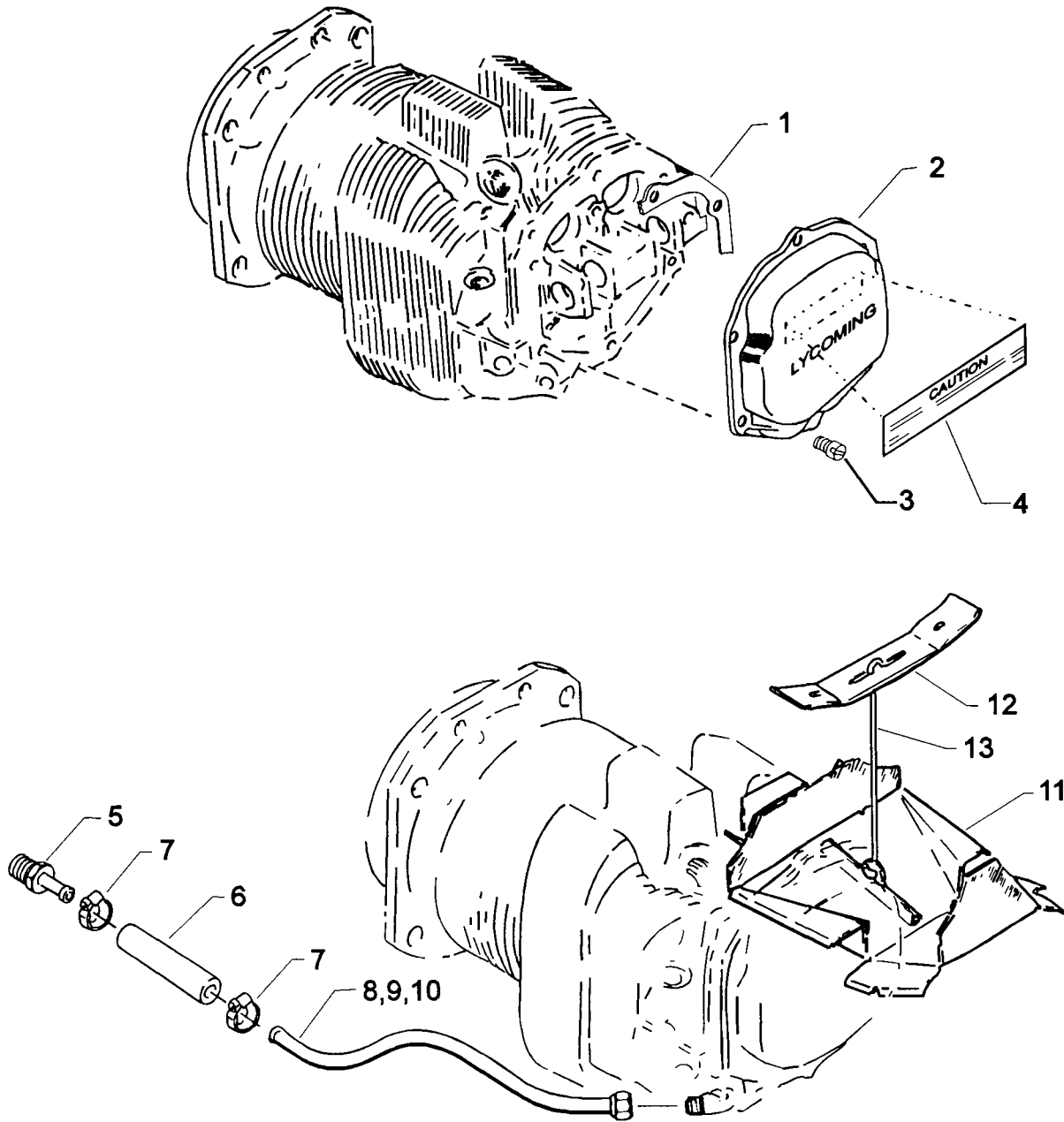


Figure 20. CYLINDER HEAD DRAIN TUBES, INTERCYLINDER COOLING BAFFLES AND RELATED PARTS

IGNITION SYSTEM

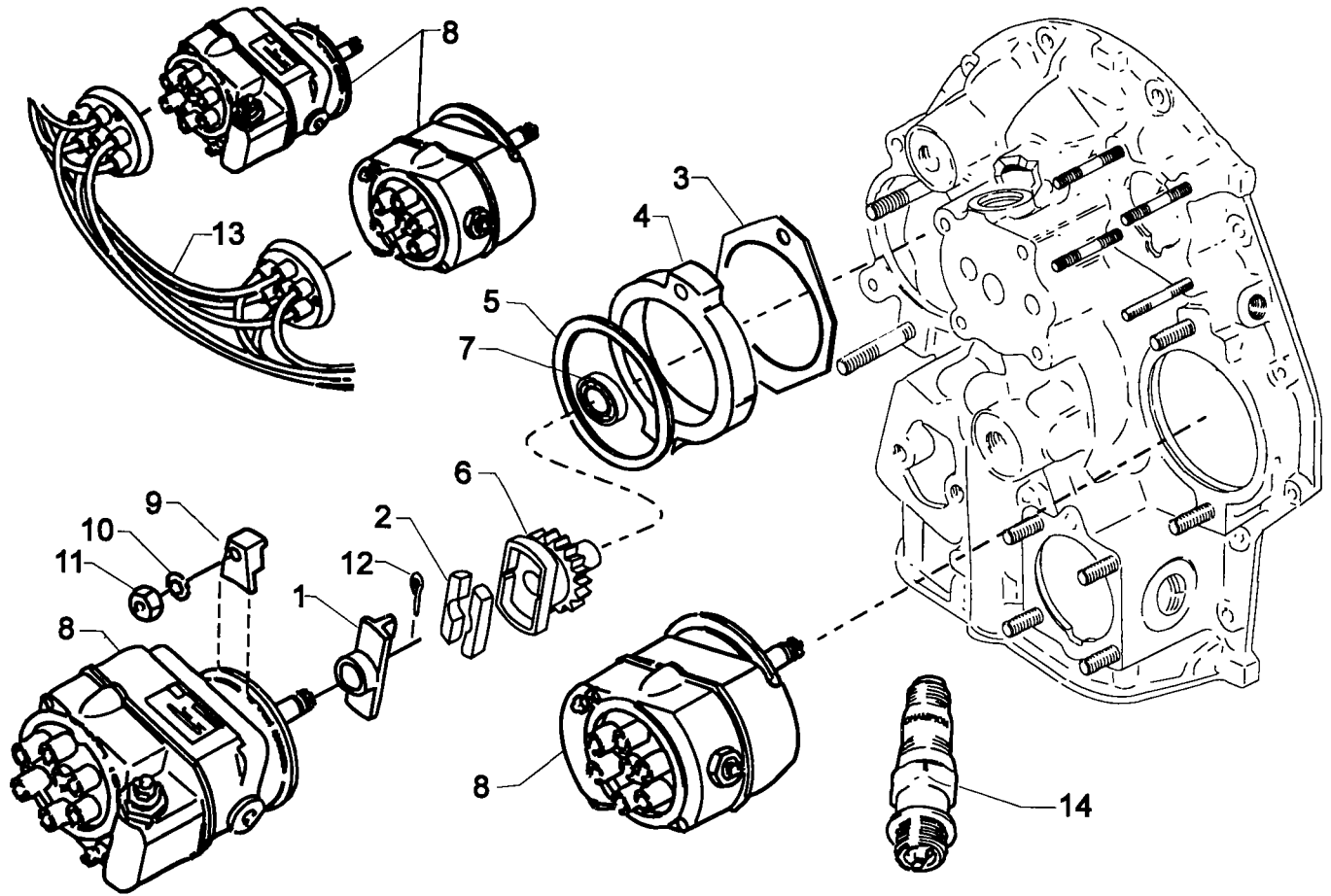
SINGLE MAGNETOS (SLICK), DRIVES, HARNESS, SPARK PLUGS AND ATTACHING PARTS

| FIG. REF. | PART NUMBER | DESCRIPTION | ON ALL | J 1 A 5 D | J 3 A 5 | J 3 A 5 D | J 3 C 5 D | L 3 C 5 D |
|-----------|---------------|---|--------|-----------|---------|-----------|-----------|-----------|
| 21 | | | | | | | | |
| 1 | 73000 | COUPLING, Magneto drive | | | 1 | | | |
| 2 | LW-13641 | CUSHION, Magneto drive | | | 4 | | | |
| 3 | 62224 | GASKET, Magneto adapter & magneto | | | 2 | | | |
| 4 | LW-12707 | ADAPTER, Magneto | | | 2 | | | |
| 5 | LW-12681 | GASKET, Magneto | | | 2 | | | |
| 6 | LW-19096 | GEAR RETAINER ASSEMBLY | | | 2 | | | |
| 7 | 67542 | BEARING, Ball | | | 2 | | | |
| 8 | 66LP-OSCNN | MAGNETO, Right, Slick Model No. 6350 | | | 1 | | | |
| | 66LC35SDNN | MAGNETO, Left, Slick Model No. 6351 | | | 1 | | | |
| | 66LC35SDNN | MAGNETO, Rt. & Lt., Slick Model No. 6351 | | | 2 | | | |
| 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 | STD-713 | COTTER PIN, 3/32 dia, x 3/4 long | | | 2 | | | |
| 13 | 67U20608 | HARNESS, Right, Slick No. M-2878 | | | 1 | | | |
| | 67U20609 | HARNESS, Left, Slick No. M-2877 | | | 1 | | | |
| | 67U20638 | HARNESS, Right, Slick No. M-2962 | | | 1 | | | |
| | 67U20639 | HARNESS, Left, Slick No. M-2961 | | | 1 | | | |
| 14 | 1182-E7 * | SPARK PLUG, Champion (REM38E) or Auburn (SR87) | | | 12 | | | |
| ** | 01P19762-4-44 | BAG, Magneto harness attaching | | | 1 | | | |
| ** | 01P19762-4-17 | BAG, Magneto harness attaching | | | 1 | | | |

* Item No. 12 spark plugs are used in current production. See latest edition of Service Instruction No. 1042 for complete listing of all approved spark plugs.

Lycoming

** 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 01P19762-4-17 | | | P/N 01P19762-4-44 | | |
|---------------------------|------------------------------|------|---------------------------|------------------------------|------|
| Part No. | Part Name | Qty. | Part No. | Part Name | Qty. |
| LW-16266-25-25 | CLIP, One wire | 4 | LW-16266-25-25 | CLIP, One wire | 4 |
| LW-14060 | CLIP, Two wire | 4 | LW-14060 | CLIP, Two wire | 4 |
| STD-8 | WASHER, 1/4 plain | 12 | STD-8 | WASHER, 1/4 plain | 12 |
| STD-160 | WASHER, 1/4 lock, | 10 | STD-160 | WASHER, 1/4 lock, | 10 |
| STD-1874 | SCREW, 1/4 lock (rocker box) | 6 | STD-1874 | SCREW, 1/4 lock (rocker box) | 6 |
| 76734 | ZIP STRAP | 12 | 76734 | ZIP STRAP | 12 |
| LW-16266-10-75 | CLAMP | 1 | LW-16266-10-75 | CLAMP | 2 |
| LW-16266-25-44 | CLIP, Three wire | 5 | LW-16266-25-44 | CLIP, Three wire | 5 |
| STD-696 | WASHER, 1/4 thin | 6 | STD-696 | WASHER, 1/4 thin | 6 |
| AN500-416-18 | SCREW, 1/4 x 1-1/8 long | 2 | AN500-416-18 | SCREW, 1/4 x 1-1/8 long | 2 |
| STD-1925 | SCREW, 1/4 x 5/8 long | 4 | STD-1925 | SCREW, 1/4 x 5/8 long | 4 |
| 72815 | BRACKET, Support clamp, 90° | 4 | 72815 | BRACKET, Support clamp, 90° | 4 |
| STD-692 | SCREW, No. 10-32 x 1/2 long | 4 | STD-692 | SCREW, No. 10-32 x 1/2 long | 4 |
| STD-425 | WASHER, No. 10 plain | 4 | STD-425 | WASHER, No. 10 plain | 4 |
| STD-670 | LOCKNUT, No. 10-32 | 4 | STD-670 | LOCKNUT, No. 10-32 | 4 |
| LW-M-2375 | PLATE, Spark plug cable | 2 | LW-M-2376 | PLATE, Spark plug cable | 2 |
| ATTACHING HARDWARE | | | ATTACHING HARDWARE | | |

Figure 21. SINGLE MAGNETOS (SLICK), DRIVES, HARNESS, SPARK PLUGS AND ATTACHING PARTS

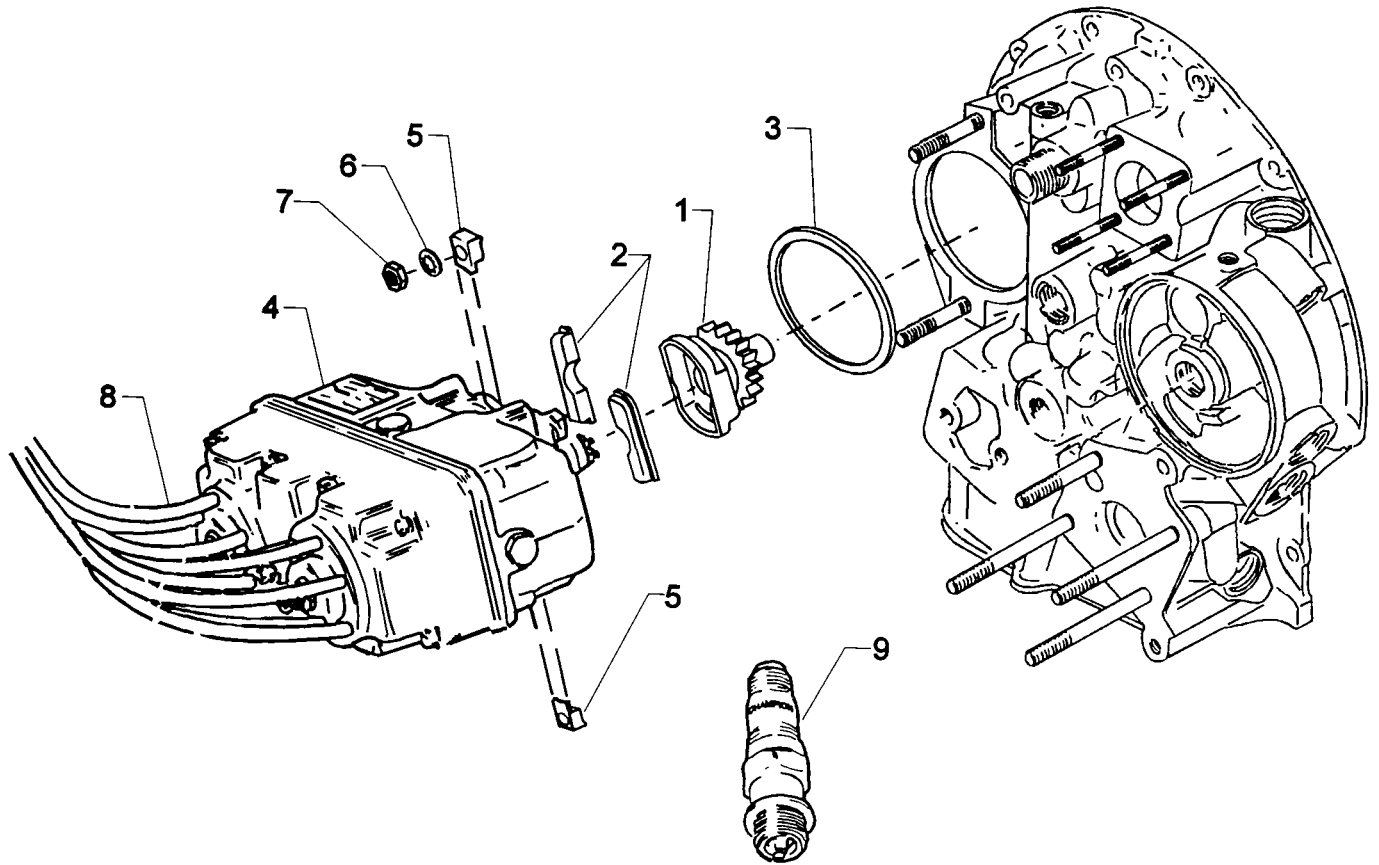
IGNITION SYSTEM

DUAL MAGNETOS, DRIVES, HARNESS, SPARK PLUGS AND ATTACHING PARTS

| FIG. REF. 22 | PART NUMBER | DESCRIPTION | ON ALL | J | J | J | J | L |
|-----------------|---------------|---|--------|----|---|----|----|----|
| | | | | 1 | 3 | 3 | 3 | 3 |
| | | | | A | A | A | C | C |
| | | | | 5 | 5 | 5 | 5 | 5 |
| | | | | D | | D | D | D |
| 1 | LW-13899 | GEAR, Retainer, magneto drive | | 1 | | 1 | 1 | 1 |
| 2 | LW-13641 | CUSHION, Magneto drive | | 2 | | 2 | 2 | 2 |
| 3 | LW-12681 | GASKET, Magneto | | 1 | | 1 | 1 | 1 |
| 4 | 66E21576 | MAGNETO IGNITION SYSTEM | | 1 | | 1 | 1 | 1 |
| | 66E21580 | MAGNETO IGNITION SYSTEM | | 1 | | 1 | | |
| | 66E21583 | MAGNETO IGNITION SYSTEM | | 1 | | | | |
| 5 | 66M19385 | CLAMP, Magneto | | 2 | | 2 | 2 | 2 |
| 6 | STD-475 | WASHER, 5/16 lock, internal teeth | | 2 | | 2 | 2 | 2 |
| 7 | STD-1410 | NUT, 5/16-18 plain | | 2 | | 2 | 2 | 2 |
| 8 | 67H21470 | HARNESS, Ignition (Bendix) | | 1 | | 1 | | |
| | 67H21475 | HARNESS, Ignition (Bendix) | | 1 | | 1 | 1 | 1 |
| 9 | 1182-F7 * | SPARK PLUG, Champion (RHM38E) or or Auburn (HSR86) | | 12 | | 12 | 12 | |
| | 1182-H7 * | SPARK PLUG, Champion (RHB37E) or or Auburn (273) | | | | | | 12 |
| ** | 01P21501-1-29 | BAG, Magneto harness attaching | | 1 | | 1 | 1 | 1 |
| ** | 01P21641-1 | BAG, Magneto harness attaching | | 1 | | 1 | 1 | 1 |

* Item No. 9 spark plugs are used in current production. See latest edition of Lycoming Service Instruction No. 1042 for complete listing of all approved spark plugs.

** See page 4-4 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 01P21501-1-29

| Part No. | Part Name | Qty. |
|----------------|-----------------------------|------|
| LW-16266-25-25 | CLIP, One wire | 10 |
| 71824 | CLIP, Two wire, 1/4 screw | 3 |
| STD-8 | WASHER, 1/4 plain | 14 |
| STD-1874 | SCREW, 1/4-20 x 13/16 long | 7 |
| 76734 | ZIP STRAP | 26 |
| LW-16266-25-50 | CLIP, Three wire | 2 |
| STD-696 | WASHER, 1/4 plain | AR |
| LW-14875 | BRACKET, Extension (90°) | 1 |
| STD-692 | SCREW, No. 10-32 x 1/2 long | 6 |
| STD-670 | NUT, No. 10-32 self-locking | 6 |
| LW-16266-10-50 | CLIP, Three wire | 1 |
| LW-16266-10-75 | CLIP, Six wire | 3 |
| LW-16266-25-88 | CLIP, Eight wire | 1 |
| STD-28 | WASHER, No. 10 plain | 8 |
| STD-1925 | SCREW, 1/4-20 x 5/8 long | 4 |
| STD-2029 | BOLT, 1/4-20 x 1-1/8 long | 2 |

ATTACHING HARDWARE

Lycoming P/N 01P21641-1

| Teledyne Continental Part No. | Part Name | Qty. |
|-------------------------------|----------------------------------|------|
| 10-400051-2 | CLIP, One wire, 1/4 screw | 6 |
| 10-400053-2 | CLIP, Two/ three wire, 1/4 screw | 3 |
| 10-620013 | ZIP STRAP | 26 |
| 10-400056-1 | CLIP, Six wire, No. 10 screw | 3 |
| 10-620039-1 | PLATE, Three wire | 2 |
| 10-620039-3 | PLATE, Nine wire | 2 |

ATTACHING HARDWARE

Figure 22. DUAL MAGNETOS, DRIVES, HARNESS, SPARK PLUGS AND ATTACHING PARTS

ELECTRICAL SYSTEM PRESTOLITE STARTERS AND ATTACHING PARTS

| FIG. REF. | PART NUMBER | DESCRIPTION | ON ALL | J 1 | J 3 | J 3 | J 3 | L 3 |
|-----------|-------------|--|--------|-----|-----|-----|-----|-----|
| | | | | A 5 | A 5 | A 5 | C 5 | C 5 |
| 23 | | | | D | D | D | D | D |
| 1 | LW-15571 | STARTER, 12 volt, 12/14 pitch pinion (MZ-4222) | | 1 | 1 | 1 | | |
| | LW-15572 | STARTER, 24 volt, 12/14 pitch pinion (MHB-4016) | | 1 | 1 | | 1 | 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.

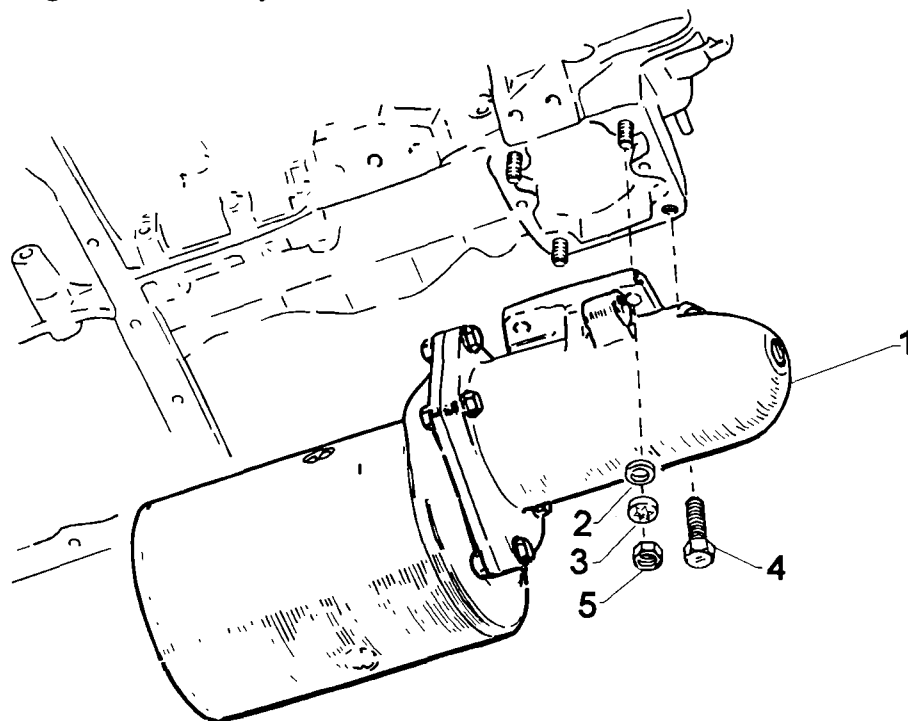


Figure 23. PRESTOLITE STARTERS AND ATTACHING PARTS

ELECTRICAL SYSTEM LYCOMING LIGHTWEIGHT STARTERS AND ATTACHING PARTS

| FIG. REF. | PART NUMBER | DESCRIPTION | ON ALL | J 1 | J 3 | J 3 | J 3 | L 3 |
|-----------|--------------|--|--------|-----|-----|-----|-----|-----|
| | | | | A 5 | A 5 | A 5 | C 5 | C 5 |
| 24 | | | | D | | D | D | D |
| 1 | 05K21302-1 * | KIT, Lightweight starter, 12 volt, 12/14 pitch | | 1 | 1 | 1 | | |
| | 05K21302-2 * | KIT, Lightweight starter, 24 volt, 12/14 pitch | | 1 | 1 | | 1 | 1 |
| 2 | LW-16152 | SPACER, Starter/crankcase | 1 | | | | | |
| 3 | 05K21194 ** | KIT, Shim, lightweight starter | 1 | | | | | |
| 4 | STD-35 | WASHER, 5/16 plain | 4 | | | | | |
| 5 | STD-475 | WASHER, 5/16 lock, internal teeth | 4 | | | | | |
| 6 | LW-31-1.16 | BOLT, 5/16-18 x 1-5/32 long, hex. hd. | 1 | | | | | |
| 7 | STD-1410 | NUT, 5/16-18 plain | 3 | | | | | |

* Refer to latest edition of breakdown.

Lycoming Starter Maintenance Manual SSP-490 for complete parts

** Refer to latest edition of

Lycoming Service Instruction No. 1447 for shim application.

NOTE

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

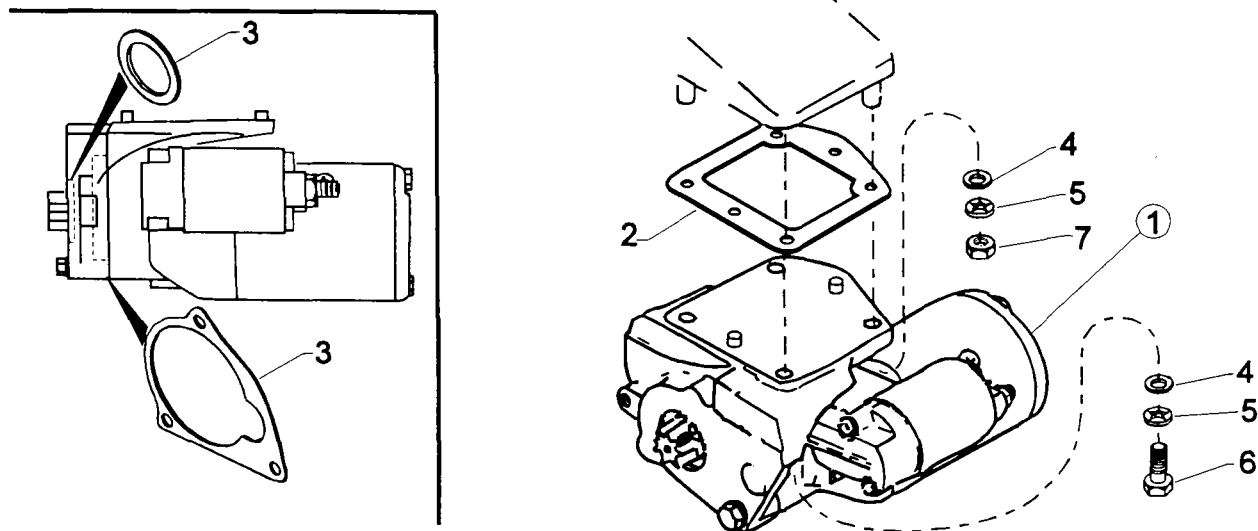


Figure 24.

LYCOMING LIGHTWEIGHT STARTERS AND ATTACHING PARTS

ELECTRICAL SYSTEM ALTERNATOR ASSEMBLIES AND BELTS

| FIG. REF. 25 | PART NUMBER | DESCRIPTION | ON ALL | J 1 A 5 D | J 3 A 5 | J 3 A 5 D | J 3 C 5 D | L 3 C 5 D |
|-----------------|--------------|------------------------------------|--------|-----------|---------|-----------|-----------|-----------|
| 1 | 32C19553 | ALTERNATOR ASSY., 24 volt, 70 amp. | | 1 | 1 | | | |
| 2 | LW-14326 | ALTERNATOR. (ALU-8421-LS) | | 1 | 1 | | | |
| 3 | 36B19484 | PULLEY, Alternator | | 1 | 1 | | | |
| 4 | LW-14371 | ALTERNATOR ASSY., 12 volt, 60 amp. | | 1 | 1 | | | |
| 5 | LW-14313 | ALTERNATOR. (ALY-8420-LS) | | 1 | 1 | | | |
| 6 | 36B19484 | PULLEY, Alternator | | 1 | 1 | | | |
| 7 | 32B19549 | ALTERNATOR ASSY., 12 volt, 70 amp. | | | | 1 | | |
| 8 | LW-14318 | ALTERNATOR. (ALX-8421-LS) | | | | 1 | | |
| 9 | 36B19484 | PULLEY, Alternator | | | | 1 | | |
| 10 | 37A19773-376 | BELT, Alternator drive, 3/8 wide | | 1 | 1 | 1 | | |

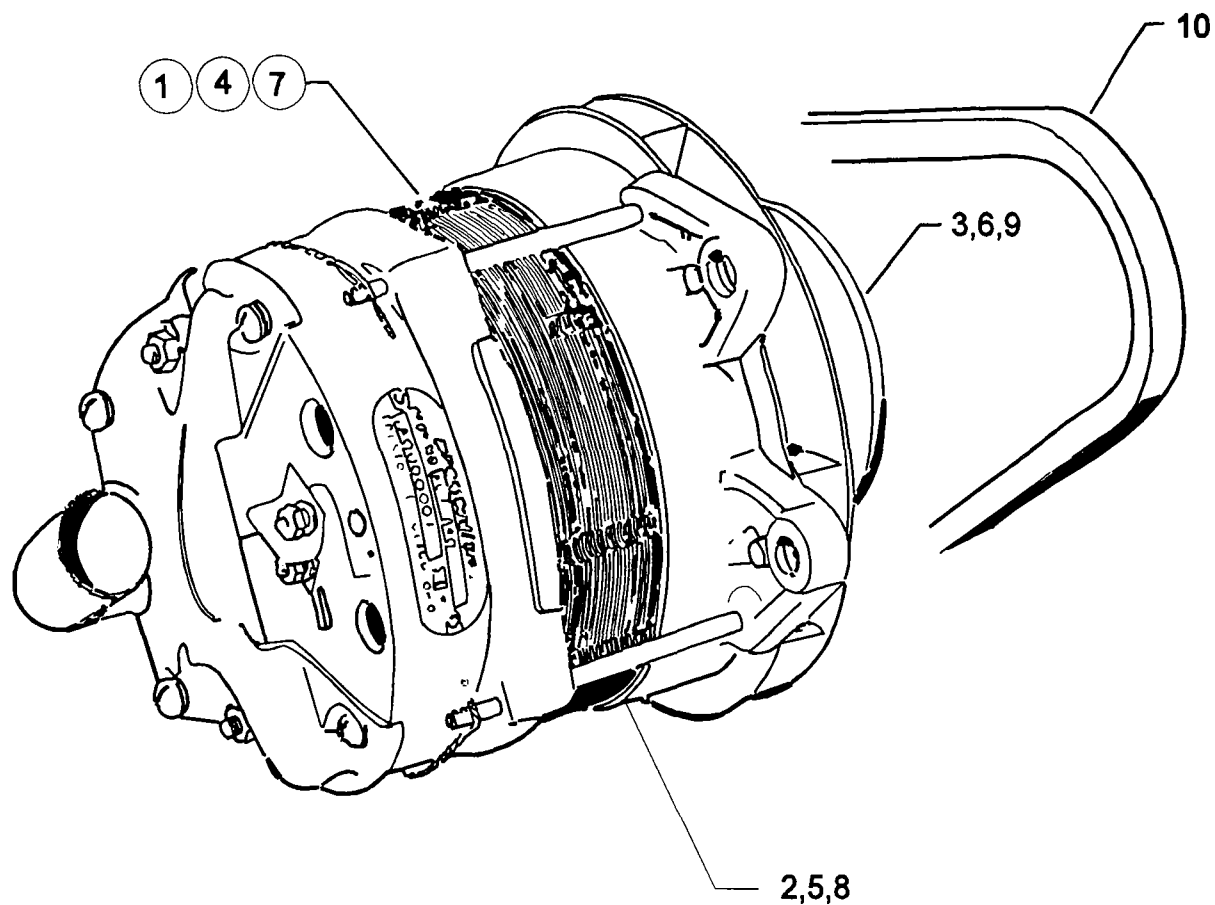
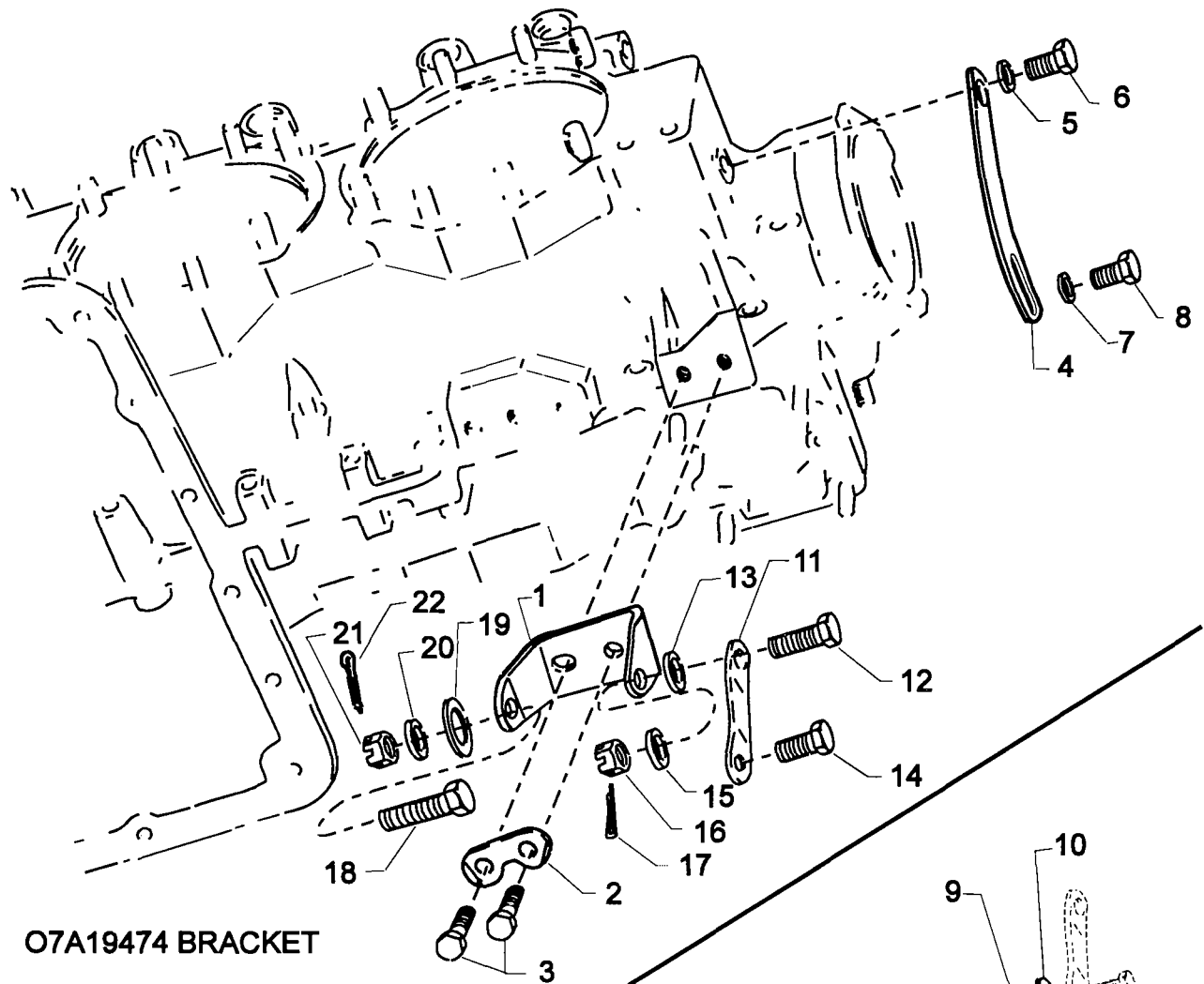


Figure 25. ALTERNATOR ASSEMBLIES AND BELT

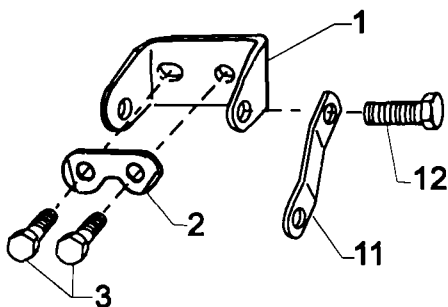
ELECTRICAL SYSTEM ALTERNATOR MOUNTING AND ATTACHING PARTS

| FIG. REF. | PART NUMBER | DESCRIPTION | ON ALL | J 1 A 5 D | J 3 A 5 D | J 3 A 5 D | J 3 C 5 D | L 3 C 5 D |
|-----------|-------------|--|--------|-----------|-----------|-----------|-----------|-----------|
| 1 | 07A19474 | BRACKET, Alternator | | 1 | 1 | 1 | | |
| | 07A21443 | BRACKET, Alternator | | | | | 1 | 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 | 1 | 1 | | |
| | LW-10729 | LINK, Alternator adjusting | | | | | 1 | 1 |
| 5 | STD-35 | WASHER, 5/16 plain | 1 | | | | | |
| 6 | LW-31H0.75 | BOLT, 5/16-18 x 3/4 long, hex. hd. | | 1 | 1 | 1 | | |
| | LW-31H0.88 | BOLT, 5/16-18 x 7/8 long, hex. hd. | | | | | 1 | 1 |
| 7 | STD-1727 | WASHER, Plain, 3/4 O.D. x 11/32 I.D. x 1/8 thick | | 1 | 1 | 1 | | |
| 8 | LW-31H0.75 | BOLT, 5/16-18 x 3/4 long, hex. hd. | | 1 | 1 | 1 | | |
| 9 | STD-2197 * | WASHER, 21/64 I.D. x 13/16 O.D. x 1/16 thick | | 2 | 2 | | | |
| 10 | LW-14649 * | SHIM, 13/16 O.D. x 11/32 I.D. x .010 thick | | 2 | 2 | | | |
| 11 | 74323 | STRUT, Alternator support | | 1 | 1 | 1 | | |
| | 76908 | STRUT, Alternator support | | | | | 1 | 1 |
| 12 | LW-31H0.75 | BOLT, 5/16-18 x 3/4 long, hex. hd. | | 1 | 1 | 1 | | |
| | LW-31H0.88 | BOLT, 5/16-18 x 7/8 long, hex. hd. | | | | | 1 | 1 |
| 13 | STD-690 | WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick | | AR | AR | AR | | |
| 14 | AN6-14 | BOLT, 3/8-24 x 1-37/64 long, hex. hd., dr. end | | 1 | 1 | | | |
| | AN6-17 | BOLT, 3/8-24 x 1-61/64 long, hex. hd., dr. end | | 1 | 1 | 1 | | |
| 15 | STD-690 | WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick | | AR | AR | AR | | |
| 16 | STD-872 | NUT, 3/8-24 slotted | | 1 | 1 | 1 | | |
| 17 | STD-713 | COTTER PIN, 3/32 dia. x 3/4 long | | 1 | 1 | 1 | | |
| 18 | AN6-16 | BOLT, 3/8-24 x 1-53/64 long, hex. hd., dr. end | | 1 | 1 | 1 | | |
| 19 | 76534 | SHIM, 1-1/8 O.D. x 13/32 I.D. x .005 thick | | AR | AR | AR | | |
| 20 | STD-690 | WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick | | AR | AR | AR | | |
| 21 | STD-872 | NUT, 3/8-24 slotted | | 1 | 1 | 1 | | |
| 22 | STD-713 | COTTER PIN, 3/32 dia. x 3/4 long | | 1 | 1 | 1 | | |

* Between P/N 74323 strut and starter.



O7A19474 BRACKET



O7A21443 BRACKET

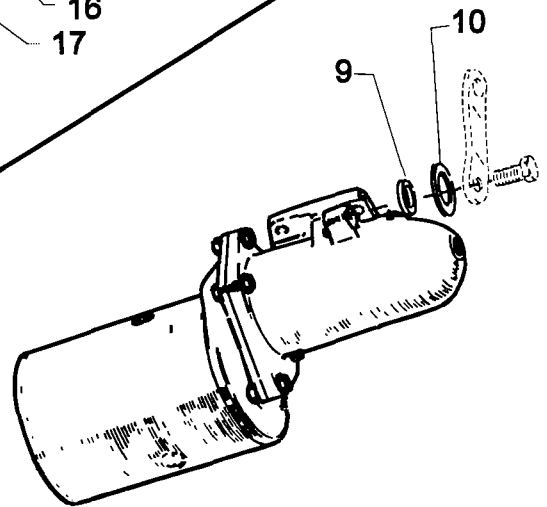


Figure 26. ALTERNATOR MOUNTING AND ATTACHING PARTS

OIL SUMP AND INDUCTION SYSTEM

OIL SUMP ASSEMBLY AND OIL SUCTION SCREEN (O-540-J1A5D, -J3A5, -J3A5D)

| FIG. REF. 27 | PART NUMBER | DESCRIPTION | ON ALL | J | J | J | J | L |
|--------------------|----------------|---|-----------|----|----|----|---|---|
| | | | | 1 | 3 | 3 | 3 | 3 |
| | | | | A | A | A | C | C |
| | | | | 5 | 5 | 5 | 5 | 5 |
| | | | | D | | D | D | D |
| 1 | 06B21326 | GASKET, Oil sump | | 1 | 1 | 1 | | |
| 2 | LW-13901 | SUMP ASSY., Oil | | 1 | 1 | 1 | | |
| 3 | 71699 | CONNECTION, Intake pipe | | 6 | 6 | 6 | | |
| 4 | 25C-11 | STUD, 1/4-20 x 1-3/8 long | | 14 | 14 | 14 | | |
| 5 | 31C-15 | STUD, 5/16-18 x 1-7/8 long | | 4 | 4 | 4 | | |
| 6 | 38-15 | STUD, 3/8-16 x 1-7/8 long | | 8 | 8 | 8 | | |
| 7 | STD-1173 | INSERT, 1/4-20 Helicoil x 1/2 long | | 4 | 4 | 4 | | |
| 8 | STD-8 | WASHER, 1/4 plain | | 34 | 34 | 34 | | |
| 9 | STD-160 | WASHER, 1/4 lock, internal teeth | | 27 | 27 | 27 | | |
| 10 | LW-25-1.13 | BOLT, 1/4-20 x 1-1/8 long, hex. hd. | | 7 | 7 | 7 | | |
| 11 | LW-25-1.00 | BOLT, 1/4-20 x 1.00 long, hex. hd. | | 6 | 6 | 6 | | |
| 12 | STD-1411 | NUT, 1/4-20 plain | | 21 | 21 | 21 | | |
| 13 | STD-551 | PLUG, 1/2-14 NPT, Sq. hd., drilled | | 2 | 2 | 2 | | |
| 14 | STD-2229 | PLUG, 1/2-14 NPT, Allen head | | 2 | 2 | 2 | | |
| 15 | 70484 | SCREEN, Oil suction | | 1 | 1 | 1 | | |
| 16 | 06E19769-1.00 | GASKET, 1.00 I.D. x 1-1/4 O.D. x 3/32 annular | | 1 | 1 | 1 | | |
| 17 | LW-12545 | PLUG, 1.00-20 thd. x 5/8 hex. hd. | | 1 | 1 | 1 | | |

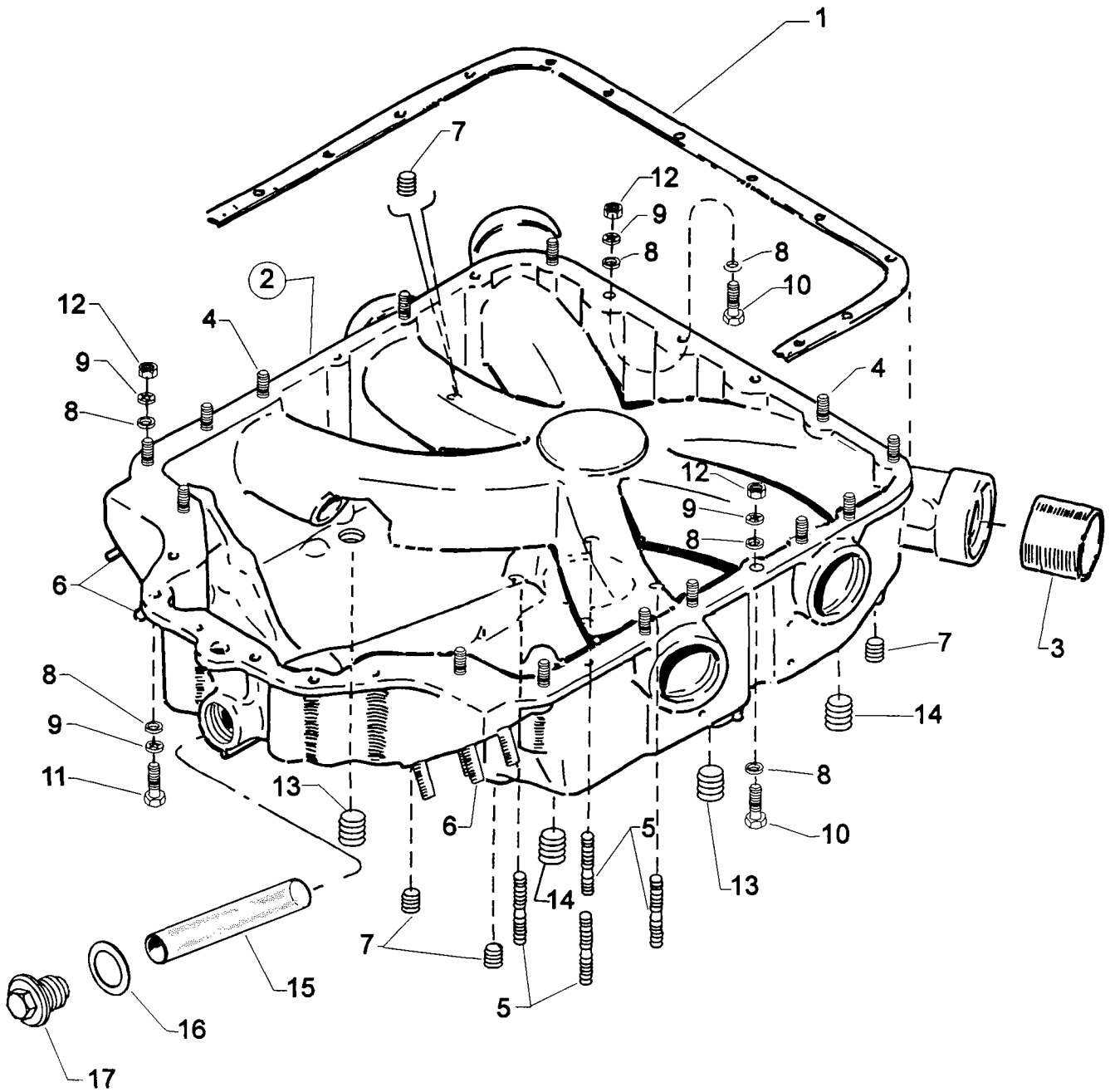


Figure 27. OIL SUMP ASSEMBLY AND OIL SUCTION SCREEN

OIL SUMP AND INDUCTION SYSTEM OIL SUMP ASSEMBLY AND OIL SUCTION SCREEN (O-540-J3C5D, -L3C5D)

| FIG. REF. | PART NUMBER | DESCRIPTION | ON ALL | J 1 A 5 D | J 3 A 5 | J 3 A 5 D | J 3 C 5 D | L 3 C 5 D |
|-----------|---------------|---|--------|-----------|---------|-----------|-----------|-----------|
| 27A | | | | | | | | |
| 1 | 06B21326 | GASKET, Oil sump | | | | | 1 | 1 |
| 2 | LW-14927 | SUMP ASSY., Oil | | | | | 1 | |
| | LW-15615 | SUMP ASSY., Oil | | | | | | 1 |
| 3 | 69602 | CONNECTION, Intake pipe | | | | | 6 | 6 |
| 4 | 25C-11 | STUD, 1/4-20 x 1-3/8 long | | | | | 4 | 4 |
| 5 | 31C-14 | STUD, 5/16-18 x 1-3/4 long | | | | | 4 | 4 |
| 6 | 31C-11 | STUD, 5/16-18 x 1-3/8 long | | | | | | 1 |
| 7 | 38-15 | STUD, 3/8-16 x 1-7/8 long | | | | | 8 | 8 |
| 8 | 1102 | PLUG, 1/8 pipe | | | | | 2 | 2 |
| 9 | STD-551 | PLUG, 1/2-14 NPT, Sq. hd., drilled | | | | | 2 | 2 |
| 10 | STD-8 | WASHER, 1/4 plain | | | | | 44 | 44 |
| 11 | STD-160 | WASHER, 1/4 lock, internal teeth | | | | | 27 | 27 |
| 12 | LW-25-1.13 | BOLT, 1/4-20 x 1-1/8 long, hex. hd. | | | | | 17 | |
| 13 | LW-25-1.13 | BOLT, 1/4-20 x 1-1/8 long, hex. hd. | | | | | | 15 |
| 14 | LW-25-1.00 | BOLT, 1/4-20 x 1.00 long, hex. hd. | | | | | 5 | 5 |
| 15 | STD-2153 | BOLT, 1/4-20 x 1-9/16 long, hex. hd. | | | | | 1 | 1 |
| 16 | STD-1411 | NUT, 1/4-20 plain | | | | | 21 | 21 |
| 17 | 1102 | PLUG, 1/8 NPT, Allen head | | | | | | 1 |
| 18 | STD-2047 * | BOLT, 1/4-20 x 1-3/8 long, hex. hd. | | | | | | 2 |
| 19 | 70484 | SCREEN, Oil suction | | | | | 1 | 1 |
| 20 | 06E19769-1.00 | GASKET, 1.00 I.D. x 1-1/4 O.D. x 3/32 annular | | | | | 1 | 1 |
| 21 | LW-12545 | PLUG, 1.00-20 thd. x 5/8 hex. hd. | | | | | 1 | 1 |

* Install at the two sump flange holes forward of the engine mount flange, left side of engine.

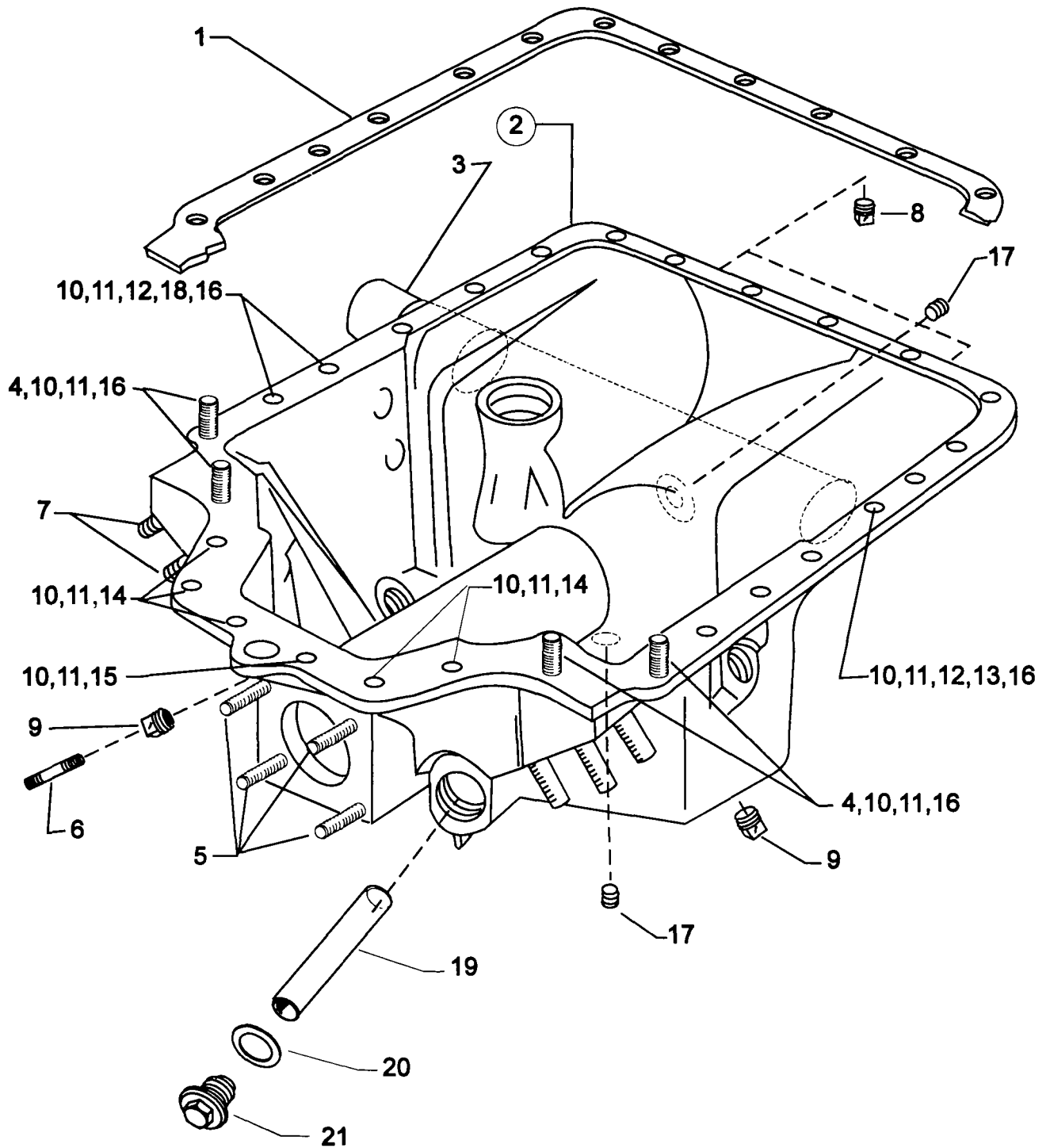


Figure 27A. OIL SUMP ASSEMBLY AND OIL SUCTION SCREEN

OIL SUMP AND INDUCTION SYSTEM INTAKE PIPES AND ATTACHING PARTS

| FIG. REF. 28 | PART NUMBER | DESCRIPTION | ON ALL | J | J | J | J | L |
|--------------------|----------------|---|-----------|---|---|---|---|---|
| | | | | 1 | 3 | 3 | 3 | 3 |
| | | | | A | A | A | C | C |
| | | | | 5 | 5 | 5 | 5 | 5 |
| | | | | D | | D | D | D |
| 1 | 70485 | PIPE, Intake | | 6 | 6 | 6 | | |
| 2 | LW-14931 | PIPE, Intake, cylinder no. 1 | | | | | 1 | 1 |
| 3 | LW-14932 | PIPE, Intake, cylinder no. 2 | | | | | 1 | 1 |
| 4 | LW-14933 | PIPE, Intake, cylinder no. 3 | | | | | 1 | 1 |
| 5 | LW-14934 | PIPE, Intake, cylinder no. 4 | | | | | 1 | 1 |
| 6 | LW-14935 | PIPE, Intake, cylinder no. 5 | | | | | 1 | 1 |
| 7 | LW-16477 | PIPE, Intake, cylinder no. 6 | | | | | 1 | 1 |
| 8 | 69603 | HOSE, 1-3/4 I.D. x 2-3/16 O.D. x 1-3/4 long | 6 | | | | | |
| 9 | LW-15592-8-28 | CLAMP, Hose | 12 | | | | | |
| 10 | 71973 | GASKET, 2 bolt flange, 1-3/4 I.D. | 6 | | | | | |
| 11 | 73346 | FLANGE, Intake pipe, upper | 6 | | | | | |
| 12 | STD-8 | WASHER, 1/4 plain | 12 | | | | | |
| 13 | STD-160 | WASHER, 1/4 lock, internal teeth | 12 | | | | | |
| 14 | LW-25-1.25 | BOLT, 1/4-20 x 1-1/4 long, hex. hd. | 12 | | | | | |

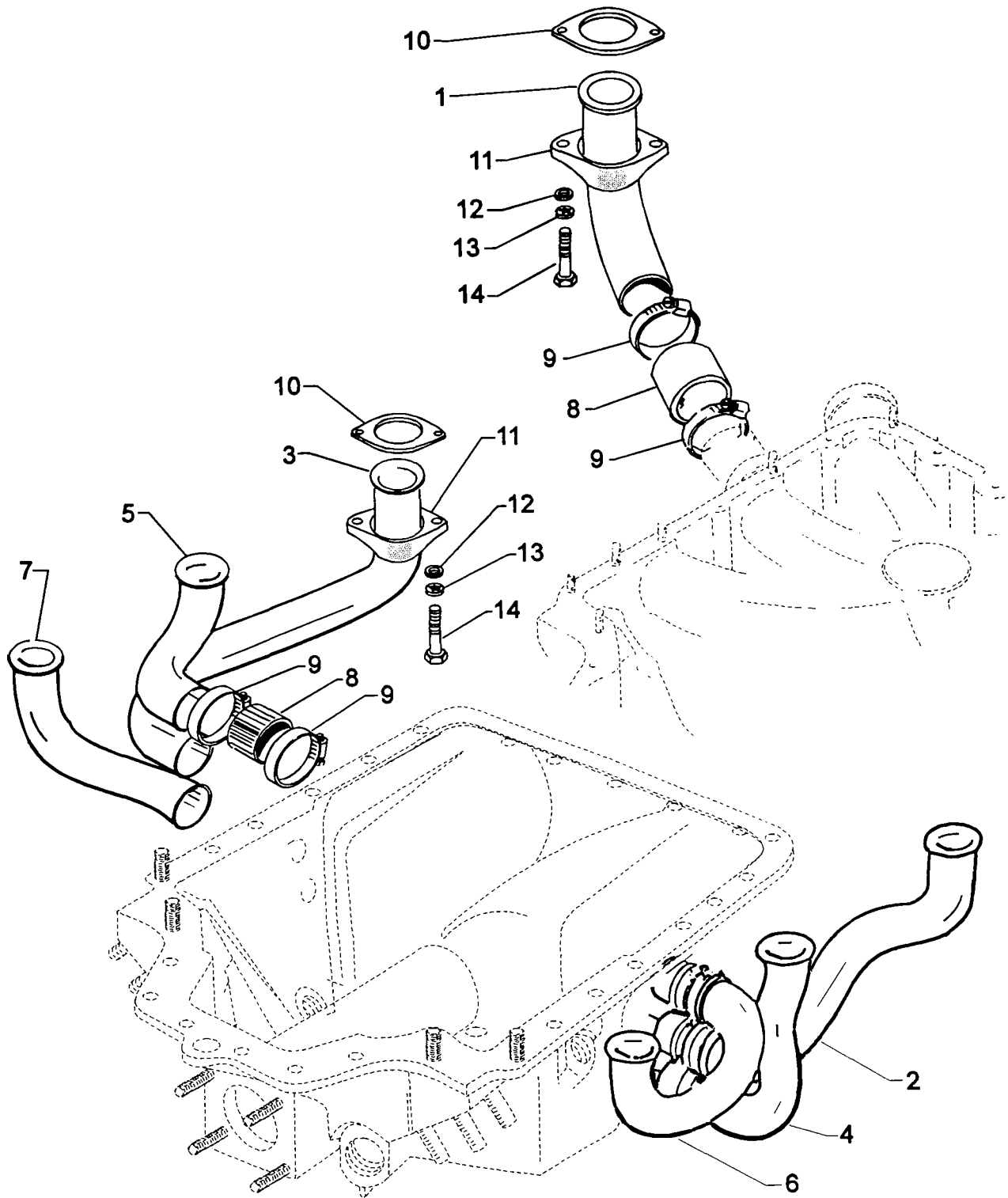


Figure 28. INTAKE PIPES AND ATTACHING PARTS

OIL SUMP AND INDUCTION SYSTEM CARBURETORS AND RELATED PARTS

| FIG. REF. | PART NUMBER | DESCRIPTION | ON ALL | J 1 A 5 D | J 3 A 5 | J 3 A 5 D | J 3 C 5 D | L 3 C 5 D |
|-----------|-------------|-----------------------------------|--------|-----------|---------|-----------|-----------|-----------|
| 1 | 66224 | GASKET, Carburetor | | 1 | 1 | 1 | | |
| 2 | 77154 | GASKET, Carburetor | | | | | 1 | 1 |
| 3 | LW-10540 | CARBURETOR, MA4-5 (10-5054) | | | 1 | 1 | | |
| | 72740 | CARBURETOR, MA4-5 (10-4404) | | 1 | 1 | | | |
| 4 | LW-15960 | CARBURETOR, HA-6 (10-5235) | | | | | 1 | |
| | LW-18987 | CARBURETOR, HA-6 (10-6001) | | | | | | 1 |
| 5 | STD-35 | WASHER, 5/16 plain | 4 | | | | | |
| 6 | STD-475 | WASHER, 5/16 lock, internal teeth | 4 | | | | | |
| 7 | STD-1410 | NUT, 5/16-18 plain | 4 | | | | | |

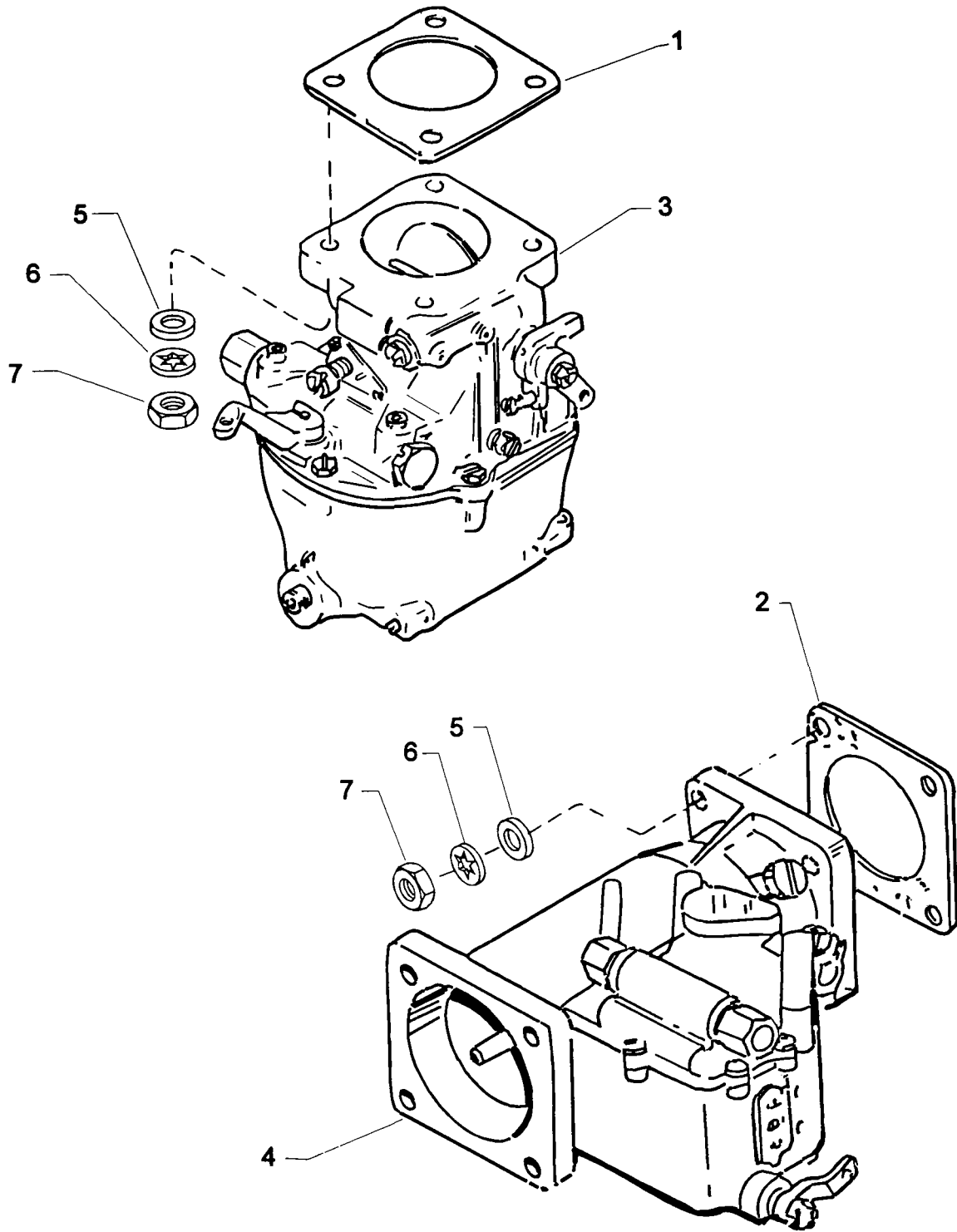


Figure 29. CARBURETORS AND RELATED PARTS

OIL SUMP AND INDUCTION SYSTEM PRIMING SYSTEM (O-540-J3A5)

| FIG. REF. | PART NUMBER | DESCRIPTION | ON ALL | J 1 A 5 D | J 3 A 5 | J 3 A 5 D | J 3 C 5 D | L 3 C 5 D |
|-----------|-----------------|---|--------|-----------|---------|-----------|-----------|-----------|
| 1 | LW-12098-0-160 | TUBE ASSY., Primer, cyl. no. 3 | | | 1 | | | |
| 2 | LW-12098-0-190 | TUBE ASSY., Primer, cyl. no. 4 | | | 1 | | | |
| 3 | LW-12098-0-120 | TUBE ASSY., Primer, cyls. no. 5 & 6 | | | 1 | | | |
| 4 | LW-12098-0-100 | TUBE ASSY., Primer, intermediate, right | | | 1 | | | |
| 5 | LW-12098-0-120 | TUBE ASSY., Primer, intermediate, left | | | 1 | | | |
| 6 | LW-12598 | SLEEVE, Priming line | | | 4 | | | |
| 7 | LW-16266-25-13 | CLAMP | | | 4 | | | |
| 8 | LW-18959-175-25 | CLAMP, 1-3/4 I.D. with 1/4 dia. | | | 4 | | | |
| 9 | STD-553 | SCREW, No. 6-32 x 1/2 long, rd. hd. | | | 4 | | | |
| 10 | AN365-632A | NUT, No. 6-32 self-locking | | | 4 | | | |
| 11 | STD-853 | TEE, Union, 1/8 tube | | | 3 | | | |
| 12 | 63D21408 | NIPPLE ASSY., Primer | | | 4 | | | |
| 13 | 1102* | PLUG, 1/8 pipe | | | 2 | | | |

* Assemble in no. 1 & 2 cylinder heads.

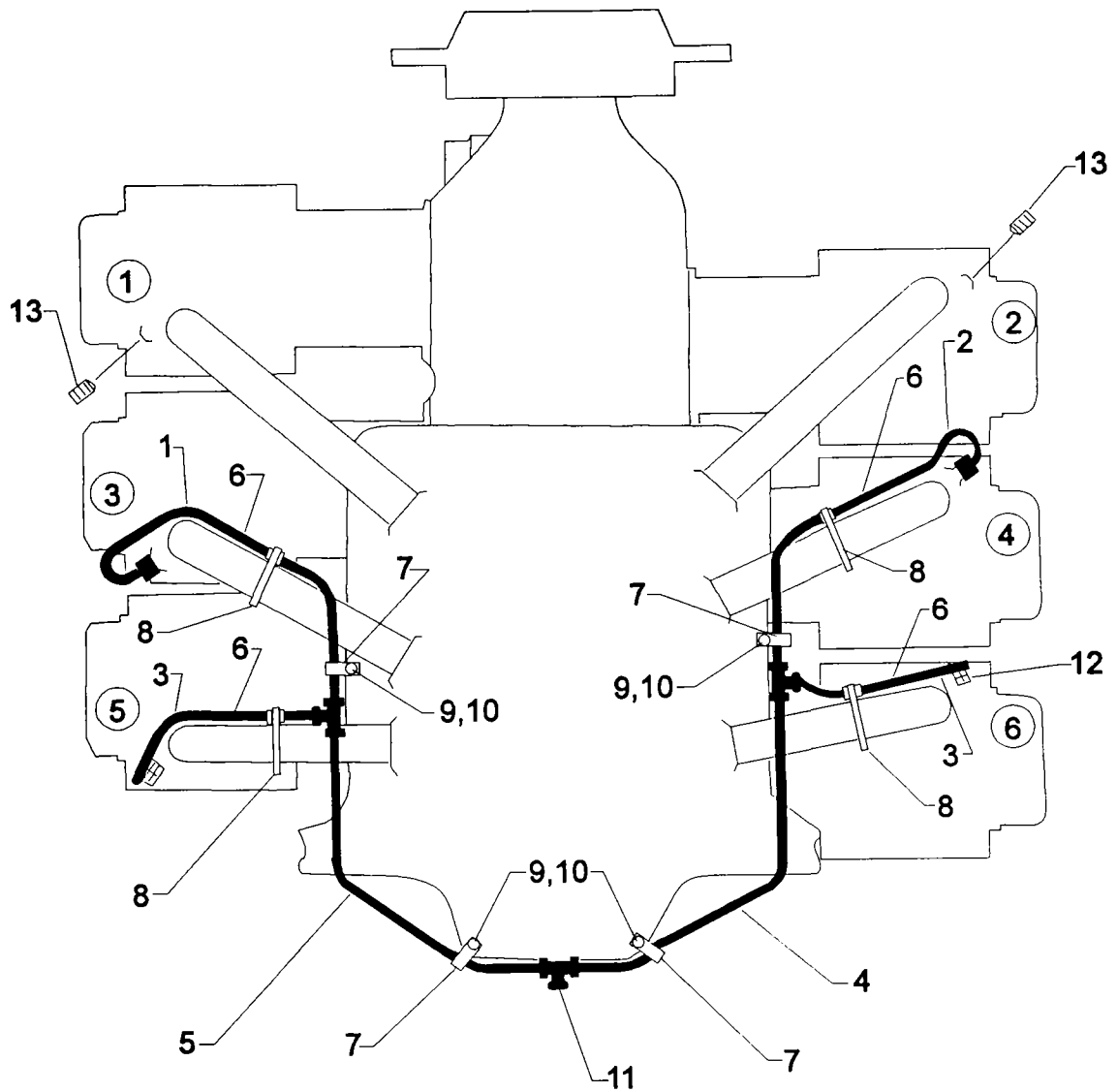


Figure 30. PRIMING SYSTEM (O-540-J3A5)

SERVICE KIT SECTION SEAL AND GASKET KIT
O-540-J1A5D, -J3A5D, -J3C5D, -L3C5D

| Part No. | Part Name | Qty. |
|---------------|------------------------------|------|
| LW-13377 | SEAL AND GASKET SET | 1 |
| LW-10332 | LOCKPLATE, Crankshaft gear | 1 |
| LW-12272 | LOCKPLATE, Shroud tube | 6 |
| LW-12681 | GASKET, Magneto | 1 |
| 06B21326 | GASKET, Oil sump | 1 |
| LW-13792 * | SEAL, Crankshaft oil | 1 |
| LW-14260 | SEAL, Tachometer drive | 1 |
| LW-14820 | RING, Internal retaining | 8 |
| LW-14995 | SPRING, Shroud tube | 6 |
| LW-15628 * | SEAL, Crankshaft oil | 1 |
| LW-18661 | SEAL, Shroud tube | 12 |
| LW-19296 | GASKET, Exhaust flange | 6 |
| STD-2231 | RING, Internal retaining | 1 |
| MS16625-1100 | RING, Internal retaining | 1 |
| MS29512-10 | SEAL, Oil | 1 |
| MS29512-06 | "O" RING | 1 |
| MS9068-009 | "O" RING | 1 |
| STD-1325 | GASKET | 1 |
| 06E19769-1.63 | GASKET | 1 |
| STD-1733 | RING, Oil seal | 1 |
| 06A19956 | SEAL, Oil | 1 |
| 06E19769-0.63 | GASKET | 1 |
| 06E19769-1.00 | GASKET | 1 |
| 06E19769-1.25 | GASKET | 1 |
| 60096 | GASKET, Fuel pump | 1 |
| 66227 | GASKET, Fuel injector | 1 |
| 70310 | SEAL, Shroud tube | 12 |
| 70455 | GASKET | 1 |
| 70457 | GASKET, Oil filler extension | 1 |
| 71481 | RING, Oil seal | 6 |
| 71973 | GASKET | 6 |
| 72053 | GASKET, Governor | 3 |
| 72091 | RING, Oil seal | 2 |
| 72312 | RING, Oil seal | 1 |
| 73383 | LOCKPLATE | 1 |
| 73818 | GASKET, Accessory housing | 1 |
| 74065 | RING, Seal, oil level gage | 1 |
| 74068 | RING, Plug, oil level gage | 1 |
| 75118 | GASKET, Exhaust flange | 12 |
| 75906 | GASKET, Rocker box cover | 6 |
| 77154 | GASKET | 1 |
| 8313 | GASKET, Vacuum pump | 3 |

* - Refer to latest edition of

Lycoming Service Instruction No. 1324 for installation.

SERVICE KIT SECTION SEAL AND GASKET SET
O-540-J3A5

| Part No. | Part Name | Qty. |
|---------------|------------------------------|------|
| 71569-1 | SEAL AND GASKET SET | 1 |
| LW-12272 | LOCKPLATE, Shroud tube | 6 |
| LW-12681 | GASKET, Magneto | 2 |
| LW-12795 | GASKET, Oil filter adapter | 1 |
| 06B21326 | GASKET, Oil sump | 1 |
| LW-13792 * | SEAL, Crankshaft oil | 1 |
| LW-14260 | SEAL, Tachometer drive | 1 |
| LW-14995 | SPRING, Shroud tube | 6 |
| LW-15628 * | SEAL, Crankshaft oil | 1 |
| LW-18638 | LOCKPLATE, Crankshaft gear | 1 |
| LW-18661 | SEAL, Shroud tube | 12 |
| LW-19296 | GASKET, Exhaust flange | 6 |
| STD-2231 | RING, Internal retaining | 1 |
| STD-213 | SEAL, Oil | 1 |
| 06A19956 | SEAL, Oil | 2 |
| 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 | 4 |
| 68315 | GASKET, Accessory drive | 1 |
| 69164 | GASKET, Fuel pump adapter | 1 |
| 69345 | SPACER | 6 |
| 69551 | GASKET, Accessory drive | 1 |
| 70310 | SEAL, Shroud tube | 12 |
| 70455 | GASKET | 1 |
| 70457 | GASKET, Oil filler extension | 1 |
| 71481 | RING, Oil seal | 6 |
| 71667 | LOCKPLATE | 1 |
| 71973 | GASKET | 6 |
| 72053 | GASKET, Governor | 1 |
| 72059 | GASKET, Oil level gage | 1 |
| 72075 | SEAL, Oil | 8 |
| 72078 | LOCKPLATE | 2 |
| 72091 | RING, Oil seal | 2 |
| 72210 | GASKET, Air throttle housing | 1 |
| 72312 | RING, Oil seal | 1 |
| 73383 | LOCKPLATE | 2 |
| 73818 | GASKET, Accessory housing | 1 |
| 74065 | RING, Oil level gage seal | 1 |
| 74068 | RING, Oil level gage plug | 1 |
| 74305 | SEAL | 1 |
| 75906 | GASKET, Rocker box cover | 6 |

(Continued)

SERVICE KIT SECTION SEAL AND GASKET SET (Continued)
O-540-J3A5 (Continued)

| Part No. | Part Name | Qty. |
|----------|---------------------------|------|
| 76510 | GASKET, Oil cooler bypass | 1 |
| 76940 | SEAL, Crankshaft oil | 1 |
| 8313 | GASKET, Vacuum pump | 2 |

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

SERVICE KIT SECTION CYLINDER, PISTON AND RING ASSEMBLY KIT
O-540-J3A5, -J1A5D, -J3A5D, -J3C5D

| Part No. | Part Name | Qty. |
|-------------------|---------------------------------------|------|
| 05K21117 | KIT - CYLINDER, PISTON AND RING ASSY. | 1 |
| LW-13870 | 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 |
| LW-13396 | PISTON | 1 |
| 74241 | RING, Piston, compression | 2 |
| 73857 or 14H21950 | RING, Piston, oil regulating | 1 |
| LW-14068 | PIN, Piston | 1 |
| 60828 | PLUG, Piston pin | 2 |
| 71481 | RING, Cylinder base seal | 1 |
| LW-18661 | SEAL, Shroud tube | 2 |
| 70310 | SEAL, Shroud tube | 2 |
| 75906 | GASKET, Rocker box cover | 1 |
| 71973 | GASKET, 2 bolt flange, 1-3/4 I.D | 1 |
| 77611 | GASKET, Exhaust flange | 1 |

SERVICE KIT SECTION CYLINDER, PISTON AND RING ASSEMBLY KIT
O-540-L3C5D

| Part No. | Part Name | Qty. |
|-------------------|--------------------------------------|------|
| 05K21231 | KIT, CYLINDER, PISTON AND RING ASSY. | 1 |
| LW-15605 | CYLINDER AND HEAD ASSY. | 1 |
| LW-19001 | VAVLE, 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 |
| 73857 or 14H21950 | RING, Piston, Oil regulating | 1 |
| LW-14068 | PIN, Piston | 1 |
| 60828 | PLUG, Piston pin | 2 |
| 71481 | RING, Cylinder base seal | 1 |
| 70310 | SEAL, Shroud tube | 2 |
| LW-18661 | SEAL, Shroud tube | 2 |
| 75906 | GASKET, Rocker box cover | 1 |
| 77611 | GASKET, Exhaust flange | 1 |
| 71973 | GASKET, 2 bolt flange, 1-3/4 I.D. | 1 |

| |
|--|
| SERVICE KIT SECTION CRANKCASE ASSY. AND THRU STUD KITS |
|--|

| Part No. | Part Name | Qty. |
|---------------|-----------------------------------|------|
| 11E20000-D1-S | CRANKCASE ASSY. AND THRU STUD KIT | 1 |
| 11E20000-D1 | CRANKCASE ASSY. | 1 |
| 76220 | THRU STUD | 8 |
| 31C-14 | STUD, AN Governor | 4 |
| 31C-16 | STUD, Woodward Governor | 4 |
| STD-1339 | PLUG | 7 |
| AN565B1032H4 | SET SCREW | 1 |
| AN565B1032H5 | SET SCREW | 1 |
| SSP-272 | TAG, Piston cooling nozzles | 1 |
| SSP-582 | TAG, Thin wall bearings | 1 |
| SSP-1576 | TAG, Governor drive idler shaft | 1 |
| SSP-1769 | TAG, Governor drive pad studs | 1 |
| 1102 | PLUG, 1/8 pipe, oil pressure | 4 |
| | | |
| 11E20000-D2-S | CRANKCASE ASSY. AND THRU STUD KIT | 1 |
| 11E20000-D2 | CRANKCASE ASSY. | 1 |
| 76220 | THRU STUD | 8 |
| 31C-14 | STUD, AN Governor | 4 |
| 31C-16 | STUD, Woodward Governor | 4 |
| STD-1339 | PLUG | 7 |
| AN565B1032H4 | SET SCREW | 1 |
| AN565B1032H5 | SET SCREW | 1 |
| SSP-272 | TAG, Piston cooling nozzles | 1 |
| SSP-582 | TAG, Thin wall bearings | 1 |
| SSP-1576 | TAG, Governor drive idler shaft | 1 |
| SSP-1769 | TAG, Governor drive pad studs | 1 |
| 1102 | PLUG, 1/8 pipe, oil pressure | 4 |
| | | |
| 11E20000-S1-S | CRANKCASE ASSY. AND THRU STUD KIT | 1 |
| 11E20000-S1 | CRANKCASE ASSY. | 1 |
| 76220 | THRU STUD | 8 |
| 31C-14 | STUD, AN Governor | 4 |
| 31C-16 | STUD, Woodward Governor | 4 |
| STD-1339 | PLUG | 7 |
| AN565B1032H4 | SET SCREW | 1 |
| AN565B1032H5 | SET SCREW | 1 |
| SSP-272 | TAG, Piston cooling nozzles | 1 |
| SSP-582 | TAG, Thin wall bearings | 1 |
| SSP-1576 | TAG, Governor drive idler shaft | 1 |
| SSP-1769 | TAG, Governor drive pad studs | 1 |
| 1102 | PLUG, 1/8 pipe, oil pressure | 4 |

NUMERICAL INDEX

| PART NO. | PART NAME | PAGE NO. | PART NO. | PART NAME | PAGE NO. |
|--------------|------------|----------|----------------|-------------------|----------|
| AN365-632A | Nut | 6-9 | LW-10307 | Gear Assy. | 2-9 |
| AN500-10-16 | Screw | 2-11 | LW-10307 | Gear Assy. | 2-11 |
| AN565B1032H5 | Set Screw | 1-11 | LW-10318 | Gear Assy. | 2-3 |
| AN6-14 | Bolt | 5-5 | LW-10320 | Sleeve | 2-13 |
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| AN6-17 | Bolt | 5-5 | LW-10332 | Lockplate | 1-7 |
| AN6-34A | Bolt | 1-15 | LW-10341 | Insert | 2-1 |
| AN777-8D | Elbow | 2-7 | LW-10344 | Body Assy. | 2-3 |
| AN8-14A | Bolt | 1-7 | LW-10442 | Gear | 1-11 |
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| AN816-8 | Nipple | 2-7 | LW-10659 | Gear Assy. | 1-13 |
| AN901-8A | Gasket | 2-7 | LW-10729 | Link | 5-5 |
| AN919-15 | Reducer | 2-9 | LW-11485 | Shroud Tube Assy. | 3-5 |
| LW-25-0.50 | Bolt | 1-3 | LW-11713 | Spring | 1-5 |
| LW-25-0.81 | Bolt | 2-3 | LW-11775 | Piston Plug | 3-1 |
| LW-25-0.94 | Bolt | 2-3 | LW-11795 | Spring | 3-5 |
| LW-25-1.00 | Bolt | 6-1 | LW-11800 | Spring | 3-5 |
| LW-25-1.00 | Bolt | 6-3 | LW-11866 | Spacer | 1-15 |
| LW-25-1.13 | Bolt | 1-15 | LW-11997 | Seal | 1-5 |
| LW-25-1.13 | Bolt | 2-3 | LW-12098-0-100 | Tube Assy. | 6-9 |
| LW-25-1.13 | Bolt | 6-1 | LW-12098-0-120 | Tube Assy. | 6-9 |
| LW-25-1.13 | Bolt | 6-3 | LW-12098-0-160 | Tube Assy. | 6-9 |
| LW-25-1.25 | Bolt | 2-3 | LW-12098-0-190 | Tube Assy. | 6-9 |
| LW-25-1.25 | Bolt | 6-5 | LW-12186 | Nut | 3-1 |
| LW-25-1.50 | Bolt | 1-15 | LW-12272 | Lockplate | 3-5 |
| LW-25-1.50 | Bolt | 2-3 | LW-12545 | Plug | 6-1 |
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