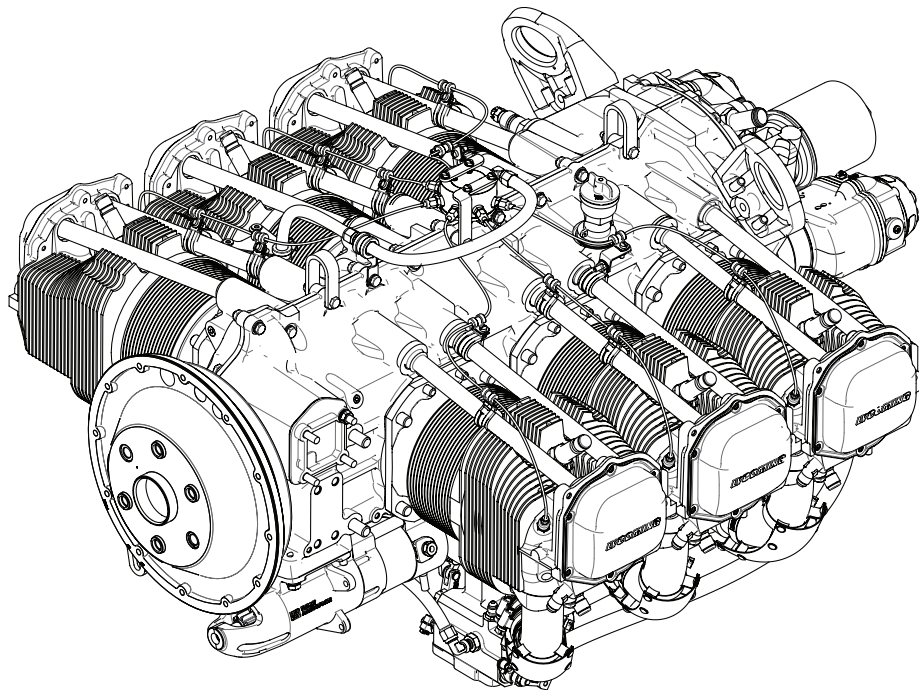


Lycoming Aircraft Engines Parts Catalog



AEIO-540-D Series **-D4A5, -D4B5**

Wide Cylinder Flange Crankcase Model Engines

LYCOMING

Lycoming

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TECHNICAL PUBLICATION SUPPLEMENT

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The page(s) furnished herewith are intended to be used in conjunction with the existing page(s) of the publication indicated above.			
Previous revisions to the publication		This revision consists of: -	
<u>None</u>		<u>SEPTEMBER, 2001</u> These Figures are to be used in conjunction with PC-615-11 Parts Catalog Illustrations: Figure 2 – Oil Gage and Engine Mounting Figure 3 – Crankcase Related Parts Figure 4 – Crankshaft and Counterweight Assy. Figure 5 – Camshaft Assembly Figure 7 – Propeller Governor Drive Assembly Figure 10 – Oil Pump and Accessory Attaching Figure 12 – Oil Filter Assy. & Oil Cooler Bypass Figure 14 – Connecting Rods, Piston and Rings Figure 15 – Cylinder Assembly Figure 16 – Valve Assembly Figure 17 – Cylinder Related Parts Figure 18 – Magnetos and Magneto Drives Figure 19 – Ignition Harness, Spark Plugs, Attaching Figure 23 – Oil Sump Assy. & Aerobatic Parts Figure 24 – Intake Pipe Assembly Figure 25 – Fuel Injector, Manifold & Nozzles These Figures have been added to show differences between the D4D5 and other "D" Series models: Figure 1 – Crankcase Assembly Figure 6 – Crankshaft & Fuel Pump Idler Gears Figure 8 – Crankcase Attaching Parts Figure 9 – Accessory Housing Assembly Figure 11 – Fuel Pump Assembly Figure 13 – Hydraulic Pump Drive and Fittings Figure 21 – Sky-Tec Starter and Attaching Figure 26 – NEW – "Injector Nozzle Vent Manifolds and Attachments"	

**CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
CRANKCASE ASSEMBLY**

FIG. REF. 1	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	11E24000-S1	CRANKCASE ASSEMBLY	1
2	LW-13794	STUD, 5/16-18 x 1.00 long	1
3	31C-12	STUD, 5/16-18 x 1-1/2 long	2
4	31C-13	STUD, 5/16-18 x 1-5/8 long	1
5	38-13	STUD, 3/8-16 x 1-5/8 long	24
6	50-15	STUD, 1/2-20 x 1-7/8 long	12
7	38-22	STUD, 3/8-16 x 2-3/4 long	1
8	38D-17	STUD, 3/8-16 x 2-1/8 long, drilled	1
9	38-16	STUD, 3/8-16 x 2.00 long	8
10	69796	DOWEL, Crankshaft bearing	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, Gov. drive idler shaft	1
14	STD-1339 *	PLUG, 1/16-27 pipe	7
15	1102	PLUG, 1/8 pipe	4
16	31C-16	STUD, 5/16-18 x 2.00 long	4

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

Lycoming **AEIO-540-D4D5 PARTS CATALOG SUPPLEMENT**
WIDE CYLINDER FLANGE CRANKCASE MODEL ENGINES

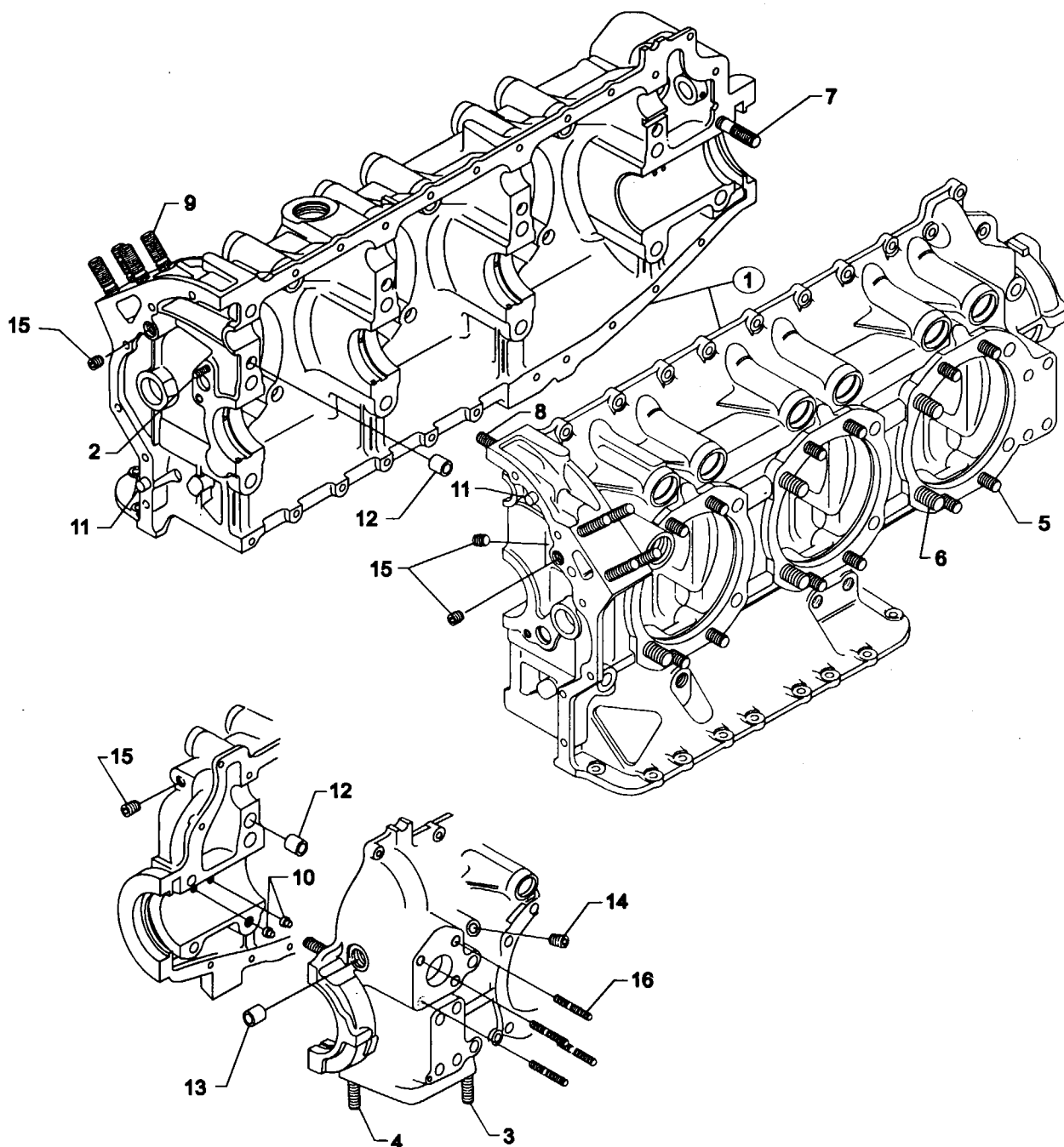


Figure 1. CRANKCASE ASSEMBLY

**CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
OIL LEVEL GAGE AND ENGINE MOUNTING BRACKETS**

FIG. REF. 2	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	70457	GASKET, Oil filler extension	1
2	75737	EXTENSION, Oil filler (short), 2-11/16 long	1
3	75761	-- DOES NOT APPLY TO THIS MODEL --	
4	74068	"O" RING, Oil level gage	1
5	LW-14756	GAGE ASSY., Oil level	1
6	12A19770	BRACKET, Engine mounting (dynafocal)	4
7	STD-33	WASHER, 3/8 plain	16
8	STD-678	WASHER, 3/8 lock, internal teeth	16
9	STD-596	NUT, 3/8-24 plain	16

- IMPORTANT -

Use in conjunction with PC-615-11: AEIO-540-D Series Parts Catalog, Figure 2 Illustration, Page 1-4.

Lycoming AEIO-540-D4D5 PARTS CATALOG SUPPLEMENT

WIDE CYLINDER FLANGE CRANKCASE MODEL ENGINES

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP CRANKCASE RELATED PARTS

FIG. REF. 3	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	1028-B	BALL, 11/16 dia.	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	STD-425	-- DOES NOT APPLY TO THIS MODEL --	
4	06E19769-1.25	GASKET, 1-1/4 I.D. x 1-1/2 O.D. x 3/32 annular	1
5	76529	-- DOES NOT APPLY TO THIS MODEL --	
6	77808	VALVE ASSY., Oil pressure relief, adjustable	1
7	LW-16711	BEARING, Crankshaft	6
8	LW-13884	BEARING, Crankshaft, front	2
9	LW-11997 **	SEAL, Crankshaft oil, split	1
	LW-13792 **	SEAL, Crankshaft oil, solid	1
10	72091	RING, Oil seal, 23/64 I.D. x 7/64 dia. section	2
11	72877	BODY, Hydraulic tappet	12

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

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

- IMPORTANT -

Use in conjunction with PC-615-11: AEIO-540-D Series Parts Catalog, Figure 3 Illustration, Page 1-6.

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP CRANKSHAFT AND COUNTERWEIGHT ASSEMBLY

FIG. REF. 4	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1		– DOES NOT APPLY TO THIS MODEL	
2	13E27622 *	CRANKSHAFT AND BUSHING ASSY.	1
3	STD-1211	PLUG, 2.00 dia. expansion	1
4	73810	BUSHING, Crankshaft dyn. counterweight	4
5	71640	PLUG, 1-3/8 dia.	1
6	75656-S	BUSHING, Propeller flange, long	4
7	72062	– DOES NOT APPLY TO THIS MODEL –	
8	72155-S	BUSHING, Propeller flange, short	1
9	72061	– DOES NOT APPLY TO THIS MODEL –	
10	75657-S	BUSHING, Propeller flange, indexing	1
11	72060	– DOES NOT APPLY TO THIS MODEL –	
12	STD-1065	DOWEL, Stepped, 5/16 x 1/4 dia. x 35/64 long	1
13	LW-19227 **	COUNTERWEIGHT ASSEMBLY	2
14	71903-A	BUSHING, Dynamic counterweight	8
15	72797 **	ROLLER, Dynamic counterweight, 6.3 order	2
16	72965 **	ROLLER, Dynamic counterweight, 5.1 order	2
17	LW-14820	RING, Internal retaining	8
18	71907	WASHER, Dynamic counterweight	8
19	13S19647 ♦	GEAR, Crankshaft	1
20	LW-18638	LOCKPLATE, Crankshaft gear	1
21	STD-2209	BOLT, 5/16-24 x 1-3/4 long, hex. hd.	1
22	77579	– DOES NOT APPLY TO THIS MODEL –	
	LW-16635	SUPPORT ASSY., Starter ring gear, 12/14 pitch	1
23	72566	GEAR, Starter ring, 12/14 pitch	1

* P/N 13E27622 CRANKSHAFT & BUSHING ASSY. supersedes P/N 13E17653 CRANKSHAFT & PLUG ASSY.

** See latest edition of Lycoming Service Instruction No. 1012 for proper counterweight and roller location.

♦ See latest edition of Lycoming Service Bulletin No. 475 for proper installation.

- IMPORTANT -

Use in conjunction with PC-615-11: AEIO-540-D Series Parts Catalog, Figure 4 Illustration, Page 1-8.

Lycoming AEIO-540-D4D5 PARTS CATALOG SUPPLEMENT

WIDE CYLINDER FLANGE CRANKCASE MODEL ENGINES

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP CAMSHAFT ASSEMBLY

FIG. REF. 5	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-19340	CAMSHAFT ASSEMBLY	1
2	76118	SPACER, Tachometer shaft centering	1
3	76155	SHAFT ASSY., Tachometer	1
4	LW-18667	PIN, 3/16 dia. x 2-21/64 long	1
5	STD-2231	RING, Internal retaining	1

- IMPORTANT -

Use in conjunction with PC-615-11: AEIO-540-D Series Parts Catalog, Figure 5 Illustration, Page 1-9.

**CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP
CRANKSHAFT AND FUEL PUMP IDLER GEARS**

FIG. REF. 6	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-13795	SHAFT, Crankshaft idler gear	2
2	LW-31H0.88	BOLT, 5/16-18 x 7/8 long, hex. hd.	3
3	STD-2168	NUT, 5/16-18 NC-3 slotted shear	1
4	72246	SHAFT, Fuel pump idler gear	1
5	71667	LOCKPLATE, 1/4 bolt x 1-3/4 spacing (offset)	1
6	LW-25-0.63	BOLT, 1/4-20 x 5/8 long, hex. hd.	2
7	71664	GEAR ASSY., Fuel pump idler	1
8	77309	BUSHING, Crankshaft idler gear	1
9	70474	WASHER, Fuel pump idler thrust	1
10	STD-1737	RING, 37/64 dia. x 3/64 thick, external retaining	1
11	71668	GEAR ASSY., Crankshaft idler, plain	2
12	67530	BUSHING, Crankshaft idler gear	2
13	72972	SHAFTGEAR ASSY., Fuel pump drive	1
14	72962	THRUST BUTTON, Shaftgear	1
15	69164	GASKET, Fuel pump adapter	1
16	69159	ADAPTER ASSY., Fuel pump drive	1
17	STD-1774	PIN, 1/8 dia. x 1/4 long	1
18	STD-213	OIL SEAL, 3/4 I.D. x 1-3/8 O.D.	1

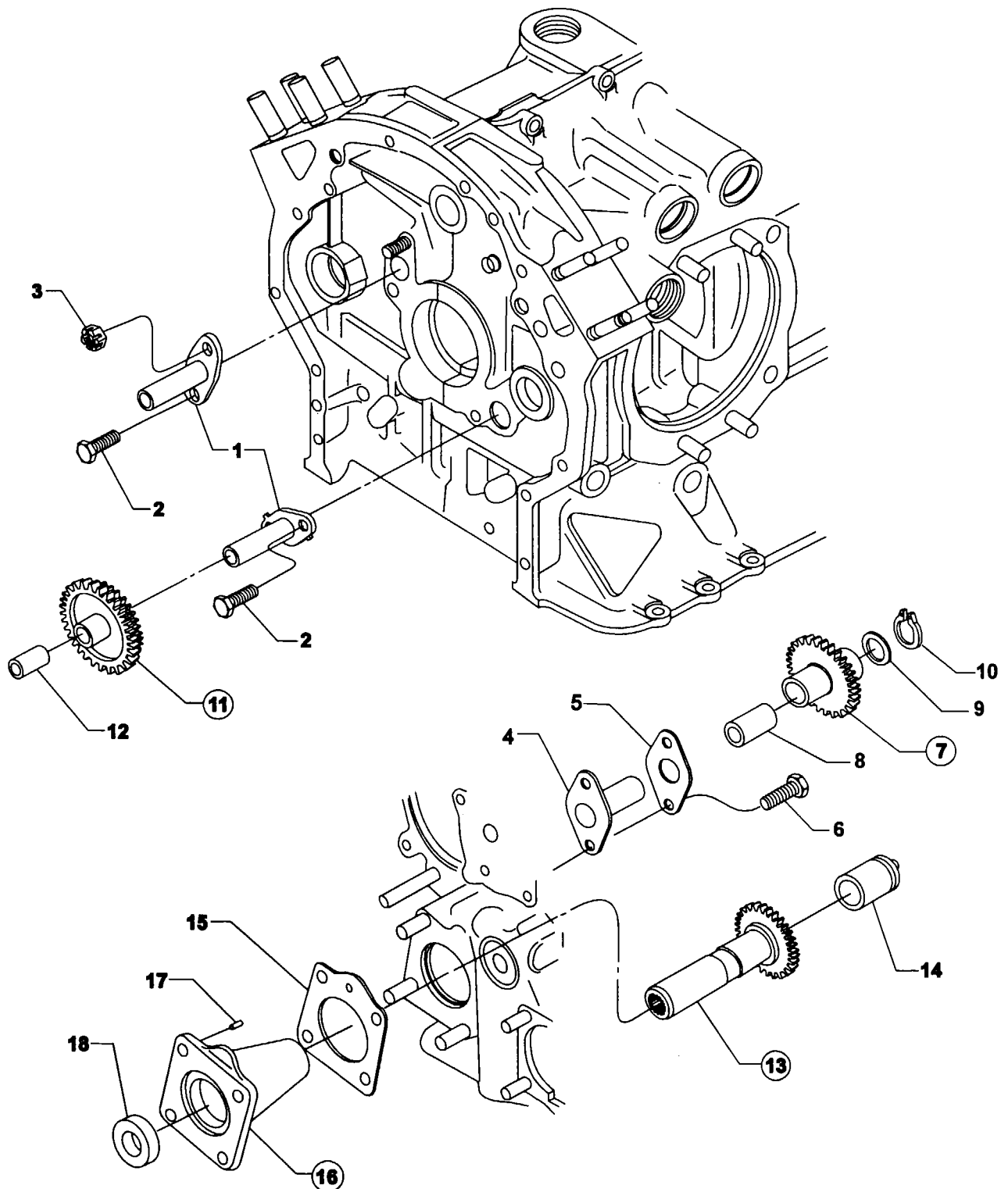


Figure 6. CRANKSHAFT AND FUEL PUMP IDLER GEARS

Lycoming AEIO-540-D4D5 PARTS CATALOG SUPPLEMENT

WIDE CYLINDER FLANGE CRANKCASE MODEL ENGINES

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP PROPELLER GOVERNOR DRIVE ASSEMBLY

FIG. REF. 7	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
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	AR
	73250	WASHER, Thrust	AR
	73251	WASHER, Thrust	AR
	73252	WASHER, Thrust	AR
	01L21418	WASHER, Thrust	AR
8	AN565B1032H5 *	SET SCREW, No. 10-32 x 5/16 long	1
9	70455	GASKET, 25/32 I.D. x 1-1/8 O.D. x 1/16 thick	1
10	LW-13896	PLUG, 3/4-16 hex. hd.	1
11	72053	GASKET, Governor	1
12	72378	COVER, Governor drive	1
13	STD-35	WASHER, 5/16 plain	20
14	STD-475	WASHER, 5/16 lock, internal teeth	4
15	STD-1410	NUT, 5/16-18 plain	4

* For alternate set screws and installation information, see latest edition of
No. 1343.

Lycoming Service Instruction

- IMPORTANT -

Use in conjunction with PC-615-11: AEIO-540-D Series Parts Catalog, Figure 7 Illustration, Page 1-12.

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

FIG. REF. 8	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
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	22
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.	1
8	STD-160	WASHER, 1/4 lock, internal teeth	13
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
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 long	8
20	LW-31-2.75	BOLT, 5/16-18 x 2-3/4 long	1
21	LW-31-1.16	BOLT, 5/16-18 x 1-5/32 long	3
22	STD-35	WASHER, 5/16 plain	4
23	STD-475	WASHER, 5/16 lock, internal teeth	4

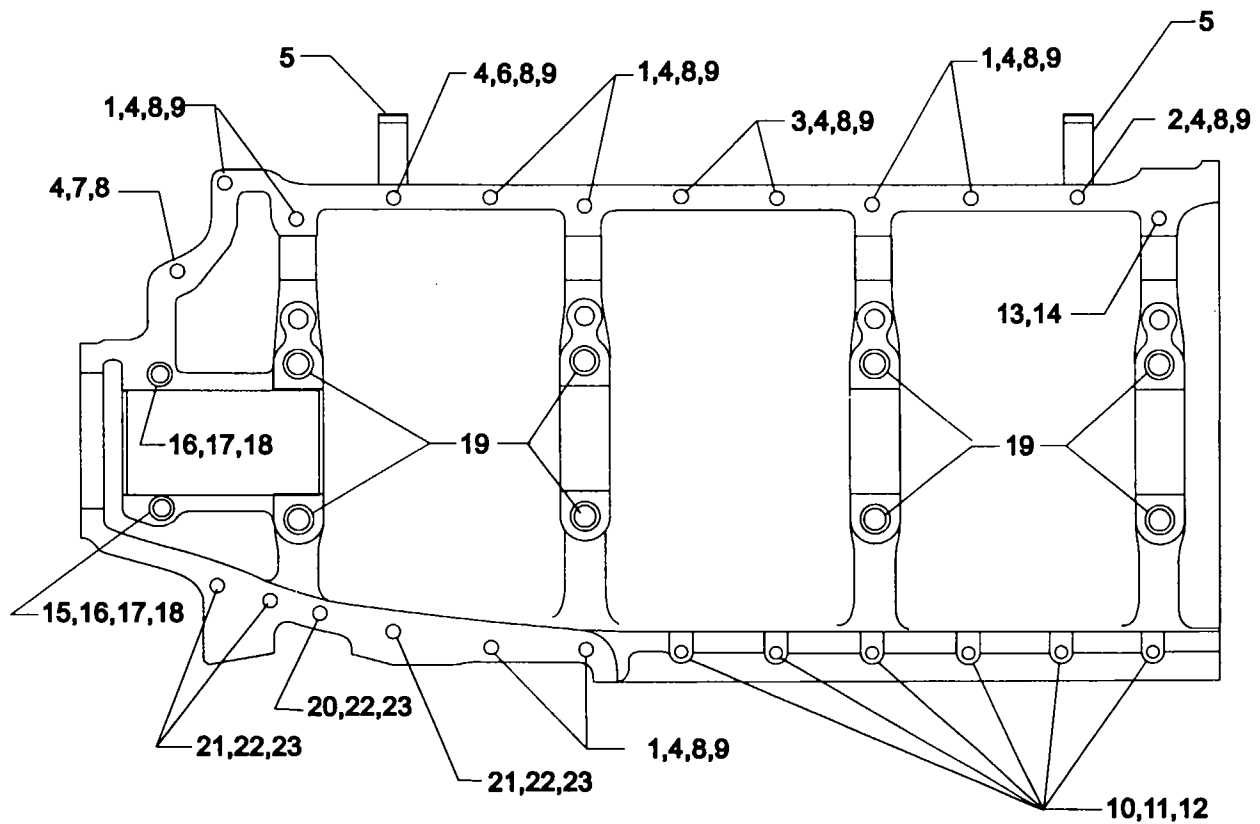


Figure 8. CRANKCASE ATTACHING PARTS

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

FIG. REF. 9	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	73818	GASKET, Accessory housing	1
2	21C21541-03	HOUSING ASSY., Accessory	1
3	31C-19	STUD, 5/16-18 x 2-3/8 long	4
4	31C-12	STUD, 5/16-18 x 1-1/2 long	4
5	31C-21	STUD, 5/16-18 x 2-5/8 long	4
6	25C-12	STUD, 1/4-20 x 1-1/2 long	4
7	31CD-17	STUD, 5/16-18 x 2-1/8 long, drilled	3
8	1102	PLUG, 1/8 pipe	4
9	STD-784	PLUG, 3/8-18 NPT, Allen head	1

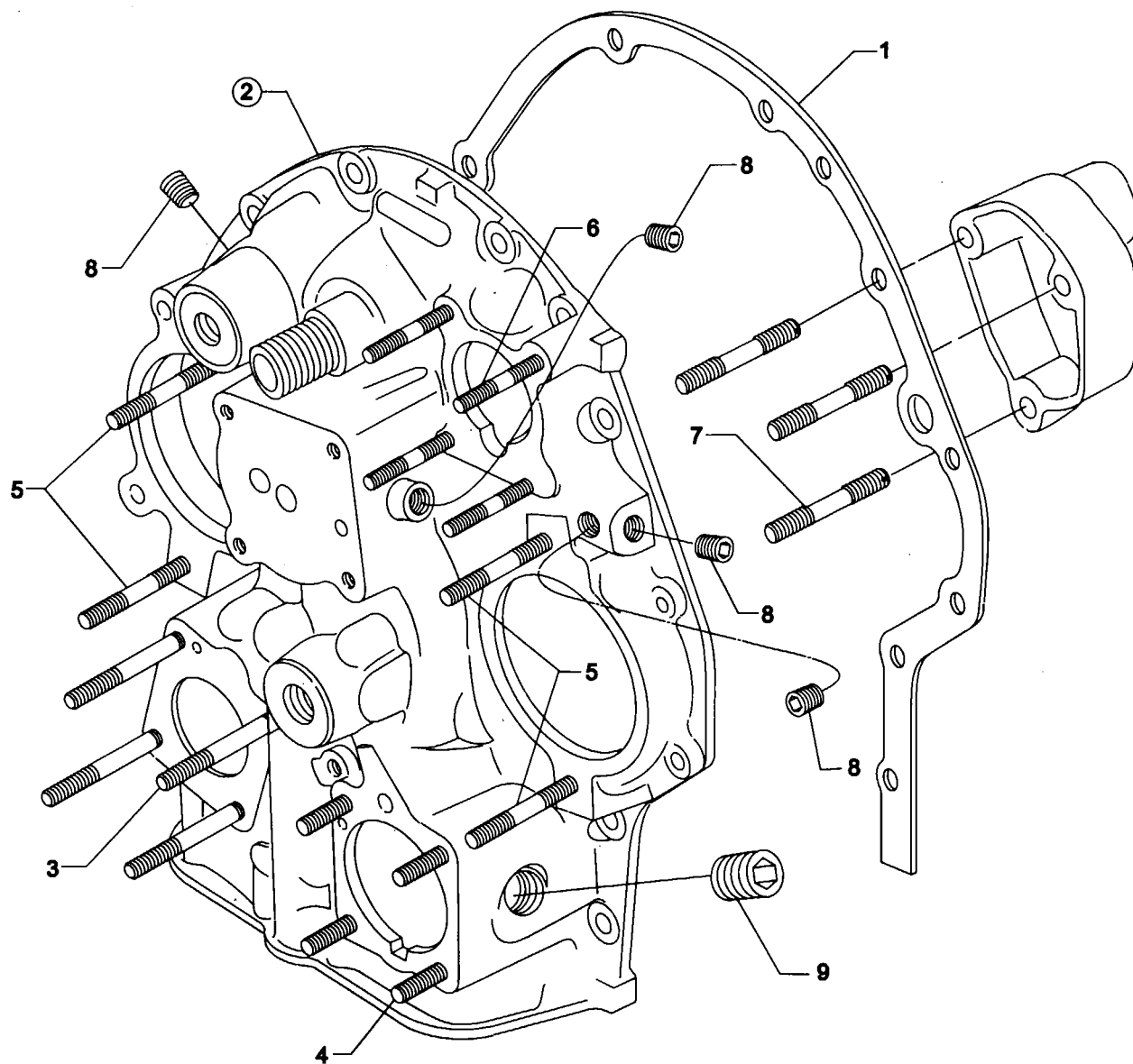


Figure 9. ACCESSORY HOUSING ASSEMBLY

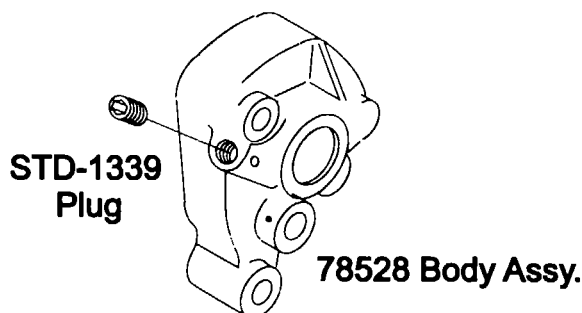
ACCESSORY HOUSING AND RELATED PARTS OIL PUMP ASSEMBLY AND ACCESSORY HOUSING ATTACHING PARTS

FIG. REF. 10	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	78531	-- DOES NOT APPLY TO THIS MODEL --	
	78528	BODY ASSY., Oil pump	1
1A	STD-1339	PLUG, 1/16-27 NPT, Allen head	1
2	05K19423-S *	OIL PUMP IMPELLER KIT	1
3	74641	SHAFT, Oil pump drive	1
4	STD-35	WASHER, 5/16 plain	3
5	STD-1420	NUT, 5/16-18 slotted	3
6	LW-14260	SEAL, Tachometer drive, oil	1
7	STD-8	WASHER, 1/4 plain	10
8	STD-160	WASHER, 1/4 lock, internal teeth	12
9	LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. hd.	9
10	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. hd.	1
11	LW-25-1.88	-- DOES NOT APPLY TO THIS MODEL --	
	LW-25-1.50	BOLT, 1/4-20 x 1-1/2 long hex. hd.	2

* To insure impellers are replaced together, oil pump impellers available in kit form only.

- IMPORTANT -

Use in conjunction with PC-615-11: AEIO-540-D Series Parts Catalog, Figure 10 Illustration, Page 2-4.



ACCESSORY HOUSING AND RELATED PARTS FUEL PUMP ASSEMBLY

FIG. REF. 11	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-10799	SPACER, Fuel pump, insulating	1
2	62E22586	FUEL PUMP, Lear Siegler RG9570K1/M	1
3	STD-35	WASHER, 5/16 plain	4
4	STD-475	WASHER, 5/16 lock, internal teeth	4
5	STD-1410	NUT, 5/16-18 plain	4
6	MS20822-6-6	ELBOW, 3/8 NPT to 3/8 tube	1
7	02A21171	TEE, 1/4 tube with 1/8 NPT	1
8	LW-14196	ELBOW, 1/2 flared tube	1

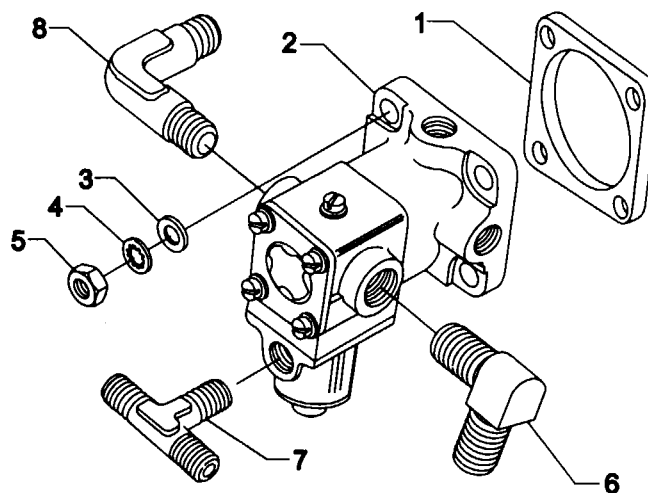


Figure 11. FUEL PUMP ASSEMBLY

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

FIG. REF. 12	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	62817	-- DOES NOT APPLY TO THIS MODEL --	
2	61173	-- DOES NOT APPLY TO THIS MODEL --	
3	69510	-- DOES NOT APPLY TO THIS MODEL --	
4	LW-12795 *	GASKET, Oil filter adapter	2
5	77852	OIL FILTER BASE ASSEMBLY	1
6	LW-13215 *	OIL FILTER, Spin-on, short	2
7	STD-8	WASHER, 1/4 plain	4
8	STD-160	WASHER, 1/4 lock, internal teeth	1
9	STD-1411	NUT, 1/4-20 plain	1
10	STD-1856	SCREW, 1/4-20 x 1.00 long, hex. hd.	3
11	06E19769-0.63	-- DOES NOT APPLY TO THIS MODEL --	
12	53E22144 **	VALVE ASSY., Temp. oil cooler bypass	1
13	76510	GASKET, Valve assembly	1
14	25C-10	STUD, 1/4-20 x 1-1/4 long	1

* Extra gasket and oil filter, shipped as loose parts, with engine.

** P/N 53E22144 VALVE ASSY. supersedes P/N 53E19600 VALVE ASSY.

- IMPORTANT -

Use in conjunction with PC-615-11: AEIO-540-D Series Parts Catalog, Figure 12 Illustration, Page 2-6.

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ACCESSORY HOUSING AND RELATED PARTS
VACUUM AND HYDRAULIC PUMP, OIL COOLER AND BREATHER FITTINGS

FIG. REF. 13	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	72964	GEAR ASSY., Hydraulic driven	1
2	72962	THRUST BUTTON, Hydraulic pump gear	1
3	71596	WASHER, Accessory drive gear	1
4	68315	GASKET, Accessory drive adapter	1
5	71675	ADAPTER ASSY., Hydraulic pump	1
6	06A19956	OIL SEAL, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide	1
7	25C-12	STUD, 1/4-20 x 1-1/2 long	4
8	STD-1774	PIN, 1/8 dia.x 1/4 long	1
9	STD-35	WASHER, 5/16 plain	4
10	STD-475	WASHER, 5/16 lock, internal teeth	4
11	STD-1410	NUT, 5/16-18 plain	4
12	8313	GASKET, Vacuum pump	1
13	60430	COVER, Vacuum pump	1
14	LW-16878 *	BREATHER, Adapter	1
15	STD-8	WASHER, 1/4 plain	8
16	STD-160	WASHER, 1/4 lock, internal teeth	8
17	STD-1411	NUT, 1/4-20 plain	8
18	06E19769-0.63	GASKET, Annular, 5/8 I.D.	1
19	69675	CONNECTOR, Acc. hsg. oil cooler	1
20	69729	CAP, Sealing, 1/2 dia. x 1.00 long	1
21	STD-784	PLUG, 3/8-18 NPT, Allen head	2

* Breather adapter with oil pick-up.

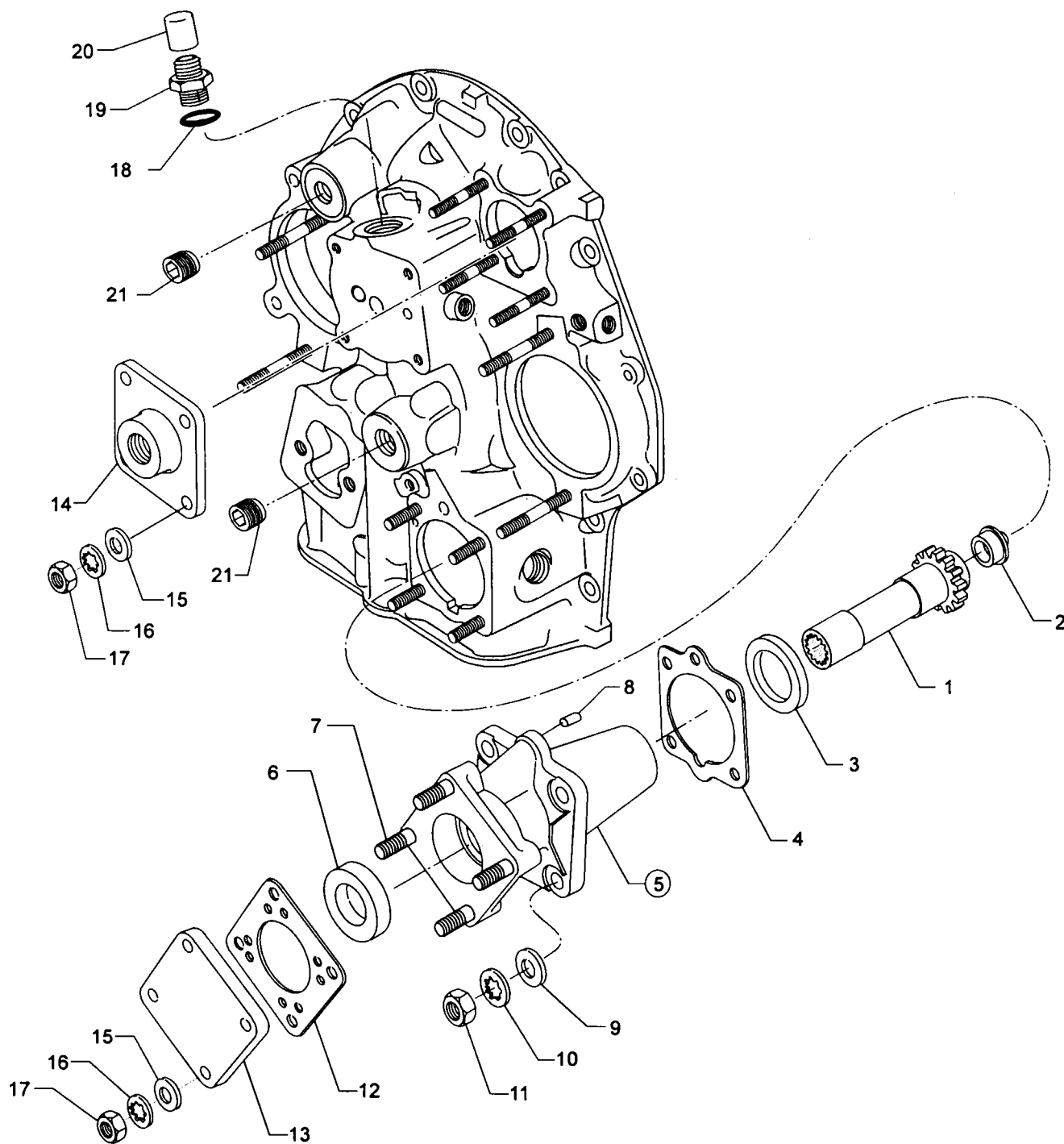


Figure 13. VACUUM AND HYDRAULIC PUMP, OIL COOLER AND BREATHER FITTINGS

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

FIG. REF. 14	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
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-13521	BEARING, Connecting rod	12
6	75089	PISTON, Compression ration 8.50:1	6
7	LW-14078 *	PIN, Piston	6
8	72198 *	PLUG, Piston pin	12
9	74241	RING, Piston compression	12
10	14H21950 *	RING, Piston, oil regulation (expander type)	6

* P/N LW-14078 PISTON PIN supersedes P/N LW-14077 PISTON PIN.

P/N 72198 PISTON PIN PLUG supersedes P/N LW-11775 PISTON PIN PLUG.

P/N 14H21950 RING supersedes P/N 73857 RING.

- IMPORTANT -

Use in conjunction with PC-615-11: AEIO-540-D Series Parts Catalog, Figure 14 Illustration, Page 3-2.

Lycoming AEIO-540-D4D5 PARTS CATALOG SUPPLEMENT

WIDE CYLINDER FLANGE CRANKCASE MODEL ENGINES

CYLINDER, PISTON AND VALVE TRAIN CYLINDER ASSEMBLY

FIG. REF. 15	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
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, flanged	6
5	77160	GUIDE, Valve exhaust, flanged	6
6	66796	INSERT, Spark plug, 18 – 1.5 MM	12
7	STD-1872	-- DOES NOT APPLY TO THIS MODEL --	
8	STD-1353	INSERT, No. 10-24 Heli-coil x 3/8	6
9	31C-12	STUD, 5/16-18 x 1-1/2 long	12
10	25C-9	-- DOES NOT APPLY TO THIS MODEL --	
	25C-8	STUD, 1/4-20 x 1.00 long	6
11	MS20823-6D	ELBOW, 45° x 3/8 flared tube	6
12	66610	BUSHING, Rocker shaft	24
13	1102 *	PLUG, 1/8-27 NPT, Allen head	6
14	LW-19296	-- DOES NOT APPLY TO THIS MODEL --	
	77611	GASKET, Exhaust flange	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.

- IMPORTANT -

Use in conjunction with PC-615-11: AEIO-540-D Series Parts Catalog, Figure 15 Illustration, Page 3-4.

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

FIG. REF. 16	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
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, Push rod shroud	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

- IMPORTANT -**Use in conjunction with PC-615-11: AEIO-540-D Series Parts Catalog, Figure 16 Illustration, Page 3-6.**

Lycoming AEIO-540-D4D5 PARTS CATALOG SUPPLEMENT

WIDE CYLINDER FLANGE CRANKCASE MODEL ENGINES

CYLINDER, PISTON AND VALVE TRAIN CYLINDER RELATED PARTS

FIG. REF. 17	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	15F19957-34 *	ROD ASSY., Push (A total of 12 reqd.)	AR
	15F19957-35 *	ROD ASSY., Push (A total of 12 reqd.)	AR
	15F19957-36 *	ROD ASSY., Push (A total of 12 reqd.)	AR
	15F19957-37 *	ROD ASSY., Push (A total of 12 reqd.)	AR
2	17F19357	ROCKER ASSY., Valve intake & exhaust	12
3	74637	BUSHING, Valve rocker, intake & exhaust	12
4	LW-13790	SHAFT, Valve rocker	6
5	LW-12892	THRUST BUTTON, Rocker shaft	12
6	75906	GASKET, Rocker box cover	6
7	61247	COVER, Rocker box	6
8	STD-1925	SCREW, 1/4-20 x 5/8 long, pan. hd., self-locking	36
9	71481	RING, Oil seal, 3/32 dia. x 4-27/32 I.D.	6
10	77906	SPACER, 33/64 I.D. x 7/8 O.D. x 1/8 thick	2
11	74887	SPACER, 33/64 I.D. x 7/8 O.D. x 3/8 thick	2
12	383-B	NUT, 3/8-24 plain	24
13	STD-2090	NUT, 1/2-20 plain	28
14	STD-684	NIPPLE, Straight, 3/8 I.D. hose	6
15	STD-1821	HOSE, 3/8 I.D. x 2-1/2 long	6
16	LW-15592-5-05	CLAMP, Hose	12
17	68759	TUBE ASSY., Cyl. head oil drain, cyl. no. 1	1
18	71737	TUBE ASSY., Cyl. head oil drain, cyl. no. 2	1
19	68761	TUBE ASSY., Cyl. head oil drain, cyls. no. 3, 4, 5, 6	4
20	75339	BAFFLE ASSY., Intercylinder	3
21	LW-13389	BAFFLE ASSY., Intercylinder	1
22	71611	RETAINER, Intercylinder baffle	4
23	71610	HOOK, Intercylinder baffle retainer	4
24	MS35489-20X	GROMMET	1

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

- IMPORTANT -

Use in conjunction with PC-615-11: AEIO-540-D Series Parts Catalog, Figure 17 Illustration, Page 3-8.

IGNITION SYSTEM MAGNETOS AND MAGNETO DRIVES

FIG. REF. 18	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	LW-13641	CUSHION, Magneto drive	4
2	62224	GASKET, Magneto adapter	4
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	BALL BEARING	2
8	73000	COUPLING, Magneto drive	1
	73013	COUPLING, Magneto drive (retard breaker)	1
		-- BENDIX --	
9		-- DOES NOT APPLY TO THIS MODEL --	
		-- SLICK --	
10	66LP-OSCNN	MAGNETO, Plain, (Right), Model No. 6350	1
	66LR37SCNN	MAGNETO, Retard, (Left), Model No. 6393	1
11	66M19385	-- DOES NOT APPLY TO THIS MODEL --	
12	66M21195	CLAMP, Magneto	4
13	STD-1727	-- DOES NOT APPLY TO THIS MODEL --	
14	STD-475	WASHER, 5/16 lock, internal teeth	4
15	STD-1410	NUT, 5/16-18 plain	4

- IMPORTANT -

Use in conjunction with PC-615-11: AEIO-540-D Series Parts Catalog, Figure 18 Illustration, Page 4-2.

Lycoming AEIO-540-D4D5 PARTS CATALOG SUPPLEMENT

WIDE CYLINDER FLANGE CRANKCASE MODEL ENGINES

IGNITION SYSTEM IGNITION HARNESSSES, SPARK PLUG AND ATTACHING HARDWARE

FIG. REF. 19	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	67U20612	HARNESS, Right, Slick No. M-2956	1
	67U20613	HARNESS, Left, Slick No. M-6027	1
2	1182-B3 *	-- DOES NOT APPLY TO THIS MODEL --	
	1182-E7 *	SPARK PLUG, Champion (REM 38E) or Auburn (SR 8)	12
**	01P19762-3-13	BAG, Magneto harness attaching	1

* Item No. 2 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 area below for breakdown of individual parts contained in the magneto and harness attaching parts bag. These parts to be attached by customer per engine line drawing included in each bag.

P/N 01P19762-3-13		ATTACHING PARTS
LW-16266-25-25	CLIP, One wire	2
LW-14060	CLIP, Two wire	3
STD-8	WASHER, 1/4 plain	10
STD-160	WASHER, 1/4 lock, internal teeth	8
STD-1874	SCREW, 1/4-20 x 13/16 long	8
76734	ZIP STRAP	8
LW-16266-25-44	CLAMP, 7/16 I.D. x 1/4 dia. screw	3
STD-696	WASHER, 1/4 plain (thin)	6
LW-M-2376	PLATE, Spark plug cable, 3 wire	2
STD-1411	NUT, 1/4-20 plain	4

- IMPORTANT -

Use in conjunction with PC-615-11: AEIO-540-D Series Parts Catalog, Figure 19 Illustration, Page 4-4.

Lycoming

AEIO-540-D4D5 PARTS CATALOG SUPPLEMENT

WIDE CYLINDER FLANGE CRANKCASE MODEL ENGINES

**ELECTRICAL COMPONENTS
ALTERNATOR AND BELT**

FIG. REF. 20	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
-----------------------------	------------------------	--------------------	--------------------------------------

**NOT
SUPPLIED
BY

LYCOMING**

ELECTRICAL COMPONENTS SKY TEC STARTER AND ATTACHING PARTS

FIG. REF. 21	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	31B22101	STARTER, Sky-Tec (149 – 24 PM)	1
2	STD-475	WASHER, 5/16 lock, internal teeth	4
3	LW-31-1.16	BOLT, 5/16-18 x 1-5/32 long, hex. hd.	1
4	STD-1410	NUT, 5/16-18 plain	3

NOTE

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

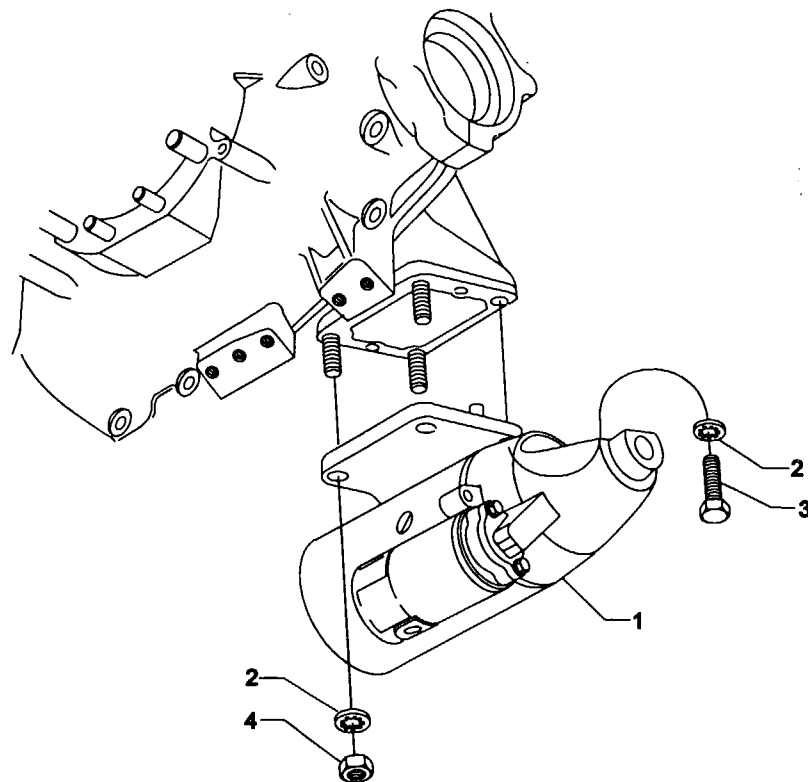


Figure 21. SKY-TEC STARTER AND ATTACHNG PARTS

ELECTRICAL COMPONENTS
ALTERNATOR MOUNTING AND ATTACHING PARTS

FIG. REF. 22	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
-----------------------------	------------------------	--------------------	--------------------------------------

**NOT
SUPPLIED
BY

LYCOMING**

Lycoming AEIO-540-D4D5 PARTS CATALOG SUPPLEMENT

WIDE CYLINDER FLANGE CRANKCASE MODEL ENGINES

OIL SUMP AND INDUCTION SYSTEM OIL SUMP ASSEMBLY AND AEROBATIC ATTACHING PARTS

FIG. REF. 23	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	06B21326	GASKET, Oil sump	1
2	LW-13901	SUMP ASSY., Oil	1
3	71699	CONNECTION, Intake pipe	6
4	25C-11	STUD, 1/4-20 x 1-3/8 long	14
5	31C-15	STUD, 5/16-18 x 1-7/8 long	4
6	38-15	STUD, 3/8-16 x 1-7/8 long	8
7	STD-1173	INSERT, 1/4-20 Heli-coil x 1/2 long	4
8	STD-8	WASHER, 1/4 plain	34
9	STD-160	WASHER, 1/4 lock, internal teeth	27
10	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. hd.	7
11	LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. hd.	6
12	STD-1411	NUT, 1/4-20 plain	21
13	STD-551	PLUG, 1/2-14 NPT, Sq. hd., drilled	4
14	LW-13752 *	PLUG, Sump	1
15	50004-111	"O" RING	1
16	LW-13888 *	SCREEN, Oil suction	1
17	LW-13751 *	FITTING, Sump, oil suction	1
18	50004-018	"O" RING	1
19	LW-14250	FITTING, Sump, oil strainer, 90° elbow	1
20	LW-13754	FITTING, Sump, oil return	1
21	57A21009	OIL SEPARATOR	1
22	LW-13902	-- DOES NOT APPLY TO THIS MODEL --	
23	57B19829	OIL VALVE	1
24	50004-027	"O" RING	1

* Assemble in sump. P/N LW-13751 to be assembled parallel with sump flange, fitting end toward the right side of the engine.

- IMPORTANT -

Use in conjunction with PC-615-11: AEIO-540-D Series Parts Catalog, Figure 23 Illustration, Page 6-2.

**OIL SUMP AND INDUCTION SYSTEM
INTAKE PIPE ASSEMBLY**

FIG. REF. 24	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
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

- IMPORTANT -

Use in conjunction with PC-615-11: AEIO-540-D Series Parts Catalog, Figure 24 Illustration, Page 6-4.

INTENTIONALLY

LEFT

BLANK

OIL SUMP AND INDUCTION SYSTEM
FUEL INJECTOR, FUEL MANIFOLD AND INJECTION NOZZLES

FIG. REF. 25	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	66224	GASKET, Fuel injector	1
2	73937	FUEL INJECTOR, RSA5AD1, (2524054-11)	1
3	STD-35	WASHER, 5/16 plain	4
3A	STD-475	WASHER, 5/16 lock, internal teeth	4
4	STD-1410	NUT, 5/16-18 plain	4
5	STD-1763	-- DOES NOT APPLY TO THIS MODEL --	
6	LW-18265	-- DOES NOT APPLY TO THIS MODEL --	
6A	LW-18854	NOZZLE ASSY., Low flow 90	6
6B	951391	"O" RING	12
7	75283	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	02G21446	NIPPLE, 1/8 tube to 1/8 NPT (restricted)	1
11	73966	SPACER, Fuel manifold bracket	2
12	73965	BRACKET, Fuel manifold	2
13	STD-251	WASHER, No. 10 lock, internal teeth	4
14	STD-82	SCREW, No. 10-24 x 1/2 long, hd. dr.	4
15	LW-12098-0-210 *	TUBE ASSY., Fuel manifold to nozzle, cyls. no. 1, 2, 5, 6	4
16	LW-12098-0-170	TUBE ASSY., Fuel manifold to nozzle, cyls. no. 3 & 4	2
17	LW-16266-10-75	CLAMP	12
18	LW-16266-10-13	CLAMP	12
19	STD-860	SCREW, No. 10-32 x 5/8 long, fill. hd.	14
20	STD-425	WASHER, No. 10 plain	2
21	STD-670	NUT, No. 10-32 self-locking	14
22	73136	BRACKET, 90°	2
23	LW-12798-4S274	HOSE ASSY., Fuel injector to fuel manifold	1
24	74278	BRACKET ASSY., Fuel line support	1

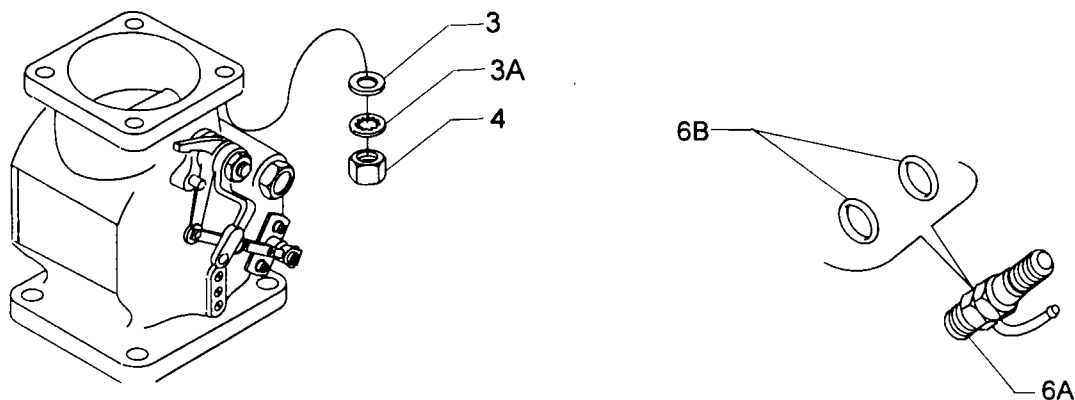
* P/N LW-12098-0-210 TUBE ASSY. supersedes P/N LW-12098-0-200 TUBE ASSY.

OIL SUMP AND INDUCTION SYSTEM FUEL INJECTOR, FUEL MANIFOLD AND INJECTION NOZZLES (Continued)

FIG. REF. 25 (Cont.)	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
25	LW-16266-25-63	CLAMP	1
26	STD-860	SCREW, No. 10-32 x 5/8 long, fill. hd.	1
27	STD-692	SCREW, No. 10-32 x 1/2 long, rd. hd.	2
28	STD-425	WASHER, No. 10 plain	3
29	STD-670	NUT, No. 10-32 self-locking	1
30	LW-12799-6S254	HOSE, Fuel pump to injector	1
31	74070	ELBOW, 3/8 tubing, adj. 45°	1

- IMPORTANT -

Use in conjunction with PC-615-11: AEIO-540-D Series Parts Catalog, Figure 25 Illustration, Page 6-6.



**OIL SUMP AND INDUCTION SYSTEM
INJECTOR NOZZLE VENT MANIFOLDS AND ATTACHMENTS**

FIG. REF. 26	PART NUMBER	DESCRIPTION	QUANTITY PER ASSEMBLY
1	78109	MANIFOLD, Right, injector nozzle vent	1
2	78110	MANIFOLD, Left, injector nozzle vent	1
3	LW-18737	HOSE, 3/16 I.D. x 7/16 O.D. x 2.00 long	6
4	LW-15592-5-04	CLAMP, 7/16 O.D. hose	12
5	78127	TUBE, Crossover, nozzle vent manifold	1
6	STD-2048	HOSE, 1/4 I.D. x 19/32 O.D. x 2-7/16 long	2
7	LW-15592-5-04	CLAMP, 7/16 O.D. hose	4
8	STD-1856	SCREW, 1/4-20 x 1.00 long, hex. hd.	4
9	STD-2079	NUT, 1/4-20 UNC	4
10	LW-16266-10-25	CLAMP	4
11	73152	BRACKET, Support clamp	4
12	78753	BRACKET, Injector nozzle vent crossover	1
13	STD-692	SCREW, No. 10-32 x 1/2 long, rd. hd.	5
14	STD-425	WASHER, No. 10 plain	5
15	STD-670	LOCKNUT, No. 10-32	5
16	STD-1339	PLUG, 1/16-27 NPT, Allen	3
17	AN815-4	UNION, 1/4 flared tube	1
18	LW-12798-4S313	HOSE ASSY., 1/4 hose, straight	1
19	LW-16266-25-63	CLAMP 5/8 I.D. x 1/4 dia. screw	1
20	73136	BRACKET, Extension, fuel injector line	1
21	STD-860	SCREW, No. 10-32 x 5/8 long, fill. hd.	1
22	STD-425	WASHER, No. 10 plain	1
23	STD-670	LOCKNUT, No. 10-32	1

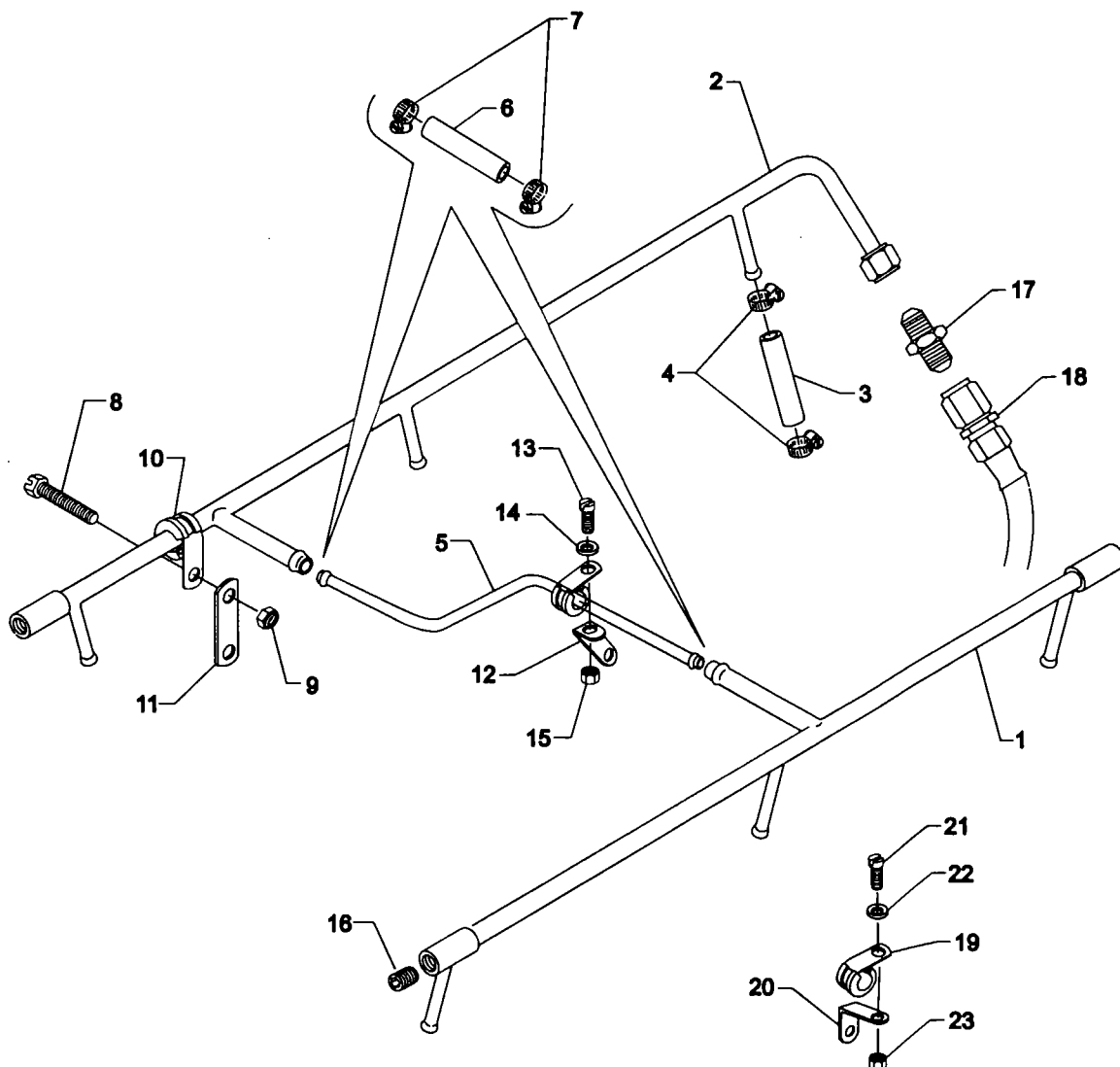


Figure 26. INJECTOR NOZZLE VENT MANIFOLDS AND ATTACHMENTS

INTRODUCTION

This illustrated parts catalog contains a complete parts listing for the Lycoming AEIO-540-D Series wide cylinder flange model aircraft engines.

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

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

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

Parts coverage of Vendor Accessories used on Lycoming engines may be found in the appropriate Vendor's Parts Catalog. A list of 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	P75 .0075	P10 .010	P125 .0125	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, Counterweight	SEE LATEST EDITION OF SERVICE INSTRUCTION NO. 1143 FOR APPLICATION.												
72057	SEAT				X			X	X					
72058	SEAT				X			X	X					
72155	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									
75656	BUSHING		X		X		X	X						
75657	BUSHING		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-16048	BEARING				X							X*	X*	X*
LW-16711	BEARING											X	X	X
STD-1065	DOWEL	X	X		X		X							

Studs available in P03, P07 and P12.

* Also available in P10 oversize.

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	
				D4A5	D4B5
1	11E20000-S1	CRANKCASE ASSEMBLY (See note)	1		
2	LW-13794	STUD, 5/16-18 x 1.00 long (left idler pad)	1		
3	31C-12	STUD, 5/16-18 x 1-1/2 long (starter pad, rear)	2		
4	31C-13	STUD, 5/16-18 x 1-5/8 long (starter pad, front)	1		
5	38-13	STUD, 3/8-16 x 1-5/8 long (cylinder pad)	24		
6	50-15	STUD, 1/2-20 x 1-7/8 long (cylinder pad)	12		
7	38-22	STUD, 3/8-16 x 2-3/4 long (nose of case)	1		
8	38D-17	STUD, 3/8-16 x 2-1/8 long (rear above cam)	1		
9	38-16	STUD, 3/8-16 x 2.00 long (engine mount)	8		
10	69796	DOWEL, Crankshaft (front bearing)	2		
11	STD-514	DOWEL, 5/16 dia. x 1/2 long (accessory face)	2		
12	STD-557	DOWEL, 1/2 dia. x 11/16 long (between halves)	2		
13	72158	BUSHING, Gov. drive idler shaft	1		
14	65007 *	RETAINER, Shroud tube seal	12		
15	STD-1339 * *	PLUG, 1/16-27 pipe	7		
16	1102	PLUG, 1/8 pipe (oil pressure)	4		
17	31C-14 ★	STUD, 5/16-18 x 1-3/4 long (at gov. pad)		4	
18	31C-16 ●	STUD, 5/16-18 x 2.00 long (at gov. pad)			4

- * Early crankcases used item no. 14, P/N 65007 retainer, 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.
- ★ "AN" governor.
- Woodward governor.

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.

Lycoming **AEIO-540-D4D5 PARTS CATALOG SUPPLEMENT**
WIDE CYLINDER FLANGE CRANKCASE MODEL ENGINES

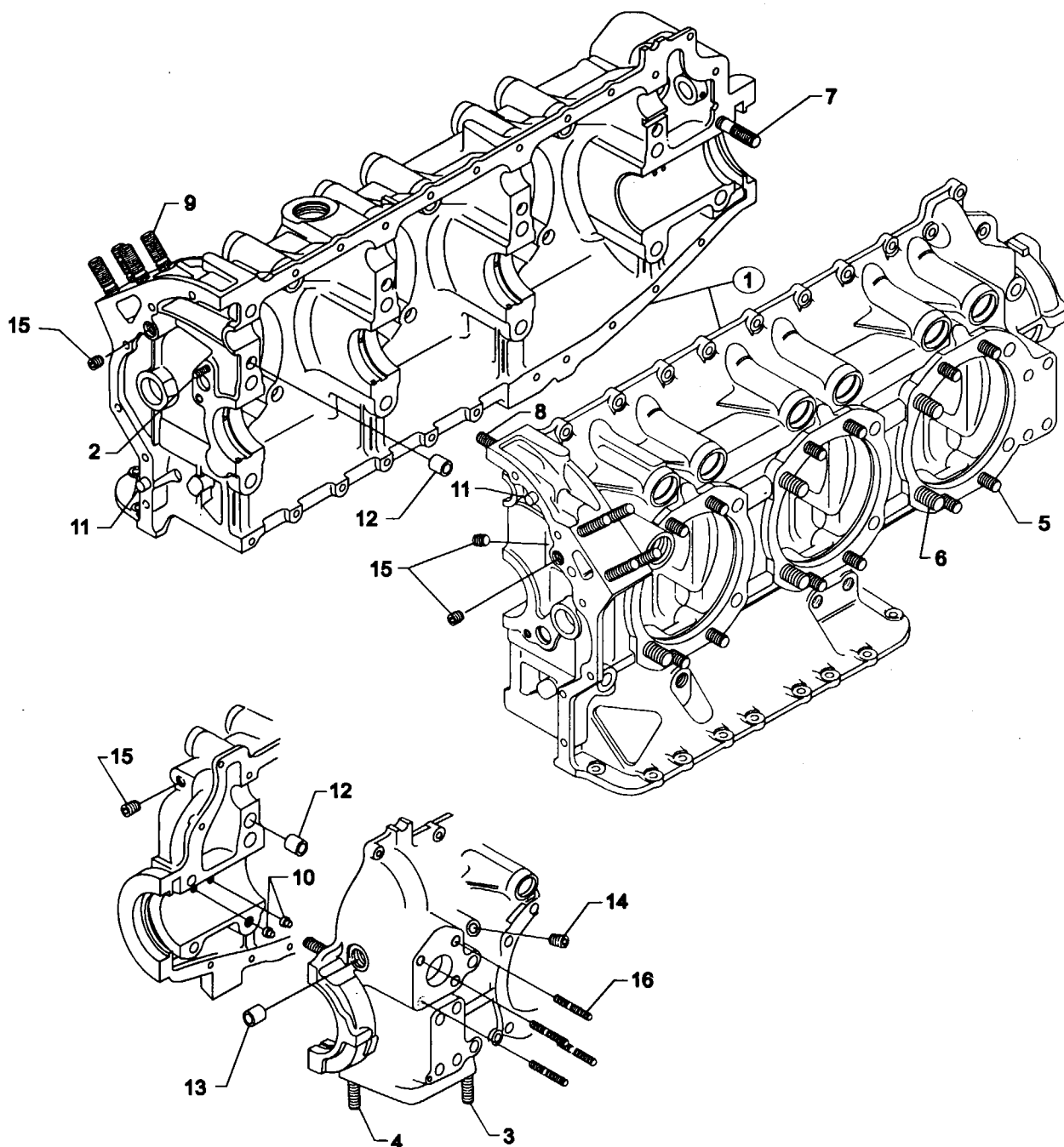


Figure 1. CRANKCASE ASSEMBLY

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	
				D4A5	D4B5
1	70457	GASKET, Oil filler extension	1		
2	75737 *	EXTENSION, Oil filler (short), 2-11/16 long	1		
	77527 ★	EXTENSION, Oil filler (short), 2-3/16 long		1	
3	75761 * *	EXTENSION, Oil filler (long), 4-15/32 long	1		
4	74068 *	"O" RING, Oil level gage	1		
	74065 * *	"O" RING, Oil level gage	1		
	74065 ●	"O" RING, Oil level gage			1
	72312 ★	RING, Oil seal, 1.00 I.D. x 1/8 section		1	
5	LW-14756	GAGE ASSY., Oil level	1		
	LW-14774	GAGE ASSY., Oil level	1		
	LW-14732	GAGE ASSY., Oil level (cam action)		1	
	LW-14779	GAGE ASSY., Oil level			1
6	12A19770	BRACKET, Engine mounting (dynafocal)	4		
	70456	BRACKET, Engine mounting (dynafocal)	4		
7	STD-33	WASHER, 3/8 plain	16		
8	STD-678	WASHER, 3/8 lock, internal teeth	16		
9	STD-596	NUT, 3/8-24 plain	16		

- * Used with P/N LW-14756 oil level gage assembly.
- * * Used with P/N LW-14774 oil level gage assembly.
- ★ Used with P/N LW-14732 (cam action) oil level gage assembly.
- Used with P/N LW-14779 oil level gage assembly.

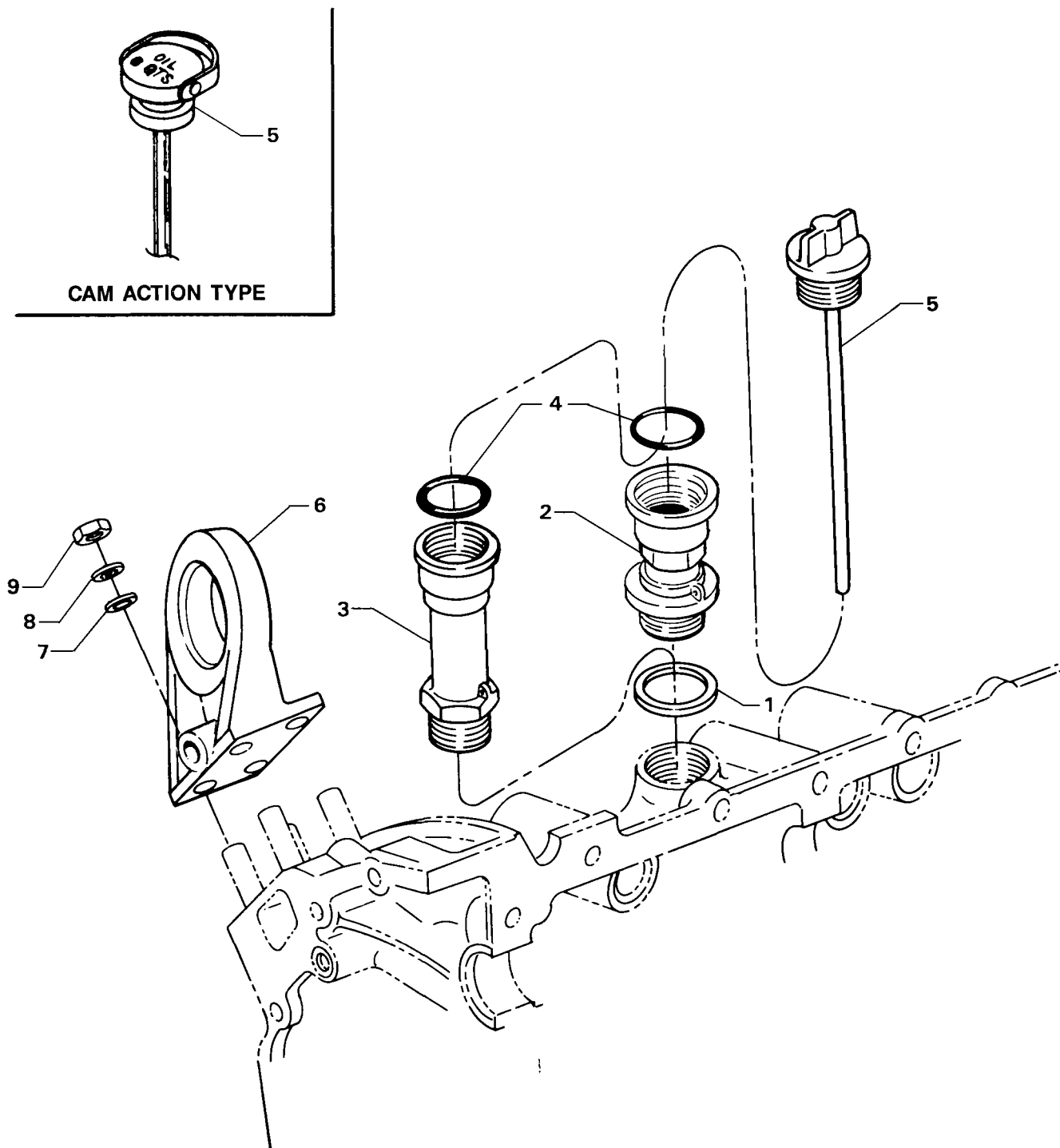


Figure 2. OIL LEVEL GAGE AND ENGINE MOUNTING BRACKETS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP

CRANKCASE RELATED PARTS

FIG. REF. 3	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY	
				D4A5	D4B5
1	1028-B	BALL, 11/16 dia.	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	STD-425 * *	WASHER, No. 10 plain (max. 9)	AR		
4	06E19769-1.25	GASKET, 1-1/4 I.D. x 1-1/2 O.D. x 3/32 annular	1		
5	76529 * *	PLUG, Oil relief valve			1
6	77808	VALVE ASSY., Oil pressure relief, adjustable	1		
7	LW-16711	BEARING, Crankshaft	6		
8	LW-13884	BEARING, Crankshaft, front	2		
9	LW-11997 ★	SEAL, Crankshaft oil, split	1		
	LW-13792 ★	SEAL, Crankshaft oil, solid	1		
10	72091	RING, Oil seal, 23/64 I.D. x 7/64 dia. section	2		
11	72877	BODY, Hydraulic tappet	12		

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

* * Used for standard oil pressure relief valve.

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

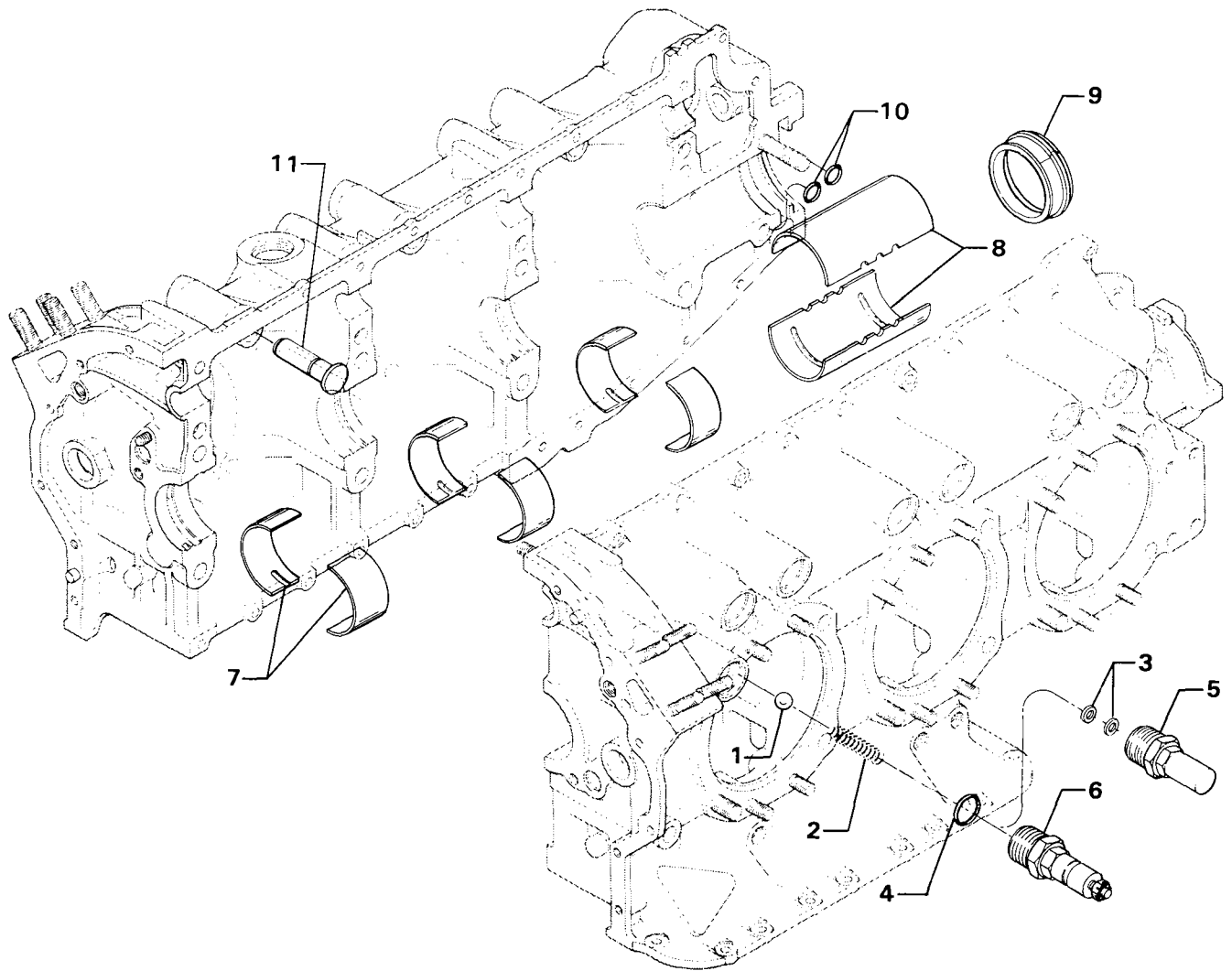


Figure 3. CRANKCASE RELATED PARTS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP

CRANKSHAFT AND COUNTERWEIGHT ASSEMBLY

FIG. REF. 4	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY	
				D4A5	D4B5
1	13E17684	CRANKSHAFT AND COUNTERWEIGHT ASSEMBLY	1		
	13E17676	CRANKSHAFT AND COUNTERWEIGHT ASSEMBLY	1		
2	13E17653	CRANKSHAFT AND PLUG ASSEMBLY	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 dia.	1		
6	75656	BUSHING, Propeller flange, long	4		
7	72062	BUSHING, Propeller flange, long	4		
8	72155	BUSHING, Propeller flange, short	1		
9	72061	BUSHING, Propeller flange, short	1		
10	75657	BUSHING, Propeller flange, indexing	1		
11	72060	BUSHING, Propeller flange, indexing	1		
12	STD-1065	DOWEL, Stepped, 5/16 x 1/4 dia. x 35/64 long	1		
13	LW-19227 *	COUNTERWEIGHT ASSEMBLY	2		
14	71903	BUSHING, Dynamic counterweight	8		
15	72797 *	ROLLER, Dynamic counterweight, 6.3 order	2		
16	72965 *	ROLLER, Dynamic counterweight, 5.1 order	2		
17	LW-14820	RING, Internal retaining	8		
18	71907	WASHER, Dynamic counterweight	8		
19	13S19647 * *	GEAR, Crankshaft	1		
20	LW-18638	LOCKPLATE, Crankshaft gear	1		
21	STD-2209	BOLT, 5/16-24 x 1-3/4 long, hex. hd.	1		
22	77579	SUPPORT ASSY., Starter ring gear, 12/14 pitch	1		
23	72566	GEAR, Starter ring, 12/14 pitch	1		

* See latest edition of
 * * See latest edition of

Lycoming Service Instruction No. 1012 for proper counterweight and roller location.
 Lycoming Service Bulletin No. 475 for proper installation.

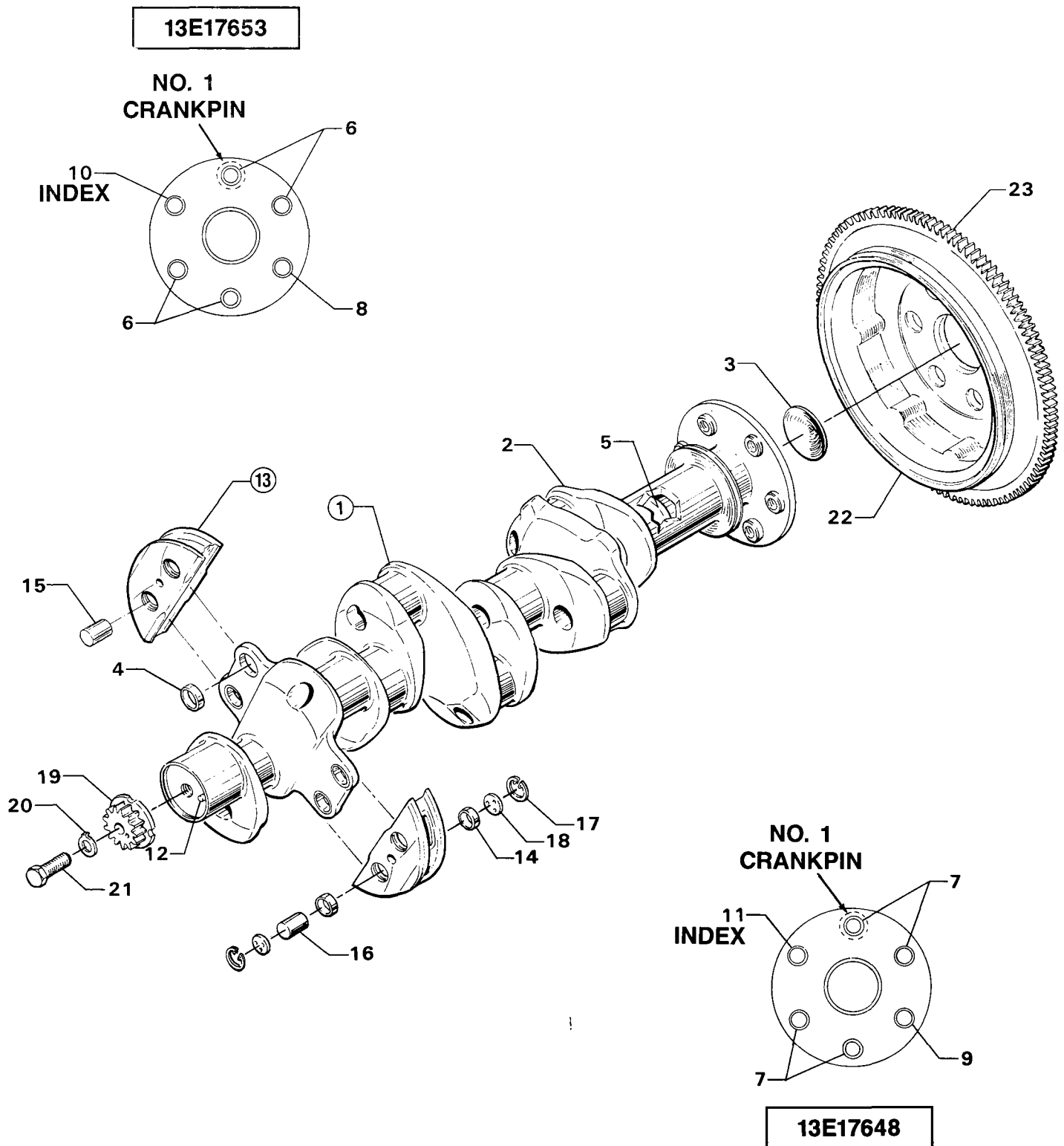


Figure 4. CRANKSHAFT AND COUNTERWEIGHT ASSEMBLY

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP

CAMSHAFT ASSEMBLY

FIG. REF. 5	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY	
				D4A5	D4B5
1	LW-19340	CAMSHAFT ASSEMBLY	1		
2	76118	SPACER, Tachometer shaft centering	1		
3	76155	SHAFT ASSY., Tachometer	1		
4	LW-18667	PIN, 3/16 dia. x 2-21/64 long	1		
5	STD-2231	RING, Internal retaining	1		

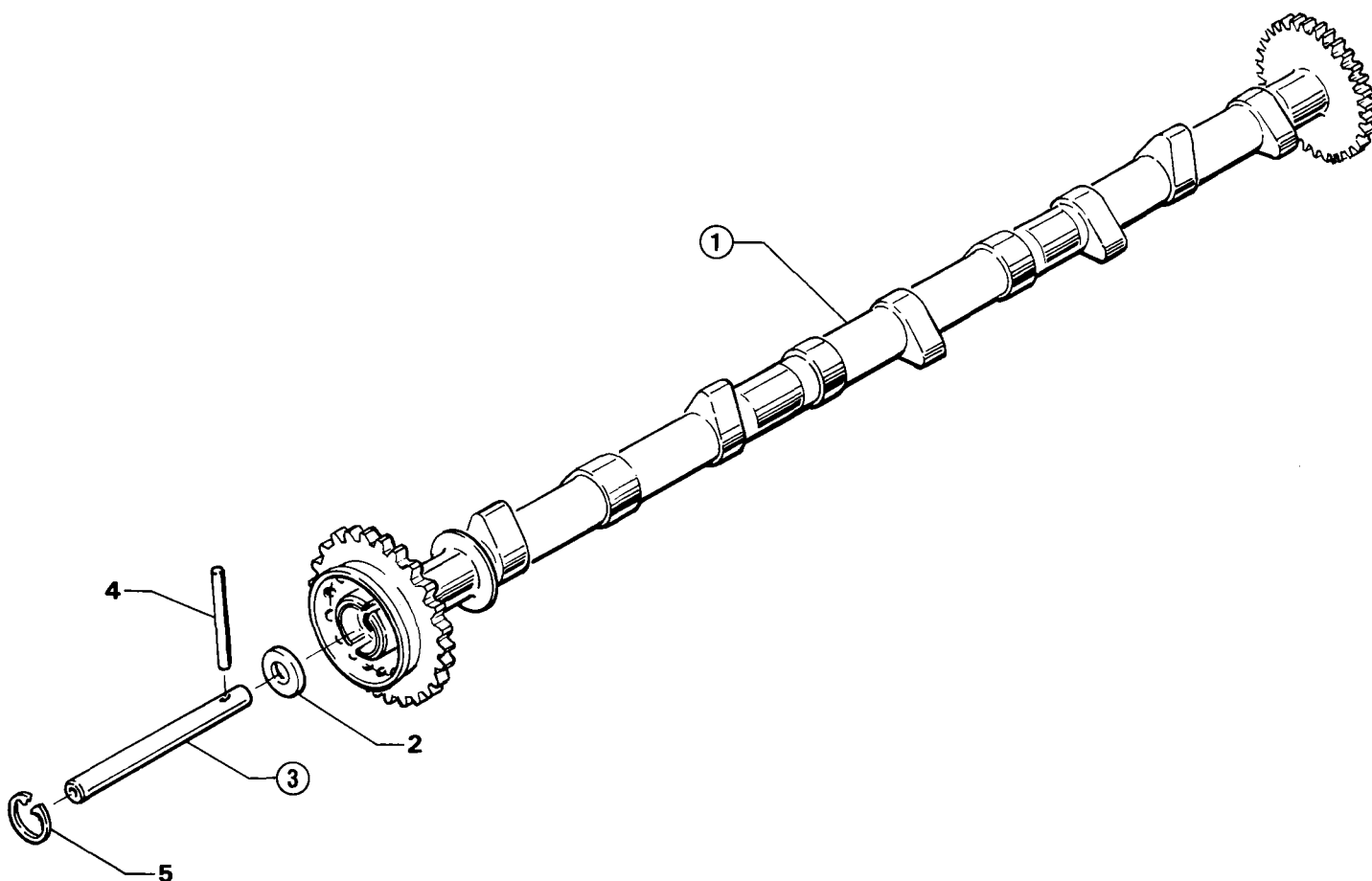
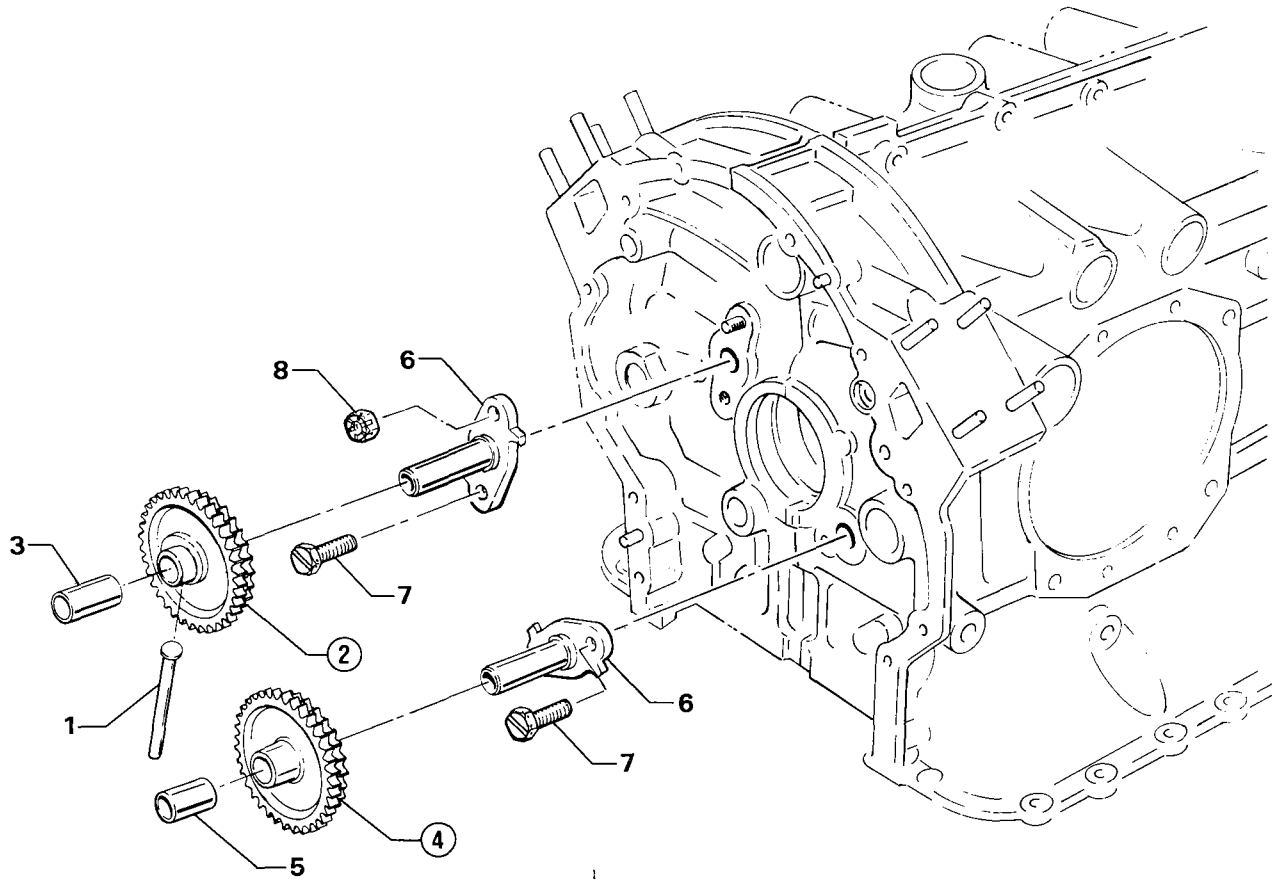


Figure 5. CAMSHAFT ASSEMBLY

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP

CRANKSHAFT IDLER GEARS

FIG. REF. 6	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY	
				D4A5	D4B5
1	61544	PLUNGER, Fuel pump, long	1		
2	71652	GEAR ASSY., Crankshaft idler	1		
3	67530	BUSHING, Crankshaft idler gear	1		
4	71668	GEAR ASSY., Crankshaft idler, plain	1		
5	67530	BUSHING, Crankshaft idler gear	1		
6	LW-13795	SHAFT, Crankshaft idler gear	2		
7	STD-2167	SCREW, 5/16-18 x 7/8 long, hex. hd., dr.	3		
8	STD-2168	NUT, 5/16-18 NC-3 slotted shear	1		



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Figure 6. CRANKSHAFT IDLER GEARS

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP PROPELLER GOVERNOR DRIVE ASSEMBLY

FIG. REF. 7	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY	
				D4A5	D4B5
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		
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. hd.	1		
11	72053	GASKET, Governor	1		
12	72378	COVER, Governor drive	1		
13	STD-35 ★	WASHER, 5/16 plain	20		
	STD-35 ★ ★	WASHER, 5/16 plain	4		
14	STD-475	WASHER, 5/16 lock, internal teeth	4		
15	STD-1410	NUT, 5/16-18 plain	4		

★ Woodward governor.

★ ★ "AN" governor.

★ For alternate set screws and installation information, see latest edition of

Lycoming Service Instruction No. 1343.

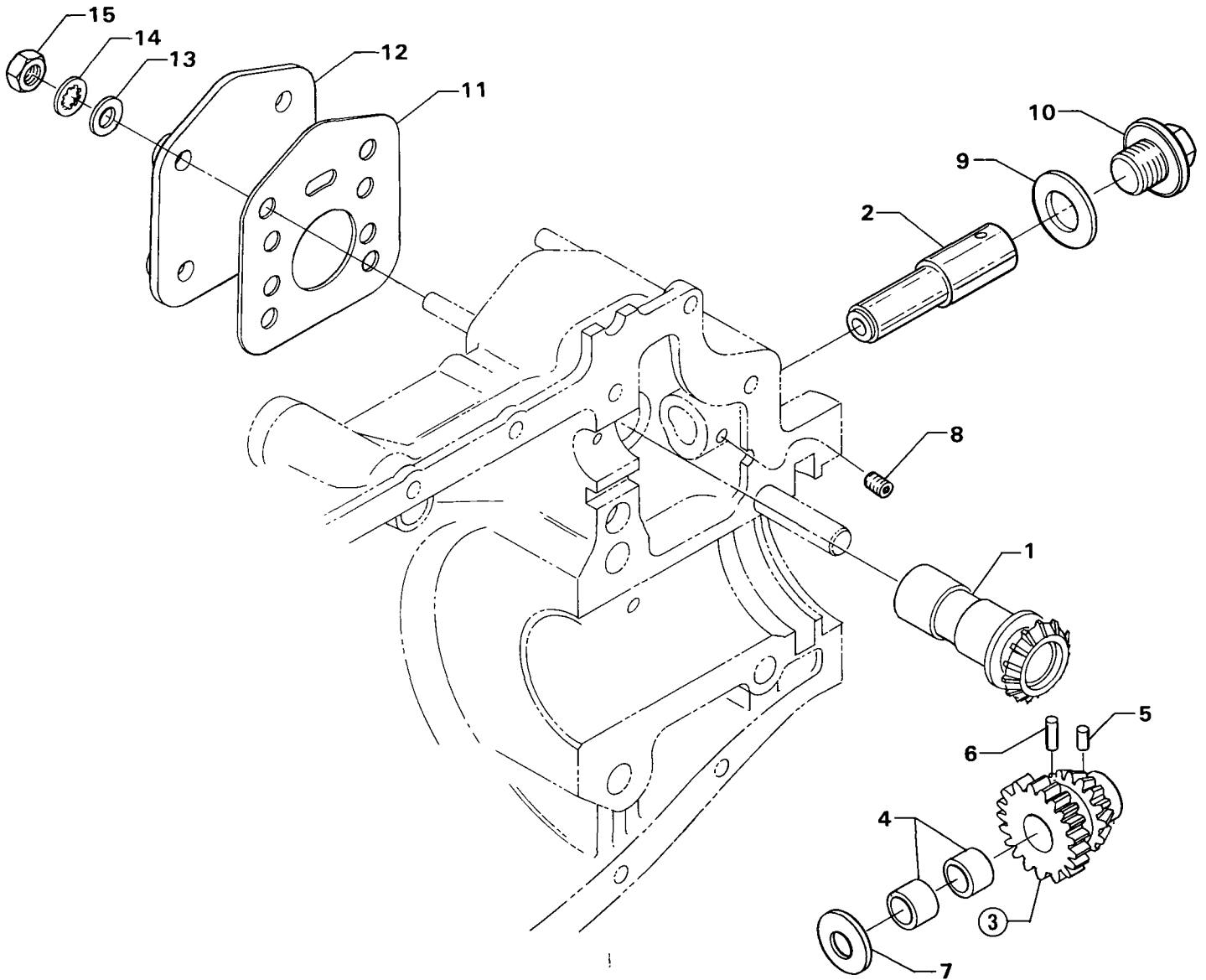


Figure 7. PROPELLER GOVERNOR DRIVE ASSEMBLY

CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP

CRANKCASE ATTACHING PARTS

FIG. REF. 8	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY	
				D4A5	D4B5
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 (max. 18)	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 long	8		

- * Two STD-8 and one LW-25-1.88 assembled in rear top hole in crankcase.
 * * Attach fuel manifold bracket.

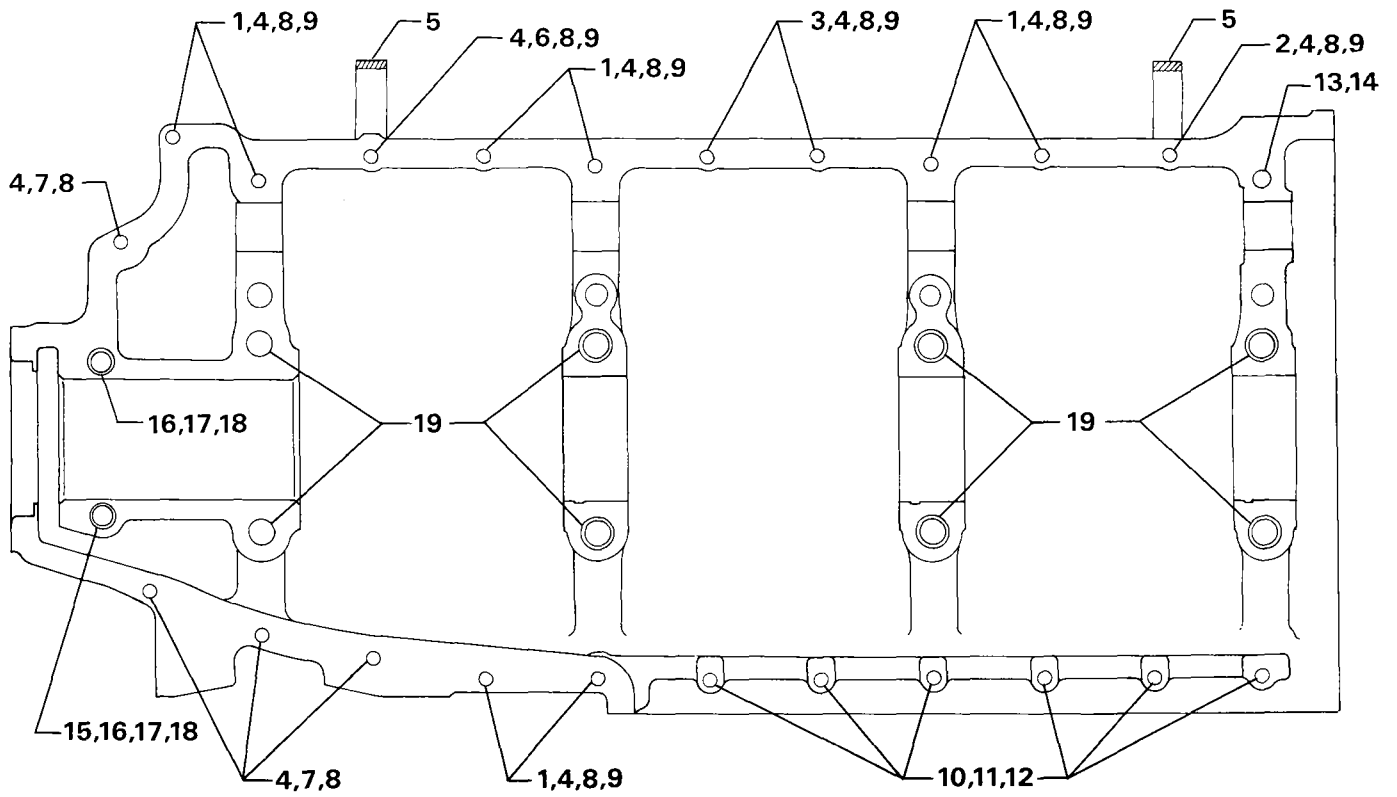


Figure 8. CRANKCASE ATTACHING PARTS

ACCESSORY HOUSING AND RELATED PARTS

ACCESSORY HOUSING ASSEMBLY

FIG. REF. 9	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY	
				D4A5	D4B5
1	73818	GASKET, Accessory housing	1		
2	76152 *	HOUSING ASSY., Accessory	1		
	LW-15881 * *	HOUSING ASSY., Accessory			1
	LW-18757 ★	HOUSING ASSY., Accessory			1
3	31C-12	STUD, 5/16-18 x 1-1/2 long	4		
4	31CD-17	STUD, 5/16-18 x 2-1/8 long, drilled	3		
5	31C-21	STUD, 5/16-18 x 2-5/8 long	4		
6	25C-21	STUD, 1/4-20 x 2-5/8 long	4		
7	25C-12 ★	STUD, 1/4-20 x 1-1/2 long			4
8	STD-784	PLUG, 3/8 pipe, Allen head	1		
9	1102	PLUG, 1/8-27 NPT, Allen head	2		

- * Provision for "AC" fuel pump.
- * * Provision for "AC" fuel pump less breather shield.
- ★ Provision for "AC" fuel pump with straight thread at breather boss.

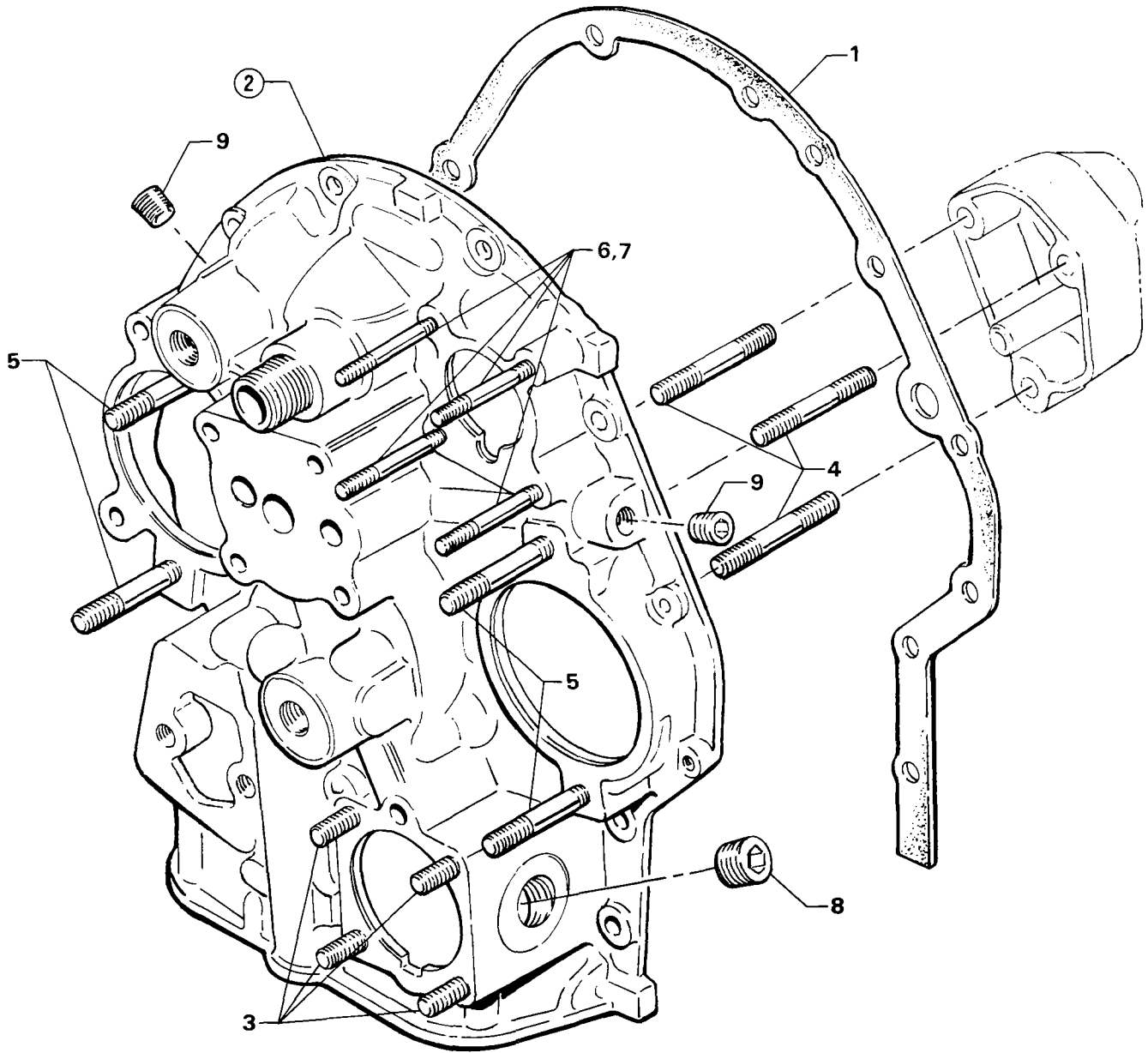


Figure 9. ACCESSORY HOUSING ASSEMBLY

ACCESSORY HOUSING AND RELATED PARTS

OIL PUMP ASSEMBLY AND ACCESSORY HOUSING ATTACHING PARTS

FIG. REF. 10	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY	
				D4A5	D4B5
1	78531	BODY, Oil pump	1		
2	05K19423-S *	OIL PUMP IMPELLER KIT ¹	1		
3	74641	SHAFT, Oil pump drive	1		
4	STD-35	WASHER, 5/16 plain	3		
5	STD-1420	NUT, 5/16-18 slotted	3		
6	LW-14260	SEAL, Tachometer drive, oil	1		
7	STD-8	WASHER, 1/4 plain	10		
8	STD-160	WASHER, 1/4 lock, internal teeth	12		
9	LW-25-0.94	BOLT, 1/4-20 x 15/16 long, hex. hd.	9		
10	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. hd.	1		
11	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 available in kit form only.

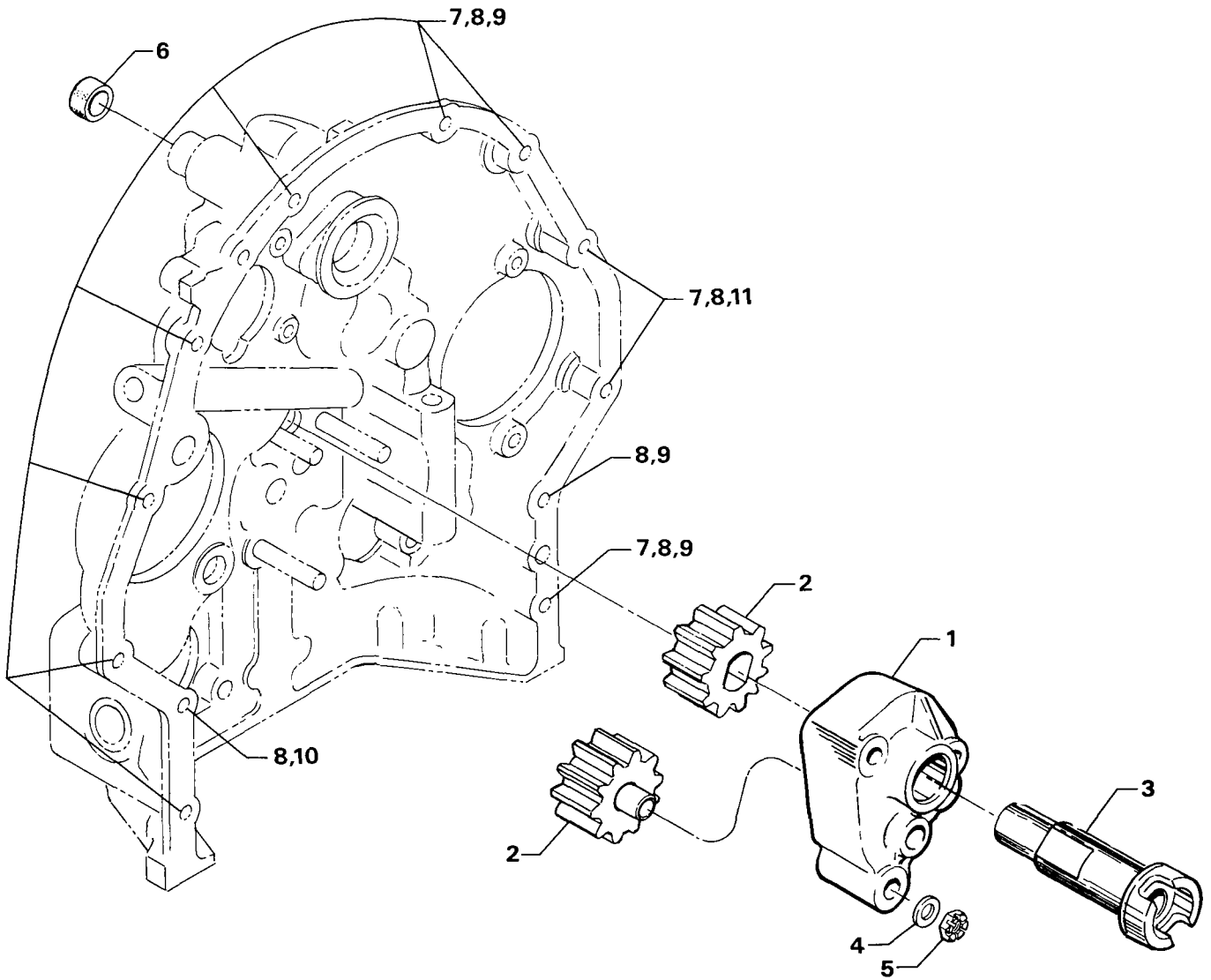


Figure 10. OIL PUMP ASSEMBLY AND ACCESSORY HOUSING ATTACHING PARTS

ACCESSORY HOUSING AND RELATED PARTS

FUEL PUMP ASSEMBLY

FIG. REF. 11	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY	
				D4A5	D4B5
1	60096	GASKET, Fuel pump	1		
2	LW-15473	FUEL PUMP, (6441234), Dual diaphragm	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		

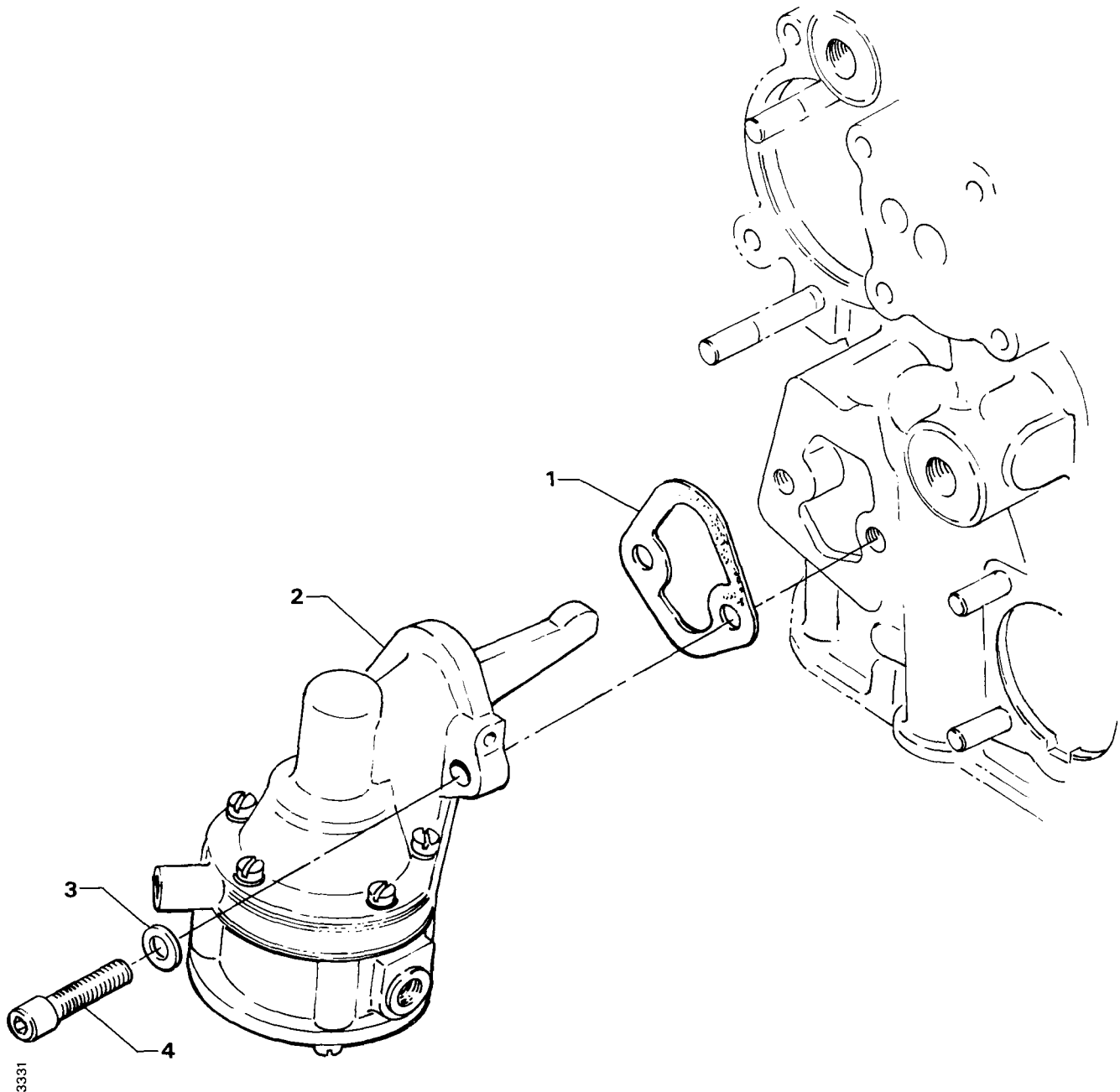


Figure 11. FUEL PUMP ASSEMBLY

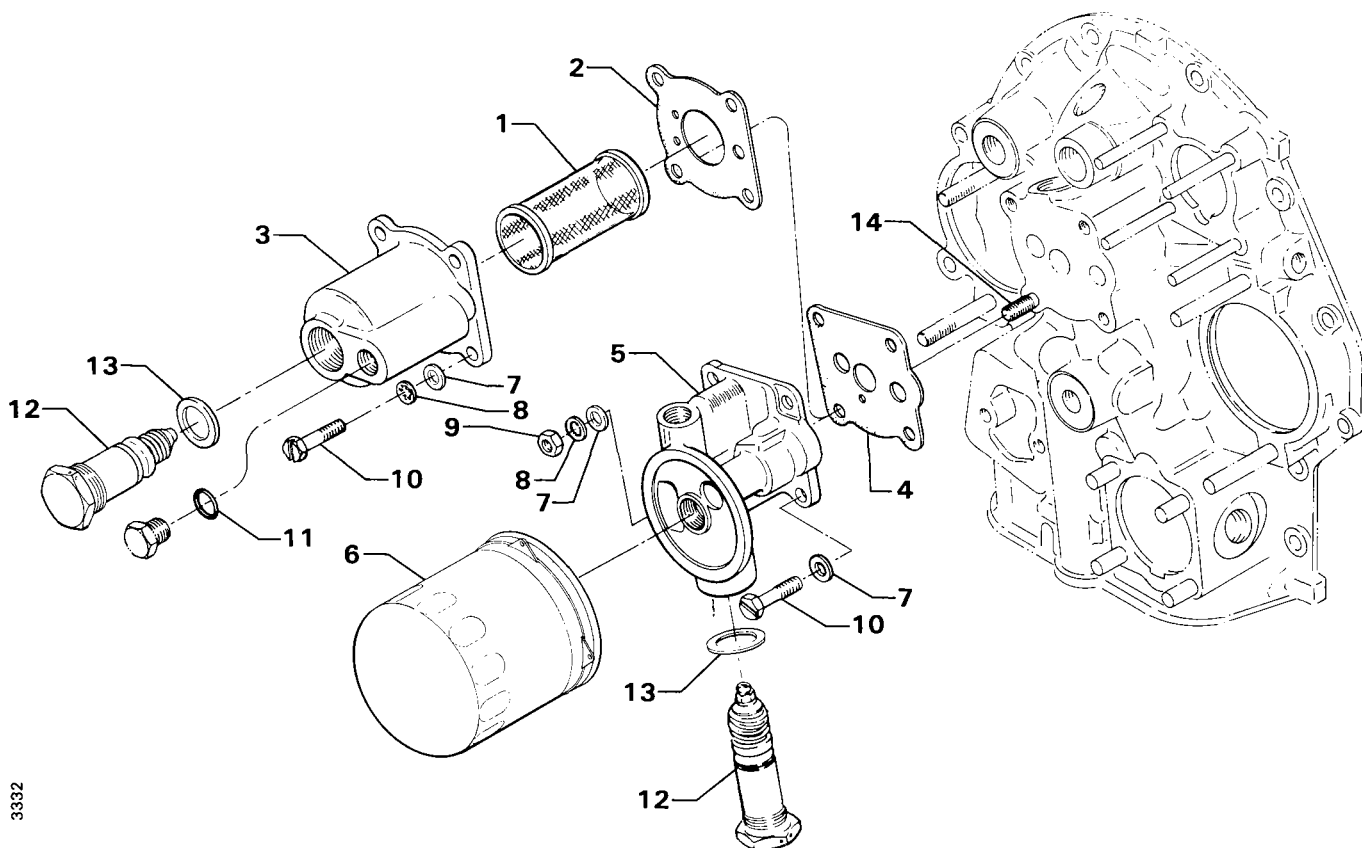
ACCESSORY HOUSING AND RELATED PARTS

OIL FILTER ASSEMBLY AND OIL COOLER BYPASS VALVE

FIG. REF. 12	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY	
				D4A5	D4B5
1	62817 *	SCREEN ASSY., Oil pressure	1		
2	61173 *	GASKET, Oil pressure housing	1		
3	69510 *	HOUSING, Thermostatic valve & oil pressure screen	1		
4	LW-12795	GASKET, Oil filter adapter			2
5	77852 * *	OIL FILTER BASE ASSEMBLY			1
6	54D19625 * *	OIL FILTER, (short with stud)	1		
7	STD-8	WASHER, 1/4 plain	4		
8	STD-160	WASHER, 1/4 lock, internal teeth			1
9	STD-1411	NUT, 1/4-20 plain			1
10	STD-1856	SCREW, 1/4-20 x 1.00 long, hex. hd., self-locking			3
	STD-1856 *	SCREW, 1/4-20 x 1.00 long, hex. hd., self-locking	4		
11	06E19769-0.63 *	GASKET, 7/8 O.D. x 5/8 I.D. x 3/32 annular	1		
12	53E19600	VALVE ASSY., Temp. control oil cooler bypass	1		
13	76510	GASKET, Valve assembly	1		
14	25C-10	STUD, 1/4-20 x 1-1/4 long			1

* Used with engines employing thermostatic valve & oil pressure screen housing.

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



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Figure 12. OIL FILTER ASSEMBLY AND OIL COOLER BYPASS VALVE

ACCESSORY HOUSING AND RELATED PARTS

VACUUM AND HYDRAULIC PUMP, OIL COOLER AND BREATHER FITTINGS

FIG. REF. 13	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY	
				D4A5	D4B5
1	61183	GASKET, Accessory adapter	1		
2	67536	ADAPTER ASSY., Vacuum pump	1		
3	STD-1774	DOWEL, 1/8 dia. x 1/4 long	1		
4	06A19956	OIL SEAL, 7/8 I.D. x 1-1/2 O.D. x 5/16 wide	1		
5	72974	GEAR ASSY., Vacuum pump driven	1		
6	71596	WASHER, Accessory driven gear	1		
7	8313	GASKET, Vacuum pump	1		
8	LW-16878 *	ADAPTER, Breather			1
9	60430	COVER, Vacuum pump	1		
10	68593 * *	SPACER, Vacuum pump stud	4		
11	STD-8	WASHER, 1/4 plain	4		
12	STD-160	WASHER, 1/4 lock, internal teeth	4		
13	STD-1411	NUT, 1/4-20 plain	4		
14	69551	GASKET, Accessory drive adapter	1		
15	69106	COVER, Governor drive adapter pad	1		
16	STD-35	WASHER, 5/16 plain	4		
17	STD-475	WASHER, 5/16 lock, internal teeth	4		
18	STD-1410	NUT, 5/16-18 plain	4		
19	06E19769-0.63	GASKET, 7/8 O.D. x 5/8 I.D. x 3/32 annular	1		
20	62417	PLUG, Oil cooler bypass			1
21	STD-784	PLUG, 3/8-18 NPT, Allen head	2		
22	AN932-6 ★	PLUG, 3/4 NPT, Allen head			1
23	LW-16835 ●	ELBOW, 3/4 hose, adj. 45°			1
24	02A21377‡	ELBOW ASSY., 45° restricted (.025)			1
25	62732 ■	CAP, Tachometer drive			1
26	69675 ►	CONNECTOR, Acc. hsg. to oil cooler inlet hose	1		

* Breather adapter with oil pick-up.

* * Used with vacuum pump pad cover less drive parts (studs in accessory housing for drive).

★ Assemble in accessory housing breather hole.

● Assemble in accessory housing breather hole when adjustable elbow used in breather boss.

‡ Assemble in accessory housing oil pressure tapped hole pointing rearward.

■ Assemble on accessory housing.

► 3/8 inch flared tube connection to oil cooler — no breather fitting.

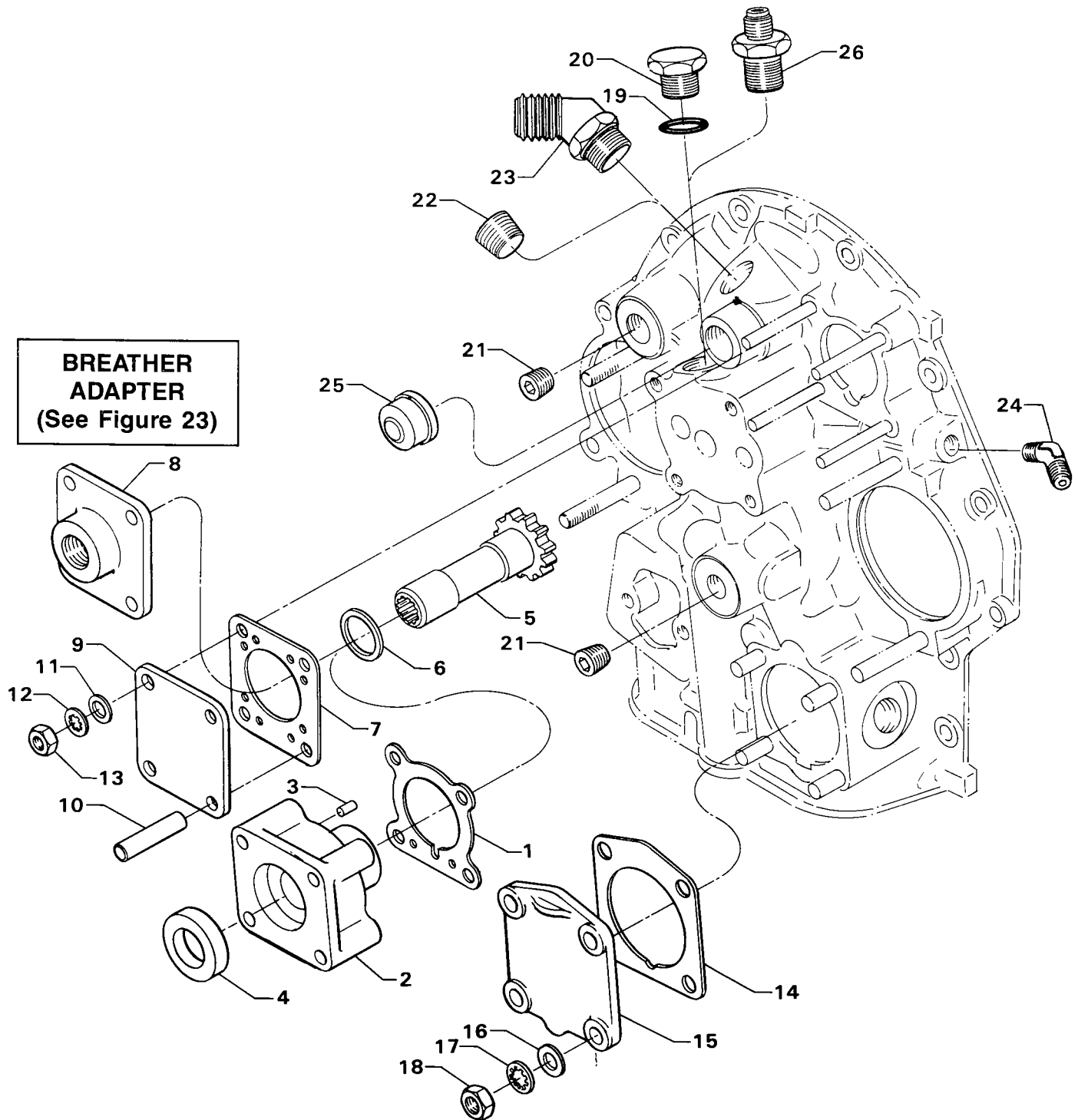


Figure 13. VACUUM AND HYDRAULIC PUMP, OIL COOLER AND BREATHER FITTINGS

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

FIG. REF. 14	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY	
				D4A5	D4B5
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-13521	BEARING, Connecting rod (use in pairs)	12		
	LW-13522	BEARING, Connecting rod (alternate)	12		
	LW-16048	BEARING, Connecting rod (alternate)	12		
6	75089	PISTON, Compression ratio 8.50:1	6		
7	LW-14077 *	PIN, Piston	6		
	LW-14078	PIN, Piston	6		
8	LW-11775 *	PLUG, Piston pin	12		
	60828	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).

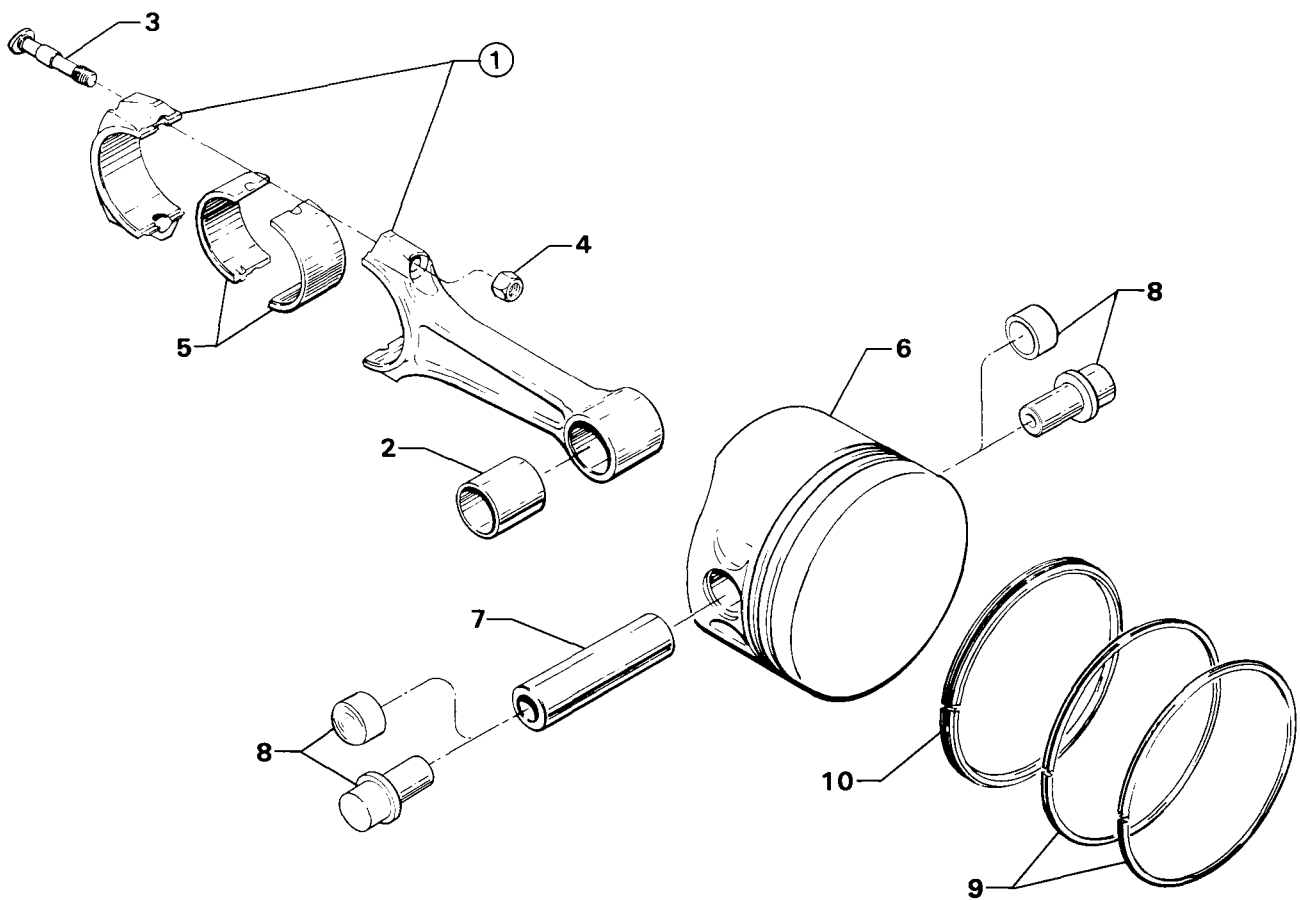


Figure 14. CONNECTING RODS, PISTON AND RING ASSEMBLIES

CYLINDER, PISTON AND VALVE TRAIN CYLINDER ASSEMBLY

FIG. REF. 15	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY	
				D4A5	D4B5
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, flanged	6		
5	74230	GUIDE, Valve exhaust, flanged	6		
6	66796	INSERT, Spark plug, 18-1.5 MM	12		
7	STD-1872	INSERT, 1/8-27 Heli-coil taper pipe thd.	12		
8	STD-1353	INSERT, No. 10-24 Heli-coil x 3/8	6		
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° x 3/8 flared tube	6		
12	66610	BUSHING, Rocker shaft	24		
13	1102 *	PLUG, 1/8-27 NPT, Allen head	6		
14	LW-19296	GASKET, Exhaust flange	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.

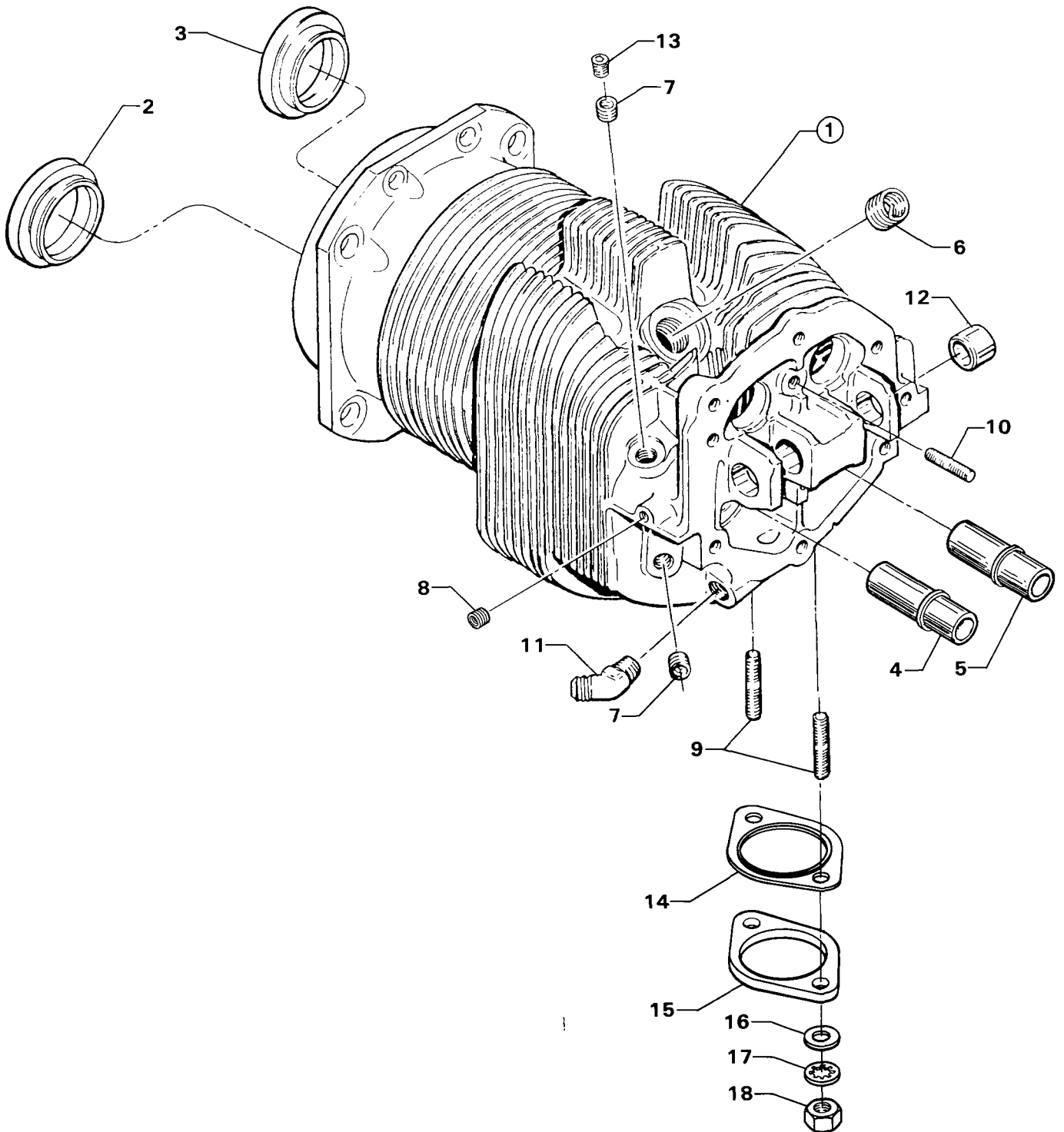


Figure 15. CYLINDER ASSEMBLY

CYLINDER, PISTON AND VALVE TRAIN VALVE ASSEMBLY

FIG. REF. 16	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY	
				D4A5	D4B5
1	73938	VALVE, Intake	6		
2	LW-19001	VALVE, Exhaust (rotator type) i	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, Push rod shroud	12		
15	LW-14995	SPRING, Shroud tube	6		
16	LW-12272	LOCKPLATE, Shroud tube	6		
17	STD-1411	NUT, 1/4-20 plain	6		
18	LW-18661	SEAL, Shroud tube	12		
19	70310	SEAL, Shroud tube	12		

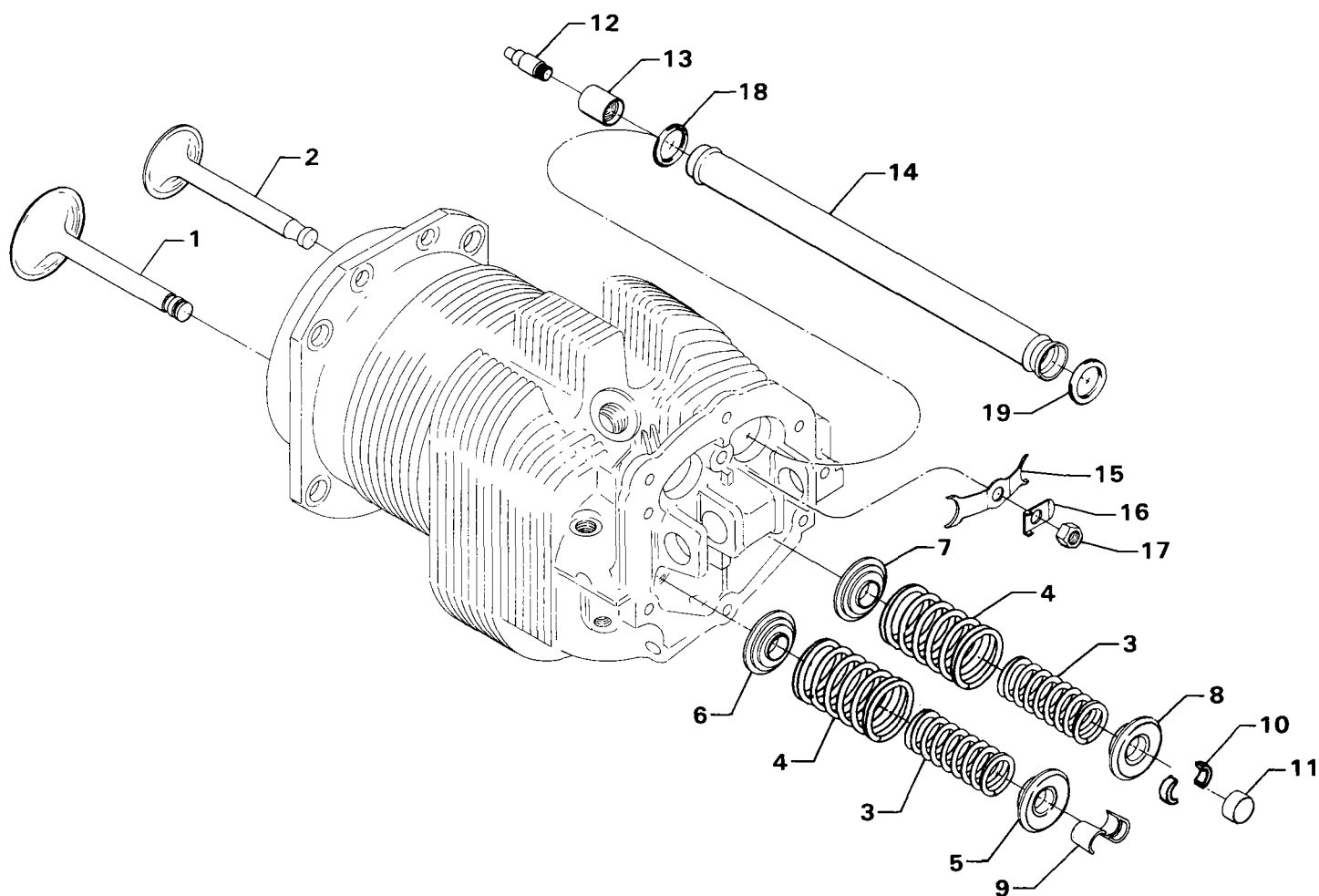


Figure 16. VALVE ASSEMBLY

CYLINDER, PISTON AND VALVE TRAIN CYLINDER RELATED PARTS

FIG. REF. 17	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY	
				D4A5	D4B5
1	73434 *	ROD ASSY., Push (A total of 12 required)	AR		
	15F19957-35 *	ROD ASSY., Push (A total of 12 required)	AR		
	15F19957-36 *	ROD ASSY., Push (A total of 12 required)	AR		
	73437 *	ROD ASSY., Push (A total of 12 required)	AR		
2	17F19353	ROCKER ASSY., Valve intake and exhaust	12		
3	74637	BUSHING, Valve rocker, intake and exhaust	12		
4	LW-13790	SHAFT, Valve rocker	6		
5	LW-12892	THRUST BUTTON, Rocker shaft	12		
6	75906	GASKET, Rocker box cover	6		
7	61247	COVER, Rocker box	6		
8	STD-1925	SCREW, 1/4-20 x 5/8 long, pan hd., self-locking	36		
9	71481	RING, Oil seal, 3/32 dia. x 4-27/32 I.D.	6		
10	77906	SPACER, 33/64 I.D. x 7/8 O.D. x 1/8 thick (rear of crankcase)	2		
11	74887	SPACER, 33/64 I.D. x 7/8 O.D. x 3/8 thick (front of crankcase)	2		
12	383-B	NUT, 3/8-24 plain	24		
13	STD-2090	NUT, 1/2-20 plain	28		
14	STD-684	NIPPLE, Straight, 3/8 I.D. hose	6		
15	STD-1821	HOSE, 3/8 I.D. x 2-1/2 long	6		
16	LW-15592-5-05	CLAMP, Hose	12		
17	68759	TUBE ASSY., Cyl. head oil drain, cyl. no. 1	1		
18	71737	TUBE ASSY., Cyl. head oil drain, cyl. no. 2	1		
19	68761	TUBE ASSY., Cyl. head oil drain, cyls. no. 3, 4, 5, 6	4		
20	75339	BAFFLE ASSY., Intercylinder	3		
21	LW-13389	BAFFLE ASSY., Intercylinder	1		
22	71611	RETAINER, Intercylinder baffle	4		
23	71610	HOOK, Intercylinder baffle retainer	4		
24	AN931-12S17	GROMMET, 3/4 I.D. x 1-3/8 O.D. x 3/8 thick	1		

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

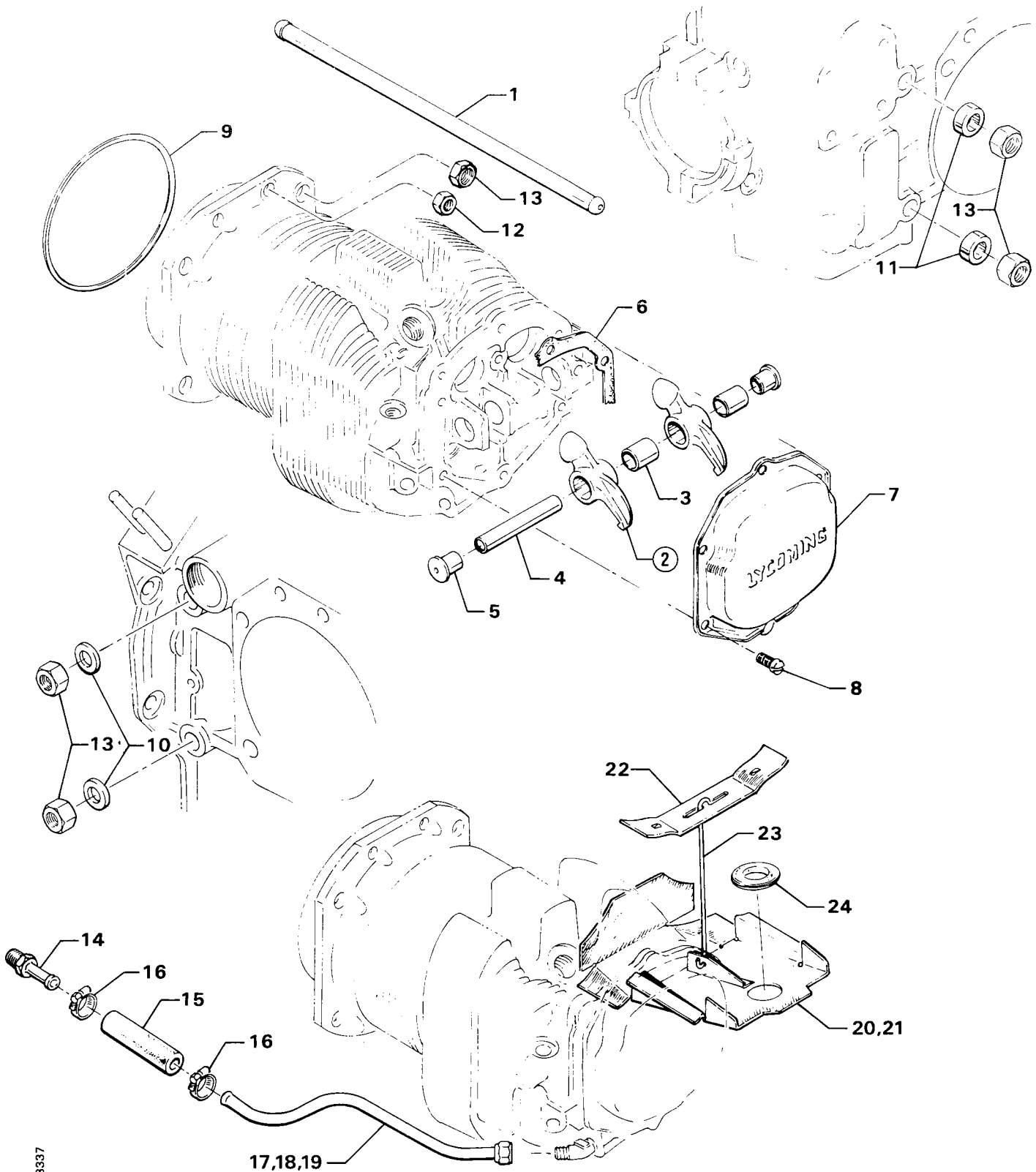


Figure 17. CYLINDER RELATED PARTS

IGNITION SYSTEM

MAGNETOS AND MAGNETO DRIVES

FIG. REF. 18	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY	
				D4A5	D4B5
1	LW-13641	CUSHION, Magneto drive	4		
2	62224	GASKET, Magneto adapter			2
	62224	GASKET, Magneto adapter & magneto		4	
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		
	73013	COUPLING, Magneto drive (retard breaker)		1	
		— BENDIX —			
9	LW-163050-9	MAGNETO, S6LN-204		1	
	LW-163010-10	MAGNETO, S6LN-200		1	
	LW-349310-1	MAGNETO, S6LN-1209			1
	LW-349370-4	MAGNETO, S6LN-1227			1
	LW-349370-4	MAGNETO, S6LN-1227			1
	LW-349310-8 *	MAGNETO, S6LN-1209			1
		— SLICK —			
10	66LP-0SCNN	MAGNETO, (Right), Model No. 6350		1	
	66LR37SCNN	MAGNETO, (Left), Model No. 6393		1	
	66LP-0SCNN	MAGNETO, (Right), Model No. 6350			1
	66JC35SDNN	MAGNETO (Left), Model No. 6351			1
	66LP-0SCGN	MAGNETO, (Right), Model No. 6371			1
	66JC35SDNN	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		

* Electric tachometer pickup.

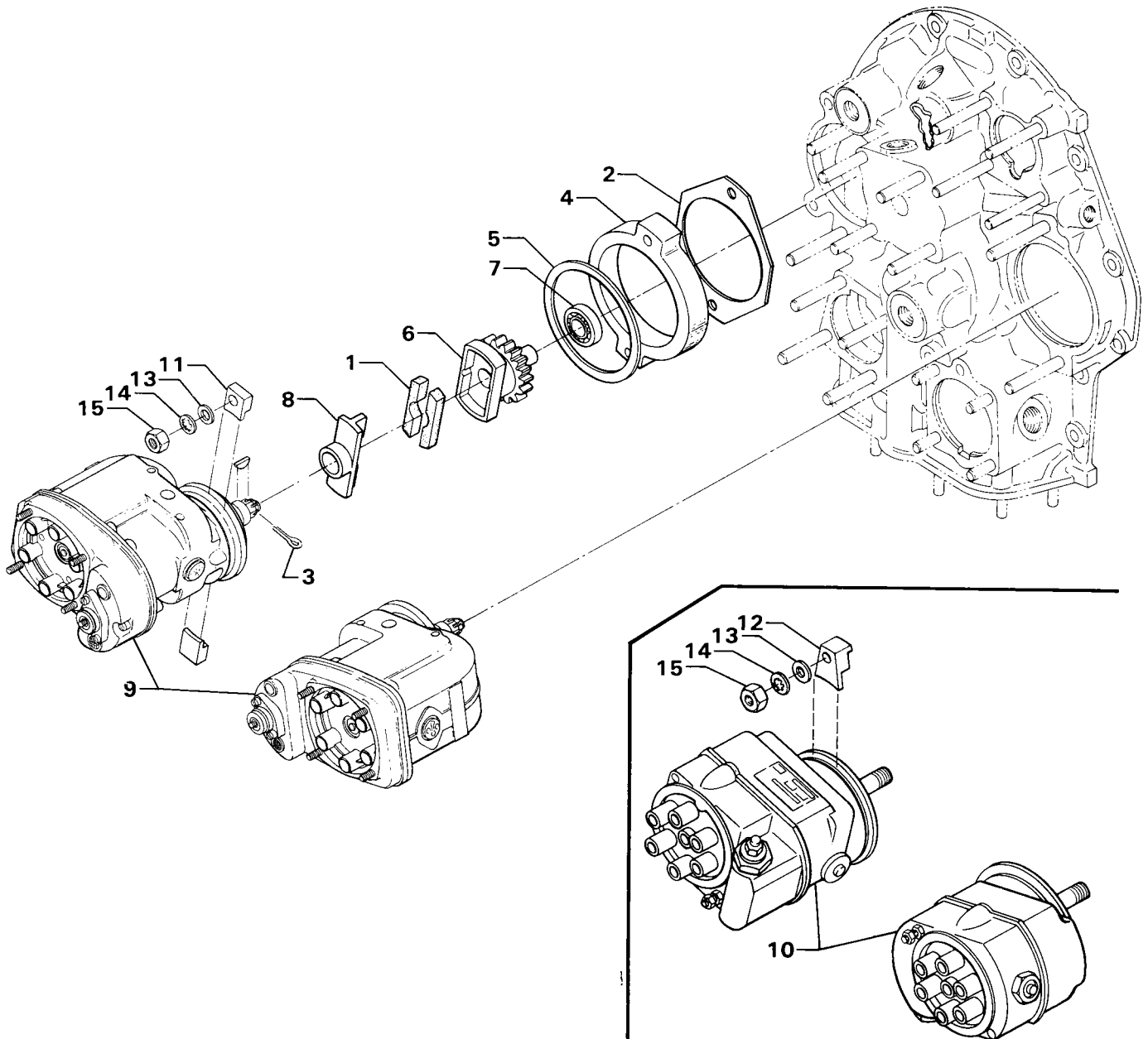


Figure 18. MAGNETOS AND MAGNETO DRIVES

IGNITION SYSTEM

IGNITION HARNESSES, SPARK PLUG AND ATTACHING HARDWARE

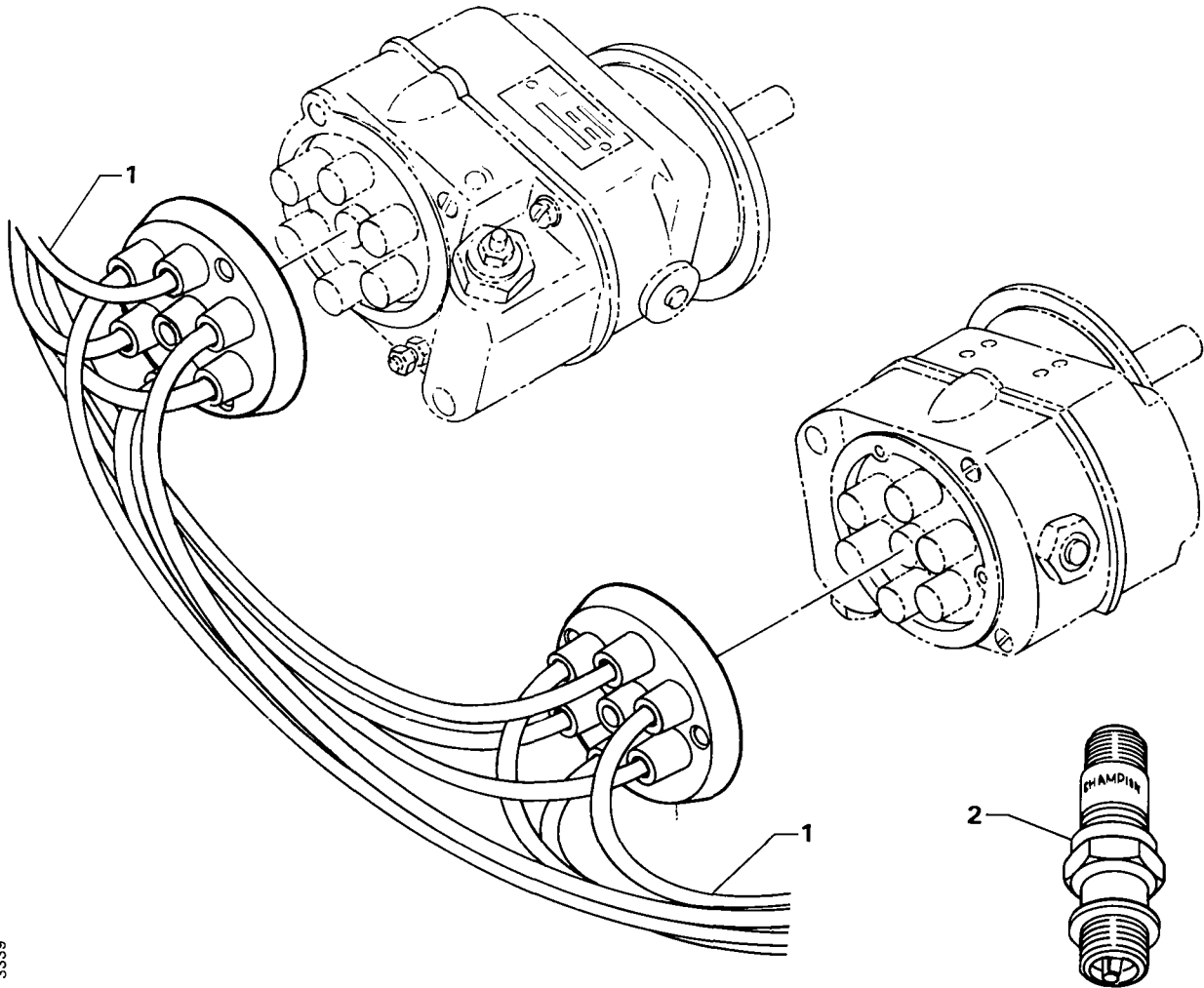
FIG. REF. 19	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY	
				D4A5	D4B5
1	67U20608	HARNESS, (Right), Slick No. M-2878		1	
	67U20609	HARNESS, (Left), Slick No. M-2877		1	
	67U20612	HARNESS, (Right), Slick No. M-2956		1	
	67U20613	HARNESS, (Left), Slick No. M-6027		1	
	67U20632	HARNESS, (Right), Slick No. M-6024			1
	67U20633	HARNESS, (Left), Slick No. M-6023			1
	67U20636	HARNESS, (Right), Slick No. M-2960			1
	67U20637	HARNESS, (Left), Slick No. M-2959			1
	67U20638	HARNESS, (Right), Slick No. M-2962			1
	67U20639	HARNESS, (Left), Slick No. M-2961			1
	67U20640	HARNESS, (Right), Slick No. M-2964			1
	67U20641	HARNESS, (Left), Slick No. M-2963			1
	1182-B3 *	SPARK PLUG, Champion (REM40E)	8		
	01P19762-3-13 * *	BAG, Magneto harness attaching		1	
	01P19762-4-16 * *	BAG, Magneto harness attaching			1
	01P19762-4-17 * *	BAG, Magneto harness attaching			1

* Item No. 2 spark plugs are used in current production only. Additional spark plugs are available for these engines. See latest edition of 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.

BAG - MAGNETO HARNESS ATTACHING

P/N 01P19762-3-13			P/N'S 01P19762-4-16 & 01P19762-4-17		
Part No.	Part Name	Qty.	Part No.	Part Name	Qty.
LW-16266-25-25	CLAMP, One wire	2	LW-16266-25-25	CLAMP, One wire	4
LW-14060	CLIP, Two wire	3	LW-14060	CLIP, Two wire	4
STD-8	WASHER, 1/4 plain	10	STD-8	WASHER, 1/4 plain	12
STD-160	WASHER, 1/4 lock	8	STD-160	WASHER, 1/4 lock	10
STD-1874	SCREW, 1/4 lock (rocker box)	8	STD-1874	SCREW, 1/4 lock (rocker box)	6
76734	ZIP STRAP	8	76734	ZIP STRAP	12
LW-16266-25-44	CLAMP, Four wire	3	LW-16266-25-44	CLAMP, Three wire	5
STD-1411	NUT, 1/4 plain	4	STD-696	WASHER, 1/4 thin	6
STD-696	WASHER 1/4 thin	6	AN500-416-18	SCREW, 1/4 x 1-1/8 long	2
LW-M-2376	PLATE, Three wire	2	STD-1925	SCREW, 1/4 x 5/8 long	4
			72815	BRACKET, Twist	4
			STD-692	SCREW, No. 10	4
			STD-425	WASHER, No. 10	4
			STD-670	NUT, No. 10	4
			LW-M-2376	PLATE, Three wire	2
			LW-16266-10-75	CLAMP, Six wire	2



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Figure 19. IGNITION HARNESSES, SPARK PLUG AND ATTACHING HARDWARE

ELECTRICAL COMPONENTS

ALTERNATOR AND BELT

FIG. REF. 20	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY	
				D4A5	D4B5
1	LW-14371	ALTERNATOR ASSY., 12 volt, 60 amp	1		
2	LW-14313	ALTERNATOR (ALY-8420LS)	1		
3	32B19549	ALTERNATOR ASSY., 12 volt, 70 amp			1
4	LW-14318	ALTERNATOR (ALX-8421LS)			1
5	32C19553	ALTERNATOR ASSY., 24 volt, 70 amp	1		
6	LW-14326	ALTERNATOR (ALU-8421LS)	1		
7	36B19484	PULLEY, Alternator	1		
8	37A19773-376	BELT, Alternator drive (3/8 wide)	1		

NOTE

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

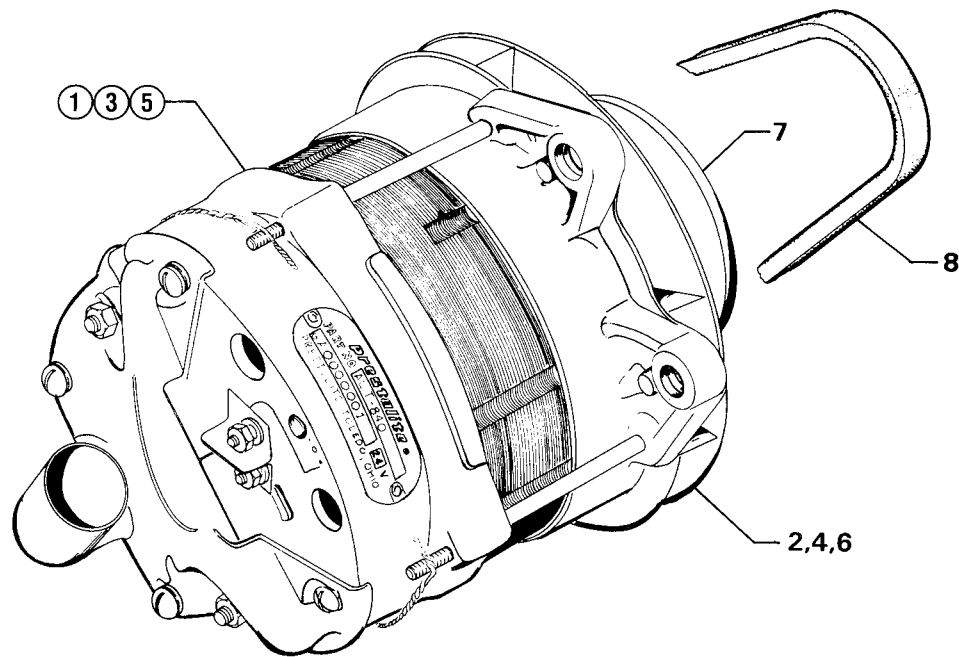


Figure 20. ALTERNATOR AND BELT

ELECTRICAL COMPONENTS

STARTER MOTOR AND ATTACHING PARTS

FIG. REF. 21	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY	
				D4A5	D4B5
1	LW-15571	STARTER, Prestolite (MZ-4222), 12/14 pitch, 12 volt	1		
	LW-15572	STARTER, Prestolite (MHB-4016), 12/14 pitch, 24 volt	1		
2	31A21198 *	STARTER ASSY., Lycoming (Lightweight), 12/14 pitch, 12 volt	1		
	31B21064 *	STARTER ASSY., Lycoming (Lightweight), 12/14 pitch, 24 volt	1		
3	31E21199	MOTOR & SOLENOID ASSY. (12 volt)	1		
	31E21143	MOTOR & SOLENOID ASSY. (24 volt)	1		
4	31D21088	HOUSING ASSY., Starter support	1		
5	STD-514	DOWEL	2		
6	LW-25-1.75	BOLT, 1/4-20 x 1-3/4 long, hex. hd.	1		
7	LW-25-2.00	BOLT, 1/4-20 x 2.00 long, hex. hd.	2		
8	STD-160	WASHER, 1/4 lock, internal teeth	3		
9	STD-8	WASHER, 1/4 plain	3		
10	01L21158 *	SHIM, Starter (housing shaped)	1		
11	01L21159 *	SHIM, Starter	1		
12	STD-35	WASHER, 5/16 plain	4		
13	STD-475	WASHER, 5/16 lock, internal teeth	4		
14	LW-31-1.16	BOLT, 5/16-18 x 1-5/32 long, hex. hd.	1		
15	STD-1410	NUT, 5/16-18 plain	3		

* See latest edition of Lycoming Service Instruction No. 1447 for starter kit information.

NOTE

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

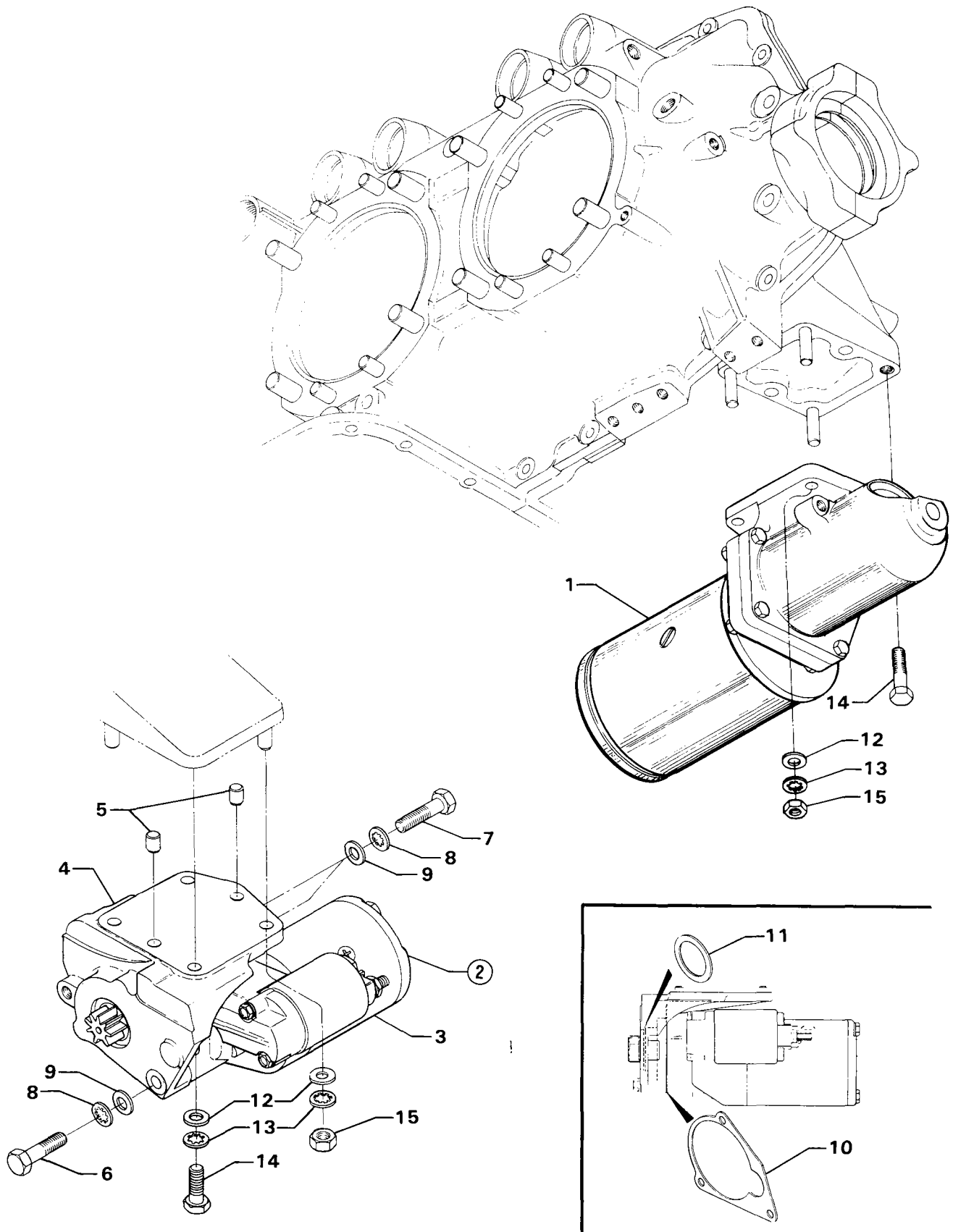


Figure 21. STARTER MOTOR AND ATTACHING PARTS

ELECTRICAL COMPONENTS

ALTERNATOR MOUNTING AND ATTACHING PARTS

FIG. REF. 22	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY	
				D4A5	D4B5
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. hd.	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. hd. dr.	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. hd. dr.	1		
9	74323	STRUT, Alternator support	1		
10	LW-31H0.75	BOLT, 5/16-18 x 3/4 long, hex. hd. dr.	1		
11	STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	1		
12	AN6-14	BOLT, 3/8-24 x 1-37/64 long, hex. hd., drilled end	1		
13	STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	AR		
14	STD-872	NUT, 3/8-24 slotted	1		
15	STD-713	PIN, Cotter, 3/32 dia. x 3/4 long	1		
16	AN6-16	BOLT, 3/8-24 x 1-53/64 long, hex. hd., drilled end	1		
17	76534	SHIM, 1-1/8 O.D. x 13/32 I.D. x .005 thick	AR		
18	STD-690	WASHER, 13/16 O.D. x 25/64 I.D. x 1/16 thick	AR		
19	STD-872	NUT, 3/8-24 slotted	1		
20	STD-713	PIN, Cotter, 3/32 dia. x 3/4 long	1		

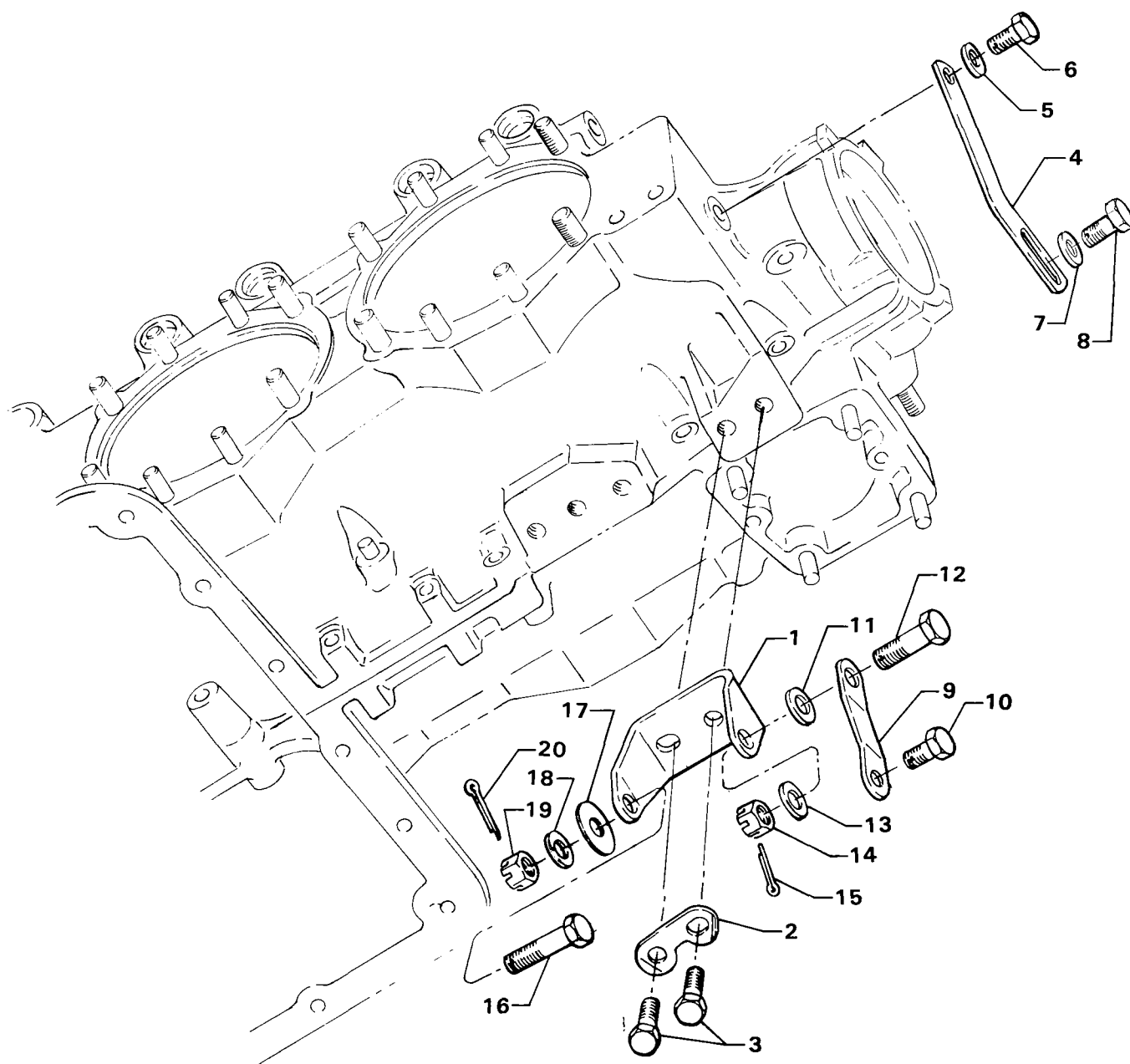


Figure 22. ALTERNATOR MOUNTING AND ATTACHING PARTS

OIL SUMP AND INDUCTION SYSTEM

OIL SUMP AND INDUCTION HOUSING ASSEMBLY

FIG. REF. 23	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY	
				D4A5	D4B5
1	06B21326	GASKET, Oil sump	1		
2	LW-13901	SUMP ASSY., Oil	1		
3	71699	CONNECTION, Intake pipe	6		
4	25C-11	STUD, 1/4-20 x 1-3/8 long	14		
5	31C-15	STUD, 5/16-18 x 1-7/8 long	4		
6	38-15	STUD, 3/8-16 x 1-7/8 long	8		
7	STD-1173	INSERT, 1/4-20 Heli-coil x 1/2 long	4		
8	STD-8	WASHER, 1/4 plain	34		
9	STD-160	WASHER, 1/4 lock, internal teeth	27		
10	LW-25-1.13	BOLT, 1/4-20 x 1-1/8 long, hex. hd.	7		
11	LW-25-1.00	BOLT, 1/4-20 x 1.00 long, hex. hd.	6		
12	STD-1411	NUT, 1/4-20 plain	21		
13	STD-551	PLUG, 1/2-14 NPT, sq. hd., drilled	4		
14	LW-13752 *	PLUG, Sump	1		
15	50004-111	"O" RING	1		
16	LW-13888 *	SCREEN, Oil suction	1		
17	LW-13751 *	FITTING, Sump, oil suction	1		
18	50004-018	"O" RING	1		
19	LW-14250	FITTING, Sump, oil strainer, 90° elbow	1		
	LW-13753	FITTING, Sump, oil strainer	1		
20	LW-13754	FITTING, Sump, oil return	1		
21	57A21009	OIL SEPARATOR	1		
22	LW-13902	BREATHER TEE	1		
23	57B19829	OIL VALVE	1		
24	50004-027	"O" RING	1		

* Assemble in sump. P/N LW-13751 to be assembled parallel with sump flange, fitting end toward the right side of the engine.

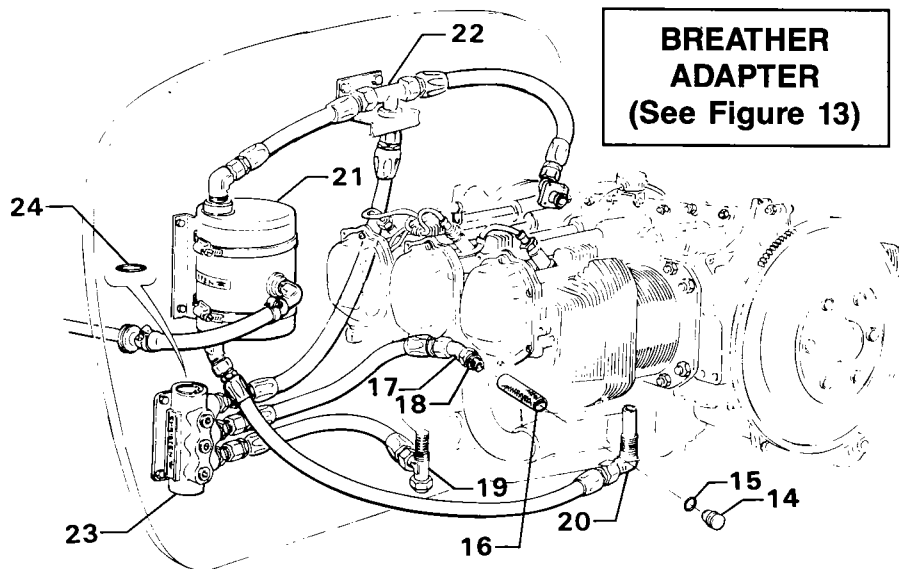
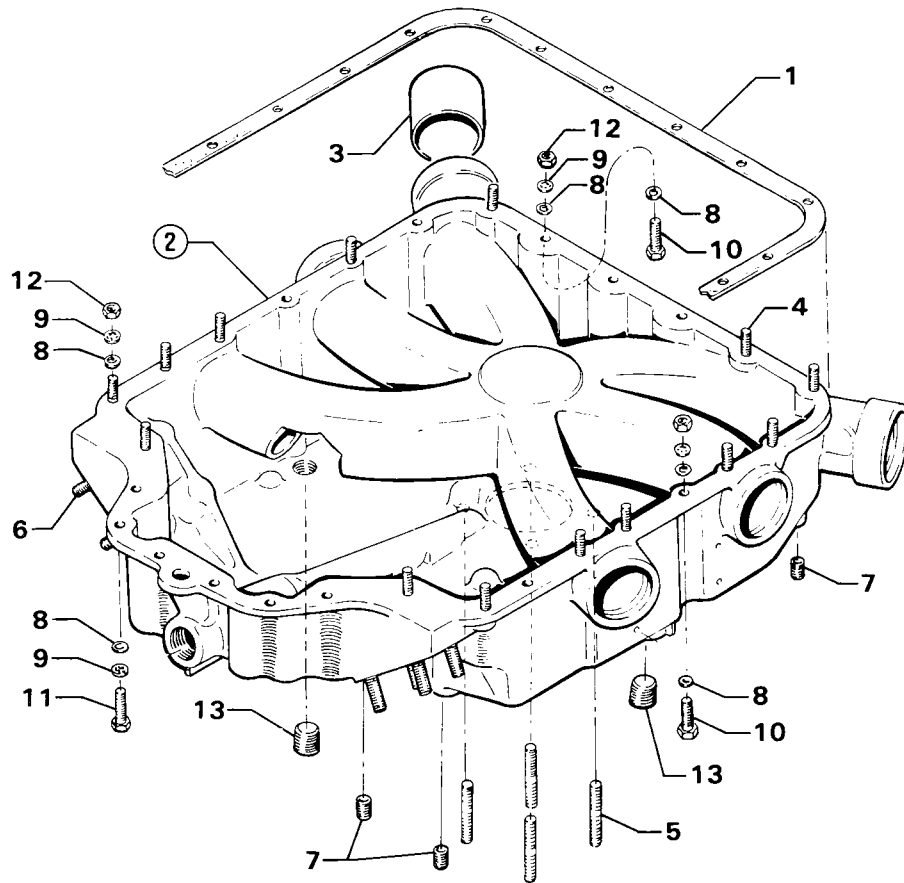


Figure 23. OIL SUMP AND INDUCTION HOUSING ASSEMBLY

OIL SUMP AND INDUCTION SYSTEM

INTAKE PIPE ASSEMBLY

FIG. REF. 24	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY	
				D4A5	D4B5
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		

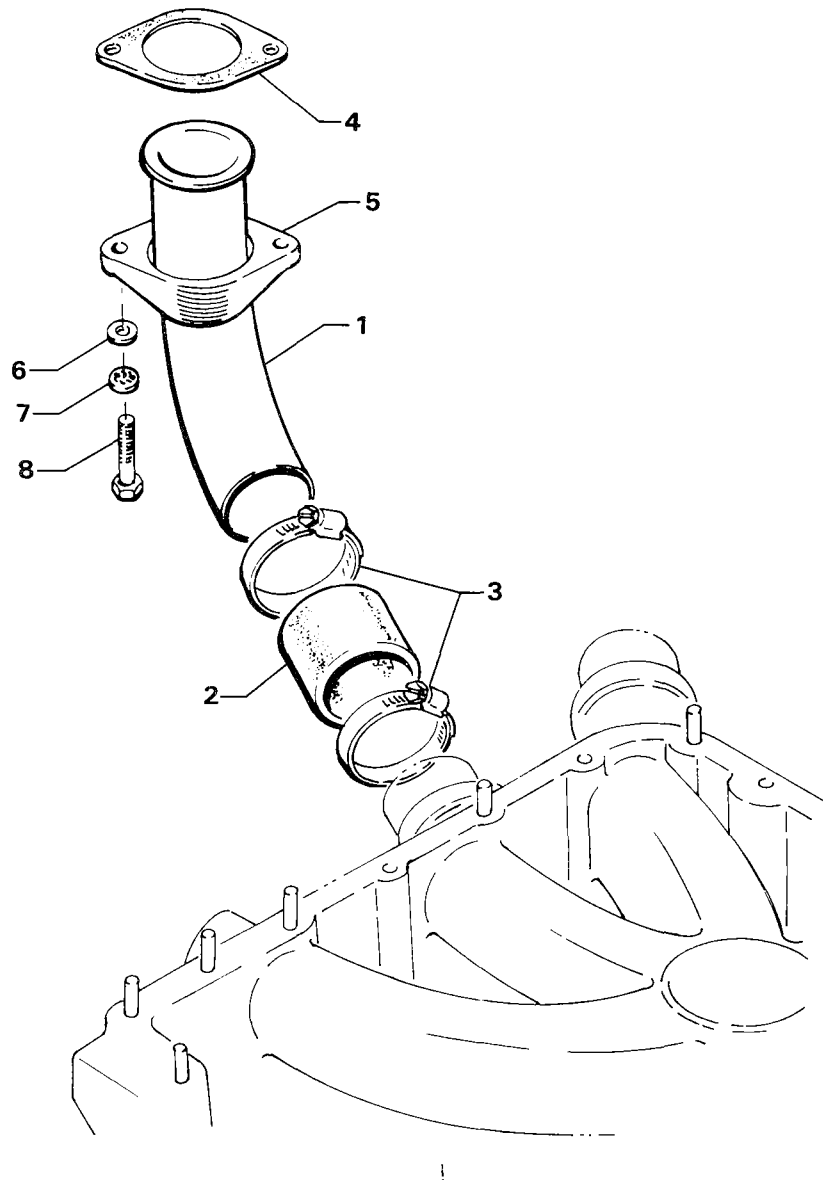


Figure 24. INTAKE PIPE ASSEMBLY

OIL SUMP AND INDUCTION SYSTEM

FUEL INJECTOR, FUEL MANIFOLD AND INJECTION NOZZLES

FIG. REF. 25	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY	
				D4A5	D4B5
1	66224	GASKET, Fuel injector	1		
2	73937	FUEL INJECTOR (Bendix 2524054-11)	1		
3	STD-35	WASHER, 5/16 plain	4		
4	STD-1410	NUT, 5/16-18 plain	4		
5	STD-1763	LOCKNUT, 5/16 palnut	4		
6	LW-18265	NOZZLE, Injection	6		
7	75283	MANIFOLD ASSY., Fuel	1		
	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	02G21446	NIPPLE, 1/8 tube to 1/8 NPT (restricted)	1		
	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-251	WASHER, No. 10 lock, internal teeth	4		
14	STD-82	SCREW, No. 10-24 x 1/2 long, hd. dr.	4		
15	LW-12098-0-200	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	12		
18	LW-16266-10-13	CLAMP	12		
19	STD-860	SCREW, No. 10-32 x 5/8 long, fill. hd.	14		
20	STD-425	WASHER, No. 10 plain	2		
21	STD-670	NUT, No. 10-32 self-locking	14		
22	73136	BRACKET, 90°	2		
23	LW-12798-4S-274	HOSE ASSY., Fuel injector to fuel manifold	1		
	LW-13175-4-274	HOSE ASSY., Fuel injector to fuel manifold	1		
24	74278	BRACKET ASSY., Fuel line support	1		
25	LW-16266-25-63 * *	CLAMP	1		
	LW-16266-25-50	CLAMP	1		
26	STD-860	SCREW, No. 10-32 x 5/8 long, fill. hd.	1		
27	STD-692	SCREW, No. 10-32 x 1/2 long, rd. hd.	2		
28	STD-425	WASHER, No. 10 plain	3		
29	STD-670	NUT, No. 10-32 self-locking	1		
30	LW-12799-6S-254 * *	HOSE, Fuel pump to injector	1		
	LW-12783-6-254	HOSE, Fuel pump to injector	1		
31	74070	ELBOW, 3/8 tubing, adj. 45°	1		

* Used on Aerotek installations.

* * Used on Hindustan installations.

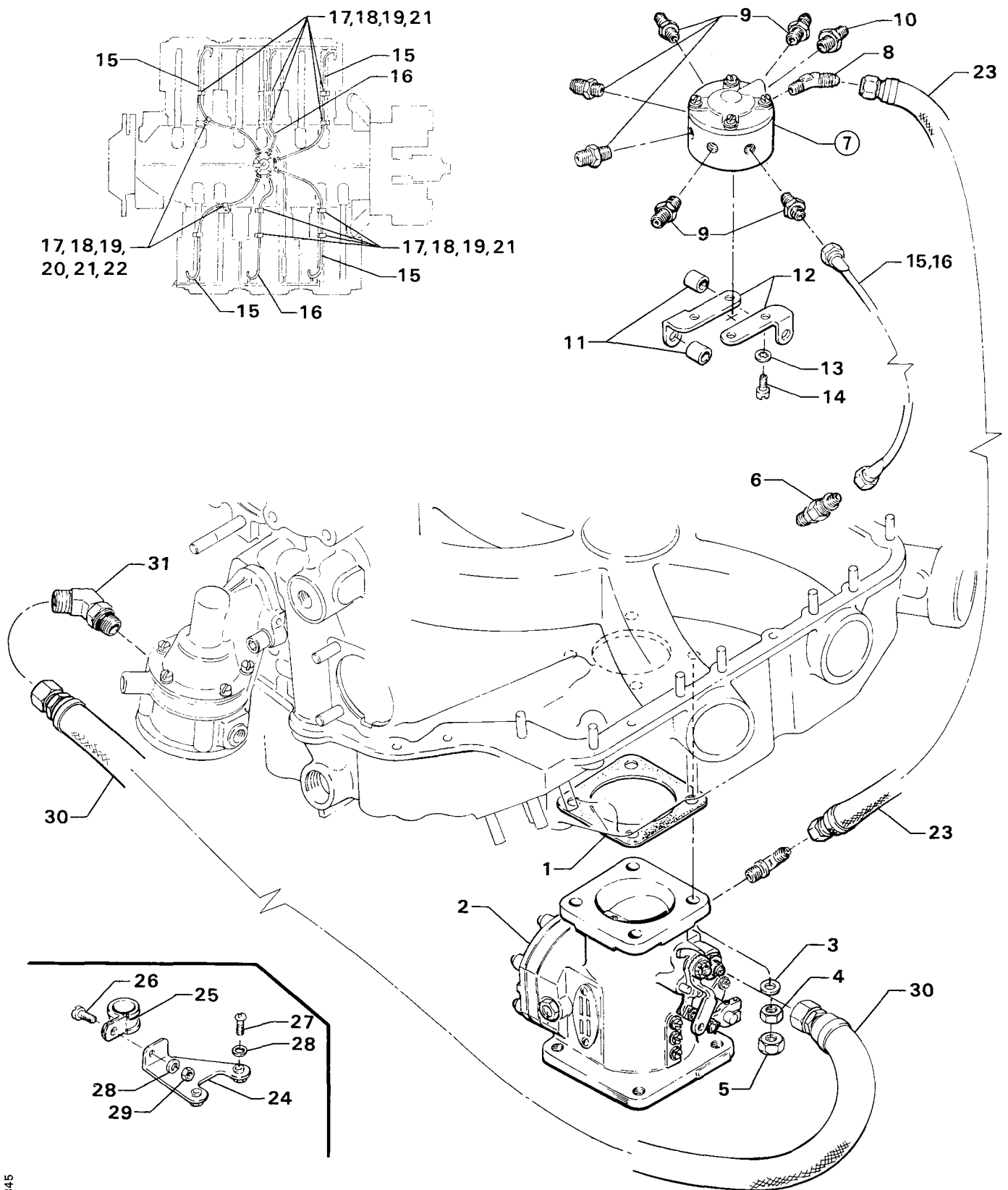


Figure 25. FUEL INJECTOR, FUEL MANIFOLD AND INJECTION NOZZLES

SERVICE KIT SECTION

SEAL AND GASKET SET

Part No.	Part Name	Qty.
LW-14476	SEAL AND GASKET SET	1
06A19956	SEAL, Oil	2
06E19769-0.63	GASKET, Annular	2
06E19769-1.25	GASKET, Annular	1
8313	GASKET, Vacuum pump	2
60096	GASKET, Fuel pump	1
LW-14260	SEAL, Tachometer drive, oil	1
61183	GASKET, Accessory adapter	1
62224	GASKET, Magneto adapter	4
LW-18661	SEAL, Shroud tube	12
66224	GASKET, Carburetor	1
LW-18638	LOCKPLATE, Crankshaft gear	1
69551	GASKET, Accessory drive adapter	1
70310	SEAL, Shroud tube	12
70455	GASKET	1
70457	GASKET	1
71481	RING, Oil seal	6
71973	GASKET, 2 bolt flange	6
72053	GASKET, Governor	1
72091	RING, Oil seal	2
72312	RING, Oil seal	1
73383	LOCKPLATE, Generator bracket	2
73818	GASKET, Accessory housing	1
75906	GASKET, Rocker box cover	6
LW-12272	LOCKPLATE, Shroud tube	6
LW-12681	GASKET	2
LW-12795	GASKET	1
06B21326	GASKET, Oil sump	1
LW-14995	SPRING	6
LW-11997**	SEAL, Crankshaft oil, split	1
LW-13792**	SEAL, Crankshaft oil, solid	1
MS16625-1081	RING, Internal retaining	1
61173	GASKET	1
72059*	GASKET	1
LW-19296	GASKET	6

* This part not applicable to AEIO-540-D4B5.

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

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-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.
AN565B1032H5	Set Screw	1-11	LW-13641	Cushion	4-1
AN6-14	Bolt	5-5	LW-13751	Fitting	6-1
AN6-16	Bolt	5-5	LW-13752	Plug	6-1
AN6-34A	Bolt	1-13	LW-13753	Fitting	6-1
AN931-12S17	Grommet	3-7	LW-13754	Fitting	6-1
AN932-6	Plug	2-7	LW-13790	Shaft	3-7
LW-25-0.94	Bolt	2-3	LW-13792	Seal	1-5
LW-25-1.00	Bolt	6-1	LW-13794	Stud	1-1
LW-25-1.13	Bolt	1-13	LW-13795	Shaft	1-10
LW-25-1.13	Bolt	2-3	LW-13884	Bearing	1-5
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