

IO-390-C Series Engine Illustrated Parts Catalog

June 2025

| PC-IO-390-C Rev 1



652 Oliver Street
Williamsport, PA 17701

IO-390-C Series Engine Illustrated Parts Catalog

Lycoming Part Number: PC-IO-390-C Rev 1

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Record of Revisions

NOTICE: Service Documents with a later release date than this parts catalog override parts information in this document.

Rev No.	Revision Changes	Issue Date
New	Initial Release	February 2017
Rev. 1	<p>Introduction</p> <ul style="list-style-type: none"> • Revised the CAUTION at the beginning of the chapter • Deleted the Roller Tappets section • Added the Lockwire, Safety Cable section • Revised the “How to Order Parts” section <p>Chapter 24-20</p> <ul style="list-style-type: none"> • Revised parts list for Figure 1A to eliminate specific models listing • Revised parts list for Figure 1B to eliminate specific models listing • Added an additional Item 7, P/N 37A19773M396 and a footnote for usage to the parts list for Figure 2 <p>Chapter 72-10</p> <ul style="list-style-type: none"> • Added alternate part number for item 8 in the parts list for Figure 4 <p>Chapter 72-20</p> <ul style="list-style-type: none"> • Revised Figure 5A • Parts list for Figure 5A/5B <ul style="list-style-type: none"> ○ Added Crankshaft Assembly P/N 11U28752-1S ○ Changed the quantity for item 16 ○ Revised the Description for P/N 31C-17 ○ Added P/N 31C-16 as an additional listing for item #19 used with Crankcase Assembly 11U28750-1S • Parts list for Figure 7 <ul style="list-style-type: none"> ○ Added an indication that P/N LW-16471 can be used on IO-390-C3B6 engines with single alternator and a footnote to explain usage ○ Added a listing for Support Assembly 74977 to item #19 • Revised figures for 9A and 9B • Separated the parts lists for Figures 9A and 9B • Corrected quantities of items 1 and 2 in the C1A6 and C3A6 columns in the parts list for Figure 9A • Added new Figure 8C and new parts list for Figure 9C <p>Chapter 72-30</p> <ul style="list-style-type: none"> • Changed part number 14H23148 to 14H29865 in the parts list for Figure 10 • Added footnote referencing SI 1458 to the parts list for Figure 10 • Deleted P/N 75118 from parts list for Figure 11 • Revised the P/Ns for all Push Rod Assemblies in the parts list for Figure 12 • Revised the description for item 6 and added an alternate P/N for item 6 (Rocker Box Cover Assembly) in the parts list for Figure 13 • Added footnote to the parts list for Figure 13 regarding rocker box cover • Revised Figure 13 to show more accurate depiction of the rocker box cover • Revised Figure 14 • Removed P/N 42E28522 from parts list for Figure 14 	June 2025

Record of Revisions (Cont.)

Rev No.	Revision Changes	Issue Date
Rev. 1 (Cont.)	<p>Chapter 72-50</p> <ul style="list-style-type: none"> • Changed Figure 15 to Figure 16A • Added new Figure 16B Added new parts list for Figure 16B • Revised Figure 17 • Changed the induction housing assembly part number from 42A28515 to 42A31579 in the parts list for Figure 17 • Revised the parts list for Figure 17 to add new P/N NASM90725-18 and remove P/Ns LW-25-2.69 and LW-25-3.00 <p>Chapter 72-60</p> <ul style="list-style-type: none"> • Added new figure and parts list for Figure 18A • Added new figure and parts list for Figure 18B • Added new figure and parts list for Figure 18C • Revised Figure 23 to add Items 14, 15, 16, 17, and 18 • Added Items 14, 15, 16, 17, and 18 to the parts list for Figure 23 • Revised figure and parts list for Figure 24 <p>Chapter 73-10</p> <ul style="list-style-type: none"> • Revised Figure 25 to show views of standard and inverted fuel manifold • Revised Figure 25 to indicate the Item number for Item 24 • Parts list for Figure 25 <ul style="list-style-type: none"> ○ Revised the Description for Item 2 - 61M28534 ○ Revised to indicate different part numbers for standard and inverted fuel manifold ○ Revised the Description for Items 21, 22, and 23 ○ Added Item 24 – STD-1411 ○ Added footnote to reference S.I. 1532 • Revised Figure 26A to show more accurate depiction of the engine • Revised Figure 26B to show more accurate depiction of the engine • Parts list for Figure 26B <ul style="list-style-type: none"> ○ Added Code symbol to Items 1 and 2 ○ Added new Item 1, 2 for P/N LW-12098-0-180 used with standard mounted fuel manifolds ○ Changed P/N for Item 24 from LW-16266-10-50 to LW-16266-10-63 ○ Added footnote to indicate use with inverted fuel manifold assembly ○ Corrected part number and descriptions for items 33 and 34 <p>Chapter 74-20</p> <ul style="list-style-type: none"> • Added impulse magneto as an alternate for IO-390-C3B6 engines • Added HET magnetos as an approved alternate to the parts list for Figure 27 • Added footnote referencing S.I. 1443 to the parts list for Figure 27 <p>Chapter 80-10</p> <ul style="list-style-type: none"> • Added an additional Item 1 P/N 31A22104 to the parts list for Figure 28 <p>Service Kit Section</p> <ul style="list-style-type: none"> • Revised the Description for P/N 06B26811 in the Seal and Gasket Set Table • Added part numbers 70455, 77504, and 77569 to the Seal and Gasket Set Table 	June 2025



Record of Revisions (Cont.)

Rev No.	Revision Changes	Issue Date
	<p>Service Kit Section (Cont.)</p> <ul style="list-style-type: none"> • Changed part number 14H23148 to 14H29865 in the Cylinder, Piston and Ring Assembly parts list • Revised the P/N and description for the Rocker Box Cover Gaskets in the Cylinder, Piston and Ring Assembly parts list 	

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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” are for “as required” applicable to bulk items or non-illustrated select-from-range-parts. The letters “RF” identify items listed for reference.

Lockwire, Safety Cable

To maintain as assembled torque integrity Lockwire used is to be a one continuous strand twisted to keep tension on various internal fasteners ensuring a minimum torque is retained. Lockwire installed correctly will pull in the direction of fastener assembled tension. Lycoming Engines does not recommend the use of safety cable for retention of internal engine parts or assemblies. Refer to the latest revision of **Service Instruction No. 1566**.

Vendor Accessories

Parts coverage of Vendor Accessories used on Lycoming engines are found in the applicable Vendor’s Parts Catalog. A list of vendors’ addresses is included in the latest revision of Lycoming Service Letter No. L114.

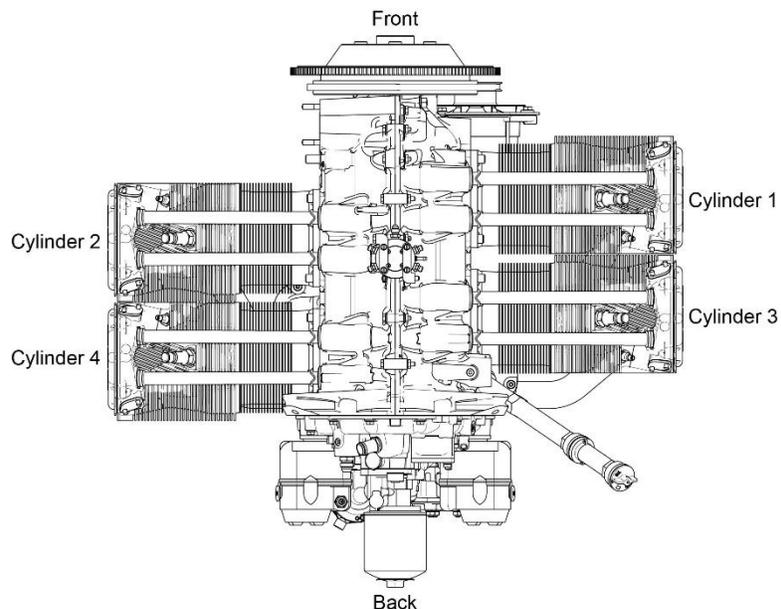
Any reference in this document to the supplier’s/part manufacturer’s product, by name, trademark, part number or other description is solely for the purpose of identification and does not indicate or infer that Lycoming accepts responsibility for quality control and/or airworthiness of parts, which do 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 the propeller end and the oil sump is 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 four-cylinder engine is 1-3-2-4.



Top View of Engine

How to Order Parts

To order parts from this parts catalog, contact an Authorized Lycoming Distributor with the part number(s), nomenclature, and quantity along with the model and serial number of your engine. Authorized Lycoming Distributors will have up-to-date part number supersedure, pricing, and availability information on parts listed in this parts catalog.

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

To supply any comments, suggestions, or corrections to this parts catalog, go online to the Lycoming.com website on the internet.

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Abbreviations and Acronyms

A	
AR	As Required
Assy.	Assembly
ATA	Air Transport Association
C	
Cyl.	Cylinder
F	
Fill.	Fillister
H	
Hd.	Head
Hex.	Hexagon
I	
I.D.	Inside Diameter
in.	Inch
IPC	Illustrated Parts Catalog
M	
mm	Millimeter
N	
No.	Number
NPT	National Pipe Taper (thread)
O	
O.D.	Outside Diameter
P	
P	Lycoming Proprietary Part
P/N	Part Number
Qty.	Quantity
R	
RF	Reference
RT	Roller Tappet
S	
SB	Service Bulletin
SI	Service Instruction
SSP	Special Service Publication

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Oversize and Undersize Parts Listing

PART NO.	DESCRIPTION	OVERSIZE (IN.)					UNDERSIZE (IN.)	
		P05 .005	P10 .010	P20 .020	P30 .030	P50 .050	M03 .003	M06 .006
18B23885	BEARING, Front Crankshaft						X	X
18E23886	BEARING, Crankshaft						X	X
18M23887	BEARING, Connecting Rod						X	X
71903-A ❖	BUSHING, Counterweight Dynamic	--	--	--	--	--	--	--
72155-S	BUSHING, Prop Flange	X						
75656-S	BUSHING, Prop Flange	X						
75657-S	BUSHING, Prop Flange	X						
66670	BUSHING, Rocker Shaft Inner		X					
STD-1065	DOWEL, Crankshaft		X					
66713	GUIDE, Intake Valve				X			
75838	GUIDE, Exhaust Valve				X			
69260	INSERT, Spark Plug		X					
72212	SEAT, Intake Valve			X				
16T19468	SEAT, Exhaust Valve			X				
LW-15628	SEAL, Crankshaft Oil					X		

❖ 71903-A is the undersize part number. When ordering, do not specify an undersize code letter

NOTICE: 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 Part Number (P/N) 18B23885 bearing in 0.003 in. undersize, order P/N 18B23885-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.

DC GENERATION**Figure 1A - Alternator Attaching Parts (Single)**

Figure Item	Code	Part Number	Description	Units per Assembly
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	1
7		STD-1727	WASHER, Plain, 3/4 O.D. x 11/32 I.D. x 1/8 thick	1
8		LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. head	1
9		07F23268	STRUT, Alternator support	1
10		LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. head	1
11	❖	STD-35	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	1
12		AN6-17	BOLT, 3/8-24 x 1-61/64 long, hex. head, drilled end	1
13		STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	10
14		STD-872	NUT, 3/8-24 slotted	2
15		STD-713	COTTER PIN, 3/32 diameter x 3/4 long	2
16		AN6-16	BOLT, 3/8-24 x 1-53/64 long, hex. head	1
17		76534	SHIM, 1-1/8 O.D. x 13/32 I.D. x .005 thick	AR

❖ Install between strut and attachment to starter lug.

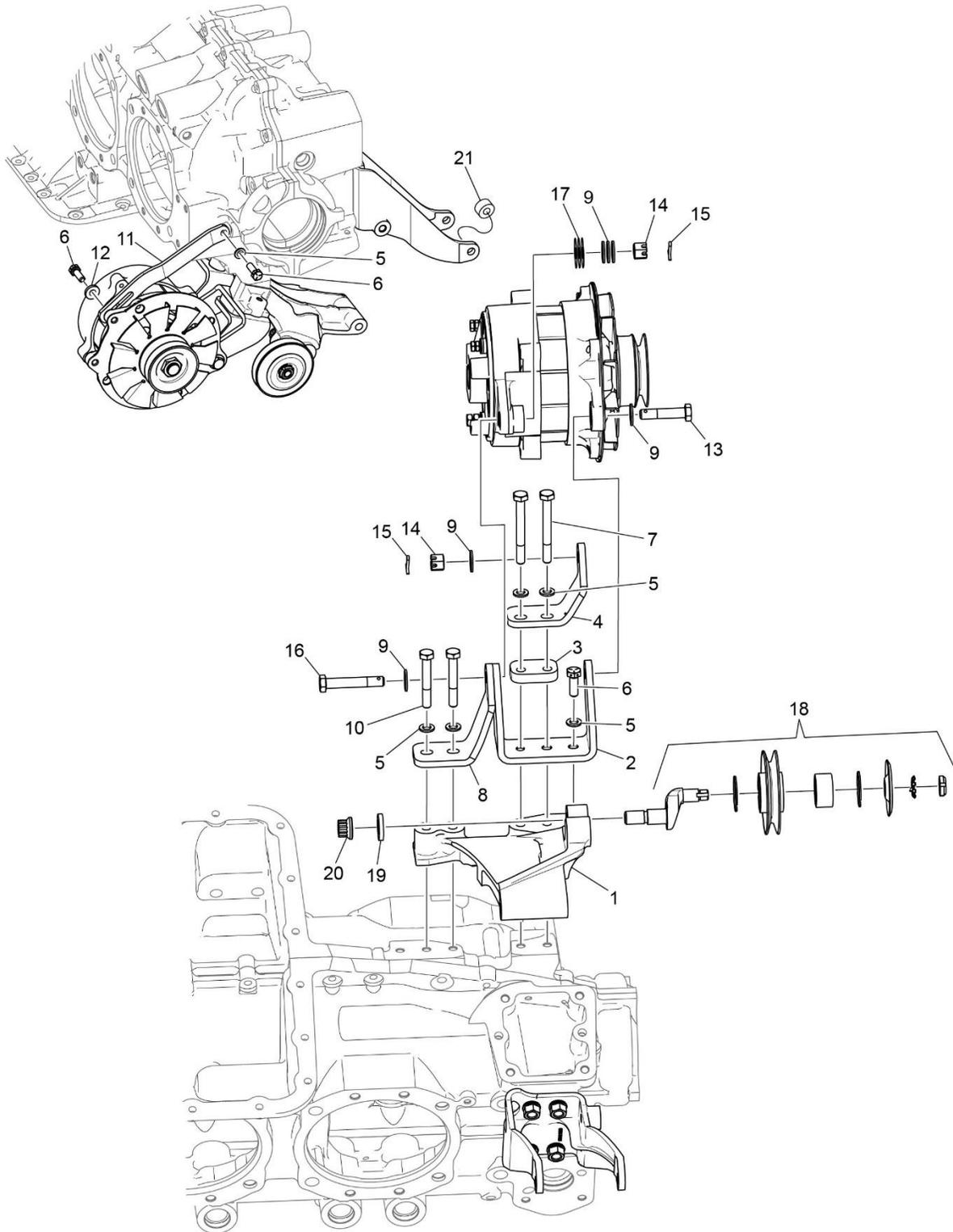


Figure 1B
Alternator Attaching Parts (Dual)

DC GENERATION**Figure 1B - Alternator Attaching Parts (Dual)**

Figure Item	Code	Part Number	Description	Units per Assembly
1		07A22097	BRACKET, Alternator	1
2		07A19880	BRACKET, Alternator-Right (Prestolite)	1
3		01L21909	SPACER, Alternator Bracket Inner (Malibu)	1
4		07A21908	BRACKET, Alternator Bracket Inner (Malibu)	1
5		STD-35	WASHER, 5/16 plain	6
6		LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex. head	3
7		LW-31H2.75	BOLT, 5/16-18 X 2.75 Long Hex D	2
8		07A21910	BRACKET, Alternator aft (Malibu)	1
9		STD-690	WASHER, 0.81 O.D. x 0.39 I.D. x 1/16 thick	8
10		LW-31H2.13	BOLT, 5/16-18 x 2.13 Long hex dr	2
11		07F21298	LINK, Alternator adjusting (Prestolite)	1
12		STD-1727	WASHER, Plain-0.33 I.D. x 0.75 O.D.	1
13		AN6-15	BOLT, 3/8-24UNF x 1.70 lg dr s	1
14		STD-872	NUT, 3/8-24 Slotted	2
15		STD-713	PIN-COTTER, 0.09 dia x 0.75 long	2
16		AN6-21	BOLT, 3/8-24UNF X 2.20 lg-dr Slotted	1
17		76534	SHIM, 1.13 O.D. x .4 I.D. x 0.005 thick	AR
18		36A19951	PULLEY and SHAFT, Assy 0.38 Belt	1
19		STD-669	WASHER, 0.52 I.D. x 1.00 O.D. x 0.13 thick	1
20		STD-2221	NUT, 1/2-20 Self locking	1
21		01L21916	SPACER, Alternator (Prestolite)	1

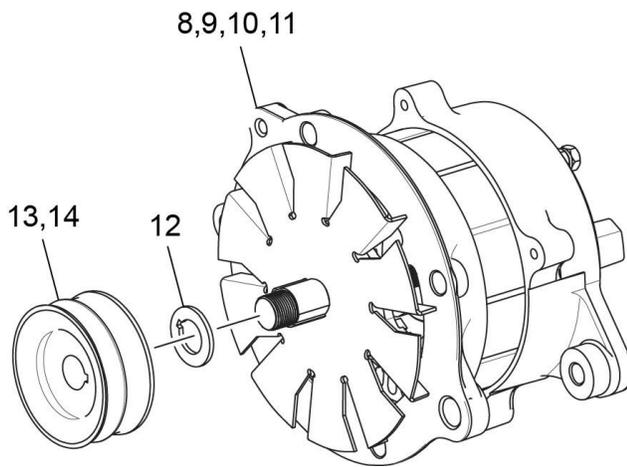
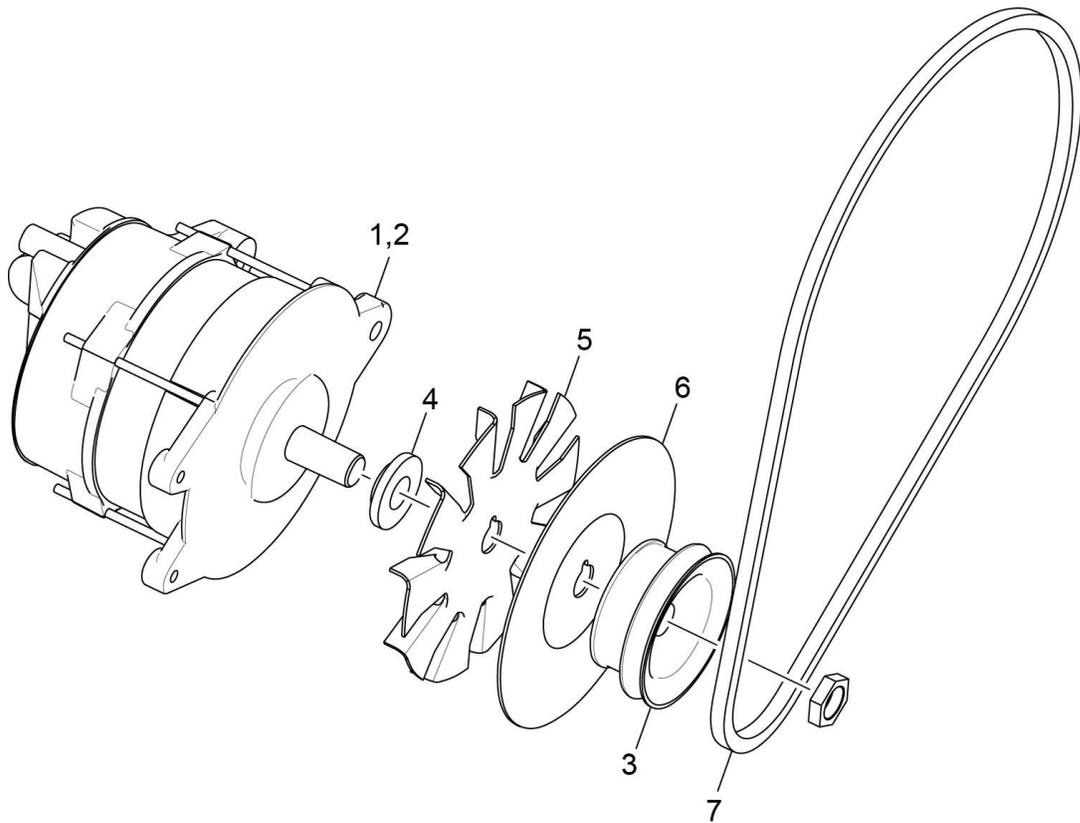


Figure 2
Alternator Assembly and Belt

DC GENERATION

Figure 2 -Alternator Assembly and Belt

Figure Item	Code	Part Number	Description	Units per Assembly			
				C 1 A 6	C 3 A 6	C 1 B 6	C 3 B 6
1	V	32B19549	ALTERNATOR ASSEMBLY, 12V, 70A	1	1	1	1
	❖	32C19553	ALTERNATOR ASSEMBLY, 24V 70A	1	1	1	1
2	V	LW-14318	ALTERNATOR, 12V, 70A (ALX-8521-LS)	1	1	1	1
	V ❖	LW-14326	ALTERNATOR, 24V, 70A (ALU8521-LS)	1	1	1	1
3		36B19484	PULLEY, Alternator	1	1	1	1
4		32F21674	SPACER, Alternator fan	1	1	1	1
		32F21668	SPACER, Alternator fan	1	1	1	1
5		32G21675	FAN, Alternator	1	1	1	1
		32G21669	FAN, Alternator	1	1	1	1
6		332R21676	BACK PLATE, Alternator fan	1	1	1	1
7		37A19773-376	BELT, Alternator drive, 3/8 wide	1	1	1	1
	◆	37A19773M396	BELT, Alternator drive, 3/8 wide, Set of 2				1
	▲	37A19773-390	BELT, Alternator, 3/8 wide, 39.000 long	1	1	1	1
	▲	37A19773-470	BELT, Alternator drive 3/8 wide	1	1	1	1
	▲	37B19774-482	BELT, Compressor drive 1/2 wide	1	1	1	1
8		32C22528	ALTERNATOR ASSY, 24V, 75A			1	1
9	V	32C22515	ALTERNATOR, 24V, 75A (ALU6539-LS)			1	1
10		32C22527	ALTERNATOR ASSY, 24V, 75A			1	1
11	V	32C22515	ALTERNATOR, 24V, 75A (ALU6539-LS)			1	1
12		LW-15403	WASHER, Alternator, 0.67ID X 1.16			1	1
13		36B19900	PULLEY, Alternator			1	1
14		36B19887	PULLEY, Alternator			1	1
❖ Optional 24V, 70A Alternator							
◆ Used with optional dual alternator.							
▲ Used with optional dual-alternator and A/C compressor front end accessory drive.							

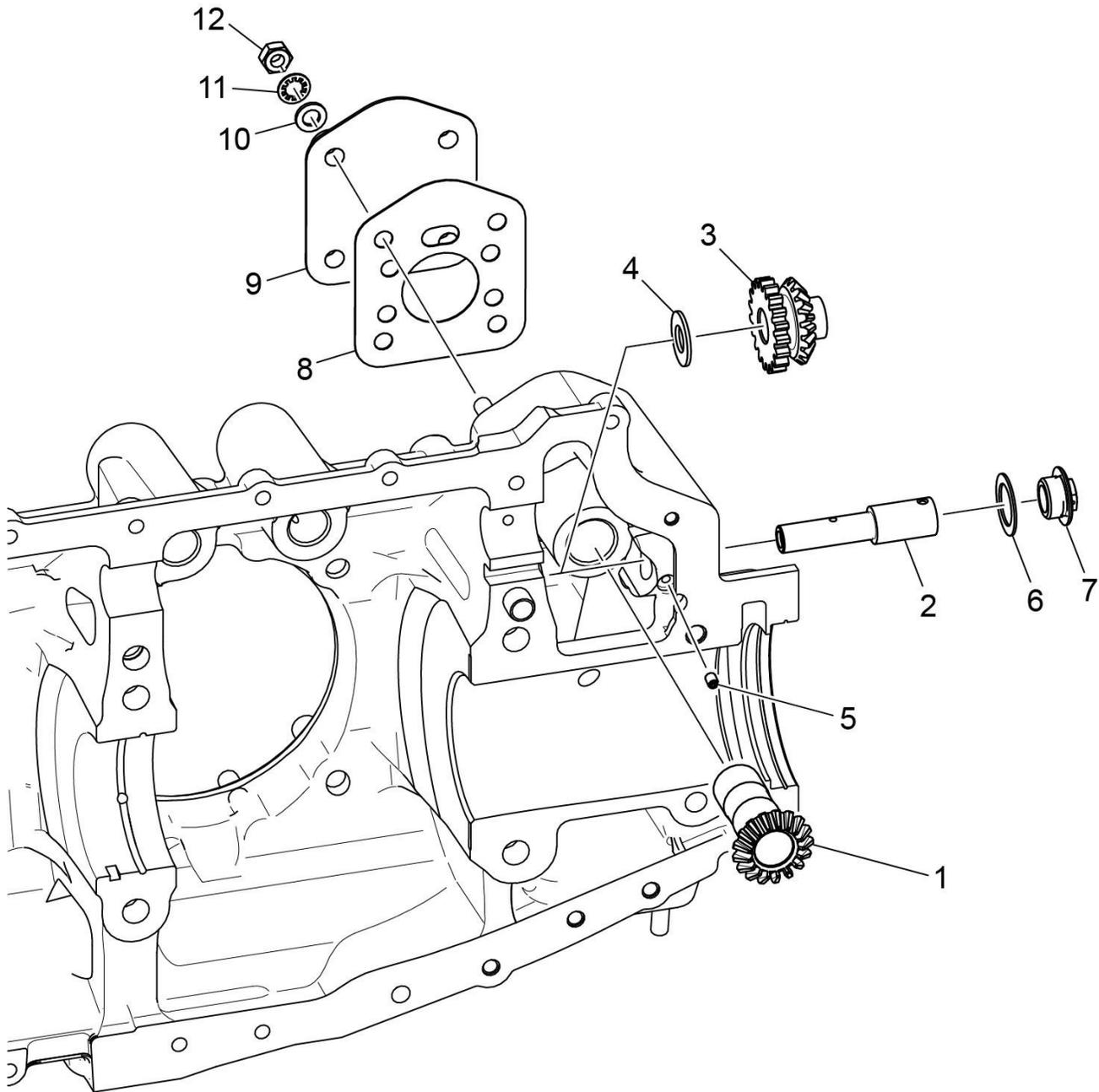


Figure 3
Propeller Governor Drive and Attaching Parts

FRONT SECTION**Figure 3 – Propeller Governor Drive and Attaching Parts**

Figure Item	Code	Part Number	Description	Units per Assembly			
				C 1 A 6	C 3 A 6	C 1 B 6	C 3 B 6
1		77875	GEAR, Propeller governor driven			1	1
2		LW-14021	SHAFT, Propeller governor idler gear			1	1
3		77874	GEAR ASSEMBLY, Propeller governor idler			1	1
4		73249	WASHER, Thrust (0.0585 - 0.0595 thick)			AR	AR
		73250	WASHER, Thrust (0.062 - 0.063 thick)			AR	AR
		73251	WASHER, Thrust (0.0655 - 0.0665 thick)			AR	AR
		73252	WASHER, Thrust (0.069 - 0.070 thick)			AR	AR
		01L21418	WASHER, Thrust (0.055 - 0.056 thick)			AR	AR
5		AN565B1032H5	SET SCREW, No. 10-32 x 5/16 long			1	1
6		70455	GASKET, 25/32 I.D. x 1-1/8 O.D. x 1/32 thick			1	1
7		LW-13896	PLUG, 3/4-16 hex. head			1	1
8		72053	GASKET, Governor	1	1	1	1
9		72378	COVER, Governor drive	1	1	1	1
10		STD-35	WASHER, 5/16 plain	4	4	4	4
11		STD-475	WASHER, 5/16 lock, internal teeth	4	4	4	4
12		STD-1410	NUT, 5/16-18 plain	4	4	4	4
AR – As Required							

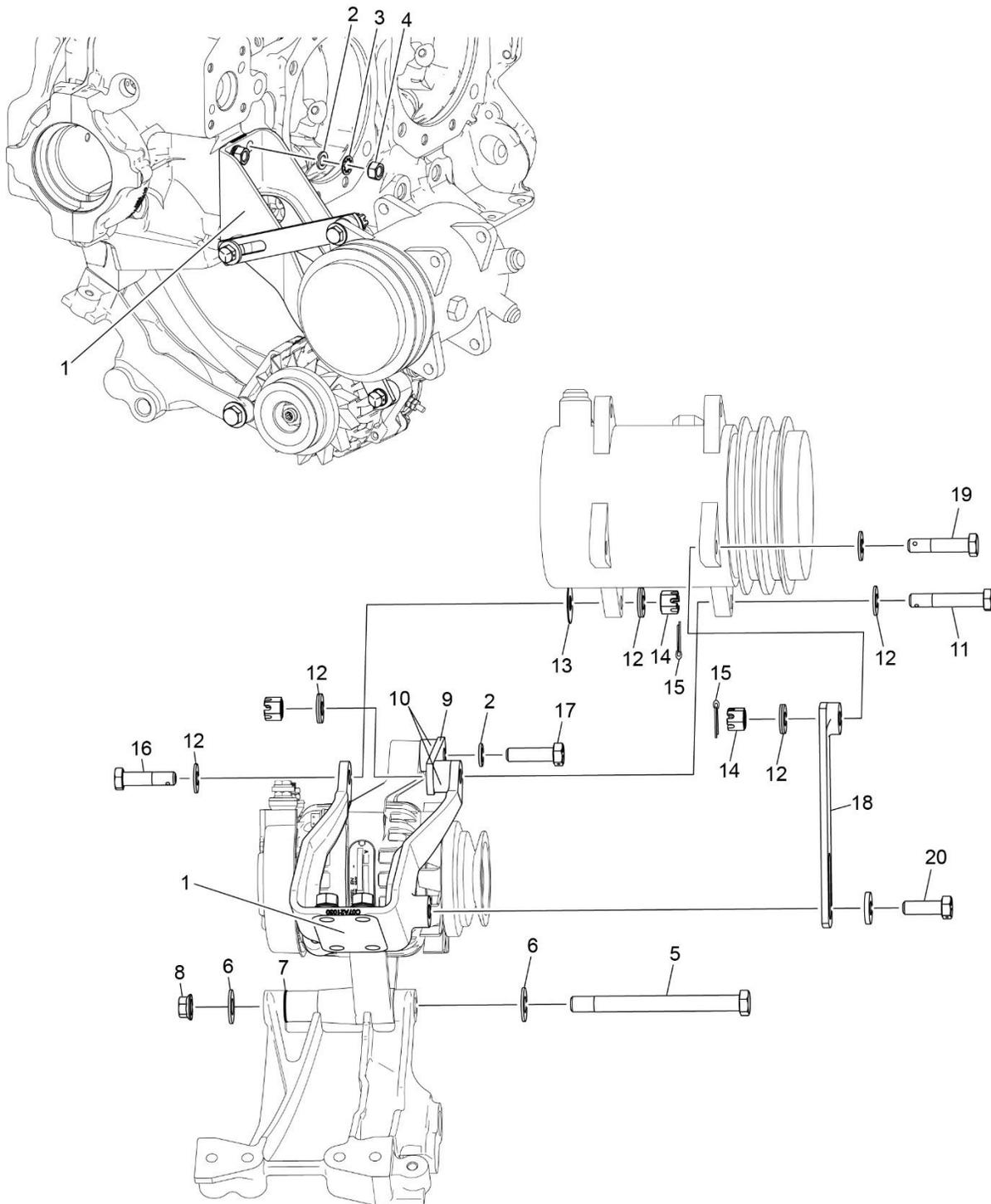


Figure 4
Compressor Attaching Parts

AC GENERATION**Figure 4 - Compressor Attaching Parts**

Figure Item	Code	Part Number	Description	Units per Assembly			
				C 1 A 6	C 3 A 6	C 1 B 6	C 3 B 6
1		07A21030	BRACKET, Compressor			1	1
2		STD-33	WASHER, 3/8 plain			4	4
3		STD-678	WASHER, 3/8 lock, internal teeth			4	4
4		383-B	NUT, 3/8-24 plain			4	4
5		AN7-45A	BOLT, 7/16-20 UNF-3A x 4.72 long			1	1
6		STD-632	WASHER, 7/16 plain			2	2
7		LW-14650	SHIM, 7/8 O.D. x 0.46 I.D. x .005 thick			12	12
8		NAS1291-7	NUT, Self lock, 7/16-20 UNJF-3B			1	1
	*	NAS1291C7	NUT, Self lock, 7/16-20 UNJF-3B A286 CRES			1	1
9		07F28426	BRACE, Alternator			1	1
10		01L21916	SPACER, Alternator (Prestolite)			2	1
11		AN6-20	BOLT, 3/8-24 x 2.08 hex head			1	1
12		STD-690	WASHER, 0.81 O.D. x 0.39 I.D. x 1/16 thick			6	6
13		76534	SHIM, 1.13 O.D. x .41 I.D. x 0.005 TH			AR	AR
14		STD-872	NUT, 3/8-24, slotted			2	2
15		STD-713	PIN-COTTER, 0.09 DIA x 0.75 LONG			3	3
16		AN6-13	BOLT, 3/8-24 x 1.45 LG-DR			1	1
17		LW-38H1.31	BOLT, 3/8-16 x 1.31 LONG HEX D			1	1
18		07F28736	LINK, Freon compressor			1	1
19		AN6-15	BOLT, 3/8-24UNF x 1.70 lg dr s			1	1
20		LW-38H1.09	BOLT, 3/8-16 x 1.09 LONG HEX D			1	1

* Part number NAS1291C7 is an approved alternate for part number NAS1291-7

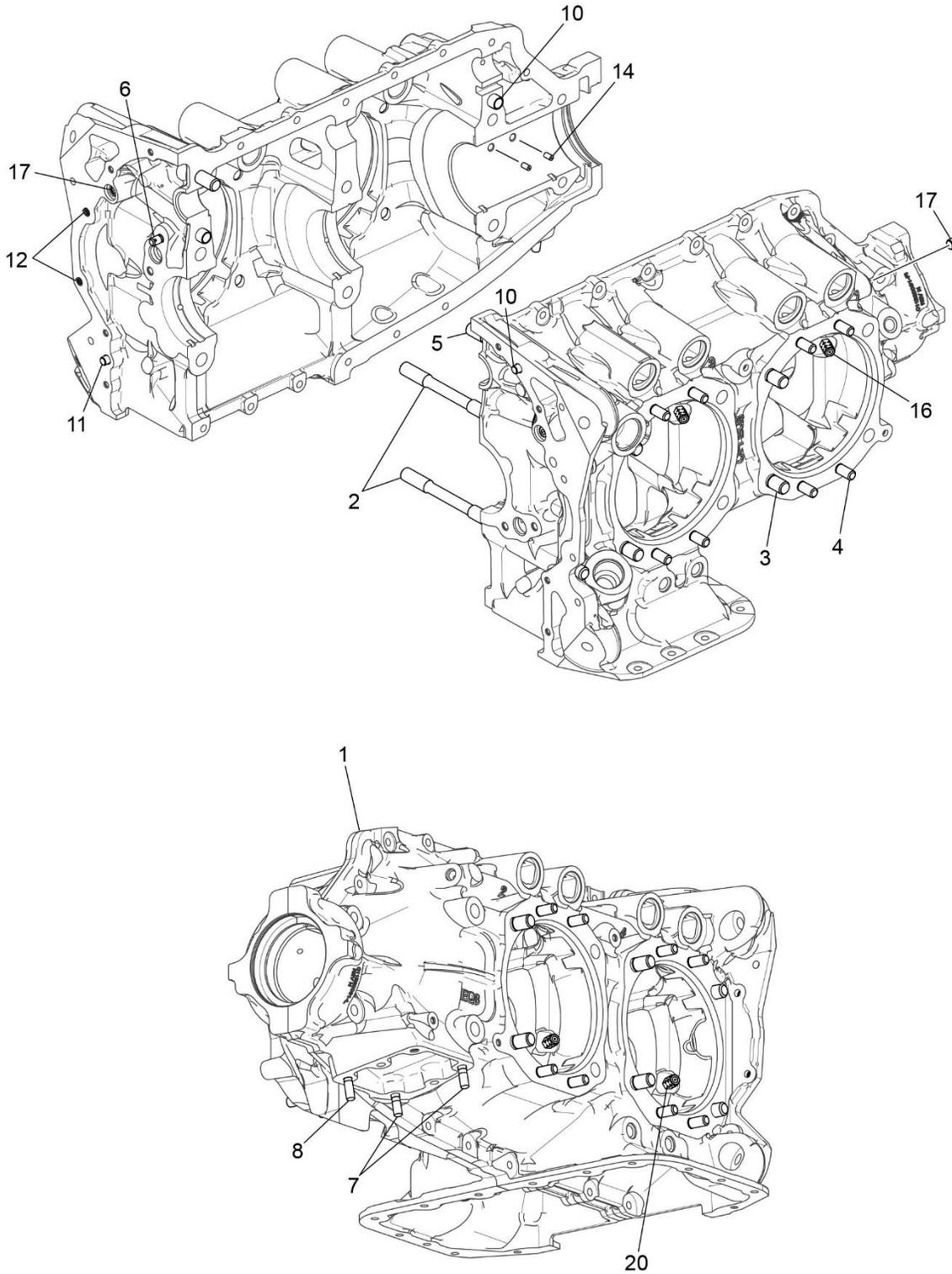


Figure 5A
Crankcase Assembly - C1A6 and C3A6

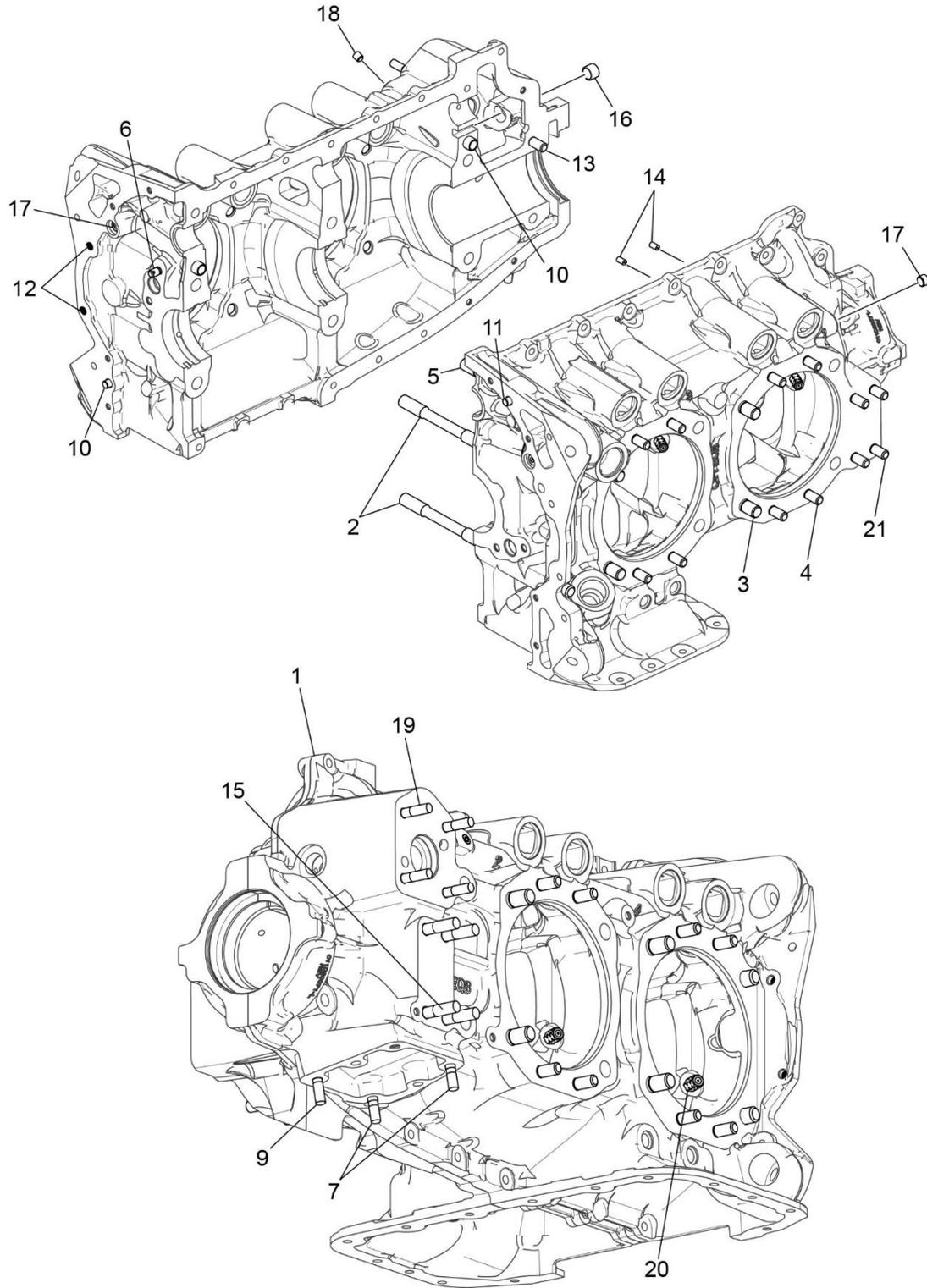


Figure 5B
Crankcase Assembly - C1B6 and C3B6

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POWER SECTION**Figure 5A/5B - Crankcase Assembly**

Figure Item	Code	Part Number	Description	Units per Assembly			
				C 1 A 6	C 3 A 6	C 1 B 6	C 3 B 6
1		11U20391-1S	CRANKCASE ASSEMBLY	1	1		
		11U28750-1S	CRANKCASE ASSEMBLY			1	1
		11U28752-1S	CRANKCASE ASSEMBLY			1	1
2		01A23544	STUD, 1/2-13 x 9-27/32 long	2	2	2	2
3		50-15	STUD, 1/2-13 x 1-7/8 long	8	8	8	8
4		38-13	STUD, 3/8-16 x 1-5/8 long	13	13	13	13
5		38D-17	STUD, 3/8-16 x 2-1/8 long, drilled	1	1	1	1
6		LW-13793	STUD, 5/16-18 x 15/16 long, drilled	1	1	1	1
7		31C-12	STUD, 5/16-18 x 1-1/2 long	2	2	2	2
8		31C-13	STUD, 5/16-18 x 15/16 long	1	1		
9		31C-14	STUD, 5/16-18 x 1-1/2 long			1	1
10		STD-557	DOWEL, 1/2 diameter x 11/16 long, hollow	2	2	2	2
11		STD-514	DOWEL, 5/16 diameter x 1/2 long	2	2	2	2
12		STD-1623	INSERT, 1/4-20 UNC x 3/8 long	2	2	2	2
13		38-22	STUD, 3/8-16 x 2-3/4 long			1	1
14		69796	DOWEL, Crankshaft bearing	2	2	2	2
15		38-13	STUD, 3/8-16 x 1-5/8 long			4	4
16		72158	BUSHING, Governor drive idler shaft			1	1
17		1102	PLUG, 1/8-27 NPT, Allen head	6	6	5	5
18		STD-1339	PLUG, 1/16-27 NPT, Allen head			1	1
19		31C-17	STUD, 5/16-18 x 2-1/8 long			4	4
		31C-16	STUD, 5/16-18 x 2.00 long (use with Crankcase Assembly 11U28750-1S)			4	4
20		12E23021	NOZZLE ASSEMBLY, Piston cooling	4	4	4	4
21		31C-19	STUD, 5/16-18 x 2.38 long			4	4

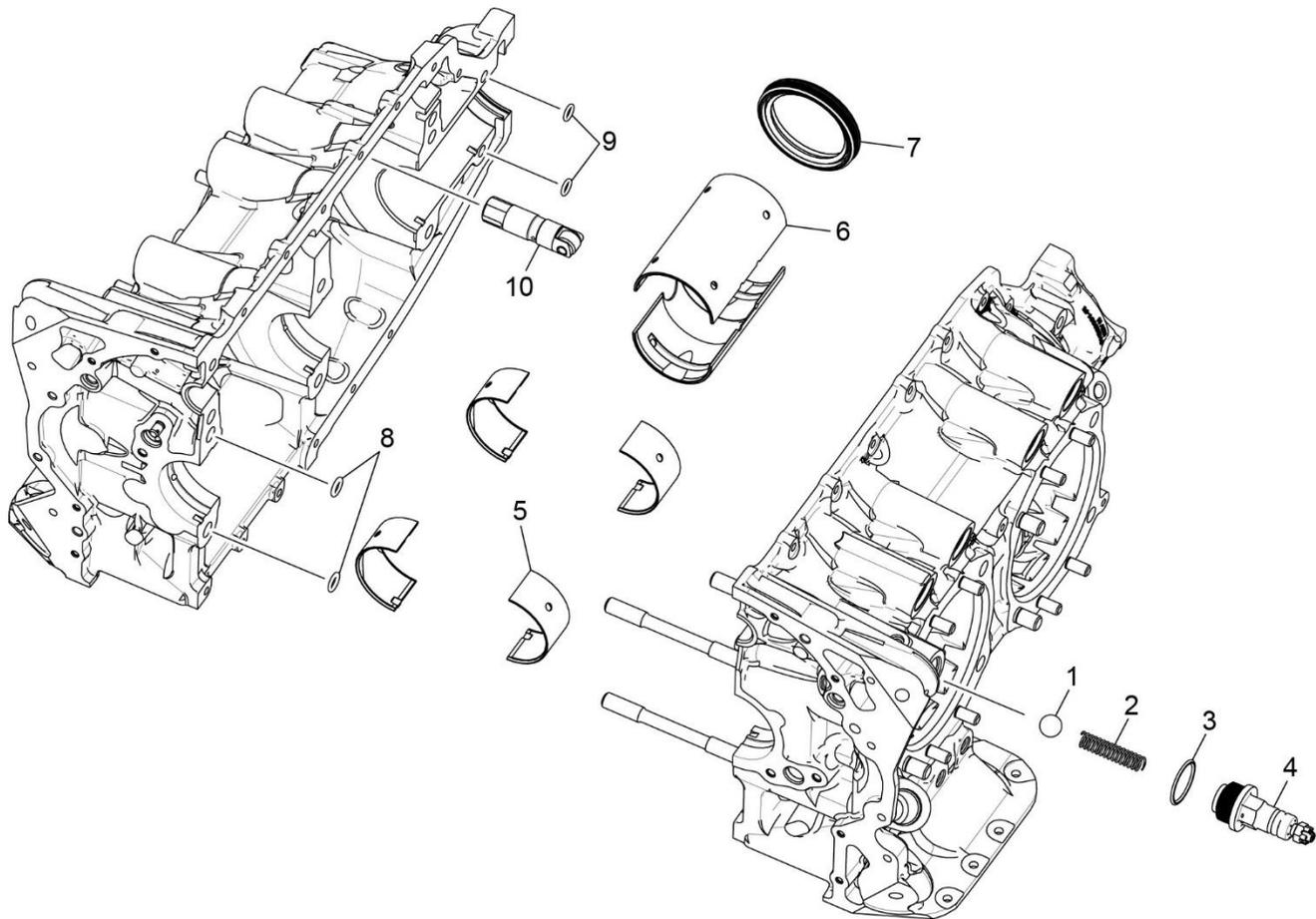


Figure 6
Crankcase Related Parts

POWER SECTION**Figure 6 - Crankcase Related Parts**

Figure Item	Code	Part Number	Description	Units per Assembly
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, 1-1/4 I.D. x 1-1/2 O.D. x 3/32 annular	1
4		77808	VALVE ASSEMBLY, Oil pressure relief valve	1
5		18E23886	BEARING, Crankshaft	4
6		18B23885	BEARING, Crankshaft, front	2
7	▲	LW-15628	SEAL, Crankshaft, Oil	1
8		72075	SEAL, Oil, 3/32 section x 7/16 I.D.	2
9		72091	RING, Oil seal, 23/64 I.D. x 1/10 diameter	2
10	●	LRT23381	BODY ASSEMBLY, Hydraulic roller tappet	8

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

▲ Refer to latest revision of Lycoming Service Instruction No. 1324 for installation.

● Sold as exchange part only.

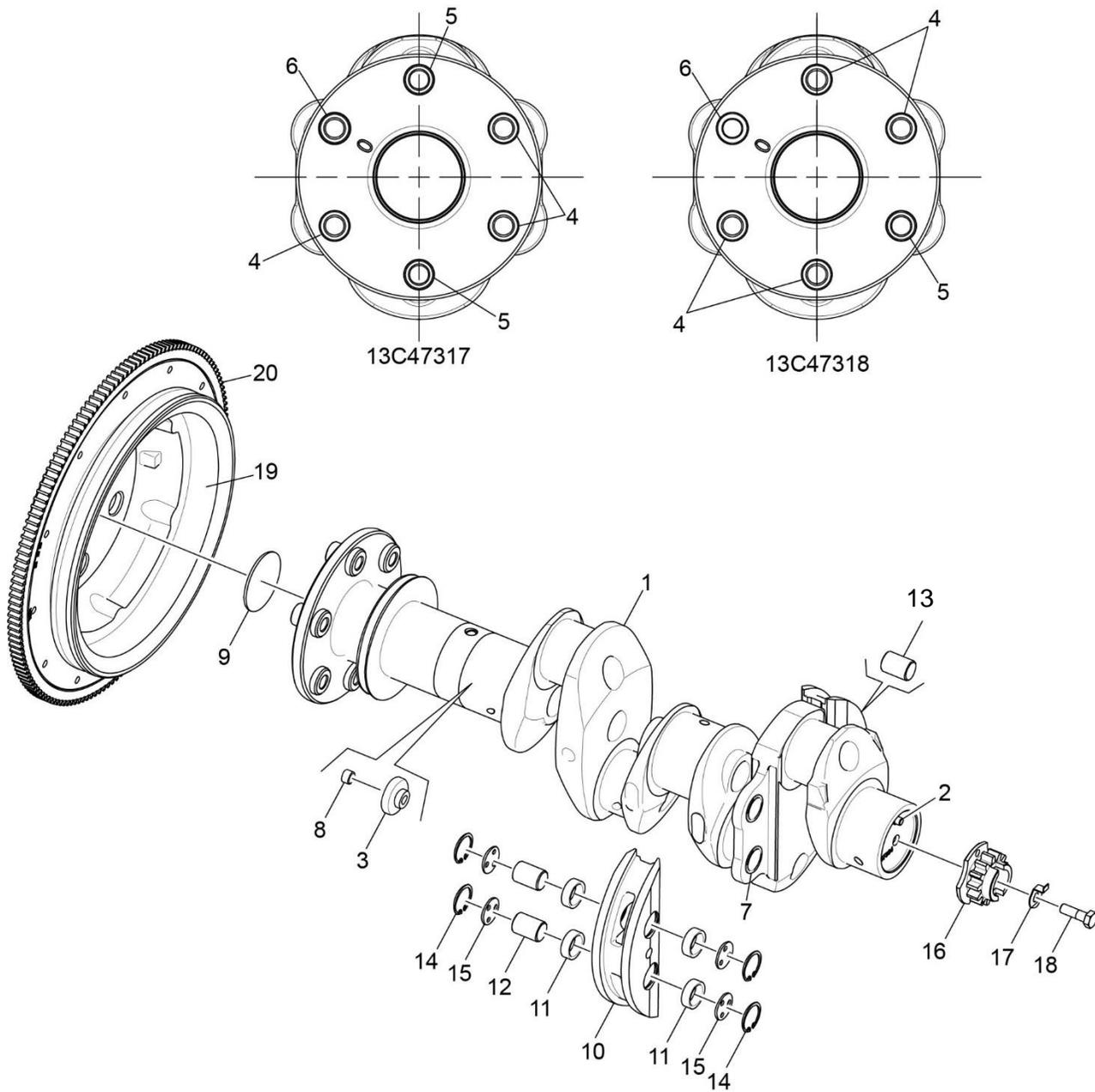


Figure 7
Crankshaft and Counterweight Assembly and Related Parts

POWER SECTION**Figure 7 - Crankshaft and Counterweight Assembly and Related Parts**

Figure Item	Code	Part Number	Description	Units per Assembly			
				C 1 A 6	C 3 A 6	C 1 B 6	C 3 B 6
1		13C47317	CRANKSHAFT AND BUSHING ASSEMBLY	1		1	
		13C47318	CRANKSHAFT AND BUSHING ASSEMBLY		1		1
2		STD-1065	DOWEL, Stepped, 5/16 & 1/4 diameter	1	1	1	1
3		74711	PLUG, 1-1/4	1	1	1	1
4		75656-S	BUSHING, Prop flange, long	3	4	3	4
5		72155-S	BUSHING, Prop flange, short	2	1	2	1
6		79024-S	BUSHING, Propeller flange, indexing	1		1	
		75657-S	BUSHING, Propeller flange, indexing		1		1
7		73810	BUSHING, Crankshaft counterweight	4	4	4	4
8		1102	PLUG, 1/8 pipe	1	1	1	1
9		LW-14529	PLUG, 2-1/16 diameter expansion	1	1	1	1
10		LW-19227	COUNTERWEIGHT ASSY	2	2	2	2
11		71903-A	BUSHING, Dynamic counterweight	8	8	8	8
12		14W21696	ROLLER, Dynamic counterweight	2	2	2	2
13		72797	ROLLER, Dynamic counterweight, 6.3 order	2	2	2	2
14		LW-14820	RING, Internal retaining	8	8	8	8
15		71907	WASHER, Counterweight	8	8	8	8
16	❖	13S19646	GEAR, Crankshaft	1	1	1	1
17		LW-18639	LOCKPLATE, Crankshaft gear	1	1	1	1
18		STD-2246	BOLT, 5/16-24 x 1.00 long	1	1	1	1
19		LW-16471	SUPPORT ASSEMBLY, Starter ring gear	1	1		1*
		31M19861	SUPPORT ASSEMBLY, Starter ring gear			1	1
		74977	SUPPORT ASSEMBLY, Starter ring gear				1
20		72566	GEAR, Starter ring, 12/14 pitch	1	1	1	1

❖ Refer to the latest revision of Service Bulletin No. 475 for proper installation.
* Used on IO-390-C3B6 engines with single alternator

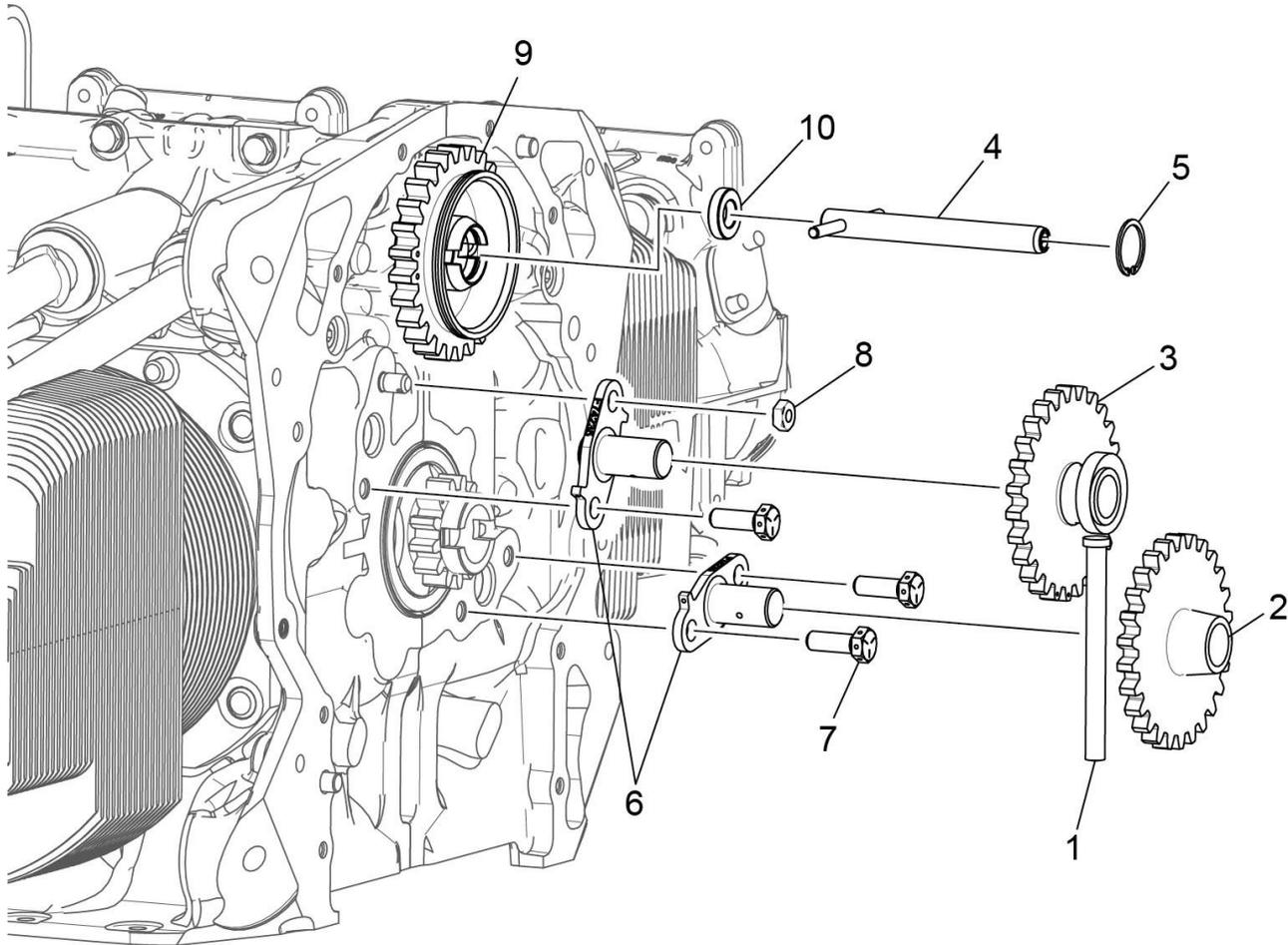


Figure 8
Crankshaft Idler Gears, Tachometer Drive, and Camshaft

POWER SECTION**Figure 8 - Crankshaft Idler Gears, Tachometer Drive, and Camshaft**

Figure Item	Code	Part Number	Description	Units per Assembly			
				C 1 A 6	C 3 A 6	C 1 B 6	C 3 B 6
1		23D26777	PLUNGER, Fuel pump, long	1	1	1	1
2		74996	GEAR ASSEMBLY, Crankshaft idler, plain	1	1	1	1
3		75072	GEAR ASSEMBLY, Crankshaft idler	1	1	1	1
4	❖	76121	SHAFT ASSEMBLY, Tachometer	1	1	1	1
5	❖	STD-2231	RING, Internal retaining	1	1	1	1
6		LW-13796	SHAFT, Crankshaft idler gear	2	2	2	2
7		LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex. head, drilled	3	3	3	3
8		STD-2168	NUT, 5/16-18 NC-3 slotted shear	1	1	1	1
9		15M23452	CAMSHAFT ASSEMBLY	1	1		
		15M23456	CAMSHAFT ASSEMBLY			1	1
10	❖	76118	SPACER, Tachometer shaft centering	1	1	1	1
❖ Optional							

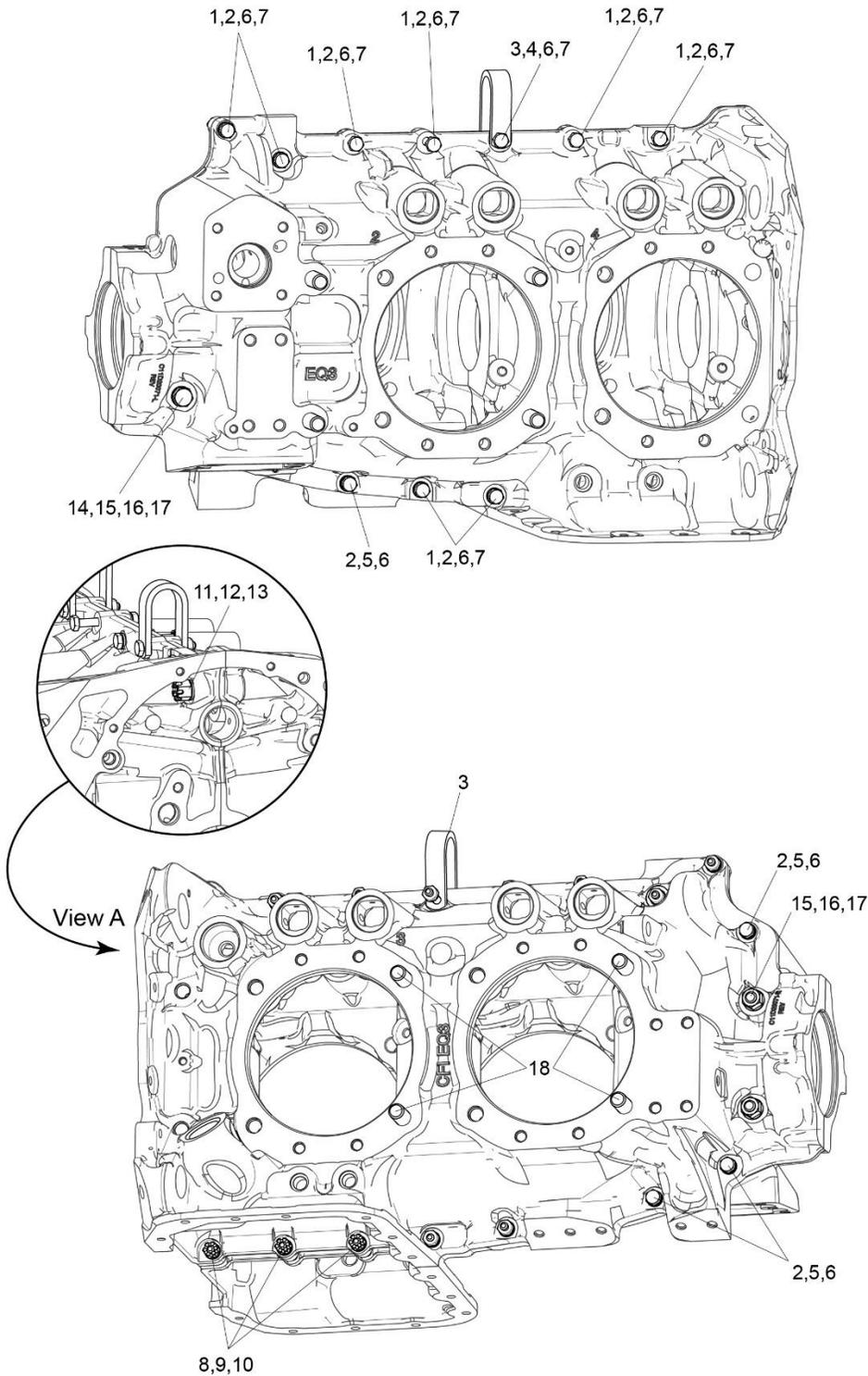


Figure 9A
Crankcase Attaching Parts (C1A6 and C3A6)
(Use with Crankcase Assembly P/N 11U20391-1S)

POWER SECTION

**Figure 9A - Crankcase Attaching Parts (C1A6 and C3A6)
(Use with Crankcase Assembly P/N 11U20391-1S)**

Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-25-1.50	BOLT, 1/4-20 x 1-1/2 long, hex. head	8
2		STD-8	WASHER, 1/4 plain	19
3		60803	STRAP, Lifting	1
4		LW-25-1.75	BOLT, 1/4-20 x 1-3/4 long, hex. head	1
5		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	3
6		STD-160	WASHER, 1/4 lock, internal teeth	12
7		STD-1411	NUT, 1/4-20 plain	9
8		LW-25S1.50	BOLT, 1/4-20 x 1-1/2 long, hex. head, drilled	3
9	AR	STD-8	WASHER, 1/4 plain	9
10		STD-2249	NUT, 1/4-20 slotted	3
11	AR	STD-33	WASHER, 3/8 plain	1
12	AR	NAS1149F0632P	WASHER, 3/8 plain, thin	1
13		STD-872	NUT, 3/8-24 slotted	1
14		AN6-34A	BOLT, 3/8-24 x 3-37/64 long, hex. head	2
15		STD-33	WASHER, 3/8 plain	4
16		STD-678	WASHER, 3/8 lock, internal teeth	2
17		STD-596	NUT, 3/8-24 plain	2
18		01A22453	STUD, 1/2-20 x 10-1/2 long	4

AR – As Required

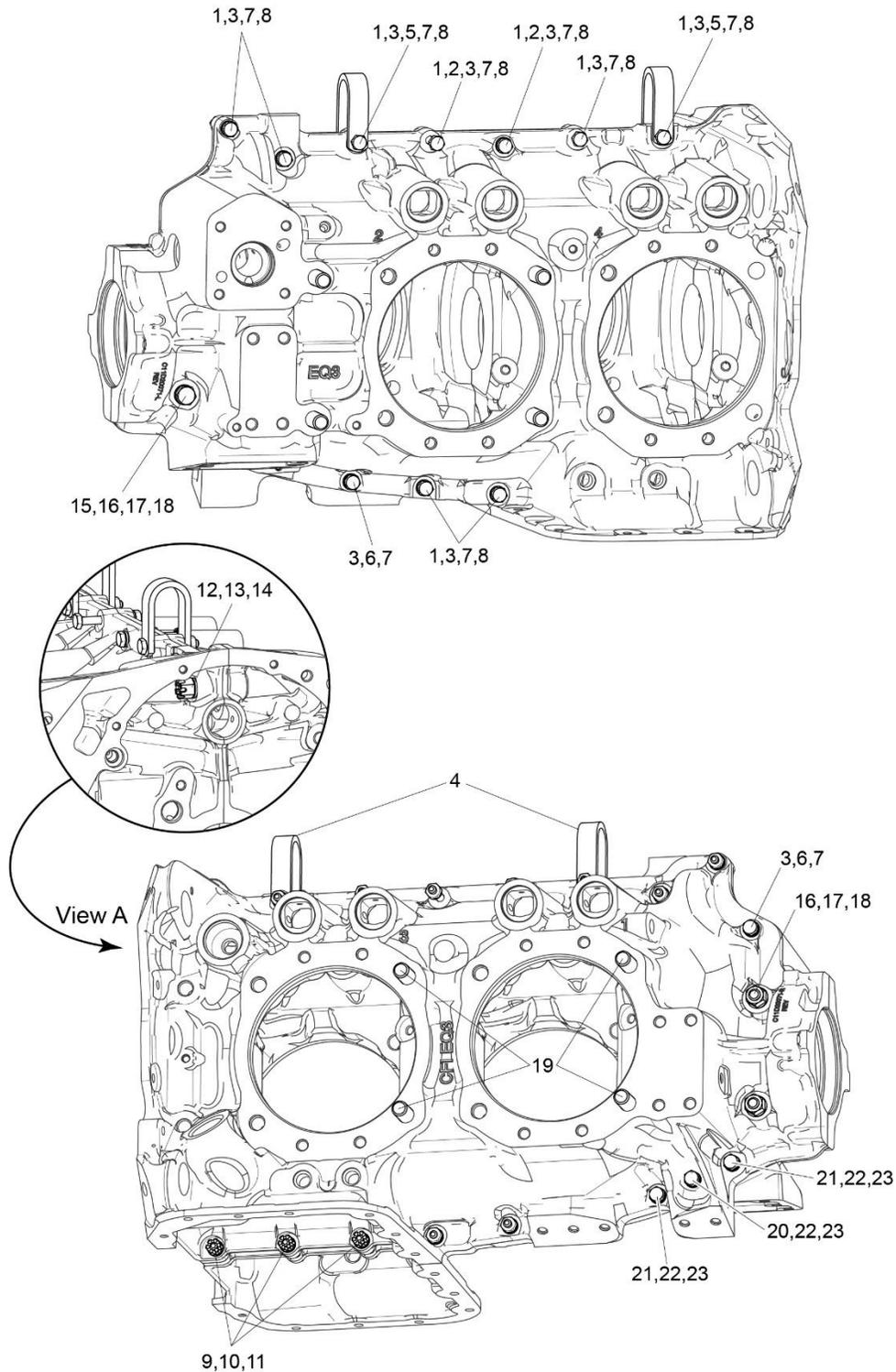


Figure 9B
Crankcase Attaching Parts (C1B6 and C3B6)
(Use with Crankcase Assembly P/N 11U28752-1S)

POWER SECTION

**Figure 9B - Crankcase Attaching Parts (C1B6 and C3B6)
(Use with Crankcase Assembly P/N 11U28752-1S)**

Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-25-1.50	BOLT, 1/4-20 x 1-1/2 long, hex. head	5
2		LW-25-2.13	BOLT, 1/4-20 x 2-1/8 long hex. head	2
3		STD-8	WASHER, 1/4 plain	14
4		60803	STRAP, Lifting	2
5		LW-25-1.75	BOLT, 1/4-20 x 1-3/4 long, hex. head	2
6		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	1
7		STD-160	WASHER, 1/4 lock, internal teeth	10
8		STD-1411	NUT, 1/4-20 plain	9
9		LW-25S1.50	BOLT, 1/4-20 x 1-1/2 long, hex. head, drilled	3
10	AR	STD-8	WASHER, 1/4 plain	9
11		STD-2249	NUT, 1/4-20 slotted	3
12	AR	STD-33	WASHER, 3/8 plain	2
13	AR	NAS1149F0632P	WASHER, 3/8 plain, thin	3
14		STD-872	NUT, 3/8-24 slotted	1
15		AN6-34A	BOLT, 3/8-24 x 3-37/64 long, hex. head	1
16		STD-33	WASHER, 3/8 plain	3
17		STD-678	WASHER, 3/8 lock, internal teeth	2
18		STD-596	NUT, 3/8-24 plain	2
19		01A22453	STUD, 1/2-20 x 10-1/2 long	4
20		LW-31-1.25	BOLT, 5/16-18 x 1-1/4 long, hex. head	1
21		LW-31-1.16	BOLT, 5/16-18 x 1-1/8 long, hex. head	2
22		STD-35	WASHER, 5/16 plain	3
23		STD-475	WASHER, 5/16 lock, internal teeth	3

AR – As Required

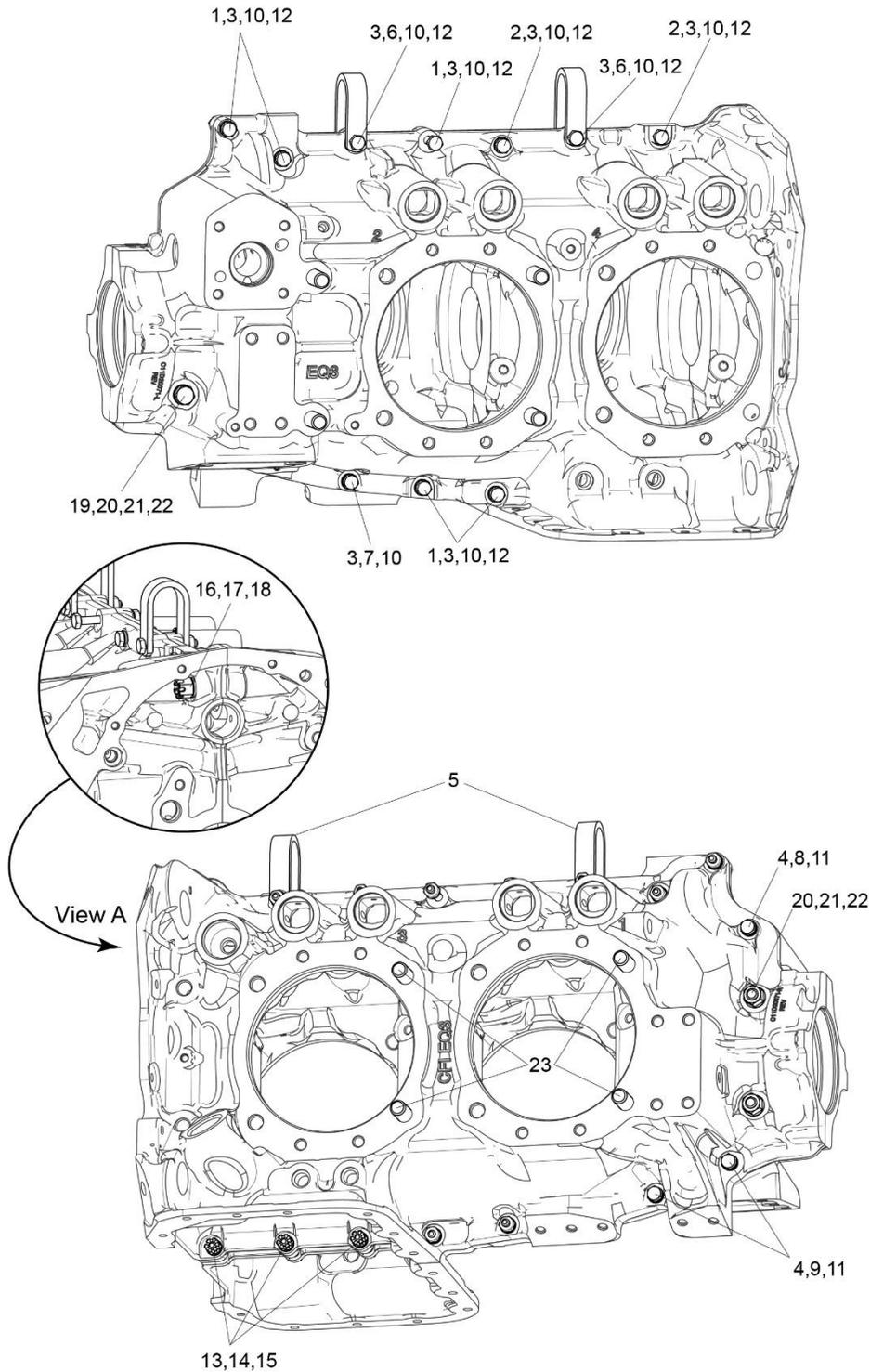


Figure 9C
Crankcase Attaching Parts
-C3B6 Equipped for Freon Compressor Installation
(Use with Crankcase Assembly P/N 11U28750-1S)

POWER SECTION

**Figure 9C - Crankcase Attaching Parts
-C3B6 Equipped for Freon Compressor Installation
(Use with Crankcase Assembly P/N 11U28750-1S)**

Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-25-1.50	BOLT, 1/4-20 x 1-1/2 long, hex. head	5
2		LW-25-2.13	BOLT, 1/4-20 x 2-1/8 long hex. head	2
3		STD-8	WASHER, 1/4 plain	14
4		STD-35	WASHER, 5/16 plain	4
5		60803	STRAP, Lifting	2
6		LW-25-1.75	BOLT, 1/4-20 x 1-3/4 long, hex. head	2
7		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	1
8		LW-31-1.31	BOLT, 5/16-18 x 1-5/16 long, hex. head	2
9		LW-31-1.16	BOLT, 5/16-18 x 1-5/32 long, hex. head	2
10		STD-160	WASHER, 1/4 lock, internal teeth	10
11		STD-475	WASHER, 5/16 lock, internal teeth	4
12		STD-1411	NUT, 1/4-20 plain	9
13		LW-25S1.50	BOLT, 1/4-20 x 1-1/2 long, hex. head, drilled	3
14	AR	STD-8	WASHER, 1/4 plain	9
15		STD-2249	NUT, 1/4-20 slotted	3
16	AR	STD-33	WASHER, 3/8 plain	2
17	AR	NAS1149F0632P	WASHER, 3/8 plain, thin	3
18		STD-872	NUT, 3/8-24 slotted	1
19		AN6-34A	BOLT, 3/8-24 x 3-37/64 long, hex. head	1
20		STD-33	WASHER, 3/8 plain	3
21		STD-678	WASHER, 3/8 lock, internal teeth	2
22		STD-596	NUT, 3/8-24 plain	2
23		01A22453	STUD, 1/2-20 x 10-1/2 long	4

AR – As Required

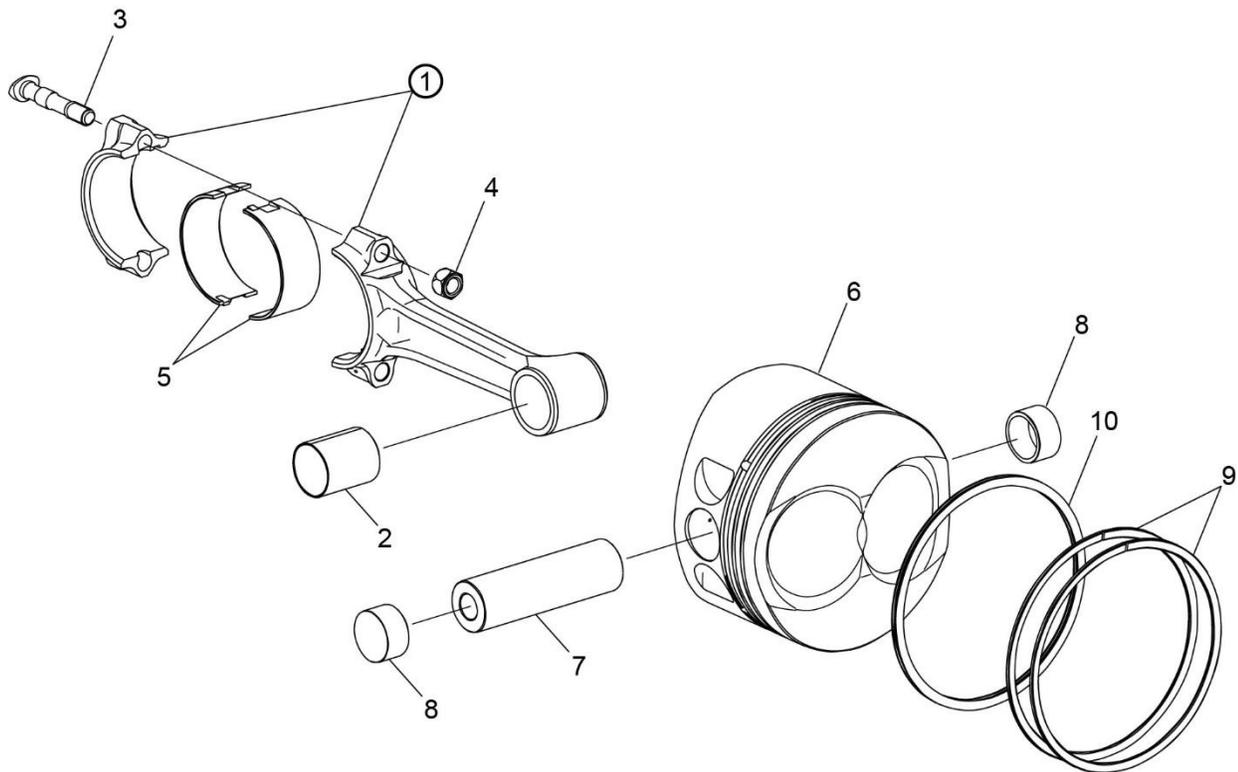


Figure 10
Connecting Rods, Pistons, and Ring Assemblies

CYLINDER SECTION**Figure 10 - Connecting Rods, Pistons, and Ring Assemblies**

Figure Item	Code	Part Number	Description	Units per Assembly
1		77450-S	CONNECTING ROD ASSEMBLY	4
2		LW-13923	BUSHING, Connecting rod, upper	4
3	*	75060	BOLT, Connecting rod	8
4		LW-12186	NUT, Connecting rod bolt	8
5		18M23887	BEARING, Connecting rod	8
6		14E23911	PISTON, Compression ratio 8.90:1	4
7	**	14J22048	PIN, Piston	4
8		72198	PLUG, Piston pin	8
9		14G22050	RING, Piston compression	8
10		14H29865	RING, Piston oil regulating, expander type	4
<p>* Refer to the latest revision of Lycoming Service Instruction No. 1458.</p> <p>** Refer to the latest revision of Lycoming Service Instruction No. 1267.</p>				

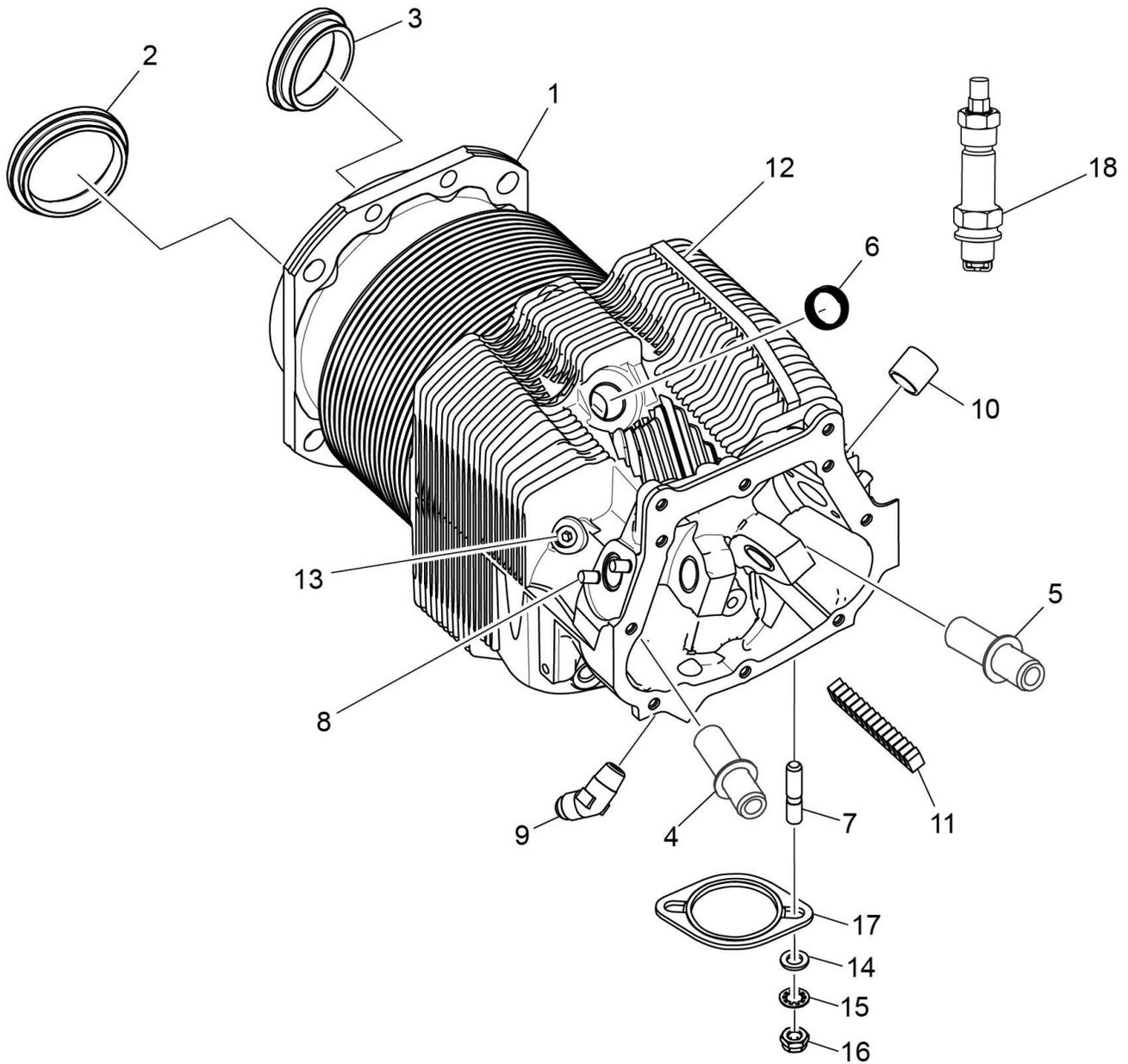


Figure 11
Cylinder Assembly

CYLINDER SECTION**Figure 11 - Cylinder Assembly**

Figure Item	Code	Part Number	Description	Units per Assembly
1		16A26081	CYLINDER AND HEAD ASSEMBLY, Nitrided bore	4
2		72212	SEAT, Intake valve	4
3		16T19468	SEAT, Valve, exhaust	4
4		LW-11956	GUIDE, Valve, intake	4
5		LW-11958	GUIDE, Valve, exhaust	4
6		69260	INSERT, Spark plug, 18-1.5 MM	8
7		31C-13	STUD, 5/16-18 x 1-5/8 long	8
8		25C-8	STUD, 1/4-20 x 1.00 long	16
9		MS20823-6D	ELBOW, 45°, 3/8 flared tube	4
10		66670	BUSHING, Rocker shaft, inner	16
11		72343	STABILIZER, Cylinder head fins, 15 teeth	4
12		72344	STABILIZER, Cylinder head fins, 26 teeth	4
13		1102	PLUG, 1/8-27 NPT, Allen head	4
14		STD-35	WASHER, 5/16 plain	8
15		STD-475	WASHER, 5/16 lock, internal teeth	8
16		STD-1410	NUT, 5/16-18 plain	8
17	❖	77611	GASKET, Exhaust flange	4
18	V ▲	1182-G7	SPARK PLUG, Champion REB37E	8

❖ This part is shipped loose with the engine and optional on all models.
V Vendor Prime Manufacturer part
▲ Refer to the latest revision of Lycoming Service Instruction No. 1042 for a complete listing of all approved spark plugs.

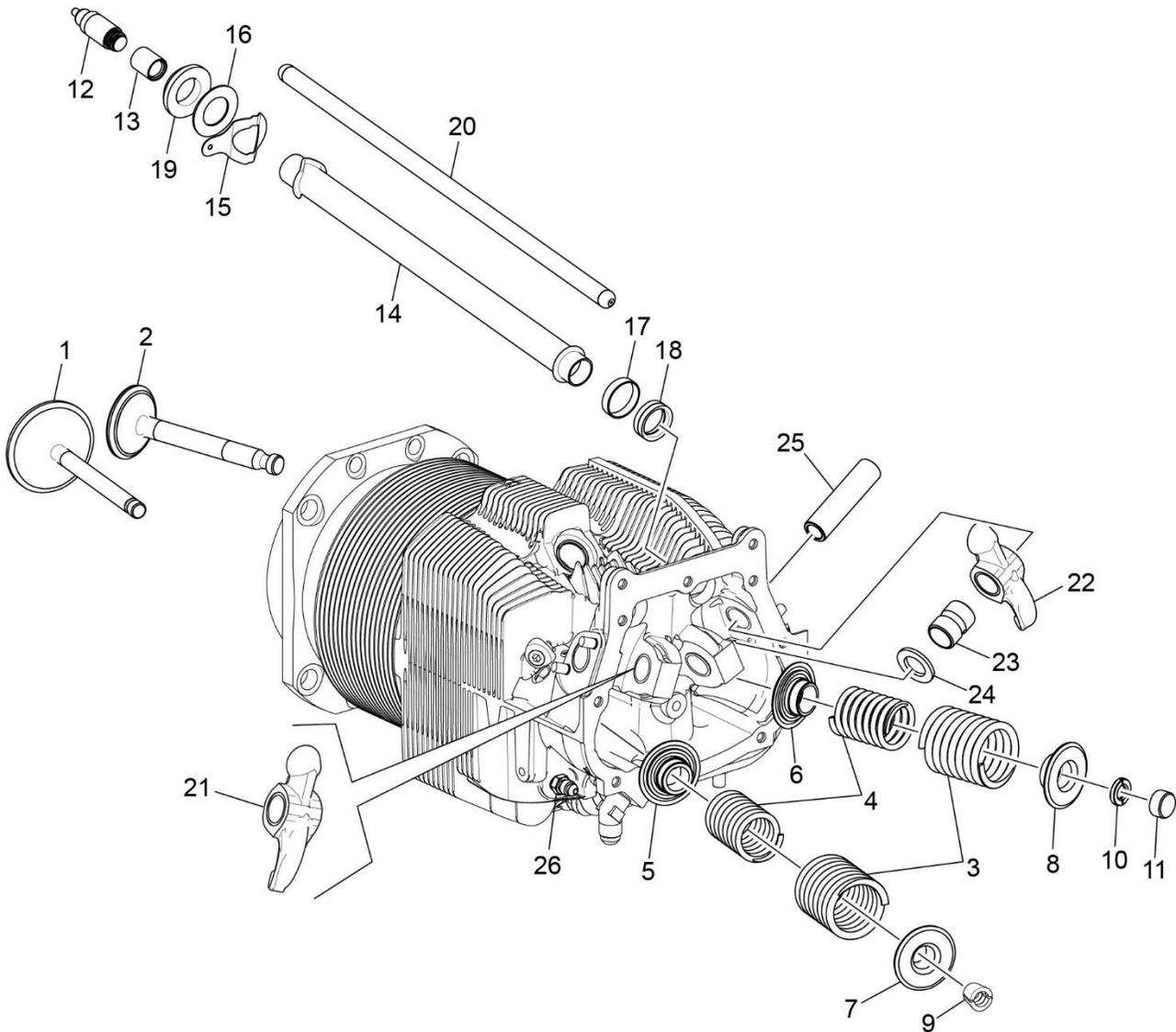


Figure 12
Valve Assembly and Related Parts

CYLINDER SECTION

Figure 12 – Valve Assembly and Related Parts

Figure Item	Code	Part Number	Description	Units per Assembly
1		17A23946	VALVE, Intake	4
2		17B23935	VALVE, Exhaust	4
3		LW-11796	SPRING, Valve, outer	8
4		LW-11797	SPRING, Valve, inner	8
5		LW-13321	SEAT, Valve spring, lower intake	4
6		LW-13322	SEAT, Valve spring, lower exhaust	4
7		LW-10077	SEAT, Valve spring, upper intake	4
8		LW-16475	SEAT, Valve spring, upper exhaust	4
9		60009	KEY, Valve, intake	8
10		17C21191	KEY, Valve, exhaust	8
11		17C19386	CAP, Valve stem, exhaust	4
12		15B26066	PLUNGER ASSEMBLY, Hydraulic tappet	8
13		15B21319	SOCKET, Hydraulic tappet	8
14		15G23462	SHROUD TUBE ASSEMBLY, Push rod	8
15		15H21201	SPRING, Shroud tube	16
16		01L23459	WASHER, 3/4 I.D. x 1-3/8 O.D. x 1/32	8
17		61503	SLEEVE, Shroud tube	8
18		LW-18661	SEAL, Shroud tube	8
19		06A23493	SEAL, Shroud tube	8
20	❖	15F28835-51	ROD ASSEMBLY, Push (A total of 8 required)	AR
	❖	15F28835-52	ROD ASSEMBLY, Push (A total of 8 required)	AR
	❖	15F28835-53	ROD ASSEMBLY, Push (A total of 8 required)	AR
	❖	15F28835-54	ROD ASSEMBLY, Push (A total of 8 required)	AR
	❖	15F28835-55	ROD ASSEMBLY, Push (A total of 8 required)	AR
	❖	15F28835-56	ROD ASSEMBLY, Push (A total of 8 required)	AR
AR – As Required				
❖ See latest revision of Service Instruction No. 1060 for complete push rod application				

(continued on next page)

CYLINDER SECTION
Figure 12– Valve Assembly and Related Parts (Cont.)

Figure Item	Code	Part Number	Description	Units per Assembly
20	❖	15F28864-17	ROD ASSEMBLY, Push (A total of 8 required)	AR
	❖	15F28864-18	ROD ASSEMBLY, Push (A total of 8 required)	AR
	❖	15F28864-19	ROD ASSEMBLY, Push (A total of 8 required)	AR
	❖	15F28864-20	ROD ASSEMBLY, Push (A total of 8 required)	AR
	❖	15F28864-21	ROD ASSEMBLY, Push (A total of 8 required)	AR
	❖	15F28864-22	ROD ASSEMBLY, Push (A total of 8 required)	AR
21	▲	17F21188	ROCKER ASSEMBLY, Valve, intake	4
22	▲	17F21187	ROCKER ASSEMBLY, Valve, exhaust	4
23		74389	BUSHING, Valve rocker	8
24		71549	WASHER, Thrust, valve rocker	8
25		72626	SHAFT, Valve rocker	8
26	●	02G21382	NIPPLE, Nozzle pressure gauge	1

AR – As Required

- ❖ See latest revision of Service Instruction No. 1060 for complete push rod application
- ▲ Due to the size of the area where the part number is stamped, the last five digits (21188) could be all that is shown of the part number.
- Optional fitting for the manifold pressure gage attachment

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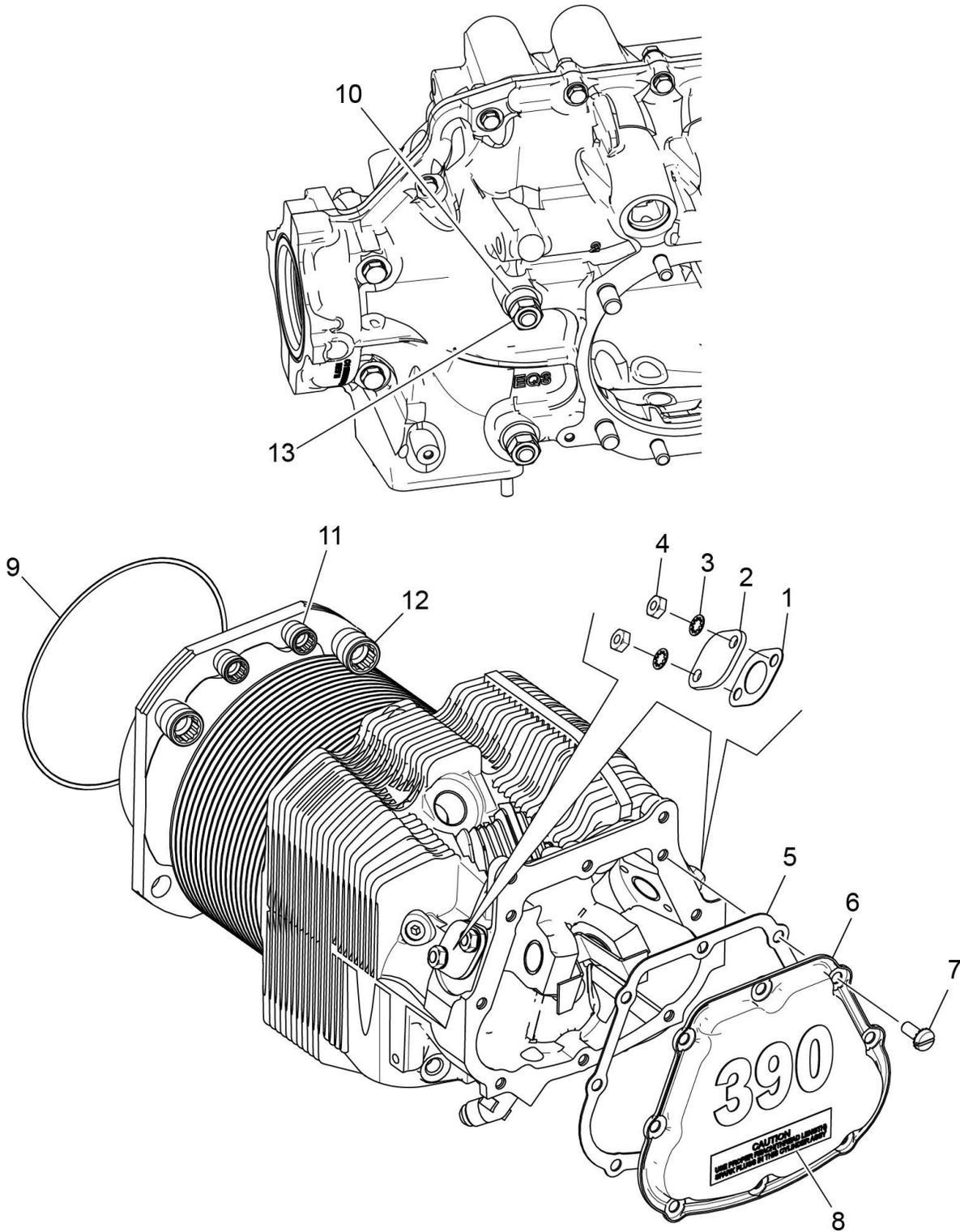


Figure 13
Cylinder Related Parts

CYLINDER SECTION**Figure 13 - Cylinder Related Parts**

Figure Item	Code	Part Number	Description	Units per Assembly
1		66732	GASKET, Valve rocker shaft cover	8
2		17H28668	COVER, Valve rocker shaft	8
3		STD-160	WASHER, 1/4 lock, internal teeth	16
4		STD-1411	NUT, 1/4-20 plain	16
5		06B26811	GASKET, Rocker box cover, silicone	4
6	*	17J28667	COVER ASSEMBLY, Rocker box (Aluminum)	4
	*	17J26469	COVER ASSEMBLY, Rocker box (Steel)	4
7		STD-1925	SCREW, 1/4-20 x 5/8 long, pan hd., self-locking	32
8		74494	PLATE, Spark plug reach caution	4
9		71481	RING, Oil seal, 3/32 diameter x 4-27/32 long	4
10		74887	SPACER, 33/64 I.D. x 7/8 O.D. x 3/8 thick	2
11		71134	NUT, 3/8-24 NF-3	16
12		71133	NUT, 1/2-20 NF-3	16
13		STD-2090	NUT, 1/2-20 plain	2

* Do not intermix aluminum and steel rocker box covers on the same engine.

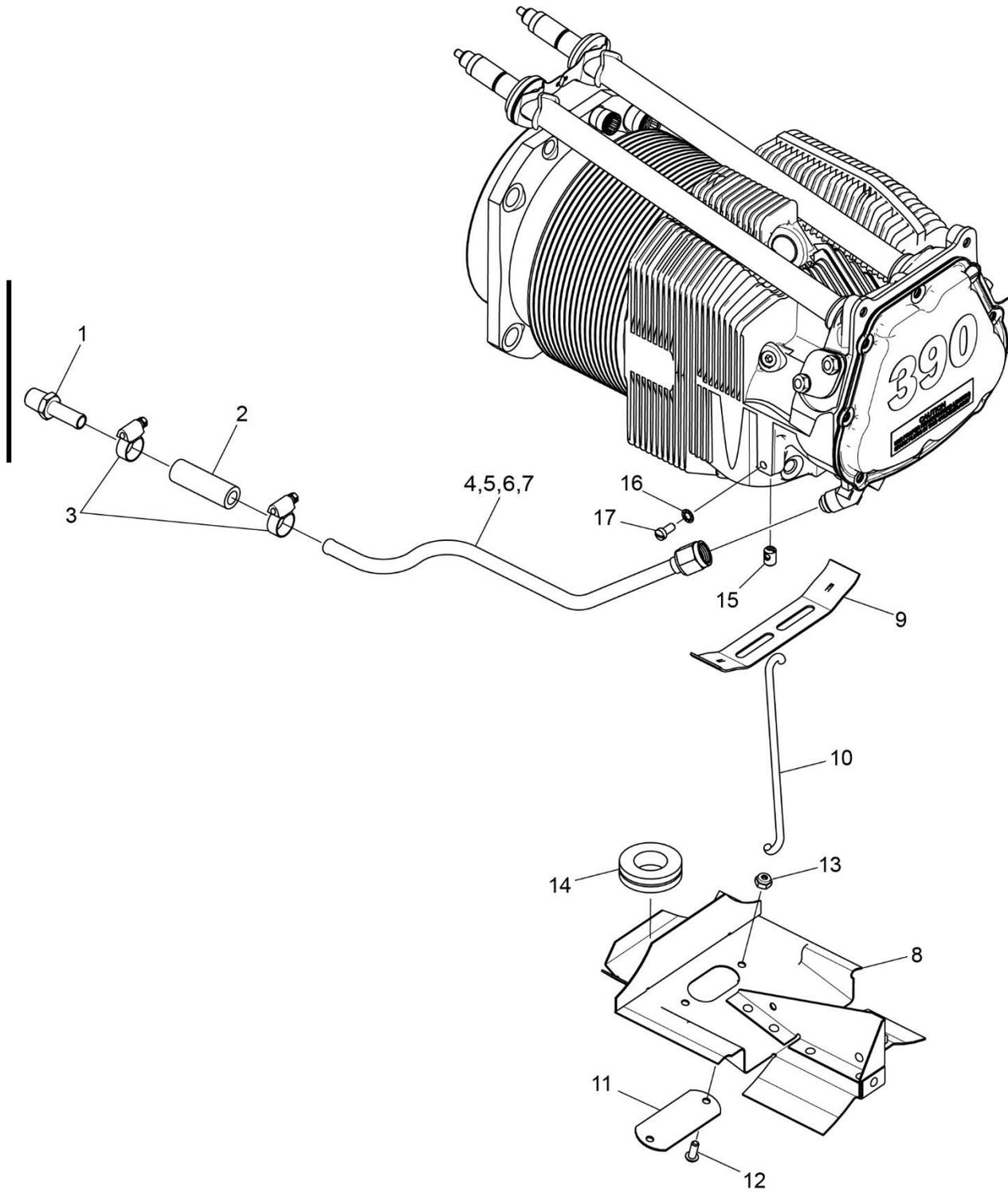


Figure 14
Cylinder Head Drain Tubes and Intercylinder Cooling Baffles

CYLINDER SECTION**Figure 14 - Cylinder Head Drain Tubes and Intercylinder Cooling Baffles**

Figure Item	Code	Part Number	Description	Units per Assembly
1		STD-684	NIPPLE, Straight, 3/8 I.D. hose	4
2		STD-2180	HOSE, 3/8 x 1-13/16 long	4
3		LW-15592-5-04	CLAMP, Hose	8
4		72702	TUBE ASSEMBLY, Cyl. head oil drain, cyl. No. 1	1
5		72703	TUBE ASSEMBLY, Cyl. head oil drain, cyl. No. 2	1
6		74808	TUBE ASSEMBLY, Cyl. head oil drain, cyl. No. 3	1
7		73027	TUBE ASSEMBLY, Cyl. head oil drain, cyl. No. 4	1
8	❖	75338	BAFFLE ASSEMBLY, Intercylinder	1
	▲	75337	BAFFLE ASSEMBLY, Intercylinder	1
9		71611	RETAINER, Intercylinder baffle	2
10		17M23284	HOOK, Intercylinder baffle retainer	2
11		72834	COVER, Baffle ignition cable hole	2
12		STD-692	SCREW, No. 10-32 x 1/2 long, round head	4
13		STD-670	LOCK NUT, No. 10-32	4
14	▲	MS35489-20X	GROMMET	1
15		65614	PLUG, Baffle attaching	4
16		STD-251	WASHER, No. 10, internal lock	4
17		STD-1686	SCREW, No. 10-32 x 7/16 long	4
❖ Install on left side cylinders No. 2 and 4				
▲ Install on right side between cylinders No. 1 and 3				

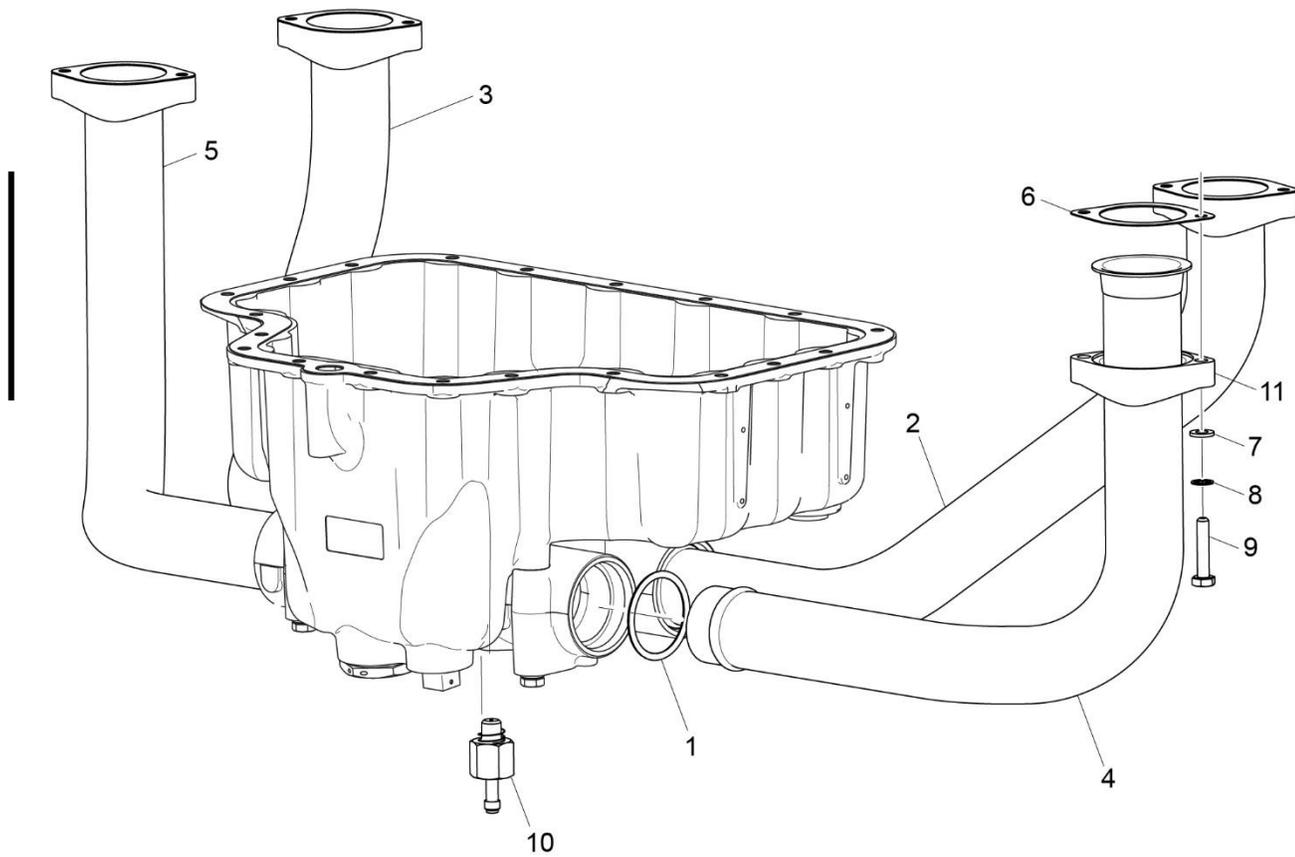


Figure 15
Intake Pipes Assembly

CYLINDER SECTION**Figure 15 – Intake Pipes Assembly**

Figure Item	Code	Part Number	Description	Units per Assembly
1		72711	SEAL, Intake pipe	4
2		42E28520	PIPE, Intake, cylinder No. 1	1
3		42E28521	PIPE, Intake, cylinder No. 2	1
4		42E28711	PIPE, Intake, cylinder No. 3	1
5		42E28523	PIPE, Intake, cylinder No. 4	1
6		71973	GASKET, 2 bolt flange, 1-3/4 I.D.	4
7		STD-8	WASHER, 1/4 plain	8
8		STD-160	WASHER, 1/4 lock, internal teeth	8
9		LW-25-1.25	BOLT, 1/4-20 x 1-1/4 long, hex. head	8
10	❖	LW-13807	ADAPTER ASSEMBLY, Fuel drain valve	1
11		74360	FLANGE, Intake pipe, upper	4
12		1102	PLUG	3
❖ Optional				

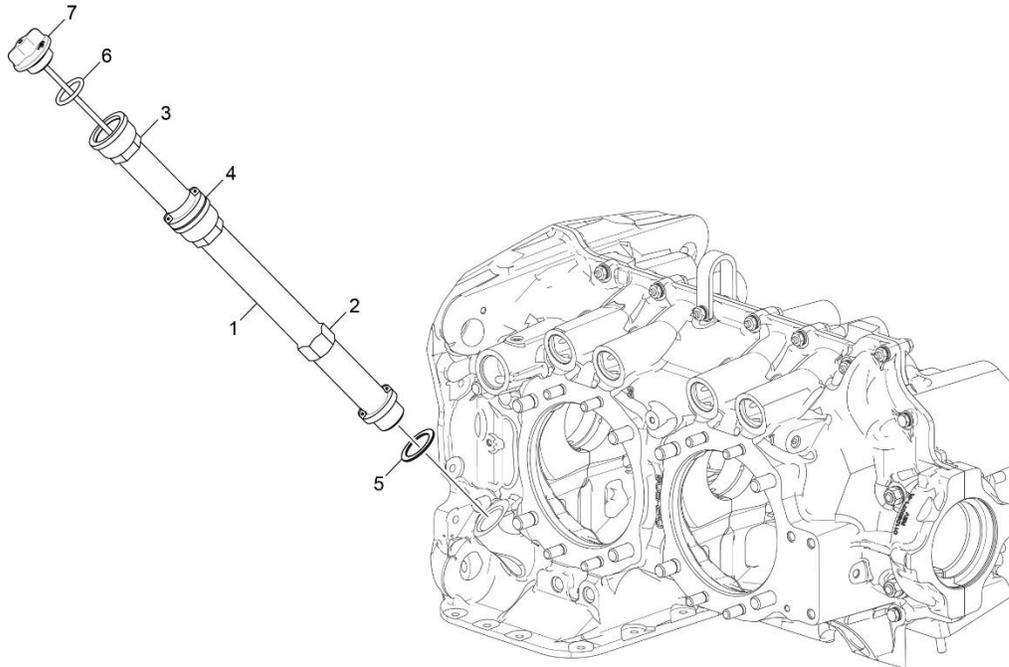


Figure 16A
Oil Level Gage

-C1A6, -C3A6, -C1B6, and -C3B6 Engines Equipped for Freon Compressor Installation

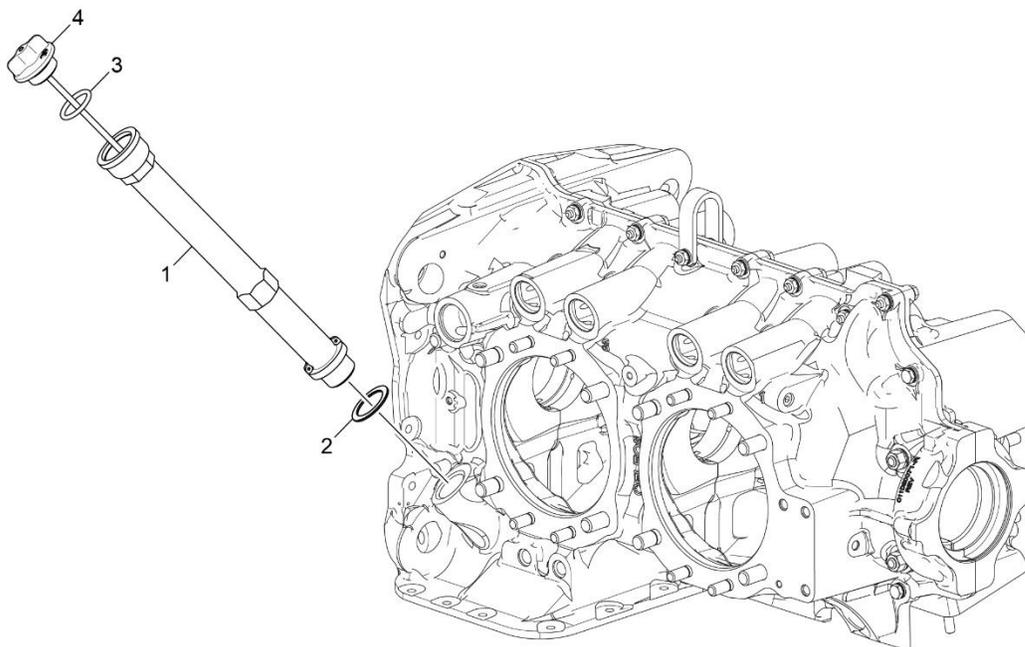


Figure 16B
Oil Level Gage

-C3B6 Engines Not Equipped for Freon Compressor Installation

LUBRICATION SYSTEM

Figure 16A - Oil Level Gage

-C1A6, -C3A6, -C1B6, and -C3B6 Engines Equipped for Freon Compressor Installation

Figure Item	Code	Part Number	Description	Units per Assembly
1		56C23075	TUBE, Oil level gage (long)	1
2		75767	TUBE, Oil level gage	1
3		75761	EXTENSION, Oil filter	1
4		72220	GASKET, Oil level gage	1
5		72059	GASKET, Oil level gage	1
6		74065	O-RING, Oil level gage	1
7		56C23680	GAGE ASSEMBLY, Oil level	1

Figure 16B - Oil Level Gage

-C3B6 Engines Not Equipped for Freon Compressor Installation

Figure Item	Code	Part Number	Description	Units per Assembly
1		75736	TUBE, Oil level gage	1
2		72059	GASKET, Oil level gage	1
3		74068	RING, Oil level gage plug	1
4		56C23681	GAGE ASSEMBLY, Oil level	1

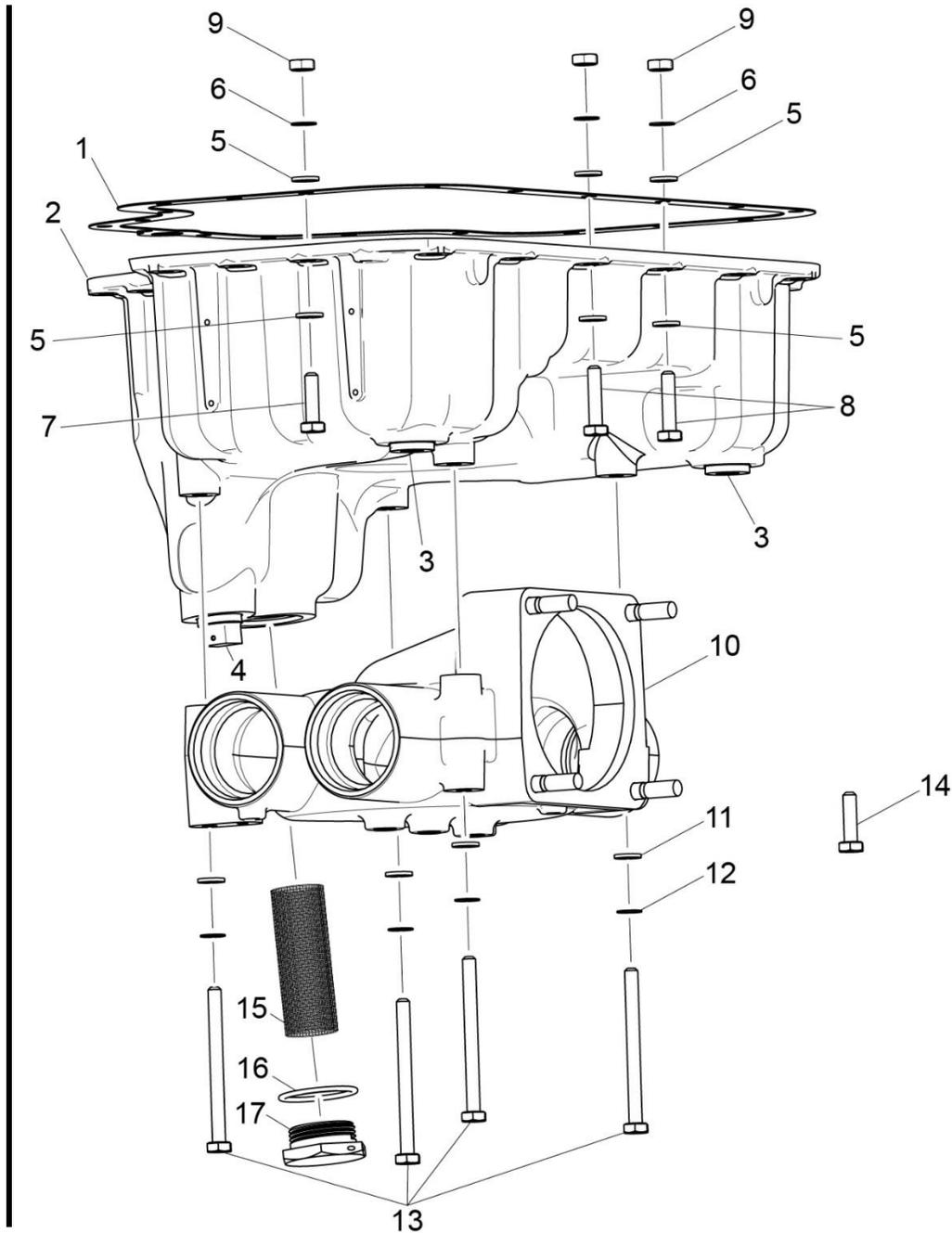


Figure 17
Oil Sump Assembly and Oil Suction Screen

LUBRICATION SYSTEM**Figure 17 – Oil Sump Assembly and Oil Suction Screen**

Figure Item	Code	Part Number	Description	Units per Assembly
1		LW-13353	GASKET, Oil sump	1
2		56B28511	SUMP ASSEMBLY, Oil	1
3		STD-2229	PLUG, 1/2 NPT, Allen head	2
4		STD-551	PLUG, 1-1/2	1
5		STD-8	WASHER, 1/4 plain	32
6		STD-160	WASHER, 1/4 lock, internal teeth	20
7		LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. head	18
8		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	2
9		STD-1411	NUT, 1/4-20 plain	12
10		42A31579	HOUSING ASSEMBLY, Induction	1
11		STD-8	WASHER, 1/4 plain	4
12		STD-160	WASHER, 1/4 lock, internal teeth	4
13		NASM90725-18	SCREW, Cap, 1/4-20 x 3.00 long, hex head,	4
14		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	4
15		61378	SCREEN, Oil suction	1
16		06E19769-1.25	GASKET, Annular, 1-1/4 I.D.	1
17		61358	PLUG, 1-1/2 hex. x 1-1/4-12	1

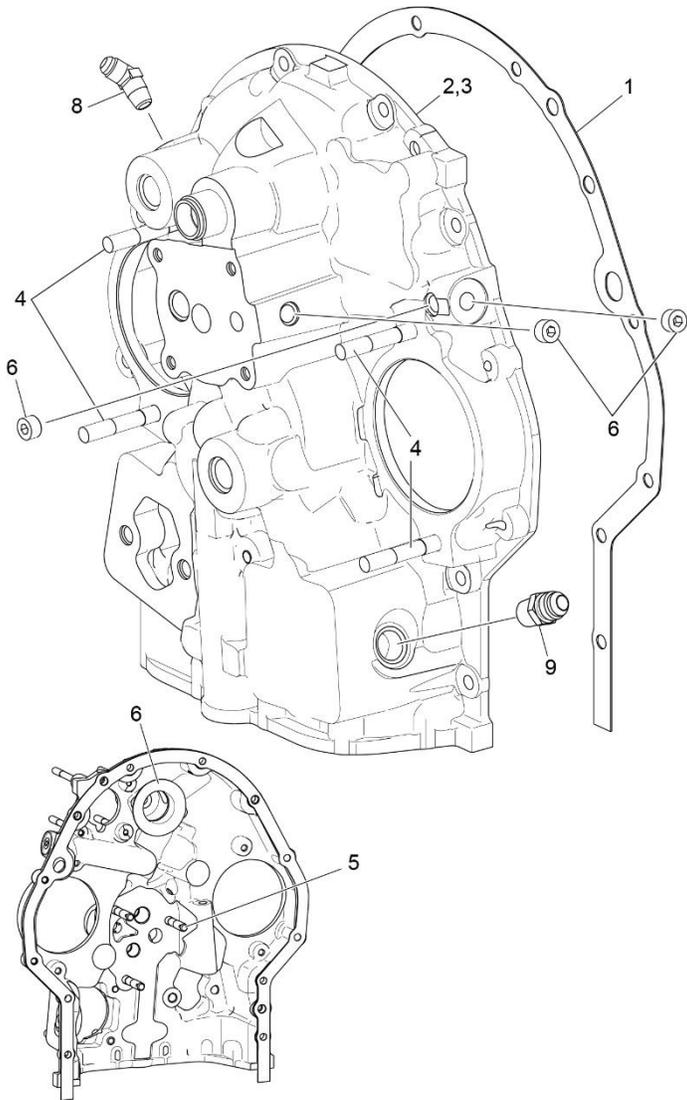


Figure 18A
Accessory Housing Assembly

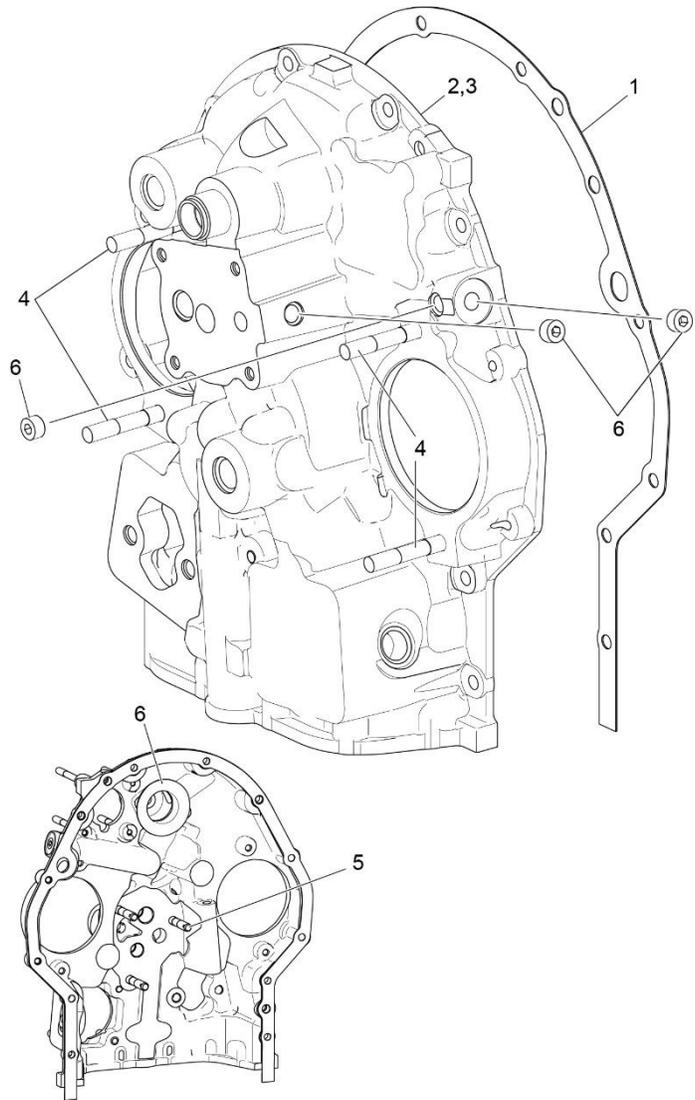


Figure 18B
Accessory Housing Assembly

ACCESSORY DRIVES**Figure 18A – Accessory Housing Assembly**

Figure Item	Code	Part Number	Description	Units per Assembly
1		73818	GASKET, Accessory housing	1
2		21A26242	ACCESSORY HOUSING	1
3		21A26242-38	ACCESSORY HOUSING ASSEMBLY, Studding	1
4		31C-12	STUD, 5/16-18 x 1-1/2 long	4
5		31CD-17	STUD, 5/16-18 x 2-1/8 long drilled	3
6		1102	PLUG, 1/8 pipe	3
7		76119	SHIELD, Accessory breather oil	1
8		MS20822-4	ELBOW, 1/8 NPT to 1/4 Tube-90°	1
9		AN912-3	BUSHING, Reducer, 3/8 NPT to 0.1	1

Figure 18B – Accessory Housing Assembly

Figure Item	Code	Part Number	Description	Units per Assembly
1		73818	GASKET, Accessory housing	1
2		21A26242	ACCESSORY HOUSING	1
3		21A26242-37	ACCESSORY HOUSING ASSEMBLY, Studding	1
4		31C-12	STUD, 5/16-18 x 1-1/2 long	4
5		31CD-17	STUD, 5/16-18 x 2-1/8 long drilled	3
6		1102	PLUG, 1/8 pipe	3
7		76119	SHIELD, Accessory breather oil	1

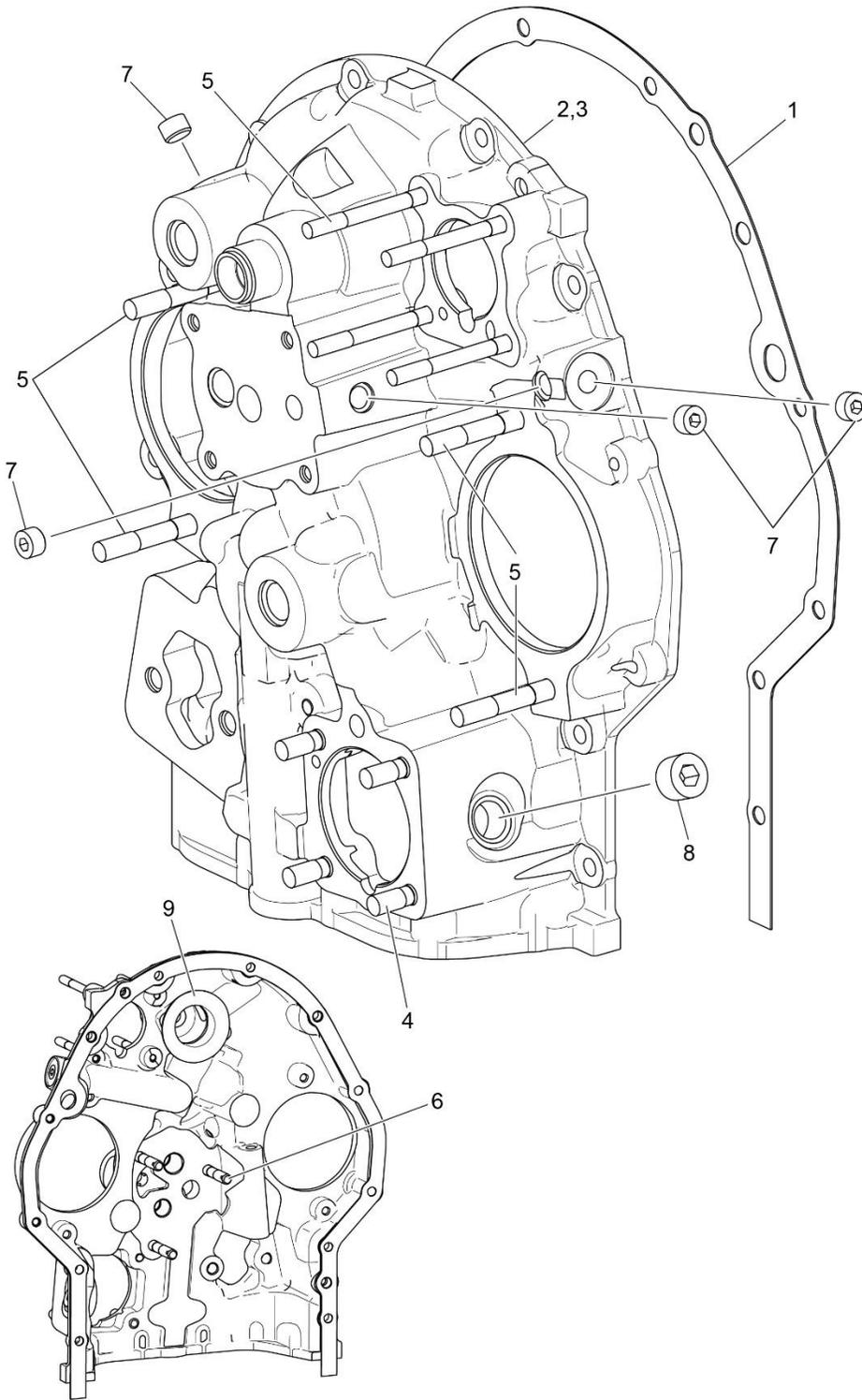


Figure 18C
Accessory Housing Assembly

ACCESSORY DRIVES**Figure 18C – Accessory Housing Assembly**

Figure Item	Code	Part Number	Description	Units per Assembly
1		73818	GASKET, Accessory housing	1
2		21A21533	ACCESSORY HOUSING	1
3		21A21533-27	ACCESSORY HOUSING ASSEMBLY, Studding	1
4		25C-12	STUD, 1/4-20 x 2-3/4 long	4
5		31C-12	STUD, 5/16-18 x 1-1/2 long	8
6		31CD-17	STUD, 5/16-18 x 2-1/8 long drilled	3
7		1102	PLUG, 1/8 pipe	4
8		STD-784	PLUG, 3/8 pipe	1
9		76119	SHIELD, Accessory breather oil	1

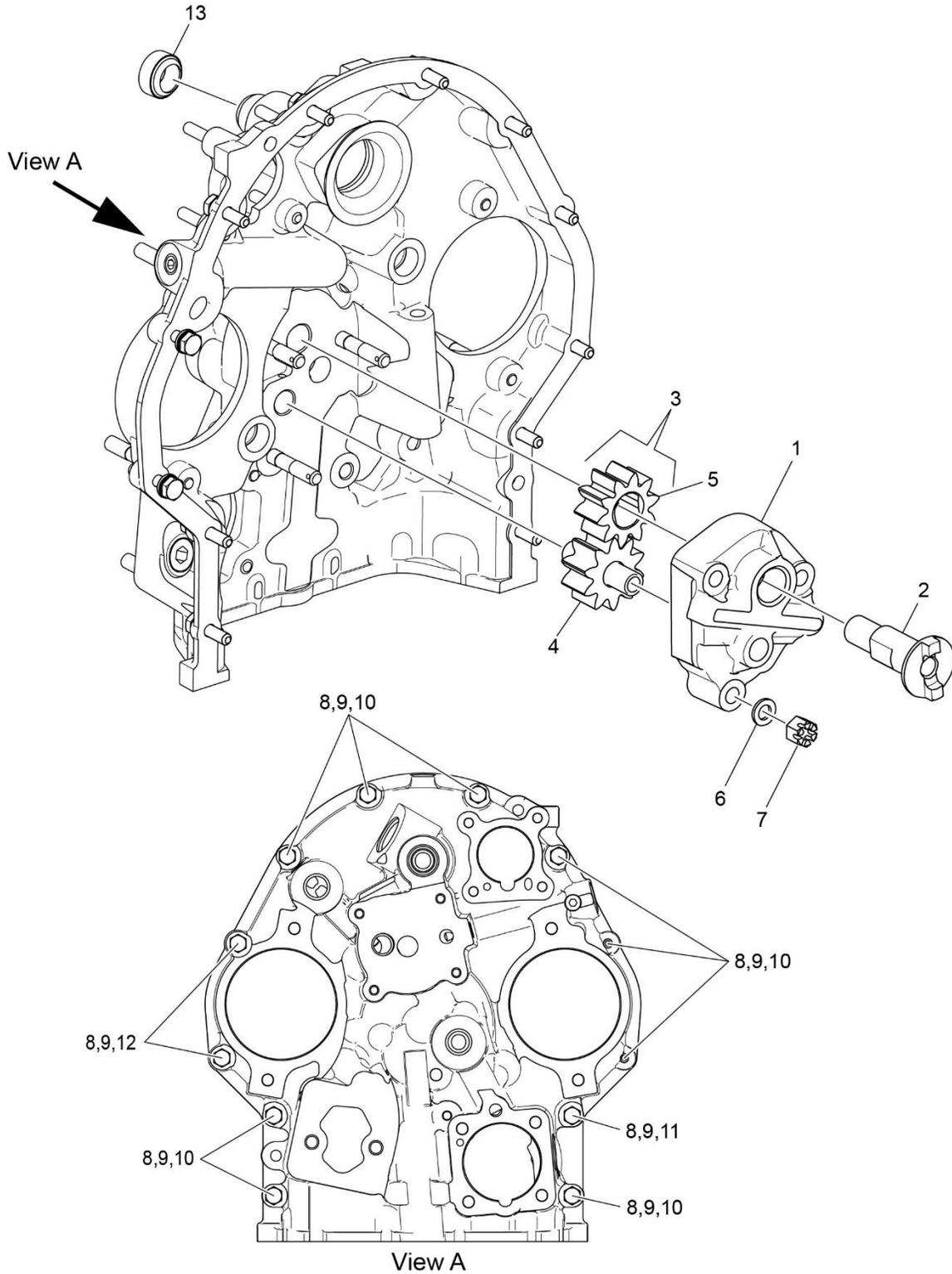


Figure 19
Oil Pump Assembly and Accessory Housing Attaching Parts

ACCESSORY DRIVES**Figure 19 – Oil Pump Assembly and Accessory Housing Attaching Parts**

Figure Item	Code	Part Number	Description	Units per Assembly
1		51F28531	BODY ASSEMBLY, Oil pump	1
2		61174	SHAFT, Oil pump drive	1
3		05K19423-S	IMPELLER KIT	1
4		LW-18110	IMPELLER ASSEMBLY, Oil pump driven	1
5		LW-18109	IMPELLER, Oil pump driven	1
6		STD-35	WASHER, 5/16 plain	3
7		STD-1420	NUT, 5/16-18 slotted	3
8		STD-8	WASHER, 1/4 plain	12
9		STD-160	WASHER, 1/4 lock, internal teeth	12
10		LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. head	9
11		LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	1
12		LW-25-1.44	BOLT, 1/4-20 x 1-7/16 long, hex. head	2
13		LW-14260	SEAL, Tachometer drive, oil	1

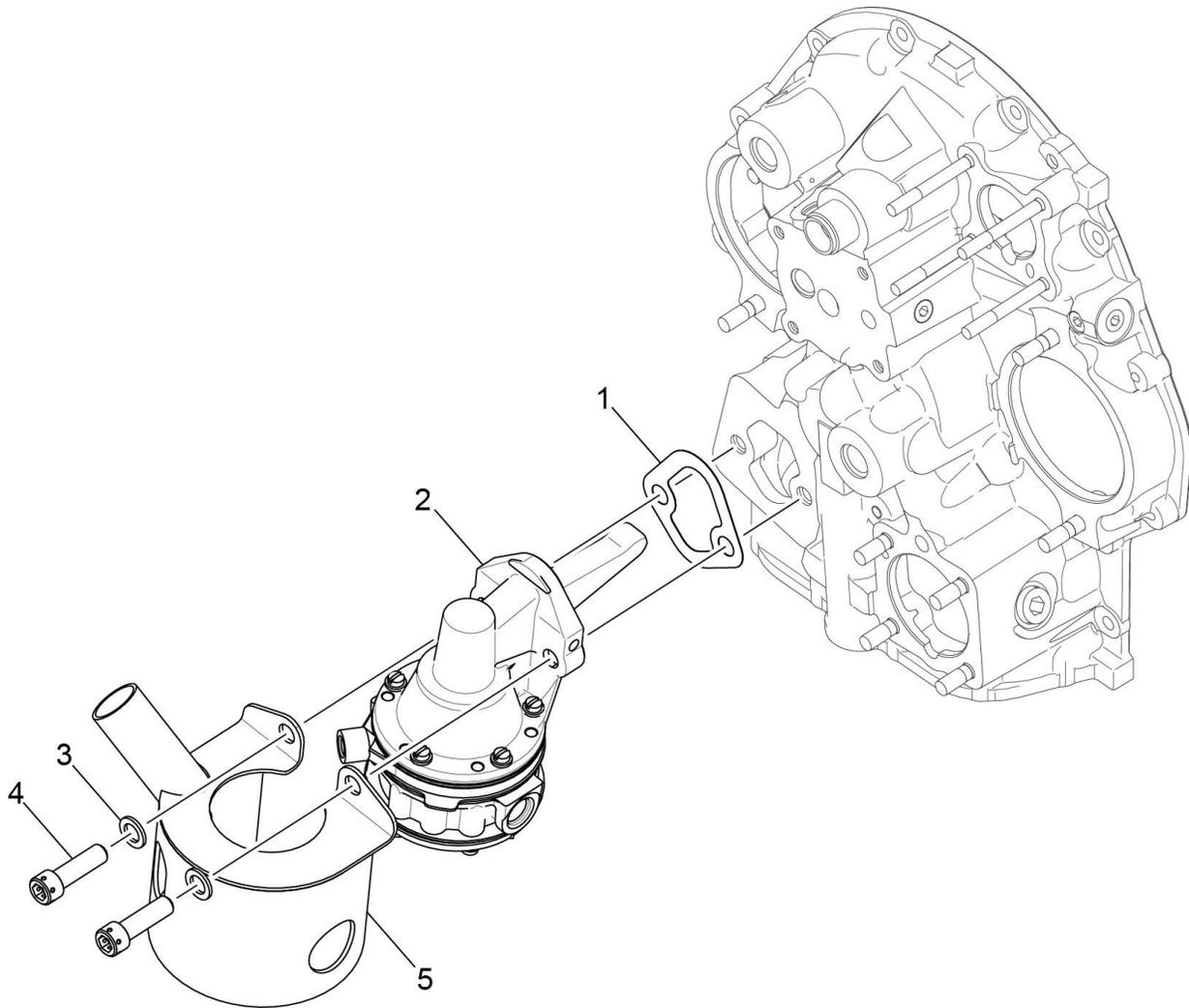


Figure 20
Fuel Pump and Attaching Parts

ACCESSORY DRIVES

Figure 20 - Fuel Pump and Attaching Parts

Figure Item	Code	Part Number	Description	Units per Assembly
1		60096	GASKET, Fuel pump	1
2		62B26931	FUEL PUMP, High Pressure	1
3		STD-33	WASHER, 3/8 plain	2
4		STD-1882	SCREW, 3/8-16 x 1-9/32 long, socket head, drilled	2
5	❖	05A28344	SHROUD ASSEMBLY, Fuel pump	1
❖ Optional				

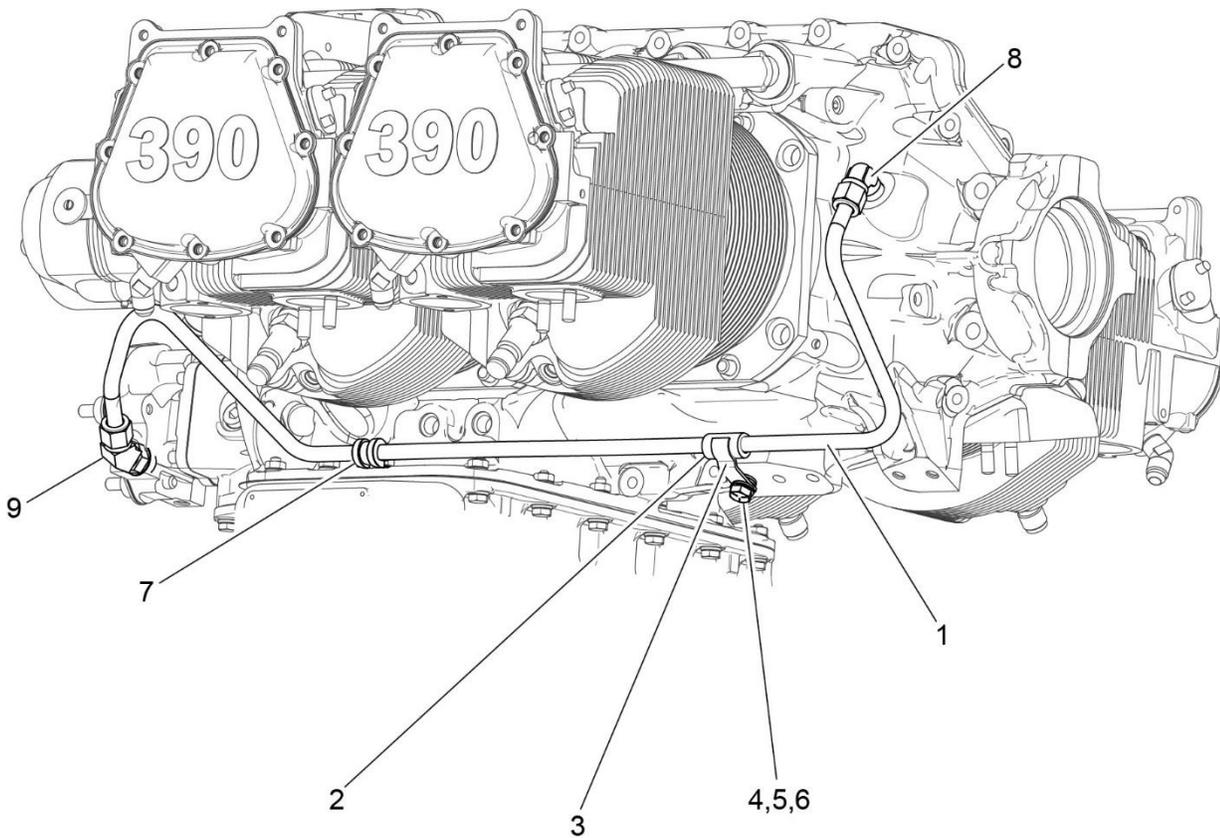


Figure 21
Propeller Governor Oil Line Tube Assembly and Attaching Parts

ACCESSORY DRIVES**Figure 21 - Propeller Governor Oil Line Tube Assembly and Attaching Parts**

Figure Item	Code	Part Number	Description	Units per Assembly			
				C 1 A 6	C 3 A 6	C 1 B 6	C 3 B 6
1		75167	TUBE ASSEMBLY, Propeller governor oil line	1	1		
2		STD-1930	HOSE, 3/8 I.D. x 1.00 long	1	1		
3		75165	CLIP, Propeller governor oil line support	1	1		
4		STD-35	WASHER, 5/16 plain	3	3		
5		STD-475	WASHER, 5/16 lock, internal teeth	1	1		
6		LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex. head	1	1		
7		LW-16266-25-38	CLAMP, 3/8 I.D. x 1/4 diameter screw	1	1		
8		MS20822-6	ELBOW, 1/4 NPT to 3/8 flared tube, 90°	1	1		
9		74070	ELBOW, 3/8 flared tube and 9/16-18	1	1		

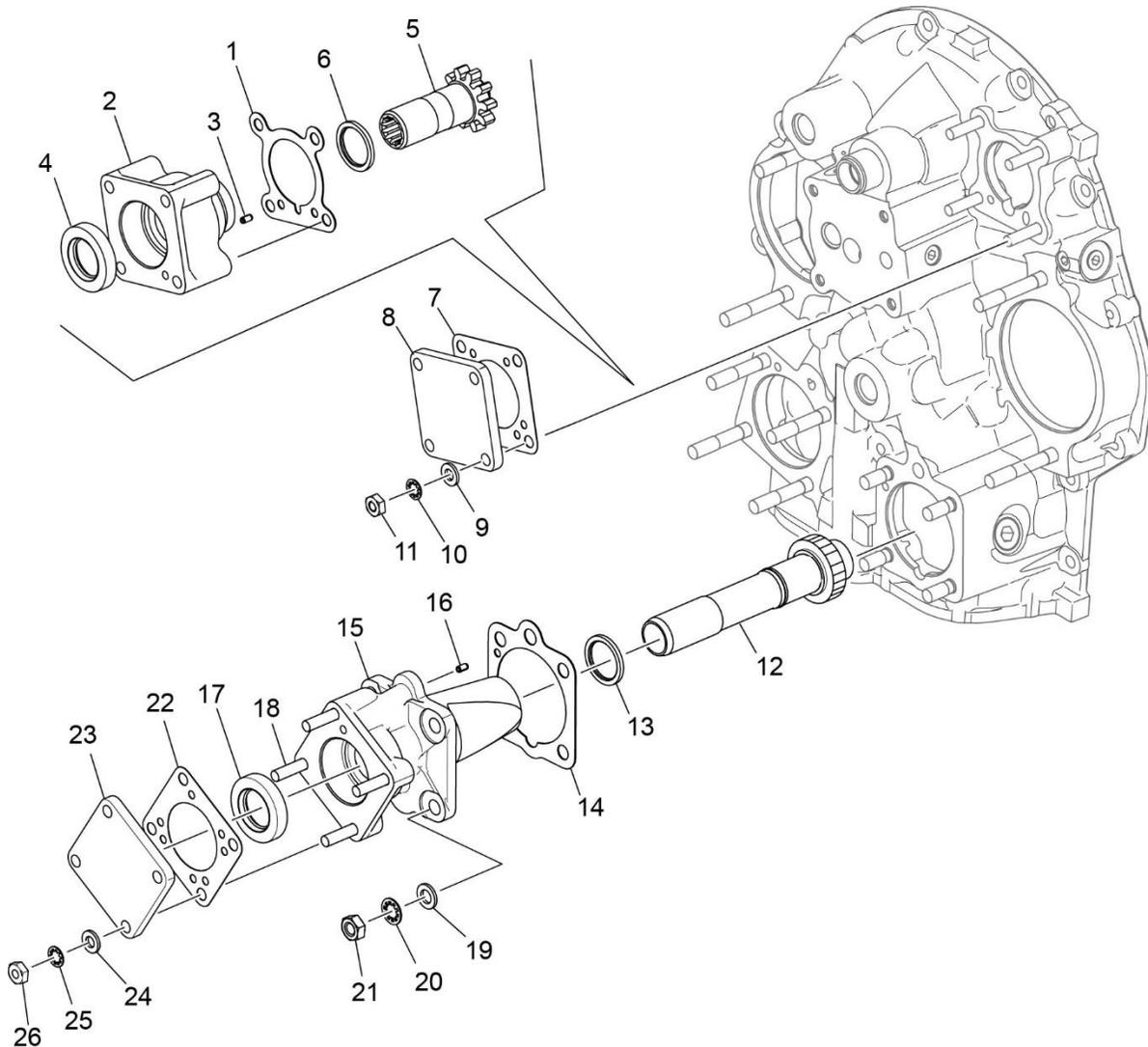


Figure 22
Vacuum and Hydraulic Pump Drives and Covers

ACCESSORY DRIVES**Figure 22 – Vacuum and Hydraulic Pump Drives and Covers**

Figure Item	Code	Part Number	Description	Units per Assembly			
				C 1 A 6	C 3 A 6	C 1 B 6	C 3 B 6
1		61183	GASKET, Accessory adapter	1	1	1	1
2		61098	ADAPTER ASSEMBLY, Vacuum pump	1	1	1	1
3		STD-1774	PIN, 1/8 diameter x 1/4 long	1	1	1	1
4		06A19956	OIL SEAL, 7/8 I.D. x 1-1/2 O.D. x 5/16	1	1	1	1
5		72970	GEAR ASSEMBLY, Vacuum pump driven	1	1	1	1
6		71596	WASHER, Accessory drive gear	1	1	1	1
7		8313	GASKET, Vacuum pump	1	1	1	1
8		60430	COVER, Vacuum pump	1	1	1	1
9		STD-8	WASHER, 1/4 plain	4	4	4	4
10		STD-160	WASHER, 1/4 lock, internal teeth	4	4	4	4
11		STD-1411	NUT, 1/4-20 plain	4	4	4	4
12		27A22099	GEAR ASSEMBLY, Hydraulic pump driven			1	1
13		71596	WASHER, Accessory drive gear			1	1
14		68315	GASKET, Accessory drive adapter			1	1
15		27D21252	ADAPTER ASSEMBLY, Hydraulic pump			1	1
16		STD-1774	PIN, 1/8 diameter x 1/4 long			1	1
17		06A19956	OIL SEAL, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide			1	1
18		25C-12	STUD, 1/4-20 x 1-1/2 long			4	4
19		STD-35	WASHER, 5/16 plain			4	4
20		STD-475	WASHER, 5/16 lock, internal teeth			4	4
21		STD-1410	NUT, 5/16-18 plain			4	4
22		8313	GASKET, Hydraulic pump			1	1
23		60430	COVER, Hydraulic pump			1	1
24		STD-8	WASHER, 1/4 plain			4	4
25		STD-160	WASHER, 1/4 lock, internal teeth			4	4
26		STD-1411	NUT, 1/4-20 plain			4	4

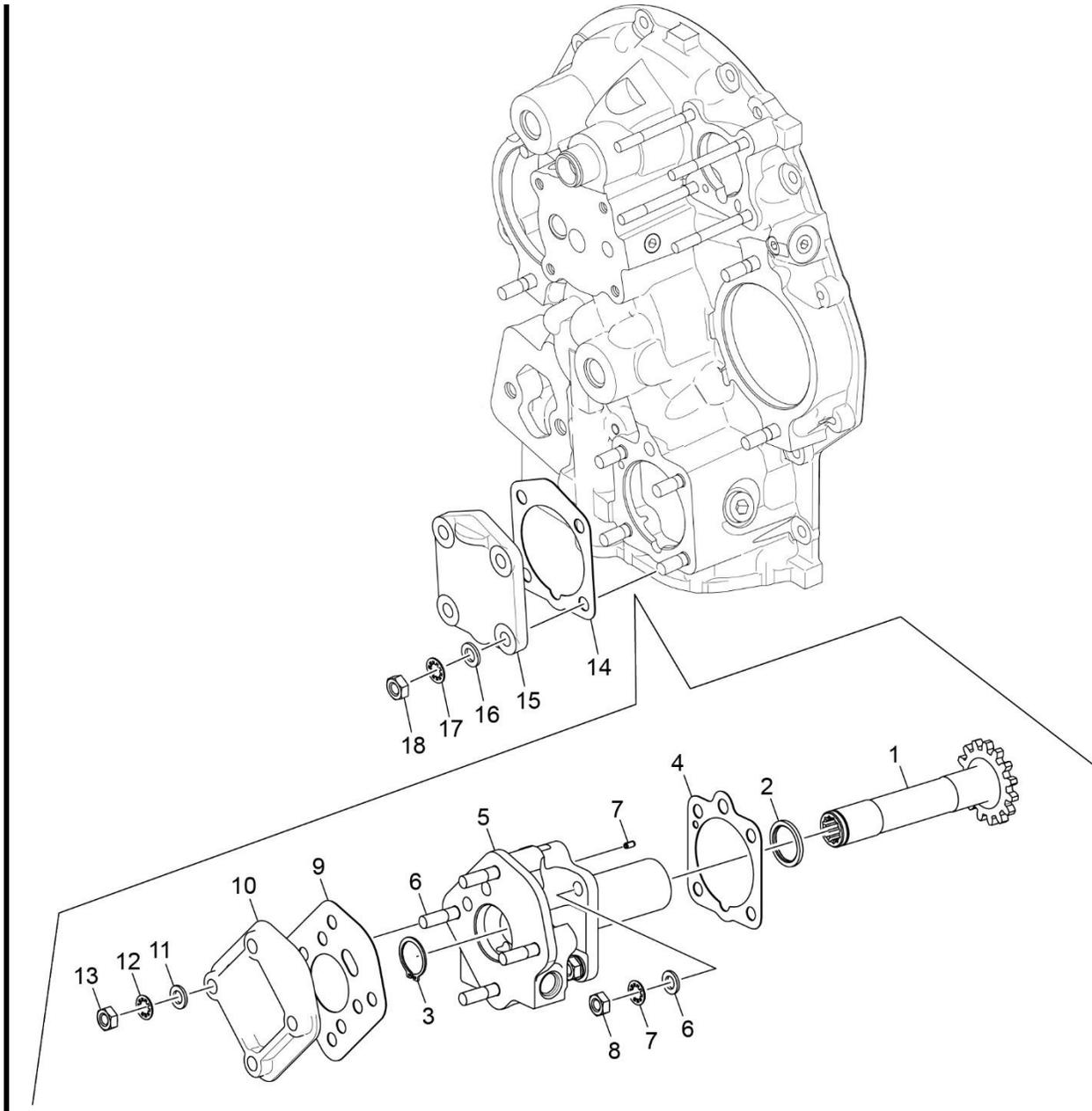


Figure 23
Propeller Governor Drive (Rear) and Cover

ACCESSORY DRIVES**Figure 23 – Propeller Governor Drive (Rear) and Cover**

Figure Item	Code	Part Number	Description	Units per Assembly			
				C 1 A 6	C 3 A 6	C 1 B 6	C 3 B 6
1		68317	SHAFTGEAR, Propeller Governor Drive	1	1		
2		71596	WASHER, Accessory drive gear	1	1		
3		STD-1221	RING, 13/16 diameter x 1/32 thick	1	1		
4		68315	GASKET, Accessory drive adapter	1	1		
5		75153	ADAPTER ASSY., Propeller gov. drive (with	1	1		
6		STD-35	WASHER, 5/16 plain	4	4		
7		STD-475	WASHER, 5/16 lock, internal teeth	4	4		
8		STD-1410	NUT, 5/16-18 plain	4	4		
9		72053	GASKET, Governor	1	1		1
10		72378	COVER, Governor drive	1	1		1
11		STD-35	WASHER, 5/16 plain	4	4		1
12		STD-475	WASHER, 5/16 lock, internal teeth	4	4		1
13		STD-1410	NUT, 5/16-18 plain	4	4		1
14		69551	GASKET, Governor				1
15		69106	COVER, Governor				1
16		STD-35	WASHER, 5/16 plain				1
17		STD-475	WASHER, 5/16 lock, internal teeth				1
18		STD-1410	NUT, 5/16-18 plain				1

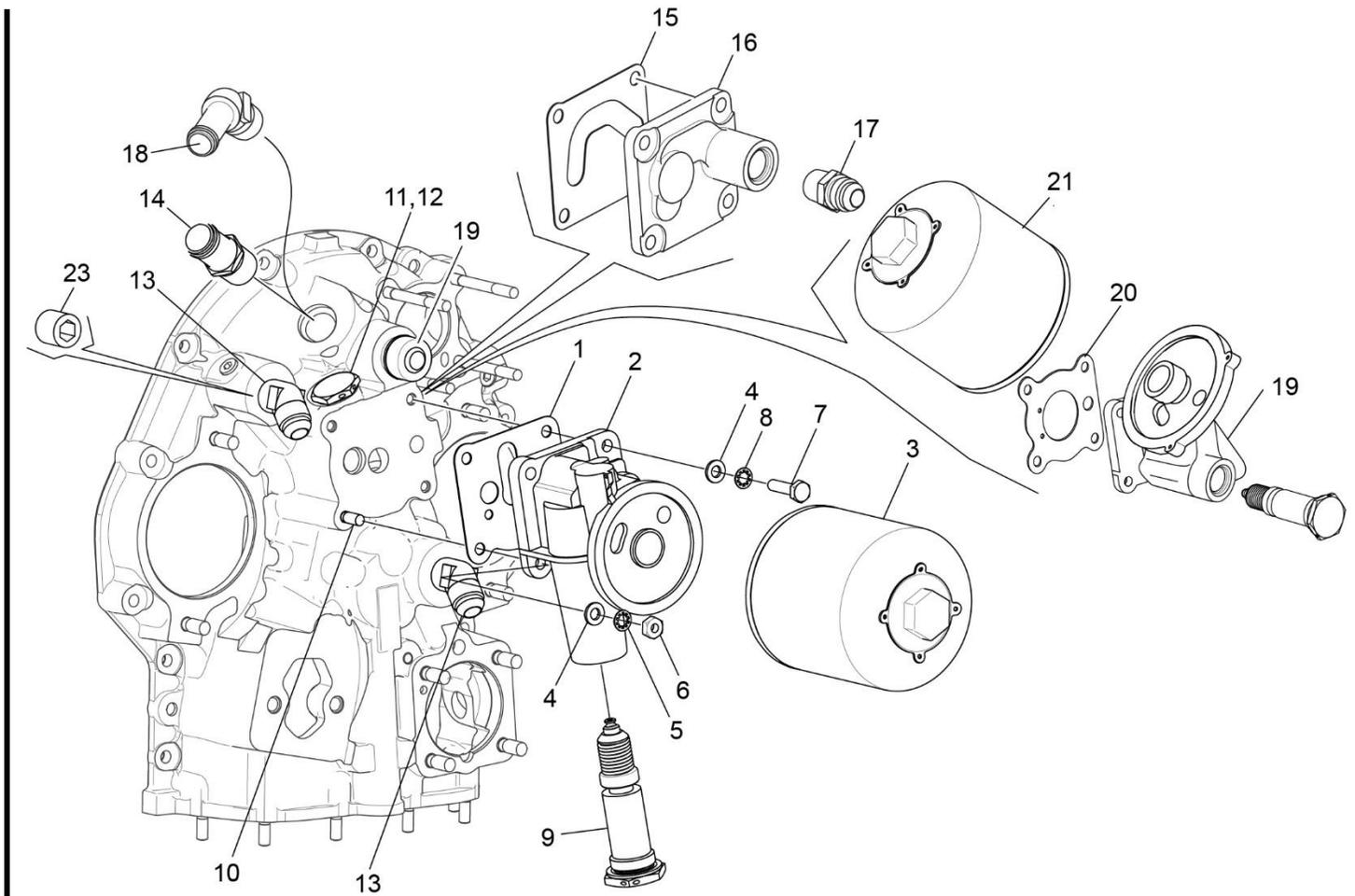


Figure 24
Oil Filter Assembly, Oil Cooler Bypass Valve, and Fittings

ACCESSORY DRIVES**Figure 24 – Oil Filter Assembly, Oil Cooler Bypass Valve, and Fittings**

Figure Item	Code	Part Number	Description	Units per Assembly
1	❖	06B23862	GASKET, Oil filter adapter	2
2		77852	OIL FILTER BASE ASSEMBLY	1
3		LW-13215	OIL FILTER, Short, CH48110-1	1
4		STD-8	WASHER, 1/4 plain	4
5		STD-160	WASHER, 1/4 lock, internal teeth	1
6		STD-1411	NUT, 1/4-20 plain	1
7		LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. head	3
8		STD-160	WASHER, 1/4 lock, internal teeth	3
9		53E22144	VALVE ASSEMBLY, Temp. control, oil cooler	1
10		25C-10	STUD, 1/4-20 x 1-1/4 long	1
11		06E19769-0.63	GASKET, Annular, 5/8 I.D.	1
12		62417	PLUG, Oil cooler bypass	1
13		MS20823-8	ELBOW, 3/8 NPT, 1/2 flared tube	2
14		71140	FITTING, Breather	1
15	▲	06B21644	GASKET, Oil filter base cover	1
16	▲	21M23736	COVER, Oil filter base	1
17	▲	AN816-8	NIPPLE, 1/2 flared tube	1
18	●	AN844-10D	ELBOW, Pipe	1
	◆	62732	CAP, Tachometer drive	1
19		54B28395	ADAPTER, Oil Filter Base Assembly	1
20		06B29860	GASKET, Oil Pressure Housing	1
21		54D28353	OIL FILTER, Short, CH48108-1	1
22		73152	BRACKET, Support clamp	1
23	□	STD-784	PLUG, 3/8-18 NPT, Allen head	1

❖ One of the oil filter adapter gaskets P/N 06B23862 is shipped loose with the engine.
▲ Optional for use with remote oil filters
● Optional breather fitting
◆ Optional with tachometer drive
□ Some configurations of IO-390-C3B6 use STD-784 in place of MS20823-8

FUEL DISTRIBUTION**Figure 25A – Fuel Injector, Fuel Manifold Assembly, and Brackets**

Figure Item	Code	Part Number	Description	Units per Assembly
1		73032	GASKET, Air Inlet housing	1
2		61M28534	FUEL INJECTOR, LFR-NNSM10, AV 2581500	1
3		06B28651	GASKET, Air Inlet housing	1
4		STD-35	WASHER, 5/16 plain	2
5		STD-1727	WASHER, Plain, 0.33 I.D. x 3/4 O.D.	2
6		STD-1410	NUT, 5/16-18 plain	4
7		STD-475	WASHER, 5/16 lock, internal teeth	4
8		63C26450	NOZZLE, Injection, low, AV 2524864-2	4
9		63B28106	MANIFOLD ASSEMBLY, Fuel (4 PSI) AVStar	1
10	❖	63B28207	MANIFOLD ASSEMBLY, Fuel (4 PSI)	1
11		STD-148	NIPPLE, Union, 1/8 NPT	4
12		1102	PLUG, 1/8 Pipe	2
13		AN816-4	NIPPLE, 1/8 NPT to 1/4 tube	1
14		MS20822-4	ELBOW, 1/8 NPT to 1/4 tube, 90°	1
15		73966	SPACER, Fuel manifold bracket	2
16		07A23031	BRACKET, Fuel manifold	1
17		07A23032	BRACKET, Fuel manifold	1
18	❖	07A22995	BRACKET, Fuel manifold	1
19	❖	07A22996	BRACKET, Fuel manifold	1
20		STD-251	WASHER, No. 10, internal lock	4
21		STD-82	SCREW, No. 10-24 x 1/2 long, fill. head	4
22		LW-25-2.00	BOLT, 1/4-20 X 2.00 long hex	2
23		STD-8	WASHER, 1/4 plain	2
24		STD-160	WASHER, 1/4 lock int.teeth	2
25		STD-1411	NUT, 1/4-20 plain	2

❖ Inverted Fuel Manifold Assembly (optional)

Refer to the latest revision of Service Instruction No. 1532 for alternate approved fuel systems.

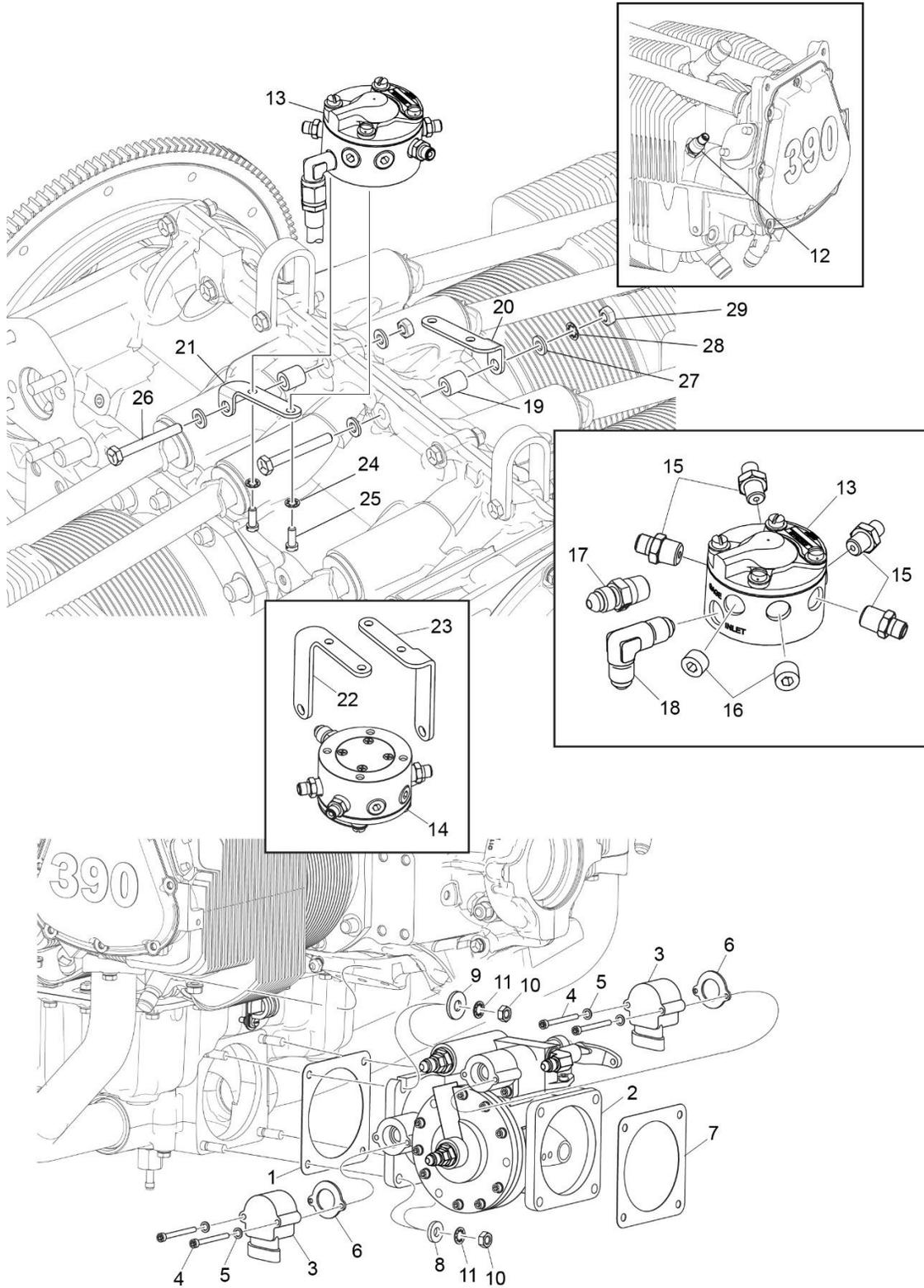


Figure 25B
Alternate Fuel Injector, Fuel Manifold Assembly, and Brackets

FUEL DISTRIBUTION**Figure 25B – Alternate Fuel Injector, Fuel Manifold Assembly, and Brackets**

Figure Item	Code	Part Number	Description	Units per Assembly
1		73032	GASKET, Air Inlet housing	1
2		61P31530	FUEL INJECTOR, LFR-BNRM10	1
3		60D29906-CT	SENSOR, Throttle Position / Mixture Position	2
4		NAS1352C08H24	SCREW, Cap #8-32 X 1.500 Long Drilled	4
5		NAS1149EN832P	WASHER, Flat – No.8	4
6		06B31647	GASKET, Servo Position Sensor	2
7		06B28651	GASKET, Air Inlet housing	1
8		STD-35	WASHER, 5/16 plain	2
9		STD-1727	WASHER, Plain, 0.33 I.D. x 3/4 O.D.	2
10		STD-1410	NUT, 5/16-18 plain	4
11		STD-475	WASHER, 5/16 lock, internal teeth	4
12		63C26450	NOZZLE, Injection, low, AV 2524864-2	4
13		63B28106	MANIFOLD ASSEMBLY, Fuel (4 PSI) AVStar	1
14	❖	63B28207	MANIFOLD ASSEMBLY, Fuel (4 PSI)	1
15		STD-148	NIPPLE, Union, 1/8 NPT	4
16		1102	PLUG, 1/8 Pipe	2
17		AN816-4	NIPPLE, 1/8 NPT to 1/4 tube	1
18		MS20822-4	ELBOW, 1/8 NPT to 1/4 tube, 90°	1
19		73966	SPACER, Fuel manifold bracket	2
20		07A23031	BRACKET, Fuel manifold	1
21		07A23032	BRACKET, Fuel manifold	1
22	❖	07A22995	BRACKET, Fuel manifold	1
23	❖	07A22996	BRACKET, Fuel manifold	1
24		STD-251	WASHER, No. 10, internal lock	4
25		STD-82	SCREW, No. 10-24 x 1/2 long, fill. head	4
26		LW-25-2.00	BOLT, 1/4-20 X 2.00 long hex	2
27		STD-8	WASHER, 1/4 plain	2
28		STD-160	WASHER, 1/4 lock int.teeth	2
29		STD-1411	NUT, 1/4-20 plain	2

❖ Inverted Fuel Manifold Assembly (optional)

Refer to the latest revision of Service Instruction No. 1532 for alternate approved fuel systems.

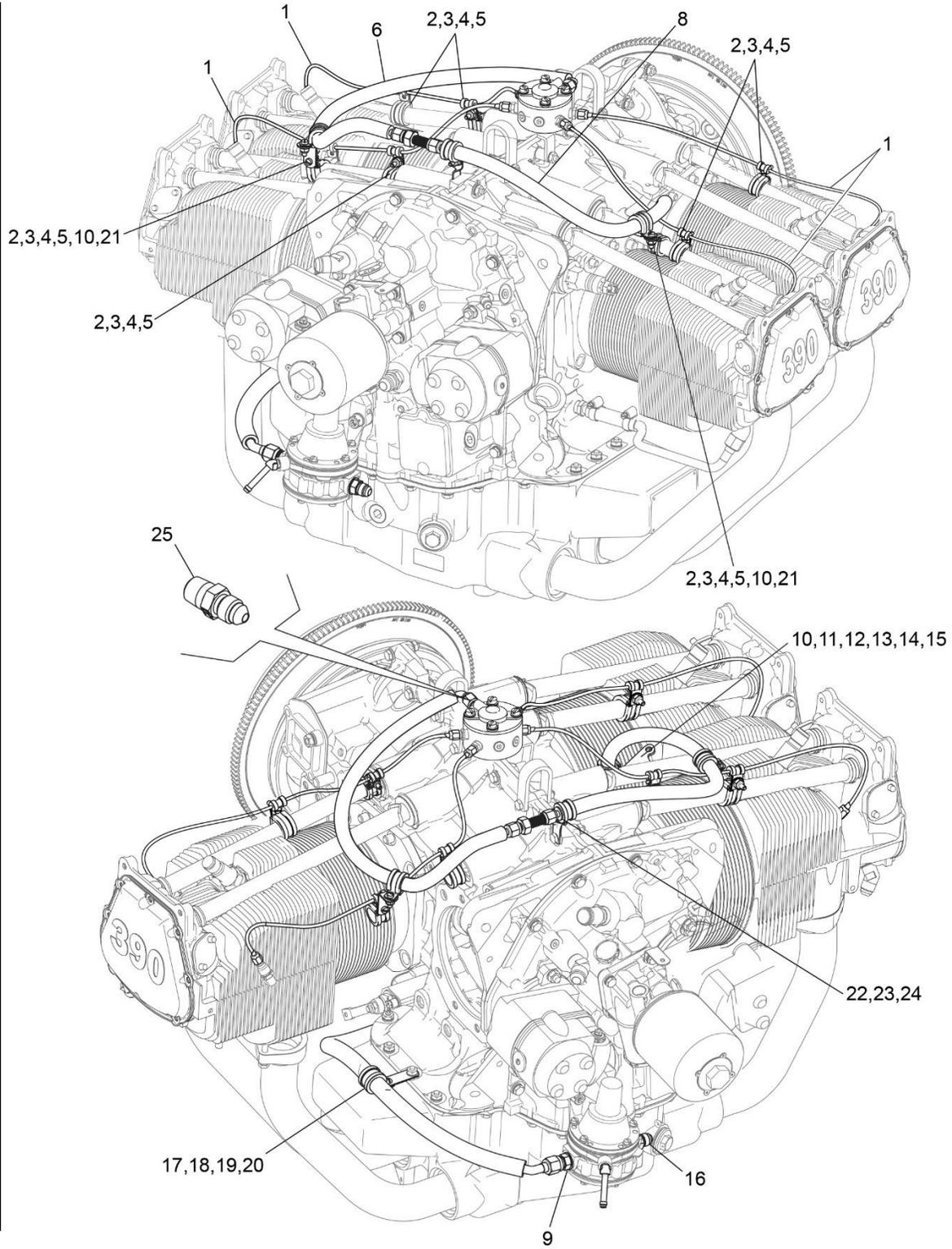


Figure 26A
Fuel Lines, Fuel Hoses, and Attaching Parts (C1A6 and C3A6)

FUEL DISTRIBUTION**Figure 26A – Fuel Lines, Fuel Hoses, and Attaching Parts (C1A6 and C3A6)**

Figure Item	Code	Part Number	Description	Units per Assembly			
				C 1 A 6	C 3 A 6	C 1 B 6	C 3 B 6
1		LW-12098-0-180	TUBE ASSEMBLY, Fuel	4	4		
2		LW-16266-10-75	CLAMP	8	8		
3		LW-16266-10-13	CLAMP, 1/8 diameter for No.10 screw	8	8		
4		STD-860	SCREW, No. 10-32 x 5/8 long, fill. head	8	8		
5		STD-670	LOCK NUT, No. 10-32	8	8		
6		LW-12876-4S120	HOSE ASSY, 1/4 hose, 90-degree elbow	1	1		
7		AN815-4	UNION, 1/4 flared tube	1	1		
8		LW-12798-4S160	HOSE ASSEMBLY, 1/4 hose straight	1	1		
9		LW-16561	NIPPLE, 3/8 flared tube, 9/16-18	1	1		
10		07A28507	BRACKET ASSY, fuel line support	1	1		
11		STD-692	SCREW, No. 10-32 x 1/2 long, round head	2	2		
12		STD-425	WASHER, No. 10 plain	3	3		
13		STD-670	LOCK NUT, No. 10-32	1	1		
14		STD-860	SCREW, No. 10-32 x 5/8 long, fill. head	1	1		
15		LW-16266-25-63	CLAMP, 5/8 I.D. x .1/4 diameter screw	1	1		
16		LW-16562	NIPPLE, 3/8 flared tube, 9/16-18	1	1		
17		73152	BRACKET, support clamp	1	1		
18		LW-16266-10-75	CLAMP	1	1		
19		STD-860	SCREW, No. 10-32 x 5/8 long, fill. head	1	1		
20		STD-670	LOCK NUT, No. 10-32	1	1		
21		73136	BRACKET, Extension, fuel injector	1	1		
22		LW-16266-10-63	CLAMP, 5/8 I.D. x No. 10 screw	1	1		
23		STD-860	SCREW, No. 10-32 x 5/8 long, fill. head	1	1		
24		STD-670	LOCK NUT, No. 10-32	1	1		
25		02G21379	NIPPLE, 1/8 NPT to 1/4 tube	1	1		

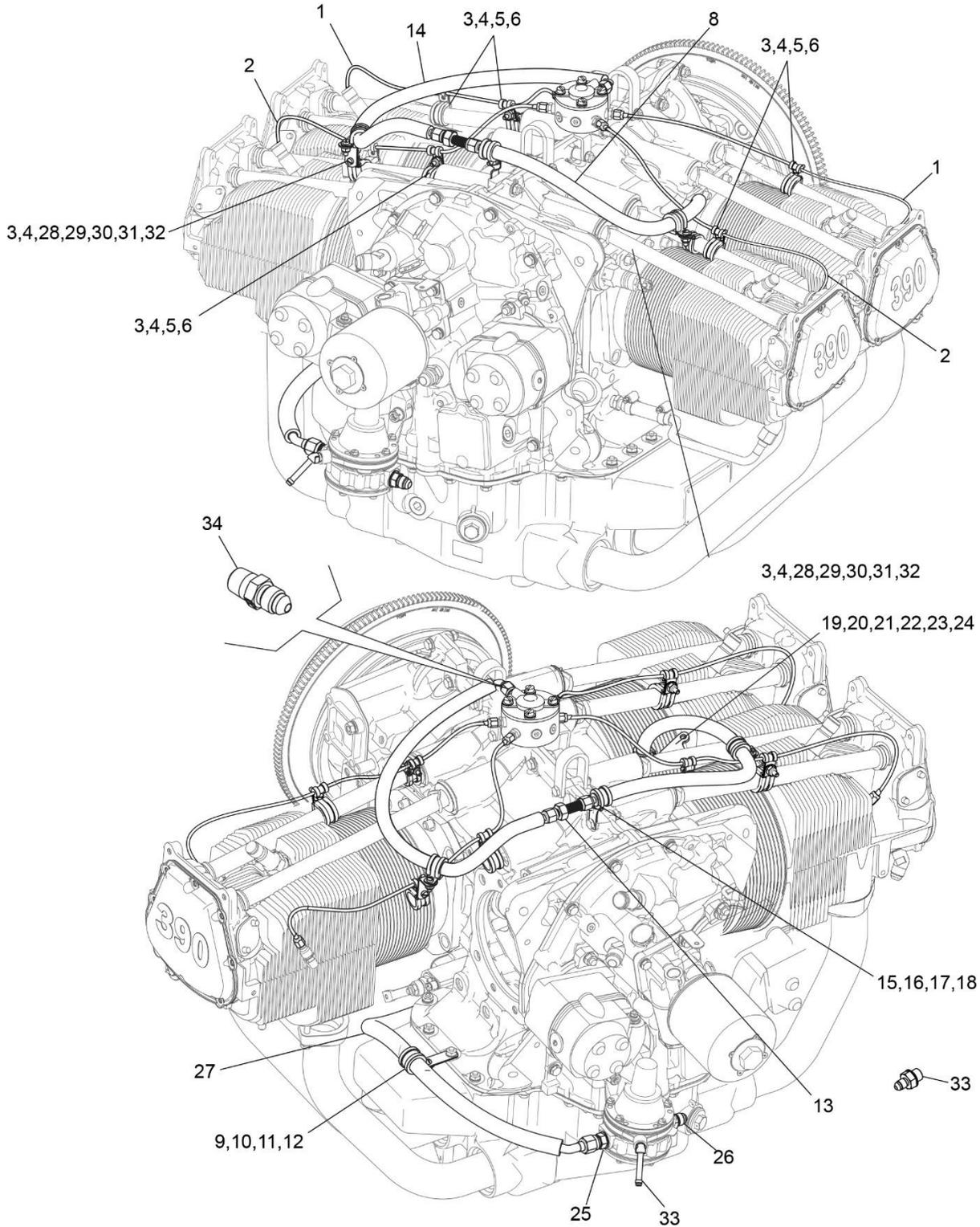


Figure 26B
Fuel Lines, Fuel Hoses, and Attaching Parts (C1B6 and C3B6)

FUEL DISTRIBUTION**Figure 26B – Fuel Lines, Fuel Hoses, and Attaching Parts (C1B6 and C3B6)**

Figure Item	Code	Part Number	Description	Units per Assembly			
				C 1 A 6	C 3 A 6	C 1 B 6	C 3 B 6
1	❖	LW-12098-0-170	TUBE ASSEMBLY, Fuel			2	2
2	❖	LW-12098-0-190	TUBE ASSEMBLY, Fuel injector line			2	2
1, 2		LW-12098-0-180	TUBE ASSEMBLY, Fuel			4	4
3		LW-16266-10-75	CLAMP			8	8
4		LW-16266-10-13	CLAMP, 1/8 diameter for No.10 screw			8	8
5		STD-860	SCREW, No. 10-32 x 5/8 long, fill. head			8	8
6		STD-670	LOCK NUT, No. 10-32			8	8
7		LW-16561	NIPPLE, 3/8 flared tube, 9/16-18			1	1
8		02M28686-4S380	HOSE ASSEMBLY, 1/4 hose, straight			1	1
9		73136	BRACKET, Extension, fuel injector			1	1
10		LW-16266-10-63	CLAMP, 5/8 I.D. x No. 10 screw			1	1
11		STD-860	SCREW, No. 10-32 x 5/8 long, fill. head			1	1
12		STD-670	LOCK NUT, No. 10-32			1	1
13		AS5406-04	UNION, 1/4 flare tube bulkhead			1	1
14		02M28686-4S205	HOSE ASSY, Teflon 1/4 hose, 90 el. w/ str. fit.			1	1
15		72815	BRACKET, Support clamp, 90 degree			1	1
16		STD-860	SCREW, No. 10-32 x 5/8 long, fill. head			1	1
17		STD-670	LOCK NUT, No. 10-32			1	1
18		LW-16266-10-63	CLAMP, 5/8 I.D. x No. 10 screw			1	1
19		07A28507	BRACKET ASSY, fuel line support			1	1
20		STD-670	LOCK NUT, No. 10-32			1	1
21		STD-692	SCREW, No. 10-32 x 1/2 long, round head			2	2
22		STD-425	WASHER, No. 10 plain			3	3
23		STD-860	SCREW, No. 10-32 x 5/8 long, fill. head			1	1
24		LW-16266-10-63	CLAMP, 5/8 I.D. x No. 10 screw			1	1

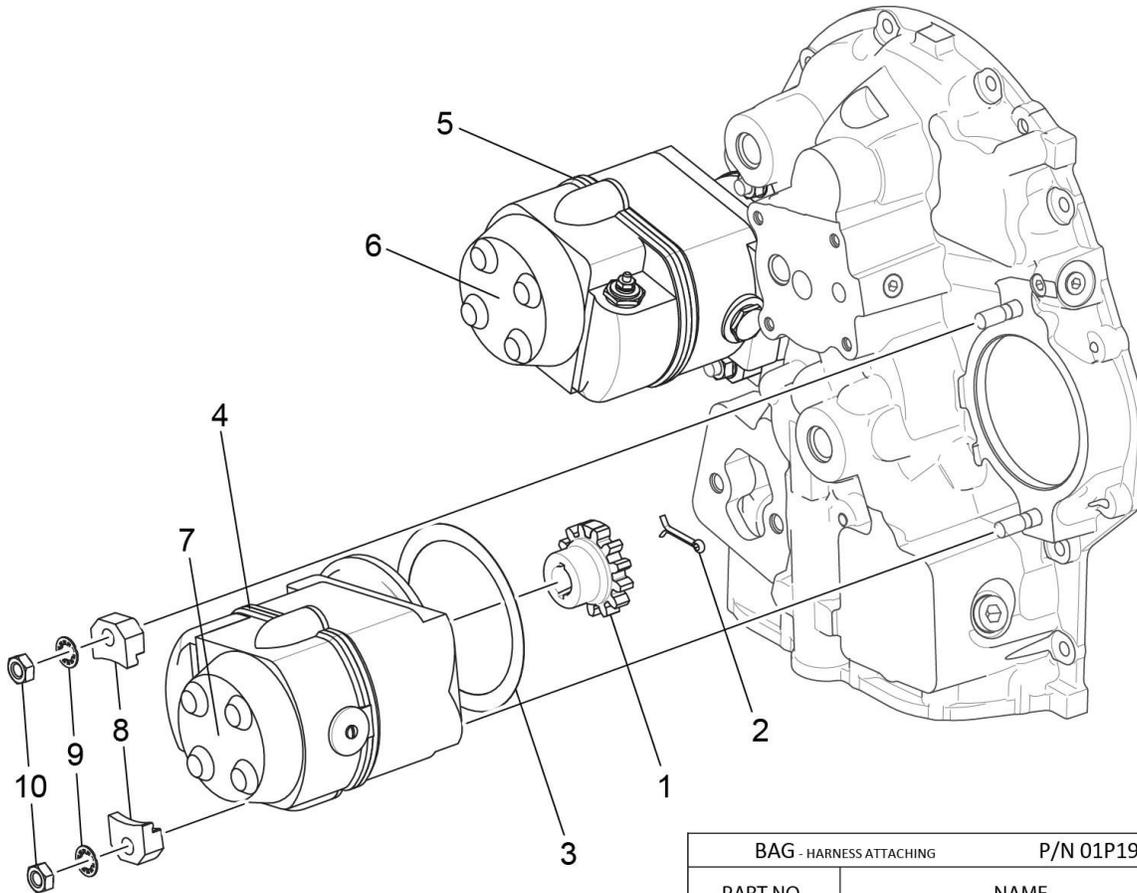
❖ Use with Inverted Fuel Manifold Assembly (optional)

Continued on next page

FUEL DISTRIBUTION
Figure 26B – Fuel Lines, Fuel Hoses, and Attaching Parts (C1B6 and C3B6) (Cont.)

Figure Item	Code	Part Number	Description	Units per Assembly			
				C 1 A 6	C 3 A 6	C 1 B 6	C 3 B 6
25		LW-16562	NIPPLE, 3/8 flared tube, 9/16-18			1	1
26		72377	ELBOW, 3/8 flared tube, adjustable			1	1
27		02M22792-6S221	HOSE ASSEMBLY, Teflon 3/8 hose, 45 deg. elbow with straight fitting - 22-1/8 length			1	1
28		73136	BRACKET, Extension, fuel injector			2	2
29		LW-16266-10-63	CLAMP, 5/8 I.D. x No. 10 screw			2	2
30		STD-860	SCREW, No. 10-32 x 5/8 long, fill. head			2	2
31		STD-425	WASHER, No. 10 plain			2	2
32		STD-670	LOCK NUT, No. 10-32			2	2
33		02G21379	NIPPLE, 1/8 NPT to 1/4 tube			1	1
34		AN844-4D	ELBOW, pipe to hose			1	1

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BAG - HARNESS ATTACHING		P/N 01P19762-2-7
PART NO.	NAME	QTY.
LW-16266-25-25	CLAMP - ONE WIRE	4
LW-14060	CLIP - TWO WIRE	4
STD-8	WASHER - .250 PLAIN	8
STD-1874	SCREW - .250-20 X .81 LG. FILL.	4
76734	ZIP STRAP	12
LW-16266-25-50	CLAMP	3
STD-1411	NUT - .250-20 PLAIN	1
STD-696	WASHER - .250 PLAIN (THIN)	4
STD-1916	SCREW - .250-20 X 1.13 LG. FIL HD	1
STD-1925	SCREW - .250-20 X .63 LG. PAN HD	2
72815	BRACKET - SUPPORT CLAMP - 90 DEGRE	3
73152	BRACKET - SUPPORT CLAMP	2
STD-692	SCREW - #10-32 X .50 LG. RD. HD.	5
STD-425	WASHER - #10 PLAIN	5
STD-670	LOCK NUT - #10-32	5
LW-M-2375	SET OF 2 PLATES - SPARK PLUG CABLE - 2 WIRE	2

Figure 27
Magnetos, Magneto Drives, and Harnesses,

DISTRIBUTION**Figure 27 – Magnetos, Magneto Drives, and Harnesses**

Figure Item	Code	Part Number	Description	Units per Assembly
1		68C19622	GEAR, Magneto	2
2		MS9245-44	COTTER PIN, 3/32 diameter x 5/8 long	2
3		LW-12681	GASKET, Magneto	2
4		66GP-0SANN	MAGNETO, Plain 4370	1
	*	66GHP-0SBNN	MAGNETO (ES4370)	1
5		66GR15SANN	MAGNETO, Retard 4345	1
	*	66GHR15SBNN	MAGNETO (ES4345)	1
		66GC15SFNN	Magneto, Impulse 4372	1
6	V	67P20413	HARNESS ASSEMBLY, Slick, Left, V M4019	1
7	V	67P20412	HARNESS ASSEMBLY, Slick, Right, V M4020	1
8		66M21195	CLAMP, Magneto	4
9		STD-475	WASHER, 5/16 lock, internal teeth	4
10		STD-1410	NUT, 5/16-18 plain	4
	❖	01P19762-2-7	BAG, Harness attaching	1
<p>* Refer to the latest revision of Service Instruction No. 1443 for a listing of approved alternate ignition systems.</p> <p>V Vendor Prime Manufacturer part</p> <p>❖ See Figure for a breakdown of individual parts contained in the magneto and harness attaching parts bag. These parts to be attached by customer per engine line drawing included in each bag.</p>				

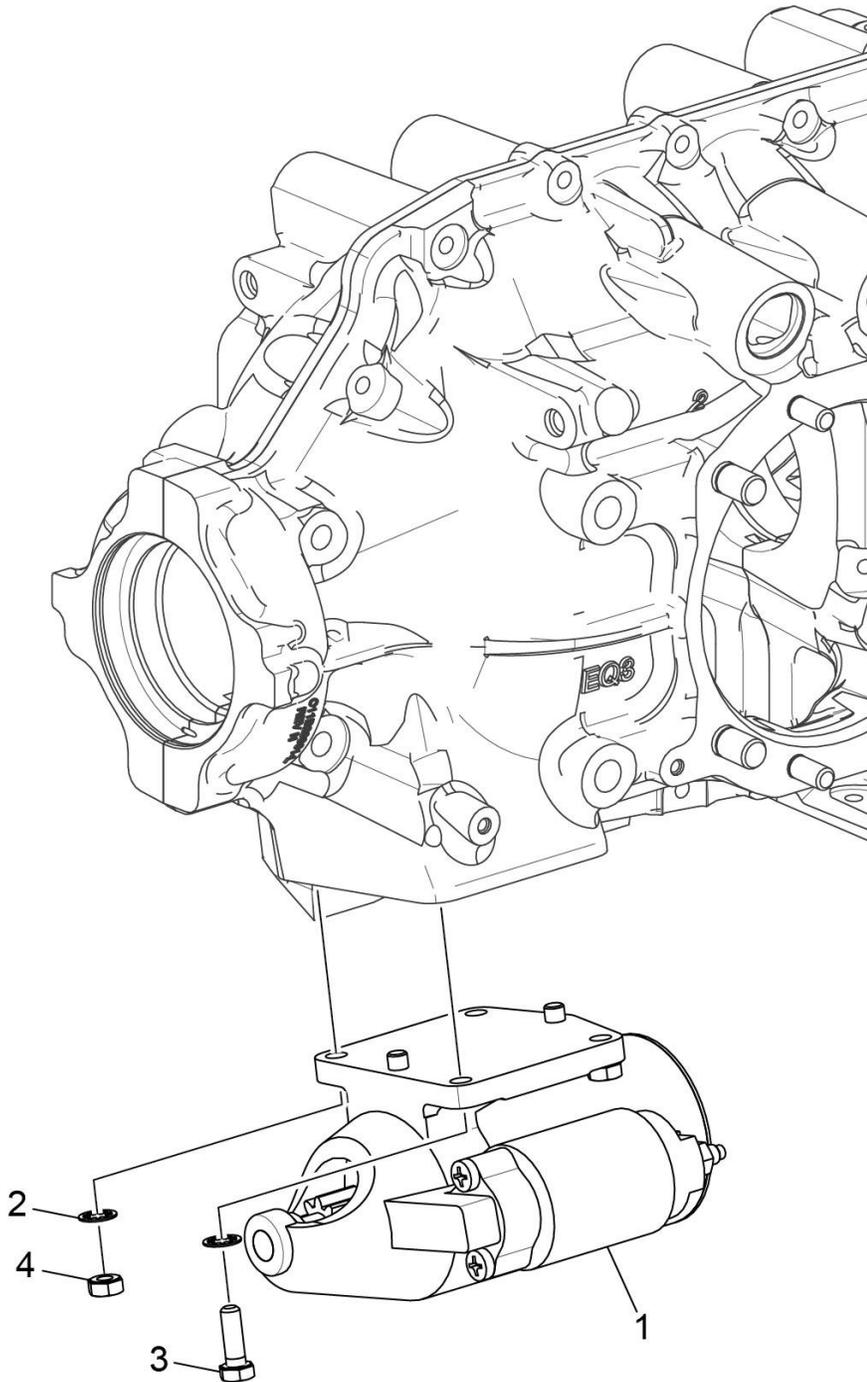


Figure 28
Starter Motor and Attaching Parts

CRANKING**Figure 28 - Starter Motor and Attaching Parts**

Figure Item	Code	Part Number	Description	Units per Assembly
1		31B22105	STARTER, Skv-Tec (149-24LS)	1
		31A22104	STARTER, Sky-Tec (149-12LS)	1
		31B26554	STARTER, Sky-Tec (149NL/EC)	1
2		STD-475	WASHER, 5/16 lock, internal teeth	4
3		LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex. head	1
4		STD-1410	NUT, 5/16-18 plain	3
NOTICE: Refer to the latest revision of Service Instruction No. 1154 for complete listing of FAA-approved starters, alternators, generators, regulators and relays.				

Service Kit Section
Seal and Gasket Set

Part No.	Part Name	Qty.
05K28818	KIT - SEAL AND GASKET SET	1
AN901-8A	GASKET, Metal tube connect seal	1
LW-12681	GASKET, Magneto	2
LW-13353	GASKET, Oil sump	1
LW-14260	SEAL, Tachometer	1
LW-15628	SEAL, Crankshaft, oil	1
LW-18639	LOCKPLATE, Crankshaft gear	1
LW-18661	SEAL, Shroud tube	8
06A19956	SEAL, OIL 7/8 I.D. x 1-1/2 O.D. x 5/16	1
06A23493	SEAL, Shroud tube	8
06B23862	GASKET, Oil filter adapter	2
06E19769-0.63	GASKET, Annular, 5/8 I.D.	1
06E19769-1.25	GASKET, 1-1/4 I.D. x 1-1/2 O.D. x 3/32 annular	1
8313	GASKET, Vacuum	1
60096	GASKET, Fuel pump	1
61183	GASKET, Accessory Adapter	1
66224	GASKET, Carburetor	1
66732	GASKET, Valve Rocker Shaft Cover	8
06B26811	GASKET, Rocker box cover (Silicone)	4
68315	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, 4-27/32 I.D. x 3/32 diameter section	4
71973	GASKET, 2 bolt flange, 1-3/4 I.D.	4
72053	GASKET, Governor	1
72059	GASKET, Oil level gage	1
72075	SEAL, Oil, 3/32 section x 7/16 I.D.	2
72091	RING, Oil seal, 0.36 I.D. x 0.10 diameter	2
73818	GASKET, Accessory Housing	1
74068	RING, Oil level gage plug	1
77611	GASKET, Exhaust flange	4
72711	RING, Seal Intake pipes	4
73032	GASKET, Air inlet housing	1
77504	GASKET-FUEL INJECTOR	1
77569	RING-SEAL-INTAKE PIPE	4
MS28775-015	"O" RING, 0.551 I. D x 0.07 O.D.	1
06B28651	GASKET, Air inlet housing	1
SSP-115	STICKER	1

Cylinder, Piston and Ring Assembly

Part No.	Part Name	Qty.
05K26625	KIT - CYLINDER, PISTON AND RING ASSEMBLY	1
16A26081	CYLINDER AND HEAD ASSEMBLY	1
14E23911	PISTON, Compression ratio 8.90:1	1
14G22050	RING, Piston, compression	2
14H29865	RING- Piston oil regulating (expander type)	1
71481	RING, Oil seal, 3/32 diameter x 4-27/32 I.D.	1
14J22048	PIN, Piston	1
72198	PLUG, Piston pin	2
66732	GASKET, Valve rocker shaft cover	2
06B26811	GASKET, Rocker box cover (Silicone)	1
71973	GASKET, 2 bolt flange, 1-13/16 I.D.	1
06A23493	SEAL, Shroud tube	2
75118	GASKET, Exhaust flange	2
77569	RING, Seal-intake pipe	1
LW-18661	SEAL, Shroud tube	2
1102	PLUG, 1/8 pipe	1
SSP-115	STICKER	1

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