

# **IO-540-AE1A5 Series Illustrated Parts Catalog**

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**August 2013**

**PC-615-AE1A5** (Replaces PC-615-13)

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652 Oliver Street  
Williamsport, PA 17701

## **IO-540-AE1A5 Series Illustrated Parts Catalog**

Lycoming Part Number: PC-615-AE1A5 (Replaces PC-615-13)

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## INTRODUCTION



**⚠ CAUTION:** DO NOT USE THIS CATALOG AS AN ASSEMBLY OR INSTALLATION DOCUMENT. THIS CATALOG MUST ONLY BE USED TO IDENTIFY PARTS IN CONJUNCTION WITH THE APPLICABLE OVERHAUL MANUAL.

## Purpose of this Catalog

This Illustrated Parts Catalog (IPC) contains a complete list of spare parts for the Lycoming IO-540-AE1A5 wide cylinder flange model engine.

## How to Use this Catalog

This catalog is based on the Air Transport Association (ATA) Spec 100 format. In order to clarify illustrations, Lycoming has taken discretion to classify non-system related assemblies and components in the same chapters, because they are physically connected.

This catalog is frequently updated by Service Bulletins (SB) and Service Instructions (SI). The updated information will be incorporated into subsequent full revisions of this catalog.

The ATA two element numbering system provides consistency throughout various manuals. The bottom of each page (beyond the frontal section) contains a two element number (##-##). In the two element numbering, the first two digits represent a chapter, and the next two digits subdivide the material into a more specific section.

The ATA format specifies the subject matter for each chapter-section. According to the ATA Standards, the following chapters apply to the IO-540-AE1A5 Illustrated Parts Catalog:

72 (Reciprocating Engine), 73 (Engine and Fuel Control), 74 (Ignition), and 76 (Engine Controls).

**EXAMPLE:**      **74**      **—**      **20**  
Chapter                      Section  
**Ignition**                      **Distribution**

**NOTE:** See the IPC Table of Contents for the sub-systems listed in each section.

## Numerical Index

The Numerical Index is a single list of part numbers, names and their locations within the IPC. It is useful for locating parts when you only know the number or name of the part.

### Description column

Indentation of a part name represents a lower level of assembly. Attaching parts have the same indentation level and are listed below the parts grouping or assembly they attach to. This column is often referred to as the "Nomenclature" on other ATA Spec manuals.

### Units per Assembly Column

Where more than one assembly exists, this column contains the quantity of a specific part required in the build sequence of only one next higher assembly. The letters “AR” represent “as required” for bulk items or non-illustrated select-from-range-parts. “RF” represents items listed for reference purposes only.

**Cross-Reference List of Manufacturer Parts to Standard Part Number****Vendor Accessories**

Parts coverage of Vendor Accessories used on Lycoming engines may be found in the appropriate Vendor's Parts Catalog. A list of vendor's addresses appears in the latest revision of Lycoming Service Letter No. L114.

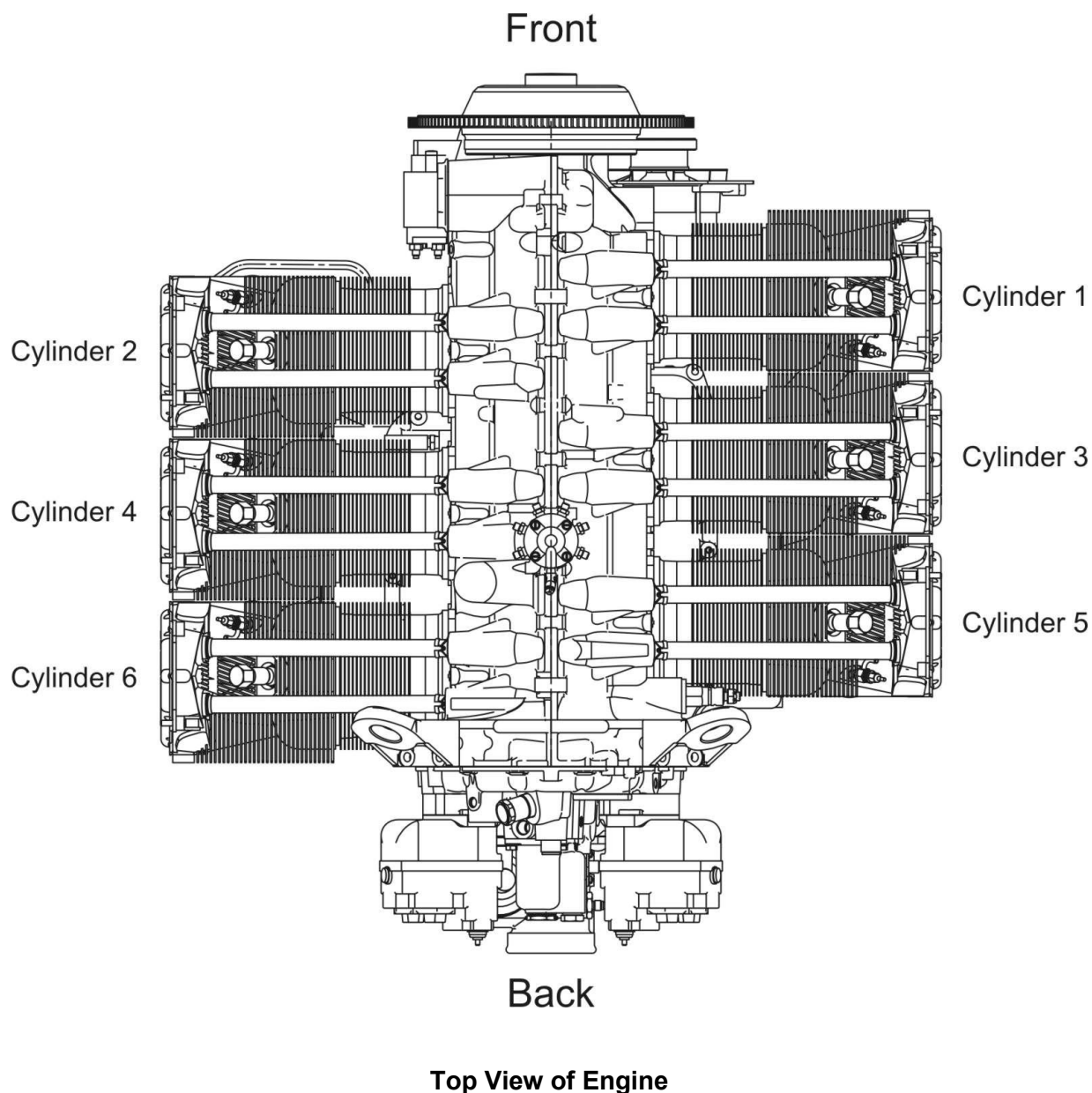
Any reference in this document to the suppliers/part manufacturer's product, by name, trademark, part number or other description is solely for the purpose of identification and does not indicate or infer that Lycoming accepts responsibility for quality control and/or airworthiness of parts, which do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

**Environmental Compliance**

Lycoming is concerned with preserving the environment. Lycoming strongly urges engine owners and repair/overhaul personnel to observe and comply with all federal, state, and local environmental regulations when solvents, paint, fuel, oil, chemicals, or other consumables are used in operating, maintaining, or overhauling an engine component. Please share our concern for, and commitment to a clean earth, clean water, and especially clean air for succeeding generations of flyers.

**Perspective of References**

In this manual, all references to locations of various components will be designated as if viewing the engine from the rear (or anti-propeller) end. The front of the engine is considered to be the propeller end and the oil sump is considered to be on the bottom of the engine. Cylinders are numbered from front to rear with the odd-numbered cylinders on the right-hand side. The firing order for this six-cylinder engine is 1-4-5-2-3-6.



**How to Order Parts and Publications**

An Oversize and Undersize Parts List is included in the front section of this catalog to aid in ordering parts as necessary during overhaul.

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. Refer to the latest revision of Service Letter No. L114 for subscription information.

1. For correct, expedited part shipments without delay:
  - a. Always give the model and serial number of your engine.
  - b. Always give the part number, nomenclature, and quantity.

The SB and SI documents are available from Lycoming distributors, or the factory, or by subscription.

Full Revisions of the Illustrated Parts Catalog are available from Lycoming distributors or the factory.

Every effort has been made in preparing this manual to ensure its accuracy. However, any comments, suggestions, or corrections to this manual are welcome and must be directed in writing to:

**Technical Publications Coordinator**  
**Lycoming Engines**  
**652 Oliver Street**  
**Williamsport, PA 17701**

**NOTE:** The owner of the manual must give notification to the factory for a change of address.

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**ABBREVIATIONS AND ACRONYMS**

| <b>A</b> |                              |
|----------|------------------------------|
| Adj.     | Adjustable                   |
| amp.     | Ampere                       |
| Assy     | Assembly                     |
| <b>F</b> |                              |
| Fill.    | Fillister                    |
| <b>H</b> |                              |
| Hex.     | Hexagon                      |
| <b>I</b> |                              |
| I.D.     | Inside Diameter              |
| <b>M</b> |                              |
| mm       | Millimeter                   |
| <b>N</b> |                              |
| No.      | Number                       |
| NPT      | National Pipe Taper (thread) |
| <b>O</b> |                              |
| O.D.     | Outside Diameter             |
| <b>P</b> |                              |
| P/N      | Part Number                  |
| psi      | Pounds per square inch       |

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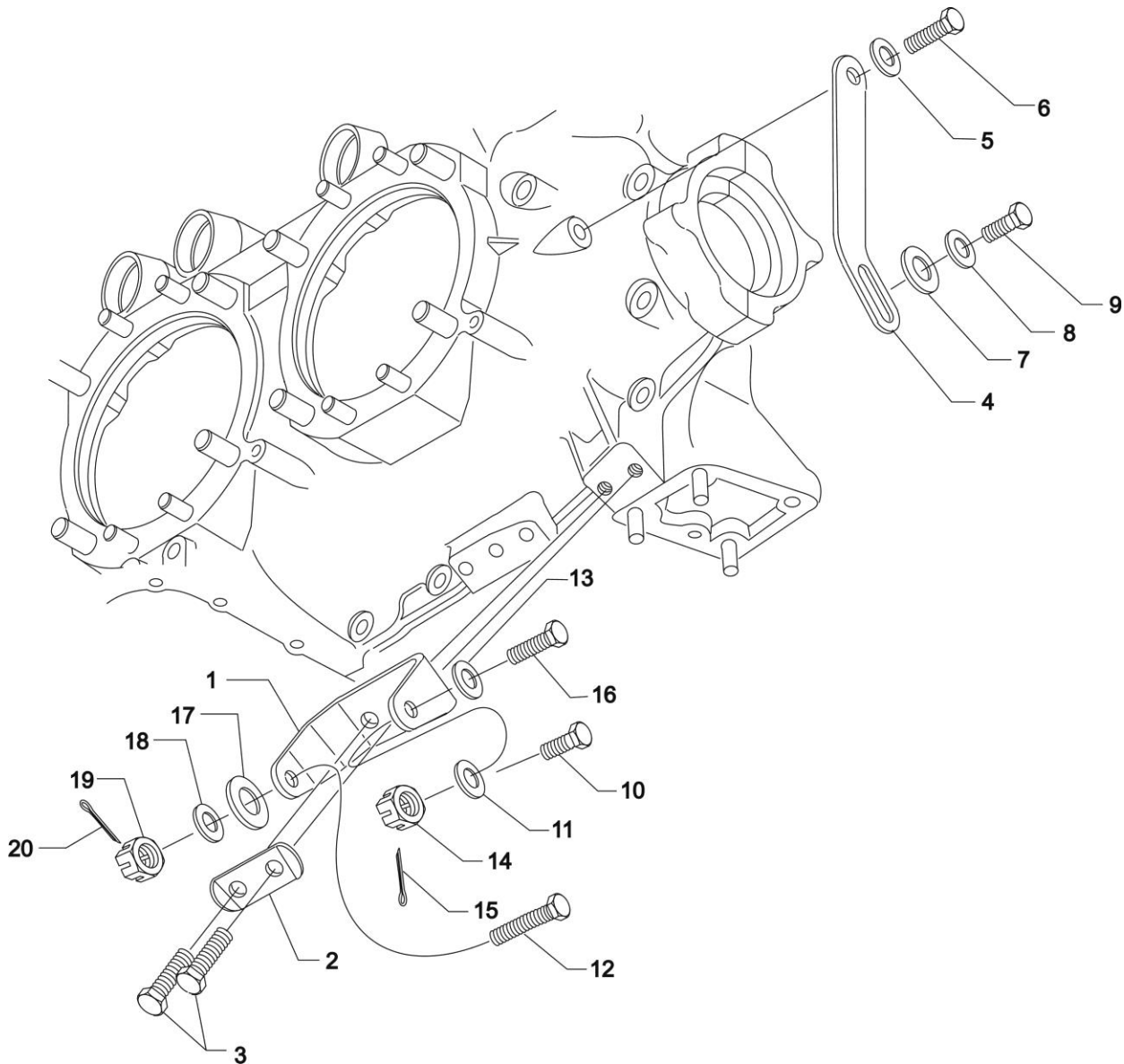
**OVERSIZE AND UNDERSIZE PARTS LISTING**

| PART NO. | DESCRIPTION | OVERSIZE (IN.) |             |             |             |             |             |             |             | UNDERSIZE (IN.) |             |             |
|----------|-------------|----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------------|-------------|-------------|
|          |             | P02<br>.002    | P05<br>.005 | P10<br>.010 | P15<br>.015 | P20<br>.020 | P30<br>.030 | P40<br>.040 | P50<br>.050 | M03<br>.003     | M06<br>.006 | M10<br>.010 |
| 66670    | BUSHING     |                | X           | X           |             |             |             |             |             |                 |             |             |
| 66713*   | GUIDE       |                | X           | X           |             | X           | X           | X           |             |                 |             |             |
| 66796    | INSERT      |                | X           | X           |             |             |             |             |             |                 |             |             |
| 69796    | DOWEL       |                | X           |             |             |             |             |             |             |                 |             |             |
| 72155-S  | BUSHING     |                | X           | X           | X           | X           |             |             |             |                 |             |             |
| 73810    | BUSHING     |                | X           | X           | X           |             |             |             |             |                 |             |             |
| 75656-S  | BUSHING     |                | X           | X           | X           | X           |             |             |             |                 |             |             |
| 75657-S  | BUSHING     |                | X           | X           | X           | X           |             |             |             |                 |             |             |
| 75838*   | GUIDE       |                | X           | X           |             | X           | X           | X           |             |                 |             |             |
| LW-11997 | SEAL        |                |             |             |             |             |             |             | X           |                 |             |             |
| LW-12688 | SEAT        |                | X           | X           |             | X           | X           |             |             |                 |             |             |
| 18M26105 | BEARING     |                |             | X           |             |             |             |             |             | X               | X           | X           |
| LW-13792 | SEAL        |                |             |             |             |             |             |             | X           |                 |             |             |
| STD-1065 | DOWEL       |                | X           | X           | X           |             |             |             |             |                 |             |             |
| 16T19468 | SEAT        |                | X           | X           |             | X           | X           |             |             |                 |             |             |
| 18M19389 | BEARING     |                |             | X           |             |             |             |             |             | X               | X           | X           |
| 18A26093 | BEARING     |                |             |             |             |             |             |             |             | X               | X           | X           |
| 18D26098 | BEARING     |                |             |             |             |             |             |             |             | X               | X           | X           |

\* Reference Figure 12 items no. 4 and 5 for valve guides.

**NOTE**

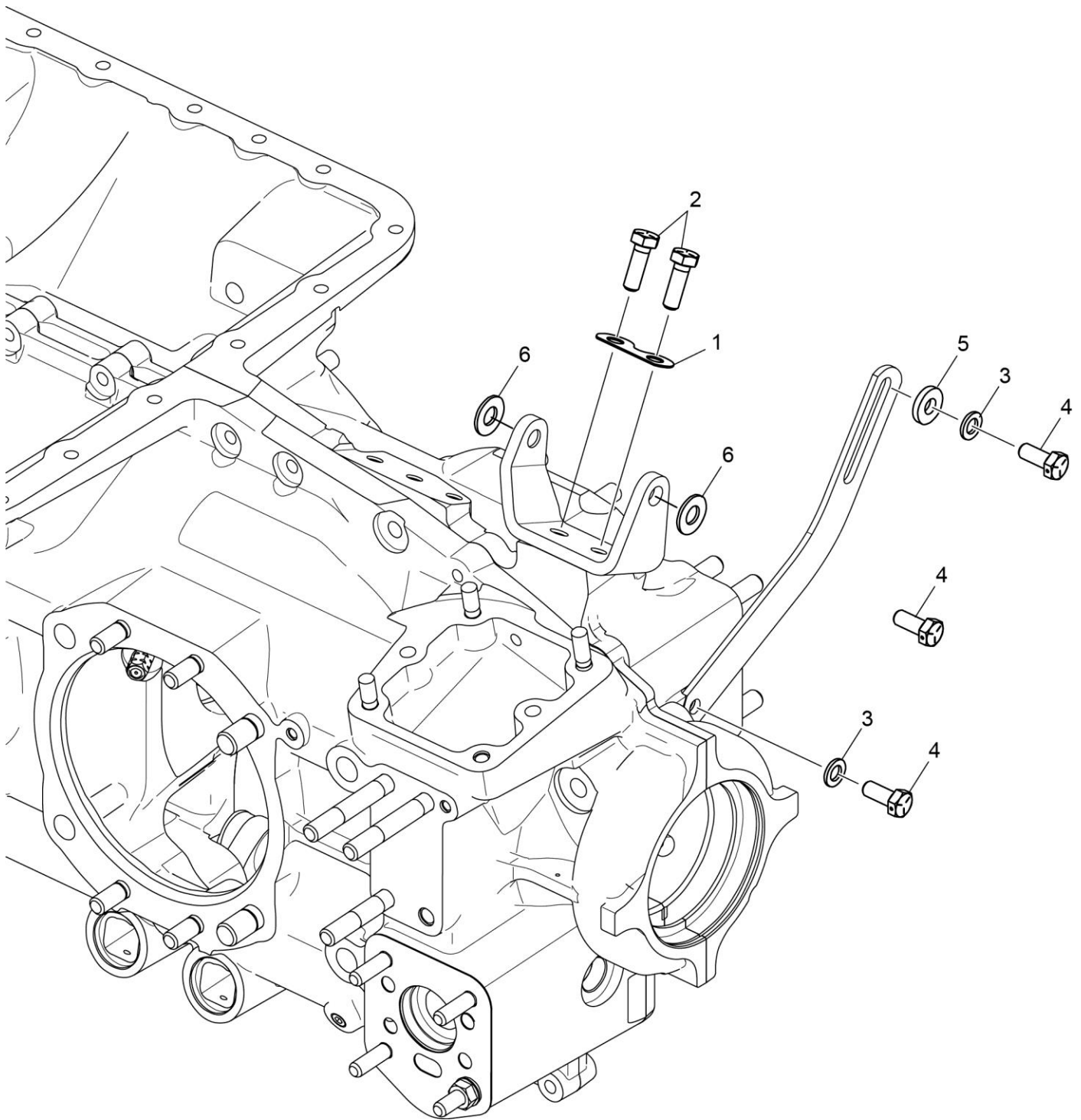
When ordering oversize and undersize parts, be sure to specify the required oversize and undersize dimension along with the proper part number. For example, to order bearing P/N 18D26098 bearing in .003 in. undersize, order P/N 18D26098-M03. Undersize code letter is "M" while oversize code letter is "P". These letters are then followed by the number designating the size in thousandths of an inch.



**Alternator Attaching Parts  
Figure 1**

**ELECTRICAL POWER****FIGURE 1 - ALTERNATOR ATTACHING PARTS**

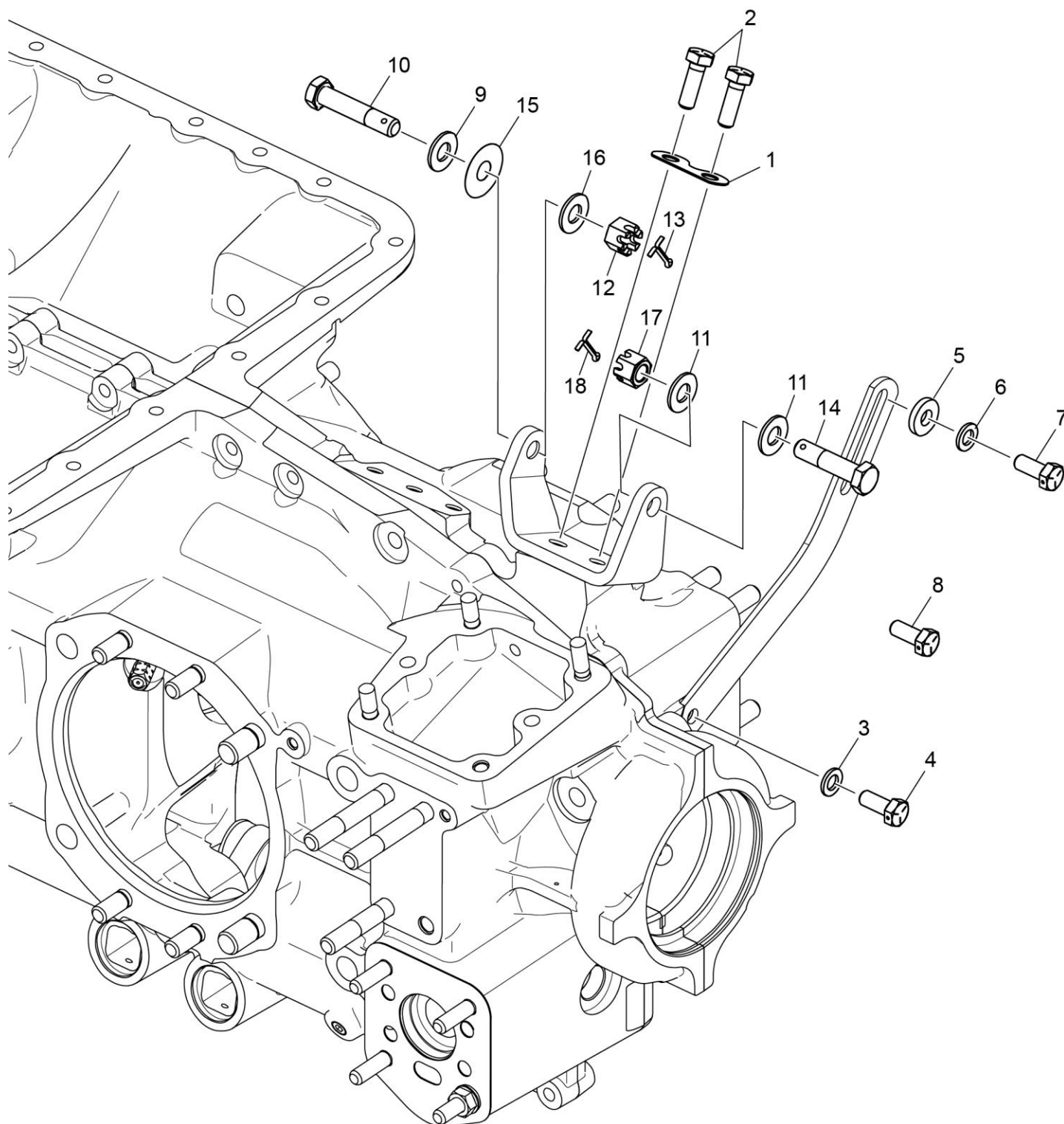
| <b>Figure Item</b>    | <b>Code</b> | <b>Part Number</b> | <b>Description</b>                                  | <b>Units per Assembly</b> |
|-----------------------|-------------|--------------------|-----------------------------------------------------|---------------------------|
| 1                     |             | 07A19474           | BRACKET, Alternator                                 | 1                         |
| 2                     |             | 73383              | LOCKPLATE, 5/16 bolt x 1.00 spacing                 | 1                         |
| 3                     |             | LW-31-0.94         | BOLT, 5/16-18 x 15/16 long, hex.head                | 2                         |
| 4                     |             | 75380              | LINK, Alternator adjusting                          | 1                         |
| 5                     |             | STD-35             | WASHER, 5/16 plain                                  | 1                         |
| 6                     |             | LW-31H0.75         | BOLT, 5/16-18 x 3/4 long, hex. head, drilled        | 1                         |
| 7                     |             | STD-1727           | WASHER, Plain, 3/4 O.D. x 21/64 I.D. x 1/8 thick    | 1                         |
| 8                     | <b>AR</b>   | STD-33             | WASHER, 3/8 plain                                   | AR                        |
| 9                     |             | LW-31H0.75         | BOLT, 5/16-18 x 3/4 long, hex. head, drilled        | 1                         |
| 10                    |             | LW-31H0.75         | BOLT, 5/16-18 x 3/4 long, hex. head, drilled        | 1                         |
| 11                    |             | STD-690            | WASHER, 13/16 O.D. x 3/8 I.D. x 1/16 thick          | 1                         |
| 12                    |             | AN6-17             | BOLT, 3/8-24 x 1-61/64 long, hex. head              | 1                         |
| 13                    | <b>AR</b>   | STD-690            | WASHER, 13/16 O.D. x 3/8 I.D. x 1/16 thick          | AR                        |
| 14                    |             | STD-872            | NUT, 3/8-24 slotted                                 | 1                         |
| 15                    |             | STD-713            | COTTER PIN, 3/32 diameter x 3/4 long                | 1                         |
| 16                    |             | AN6-16             | BOLT, 3/8-24 x 1-53/64 long, hex. head, drilled end | 1                         |
| 17                    | <b>AR</b>   | 76534              | SHIM, 1-1/8 O.D. x 13/32 I.D. x .005 thick          | AR                        |
| 18                    | <b>AR</b>   | STD-690            | WASHER, 13/16 O.D. x 3/8 I.D. x 1/16 thick          | AR                        |
| 19                    |             | STD-872            | NUT, 3/8-24 slotted                                 | 1                         |
| 20                    |             | STD-713            | COTTER PIN, 3/32 diameter x 3/4 long                | 1                         |
| <b>AR as required</b> |             |                    |                                                     |                           |



**Alternator Attaching Parts**  
**Figure 2**

**ELECTRICAL POWER****FIGURE 2 - ALTERNATOR ATTACHING PARTS**

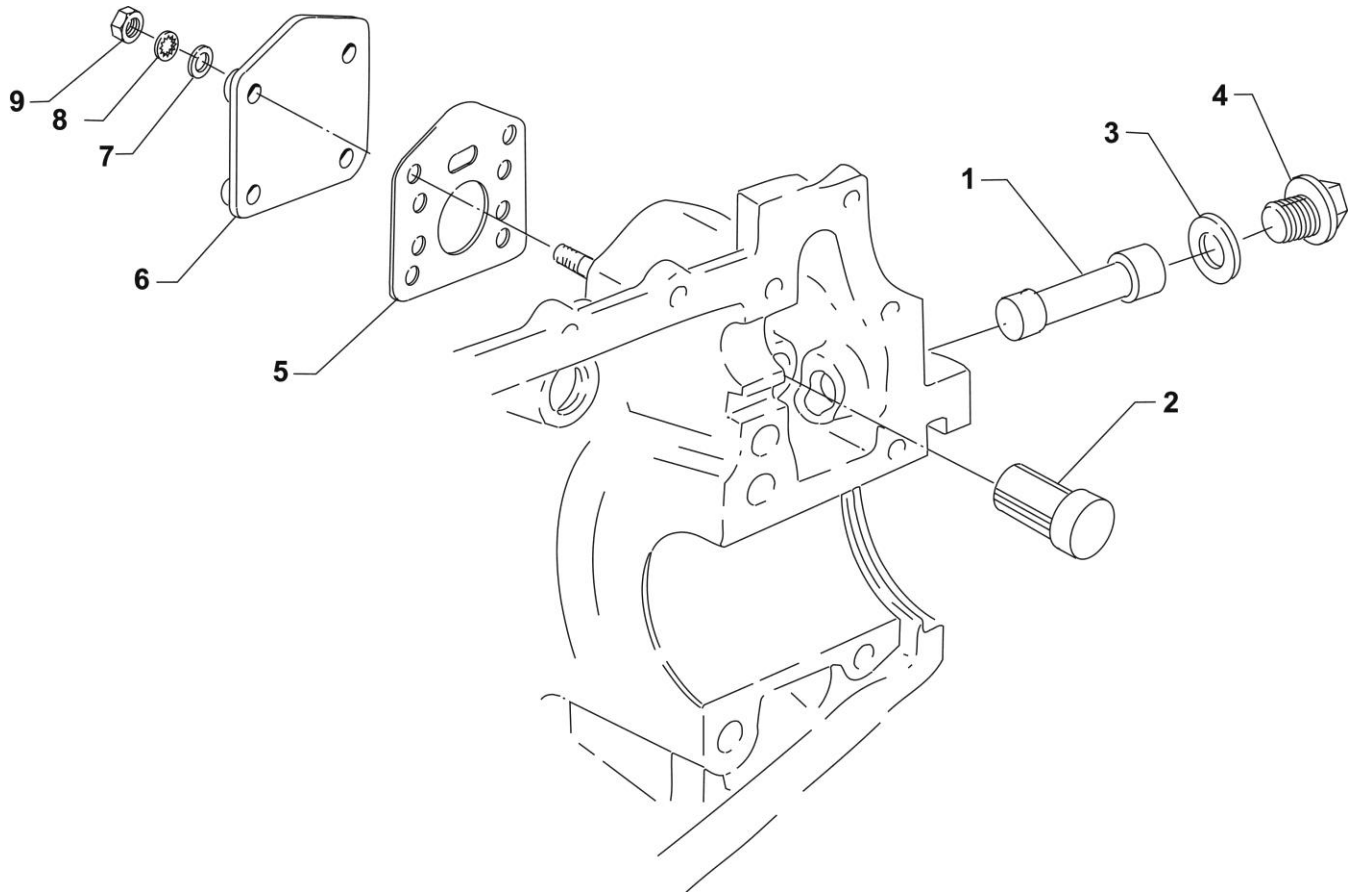
| <b>Figure Item</b>    | <b>Code</b> | <b>Part Number</b> | <b>Description</b>                               | <b>Units per Assembly</b> |
|-----------------------|-------------|--------------------|--------------------------------------------------|---------------------------|
| 1                     |             | 73383              | LOCKPLATE, 5/16 bolt x 1.00 spacing              | 1                         |
| 2                     |             | LW-31-0.94         | BOLT, 5/16-18 x 15/16 long, hex.head             | 2                         |
| 3                     | <b>AR</b>   | STD-35             | WASHER, 5/16 plain                               | AR                        |
| 4                     |             | LW-31H0.75         | BOLT, 5/16-18 x 3/4 long, hex. head, drilled     | 3                         |
| 5                     |             | STD-1727           | WASHER, Plain, 3/4 O.D. x 21/64 I.D. x 1/8 thick | 1                         |
| 6                     | <b>AR</b>   | STD-690            | WASHER, 13/16 O.D. x 3/8 I.D. x 1/16 thick       | AR                        |
| <b>AR</b> as required |             |                    |                                                  |                           |



**Alternator Attaching Parts**  
**Figure 3**

**ELECTRICAL POWER****FIGURE 3 - ALTERNATOR ATTACHING PARTS**

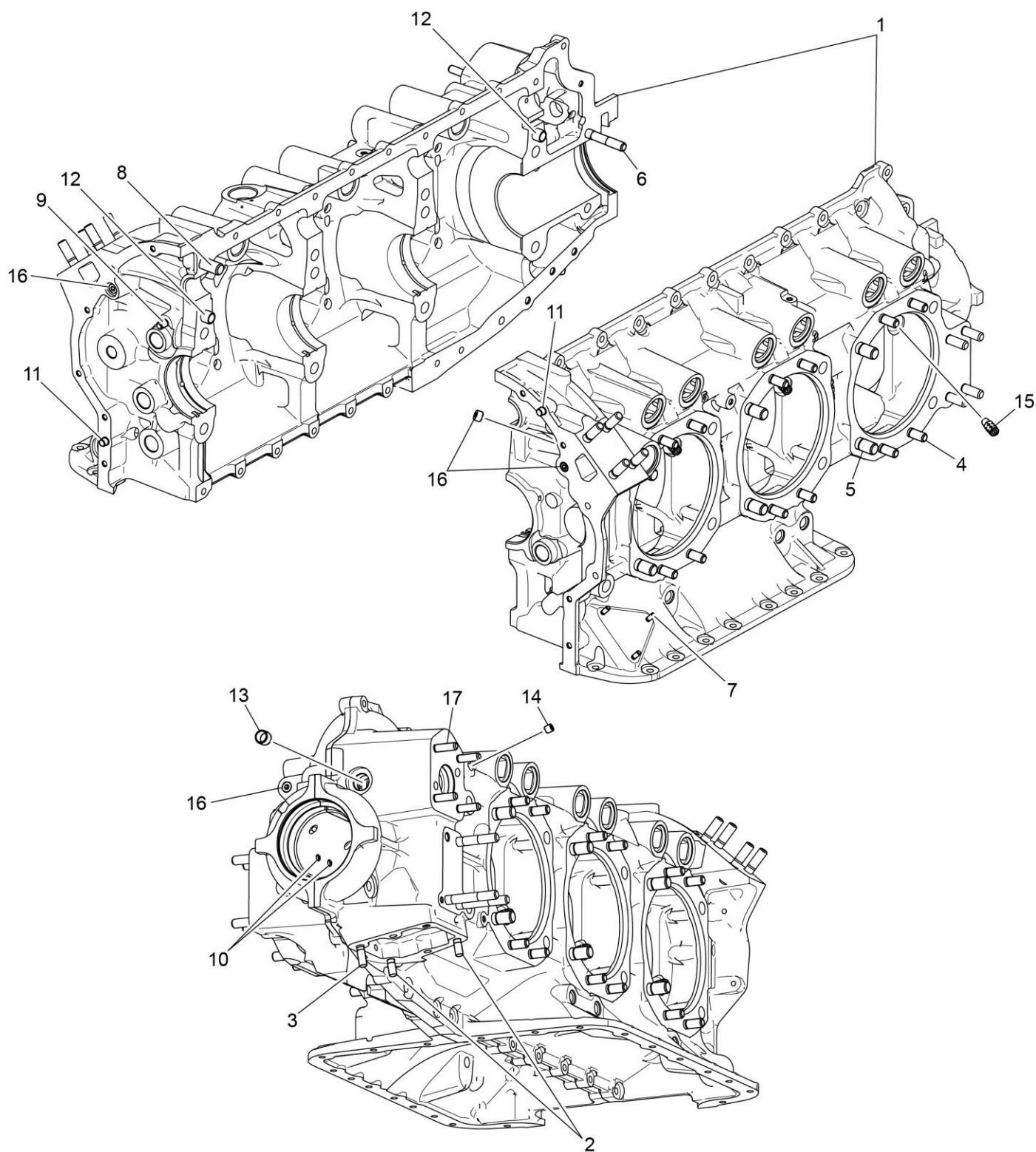
| <b>Figure Item</b>    | <b>Code</b> | <b>Part Number</b> | <b>Description</b>                                  | <b>Units per Assembly</b> |
|-----------------------|-------------|--------------------|-----------------------------------------------------|---------------------------|
| 1                     |             | 73383              | LOCKPLATE, 5/16 bolt x 1.00 spacing                 | 1                         |
| 2                     |             | LW-31-0.94         | BOLT, 5/16-18 x 15/16 long, hex.head                | 2                         |
| 3                     |             | STD-35             | WASHER, 5/16 plain                                  | 1                         |
| 4                     |             | LW-31H0.75         | BOLT, 5/16-18 x 3/4 long, hex. head, drilled        | 1                         |
| 5                     |             | STD-1727           | WASHER, Plain, 3/4 O.D. x 21/64 I.D. x 1/8 thick    | 1                         |
| 6                     | <b>AR</b>   | STD-33             | WASHER, 3/8 plain                                   | 3 AR                      |
| 7                     |             | LW-31H0.75         | BOLT, 5/16-18 x 3/4 long, hex. head, drilled        | 1                         |
| 8                     |             | LW-31H0.75         | BOLT, 5/16-18 x 3/4 long, hex. head, drilled        | 1                         |
| 9                     |             | STD-690            | WASHER, 13/16 O.D. x 3/8 I.D. x 1/16 thick          | 1                         |
| 10                    |             | AN6-17             | BOLT, 3/8-24 x 1-61/64 long, hex. head              | 1                         |
| 11                    | <b>AR</b>   | STD-690            | WASHER, 13/16 O.D. x 3/8 I.D. x 1/16 thick          | 3 AR                      |
| 12                    |             | STD-872            | NUT, 3/8-24 slotted                                 | 1                         |
| 13                    |             | STD-713            | COTTER PIN, 3/32 diameter x 3/4 long                | 1                         |
| 14                    |             | AN6-16             | BOLT, 3/8-24 x 1-53/64 long, hex. head, drilled end | 1                         |
| 15                    | <b>AR</b>   | 76534              | SHIM, 1-1/8 O.D. x 13/32 I.D. x .005 thick          | AR                        |
| 16                    | <b>AR</b>   | STD-690            | WASHER, 13/16 O.D. x 3/8 I.D. x 1/16 thick          | AR                        |
| 17                    |             | STD-872            | NUT, 3/8-24 slotted                                 | 1                         |
| 18                    |             | STD-713            | COTTER PIN, 3/32 diameter x 3/4 long                | 1                         |
| <b>AR as required</b> |             |                    |                                                     |                           |



**Propeller Governor Plugs and Cover**  
**Figure 4**

**FRONT SECTION****FIGURE 4 – PROPELLER GOVERNOR PLUGS AND COVER**

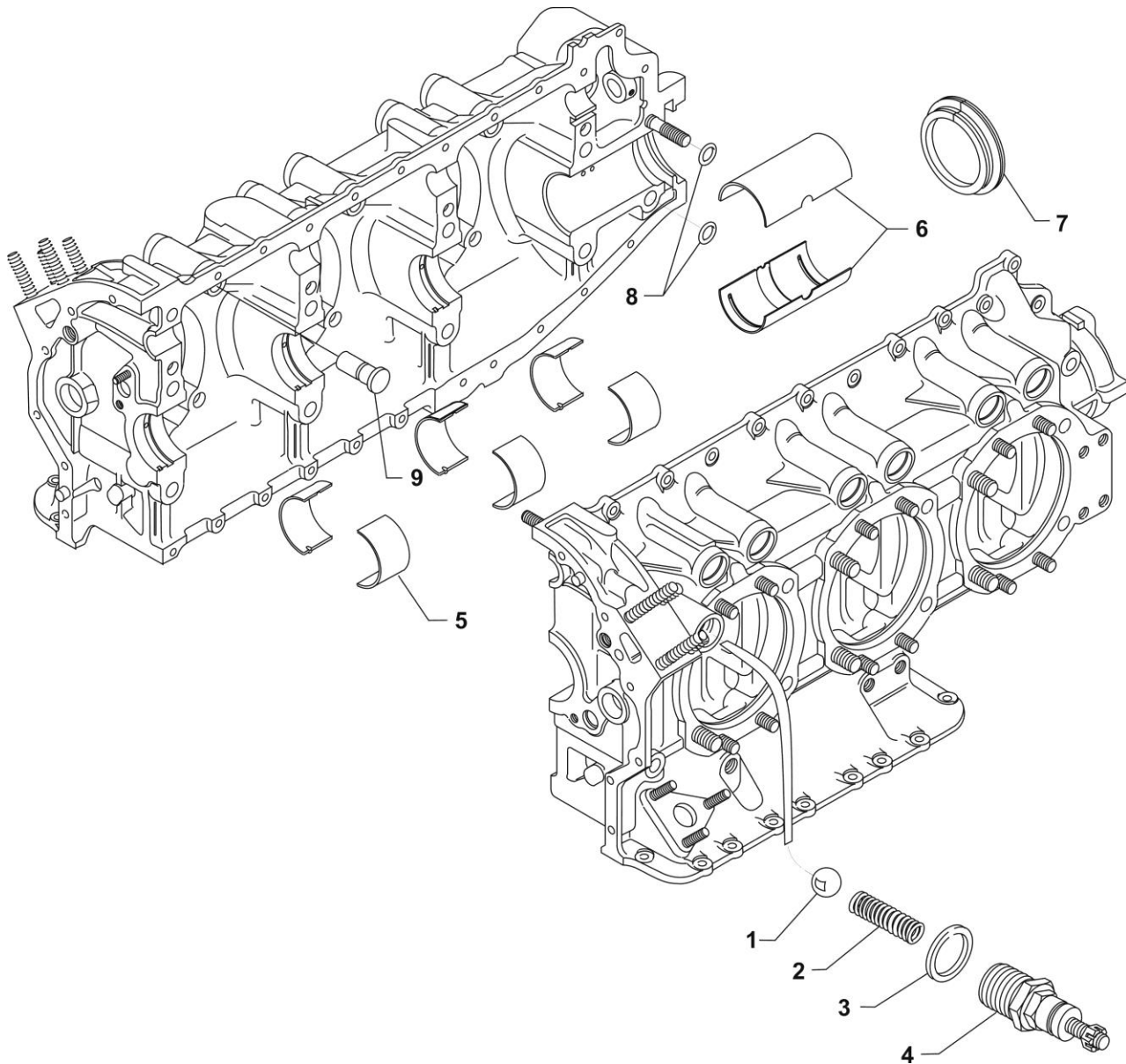
| <b>Figure Item</b> | <b>Code</b> | <b>Part Number</b> | <b>Description</b>                           | <b>Units per Assembly</b> |
|--------------------|-------------|--------------------|----------------------------------------------|---------------------------|
| 1                  |             | 78589              | PLUG, Propeller governor idler shaft         | 1                         |
| 2                  |             | 03C21721           | PLUG, Propeller governor drive gear          | 1                         |
| 3                  |             | 70455              | GASKET, 25/32 I.D. x 1-1/8 O.D. x 1/32 thick | 1                         |
| 4                  |             | LW-13896           | PLUG, 3/4-16 hex. head                       | 1                         |
| 5                  |             | 72053              | GASKET, Governor                             | 1                         |
| 6                  |             | 72378              | COVER, Governor drive                        | 1                         |
| 7                  |             | STD-35             | WASHER, 5/16 plain                           | 4                         |
| 8                  |             | STD-475            | WASHER. 5/16 lock, internal teeth            | 4                         |
| 9                  |             | STD-1410           | NUT, 5/16-18 plain                           | 4                         |



**Crankcase Assembly**  
**Figure 5**

**POWER SECTION****FIGURE 5 - CRANKCASE ASSEMBLY**

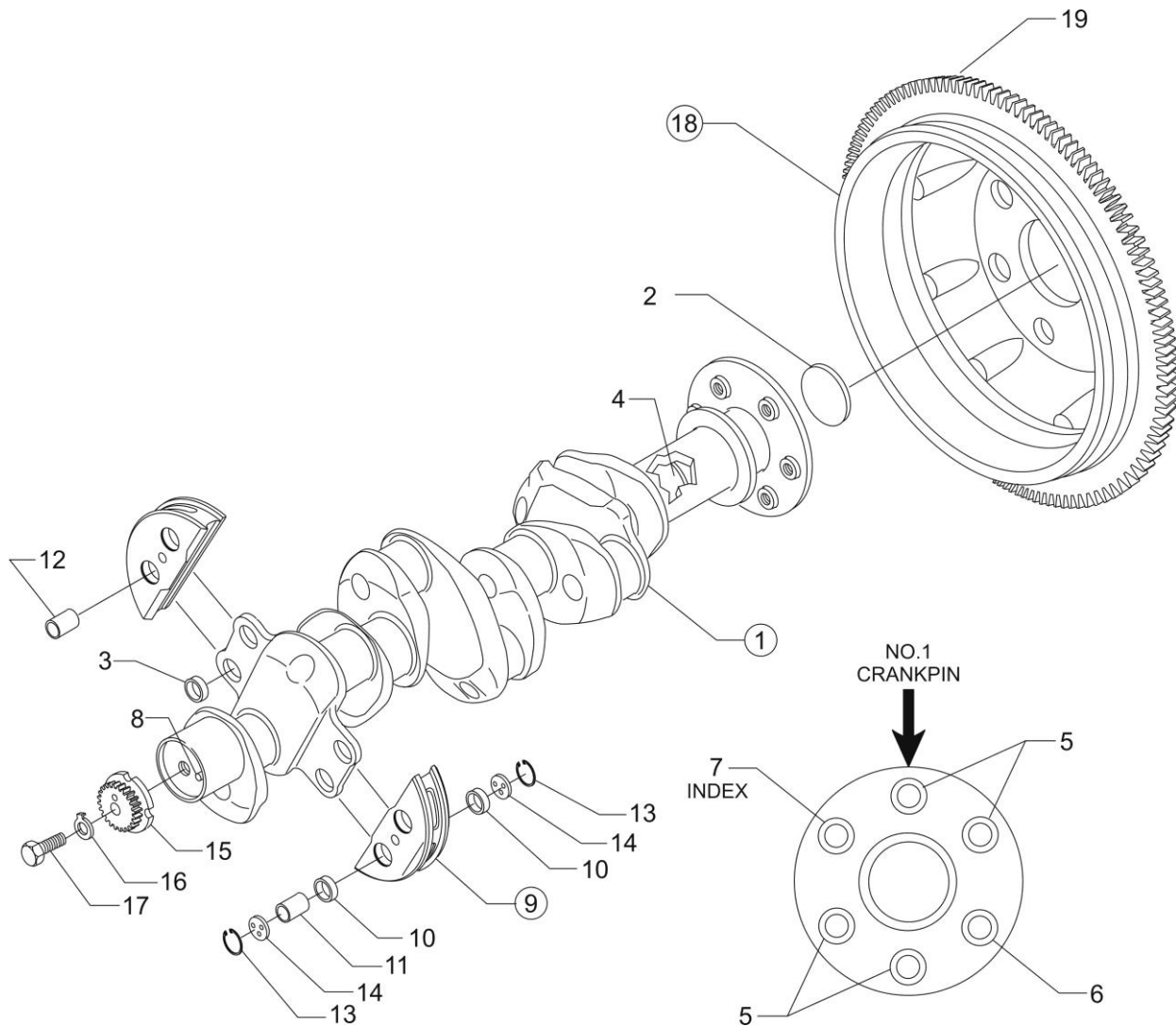
| <b>Figure Item</b>                                                                                                                                                                                                           | <b>Code</b> | <b>Part Number</b> | <b>Description</b>                       | <b>Units per Assembly</b> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------|------------------------------------------|---------------------------|
| 1                                                                                                                                                                                                                            | *           | 11E24004-S1-S      | CRANKCASE ASSEMBLY KIT (Flat Tappet)     | 1                         |
|                                                                                                                                                                                                                              | <b>P</b>    | 11E24004-S1        | CRANKCASE ASSEMBLY                       | 1                         |
|                                                                                                                                                                                                                              | *           | 11E24104-S1-S      | CRANKCASE ASSEMBLY KIT (Roller Tappet)   | 1                         |
|                                                                                                                                                                                                                              | <b>P</b>    | 11E24104-S1        | CRANKCASE ASSEMBLY                       | 1                         |
|                                                                                                                                                                                                                              | *           | 11E24106-S1-S      | CRANKCASE ASSEMBLY KIT (Roller Tappet)   | 1                         |
|                                                                                                                                                                                                                              | <b>P</b>    | 11E24106-S1        | CRANKCASE ASSEMBLY                       | 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                                                                                                                                                                                                                            |             | 10-8               | STUD, No. 10-32 x 1.00 long              | 3                         |
| 8                                                                                                                                                                                                                            |             | 38D-17             | STUD, 3/8-16 x 2-1/8 long, drilled       | 1                         |
| 9                                                                                                                                                                                                                            |             | 01A23354           | STUD, 5/16-18 x 1.00 long, drilled       | 1                         |
| 10                                                                                                                                                                                                                           |             | 69796              | DOWEL, Crankshaft bearing                | 2                         |
| 11                                                                                                                                                                                                                           |             | STD-514            | DOWEL, 5/16 diameter x 1/2 long          | 2                         |
| 12                                                                                                                                                                                                                           |             | STD-557            | DOWEL, 1/2 diameter x 11/16 long, hollow | 2                         |
| 13                                                                                                                                                                                                                           |             | 72158              | BUSHING, Governor drive idler shaft      | 1                         |
| 14                                                                                                                                                                                                                           |             | STD-1339           | PLUG, 1/16-27 NPT, Allen head            | 1                         |
| 15                                                                                                                                                                                                                           |             | 73772              | NOZZLE ASSEMBLY, Piston cooling          | 6                         |
| 16                                                                                                                                                                                                                           |             | 1102               | PLUG, 1/8-27 NPT, Allen head             | 4                         |
| 17                                                                                                                                                                                                                           |             | 31C-14             | STUD, 5/16-18 x 1-3/4 long               | 4                         |
| <p><b>P</b> Lycoming proprietary part. Listed for reference purposes only, cannot be purchased.</p> <p><b>*</b> Refer to Service Kits Section for applicable Crankcase Assembly and Governor Thru-Stud Kit Part Numbers.</p> |             |                    |                                          |                           |



**Crankcase Related Parts**  
**Figure 6**

**POWER SECTION****FIGURE 6 - CRANKCASE RELATED PARTS**

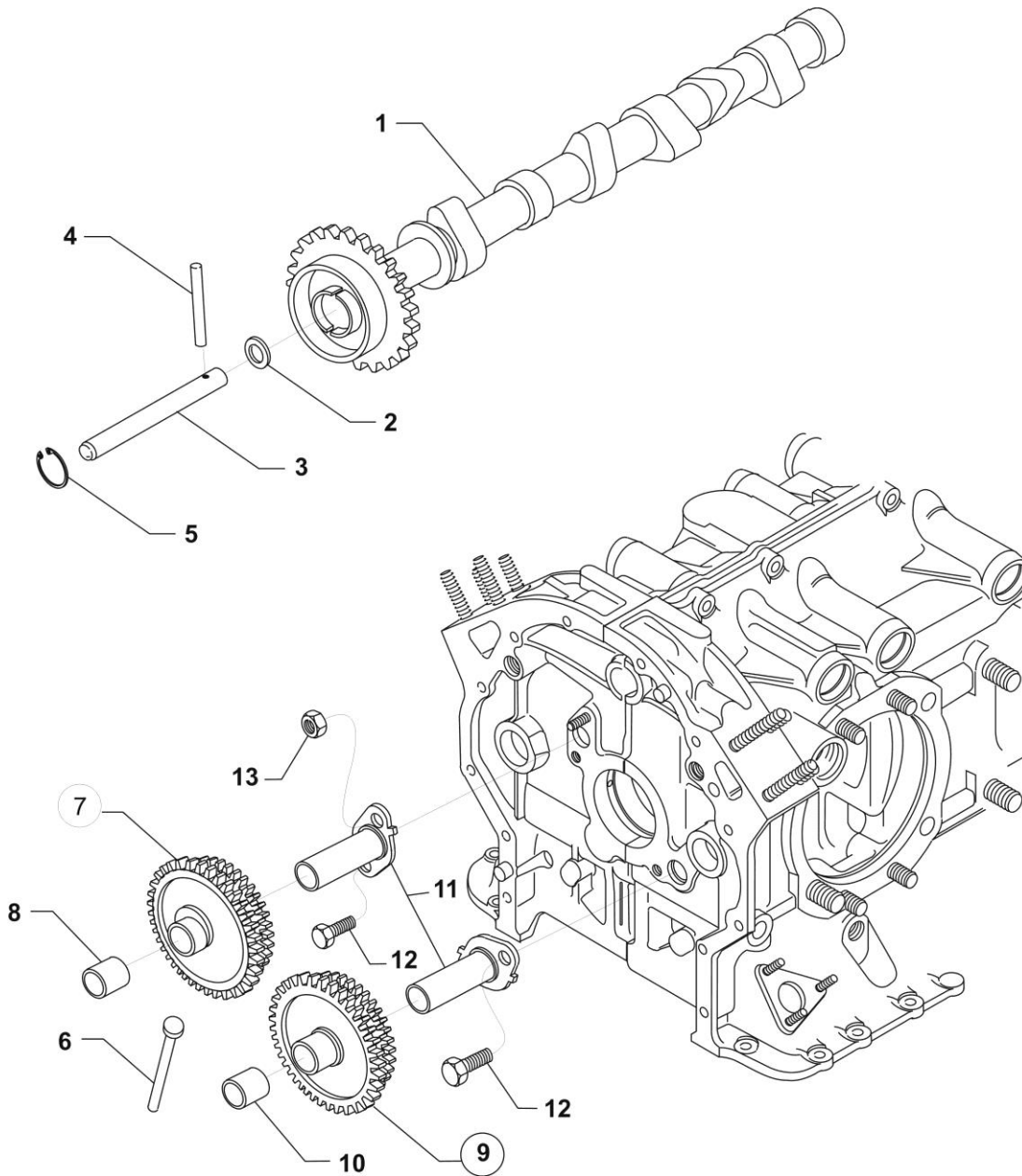
| <b>Figure Item</b>                                                                                                                                                                                                                                                                         | <b>Code</b> | <b>Part Number</b> | <b>Description</b>                                    | <b>Units per Assembly</b> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------|-------------------------------------------------------|---------------------------|
| 1                                                                                                                                                                                                                                                                                          |             | 1028-B             | BALL, 11/16 diameter                                  | 1                         |
| 2                                                                                                                                                                                                                                                                                          | *           | 61084              | SPRING, Oil pressure relief valve                     | 1                         |
|                                                                                                                                                                                                                                                                                            | *           | 68668              | SPRING, Oil pressure relief valve                     | 1                         |
|                                                                                                                                                                                                                                                                                            | *           | 77467              | SPRING, Oil pressure relief valve                     | 1                         |
|                                                                                                                                                                                                                                                                                            | *           | LW-11713           | SPRING, Oil pressure relief valve                     | 1                         |
|                                                                                                                                                                                                                                                                                            | *           | LW-18085           | SPRING, Oil pressure relief valve                     | 1                         |
| 3                                                                                                                                                                                                                                                                                          |             | 06E19769-1.25      | GASKET, Annular, 1-1/4 I.D.                           | 1                         |
| 4                                                                                                                                                                                                                                                                                          |             | 77808              | VALVE ASSEMBLY, Oil pressure relief valve, adj.       | 1                         |
| 5                                                                                                                                                                                                                                                                                          |             | 18D26098           | BEARING, Crankshaft                                   | 6                         |
| 6                                                                                                                                                                                                                                                                                          |             | 18A26093           | BEARING, Crankshaft                                   | 2                         |
| 7                                                                                                                                                                                                                                                                                          | **          | LW-13792           | SEAL, Crankshaft oil                                  | 1                         |
| 8                                                                                                                                                                                                                                                                                          |             | 72091              | RING, Oil seal, 23/64 I.D. x 7/64 diameter            | 2                         |
| 9                                                                                                                                                                                                                                                                                          |             | 15B26262           | BODY, Hydraulic tappet                                | 12                        |
|                                                                                                                                                                                                                                                                                            |             | LRT23381           | BODY ASSEMBLY, Hydraulic tappet, Lycoming roller type | 12                        |
| <p>* Select spring to give a minimum of three threads exposed on adjusting screw to allow field adjustment. Reference latest revision of SSP-1776, Part I for spring identification.</p> <p>** Refer to the latest revision of Lycoming Service Instruction No. 1324 for installation.</p> |             |                    |                                                       |                           |



**Crankshaft Assembly and Related Parts**  
**Figure 7**

**POWER SECTION****FIGURE 7 - CRANKSHAFT ASSEMBLY AND RELATED PARTS**

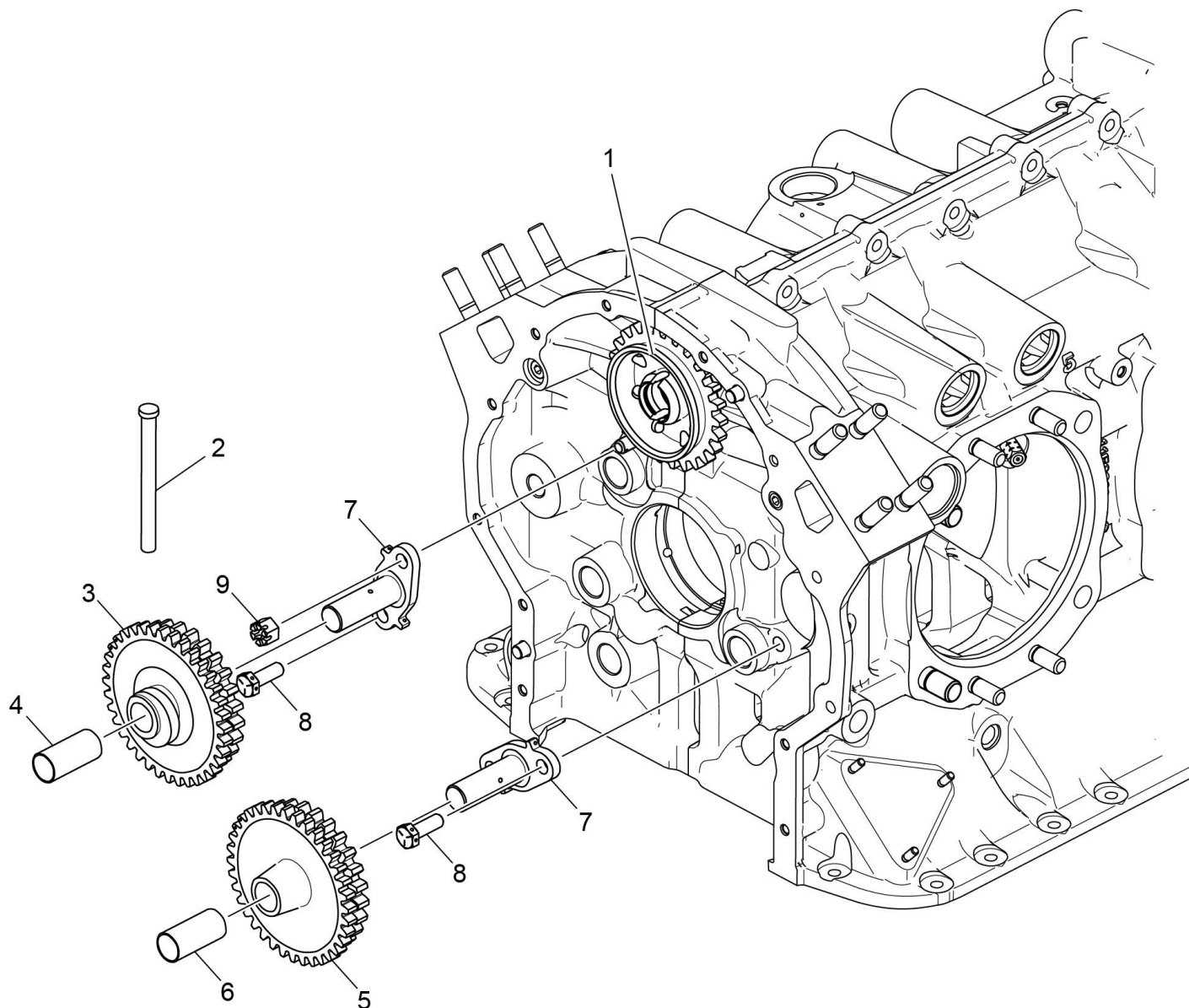
| Figure Item                                                                                                                                                                                | Code | Part Number | Description                                      | Units per Assembly |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-------------|--------------------------------------------------|--------------------|
| 1                                                                                                                                                                                          |      | 13E47622    | CRANKSHAFT AND BUSHING ASSEMBLY                  | 1                  |
| 2                                                                                                                                                                                          |      | STD-1211    | PLUG, 2.00 diameter expansion                    | 1                  |
| 3                                                                                                                                                                                          |      | 73810       | BUSHING, Crankshaft dynamic counterweight        | 4                  |
| 4                                                                                                                                                                                          |      | 71640       | PLUG, 1-3/8 diameter                             | 1                  |
| 5                                                                                                                                                                                          |      | 75656-S     | BUSHING, Propeller flange, long                  | 4                  |
| 6                                                                                                                                                                                          |      | 72155-S     | BUSHING, Propeller flange, short                 | 1                  |
| 7                                                                                                                                                                                          |      | 75657-S     | BUSHING, Propeller flange, indexing              | 1                  |
| 8                                                                                                                                                                                          |      | STD-1065    | DOWEL, Stepped, 5/16 x 1/4 diameter              | 1                  |
| 9                                                                                                                                                                                          |      | 14U22539    | COUNTERWEIGHT ASSEMBLY                           | 2                  |
| 10                                                                                                                                                                                         |      | 71903-A     | BUSHING, Dynamic counterweight                   | 4                  |
| 11                                                                                                                                                                                         |      | 14W22647    | ROLLER, Dynamic counterweight, 4.81 order        | 2                  |
| 12                                                                                                                                                                                         |      | 70416       | ROLLER, Dynamic counterweight                    | 2                  |
| 13                                                                                                                                                                                         |      | LW-14820    | RING, Internal retaining                         | 8                  |
| 14                                                                                                                                                                                         |      | 71907       | WASHER, Dynamic counterweight                    | 8                  |
| 15                                                                                                                                                                                         | *    | 13S19647    | GEAR, Crankshaft                                 | 1                  |
| 16                                                                                                                                                                                         |      | LW-18638    | LOCKPLATE, Crankshaft gear                       | 1                  |
| 17                                                                                                                                                                                         |      | STD-2247    | BOLT, 5/16 -24 x 1-3/4 long                      | 1                  |
| 18                                                                                                                                                                                         |      | 31M22972    | SUPPORT ASSEMBLY, Starter ring gear, 12/14 pitch | 1                  |
| 19                                                                                                                                                                                         |      | 72566       | GEAR, Starter ring, 12/14 pitch                  | 1                  |
| <p>* Refer to the latest revision of Service Bulletin No. 475 for proper installation.</p> <p><b>NOTE:</b> Refer to Service Kit Section for Crankshaft and Counterweight Assembly kit.</p> |      |             |                                                  |                    |



**Crankshaft Idler Gears, Tachometer Drive and Camshaft  
Figure 8**

**POWER SECTION****FIGURE 8 - CRANKSHAFT IDLER GEARS, TACHOMETER DRIVE AND CAMSHAFT**

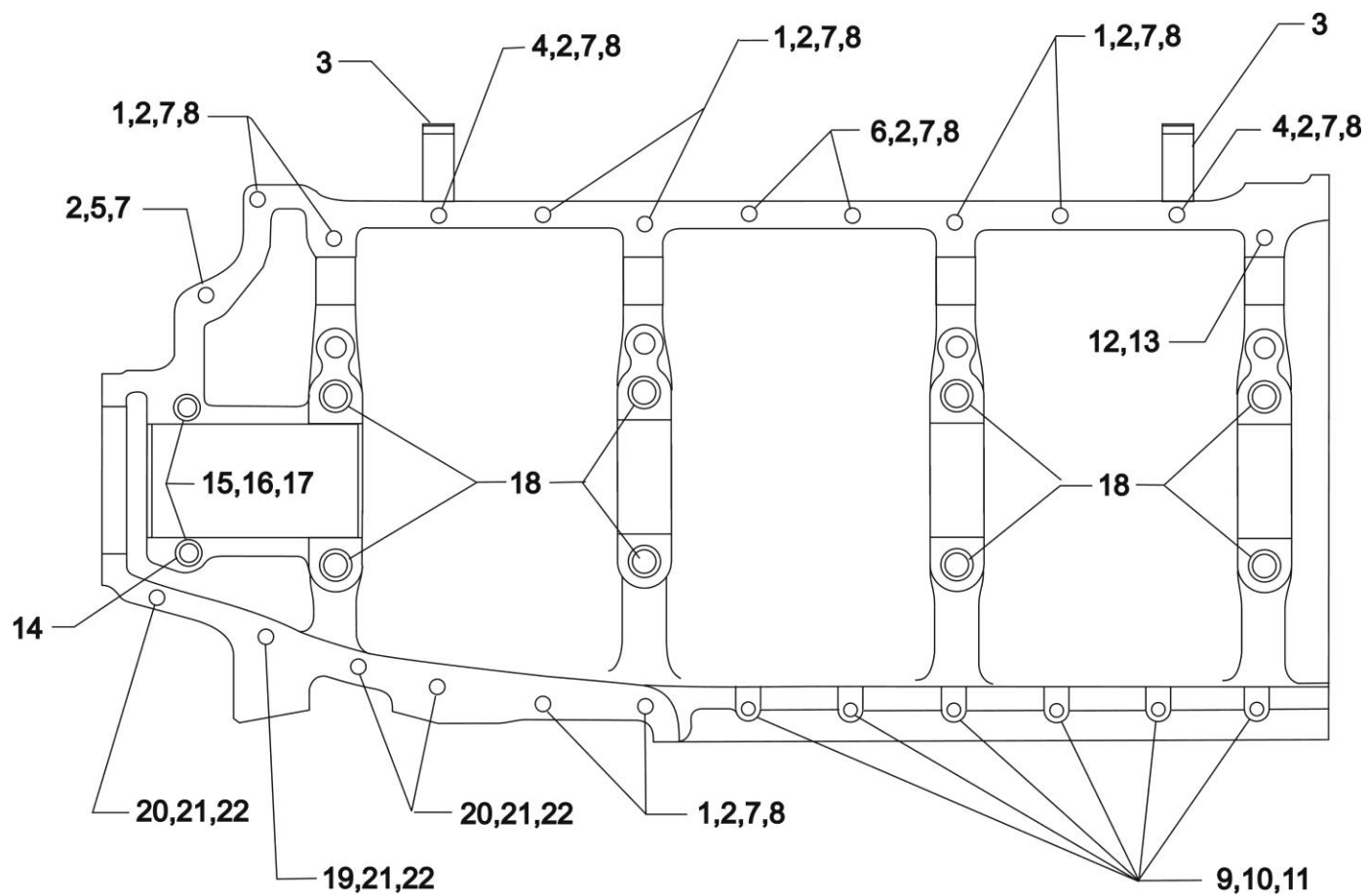
| <b>Figure Item</b> | <b>Code</b> | <b>Part Number</b> | <b>Description</b>                           | <b>Units per Assembly</b> |
|--------------------|-------------|--------------------|----------------------------------------------|---------------------------|
| 1                  |             | LW-19340           | CAMSHAFT ASSEMBLY, Flat Tappets              | 1                         |
|                    |             | 15N23374           | CAMSHAFT ASSEMBLY, Roller Lifter             | 1                         |
| 2                  |             | 76118              | SPACER, Tachometer shaft centering           | 1                         |
| 3                  |             | 76155              | SHAFT ASSEMBLY, Tachometer                   | 1                         |
| 4                  |             | LW-18667           | PIN, 3/16 diameter x 2-21/64 long            | 1                         |
| 5                  |             | STD-2231           | RING, Internal retaining (13/16)             | 1                         |
| 6                  |             | 23D26777           | PLUNGER, Fuel pump, long                     | 1                         |
| 7                  |             | 71652              | GEAR ASSEMBLY, Crankshaft idler              | 1                         |
| 8                  |             | 67530              | BUSHING, Crankshaft idler gear               | 1                         |
| 9                  |             | 71668              | GEAR ASSEMBLY, Crankshaft idler, plain       | 1                         |
| 10                 |             | 67530              | BUSHING, Crankshaft idler gear               | 1                         |
| 11                 |             | LW-13795           | SHAFT, Crankshaft idler gear                 | 2                         |
| 12                 |             | LW-31H0.88         | BOLT, 5/16-18 x 7/8 long, hex. head, drilled | 3                         |
| 13                 |             | STD-2168           | NUT, 5/16-18 NC-3 slotted shear              | 1                         |



**Crankshaft Idler Gears, Tachometer Drive and Camshaft**  
**Figure 9**

**POWER SECTION****FIGURE 9 - CRANKSHAFT IDLER GEARS AND CAMSHAFT**

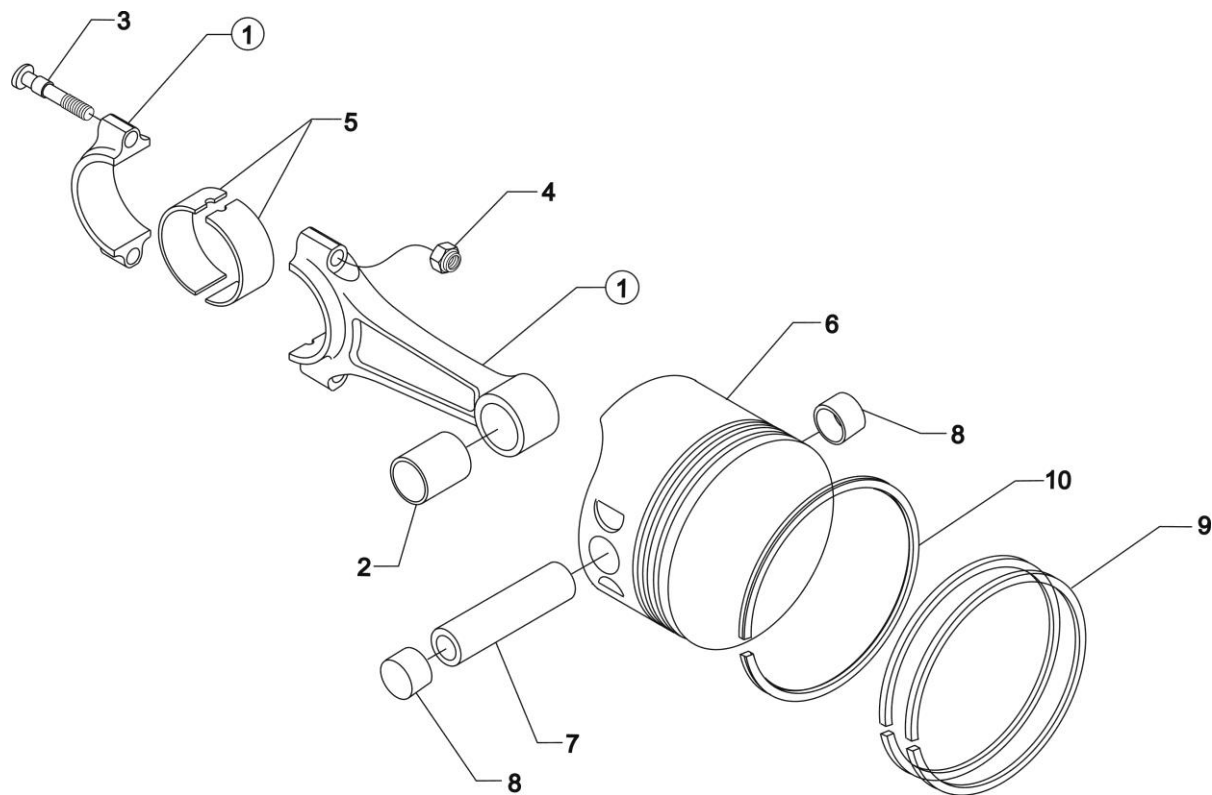
| <b>Figure Item</b> | <b>Code</b> | <b>Part Number</b> | <b>Description</b>                           | <b>Units per Assembly</b> |
|--------------------|-------------|--------------------|----------------------------------------------|---------------------------|
| 1                  |             | 15N26092           | CAMSHAFT ASSEMBLY, Roller lifter             | 1                         |
| 2                  |             | 23D26777           | PLUNGER, Fuel pump, long                     | 1                         |
| 3                  |             | 71652              | GEAR ASSEMBLY, Crankshaft idler              | 1                         |
| 4                  |             | 67530              | BUSHING, Crankshaft idler gear               | 1                         |
| 5                  |             | 71668              | GEAR ASSEMBLY, Crankshaft idler, plain       | 1                         |
| 6                  |             | 67530              | BUSHING, Crankshaft idler gear               | 1                         |
| 7                  |             | LW-13795           | SHAFT, Crankshaft idler gear                 | 2                         |
| 8                  |             | LW-31H0.88         | BOLT, 5/16-18 x 7/8 long, hex. head, drilled | 3                         |
| 9                  |             | STD-2168           | NUT, 5/16-18 NC-3 slotted shear              | 1                         |



**Crankcase Attaching Parts**  
**Figure 10**

**POWER SECTION****FIGURE 10 - CRANKCASE ATTACHING PARTS**

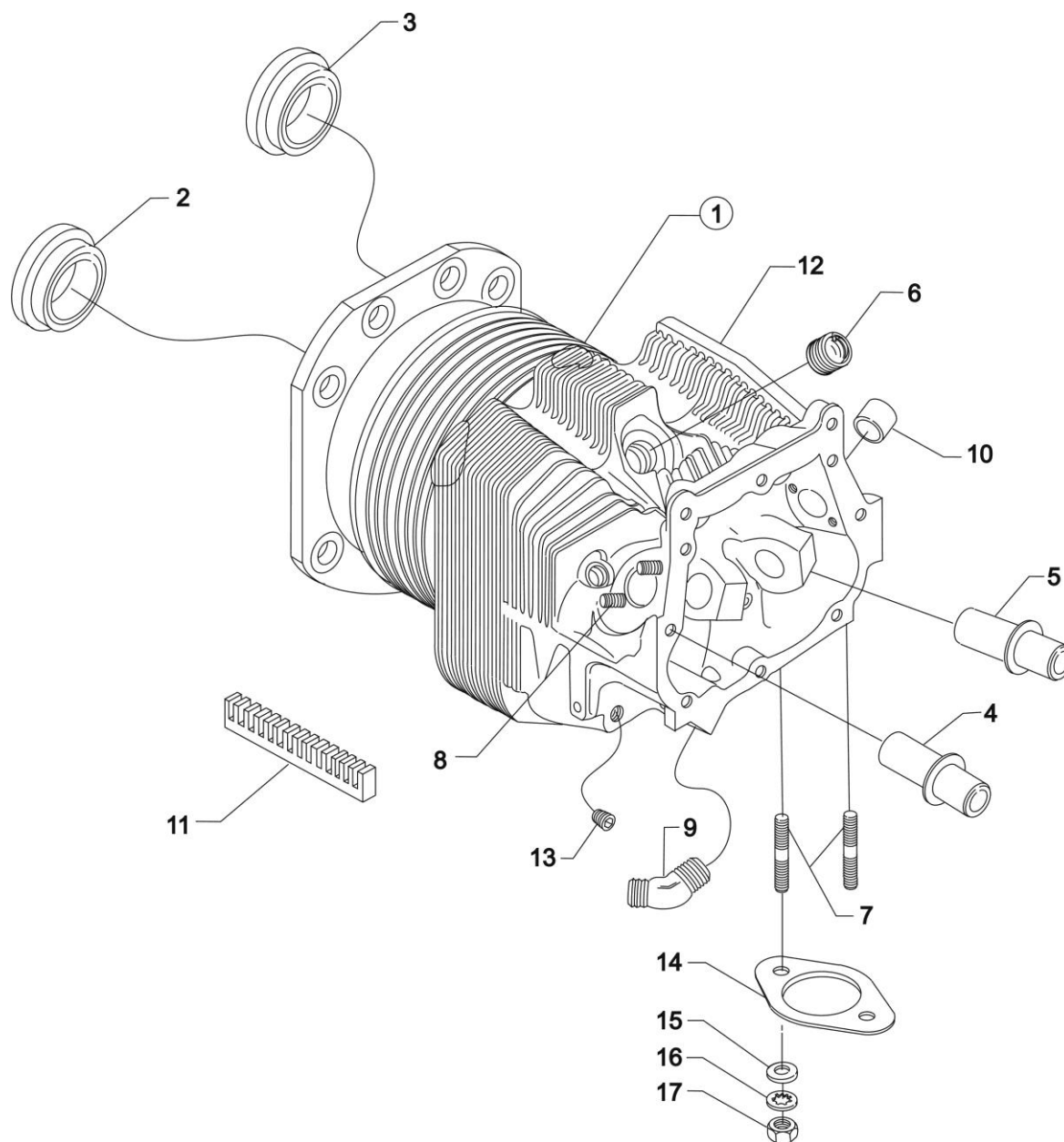
| <b>Figure Item</b>    | <b>Code</b> | <b>Part Number</b> | <b>Description</b>                                | <b>Units per Assembly</b> |
|-----------------------|-------------|--------------------|---------------------------------------------------|---------------------------|
| 1                     |             | LW-25-1.50         | BOLT, 1/4-20 x 1-1/2 long, hex. head              | 9                         |
| 2                     |             | STD-8              | WASHER, 1/4 plain                                 | 24                        |
| 3                     |             | 60803              | STRAP, Lifting                                    | 2                         |
| 4                     |             | LW-25-1.75         | BOLT, 1/4-20 x 1-3/4 long, hex. head              | 2                         |
| 5                     |             | LW-25-1.13         | BOLT, 1/4-20 x 1-1/8 long, hex. head              | 1                         |
| 6                     |             | LW-25-2.00         | BOLT, 1/4-20 x 2.00 long, hex. head               | 2                         |
| 7                     |             | STD-160            | WASHER, 1/4 lock, internal teeth                  | 13                        |
| 8                     |             | STD-1411           | NUT, 1/4-20 plain                                 | 12                        |
| 9                     |             | LW-25S1.50         | BOLT, 1/4-20 x 1-1/2 long, hex. head, drilled end | 6                         |
| 10                    | <b>AR</b>   | STD-8              | WASHER, 1/4 plain (max. 18)                       | AR                        |
| 11                    |             | STD-2249           | NUT, 1/4-20 slotted                               | 6                         |
| 12                    |             | STD-33             | WASHER, 3/8 plain                                 | 1                         |
| 13                    |             | STD-872            | NUT, 3/8-24 slotted                               | 1                         |
| 14                    |             | AN6-34A            | BOLT, 3/8-24 x 3-37/64 long, hex. head            | 1                         |
| 15                    |             | STD-33             | WASHER, 3/8 plain                                 | 3                         |
| 16                    |             | STD-678            | WASHER, 3/8 lock, internal teeth                  | 2                         |
| 17                    |             | STD-596            | NUT, 3/8-24 plain                                 | 2                         |
| 18                    |             | 76220              | STUD, 1/2-20 x 10-45/64 long                      | 8                         |
| 19                    |             | LW-31-2.75         | BOLT, 5/16-18 x 2-3/4 long, hex. head             | 1                         |
| 20                    |             | LW-31-1.16         | BOLT, 5/16-18 x 1-5/32 long, hex. head            | 3                         |
| 21                    |             | STD-35             | WASHER, 5/16 plain                                | 4                         |
| 22                    |             | STD-475            | WASHER, 5/16 lock, internal teeth                 | 4                         |
| <b>AR as required</b> |             |                    |                                                   |                           |



**Connecting Rods, Pistons and Ring Assemblies**  
**Figure 11**

**CYLINDER SECTION****FIGURE 11 - CONNECTING RODS, PISTONS AND RING ASSEMBLIES**

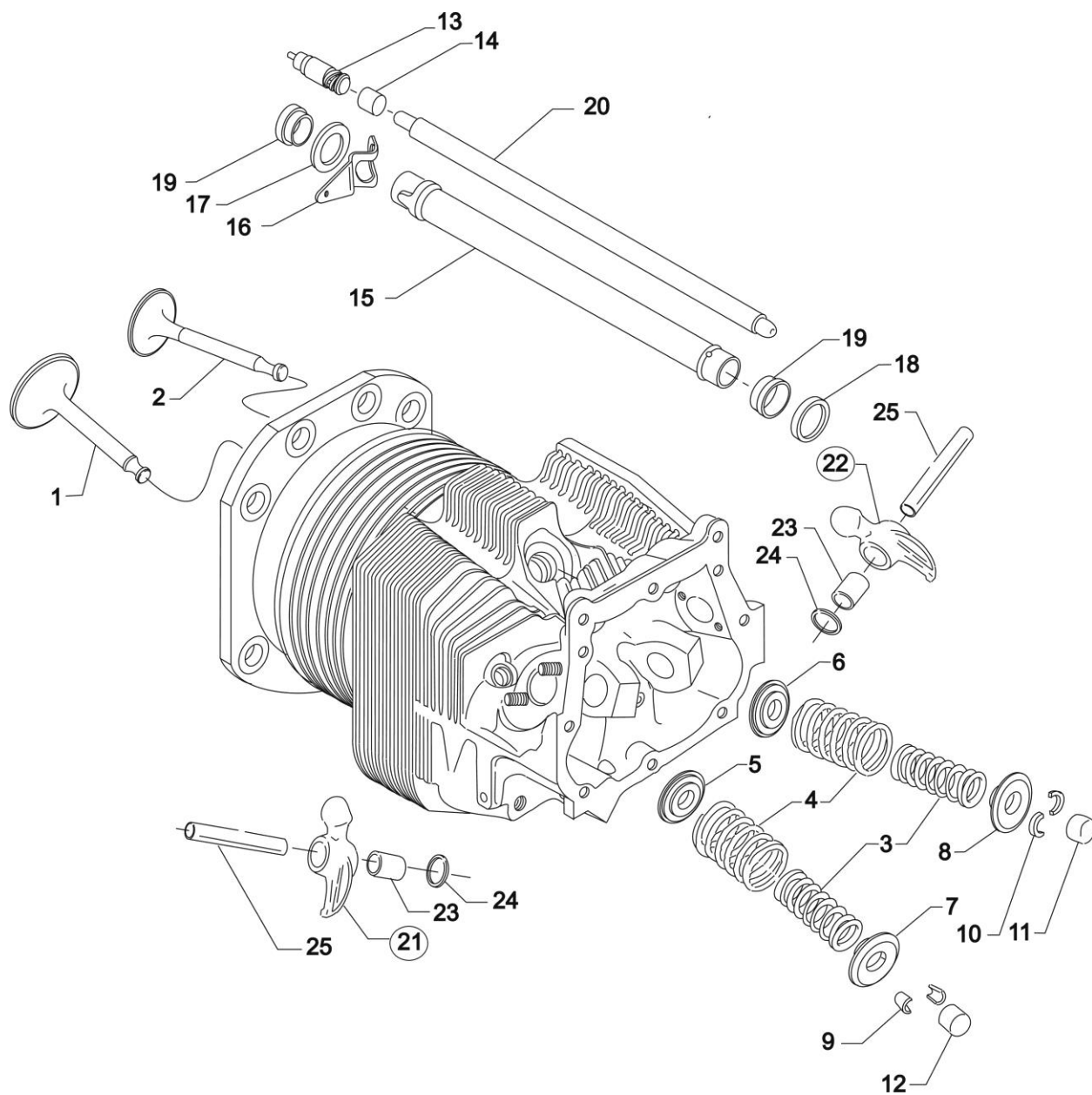
| Figure Item                                                                                                                                                                                                                  | Code     | Part Number | Description                                  | Units per Assembly |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------|----------------------------------------------|--------------------|
| 1                                                                                                                                                                                                                            |          | LW-11750    | CONNECTING ROD ASSEMBLY                      | 6                  |
| 2                                                                                                                                                                                                                            |          | LW-13923    | BUSHING, Connecting rod, upper               | 6                  |
| 3                                                                                                                                                                                                                            | <b>P</b> | 14S23890    | BOLT, Connecting rod                         |                    |
|                                                                                                                                                                                                                              | *        | 75060       | BOLT, Connecting rod                         | 12                 |
| 4                                                                                                                                                                                                                            |          | LW-12186    | NUT, Connecting rod bolt                     | 12                 |
| 5                                                                                                                                                                                                                            |          | 18M26105    | BEARING, Connecting rod                      | 12                 |
| 6                                                                                                                                                                                                                            |          | 14D23908    | PISTON, Compression ratio 8.70:1             | 6                  |
| 7                                                                                                                                                                                                                            | **       | LW-14078    | PIN, Piston                                  | 6                  |
| 8                                                                                                                                                                                                                            | **       | 72198       | PLUG, Piston pin                             | 12                 |
| 9                                                                                                                                                                                                                            |          | 74241       | RING, Piston, compression                    | 12                 |
| 10                                                                                                                                                                                                                           |          | 14H21950    | RING, Piston, oil regulating (expander type) | 6                  |
| <p><b>P</b> Lycoming proprietary part. Listed for reference purpose only, cannot be purchased.</p> <p><b>*</b> Service use only.</p> <p><b>**</b> Refer to the latest revision of Lycoming Service Instruction No. 1267.</p> |          |             |                                              |                    |



**Cylinder Assembly**  
**Figure 12**

**CYLINDER SECTION**  
**FIGURE 12 - CYLINDER ASSEMBLY**

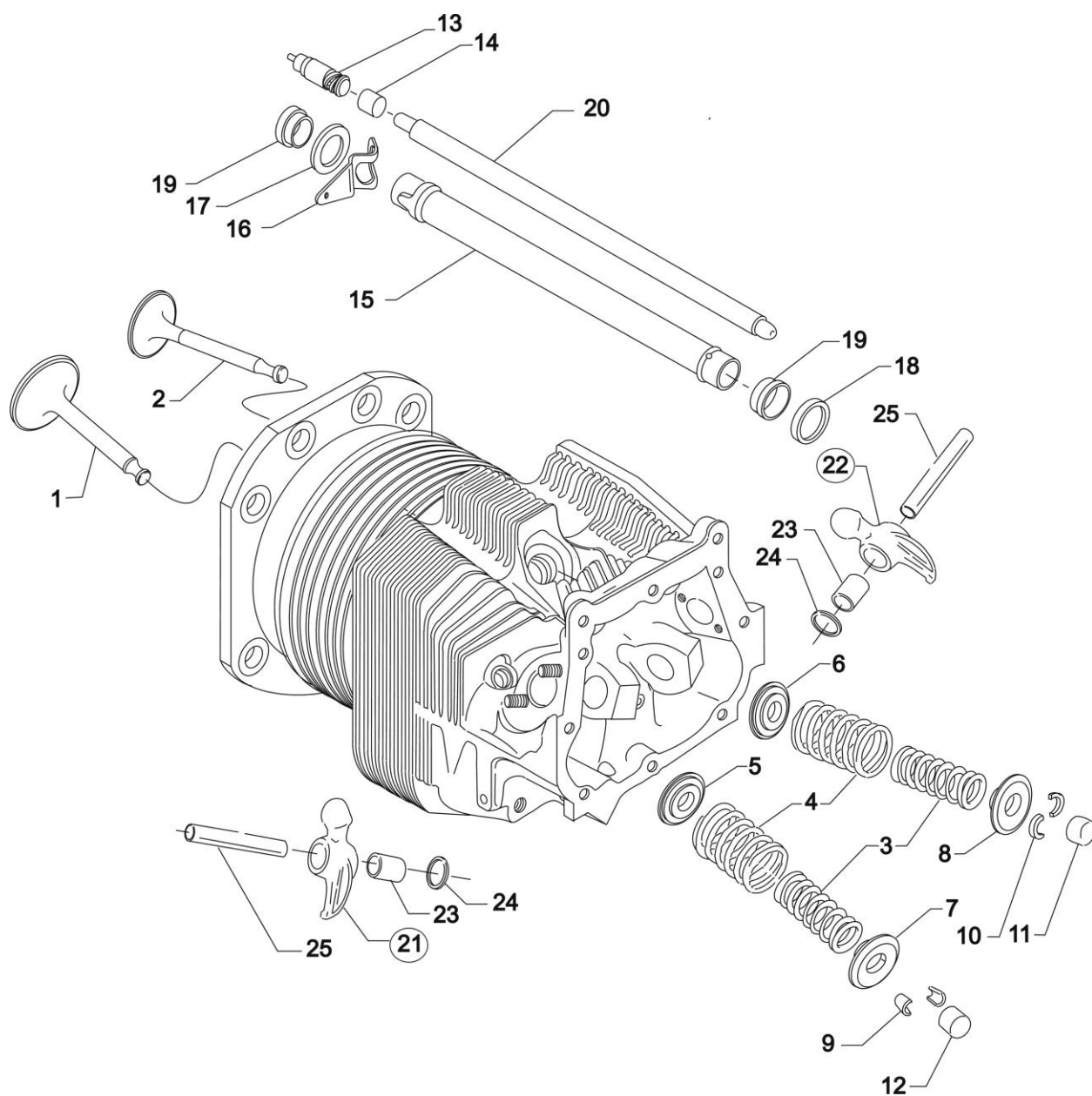
| Figure Item                                                                                                                                                                                                                                                    | Code      | Part Number | Description                              | Units per Assembly |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------|------------------------------------------|--------------------|
| 1                                                                                                                                                                                                                                                              |           | LW-12993    | CYLINDER AND HEAD ASSEMBLY, Nitrided     | 6                  |
| 2                                                                                                                                                                                                                                                              |           | LW-12688    | SEAT, Intake valve                       | 6                  |
| 3                                                                                                                                                                                                                                                              |           | 16T19468    | SEAT, Exhaust valve                      | 6                  |
| 4                                                                                                                                                                                                                                                              | <b>P*</b> | LW-11956    | GUIDE, Valve, intake, flanged            | 6                  |
| 5                                                                                                                                                                                                                                                              | <b>P*</b> | LW-11958    | GUIDE, Valve, exhaust, flanged           | 6                  |
| 6                                                                                                                                                                                                                                                              |           | 66796       | INSERT, Spark plug, 18-1.5 MM            | 12                 |
| 7                                                                                                                                                                                                                                                              |           | 31C-12      | STUD, 5/16-18 x 1-1/2 long               | 12                 |
| 8                                                                                                                                                                                                                                                              |           | 25C-8       | STUD, 1/4-20 x 1.00 long                 | 24                 |
| 9                                                                                                                                                                                                                                                              |           | MS20823-6D  | ELBOW, 45 Degree, 3/8 flared tube        | 6                  |
| 10                                                                                                                                                                                                                                                             |           | 66670       | BUSHING, Rocker shaft, inner             | 24                 |
| 11                                                                                                                                                                                                                                                             |           | 72343       | STABILIZER, Cylinder head fins, 15 teeth | 6                  |
| 12                                                                                                                                                                                                                                                             |           | 72344       | STABILIZER, Cylinder head fins, 26 teeth | 6                  |
| 13                                                                                                                                                                                                                                                             | <b>**</b> | 1102        | PLUG, 1/8-27 NPT, Allen head             | 6                  |
| 14                                                                                                                                                                                                                                                             |           | 77611       | GASKET, Exhaust flange                   | 6                  |
| 15                                                                                                                                                                                                                                                             |           | STD-35      | WASHER, 5/16 plain                       | 12                 |
| 16                                                                                                                                                                                                                                                             |           | STD-475     | WASHER, 5/16 lock, internal teeth        | 12                 |
| 17                                                                                                                                                                                                                                                             |           | STD-1410    | NUT, 5/16-18, plain                      | 12                 |
| <p><b>P</b> Lycoming proprietary part. Listed for reference purpose only, cannot be purchased.</p> <p><b>*</b> Refer to the latest revision of Lycoming Service Instruction No. 1256 for service valve guides.</p> <p><b>**</b> Assemble in cylinder head.</p> |           |             |                                          |                    |



**Valve Assembly and Related Parts**  
**Figure 13**

**CYLINDER SECTION****FIGURE 13 – VALVE ASSEMBLY AND RELATED PARTS**

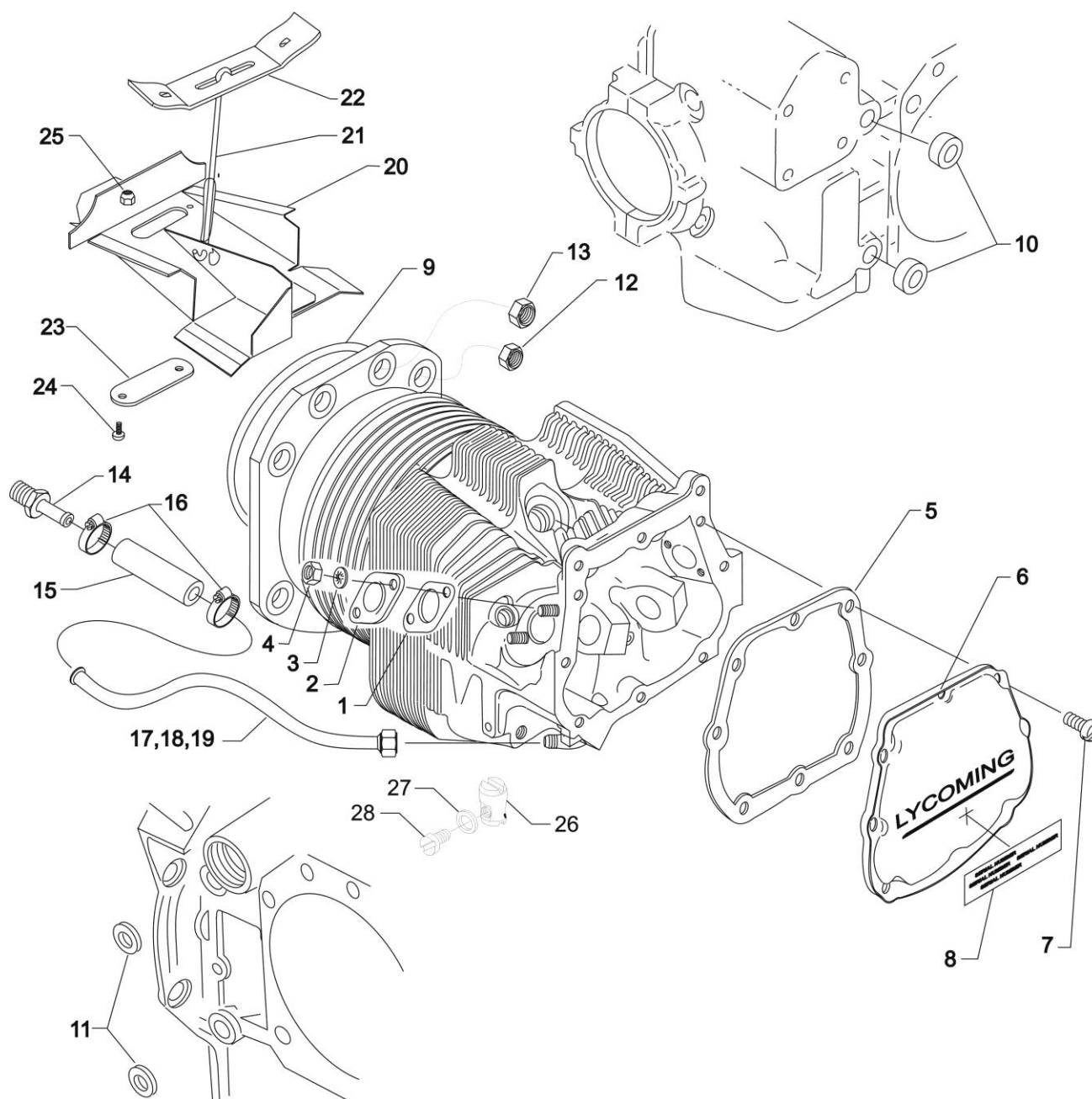
| Figure Item                                                                                                                                                                                                                                                                                                                                                | Code       | Part Number | Description                                           | Units per Assembly |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------|-------------------------------------------------------|--------------------|
| 1                                                                                                                                                                                                                                                                                                                                                          |            | 17A23937    | VALVE, Intake                                         | 6                  |
| 2                                                                                                                                                                                                                                                                                                                                                          |            | 17B23935    | VALVE, Exhaust (rotator type)                         | 6                  |
| 3                                                                                                                                                                                                                                                                                                                                                          |            | LW-11797    | SPRING, Valve, inner                                  | 12                 |
| 4                                                                                                                                                                                                                                                                                                                                                          |            | LW-11796    | SPRING, Valve, outer                                  | 12                 |
| 5                                                                                                                                                                                                                                                                                                                                                          |            | LW-13321    | SEAT, Valve spring, lower intake                      | 6                  |
| 6                                                                                                                                                                                                                                                                                                                                                          |            | LW-13322    | SEAT, Valve spring, lower exhaust                     | 6                  |
| 7                                                                                                                                                                                                                                                                                                                                                          |            | 69532       | SEAT, Valve spring, upper intake                      | 6                  |
| 8                                                                                                                                                                                                                                                                                                                                                          |            | LW-16475    | SEAT, Valve spring, upper exhaust (rotator type)      | 6                  |
| 9                                                                                                                                                                                                                                                                                                                                                          |            | 72050       | KEY, Valve intake                                     | 12                 |
| 10                                                                                                                                                                                                                                                                                                                                                         |            | 17C21191    | KEY, Valve exhaust (rotator type)                     | 12                 |
| 11                                                                                                                                                                                                                                                                                                                                                         |            | 17C19386    | CAP, Valve stem, exhaust (rotator type)               | 6                  |
| 12                                                                                                                                                                                                                                                                                                                                                         |            | 62388       | CAP, Valve stem                                       | 6                  |
| 13                                                                                                                                                                                                                                                                                                                                                         |            | 15B26066    | PLUNGER ASSEMBLY, Hydraulic lifter                    | 12                 |
| 14                                                                                                                                                                                                                                                                                                                                                         |            | 15B21319    | SOCKET, Hydraulic tappet                              | 12                 |
| 15                                                                                                                                                                                                                                                                                                                                                         |            | 72255       | SHROUD TUBE ASSEMBLY, Push rod, Flat Tappet           | 12                 |
|                                                                                                                                                                                                                                                                                                                                                            |            | 15G23462    | SHROUD TUBE ASSEMBLY, Push rod, Roller Tappet         | 12                 |
| 16                                                                                                                                                                                                                                                                                                                                                         |            | 15H21201    | SPRING, Shroud tube                                   | 24                 |
| 17                                                                                                                                                                                                                                                                                                                                                         |            | 66728       | WASHER, Flat Tappet, 23/32 I.D. x 1-1/4 O.D. x 1/32   | 12                 |
|                                                                                                                                                                                                                                                                                                                                                            |            | 01L23459    | WASHER, Roller Tappet, 25/32 I.D. x 1-3/8 O.D. x 3/64 | 12                 |
| 18                                                                                                                                                                                                                                                                                                                                                         |            | 61503       | SLEEVE, Shroud tube seal                              | 12                 |
| 19                                                                                                                                                                                                                                                                                                                                                         |            | LW-18661    | SEAL, Shroud tube, Flat Tappet                        | 24                 |
|                                                                                                                                                                                                                                                                                                                                                            |            | 06A23493    | SEAL, Shroud tube, Roller Tappet                      | 12                 |
| 20                                                                                                                                                                                                                                                                                                                                                         | <b>AR*</b> | 15F19957-52 | ROD ASSEMBLY, Push                                    | AR                 |
| <p><b>AR</b> as required</p> <p>* Refer to the latest revision of Service Instruction No. 1060 for complete push rod application.</p> <p>** Due to the size of the area where the part number is stamped, the last five digits may be all that is shown (21185, 21186).</p> <p><b>NOTE:</b> Various push rod lengths are used to set valve clearances.</p> |            |             |                                                       |                    |



**Valve Assembly and Related Parts - cont.**  
**Figure 13**

**CYLINDER SECTION****FIGURE 13 – VALVE ASSEMBLY AND RELATED PARTS - CONT.**

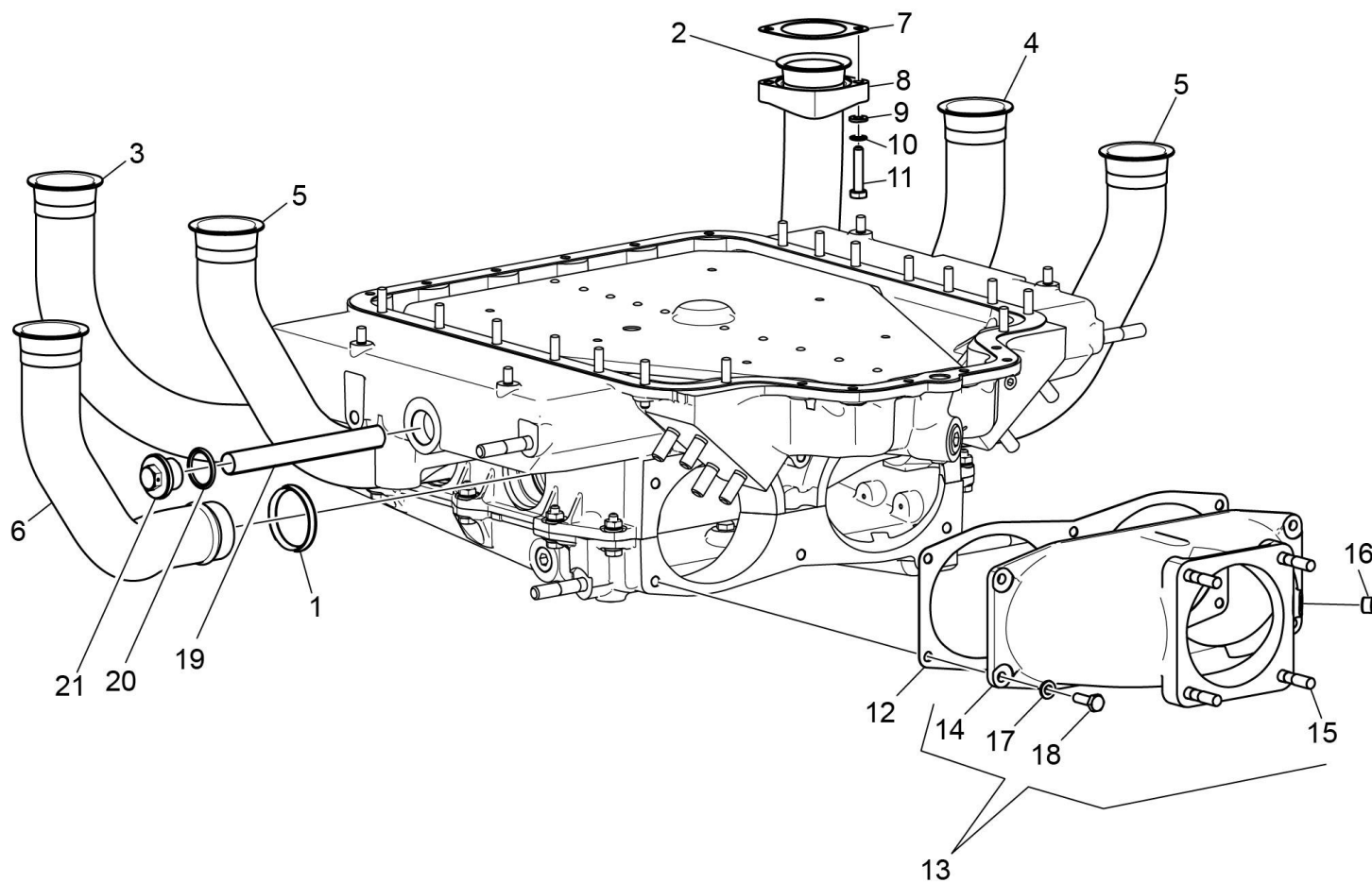
| Figure Item                                                                                                                                                                                                                                                                                                                                                | Code | Part Number | Description                         | Units per Assembly |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-------------|-------------------------------------|--------------------|
|                                                                                                                                                                                                                                                                                                                                                            | AR*  | 15F19957-53 | ROD ASSEMBLY, Push                  | AR                 |
|                                                                                                                                                                                                                                                                                                                                                            | AR*  | 15F19957-54 | ROD ASSEMBLY, Push                  | AR                 |
|                                                                                                                                                                                                                                                                                                                                                            | AR*  | 15F19957-55 | ROD ASSEMBLY, Push                  | AR                 |
|                                                                                                                                                                                                                                                                                                                                                            | AR*  | 15F19957-56 | ROD ASSEMBLY, Push                  | AR                 |
|                                                                                                                                                                                                                                                                                                                                                            | AR*  | 15F19957-57 | ROD ASSEMBLY, Push                  | AR                 |
|                                                                                                                                                                                                                                                                                                                                                            | AR*  | 15F19957-58 | ROD ASSEMBLY, Push                  | AR                 |
|                                                                                                                                                                                                                                                                                                                                                            | AR*  | 15F21362-18 | ROD ASSEMBLY, Push, Alternate Heavy | AR                 |
|                                                                                                                                                                                                                                                                                                                                                            | AR*  | 15F21362-19 | ROD ASSEMBLY, Push, Alternate Heavy | AR                 |
|                                                                                                                                                                                                                                                                                                                                                            | AR*  | 15F21362-20 | ROD ASSEMBLY, Push, Alternate Heavy | AR                 |
|                                                                                                                                                                                                                                                                                                                                                            | AR*  | 15F21362-21 | ROD ASSEMBLY, Push, Alternate Heavy | AR                 |
|                                                                                                                                                                                                                                                                                                                                                            | AR*  | 15F21362-22 | ROD ASSEMBLY, Push, Alternate Heavy | AR                 |
|                                                                                                                                                                                                                                                                                                                                                            | AR*  | 15F21362-23 | ROD ASSEMBLY, Push, Alternate Heavy | AR                 |
|                                                                                                                                                                                                                                                                                                                                                            | AR*  | 15F21362-24 | ROD ASSEMBLY, Push, Alternate Heavy | AR                 |
| 21                                                                                                                                                                                                                                                                                                                                                         | **   | 17F21186    | ROCKER ASSEMBLY, Valve, intake      | 6                  |
| 22                                                                                                                                                                                                                                                                                                                                                         | **   | 15F21185    | ROCKER ASSEMBLY, Valve, exhaust     | 6                  |
| 23                                                                                                                                                                                                                                                                                                                                                         |      | 74389       | BUSHING, Valve rocker               | 12                 |
| 24                                                                                                                                                                                                                                                                                                                                                         |      | 71549       | WASHER, Valve rocker                | 12                 |
| 25                                                                                                                                                                                                                                                                                                                                                         |      | 72626       | SHAFT, Valve rocker                 | 12                 |
| <p><b>AR</b> as required</p> <p>* Refer to the latest revision of Service Instruction No. 1060 for complete push rod application.</p> <p>** Due to the size of the area where the part number is stamped, the last five digits may be all that is shown (21185, 21186).</p> <p><b>NOTE:</b> Various push rod lengths are used to set valve clearances.</p> |      |             |                                     |                    |



**Cylinder Related Parts**  
**Figure 14**

**CYLINDER SECTION****FIGURE 14 - CYLINDER RELATED PARTS**

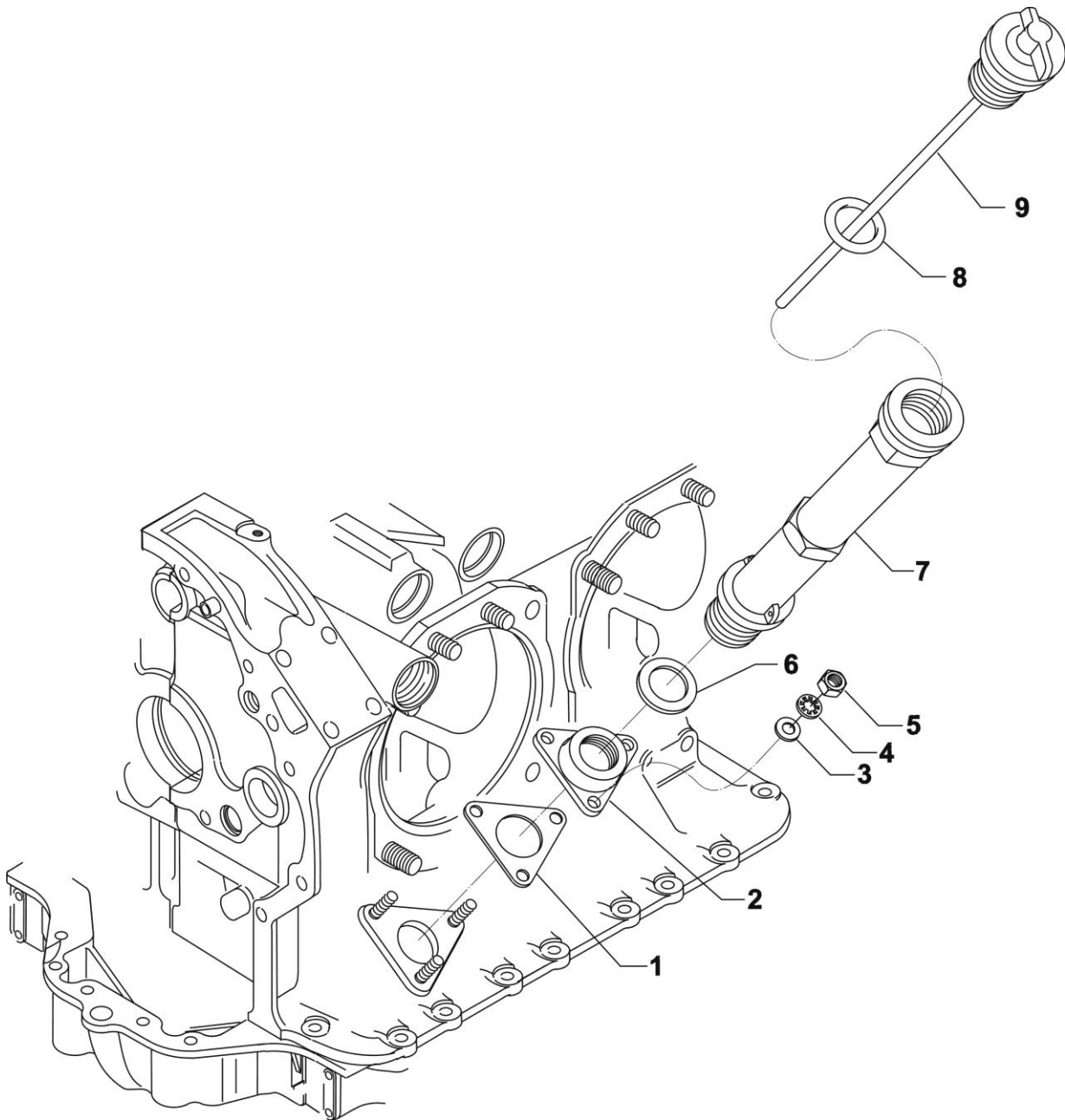
| Figure Item | Code | Part Number   | Description                                                   | Units per Assembly |
|-------------|------|---------------|---------------------------------------------------------------|--------------------|
| 1           |      | 66732         | GASKET, Valve rocker shaft cover                              | 12                 |
| 2           |      | 72710         | COVER, Valve rocker shaft                                     | 12                 |
| 3           |      | STD-160       | WASHER, 1/4 lock, internal teeth                              | 24                 |
| 4           |      | STD-1411      | NUT, 1/4-20 plain                                             | 24                 |
| 5           |      | 67193         | GASKET, Rocker box cover                                      | 6                  |
| 6           |      | 68795         | COVER ASSEMBLY, Rocker box                                    | 6                  |
| 7           |      | STD-1925      | SCREW, 1/4-20 x 5/8 long, pan. head                           | 48                 |
| 8           |      | 74494         | PLATE, Spark plug reach caution                               | 6                  |
| 9           |      | 71481         | RING, Oil seal, 3/32 diameter x 4-27/32 I.D.                  | 6                  |
| 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                                             | 24                 |
| 13          |      | STD-2090      | NUT, 1/2-20 plain                                             | 28                 |
| 14          |      | STD-684       | NIPPLE, Straight, 3/8 I.D. hose                               | 6                  |
| 15          |      | STD-2180      | HOSE, 3/8 I.D. x 1-7/8 long                                   | 6                  |
| 16          |      | LW-15592-5-05 | CLAMP, Hose                                                   | 12                 |
| 17          |      | 72702         | TUBE ASSEMBLY, Cylinder head oil drain, cylinder #1           | 1                  |
| 18          |      | 72703         | TUBE ASSEMBLY, Cylinder head oil drain, cylinder #2           | 1                  |
| 19          |      | 73027         | TUBE ASSEMBLY, Cylinder head oil drain, cylinders #3, 4, 5, 6 | 4                  |
| 20          |      | 75338         | BAFFLE ASSEMBLY, Intercylinder                                | 4                  |
| 21          |      | 71610         | HOOK, Intercylinder baffle                                    | 4                  |
| 22          |      | 71611         | RETAINER, Intercylinder baffle                                | 4                  |
| 23          |      | 72834         | COVER, Baffle ignition cable hole                             | 4                  |
| 24          |      | STD-692       | SCREW, No. 10-32 x 1/2 long, round head                       | 8                  |
| 25          |      | STD-670       | LOCKNUT, No. 10-32                                            | 8                  |
| 26          |      | 65614         | PLUG, Baffle attaching                                        | 4                  |
| 27          |      | STD-251       | WASHER, No. 10, internal lock                                 | 4                  |
| 28          |      | STD-1686      | SCREW, No. 10-32 x 7/16 long                                  | 4                  |



**Intake Pipes Assembly  
Figure 15**

**CYLINDER SECTION****FIGURE 15 – INTAKE PIPES ASSEMBLY**

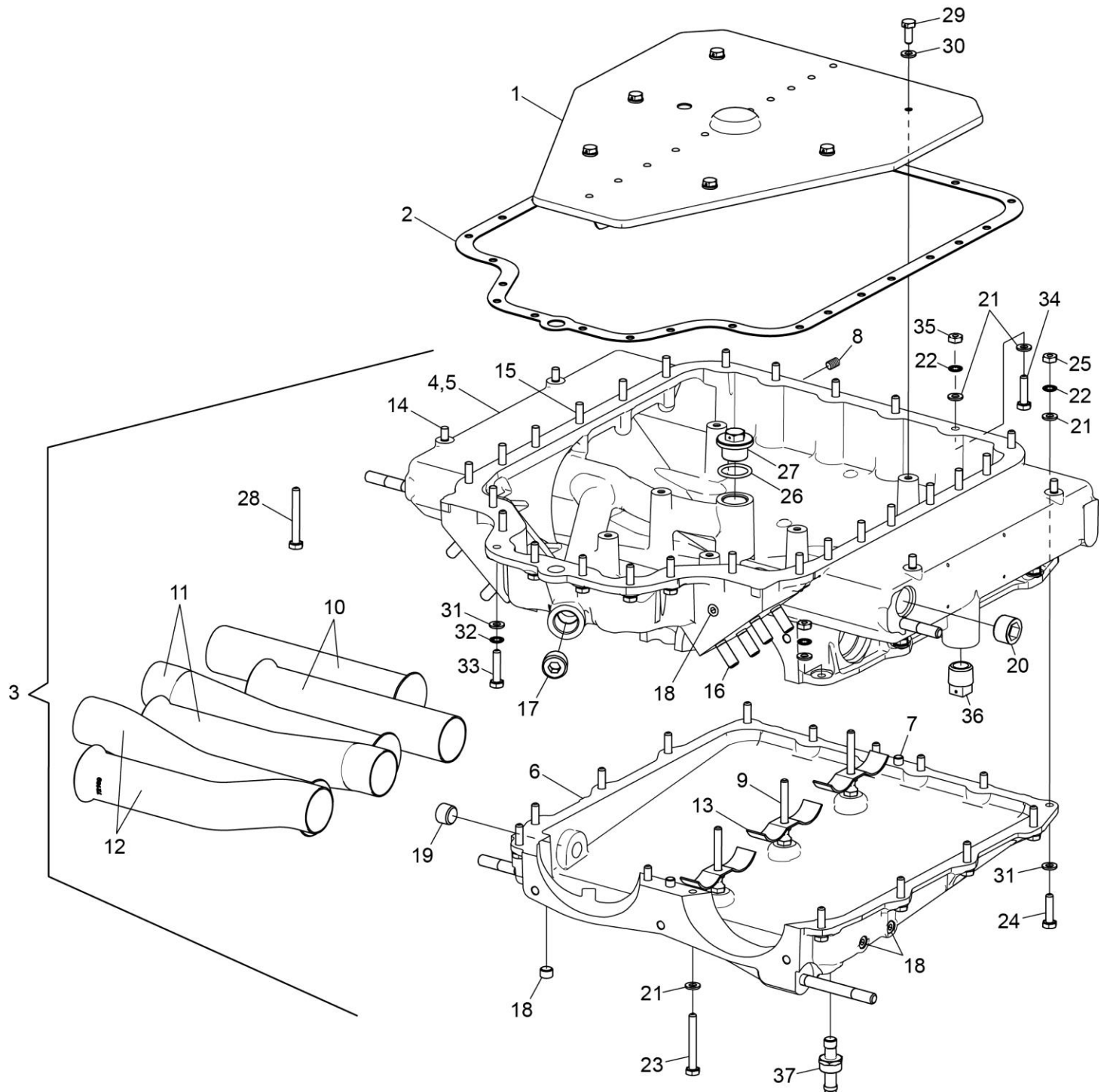
| <b>Figure Item</b> | <b>Code</b> | <b>Part Number</b> | <b>Description</b>                   | <b>Units per Assembly</b> |
|--------------------|-------------|--------------------|--------------------------------------|---------------------------|
| 1                  |             | 72711              | RING, Seal, intake pipes             | 6                         |
| 2                  |             | LW-12191           | PIPE, Intake, cylinder #1            | 1                         |
| 3                  |             | LW-12192           | PIPE, Intake, cylinder #2            | 1                         |
| 4                  |             | LW-12193           | PIPE, Intake, cylinder #3            | 1                         |
| 5                  |             | LW-12194           | PIPE, Intake, cylinders #4 and 5     | 2                         |
| 6                  |             | LW-12195           | PIPE, Intake, cylinder #6            | 1                         |
| 7                  |             | 71973              | GASKET, 2 bolt flange, 1-3/4 I.D.    | 6                         |
| 8                  |             | 74360              | FLANGE, Intake pipe, upper           | 6                         |
| 9                  |             | STD-8              | WASHER, 1/4 plain                    | 12                        |
| 10                 |             | STD-160            | WASHER, 1/4 lock, internal teeth     | 12                        |
| 11                 |             | LW-25-1.25         | BOLT, 1/4-20 x 1-1/4 long, hex. head | 12                        |
| 12                 |             | 72210              | GASKET, Air inlet throttle housing   | 2                         |
| 13                 |             | 77653              | HOUSING ASSEMBLY, Air inlet          | 1                         |
| 14                 |             | LW-15673           | HOUSING, Air inlet                   | 1                         |
| 15                 |             | 31C-16             | STUD, 5/16-18 x 2.00 long            | 4                         |
| 16                 |             | 1102               | PLUG, 1/8 pipe                       |                           |
| 17                 |             | STD-8              | WASHER, 1/4 plain                    | 6                         |
| 18                 |             | LW-25-0.81         | BOLT, 1/4-20 x 13/16 long, hex. head | 6                         |
| 19                 |             | 60422              | SCREEN, Oil suction                  | 1                         |
| 20                 |             | 06E19769-1.00      | GASKET, Annular, 1.00 I.D.           | 1                         |
| 21                 |             | LW-12545           | PLUG, 5/8 hex. head x 1.00-20 thread | 1                         |



**Oil Level Gage Assembly and Engine Mounting Brackets**  
**Figure 16**

**LUBRICATION SYSTEM****FIGURE 16 – OIL LEVEL GAGE ASSEMBLY AND ENGINE MOUNTING BRACKETS**

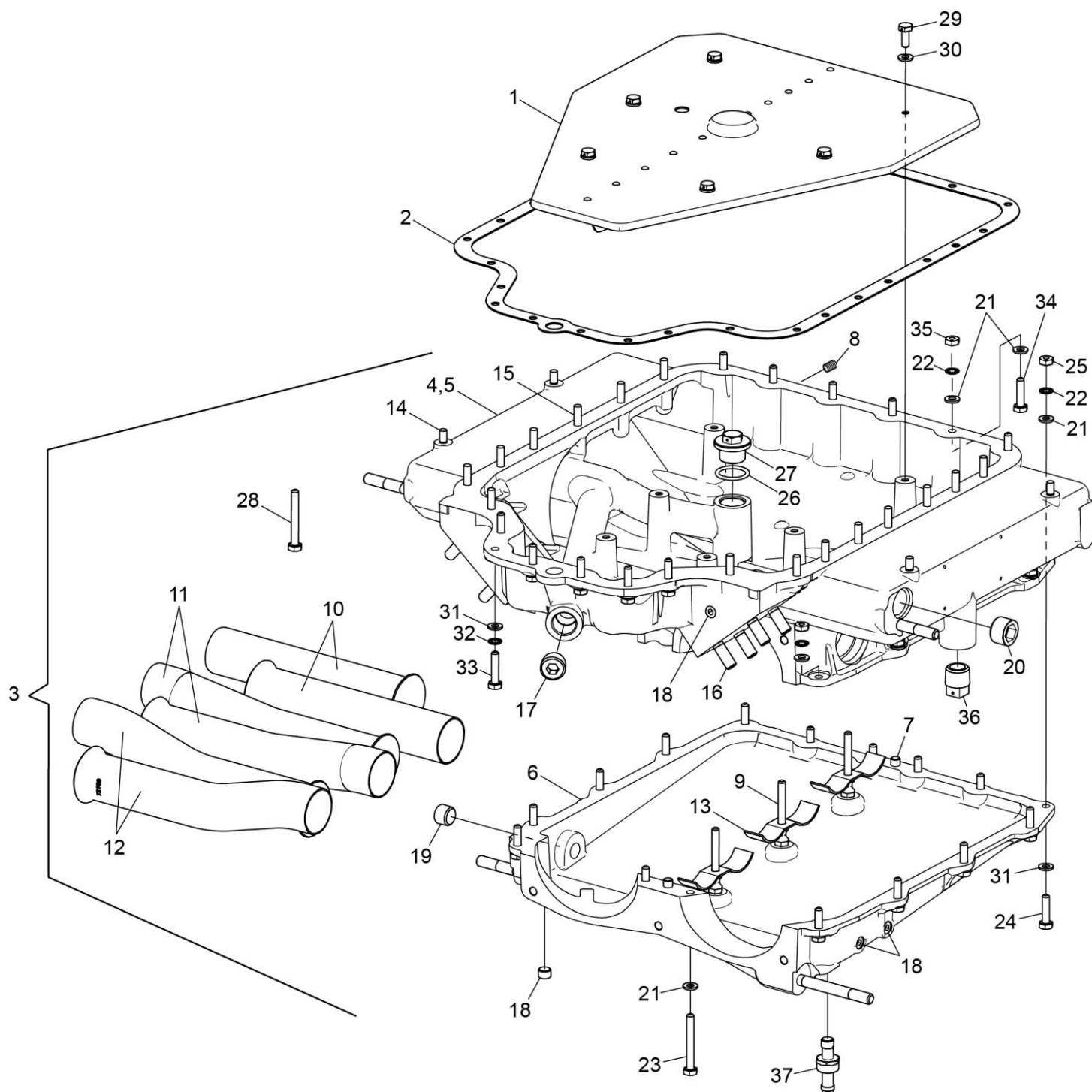
| <b>Figure Item</b> | <b>Code</b> | <b>Part Number</b> | <b>Description</b>               | <b>Units per Assembly</b> |
|--------------------|-------------|--------------------|----------------------------------|---------------------------|
| 1                  |             | LW-18481           | GASKET, Oil filler adapter       | 1                         |
| 2                  |             | LW-18482           | ADAPTER, Oil filler tube         | 1                         |
| 3                  |             | STD-28             | WASHER, No. 10 plain             | 3                         |
| 4                  |             | STD-251            | WASHER, No. 10 internal lock     | 3                         |
| 5                  |             | STD-63             | NUT, No. 10-32 plain             | 3                         |
| 6                  |             | 72059              | GASKET, Oil filler extension     | 1                         |
| 7                  |             | LW-15970           | TUBE, Oil level gage (3.00 long) | 1                         |
| 8                  |             | 74068              | RING, Oil level gage plug        | 1                         |
| 9                  |             | LW-16783-30P       | GAGE ASSEMBLY, Oil level         | 1                         |



**Oil Sump and Induction Housing Assembly**  
**Figure 17**

**LUBRICATION SYSTEM****FIGURE 17 – OIL SUMP AND INDUCTION HOUSING ASSEMBLY**

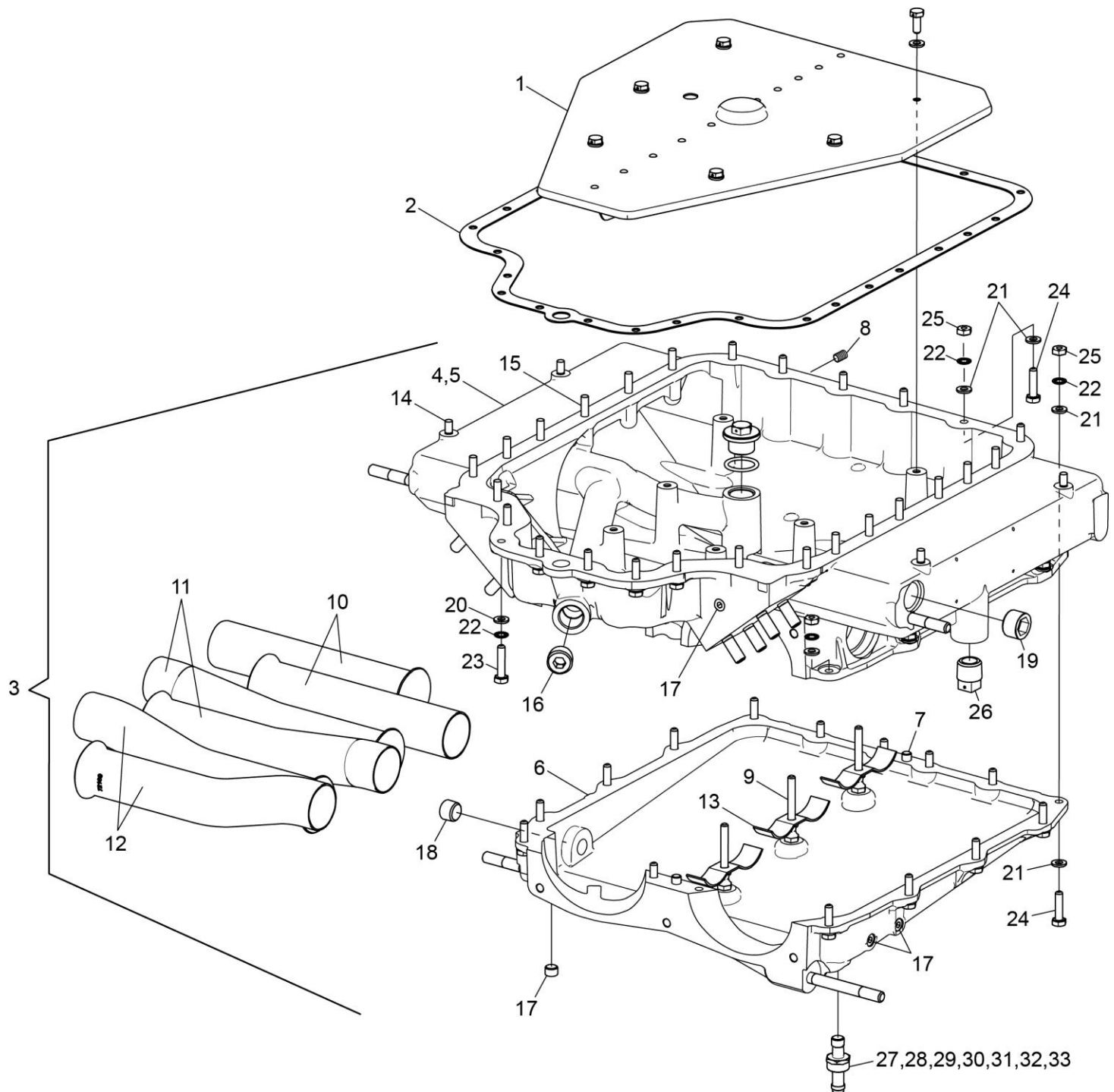
| Figure Item           | Code      | Part Number   | Description                                       | Units per Assembly |
|-----------------------|-----------|---------------|---------------------------------------------------|--------------------|
| 1                     |           | 56G26069      | BAFFLE, Oil sump                                  | 1                  |
| 2                     |           | 06B21326      | GASKET, Oil sump                                  | 1                  |
| 3                     |           | 56A26071-03   | HOUSING ASSEMBLY, Oil sump and induction housing  | 1                  |
| 4                     |           | 56A26071      | HOUSING, Holding assembly, oil sump and induction | 1                  |
| 5                     |           | 56B23949      | HOUSING, Oil sump and induction                   | 1                  |
| 6                     |           | LW-18291      | COVER, Induction housing                          | 1                  |
| 7                     |           | STD-514       | DOWEL, 5/16 diameter x 1/2 long                   | 2                  |
| 8                     |           | 72706         | INSERT, Heli-coil, 1/4-20 x 3/8 long              | 14                 |
| 9                     |           | 72179         | STUD, Intake pipe extension                       | 3                  |
| 10                    |           | 72167         | PIPE, Extension, intake (cylinders 1 and 2)       | 2                  |
| 11                    |           | 72168         | PIPE, Extension, intake (cylinders 3 and 4)       | 2                  |
| 12                    |           | 72169         | PIPE, Extension, intake (cylinders 5 and 6)       | 2                  |
| 13                    |           | LW-11273      | CLAMP, Intake pipe extension                      | 3                  |
| 14                    |           | 25C-9         | STUD, 1/4-20 x 1-1/8 long                         | 4                  |
| 15                    |           | 25C-11        | STUD, 1/4-20 x 1-3/8 long                         | 15                 |
| 16                    |           | 38-15         | STUD, 3/8-16 x 1-7/8 long                         | 8                  |
| 17                    |           | STD-91        | PLUG, 1/2-14 NPT, Allen head                      | 1                  |
| 18                    |           | 1102          | PLUG, 1/8-27 NPT, Allen head                      | 5                  |
| 19                    |           | STD-784       | PLUG, 3/8-18 NPT, Allen head                      | 1                  |
| 20                    |           | STD-355       | PLUG, 3/4-14 NPT                                  | 2                  |
| 21                    | <b>AR</b> | STD-8         | WASHER, 1/4 plain                                 | AR                 |
| 22                    |           | STD-160       | WASHER, 1/4 lock, internal teeth                  | 23                 |
| 23                    |           | LW-25-2.00    | BOLT, 1/4-20 x 2.00 long, hex head                | 2                  |
| 24                    |           | LW-25-1.00    | BOLT, 1/4-20 x 1.00 long, hex head                | 10                 |
| 25                    |           | STD-1411      | NUT, 1/4-20 plain                                 | 13                 |
| 26                    |           | 06E19769-0.91 | GASKET, Annular, 29/32 I.D.                       | 1                  |
| 27                    |           | 72960         | PLUG, 7/8-14 x 5/8 hex head                       | 1                  |
| 28                    |           | LW-25-2.00    | BOLT, 1/4-20 x 13/16 long, hex head               | 4                  |
| 29                    |           | LW-25H0.63    | BOLT, 1/4-20 x 5/8 long, hex head, drilled        | 6                  |
| 30                    |           | STD-8         | WASHER, 1/4 plain                                 | 6                  |
| 31                    | <b>AR</b> | STD-8         | WASHER, 1/4 plain                                 | AR                 |
| 32                    |           | STD-160       | WASHER, 1/4 lock, internal teeth                  | 23                 |
| 33                    |           | LW-25-1.13    | BOLT, 1/4-20 x 1-1/8 long, hex head               | 6                  |
| 34                    |           | LW-25-1.00    | BOLT, 1/4-20 x 1.00 long, hex head                | 6                  |
| <b>AR as required</b> |           |               |                                                   |                    |



**Oil Sump and Induction Housing Assembly - cont.**  
**Figure 17**

**LUBRICATION SYSTEM****FIGURE 17 – OIL SUMP AND INDUCTION HOUSING ASSEMBLY - CONT.**

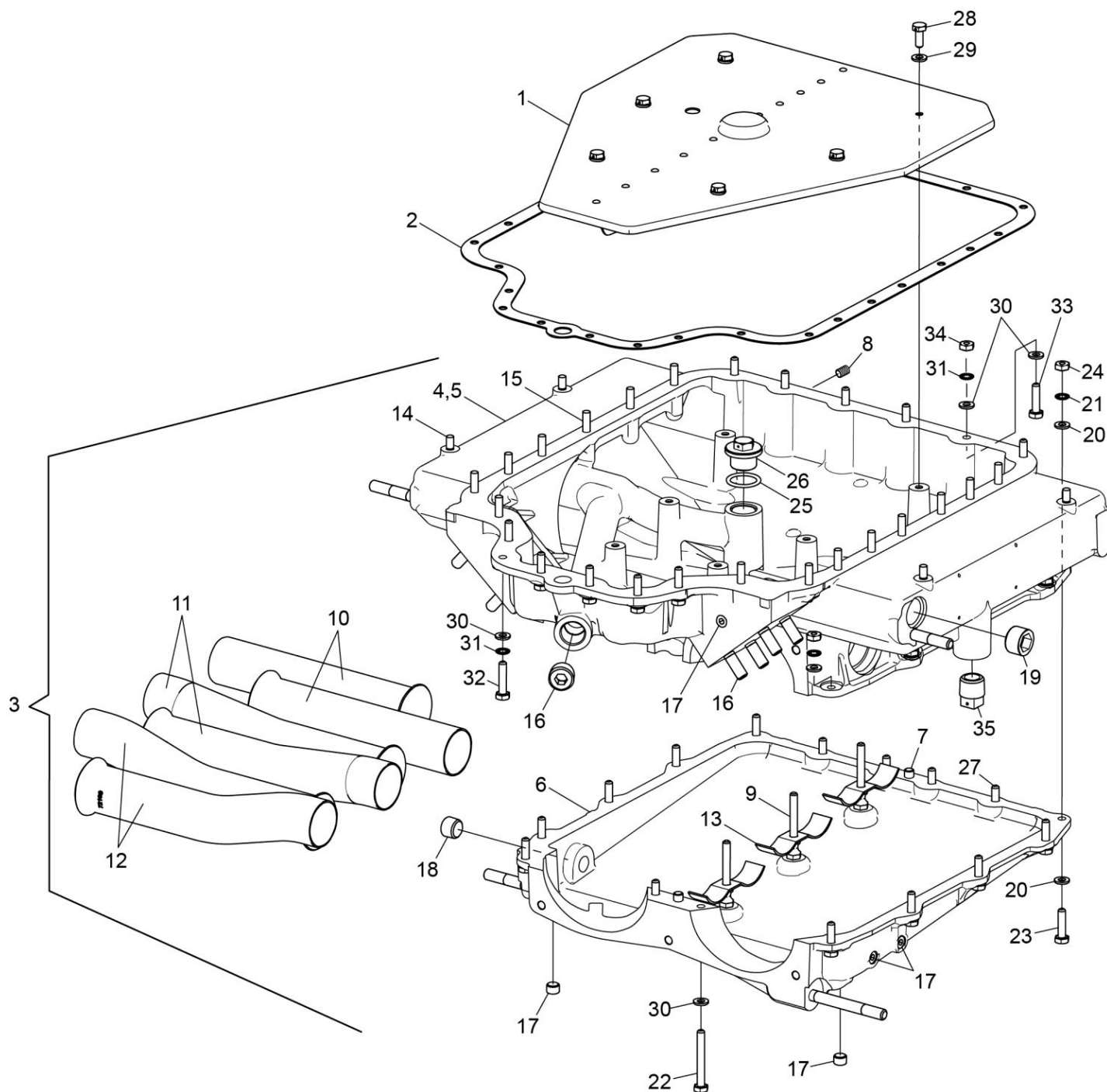
| <b>Figure Item</b>    | <b>Code</b> | <b>Part Number</b> | <b>Description</b>                     | <b>Units per Assembly</b> |
|-----------------------|-------------|--------------------|----------------------------------------|---------------------------|
| 35                    | <b>AR</b>   | STD-1411           | NUT, 1/4-20 plain                      | AR                        |
| 36                    |             | STD-551            | PLUG, 1/2-14 NPT, square head, drilled | 2                         |
| 37                    |             | 75444              | ADAPTER ASSEMBLY, Fuel drain valve     | 2                         |
| <b>AR</b> as required |             |                    |                                        |                           |



**Oil Sump and Induction Housing Assembly**  
**Figure 18**

**LUBRICATION SYSTEM****FIGURE 18 – OIL SUMP AND INDUCTION HOUSING ASSEMBLY**

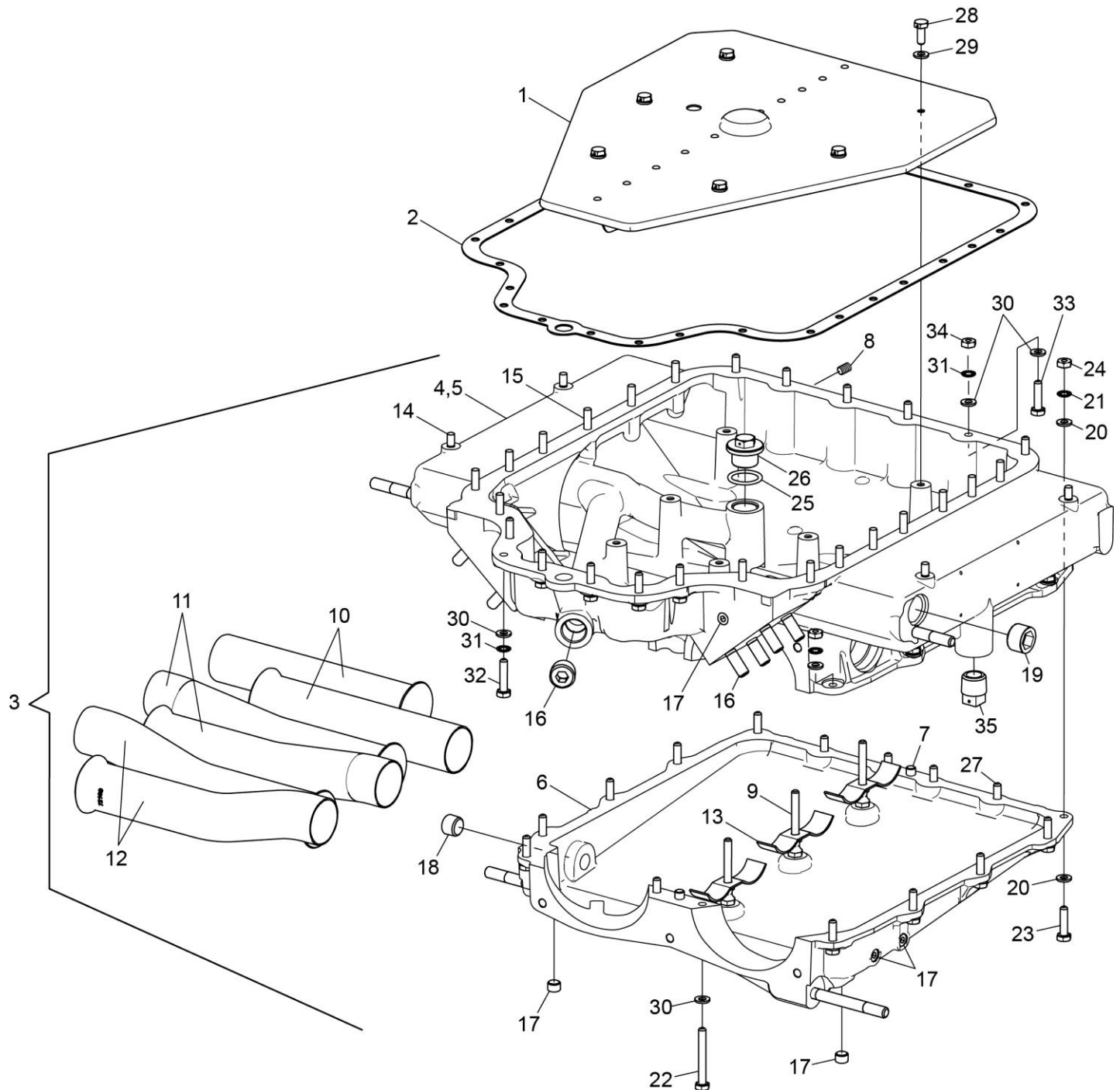
| Figure Item           | Code      | Part Number   | Description                                       | Units per Assembly |
|-----------------------|-----------|---------------|---------------------------------------------------|--------------------|
| 1                     |           | 56G26069      | BAFFLE, Oil sump                                  | 1                  |
| 2                     |           | 06B21326      | GASKET, Oil sump                                  | 1                  |
| 3                     |           | 56A26071-09   | HOUSING ASSEMBLY, Oil sump and induction housing  | 1                  |
| 4                     |           | 56A26071      | HOUSING, Holding assembly, oil sump and induction | 1                  |
| 5                     |           | 56B23949      | HOUSING, Oil sump and induction                   | 1                  |
| 6                     |           | LW-18291      | COVER, Induction housing                          | 1                  |
| 7                     |           | STD-514       | DOWEL, 5/16 diameter x 1/2 long                   | 2                  |
| 8                     |           | 72706         | INSERT, Heli-coil, 1/4-20 x 3/8 long              | 14                 |
| 9                     |           | 72179         | STUD, Intake pipe extension                       | 3                  |
| 10                    |           | 72167         | PIPE, Extension, intake (cylinders 1 and 2)       | 2                  |
| 11                    |           | 72168         | PIPE, Extension, intake (cylinders 3 and 4)       | 2                  |
| 12                    |           | 72169         | PIPE, Extension, intake (cylinders 5 and 6)       | 2                  |
| 13                    |           | LW-11273      | CLAMP, Intake pipe extension                      | 3                  |
| 14                    |           | 25C-9         | STUD, 1/4-20 x 1-1/8 long                         | 4                  |
| 15                    |           | 25C-11        | STUD, 1/4-20 x 1-3/8 long                         | 15                 |
| 16                    |           | STD-91        | PLUG, 1/2-14 NPT, Allen head                      | 1                  |
| 17                    |           | 1102          | PLUG, 1/8-27 NPT, Allen head                      | 5                  |
| 18                    |           | STD-784       | PLUG, 3/8-18 NPT, Allen head                      | 1                  |
| 19                    |           | STD-355       | PLUG, 3/4-14 NPT                                  | 2                  |
| 20                    |           | STD-8         | WASHER, 1/4 plain                                 | 6                  |
| 21                    | <b>AR</b> | STD-8         | WASHER, 1/4 plain                                 | AR                 |
| 22                    |           | STD-160       | WASHER, 1/4 lock, internal teeth                  | 23                 |
| 23                    |           | LW-25-1.13    | BOLT, 1/4-20 x 1-1/8 long, hex head               | 6                  |
| 24                    |           | LW-25-1.00    | BOLT, 1/4-20 x 1.00 long, hex head                | 8                  |
| 25                    |           | STD-1411      | NUT, 1/4-20 plain                                 | 25                 |
| 26                    |           | STD-551       | PLUG, 1/2-14 NPT, square head, drilled            | 2                  |
| 27                    |           | LW-13807      | ADAPTER ASSEMBLY, Fuel drain valve                | 1                  |
| 28                    |           | LW-13806      | ADAPTER, Fuel drain valve                         | 1                  |
| 29                    |           | LW-13805      | CONNECTION, Fuel drain valve                      | 1                  |
| 30                    |           | LW-13874      | SPRING, Fuel drain valve                          | 2                  |
| 31                    |           | LW-13927      | DISC, Fuel drain valve                            | 1                  |
| 32                    |           | MS-28775-015  | O-RING, 35/64 I.D. x 45/64 diameter               | 1                  |
| 33                    |           | MS-16625-1068 | RING, Internal retaining                          | 1                  |
| <b>AR as required</b> |           |               |                                                   |                    |



**Oil Sump and Induction Housing Assembly**  
**Figure 19**

**LUBRICATION SYSTEM****FIGURE 19 – OIL SUMP AND INDUCTION HOUSING ASSEMBLY**

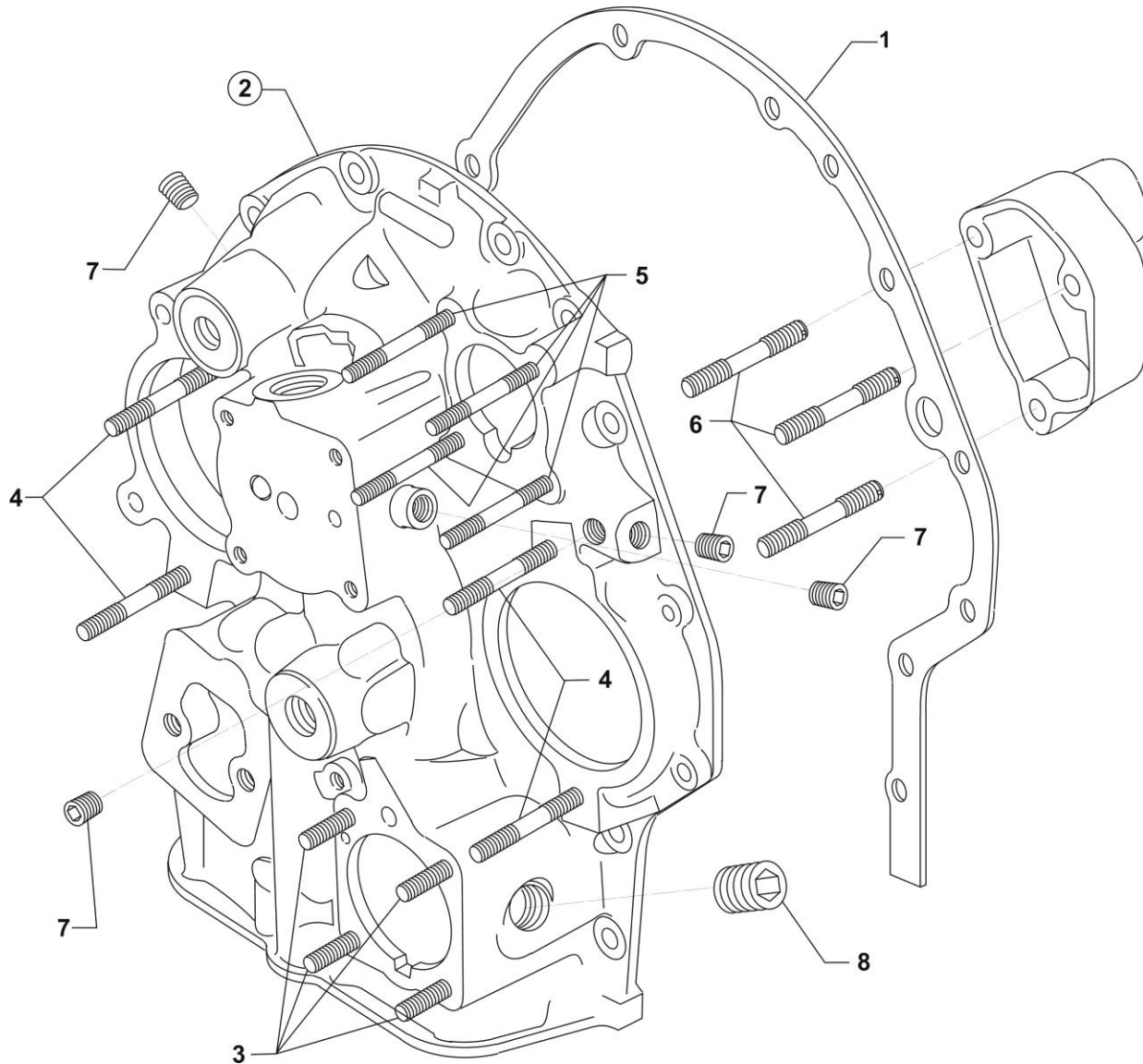
| Figure Item           | Code      | Part Number   | Description                                       | Units per Assembly |
|-----------------------|-----------|---------------|---------------------------------------------------|--------------------|
| 1                     |           | 56G26069      | BAFFLE, Oil sump                                  | 1                  |
| 2                     |           | 06B21326      | GASKET, Oil sump                                  | 1                  |
| 3                     |           | 56A26071-09   | HOUSING ASSEMBLY, Oil sump and induction housing  | 1                  |
| 4                     |           | 56A26071      | HOUSING, Holding assembly, oil sump and induction | 1                  |
| 5                     |           | 56B23949      | HOUSING, Oil sump and induction                   | 1                  |
| 6                     |           | LW-18291      | COVER, Induction housing                          | 1                  |
| 7                     |           | STD-514       | DOWEL, 5/16 diameter x 1/2 long                   | 2                  |
| 8                     |           | 72706         | INSERT, Heli-coil, 1/4-20 x 3/8 long              | 14                 |
| 9                     |           | 72179         | STUD, Intake pipe extension                       | 3                  |
| 10                    |           | 72167         | PIPE, Extension, intake (cylinders 1 and 2)       | 2                  |
| 11                    |           | 72168         | PIPE, Extension, intake (cylinders 3 and 4)       | 2                  |
| 12                    |           | 72169         | PIPE, Extension, intake (cylinders 5 and 6)       | 2                  |
| 13                    |           | LW-11273      | CLAMP, Intake pipe extension                      | 3                  |
| 14                    |           | 25C-9         | STUD, 1/4-20 x 1-1/8 long                         | 4                  |
| 15                    |           | 25C-11        | STUD, 1/4-20 x 1-3/8 long                         | 15                 |
| 16                    |           | STD-91        | PLUG, 1/2-14 NPT, Allen head                      | 1                  |
| 17                    |           | 1102          | PLUG, 1/8-27 NPT, Allen head                      | 5                  |
| 18                    |           | STD-784       | PLUG, 3/8-18 NPT, Allen head                      | 1                  |
| 19                    |           | STD-355       | PLUG, 3/4-14 NPT                                  | 2                  |
| 20                    | <b>AR</b> | STD-8         | WASHER, 1/4 plain                                 | AR                 |
| 21                    |           | STD-160       | WASHER, 1/4 lock, internal teeth                  | 23                 |
| 22                    |           | LW-25-2.00    | BOLT, 1/4-20 x 2.00 long, hex head                | 2                  |
| 23                    |           | LW-25-1.00    | BOLT, 1/4-20 x 1.00 long, hex head                | 10                 |
| 24                    |           | STD-1411      | NUT, 1/4-20 plain                                 | 13                 |
| 25                    |           | 06E19769-0.91 | GASKET, Annular, 29/32 I.D.                       | 1                  |
| 26                    |           | 72960         | PLUG, 7/8-14 x 5/8 hex head                       | 1                  |
| 27                    |           | LW-25-0.81    | BOLT, 1/4-20 x 13/16 long, hex head               | 4                  |
| 28                    |           | LW-25H0.63    | BOLT, 1/4-20 x 5/8 long, hex head, drilled        | 6                  |
| 29                    |           | STD-8         | WASHER, 1/4 plain                                 | 6                  |
| 30                    | <b>AR</b> | STD-8         | WASHER, 1/4 plain                                 | AR                 |
| 31                    |           | STD-160       | WASHER, 1/4 lock, internal teeth                  | 23                 |
| 32                    |           | LW-25-1.13    | BOLT, 1/4-20 x 1-1/8 long, hex head               | 6                  |
| 33                    |           | LW-25-1.00    | BOLT, 1/4-20 x 1.00 long, hex head                | 6                  |
| <b>AR as required</b> |           |               |                                                   |                    |



**Oil Sump and Induction Housing Assembly - cont.**  
**Figure 19**

**LUBRICATION SYSTEM****FIGURE 19 – OIL SUMP AND INDUCTION HOUSING ASSEMBLY - CONT.**

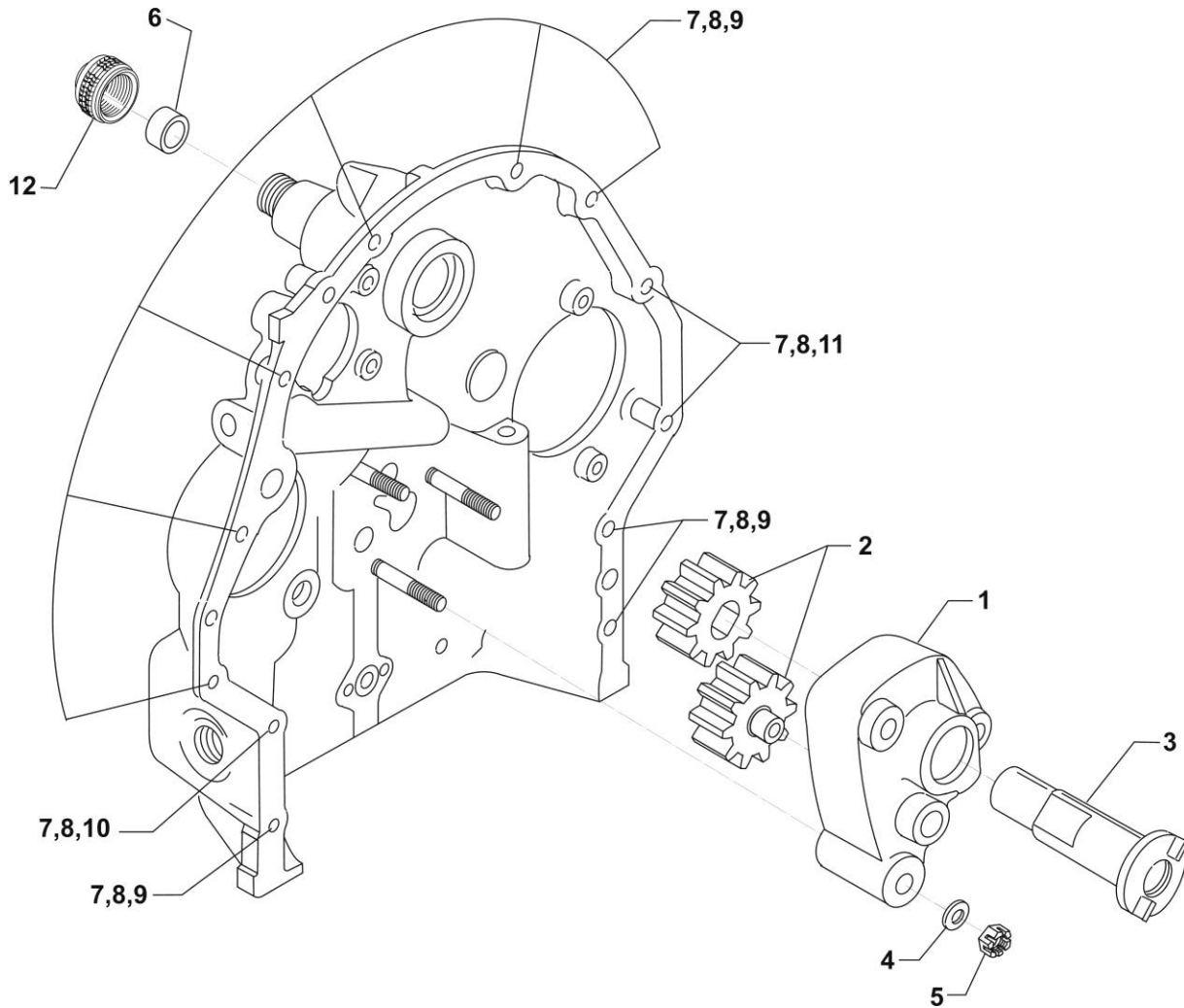
| <b>Figure Item</b>    | <b>Code</b> | <b>Part Number</b> | <b>Description</b>                     | <b>Units per Assembly</b> |
|-----------------------|-------------|--------------------|----------------------------------------|---------------------------|
| 34                    |             | STD-1411           | NUT, 1/4-20 plain                      | AR                        |
| 35                    |             | STD-551            | PLUG, 1/2-14 NPT, square head, drilled | 2                         |
| <b>AR</b> as required |             |                    |                                        |                           |



**Accessory Housing Assembly  
Figure 20**

**ACCESSORY DRIVES****FIGURE 20 – ACCESSORY HOUSING ASSEMBLY**

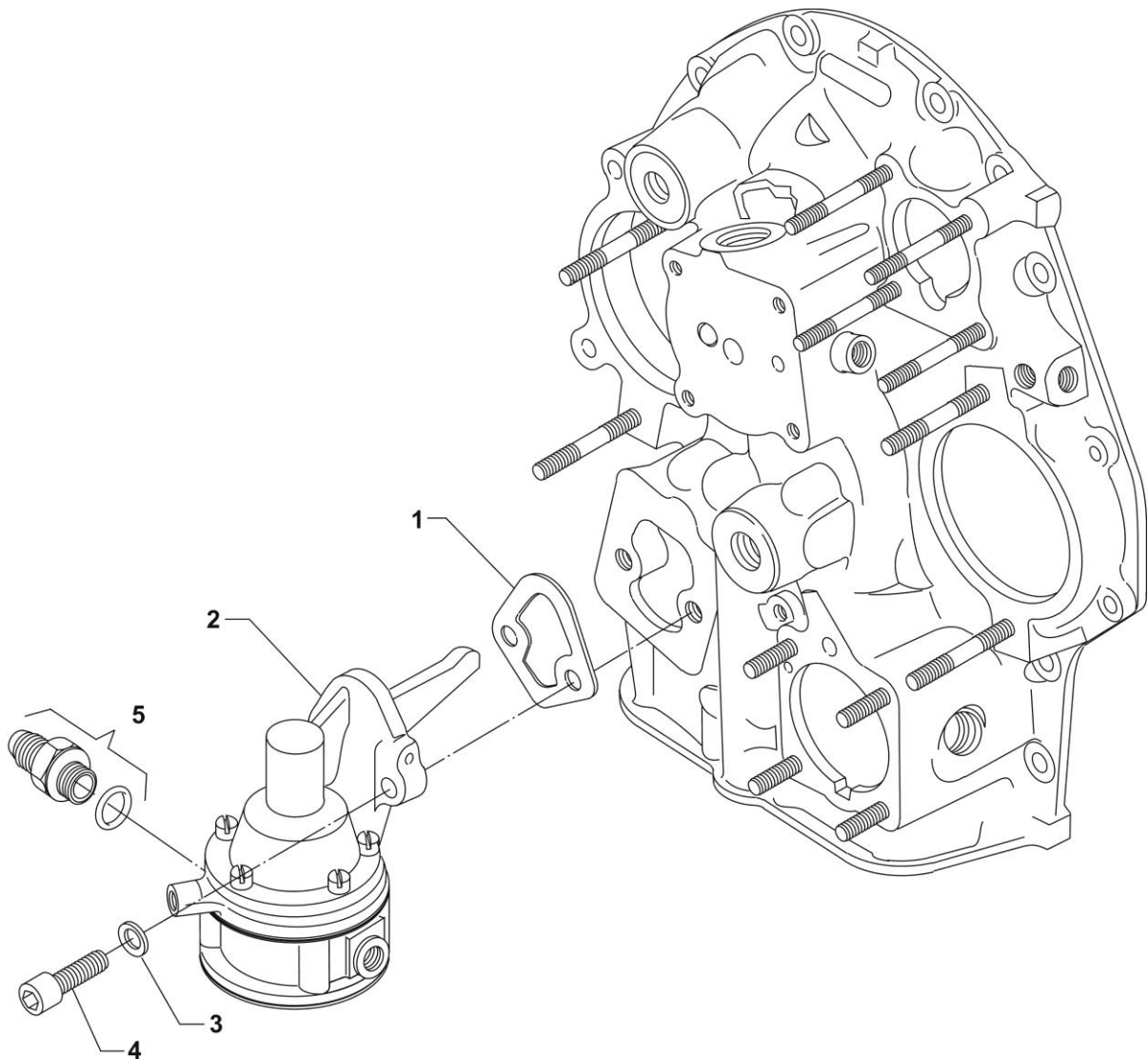
| <b>Figure Item</b> | <b>Code</b> | <b>Part Number</b> | <b>Description</b>                                                        | <b>Units per Assembly</b> |
|--------------------|-------------|--------------------|---------------------------------------------------------------------------|---------------------------|
| 1                  |             | 73818              | GASKET, Accessory housing                                                 | 1                         |
| 2                  |             | 21C21539-03        | HOUSING ASSEMBLY, Accessory                                               | 1                         |
|                    |             | 21C21546-03        | HOUSING ASSEMBLY, Accessory, Roller Tappet Model, No Propeller Gov. Drive | 1                         |
| 3                  |             | 31C-12             | STUD, 5/16-18 x 1-1/2 long                                                | 4                         |
| 4                  |             | 31C-21             | STUD, 5/16-18 x 2-5/8 long                                                | 4                         |
| 5                  |             | 25C-12             | STUD, 1/4-20 x 1-1/2 long                                                 | 4                         |
| 6                  |             | 31CD-17            | STUD, 5/16-18 x 2-1/8 long, drilled                                       | 3                         |
| 7                  |             | 1102               | PLUG, 1/8-27 NPT, Allen head                                              | 4                         |
| 8                  |             | STD-784            | PLUG, 3/8 -18 NPT, Allen head                                             | 1                         |



**Oil Pump Assembly and Accessory Housing Attaching Parts  
Figure 21**

**ACCESSORY DRIVES****FIGURE 21 – OIL PUMP ASSEMBLY AND ACCESSORY HOUSING ATTACHING PARTS**

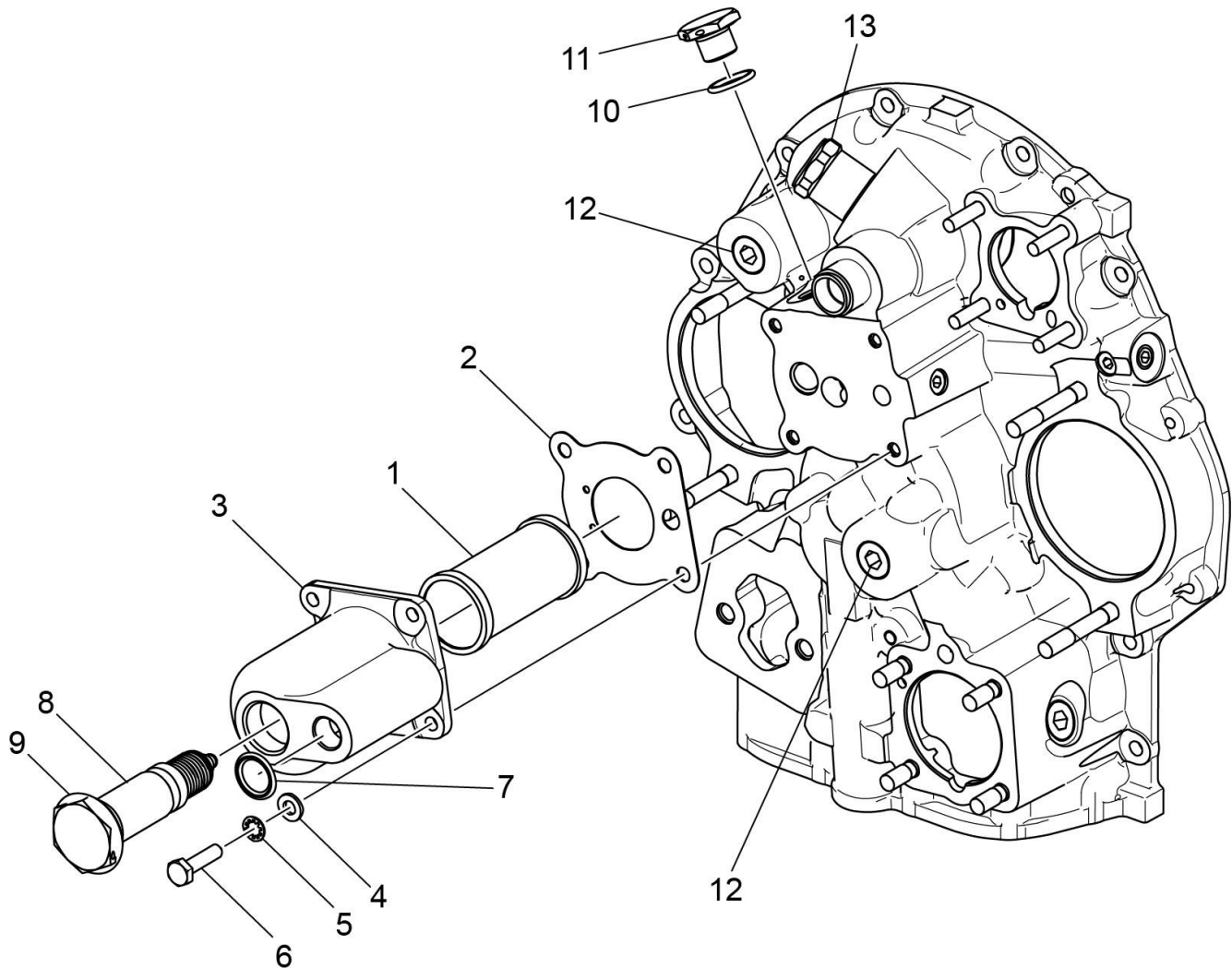
| <b>Figure Item</b>                                                                            | <b>Code</b> | <b>Part Number</b> | <b>Description</b>                    | <b>Units per Assembly</b> |
|-----------------------------------------------------------------------------------------------|-------------|--------------------|---------------------------------------|---------------------------|
| 1                                                                                             |             | 78531              | BODY ASSEMBLY, Oil pump               | 1                         |
| 2                                                                                             | *           | 05K19423-S         | OIL PUMP IMPELLER KIT                 | 1                         |
| 3                                                                                             |             | 74641              | SHAFT, Oil pump drive                 | 1                         |
| 4                                                                                             |             | STD-35             | WASHER, 5/16 plain                    | 3                         |
| 5                                                                                             |             | STD-1420           | NUT, 5/16-18 slotted                  | 3                         |
| 6                                                                                             |             | LW-14260           | SEAL, Tachometer drive, oil           | 1                         |
| 7                                                                                             |             | STD-8              | WASHER, 1/4 plain                     | 12                        |
| 8                                                                                             |             | STD-160            | WASHER, 1/4 lock, internal teeth      | 12                        |
| 9                                                                                             |             | LW-25-0.94         | BOLT, 1/4-20 x 15/16 long, hex. head  | 9                         |
| 10                                                                                            |             | LW-25-1.13         | BOLT, 1/4-20 x 1-1/8 long, hex. head  | 1                         |
| 11                                                                                            |             | LW-25-1.44         | BOLT, 1/4-20 x 1-7/16 long, hex. head | 2                         |
| 12                                                                                            |             | 62732              | CAP, Tachometer boss (metal)          | 1                         |
| * - To ensure impellers are replaced together, oil pump impellers available in kit form only. |             |                    |                                       |                           |



**Fuel Pump Assembly and Attaching Parts**  
**Figure 22**

**ACCESSORY DRIVES****FIGURE 22 - FUEL PUMP ASSEMBLY AND ATTACHING PARTS**

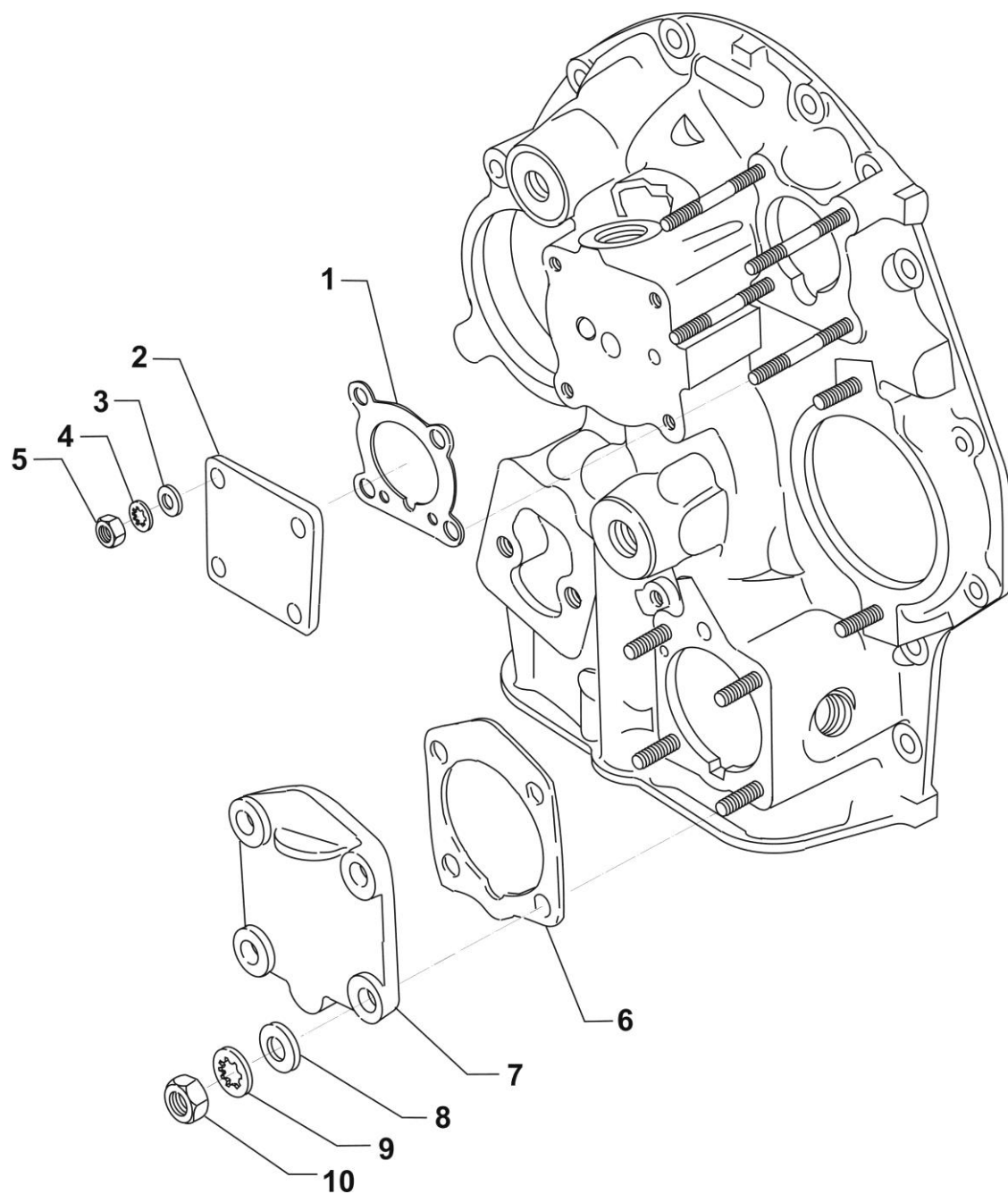
| <b>Figure Item</b>               | <b>Code</b> | <b>Part Number</b> | <b>Description</b>                        | <b>Units per Assembly</b> |
|----------------------------------|-------------|--------------------|-------------------------------------------|---------------------------|
| 1                                |             | 60096              | GASKET, Fuel pump                         | 1                         |
| 2                                |             | LW-15473           | FUEL PUMP, Dual diaphragm                 | 1                         |
| 3                                |             | STD-33             | WASHER, 3/8 plain                         | 2                         |
| 4                                |             | STD-1882           | SCREW, 3/8-16 x 1-9/32 long, socket drive | 2                         |
| 5                                | *           | LW-16561           | NIPPLE, 1/4 tube, 9/16-18 thread          | 1                         |
| * Requires P/N MS29512-06 O Ring |             |                    |                                           |                           |



**Oil Pressure Screen and Bypass Valve Assembly**  
**Figure 23**

**ACCESSORY DRIVES****FIGURE 23 – OIL PRESSURE SCREEN AND BYPASS VALVE ASSEMBLY**

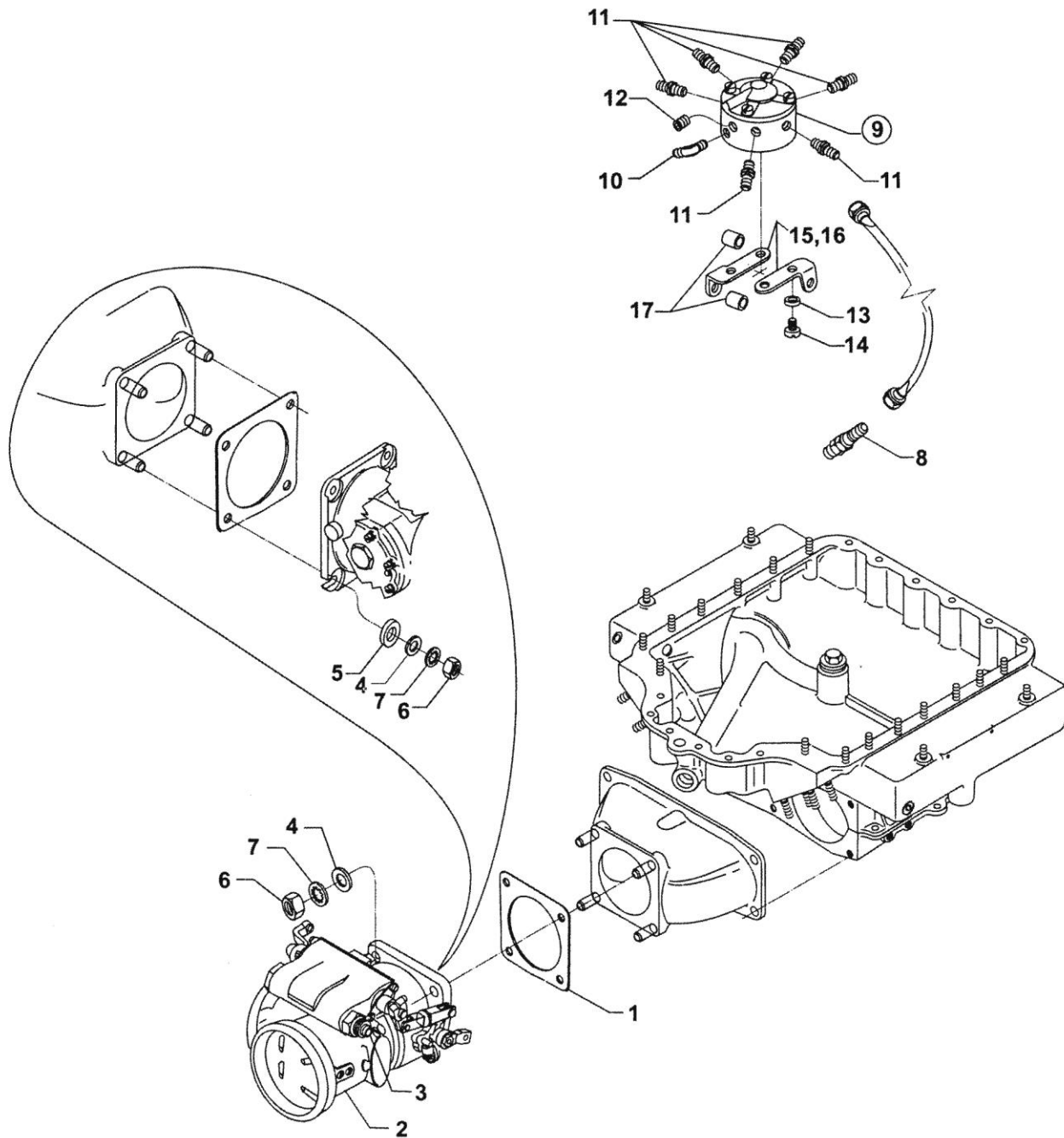
| <b>Figure Item</b> | <b>Code</b> | <b>Part Number</b> | <b>Description</b>                                    | <b>Units per Assembly</b> |
|--------------------|-------------|--------------------|-------------------------------------------------------|---------------------------|
| 1                  |             | 62817              | SCREEN ASSEMBLY, Oil pressure                         | 1                         |
| 2                  |             | 61173              | GASKET, Oil pressure housing                          | 1                         |
| 3                  |             | 69510              | HOUSING, Oil pressure screen                          | 1                         |
| 4                  |             | STD-8              | WASHER, 1/4 plain                                     | 4                         |
| 5                  |             | STD-160            | WASHER, 1/4 lock, internal teeth                      | 4                         |
| 6                  |             | LW-25-1.00         | BOLT, 1/4-20 x 1.00 long hex head                     | 4                         |
| 7                  |             | 06E19769-0.63      | GASKET, 5/8 I.D. annular                              | 1                         |
| 8                  |             | 53E22144           | VALVE ASSEMBLY, Temperature control oil cooler bypass | 1                         |
| 9                  |             | 76510              | GASKET, Oil cooler bypass valve                       | 1                         |
| 10                 |             | 06E19769-0.63      | GASKET, 5/8 I.D. annular                              | 1                         |
| 11                 |             | 62417              | PLUG, Oil cooler bypass                               | 1                         |
| 12                 |             | STD-784            | PLUG, 3/8-18 NPT Allen head                           | 2                         |
| 13                 |             | 72996              | FITTING, Breather                                     | 1                         |



**Vacuum and Hydraulic Pump Covers**  
**Figure 24**

**ACCESSORY DRIVES****FIGURE 24 – VACUUM AND HYDRAULIC PUMP COVERS**

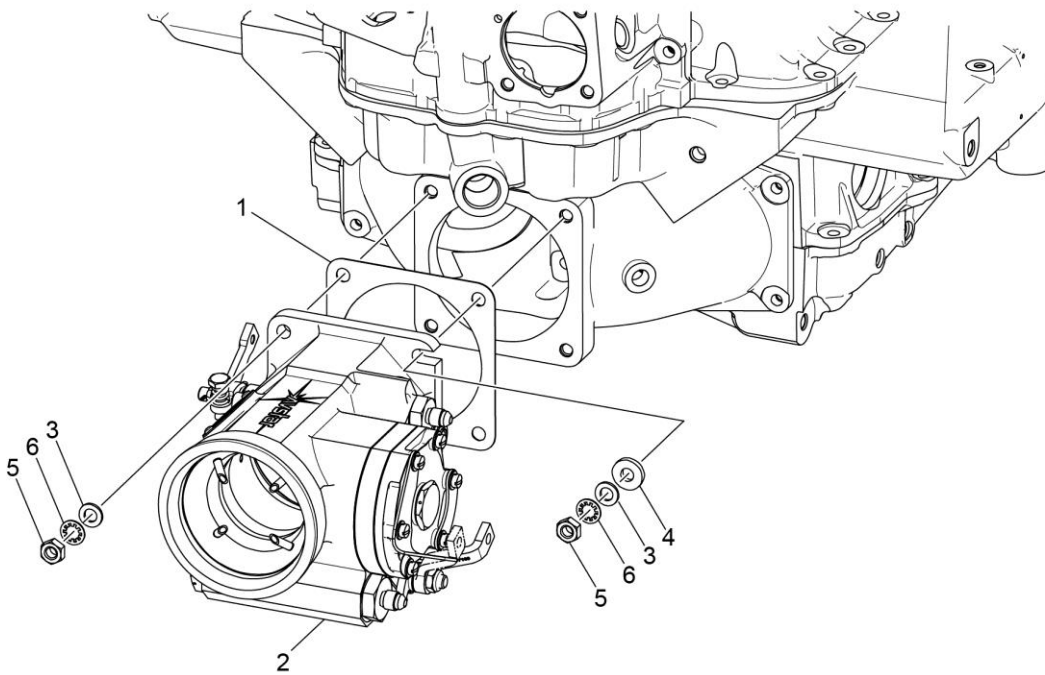
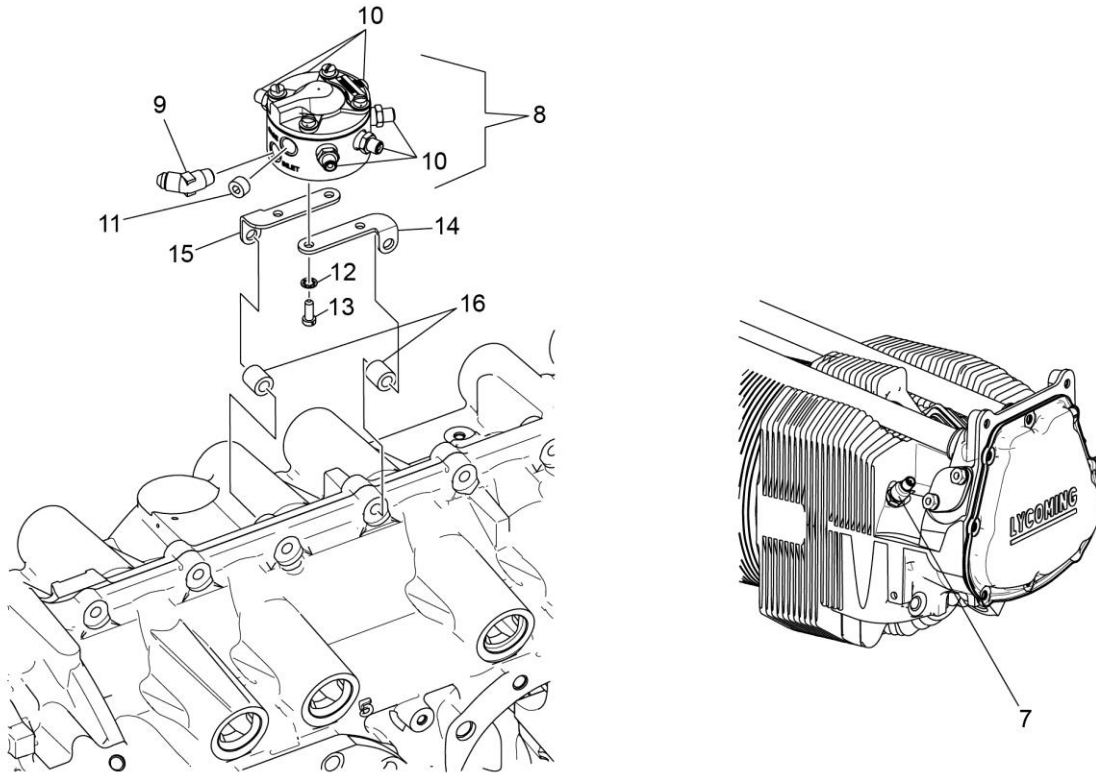
| <b>Figure Item</b> | <b>Code</b> | <b>Part Number</b> | <b>Description</b>                | <b>Units per Assembly</b> |
|--------------------|-------------|--------------------|-----------------------------------|---------------------------|
| 1                  |             | 61183              | GASKET, Accessory adapter         | 1                         |
| 2                  |             | 60430              | COVER, Vacuum pump                | 1                         |
| 3                  |             | STD-8              | WASHER, 1/4 plain                 | 4                         |
| 4                  |             | STD-160            | WASHER, 1/4 lock, internal teeth  | 4                         |
| 5                  |             | STD-1411           | NUT, 1/4-20 plain                 | 4                         |
| 6                  |             | 69551              | GASKET, Accessory drive adapter   | 1                         |
| 7                  |             | 69106              | COVER, Governor drive adapter pad | 1                         |
| 8                  |             | STD-35             | WASHER, 5/16 plain                | 4                         |
| 9                  |             | STD-475            | WASHER, 5/16 lock, internal teeth | 4                         |
| 10                 |             | STD-1410           | NUT, 5/16-18 plain                | 4                         |



**Fuel Injector, Fuel Manifold and Injection Nozzles**  
**Figure 25**

**FUEL DISTRIBUTION****FIGURE 25 – FUEL INJECTOR, FUEL MANIFOLD AND INJECTION NOZZLES**

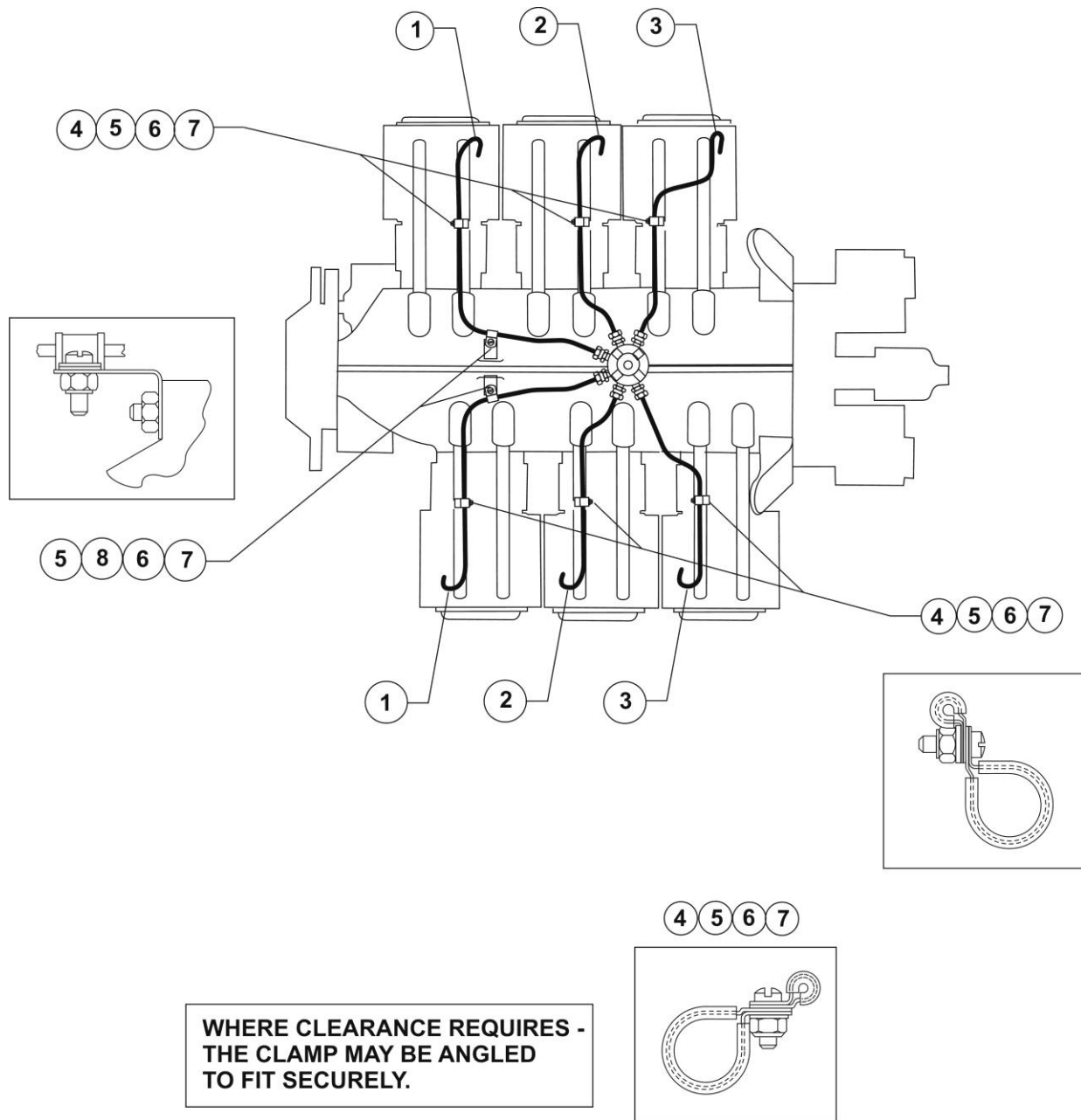
| <b>Figure Item</b>                                 | <b>Code</b> | <b>Part Number</b> | <b>Description</b>                        | <b>Units per Assembly</b> |
|----------------------------------------------------|-------------|--------------------|-------------------------------------------|---------------------------|
| 1                                                  | *           | 73032              | GASKET, Fuel injector                     | 2                         |
| 2                                                  |             | 61M26405           | FUEL INJECTOR, RSA-10AD1 P/N AV2576630-4  | 1                         |
| 3                                                  | **          | LW-16561           | NIPPLE, 1/4 tube to 9/16-18 thread        | 1                         |
| 4                                                  |             | STD-35             | WASHER, 5/16 plain                        | 2                         |
| 5                                                  |             | STD-1727           | WASHER, 21/64 I.D. x 3/4 O.D. x 1/8 thick | 2                         |
| 6                                                  |             | STD-1410           | NUT, 5/16-18 plain                        | 4                         |
| 7                                                  |             | STD-475            | WASHER, 5/16 lock, internal teeth         | 4                         |
| 8                                                  |             | 63C26450           | NOZZLE, Injection (AV2524864-2)           | 6                         |
| 9                                                  |             | 63D26710           | MANIFOLD ASSEMBLY, Fuel (4 psi)           | 1                         |
| 10                                                 |             | MS20823-4          | ELBOW, 1/8 NPT to 1/4 flared tube         | 1                         |
| 11                                                 |             | STD-148            | NIPPLE, Union 1/8 NPT                     | 6                         |
| 12                                                 |             | 1102               | PLUG, 1/8-27 NPT, Allen head              | 1                         |
| 13                                                 |             | STD-251            | WASHER, No. 10 lock, internal teeth       | 4                         |
| 14                                                 |             | STD-82             | SCREW, NO. 10-24 x 1/2 long fill. head    | 4                         |
| 15                                                 |             | 07A23031           | BRACKET, Fuel manifold                    | 1                         |
| 16                                                 |             | 07A23032           | BRACKET, Fuel manifold                    | 1                         |
| 17                                                 |             | 73966              | SPACER, Fuel manifold bracket             | 2                         |
| * Extra gasket, shipped as loose part with engine. |             |                    |                                           |                           |
| ** Requires P/N MS92512-06 O Ring                  |             |                    |                                           |                           |



**Fuel Injector, Fuel Manifold and Injection Nozzles**  
**Figure 26**

**FUEL DISTRIBUTION****FIGURE 26 – FUEL INJECTOR, FUEL MANIFOLD AND INJECTION NOZZLES**

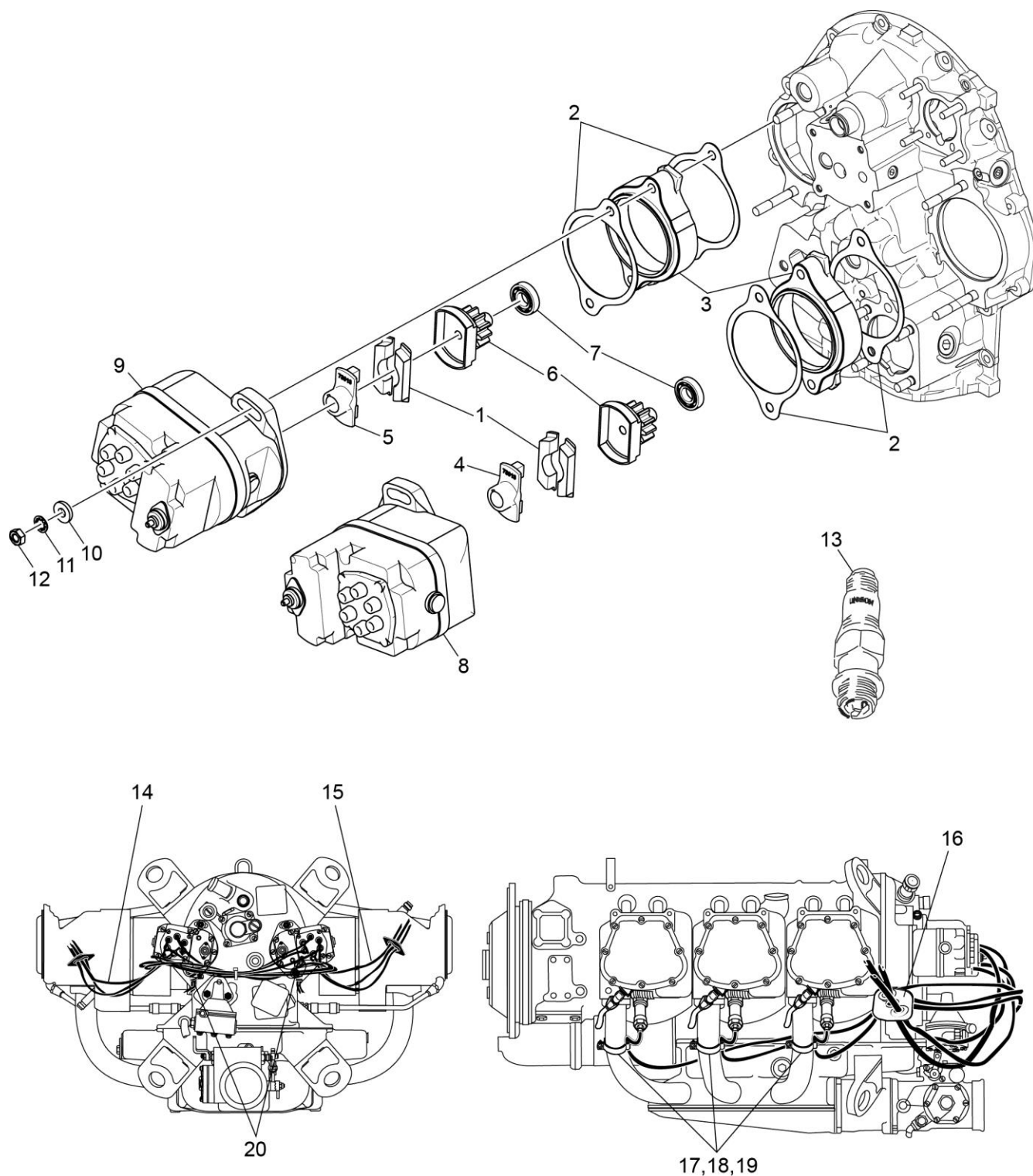
| <b>Figure Item</b>                                 | <b>Code</b> | <b>Part Number</b> | <b>Description</b>                        | <b>Units per Assembly</b> |
|----------------------------------------------------|-------------|--------------------|-------------------------------------------|---------------------------|
| 1                                                  | *           | 73032              | GASKET, Fuel injector                     | 2                         |
| 2                                                  |             | 61M26405           | FUEL INJECTOR, RSA-10AD1 P/N AV2576630-4  | 1                         |
| 3                                                  |             | STD-35             | WASHER, 5/16 plain                        | 2                         |
| 4                                                  |             | STD-1727           | WASHER, 21/64 I.D. x 3/4 O.D. x 1/8 thick | 2                         |
| 5                                                  |             | STD-1410           | NUT, 5/16-18 plain                        | 4                         |
| 6                                                  |             | STD-475            | WASHER, 5/16 lock, internal teeth         | 4                         |
| 7                                                  |             | 63C26450           | NOZZLE, Injection (AV2524864-2)           | 6                         |
| 8                                                  |             | 63D26710           | MANIFOLD ASSEMBLY, Fuel (4 psi)           | 1                         |
| 9                                                  |             | MS20823-4          | ELBOW, 1/8 NPT to 1/4 flared tube         | 1                         |
| 10                                                 |             | STD-148            | NIPPLE, Union 1/8 NPT                     | 6                         |
| 11                                                 |             | 1102               | PLUG, 1/8-27 NPT, Allen head              | 1                         |
| 12                                                 |             | STD-251            | WASHER, No. 10 lock, internal teeth       | 4                         |
| 13                                                 |             | STD-82             | SCREW, NO. 10-24 x 1/2 long fill. head    | 4                         |
| 14                                                 |             | 07A23031           | BRACKET, Fuel manifold                    | 1                         |
| 15                                                 |             | 07A23032           | BRACKET, Fuel manifold                    | 1                         |
| 16                                                 |             | 73966              | SPACER, Fuel manifold bracket             | 2                         |
| * Extra gasket, shipped as loose part with engine. |             |                    |                                           |                           |



**Fuel Lines and Attaching Parts**  
**Figure 27**

**FUEL DISTRIBUTION****FIGURE 27 – FUEL LINES AND ATTACHING PARTS**

| <b>Figure Item</b> | <b>Code</b> | <b>Part Number</b> | <b>Description</b>                                        | <b>Units per Assembly</b> |
|--------------------|-------------|--------------------|-----------------------------------------------------------|---------------------------|
| 1                  |             | LW-12098-0-240     | TUBE ASSEMBLY, Fuel manifold to nozzle, cylinders 1 and 2 | 2                         |
| 2                  |             | LW-12098-0-170     | TUBE ASSEMBLY, Fuel manifold to nozzle, cylinders 3 and 4 | 2                         |
| 3                  |             | LW-12098-0-180     | TUBE ASSEMBLY, Fuel manifold to nozzle, cylinders 5 and 6 | 2                         |
| 4                  |             | LW-16266-10-75     | CLAMP                                                     | 6                         |
| 5                  |             | LW-16266-10-13     | CLAMP, 1/8 diameter for No. 10 screw                      | 8                         |
| 6                  |             | STD-860            | SCREW, No. 10-32 x 5/8 long, fill. head                   | 8                         |
| 7                  |             | STD-670            | LOCKNUT, No. 10-32                                        | 8                         |
| 8                  |             | 73136              | BRACKET, Extension, fuel injector line                    | 2                         |



**Magnetos, Magneto Drives, Harnesses and Spark Plugs**  
**Figure 28**

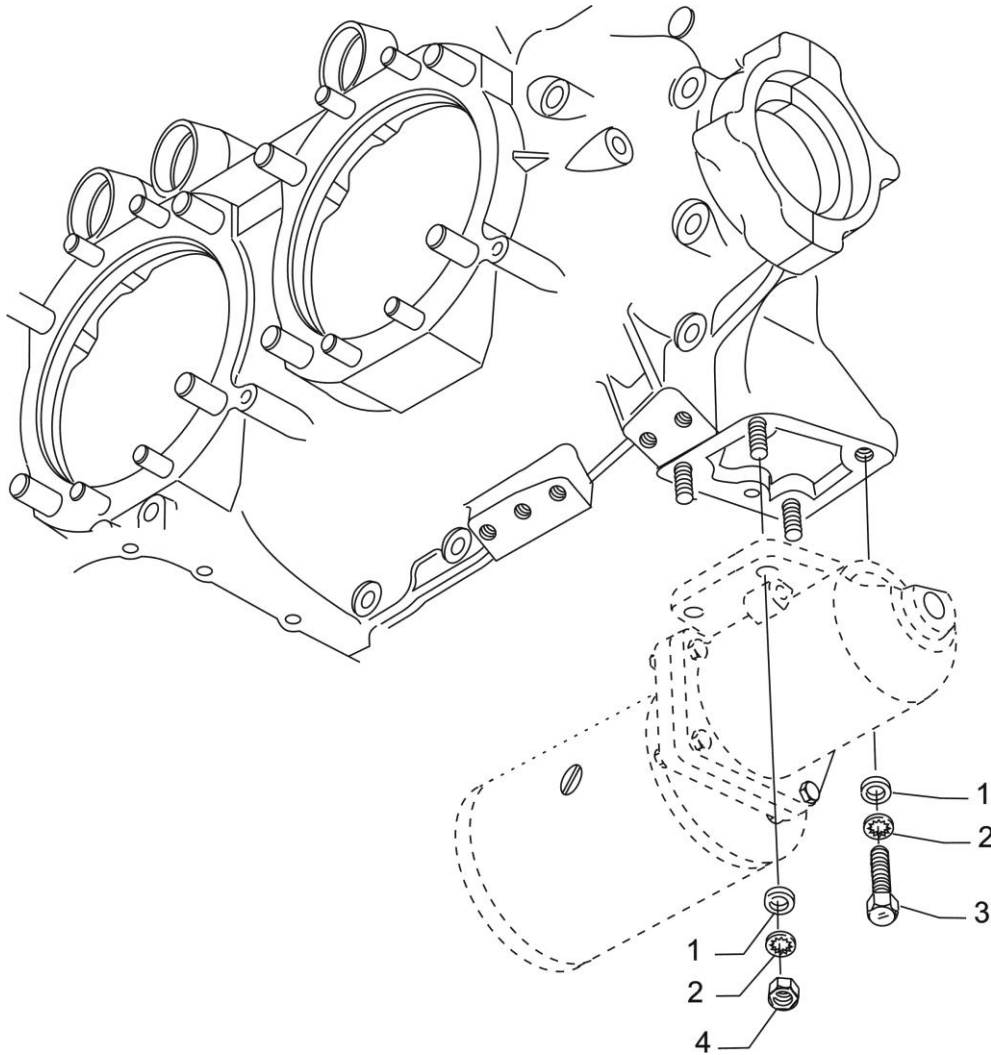
**IGNITION DISTRIBUTION SYSTEM****FIGURE 28 – MAGNETOS, MAGNETO DRIVES, HARNESES AND SPARK PLUGS**

| <b>Figure Item</b>                                                                                                        | <b>Code</b> | <b>Part Number</b> | <b>Description</b>                        | <b>Units per Assembly</b> |
|---------------------------------------------------------------------------------------------------------------------------|-------------|--------------------|-------------------------------------------|---------------------------|
| 1                                                                                                                         |             | 68H22624           | CUSHION, Magneto drive                    | 4                         |
| 2                                                                                                                         |             | 62224              | GASKET, Magneto adapter and magneto       | 4                         |
| 3                                                                                                                         |             | LW-12707           | ADAPTER, Magneto                          | 2                         |
| 4                                                                                                                         |             | 73000              | COUPLING, Magneto drive, right            | 1                         |
|                                                                                                                           |             | 73636              | COUPLING, Magneto drive, right            | 1                         |
| 5                                                                                                                         |             | 73013              | COUPLING, Magneto drive, retard, left     | 1                         |
|                                                                                                                           |             | 73000              | COUPLING, Magneto drive, retard, left     | 1                         |
| 6                                                                                                                         |             | LW-19096           | GEAR RETAINING ASSEMBLY                   | 2                         |
| 7                                                                                                                         |             | 67542              | BALL BEARING                              | 2                         |
| 8                                                                                                                         |             | 66B21783           | MAGNETO, Right (S6LSC-204T)               | 1                         |
| 9                                                                                                                         |             | 66B21774           | MAGNETO, Left, retard (S6LSC-200)         | 1                         |
|                                                                                                                           |             | 66B21784           | MAGNETO, Left, retard (S6LSC-200)         | 1                         |
| 10                                                                                                                        |             | STD-1727           | WASHER, 3/4 O.D. x 21/64 I.D. x 1/8 thick | 4                         |
| 11                                                                                                                        |             | STD-475            | WASHER, 5/16 lock, internal teeth         | 4                         |
| 12                                                                                                                        |             | STD-1410           | NUT, 5/16-18 plain                        | 4                         |
| 13                                                                                                                        | *           | 1182-E7            | SPARK PLUG, Champion (REM 38E)            | 12                        |
| 14                                                                                                                        |             | LW-M-2463          | HARNESS ASSEMBLY, Left magneto            | 1                         |
| 15                                                                                                                        |             | LW-M-2464          | HARNESS ASSEMBLY, Right magneto           | 1                         |
| 16                                                                                                                        |             | LW-M-2376          | PLATE, Spark plug cable                   | 2                         |
| 17                                                                                                                        |             | LW-18959-163-25    | CLAMP                                     | 6                         |
| 18                                                                                                                        |             | STD-553            | SCREW, No. 6-32 x 1/2 long, round head    | 6                         |
| 19                                                                                                                        |             | MS21044N06         | NUT, No. 6-32 self-locking                | 6                         |
| 20                                                                                                                        |             | LW-16266-25-44     | CLAMP, 7/16 I.D. x 1/4 diameter screw     | 2                         |
| * Refer to the latest revision of Lycoming Service Instruction No. 1042 for complete listing of all approved spark plugs. |             |                    |                                           |                           |



**IGNITION DISTRIBUTION SYSTEM****FIGURE 29 - ALTERNATOR ASSEMBLY**

| Figure Item                 | Code | Part Number | Description                           | Units per Assembly |
|-----------------------------|------|-------------|---------------------------------------|--------------------|
| 1                           | *    | 32C19553    | ALTERNATOR ASSEMBLY, 24 volt, 70 amp. | 1                  |
| 2                           | *    | LW-14326    | ALTERNATOR, (ALU-8521-LS)             | 1                  |
| 3                           | *    | 36B19484    | PULLEY, Alternator                    | 1                  |
| * Shipped loose with engine |      |             |                                       |                    |



**Starter Attaching Parts  
Figure 30**

**STARTING****FIGURE 30 - STARTER ATTACHING PARTS**

| <b>Figure Item</b>                    | <b>Code</b> | <b>Part Number</b> | <b>Description</b>                     | <b>Units per Assembly</b> |
|---------------------------------------|-------------|--------------------|----------------------------------------|---------------------------|
| 1                                     | *           | STD-35             | WASHER, 5/16 plain                     | 4                         |
| 2                                     | *           | STD-475            | WASHER, 5/16 lock, internal teeth      | 4                         |
| 3                                     | *           | LW-31-1.16         | BOLT, 5/16-18 x 1-5/32 long, hex. head | 1                         |
| 4                                     | *           | STD-1410           | NUT, 5/16-18 plain                     | 3                         |
| * Hardware only, supplied by Lycoming |             |                    |                                        |                           |

**SERVICE KIT SECTION**  
**SEAL AND GASKET SET**

| <b>PART NO.</b> | <b>PART NAME</b>                             | <b>Qty.</b> |
|-----------------|----------------------------------------------|-------------|
| <b>05K23341</b> | <b>KIT - SEAL AND GASKET SET</b>             | <b>1</b>    |
| 06B21326        | GASKET, Oil sump                             | 1           |
| 06E19769-0.63   | GASKET, Annular 5/8 I.D.                     | 2           |
| 06E19769-1.00   | GASKET, Annular, 1.00 I.D.                   | 1           |
| 06E19769-1.25   | GASKET, Annular, 1 1/4 I.D.                  | 1           |
| 15H21201        | SPRING, Shroud tube                          | 24          |
| 60096           | GASKET, Fuel pump                            | 1           |
| 61173           | GASKET, Oil pressure housing                 | 1           |
| 61183           | GASKET, Accessory adapter                    | 1           |
| 62224           | GASKET, Magneto adapter                      | 4           |
| 66732           | GASKET, Valve rocker shaft cover             | 12          |
| 67193           | GASKET, Rocker box cover                     | 6           |
| 68H22624        | CUSHION, Magneto drive                       | 4           |
| 69951           | GASKET, Accessory drive adapter              | 1           |
| 70455           | GASKET, 25/32 I.D. x 1-1/8 O.D. x 1/32 thick | 1           |
| 71481           | RING, Oil seal, 3/32 diameter x 4-27/32 I.D. | 6           |
| 71973           | GASKET, 2 bolt flange, 1-13/16 I.D.          | 6           |
| 72053           | GASKET, Governor                             | 1           |
| 72059           | GASKET, Oil level gage                       | 1           |
| 72091           | RING, Oil seal, 3/8 I.D. x 7/64 diameter     | 2           |
| 72210           | GASKET, Air throttle housing                 | 1           |
| 72711           | RING, Seal, intake pipes                     | 6           |
| 73032           | GASKET, Air inlet housing                    | 2           |
| 73383           | LOCKPLATE, 5/16 bolt x 1.00                  | 2           |
| 73818           | GASKET, Accessory housing                    | 1           |
| 74068           | RING, Oil level gage plug                    | 1           |
| 76510           | GASKET, Oil cooler bypass valve              | 1           |
| 77611           | GASKET, Exhaust flange                       | 6           |
| LW-13792        | SEAL, Crankshaft oil                         | 1           |
| LW-14260        | SEAL, Tachometer drive, oil                  | 1           |
| LW-14820        | RING, Internal retaining                     | 8           |
| LW-18481        | GASKET, Oil filler adapter                   | 1           |
| LW-18638        | LOCKPLATE, Crankshaft gear                   | 1           |
| LW-18661        | SEAL, Shroud tube                            | 24          |
| MS29512-06      | O-RING, 15/32 I.D. x 5/64 section            | 2           |
| STD-22180       | HOSE, 3/8 I.D. x 1-7/8 long                  | 6           |
| STD-2231        | RING, Internal retaining (13/16)             | 1           |

**CYLINDER, PISTON AND RING ASSEMBLY**

| <b>PART NO.</b> | <b>PART NAME</b>                                 | <b>Qty.</b> |
|-----------------|--------------------------------------------------|-------------|
| <b>05K21120</b> | <b>KIT - CYLINDER, PISTON AND RING ASSEMBLY</b>  | <b>1</b>    |
| LW-12993        | CYLINDER ASSEMBLY                                | 1           |
| 72343           | STABILIZER, Cylinder head fins, 15 teeth         | 1           |
| 72344           | STABILIZER, Cylinder head fins, 26 teeth         | 1           |
| 17A23937        | VALVE, Intake                                    | 1           |
| 17B23935        | VALVE, Exhaust (rotator type)                    | 1           |
| LW-13321        | SEAT, Valve spring, lower intake                 | 1           |
| LW-13322        | SEAT, Valve spring, lower exhaust                | 1           |
| LW-11796        | SPRING, Valve, outer                             | 2           |
| LW-11797        | SPRING, Valve, inner                             | 2           |
| 69532           | SEAT, Valve spring, upper intake                 | 1           |
| LW-16475        | SEAT, Valve spring, upper exhaust (rotator type) | 1           |
| 72050           | KEY, Valve intake                                | 2           |
| 17C21191        | KEY, Valve exhaust (rotator type)                | 2           |
| MS20523-6D      | ELBOW, 45 degree, 3/8 flared tube                | 1           |
| 62388           | CAP, Valve stem                                  | 1           |
| 17C19386        | CAP, Valve stem, exhaust (rotator type)          | 1           |
| 1102            | PLUG, 1/8-27 NPT, allen head                     | 2           |
| 71481           | RING, Oil seal, 3/32 diameter x 4-27/32 I.D.     | 1           |
| 14D23908        | PISTON, 8.70:1                                   | 1           |
| 74241           | RING, Piston, compression                        | 2           |
| 14H21950        | RING, Piston, oil regulating (expander type)     | 1           |
| LW-14078        | PIN, Piston                                      | 1           |
| 72198           | PLUG, Piston pin                                 | 2           |
| 66732           | GASKET, Valve rocker shaft cover                 | 2           |
| 67193           | GASKET, Rocker box cover                         | 1           |
| LW-18661        | SEAL, Shroud tube                                | 4           |
| SSP-299         | TAG, Use of piston pin plugs                     | 1           |
| 77611           | GASKET, Exhaust flange                           | 1           |
| 71973           | GASKET, 2 bolt flange, 1-13/16 I.D.              | 1           |
| 06A23493        | SEAL, Shroud tube                                | 2           |

**CRANKSHAFT AND COUNTERWEIGHT ASSEMBLY KIT**

| <b>PART NO.</b> | <b>PART NAME</b>                                   | <b>Qty.</b> |
|-----------------|----------------------------------------------------|-------------|
| <b>05K23340</b> | <b>KIT - CRANKSHAFT AND COUNTERWEIGHT ASSEMBLY</b> | <b>1</b>    |
| 13E47622        | CRANKSHAFT ASSEMBLY                                | 1           |
| 14U22539        | COUNTERWEIGHT ASSEMBLY                             | 2           |
| 14W22647        | ROLLER, Dynamic counterweight, 4.81 order          | 2           |
| 70416           | ROLLER, Dynamic counterweight                      | 2           |
| 71907           | WASHER, Counterweight                              | 8           |
| LW-14820        | RING, Internal retaining                           | 8           |

**CRANKCASE ASSEMBLY AND THRU-STUD KITS**

| <b>PART NO.</b>      | <b>PART NAME</b>                              | <b>Qty.</b> |
|----------------------|-----------------------------------------------|-------------|
| <b>11E24004-S1-S</b> | <b>KIT - CRANKCASE ASSEMBLY AND THRU-STUD</b> | <b>1</b>    |
| 11E24004-S           | CRANKCASE ASSEMBLY                            | 1           |
| 76220                | STUD, 1/2-20 x 10-45/64 long                  | 8           |
| 31C-14               | STUD, 5/16-18 x 1-3/4 long                    | 4           |
| 31C-16               | STUD, 5/16-18 x 2.00 long                     | 4           |
| STD-1339             | PLUG, 1/16-27 NPT, Allen head                 | 7           |
| AN565B1032H4         | SETSCREW, No. 10-32 x 1/4 long                | 1           |
| AN565B1032H5         | SETSCREW, No. 10-32 x 5/16 long               | 1           |
| 1102                 | PLUG, 1/8-27 NPT, Allen head                  | 4           |
| LW-31-2.75           | BOLT, 5/16-18 x 2-3/4 long, hex. head         | 1           |
| LW-31-1.16           | BOLT, 5/16-18 x 1-5/32 long, hex. head        | 3           |
| STD-35               | WASHER, 5/16 plain                            | 4           |
| STD-475              | WASHER, 5/16 lock, internal teeth             | 4           |

**CRANKCASE ASSEMBLY AND THRU-STUD KITS**

| <b>PART NO.</b>      | <b>PART NAME</b>                              | <b>Qty.</b> |
|----------------------|-----------------------------------------------|-------------|
| <b>11E24104-S1-S</b> | <b>KIT - CRANKCASE ASSEMBLY AND THRU-STUD</b> | <b>1</b>    |
| 11E24104-S           | CRANKCASE ASSEMBLY                            | 1           |
| 76220                | STUD, 1/2-20 x 10-45/64 long                  | 8           |
| 31C-14               | STUD, 5/16-18 x 1-3/4 long                    | 4           |
| 31C-16               | STUD, 5/16-18 x 2.00 long                     | 4           |
| STD-1339             | PLUG, 1/16-27 NPT, Allen head                 | 7           |
| AN565B1032H4         | SETSCREW, No. 10-32 x 1/4 long                | 1           |
| AN565B1032H5         | SETSCREW, No. 10-32 x 5/16 long               | 1           |
| 1102                 | PLUG, 1/8-27 NPT, Allen head                  | 4           |
| LW-31-2.75           | BOLT, 5/16-18 x 2-3/4 long, hex. head         | 1           |
| LW-31-1.16           | BOLT, 5/16-18 x 1-5/32 long, hex. head        | 3           |
| STD-35               | WASHER, 5/16 plain                            | 4           |
| STD-475              | WASHER, 5/16 lock, internal teeth             | 4           |

**CRANKCASE ASSEMBLY AND THRU-STUD KITS**

| PART NO.      | PART NAME                              | Qty. |
|---------------|----------------------------------------|------|
| 11E24106-S1-S | KIT - CRANKCASE ASSEMBLY AND THRU-STUD | 1    |
| 11E24106-S    | CRANKCASE ASSEMBLY                     | 1    |
| 1102          | PLUG, 1/8-27 NPT, Allen head           | 6    |

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| AN6-16     | Bolt      | 5        | LW-31H0.75     | Bolt                | 3        |
| AN6-17     | Bolt      | 1        | LW-31H0.75     | Bolt                | 5        |
| AN6-17     | Bolt      | 5        | LW-31H0.75     | Bolt                | 5        |
| AN6-34A    | Bolt      | 19       | LW-31H0.75     | Bolt                | 5        |
| LRT23381   | Body Assy | 11       | LW-31H0.88     | Bolt                | 15       |
| LW-25-2.00 | Bolt      | 19       | LW-31H0.88     | Bolt                | 17       |
| LW-25-2.00 | Bolt      | 35       | LW-11273       | Clamp               | 35       |
| LW-25-2.00 | Bolt      | 35       | LW-11273       | Clamp               | 39       |
| LW-25-2.00 | Bolt      | 41       | LW-11273       | Clamp               | 41       |
| LW-25-1.75 | Bolt      | 19       | LW-11713       | Spring              | 11       |
| LW-25-1.50 | Bolt      | 19       | LW-11750       | Connecting Rod Assy | 21       |
| LW-25-1.44 | Bolt      | 47       | LW-11796       | Spring              | 25       |
| LW-25-1.25 | Bolt      | 31       | LW-11797       | Spring              | 25       |
| LW-25-1.13 | Bolt      | 19       | LW-11956       | Guide               | 23       |
| LW-25-1.13 | Bolt      | 35       | LW-11958       | Guide               | 23       |
| LW-25-1.13 | Bolt      | 39       | LW-12098-0-170 | Tube Assy           | 59       |
| LW-25-1.13 | Bolt      | 41       | LW-12098-0-180 | Tube Assy           | 59       |
| LW-25-1.13 | Bolt      | 47       | LW-12098-0-240 | Tube Assy           | 59       |
| LW-25-1.00 | Bolt      | 35       | LW-12186       | Nut                 | 21       |
| LW-25-1.00 | Bolt      | 35       | LW-12191       | Pipe                | 31       |
| LW-25-1.00 | Bolt      | 39       | LW-12192       | Pipe                | 31       |
| LW-25-1.00 | Bolt      | 41       | LW-12193       | Pipe                | 31       |
| LW-25-1.00 | Bolt      | 41       | LW-12194       | Pipe                | 31       |
| LW-25-1.00 | Bolt      | 51       | LW-12195       | Pipe                | 31       |
| LW-25-0.94 | Bolt      | 47       | LW-12545       | Plug                | 31       |
| LW-25-0.81 | Bolt      | 31       | LW-12688       | Seat                | 23       |
| LW-25-0.81 | Bolt      | 41       | LW-12707       | Adapter             | 61       |
| LW-25S1.50 | Bolt      | 19       | LW-12993       | Cylinder Assy       | 23       |
| LW-25H0.63 | Bolt      | 35       | LW-13321       | Seat                | 25       |
| LW-25H0.63 | Bolt      | 41       | LW-13322       | Seat                | 25       |
| LW-31-0.94 | Bolt      | 1        | LW-13792       | Seal                | 11       |
| LW-31-0.94 | Bolt      | 3        | LW-13795       | Shaft               | 15       |
| LW-31-0.94 | Bolt      | 5        | LW-13795       | Shaft               | 17       |
| LW-31-1.16 | Bolt      | 19       | LW-13805       | Connection          | 39       |
| LW-31-1.16 | Bolt      | 65       | LW-13806       | Adapter             | 39       |
| LW-31-2.75 | Bolt      | 19       | LW-13807       | Adapter Assy        | 39       |
| LW-31H0.75 | Bolt      | 1        | LW-13874       | Spring              | 39       |
| LW-31H0.75 | Bolt      | 1        | LW-13896       | Plug                | 7        |

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| LW-15473        | Fuel Pump           | 49              | STD-8           | Washer           | 39              |
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| LW-18481        | Gasket              | 33              | STD-35          | Washer           | 3               |
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| 10-8            | Stud             | 9               | 61173           | Gasket           | 51              |
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| 68795           | Cover Assy       | 29              | 72210           | Gasket           | 31              |
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| 69510           | Housing          | 51              | 72343           | Stabilizer       | 23              |
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| 21C21546-03     | Housing Assy     | 45              | 56G26069        | Baffle           | 39              |
| 23D26777        | Plunger          | 15              | 56G26069        | Baffle           | 41              |
| 23D26777        | Plunger          | 17              | 61M26405        | Fuel Injector    | 55              |
| 31M22972        | Support Assy     | 13              | 61M26405        | Fuel Injector    | 57              |
| 32C19553        | Alternator Assy  | 63              | 63C26450        | Nozzle           | 55              |
| 36B19484        | Pulley           | 63              | 63C26450        | Nozzle           | 57              |
| 53E22144        | Valve Assy       | 51              | 63D26710        | Manifold Assy    | 55              |
| 56A26071        | Housing          | 35              | 63D26710        | Manifold Assy    | 57              |
| 56A26071        | Housing          | 39              | 66B21774        | Magneto          | 61              |
| 56A26071        | Housing          | 41              | 66B21783        | Magneto          | 61              |
| 56A26071-03     | Housing Assy     | 35              | 66B21784        | Magneto          | 61              |
| 56A26071-09     | Housing Assy     | 39              | 68H22624        | Cushion          | 61              |