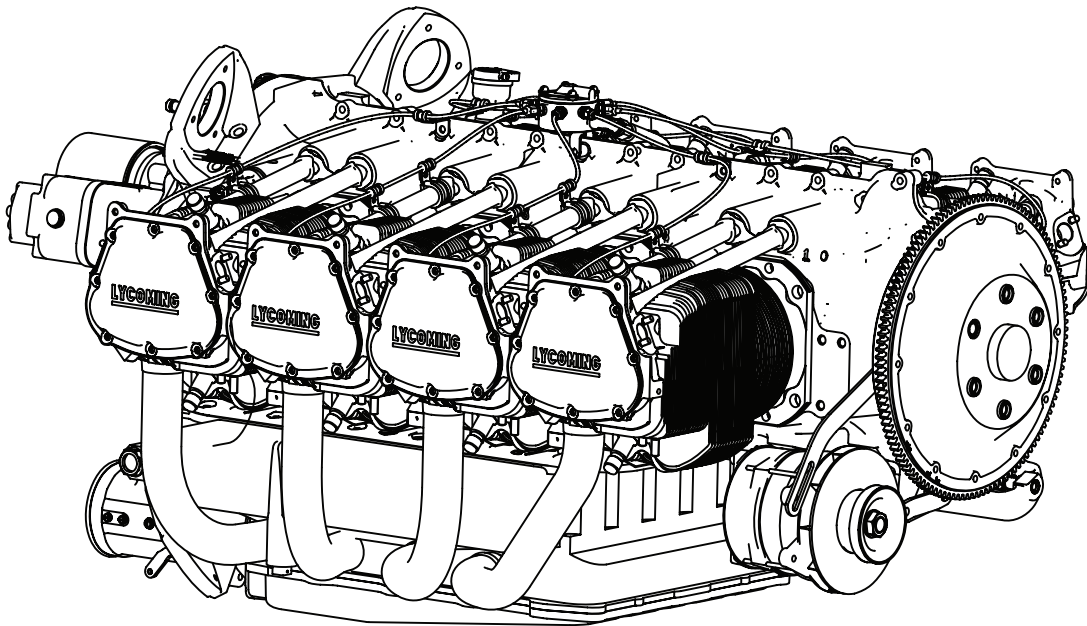


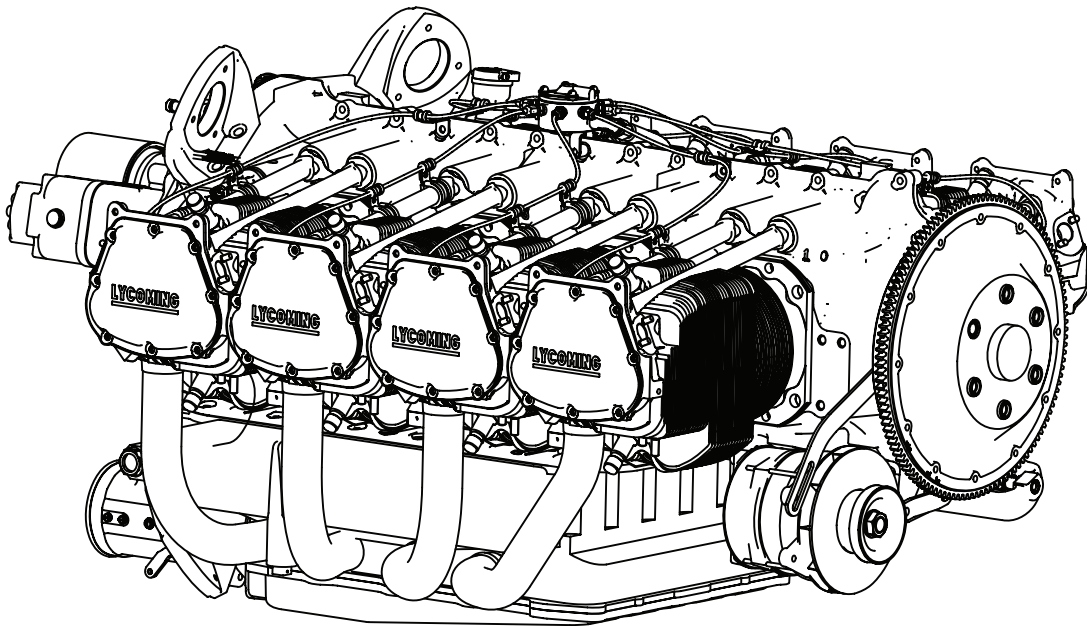
# Lycoming Aircraft Engines Parts Catalog



## **IO-720-D1C** **Wide Cylinder Flange Model**

***LYCOMING***

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## **IO-720-D1C** **Wide Cylinder Flange Model**

***LYCOMING***



**INTRODUCTION**

This illustrated parts catalog contains a complete parts listing for the Lycoming IO-720-D1C wide cylinder flange 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 these publications appear in the latest edition of Service Letter No. L114.

**NOTE**

The illustrations, pictures and drawings shown in this publication are typical of the subject matter they portray; in no instance are they to be interpreted as examples of any specific engine, equipment or part thereof.

Any reference in this document to a suppliers/parts manufacturers' product, by name, trademark, part number or other description is solely for the purposes of identification and does not indicate or infer that Lycoming accepts responsibility for quality control and/or airworthiness of parts which do not pass through the Lycoming quality control system.

**SERVICE BULLETINS, INSTRUCTIONS AND LETTERS**

Although the information contained in this parts catalog is up-to-date at time of publication, users are urged to keep abreast of later information through all Lycoming distributors or from the factory by subscription. Consult the latest edition of Service Letter No. L114 for subscription information.

**IO-720-D1C**

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**IO-720-D1C WIDE CYLINDER FLANGE**

Oversize and Undersize Parts Listing

| PART NO. | DESCRIPTION               | OVERSIZE  |     |     |     |     |     | UNDERSIZE |     |     |
|----------|---------------------------|---|-----|-----|-----|-----|-----|-----------|-----|-----|
|          |                           | P02   | P05 | P10 | P15 | P20 | P30 | M03       | M06 | M10 |
| 66670    | BUSHING, Rocker shaft     |   | X   | X   |     |     |     |           |     |     |
| 69260    | INSERT, Spark plug        |   |     | X   |     |     |     |           |     |     |
| 69796    | DOWEL, Crankshaft bearing |   | X   |     |     |     |     |           |     |     |
| 71894    | SEAL, Valve               |   |     | X   |     | X   | X   |           |     |     |
| 71903    | BUSHING, Counterweight    | SEE LATEST EDITION OF SERVICE INSTRUCTION NO. 1143 FOR APPLICATION. |     |     |     |     |     |           |     |     |
| 72155-S  | BUSHING, Propeller        |   | X   | X   | X   | X   |     |           |     |     |
| 72156-S  | BUSHING, Propeller        |   | X   | X   |     | X   |     |           |     |     |
| 73810    | BUSHING, Crankshaft       | SEE LATEST EDITION OF SERVICE INSTRUCTION NO. 1142 FOR APPLICATION. |     |     |     |     |     |           |     |     |
| 73811    | BUSHING, Propeller        |   | X   | X   |     | X   |     |           |     |     |
| 74309    | BEARING, Rod              |   |     |     |     |     |     | X         | X   | X   |
| LW-11956 | GUIDE, Valve              |   | X   | X   |     | X   | X   |           |     |     |
| LW-11957 | GUIDE, Valve              |   | X   | X   |     | X   | X   |           |     |     |
| LW-12688 | SEAT, Valve               |   |     | X   |     | X   | X   |           |     |     |
| LW-13885 | BEARING, Crankshaft       |   |     |     |     |     |     | X         | X   | X   |
| LW-14830 | BEARING, Crankshaft       |   |     |     |     |     |     | X         | X   | X   |
| STD-1065 | DOWEL, Crankshaft         | X   | X   | X   | X   |     |     |           |     |     |

Studs available in P03, P07 and P12.

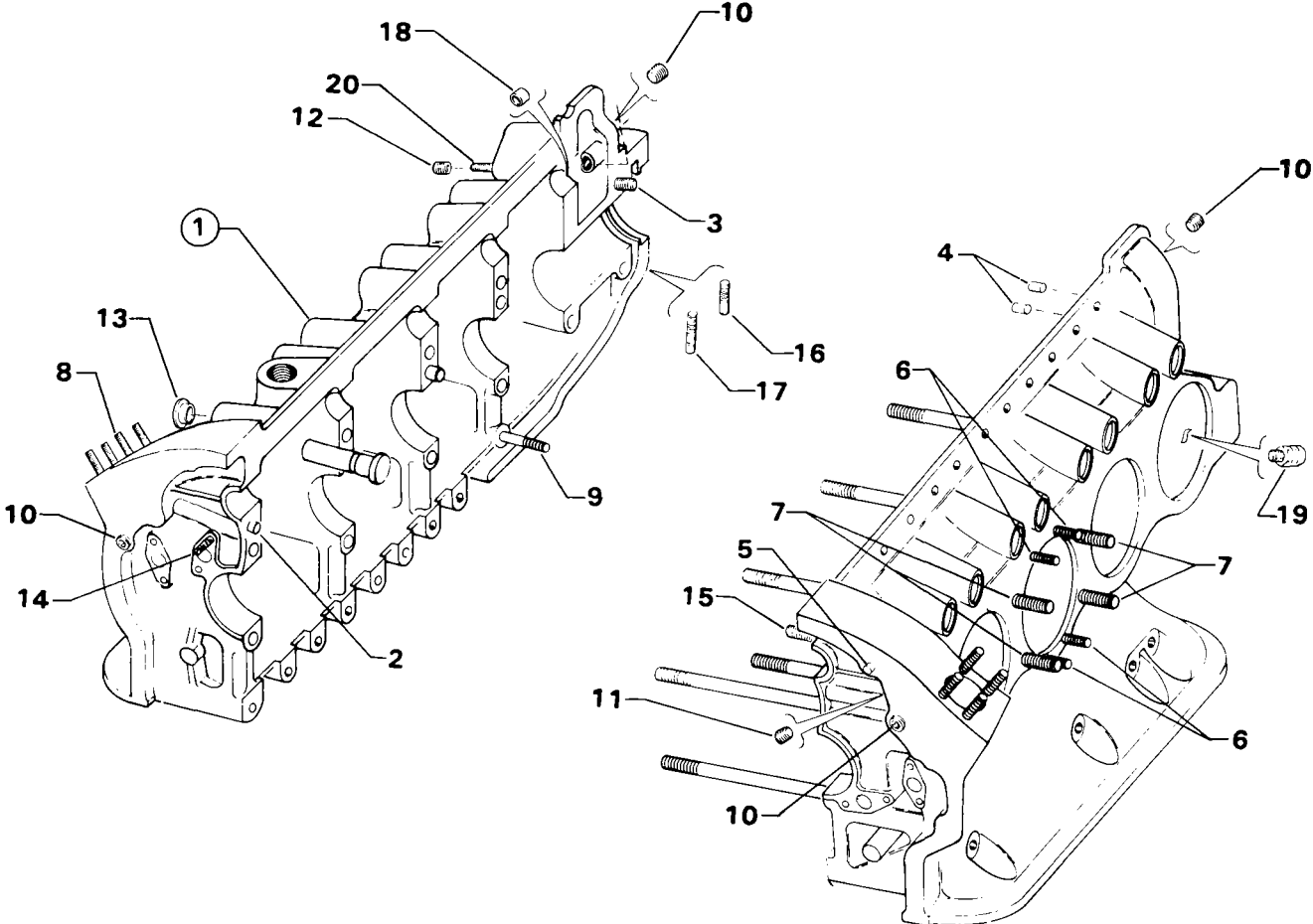
NOTE

When ordering oversize or undersize parts, be sure to specify the required oversize or undersize dimension along with the proper part number. For example: to order P/N 66670 bushing in .010 oversize, order P/N 66670, P10. To order P/N LW-13885 bearing in .006 undersize, order P/N LW-13885, M06. Oversize code letter is "P", undersize code letter is "M".

**CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP**

**CRANKCASE ASSEMBLY**

| FIG. REF. 1 | PART NUMBER | DESCRIPTION                          | QUANTITY PER ASSEMBLY |
|-------------|-------------|--------------------------------------|-----------------------|
| 1           | LW-14626    | CRANKCASE ASSEMBLY                   | 1                     |
| 2           | STD-557     | DOWEL, 1/2 dia. x 11/16 long, hollow | 2                     |
| 3           | 38-22       | STUD, 3/8-16 x 2-3/4 long            | 1                     |
| 4           | 69796       | DOWEL, Crankshaft bearing            | 2                     |
| 5           | STD-514     | DOWEL, 5/16 dia. x 1/2 long          | 2                     |
| 6           | 50-15       | STUD, 1/2-13 x 1-7/8 long            | 16                    |
| 7           | 38-13       | STUD, 3/8-16 x 1-5/8 long            | 36                    |
| 8           | 38-15       | STUD, 3/8-16 x 1-7/8 long            | 8                     |
| 9           | 31C-21      | STUD, 5/16-18 x 2-5/8 long           | 1                     |
| 10          | 1102        | PLUG, 1/8 NPT x 3/8 long, Allen hd.  | 4                     |
| 11          | STD-783     | PLUG, 1/4 NPT x 7/16 long, Allen hd. | 1                     |
| 12          | STD-1339    | PLUG, 1/16-27 NPT, Allen hd.         | 1                     |
| 13          | 65007       | RETAINER, Shroud tube seal           | 16                    |
| 14          | LW-13794    | STUD, 5/16-18 x 1.00 long dr.        | 1                     |
| 15          | 38D-17      | STUD, 3/8-16 x 2-1/8 long dr.        | 1                     |
| 16          | 31C-12      | STUD, 5/16-18 x 1-1/2 long           | 2                     |
| 17          | 31C-13      | STUD, 5/16-18 x 1-5/8 long           | 2                     |
| 18          | 72158       | BUSHING, Gov. drive idler shaft      | 1                     |
| 19          | 73772       | NOZZLE ASSY., Piston cooling         | 8                     |
| 20          | 31C-14      | STUD, 5/16-18 x 1-3/4 long           | 4                     |

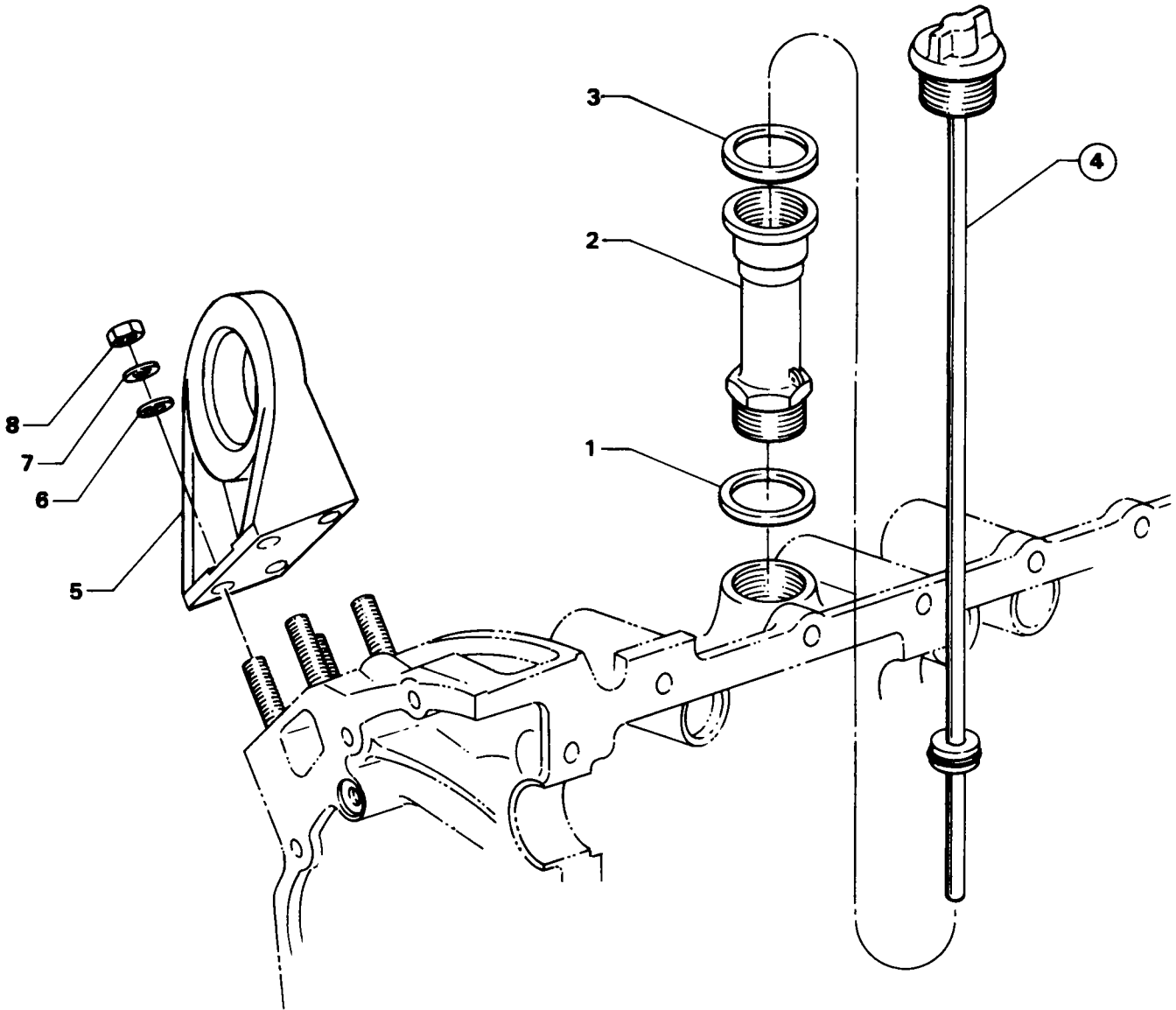


**Figure 1. Crankcase Assembly**



**CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP**  
**OIL LEVEL GAGES AND MOUNTING BRACKETS**

| <b>FIG.<br/>REF.<br/>2</b> | <b>PART<br/>NUMBER</b> | <b>DESCRIPTION</b>                               | <b>QUANTITY<br/>PER<br/>ASSEMBLY</b> |
|----------------------------|------------------------|--|--------------------------------------|
| 1                          | 70457                  | GASKET, Oil filter extension                     | 1                                    |
| 2                          | 77527                  | EXTENSION, Oil filter                            | 1                                    |
| 3                          | 72312                  | RING, Oil seal, 1.00 ID x 1/8 section            | 1                                    |
| 4                          | LW-14745               | GAGE ASSEMBLY, Oil level                         | 1                                    |
| 5                          | 77311                  | BRACKET, Engine mounting, top (20° dynafocal)    | 2                                    |
|                            | 77312                  | BRACKET, Engine mounting, bottom (40° dynafocal) | 2                                    |
| 6                          | STD-33                 | WASHER, 3/8 plain                                | 16                                   |
| 7                          | STD-678                | WASHER, 3/8 internal lock                        | 16                                   |
| 8                          | STD-596                | NUT, 3/8-24 plain, 21/64 thick                   | 16                                   |

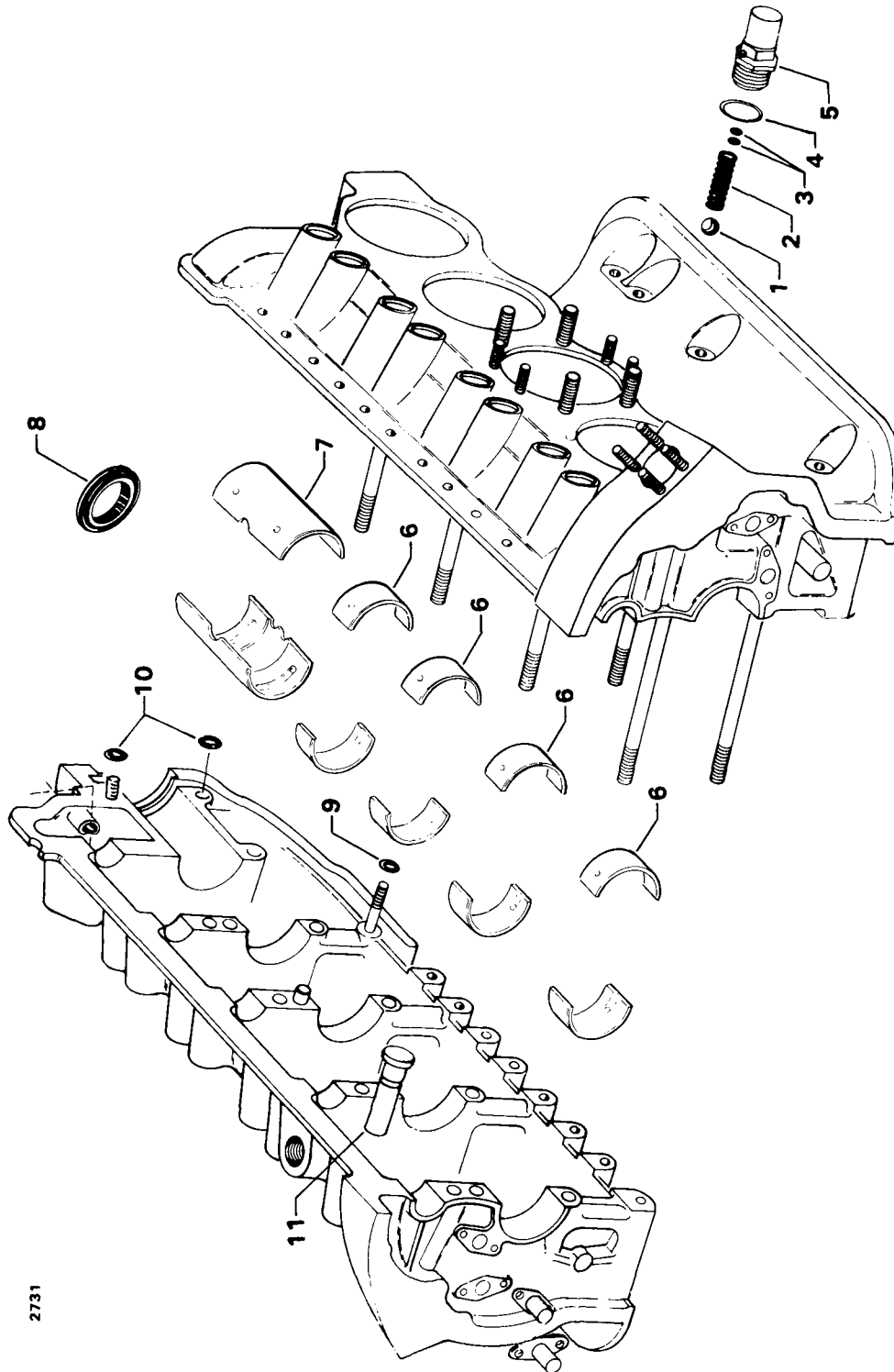


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Figure 2. Oil Level Gages and Mounting Brackets

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

| <b>FIG. REF. 3</b> | <b>PART NUMBER</b> | <b>DESCRIPTION</b>                         | <b>QUANTITY PER ASSEMBLY</b> |
|--------------------|--------------------|--|------------------------------|
| 1                  | 1028-B             | BALL, 11/16 diameter                       | 1                            |
| 2                  | 61084              | SPRING, Oil pressure relief valve          | 1                            |
| 3                  | STD-425            | WASHER, No. 10 plain (Max. 9)              | un                           |
| 4                  | STD-1045           | GASKET, 1-1/4 ID x 1-1/2 OD x 3/32 annular | 1                            |
| 5                  | 76529              | PLUG, Oil relief valve                     | 1                            |
| 6                  | LW-14830           | BEARING, Crankshaft                        | 8                            |
| 7                  | LW-13885           | BEARING, Crankshaft front                  | 2                            |
| 8                  | LW-15628           | SEAL, Crankshaft oil                       | 1                            |
| 9                  | STD-1002           | RING, Oil seal, 5/16 ID x 1/16 dia.        | 1                            |
| 10                 | 72091              | RING, Oil seal, 23/64 ID x 7/64 dia.       | 2                            |
| 11                 | 72877              | BODY, Hydraulic tappet                     | 16                           |

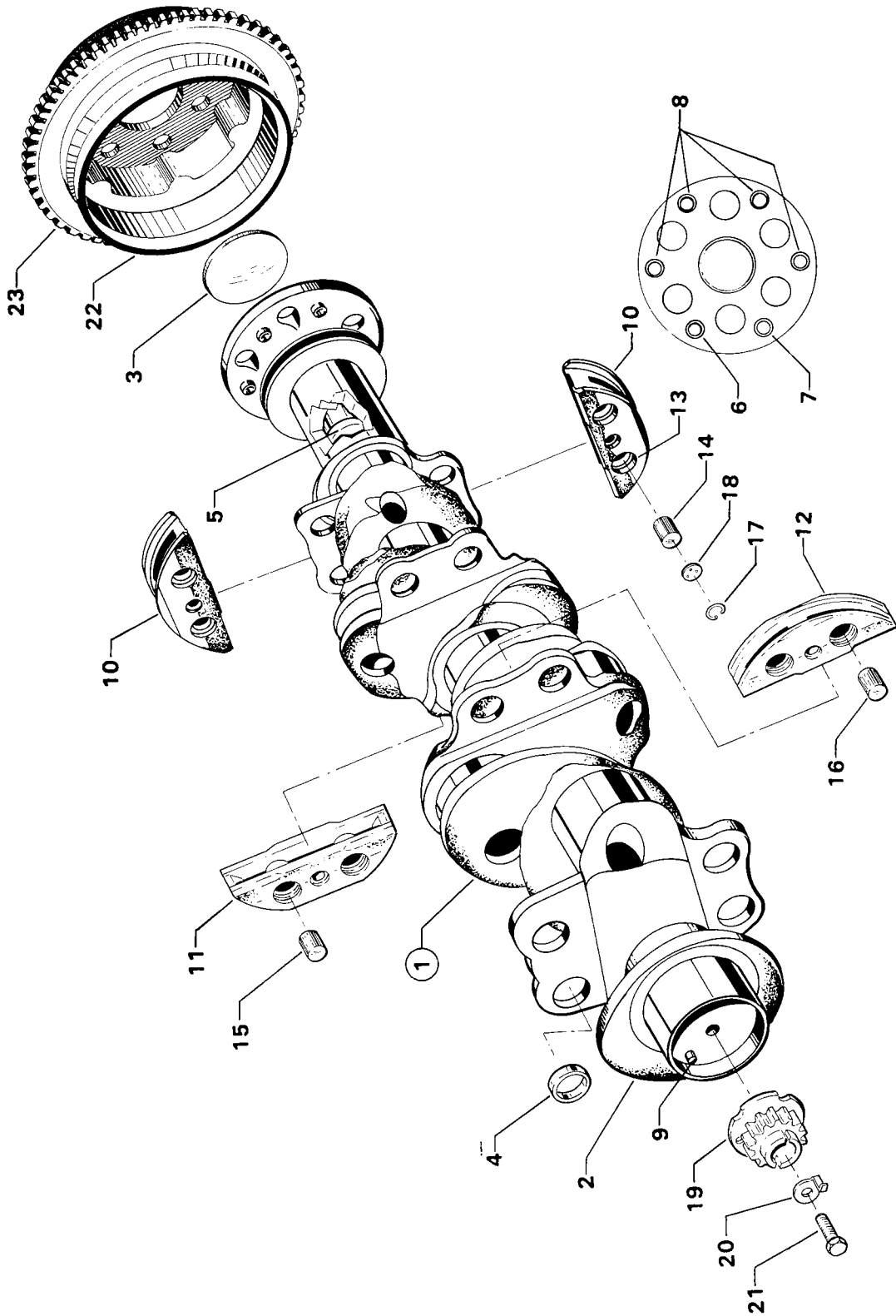


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Figure 3. Crankcase Related Parts

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

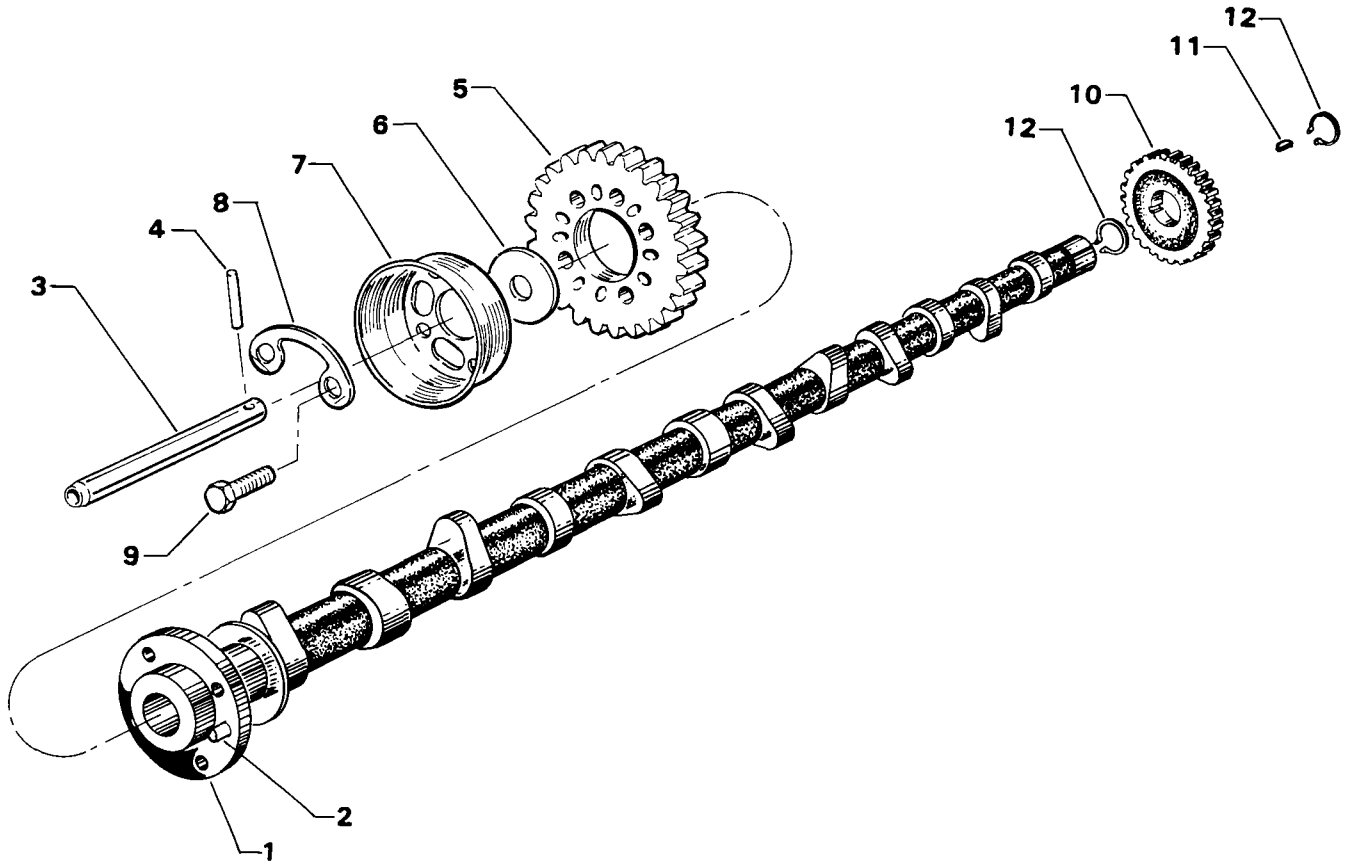
| FIG. REF.<br>4 | PART NUMBER | DESCRIPTION                                  | QUANTITY PER ASSEMBLY |
|----------------|-------------|--|-----------------------|
| 1              | LW-17839    | CRANKSHAFT AND COUNTERWEIGHT ASSY.           | 1                     |
| 2              | LW-17828    | CRANKSHAFT AND PLUG ASSY.                    | 1                     |
| 3              | STD-1211    | PLUG, 2.00 dia. expansion                    | 1                     |
| 4              | 73810       | BUSHING, Crankshaft                          | 16                    |
| 5              | 60945       | PLUG, 1-1/4 dia.                             | 1                     |
| 6              | 73811       | BUSHING, Prop. flange, long, indexing        | 1                     |
| 7              | 72155       | BUSHING, Prop. flange, short                 | 1                     |
| 8              | 72156       | BUSHING, Prop. flange, long                  | 4                     |
| 9              | STD-1065    | DOWEL, Stepped, 5/16 & 1/4 dia. x 35/64 long | 1                     |
| 10             | 73643       | COUNTERWEIGHT ASSY.                          | 6                     |
| 11             | 73812       | COUNTERWEIGHT ASSY.                          | 1                     |
| 12             | 73644       | COUNTERWEIGHT ASSY.                          | 1                     |
| 13             | 71903       | BUSHING, Dynamic counterweight               | 32                    |
| 14             | 73649       | ROLLER, Dynamic counterweight, 4.1 order     | 12                    |
| 15             | 73814       | ROLLER, Dynamic counterweight, 3.5 order     | 2                     |
| 16             | 73648       | ROLLER, Dynamic counterweight, 5.1 order     | 2                     |
| 17             | LW-14820    | RING, Internal retaining                     | 32                    |
| 18             | 71907       | WASHER, Dynamic counterweight                | 32                    |
| 19             | 61155       | GEAR, Crankshaft                             | 1                     |
| 20             | LW-18639    | LOCKPLATE, Crankshaft gear                   | 1                     |
| 21             | STD-847     | SCREW, 5/16-24 x 1.00 long, hex. hd.         | 1                     |
| 22             | 74321       | SUPPORT ASSY., Starter ring gear             | 1                     |
| 23             | 60882       | GEAR, Starter ring                           | 1                     |



**Figure 4. Crankshaft and Related Parts**

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

| <b>FIG. REF. 5</b> | <b>PART NUMBER</b> | <b>DESCRIPTION</b>                           | <b>QUANTITY PER ASSEMBLY</b> |
|--------------------|--------------------|--|------------------------------|
| 1                  | LW-13879           | CAMSHAFT ASSY.                               | 1                            |
| 2                  | STD-1065           | DOWEL, Stepped, 5/16 & 1/4 dia. x 35/64 long | 1                            |
| 3                  | 71643              | SHAFT, ASSY., Tachometer                     | 1                            |
| 4                  | STD-1199           | PIN, 3/16 dia. x 1-1/8 long                  | 1                            |
| 5                  | 72080              | GEAR, Camshaft                               | 1                            |
| 6                  | 68753              | SPACER, Tachometer shaft centering           | 1                            |
| 7                  | 73816              | SLINGER, Breather                            | 1                            |
| 8                  | 72078              | LOCKPLATE, 5/16 bolt x 1-21/64 spacing       | 2                            |
| 9                  | STD-1791           | SCREW, 5/16-24 x 21/32 long, hex. hd.        | 4                            |
| 10                 | 70387              | GEAR, Camshaft governor drive                | 1                            |
| 11                 | STD-737            | KEY, 3/32 x 1/2 Woodruff                     | 1                            |
| 12                 | STD-1732           | RING, External retaining                     | 2                            |



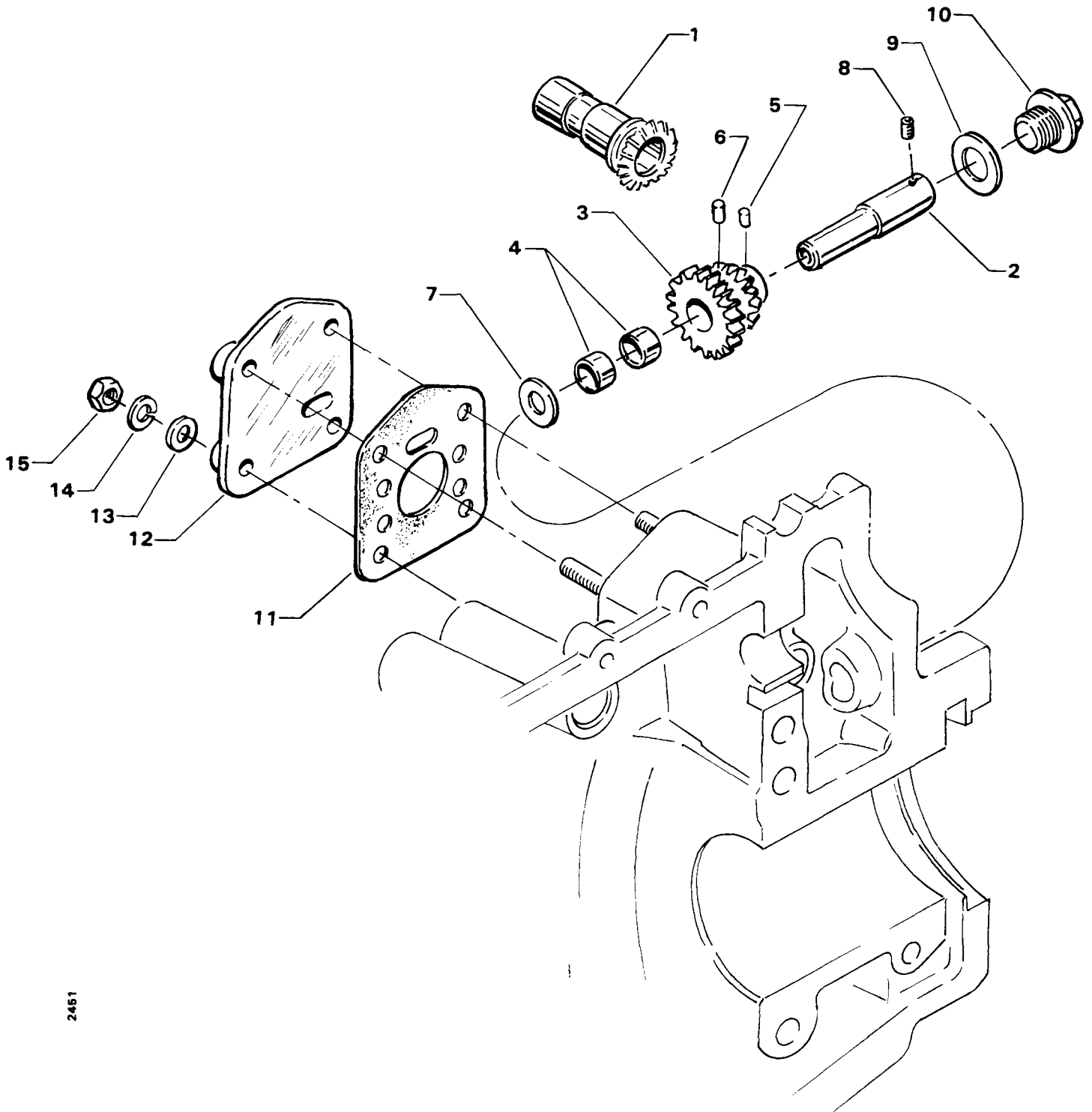
**Figure 5. Camshaft and Related Parts**



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

| FIG. REF. 6 | PART NUMBER   | DESCRIPTION                              | QUANTITY PER ASSEMBLY |
|-------------|---------------|--|-----------------------|
| 1           | 77875         | GEAR, Prop. governor driven              | 1                     |
| 2           | LW-14021      | SHAFT, Prop. governor idler gear         | 1                     |
| 3           | 77874         | GEAR ASSY., Prop. governor idler         | 1                     |
| 4           | 77872         | BUSHING, Prop. 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                           | un                    |
|             | 73250         | WASHER, Thrust                           | un                    |
|             | 73251         | WASHER, Thrust                           | un                    |
|             | 73252         | WASHER, Thrust                           | un                    |
| 8           | AN565B1032H5* | SET SCREW, 10-32 x 5/16 long             | 1                     |
| 9           | 70455         | GASKET, 25/32 ID x 1-1/8 OD x 1/16 thick | 1                     |
| 10          | LW-13896      | PLUG, 3/4-16 hex. hd.                    | 1                     |
| 11          | 72053         | GASKET, Governor drive                   | 1                     |
| 12          | 72378         | COVER, Governor drive                    | 1                     |
| 13          | STD-35        | WASHER, 5/16 plain                       | un                    |
| 14          | STD-475       | WASHER, 5/16 internal lock               | 4                     |
| 15          | STD-1410      | NUT, 5/16 plain                          | 4                     |

\* AN565B1032H4 set screw, 10-32 x 1/4 long is used if shaft boss is not thick enough to allow peening with the AN565B1032H5 set screw.

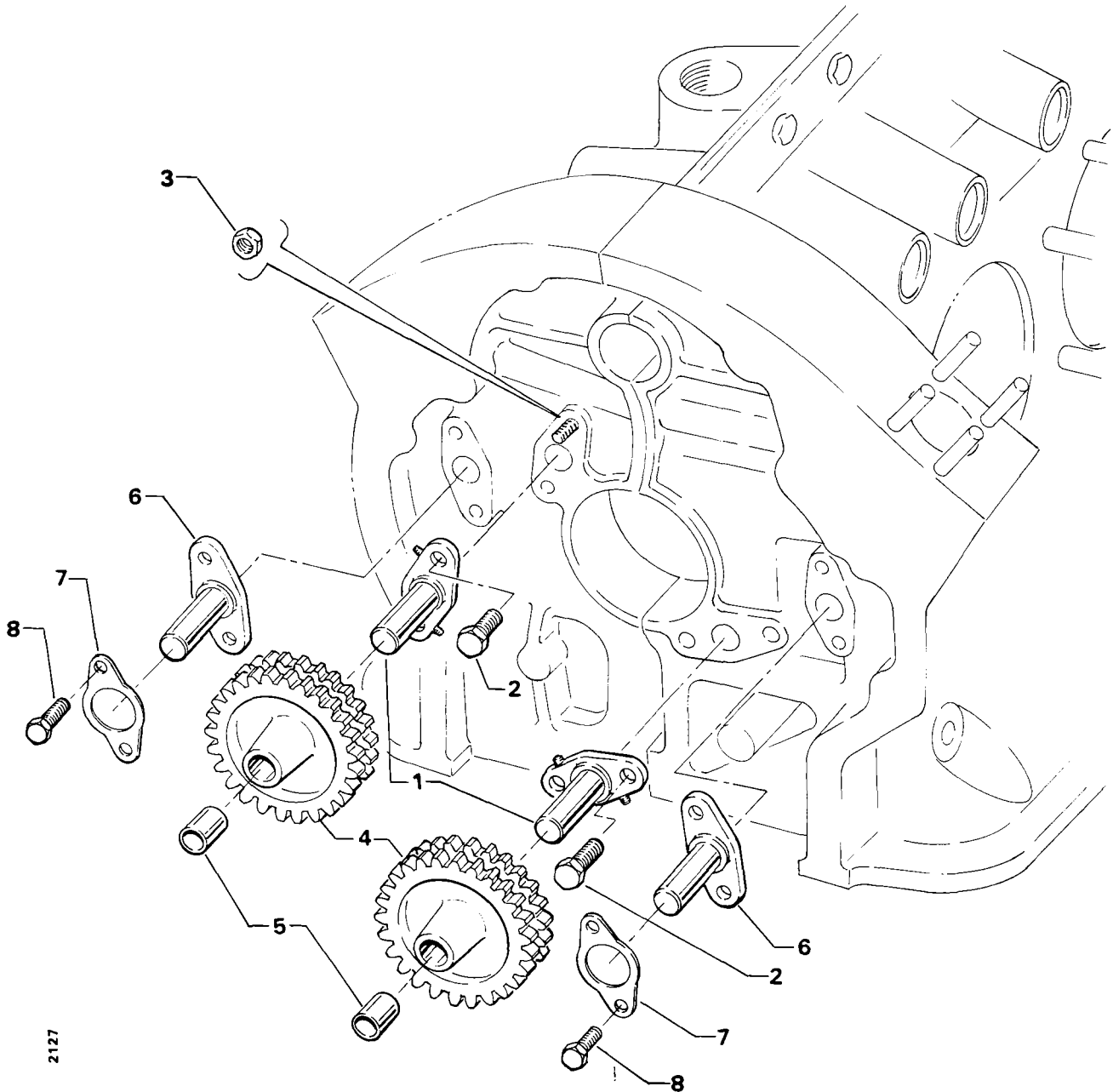


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**Figure 6. Propeller Governor Drive Assy. (Crankcase)**

**CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP**  
**CRANKSHAFT IDLER GEAR**

| <b>FIG. REF.<br/>7</b> | <b>PART NUMBER</b> | <b>DESCRIPTION</b>                        | <b>QUANTITY PER ASSEMBLY</b> |
|------------------------|--------------------|---|------------------------------|
| 1                      | LW-13795           | SHAFT, Crankshaft idler gear              | 2                            |
| 2                      | STD-2167           | SCREW, 5/16-18 x 7/8 long, hex. hd. drive | 3                            |
| 3                      | STD-2168           | NUT, 5/16-18 NC-3 slotted shear           | 1                            |
| 4                      | LW-11489           | GEAR ASSY., Crankshaft idler              | 2                            |
| 5                      | 67530              | BUSHING, Crankshaft idler gear            | 2                            |
| 6                      | 68749-1            | SHAFT, Magneto drive gear                 | 2                            |
| 7                      | 73817              | LOCKPLATE, 1/4 bolt x 1-3/4 spacing       | 2                            |
| 8                      | STD-705            | SCREW, 1/4-20 x 11/16 long, hex. hd.      | 4                            |



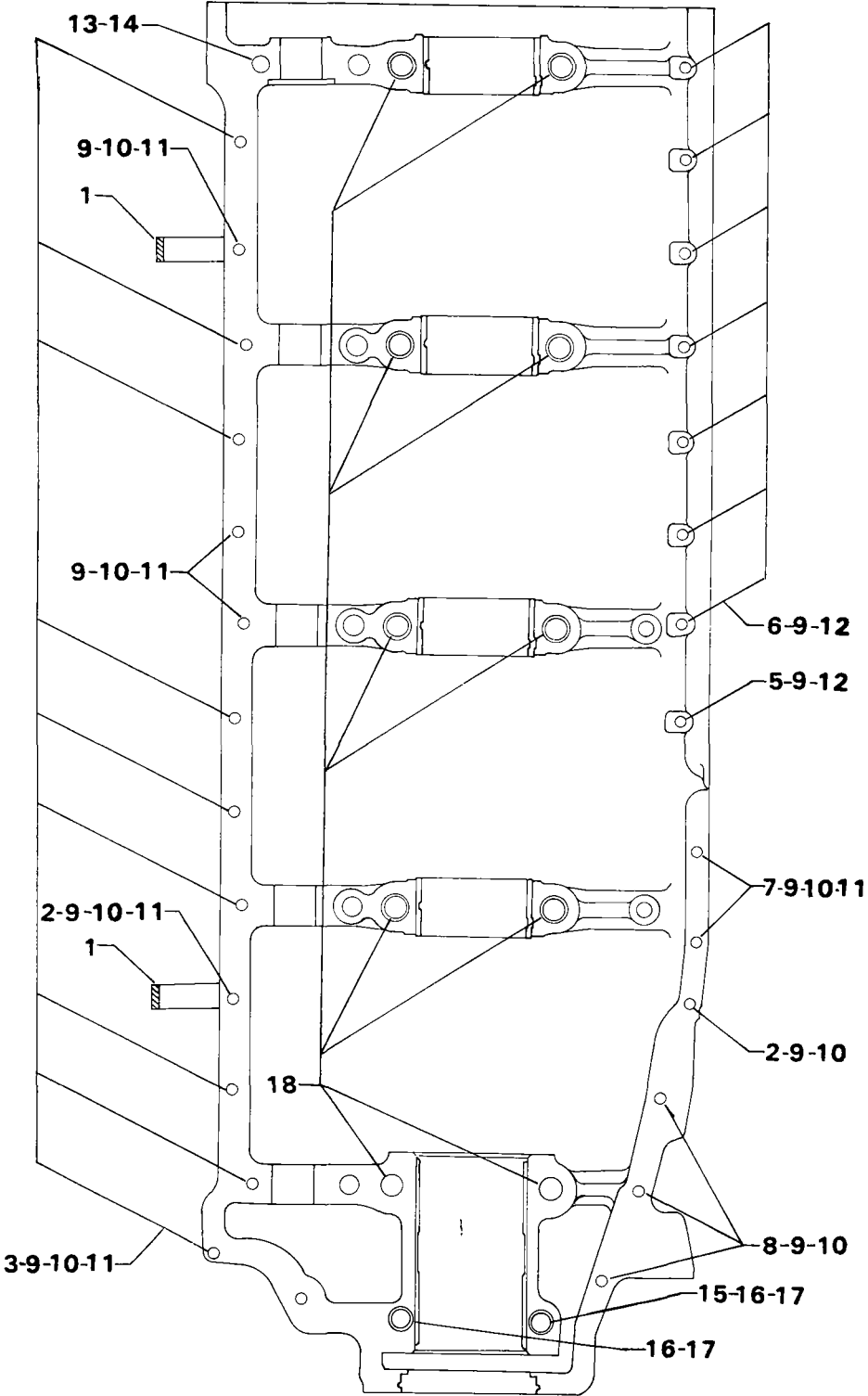
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**Figure 7. Crankshaft Idler Gear**

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

| FIG. REF. 8 | PART NUMBER | DESCRIPTION                             | QUANTITY PER ASSEMBLY |
|-------------|-------------|---|-----------------------|
| 1           | 60803       | STRAP, Lifting                          | 2                     |
| 2           | STD-2084    | BOLT, 1/4-20 x 1-3/4 long, hex. hd.     | 2                     |
| 3           | STD-1414    | BOLT, 1/4-20 x 1-1/2 long, hex. hd.     | 10                    |
| 4           | STD-1646    | BOLT, 1/4-20 x 2.00 long, hex. hd.      | 2                     |
| 5           | STD-1904    | BOLT, 1/4-20 x 2-3/4 long, hex. hd. dr. | 1                     |
| 6           | STD-1903    | BOLT, 1/4-20 x 2-1/8 long, hex. hd. dr. | 7                     |
| 7           | STD-1905    | BOLT, 1/4-20 x 2-15/16 long, hex. hd.   | 2                     |
| 8           | STD-1419    | BOLT, 1/4-20 x 1-1/8 long, hex. hd.     | 4                     |
| 9           | STD-8       | WASHER, 1/4 plain                       | 41                    |
| 10          | STD-160     | WASHER, 1/4 internal lock               | 20                    |
| 11          | STD-1411    | NUT, 1/4-20 plain                       | 15                    |
| 12          | STD-1409    | NUT, 1/4-20 slotted shear               | 8                     |
| 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                       | 4                     |
| 17          | LW-11866    | SPACER, Nut, compressor                 | 2                     |
| 18          | 76220       | STUD, 1/2-20 x 10-45/64 long            | 10                    |

\*2 required under head of AN6-34A.



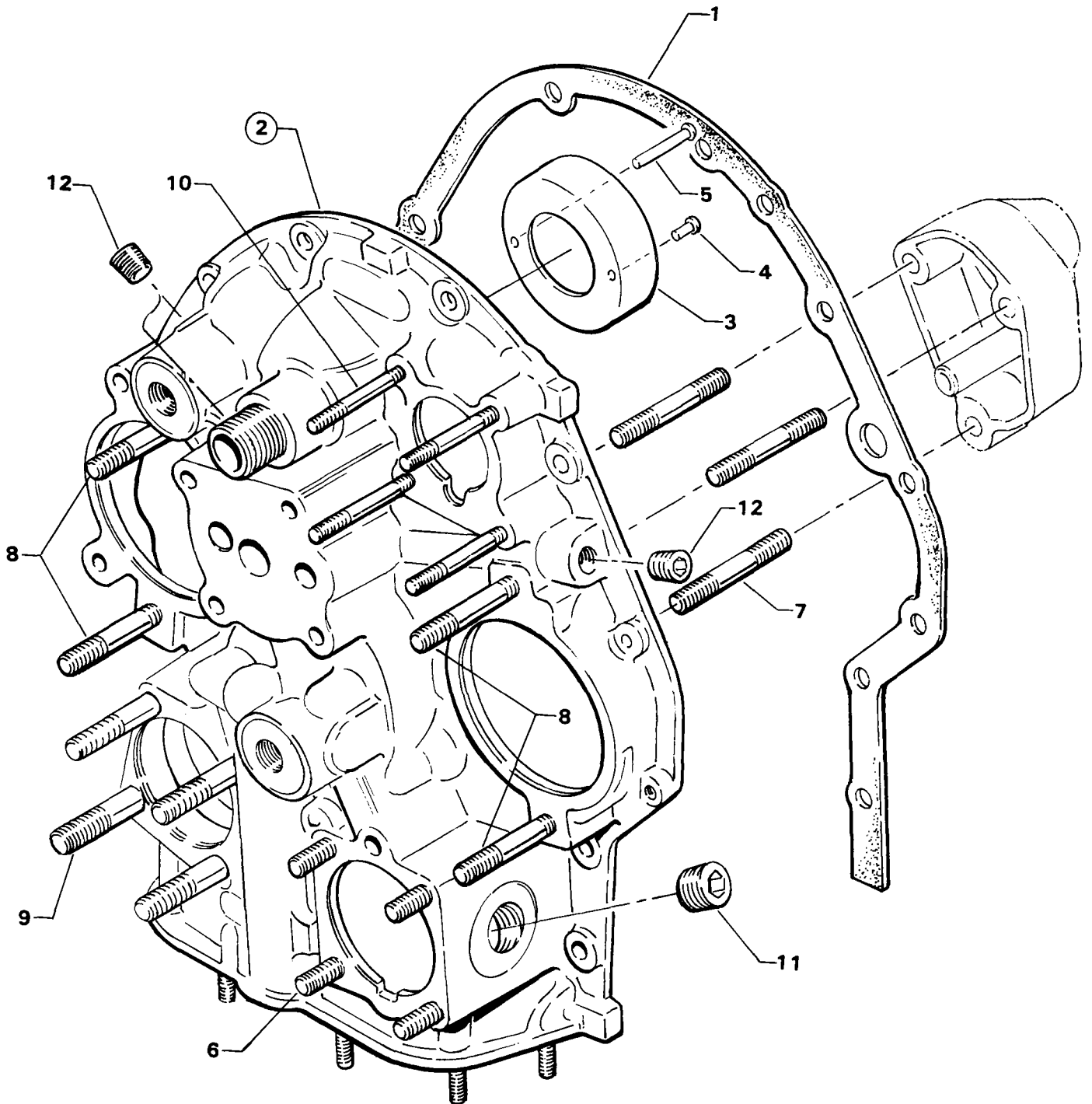
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Figure 8. Crankcase Attaching Parts

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

| <b>FIG. REF. 9</b> | <b>PART NUMBER</b> | <b>DESCRIPTION</b>                         | <b>QUANTITY PER ASSEMBLY</b> |
|--------------------|--------------------|--|------------------------------|
| 1                  | 73818              | GASKET, Accessory housing                  | 1                            |
| 2                  | LW-11685*          | HOUSING ASSY., Accessory                   | 1                            |
| 3                  | 71650              | SHIELD, Oil, accessory housing breather    | 1                            |
| 4                  | AN456AD4-8         | RIVET, 1/8 dia. x 1/2 long, brazier head   | 1                            |
| 5                  | AN456AD4-22        | RIVET, 1/8 dia. x 1-3/8 long, brazier head | 1                            |
| 6                  | 31C-12             | STUD, 5/16-18 x 1-1/2 long                 | 4                            |
| 7                  | 31CD-20            | STUD, 5/16-18 x 2-1/2 long, drilled        | 3                            |
| 8                  | 31C-20             | STUD, 5/16-18 x 2-1/2 long                 | 4                            |
| 9                  | 31C-19             | STUD, 5/16-18 x 2-3/8 long                 | 4                            |
| 10                 | 25C-21             | STUD, 1/4-20 x 2-5/8 long                  | 4                            |
| 11                 | STD-784            | PLUG, 3/8 NPT, Allen head                  | 1                            |
| 12                 | STD-783            | PLUG, 1/4 NPT, Allen head                  | 3                            |

\* Stud in fuel pump pad for RG-9080 fuel pump and spacer.



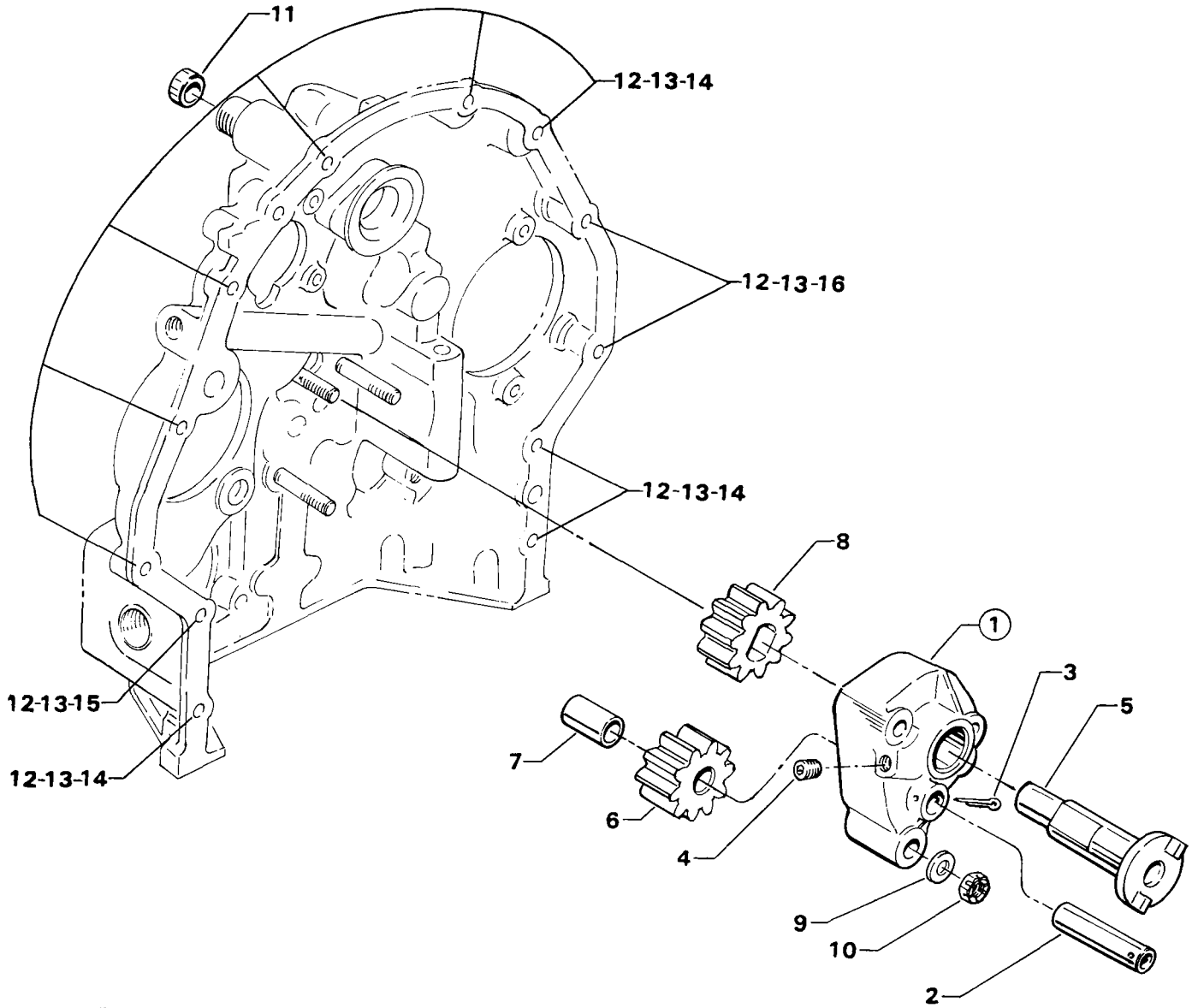
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Figure 9. Accessory Housing Assembly



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

| <b>FIG. REF. 10</b> | <b>PART NUMBER</b> | <b>DESCRIPTION</b>                  | <b>QUANTITY PER ASSEMBLY</b> |
|---------------------|--------------------|-------------------------------------|------------------------------|
| 1                   | 78890              | BODY ASSY., Oil pump                | 1                            |
| 2                   | 60329              | SHAFT, Oil pump                     | 1                            |
| 3                   | STD-714            | PIN, 1/8 dia. x 1.00 long, cotter   | 1                            |
| 4                   | STD-1339           | PLUG, 1/16-27 NPT, Allen hd.        | 1                            |
| 5                   | 73281              | SHAFT, Oil pump drive               | 1                            |
| 6                   | LW-18299           | IMPELLER ASSY., Oil pump driven     | 1                            |
| 7                   | LW-18296           | BUSHING, Impeller                   | 1                            |
| 8                   | LW-18297           | IMPELLER, Oil pump driving          | 1                            |
| 9                   | STD-35             | WASHER, 5/16 plain                  | 3                            |
| 10                  | STD-1420           | NUT, 5/16-18 slotted                | 3                            |
| 11                  | LW-14260           | SEAL, Oil, tachometer drive         | 1                            |
| 12                  | STD-8              | WASHER, 1/4 plain                   | 10                           |
| 13                  | STD-160            | WASHER, 1/4 internal lock           | 12                           |
| 14                  | STD-1204           | BOLT, 1/4-20 x 15/16 long, hex. hd. | 9                            |
| 15                  | STD-1419           | BOLT, 1/4-20 x 1-1/8 long, hex. hd. | 1                            |
| 16                  | STD-1931           | BOLT, 1/4-20 x 1-7/8 long, hex. hd. | 2                            |

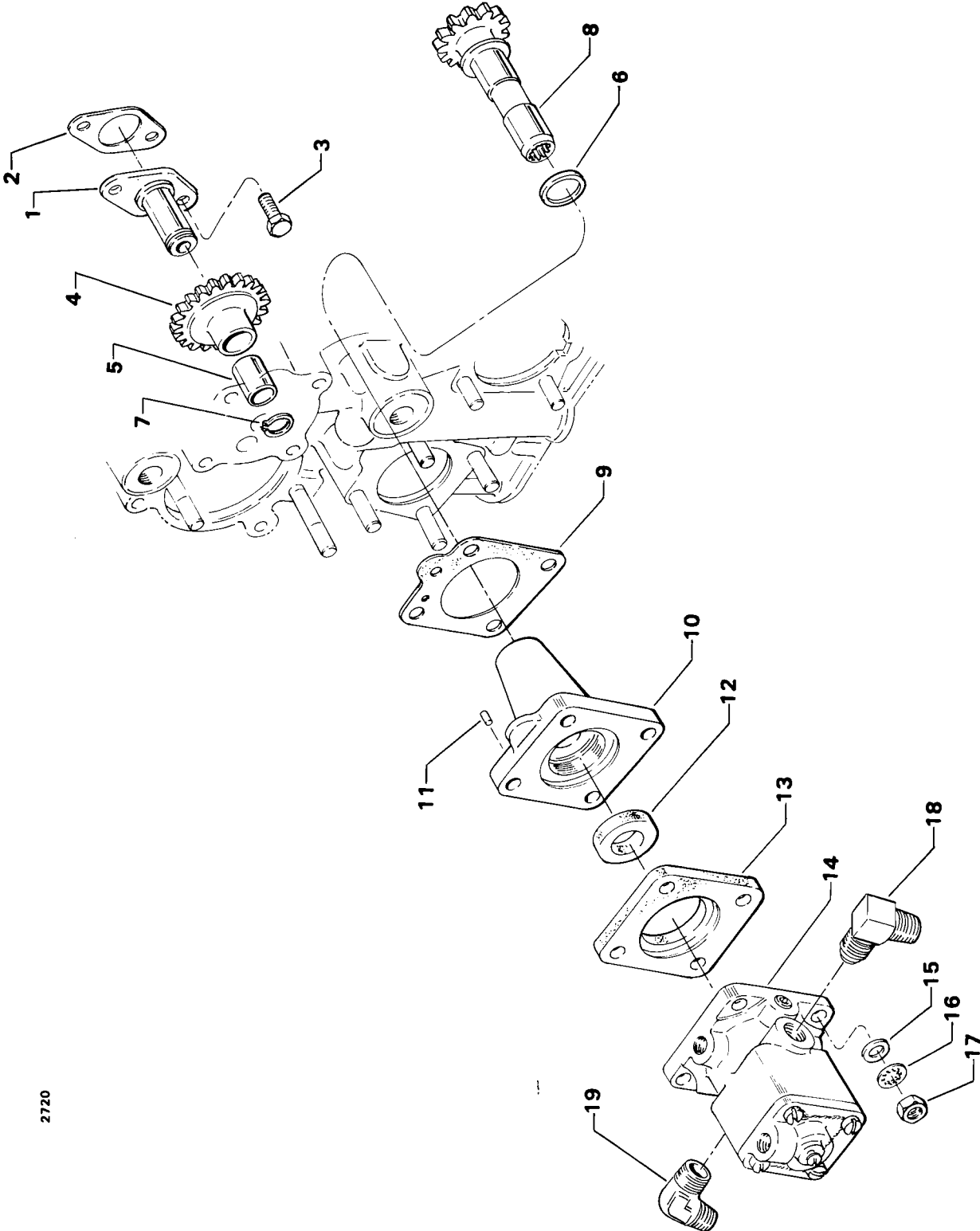


2728

Figure 10. Oil Pump and Accessory Housing Attaching Parts

**ACCESSORY HOUSING AND RELATED PARTS  
FUEL PUMP DRIVES AND FUEL PUMP ASSEMBLIES**

| <b>FIG. REF. 11</b> | <b>PART NUMBER</b> | <b>DESCRIPTION</b>                                | <b>QUANTITY PER ASSEMBLY</b> |
|---------------------|--------------------|---|------------------------------|
| 1                   | 73305              | SHAFT, Fuel pump idler                            | 1                            |
| 2                   | 72829              | LOCKPLATE, 1/4 bolt x 1-3/4 spacing               | 1                            |
| 3                   | STD-705            | SCREW, 1/4-20 x 11/16 long, hex. hd.              | 2                            |
| 4                   | 73306              | GEAR ASSY., Fuel pump idler                       | 1                            |
| 5                   | 77309              | BUSHING, Crankshaft idler gear                    | 1                            |
| 6                   | 70474              | WASHER, Fuel pump idler, thrust                   | 1                            |
| 7                   | STD-1737           | RING, 37/64 dia. x 1/32 thick, external retaining | 1                            |
| 8                   | 73308              | SHAFTGEAR ASSY., Fuel pump drive                  | 1                            |
| 9                   | 69164              | GASKET, Fuel pump adapter                         | 1                            |
| 10                  | 69159              | ADAPTER ASSY., Fuel pump drive                    | 1                            |
| 11                  | STD-1774           | PIN, 1/8 dia. x 1/4 long                          | 1                            |
| 12                  | STD-213            | SEAL, Oil, 3/4 ID x 1-3/8 OD                      | 1                            |
| 13                  | LW-10799           | SPACER, Fuel pump insulating                      | 1                            |
| 14                  | LW-13909           | PUMP, Fuel, RG9080-J4A                            | 1                            |
| 15                  | STD-35             | WASHER, 5/16 plain                                | 4                            |
| 16                  | STD-475            | WASHER, 5/16 internal lock                        | 4                            |
| 17                  | STD-1410           | NUT, 5/16-18 plain                                | 4                            |
| 18                  | 76422              | ELBOW, 1/2 flared tube, 1/2 NPT, 90°, inlet       | 1                            |
| 19                  | MS20822-6-8        | ELBOW, 3/8 flared tube, 1/2 NPT, 90°, outlet      | 1                            |

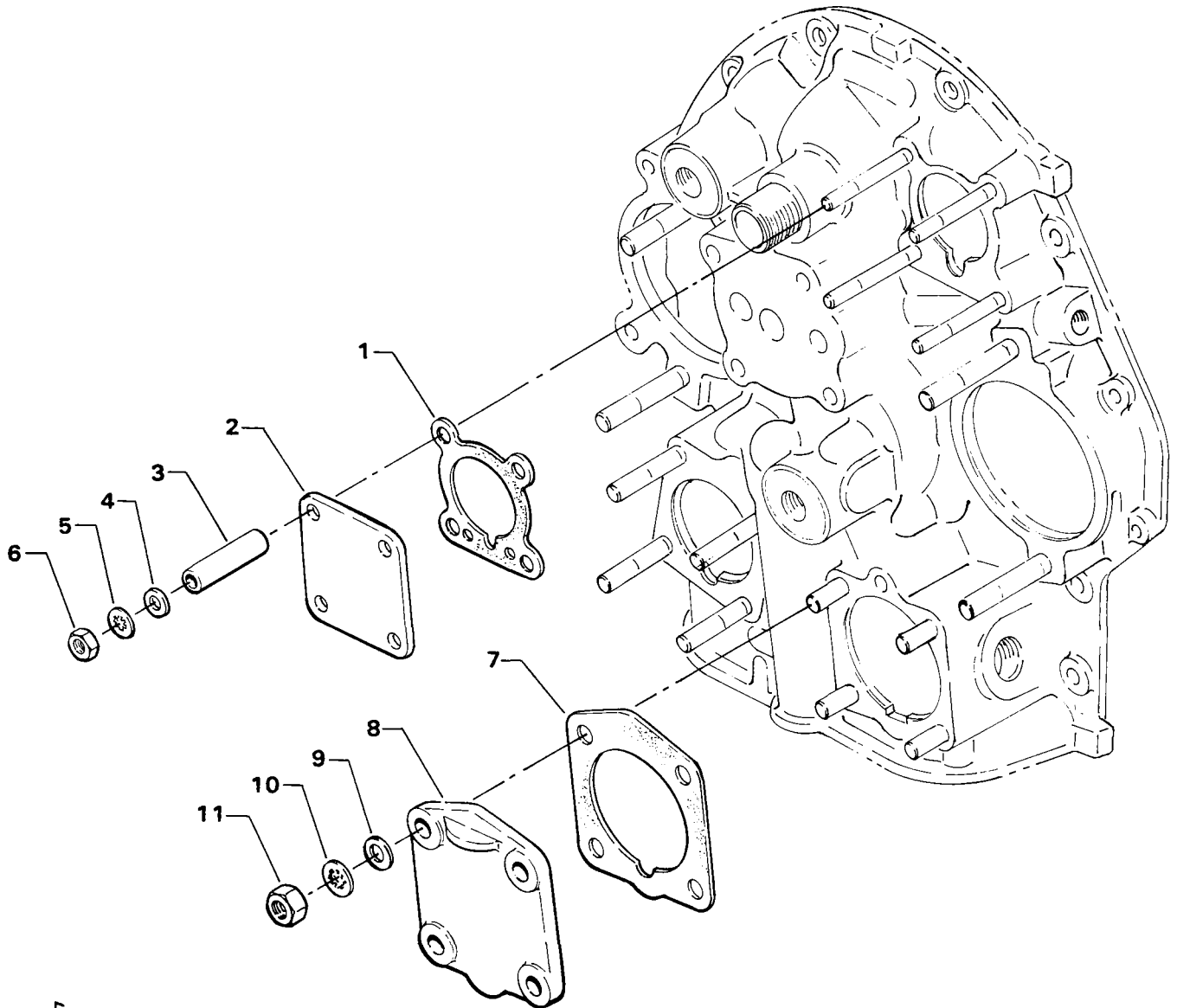


2720

Figure 11. Fuel Pump Drives and Fuel Pump Assemblies

**ACCESSORY HOUSING AND RELATED PARTS**  
**VACUUM PUMP AND HYDRAULIC PUMP DRIVE COVERS**

| <b>FIG. REF. 12</b> | <b>PART NUMBER</b> | <b>DESCRIPTION</b>                 | <b>QUANTITY PER ASSEMBLY</b> |
|---------------------|--------------------|------------------------------------|------------------------------|
| 1                   | 61183              | GASKET, Accessory adapter          | 1                            |
| 2                   | 60430              | COVER, Vacuum pump                 | 1                            |
| 3                   | 68593              | SPACER, Vacuum pump stud           | 4                            |
| 4                   | STD-8              | WASHER, 1/4 plain                  | 4                            |
| 5                   | STD-160            | WASHER, 1/4 internal lock          | 4                            |
| 6                   | STD-1411           | NUT, 1/4-20 plain                  | 4                            |
| 7                   | 69551              | GASKET, Accessory drive adapter    | 1                            |
| 8                   | 69106              | COVER, Accessory drivw adapter pad | 1                            |
| 9                   | STD-35             | WASHER, 5/16 plain                 | 4                            |
| 10                  | STD-475            | WASHER, 5/16 lock                  | 4                            |
| 11                  | STD-1410           | NUT, 5/16-18 plain                 | 4                            |



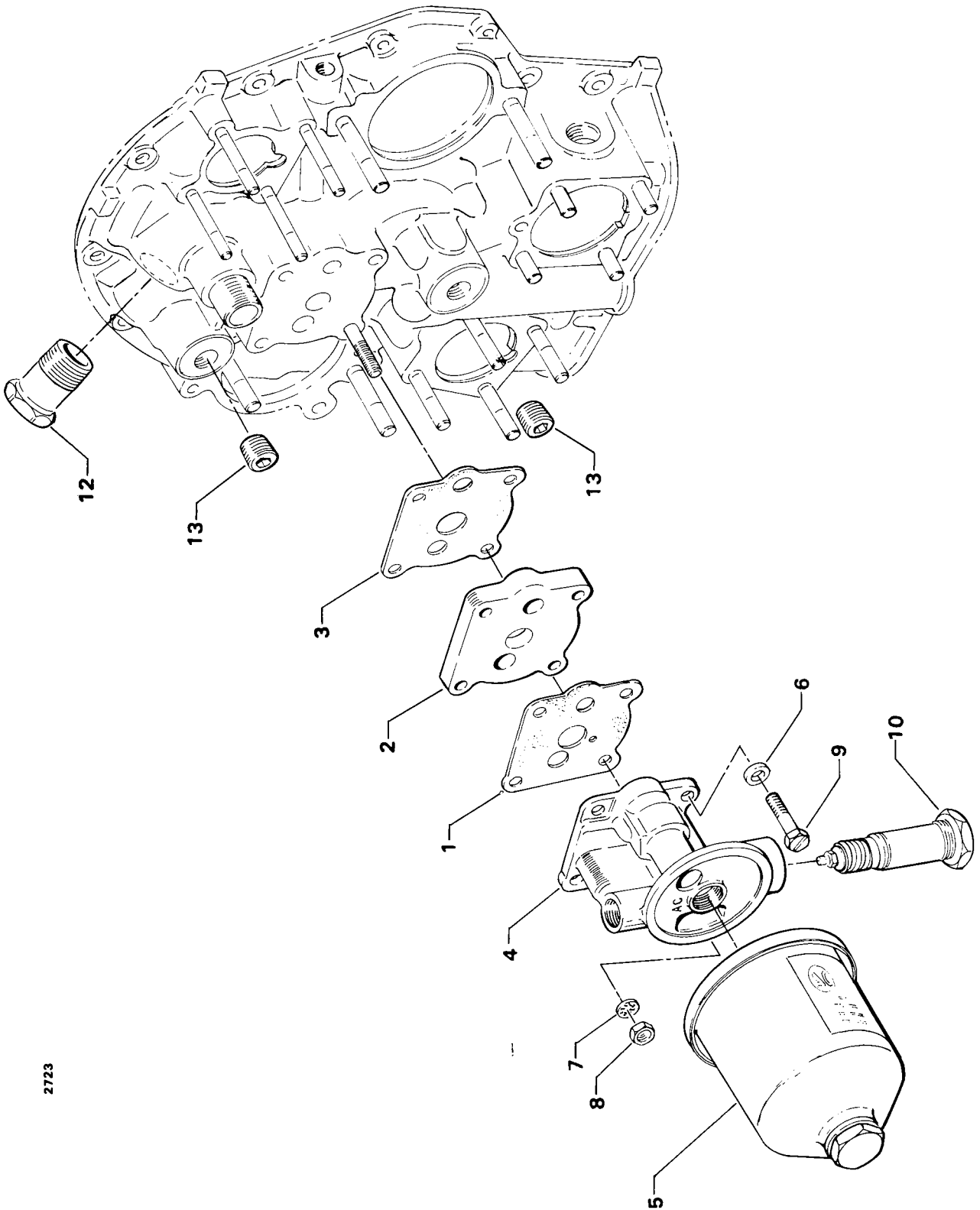
2717

**Figure 12. Vacuum Pump and Hydraulic Pump Drive Covers**

**ACCESSORY HOUSING AND RELATED PARTS**

OIL FILTER ASSEMBLY AND OIL COOLER BYPASS VALVE

| FIG. REF. 13 | PART NUMBER | DESCRIPTION                                   | QUANTITY PER ASSEMBLY |
|--------------|-------------|---|-----------------------|
| 1            | LW-12776    | GASKET, Oil filter adapter                    | 2                     |
| 2            | LW-12775    | ADAPTER, Oil filter base                      | 1                     |
| 3            | LW-12777    | GASKET, Oil filter base                       | 2                     |
| 4            | 77852       | BASE ASSY., Oil filter                        | 1                     |
| 5            | LW-13216    | OIL FILTER, Long (spin-on type)               | 1                     |
| 6            | STD-8       | WASHER, 1/4 plain                             | 4                     |
| 7            | STD-160     | WASHER, 1/4 internal lock                     | 4                     |
| 8            | STD-1411    | NUT, 1/4-20 plain                             | 1                     |
| 9            | STD-2153    | SCREW, 1/4-20 x 1-9/16 long, hex. hd.         | 3                     |
| 10           | 75944       | VALVE ASSY., Temp. control, oil cooler bypass | 1                     |
| 11           | 25C-14      | STUD, 1/4-20 x 1-3/4 long                     | 1                     |
| 12           | 73647       | FITTING, Breather                             | 1                     |
| 13           | AN932-5     | PLUG, 1/2 NPT, Allen head                     | 2                     |



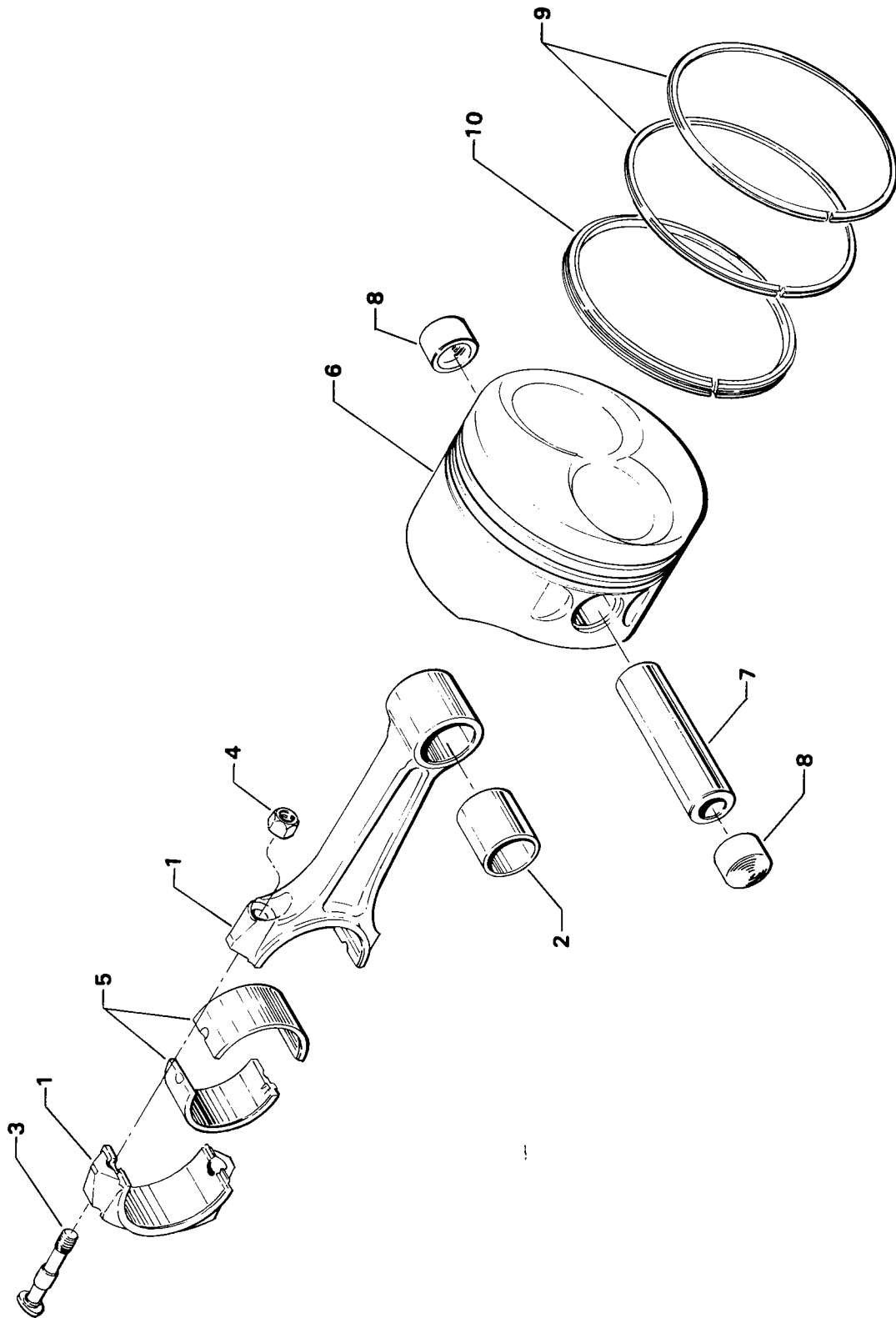
2723

**Figure 13. Oil Filter Assembly and Oil Cooler Bypass Valve**



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

| <b>FIG. REF. 14</b> | <b>PART NUMBER</b> | <b>DESCRIPTION</b>                          | <b>QUANTITY PER ASSEMBLY</b> |
|---------------------|--------------------|---|------------------------------|
| 1                   | LW-10646           | CONNECTING ROD ASSEMBLY                     | 8                            |
| 2                   | LW-13923           | BUSHING, Connecting rod, upper              | 8                            |
| 3                   | 75060              | BOLT, Connecting rod                        | 16                           |
| 4                   | LW-12186           | NUT, Connecting rod bolt                    | 16                           |
| 5                   | 74309              | BEARING, Connecting rod                     | 16                           |
|                     | LW-14954           | BEARING, Connecting rod (alternate)         | 16                           |
| 6                   | LW-10207S          | PISTON, Compression ratio 8.7:1             | 8                            |
| 7                   | LW-14078           | PIN, Piston                                 | 8                            |
| 8                   | 60828              | PLUG, Piston pin                            | 16                           |
| 9                   | 74241              | RING, Piston compression                    | 16                           |
| 10                  | 73857              | RING, Piston oil regulating (expander type) | 8                            |



**Figure 14. Connecting Rods, Pistons and Ring Assemblies**

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

| <b>FIG. REF. 15</b> | <b>PART NUMBER</b> | <b>DESCRIPTION</b>                        | <b>QUANTITY PER ASSEMBLY</b> |
|---------------------|--------------------|---|------------------------------|
| 1                   | LW-15438*          | CYLINDER AND HEAD ASSEMBLY                | 8                            |
| 2                   | LW-12688           | SEAT, Intake valve                        | 8                            |
| 3                   | 71894              | SEAT, Exhaust valve                       | 8                            |
| 4                   | 66713              | GUIDE, Valve intake                       | 8                            |
| 5                   | 72897              | GUIDE, Valve exhaust                      | 8                            |
| 6                   | 69260              | INSERT, Spark plug (long reach)           | 16                           |
| 7                   | STD-1872           | INSERT, 1/8-27 NPT, Heli-coil             | 8                            |
| 8                   | 31C-13             | STUD, 5/16-18 x 1-5/8 long                | 16                           |
| 9                   | 25C-8              | STUD, 1/4-20 x 1.00 long                  | 32                           |
| 10                  | 66670              | BUSHING, Rocker shaft, inner              | 32                           |
| 11                  | MS20823-6D         | ELBOW, 3/8 flared tube x 1/4 NPT, 45°     | 8                            |
| 12                  | 72343              | STABILIZER, Cylinder head fins (15 teeth) | 8                            |
| 13                  | 72344              | STABILIZER, Cylinder head fins (26 teeth) | 8                            |

\* - Nitrided cylinder, long reach plug.

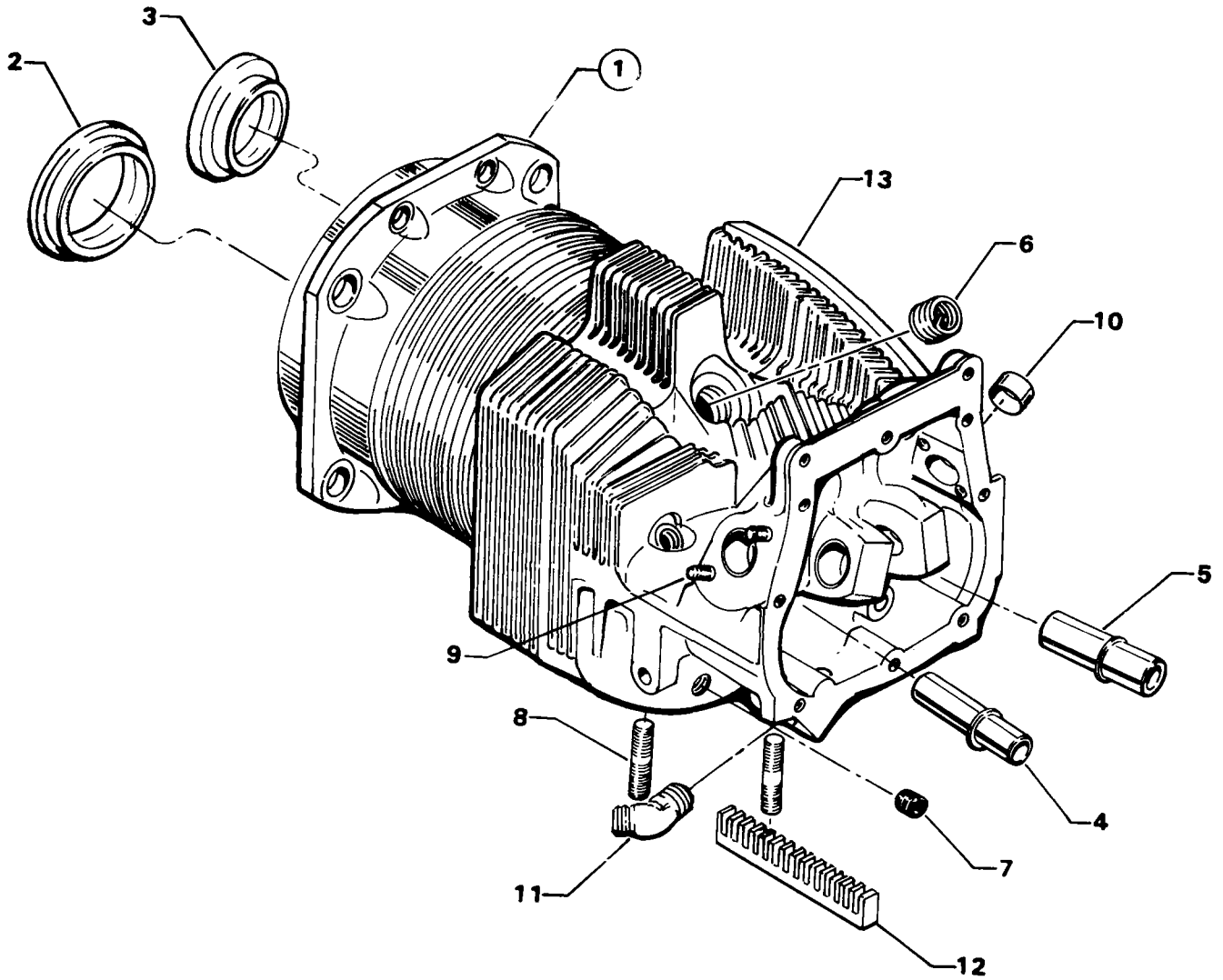


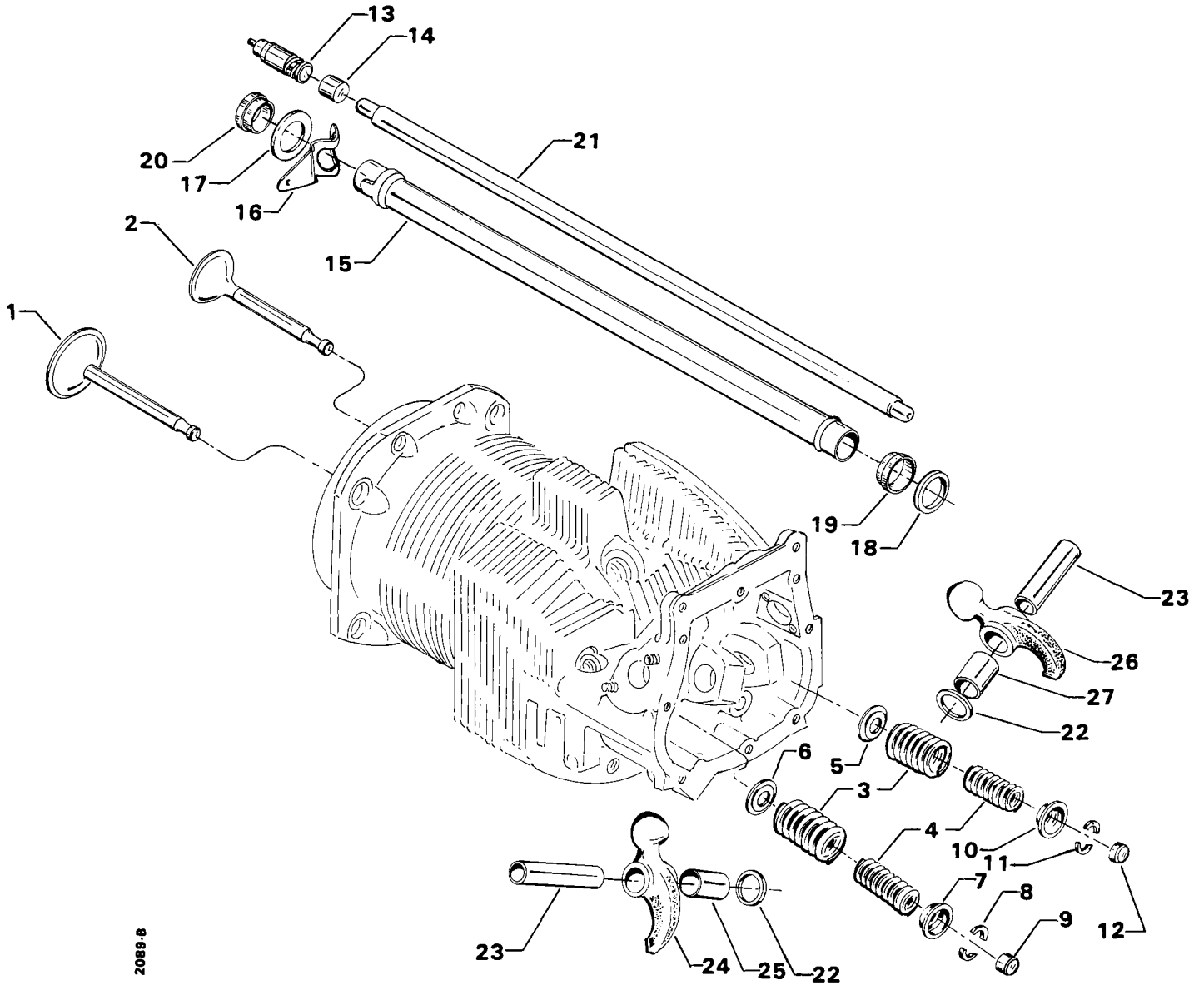
Figure 15. Cylinder Assembly

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

| FIG. REF. 16 | PART NUMBER | DESCRIPTION                                   | QUANTITY PER ASSEMBLY |
|--------------|-------------|---|-----------------------|
| 1            | LW-13622    | VALVE, Intake (small diameter intake rotator) | 8                     |
| 2            | 73111       | VALVE, Exhaust (rotator type)                 | 8                     |
| 3            | LW-11796    | SPRING, Valve, outer                          | 16                    |
| 4            | LW-11797    | SPRING, Valve, auxiliary <sup>1</sup>         | 16                    |
| 5            | LW-13321    | SEAT, Valve spring, lower intake              | 8                     |
| 6            | LW-13322    | SEAT, Valve spring, lower exhaust             | 8                     |
| 7            | 69532       | SEAT, Valve spring, upper intake (rotator)    | 8                     |
| 8            | 72050       | KEY, Valve intake (rotator)                   | 16                    |
| 9            | 62388       | CAP, Valve stem intake (rotator)              | 8                     |
| 10           | LW-16475    | SEAT, Valve spring, upper exhaust (rotator)   | 8                     |
| 11           | MS13997-3   | KEY, Valve exhaust (rotator)                  | 16                    |
| 12           | MS13998-3   | CAP, Valve stem, exhaust (rotator)            | 8                     |
| 13           | 78290       | PLUNGER ASSY., Hydraulic tappet               | 16                    |
| 14           | 78524       | SOCKET, Push rod, hydraulic tappet            | 16                    |
| 15           | 72255       | SHROUD TUBE ASSY., Push rod                   | 16                    |
| 16           | LW-13077    | SPRING, Shroud tube                           | 32                    |
| 17           | 66728*      | WASHER, 25/32 I.D. x 1-1/4 O.D. x 1/32 thick  | un                    |
| 18           | 61503       | SLEEVE, Shroud tube seal                      | 16                    |
| 19           | LW-18661    | SEAL, Shroud tube (w/61503 sleeve)            | 16                    |
| 20           | 62922       | SEAL, Shroud tube (w/crankcase end)           | 16                    |
| 21           | 73455**     | ROD ASSY., Push                               | un                    |
|              | 73456**     | ROD ASSY., Push                               | un                    |
|              | 73457**     | ROD ASSY., Push                               | un                    |
|              | 73458**     | ROD ASSY., Push                               | un                    |
|              | 73555**     | ROD ASSY., Push                               | un                    |
|              | 73556**     | ROD ASSY., Push                               | un                    |
|              | 73557**     | ROD ASSY., Push                               | un                    |
|              | 73558**     | ROD ASSY., Push                               | un                    |
| 22           | 71549       | WASHER, Valve rocker thrust                   | 16                    |
| 23           | 72626       | SHAFT, Valve rocker                           | 16                    |
| 24           | 71266       | ROCKER ASSY., Intake valve                    | 8                     |
| 25           | 67114       | BUSHING, Valve rocker                         | 8                     |
| 26           | 71265       | ROCKER ASSY., Exhaust valve                   | 8                     |
| 27           | 67114       | BUSHING, Valve rocker                         | 8                     |

\* - See latest edition of Avco Lycoming Service Instruction No. 1284 for application of 66728 washer.

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



2089-B

Figure 16. Valve Assembly

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

| FIG. REF. 17 | PART NUMBER   | DESCRIPTION  | QUANTITY PER ASSEMBLY |
|--------------|---------------|--|-----------------------|
| 1            | 66732         | GASKET, Cover, valve rocker shaft                        | 16                    |
| 2            | 66731         | COVER, Valve rocker shaft                                | 16                    |
| 3            | STD-160       | WASHER, 1/4 internal lock                                | 32                    |
| 4            | STD-1411      | NUT, 1/4-20 plain  | 32                    |
| 5            | 67193         | GASKET, Rocker box cover                                 | 8                     |
| 6            | 68795         | COVER ASSY., Rocker box                                  | 8                     |
| 7            | STD-1925      | SCREW, 1/4-20 x 5/8 long, pan hd., self-locking          | 56                    |
| 8            | 74494         | PLATE, Spark plug caution                                | 8                     |
| 9            | 71481         | RING, Oil seal 3/32 dia. x 4-27/32 I.D.                  | 8                     |
| 10           | 77906         | SPACER, 33/64 I.D. x 7/8 O.D. x 1/8 thick                | 2                     |
| 11           | 74887         | SPACER, 33/64 I.D. x 7/8 O.D. x 3/8 thick                | 2                     |
| 12           | 383-B         | NUT, 3/8-24 plain  | 32                    |
| 13           | STD-2090      | NUT, 1/2-20 plain  | 36                    |
| 14           | STD-684       | NIPPLE, Straight, 3/8 I.D. hose                          | 8                     |
| 15           | STD-2180      | HOSE, 3/8 I.D. x 1-13/16 long                            | 8                     |
| 16           | LW-15592-5-05 | CLAMP, Hose  | 16                    |
| 17           | 73382         | TUBE ASSY., Cyl. head oil drain, cyl. no. 1              | 1                     |
| 18           | 73384         | TUBE ASSY., Cyl. head oil drain, cyl. no. 2              | 1                     |
| 19           | 73387         | TUBE ASSY., Cyl. head oil drain, cyl. no. 4              | 1                     |
| 20           | 73388         | TUBE ASSY., Cyl. head oil drain, cyls. no. 3, 4, 6, 7, 8 | 5                     |
| 21           | 75338         | BAFFLE ASSY., Intercylinder                              | 6                     |
| 22           | 71610         | HOOK, Intercylinder baffle retainer                      | 6                     |
| 23           | 71611         | RETAINER, Intercylinder baffle                           | 6                     |
| 24           | 72834         | COVER, Baffle ignition hole                              | 6                     |
| 25           | STD-692       | SCREW, No. 10-32 x 1/2 long, rd. hd.                     | 12                    |
| 26           | STD-670       | NUT, No. 10-32 self-locking                              | 12                    |
| 27           | 75118         | GASKET, Exhaust flange                                   | 16                    |
| 28           | STD-35        | WASHER, 5/16 plain                                       | 16                    |
| 29           | STD-475       | WASHER, 5/16 internal lock                               | 16                    |
| 30           | STD-1410      | NUT, 5/16 plain  | 16                    |

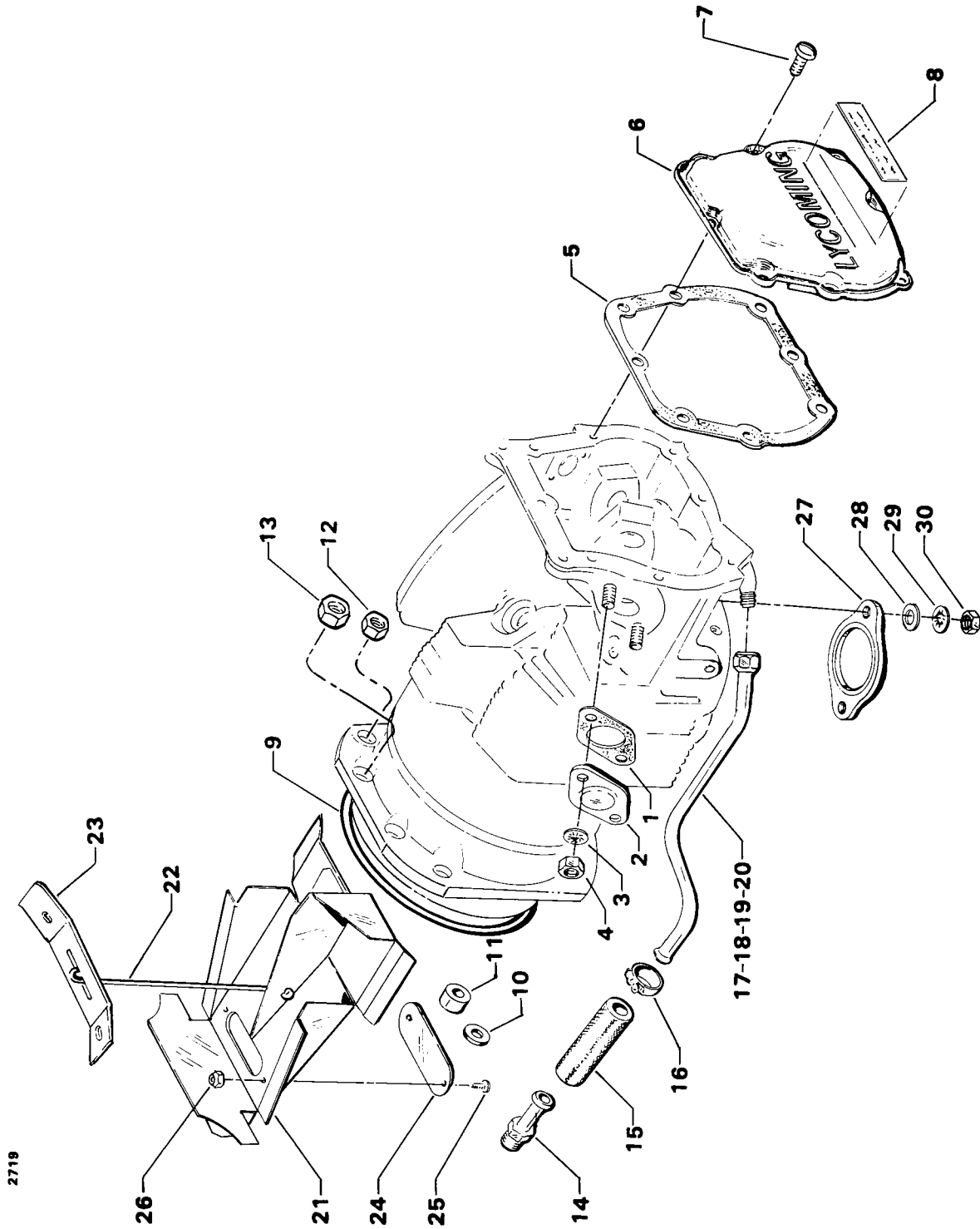


Figure 17. Cylinder Related Parts



**IGNITION SYSTEM**  
 1200 SERIES MAGNETO, MAGNETO DRIVES AND SPARK PLUGS

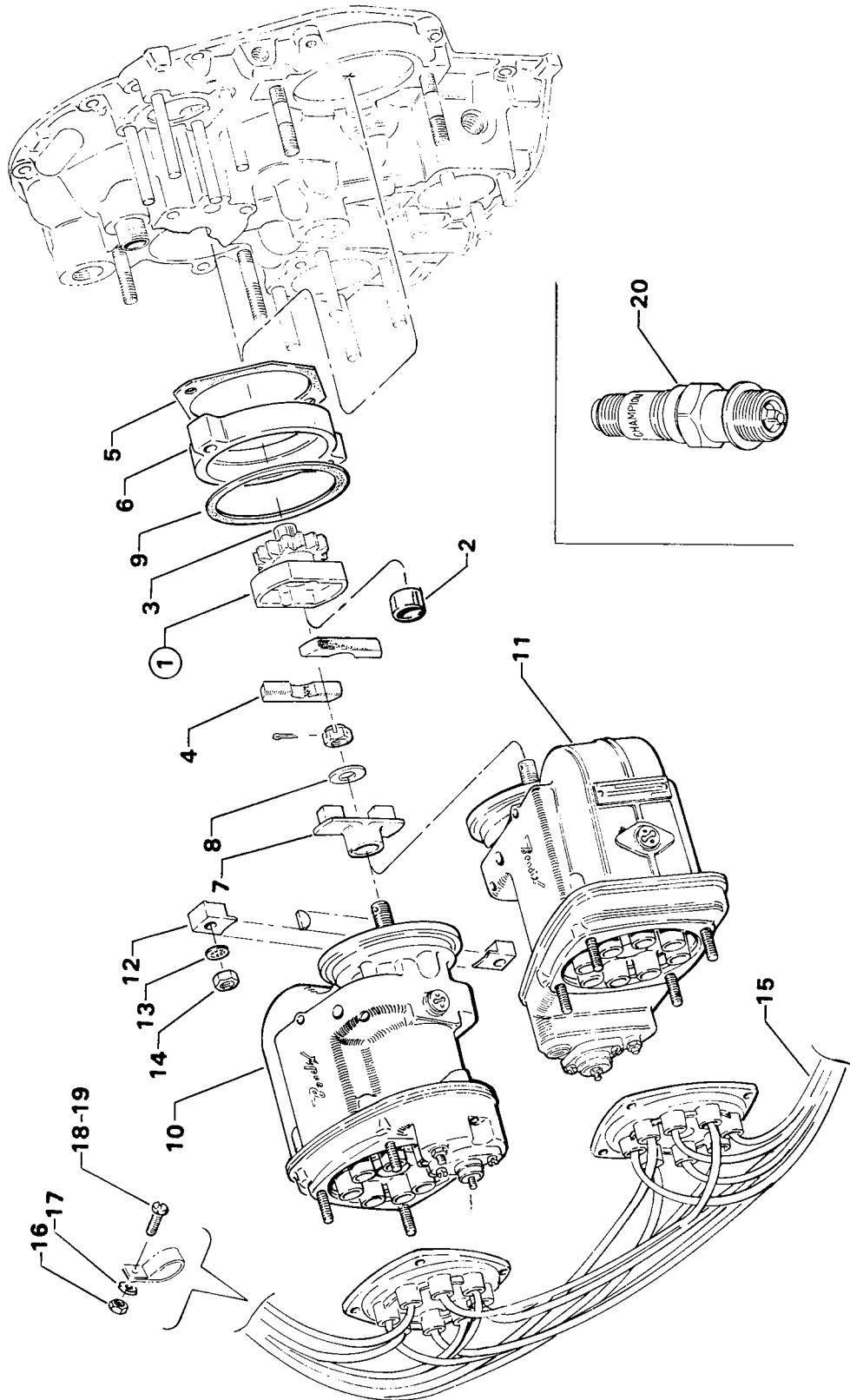
| FIG. REF. 18 | PART NUMBER | DESCRIPTION   | QUANTITY PER ASSEMBLY |
|--------------|-------------|---|-----------------------|
| 1            | LW-16304    | GEAR ASSEMBLY, Magneto  | 2                     |
| 2            | 77436       | SLEEVE, Magneto gear  | 2                     |
| 3            | 77309       | BUSHING, Crankshaft idler gear  | 2                     |
| 4            | LW-12136    | CUSHION, Magneto drive  | 4                     |
| 5            | 62224       | GASKET, Magneto adapter   | 2                     |
| 6            | LW-12707    | ADAPTER, Magneto  | 2                     |
| 7            | 73000       | COUPLING, Magneto drive   | 2                     |
| 8            | LW-12289    | WASHER, 3/8 I.D. x 39/64 O.D. x 1/8 thick   | 2                     |
| 9            | LW-12681    | GASKET, Magneto   | 2                     |
| 10           | LW-349320-4 | MAGNETO, S8LN-1209  | 1                     |
| 11           | LW-349300-4 | MAGNETO, S8LN-1208, 15° retard  | 1                     |
| 12           | 75965       | CLAMP, Magneto  | 4                     |
| 13           | STD-475     | WASHER, 5/16 lock, internal teeth   | 4                     |
| 14           | STD-1410    | NUT, 5/16-18 plain  | 4                     |
| 15           | LW-720570-5 | HARNESS ASSY., Ignition   | 1                     |
| 16           | STD-8       | WASHER, 1/4 plain   | 16                    |
| 17           | STD-160*    | WASHER, 1/4 lock  | 8                     |
| 18           | STD-1874    | SCREW, 1/4-20 x 7/8 long, fill. hd.   | 8                     |
| 19           | STD-2029*   | BOLT, 1/4-20 x 1-1/8 long, hex. hd.   | 6                     |
| 20           | 1182-W5**   | SPARK PLUG, Champion RHB-37E  | 16                    |
|              |             | Item No. 20 spark plug is used in current production only. Additional spark plugs are available for this engine. See latest edition of Avco Lycoming Service Instruction No. 1042 for complete listing of all approved spark plugs. |                       |

\* - Attached to cylinder head ear.

\*\* - Long reach, all weather, massive electrode.

**NOTE**

Individual spark plug leads may be replaced by ordering either 620633-48 (3B, 4B, 5B, 6B, 7B, 8B, 7T, 8T) or 620633-72 (1T, 2T, 3T, 4T, 5T, 6T, 1B, 2B) replacement leads. Lead length is indicated by the part no. suffix.



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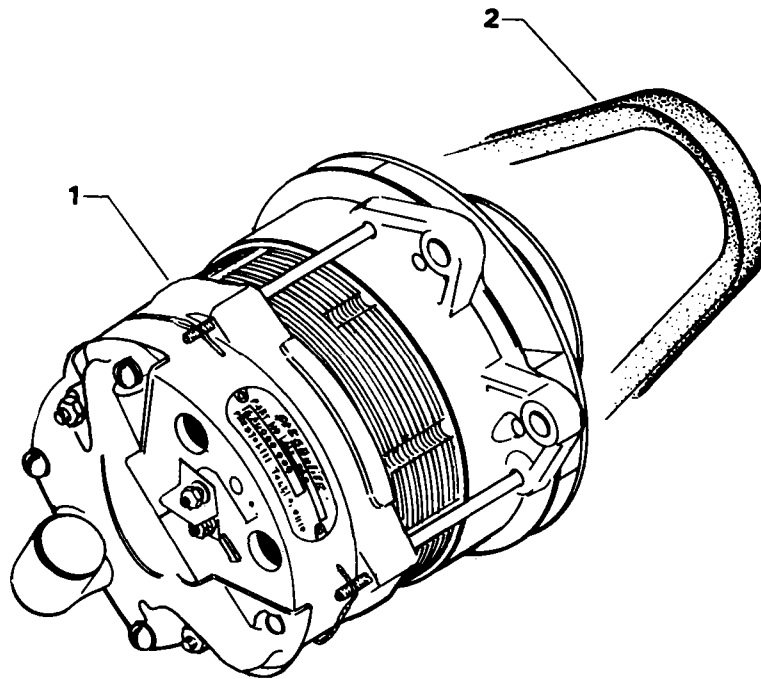
**Figure 18. 1200 Series Magneto, Magneto Drives and Spark Plugs**

**ELECTRICAL COMPONENTS**  
**ALTERNATOR AND BELT**

| FIG. REF. 19 | PART NUMBER | DESCRIPTION   | QUANTITY PER ASSEMBLY |
|--------------|-------------|---|-----------------------|
| 1            | LW-14324    | ALTERNATOR, 24 volt, 70 amp, externally grounded (ALU-8421) | 1                     |
| 2            | 76026       | BELT, Alternator drive                                      | 1                     |

NOTE

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



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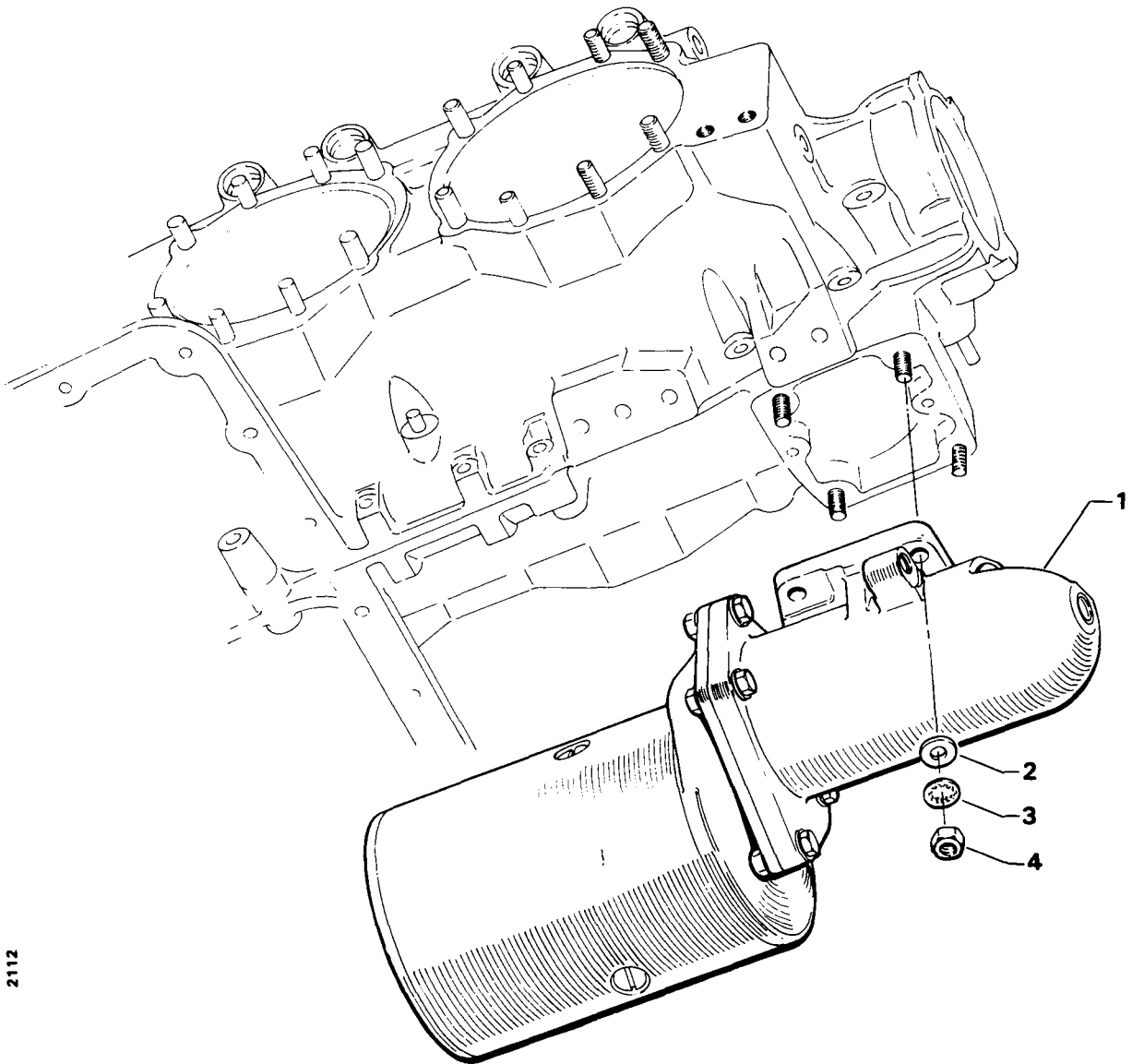
Figure 19. Alternator and Belt

**ELECTRICAL COMPONENTS**  
 STARTER MOTOR AND ATTACHING PARTS

| FIG. REF. 20 | PART NUMBER | DESCRIPTION  | QUANTITY PER ASSEMBLY |
|--------------|-------------|--|-----------------------|
| 1            | 77879       | STARTER, 24 volt, 3.38:1 internal reduction (MHJ-4004) | 1                     |
| 2            | STD-35      | WASHER, 5/16 plain                                     | 4                     |
| 3            | STD-475     | WASHER, 5/16 lock, internal teeth                      | 4                     |
| 4            | STD-1410    | NUT, 5/16 plain  | 4                     |

NOTE

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



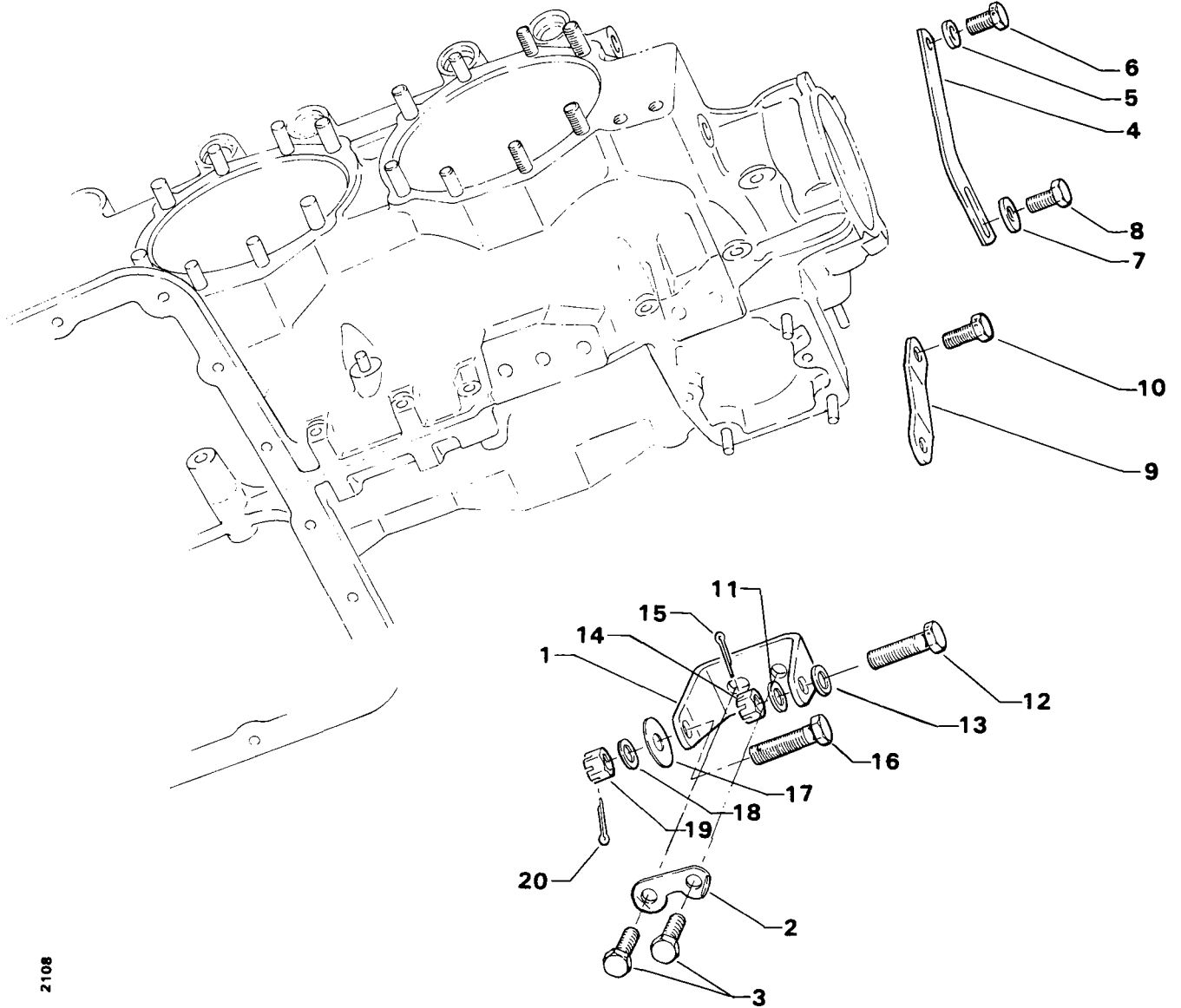
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Figure 20.

ELECTRICAL COMPONENTS

ALTERNATOR MOUNTING AND ATTACHING PARTS

| FIG. REF. 21 | PART NUMBER | DESCRIPTION  | QUANTITY PER ASSEMBLY |
|--------------|-------------|--|-----------------------|
| 1            | LW-13039    | BRACKET, Alternator                                | 1                     |
| 2            | 73383       | LOCKPLATE, 5/16 bolt, 1.00 spacing                 | 1                     |
| 3            | STD-1838    | BOLT, 5/16-18 x 15/16 long, hex. hd.               | 2                     |
| 4            | 75380       | LINK, Alternator adjusting                         | 1                     |
| 5            | STD-35      | WASHER, Plain                                      | 1                     |
| 6            | LW-31H.75   | BOLT, 5/16-18 x 3/4 long, hex. hd. drive           | 1                     |
| 7            | STD-1727    | WASHER, Plain                                      | 1                     |
| 8            | LW-31H.75   | BOLT, 5/16-18 x 3/4 long, hex. hd. drive           | 1                     |
| 9            | 74323       | STRUT, Alternator support                          | 1                     |
| 10           | LW-31H.75   | BOLT, 5/16-18 x 3/4 long, hex. hd. drive           | 1                     |
| 11           | STD-690     | WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick       | 1                     |
| 12           | AN6-14      | BOLT, 3/8-24 x 1-37/64 long, hex. hd., drilled end | 1                     |
| 13           | STD-690     | WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick       | un                    |
| 14           | STD-872     | NUT, 3/8-24 slotted                                | 1                     |
| 15           | STD-713     | PIN, Cotter 3/64 dia. x 3/4 long                   | 1                     |
| 16           | AN6-16      | BOLT, 3/8-24 x 1-53/64 long, hex. hd., drilled end | 1                     |
| 17           | 76534       | SHIM, 1-1/8 O.D. x 13/32 I.D. x .005 thick         | un                    |
| 18           | STD-690     | WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick       | un                    |
| 19           | STD-872     | NUT, 3/8-24 slotted                                | 1                     |
| 20           | STD-713     | PIN, Cotter 3/64 dia. x 3/4 long                   | 1                     |

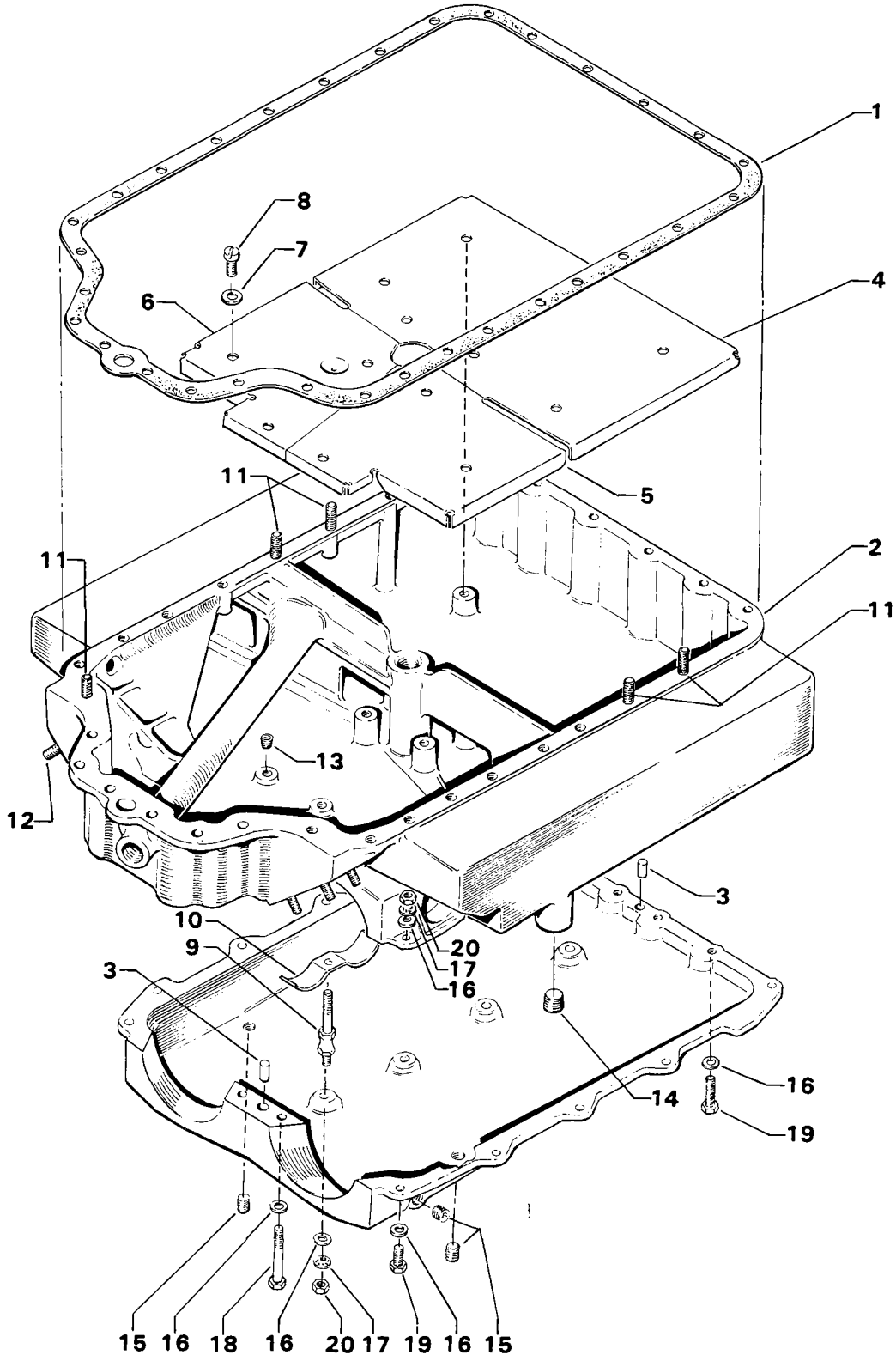


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**Figure 21. Alternator Mounting and Attaching Parts**

**OIL SUMP AND INDUCTION SYSTEM**  
**OIL SUMP AND INDUCTION HOUSING ASSEMBLY**

| FIG. REF. 22 | PART NUMBER | DESCRIPTION  | QUANTITY PER ASSEMBLY |
|--------------|-------------|--|-----------------------|
| 1            | 72119       | GASKET, Oil sump                                   | 1                     |
| 2            | 75107       | HOUSING ASSY., Oil sump and induction              | 1                     |
| 3            | STD-514     | DOWEL, 5/16 dia. x 1/2 long                        | 2                     |
| 4            | 75110       | BAFFLE, Oil sump, front                            | 1                     |
| 5            | 75374       | BAFFLE, Oil sump, right rear                       | 1                     |
| 6            | 75373       | BAFFLE, Oil sump, left rear                        | 1                     |
| 7            | STD-8       | WASHER, 1/4 plain                                  | 12                    |
| 8            | STD-1296    | SCREW, 1/4-20 x 5/8 long, fill. hd., drilled hd.   | 12                    |
| 9            | 72179       | STUD, Intake pipe extension                        | 4                     |
| 10           | LW-11273    | CLAMP, Intake pipe extension                       | 4                     |
| 11           | 25C-11      | STUD, 1/4-20 x 1-3/8 long                          | 19                    |
| 12           | 38-15       | STUD, 3/8-16 x 1-7/8 long                          | 8                     |
| 13           | 72706       | INSERT, Heli-coil, 1/4-20 x 3/8 long, self-locking | 12                    |
| 14           | STD-91      | PLUG, 1/2-14 NPT, allen hd.                        | 2                     |
| 15           | 1102        | PLUG, 1/4-20 NPT x 3/8 long, allen hd.             | 3                     |
| 16           | STD-8       | WASHER, 1/4 plain                                  | 34                    |
| 17           | STD-160     | WASHER, 1/4 lock, internal teeth                   | 16                    |
| 18           | STD-1646    | BOLT, 1/4-20 x 2.00 long, hex. hd.                 | 2                     |
| 19           | STD-1688    | BOLT, 1/4-20 x 1.00 long, hex. hd.                 | 16                    |
| 20           | STD-1411    | NUT, 1/4-20 plain                                  | 16                    |



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Figure 22. Oil Sump and Induction Housing Assembly



**OIL SUMP AND INDUCTION SYSTEM**  
 OIL SUCTION SCREEN AND SUMP ATTACHING PARTS

| FIG. REF. 23 | PART NUMBER | DESCRIPTION                                   | QUANTITY PER ASSEMBLY |
|--------------|-------------|---|-----------------------|
| 1            | STD-1419    | BOLT, 1/4-20 x 1-1/8 long, hex. hd.           | 4                     |
| 2            | STD-1688    | BOLT, 1/4-20 x 1.00 long, hex. hd.            | 8                     |
| 3            | STD-8       | WASHER, 1/4 plain                             | 35                    |
| 4            | STD-160     | WASHER, 1/4 lock, internal teeth              | 31                    |
| 5            | STD-1411    | NUT, 1/4-20 plain                             | 19                    |
| 6            | STD-551     | PLUG, 1/2-14 NPT, square hd., drilled         | 2                     |
| 7            | 60422       | SCREEN, Oil suction                           | 1                     |
| 8            | STD-111     | GASKET, 1.00 I.D. x 1-1/4 O.D. x 3/32 annular | 1                     |
| 9            | LW-12545    | PLUG, 1.00-20 thread x 5/8 hd.                | 1                     |

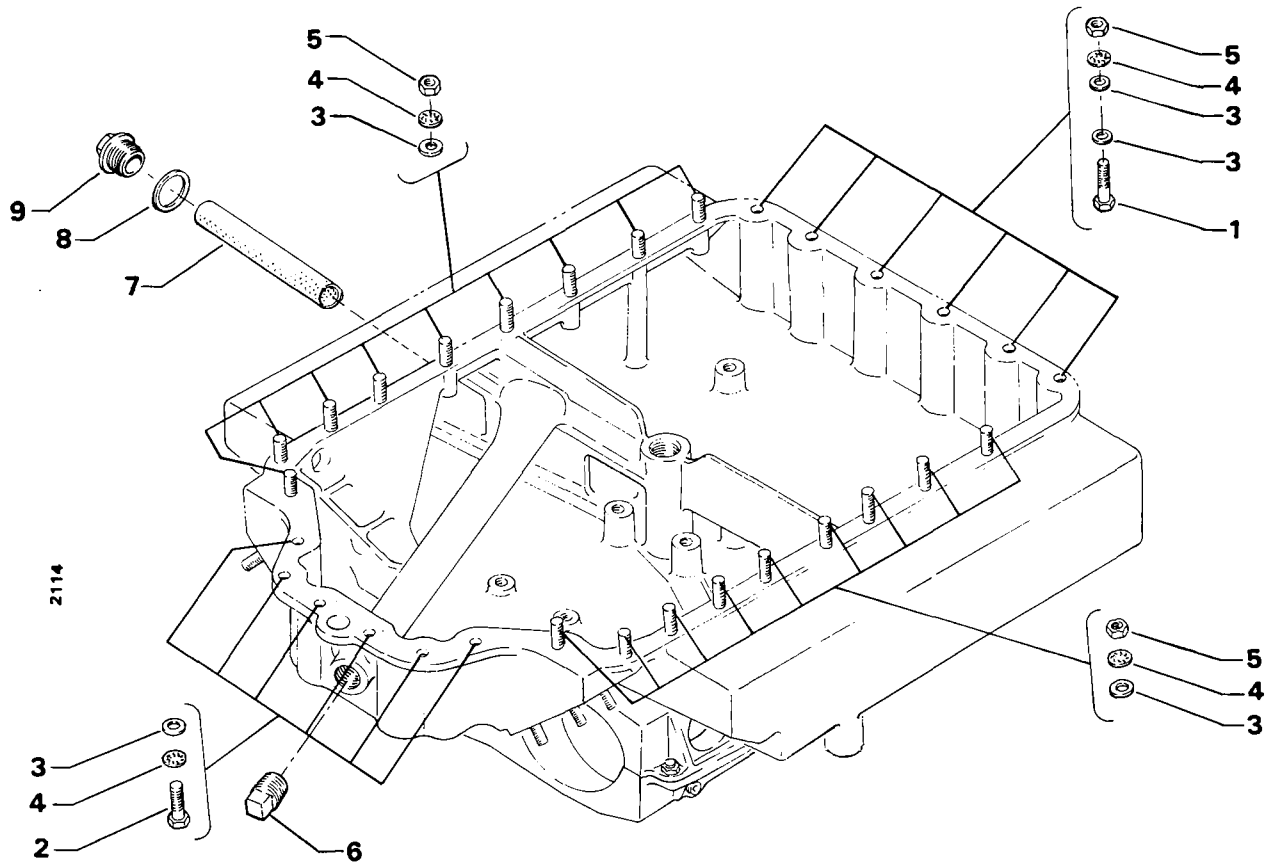
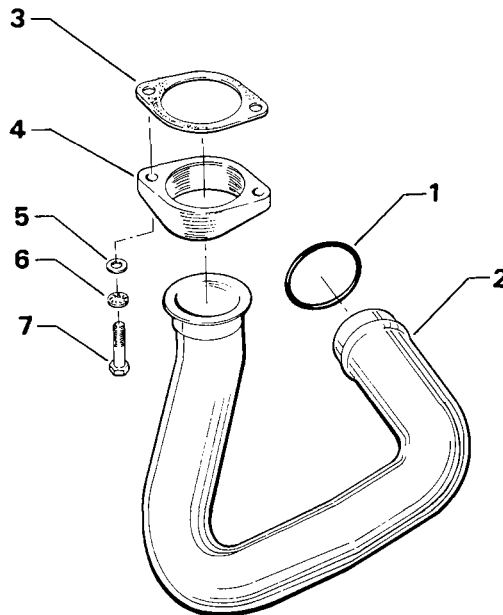


Figure 23.

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

| FIG. REF. 24 | PART NUMBER | DESCRIPTION                          | QUANTITY PER ASSEMBLY |
|--------------|-------------|--------------------------------------|-----------------------|
| 1            | 72111       | RING, Oil seal, intake pipes         | 8                     |
| 2            | 75111       | PIPE, Intake (cylinder no.1)         | 1                     |
|              | 75112       | PIPE, Intake (cylinder no. 2)        | 1                     |
|              | 75113       | PIPE, Intake (cylinder no. 3)        | 1                     |
|              | 75114       | PIPE, Intake (cylinder no. 4)        | 1                     |
|              | 75115       | PIPE, Intake (cylinders no. 5 and 8) | 2                     |
|              | 75116       | PIPE, Intake (cylinders no. 6 and 7) | 2                     |
| 3            | 71973       | GASKET, 2 bolt flange, 1-7/8 I.D.    | 8                     |
| 4            | 74360       | FLANGE, Intake pipe, upper           | 8                     |
| 5            | STD-8       | WASHER, 1/4 plain                    | 16                    |
| 6            | STD-160     | WASHER, 1/4 internal lock            | 16                    |
| 7            | STD-1215    | BOLT, 1/4-20 x 1-1/4 long, hex. hd.  | 16                    |

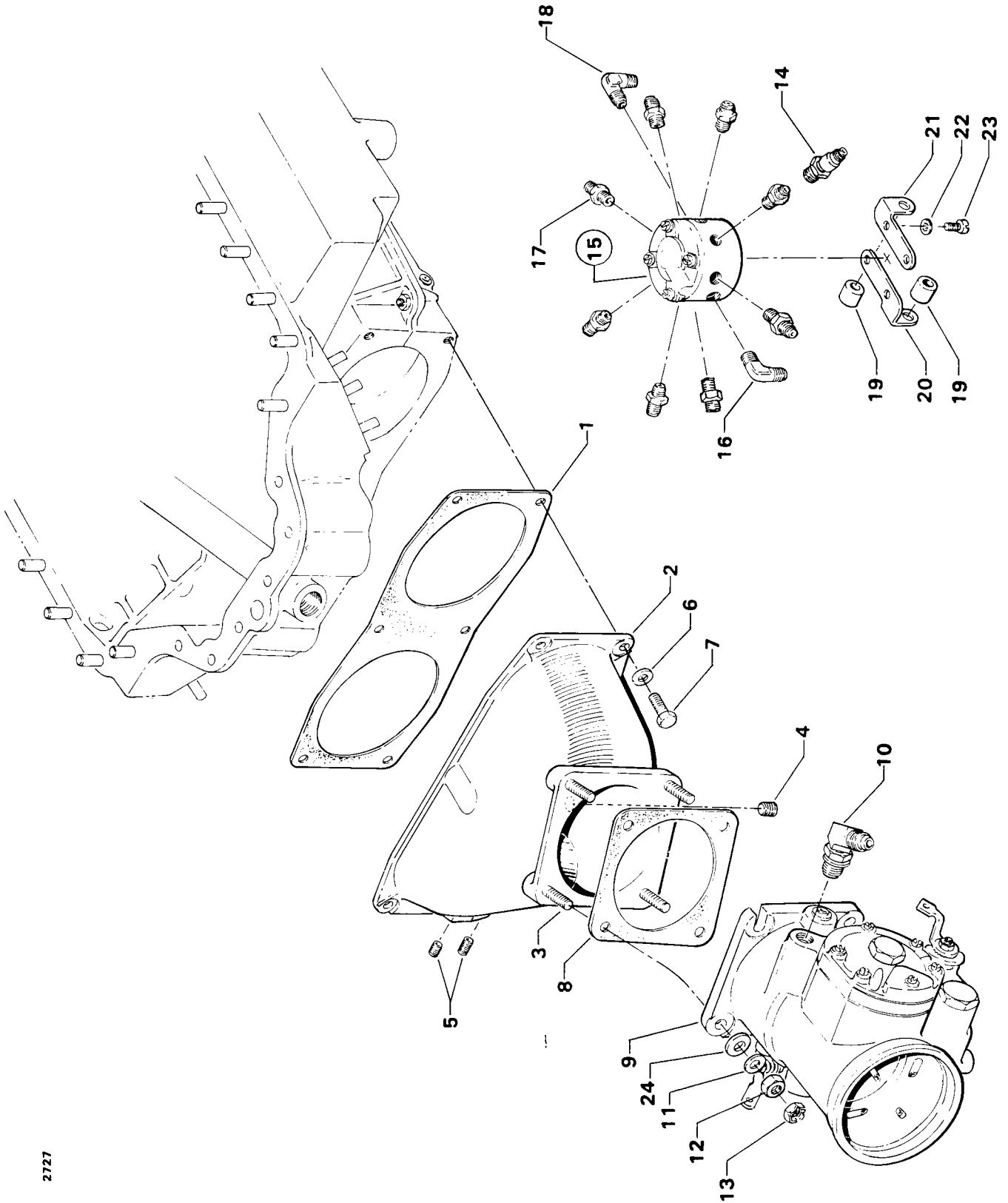


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Figure 24.

**OIL SUMP AND INDUCTION SYSTEM**  
**FUEL INJECTOR, FUEL MANIFOLD AND RELATED PARTS**

| FIG. REF. 25 | PART NUMBER | DESCRIPTION                                 | QUANTITY PER ASSEMBLY |
|--------------|-------------|---|-----------------------|
| 1            | 72210       | GASKET, Air throttle housing                | 1                     |
| 2            | 78100       | HOUSING ASSY., Air inlet                    | 1                     |
| 3            | 31C-14      | STUD, 5/16-18 x 1-3/4 long                  | 4                     |
| 4            | 1102        | PLUG, 5/16-18 x 3/8 long, socket hd.        | 1                     |
| 5            | STD-1353    | INSERT, 10-24 Heli-coil, 3/8 long           | 2                     |
| 6            | STD-8       | WASHER, 1/4 plain                           | 6                     |
| 7            | STD-1875    | BOLT, 1/4-20 x 13/16 long, hex. hd.         | 6                     |
| 8            | 73032       | GASKET, Air inlet housing                   | 1                     |
| 9            | LW-15671    | FUEL INJECTOR (2524757-5)                   | 1                     |
| 10           | 74070       | ELBOW, 3/8 flared, adjustable 45°           | 1                     |
| 11           | STD-35      | WASHER, 5/16-18 plain                       | 2                     |
| 12           | STD-1410    | NUT, 5/16-18 plain                          | 4                     |
| 13           | STD-1763    | LOCKNUT, 5/16 Palnut                        | 4                     |
| 14           | LW-18265    | NOZZLE, Injection (2524864)                 | 8                     |
| 15           | LW-15675    | MANIFOLD ASSY., Fuel                        | 1                     |
| 16           | MS20822-6   | ELBOW, 3/8 tube to 1/4 NPT, 90°             | 1                     |
| 17           | STD-148     | NIPPLE, 1/8 NPT, 90°                        | 8                     |
| 18           | 77915       | ELBOW, 3/16 tube to 1/8 NPT, 90° restricted | 1                     |
| 19           | 73966       | SPACER, Fuel manifold bracket               | 2                     |
| 20           | 74000       | BRACKET, Fuel manifold                      | 1                     |
| 21           | 74464       | BRACKET, Fuel manifold                      | 1                     |
| 22           | STD-251     | WASHER, No. 10 internal lock                | 4                     |
| 23           | STD-82      | SCREW, No. 10-24 x 1/2 long, round hd.      | 4                     |
| 24           | STD-1727    | WASHER, 3/4 O.D. x 21/64 I.D. x 1/8 thick   | 2                     |

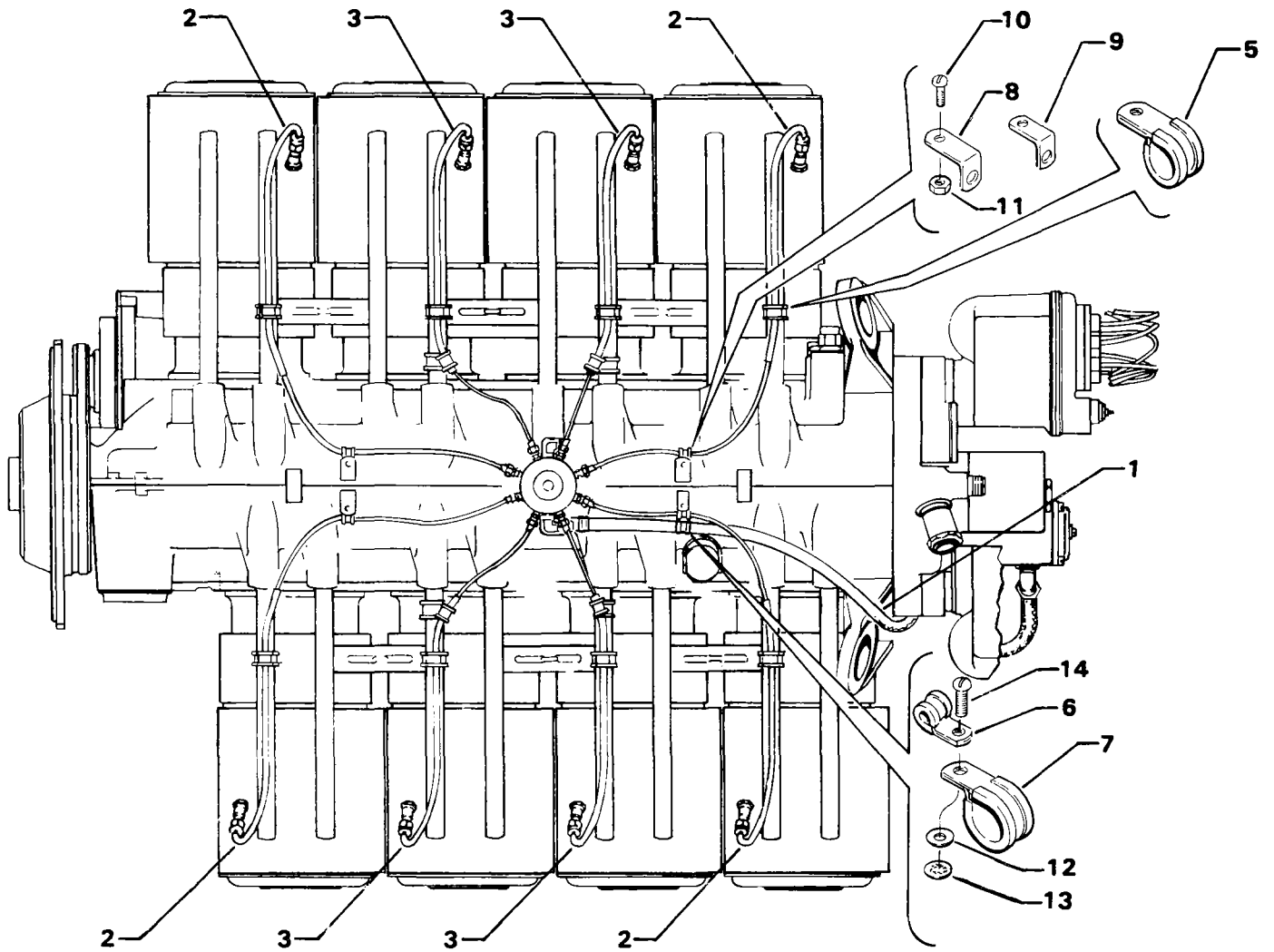


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**Figure 25. Fuel Injector, Fuel Manifold and Related Parts**

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

| <b>FIG. REF. 26</b> | <b>PART NUMBER</b> | <b>DESCRIPTION</b>  | <b>QUANTITY PER ASSEMBLY</b> |
|---------------------|--------------------|---|------------------------------|
| 1                   | LW-12799-6S-090    | HOSE ASSY., Fuel pump to injector                         | 1                            |
| 2                   | LW-12098-0-230     | TUBE ASSY., Fuel manifold to nozzle, cyls. no. 1, 2, 7, 8 | 4                            |
| 3                   | LW-12098-0-170     | TUBE ASSY., Fuel manifold to nozzle, cyls. no. 3, 4, 5, 6 | 4                            |
| 4                   | LW-12877-6S-357    | HOSE ASSY., Fuel injector to manifold                     | 1                            |
| 5                   | LW-16266-10-75     | CLAMP, 3/4 I.D., for 1/4 dia. screw                       | 12                           |
| 6                   | LW-16266-10-13     | CLAMP, 1/8 I.D., for 1/4 dia. screw                       | 16                           |
| 7                   | 77468              | CLAMP, 7/8 I.D., for 1/4 dia. screw                       | 1                            |
| 8                   | 73136              | BRACKET, Extension, 90°, 5/8 wide                         | 3                            |
| 9                   | LW-14875           | BRACKET, Extension, 90°, 31/64 wide                       | 1                            |
| 10                  | STD-860            | SCREW, No. 10-32 x 5/8 long, fill. hd.                    | 16                           |
| 11                  | STD-670            | NUT, 10-32 self-locking                                   | 16                           |
| 12                  | STD-8              | WASHER, 1/4 plain   | 3                            |
| 13                  | STD-160            | WASHER, 1/4 internal lock                                 | 1                            |
| 14                  | STD-1875           | BOLT, 1/4-20 x 13/16 long, hex. hd.                       | 1                            |



**Figure 26. Fuel Lines, Hoses and Attaching Parts**

**SERVICE KIT SECTION**

**SEAL AND GASKET SET  
 WIDE CYLINDER FLANGE MODELS**

| Part No.   | Part Name                                   | Qty. |
|------------|---|------|
| LW-15423   | SEAL AND GASKET SET                         | 1    |
| LW-12681   | GASKET, Magneto                             | 2    |
| LW-14260   | GASKET, Tachometer drive                    | 1    |
| MS29512-4  | SEAL, Oil                                   | 1    |
| MS29512-6  | SEAL, Oil                                   | 1    |
| MS29512-10 | SEAL, Oil                                   | 2    |
| STD-111    | GASKET                                      | 1    |
| STD-208    | SEAL, Oil                                   | 1    |
| STD-213    | SEAL, Oil                                   | 1    |
| STD-294    | GASKET, Annular (maximum 2 pcs.)            | un   |
| STD-1002   | RING, Oil seal                              | 6    |
| STD-1045   | GASKET, Annular (maximum 2 pcs.)            | un   |
| 8313       | GASKET, Vacuum pump                         | 3    |
| LW-18661   | SEAL, Shroud tube                           | 32   |
| 66732      | GASKET, Valve rocker shaft cover            | 16   |
| 69164      | GASKET, Fuel pump adapter                   | 1    |
| 70455      | GASKET, .030-.040 thick                     | 1    |
| 70457      | GASKET, Oil filter extension                | 1    |
| 71450      | GASKET, Rocker box cover                    | 8    |
| 71481      | RING, Oil seal                              | 8    |
| 71973      | GASKET, Intake pipe                         | 8    |
| 72053      | GASKET, Gov.                                | 1    |
| 72078      | LOCKPLATE, Camshaft gear                    | 2    |
| 72091      | RING, Oil seal                              | 2    |
| 72119      | GASKET, Oil sump                            | 1    |
| 72210      | GASKET, Air throttle housing                | 1    |
| 72312      | RING, Oil seal                              | 1    |
| 72711      | RING, Oil seal, intake pipe                 | 8    |
| 73032      | GASKET, Air inlet housing                   | 1    |
| 73383      | LOCKPLATE, Alternator and generator bracket | 2    |
| 73818      | GASKET, Accessory housing                   | 1    |
| LW-15619   | GASKET, Exhaust flange                      | 16   |
| LW-15628   | SEAL, Crankshaft                            | 1    |
| 1691-C     | GASKET, Fuel pump                           | 1    |
| LW-18639   | LOCKPLATE, Crankshaft gear                  | 1    |
| 61183      | GASKET, Accessory adapter                   | 1    |
| 62224      | GASKET, Magneto adapter                     | 2    |
| 67193      | GASKET, Rocker box cover                    | 8    |
| 68315      | GASKET, Accessory drive adapter             | 1    |
| 69551      | GASKET, Accessory drive adapter             | 1    |
| 72829      | LOCKPLATE, Fuel pump idler gear shaft       | 1    |
| 73817      | LOCKPLATE, Magneto drive gear shaft         | 2    |
| 73830      | GASKET, Oil pressure housing                | 1    |
| 75118      | GASKET, Exhaust flange                      | 16   |
| LW-12776   | GASKET, Oil filter adapter                  | 1    |
| LW-12777   | GASKET, Oil filler base                     | 1    |
| MS9068-009 | SEAL, Oil                                   | 2    |
| LW-10332   | LOCKPLATE                                   | 1    |
| AN123857   | "O" RING                                    | 1    |
| 20415      | GASKET                                      | 1    |

**SERVICE KIT SECTION**

**CYLINDER, PISTON AND RING KIT  
 WIDE CYLINDER FLANGE MODELS**

| Part No.   | Part Name                          | Qty. |
|------------|------------------------------------|------|
| LW-15464   | CYLINDER, PISTON AND RING KIT      | 1    |
| MS13997-3  | KEY, Valve (rotator type)          | 2    |
| MS13998-3  | CAP, Valve stem                    | 1    |
| STD-8      | WASHER, Plain                      | 1    |
| STD-160    | WASHER, Internal lock              | 4    |
| STD-1215   | BOLT, 1/4-20 x 1.25 long, hex. hd. | 2    |
| STD-1411   | NUT, Plain, 1/4-20                 | 4    |
| STD-1874   | SCREW, Fill. hd., self-locking     | 1    |
| STD-1925   | SCREW, Fill. hd., self-locking     | 8    |
| LW-16475   | SEAT, Valve spring, upper, exh.    | 1    |
| LW-10207-S | PISTON, (3-ring)                   | 1    |
| LW-11796   | SPRING, Valve outer                | 2    |
| LW-11797   | SPRING, Valve, auxiliary           | 2    |
| LW-15438   | CYLINDER ASSEMBLY, Nitrided        | 1    |
| LW-13321   | SEAT, Valve spring, lower, int.    | 1    |
| LW-13322   | SEAT, Valve spring, lower, exh.    | 1    |
| LW-13622   | VALVE, Intake (rotator type)       | 1    |
| LW-14077   | PIN, Piston                        | 1    |
| 60828      | PLUG, Piston pin                   | 2    |
| 62388      | CAP, Valve stem                    | 1    |
| LW-18661   | SEAL, Shroud tube                  | 4    |
| 66731      | COVER, Valve rocker shaft          | 2    |
| 66732      | GASKET, Valve rocker shaft cover   | 2    |
| 67193      | GASKET, Rocker box cover           | 1    |
| 68795      | COVER, Rocker box                  | 1    |
| 69532      | SEAT, Valve spring                 | 1    |
| 71195      | BOX, Set up                        | 1    |
| 71265      | ROCKER ASSEMBLY, Exhaust valve     | 1    |
| 71266      | ROCKER ASSEMBLY, Intake valve      | 1    |
| 71481      | RING, Oil seal                     | 1    |
| 71549      | WASHER, Valve rocker thrust        | 2    |
| 72050      | KEY, Valve                         | 2    |
| 72626      | SHAFT, Valve rocker                | 2    |
| 73111      | VALVE, Exhaust                     | 1    |
| 73857      | RING, Piston, oil reg.             | 1    |
| 74241      | RING, Piston, compression          | 2    |
| 74494      | PLATE, Spark plug caution          | 1    |

**NOTE**

Nitrided cylinder assembly, standard 1/2 inch exhaust guide, long reach spark plug.



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| AN465AD4-22     | Rivet              | 2-1      | LW-14820       | Ring              | 1-7      |
| AN565B1032H5    | Screw              | 1-11     | LW-14830       | Bearing           | 1-5      |
| AN6-14          | Bolt               | 5-3      | LW-14875       | Bracket           | 6-7      |
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| AN6-34A         | Bolt               | 1-15     | LW-15438       | Cylinder & Head   | 3-3      |
| AN932-5         | Plug               | 2-9      | LW-15592-5-05  | Clamp             | 3-7      |
| LW-10207S       | Piston             | 3-1      | LW-15628       | Seal              | 1-5      |
| LW-10646        | Rod Assembly       | 3-1      | LW-15671       | Fuel Injector     | 6-5      |
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| LW-11685        | Housing Assembly   | 2-1      | LW-16304       | Gear Assembly     | 4-1      |
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| LW-11797        | Spring             | 3-5      | LW-17828       | Crankshaft        | 1-7      |
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| LW-12239        | Washer             | 4-1      | LW-31H.75      | Bolt              | 5-3      |
| LW-12545        | Plug               | 6-3      | LW-349300-4    | Magneto           | 4-1      |
| LW-12681        | Gasket             | 4-1      | LW-349320-4    | Magneto           | 4-1      |
| LW-12688        | Seat               | 3-3      | LW-720570-5    | Harness Assembly  | 4-1      |
| LW-12707        | Adapter            | 4-1      | MS13997-3      | Key               | 3-5      |
| LW-12775        | Adapter            | 2-9      | MS13998-3      | Cap               | 3-5      |
| LW-12776        | Gasket             | 2-9      | MS20822-6      | Elbow             | 6-5      |
| LW-12777        | Gasket             | 2-9      | MS20822-6-8    | Elbow             | 2-5      |
| LW-12799-6S-090 | Hose Assembly      | 6-7      | MS20823-6D     | Elbow             | 3-3      |
| LW-12877-6S-357 | Hose Assembly      | 6-7      | STD-8          | Washer            | 1-15     |
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| LW-13077        | Spring             | 3-5      | STD-8          | Washer            | 2-7      |
| LW-13216        | Oil Filter         | 2-9      | STD-8          | Washer            | 2-9      |
| LW-13321        | Seat               | 3-5      | STD-8          | Washer            | 4-1      |
| LW-13322        | Seat               | 3-5      | STD-8          | Washer            | 6-1      |
| LW-13622        | Valve              | 3-5      | STD-8          | Washer            | 6-3      |
| LW-13794        | Stud               | 1-1      | STD-8          | Washer            | 6-4      |
| LW-13795        | Shaft              | 1-13     | STD-8          | Washer            | 6-5      |
| LW-13879        | Camshaft Assembly  | 1-9      | STD-8          | Washer            | 6-7      |
| LW-13885        | Bearing            | 1-5      | STD-19         | Dowel             | 1-11     |
| LW-13896        | Plug               | 1-11     | STD-33         | Washer            | 1-3      |
| LW-13909        | Pump               | 2-5      | STD-33         | Washer            | 1-15     |
| LW-13923        | Bushing            | 3-1      | STD-35         | Washer            | 1-11     |
| LW-14021        | Shaft              | 1-11     | STD-35         | Washer            | 2-3      |
| LW-14078        | Pin                | 3-1      | STD-35         | Washer            | 2-5      |
| LW-14260        | Seal               | 2-3      | STD-35         | Washer            | 2-7      |
| LW-14324        | Alternator         | 5-1      | STD-35         | Washer            | 3-7      |
| LW-14626        | Crankcase Assembly | 1-1      | STD-35         | Washer            | 5-2      |

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| STD-91   | Plug      | 6-1      | STD-1199 | Pin       | 1-9      |
| STD-111  | Gasket    | 6-3      | STD-1204 | Bolt      | 2-3      |
| STD-148  | Nipple    | 6-5      | STD-1211 | Plug      | 1-7      |
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| STD-160  | Washer    | 4-1      | STD-1409 | Nut       | 1-15     |
| STD-160  | Washer    | 6-1      | STD-1410 | Nut       | 1-11     |
| STD-160  | Washer    | 6-3      | STD-1410 | Nut       | 2-5      |
| STD-160  | Washer    | 6-4      | STD-1410 | Nut       | 2-7      |
| STD-160  | Washer    | 6-7      | STD-1410 | Nut       | 3-7      |
| STD-213  | Seal      | 2-5      | STD-1410 | Nut       | 4-1      |
| STD-251  | Washer    | 6-5      | STD-1410 | Nut       | 5-2      |
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| STD-475  | Washer    | 2-7      | STD-1411 | Nut       | 2-9      |
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| STD-475  | Washer    | 4-1      | STD-1411 | Nut       | 6-1      |
| STD-475  | Washer    | 5-2      | STD-1411 | Nut       | 6-3      |
| STD-514  | Dowel     | 1-1      | STD-1414 | Bolt      | 1-15     |
| STD-514  | Dowel     | 6-1      | STD-1419 | Bolt      | 1-15     |
| STD-551  | Plug      | 6-3      | STD-1419 | Bolt      | 2-3      |
| STD-557  | Dowel     | 1-1      | STD-1419 | Bolt      | 6-3      |
| STD-596  | Nut       | 1-3      | STD-1420 | Nut       | 2-3      |
| STD-670  | Nut       | 3-7      | STD-1646 | Bolt      | 1-15     |
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| STD-678  | Washer    | 1-3      | STD-1688 | Bolt      | 6-1      |
| STD-684  | Nipple    | 3-7      | STD-1688 | Bolt      | 6-3      |
| STD-690  | Washer    | 5-3      | STD-1727 | Washer    | 5-3      |
| STD-692  | Screw     | 3-7      | STD-1727 | Washer    | 6-5      |
| STD-705  | Screw     | 1-13     | STD-1732 | Ring      | 1-9      |
| STD-705  | Screw     | 2-5      | STD-1737 | Ring      | 2-5      |
| STD-713  | Pin       | 5-3      | STD-1763 | Locknut   | 6-5      |
| STD-714  | Pin       | 2-3      | STD-1774 | Pin       | 2-5      |
| STD-737  | Key       | 1-9      | STD-1791 | Screw     | 1-9      |
| STD-783  | Plug      | 1-1      | STD-1838 | Bolt      | 5-3      |
| STD-783  | Plug      | 2-1      | STD-1872 | Insert    | 3-3      |
| STD-784  | Plug      | 2-1      | STD-1874 | Screw     | 4-1      |
| STD-798  | Dowel     | 1-11     | STD-1875 | Bolt      | 6-5      |
| STD-847  | Screw     | 1-7      | STD-1875 | Bolt      | 6-7      |
| STD-860  | Screw     | 6-7      | STD-1903 | Bolt      | 1-15     |
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