

Lycoming AIRCRAFT ENGINES

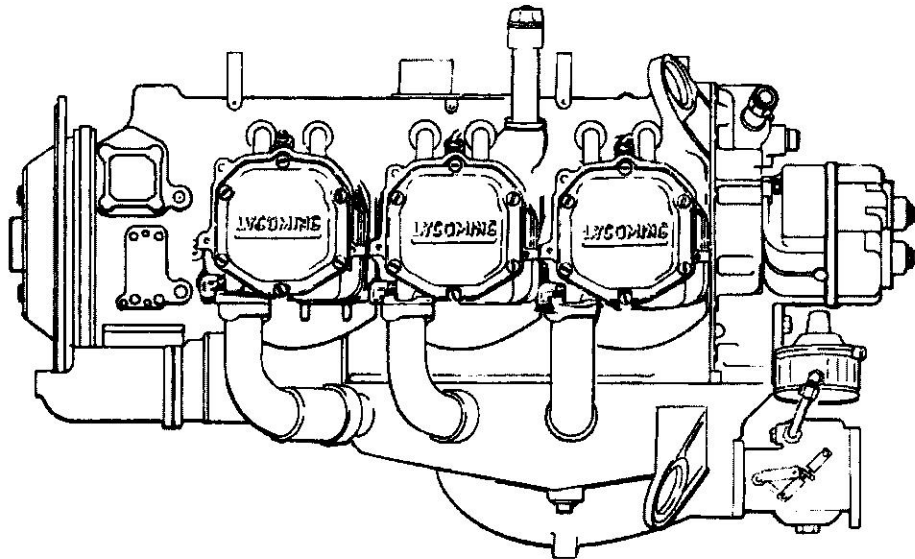
IO-540-T Series

-T4A5D, -T4B5, -T4B5D, -T4C5D

Wide Cylinder Flange Crankcase Model Engines

PARTS CATALOG

PC-615-8



October 1992

Lycoming

652 Oliver Street
Williamsport, PA 17701 U.S.A.

INTRODUCTION

This illustrated parts catalog contains a complete parts listing for the -T4B5D and -T4C5D wide cylinder flange model aircraft engines.

Lycoming IO-540-T4A5D, -T4B5,

Major assembly and sub-assembly parts of the engines are listed in the Group Assembly sections in the general sequence of engine build up.

A Service Kits section and Oversize and Undersize Parts List are included to aid in ordering parts as necessary during overhaul.

The Numerical Index is provided for convenience in finding parts when only the part number is known.

Parts coverage of Vendor Accessories used on Lycoming engines may be found in the appropriate Vendor's Parts Catalog. A list of addresses of where to obtain these publications appears in the latest edition of Service Letter No. L114.

NOTE

The illustrations, pictures and drawings shown in this publication are typical of the subject matter they portray.

This catalog, when used in conjunction with the appropriate overhaul manual, shall be used for parts identification only. Under no circumstances shall this catalog be used as an assembly or installation document.

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

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SERVICE BULLETINS, INSTRUCTIONS AND LETTERS

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

HOW TO ORDER PARTS

In ordering parts for your engine, observe the following instructions which will expedite shipment of correct parts required without delay.

- a. Always specify the model and serial number of your engine.
- b. Always specify Part Number, Nomenclature and quantity required.

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Oversize and Undersize Parts Listing

PART NO.	DESCRIPTION	OVERSIZE								UNDERSIZE		
		P02 .002	P05 .005	P10 .010	P15 .015	P20 .020	P30 .030	P40 .040	P50 .050	M03 .003	M06 .006	M10 .010
61681	GUIDE	SEE LATEST EDITION OF SERVICE INSTRUCTION NO. 1256 FOR APPLICATION.										
66610	BUSHING		X	X								
66796	INSERT			X								
69796	DOWEL		X									
71903	BUSHING	SEE LATEST EDITION OF SERVICE INSTRUCTION NO. 1143 FOR APPLICATION.										
72057	SEAT			X		X	X					
72058	SEAT			X		X	X					
72060	BUSHING		X	X	X	X						
72061	BUSHING		X	X	X	X						
72062	BUSHING		X	X	X	X						
73810	BUSHING	SEE LATEST EDITION OF SERVICE INSTRUCTION NO. 1142 FOR APPLICATION.										
73857	RING			X		X						
74230	GUIDE	SEE LATEST EDITION OF SERVICE INSTRUCTION NO. 1256 FOR APPLICATION.										
74241	RING			X								
LW-11020	BEARING				X					X	X	X
LW-11021	BEARING				X					X	X	X
LW-11997	SEAL	SEE LATEST EDITION OF SERVICE INSTRUCTION NO. 1324 FOR APPLICATION.										
LW-13521	BEARING			X						X*	X*	X*
LW-13522	BEARING									X	X	X
LW-13792	SEAL	SEE LATEST EDITION OF SERVICE INSTRUCTION NO. 1324 FOR APPLICATION.										
LW-13884	BEARING				X					X	X	X
LW-16047	BEARING				X					X	X	X
LW-16048	BEARING			X						X*	X*	X*
LW-16711	BEARING									X	X	X
STD-2078	DOWEL	X	X	X	X							
18A19441	BEARING				X					X	X	X

* Also available in P10 oversize.

In addition to the above, studs are available in P01, P02, P03, P05, P07, P10 & P12.

NOTE

When ordering oversize and undersize parts, be sure to specify the required oversize and undersize dimension along with the proper part number. For example, to order bearing LW-13884 in .003 undersize, order part number LW-13884-M3. Oversize code letter is "P" while undersize code letter is "M". These letters are then followed by the number designating the size in thousandths of an inch.

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP

CRANKCASE ASSEMBLY

FIG. REF. 1	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	11E20000-D1	CRANKCASE ASSEMBLY (See Note)		1		1	
	11E20002-D1	CRANKCASE ASSEMBLY (See Note)					1
	11E20000-S1	CRANKCASE ASSEMBLY (See Note)			1		
2	31C-12	STUD, 5/16-18 x 1-1/2 long	2				
3	31C-13	STUD, 5/16-18 x 1-5/8 long	1				
4	38-13	STUD, 3/8-16 x 1-5/8 long	24				
5	50-15	STUD, 1/2-13 x 1-7/8 long	12				
6	38-22	STUD, 3/8-16 x 2-3/4 long	1				
7	10-8	STUD, 10-32 x 1.00 long					3
8	38D-17	STUD, 3/8-16 x 2-1/8 long	1				
9	38-16	STUD, 3/8-16 x 2.00 long	8				
10	69796	DOWEL, Crankshaft	2				
11	STD-514	DOWEL, 5/16 dia. x 1/2 long	2				
12	STD-557	DOWEL, 1/2 dia. x 11/16 long	2				
13	72158	BUSHING, Governor drive idler gear	1				
14	STD-1339 * *	PLUG, 1/16-27 NPT	7				
15	1102	PLUG, 1/8 pipe	4				
16	31C-16	STUD, 5/16-18 x 2.00 long	4				
17	65007 *	RETAINER, Shroud tube seal	12				

- * Early crankcases used Item No. 17 retainer, P/N 65007, installed in shroud tube bosses. Later crankcases are machined as a product improvement to accept shroud tubes without retainers. This part is a service item only.
- * * 1 at governor pad, 6 at piston squirt holes.

NOTE

This part is not available as a service item. Refer to Section 7, Service Kits, Page 7-3 for applicable Crankcase Assy. and Thru Stud Kit part number.

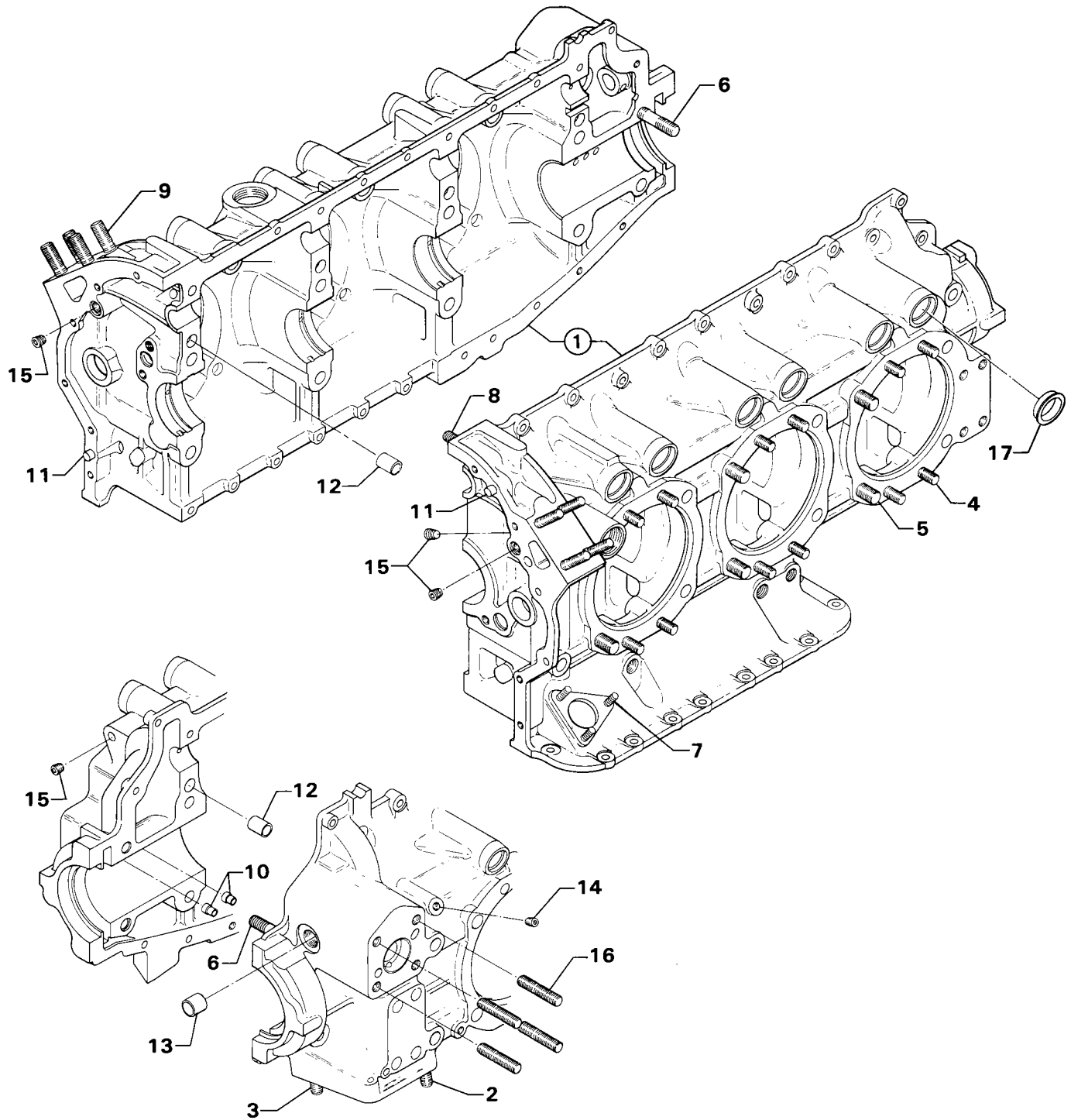


Figure 1. CRANKCASE ASSEMBLY

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP

OIL LEVEL GAGE AND ENGINE MOUNTING BRACKETS

FIG. REF. 2	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	70457	GASKET, Oil filler extension		1	1	1	
2	77527	EXTENSION, Oil filler, short		1	1	1	
3	72312	RING, Oil seal, 1.00 I.D. x 1/8 section		1	1	1	
4	LW-14730	GAGE ASSY., Oil level		1	1	1	
5	LW-18481	GASKET, Oil filler adapter					1
6	LW-18482	ADAPTER, Oil filler tube					1
7	STD-28	WASHER, No. 10 plain					3
8	STD-251	WASHER, No. 10 internal lock					3
9	STD-63	NUT, No. 10-32 plain					3
10	72059	GASKET, Oil filler extension					1
11	75735	EXTENSION, Oil filler					1
12	74068	"O" RING, Oil level gage					1
13	LW-16783-10	GAGE ASSEMBLY, Oil level					1
14	70456	BRACKET, Engine mounting (Dynafocal)		4	4	4	
	12A19770	BRACKET, Engine mounting (Dynafocal)					4
15	STD-33	WASHER, 3/8 plain	16				
16	STD-678	WASHER, 3/8 lock, internal teeth	16				
17	STD-596	NUT, 3/8-24 plain	16				

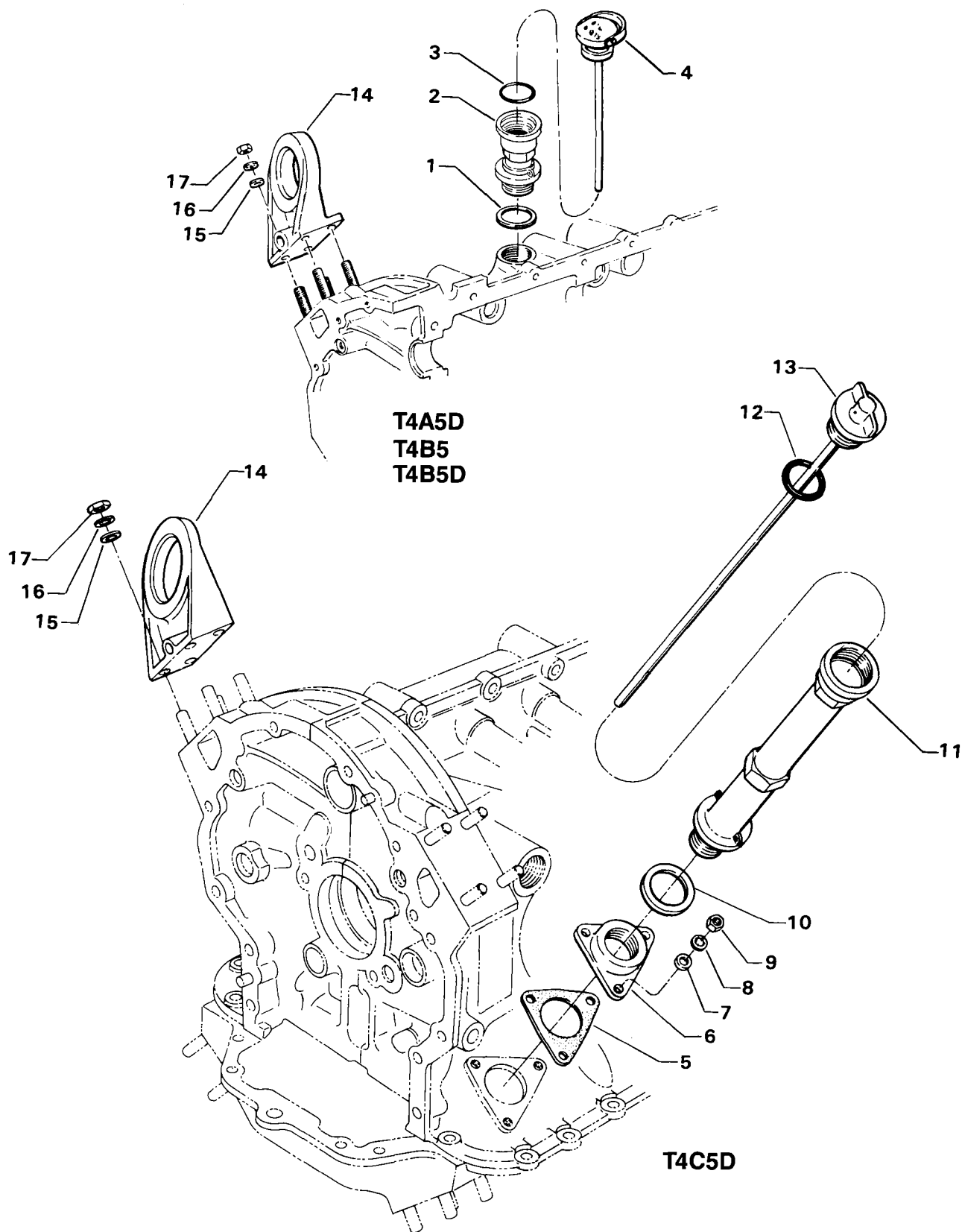


Figure 2. OIL LEVEL GAGE AND ENGINE MOUNTING BRACKETS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP

CRANKCASE RELATED PARTS

FIG. REF. 3	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	1028-B	BALL, 11/16 diameter	1				
2	68668 *	SPRING, Oil pressure relief valve	1				
	61084 *	SPRING, Oil pressure relief valve	1				
	77467 *	SPRING, Oil pressure relief valve	1				
	LW-11713 *	SPRING, Oil pressure relief valve	1				
	LW-18085 *	SPRING, Oil pressure relief valve	1				
3	STD-425	WASHER, No. 10 plain (max. 9)		AR		AR	
4	06E19769-1.25	GASKET, 1-1/4 I.D. x 1-1/2 O.D. x 3/32 annular	1				
5	77808	VALVE ASSY., Oil pressure relief, adjustable			1	1	1
6	76529	PLUG, Oil relief valve		1		1	
7	LW-11020	BEARING, Crankshaft		6		6	
	LW-11021	BEARING, Crankshaft (alternate)		6		6	
	LW-16047	BEARING, Crankshaft (alternate)		6		6	
8	LW-16711	BEARING, Crankshaft			6	6	6
9	LW-13884	BEARING, Crankshaft, front	2				
	18A19441	BEARING, Crankshaft, front (alternate)	2				
10	LW-13792 * *	SEAL, Crankshaft oil, solid	1				
	LW-11997 * *	SEAL, Crankshaft oil, split	1				
11	72091	RING, Oil seal	2				
12	72877	BODY, Hydraulic tappet	12				
13	LW-14178	PLUG, Drain					1
14	MS29512-10	SEAL, Oil, 3/32 section x 45/64 I.D.					1

* Select spring to give a maximum of three threads exposed on adjusting screw to allow field adjustment. Reference latest revision of Lycoming Table of Limits SSP-1776, Part 1 for spring identification.

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

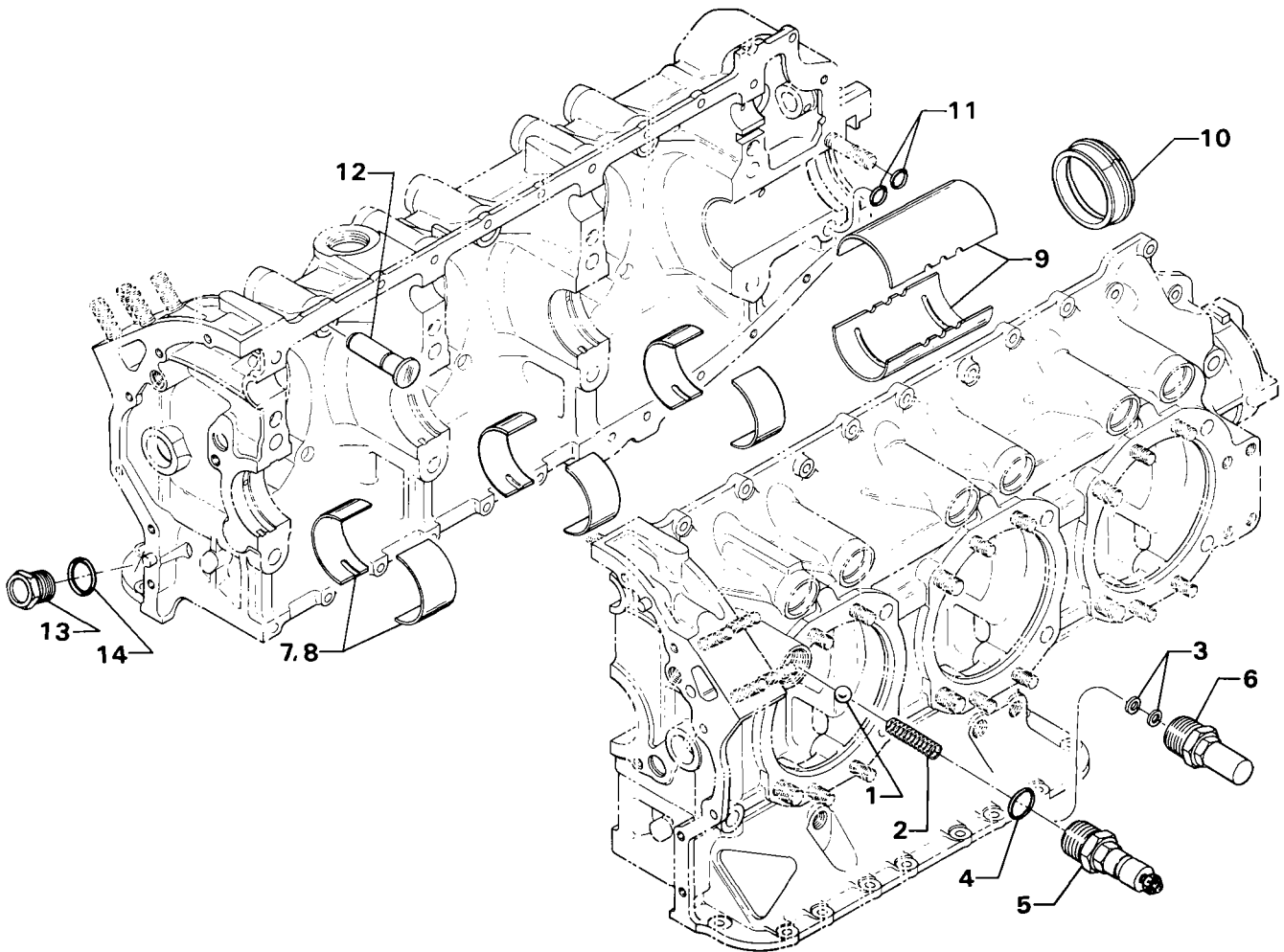


Figure 3. CRANKCASE RELATED PARTS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP

CRANKSHAFT, IDLER GEARS AND RELATED PARTS

FIG. REF. 4	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	13E17680	CRANKSHAFT AND COUNTERWEIGHT ASSEMBLY		1		1	1
	13E17676	CRANKSHAFT AND COUNTERWEIGHT ASSEMBLY			1		
2	13E17651	CRANKSHAFT AND PLUG ASSEMBLY		1		1	1
	13E17648	CRANKSHAFT AND PLUG ASSEMBLY			1		
3	STD-1211	PLUG, 2.00 dia. expansion	1				
4	73810 *	BUSHING, Crankshaft dynamic counterweight	4				
5	71640	PLUG, 1-3/8 diameter	1				
6	72062	BUSHING, Propeller flange, long	4				
7	72061	BUSHING, Propeller flange, short	1				
8	72060	BUSHING, Propeller flange, indexing	1				
9	STD-2078	DOWEL, 3/8 O.D. x 1/2 long		1		1	1
10	STD-1065	DOWEL, Stepped, 5/16 & 1/4 dia. x 35/64 long			1		
11	LW-19227 * *	COUNTERWEIGHT ASSEMBLY	2				
12	71903 ●	BUSHING, Dynamic counterweight	8				
13	72797 * *	ROLLER, Dynamic counterweight, 6.3 order	2				
14	72965 * *	ROLLER, Dynamic counterweight, 5.1 order	2				
15	LW-14820	RING, Internal retaining	8				
16	71907	WASHER, Dynamic counterweight	8				
17	13S19649 ★	GEAR, Crankshaft		1		1	1
18	LW-10332	LOCKPLATE, Crankshaft gear		1		1	1
19	AN8-14A	BOLT, 1/2-20 x 1-19/32 long		1		1	1
20	13S19647 ★	GEAR, Crankshaft			1		
21	LW-18638	LOCKPLATE, Crankshaft gear			1		
22	STD-2209	BOLT, 5/16-24 x 1-3/4 long			1		
23	61544	PLUNGER, Fuel pump	1				
24	LW-10290	GEAR ASSY., Crankshaft idler		1		1	1
25	LW-10299	SHAFT, Crankshaft idler gear		1		1	1
26	LW-10297	GEAR ASSY., Crankshaft idler, heavy		1		1	1
27	LW-10325	SPACER, Idler gear		1		1	1
28	71652	GEAR ASSY., Crankshaft idler			1		
29	67530	BUSHING, Crankshaft idler gear			1		
30	71668	GEAR ASSY., Crankshaft idler, plain			1		
31	67530	BUSHING, Crankshaft idler			1		
32	LW-13795	SHAFT, Crankshaft idler gear			2		
33	STD-2167	SCREW, 5/16-18 x 7/8 long, hex. hd., dr.			3		
34	STD-2168	NUT, 5/16-18 NC-3 slotted shear			1		
35	LW-16471	SUPPORT ASSY., Starter ring gear, 12/14 pitch		1	1	1	
	74977	SUPPORT ASSY., Starter ring gear, 12/14 pitch					1
36	72566	GEAR, Starter ring, 12/14 pitch	1				

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

Lycoming Service Instruction No. 1142 for application.
 Lycoming Service Instruction No. 1012 for application.
 Lycoming Service Bulletin No. 475 for application.
 Lycoming Service Instruction No. 1143 for application.



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CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
CAMSHAFT AND RELATED PARTS

FIG. REF. 5	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	LW-19340	CAMSHAFT ASSEMBLY	1				
2	76118	SPACER, Tachometer shaft centering	1				
3	76155	SHAFT ASSEMBLY, Tachometer	1				
4	LW-18667	PIN, 3/16 dia. x 2-21/64 long	1				
5	MS16625-1081	RING, Internal retaining	1				

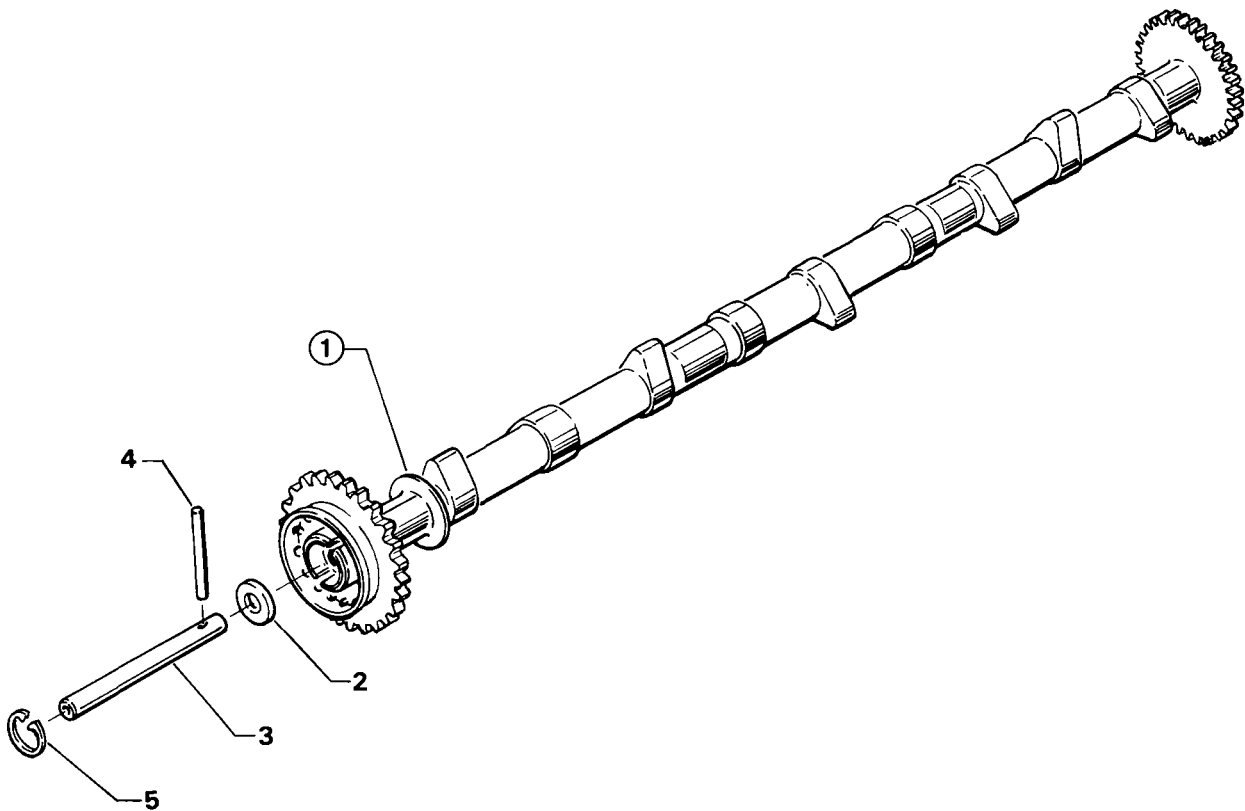


Figure 5. CAMSHAFT AND RELATED PARTS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP

PROPELLER GOVERNOR DRIVE ASSEMBLY

FIG. REF. 6	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	LW-10442	GEAR, Propeller governor drive	1				
2	LW-14021	SHAFT, Propeller governor idler gear	1				
3	LW-10541	GEAR ASSY., Propeller governor idler	1				
4	77872	BUSHING, Propeller governor idler gear	2				
5	STD-19	DOWEL, 3/32 dia. x 7/32 long	1				
6	STD-798	DOWEL, 3/32 dia. x 9/32 long	1				
7	73249	WASHER, Thrust (.0585-.0595) thick	AR				
	73250	WASHER, Thrust (.062-.063) thick	AR				
	73251	WASHER, Thrust (.0655-.0665) thick	AR				
	73252	WASHER, Thrust (.069-.070) thick	AR				
	01L21418	WASHER, Thrust (.055) thick	AR				
8	AN565B1032H5 *	SET SCREW, No. 10-32 x 5/16 long	1				
9	70455	GASKET, 25/32 I.D. x 1-1/8 O.D. x 1/16 thick	1				
10	LW-13896	PLUG, 3/4-16 hex. head	1				
11	72053	GASKET, Governor	1				
12	72378	COVER, Governor drive	1				
13	STD-35	WASHER, 5/16 plain	4				
	STD-35	WASHER, 5/16 plain	20				
14	STD-475	WASHER, 5/16 lock, internal teeth	4				
15	STD-1410	NUT, 5/16-18 plain	4				

* For alternate set screw and installation information, see latest edition of

Lycoming Service Instruction No. 1343.

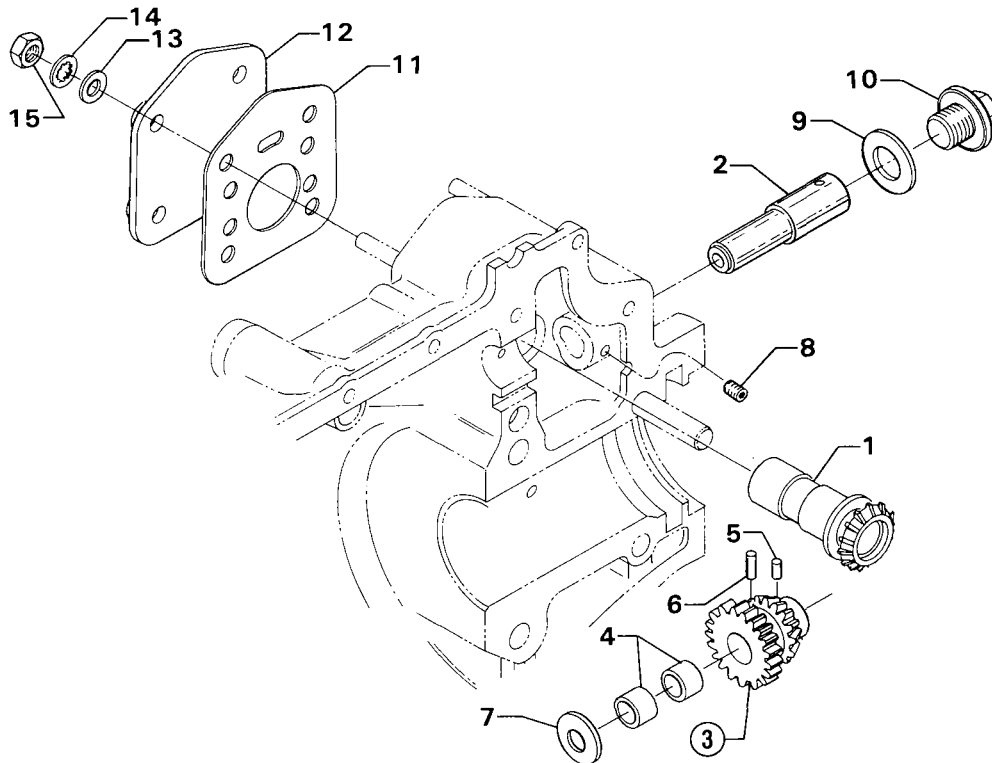


Figure 6. PROPELLER GOVERNOR DRIVE ASSEMBLY

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP

CRANKCASE ATTACHING PARTS

FIG. REF. 7	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	LW-25-1.50	BOLT, 1/4-20 x 1-1/2 long, hex. hd.	8				
2	LW-25-1.88 *	BOLT, 1/4-20 x 1-7/8 long, hex. hd.	1				
3	LW-25-2.00 * *	BOLT, 1/4-20 x 2.00 long, hex. hd.	2				
4	STD-8	WASHER, 1/4 plain	25				
5	60803	STRAP, Lifting	2				
6	LW-25-1.75	BOLT, 1/4-20 x 1-3/4 long, hex. hd.	1				
7	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. hd.	4				
8	STD-160	WASHER, 1/4 lock, internal teeth	16				
9	STD-1411	NUT, 1/4-20 plain	12				
10	LW-25S1.50	BOLT, 1/4-20 x 1-1/2 long, hex. hd. dr. end	6				
11	STD-8	WASHER, 1/4 plain (18 max.)	AR				
12	STD-1409	NUT, 1/4-20 slotted shear	6				
13	STD-33	WASHER, 3/8 plain	1				
14	STD-872	NUT, 3/8-24 slotted	1				
15	AN6-34A	BOLT, 3/8-24 x 3-37/64 long, hex. hd.	1				
16	STD-33	WASHER, 3/8 plain	3				
17	STD-678	WASHER, 3/8 lock, internal teeth	2				
18	STD-596	NUT, 3/8-24 plain	2				
19	76220	STUD, 1/2-20 x 10-45/64	8				
20	STD-35 ★	WASHER, 5/16 plain		5		5	5
21	STD-475 ★	WASHER, 5/16 lock, internal teeth		1		1	1
22	LW-31-0.94 ★	BOLT, 5/16-18 x 15/16 long, hex. hd.		1		1	1

- * Two STD-8 washers and one LW-25-1.88 bolt assembled in rear top hole in crankcase.
- * * Used to attach fuel manifold bracket.
- ★ Installed in center hole at rear alternator attaching pad.

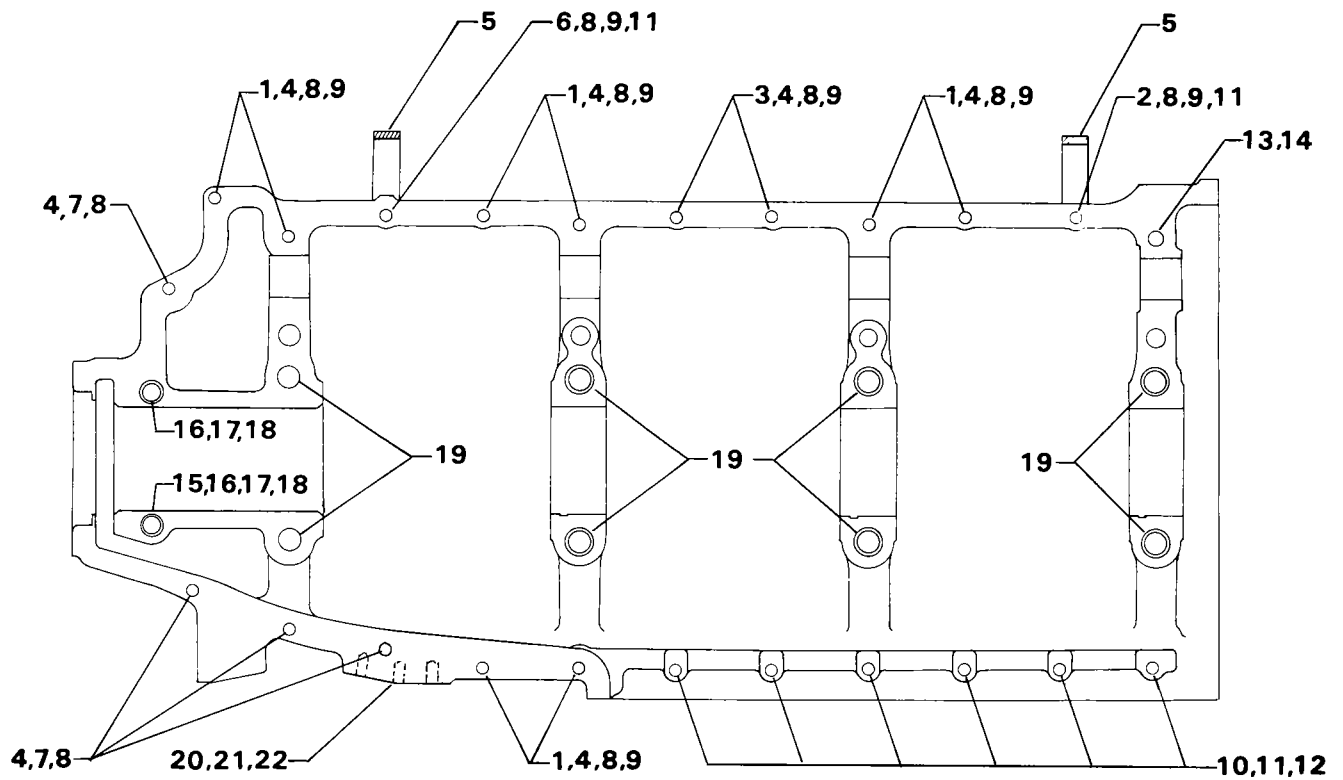
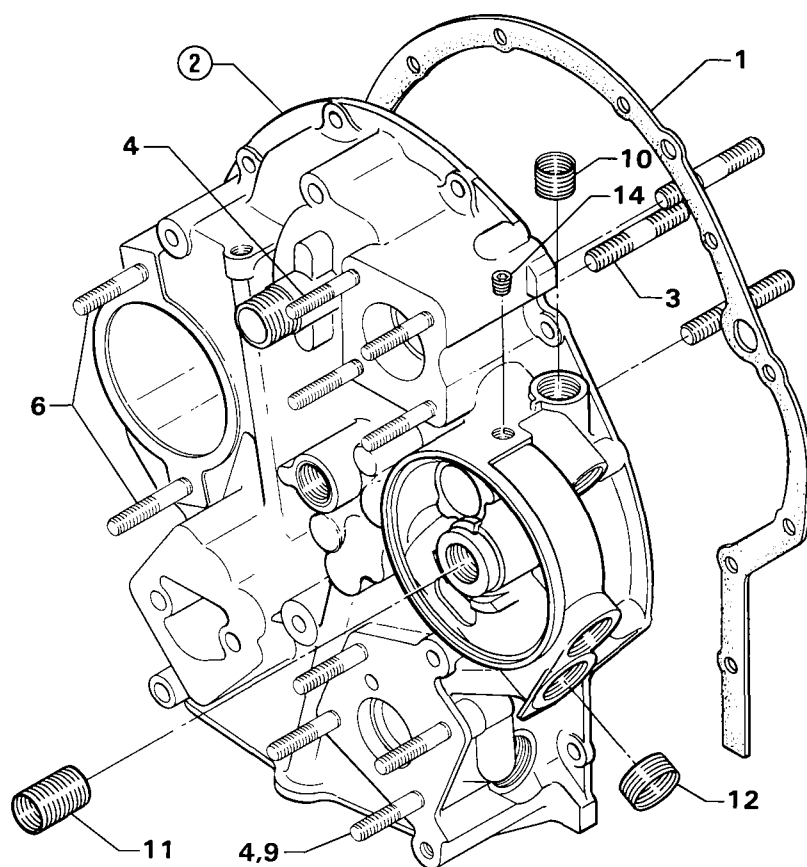


Figure 7. CRANKCASE ATTACHING PARTS

ACCESSORY HOUSING AND RELATED PARTS

ACCESSORY HOUSING ASSEMBLY

FIG. REF. 8	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	73818	GASKET, Accessory housing	1				
2	21D21607-2	HOUSING ASSEMBLY, Accessory		1		1	
	21D21612-1	HOUSING ASSEMBLY, Accessory					1
	76152	HOUSING ASSEMBLY, Accessory			1		
3	31CD-20	STUD, 5/16-18 x 2-1/2 long, drilled		3		3	3
	31CD-17	STUD, 5/16-18 x 2-1/8 long, drilled			3		
4	25C-12	STUD, 1/4-20 x 1-1/2 long		8		8	
	25C-12	STUD, 1/4-20 x 1-1/2 long					4
5	25C-21	STUD, 1/4-20 x 2-5/8 long			4		
6	31C-13	STUD, 5/16-18 x 1-5/8 long		2		2	2
7	31C-12	STUD, 5/16-18 x 1-1/2 long			4		
8	31C-21	STUD, 5/16-18 x 2-5/8 long			4		
9	31C-17	STUD, 5/16-18 x 2-1/8 long					4
10	LW-12589	INSERT, Helicoil, 5/8-18 x 3/8 long		1		1	1
11	MS124703	INSERT, Helicoil, 3/4-16 x 1-1/8 long		1		1	1
12	LW-10341	INSERT, Helicoil, 1.00-14 x 3/8 long		1		1	1
13	STD-784	PLUG, 3/8-18 NPT, Allen head			1		
14	1102	PLUG, 1/8-27 NPT, Allen head		1		1	1
	1102	PLUG, 1/8-27 NPT, Allen head			2		



**T4A5D
T4B5D
T4C5D**

T4B5

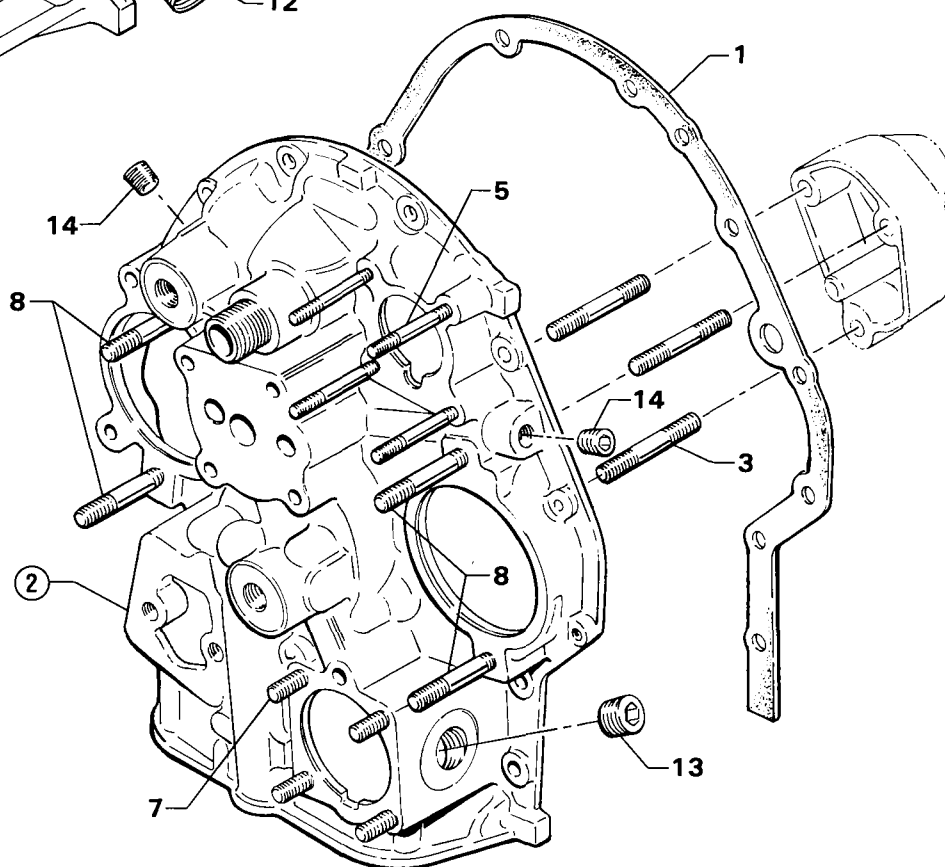


Figure 8. ACCESSORY HOUSING ASSEMBLY

ACCESSORY HOUSING AND RELATED PARTS

OIL PUMP ASSEMBLY AND ACCESSORY HOUSING ATTACHING PARTS

FIG. REF. 9	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	LW-10344	BODY ASSY., Oil pump		1		1	1
	78531	BODY ASSY., Oil pump			1		
2	60329	SHAFT, Oil pump idler		1		1	1
3	STD-714	PIN, Cotter, 1/8 dia. x 1.00 long		1		1	1
4	LW-10318	GEAR ASSY., Oil pump drive		1		1	1
5	61166	THRUST BUTTON, Oil pump drive gear		1		1	1
6	61297	IMPELLER, Oil pump driving		1		1	1
7	61298	IMPELLER, Oil pump driven		1		1	1
8	05K19423-S *	OIL PUMP IMPELLER KIT			1		
9	74641	SHAFT, Oil pump drive			1		
10	STD-35	WASHER, 5/16 plain	3				
11	STD-1420	NUT, 5/16-18 slotted	3				
12	LW-14260	SEAL, Tachometer drive, oil	1				
13	STD-8	WASHER, 1/4 plain			10		
	STD-8	WASHER, 1/4 plain		12		12	12
14	STD-160	WASHER, 1/4 lock, internal teeth	12				
15	LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. hd.	9				
16	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. hd.			1		
	LW-25-1.25	BOLT, 1/4-20 x 1-1/4 long, hex. hd.		1		1	1
17	LW-25-0.81	BOLT, 1/4-20 x 13/16 long, hex. hd.		2		2	2
	LW-25-1.88	BOLT, 1/4-20 x 1-7/8 long, hex. hd.			2		

* To insure impellers are replaced together, oil pump impellers (P/N's LW-18109 and LW-18110) are available only in this Kit form.

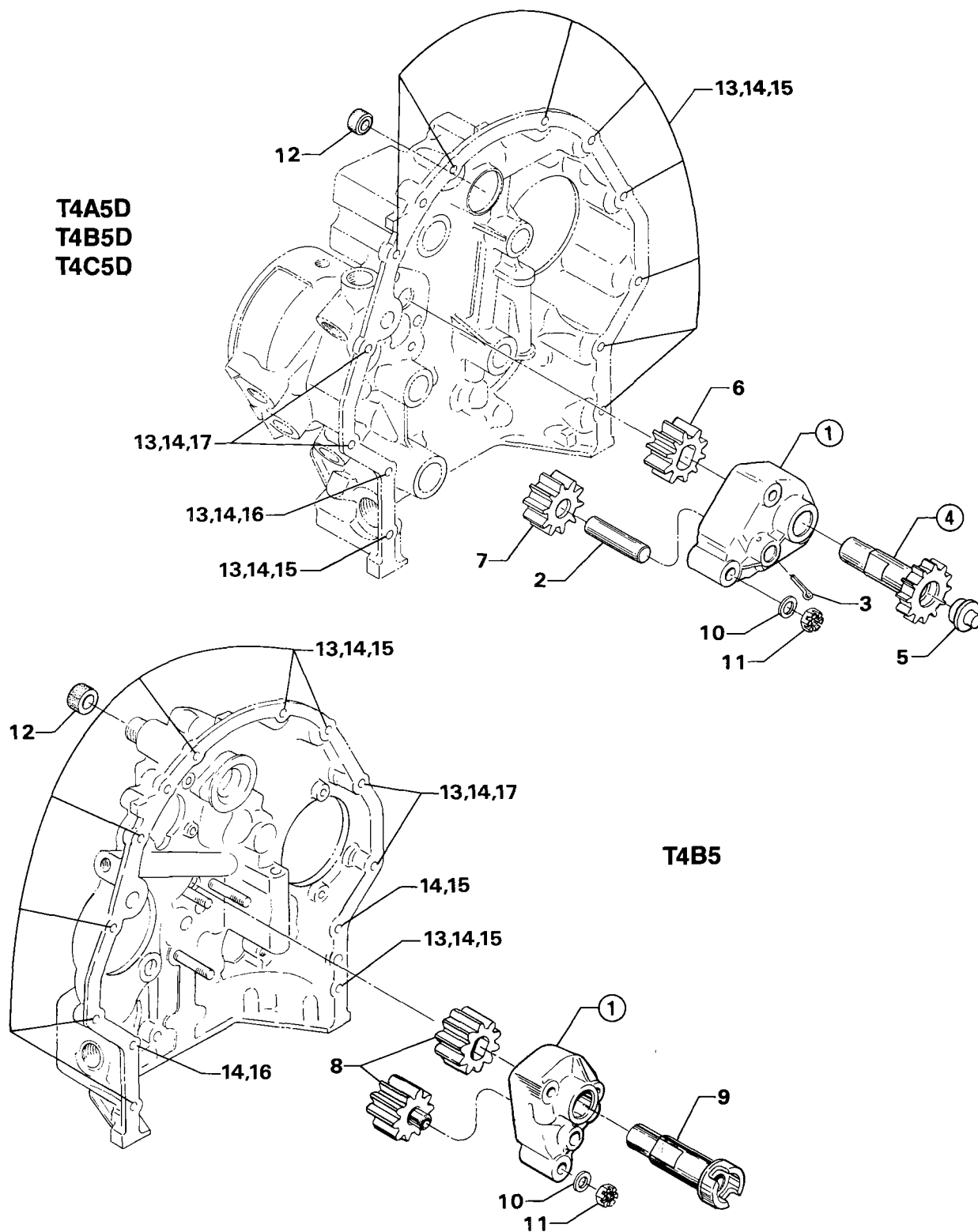


Figure 9. OIL PUMP ASSEMBLY AND ACCESSORY HOUSING ATTACHING PARTS

ACCESSORY HOUSING AND RELATED PARTS

FUEL PUMP ASSEMBLY

FIG. REF. 10	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	60096	GASKET, Fuel pump	1				
2	LW-15473	FUEL PUMP (6441234)	1				
3	STD-33	WASHER, 3/8 plain	2				
4	STD-1882	SCREW, 3/8-16 x 1-9/32 long, socket hd., dr. hd.	2				

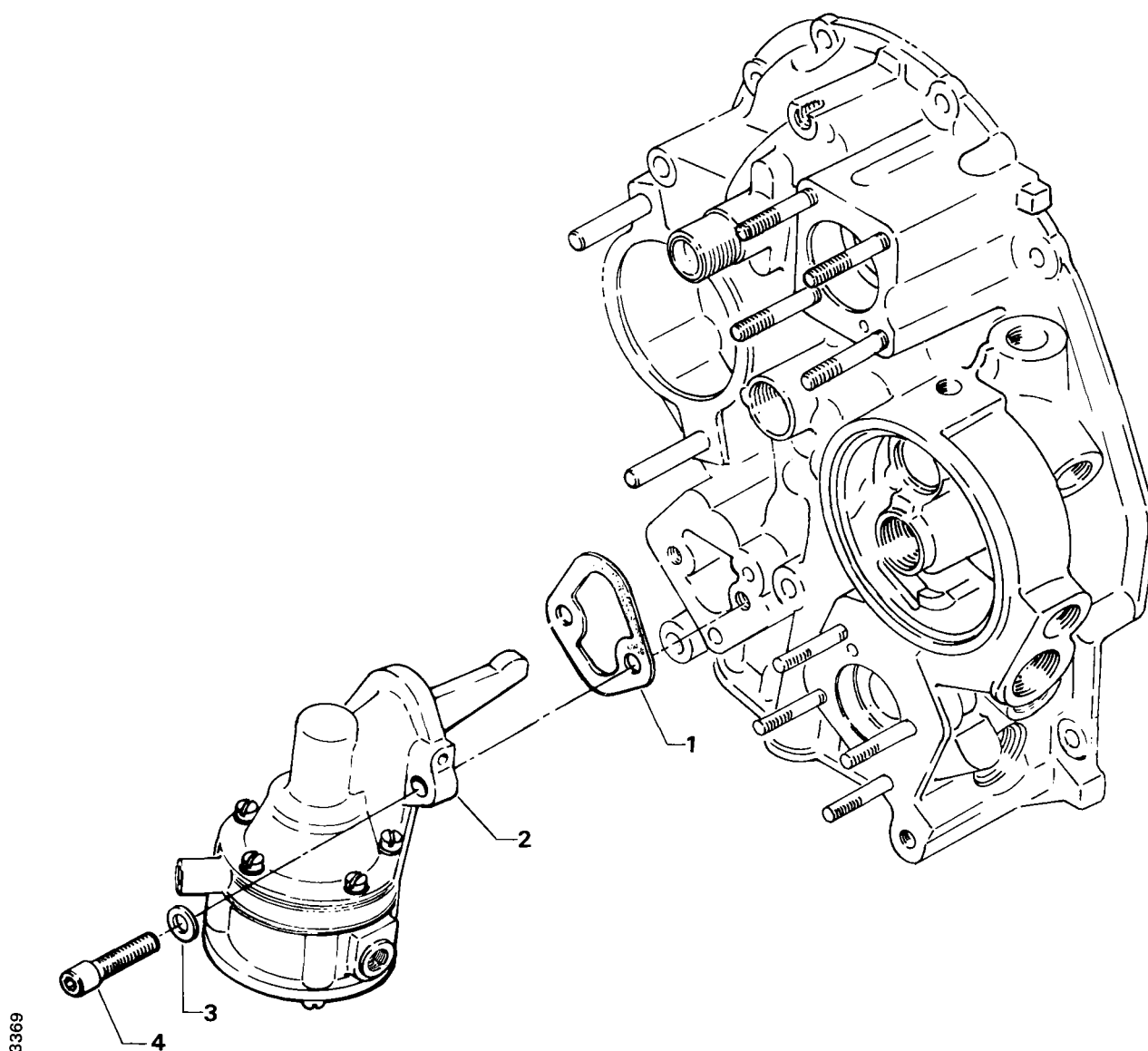


Figure 10. FUEL PUMP ASSEMBLY

ACCESSORY HOUSING AND RELATED PARTS

OIL FILTER ASSEMBLY AND OIL COOLER BYPASS VALVE (DUAL MAGNETO)

FIG. REF. 11	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	55C21021	SPRING, Oil filter bypass valve		1		1	1
2	55K21022	SPACER, Oil pressure bypass valve		1		1	1
3	76539	SEAT, Oil relief valve		1		1	1
4	LW-10320	SLEEVE, Oil filter bypass valve		1		1	1
5	MS16625-1100	RING, Internal retaining		1		1	1
6	54D19627 *	OIL FILTER, (short - no stud)		1		1	1
7	LW-13904 * *	KIT, Converter plate, oil filter		1		1	1
8	53E19600	VALVE ASSEMBLY, Temp. control, oil cooler bypass		1		1	1
9	76510	GASKET, Valve assembly		1		1	1

* See latest edition of
 ** See latest edition of

Lycoming SSP-885 for oil filter kits and replacement filters.
 Lycoming Service Instruction No. 1453 for service application.

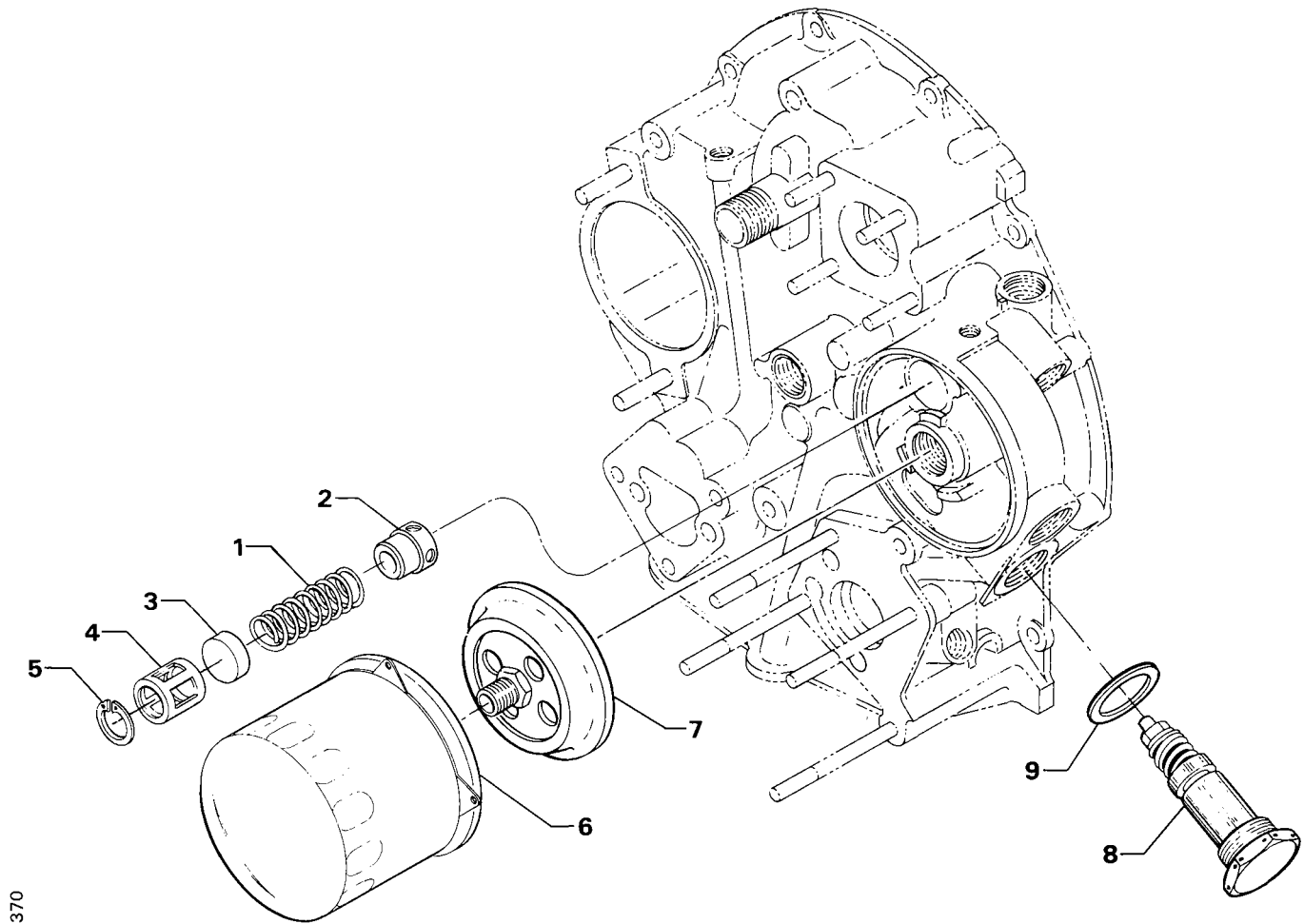


Figure 11. OIL FILTER ASSEMBLY AND OIL COOLER BYPASS VALVE (DUAL MAGNETO)

ACCESSORY HOUSING AND RELATED PARTS

OIL FILTER ASSEMBLY AND OIL COOLER BYPASS VALVE (T4B5)

FIG. REF. 12	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	LW-12795 *	GASKET, Oil filter adapter			1		
2	77852 *	OIL FILTER BASE ASSEMBLY			1		
3	54D19625 *	OIL FILTER,			1		
4	STD-8	WASHER, 1/4 plain			4		
5	STD-160	WASHER, 1/4 lock, internal teeth			1		
6	STD-1411	NUT, 1/4-20 plain			1		
7	STD-1856	SCREW, 1/4-20 x 1.00 long, hex. hd.			3		
8	53E19600	VALVE ASSY., Temp. control oil cooler bypass			1		
9	76510	GASKET, Valve assembly			1		
10	25C-10	STUD, 1/4-20 x 1-1/4 long			1		

* See latest edition of Lycoming SSP-885 for oil filter kits and replacement filters.

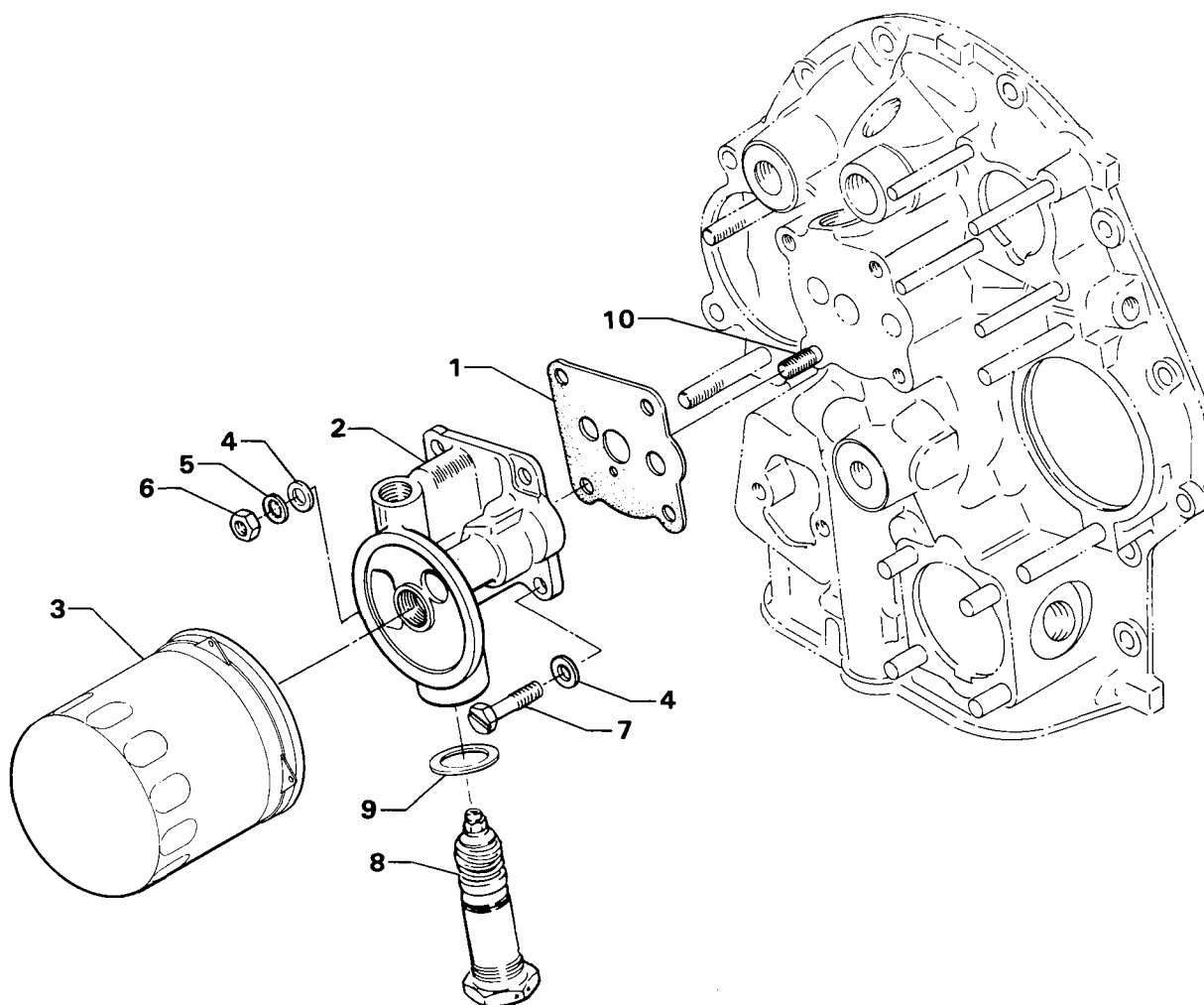


Figure 12. OIL FILTER ASSEMBLY AND OIL COOLER BYPASS VALVE (T4B5)

ACCESSORY HOUSING AND RELATED PARTS

OIL COOLER AND BREATHER FITTINGS

FIG. REF. 13	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	71651	FITTING, Breather		1		1	1
2	MS29512-10 *	SEAL, Oil, 3/32 section x 45/64 I.D.		1		1	1
3	AN814-10L *	PLUG, 7/8-14 thread		1		1	1
4	06E19769-0.63	GASKET, 7/8 I.D. x 5/8 I.D. x 3/32 annular		2		2	2
5	1540	PLUG, Thermometer well		2		2	2
6	MS29512-10 * *	SEAL, Oil, 3/32 section x 45/64 I.D.		2		2	2
7	AN919-15 * *	REDUCER, 1/2 tubing to 5/8 tubing		2		2	2
8	06E19769-0.63	GASKET, 7/8 I.D. x 5/8 I.D. x 3/32 annular			1		
9	69675	CONNECTOR, Accy. hsg. oil cooler			1		
10	STD-784	PLUG, 3/8-18 NPT, Allen head			2		
11	71651	FITTING, Breather			1		
12	62732	CAP, Tachometer drive			1		

* Accessory oil return.

* * Oil cooler inlet and outlet.

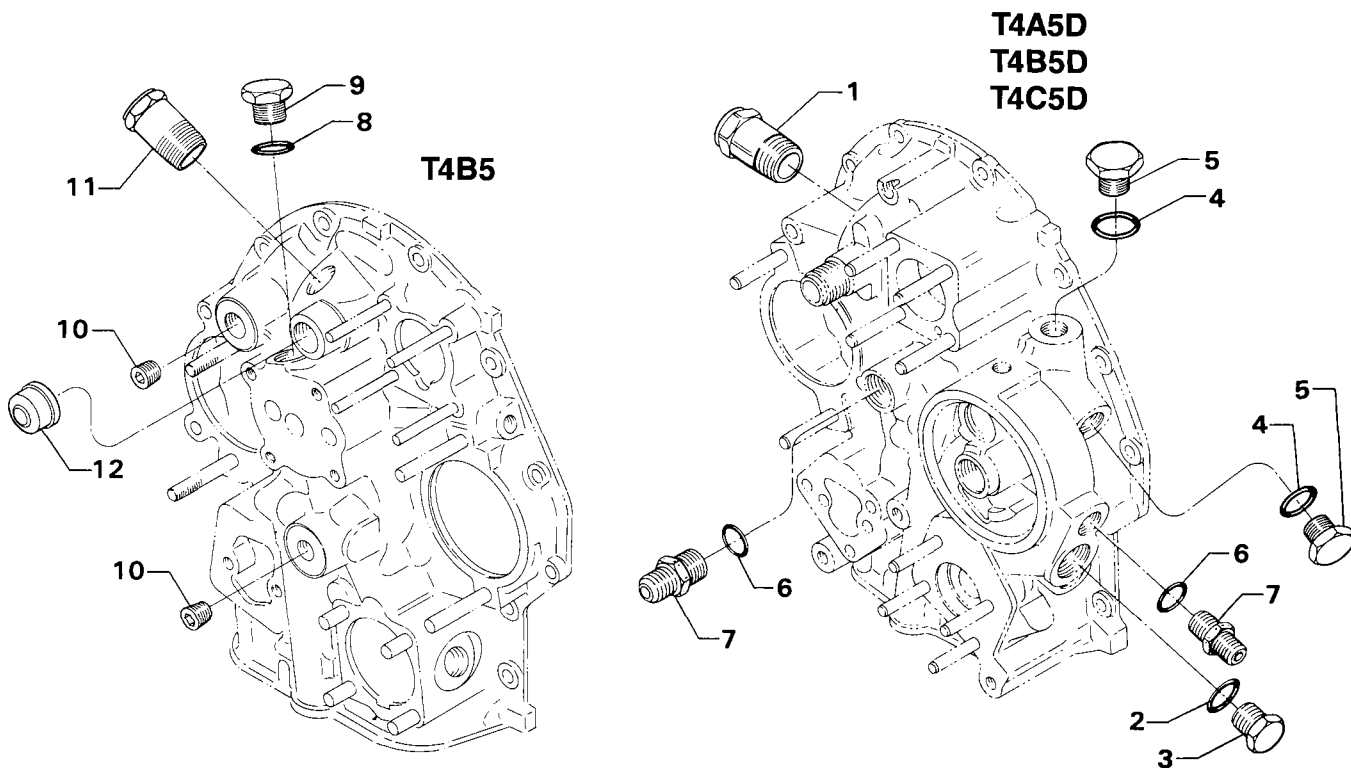


Figure 13. OIL COOLER AND BREATHER FITTINGS

ACCESSORY HOUSING AND RELATED PARTS VACUUM PUMP DRIVES AND COVERS

FIG. REF. 14	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	LW-10307	GEAR ASSY., Accessory driven		1		1	1
2	61166	THRUST BUTTON, Vacuum pump gear		1		1	1
3	71596	WASHER, Accessory drive gear		1		1	1
4	06A19956	SEAL, Oil, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide		1		1	1
5	8313	GASKET, Vacuum pump		1		1	1
6	60430	COVER, Vacuum pump		1		1	1
7	STD-8	WASHER, 1/4 plain		4		4	4
8	STD-160	WASHER, 1/4 lock, internal teeth		4		4	4
9	STD-1411	NUT, 1/4-20 plain		4		4	4
10	LW-10303	PLUG, Hydraulic pump drive		1		1	
11	8313	GASKET, Hydraulic pump		1		1	
12	60430	COVER, Hydraulic pump		1		1	
13	STD-8	WASHER, 1/4 plain		4		4	
14	STD-160	WASHER, 1/4 lock, internal teeth		4		4	
15	STD-1411	NUT, 1/4-20 plain		4		4	
16	LW-18974★	GEAR ASSY., Accessory driven					1
17	LW-18995★	THRUST BUTTON, Accessory driven gear					1
18	71596★	WASHER, Accessory driven gear					1
19	72053★	GASKET, Governor drive					2
20	LW-12347★	PLATE, Propeller governor pad					1
21	72378★	COVER, Governor drive					1
22	STD-35★	WASHER, 5/16 plain					8
23	STD-475★	WASHER, 5/16 internal lock					4
24	STD-1410★	NUT, 5/16-18 plain					4
25	MS29512-6★	SEAL, Oil 5/64 dia. section x 15/32 I.D.					1
26	AN814-6L★	PLUG, Governor oil line					1

★ Rear propeller governor drive engines for use with Woodward or McCauley governor only. See latest edition of Service Instruction No. 1438.

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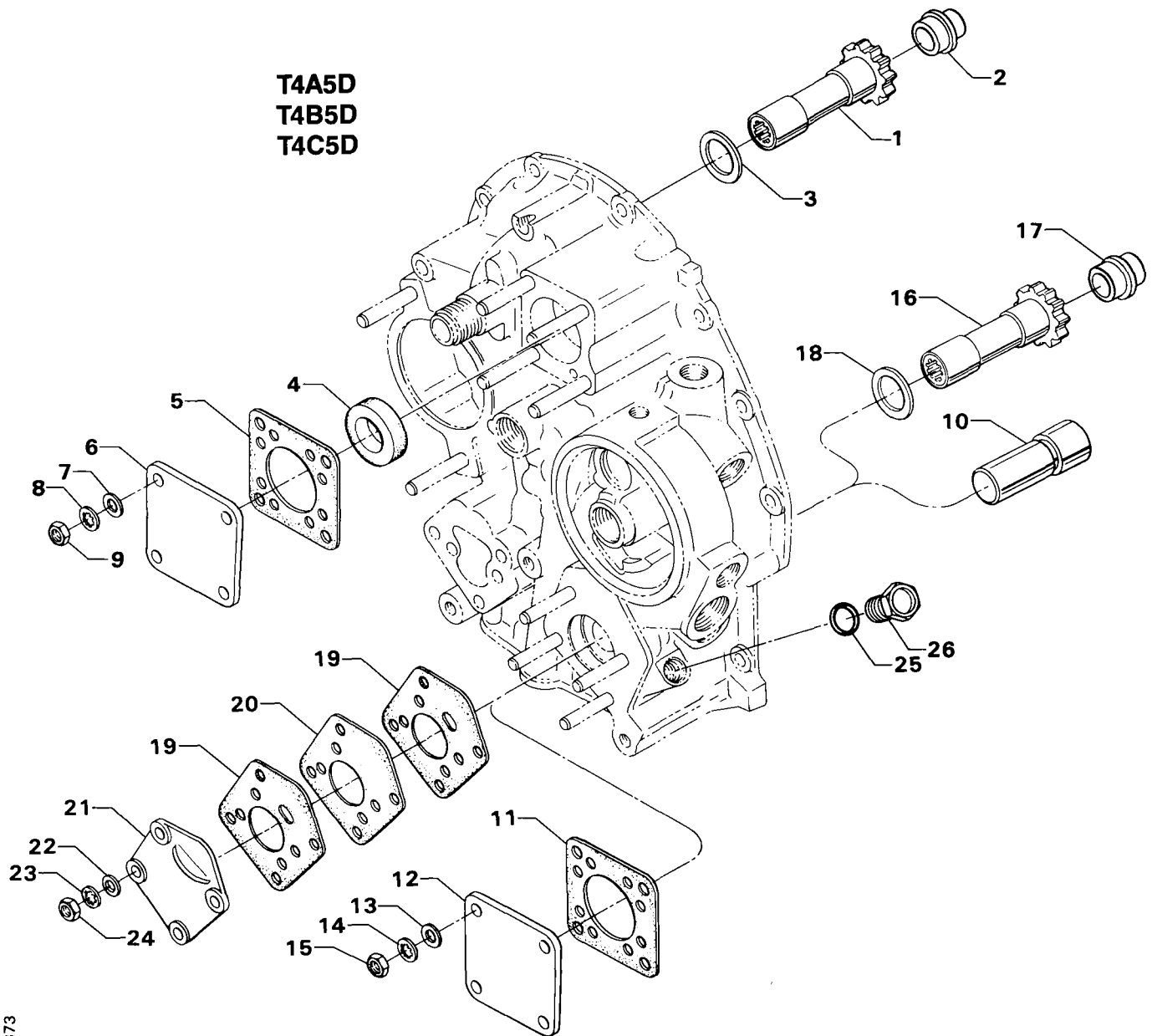


Figure 14. VACUUM PUMP DRIVES AND COVERS

ACCESSORY HOUSING AND RELATED PARTS

VACUUM AND HYDRAULIC PUMP DRIVES AND COVERS (T4B5)

FIG. REF. 15	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	61183	GASKET, Accessory adapter			1		
2	67536	ADAPTER ASSY., Vacuum pump			1		
3	STD-1774	PIN, 1/8 dia. x 1/4 long			1		
4	06A19956	OIL SEAL, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide			1		
5	72974	GEAR ASSY., Vacuum pump driven			1		
6	71596	WASHER, Accessory drive gear			1		
7	8313	GASKET, Vacuum pump			1		
8	60430	COVER, Vacuum pump			1		
9	STD-8	WASHER, 1/4 plain			4		
10	STD-160	WASHER, 1/4 lock, internal teeth			4		
11	STD-1411	NUT, 1/4-20 plain			4		
12	72964	GEAR ASSY., Hydraulic pump driven			1		
13	71596	WASHER, Accessory drive gear			1		
14	68315	GASKET, Accessory drive adapter			1		
15	71675	ADAPTER ASSY., Hydraulic pump			1		
16	06A19956	OIL SEAL, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide			1		
17	25C-12	STUD, 1/4-20 x 1-1/2 long			4		
18	STD-1774	PIN, 1/8 dia. x 1/4 long			1		
19	STD-35	WASHER, 5/16 plain			4		
20	STD-475	WASHER, 5/16 lock, internal teeth			4		
21	STD-1410	NUT, 5/16-18 plain			4		
22	8313	GASKET, Vacuum pump			1		
23	60430	COVER, Vacuum pump			1		
24	STD-8	WASHER, 1/4 plain			4		
25	STD-160	WASHER, 1/4 lock, internal teeth			4		
26	STD-1411	NUT, 1/4-20 plain			4		

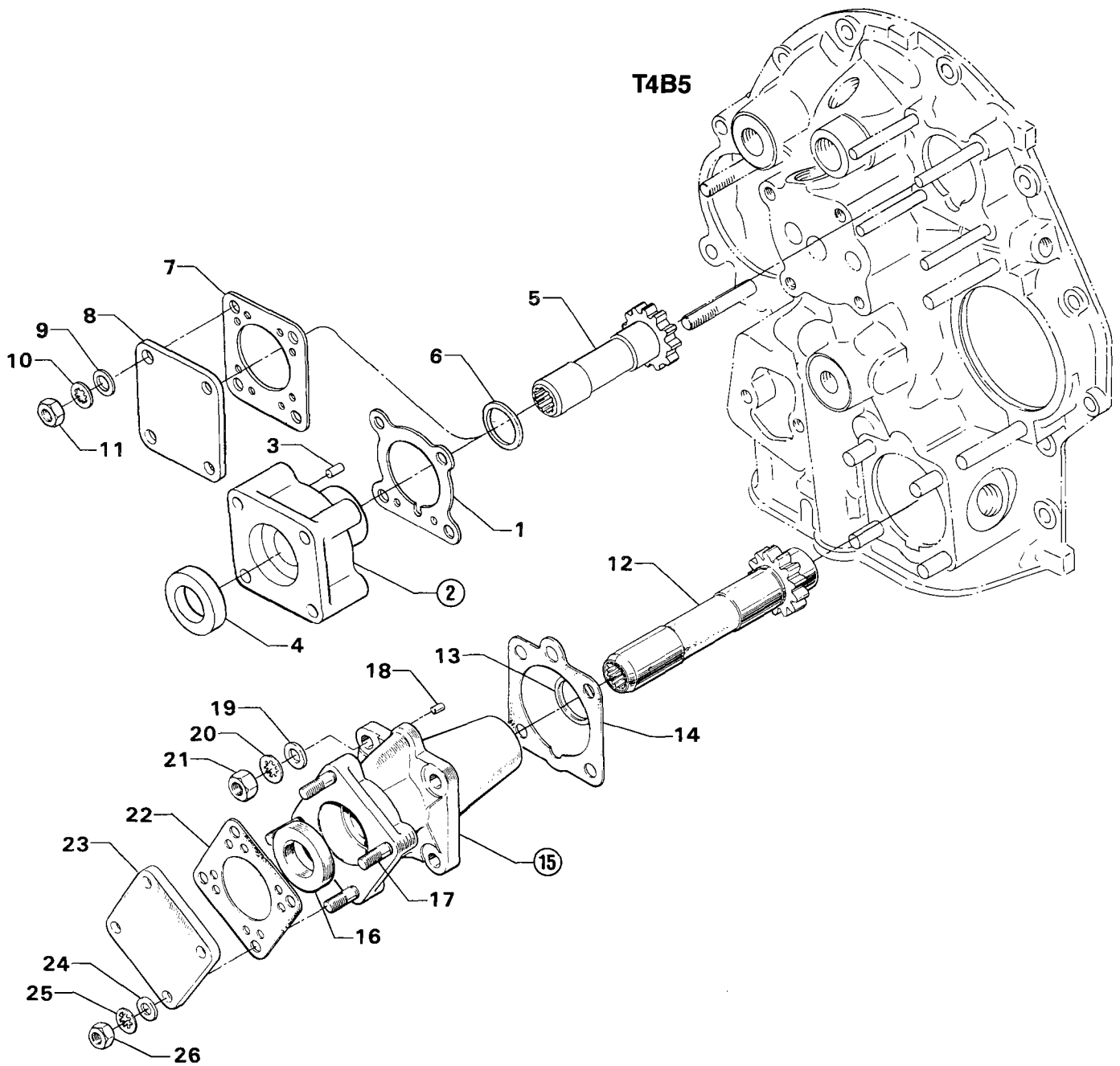
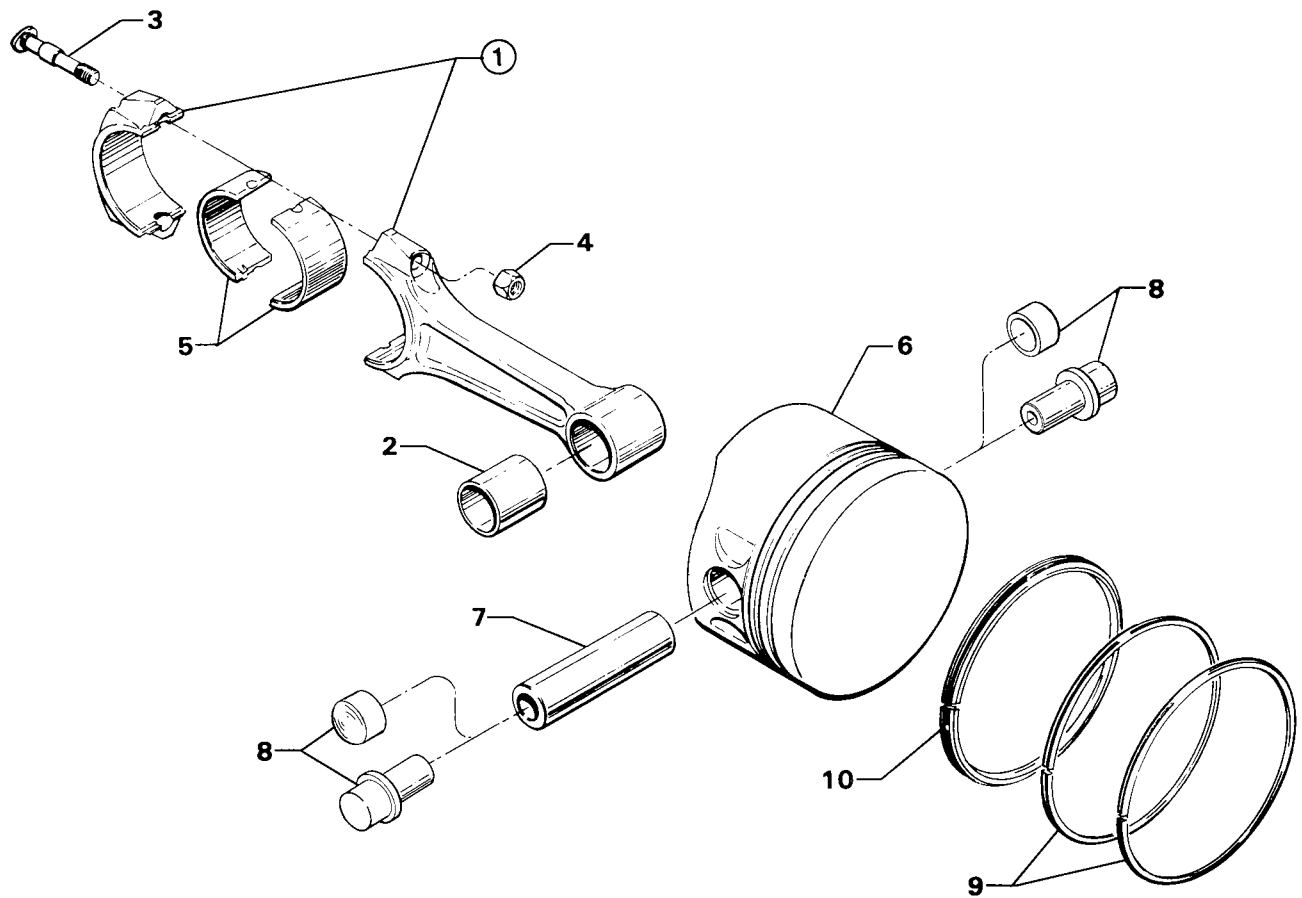


Figure 15. VACUUM AND HYDRAULIC PUMP DRIVES AND COVERS (T4B5)

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

FIG. REF. 16	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	LW-11750	CONNECTING ROD ASSEMBLY	6				
2	LW-13923	BUSHING, Connecting rod, upper	6				
3	75061	BOLT, Connecting rod	12				
4	LW-12186	NUT, Connecting rod bolt	12				
5	LW-13522	BEARING, Connecting rod	12				
	LW-16048	BEARING, Connecting rod (alternate)	12				
	LW-13521	BEARING, Connecting rod (alternate)	12				
6	75089	PISTON, Compression ratio 8.50:1	6				
7	LW-14078	PIN, Piston	6				
	LW-14077 *	PIN, Piston	6				
8	60828	PLUG, Piston pin	12				
	LW-11775 *	PLUG, Piston pin	12				
9	74241	RING, Piston compression	12				
10	73857	RING, Piston, oil regulating (expander type)	6				

* Piloted piston pin plug (use in complete sets only).



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Figure 16. CONNECTING RODS, PISTON AND RING ASSEMBLIES

CYLINDER, PISTON AND VALVE TRAIN CYLINDER ASSEMBLY

FIG. REF. 17	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	LW-12427	CYLINDER AND HEAD ASSY., Nitrided	6				
2	72057	SEAT, Intake valve	6				
3	72058	SEAT, Exhaust valve	6				
4	61681	GUIDE, Valve intake	6				
5	74230	GUIDE, Valve exhaust	6				
6	66796	INSERT, Spark plug	12				
7	STD-1353	INSERT, No. 10-24 Helicoil x 3/8	6				
8	STD-1872	INSERT, 1/8-27 Helicoil taper pipe thread	12				
9	31C-12	STUD, 5/16-18 x 1-1/2 long	12				
10	25C-9	STUD, 1/4-20 x 1-1/8 long	6				
11	MS20823-6D	ELBOW, 45°, 3/8 flared tube	6				
12	66610	BUSHING, Rocker shaft	24				
13	1102 *	PLUG, 1/8-27 NPT, Allen head	6				
14	75118	GASKET, Exhaust flange (copper)		12		12	
	LW-19296	GASKET, Exhaust flange			6		6
15	61260	FLANGE, Exhaust, stainless					6
16	STD-35	WASHER, 5/16 plain	12				
17	STD-475	WASHER, 5/16 lock, internal teeth	12				
18	STD-1410	NUT, 5/16 plain	12				

* Assemble in cylinder head.

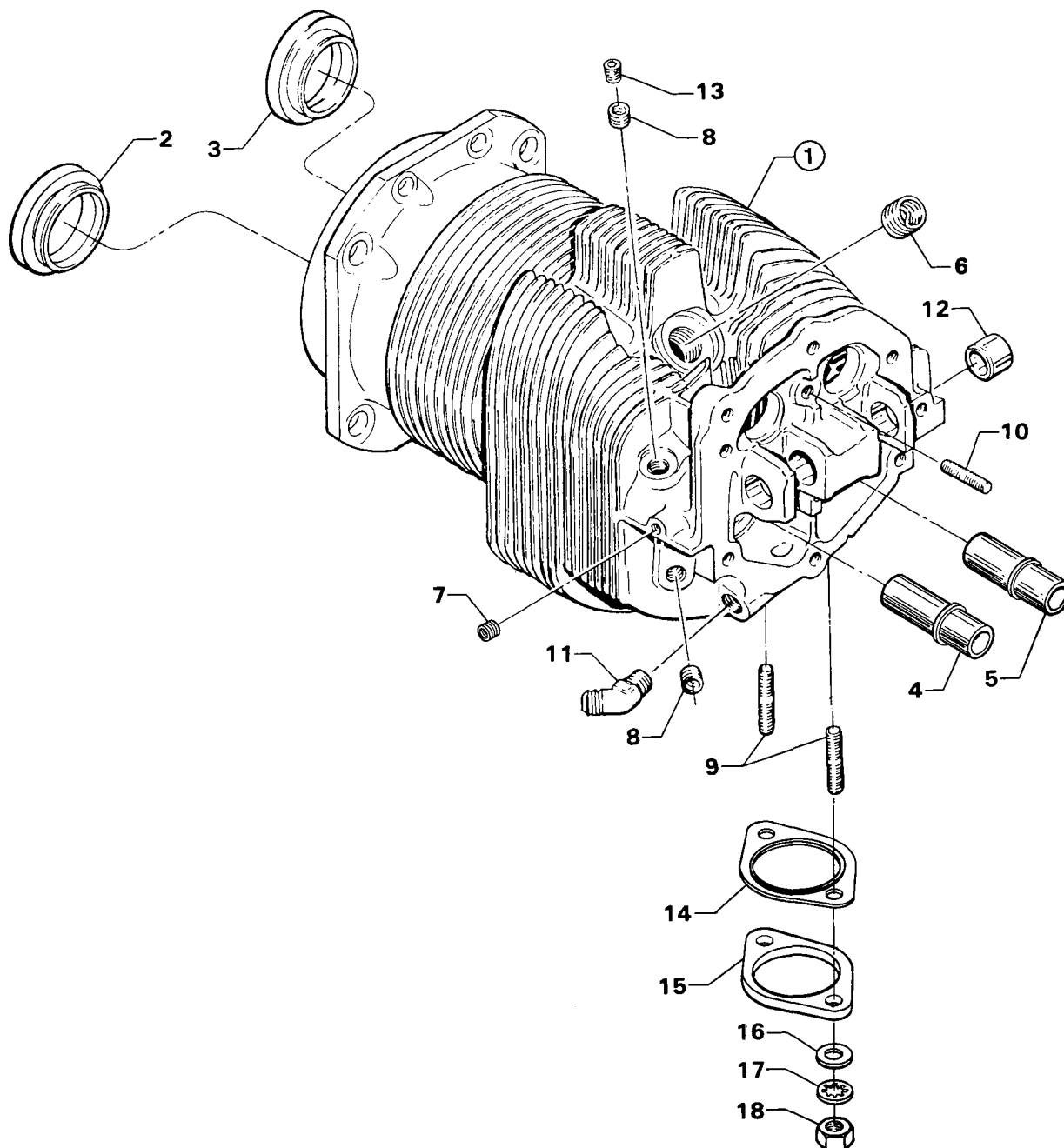


Figure 17. CYLINDER ASSEMBLY

CYLINDER, PISTON AND VALVE TRAIN VALVE AND ROD ASSEMBLIES

FIG. REF. 18	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	73938	VALVE, Intake	6				
2	LW-19001	VALVE, Exhaust (rotator type)	6				
3	LW-11795	SPRING, Valve, inner	12				
4	LW-11800	SPRING, Valve, outer	12				
5	LW-10077	SEAT, Valve spring, upper intake	6				
6	65441	SEAT, Valve spring, lower intake	6				
7	LW-13323	SEAT, Valve spring, lower exhaust	6				
8	LW-16475	SEAT, Valve spring, upper exhaust (rotator type)	6				
9	60009	KEY, Valve intake	12				
10	17C21191	KEY, Valve exhaust (rotator type)	12				
11	17C19386	CAP, Valve stem, exhaust (rotator type)	6				
12	78290	PLUNGER ASSY., Hydraulic tappet	12				
13	15B21319	SOCKET, Push rod, hydraulic tappet	12				
14	LW-11485	TUBE, Shroud, push rod	12				
15	LW-14995	SPRING, Shroud tube	6				
16	LW-12272	LOCKPLATE, Shroud tube	6				
17	STD-1411	NUT, 1/4-20 plain	6				
18	LW-18661	SEAL, Shroud tube	12				
19	70310	SEAL, Shroud tube	12				
20	73434 *	ROD ASSY., Push (total of 12 required)	AR				
	15F19957-35 *	ROD ASSY., Push (total of 12 required)	AR				
	15F19957-36 *	ROD ASSY., Push (total of 12 required)	AR				
	73437 *	ROD ASSY., Push (total of 12 required)	AR				
21	17F19357 * *	ROCKER ASSY., Valve	12				
22	74637	BUSHING, Valve rocker	12				
23	LW-13790	SHAFT, Valve rocker	6				
24	LW-12892	THRUST BUTTON, Rocker shaft	12				

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

* * Due to the size of the area where the part number is stamped, the last five digits may be all that is shown (19357).

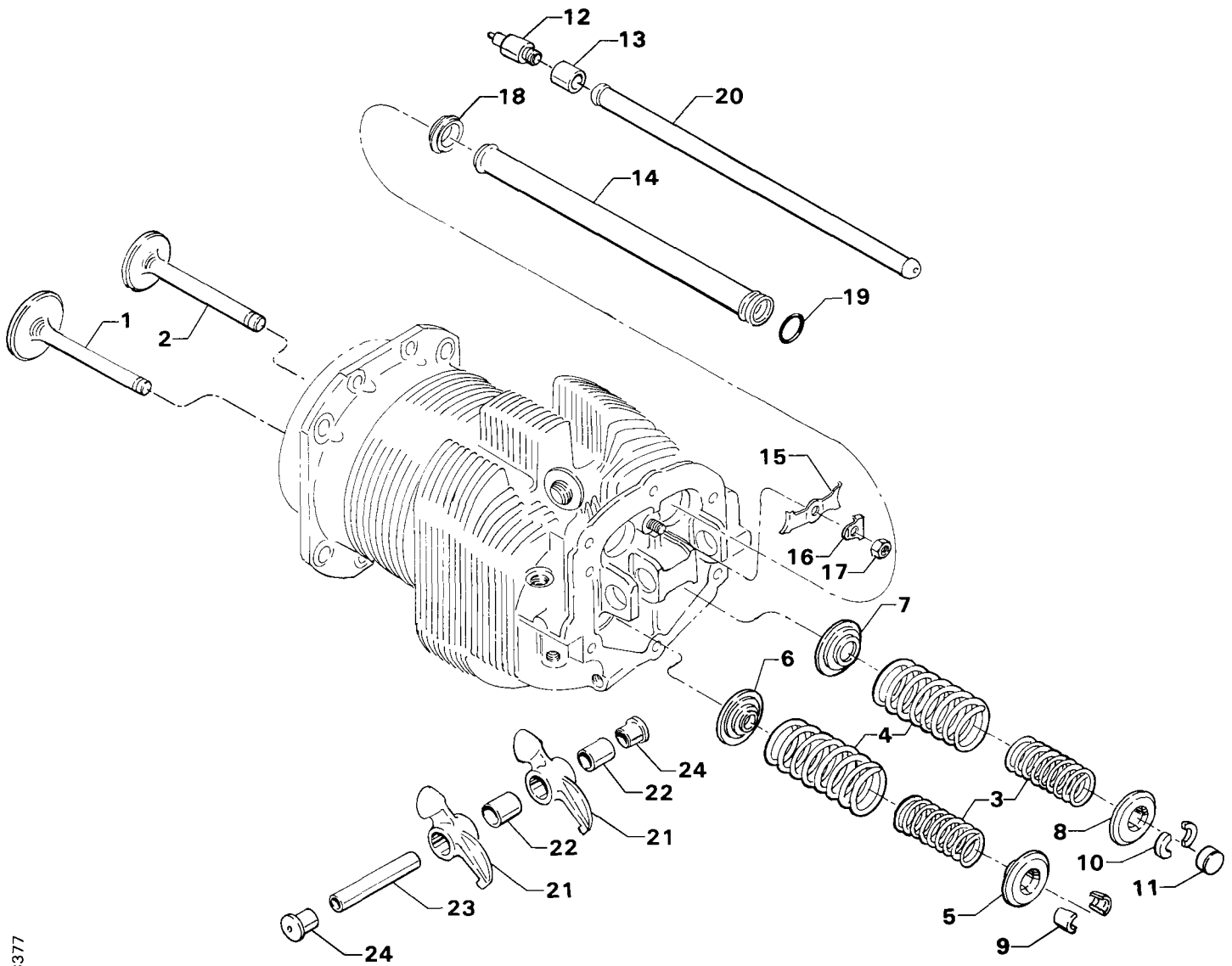


Figure 18. VALVE AND ROD ASSEMBLIES

CYLINDER, PISTON AND VALVE TRAIN CYLINDER RELATED PARTS

FIG. REF. 19	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	75906	GASKET, Rocker box cover	6				
2	61247	COVER, Rocker box	6				
3	STD-1925	SCREW, 1/4-20 x 5/8 long, pan head (self-lock)	36				
4	71481	RING, Oil seal, 3/32 dia. x 4-27/32 I.D.	6				
5	77906	SPACER, 33/64 I.D. x 7/8 O.D. x 1/8 thick	2				
6	74887	SPACER, 33/64 I.D. x 7/8 O.D. x 3/8 thick	2				
7	383-B	NUT, 3/8-24 plain	24				
8	STD-2090	NUT, 1/2-20 plain	28				
9	STD-684	NIPPLE, Straight, 3/8 I.D. hose	6				
10	STD-1821	HOSE, 3/8 I.D. x 2-1/2 long	6				
11	LW-15592-5-05	CLAMP, Hose	12				
12	68759	TUBE ASSY., Cyl. head oil drain, cyl. no. 1	1				
13	71737	TUBE ASSY., Cyl. head oil drain, cyl. no. 2	1				
14	68761	TUBE ASSY., Cyl. head oil drain, cyls. no. 3, 4, 5, 6	4				
15	75339	BAFFLE ASSY., Intercylinder	4				
16	71611	RETAINER, Intercylinder baffle	4				
17	71610	HOOK, Intercylinder baffle	4				

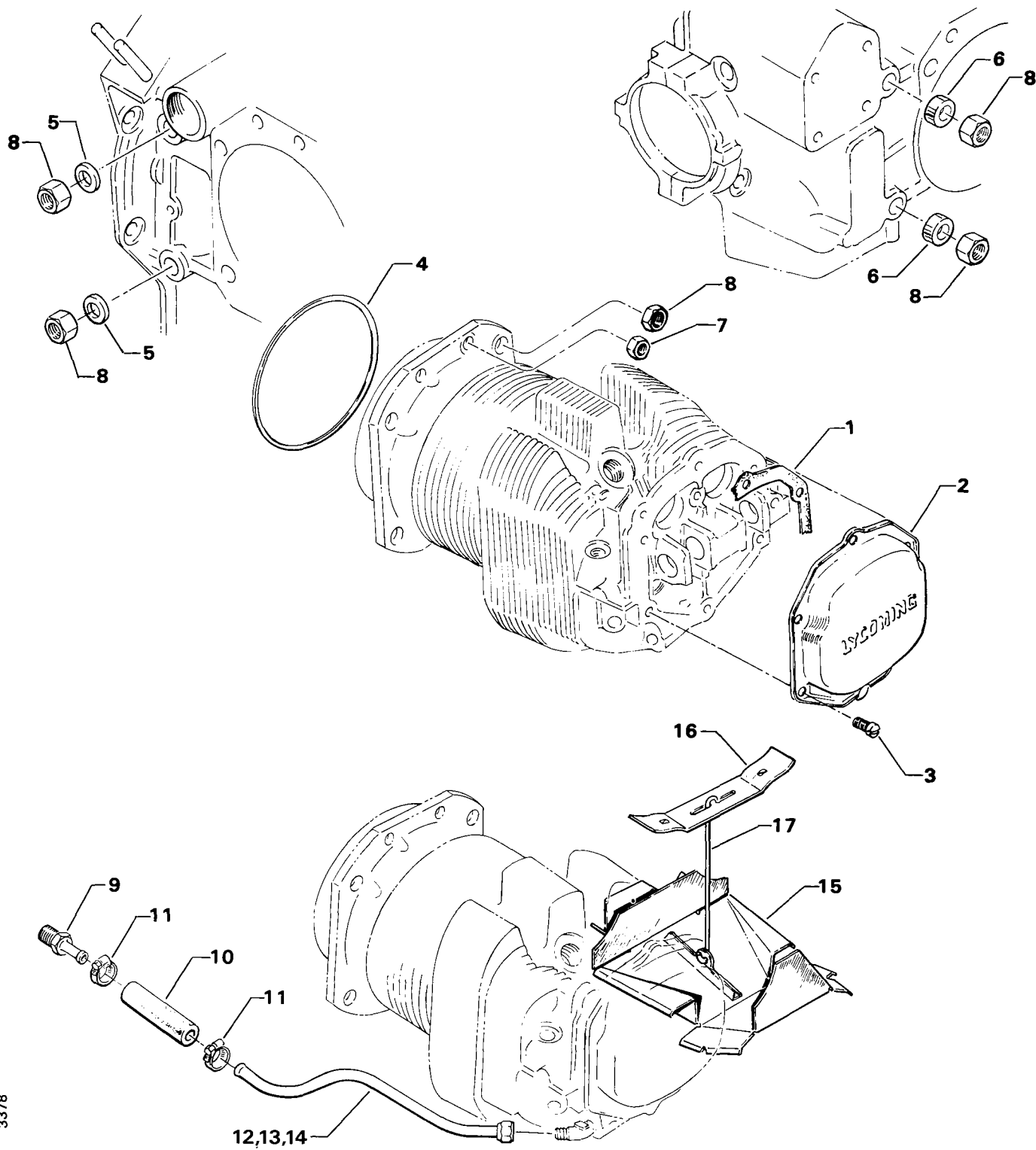


Figure 19. CYLINDER RELATED PARTS

IGNITION SYSTEM

MAGNETOS, MAGNETO DRIVES, IGNITION HARNESSSES, SPARK PLUG AND ATTACHING HARDWARE

FIG. REF. 20	PART NUMBER	DESCRIPTION	O N A L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	LW-13641	CUSHION, Magneto drive			4		
2	62224	GASKET, Magneto adapter			2		
3	STD-713	COTTER PIN, 3/32 x 3/4 long			2		
4	LW-12707	ADAPTER, Magneto			2		
5	LW-12681	GASKET, Magneto			2		
6	LW-19096	GEAR RETAINER ASSEMBLY			2		
7	67542	BEARING, Ball			2		
8	73000	COUPLING, Magneto drive			1		
		— BENDIX —					
9	LW-349310-1	MAGNETO, S6LN-1209			1		
	LW-349370-4	MAGNETO, S6LN-1227			1		
		— SLICK —					
10	66LP-0SCNN	MAGNETO, (Right), Model No. 6350			1		
	66LC-35SDNN	MAGNETO, (Left), Model No. 6351			1		
11	66M19385	CLAMP, Magneto (Used on Bendix (TCM) Magnetos)			4		
12	66M21195	CLAMP, Magneto (Used on Slick Magnetos)			4		
13	STD-1727	WASHER, Plain, 3/4 O.D. x 21/64 I.D. x 1/8 thick			4		
14	STD-475	WASHER, 5/16 lock, internal teeth			4		
15	STD-1410	NUT, 5/16-18 plain			4		
16	67U20638	HARNESS, (Right), Slick No. M-2962			1		
	67U20639	HARNESS, (Left), Slick No. M-2961			1		
17	1182-E7 *	SPARK PLUG, Champion (REM38E) or Auburn (SR87)			12		
**	01P19762-4-17	BAG, Magneto harness attaching			1		

- * Item No. 17 spark plugs are used in current production only. Additional spark plugs are available for these engines. See latest edition of Lycoming Service Instruction No. 1042 for complete listing of all approved spark plugs.
- ** See page 4-2 for a breakdown of individual parts contained in the magneto and harness attaching parts bag. These parts to be attached by customer per engine line drawing included in each bag.

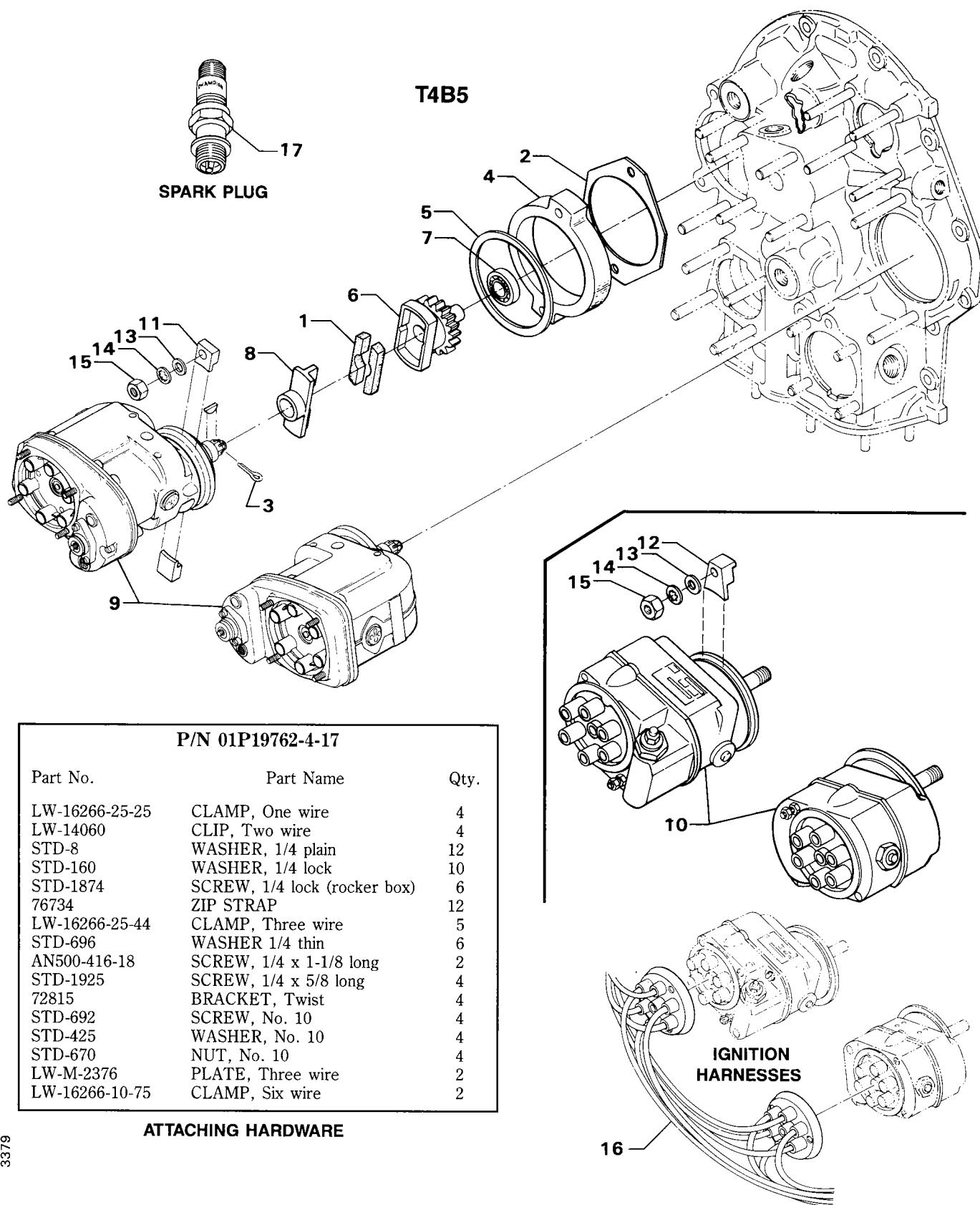


Figure 20. MAGNETOS AND MAGNETO DRIVES

IGNITION SYSTEM

DUAL MAGNETO, MAGNETO DRIVE, IGNITION HARNESSSES, SPARK PLUG AND ATTACHING HARDWARE

FIG. REF. 21	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	LW-13899	GEAR, Retainer, magneto drive		1		1	1
2	LW-13641	CUSHION, Magneto drive		2		2	2
3	LW-12681	GASKET, Magneto		1		1	1
4	66E21556	MAGNETO IGNITION SYSTEM (BENDIX)					1
	66E21576	MAGNETO IGNITION SYSTEM (BENDIX)		1		1	
5	LW-682610-11	MAGNETO, Ignition					1
	LW-682560-11	MAGNETO, Ignition		1		1	
6	66M19385	CLAMP, Magneto		2		2	2
7	STD-475	WASHER, 5/16 lock, internal teeth		2		2	2
8	STD-1410	NUT, 5/16-18 plain		2		2	2
9	67H21471	HARNESS, Ignition (Bendix)		1		1	1
10	1182-F7 *	SPARK PLUG, Champion (RHM38E) or Auburn (HSR86)	12				
11	01P21501-1-29 * *	BAG, Magneto harness attaching		1		1	1

* Item No. 10 spark plugs are used in current production only. Additional spark plugs are available for these engines. See latest edition of Lycoming Service Instruction No. 1042 for complete listing of all approved spark plugs.

* * See page 4-4 for a breakdown of individual parts contained in the magneto and harness attaching parts bag. These parts to be attached by customer per engine line drawing included in each bag.

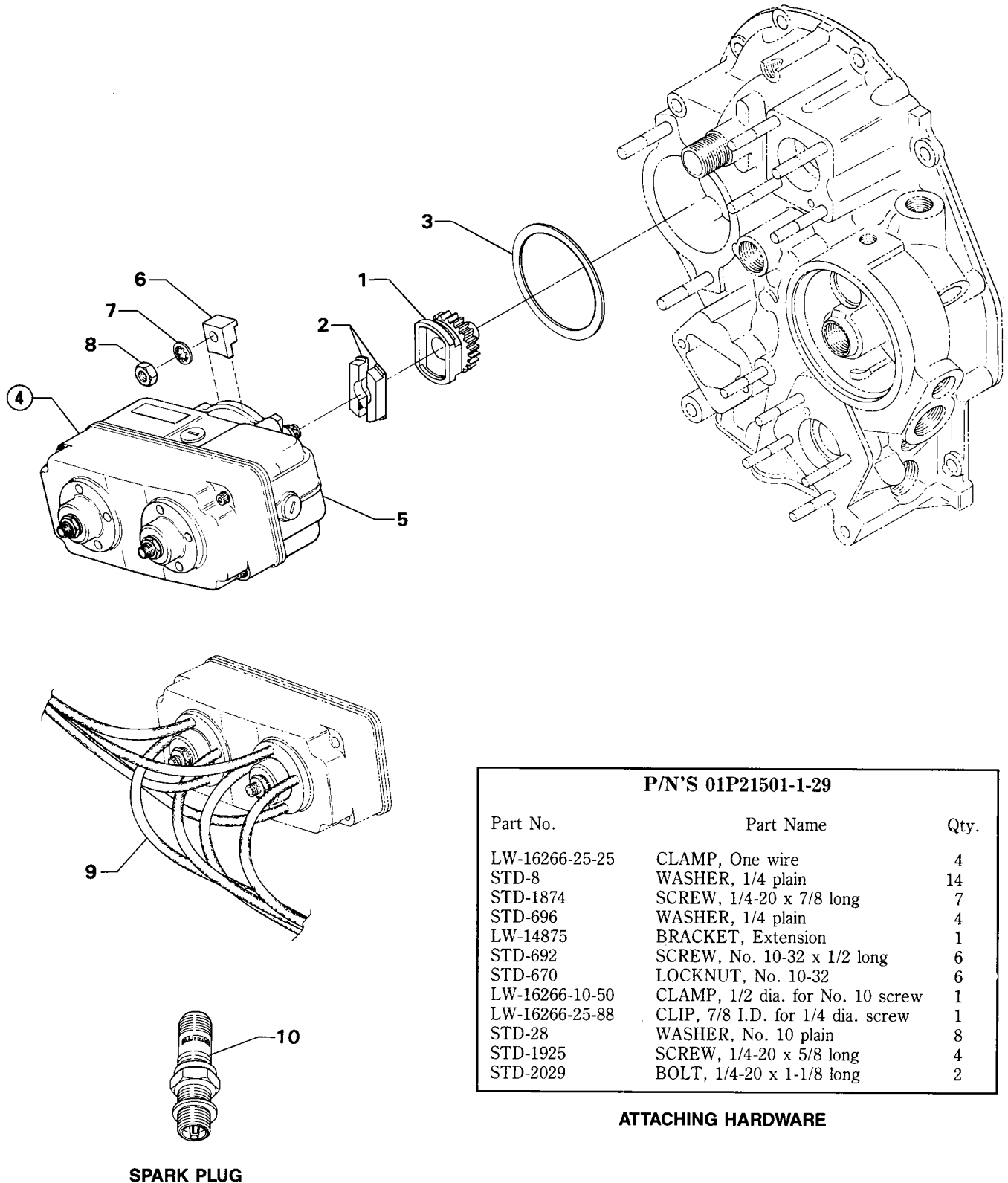


Figure 21. DUAL MAGNETOS, MAGNETO DRIVE AND IGNITION HARNESSES

ELECTRICAL COMPONENTS

ALTERNATOR ASSEMBLY AND BELT

FIG. REF. 22	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	32B19549	ALTERNATOR ASSY., 12V.-70 amp. (ALX-8421)		1		1	
	LW-18900	ALTERNATOR ASSY., 24V.-100 amp. (ALV-8511)					1
2	LW-14318	ALTERNATOR, 12V.-70 amp. (ALX-8421-LS)		1		1	
	LW-18885	ALTERNATOR, 24V.-100 amp. (ALV-8511-LS)					1
3	36B19484	PULLEY, Alternator		1		1	
	76421	PULLEY, Alternator, dual belt					1
		— DUAL ALTERNATORS —					
4	32C19558	ALTERNATOR ASSY., 24V.-70 amp. (Right)			1		
	32C19559	ALTERNATOR ASSY., 24V.-70 amp. (Left)			1		
5	LW-14326	ALTERNATOR, 24V.-70 amp. (Right & Left)			2		
6	36B19889	PULLEY, Alternator (Right)			1		
	36B19900	PULLEY, Alternator (Left)			1		
7	37A19773-376	BELT, Alternator drive, 3/8 wide		1	1	1	
	37A19773M396	BELT, Alternator drive, dual pulley					1

NOTE

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

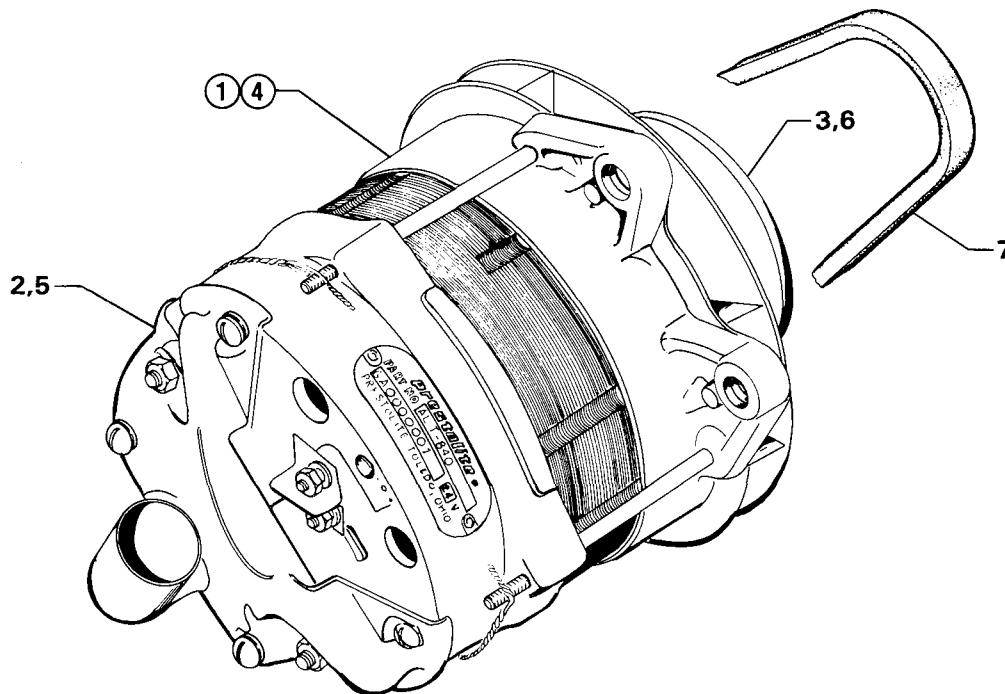


Figure 22. ALTERNATOR ASSEMBLY AND BELT

**Intentionally
Left
Blank**

ELECTRICAL COMPONENTS

STARTER MOTOR AND ATTACHING PARTS

FIG. REF. 23	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	LW-15571	STARTER, 12V. (3.38:1 internal reduction, 12/14 pinion) (MZ-4222)		1	1	1	
	LW-15572	STARTER, 24V. (3.38:1 internal reduction, 12/14 pinion) (MHB-4016)					1
2	05K21302-1 *	KIT, Lightweight starter, 12/14 pitch, 12 volt		1	1	1	
	05K21302-2 *	KIT, Lightweight starter, 12/14 pitch, 24 volt					1
3	LW-16152	SPACER, Starter/crankcase	1				
4	05K21194 * *	KIT, Shim, lightweight starter	1				
5	STD-35	WASHER, 5/16 plain	4				
6	STD-475	WASHER, 5/16 lock, internal teeth	4				
7	LW-31-1.16	BOLT, 5/16-18 x 1-5/32 long, hex. head	1				
8	STD-1410	NUT, 5/16-18 plain	3				

* Refer to the latest edition of

Lycoming SSP-490, Starter Maintenance Manual, for complete parts breakdown.

* * Refer to the latest edition of

Lycoming Service Instruction No. 1447 for shim application.

NOTE

See latest edition of

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

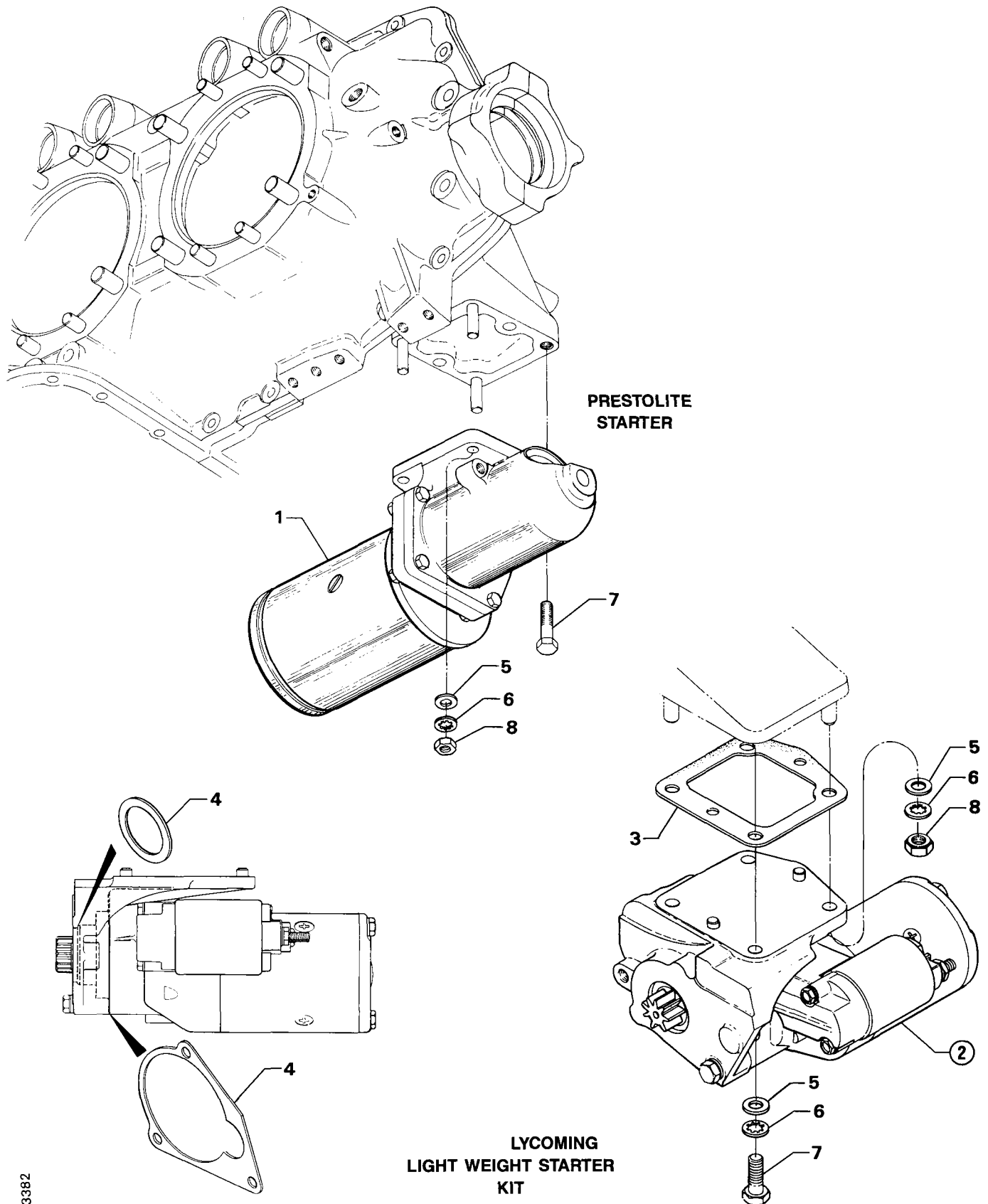


Figure 23. STARTER MOTOR AND ATTACHING PARTS

ELECTRICAL COMPONENTS

ALTERNATOR MOUNTING AND ATTACHING PARTS (12 Volt-70 Amp.)

FIG. REF. 24	PART NUMBER	DESCRIPTION	O N A L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	07A19474	BRACKET, Alternator		1	1	1	
2	73383	LOCKPLATE, 5/16 bolt x 1.00 spacing		1	1	1	
3	LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex. head		2	2	2	
4	75380	LINK, Alternator adjusting		1	1	1	
5	STD-35	WASHER, 5/16 plain		1	1	1	
6	LW-31H.75	BOLT, 5/16-18 x 3/4 long, hex. hd. drive		1	1	1	
7	STD-1727	WASHER, Plain, 3/4 O.D. x 11/32 I.D. x 1/8 thick		1	1	1	
8	LW-31H.75	BOLT, 5/16-18 x 3/4 long, hex. hd. drive		1	1	1	
9	74323	STRUT, Alternator support		1	1	1	
10	LW-31H.75	BOLT, 5/16-18 x 3/4 long, hex. hd. drive		1	1	1	
11	STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick		1	1	1	
12	AN6-17	BOLT, 3/8-24 x 1-61/64 long, hex. hd. dr. end		1	1	1	
13	STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick		AR	AR	AR	
14	STD-872	NUT, 3/8-24, slotted		1	1	1	
15	STD-713	PIN, Cotter, 3/32 dia. x 3/4 long		1	1	1	
16	AN6-16	BOLT, 3/8-24 x 1-53/64 long, hex. hd. dr. end		1	1	1	
17	76534	SHIM, 1-1/8 O.D. x 13/32 I.D. x .005 thick		AR	AR	AR	
18	STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick		AR	AR	AR	
19	STD-872	NUT, 3/8-24, slotted		1	1	1	
20	STD-713	PIN, Cotter, 3/32 dia. x 3/4 long		1	1	1	

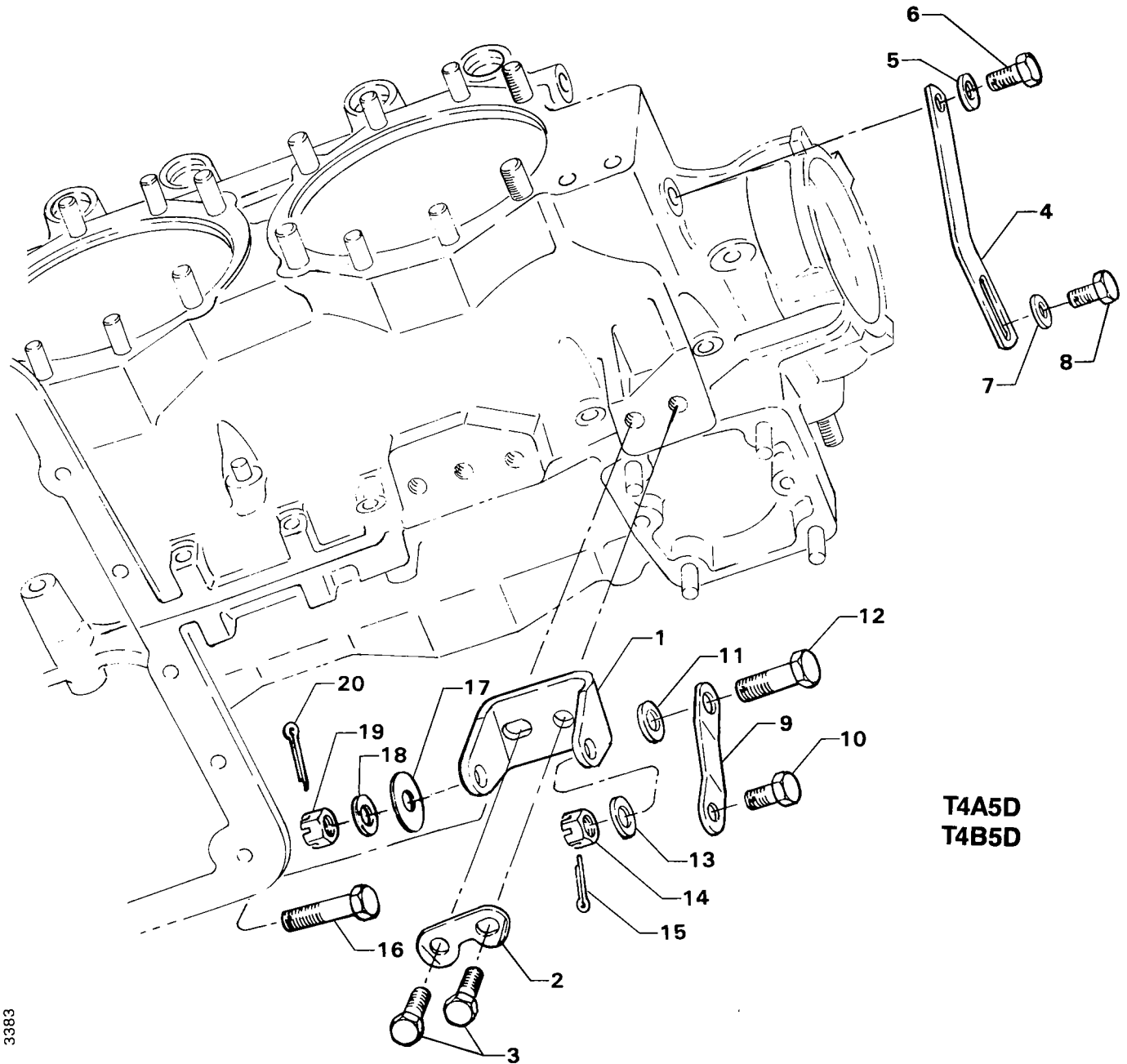


Figure 24. ALTERNATOR MOUNTING AND ATTACHING PARTS (12 VOLT - 70 AMP.)

ELECTRICAL COMPONENTS

ALTERNATOR MOUNTING AND ATTACHING PARTS (24 Volt-100 Amp.)

FIG. REF. 25	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	LW-14141	BRACKET, Alternator, front					1
2	LW-14142	BRACKET, Alternator, rear					1
3	73383	LOCKPLATE, 5/16 bolt x 1.00 spacing					2
4	LW-31-0.94	BOLT, 5/16-18 x 15/16 long, hex. hd.					4
5	LW-11147	BRACKET, Alternator belt adjusting					1
6	STD-1727	WASHER, Plain, 3/4 O.D. x 11/32 I.D. x 1/8 thick					1
7	LW-14637 *	SHIM, 13/16 O.D. x 11/32 I.D. x .005 thick					AR
8	LW-14649 *	SHIM, 13/16 O.D. x 11/32 I.D. x .010 thick					AR
9	LW-31H1.22	BOLT, 5/16-18 x 1-7/32 long, hex. hd. dr.					1
10	LW-19265	PULLEY & SHAFT ASSY., Alternator dual belt adjusting					1
11	76420	PULLEY, Alternator idler, dual					1
12	78629	BALL BEARING, Double row, alt. idler pulley					1
13	MS16625-1125	RING, Internal retainer, 1-1/4 dia.					2
14	LW-19238	SHAFT, Alternator dual belt idler					1
15	76768	LOCKWASHER, Alternator idler pulley bearing					1
16	76769	LOCKNUT, Alternator idler pulley bearing					1
17	LW-11635	SHIELD, Idler shaft					1
18	STD-669	WASHER, 33/64 I.D. x 1.00 O.D. x 1/8 thick					1
19	STD-2221	NUT, 1/2-20 self-locking					1
20	STD-1727	WASHER, Plain, 3/4 O.D. x 11/32 I.D. x 1/8 thick					1
21	LW-31H1.22	BOLT, 5/16-18 x 1-7/32 long, hex. hd. dr.					1
22	LW-14637	SHIM, 13/16 O.D. x 11/32 I.D. x .005 thick					AR
23	LW-10970	STRUT, Alternator support					1
24	LW-31H.75	BOLT, 5/16-18 x 3/4 long, hex. hd. dr.					1
25	LW-14650 *	SHIM, 7/8 O.D. x 15/32 I.D. x .005 thick					AR
26	AN7-14	BOLT, 7/16-20 UNF-3A x 1-19/32 long, dr. end					1
27	STD-632	WASHER, 7/16 plain					AR
28	AN310-7	NUT, 7/16-20 plain, slotted					1
29	STD-761	PIN, Cotter, 3/32 dia. x 1.00 long					1
30	AN7-12	BOLT, 7/16-20 UNF-3A x 1-11/32 long, dr. end					1
31	STD-632	WASHER, 7/16 plain					AR
32	AN310-7	NUT, 7/16-20 plain, slotted					1
33	STD-761	PIN, Cotter, 3/32 dia. x 1.00 long					1

* Shim as required for belt alignment between crankcase idler adjusting bracket, alternator and alternator bracket.

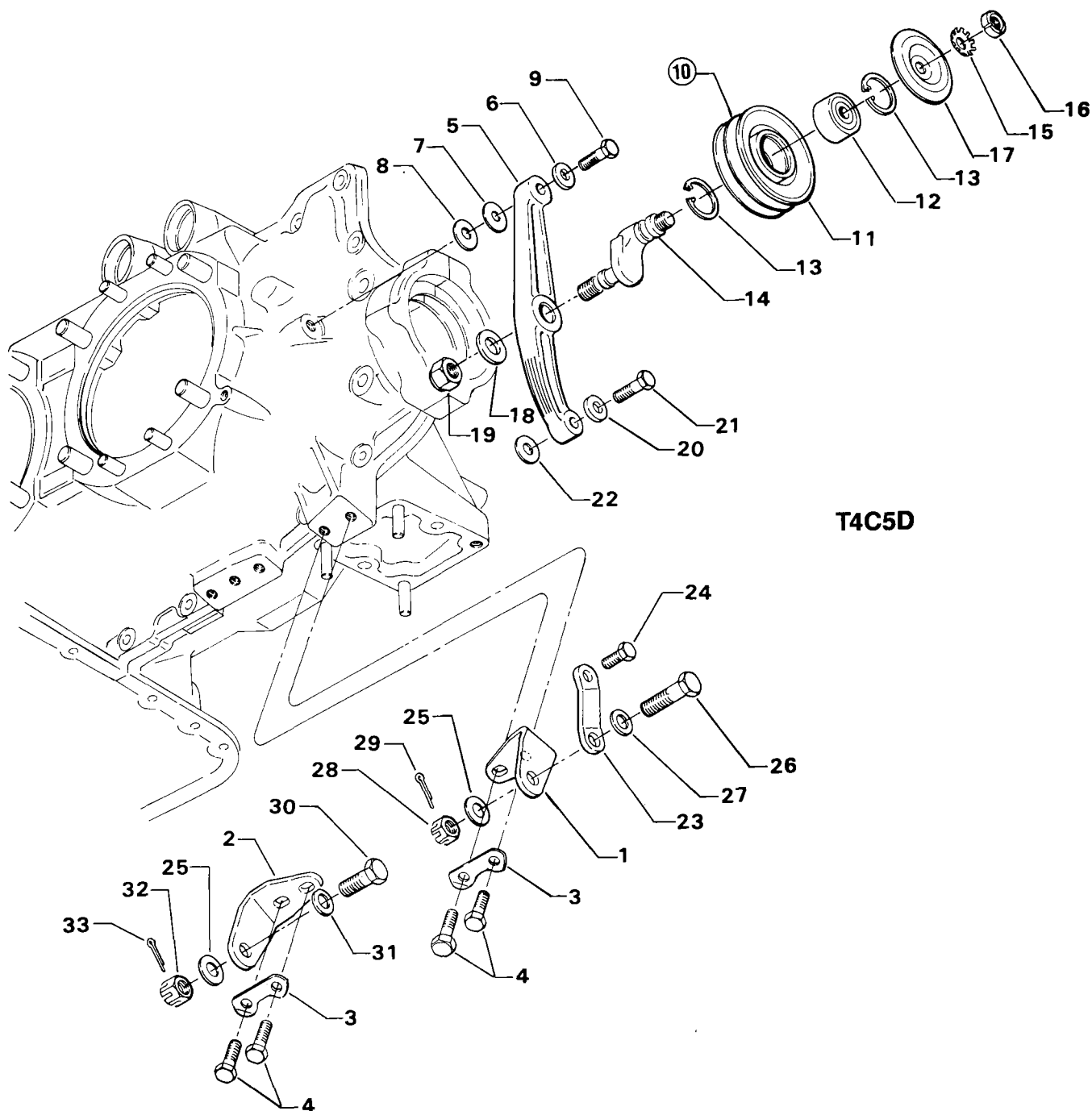


Figure 25. ALTERNATOR MOUNTING AND ATTACHING PARTS (24 VOLT - 100 AMP.)

OIL SUMP AND INDUCTION SYSTEM

OIL SUMP ASSEMBLY

FIG. REF. 26	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	06B21326	GASKET, Oil sump	1				
2	LW-18438	SUMP ASSEMBLY, Oil	1				
3	06E19769-1.63	GASKET, 1-7/8 O.D. x 1-5/8 I.D. x 3/32 annular	1				
4	LW-18434	PLUG, Oil sump, 1-5/8 diameter	1				
5	71699	CONNECTOR, Intake pipe	6				
6	25C-11	STUD, 1/4-20 x 1-3/8 long	14				
7	38-15	STUD, 3/8-16 x 1-7/8 long	8				
8	STD-1164	INSERT, 5/16-18 x 5/8 long, Helicoil	4				
9	STD-71	PLUG, 3/8-18 NPT, socket head	1				
10	1102	PLUG, 1/8 NPT, Allen head	2				
11	STD-8	WASHER, 1/4 plain	34				
12	STD-160	WASHER, 1/4 lock, internal teeth	27				
13	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. head	7				
14	LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. head	6				
15	STD-1411	NUT, 1/4 plain	21				
16	STD-551	PLUG, 1/2-14 NPT, sq. hd. drilled	2				

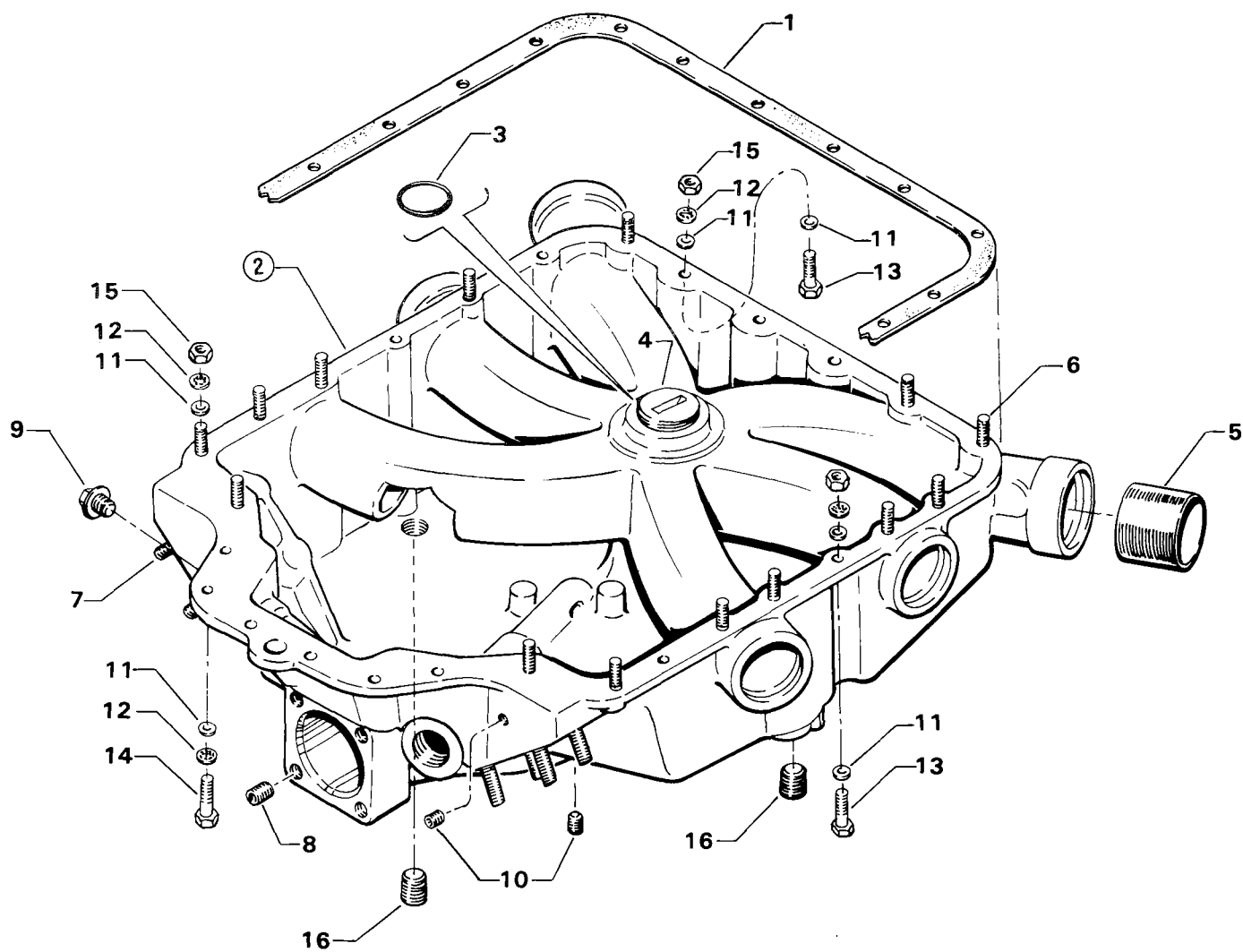


Figure 26. OIL SUMP ASSEMBLY

OIL SUMP AND INDUCTION SYSTEM INTAKE PIPES AND OIL SUCTION SCREEN

FIG. REF. 27	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	70485	PIPE, Intake	6				
2	69603	HOSE, 1-3/4 I.D. x 2-3/16 O.D. x 1-3/4 long	6				
3	LW-15592-8-28	CLAMP, Hose	12				
4	71973	GASKET, 2 bolt flange, 1-7/8 I.D.	6				
5	73346	FLANGE, Intake pipe, upper	6				
6	STD-8	WASHER, 1/4 plain	12				
7	STD-160	WASHER, 1/4 lock, internal teeth	12				
8	LW-25-1.25	BOLT, 1/4-20 x 1-1/4 long, hex. hd.	12				
9	70484	SCREEN, Oil suction	1				
10	06E19769-1.00	GASKET, 1.00 I.D. x 1-1/4 O.D. x 3/32 annular	1				
11	LW-12545	PLUG, 5/8 Hex. hd. x 1.00-20 thread	1				

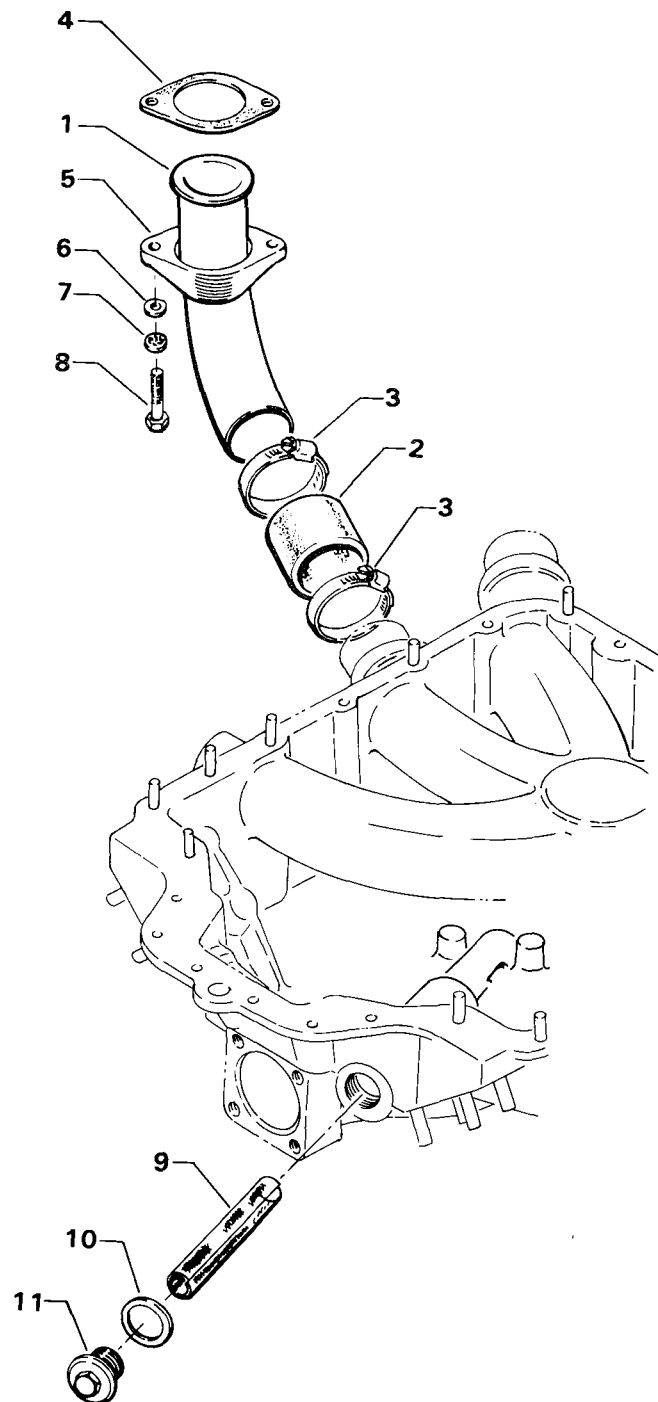


Figure 27. INTAKE PIPES AND OIL SUCTION SCREEN

OIL SUMP AND INDUCTION SYSTEM

FUEL INJECTOR, FUEL MANIFOLD AND INJECTION NOZZLES

FIG. REF. 28	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY			
				T4A5D	T4B5	T4B5D	T4C5D
1	66224	GASKET, Fuel injector	1				
2	LW-14184	FUEL INJECTOR (2524673-8)	1				
3	STD-35	WASHER, 5/16 plain	4				
4	STD-475	WASHER, 5/16 internal lock	4				
5	LW-31-1.25	BOLT, 5/16-18 x 1-1/4 long, hex. head	4				
6	LW-18265	NOZZLE, Injection	6				
7	79007	MANIFOLD ASSY., Fuel	1				
8	MS20823-4	ELBOW, 1/4 tube, 1/8 NPT, 45°	1				
9	STD-148	NIPPLE, Union, 1/8 NPT	6				
10	02A21382	NIPPLE, 3/16 tube to 1/8 NPT (restricted)	1				
11	73966	SPACER, Fuel manifold bracket	2				
12	73965	BRACKET, Fuel manifold	2				
13	STD-82	SCREW, No. 10-24 x 1/2 long, dr. hd.	4				
14	STD-251	WASHER, No. 10 lock, internal teeth	4				
15	LW-12098-0-210	TUBE ASSY., Fuel manifold to nozzle cyls. 1, 2, 5, 6	4				
16	LW-12098-0-170	TUBE ASSY., Fuel manifold to nozzle cyls. 3 & 4	2				
17	LW-16266-10-75	CLAMP	10				
18	LW-16266-10-13	CLAMP	12				
19	73136	BRACKET, 90°	4				
20	STD-860	SCREW, No. 10-32 x 5/8 long, fill. hd.	14				
21	STD-425	WASHER, No. 10 plain	2				
22	STD-670	NUT, No. 10-32 self-locking	14				
23	72377	ELBOW, 3/8 tubing, adj. 90° (fuel pump outlet)	1				
24	LW-16562	NIPPLE, 3/8 tubing, 9/16-18 st. thd. (fuel pump inlet)	1				
25	LW-14183	TUBE ASSY., Fuel pump to injector	1				
26	LW-12798-4S340	HOSE ASSY., Fuel injector to fuel manifold	1				
27	LW-16266-25-63	CLAMP	2				
28	76735	BRACKET, Extension, 90°	1				
29	STD-860	SCREW, No. 10-32 x 5/8 long, fill. hd.	1				
30	STD-425	WASHER, No. 10 plain	1				
31	STD-670	NUT, No. 10-32 self-locking	1				

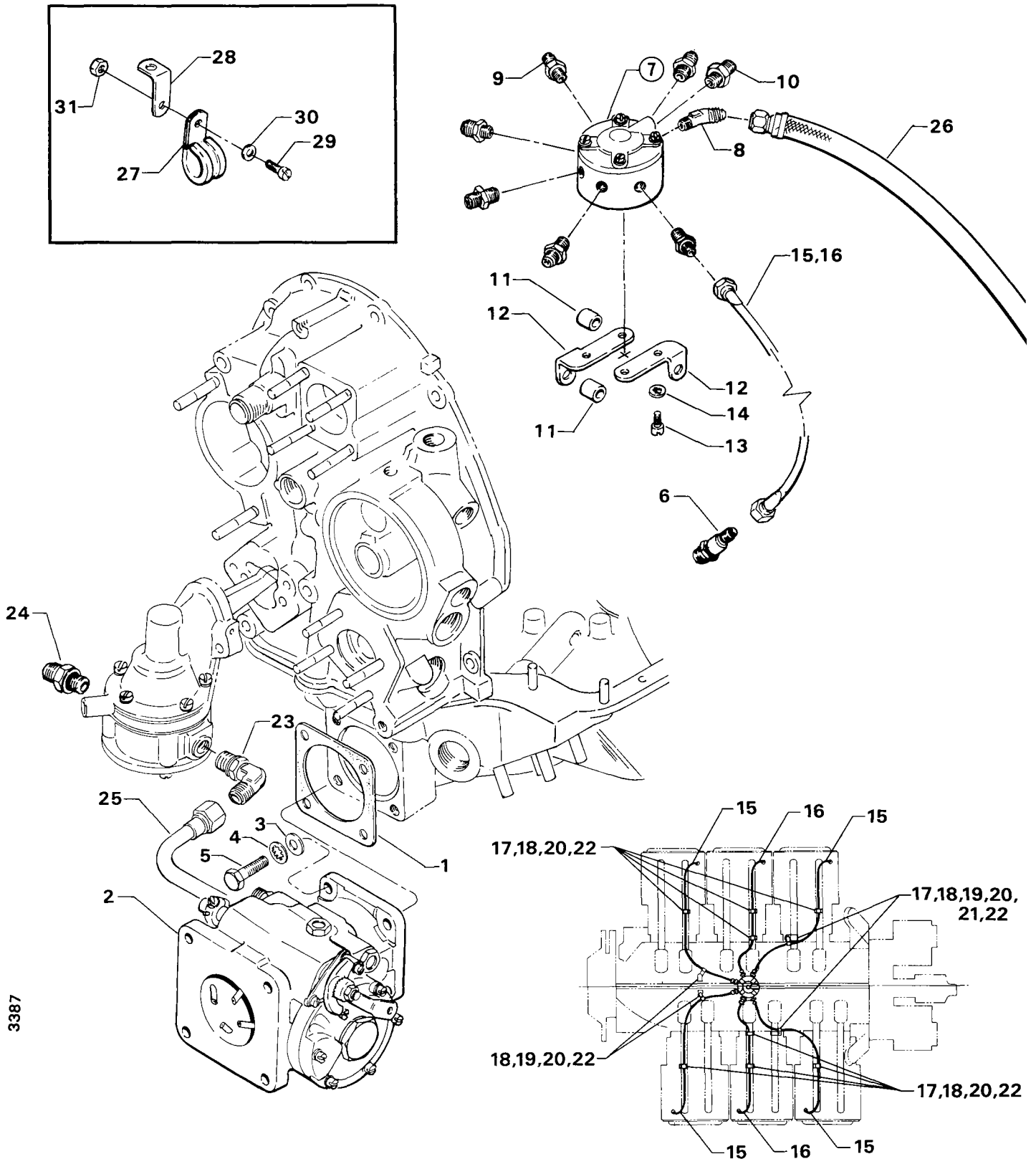


Figure 28. FUEL INJECTOR, FUEL MANIFOLD AND INJECTION NOZZLES

SERVICE KIT SECTION

SEAL AND GASKET SET

IO-540-T4A5D, -T4B5D, -T4C5D

Part No.	Part Name	Qty.
LW-13377	SEAL AND GASKET SET	1
MS29512-6	SEAL, Oil	1
MS29512-10	SEAL, Oil	3
MS16625-1081	RING, Internal retaining	1
06E19769-1.00	GASKET, Oil suction screen	1
06E19769-1.25	GASKET, Oil pressure relief valve	1
8313	GASKET, Vacuum & hydraulic pump	3
60096	GASKET, Fuel pump	1
LW-14260	SEAL, Tachometer drive	1
LW-18661	SEAL, Shroud tube	12
66224	GASKET, Fuel injector	1
70310	SEAL, Shroud tube	12
70455	GASKET, Prop. drive gear plug	1
70457	GASKET, Oil filter extension	1
71481	RING, Cylinder base seal	6
LW-14820	RING, Internal retaining	8
71973	GASKET, Intake pipe flange	6
72053	GASKET, Governor	3
72091	RING, Oil seal	2
72312	RING, Oil seal oil level gage	1
73383	LOCKPLATE, Alternator bracket	1
73818	GASKET, Accessory housing	1
75118	GASKET, Exhaust flange	12
75906	GASKET, Rocker box cover	6
LW-15628*	SEAL, Crankshaft oil, solid	1
LW-10332	LOCKPLATE, Crankshaft gear	1
LW-13792*	SEAL, Crankshaft, solid	1
LW-11997*	SEAL, Crankshaft oil, split	1
LW-12681	GASKET, Magneto	1
LW-12272	LOCKPLATE, Shroud tube	6
LW-13306	GASKET, Oil sump	1
LW-14995	SPRING, Shroud tube	6
STD-2217	SEAL, Oil	1
77154	GASKET	1
06E19769-0.63	GASKET	1
LW-19296	GASKET	6
STD-1733	"O" RING	1
MS9068-009	RING, Oil seal	1
74065	"O" RING	1
74068	"O" RING	1
STD-1325	GASKET	1
MS16625-1100	RING, Internal retaining	1

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

SERVICE KIT SECTION
SEAL AND GASKET SET

IO-540-T4B5

Part No.	Part Name	Qty.
71569-1	SEAL AND GASKET SET	1
LW-12272	LOCKPLATE, Shroud tube	6
LW-12681	GASKET, Magneto	2
LW-12795	GASKET, Oil filter adapter	1
06B21326	GASKET, Oil sump	1
LW-13792	SEAL, Crankshaft oil	1
LW-14260	SEAL, Tachometer drive oil	1
LW-14995	SPRING, Shroud tube	6
LW-15628	SEAL, Crankshaft	1
LW-18638	LOCKPLATE, Crankshaft gear	1
LW-18661	SEAL, Shroud tube	12
MS16625-1081	RING, Internal retaining	1
06E19769-1.00	GASKET, Oil suction screen	1
STD-213	SEAL, Oil	1
06E19769-0.63	GASKET, Annular	2
06E19769-1.25	GASKET, Annular	1
06A19956	SEAL, Oil	2
1691-C	GASKET, Fuel pump	1
8313	GASKET, Vacuum pump	2
60096	GASKET, Fuel pump	1
61173	GASKET, Oil pressure housing	1
61183	GASKET, Accessory adapter	1
62224	GASKET, Magneto adapter	1
LW-19296	GASKET, Exhaust flange	6
66224	GASKET, Carburetor	1
68315	GASKET, Accessory drive adapter	1
69164	GASKET, Fuel pump adapter	1
69345	SPACER	6
69551	GASKET, Accessory drive adapter	1
70310	SEAL, Shroud tube	12
70455	GASKET	1
70457	GASKET	1
71481	RING, Oil seal	6
71667	LOCKPLATE	1
71973	GASKET, 2 Bolt flange	6
72053	GASKET, Governor	1
72059	GASKET, Oil filler extension	1
72075	RING, Oil seal	8
72078	LOCKPLATE, Cam gear	2
72091	RING, Oil seal	2
72210	GASKET	1
72312	RING, Oil seal	1
73383	LOCKPLATE, Generator bracket	2
73818	GASKET, Accessory housing	1
74065	"O" RING, Oil level gage	1
74068	"O" RING	1
74305	SEAL	1
75906	GASKET, Rocker box cover	6
76510	GASKET	1
76940	SEAL, Crankshaft oil	1

SERVICE KIT SECTION
CYLINDER, PISTON AND RING ASSEMBLY KIT

Part No.	Part Name	Qty.
05K21104	CYLINDER, PISTON AND RING KIT	1
65441	SEAT, Valve spring, lower intake	1
LW-12427	CYLINDER & HEAD ASSY.	1
LW-19001	VALVE, Exhaust	1
73938	VALVE, Intake	1
LW-11800	SPRING, Valve, outer	2
LW-11795	SPRING, Valve, inner	2
LW-10077	SEAT, Valve spring, upper intake	1
LW-16475	SEAT, Valve spring, upper exhaust	1
LW-13323	SEAT, Valve spring, lower exhaust	1
60009	KEY, Valve, intake	2
17C21191	KEY, Valve, exhaust	2
17C19386	CAP, Valve stem, exhaust	1
75089	PISTON	1
74241	RING, Piston, compression	2
73857	RING, Piston, oil regulating	1
LW-14077	PIN, Piston	1
LW-11775	PLUG, Piston pin	2
60828	PLUG, Piston pin	2
71481	RING, Cylinder base seal	1
LW-18661	SEAL, Shroud tube	2
70310	SEAL, Shroud tube	2
75906	GASKET, Rocker box cover	1
SSP-2272	TAG	1
SSP-2472	TAG	1
SSP-672	TAG	1
72198	PLUG, Piston pin	2

SERVICE KIT SECTION
CRANKCASE ASSY. AND THRU STUD KIT

Part No.	Part Name	Qty.
11E20000-D1-S	CRANKCASE ASSY. AND THRU STUD KIT	1
11E20000-D1*	CRANKCASE ASSEMBLY	1
76220	THRU STUD	8
31C-14	STUD, AN Governor	4
31C-16	STUD, Woodward Governor	4
STD-1339	PLUG	7
AN565B1032H4	SET SCREW	1
AN565B1032H5	SET SCREW	1
SSP-272	TAG, Piston cooling nozzles	1
SSP-582	TAG, Thin wall bearings	1
SSP-1576	TAG, Governor drive idler shaft	1
SSP-1769	TAG, Governor drive pad studs	1
1102	PLUG, 1/8 pipe, oil pressure	4
11E20002-D1-S	CRANKCASE ASSY. AND THRU STUD KIT	1
11E20002-D1*	CRANKCASE ASSEMBLY	1
76220	THRU STUD	8
31C-14	STUD, AN Governor	4
31C-16	STUD, Woodward Governor	4
STD-1339	PLUG	7
AN565B1032H4	SET SCREW	1
AN565B1032H5	SET SCREW	1
SSP-272	TAG, Piston cooling nozzles	1
SSP-582	TAG, Thin wall bearings	1
SSP-1576	TAG, Governor drive idler shaft	1
SSP-1769	TAG, Governor drive pad studs	1
31C-23	STUD	4
1102	PLUG, 1/8 pipe, oil pressure	4
11E20000-S1-S	CRANKCASE ASSY. AND THRU STUD KIT	1
11E20000-S1*	CRANKCASE ASSEMBLY	1
76220	THRU STUD	8
31C-14	STUD, AN Governor	4
31C-16	STUD, Woodward Governor	4
STD-1339	PLUG	7
AN565-B-1032-H4	SET SCREW	1
AN565-B-1032-H5	SET SCREW	1
SSP-272	TAG, Piston cooling nozzles	1
SSP-582	TAG, Thin wall bearings	1
SSP-1576	TAG, Governor drive idler shaft	1
SSP-1769	TAG, Governor drive pad studs	1
1102	PLUG, 1/8 pipe, oil pressure	4

* See Fig. 1, Page 1-1 for component parts.

NUMERICAL INDEX

PART NO.	PART NAME	PAGE NO.	PART NO.	PART NAME	PAGE NO.
AN310-7	Nut	5-6	LW-11147	Bracket	5-6
AN565B1032H5	Set Screw	1-10	LW-11485	Tube	3-5
AN6-16	Bolt	5-4	LW-11635	Shield	5-6
AN6-17	Bolt	5-4	LW-11713	Spring	1-5
AN6-34A	Bolt	1-11	LW-11750	Con. Rod Assy.	3-1
AN7-12	Bolt	5-6	LW-11775	Plug	3-1
AN7-14	Bolt	5-6	LW-11795	Spring	3-5
AN8-14A	Bolt	1-7	LW-11800	Spring	3-5
AN814-6L	Plug	2-9	LW-11997	Seal	1-5
AN814-10L	Plug	2-8	LW-12098-0-170	Tube Assy.	6-5
AN919-15	Reducer	2-8	LW-12098-0-210	Tube Assy.	6-5
LW-25-0.81	Bolt	2-3	LW-12186	Nut	3-1
LW-25-0.94	Bolt	2-3	LW-12272	Lockplate	3-5
LW-25-1.00	Bolt	6-1	LW-12347	Plate	2-9
LW-25-1.13	Bolt	1-11	LW-12427	Cyl. & Head Assy.	3-3
LW-25-1.13	Bolt	2-3	LW-12545	Plug	6-3
LW-25-1.13	Bolt	6-1	LW-12589	Insert	2-1
LW-25-1.25	Bolt	2-3	LW-12681	Gasket	4-1
LW-25-1.25	Bolt	6-3	LW-12681	Gasket	4-3
LW-25-1.50	Bolt	1-11	LW-12707	Adapter	4-1
LW-25-1.75	Bolt	1-11	LW-12795	Gasket	2-7
LW-25-1.88	Bolt	1-11	LW-12798-4S340	Hose Assy.	6-5
LW-25-1.88	Bolt	2-3	LW-12892	Thrust Button	3-5
LW-25-2.00	Bolt	1-11	LW-13323	Seat	3-5
LW-25S1.50	Bolt	1-11	LW-13521	Bearing	3-1
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