

# P6170

For Models: L6170A and M6170A

# PARTS CATALOG

Marine Generators | Marine Diesel Engines | Land-Based Generators



# LUGGER





— CALIFORNIA —  
Proposition 65 Warning:

*Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.*

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PART NO.: P6170 01/10



# PARTS MANUAL P6170

for Models: L6170A & M6170A

*Please read thoroughly before attempting to use this manual.*

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#### *Proprietary Information*

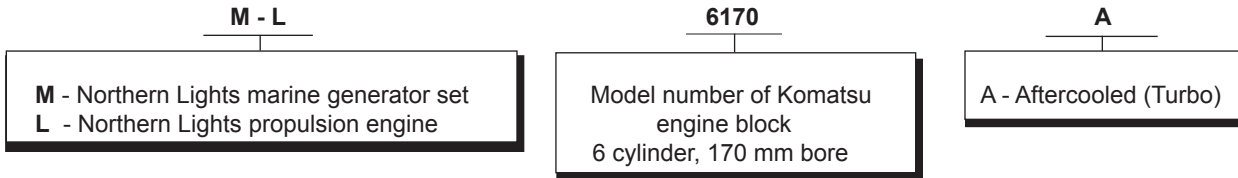
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# INTRODUCTION

## MODEL DESIGNATION

### MODEL NUMBERS

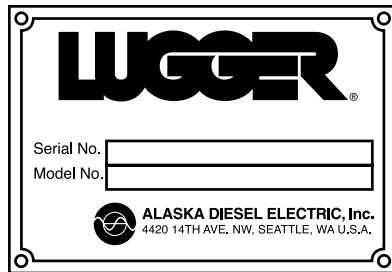
Model numbers give unit's application, block model, and aspiration:



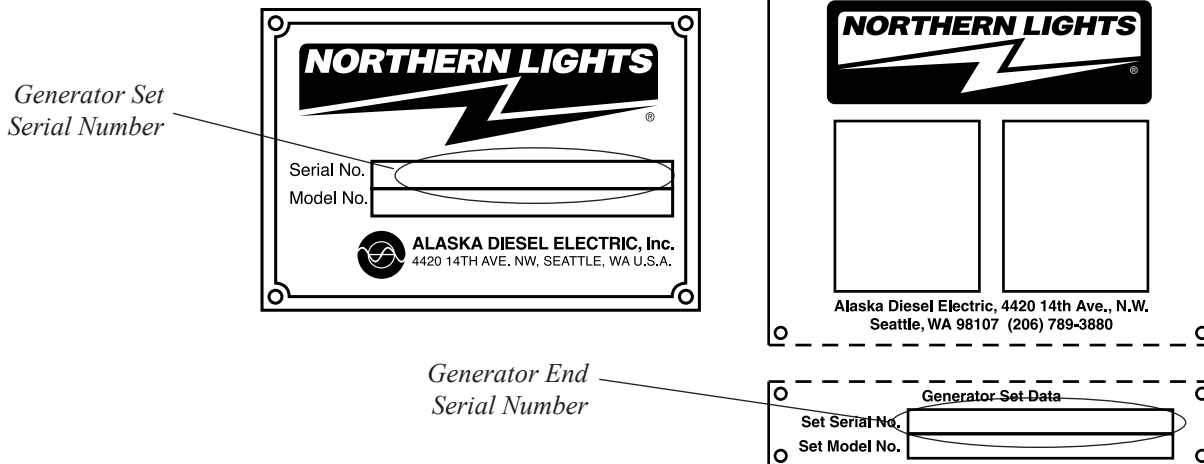
**EXAMPLE:** **L6170A** Lugger turbocharged-aftercooled marine propulsion engine. Komatsu 170 block.

### SERIAL NUMBERS

**LUGGER:** When ordering Lugger parts, refer to this serial number located on the flywheel housing. Serial numbers for Northern Lights are eight digits. e.g. 1234-5678



**NORTHERN LIGHTS:** Every Northern Lights generator set has two data plates and two serial numbers, which may cause some confusion. One serial number is for the generator end, and it is found on the Generator End Data Plate. The other serial number, found with the **Generator set Data Plate**, **should be used when ordering parts**. Serial Numbers for Northern Lights are eight digits. e.g. 1234-5678.



**IMPORTANT:**

Before selecting parts be sure that you are choosing parts from the correct page. Check the application at top of page. (Do not use this illustration for parts purchasing.)

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIALNUMBER
..	185046210	1	Alternator Assembly	-
1	185446219	1	Flywheel, complete	-
2	185446217	1	Plate, complete	-
3	185716200	1	Plate	-
4	185446218	1	Stator, complete	-
5	040126210	2	Bearing	-
6	020210010	1	Nut	-
7	027100010	1	Spring washer	-
8	026100010	1	Washer	-
9	185446220	1	Clamp	-
10	015140408	1	Screw	-
11	015140425	2	Screw	-
12	199236510	1	Collar	-

**REFERENCES**

- |   |   |
|---|---|
| 1. Major component group.                                 | 7. Part number to order.  |
| 2. Title and description of assembly or system.           | 8. Quantity of parts used in assembly.                                      |
| 3. Application.   | 9. Description of each component part.                                      |
| 4. Drawing numbers. Correspond to key numbers.            | 10. Serial number. Parts used between, up to or after serial numbers noted. |
| 5. Denotes an assembly or kit.                            | 11. Component group number.   |
| 6. Key column. Key numbers correspond to drawing numbers. | 12. Page number within component group.                                     |
|   | 13. Manual identification.  |
|   | 14. Publication date.   |

⇒ Arrows always point toward the front of the engine.

CYLINDER BLOCK

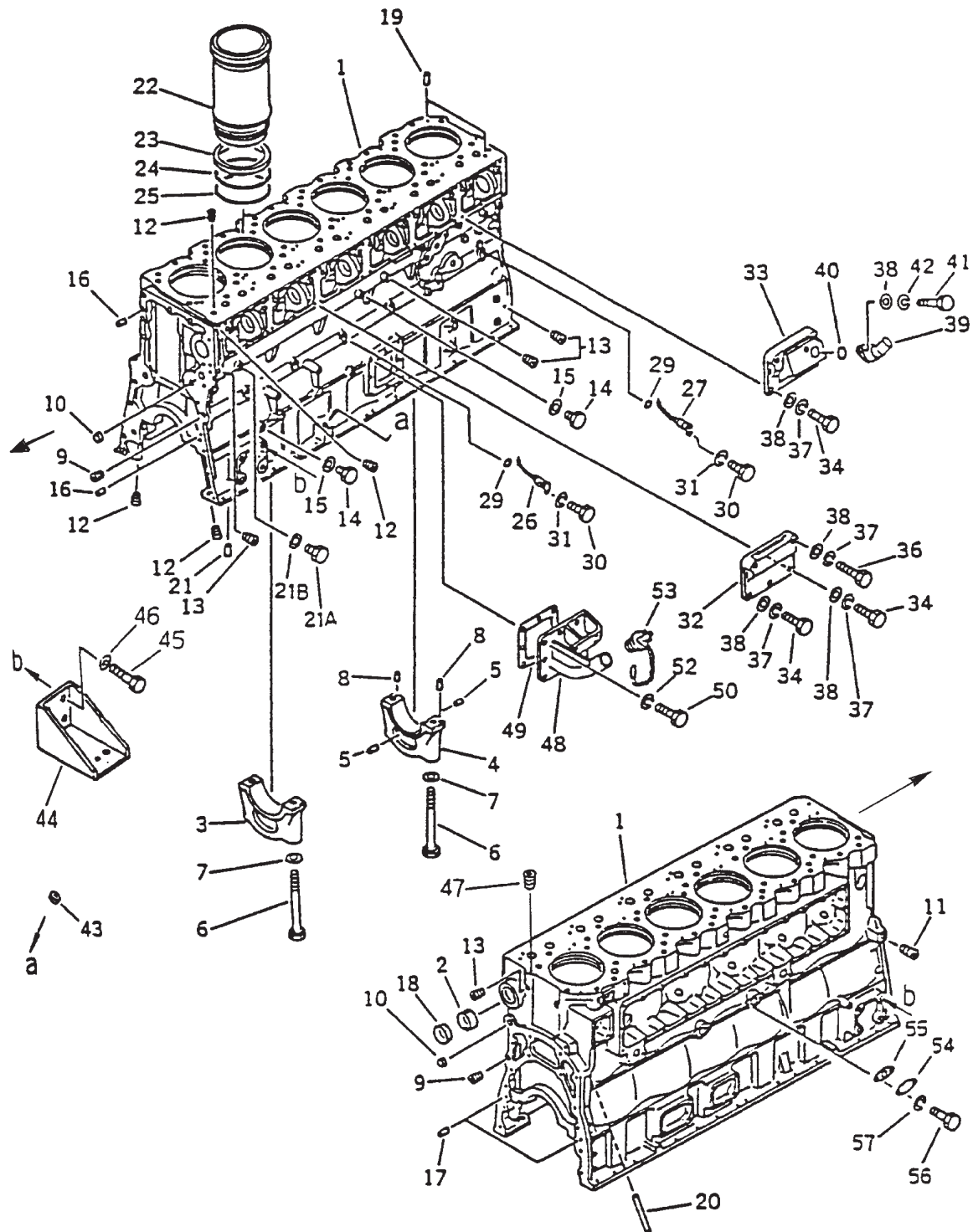


Fig. 2001

## CYLINDER BLOCK

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	6162-23-1103	1	Cylinder Block Assembly (includes keys 2-21, 27 & 35)	-
2	6162-23-1490	7	Bushing	-
3	6162-23-1210	6	Main Bearing Cap (#s 1-5, & 7)	-
4	6162-23-1250	1	Main Bearing Cap (# 6)	-
5	6161-23-1260	2	Dowel pin	-
6	6162-23-1710	14	Bolt	-
7	6127-21-1741	14	Washer	-
8	04020-00514	2	Dowel Pin	-
9	07043-50415	2	Plug	-
10	07046-43516	2	Plug	-
11	07043-50211	1	Plug	-
12	07043-50108	14	Plug	-
13	07043-00108	6	Plug	-
14	07040-11409	2	Plug	-
15	07005-01412	2	Sealing Washer	-
16	04020-01434	2	Dowel Pin	-
17	6127-21-1160	2	Dowel Pin	-
18	070046-48020	1	Plug	-
19	6162-13-1410	12	Pin	-
20	6162-23-1140	1	Pipe	-
21	04020-00820	2	Dowel Pin	-
22	6162-23-2210	6	Cylinder Liner	-
23	6162-23-2250	6	Crevis Seal	-
24	6162-23-2220	6	O-ring	-
25	6162-23-2240	6	O-ring	-
26	6161-21-1840	6	Nozzle, Piston Cooling	-
27	07040-11007	1	Plug	-
29	07000-62016	6	O-ring	-
30	01010-50818	6	Bolt	-
31	01602-20825	6	Lock Washer	-
32	6162-23-6412	5	Cover	-
33	6162-23-6422	1	Cover	-
34	01010-51030	17	Bolt	-
35	07005-01012	1	Gasket	-
36	01010-51055	12	Bolt	-
37	01602-21030	29	Lock Washer	-
38	01640-21016	31	Washer	-
39	6162-23-8531	1	Breather	-
40	07000-03045	1	O-ring	-
41	01010-51025	2	Bolt	-
42	01602-21030	2	Lock Washer	-
43	07046-42010	1	Plug	-
44	6162-23-3620	2	Bracket	-
45	01010-51850	8	Bolt	-
46	01643-31845	8	Washer	-
47	07043-00211	1	Plug	-
48	36-94901	1	Oil Fill, left side	-
49	6162-23-6520	1	Gasket	-
50	01010-51030	6	Bolt	-
52	01602-21030	6	Lock Washer	-
53	07025-00100	1	Cap	-
54	6162-23-6530	2	Plate	-
55	6127-51-6821	2	Gasket	-
56	01010-51025	4	Bolt	-
57	01602-21030	4	Washer	-

FLYWHEEL AND FLYWHEEL HOUSING

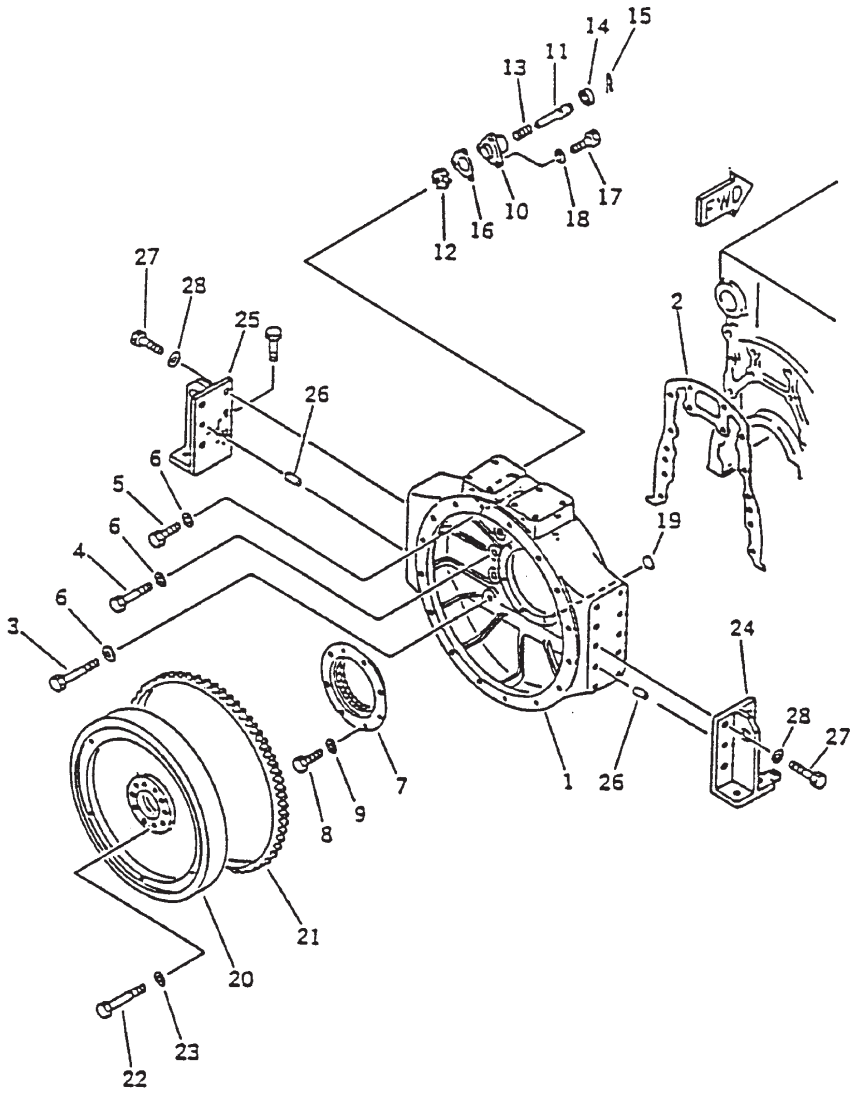


Fig. 2201



## FLYWHEEL AND FLYWHEEL HOUSING

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	6162-23-1130	1	Flywheel Housing - SAE #0	-
2	6127-21-4813	1	Gasket	-
3	01010-31870	3	Bolt	-
4	01010-31855	7	Bolt	-
5	01010-31845	4	Bolt	-
6	01643-31845	14	Washer	-
7	6162-23-4251	1	Rear Seal (Standard)	-
	6162-29-4500	1	Rear Seal (Repair Type)	-
8	01010-31020	8	Bolt	-
9	01641-01016	8	Washer	-
••	6162-23-4500	1	Manual Rotation Assembly (includes keys 10 –15)	-
10	6162-23-4501	1	Case	-
11	6162-23-4500	1	Shaft	-
12	6162-23-4930	1	Gear	-
13	565-62-11321	1	Spring	-
14	07016-20306	1	Seal	-
15	6162-23-4531	1	Pin	-
16	6162-23-4940	1	Gasket	-
17	01010-51030	3	Bolt	-
18	01602-21030	3	Spring Washer	-
19	07046-11516	8	Plug	-
20	6162-33-1500	1	Flywheel Assembly - SAE #18 (includes key 21)	-
21	6645-31-1321	1	Ring Gear (138 teeth)	-
22	01050-32090	10	Bolt	-
23	6127-11-1621	10	Washer	-
24	6162-23-4730	1	Bracket, Right hand	-
25	6162-23-4720	1	Bracket, Left hand	-
26	04020-01434	4	Pin	-
27	01010-51850	8	Bolt	-
28	01643-31845	8	Washer	-

GROUP 1 - ENGINE

CRANKSHAFT

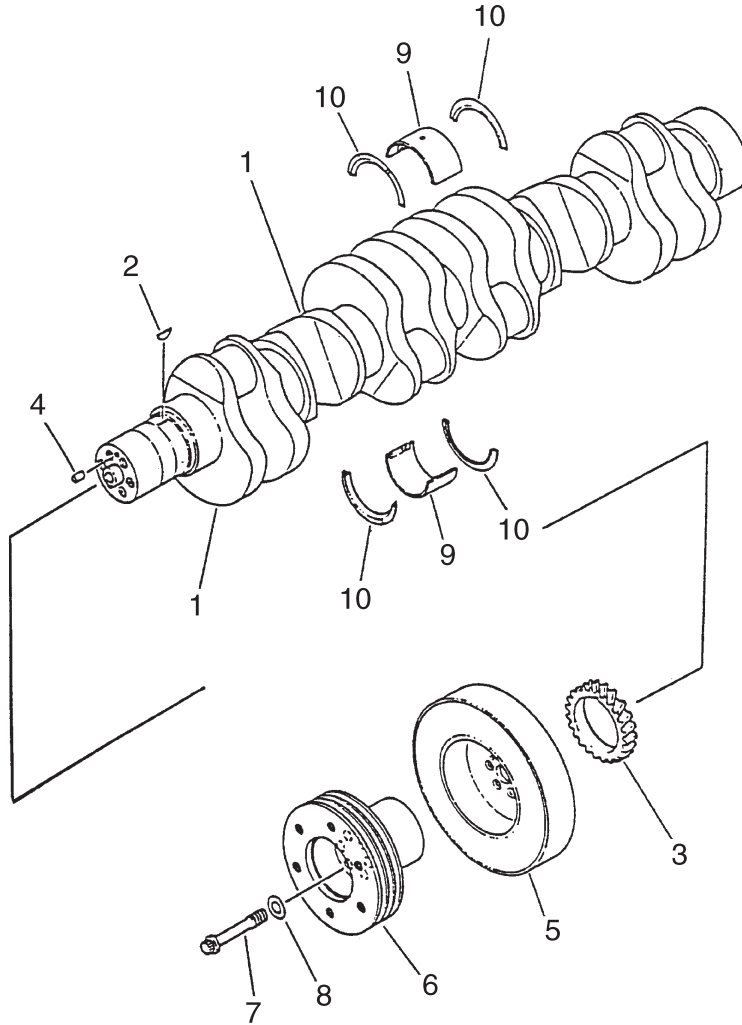


Fig. 2301

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	6162-33-1201	1	Crankshaft Assembly (includes keys 2-4)	-
2	04010-00728	1	Key	-
3	6162-33-1411	1	Gear	-
4	04020-01024	1	Dowel Pin	-
5	6162-33-8100	1	Damper	-
6	6162-33-5360	1	Pulley	-
7	6162-33-5321	6	Bolt	-
8	6162-13-1620	6	Washer	-
9			MAIN BEARING ASSEMBLIES	
••	6162-23-8000	1	Main bearing set. Standard	-
••	6162-23-8010	7	Main bearing assembly. Standard	-
••	6162-29-8010	7	Main bearing assembly. Undersize, 0.25 mm	-
••	6162-28-8010	7	Main bearing assembly. Undersize, 0.50 mm	-
••	6162-27-8010	7	Main bearing assembly. Undersize, 0.75 mm	-
••	6162-26-8010	7	Main bearing assembly. Undersize, 1.00 mm	-
10			THRUST BEARING ASSEMBLIES (Set of 4 Bearings)	
••	6162-23-8050	1	Thrust bearing assembly. Standard	-
••	6162-29-8050	1	Thrust bearing assembly. Oversize, 0.25 mm	-
••	6162-28-8050	1	Thrust bearing assembly. Oversize, 0.50 mm	-
••	6162-27-8050	1	Thrust bearing assembly. Oversize, 0.75 mm	-
••	6162-26-8050	1	Thrust bearing assembly. Oversize, 1.00 mm	-

PISTON AND CONNECTING ROD

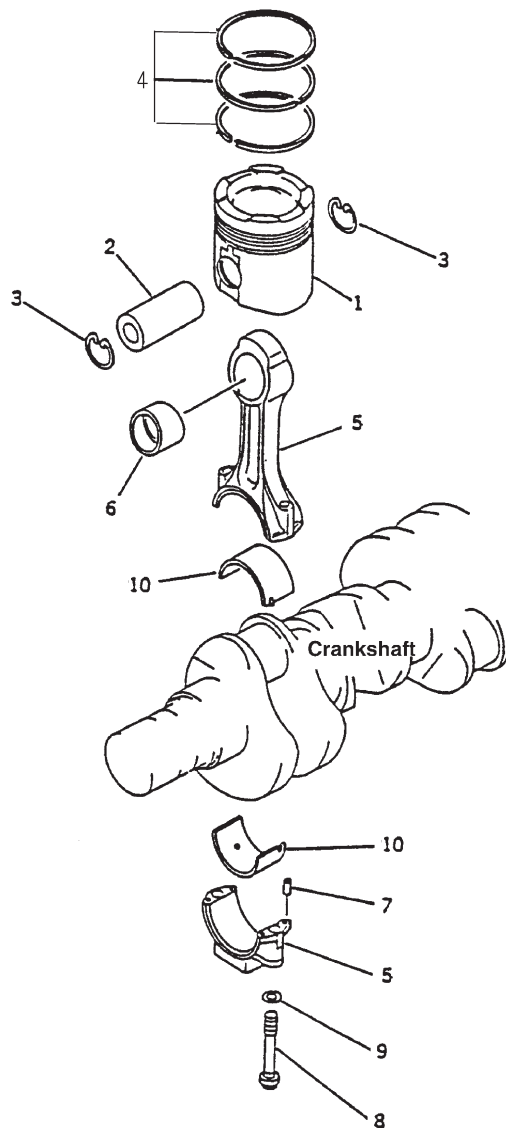


Fig. 2351

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	6164-31-2121	6	Piston (formerly #6164-31-2120)	-
2	6161-31-2410	6	Pin	-
3	6162-33-2420	12	Snap ring	-
4	6162-33-2060	6	Piston ring set	-
5	6162-33-3101	6	Connecting rod assembly (includes keys 6-9)	-
6	6162-33-3131	1	Bushing	-
7	02400-10413	4	Dowel pin	-
8	6162-33-3310	2	Bolt	-
9	6162-33-3330	2	Washer	-
10			ROD BEARING ASSEMBLIES	
••	6162-33-3041	6	Bearing assembly. Standard	-
••	6162-39-3041	6	Bearing assembly. Undersize, 0.25 mm	-
••	6162-38-3041	6	Bearing assembly. Undersize, 0.50 mm	-
••	6162-37-3041	6	Bearing assembly. Undersize, 0.75 mm	-
••	6162-36-3041	6	Bearing assembly. Undersize, 1.00 mm	-

CAMSHAFT

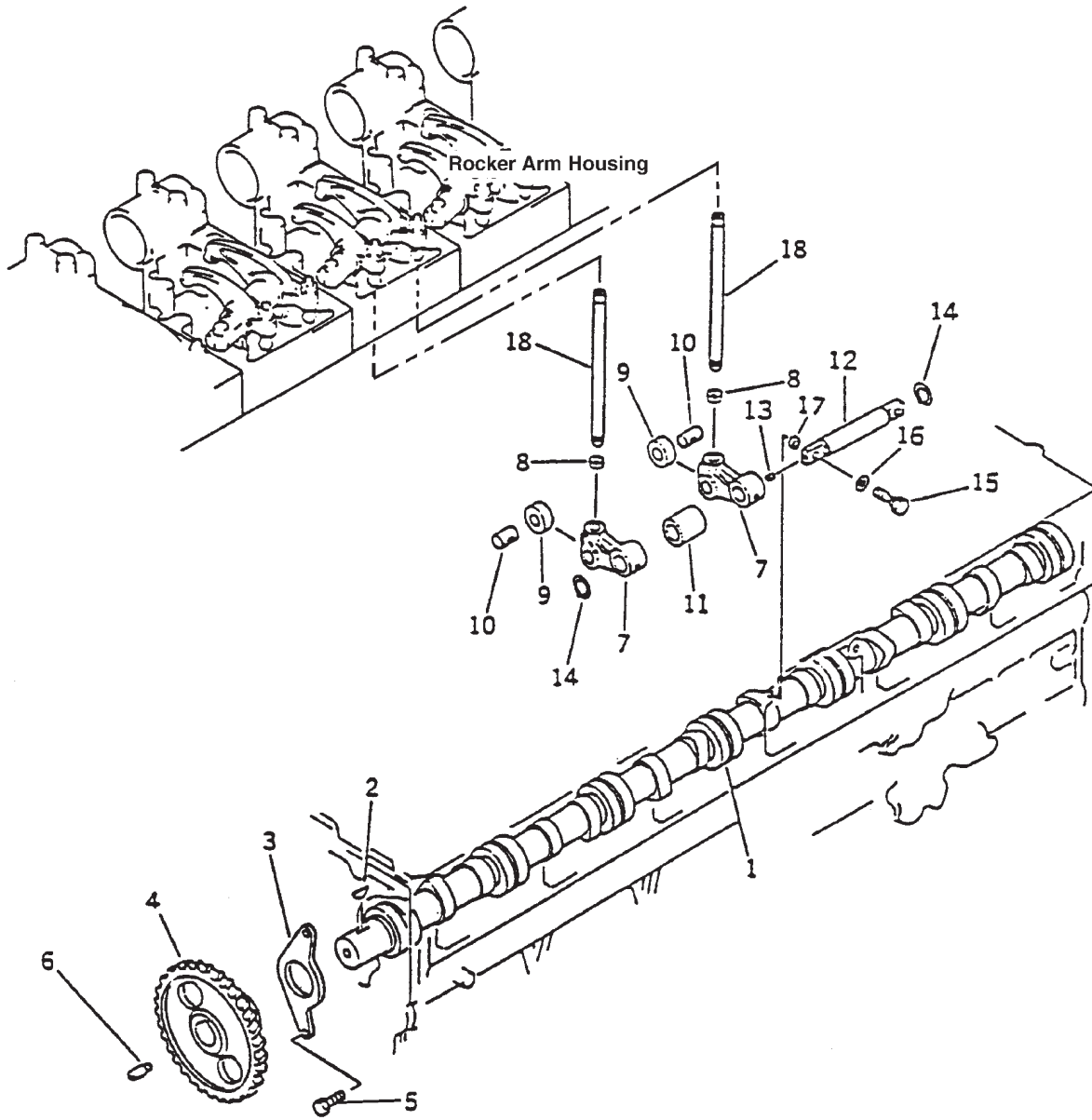


Fig. 2401

## CAMSHAFT

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	6162-43-1100	1	Camshaft assembly (includes keys 1-4)	-
1	6162-43-1101	1	Camshaft (formerly #6162-43-1110)	-
2	04010-00738	1	Key	-
3	6162-43-1130	1	Thrust Plate	-
4	6162-43-1121	1	Camshaft Gear	-
5	6162-42-1150	2	Bolt	-
6	6162-53-1891	1	Shaft	-
••	6162-43-2021	6	Cam follower assembly (includes keys 7-13)	-
7	6162-43-2301	12	Lever assembly (includes keys 8-11)	-
8		12	Socket	-
9		12	Roller	-
10		12	Pin	-
			} Not available separately	
11	6162-43-2320	6	Collar	-
12	6162-43-2401	6	Shaft Assembly (includes key #13)	-
13	6162-43-2420	1	Pin	-
14	04064-02512	12	Snap Ring	-
15	6162-43-2450	12	Bolt	-
16	01643-31232	12	Washer	-
17	6162-43-2430	12	Ring	-
18	6162-43-3101	12	Push rod	-

TIMING COVER

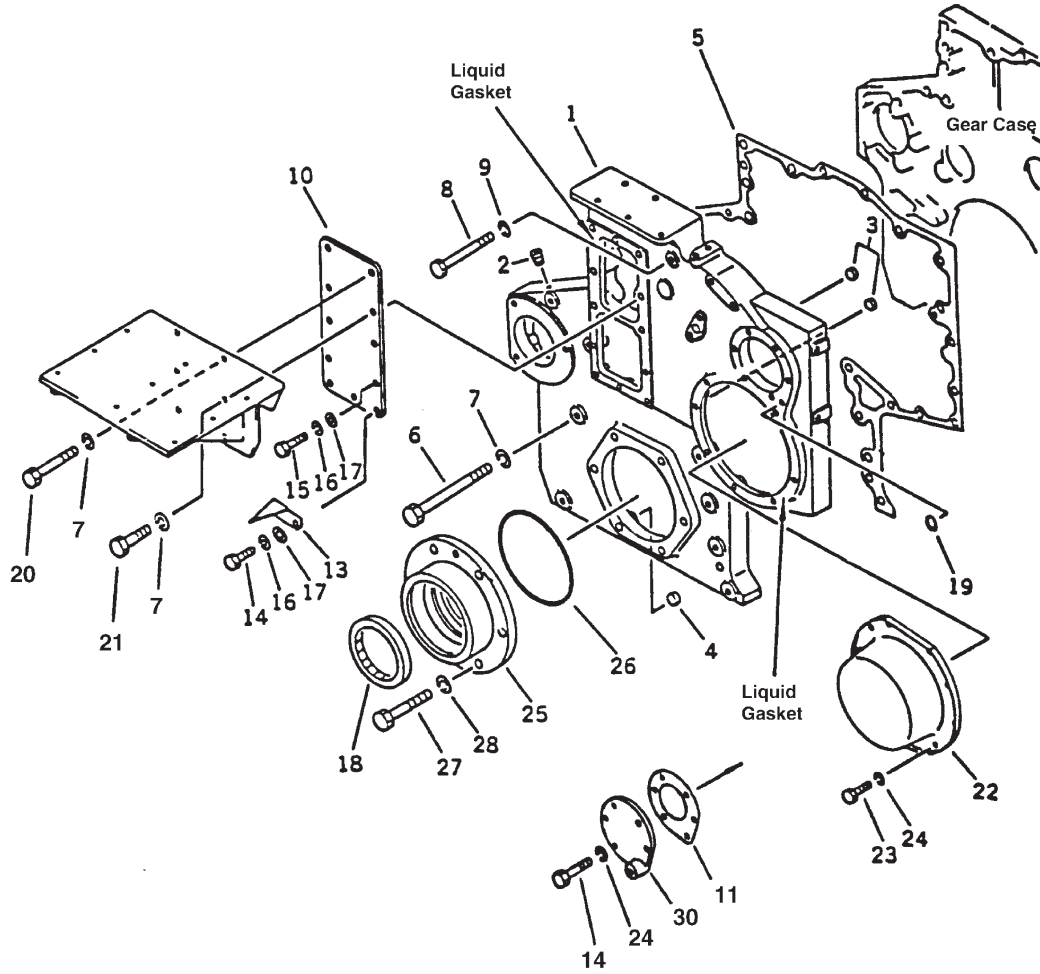


Fig. 2023

## TIMING COVER

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	6162-23-3211	1	Cover	-
2	07043-50108	1	Plug	-
3	07046-11216	4	Plug	-
4	07046-11816	3	Plug	-
5	6162-23-3250	1	Gasket	-
6	01011-51410	6	Spring Washer	-
7	01602-21442	12	Bolt	-
8	01010-51285	2	Bolt	-
9	01602-21236	2	Spring Washer	-
10	6162-23-3370	1	Plate	-
11	6162-23-3290	1	Gasket	-
12	23-14901	1	Bracket (see heat exchanger parts detail)	-
13	6162-23-3380	1	Pointer	-
14	01010-50825	8	Bolt	-
15	01010-50820	3	Bolt	-
16	01602-20825	5	Spring Washer	-
17	01640-20816	5	Washer	-
18	6162-23-3510	1	Front Seal	-
	00-04901	1	Repair Sleeve (not shown)	-
19	07000-01009	1	O-ring	-
20	01011-51445	3	Bolt (H.E.)	-
	01011-51430	4	Bolt (K.C.)	-
21	01010-51445	1	Bolt (H.E.)	-
	01010-51430	2	Bolt (K.C.)	-
22	6162-23-3220	1	Cover	-
23	01010-50816	9	Bolt	-
24	01602-20825	16	Lock Washer	-
25	6162-23-9910	1	Trunnion	-
26	07000-65175	1	O-ring	-
27	01010-51435	6	Bolt	-
28	15-01402	6	Lock Washer M14	-
29	09920-00150	**	Liquid Gasket	-
30	6162-23-3390	1	Cover (K.C. only - see raw water pump detail)	-
			**As required	

IDLER GEARS AND GEAR CASE HOUSING

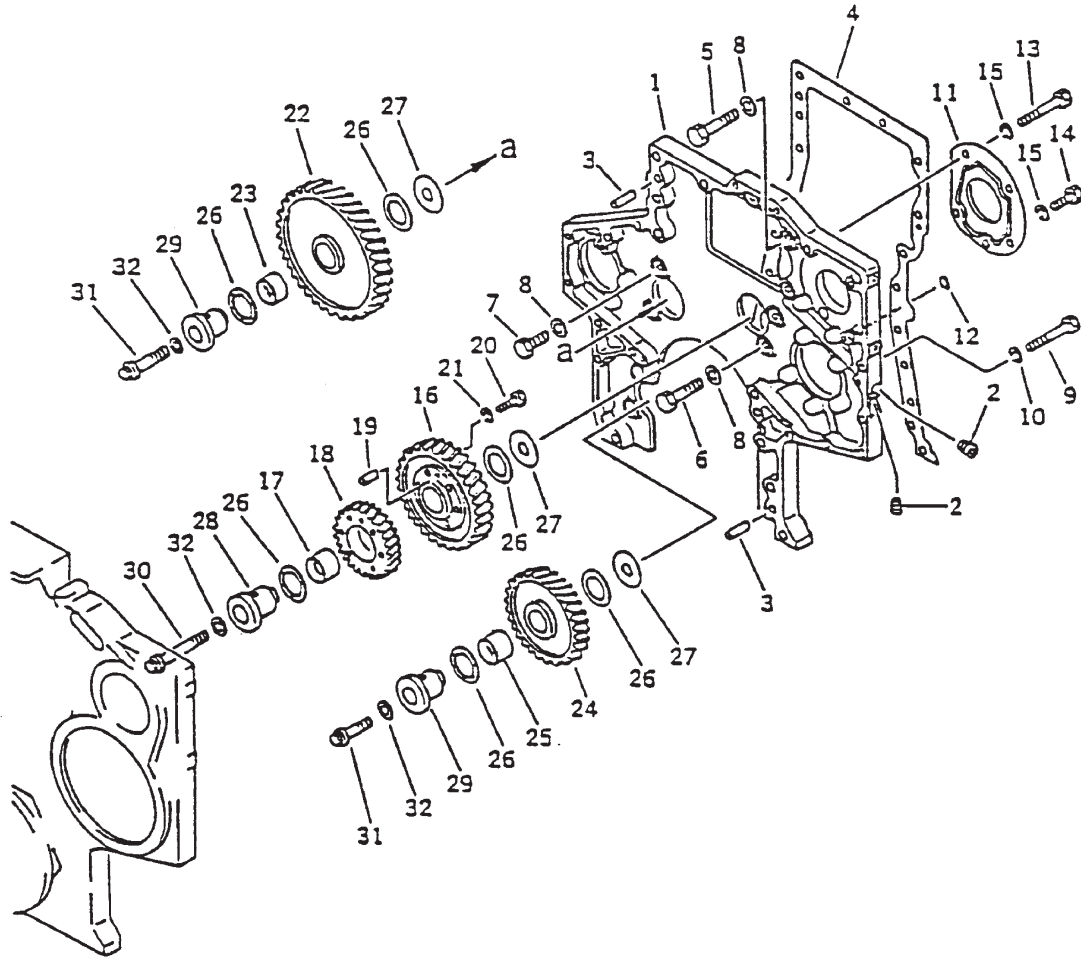


Fig. 2025



## IDLER GEARS AND GEAR CASE HOUSING

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	6162-23-3012	1	Gear Case Housing (includes keys 2 & 3)	-
2	07043-50108	2	Plug	-
3	04020-01434	2	Dowel Pin	-
4	6162-23-3810	1	Gasket	-
5	01010-31450	3	Bolt	-
6	01010-31435	4	Bolt	-
7	01010-31440	2	Bolt	-
8	01643-31445	9	Washer	-
9	01010-51260	10	Bolt	-
10	01602-21236	10	Lock Washer	-
11	6162-23-3170	1	Cover	-
12	07000-01009	1	O-ring	-
13	01010-51260	3	Bolt	-
14	01010-51225	2	Bolt	-
15	01602-21236	5	Lock Washer	-
16	6162-33-6600	1	Gear Assembly (includes key 17)	-
17	6162-33-6430	1	Bushing	-
18	6162-33-6331	1	Idler Gear	-
19	04020-00820	1	Dowel Pin	-
20	01050-31035	6	Bolt	-
21	01602-01030	6	Lock Washer	-
22	6162-33-6400	1	Idler Gear Assembly (includes key 23)	-
23	6162-33-6420	1	Bushing	-
24	6162-33-6202	1	Idler Gear Assembly (includes key 25)	-
25	6162-33-6121	1	Bushing	-
26	6162-33-6460	6	Bearing	-
27	6162-23-2470	3	Plate	-
28	6162-23-2520	1	Shaft	-
29	6162-23-2460	2	Shaft	-
30	6162-23-2433	1	Bolt	-
31	6162-23-2443	2	Bolt	-
32	01643-31845	1	Washer	-

OIL PUMP AND SUCTION PIPE

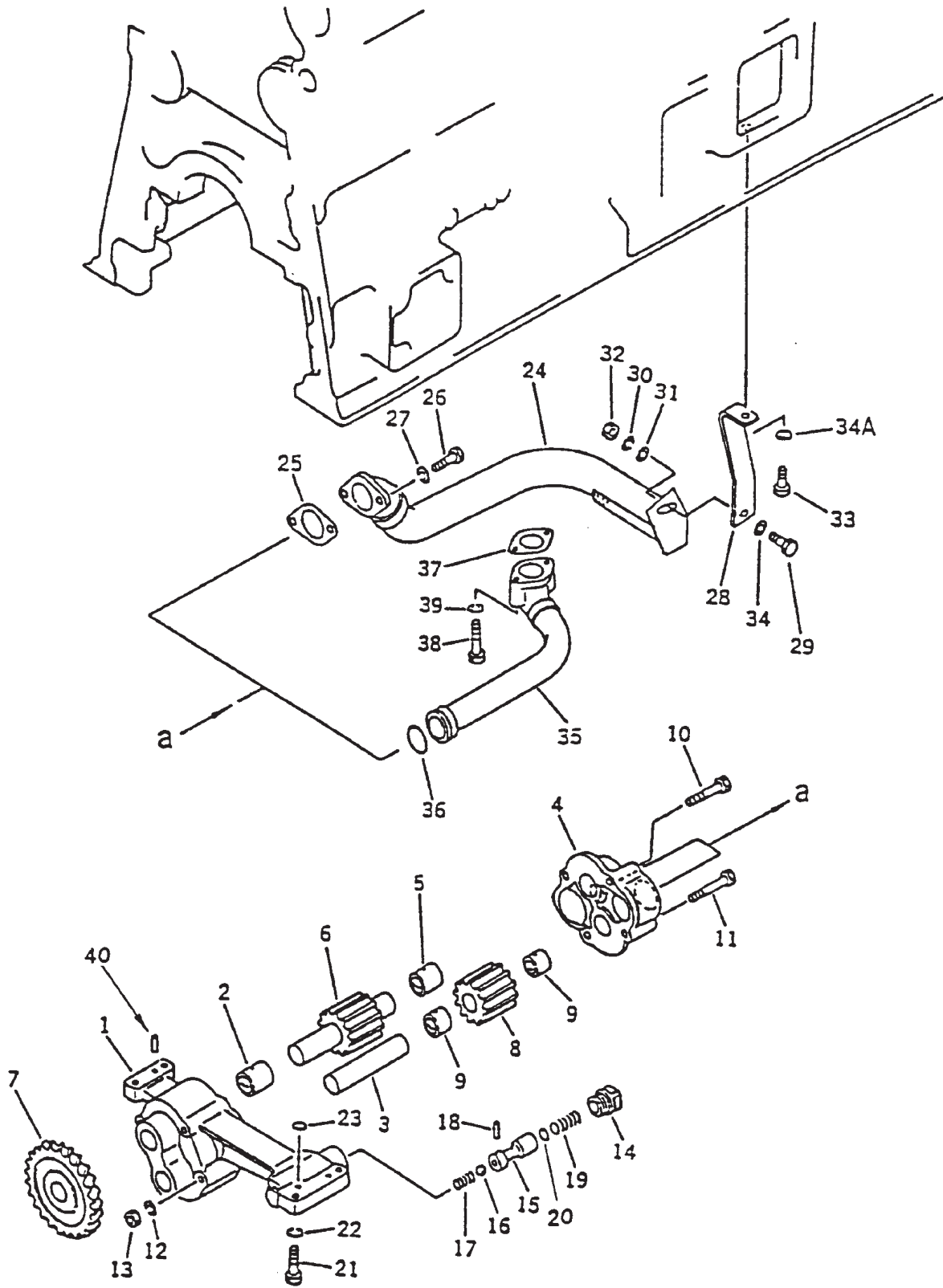


Fig. 3001

## OIL PUMP AND SUCTION PIPE

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	6162-53-1012	1	Oil Pump Assembly (includes keys 1–20)	-
1	6162-53-1210	1	Housing Assembly (includes keys 2–3)	-
2	6162-53-1180	1	Bushing	-
3	6162-53-1270	1	Drive Shaft	-
4	6162-53-1100	1	Cover Assembly (includes key 5)	-
5	6162-53-1180	1	Bushing	-
6	6162-53-1240	1	Drive Shaft	-
7	6162-53-1510	1	Gear	-
8	6162-53-1250	1	Drive Gear Assembly (includes key 9)	-
9	6162-53-1280	2	Bushing	-
10	6162-53-1290	2	Bolt	-
11	01051-31250	2	Bolt	-
12	01602-01236	4	Lock Washer	-
13	01582-01210	4	Nut	-
14	6162-53-1651	1	Plug	-
••	6162-53-6852	1	Relief Valve Assembly (includes keys 15–20)	-
15	6162-53-6862	1	Plunger	-
16	6162-53-6870	1	Ball	-
17	6162-53-6880	1	Spring	-
18	6162-53-1190	1	Pin	-
19	6162-53-6890	1	Spring	-
20	6110-25-6340	3	Shim	-
21	01010-31240	4	Bolt	-
22	01602-01236	4	Lock Washer	-
23	07000-62015	1	O-ring	-
24	6162-53-6470	1	Pipe	-
25	6111-61-6810	1	Gasket	-
26	01010-31035	2	Bolt	-
27	01602-01030	2	Lock Washer	-
28	6262-53-6480	1	Bracket	-
29	01010-31025	1	Bolt	-
30	01602-01030	1	Washer	-
31	01643-31032	1	Washer	-
32	01580-01008	1	Nut	-
33	01010-31025	1	Bolt	-
34	01640-01016	1	Washer	-
34A	6110-23-6490	1	Spacer	-
35	6162-53-6410	1	Pipe	-
36	6162-53-6370	1	O-ring	-
37	6127-51-6821	1	Gasket	-
38	01010-31070	2	Bolt	-
39	01602-01030	2	Lock Washer	-
40	04020-00820	2	Dowel Pin	-

OIL FILTER ASSEMBLY

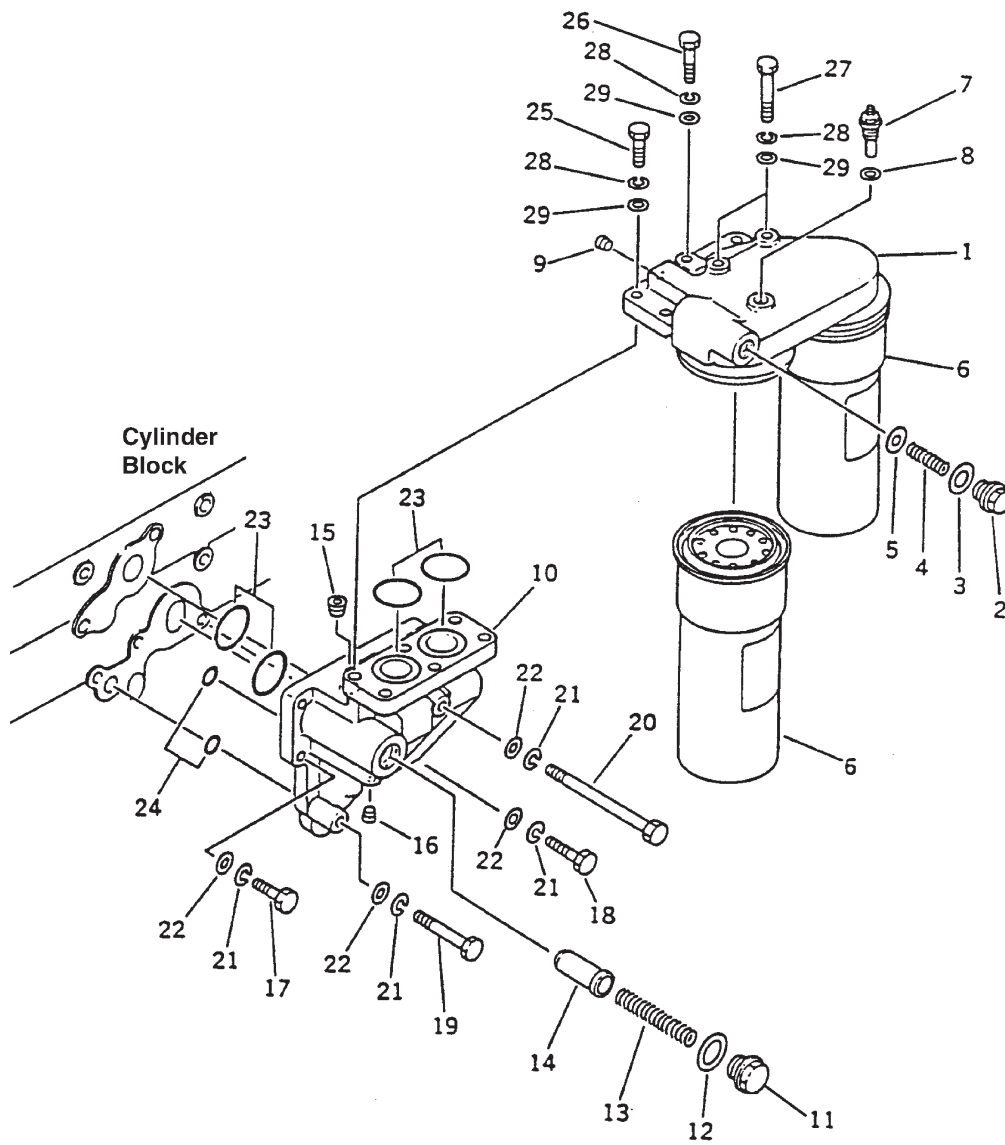


Fig. 3101

## OIL FILTER ASSEMBLY

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	6162-53-5400	1	Oil Filter and Bracket Assembly (includes keys 2-9)	-
2	6162-55-5210	1	Cap*	-
3	6162-53-5430	1	Packing	-
4	600-211-1870	1	Spring	-
5	6162-55-5220	1	Valve*	-
6	24-04801	2	Cartridge	-
7	600-211-1930	1	Sensor	-
8	07005-01612	1	Sealing Washer	-
9	07043-00312	1	Plug	-
**	6162-53-5500	1	Adapter Assembly (includes keys 10-16)	-
10	6162-53-5510	1	Adapter	-
11	6162-53-5520	1	Cap	-
12	6162-53-5530	1	Packing	-
13	6162-53-5540	1	Spring	-
14	6162-53-6770	1	Plunger	-
15	07043-00415	1	Plug	-
16	07042-00108	1	Plug	-
17	01010-51245	4	Bolt	-
18	01010-51245	2	Bolt	-
19	01010-51285	1	Bolt	-
20	01011-51260	1	Bolt	-
21	01602-21236	8	Lock Washer	-
22	01641-21223	8	Washer	-
23	07000-63050	4	O-ring	-
24	07000-63028	2	O-ring	-
25	01010-51240	3	Bolt	-
26	01010-51250	1	Bolt	-
27	01010-51270	2	Bolt	-
28	01602-21236	6	Washer	-
29	01640-21223	6	Washer	-

## \*Note:

Original Cap key #2 and Packing key #5 have been replaced by numbers now listed (formerly 6162-53-5420 and 6162-53-5450)

GROUP 1 - ENGINE

OIL PAN

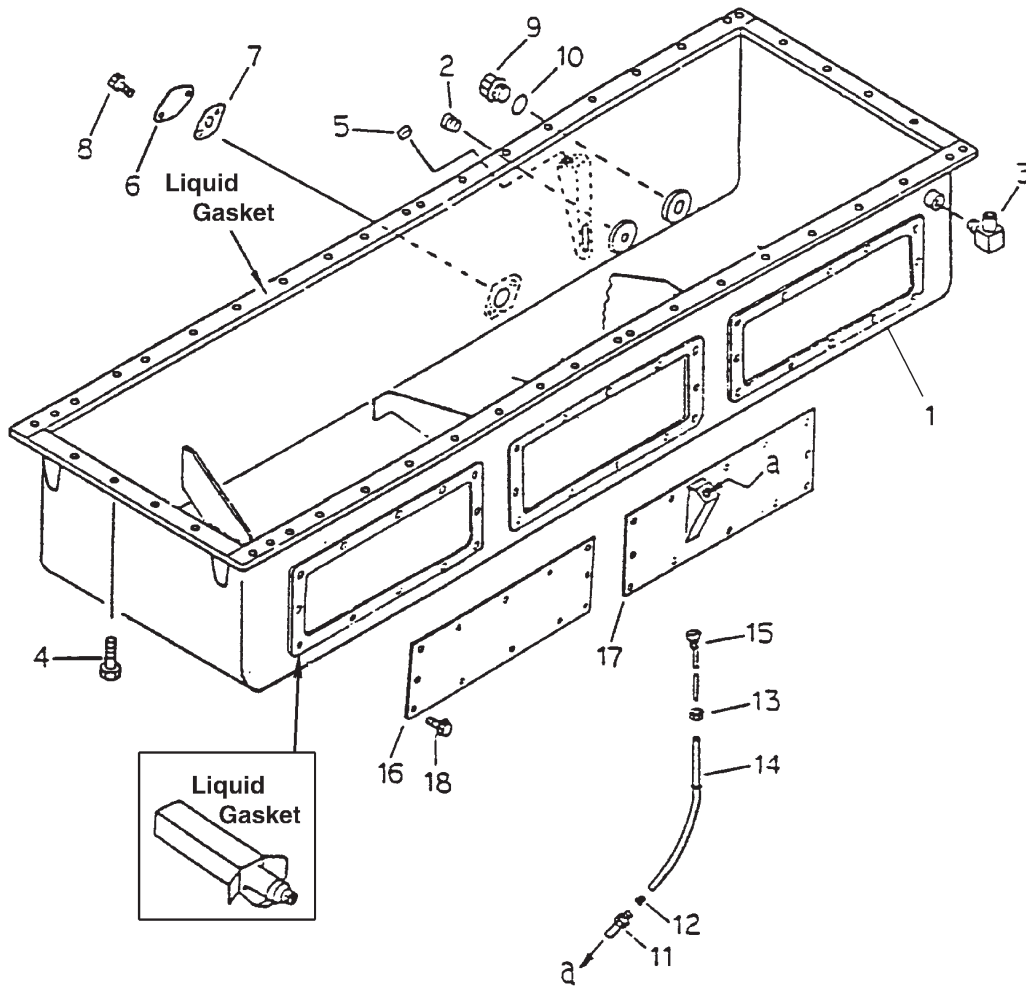


Fig. 2101

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	6162-23-5182	1	Oil Pan	-
2	07043-30415	1	Plug	-
3	232-43-54460	1	Elbow, 1/2 BSPT x 15 mm Hose Stub (Plain - no barb)	-
4	12-00832	49	Capscrew, Hex Head M10 x 1.5 x 30 mm	-
5	07046-2010	1	Plug	-
6	6136-21-5710	1	Plate	-
7	6110-61-6811	1	Gasket	-
8	12-04400	2	Capscrew, Hex Head M10 x 1.5 x 16 mm	-
9	07044-13620	1	Plug, M36 x 1.5	-
10	07002-33634	1	O-ring	-
11	6150-21-5910	1	Bushing	-
12	6150-21-5920	1	Collar	-
13	6150-21-5930	1	Nut	-
14	6150-21-5410	1	Dipstick Tube	-
15	36-74901	1	Dipstick	-
16	6162-23-4960	2	Cover	-
17	6162-23-4970	1	Cover	-
18	01435-01020	36	Capscrew, Hex Head Flanged M10 x 1.5 x 20 mm	-
19	09920-00150	**	Liquid Gasket	-
			**As required	

DRAWING NOT AVAILABLE AT THIS TIME

A-6788

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	27-04901	1	Tube	-
2	07025-00100	1	Cap	-
3	6110-61-6811	1	Gasket	-
4	12-00831	2	Capscrew, Hex Head M10 x 1.5 x 25 mm	-
5	15-00302	2	Lock washer, Helical 3/8	-
6	19-11001	1	U-bolt Clamp	-
7	41-01112	.25	Cushion	-

INTAKE VALVE LUBRICATION PUMP AND PIPING

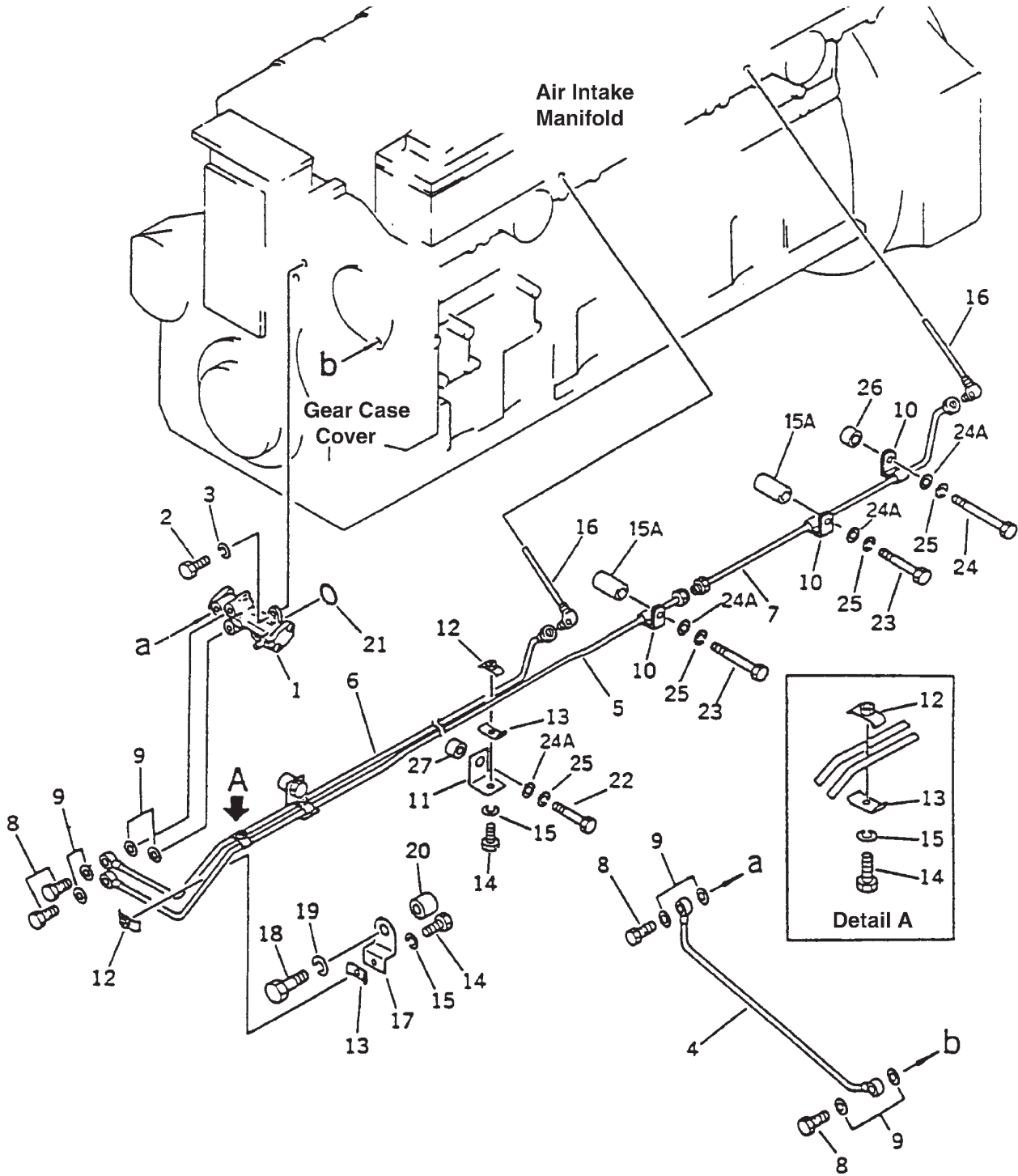


Fig. 3721



## INTAKE VALVE LUBRICATION PUMP AND PIPING

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	6162-53-2101	1	Lubrication pump	up to S/N 1701-1528 ↓
2	01010-50616	2	Bolt	
3	01602-20619	2	Washer	
4	6162-53-1750	1	Tube	
5	6162-53-1840	1	Tube	
6	6162-53-1860	1	Tube	
7	6162-53-1820	1	Tube	
8	6130-71-5351	4	Bolt	
9	07005-00812	8	Gasket	
10	6127-81-4420	3	Clip	
11	6162-53-1830	2	Plate	
12	6127-81-4350	4	Clamp	
13	6127-81-4360	4	Clamp	
14	01016-20412	4	Bolt	
15	01601-00410	4	Lock Washer	
15A	6134-11-5120	2	Spacer	
16	6162-53-1710	2	Elbow	
17	6162-53-1850	1	Plate	
18	01010-51240	1	Bolt	
19	01602-21236	1	Lock Washer	
20	175-79-33240	1	Spacer	
21	MK-2M-36E-215	1	O-ring	
22	01011-51005	2	Bolt	
23	01011-51040	2	Bolt	
24	01011-51005	1	Bolt	
24A	01640-21016	5	Washer	
25	01602-21030	5	Lock Washer	
26	560-43-15220	1	Spacer	
27	6162-13-4860	2	Spacer	

CYLINDER HEAD

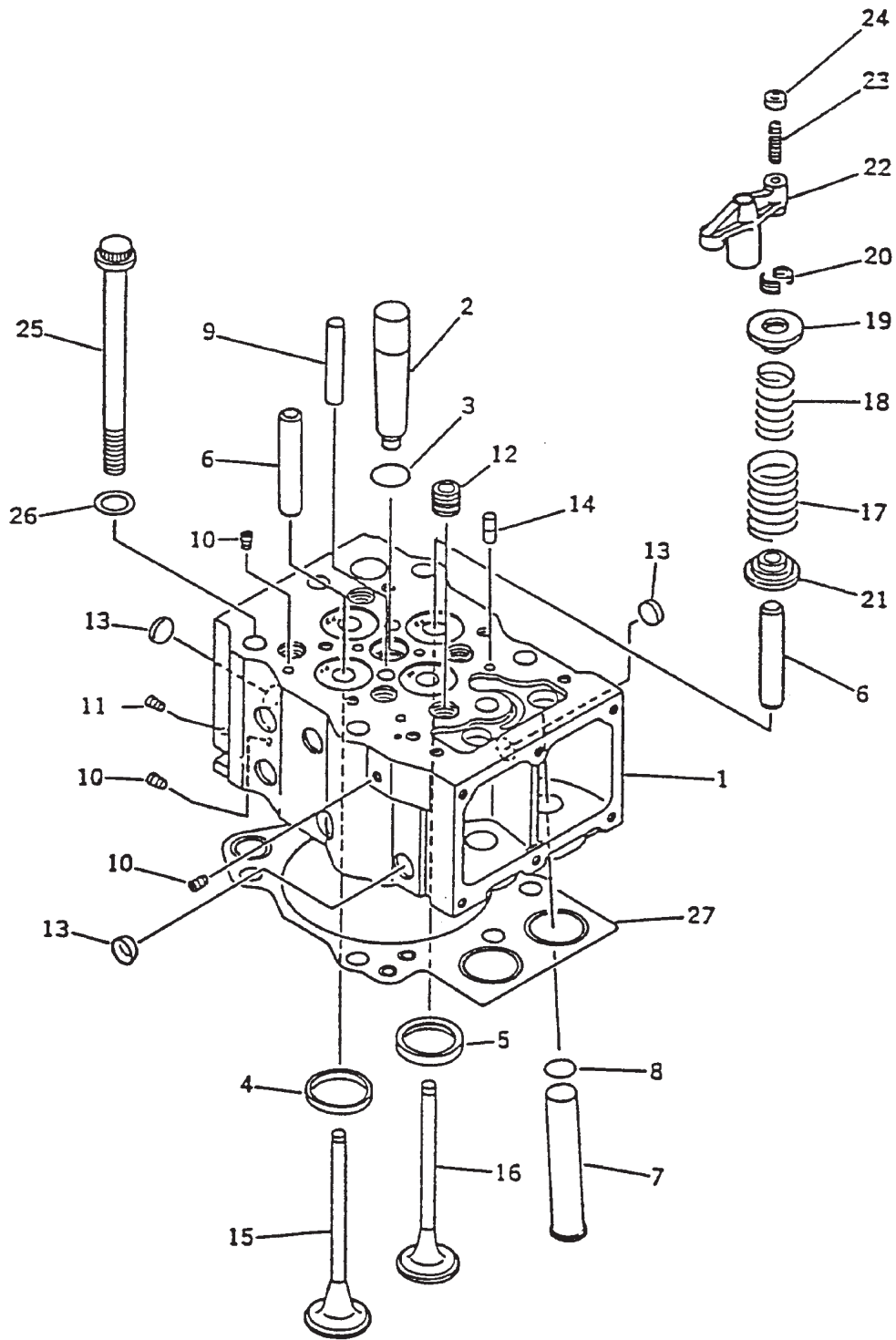


Fig. 1001

## CYLINDER HEAD

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	6162-13-1103	6	Cylinder head assembly (includes keys 2–14)	-
2	6162-13-1130	1	Injector sleeve	-
3	6162-12-1152	1	O-ring	-
4	6162-15-1370	2	Intake seat insert, Standard	-
	6162-19-1330	2	Intake seat insert, Oversize 0.25 mm	-
	6162-18-1330	2	Intake seat insert, Oversize 0.50 mm	-
	6162-17-1370	2	Intake seat insert, Oversize 0.75 mm	-
	6162-16-1330	2	Intake seat insert, Oversize 1.00 mm	-
5	6162-13-1322	2	Exhaust seat insert, Standard	-
	6162-19-1321	2	Exhaust seat insert, Oversize 0.25 mm	-
	6162-18-1321	2	Exhaust seat insert, Oversize 0.50 mm	-
	6162-17-1321	2	Exhaust seat insert, Oversize 0.75 mm	-
	6162-16-1321	2	Exhaust seat insert, Oversize 1.00 mm	-
6	6162-16-1341	4	Valve guide	-
7	6162-13-1160	2	Push rod tube	-
8	07000-63028	2	O-ring	-
9	6162-13-1140	2	Guide	-
10	07043-50108	3	Plug	-
11	07043-50211	1	Plug	-
12	07043-50617	5	Plug	-
13	6162-13-1150	11	Expansion plug	-
14	6162-13-1410	2	Pin	-
15	6162-43-4111	12	Intake valve (replaces 6162-43-4110)	-
16	6164-41-4211	12	Exhaust valve	-
17	6162-43-4440	24	Valve spring, outer (formerly 6162-43-4410)	-
18	6162-43-4420	24	Valve spring, inner	-
19	6162-43-4510	24	Retainer	-
20	6162-42-4520	48	Keeper	-
21	6162-43-4430	24	Spring seat	-
22	6162-43-5610	12	Crosshead	-
23	6162-43-5640	12	Screw	-
24	6127-41-5630	12	Nut	-
25	6162-15-1610	36	Head bolt (formerly #6162-13-1611)	-
26	6162-13-1620	36	Washer	-
27	6162-13-1812	8	Head Gasket Standard	-
	6162-19-1812	6	Head Gasket Repair (.4 mm thicker than standard)*	-

\*Refer to service manual for application and specifications.

Note: Quantities for keys 2–14 are per each cylinder head.

ROCKER ARM AND HOUSING

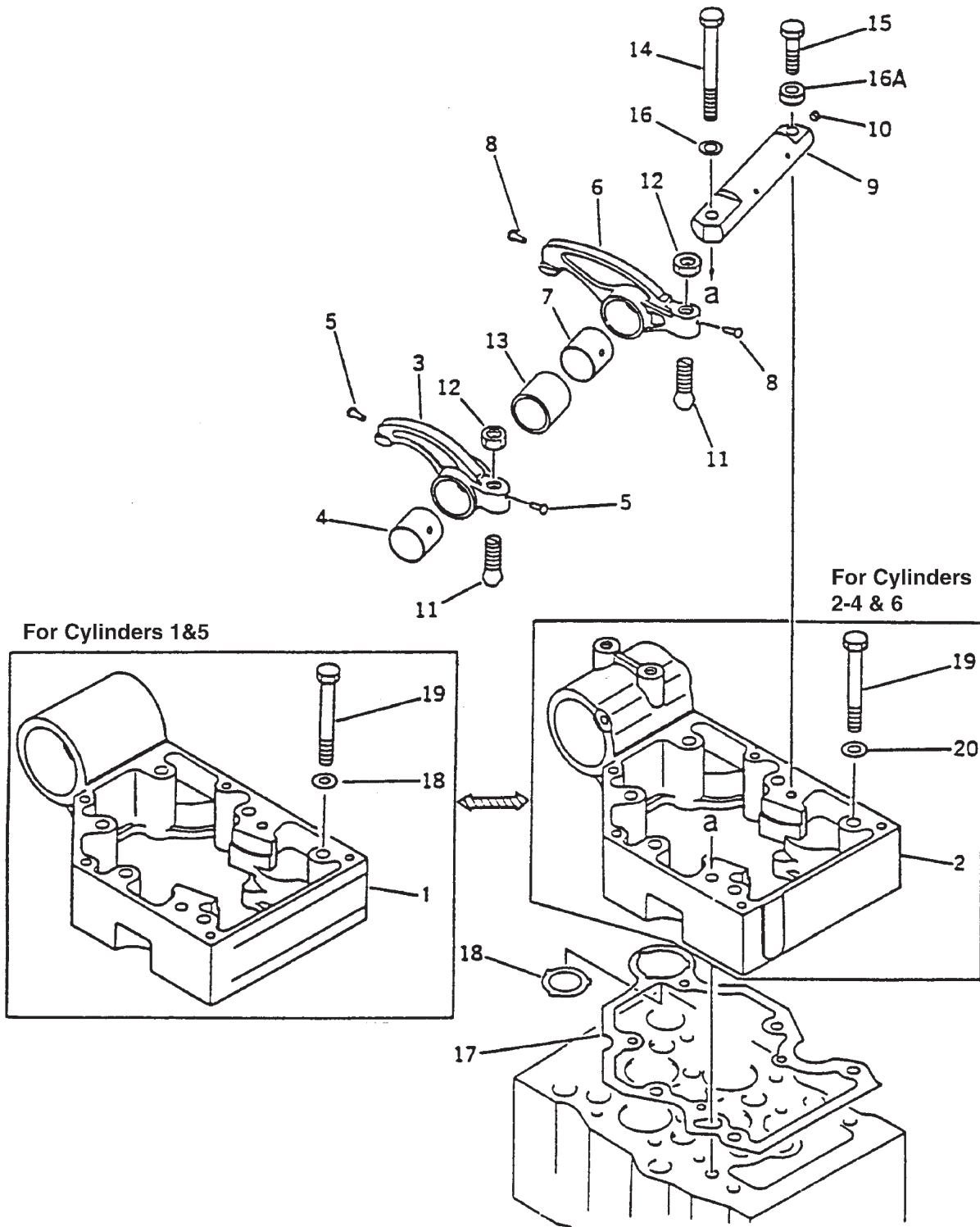


Fig. 1101

## ROCKER ARM AND HOUSING

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	6162-13-7210	2	Housing (No. 1 & 5)	-
2	6162-13-7110	4	Housing (No 2, 3, 4 & 6)	-
3	6162-43-5400	6	Intake Rocker Arm Assembly (includes keys 4 & 5)	-
4	6162-43-5420	1	Bushing	-
5	6162-43-5340	2	Rivet	-
6	6162-43-5500	6	Exhaust Rocker Arm Assembly (includes keys 6 & 8)	-
7	6162-43-5420	1	Bushing	-
8	6162-43-5340	2	Rivet	-
9	6162-43-5300	6	Rocker Arm Shaft Assembly (includes key 10)	-
10	6162-43-2420	1	Pin	-
11	6127-41-5445	12	Adjusting Screw	-
12	6127-41-5431	12	Nut	-
13	6162-43-5320	6	Collar	-
14	01011-31215	6	Bolt	-
15	01010-31255	6	Bolt	-
16	01643-31232	6	Washer	-
16A	6164-41-5390	6	Spacer	-
17	6162-13-7812	6	Gasket	-
18	6162-13-7823	6	Packing	-
19	01010-51290	36	Bolt	-
20	01643-21232	36	Washer	-

**ROCKER ARM COVER**

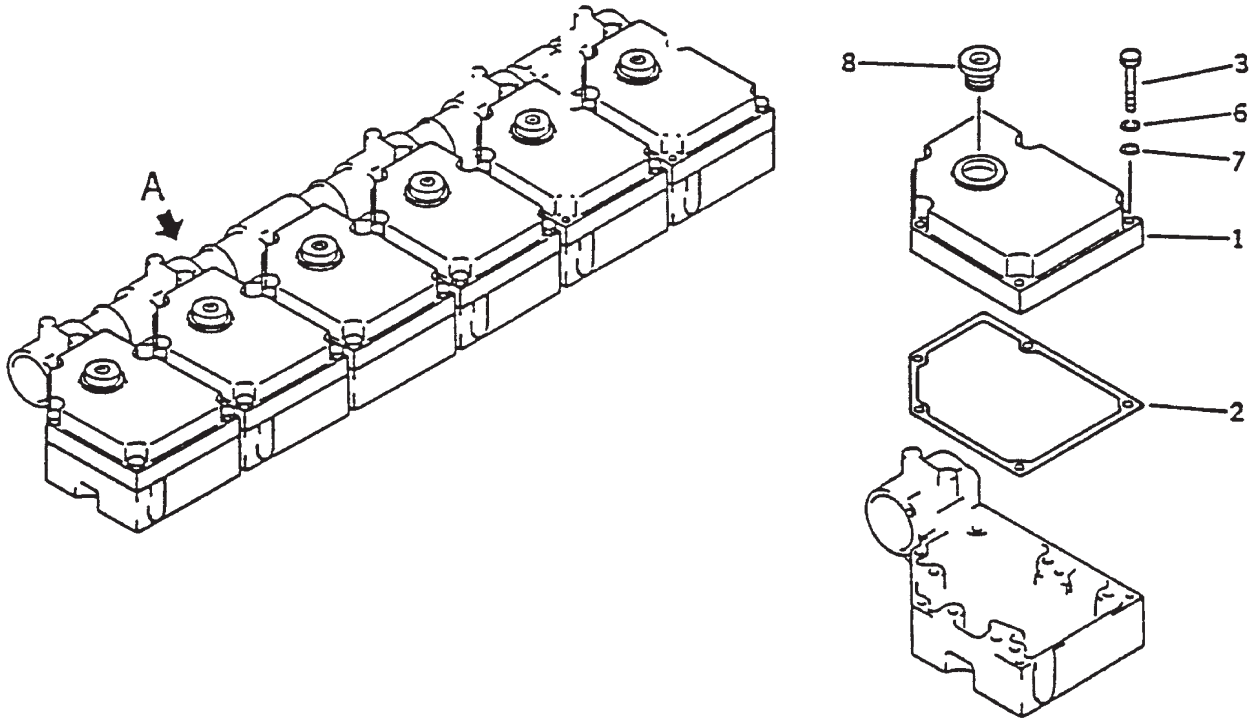
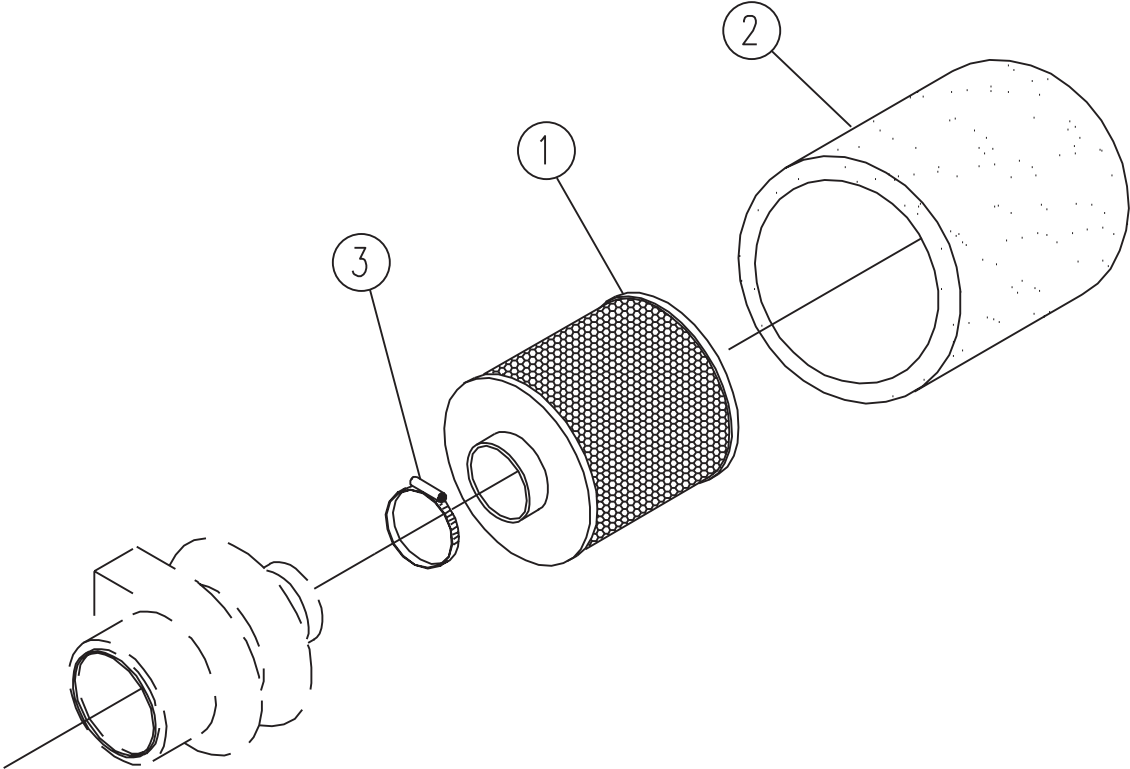


Fig. 1151

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	6162-13-8112	6	Cover	-
2	6162-13-8810	6	Gasket	-
3	01010-51055	30	Bolt	-
6	01602-21030	30	Spring washer	-
7	01640-21016	30	Washer	-
8	6162-13-8181	6	Packing	-

**AIR FILTER**

*Standard*



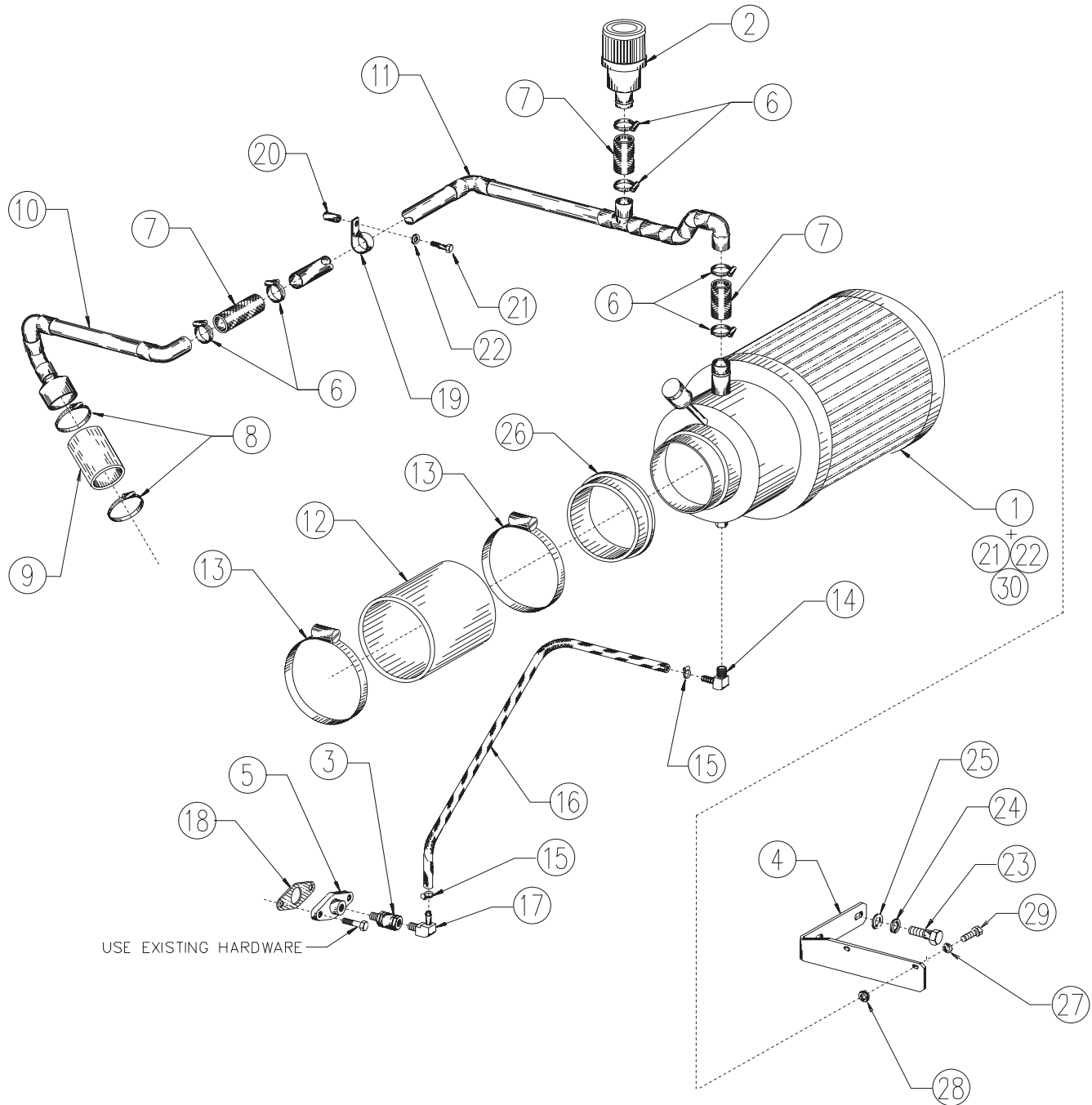
*A-6007/B-7982*

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	24-24901	1	Air Filter Base	-
2	24-24902	1	Air Filter Sleeve	-
3	19-01625	1	T-Bolt Clamp 6-1/4" S/S	-

GROUP 2 - INTAKE AND EXHAUST

'AIR-SEP' AIR FILTER/CRANKCASE BREATHER

Arrangement with Vacuum Limiter, Early Production



A-6039 / D-2524



## 'AIR-SEP' AIR FILTER/CRANKCASE BREATHER

*Arrangement with Vacuum Limiter, Early Production*

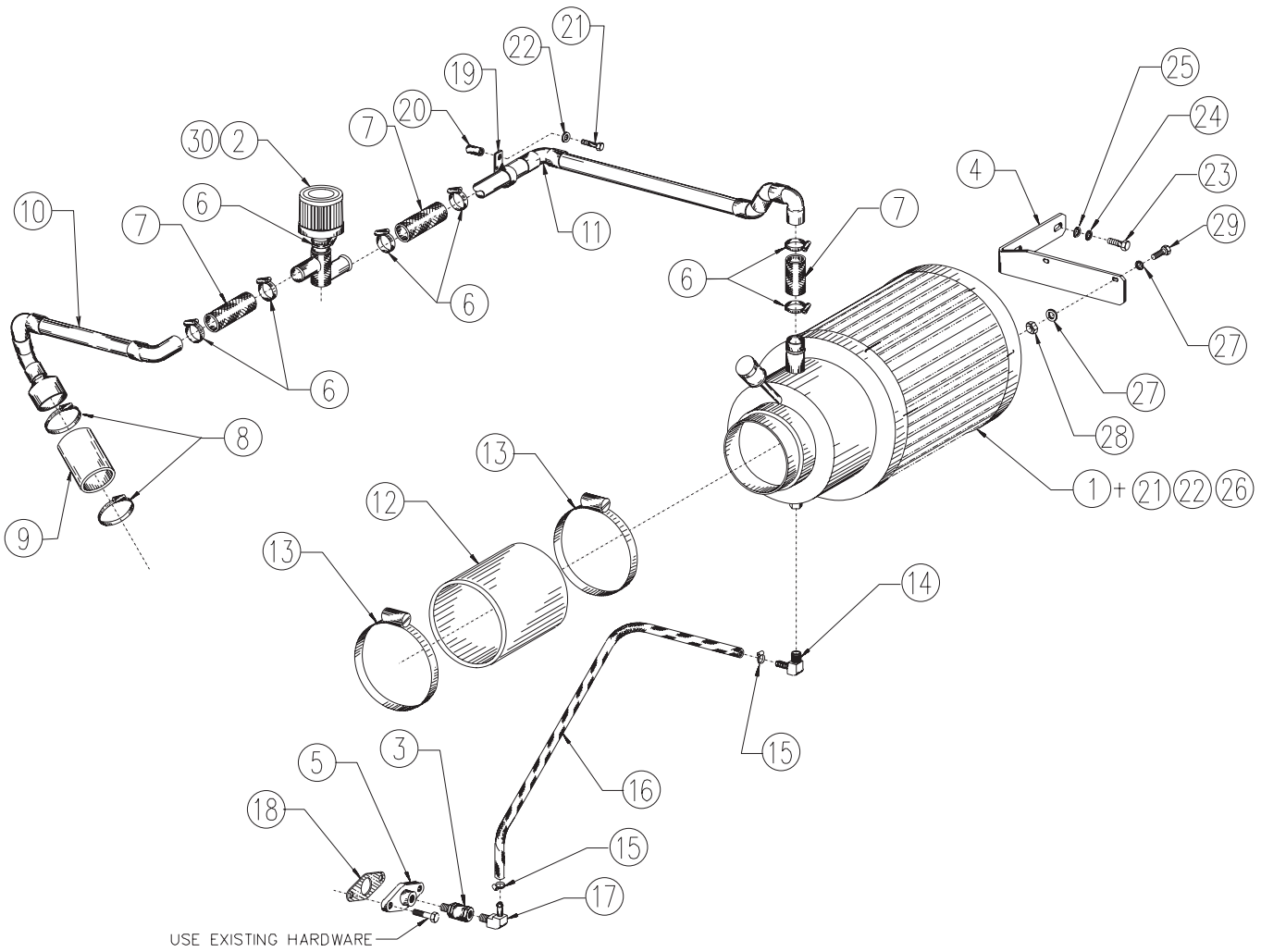
KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	24-24909	1	'Air-Sep' Filter Assembly* (includes keys 21-22 & 30)	-
2	24-20006	1	Vacuum Limiter	-
3	21-50023	1	One Way Valve	-
4	23-14904	1	Bracket	-
5	31-24901	1	Adapter	-
6	19-00020	6	Hose Clamp #20	-
7	18-11902	3	Hose 1-1/4" ID x 3-1/2"	-
8	19-00032	2	Hose Clamp #32	-
9	18-21018	1	Hose, 2" x 3-1/2"	-
10	27-24902	1	Tube	-
11	27-24901	1	Tube	-
12	24-25004	1	Rubber Connector 6" ID x 3"	-
13	19-00104	2	Hose Clamp #104	-
14	21-52619	1	Male Elbow 90°, 3/8" NPT x 3/8"	-
15	19-00002	2	Hose Clamp #2	-
16	18-00003	1	Hose 3/8" x 32"	-
17	21-14828	1	Male Elbow 90°, 1/4 NPT x 3/8 HB	-
18	6127-51-6822	1	Gasket	-
19	19-71030	1	Adelle Clamp 1-1/8" ID x 1/2" Stud	-
20	21-75005	1	Spacer	-
21	24-24908	1	Element 12" OD x 10"	-
22	24-20008	1	Cover	-
23	12-00811	2	Capscrew, Hex Head M10 x 1.25 x 30 mm	-
24	15-00802	2	Lock Washer, Helical M10	-
25	15-00805	2	Flat Washer M10	-
26	24-25003	1	Rubber Bushing 5-1/2" ID x 6" OD	-
27	15-00701	4	Flat Washer M8	-
28	14-04802	2	Nylock Nut M8 x 1.25	-
29	12-00712	2	Capscrew, Hex Head M8 x 1.25 x 25 mm	-
30	00-20001	3	Cover, Retaining Spring	-

\*Replaces earlier filter assemblies:  
 24-24903 (9" OD x 12" Tapered Element)  
 24-24907 (Same element as shown in parts list)

GROUP 2 - INTAKE AND EXHAUST

'AIR-SEP' AIR FILTER/CRANKCASE BREATHER

Arrangement with Vacuum Regulator



A-7692 / D-3613

## 'AIR-SEP' AIR FILTER/CRANKCASE BREATHER

*Arrangement with Vacuum Regulator*

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	24-24912	1	'Air-Sep' Filter Assembly (includes keys 21-22, & 26)	-
2	24-20013	1	Vacuum Regulator (includes key #30)	-
3	21-50023	1	One Way Valve	-
4	23-14904	1	Bracket	-
5	31-24901	1	Adapter	-
6	19-00020	6	Hose Clamp #20	-
7	18-11902	3	Hose 1-1/4" ID x 3-1/2"	-
8	19-00032	2	Hose Clamp #32	-
9	18-21018	1	Hose, 2" x 3-1/2"	-
10	27-24902	1	Tube	-
11	27-24906	1	Tube	-
12	24-25004	1	Rubber Connector 6" ID x 3"	-
13	19-00104	2	Hose Clamp #104	-
14	21-52619	1	Male Elbow 90°, 3/8" NPT x 3/8"	-
15	19-00004	2	Hose Clamp #4	-
16	18-00003	1	Hose 3/8" x 32"	-
17	21-14828	1	Male Elbow 90°, 1/4 NPT x 3/8 HB	-
18	6127-51-6822	1	Gasket	-
19	19-71030	1	Adelle Clamp 1-1/8" ID x 1/2" Stud	-
20	21-75005	1	Spacer	-
21	24-24908	1	Element 12" OD x 10"	-
22	24-20008	1	Cover	-
23	12-00811	2	Capscrew, Hex Head M10 x 1.25 x 30 mm	-
24	15-00802	2	Lock Washer, Helical M10	-
25	15-00805	2	Flat Washer M10	-
26	00-20001	3	Cover Retaining Spring	-
27	15-00701	4	Flat Washer M8	-
28	14-04802	2	Nylock Nut M8 x 1.25	-
29	12-00712	2	Capscrew, Hex Head M8 x 1.25 x 25 mm	-
30	24-20014	1	Element, Vacuum Regulator	-

INTAKE MANIFOLD AND AFTERCOOLER

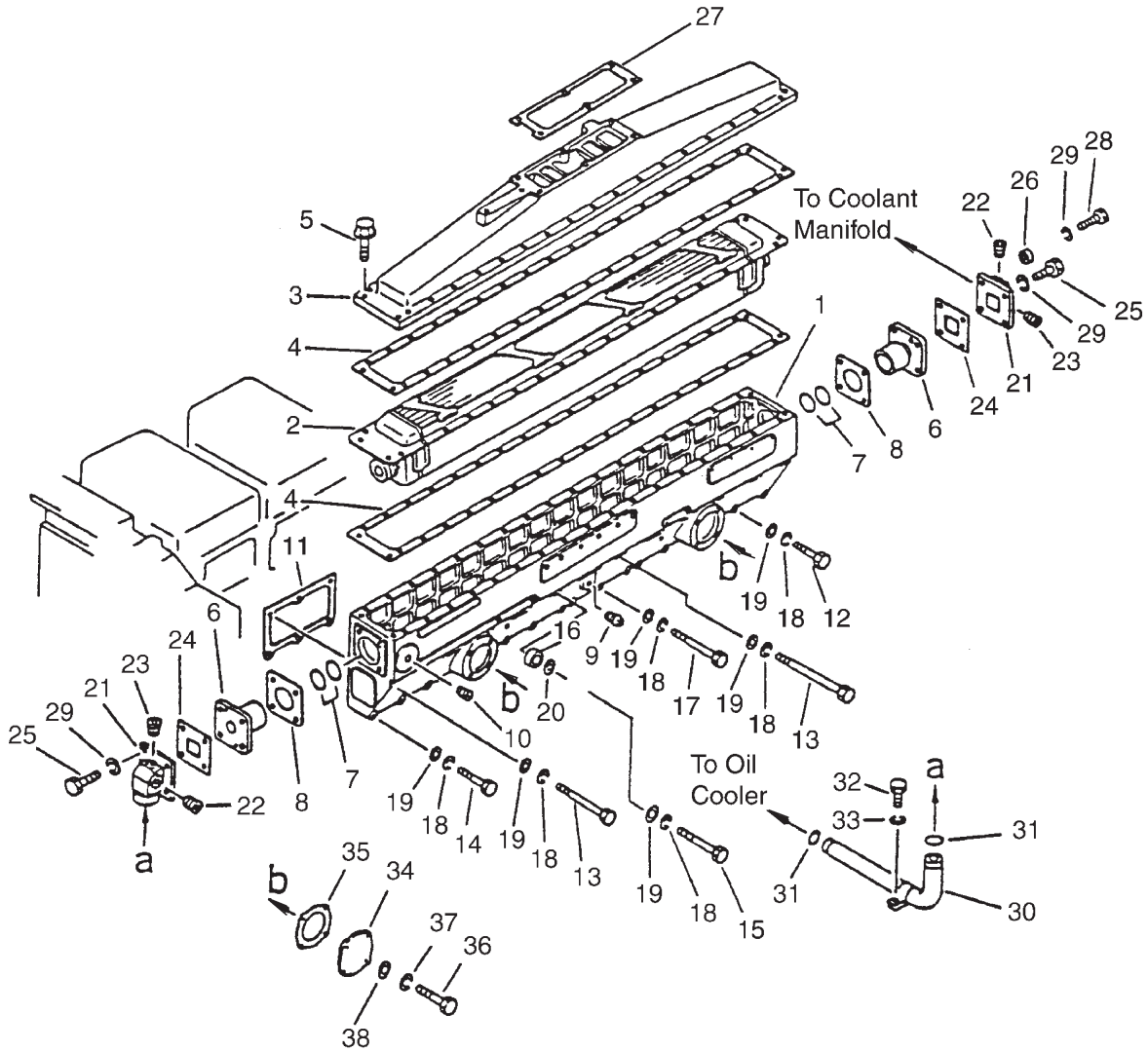


Fig. 1301

## INTAKE MANIFOLD AND AFTERCOOLER

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	6162-13-4111	1	Air Intake Manifold	-
2	6162-63-6121	1	Aftercooler Element	-
3	6162-13-4160	1	Cooler	-
4	6162-13-4140	2	Gasket	-
5	01435-00840	38	Bolt	-
6	6162-63-6830	2	Connector	-
7	6110-11-2820	4	O-ring	-
8	6162-63-6840	2	Gasket	-
9	07042-70108	1	Plug	-
10	02720-21214	1	Plug	-
11	6162-13-4811	6	Gasket	-
12	01010-51095	13	Bolt	-
13	01011-51055	17	Bolt	-
14	01011-51005	3	Bolt	-
15	562-15-16410	1	Bolt	-
16	6143-11-4290	1	Spacer	-
17	01011-51040	2	Bolt	-
18	01602-21030	36	Lock Washer	-
19	01640-21016	36	Washer	-
20	01640-21123	1	Washer	-
21	6162-63-6480	2	Connector	-
22	07043-70312	2	Plug	-
23	02720-20204	2	Plug	-
24	6162-63-6840	2	Gasket	-
25	01010-51045	7	Bolt	-
26	6131-12-5920	1	Spacer	-
27	6162-13-4740	1	Gasket	-
28	01010-51060	1	Bolt	-
29	01602-01030	8	Lock Washer	-
30	6162-63-6440	1	Pipe	-
31	07000-03038	2	O-ring	-
32	01010-51025	1	Bolt	-
33	01602-21030	1	Lock Washer	-
34	6128-81-4930	2	Cover	-
35	6675-11-4960	2	Gasket	-
36	01010-50825	8	Bolt	-
37	01602-20825	8	Lock Washer	-
38	01640-20816	8	Washer	-

EXHAUST MANIFOLD

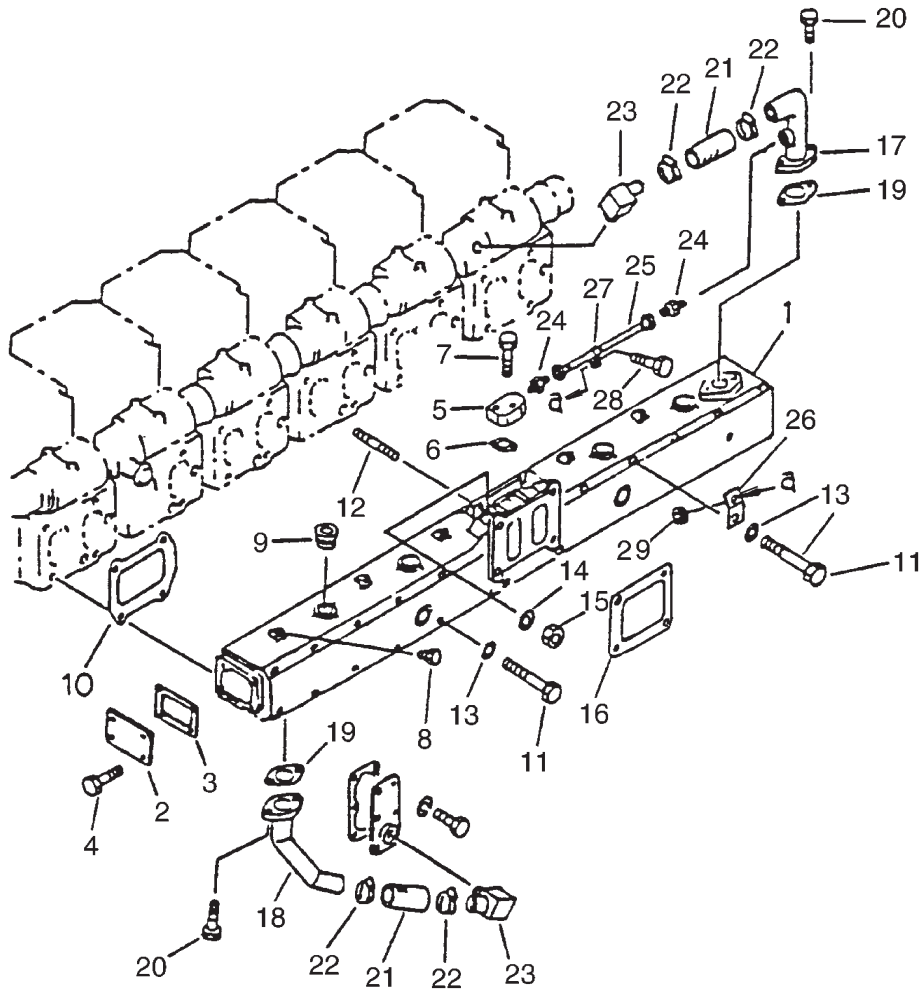


Fig. 1501

## EXHAUST MANIFOLD

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	6162-13-9502	1	Exhaust manifold assembly (includes keys 1-9, formerly #6162-13-9501) See keys 18 & 19	-
	6162-15-5200	1	Exhaust manifold assembly (includes keys 1-9, formerly #6162-13-9502) See keys 18 & 19	-
2	6162-13-9560	2	Plate	-
3	6162-13-9620	2	Gasket	-
4	01435-01020	8	Bolt	-
5	6162-13-9611	1	Flange	-
6	6162-13-9670	1	Gasket	-
7	01435-00840	2	Bolt	-
8	6151-15-5971	6	Plug	-
9	07043-51222	11	Plug	-
10	6162-13-5810	6	Gasket	-
11	01011-81260	22	Bolt	-
12	01124-51235	2	Stud	-
13	01643-31232	22	Washer	-
14	6127-11-5180	2	Washer	-
15	01580-11210	2	Nut	-
16	6162-83-2870	1	Gasket	-
17	6162-13-9660	1	Connector (2 bolt flange - use with 6162-13-9502)	-
	6162-13-9280	1	Connector (4 bolt flange - use with 6162-15-5200)	-
18	6162-13-9640	1	Connector (2 bolt flange - use with 6162-13-9502)	-
19	6162-13-9670	**	Gasket (2 bolt flange - use with 6162-13-9502)	-
	6210-21-1971	**	Gasket (4 bolt flange - use with 6162-15-5200)	-
20	01435-00825	**	Bolt	-
21	18-14902	2	Hose, 1-5/16 ID x 6" Silicone (former #6132-61-6851)	-
22	19-01025	4	Hose Clamp #28 Extended Band	-
23	205-97-96721	2	Elbow	-
24	07213-51217	2	Nipple	-
25	6162-13-9631	1	Tube	-
26	6162-13-9690	1	Stay	-
27	04434-51208	1	Clip	-
28	01435-00814	1	Bolt	-
29	01584-00806	1	Nut	-
			**As required.	

GROUP 2 - INTAKE AND EXHAUST

INTAKE AND TURBOCHARGER

Early Production

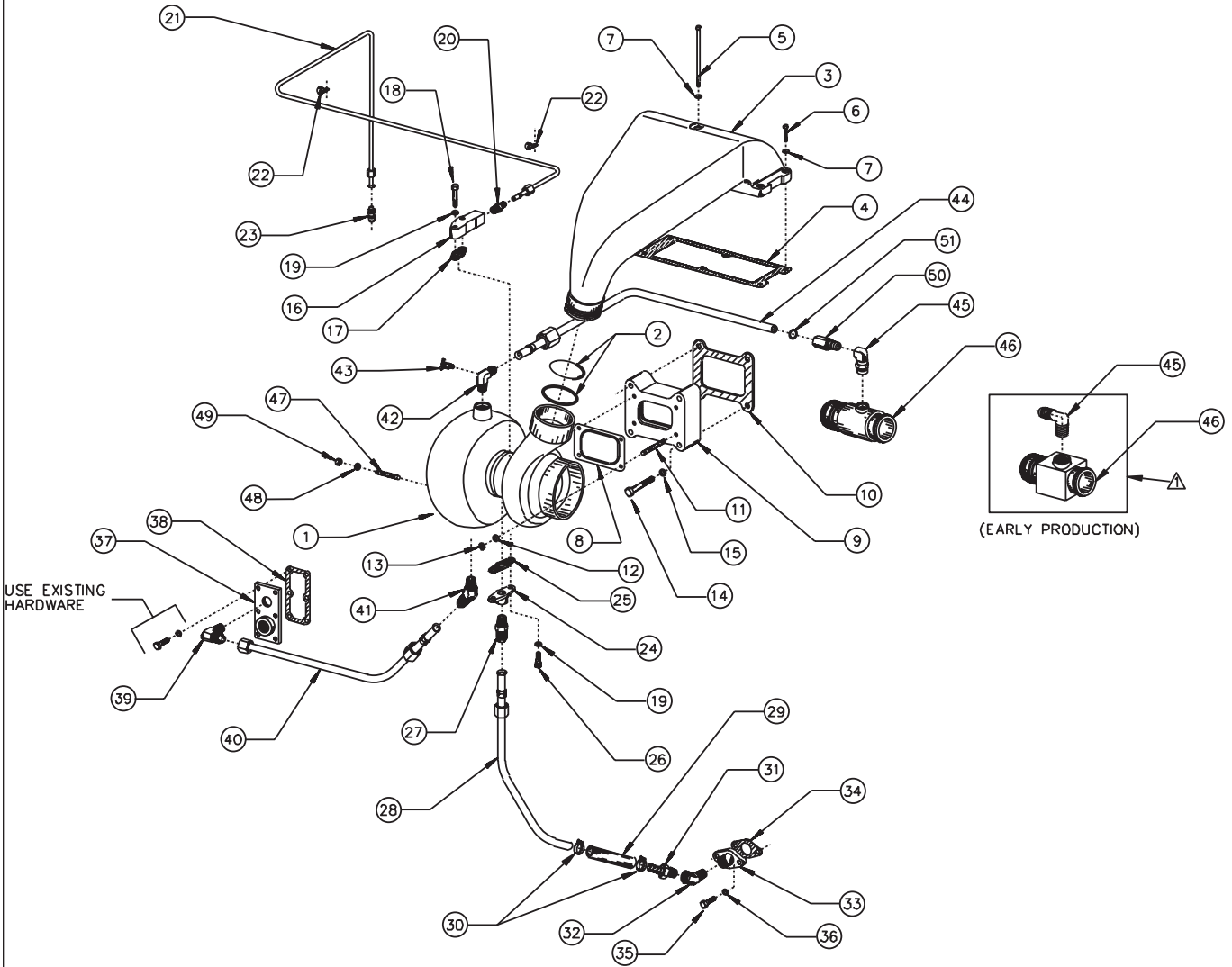


Fig. A-6013/D-2462



## INTAKE AND TURBOCHARGER

Early Production

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	30-34901	1	Turbocharger	-
2	16-25002	1	O-ring	-
3	10-24903	1	Connector	-
4	6162-13-4741	1	Gasket	-
5	12-00729	1	Capscrew, Hex Head M8 x 1.25 x 150 mm	-
6	12-00713	5	Capscrew, Hex Head M8 x 1.25 x 35 mm	-
7	15-00701	6	Flat Washer M8	-
8	11-34804	1	Gasket	-
9	31-34902	1	Adapter, Turbo Mounting *	-
10	6162-83-2870	1	Gasket	-
11	13-00336	4	Stud 3/8 -16 x 3/8 -24 x 2" *	-
12	15-00321	4	Flat Washer 3/8 SAE *	-
13	14-00321	4	Hex Nut 3/8 -24 *	-
14	12-00956	**	Capscrew, Hex Head M12 x 1.75 x 65 mm (**As required)	-
	12-00953	1	Capscrew, Hex Head M12 x 1.75 x 30 mm	-
15	15-00912	4	Lock Washer, Helical M12	-
16	31-31047	1	Adapter, Turbo Oil Inlet	-
17	11-31014	1	Gasket	-
18	12-00315	2	Capscrew, Hex Head 3/8 -16 x 1 -3/4"	-
19	15-00302	4	Lock Washer, Helical 3/8	-
20	21-52800	1	Male Connector 3/8 NPT x 3/8 -37T	-
21	27-34903	1	Tube Assembly, Turbo Oil Supply	-
22	19-72252	2	Adelle Clamp 3/8" ID x 3/8" Stud	-
23	21-00612	1	Male Connector, Brass 1/4 NPT x 3/8 -37T	-
24	31-74800	1	Adapter, Turbo Oil Return	-
25	11-31013	1	Gasket	-
26	12-20312	2	Capscrew, Socket Head 3/8 -16 x 1"	-
27	21-35002	1	Male Connector 1/2 NPT x 3/4 -37T	-
28	27-34902	2	Tube Assembly, Turbo Oil Return	-
29	18-11011	1	Hose 3/4" ID x 4 -1/2"	-
30	19-00010	2	Hose Clamp #10	-
31	21-00129	1	Male Connector 1/2 NPT x 3/4 HB	-
32	21-03359	1	Elbow 45° 1/2 NPT x 1/2 NPT	-
33	31-34904	1	Adapter, Turbo Oil Return	-
34	6127-51-6821	1	Gasket	-
35	12-00831	2	Capscrew, Hex Head M10 x 1.5 x 25 mm	-
36	15-00802	2	Lock Washer, Helical M10	-
37	31-34906	1	Adapter, Turbo Coolant Supply	-
38	6162-63-6730	1	Gasket	-
39	21-64801	1	Elbow 90° 3/4 NPT x 3/4-37T	-
40	27-14901	1	Tube Assembly, Turbo Coolant Supply	-
41	21-14806	1	Elbow 45° 3/4 NPT x 3/4 -37T	-
42	21-15001	1	Elbow 90° 3/4 NPT x 3/4 -37T, tapped 1/8 NPT	-
43	21-10001	1	Drain Cock, Brass 1/8 NPT	-
44	27-14902	1	Tube Assembly, Turbo Coolant Return	-
45	21-64801	1	Male Elbow, 90° Steel 3/4 NPT x 3/4 -37T	up to s/n xxxx-1340
	21-03459	1	Female Elbow, 90° Steel 5/8 O-ring port x 1/2 NPT	from s/n xxxx-1341
46	10-14903	1	Manifold	up to s/n xxxx-1340
	27-14911	1	Connector	from s/n xxxx-1341
47	13-00314	4	Stud 3/8 -16 x 3/8 -24 x 1 -1/4"	-
48	15-00814	4	Wave Washer M10	-
49	14-05001	4	Hex Nut 3/8 -24 Stainless Steel	-
50	R41285	1	O-ring Connector 1/2 NPT	-
51	16-01000	1	O-ring	-
52	27-24904	1	Tube	-
53	16-24801	1	O-ring	-

\*For Turbo Mtg. upgrade use 11-34902, 31-34911, 13-34902 (for 700-800 Hp), 13-34903 (for 900 Hp), and 14-00506.

GROUP 2 - INTAKE AND EXHAUST

INTAKE AND TURBOCHARGER

Late Production

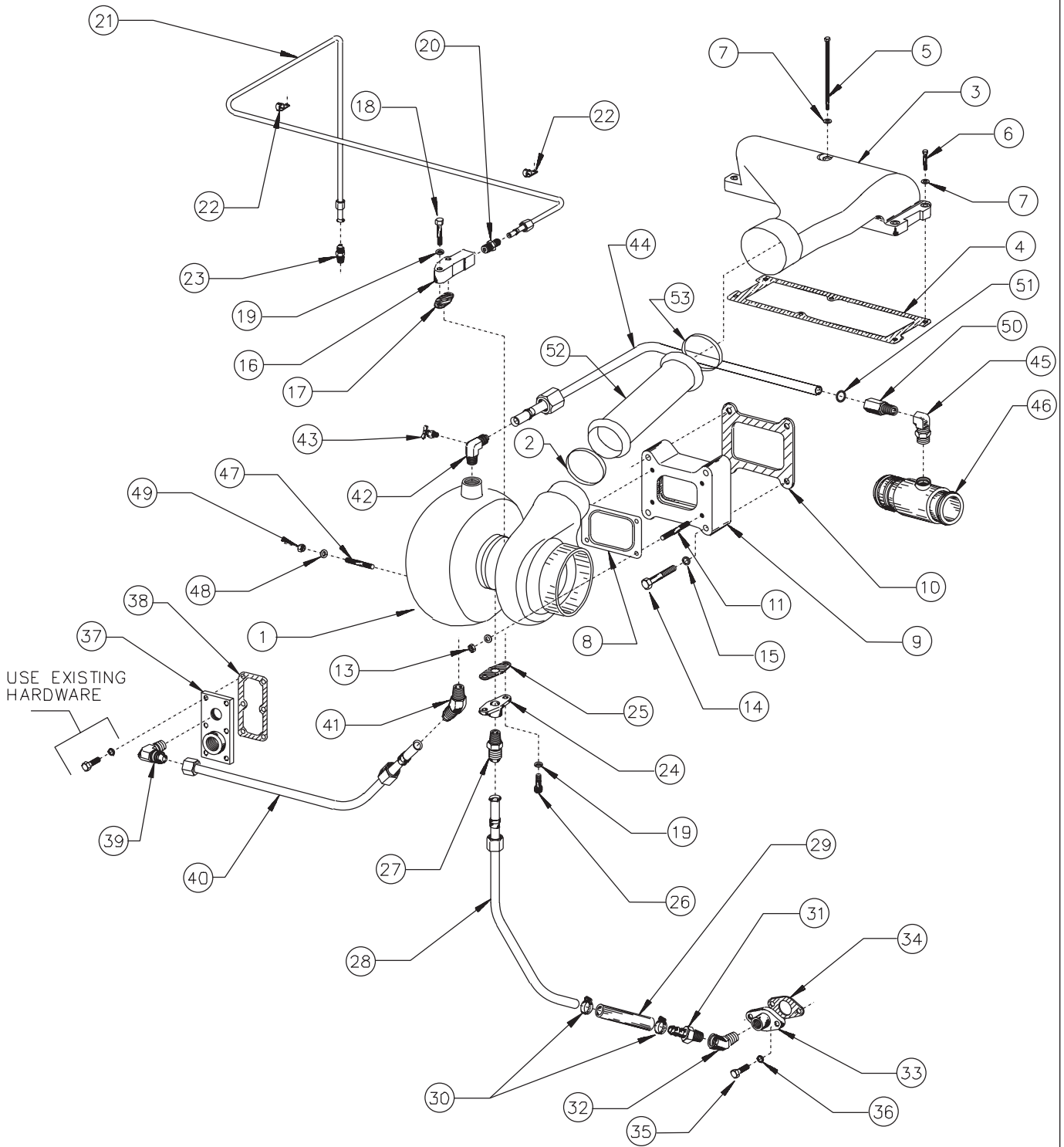


Fig. A-6013/ D-3626

## INTAKE AND TURBOCHARGER

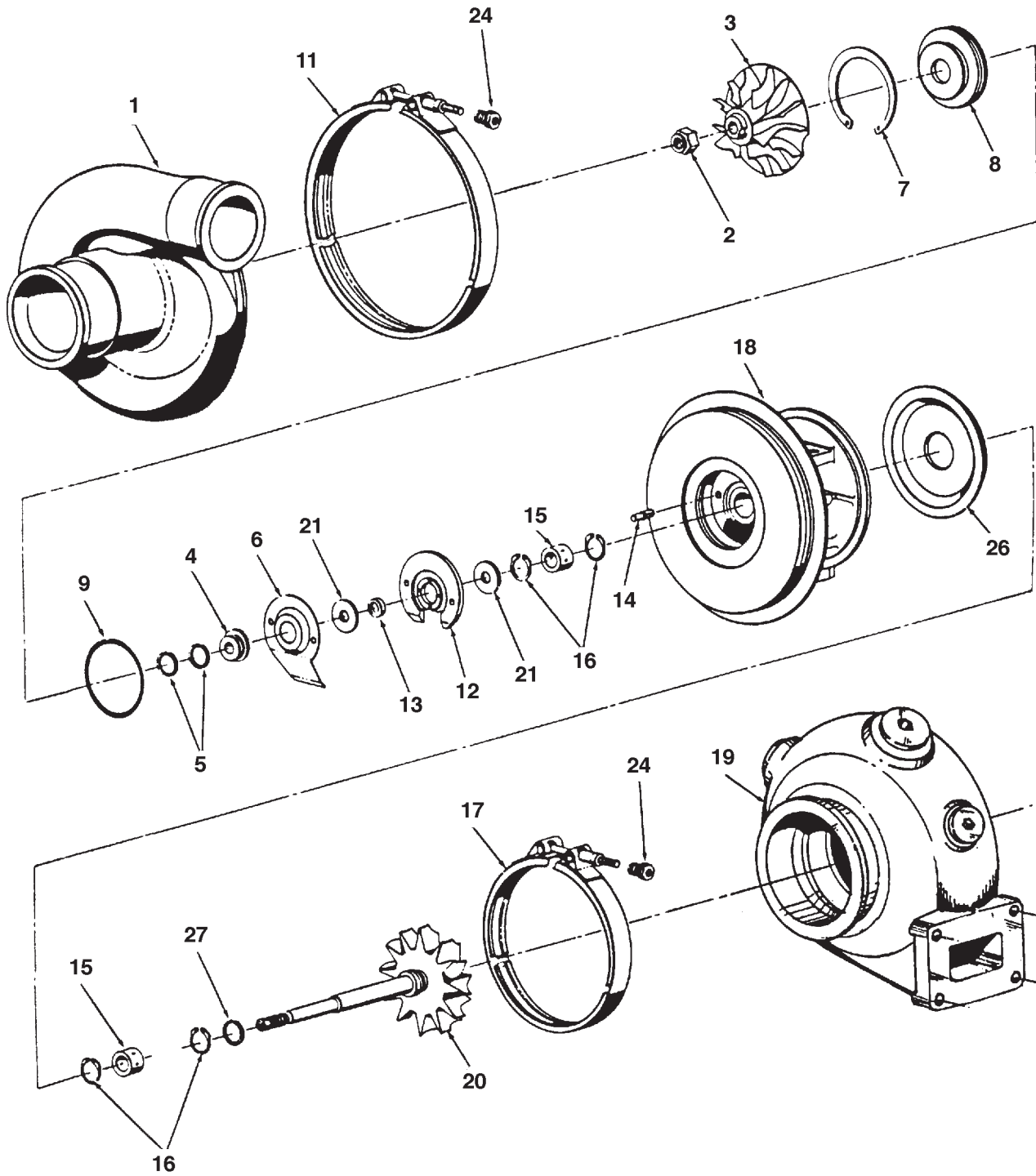
*Late Production*

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	30-34901	1	Turbocharger	-
2	16-25002	1	O-ring	-
3	10-24904	1	Connector	-
4	6162-13-4741	1	Gasket	-
5	12-00729	1	Capscrew, Hex Head M8 x 1.25 x 150 mm	-
6	12-00713	5	Capscrew, Hex Head M8 x 1.25 x 35 mm	-
7	15-00701	6	Flat Washer M8	-
8	11-34902	1	Gasket	-
9	31-34911	1	Adapter, Turbo Mounting	-
10	6162-83-2870	1	Gasket	-
11	13-34902	4	Stud 1/2 -13 x 1/2 -20 x 1.855"	-
13	14-00506	4	Lock Nut, 12 Pt Flanged	-
14	12-00956	3	Capscrew, Hex Head M12 x 1.75 x 65 mm	-
	12-00953	1	Capscrew, Hex Head M12 x 1.75 x 30 mm	-
15	15-00912	4	Lock Washer, Helical M12	-
16	31-31047	1	Adapter, Turbo Oil Inlet	-
17	11-31014	1	Gasket	-
18	12-00315	2	Capscrew, Hex Head 3/8 -16 x 1 -3/4"	-
19	15-00302	4	Lock Washer, Helical 3/8	-
20	21-52800	1	Male Connector 3/8 NPT x 3/8 -37T	-
21	27-34903	1	Tube Assembly, Turbo Oil Supply	-
22	19-72252	2	Adelle Clamp 3/8" ID x 3/8" Stud	-
23	21-00612	1	Male Connector, Brass 1/4 NPT x 3/8 -37T	-
24	31-74800	1	Adapter, Turbo Oil Return	-
25	11-31013	1	Gasket	-
26	12-20312	2	Capscrew, Socket Head 3/8 -16 x 1"	-
27	21-35002	1	Male Connector 1/2 NPT x 3/4 -37T	-
28	27-34902	1	Tube Assembly, Turbo Oil Return	-
29	18-11011	1	Hose 3/4" ID x 4 -1/2"	-
30	19-00010	2	Hose Clamp #10	-
31	21-00129	1	Male Connector 1/2 NPT x 3/4 HB	-
32	21-03359	1	Elbow 45°, 1/2 NPT x 1/2 NPT	-
33	31-34904	1	Adapter, Turbo Oil Return	-
34	6127-51-6822	1	Gasket	-
35	12-00831	2	Capscrew, Hex Head M10 x 1.5 x 25 mm	-
36	15-00802	2	Lock Washer, Helical M10	-
37	31-34906	1	Adapter, Turbo Coolant Supply	-
38	6162-63-6731	1	Gasket	-
39	21-64801	1	Male Elbow 90°, Steel 3/4 NPT x 3/4 -37T	-
40	27-14901	1	Tube Assembly, Turbo Coolant Supply	-
41	21-14806	1	Male Elbow 45°, Steel 3/4 NPT x 3/4 -37T	-
42	21-15001	1	Male Elbow 90°, Steel 3/4 NPT x 3/4 -37T, tapped 1/8 NPT	-
43	21-10001	1	Drain Cock, Brass 1/8 NPT	-
44	27-14902	1	Tube Assembly, Turbo Coolant Return	-
45	21-03459	1	Female Elbow 90°, Steel 5/8 O-ring port x 1/2 NPT	from s/n xxxx-1341
46	27-14911	1	Connector	from s/n xxxx-1341
47	13-00314	4	Stud 3/8 -16 x 3/8 -24 x 1"	-
48	15-00804	4	Wave Washer M10	-
49	14-05001	4	Hex Nut 3/8 -24 Stainless Steel	-
50	R41285	1	O-ring Adapter 1/2 NPT	-
51	16-01000	1	O-ring	-
52	27-24904	1	Tube, Air Inlet	-
53	16-24801	1	O-ring	-

GROUP 2 - INTAKE AND EXHAUST

TURBOCHARGER ASSEMBLY

L6170 up to 800 Hp



## TURBOCHARGER ASSEMBLY

L6170 up to 800 Hp

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	30-34901	1	Turbocharger (includes all keys)	-
•	30-04906	1	Cartridge Assembly (includes keys 2-9, 12-16, 18, 20, 21, 26 & 27)	-
1	30-04901	1	Compressor Cover	-
2	30-05002	1	Lock Nut (formerly #30-00021)	-
3	30-04902	1	Compressor Wheel	-
4	30-00001	1	Flinger Sleeve	-
5	30-00002	1	Piston Ring	-
6	30-00003	1	Oil Deflector	-
7	30-00004	1	Snap Ring	-
8	30-00022	1	Compressor Insert	-
9	30-00006	1	O-ring	-
11	30-00007	1	V-Clamp	-
12	30-04907	1	Thrust Bearing Assembly	-
13	30-00008	1	Spacer Sleeve	-
14	30-00009	1	Pin	-
15	30-00010	2	Bearing	-
16	30-00011	4	Snap Ring	-
17	30-00012	1	V-Clamp	-
18	30-04903	1	Bearing Housing Assembly	-
19	30-04904	1	Turbine Housing Assembly	-
20	30-04807	1	Shaft and Turbine Wheel Assembly (formerly #30-04908)	-
21	30-00014	2	Thrust Ring	-
22	30-05007	1	Self Tapping Screw*	-
23	30-00015	1	Name Plate*	-
24	30-00016	2	Clamp Nut	-
26	30-00017	1	Turbine Backplate	-
27	30-00018	1	Piston Ring	-
28	30-05008	4	Plug*	-
29	30-00019	5	Plug*	-
30	17-10054	4	Expansion Plug 1-1/4"	-

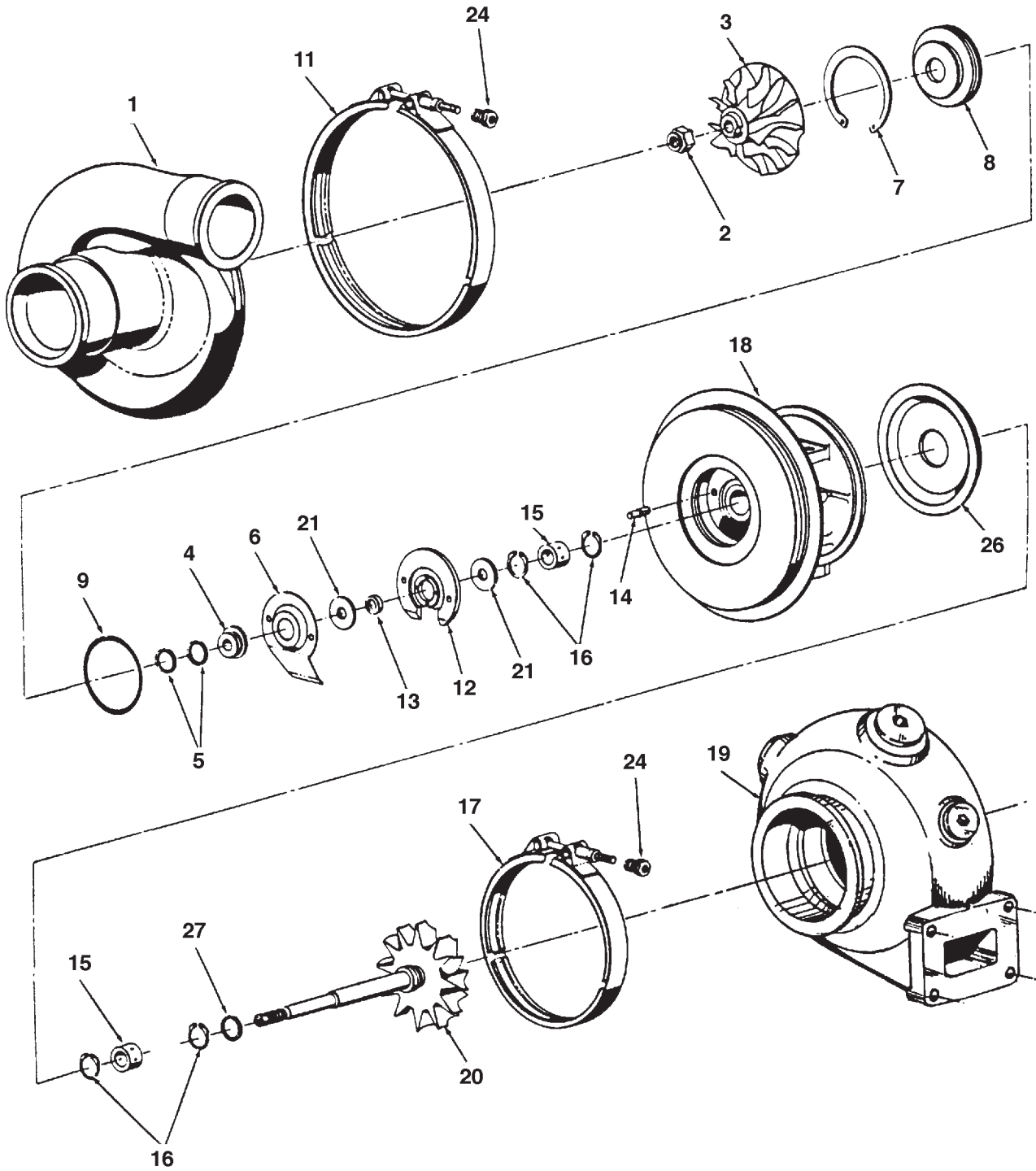
\*Not shown

**Note:** Repair kit 30-00025

GROUP 2 - INTAKE AND EXHAUST

TURBOCHARGER ASSEMBLY

L6170 up to 900 Hp



## TURBOCHARGER ASSEMBLY

L6170 up to 900 Hp

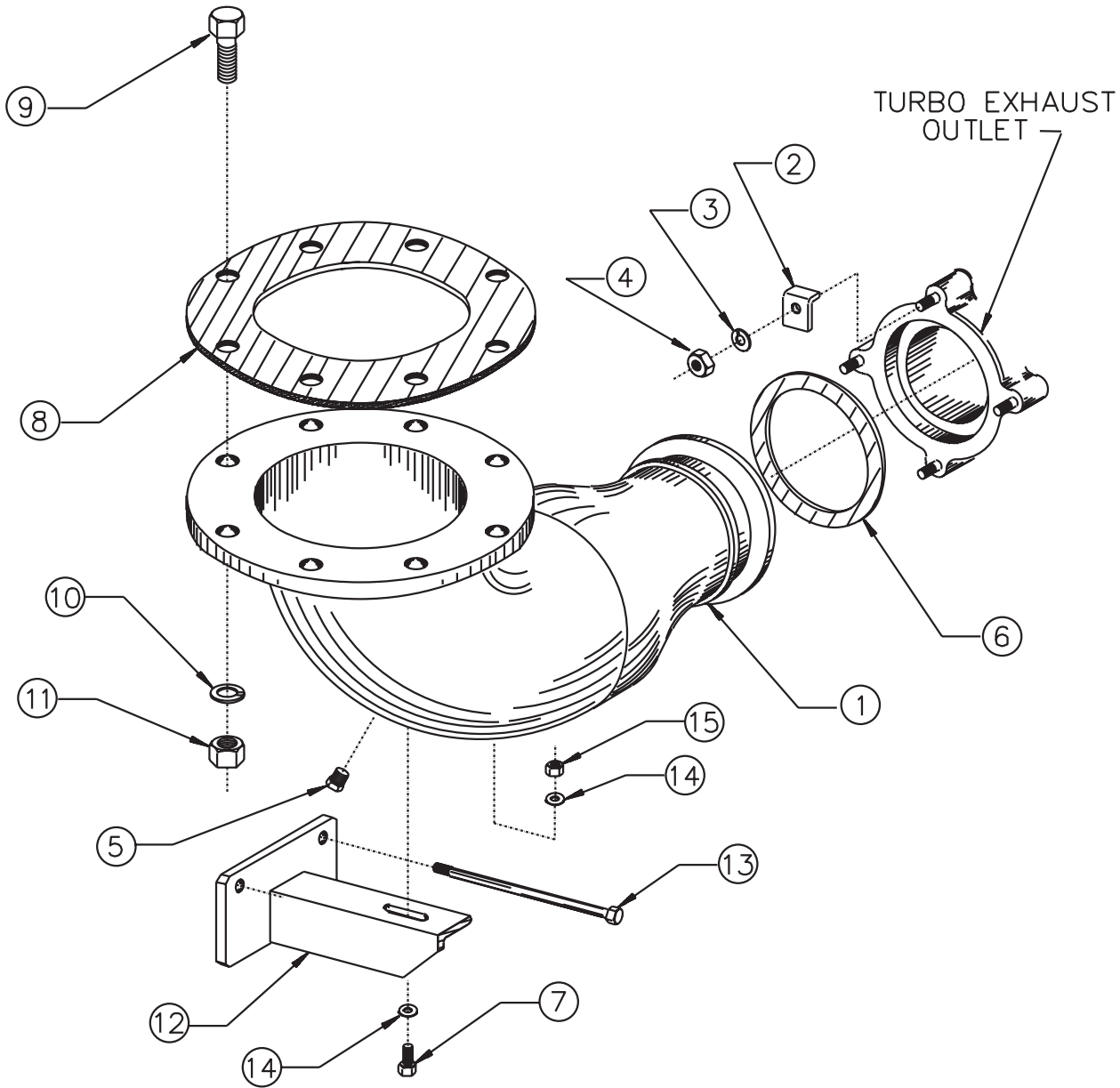
KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	30-34902	1	Turbocharger (includes all keys)	-
•	30-04909	1	Cartridge Assembly (includes keys 2-9, 12-16, 18, 20, 21, 26 & 27)	-
•	30-04915	1	Repair Kit (includes keys 2,5, 9, 10, 12, 15, 16, 21, 24, 25, & 27)	-
1	30-04911	1	Compressor Cover	-
2	30-05002	1	Lock Nut	-
3	30-04913	1	Compressor Wheel	-
4		1	Flinger Sleeve*	-
5	30-05026	2	Piston Ring	-
6		1	Oil Deflector*	-
7		1	Snap Ring*	-
8		1	Compressor Insert*	-
9	30-05015	1	O-ring	-
10	30-05010	2	Speed Control Washer (not shown)	-
11		1	V-Clamp*	-
12	30-04918	1	Thrust Bearing Assembly	-
13		1	Spacer Sleeve*	-
14		1	Pin*	-
15	30-05018	2	Bearing	-
16	30-05019	4	Snap Ring	-
17		1	V-Clamp*	-
18	30-04914	1	Bearing Housing Assembly	-
19	30-04917	1	Turbine Housing Assembly	-
20	30-04916	1	Shaft and Turbine Wheel Assembly (formerly #30-04908)	-
21	30-00014	2	Thrust Ring	-
22		1	Self Tapping Screw (not shown)*	-
23		1	Name Plate (not shown)*	-
24	30-04919	2	Clamp Nut	-
25	30-04921	1	O-ring (not shown)	-
26		1	Turbine Backplate*	-
27	30-05719	1	Piston Ring	-

\*Not currently available

**Note:** Repair kit 30-00025

GROUP 2 - INTAKE AND EXHAUST

DRY EXHAUST ELBOW



A-6008/ C-2987

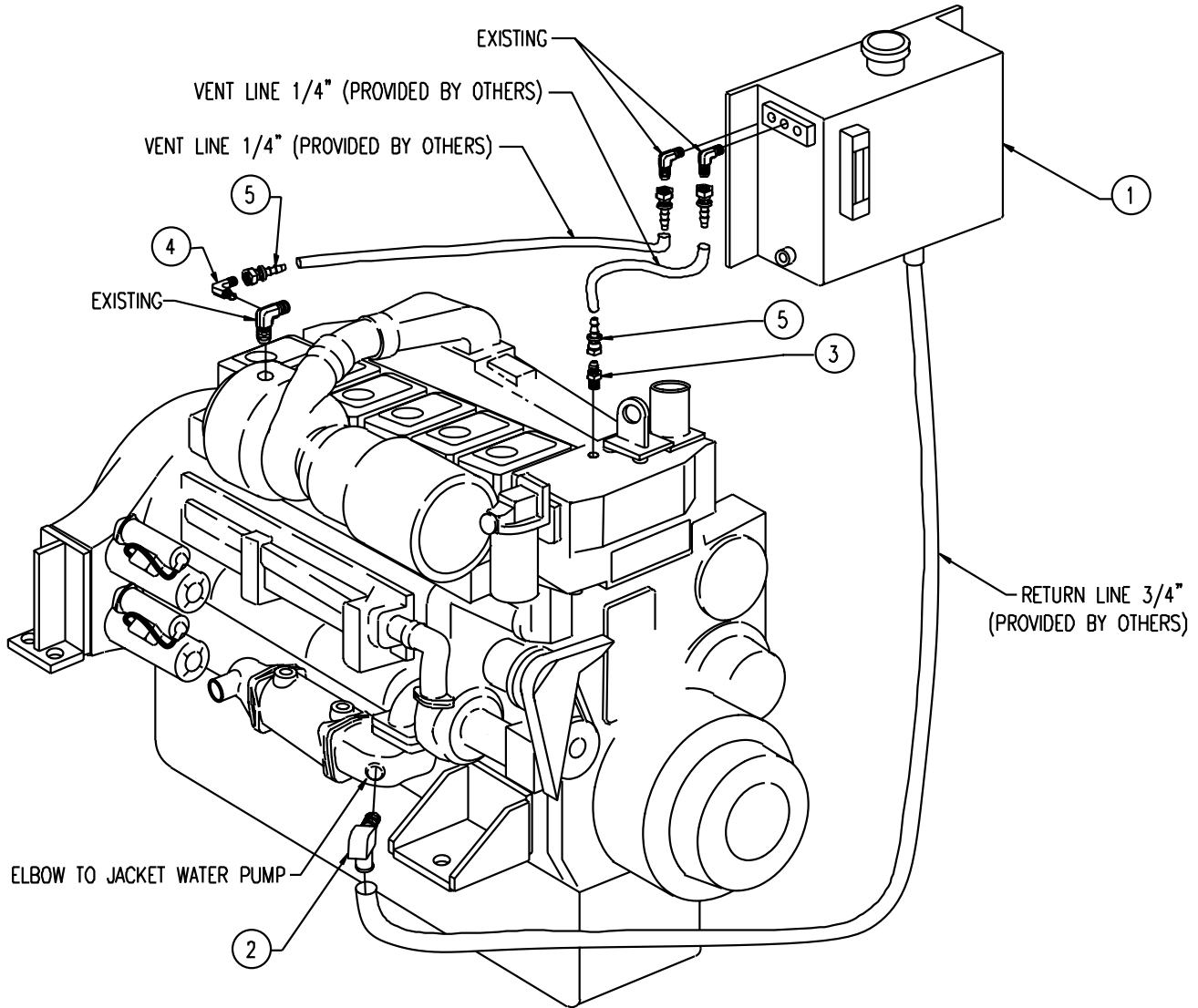
KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	27-34901	1	Dry Exhaust Elbow 8"	-
2	00-30005	4	Clip	-
3	15-00302	4	Lock Washer, Helical 3/8	-
4	14-00321	4	Hex Nut 3/8-24	-
5	21-31624	1	Plug, Brass 1/4 NPT	-
6	11-34808	1	Gasket	-
7	12-00712	1	Capscrew, Hex Head M8 x 1.25 x 25 mm	-
8	11-34901	1	Gasket	-
9	12-01216	8	Capscrew, Hex Head 3/4-10 x 2"	-
10	15-01202	8	Lock Washer, Helical 3/4	-
11	14-01211	8	Hex Nut 3/4-10	-
12	23-34901	1	Bracket	-
13	12-00935	2	Capscrew, Hex Head M12 x 1.75 x 180 mm	-
14	15-00701	2	Flat Washer M8	-
15	14-04802	1	Hex Nut, Nylock M8 x 1.25 mm	-





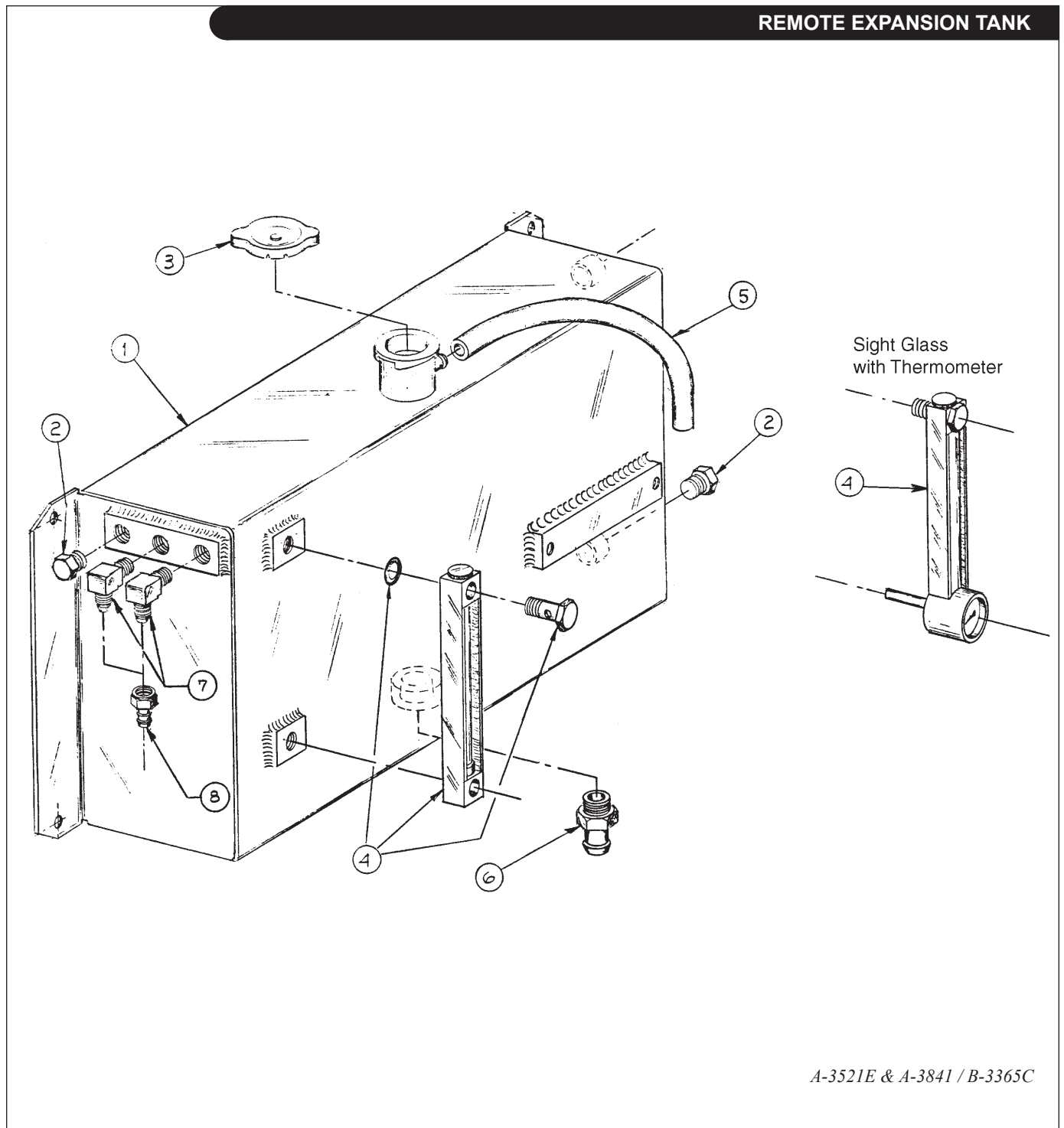
GROUP 3 - COOLING SYSTEM

REMOTE EXPANSION TANK



A-7671/ B-5149

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	10-15002	1	Remote Expansion Tank Assembly (see assembly detail, next page)	-
2	21-31902	1	Male Elbow 90° Brass, 1/2 NPT x 3/4 HB	-
3	21-74406	1	Male Connector Steel, 1/4 NPT x 1/4-37T	-
4	21-71053	1	Male Elbow 90° Steel, 1/8 NPT x 1/4-37T	-
5	21-80002	2	Female Swivel Steel 1/4 HB x 1/4-37T	-

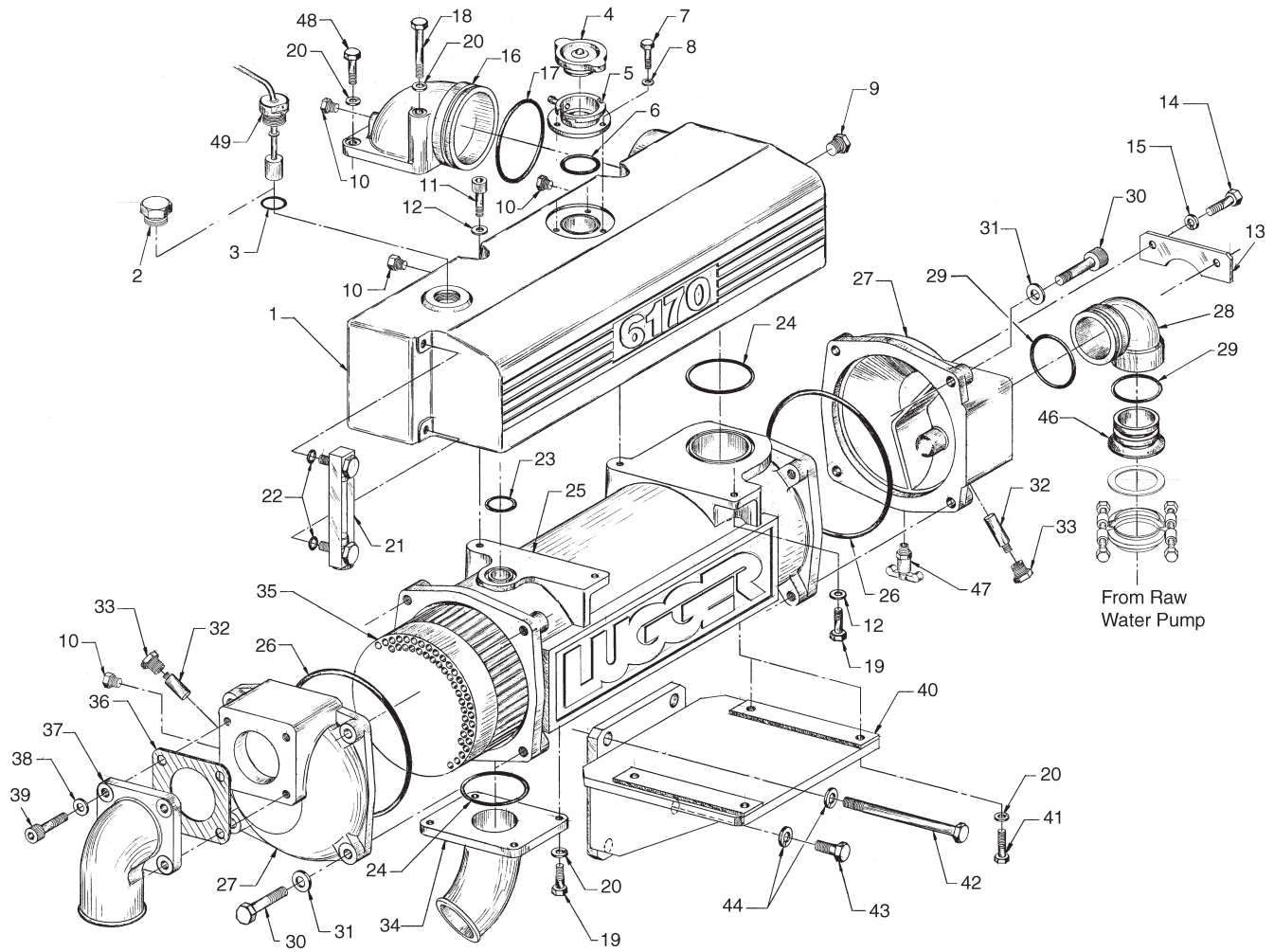


A-3521E & A-3841 / B-3365C

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	10-15002	1	Remote Expansion Tank Assembly (includes all keys)	-
2	21-31624	3	Plug, Hex Head Brass 1/4 NPT	-
3	21-12007	1	Filler Cap 7 lb.	-
4	37-75001	1	Sight Glass (w/ Banjo Bolts and O-rings)	-
	37-75002	1	Thermometer Sight Glass (w/ Banjo Bolts and O-rings)	-
5	18-00130	1	Hose 1/4" ID x 30"	-
6	21-00129	1	Connector 1/2 NPT x 3/4 HB	-
7	21-71044	2	Male Elbow 900 1/4 NPT x 1/4 -45T	-
8	21-71045	2	Female Swivel 1/4 HB x 1/4 -45T	-

GROUP 3 - COOLING SYSTEM

EXPANSION TANK AND HEAT EXCHANGER



A-6090/ D-2370

## EXPANSION TANK AND HEAT EXCHANGER

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	10-14902	1	Expansion tank	-
2	21-14903	1	Plug, Hex Head, Brass M36 x 1.5	-
3	07002-33634	1	O-ring	-
4	21-10007	1	Filler Cap 7 lbs PSI	-
5	10-14811	1	Filler Neck	-
6	16-00003	1	O-ring	-
7	12-00711	3	Capscrew, Hex Head M8 x 1.25 x 20 mm	-
8	15-00702	3	Lock Washer, Helical M8	-
9	21-00530	1	Plug, Hex Head, Brass 1/2 NPT	-
10	21-31624	4	Plug, Hex Head, Brass 1/4 NPT	-
11	12-34802	2	Capscrew, Socket Head M10 x 1.5 x 30 mm	-
12	15-00300	4	Flat Washer (special)	-
13	28-14901	1	Locking Bar	-
14	12-00911	2	Capscrew, Hex Head M12 x 1.75 x 20 mm	-
15	15-00912	2	Lock washer, Helical M12	-
16	27-14903	1	Elbow	-
17	16-25701	1	O-ring	-
18	01011-51085	2	Capscrew, Hex Head M10 x 1.5 x 185 mm	-
19	12-00832	6	Capscrew, Hex Head M10 x 1.5 x 30 mm	-
20	15-00802	12	Lock Washer, Helical M10	-
21	37-74901	1	Sight Glass 5" (includes key 22)	-
22	16-15005	2	O-ring	-
23	16-00003	1	O-ring	-
24	16-14904	2	O-ring	-
25	10-14901	1	Heat Exchanger Housing	-
26	16-14903	2	O-ring	-
27	20-14905	2	End Cover	-
28	27-14907	1	Elbow	-
29	16-14905	2	O-ring	-
30	12-09504	8	Capscrew, Hex Head M16 x 2.0 x 60 mm Stainless Steel	-
31	01643-31645	8	Flat Washer M16	-
32	21-10010	2	Zinc Electrode	-
33	21-10000	2	Zinc Plug, Brass 1/2 NPT x 7/16-14	-
34	20-14906	1	Connector	-
35	20-14903	1	Element	-
36	11-14902	1	Gasket	-
37	20-14907	1	Connector	-
38	15-00007	4	Flat Washer M12	-
39	12-20913	4	Capscrew, Socket Head M12 x 1.75 x 30 mm	-
40	23-14901	1	Bracket	-
41	12-00814	4	Capscrew, Hex Head M10 x 1.5 x 35 mm	-
42	01011-31445	3	Capscrew, Hex Head M14 x 2.0 x 145 mm	-
43	01010-51445	1	Capscrew, Hex Head M14 x 2.0 x 45 mm	-
44	15-01402	4	Lock Washer, Helical M14	-
45	18-13109	1	Hose 5/16" ID x 25" (not shown)	-
46	31-14902	1	Adapter	-
47	21-10002	1	Drain Cock, Brass 1/4 NPT	-
48	12-00052	2	Capscrew, Hex Head M10 x 1.5 x 110 mm	-
49	7700-85-8633	1	Coolant Level Switch (formerly #7700-85-8631)*	-

\*Optional

THERMOSTAT HOUSING

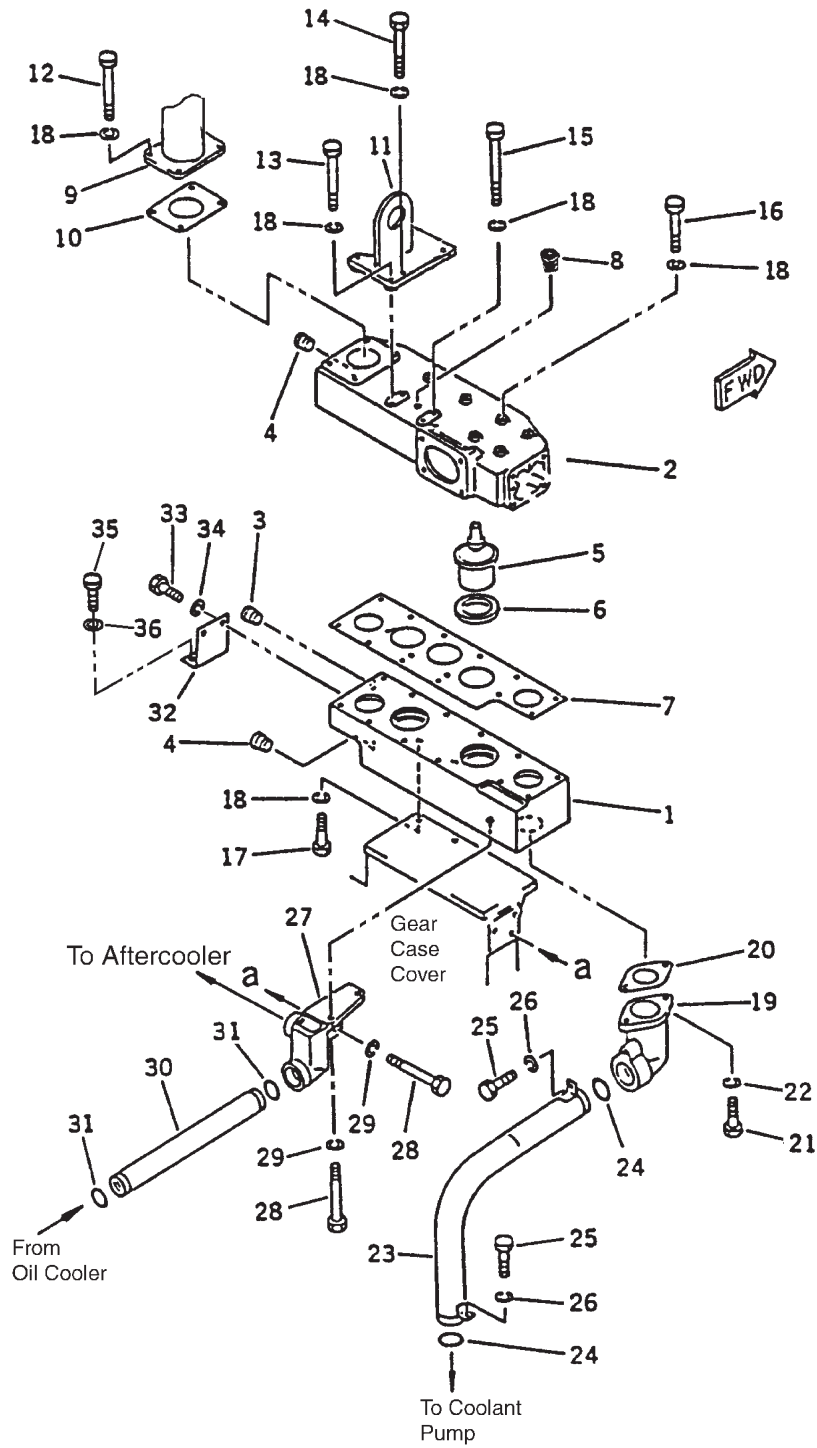


Fig. 1702

## THERMOSTAT HOUSING

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	6162-13-6411	1	Thermostat Housing	-
2	6162-13-6512	1	Cover	-
3	07043-70312	1	Plug	-
4	07043-70211	2	Plug	-
5	600-421-6630	2	Thermostat 170°F/ 76.5°C, 700 & 800 Hp	-
	600-421-6650	2	Thermostat 149°F/ 65°C, 900 Hp	-
6	6162-13-6440	2	Seal	-
7	6162-13-6430	1	Gasket	-
8	02720-10204	1	Plug	-
9	27-14903	1	Elbow, Coolant Outlet (see Expansion Tank & Heat Exchanger detail)	-
	27-14908	1	Tube, Coolant Outlet (see Keel Cooling Outlet detail)	-
10	6162-13-6480	1	Gasket	-
11	00-74902	1	Lifting Eye (Heat Exchanged)	-
	6164-61-7170	2	Capscrew, Hex Head M10 x 1.5 x 200 mm	-
	01011-81010	4	Capscrew, Hex Head M10 x 1.5 x 110 mm	-
	15-00802	6	Lock Washer M10	-
	6162-23-3340	1	Lifting Eye (Keel Cooled)	-
12	01011-81010	**	Bolt	-
13	01011-51020	4	Bolt	-
14	562-15-16410	1	Bolt	-
15	01011-51090	1	Bolt	-
16	01010-51095	6	Bolt	-
17	01010-51035	3	Bolt	-
18	01602-21030	17	Washer	-
19	6162-63-6510	1	Bypass elbow	-
20	195-03-14380	1	Gasket	-
21	01010-51030	2	Bolt	-
22	01643-31032	2	Washer	-
23	6162-63-6890	1	Tube	-
24	6162-63-6880	2	O-ring	-
25	01010-50816	2	Bolt	-
26	01602-20825	2	Lock Washer	-
27	6162-63-6470	1	Connector	-
28	01010-51030	5	Bolt	-
29	01602-21030	5	Washer	-
30	6162-63-6210	1	Tube (see Engine Oil Cooler detail)	-
31	07000-03038	2	O-ring	-
32	6162-23-6880	1	Plate	-
33	01010-51025	3	Bolt	-
34	01602-01030	3	Washer	-
35	01010-51025	1	Bolt	-
36	01602-21030	1	Washer	-
			**As required	

GROUP 3 - COOLING SYSTEM

COOLANT MANIFOLD

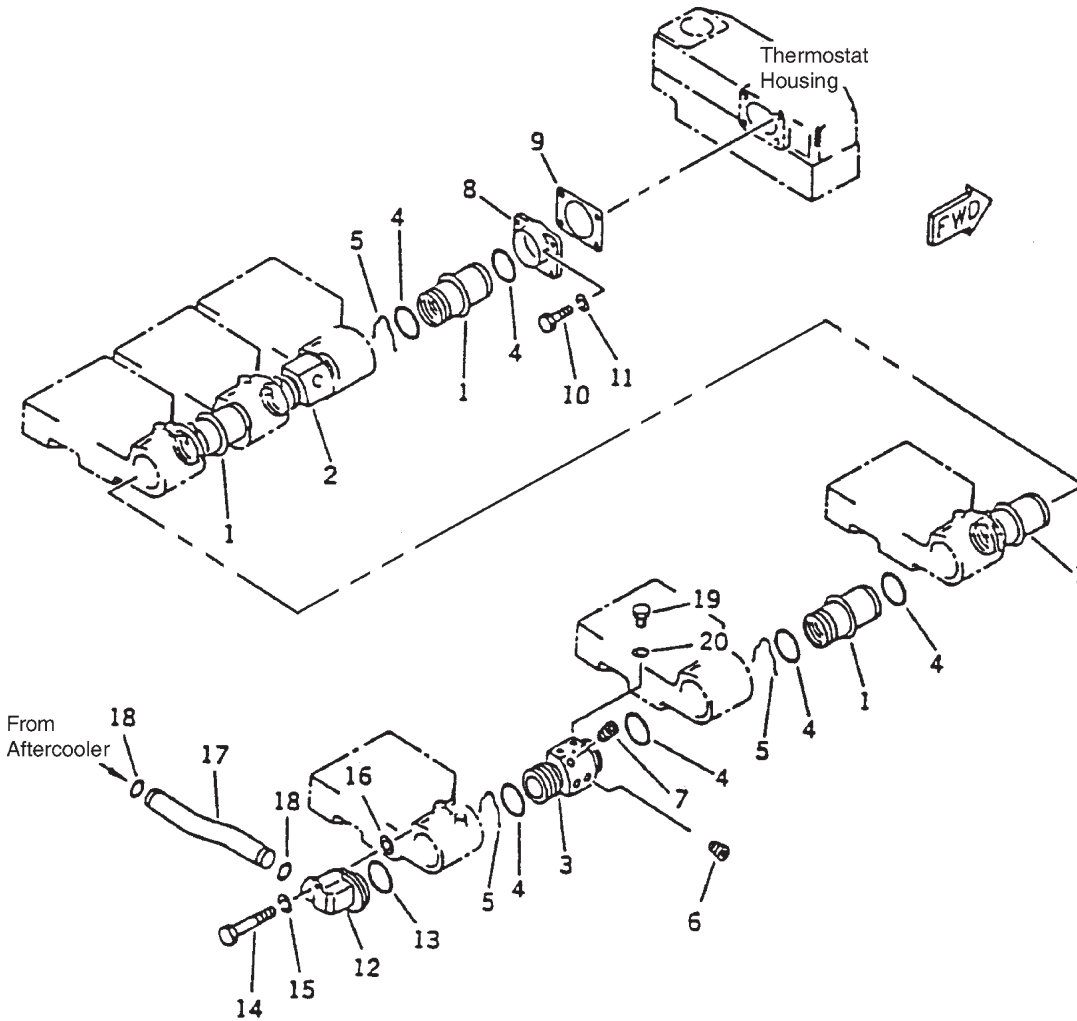


Fig. 1701

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	6162-13-6270	4	Tube	up to S/N xxxx-1340
	27-14911	1	Connector	from S/N xxxx-1341
2	10-14903	1	Coolant Manifold	up to S/N xxxx-1340
	6162-13-6370	1	Coolant Manifold	from S/N xxxx-1341
3	6162-13-6291	1	Coolant Manifold	-
4	6166-11-6290	12	O-ring	-
5	6162-13-6280	**	Snap Ring	-
6	07043-70312	2	Plug 1/2 BSPT	-
7	07043-70415	1	Plug	-
8	6162-13-6560	1	Connector	-
9	6162-13-6570	1	Gasket	-
10	01010-51025	4	Bolt	-
11	01602-21030	4	Washer	-
12	6162-63-6250	1	Connector	-
13	07000-02070	1	O-ring	-
14	01010-51080	1	Bolt	-
15	01602-21030	1	Washer	-
16	01641-21016	1	Washer	-
17	6162-63-6390	1	Tube	-
18	07000-03038	2	O-ring	-
19	07040-11612	**	Plug M16 x 1.5	-
20	07005-01612	2	Gasket	-
			**As required	



CORROSION RESISTOR

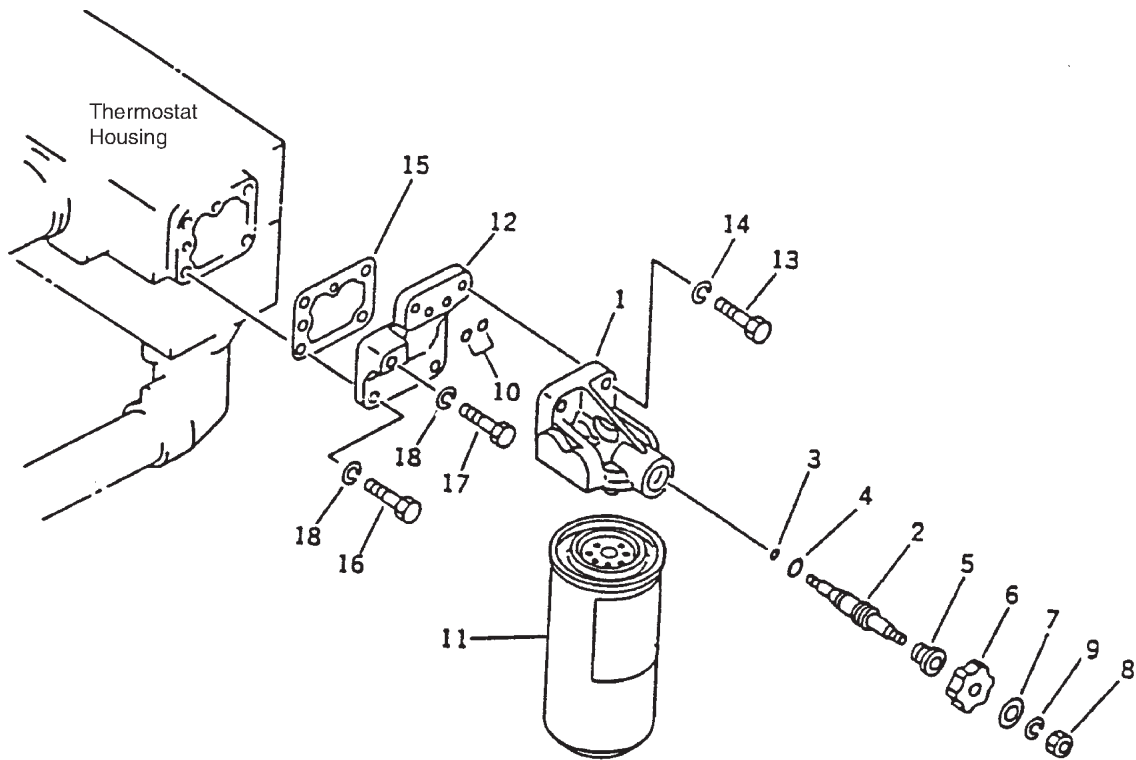


Fig. 5201

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	600-411-1850	1	Corrosion Resistor Assembly (includes keys 1-11)	-
•	600-411-1211	1	Head Assembly (includes keys 1-9)	-
1	600-411-1221	1	Head	-
2	600-411-1231	1	Valve	-
3	07000-01006	1	O-ring	-
4	07000-02014	1	O-ring	-
5	600-411-1250	1	Cover	-
6	600-411-1240	1	Handle	-
7	600-411-1260	1	Plate	-
8	01582-11210	1	Nut	-
9	01602-21236	1	Washer	-
10	600-411-1270	2	O-ring	-
11	24-15001	1	Element	-
12	6162-63-8120	1	Bracket	-
13	01010-51040	2	Bolt	-
14	01602-21030	2	Washer	-
15	6162-63-8130	1	Gasket	-
16	01010-51030	3	Bolt	-
17	01010-51055	1	Bolt	-
18	01602-21030	4	Washer	-

COOLANT PUMP AND ACCESSORY DRIVE

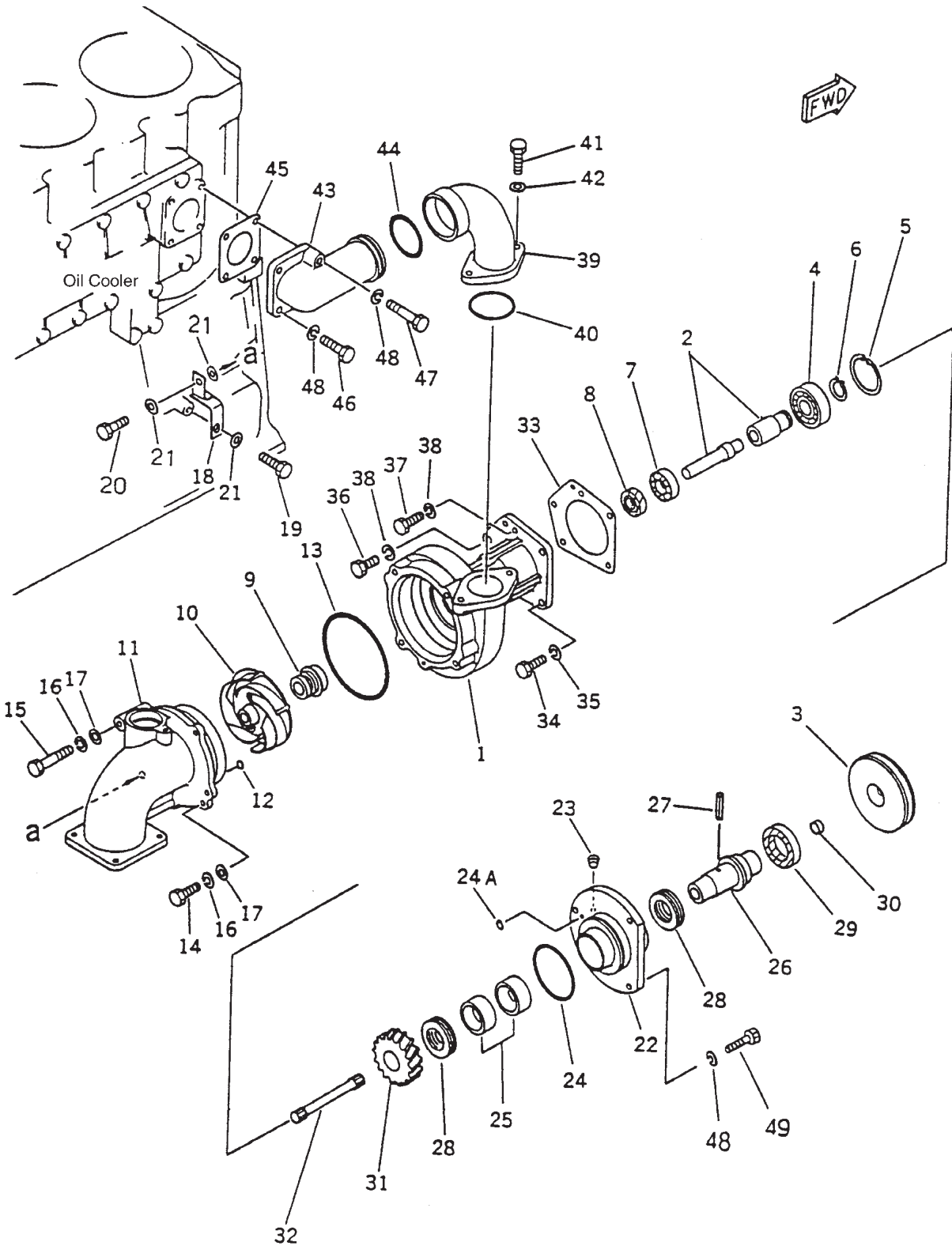


Fig. 5001

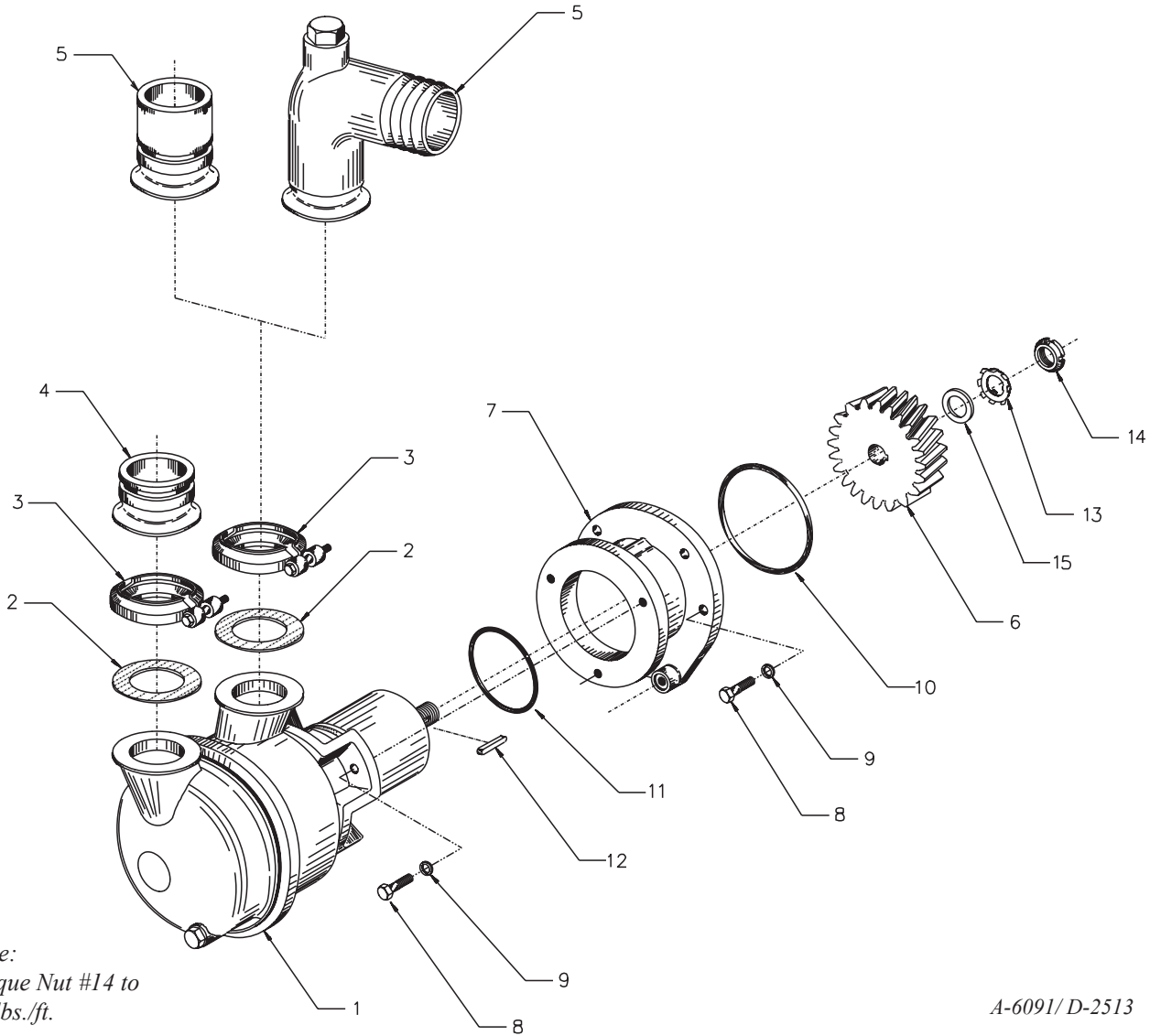
## COOLANT PUMP AND ACCESSORY DRIVE

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	6162-63-1015	1	Coolant Pump Assembly (includes keys 1-17)	-
1		1	Housing *	-
2	6162-63-1301	1	Shaft assembly	-
3	6162-83-1280	1	Pulley	-
4	06000-06306	1	Bearing	-
5	6162-63-1440	1	Snap ring	-
6	6162-63-1340	1	Snap ring	-
7	06000-06205	1	Bearing	-
8	6162-63-1570	1	Oil seal	-
9	6162-63-1514	1	Coolant seal	-
10	6162-63-1353	1	Impeller	-
11	6162-63-1180	1	Inlet housing	-
12	07000-62012	1	O-ring	-
13	07000-05145	1	O-ring	-
14	01010-81030	3	Bolt	-
15	01010-81080	1	Bolt	-
16	01602-01030	4	Washer	-
17	01640-01016	4	Washer	-
18	6162-63-1531	1	Bracket	-
19	01010-81025	1	Bolt	-
20	01010-81035	1	Bolt	-
21	01640-21016	3	Washer	-
22	6162-63-1710	1	Housing	-
23	07043-00108	2	Plug	-
24	07000-62095	1	O-ring	-
24A	07000-01009	1	O-ring	-
25	6127-31-6221	2	Bushing	-
26	6162-63-1621	1	Shaft	-
27	04025-00524	1	Spring pin	-
28	6127-31-6261	2	Thrust bearing	-
29	6162-63-1691	1	Oil seal	-
30	6162-63-1660	1	Plug	-
31	6162-63-1610	1	Gear	-
32	6162-63-1630	1	Shaft	-
33	6162-63-1811	1	Gasket	-
34	01010-81270	2	Bolt	-
35	01602-01236	2	Washer	-
36	01010-81030	2	Bolt	-
37	01010-81075	1	Bolt	-
38	01602-01030	3	Washer	-
39	6162-63-6560	1	Elbow	-
40	07000-02075	1	O-ring	-
41	01010-51235	2	Bolt	-
42	01602-21236	2	Washer	-
43	6162-63-6570	1	Connector	-
44	07000-02070	1	O-ring	-
45	6162-63-2160	1	Gasket	-
46	01010-81035	2	Bolt	-
47	01011-81020	2	Bolt	-
48	01602-21030	4	Washer	-
49	01010-81030	3	Bolt	-
50	01602-21030	3	Washer	-

\*Not available separately

**GROUP 3 - COOLING SYSTEM**

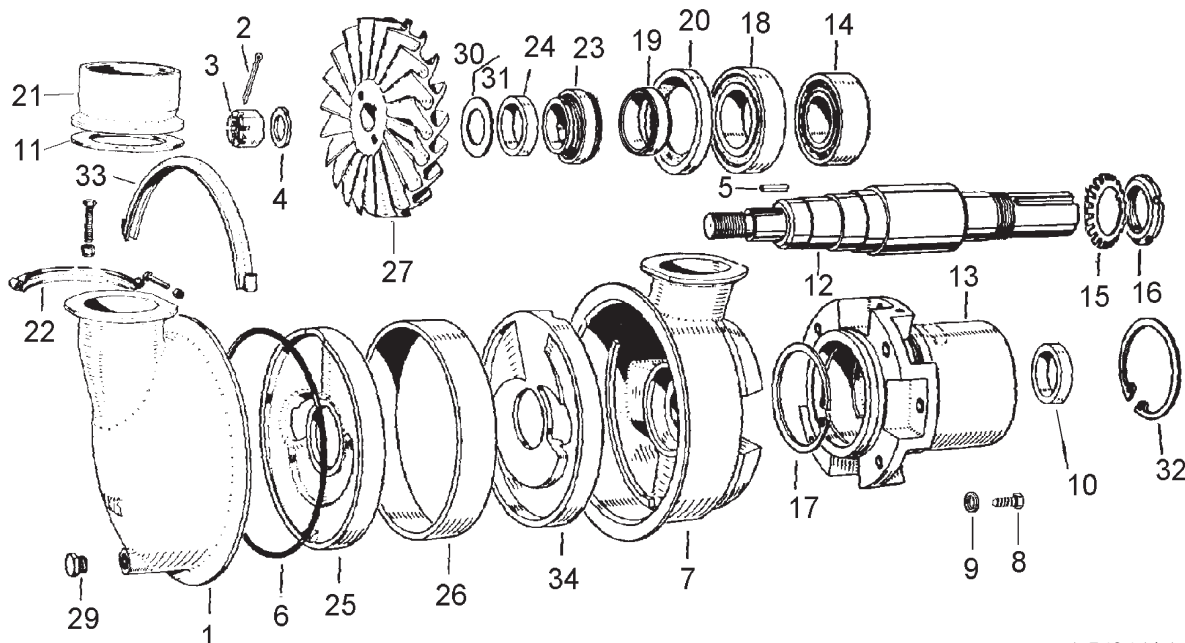
**RAW WATER PUMP**



A-6091/D-2513

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	25-14936	1	Raw Water Pump Assembly (includes keys #1, 6-9, & 11-15)	-
1	25-14901	1	Raw Water Pump (see parts detail, not available separately)	-
2	11-14901	2	Gasket	-
3	19-14901	2	V-Clamp	-
4	31-14902	1	Adapter	-
5	31-14903	**	Adapter, 2" BSPP Female	-
	27-14905	**	Elbow	-
6	6162-63-7490	1	Gear	-
7	31-14901	1	Adapter	-
8	12-00712	9	Capscrew, Hex Head M8 x 1.25 x 25 mm	-
9	15-00702	9	Lock Washer, Helical M8	-
10	16-14902	1	O-ring	-
11	16-00004	1	O-ring	-
12	32-14901	1	Key	-
13	25-14915	1	Tab Washer	-
14	25-14916	1	Lock Nut, M20 x 1.0	-
15	25-14934	1	Shim Washer	-
			**As required	

RAW WATER PUMP



A-7484A/ A-9720

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	25-14901	1	Raw Water Pump Assembly (includes keys 1-20 & 22-33)	-
•	25-14900	1	Spares Kit (includes keys 2, 6, 23, 24 & 30-32)	-
1	25-14911	1	Outer Housing	-
2	25-14902	1	Cotter Pin	-
3	25-14903	1	Castle Nut 5/8-18	-
4	25-14904	1	Flat Washer	-
5	25-14921	1	Key	-
6	25-14906	1	O-ring	-
7	25-14907	1	Inner Housing	-
8	25-14908	3	Capscrew, Hex Head 3/8-24 x 7/8"	-
9	15-00342	3	Lock Washer 3/8 Stainless Steel	-
10	25-14910	1	Spacer	-
11	25-14901	2	Gasket	-
12	25-14912	1	Shaft	-
13	25-14913	1	Bearing Housing	-
14	25-14914	1	Bearing	-
15	25-14915	1	Tab Washer	-
16	25-14916	1	Lock Nut	-
17	25-14917	1	Snap Ring	-
18	25-14918	1	Bearing	-
19	25-14919	1	Wear Sleeve	-
20	25-14920	1	Lip Seal	-
21	31-14902	1	Adapter, Pump Outlet	-
22	19-14901	2	V-clamp	-
23	25-14923	1	Mechanical Seal	-
24	25-14924	1	Spacer	-
25	26-14925	1	Port Plate	-
26	25-14926	1	Spacer	-
27	25-14922	1	Impeller (replaces Impeller #25-14927)	-
28	25-14928	2	Data Plate (not shown)	-
29	25-14929	1	Plug, Hex Head, Stainless 1/4 BSPT	-
30	25-14930	**	Shim 0.25 mm	-
31	25-14931	**	Shim 0.38 mm	-
32	25-14932	1	Snap Ring, Beveled	-
33	25-14933	1	V-clamp	-
34	25-14909	1	Port Plate (**As required)	-

LUBRICATING OIL COOLER

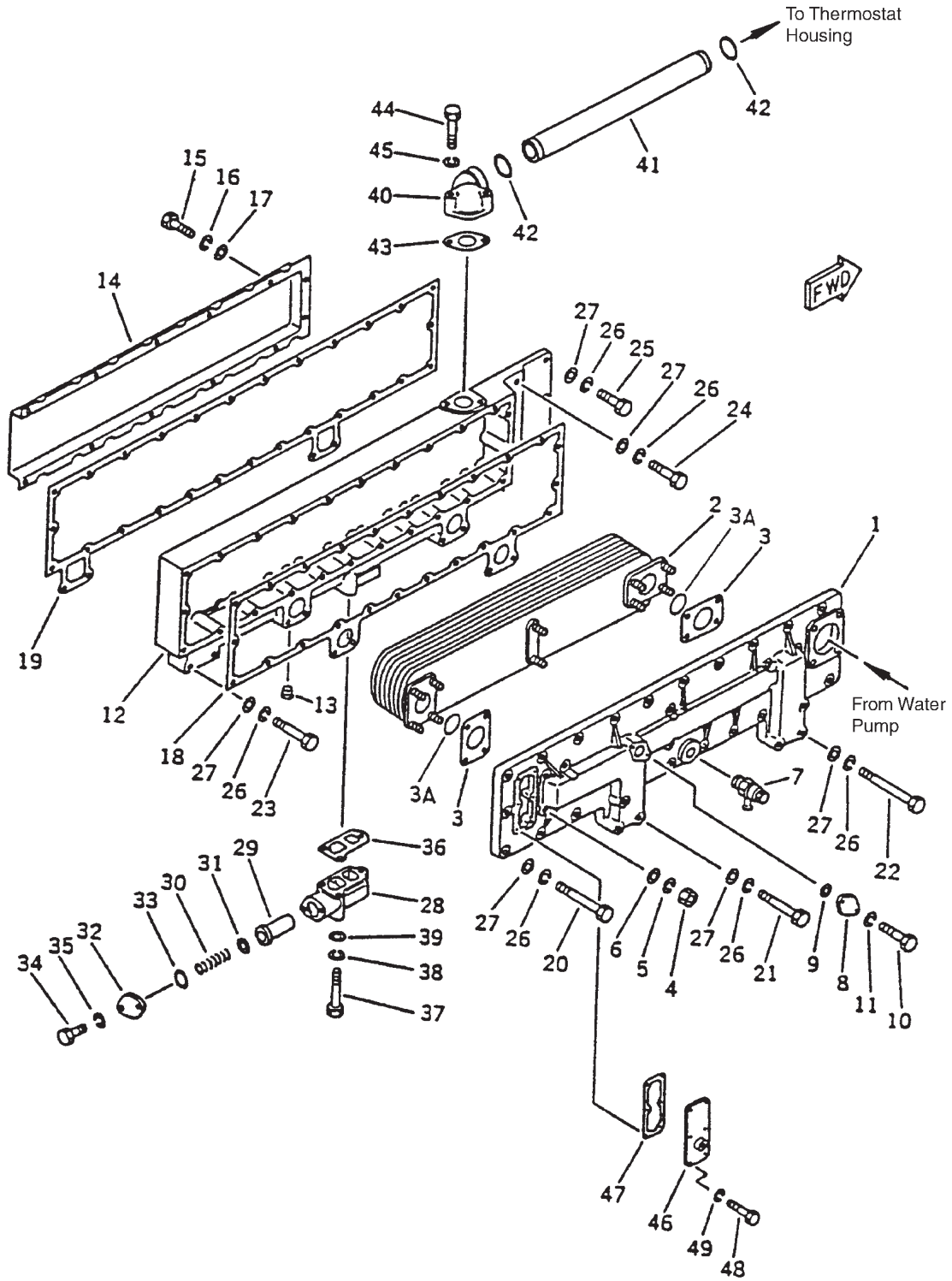


Fig. 3301

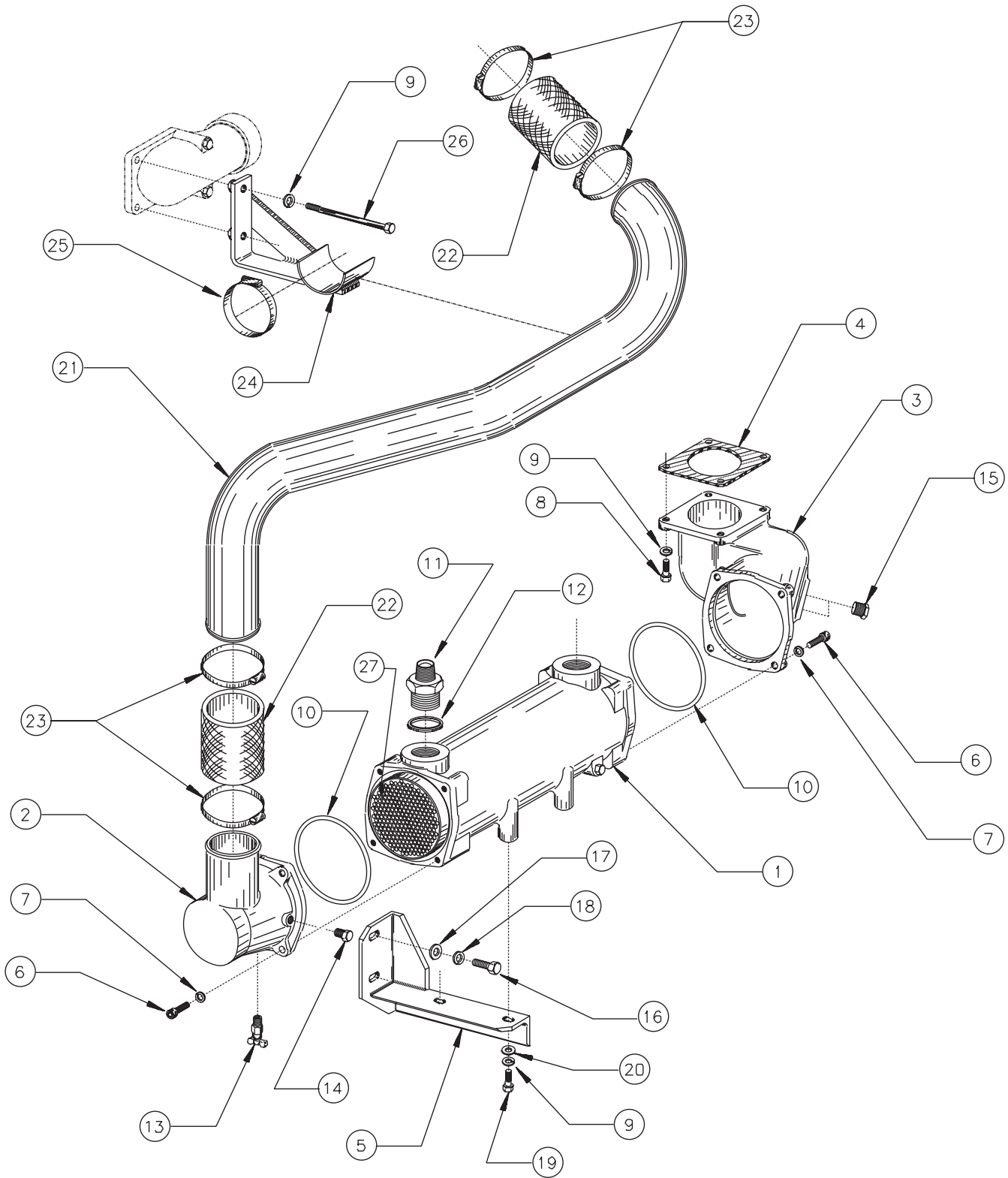
## LUBRICATING OIL COOLER

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	6162-63-2301	1	Lubricating Oil Cooler Assembly (includes keys 1-11)	-
1	6162-63-2311	1	Cover	-
2	600-651-1250	1	Element	-
3	6162-63-2280	2	Gasket	-
3A	6162-63-2290	2	O-ring	-
4	01580-01008	10	Nut	-
5	01602-01030	10	Lock Washer	-
6	01641-21016	10	Washer	-
7	6127-61-8411	1	Drain Cock	-
8	6127-61-2412	1	Cover	-
9	6127-61-2420	1	Gasket	-
10	01010-31020	2	Bolt	-
11	01602-21030	2	Lock Washer	-
12	6162-63-2711	1	Housing	-
13	02720-20607	1	Plug	-
14	6162-63-2120	1	Baffle Plate	-
15	01010-50616	12	Bolt	-
16	01602-20619	12	Lock Washer	-
17	01643-30623	12	Washer	-
18	6162-63-2140	1	Gasket	-
19	6162-63-2131	1	Gasket	-
20	01011-51005	20	Bolt	-
21	01010-51075	2	Bolt	-
22	01011-51030	4	Bolt	-
23	01010-51065	2	Bolt	-
24	01010-51040	2	Bolt	-
25	01010-51035	3	Bolt	-
26	01602-21030	33	Lock Washer	-
27	01640-21016	33	Washer	-
••	6162-63-5700	1	Bypass Valve Assembly (includes keys 28-35)	-
28	6162-63-5710	1	Housing	-
29	6162-63-5770	1	Plunger	-
30	6162-63-5750	1	Spring	-
31	6110-25-6340	1	Shim	-
32	6162-63-5730	1	Plug	-
33	07000-63030	1	O-ring	-
34	01010-50820	2	Bolt	-
35	01602-20825	2	Lock Washer	-
36	6162-63-5740	1	Gasket	-
37	01010-50865	3	Bolt	-
38	01602-20825	3	Lock Washer	-
39	01640-20816	3	Washer	-
40	6162-63-6490	1	Connector	-
41	6162-63-6210	1	Tube	-
42	07000-03038	2	O-ring	-
43	6128-11-6811	1	Gasket	-
44	01010-51065	2	Bolt	-
45	01602-21030	2	Lock Washer	-
46	31-34906	1	Plate	-
47	6162-63-6730	1	Gasket	-
48	01010-50825	6	Bolt	-
49	01602-20825	6	Lock Washer	-

GROUP 3 - COOLING SYSTEM

GEAR OIL COOLER

Heat Exchanged Units



A-6811/D-2589



## GEAR OIL COOLER

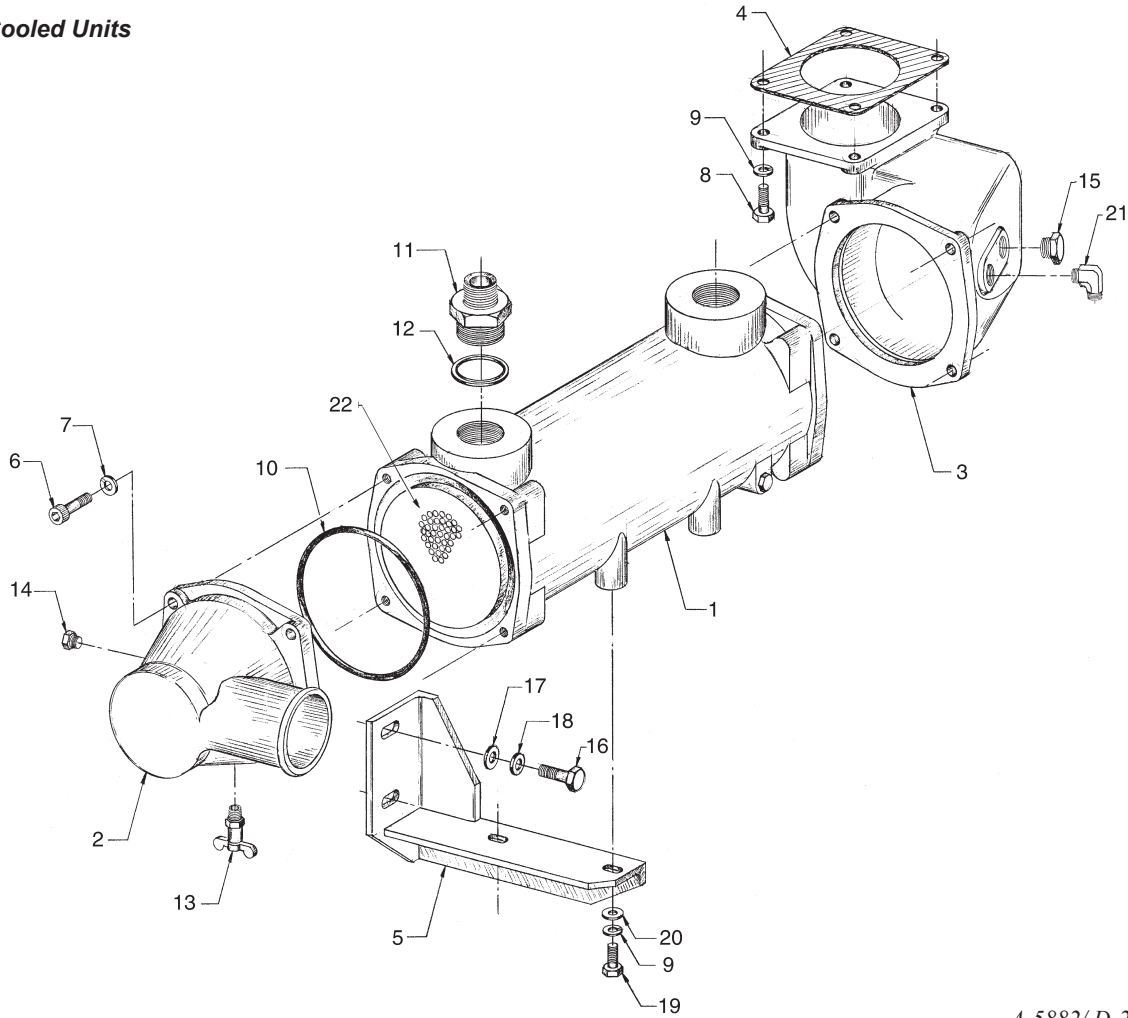
*Heat Exchanged Units*

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	20-64901	1	Gear Oil Cooler (includes keys 1, 10-12 & 27)	-
1	10-04901	1	Housing	-
2	20-14902	1	End Cap	-
3	20-14901	1	End Cap	-
4	195-03-41480	1	Gasket	-
5	23-74901	1	Bracket	-
6	12-34802	8	Capscrew, Socket Head M10 x 1.5 x 30 mm	-
7	15-00803	8	Lock Washer M10	-
8	12-00814	4	Capscrew, Hex Head M10 x 1.5 x 35 mm (formerly #12-00832)	-
9	15-00802	8	Lock Washer, Helical M10	-
10	16-14802	2	O-ring 5-3/4" ID x 1/4"	-
11	21-14901	2	Male Connector 1-1/2 BSPP x 1" NPSM	-
12	21-14902	2	Sealing Washer 1-1/2 BSP	-
13	21-10002	1	Drain Cock, Brass 1/4 NPT	-
14	21-31624	1	Plug, Hex Head, Brass 1/4 NPT	-
15	21-00530	2	Plug, Hex Head, Brass 1/2 NPT	-
16	12-00911	2	Capscrew, Hex Head M12 x 1.75 x 20 mm	-
17	15-00007	2	Flat Washer M12	-
18	15-00912	2	Lock Washer, Helical M12	-
19	12-00805	2	Capscrew, Hex Head M10 x 1.5 x 20 mm	-
20	15-00805	2	Flat Washer M10	-
21	27-14906	1	Tube	-
22	18-22630	2	Hose 3-1/2" ID x 4"	-
23	19-00056	4	Hose Clamp #56	-
24	23-14903	1	Bracket	-
25	19-00052	1	Hose Clamp #52	-
26	12-00842	2	Capscrew, Hex Head M10 x 1.5 x 140 mm	-
27	20-04901	1	Element	-

GROUP 3 - COOLING SYSTEM

GEAR OIL COOLER

Keel Cooled Units

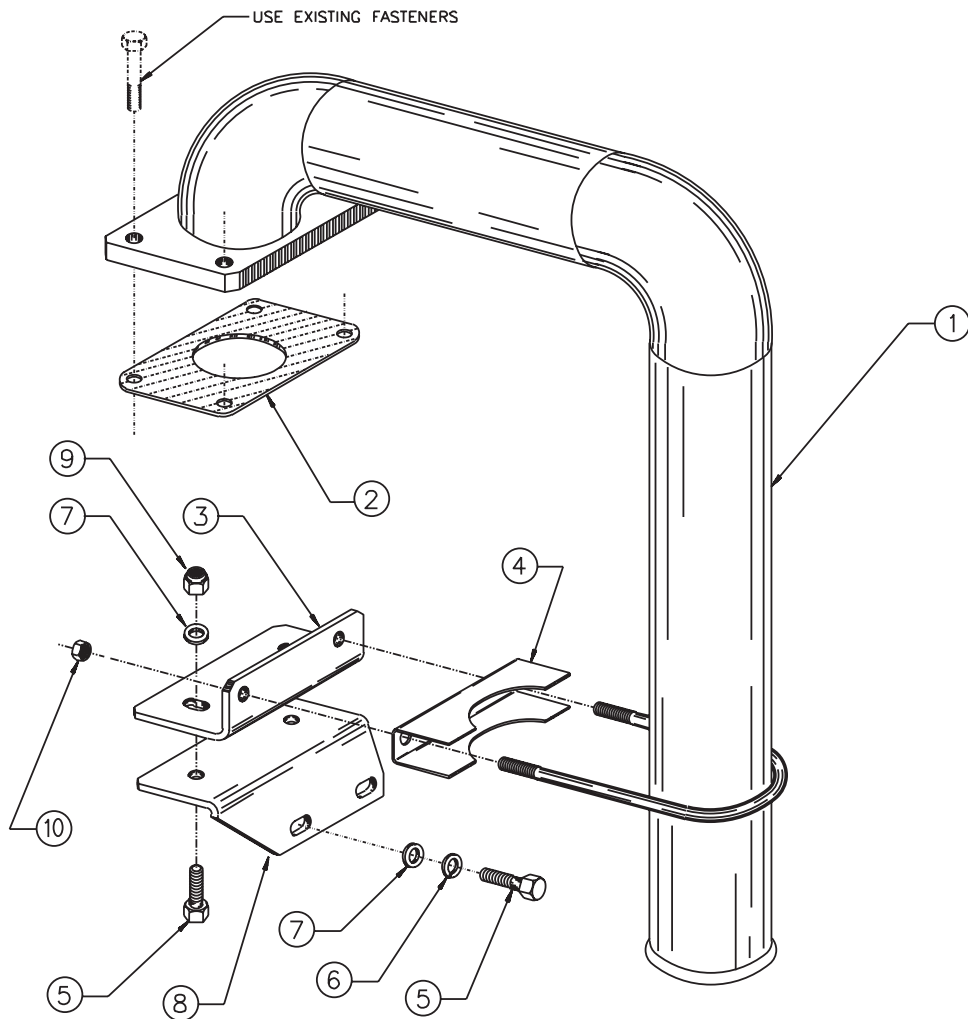
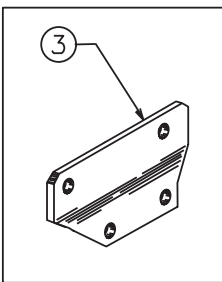


A-5882/D-2368

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	20-64901	1	Gear Oil Cooler (includes keys 1, 10-12 & 22)	-
1	10-04901	1	Housing	-
2	20-14902	1	End Cap	-
3	20-14901	1	End Cap	-
4	195-03-41480	1	Gasket	-
5	23-74901	1	Bracket	-
6	12-34802	8	Capscrew, Socket Head M10 x 1.5 x 30 mm	-
7	15-00803	8	Lock Washer M10	-
8	12-00814	4	Capscrew, Hex Head M10 x 1.5 x 35 mm (formerly #12-00832)	-
9	15-00802	6	Lock Washer, Helical M10	-
10	16-14802	2	O-ring 5-3/4" ID x 1/4"	-
11	21-14901	2	Male Connector 1-1/2 BSPP x 1" NPSM	-
12	21-14902	2	Sealing Washer 1-1/2 BSP	-
13	21-10002	1	Drain Cock, Brass 1/4 NPT	-
14	21-31624	1	Plug, Hex Head, Brass 1/4 NPT	-
15	21-00530	1	Plug, Hex Head, Brass 1/2 NPT	-
16	12-00911	2	Capscrew, Hex Head M12 x 1.75 x 20 mm	-
17	15-00007	2	Flat Washer M12	-
18	15-00912	2	Lock Washer, Helical M12	-
19	12-00805	2	Capscrew, Hex Head M10 x 1.5 x 20 mm	-
20	15-00805	2	Flat Washer M10	-
21	21-31902	1	Male Elbow, Brass 1/2 NPT x 3/4 HB	-
22	20-04901	1	Element	-

KEEL COOLING OUTLET

Early Production



A-6677/ C-3115

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	27-14908	1	Tube, Coolant Discharge	-
2	6162-13-6480	1	Gasket	-
3	23-14902	1	Bracket (Early Production)	-
	23-14906	1	Bracket (Late Production)	-
4	19-14902	1	U-Bolt Clamp 3-1/2" ID	-
5	12-00831	4	Capscrew, Hex Head M10 x 1.5 x 25 mm	-
6	15-00802	2	Lock Washer, Helical M10	-
7	15-00805	4	Flat Washer M10	-
8	23-14905	1	Bracket (Late Production)	-
9	14-00812	2	Nylock Nut M10 x 1.5	-
10	14-00302	2	Lock Nut, Flanged 3/8-16	-

FUEL INJECTION PUMP AND FUEL LINES

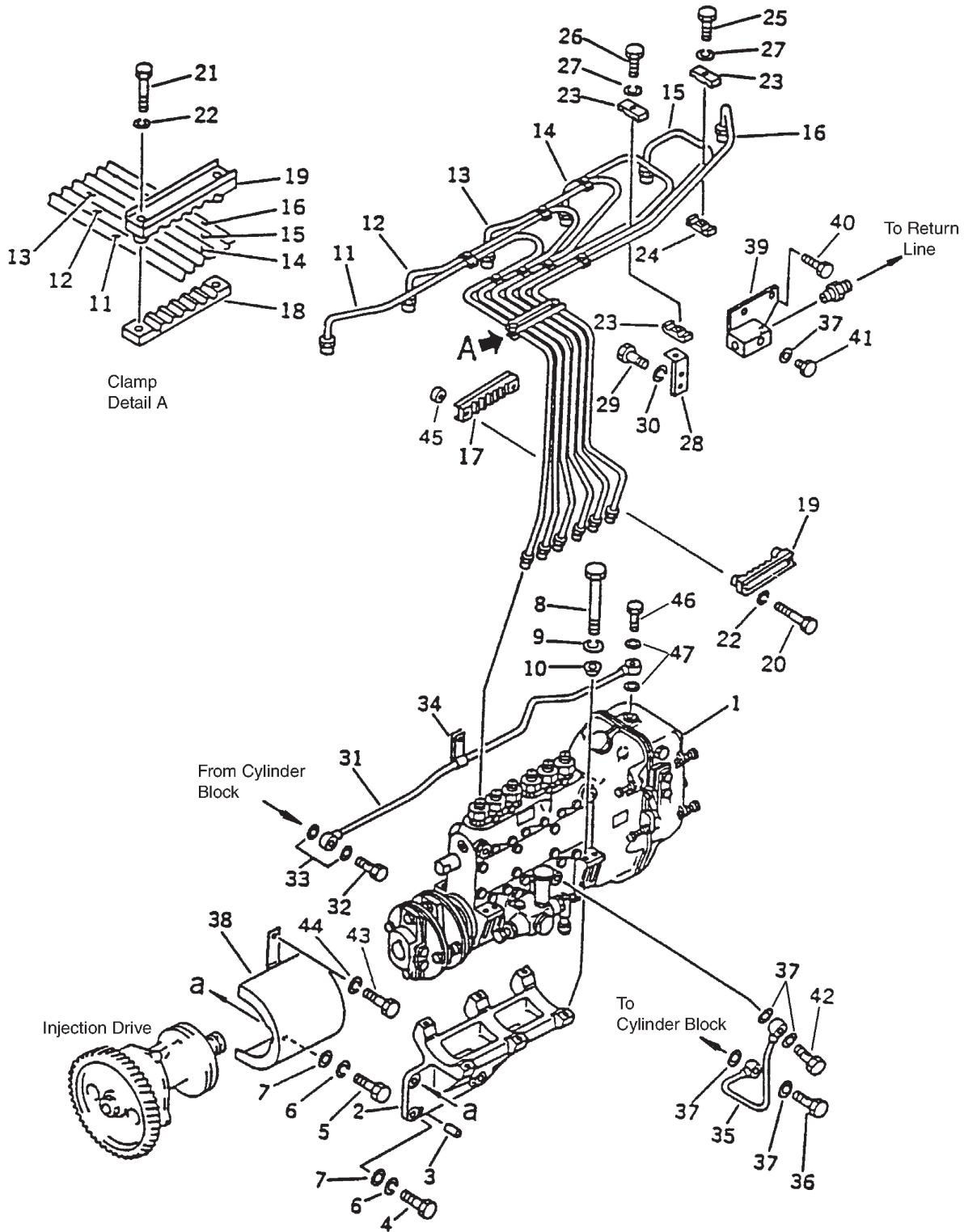


Fig. 4001

## FUEL INJECTION PUMP AND FUEL LINES

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1		1	Injection Pump Assembly (see authorized pump repair station for parts, see application table)	-
2	6162-23-7610	1	Bracket	-
3	04020-00820	2	Dowel Pin	-
4	12-04802	3	Capscrew, Hex Head, M12 x 1.75 x 40 mm	-
5	12-00037	1	Capscrew, Hex Head, M12 x 1.75 x 45 mm	-
6	01602-21236	4	Lock Washer	-
7	01640-21223	4	Washer	-
8	12-00070	6	Capscrew, Hex Head M10 x 1.5 x 100 mm	-
9	01602-21030	6	Washer	-
10	6162-73-3640	6	Washer	-
11	6162-73-5210	1	Injection line #1	-
12	6162-73-5220	1	Injection line #2	-
13	6162-73-5230	1	Injection line #3	-
14	6162-73-5240	1	Injection line #4	-
15	6162-73-5250	1	Injection line #5	-
16	6162-73-5260	1	Injection line #6	-
17	6162-73-5930	1	Clamp	-
18	6162-73-5910	1	Rubber	-
19	6162-73-5920	2	Clamp	-
20	01010-50845	2	Bolt	-
21	01010-50835	2	Bolt	-
22	01602-20825	4	Lock Washer	-
23	6162-73-5520	10	Clamp	-
24	6162-73-5510	8	Clamp	-
25	01010-50630	8	Bolt	-
26	01010-50635	1	Bolt	-
27	01602-20619	9	Lock Washer	-
28	6162-73-5670	1	Bracket	-
29	12-00711	2	Capscrew, Hex Head M8 x 1.25 x 20 mm	-
30	01602-20825	2	Lock Washer	-
31	6162-73-4830	1	Oil Supply Tube (formerly #6162-73-5870)	-
32	07206-30710	1	Bolt	-
33	07005-01012	2	Sealing Washer	-
34	6162-53-8620	1	Clamp	-
35	6162-73-5860	1	Oil Return Tube (units with injection pump #6162-73-1640)	-
	6162-73-5970	1	Oil Return Tube (units with injection pump #6162-73-2460)	-
36	07206-31014	1	Banjo Bolt	-
37	07005-01412	5	Gasket	-
38	6162-73-3570	1	Coupling Guard	-
39	6150-71-8520	1	Adapter	-
40	12-04400	2	Capscrew, Hex Head M10 x 1.5 x 16 mm	-
41	07040-11409	1	Plug	-
42	DK029731-4680	1	Banjo Bolt	-
43	12-00814	1	Capscrew, Hex Head M10 x 1.5 x 35 mm	-
44	15-00802	1	Lock Washer M10	-
45	6162-73-5940	2	Spacer	-
46	DK139812-2300	1	Banjo Bolt	-
47	DK029341-2140	2	Sealing Washer	-
48	DK105664-0490	1	Coupling Assembly (see parts detail)	-
49	DK105235-1781	1	Fuel Feed Pump Assembly (see parts detail)	-

**INJECTION PUMP APPLICATION LIST**

Part #	Engine Model	Application Notes
<b>Propulsion Engines, Pre-Emissions Compliant through December 1999</b>		
<b>6162-73-1640 *</b>  <i>*Specify rating when ordering.</i>	<b>L6170A High-Output</b> <b>L6170A Medium Duty</b> <b>L6170A Continuous</b>	<b>825 Hp @ 2100 RPM</b> <b>750 Hp @ 2000 RPM</b> <b>640 Hp @ 1800 RPM</b>
<b>Propulsion Engines, Emissions Compliant from January 2000</b>		
<b>6162-73-2460</b> <b>6162-73-2460A</b> <b>6162-73-2460B</b>	<b>L6170A</b> <b>L6170A</b> <b>L6170A</b>	<b>900 Hp @ 2100 RPM</b> <b>800 Hp @ 2000 RPM</b> <b>700 Hp @ 1800 RPM</b>



FUEL INJECTORS AND RETURN LINES

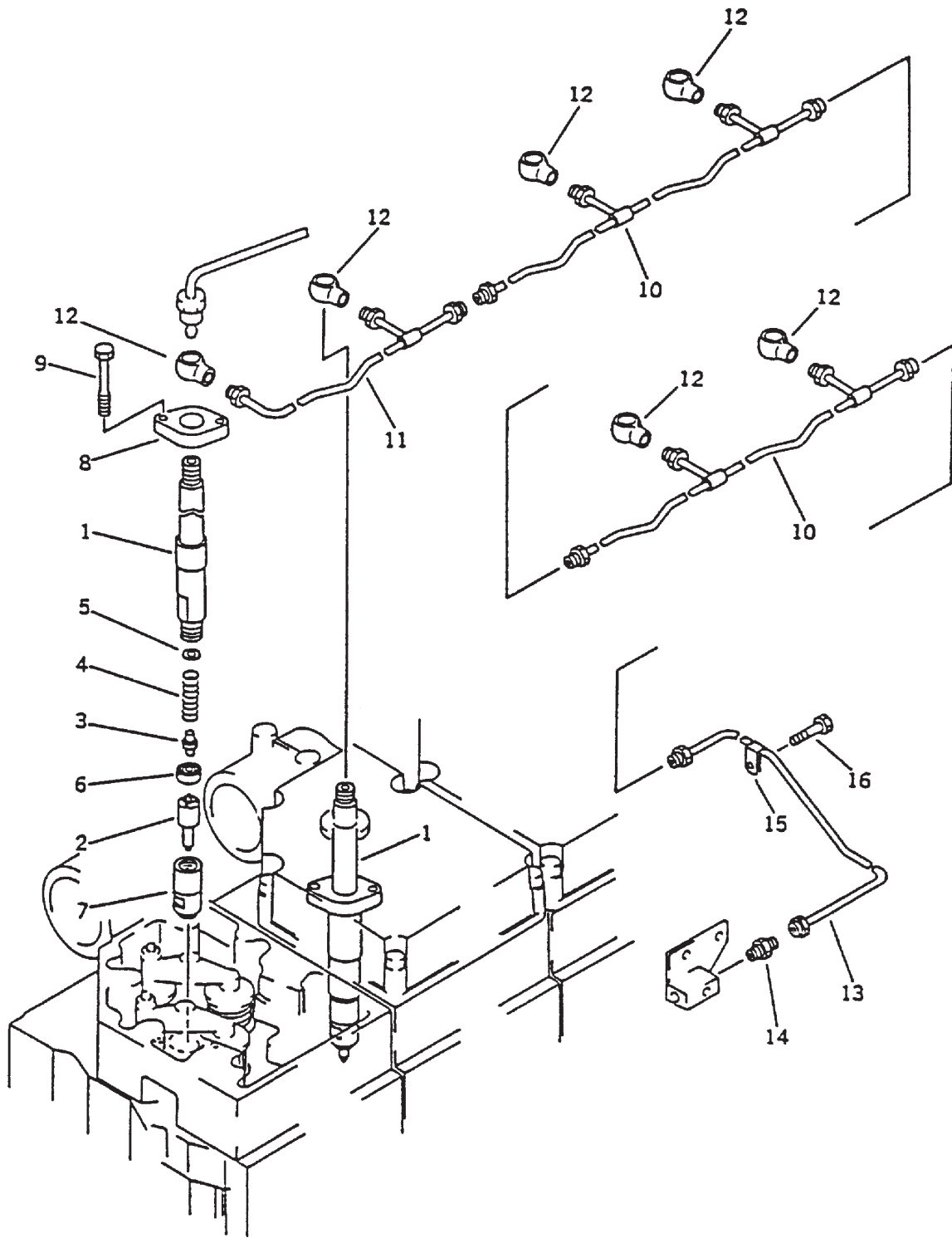


Fig. 4201



## FUEL INJECTORS AND RETURN LINES

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	6162-13-3903	1	Fuel Injector (includes keys 1-8, replaces #6162-13-3901 & 6162-13-3902, units with 6162-73-1641 series injection pump)*	-
••	6162-13-8902	1	Fuel Injector (includes keys 1-8, units with 6162-73-2460 series injection pump)*	-
1	6162-13-3712	1	Holder	-
2	6162-13-3921	1	Nozzle (for injector 6162-13-3903)	-
	DK105025-3010	1	Nozzle (for injector 6162-13-8902)	-
3	DK150510-0700	1	Push Rod	-
4	DK150562-4500	1	Spring	-
5	DK150523-5000	**	Shim 0.50 mm	-
	DK150523-5200	**	Shim 0.54 mm	-
	DK150523-5400	**	Shim 0.58 mm	-
	DK150523-5600	**	Shim 0.62 mm	-
	DK150523-5800	**	Shim 0.66 mm	-
	DK150523-6000	**	Shim 0.70 mm	-
	DK150523-6200	**	Shim 0.74 mm	-
	DK150523-6400	**	Shim 0.78 mm	-
	DK150523-6600	**	Shim 0.82 mm	-
	DK150523-6800	**	Shim 0.86 mm	-
	DK150523-7000	**	Shim 0.90 mm	-
	DK150523-7200	**	Shim 0.94 mm	-
	DK150523-7400	**	Shim 0.98 mm	-
	DK150523-7500	**	Shim 1.00 mm	-
6	DK150524-4400	1	Spacer	-
7	DK150651-5201	1	Retaining Nut	-
8	DK150628-1900	1	Flange	-
9	6162-13-3510	12	Bolt	-
10	6162-13-3640	2	Fuel Return Tube	-
11	6162-13-3650	1	Fuel Return Tube	-
12	6162-73-5320	6	Banjo Fitting	-
13	6162-13-3670	1	Fuel Return Tube	-
14	07213-50510	1	Nipple	-
15	04434-50510	1	Clip	-
16	12-00048	1	Capscrew, Hex Head M10 x 1.5 x 60 mm	-

\* See Cylinder Head parts detail for Injector Sealing Sleeve and related parts.

\*\* As required

FUEL FILTER AND LINES

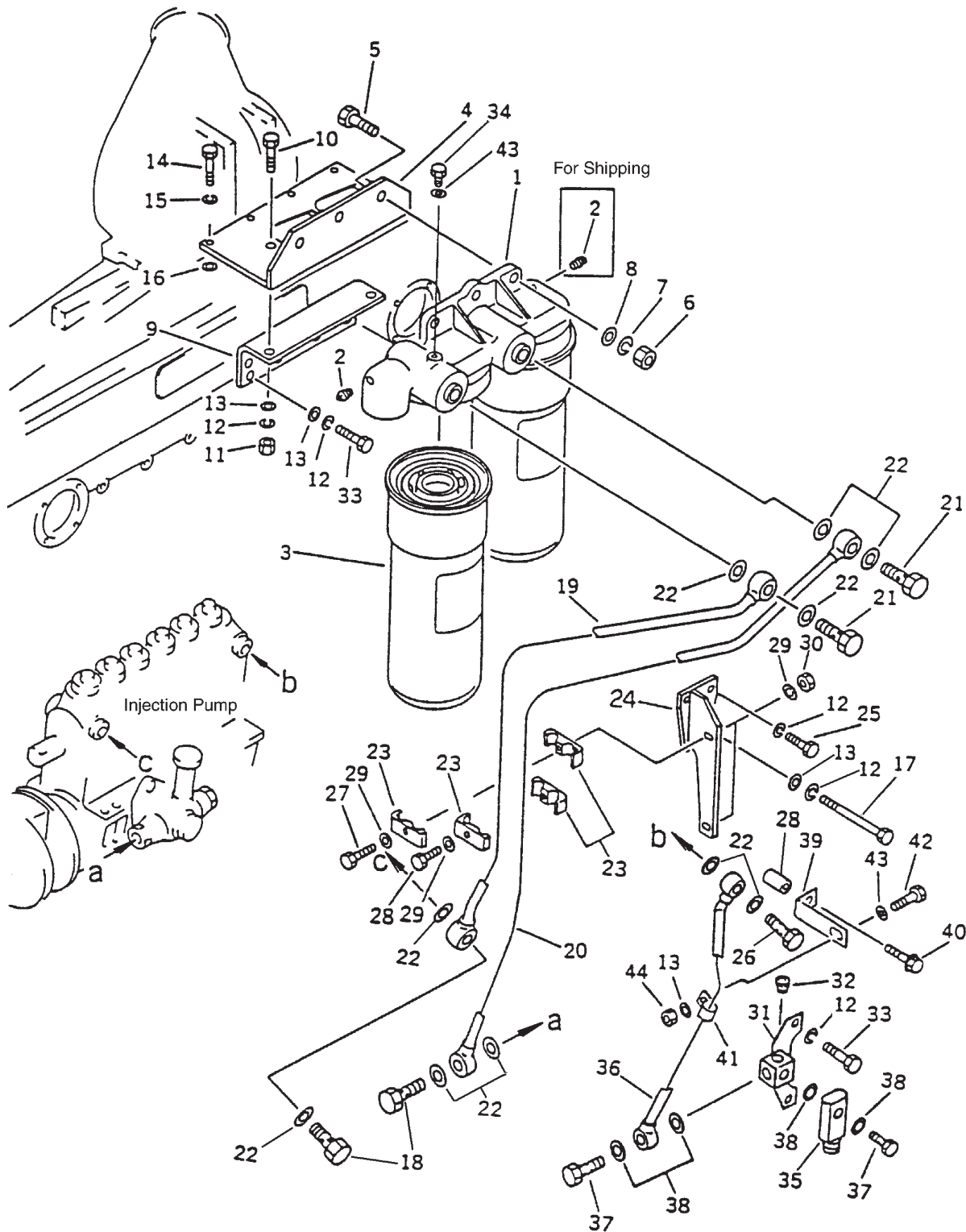


Fig. 4101

## FUEL FILTER AND LINES

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	6162-73-6301	1	Fuel Filter Assembly (includes keys 1 -3, 34 & 43)	-
1	6162-73-6311	1	Bracket	-
2	07042-00108	2	Plug	-
3	24-55001	2	Fuel Filter	-
4	6162-73-6320	1	Bracket	-
5	12-00037	3	Capscrew, Hex Head M12 x 1.75 x 45 mm	-
6	01580-11210	3	Nut	-
7	01602-21236	3	Lock washer	-
8	01640-21223	3	Washer	-
9	6162-73-6330	1	Bracket	-
10	12-00832	2	Capscrew, Hex Head M10 x 1.5 x 30 mm	-
11	14-00811	2	Hex Nut M10 x 1.5	-
12	15-00802	11	Lock Washer M10	-
13	15-00805	9	Flat Washer M10	-
14	01010-50850	4	Bolt	-
15	01602-20825	4	Lock Washer	-
16	01640-20816	4	Washer	-
17	562-15-1640	1	Bolt	-
18	DK029731-4680	2	Banjo Bolt	-
19	6162-73-6561	1	Tube*	-
20	6162-73-6571	1	Tube*	-
21	07206-31014	2	Bolt	-
22	07005-01412	4	Gasket	-
23	6162-73-5550	4	Clamp	-
24	6162-73-7670	1	Bracket	-
25	12-00816	2	Capscrew, Hex Head M10 x 1.5 x 50 mm	-
26	DK131424-7320	1	Banjo Bolt	-
27	01010-50850	2	Bolt	-
28	6131-22-3750	1	Spacer	-
29	01640-20816	4	Washer	-
30	01580-10806	2	Nut	-
31	6162-73-6890	1	Adapter	-
32	21-00139	1	Adapter 1/8 BSPT x 1/8 NPT	-
33	12-00814	8	Capscrew, Hex Head M10 x 1.5 x 35 mm	-
34	6110-73-6231	2	Plug	-
35	21-52203	1	Banjo Fitting	-
36	6162-73-6720	1	Tube (units with injection pump #6162-73-1640)	-
	6162-73-6540	1	Tube (units with injection pump #6162-73-2460)	-
37	07206-31014	2	Banjo Bolt	-
38	07005-01412	4	Gasket	-
39	6162-73-7680	1	Bracket	-
40	01435-01245	1	Bolt	-
41	04434-51010	1	Clip	-
42	12-00805	1	Capscrew, Hex Head M10 x 1.5 x 20 mm	-
43	07005-00812	1	Sealing Washer	-
44	14-00811	1	Hex Nut M10 x 1.5	-

\*Note:

See also Fuel Filter connections for units with flexible lines

**GROUP 4 - FUEL SYSTEM**

**FUEL FILTER CONNECTIONS**

*With Flexible Lines*

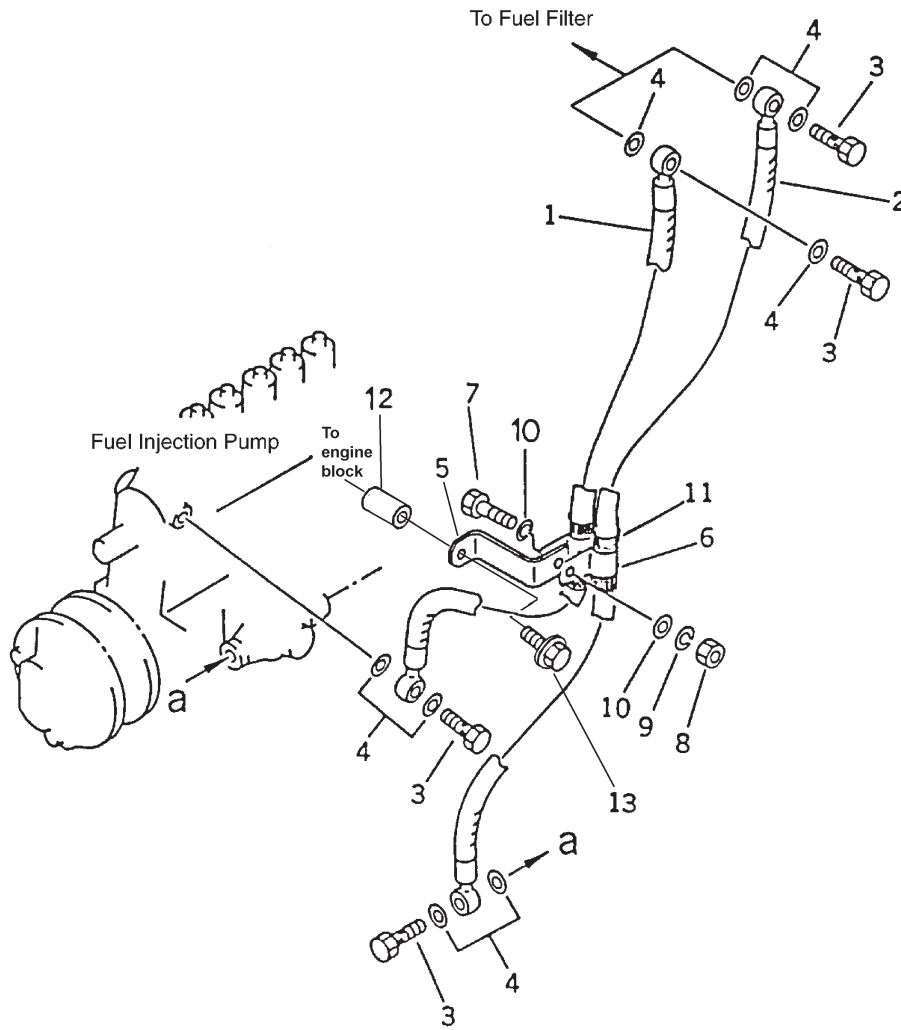
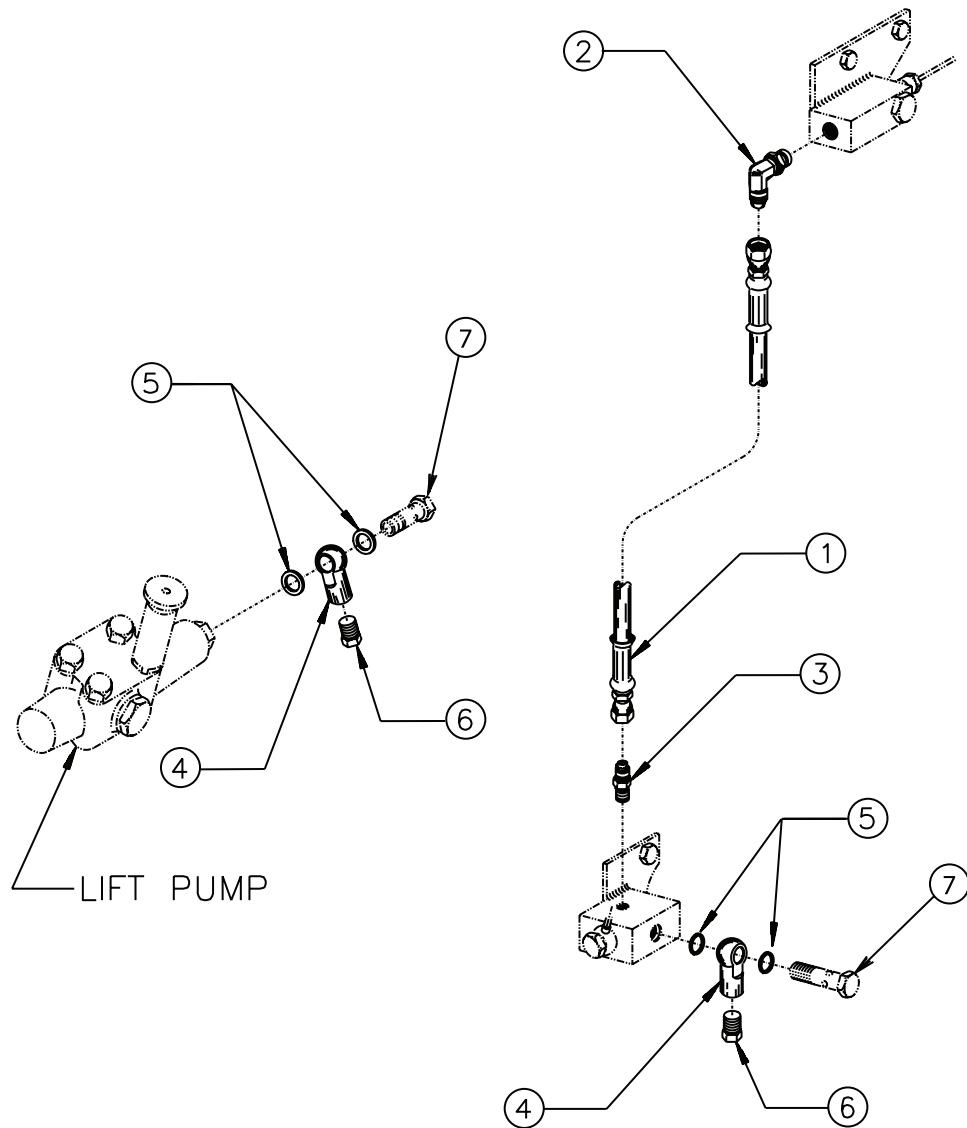


Fig. 411B01

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	6162-73-7940	1	Hose	-
2	6162-73-7930	1	Hose	-
3	07206-11014	4	Bolt	-
4	07005-01412	8	Gasket	-
5	6162-73-6190	1	Bracket	-
6	04434-52510	2	Clip	-
	04434-51810	1	Clip	-
	6128-71-5911	1	Clip	-
7	01010-31025	1	Bolt	-
8	01580-01008	1	Nut	-
9	01602-01030	1	Spring Washer	-
10	01640-01016	**	Washer	-
11	07095-20318	2	Cushion	-
12	6354-81-6930	1	Spacer	-
13	01010-80890	1	Capscrew, Flange Head	-
			**As required	

FUEL SUPPLY AND RETURN CONNECTIONS



A-6315/B-4792

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	18-54901	1	Hose Assembly 1/4"ID x 37-1/2"	-
2	21-54901	1	Male Elbow 90°, Steel M14 x 1.5 x 3/8- 37T	-
3	21-52222	1	Male Connector, Steel 1/8 BSPT x 1/4- 37T	-
4	21-52203	2	Banjo Fitting x 1/4 NPTF	-
5	07005-01412	4	Sealing Washer	-
6	DK152300-3620	1	Banjo Bolt	-
7	07206-31014	1	Banjo Bolt	-
8	21-31624	2	Plug, Hex Head, Brass 1/4 NPT (for shipping)	-

GROUP 4 - FUEL SYSTEM

FUEL FEED PUMP ASSEMBLY

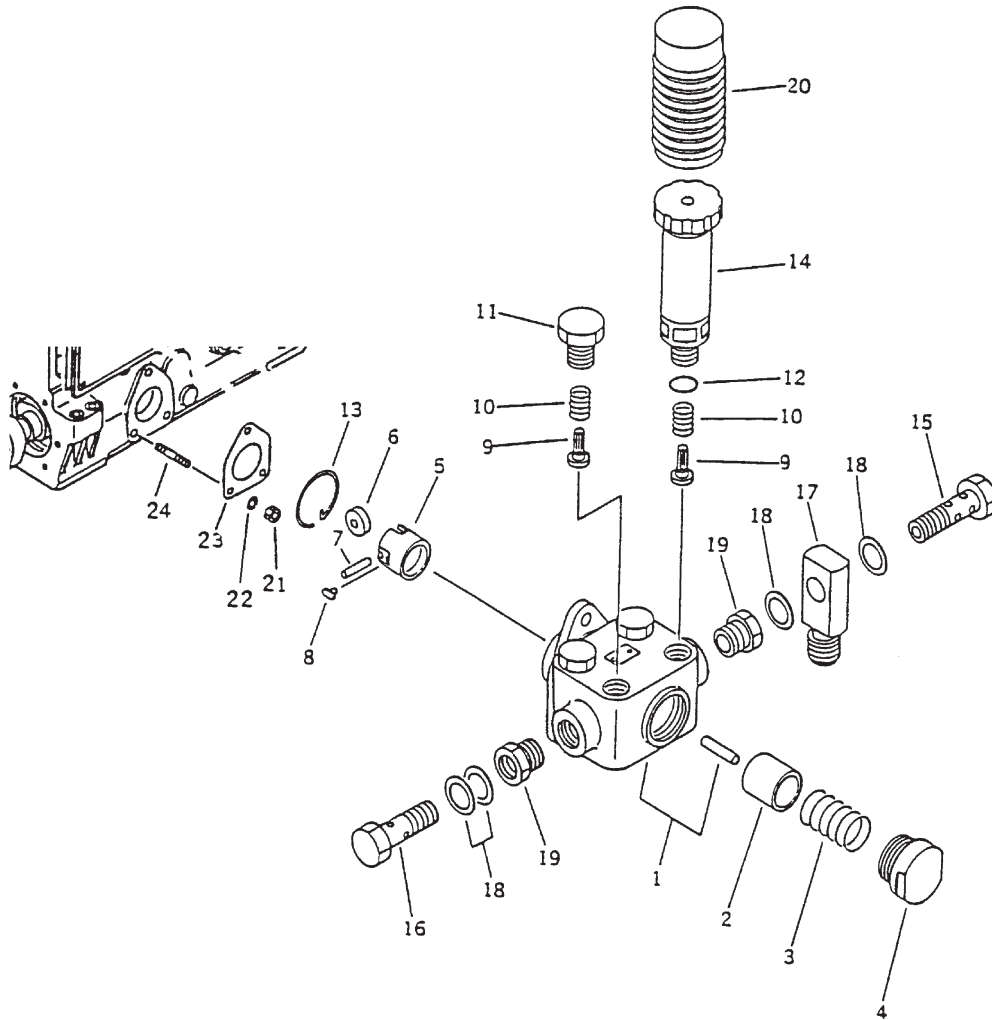


Fig. 4521&4501

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	DK105235-1781	1	Feed Pump Assembly (includes keys 1-16 & 18-20)	-
1	DK152002-2220	1	Housing	-
2	KD152100-1120	1	Piston	-
3	DK152104-0400	1	Spring	-
4	DK152105-1500	1	Plug	-
5	DK152111-4620	1	Tappet Assembly (includes keys 6-8)	-
6		1	Roller	-
7		1	Pin	-
8		2	Guide	-
9	DK152115-0500	4	Valve	-
10	DK152116-0200	4	Spring	-
11	DK152117-0400	3	Plug	-
12	DK029631-6060	1	O-ring	-
13	DK152121-0200	1	Snap Ring	-
14	DK152200-5320	1	Priming Pump	-
15	DK152300-3620	1	Banjo Bolt	-
16	DK029731-4680	1	Banjo Fitting	-
17	21-52203	1	Banjo Fitting	-
18	07005-01412	4	Sealing Washer	-
19	DK132400-0200	2	Adapter	-
20	DK152320-0100	1	Cover	-
21	DK013020-6040	3	Hex Nut	-
22	DK014110-6440	3	Lock Washer	-
23	DK133041-0300	1	Gasket	-
24	DK029040-6020	3	Stud	-



FUEL INJECTION PUMP DRIVE

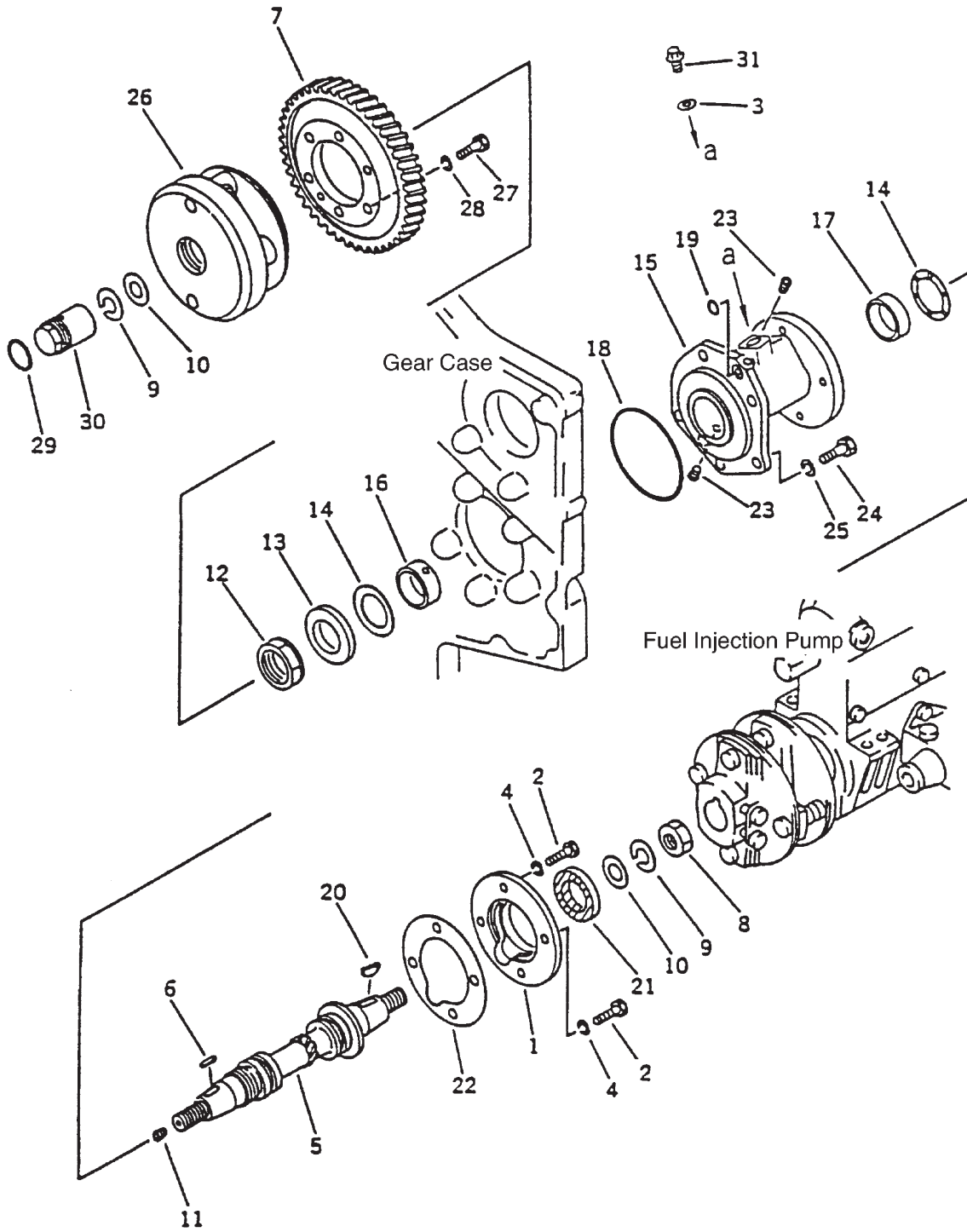


Fig. 4005



## FUEL INJECTION PUMP DRIVE

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	6162-73-3530	1	Cover	-
2	01010-51030	4	Bolt	-
3	07005-02216	1	Gasket	-
4	01602-21030	4	Lock Washer	-
5	6162-73-3260	1	Shaft	-
6	6162-73-3180	1	Key	-
7	6162-73-3221	1	Gear	-
8	01583-02012	1	Nut	-
9	01602-02060	2	Lock Washer	-
10	6162-73-3660	2	Washer	-
11	07043-50108	1	Plug	-
12	6162-73-3150	1	Nut	-
13	6162-73-3160	1	Washer	-
14	6162-33-6160	2	Bearing	-
15	6162-73-3600	1	Housing Assembly (includes keys 16-17)	-
16	6162-73-3380	1	Bushing	-
17	6162-33-6140	1	Bushing	-
18	07000-03115	1	O-ring	-
19	07000-02016	1	O-ring	-
20	04010-01832	1	Key	-
21	07012-10040	1	Seal	-
22	6162-73-3540	1	Gasket	-
23	07043-50108	2	Plug	-
24	01010-51235	5	Bolt	-
25	01602-21236	5	Lock Washer	-
26	6166-71-1231	1	Centrifugal Advance Assembly (formerly #6162-73-1240 & 6166-71-1230, includes key #7)	-
27	01050-31030	6	Bolt	-
28	01602-21030	6	Lock Washer	-
29	07000-63032	1	O-ring	-
30	6127-72-2212	1	Advance Assembly Retaining Nut	-
31	6204-21-5180	1	Plug	-

FUEL INJECTION PUMP COUPLING

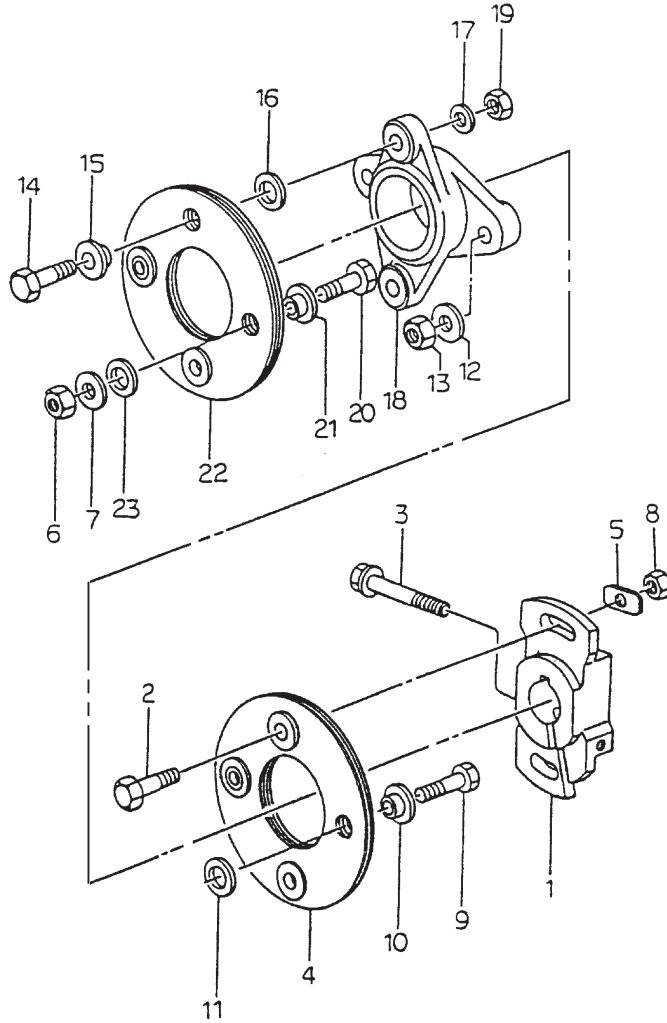
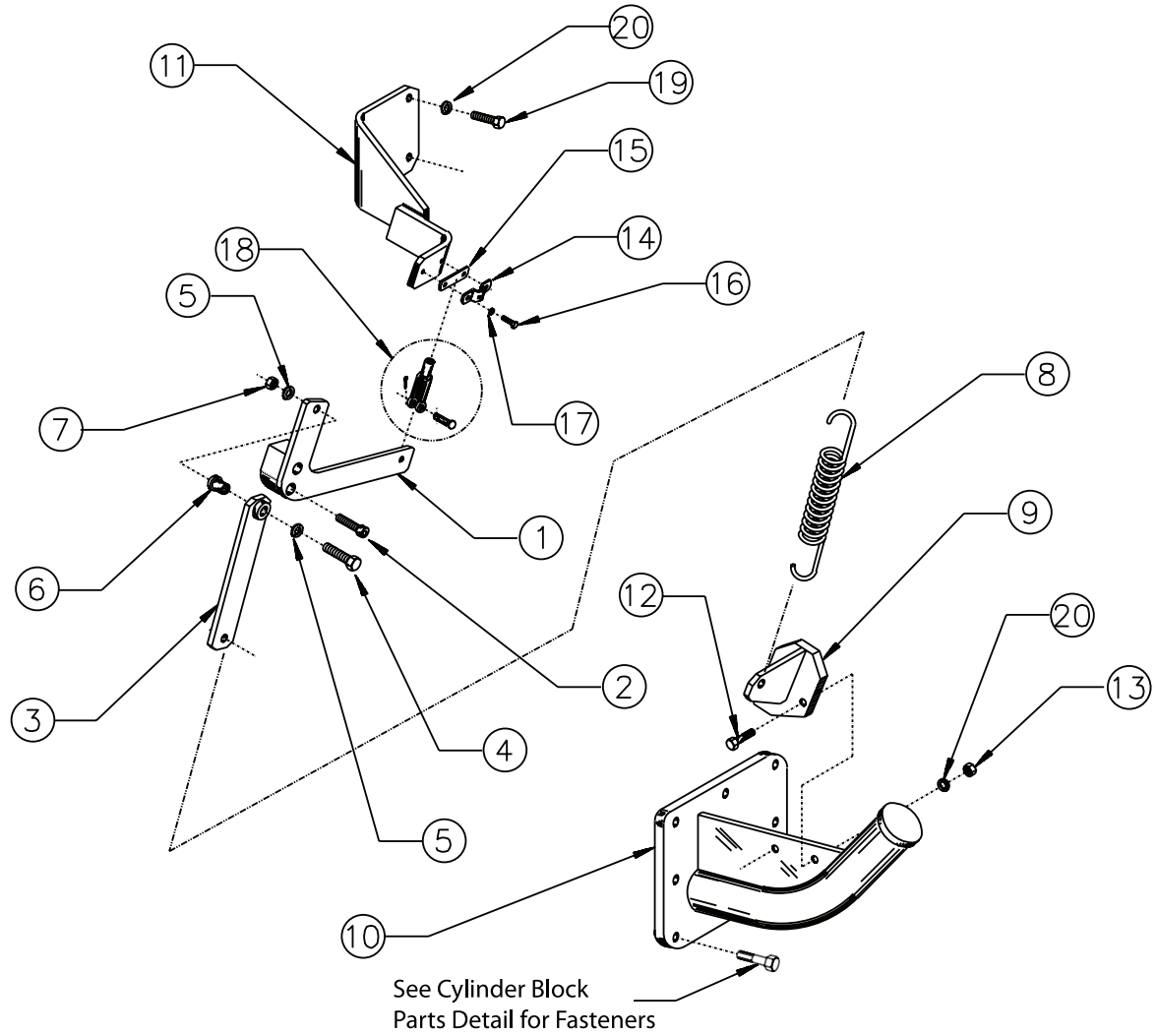


Fig. 4531

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	DK105664-0490	1	Coupling assembly (includes all keys)	-
1	DK156631-4600	1	Coupling	-
2	DK156633-7000	2	Bolt	-
3	DK156634-0500	1	Bolt	-
4	DK156605-6620	8	Plate	-
5	DK156615-4200	2	Washer	-
6	DK156617-3100	2	Nut	-
7	DK156615-5200	2	Washer	-
8	DK156617-3100	2	Nut	-
9	DK156633-6900	2	Bolt	-
10	DK156622-3200	2	Bushing	-
11	DK156615-4100	2	Washer	-
12	DK156615-5200	2	Washer	-
13	DK156617-3100	2	Nut	-
14	DK156633-6900	2	Bolt	-
15	DK156622-3200	2	Bushing	-
16	DK156615-4100	2	Washer	-
17	DK156615-5200	2	Washer	-
18	DK156609-6700	1	Cross coupling	-
19	DK156617-3100	2	Nut	-
20	DK156633-7000	2	Bolt	-
21	DK156622-3200	2	Bushing	-
22	DK156605-4800	8	Plate	-
23	DK156615-4100	2	Washer	-



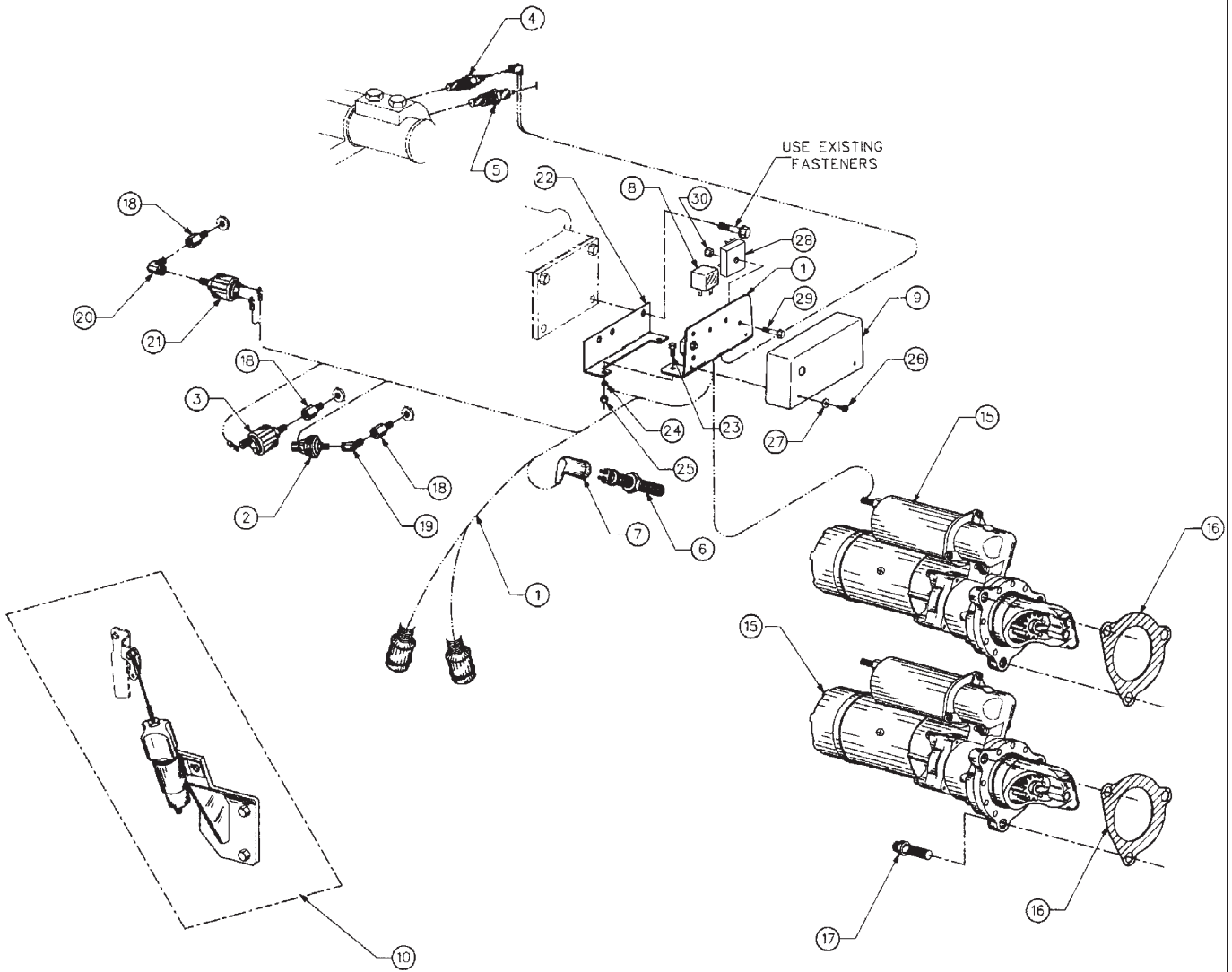
A-6241/D-2494

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	23-94903	1	Throttle Lever	-
2	12-14802	2	Capscrew, Socket Head M8 x 1.25 x 30 mm	-
3	23-94905	1	Throttle Link	-
4	12-00315	1	Capscrew, Hex Head 3/8-16 x 1-3/4"	-
5	15-00321	2	Flat Washer 3/8 SAE	-
6	00-90029	1	Bushing	-
7	14-00312	1	Hex Nut, Nylock 3/8-16	-
8	00-94901	1	Spring	-
9	23-94904	1	Bracket	-
10	36-94901	1	Oil Fill Tube	-
11	23-94906	1	Bracket	-
12	12-00753	2	Capscrew, Hex Head M8 x 1.25 x 30 mm	-
13	14-00711	2	Hex Nut M8 x 1.25	-
14	23-91001	1	Cable Clamp	-
15	23-91002	1	Throttle Shim	-
16	12-00000	2	Machine Screw, Slotted #10-32 x 1/2"	-
17	15-00033	2	Lock Washer, Helical #10	-
18	00-90030	1	Clevis	-
19	12-00712	2	Capscrew, Hex Head M8 x 1.25 x 25 mm	-
20	15-00702	4	Lock Washer, Helical M8	-

GROUP 5 - ELECTRICAL SYSTEM

24 VOLT ENGINE ELECTRICAL

Lugger Application – Standard Ground



A-6745/D-2598

## 24 VOLT ENGINE ELECTRICAL

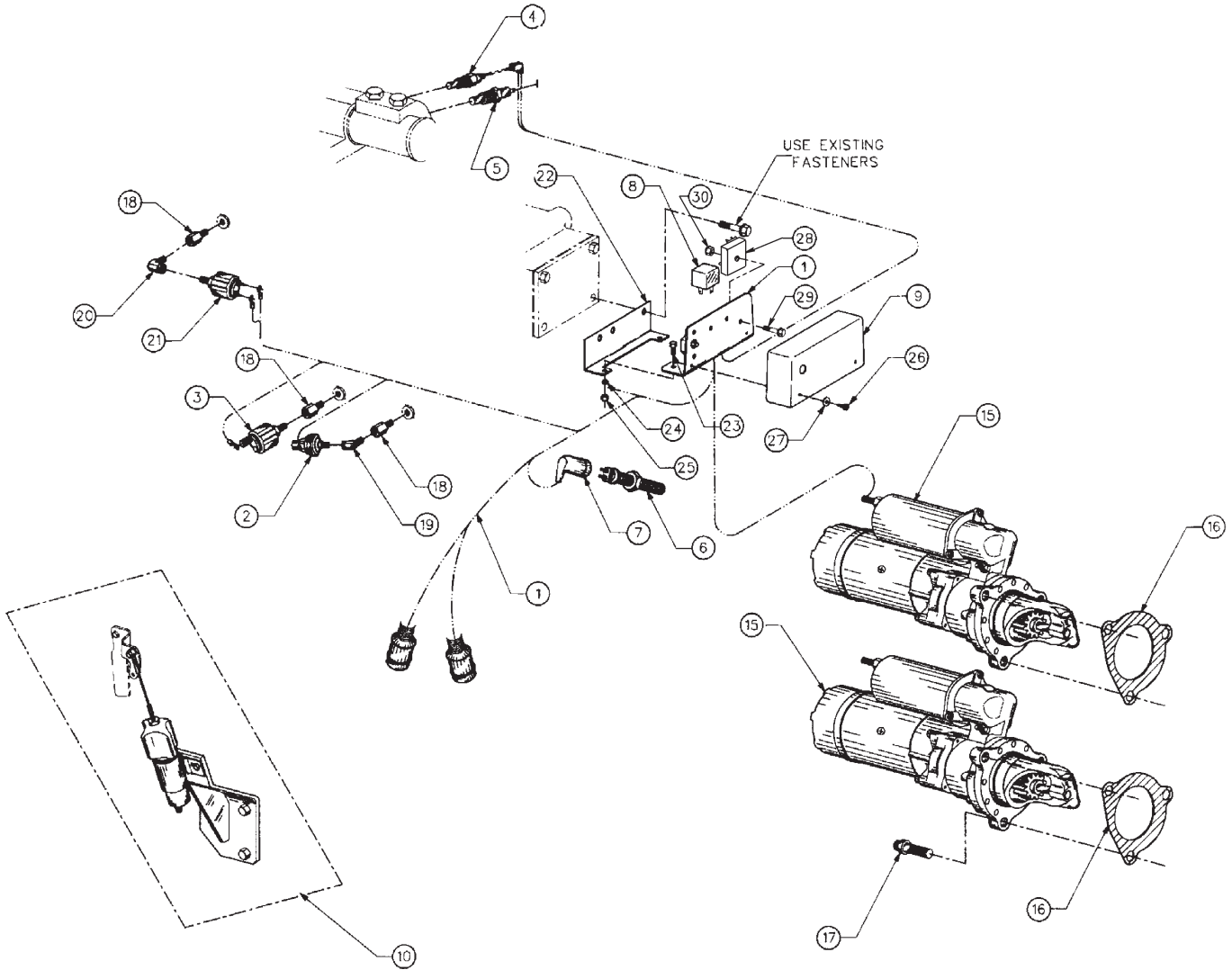
Lugger Application – Standard Ground

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1		1	Wire Harness Assembly (see parts detail)	-
2	22-40233	1	Switch, Oil Pressure (formerly #22-42805)	-
3	22-44871	1	Sender, Oil Pressure – Single Station	-
	22-44872	1	Sender, Oil Pressure – Dual Station	-
4	22-41025	1	Switch, Coolant Temperature	-
5	22-44810	1	Sender, Coolant Temperature – Single Station	-
	22-74802	1	Sender, Coolant Temperature – Dual Station	-
	21-51099	1	Bushing (for Dual Station Sender – not shown)	-
6	22-42551	1	Tachometer Sender	-
7	22-44813	1	Rubber Boot	-
8	22-40085	**	Relay, 24 volt	-
9	00-44801	1	Cover	-
10		1	Stop Solenoid Assembly (see parts detail)	-
11	22-96800	1	Main Instrument Panel (formerly #22-44930 – see parts detail)	-
12	15-04803	6	Lock washer, Hi-collar M16 *	-
13	22-41002	1	Harness Extension 20' (not shown)	-
15	600-813-4570	2	Starter, 24 volt (see parts detail)	-
16	6221-81-6810	2	Gasket (formerly #6160-81-2210)	-
17	12-45001	6	Capscrew, 12 point M16 x 2.0 x 40 mm	-
18	21-00139	3	Adapter, Steel 1/8 BSPT x 1/8 NPT	-
19	21-00004	1	Street Elbow 45° Steel 1/8 NPT	-
20	21-04801	1	Street Elbow 90° Steel 1/8 NPT	-
21	22-41016	1	Pressure Sender 0-80 PSI Turbo Boost	-
	22-41094	1	Pressure Sender 0-30 PSI Turbo Boost	-
22	23-44806	1	Bracket	-
23	12-00111	4	Capscrew, Hex Head 1/4-20 x 3/4"	-
24	15-00111	4	Flat Washer 1/4	-
25	14-00112	4	Nylock Nut 1/4-20	-
26	12-00015	2	Machine Screw, Slotted #10-32 x 3/8"	-
27	15-00032	2	Flat Washer #10	-
28	22-40408	**	Timer Module	-
29	12-03012	**	Machine Screw, Flathead CSK Slotted #10-32 x 1-1/4	-
30	14-00032	**	Hex Nut, Nylock #10-32 S/S	-
			**As required	

GROUP 5 - ELECTRICAL SYSTEM

24 VOLT ENGINE ELECTRICAL

Lugger Application – Isolated Ground



A-6745A/D-2598

## 24 VOLT ENGINE ELECTRICAL

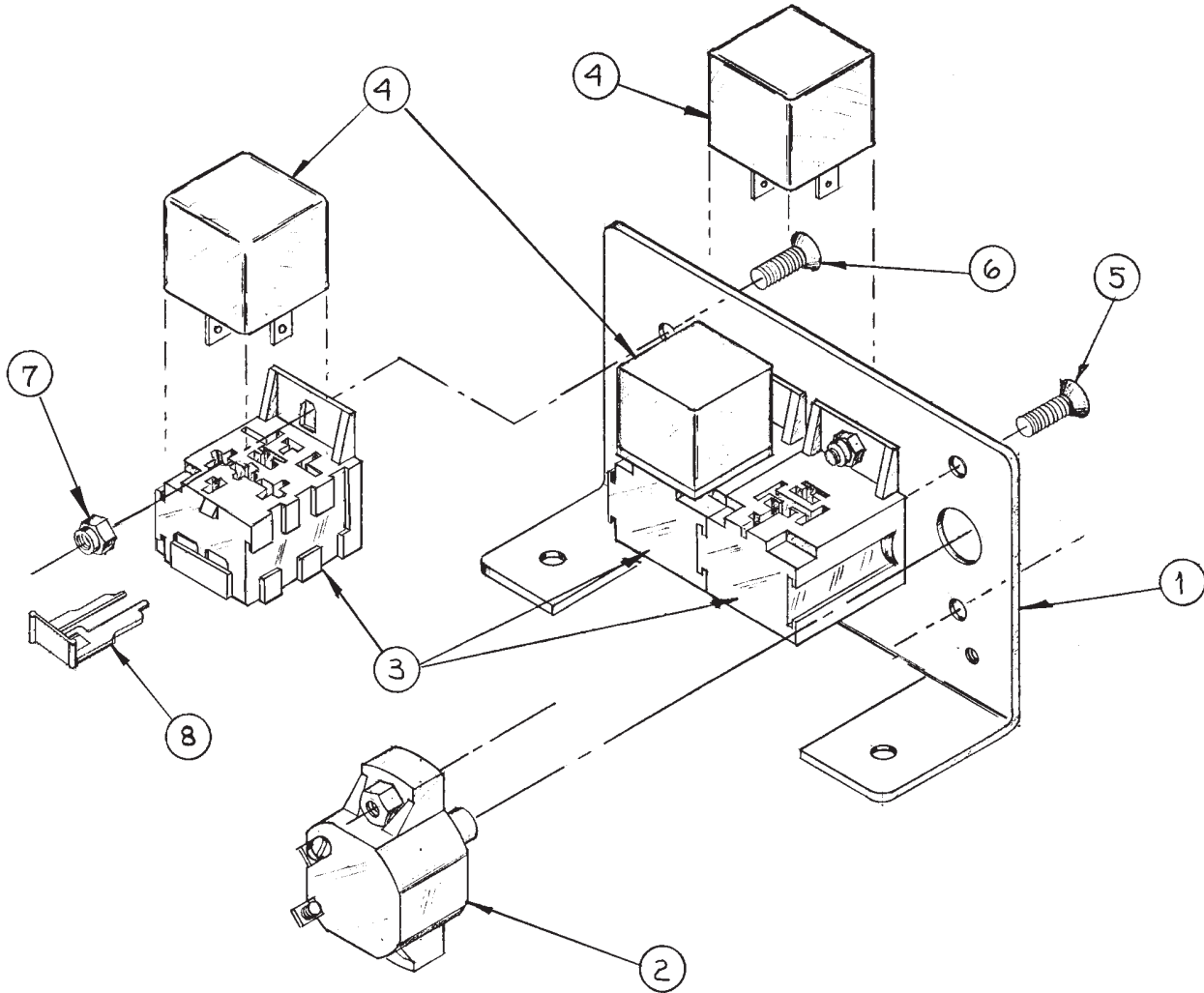
*Lugger Application – Isolated Ground*

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1		1	Wire Harness Assembly (see parts detail)	-
2	22-40236	1	Switch, Oil Pressure	-
3	22-40201	1	Sender, Oil Pressure – Single Station	-
	22-40108	1	Sender, Oil Pressure – Dual Station	-
4	22-40906	1	Switch, Coolant Temperature	-
	21-00134	1	Bushing (for dual station sender – not shown)	-
5	22-44810	1	Sender, Coolant Temperature – Single Station	-
	22-74802	1	Sender, Coolant Temperature – Dual Station	-
	21-51099	1	Bushing (for dual station sender – not shown)	-
6	22-42551	1	Tachometer Sender	-
7	22-44813	1	Rubber Boot	-
8	22-40085	**	Relay, 24 Volt	-
9	00-44801	1	Cover	-
10	22-44925	1	Stop Solenoid Assembly (see parts detail)	-
11	22-96800	1	Main Instrument Panel (former #22-44930 – see parts detail)	-
13	22-41002	1	Harness Extension 20' (not shown)	-
14	22-44906	1	Harness Addition, Isolated Ground (not shown)	-
15	22-44903	2	Starter, 24 Volt (see parts detail)	-
16	6221-81-6810	2	Gasket (formerly #6610-81-2210)	-
17	12-45001	6	Capscrew, 12 point M16 x 2.0 x 40 mm	-
18	21-00139	3	Female Adapter, Steel 1/8 BSPT x 1/8 NPT	-
19	21-00004	1	Street Elbow 45° Steel 1/8 NPT	-
20	21-04801	1	Street Elbow 90° Steel 1/8 NPT	-
21	22-41016	1	Pressure Sender 0-80 PSI Turbo Boost	-
	22-41094	1	Pressure Sender 0-30 PSI Turbo Boost	-
22	23-44836	1	Bracket	-
23	12-00111	4	Capscrew, Hex Head 1/4 -20 x 3/4"	-
24	15-00111	4	Flat Washer 1/4	-
25	14-00112	4	Nylock Nut 1/4 -20	-
26	12-00015	2	Machine Screw, Slotted #10 -32 x 3/8"	-
27	15-00032	2	Flat Washer #10	-
28	22-40408	**	Timer Module, 24 Volt	-
29	12-03012	**	Machine Screw, Slotted #10 -32 x 1-1/4"	-
30	14-00032	**	Hex Nut, Nylock #10 -32 S/S	-
			**As required	

**GROUP 5 - ELECTRICAL SYSTEM**

**HARNESS ASSEMBLY WITH 24 VOLT CIRCUIT BREAKER & RELAY PANEL**

*Propulsion Units with 2 Relay Functions*



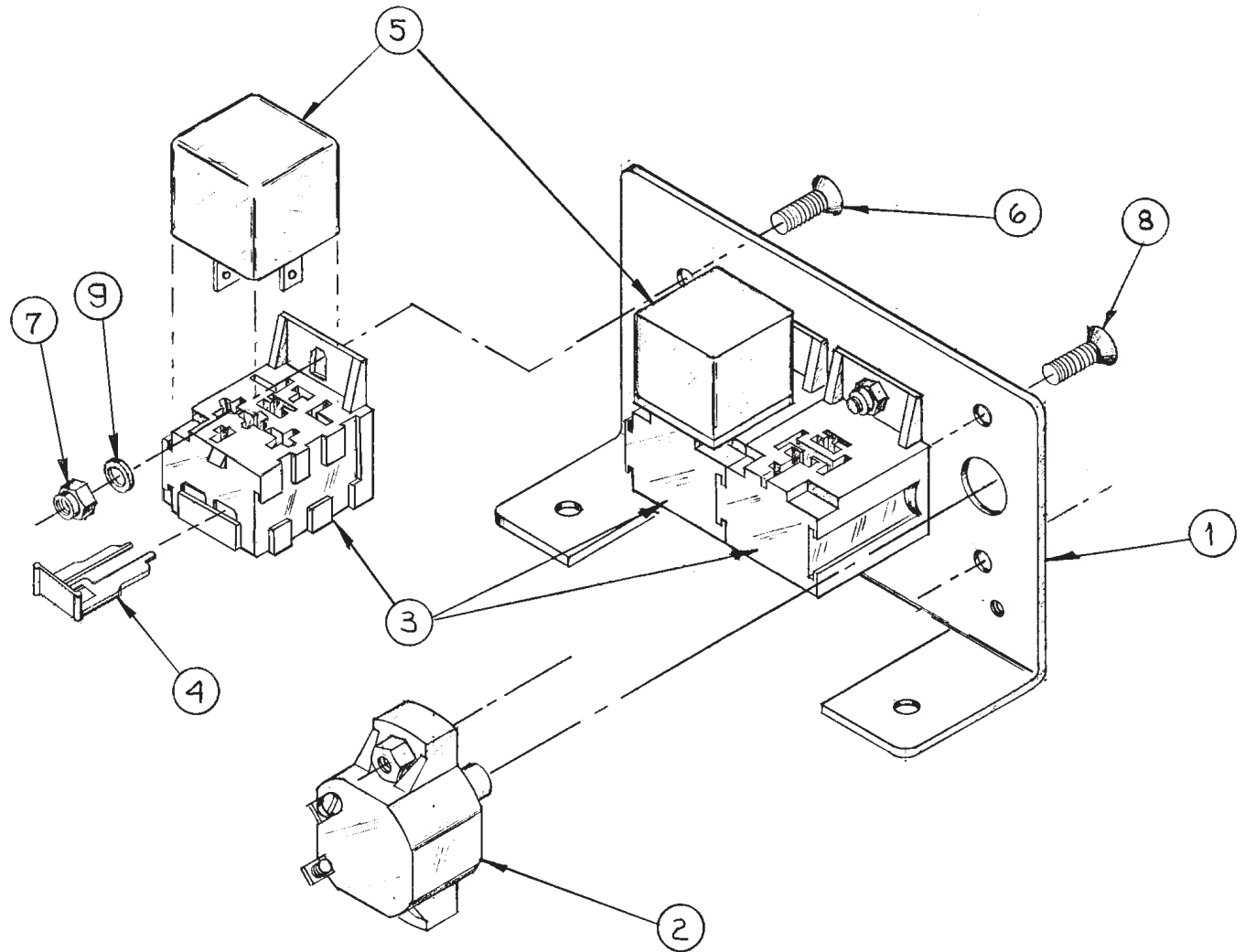
A-7049/ B-3139B

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	22-44904	1	Wire Harness Assembly with Relay Bases (w/o relays)	-
1	23-40010	1	Bracket	-
2	22-41070	1	40 Amp Circuit Breaker	-
3	22-40391	1	Relay Base (formerly #22-41032 - also requires #8)*	-
4	22-40085	1	24 Volt Relay	-
5	12-03011	2	Countersunk Machine Screw, #10 - 32 x 3/4", 100° Flathead	-
6	12-03010	2	Machine Screw, #10 - 32 x 3/8", 100°	-
7	14-00001	4	Hex Nut, #10 - 32	-
8	22-40393	2	Terminal Retainer	-



**HARNESS ASSEMBLY WITH 24 VOLT CIRCUIT BREAKER & RELAY PANEL**

*Propulsion Units with Shutdown Timer & Single Relay Function*

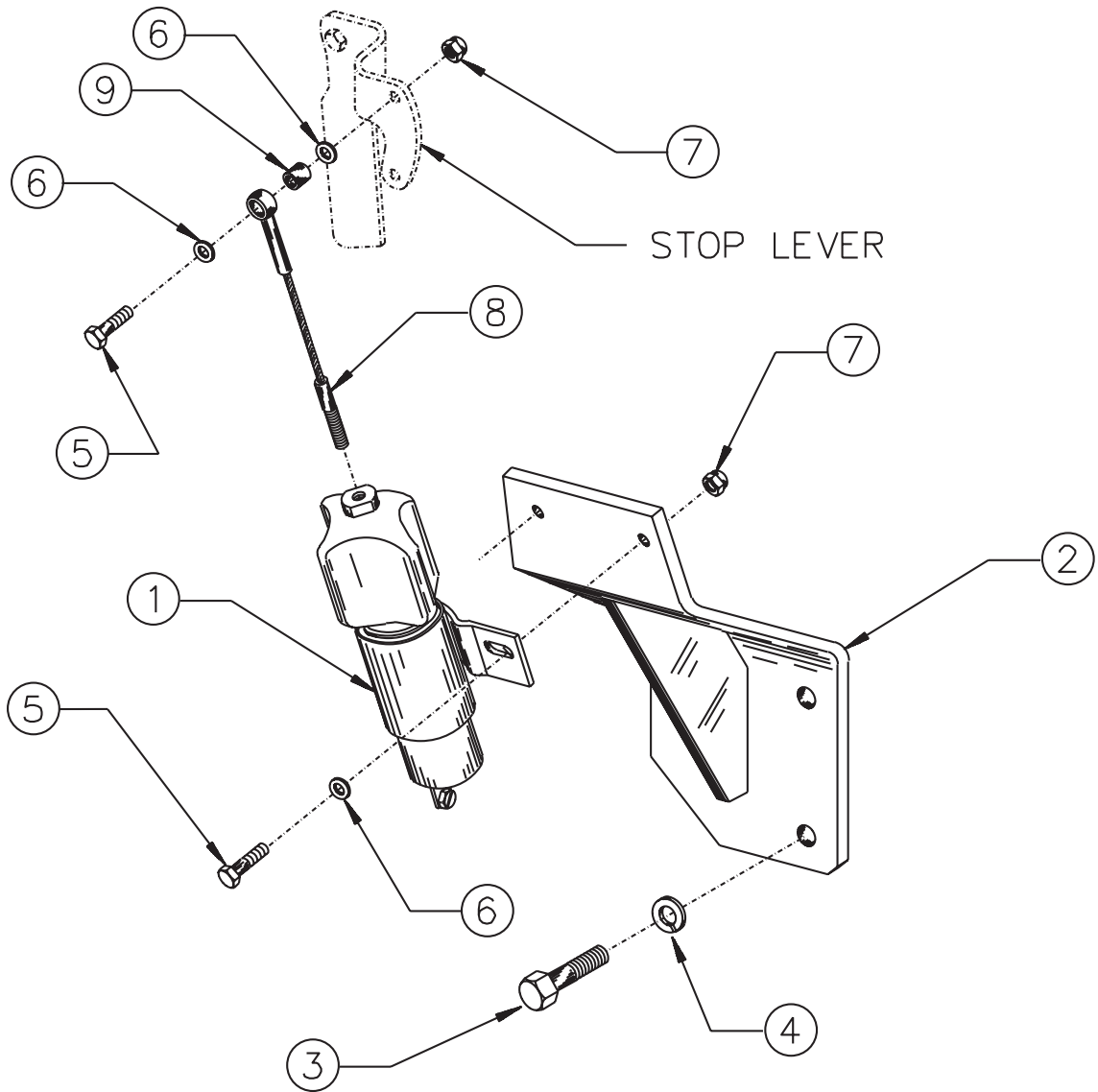


A-7049/ B-3139z

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	22-44907	1	Wire Harness Assembly with Relay Bases (w/o relays)	-
1	23-40019	1	Bracket	-
2	22-41070	1	40 Amp Circuit Breaker	-
3	22-40391	1	Relay Base (formerly #22-41032 - also requires #9)*	-
4	22-40393	2	Terminal Retainer	-
5	22-42047	1	12 Volt Start Relay	-
	22-40085	1	24 Volt Start Relay	-
6	12-03010	2	Machine Screw, #10 - 32 x 3/8"	-
7	14-00001	3	Hex Nut, #10 - 32	-
8	12-03011	2	Countersunk Machine Screw, 10 - 32 x 3/4", 100° Flathead	-
9	15-00032	1	Flat Washer #10	-

NOTES

STOP SOLENOID 24 VOLT



A-5900/ C-3005

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	22-40346	1	Stop Solenoid 24 Volt	-
2	23-44902	1	Bracket	-
3	12-00832	3	Capscrew, Hex Head M10 x 1.5 x 30 mm	-
4	15-00802	3	Lock Washer, Helical M10	-
5	12-00031	3	Capscrew, Hex Head M6 x 1.0 x 25 mm	-
6	15-00008	4	Flat Washer M6	-
7	14-04803	3	Hex Nut, Nylock M6 x 1.0	-
8	00-94902	1	Connector Strap	-
9	00-90028	1	Bushing	-

STARTER 24 VOLT STANDARD GROUND

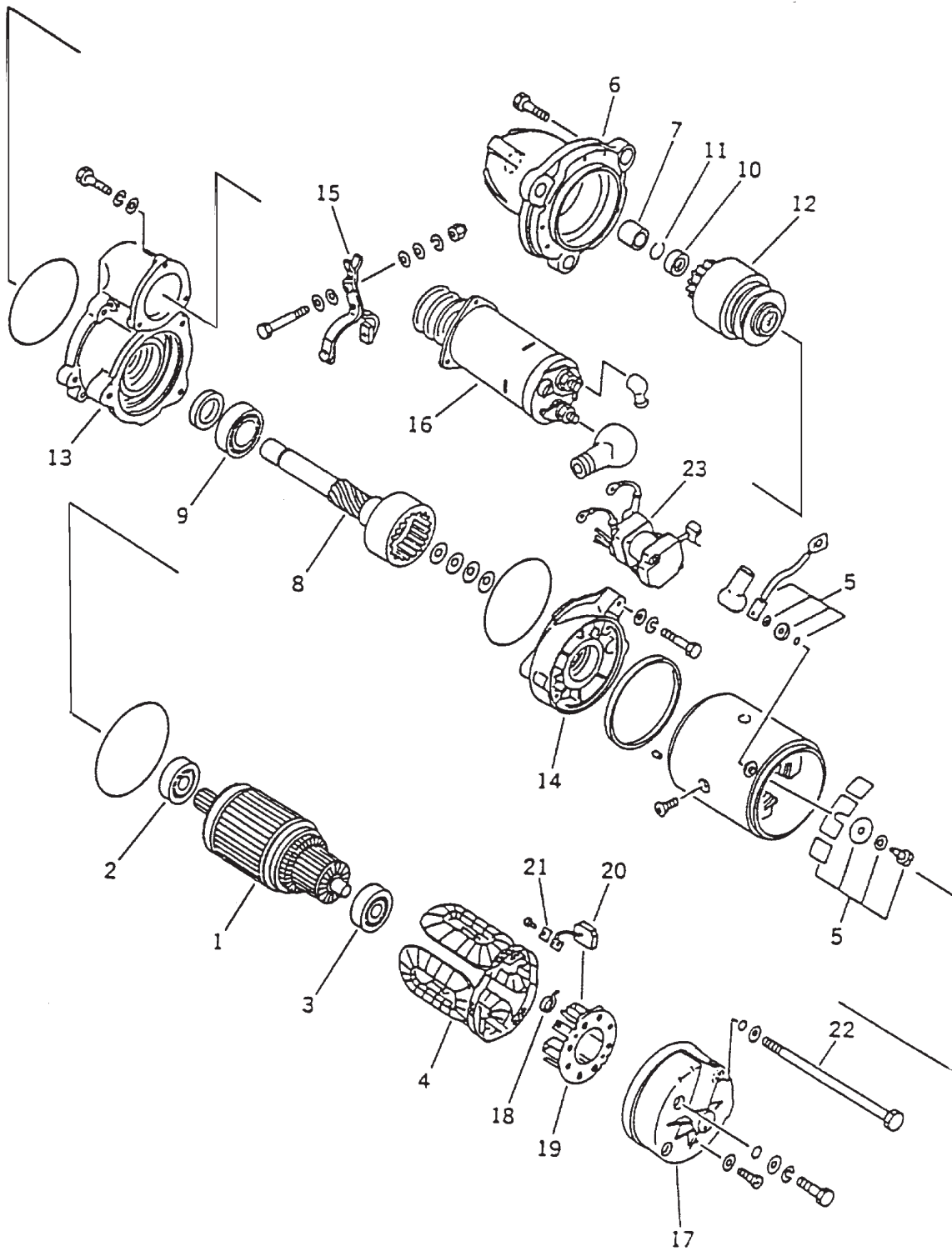


Fig 6401

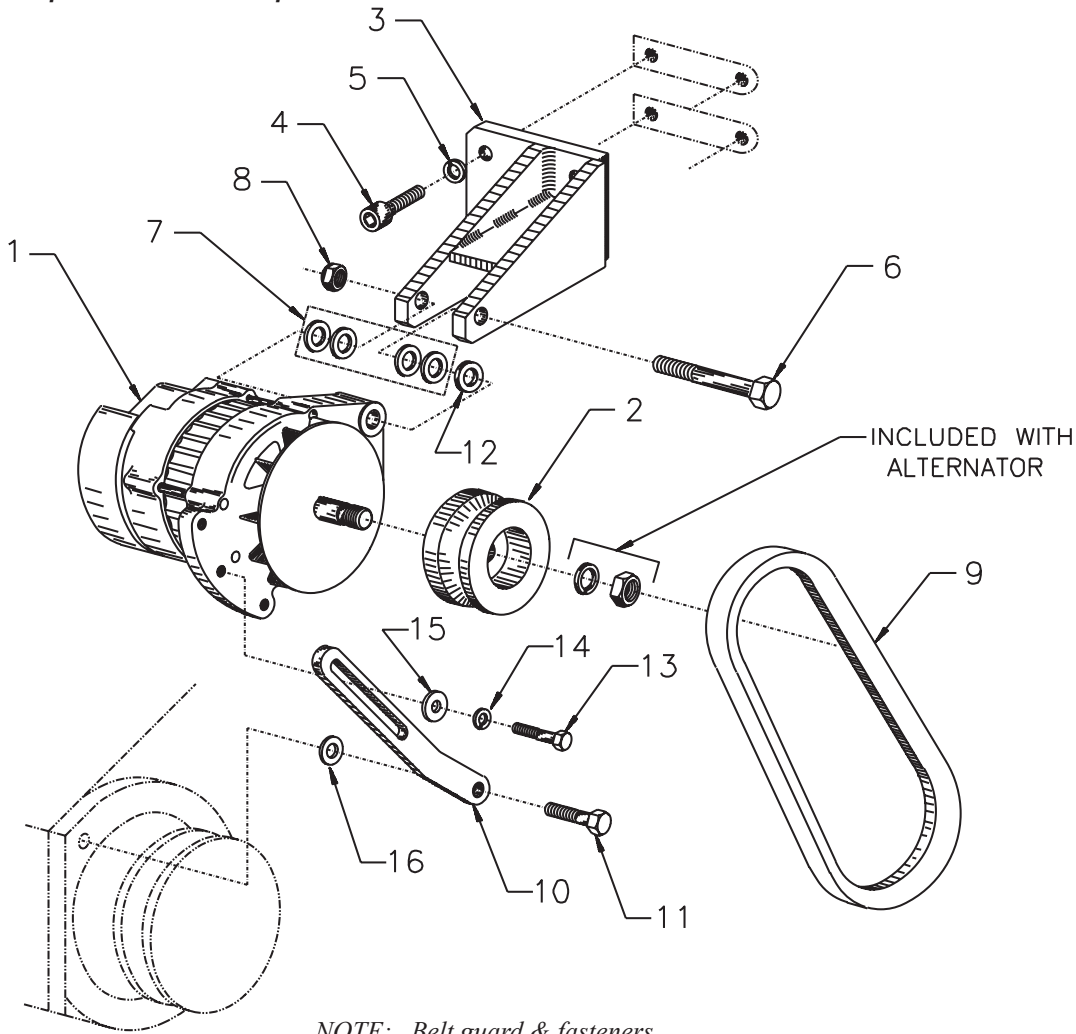
## STARTER 24 VOLT STANDARD GROUND

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	600-813-4570	1	Starter Assembly (includes all keys)	from xxxx-12376
•	KD7-23920-0060	1	Washer Assembly (not shown)	"
•	KD7-02910-1000	1	Seal Kit (not shown)	"
1	KD0-231000-0230	1	Armature Assembly (includes keys #2-3)	"
2	KD1-0456-62047	1	Bearing	"
3	KD1-0456-62007	1	Bearing	"
4	KD0-23230-0150	1	Field Coil Assembly	"
5	KD7-23780-0160	1	Terminal Assembly	"
6	KD0-23310-0361	1	Front Housing Assembly (includes key #7)	"
7	KD7-23351-0080	1	Bushing	"
8	KD7-23120-0090	1	Shaft Assembly (includes key #9)	"
9	KD1-0456-60067	1	Bearing	"
10	KD1-23181-0020	1	Pinion Stop	"
11	KD1-23914-0020	1	Snap Ring	"
12	KD1-23500-0160	1	Drive Pinion Assembly	"
13	KD0-23600-0082	1	Center Housing	"
14	KD1-23611-0081	1	Housing	"
15	KD1-23320-0190	1	Shift Lever Assembly	"
16	KD0-47100-3421	1	Solenoid	"
•	KD7-23700-0260	1	Rear Housing Assembly (includes keys #17-21)	"
17	KD0-23711-0222	1	Rear Housing	"
18	KD1-23913-0041	4	Spring	"
19	KD0-23913-0051	1	Brush Holder Assembly	"
20	KD1-23740-0050	4	Brush	"
21	KD1-25922-2800	4	Plate	"
22	KD0-09001-4380	2	Bolt	"
23	KD0-25000-7120	1	Switch, Safety Relay	"

GROUP 5 - ELECTRICAL SYSTEM

ALTERNATORS & MOUNTING

24 Volt/35 Amp and 24 Volt/40 Amp



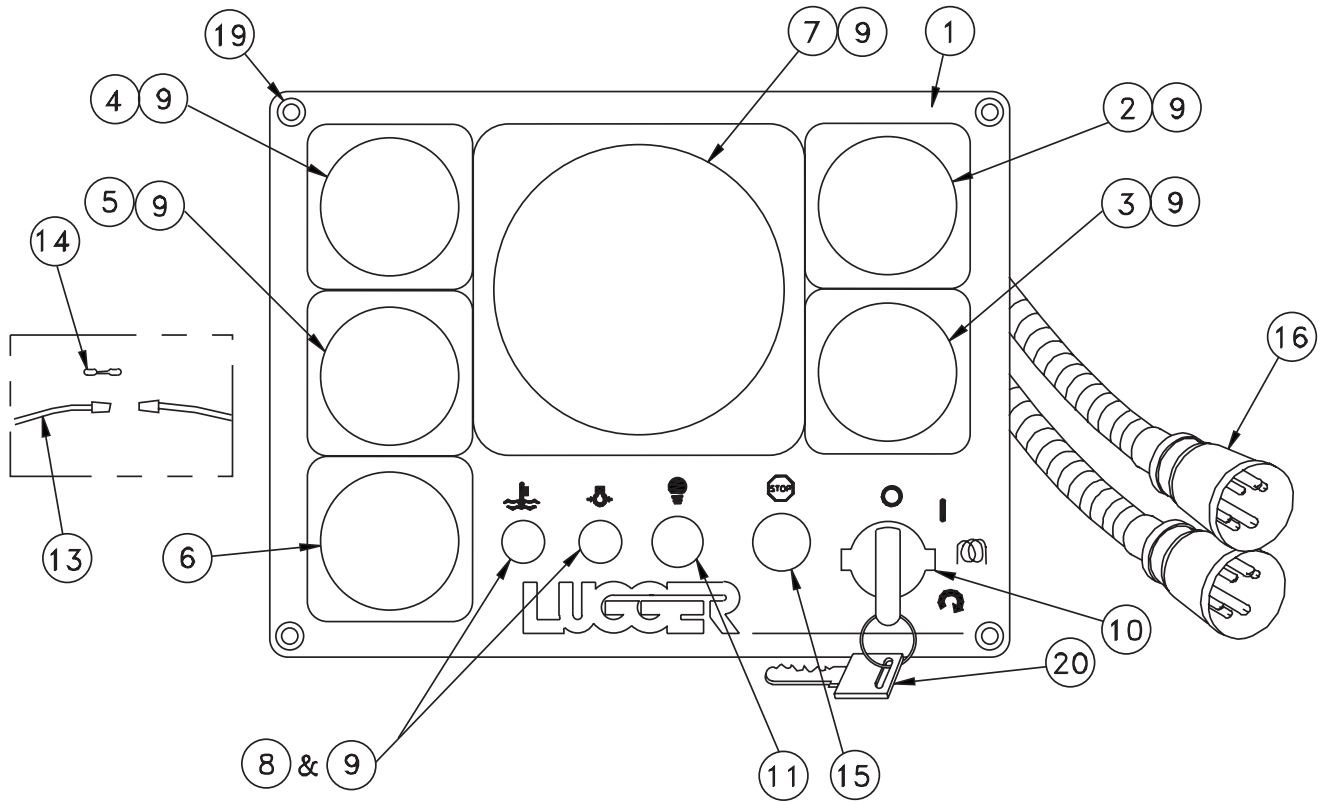
NOTE: Belt guard & fasteners (#17 - #19) not shown.

A-6179, A-6786/ C-3144

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	22-71052	1	Alternator, 24 Volt 35 Amp Isolated Ground	-
	22-40278	1	Alternator, 24 Volt 40 Amp Standard Ground (formerly #22-71051)	-
2	34-30001	1	Pulley	-
3	23-44904	1	Bracket	-
4	12-34803	4	Capscrew, Socket Head M10 x 1.5 x 25 mm	-
5	15-00803	4	Lock Washer, Hi-collar M10	-
6	12-00524	1	Capscrew, Hex Head 1/2-13 x 5-1/2"	-
7	15-00504	4	Flat Washer 1/2 SAE	-
8	14-00512	1	Hex Nut, Nylock 1/2-13	-
9	40-44901	1	Drive Belt	-
10	23-45701	1	Tensioning Arm	-
11	12-00814	1	Capscrew, Hex Head M10 x 1.5 x 35 mm	-
12	21-44800	1	Spacer	-
13	12-00213	1	Capscrew, Hex Head 5/16-18 x 1-1/4"	-
14	15-00202	1	Lock Washer, Helical 5/16	-
15	15-00201	2	Stud Washer 5/16	-
16	15-00805	2	Flat Washer M10	-
17	00-74906	1	Belt Guard	-
18	15-00807	1	Stud Washer M10	-
19	12-00831	1	Capscrew, Hex Head M10 x 1.5 x 25 mm	-
20	23-74906	1	Bracket, Belt Guard Mtg.	-

MAIN INSTRUMENT PANEL "BLUE LINE" 24 VOLT

Lugger Application



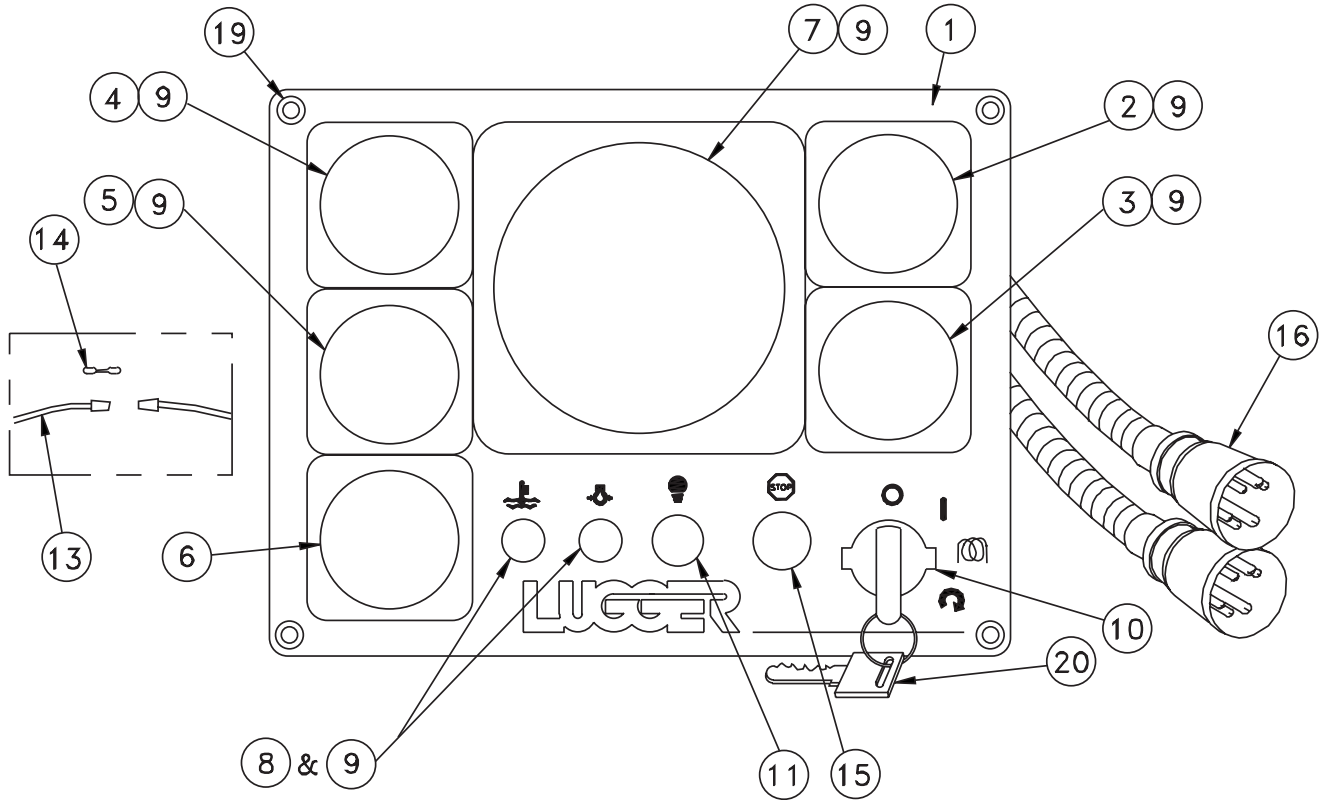
A-5891 / B-4734-2

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
**	22-44930	1	24 Volt Main Instrument Panel (includes all keys)	-
1	28-94801	1	Panel Plate	-
2	37-91034	1	Voltmeter, 24 Volt	-
3	37-94806	1	Hourmeter	-
4	37-94810	1	Temperature Gauge, 24 Volt	-
5	37-94811	1	Oil Pressure Gauge, 0-150 PSI, 24 Volt	-
6	22-40263	1	Alarm Horn, 24 Volt (replaces former #22-44855)	-
7	27-94902	1	Tachometer 0-3000 RPM	-
8	22-44851	2	Fault Lamp Holder, Amber	-
9	37-41003	**	Bulb, Red 24 Volt	-
	22-44853	**	Bulb, Clear 24 Volt	-
10	37-94803	1	Key Switch	-
11	22-44856	1	Dimmer Switch	-
12	22-41060	2	Diode (not shown)	-
13	22-00044	1	Fuse Holder, In-line	-
14	22-41008	1	Fuse, 7-1/2 Amp	-
15	37-91007	1	Push Button, Weather Proof	-
16	22-44859	1	Wire Harness	-
17	22-40004	1	Resistor Kit (not shown)	-
19	12-90002	4	Screw, Self-tapping #8 x 1" Type AB Phillips	-
20	37-94814	**	Key	-
			** As required	

GROUP 5 - ELECTRICAL SYSTEM

MAIN INSTRUMENT PANEL "VANGUARD" 24 VOLT

Lugger Application



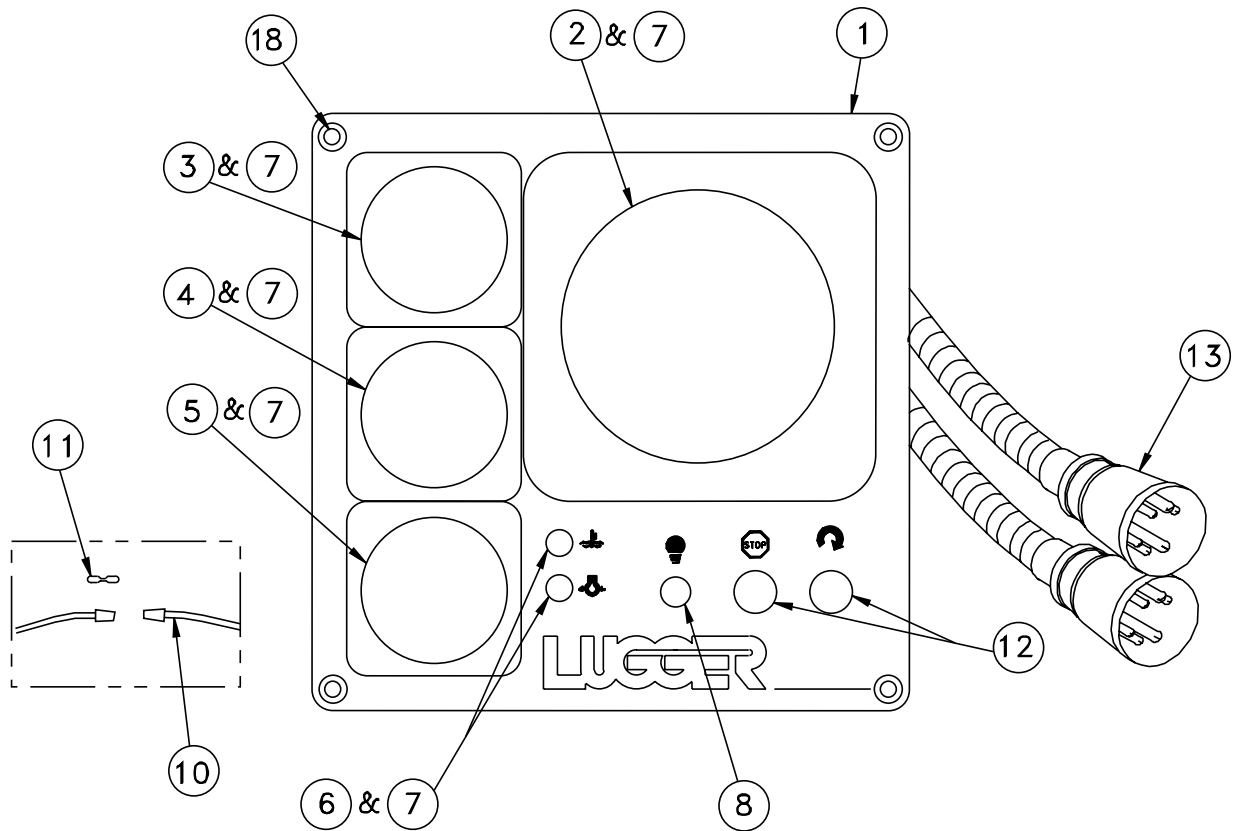
A-6865/ B-4734-2

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
**	22-96800	1	24 Volt Main Instrument Panel (includes all keys)	-
1	28-96801	1	Panel Plate	-
2	37-90023	1	Voltmeter, 24 Volt	-
3	37-90024	1	Hourmeter	-
4	37-90026	1	Temperature Gauge, 24 Volt	-
5	37-90028	1	Oil Pressure Gauge, 0-150 PSI, 24 Volt	-
6	22-40263	1	Alarm Horn, 24 Volt	-
7	27-96804	1	Tachometer 0-3000 RPM	-
8	22-44851	2	Fault Lamp Holder, Amber	-
9	22-44853	**	Bulb, Clear 24 Volt	-
10	37-94803	1	Key Switch	-
11	22-40247	1	Toggle Switch (for panel lights)	-
12	22-41060	2	Diode (not shown)	-
13	22-00044	1	Fuse Holder, In-line	-
14	22-41008	1	Fuse, 7-1/2 Amp	-
15	37-91007	1	Push Button, Weather proof	-
16	22-44859	1	Wire Harness	-
17	22-44861	1	Red Diffuser (for hourmeter, not shown)	-
19	12-90002	4	Screw, #8 x 1" type AB Phillips	-
20	37-94814	**	Key	-
			** As required	



FLYBRIDGE PANEL "BLUE LINE" 24 VOLT

Lugger Application



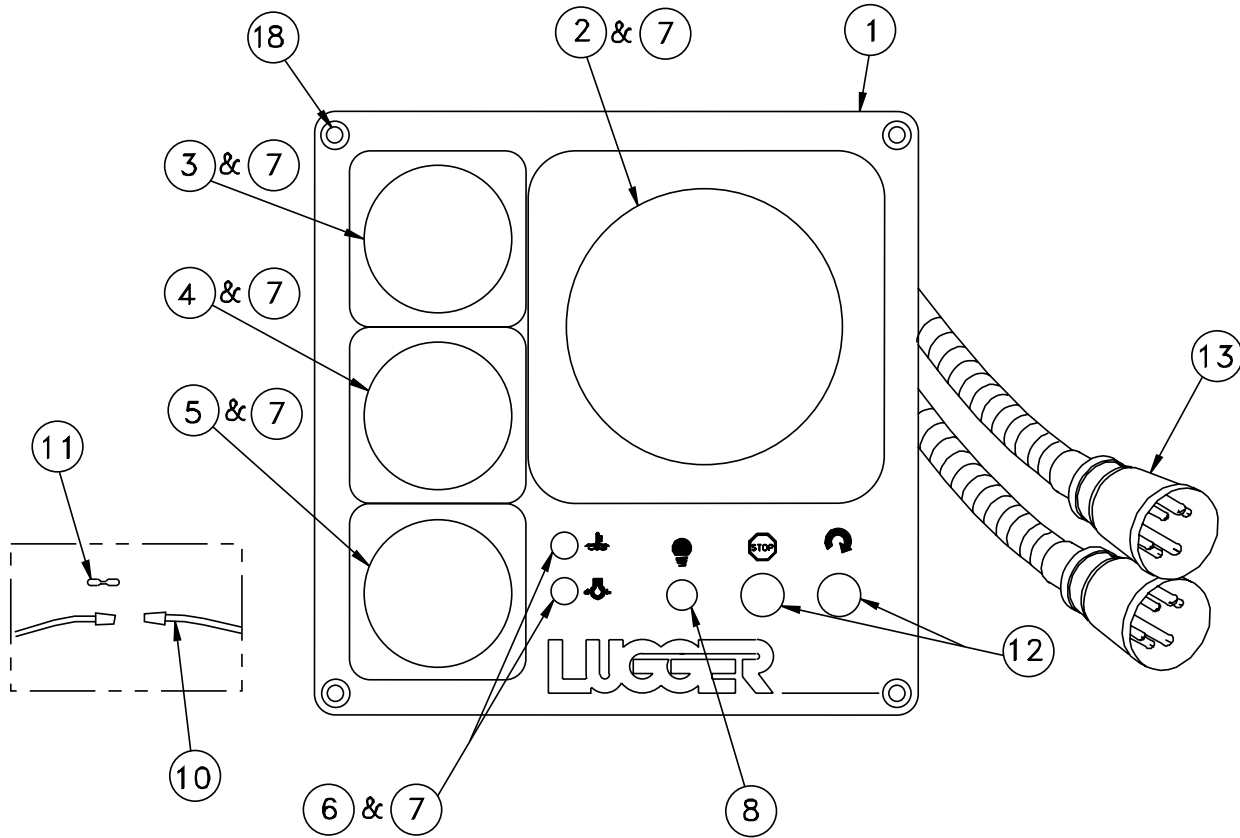
A-6756, A-6755/ B-4734-3A

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	22-94910	1	Flybridge Panel Kit 24 Volt (includes all keys)	-
•	22-94905	1	Flybridge Panel 24 Volt (includes keys 1-14 & 18)	-
1	37-94802	1	Panel Plate	-
2	37-94902	1	Tachometer 0-3000 RPM	-
3	37-94811	1	Oil Pressure Gauge 0-150 PSI, 24 Volt	-
4	37-94810	1	Temperature Gauge, 24 Volt	-
5	22-40263	1	Alarm Horn, 24 Volt	-
6	22-44851	2	Fault Lamp Holder, Amber	-
7	37-41003	**	Bulb, Red 24 Volt	-
	22-44853	**	Bulb, Clear 24 Volt	-
8	22-44856	1	Dimmer Switch for Panel Lights	-
9	22-41060	2	6 Amp 50 Volt Diode *	-
10	22-00044	1	In-line Fuse Holder	-
11	22-41008	1	7.5 Amp Fuse	-
12	37-91007	2	Push Button, Weatherproof	-
13	22-90003	1	Wire Harness	-
14	22-40004	1	Resistor Kit *	-
15	22-44872	1	Oil Pressure Sender, Dual Station *	-
16	22-74802	1	Temperature Sender, Dual station *	-
17	22-71009	1	Double Plug "Y" Harness *	-
18	12-90002	4	Self tapping Screw #8 x 1, type AB Phillips	-
20	22-41001	1	Extension Harness 10 ft.*	-
			* Not shown	
			** As required	

GROUP 5 - ELECTRICAL SYSTEM

**FLYBRIDGE PANEL "VANGUARD" 24 VOLT**

*Lugger Application*



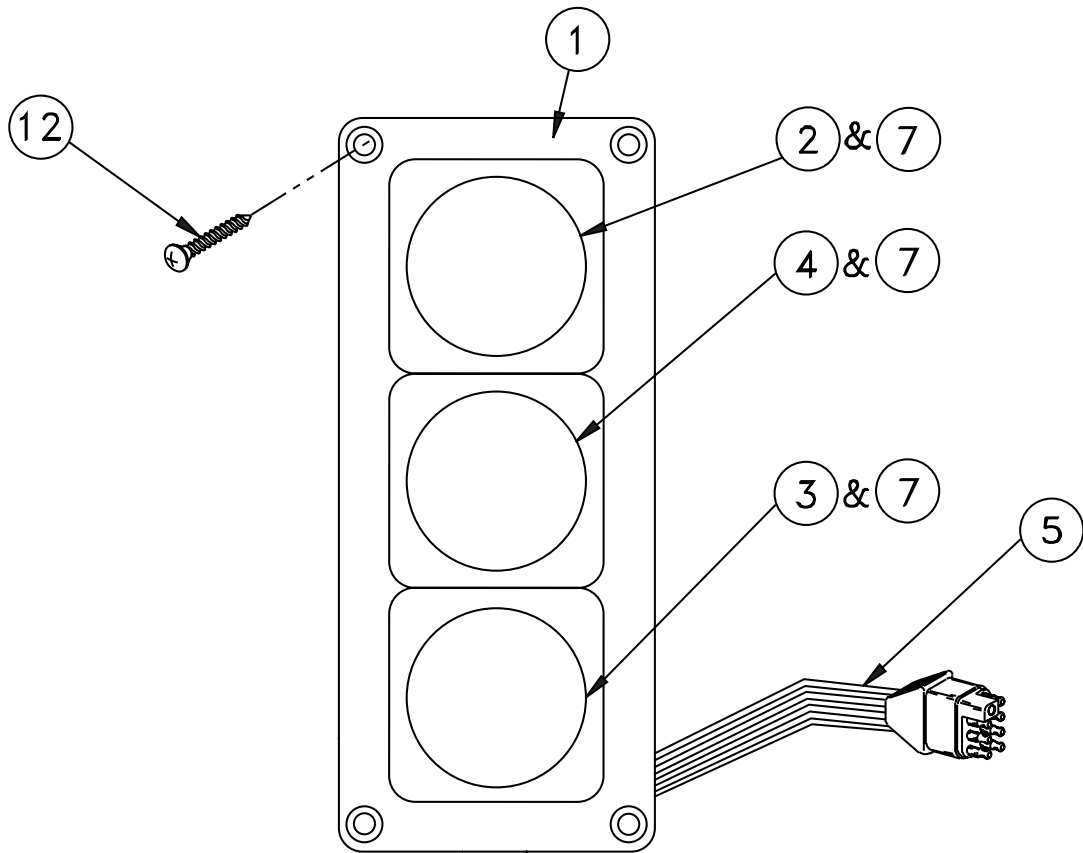
A-6881, A-6880/ B-4734-3A

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	22-96815	1	Flybridge Panel kit 24 Volt (includes all keys)	-
•	22-96814	1	Flybridge Panel 24 Volt (includes keys 1-13 & 18)	-
1	28-96802	1	Panel Plate	-
2	37-96804	1	Tachometer 0-3000 RPM, 24 Volt	-
3	37-90028	1	Oil pressure Gauge 0-150 PSI, 24 Volt	-
4	37-90026	1	Temperature Gauge, 24 Volt	-
5	22-40263	1	Alarm Horn, 24 Volt	-
6	22-44851	2	Fault Lamp Holder, Amber	-
7	22-44853	**	Bulb, Clear 24 Volt	-
8	22-40247	1	Toggle Switch for Panel Lights	-
9	22-41060	2	6 Amp 50 Volt Diode*	-
10	22-00044	1	In-line Fuse Holder	-
11	22-41008	1	7.5 Amp Fuse	-
12	37-91007	2	Push Button, Weatherproof	-
13	22-90003	1	Wire Harness	-
15	22-44872	1	Oil Pressure Sender, Dual Station*	-
16	22-74802	1	Temperature Sender, Dual Station*	-
17	22-71009	1	Double Plug "Y" Harness*	-
18	12-90002	4	Self tapping Screw #8 x 1, Type AB Phillips	-
19	21-51099	1	Bushing, Brass 3/4 NPT x 1/4 NPT*	-
20	22-41001	1	Extension Harness 10 ft.*	-

\* Not shown  
\*\* As required

AUXILIARY INSTRUMENT PANEL "BLUE LINE" 24 VOLT

Lugger Application



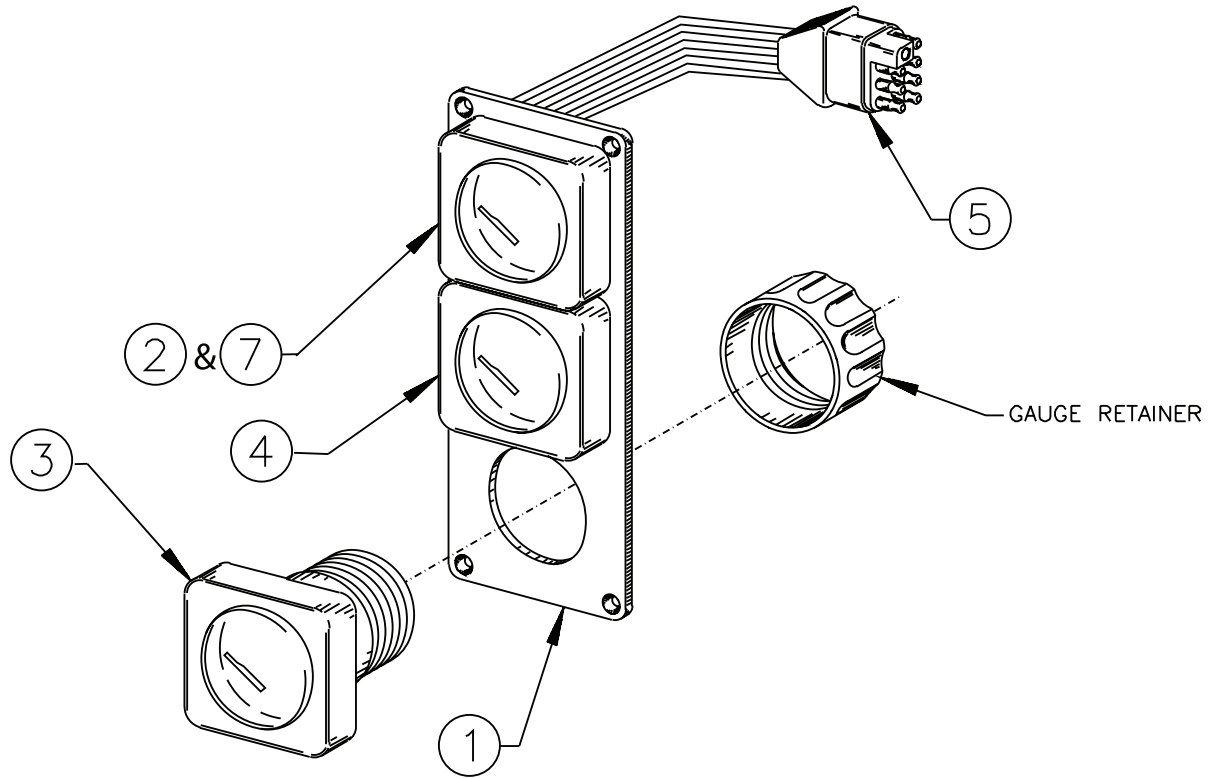
A-3892C, A-3888C/ B-6747

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	22-45020	1	Auxiliary Panel Kit 24 volt (includes all keys)	-
•	22-45019	1	Auxiliary Panel 24 volt (includes keys 1-7)	-
1	22-74801	1	Panel Plate	-
2	37-94809	1	Pyrometer Assembly (includes thermocouple & harness)	-
	37-94816	1	Pyrometer (gauge only)	-
	22-75006	1	Harness	-
	22-75007	1	Thermocouple	-
3	37-94812	1	Oil Pressure Gauge 0-350 PSI, 24 volt	-
	37-90019	1	Oil pressure Gauge 0-400 PSI, 12 volt	-
4	37-94808	1	Pressure Gauge 0-30 PSI, 12 volt	-
5	22-44865	1	Wire Harness	-
6	22-40004	**	Resistor Kit (for 12 volt gauges - not shown)	-
7	22-44853	**	Bulb, Clear, 24 Volt	-
	37-41003	**	Bulb, Red, 24 Volt	-
8	22-41094	1	Pressure Sender 0-30 PSI (not shown)	-
9	22-44873	**	Oil Pressure Sender 0-350 PSI (not shown)	-
	22-40239	**	Oil Pressure Sender 0-400 PSI (not shown)	-
10	21-00139	1	Adapter 1/8 BSPT x 1/8 NPT (not shown)	-
11	22-94803	1	Extension Harness 3' (not shown)	-
12	12-90002	4	Self Tapping Screw #8 x 1" type AB Phillips	-
		**	As required	

GROUP 5 - ELECTRICAL SYSTEM

AUXILIARY INSTRUMENT PANEL "VANGUARD" 24 VOLT

Lugger Application



A-6903/A-6904/ B-4766

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	22-96835	1	Auxiliary Panel Kit 24 volt (includes all keys)	-
•	22-96834	1	Auxiliary Panel 24 volt (includes keys 1-7)	-
1	28-94801	1	Panel Plate	-
2	37-94809	1	Pyrometer Assembly (includes thermocouple & harness)	-
	37-94816	1	Pyrometer (gauge only)	-
	22-75006	1	Harness	-
	22-75007	1	Thermocouple	-
3	37-90036	1	Oil Pressure Gauge 0-400 PSI, 24 Volt	-
4	37-90034	1	Pressure Gauge 0-80 PSI, 24 Volt	-
5	22-44865	1	Wire Harness	-
6	12-90002	4	Self Tapping Screw #8 x 1" Type AB Phillips *	-
7	22-44853	**	Bulb, Clear, 24 Volt	-
8	22-41016	1	Pressure sender 0-80 PSI *	-
9	22-40239	1	Oil pressure sender 0-400 PSI *	-
10	21-00139	1	Adapter 1/8 BSPT x 1/8 NPT *	-
11	22-94803	1	Extension Harness 3' *	-
			* Not shown	
			** As required	

## CYLINDER HEAD KIT

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	29-04900	1	Cylinder head gasket kit (includes all keys)	-
1	6162-13-1812	6	Head gasket, Standard	-
2	16-25002	2	O-ring	-
3	11-34804	1	Gasket, Turbo Mounting	-
4	11-31014	1	Gasket, Turbo Oil Inlet	-
5	11-31013	1	Gasket, Turbo Oil Return	-
6	11-34808	1	Gasket, Turbo Exhaust Outlet	-
7	11-34901	1	Gasket, Exhaust 8"	-
8	11-14902	1	Gasket, Raw Water Outlet	-
9	16-00003	2	O-ring	-
10	16-25701	1	O-ring	-
11	16-14904	2	O-ring	-
12	16-14903	2	O-ring	-
13	16-14905	2	O-ring	-
14	11-14901	1	Gasket	-
15	16-14902	1	O-ring	-
16	16-00004	1	O-ring	-
17	16-14802	2	O-ring	-
18	07000-02070	2	O-ring	-
19	07000-02075	1	O-ring	-
20	07000-02080	1	O-ring	-
21	07000-02095	2	O-ring	-
22	07000-03038	4	O-ring	-
23	07000-63028	12	O-ring	-
24	07002-03634	1	O-ring	-
25	07005-01612	2	Seal	-
26	08034-00414	5	Band	-
27	08034-00519	7	Band	-
28	195-03-14380	1	Gasket	-
29	6110-11-2820	4	O-ring	-
30	6127-51-6822	1	Gasket	-
31	6162-13-4140	2	Gasket	-
32	6162-13-4741	1	Gasket	-
33	6162-13-4811	6	Gasket, Intake	-
34	6162-13-5810	6	Gasket	-
35	6162-13-5890	4	Gasket	-
36	6162-13-6430	1	Gasket	-
37	6162-13-6440	2	Thermostat Seal	-
38	6162-13-6480	1	Gasket	-
39	6162-13-6570	1	Gasket	-
40	6162-13-7812	6	Gasket	-
41	6162-13-7823	6	Grommet	-
42	6162-13-8181	6	Rocker Cover Nozzle Seal	-
43	6162-13-8812	6	Gasket	-
44	6162-13-9620	2	Gasket	-
45	6162-13-9670	3	Gasket	-
46	6162-13-9790	1	Gasket	-
47	6162-13-6840	6	Gasket	-
48	6162-63-6880	2	O-ring	-
49	6162-63-8130	1	Gasket	-
50	6162-83-2870	2	Gasket	-
51	6166-11-6290	12	O-ring	-
52	6205-65-8410	1	Gasket	-
53	6212-65-8520	2	Gasket	-
54	6675-11-4960	2	Gasket	-
55	7700-75-1350	1	Gasket	-

**GROUP 6 - GASKET SETS**

**CYLINDER BLOCK & COOLANT PUMP KITS**

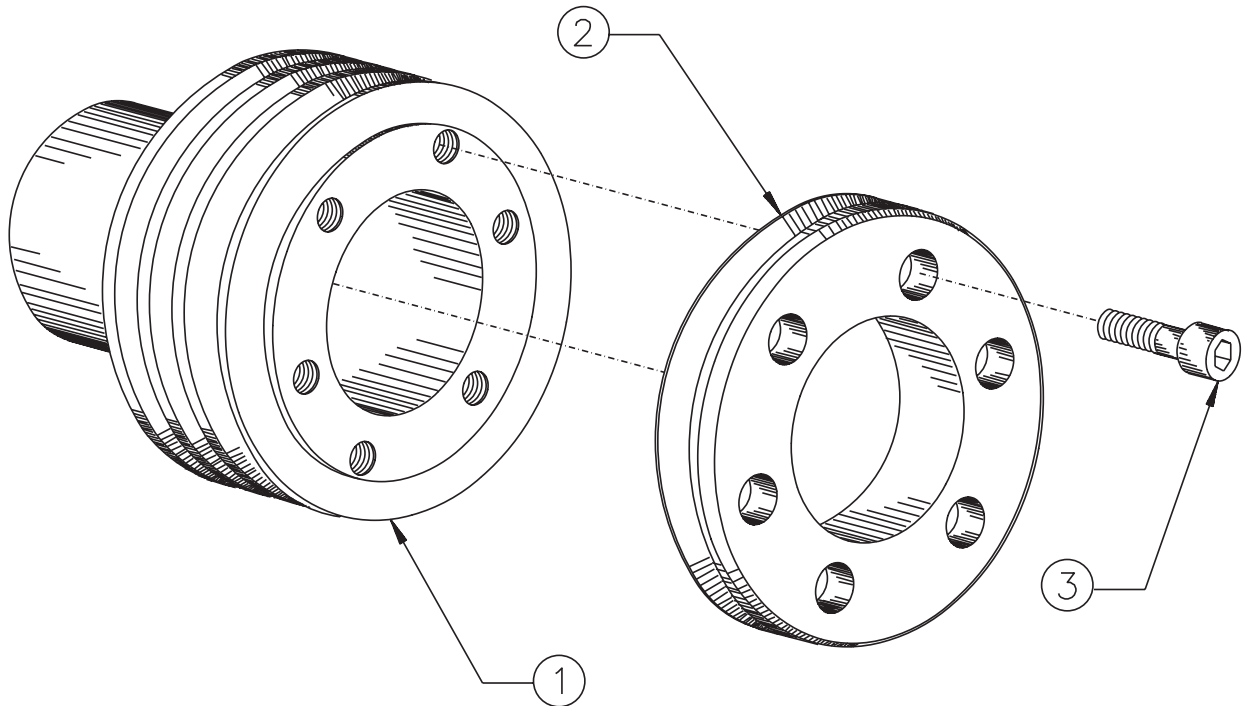
KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	29-04905	1	Cylinder block kit (includes all keys)	-
1	6162-k2-9901	1	Gasket Set	-
2	6136-21-5780	1	Gasket (formerly #6160-61-6811)	-
3	07002-33624	1	O-ring	-
4	6162-63-1691	1	Seal	-

**COOLANT PUMP KIT**

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
••	29-14900	1	O-ring	-
1	07000-02075	3	O-ring	-
2	07000-02095	1	O-ring	-
3	07000-05145	1	O-ring	-
4	07012-20048	1	Oil seal	-
5	6127-61-2971	1	O-ring	-
6	6162-63-1511	1	Seal	-
7	6162-63-1540	1	Oil seal	-
8	6162-63-1810	1	Gasket	-
9	6162-63-2160	1	Gasket	-

FRONT CRANKSHAFT PULLEY

Lugger Application

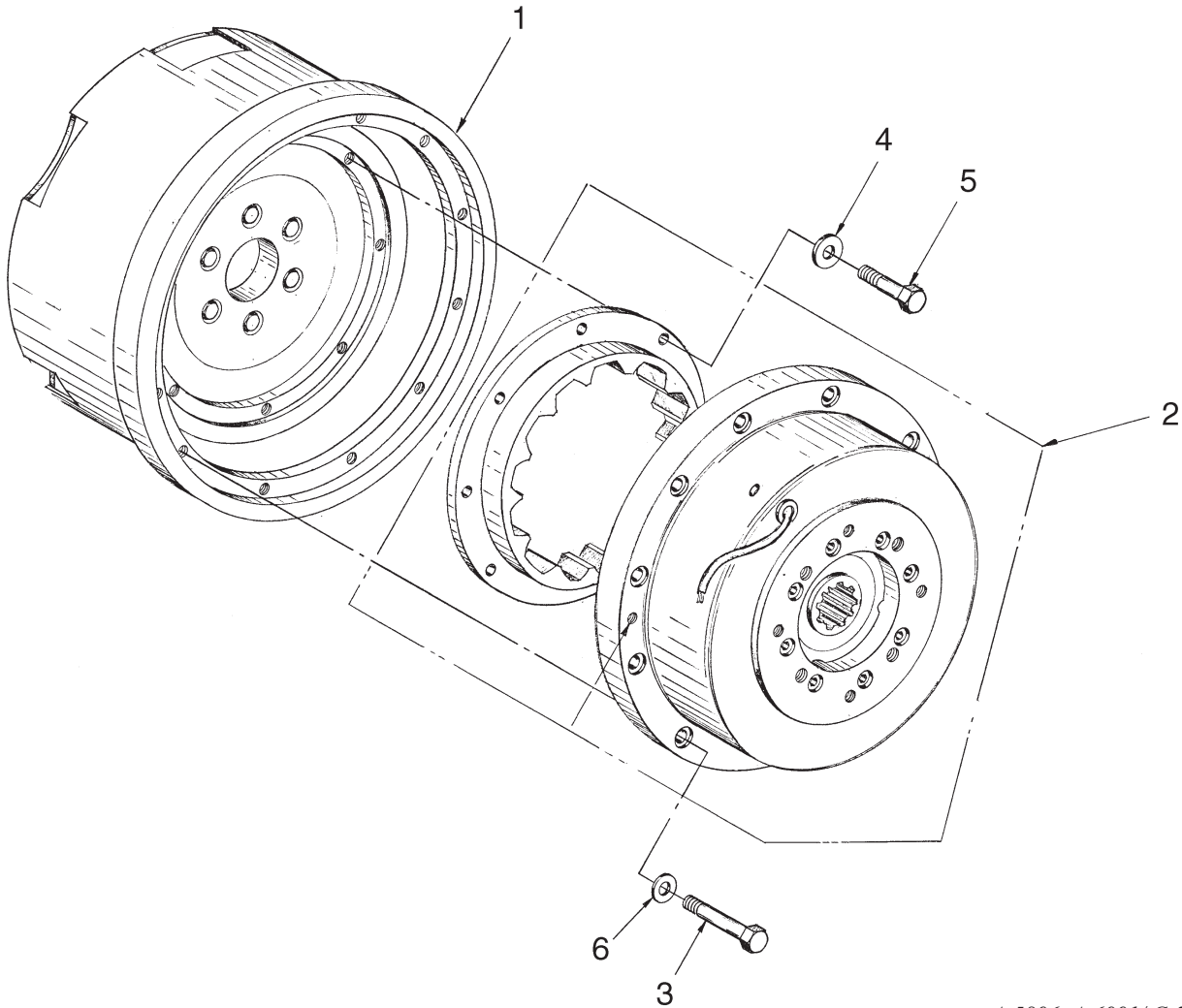


A-5901/B-4653

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	34-74902	1	Crankshaft pulley 3-A/B x 8-1/2"	-
2	34-74901	1	Pulley extension 1-A/B x 8-1/2"	-
3	12-01500	6	Capscrew, socket head M16 x 2.0 x 40mm	-
<p><b>Note:</b> Pulley extension cannot be used with stock crankshaft pulley. See crankshaft parts detail for mounting fasteners.</p>				

**GROUP 9 - ACCESSORIES AND OPTIONAL EQUIPMENT**

**PTO & ELECTRIC CLUTCH MOUNTING ARRANGEMENT**

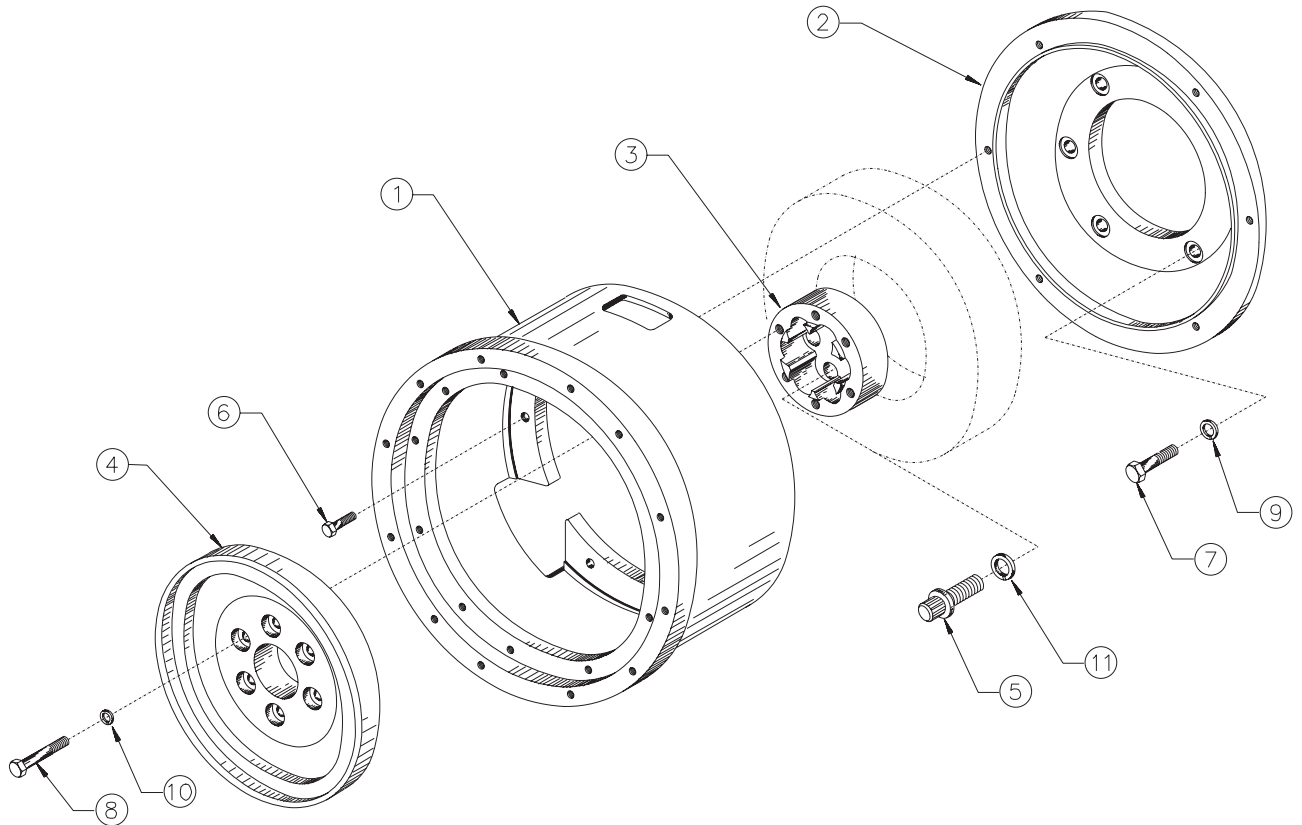


A-5896, A-6991/ C-2304

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	31-64900	1	PTO Adapter Assembly SAE #4/#10 (see parts detail)	-
	31-64905	1	PTO Adapter Assembly SAE #3/#11-1/2 (see parts detail)	-
2	34-60055	1	Electric Clutch H-49/C-Spline 24 Volt (see parts detail)	-
	34-66800	1	Electric Clutch H-55/D-E-Spline 24 Volt (see parts detail)	-
3	12-00315	12	Capscrew, Hex Head 3/8 -16 x 1 -3/4" (H-49 Clutch)	-
	12-00312	12	Capscrew, Hex Head 3/8 -16 x 1" (H-55 Clutch)	-
4	15-00301	8	Flat Washer 3/8	-
5	12-00312	8	Capscrew, Hex Head 3/8 -16 x 1"	-
6	15-00300	12	Flat Washer 3/8 Narrow	-



PTO & ELECTRIC CLUTCH ADAPTER SAE #4/#10 & #3/#11-1/2

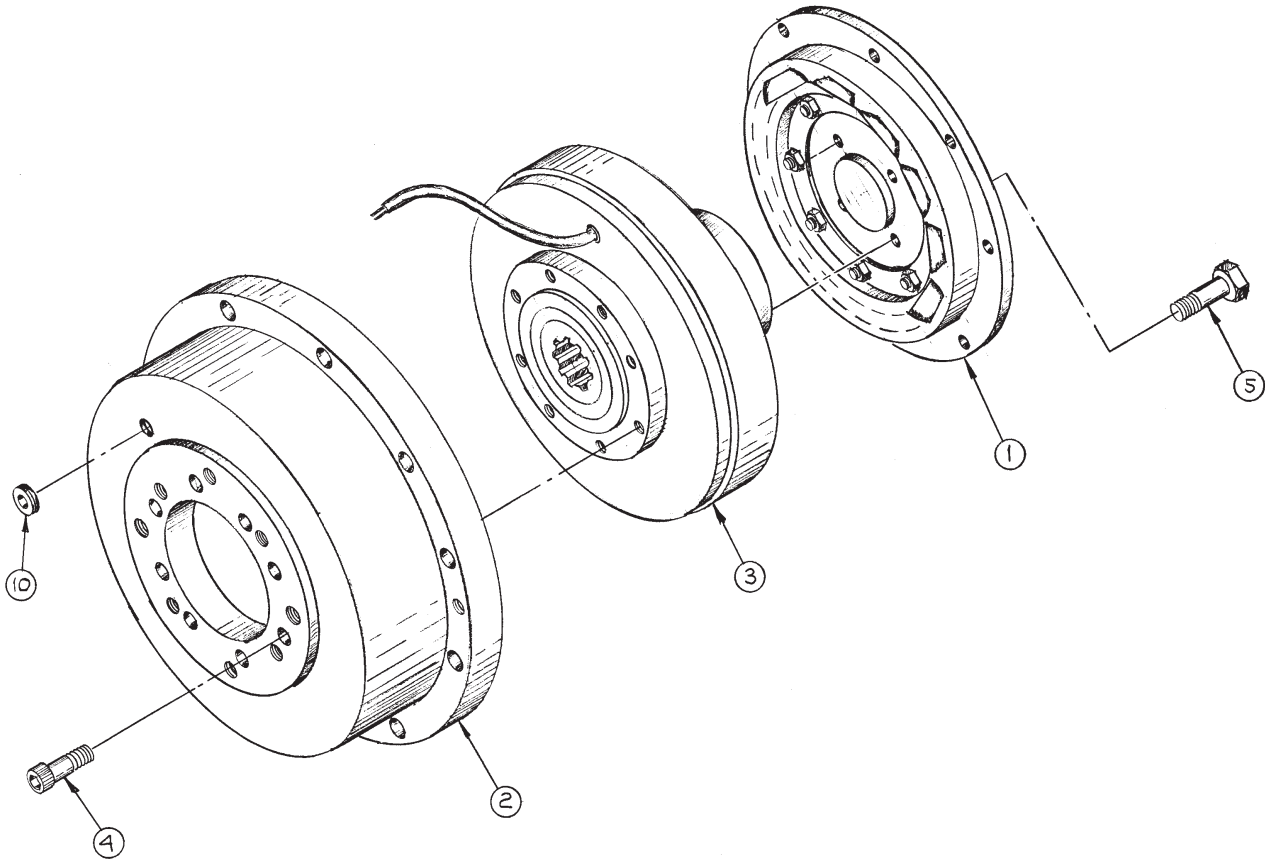


A-5894, A-6843/ C-2497

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	23-64901	1	PTO Housing SAE #3 and #4	-
2	31-64901	1	Flange	-
3	31-64902	1	Carrier Adapter	-
4	34-64801	1	PTO Carrier SAE#10	-
	34-64811	1	PTO Carrier SAE#11-1/2	-
5	12-64901	6	Capscrew, 12 point M22 x 1.5 x 50 mm	-
6	12-00832	6	Capscrew, Hex Head M10 x 1.5 x 30 mm	-
7	12-01403	6	Capscrew, Hex Head M14 x 2.0 x 50 mm	-
8	12-00955	6	Capscrew, Hex Head M12 x 1.75 x 60 mm (SAE #10 Carrier)	-
	12-00956	6	Capscrew, Hex Head M12 x 1.75 x 65 mm (SAE #11-1/2 Carrier)	-
9	15-01402	6	Lock Washer M14	-
10	15-00007	6	Lock Washer M12	-
11	15-02202	6	Lock Washer M22	-

**GROUP 9 - ACCESSORIES AND OPTIONAL EQUIPMENT**

**ELECTRIC CLUTCH COMPONENTS**

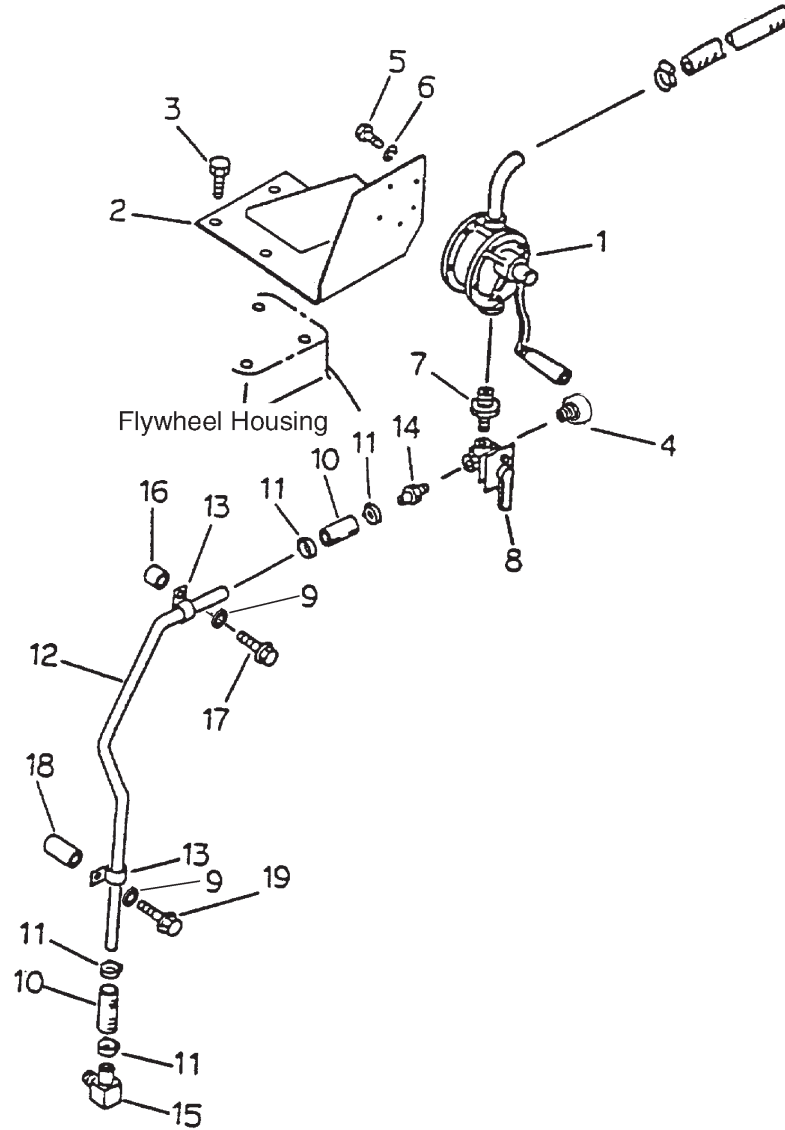


A-4056, A-6990/ C-2236

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	34-61454	1	Drive Assembly H-49 (includes key 11)	-
	34-65803	1	Drive Assembly H-55 (includes key 11)	-
2	10-60011	1	Clutch Housing H-49/C-Pad	-
	10-60012	1	Clutch Housing H-55/D-Pad	-
3	34-60026	1	Electric Clutch H-49/C-Spline, 24 Volt	-
	34-60038	1	Electric Clutch H55/D-E Spline, 24 Volt	-
4	12-00035	8	Capscrew, Socket Head 3/8-16 x 3/4"	-
5	12-00025	4	Capscrew, Hex Head 7/16-20 x 3/4"	-
10	00-61003	1	Grommet	-
11	00-61001	**	Drive Block (not shown)	-
			** As required	

**OIL CHANGE PUMP**

Left Hand



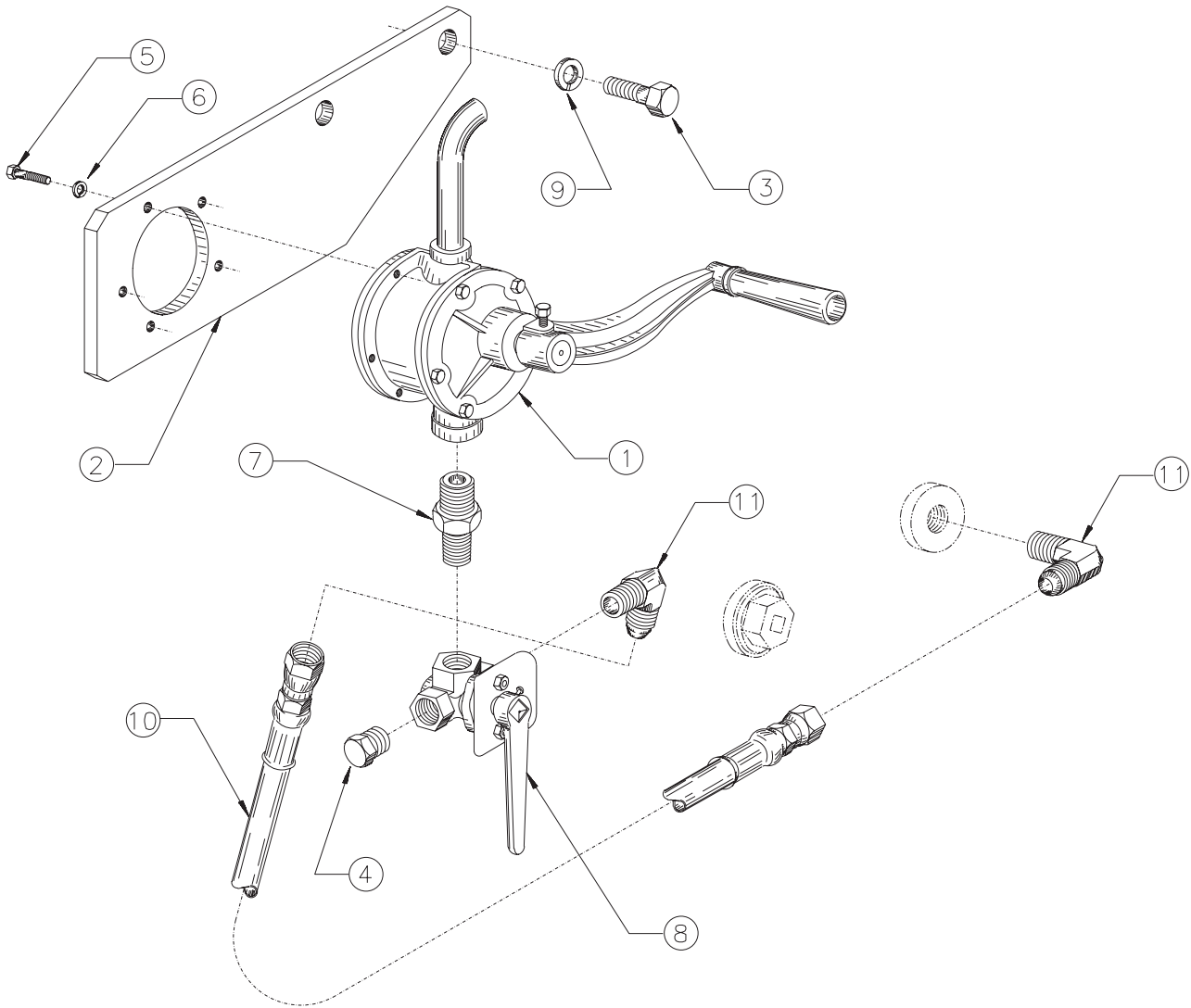
A-6804/ Fig. 3501

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	6136-55-7112	1	Oil Change Pump	-
2	6162-53-7530	1	Bracket	-
3	12-00912	4	Capscrew, Hex Head M12 x 1.75 x 25 mm	-
4	21-00530	1	Plug, Hex Head, Brass 1/2 NPT	-
5	12-01131	5	Capscrew, Hex Head M6 x 1.0 x 20 mm	-
6	15-01132	5	Lock Washer, Helical M6	-
7	7700-51-1850	1	Nipple	-
8	7700-51-1810	1	2-way Valve	-
9	15-00805	2	Flat Washer M10	-
10	07260-21407	2	Hose	-
11	19-00010	4	Hose Clamp #10	-
12	6162-53-7540	1	Pipe	-
13	19-72254	2	Adelle Clamp 5/8" ID x 3/8 " Stud	-
14	232-43-54430	1	Nipple	-
15	232-43-54460	1	Elbow	-
16	6130-21-6760	1	Spacer	-
17	12-00814	1	Capscrew, Hex Head M10 x 1.5 x 35 mm	-
18	6130-22-6760	1	Spacer	-
19	12-00817	1	Capscrew, Hex Head M10 x 1.5 x 55 mm	-

**GROUP 9 - ACCESSORIES AND OPTIONAL EQUIPMENT**

**OIL CHANGE PUMP**

*Right Hand*



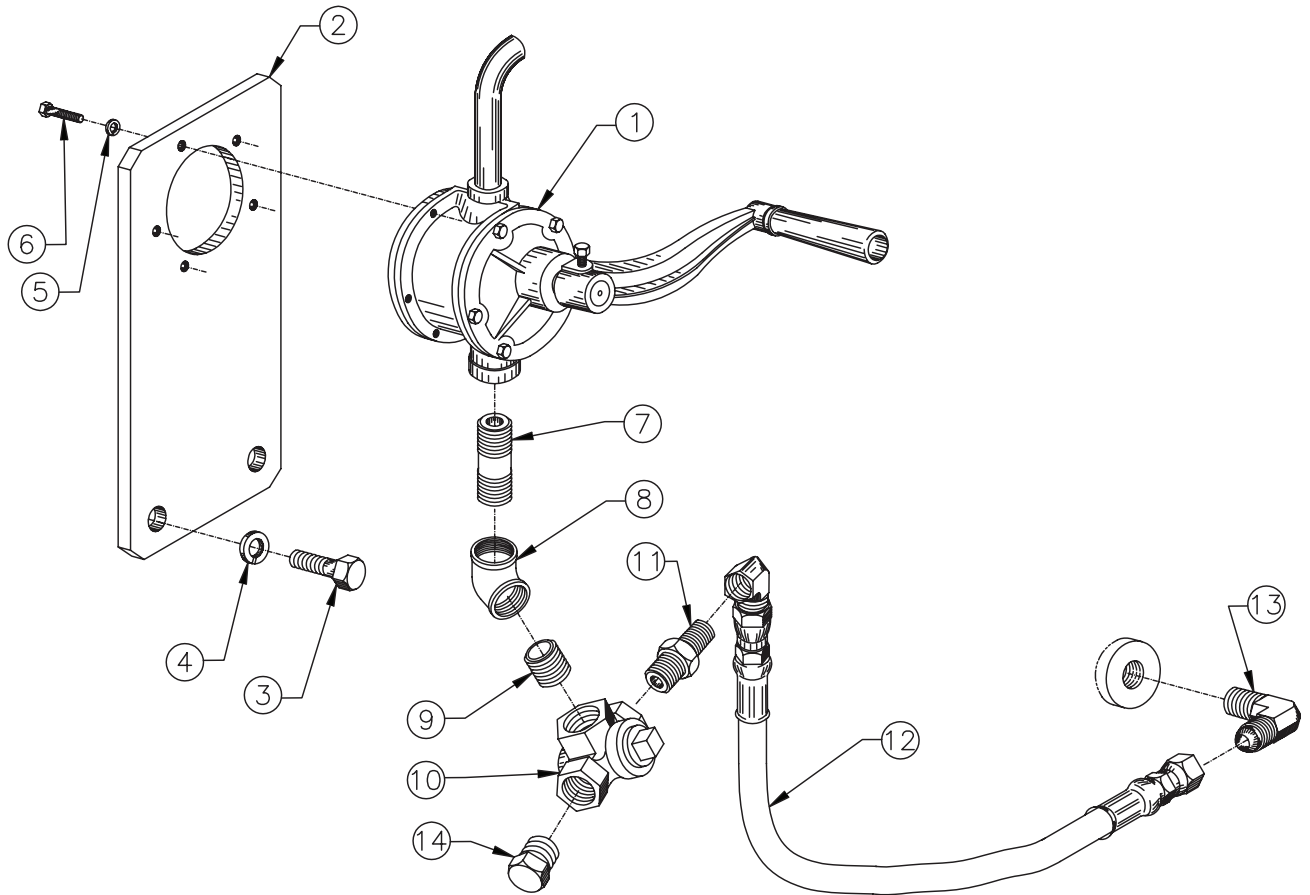
A-6802/ C-3148

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	6136-55-7112	1	Oil Change Pump	-
2	23-74908	1	Bracket	-
3	12-01802	2	Capscrew, Hex Head M18 x 2.5 x 40 mm	-
4	21-10005	1	Plug, Hex Head, Steel 1/2 NPT	-
5	12-01131	5	Capscrew, Hex Head M6 x 1.0 x 25 mm	-
6	15-01132	5	Lock washer, Helical M6	-
7	7700-51-1850	1	Nipple	-
8	7700-51-1810	1	2-way Valve	-
9	15-01802	2	Lock Washer, Helical M18	-
10	18-64813	1	Hose Assembly, 1/2" ID x 31"	-
11	21-62507	2	Male Elbow 90° Steel, 1/2 NPT x 5/8-37T	-
12	07002-23634	1	O-ring (not shown)	-

**GROUP 9 - ACCESSORIES AND OPTIONAL EQUIPMENT**

**OIL CHANGE PUMP**

*Right Hand, Late Production*



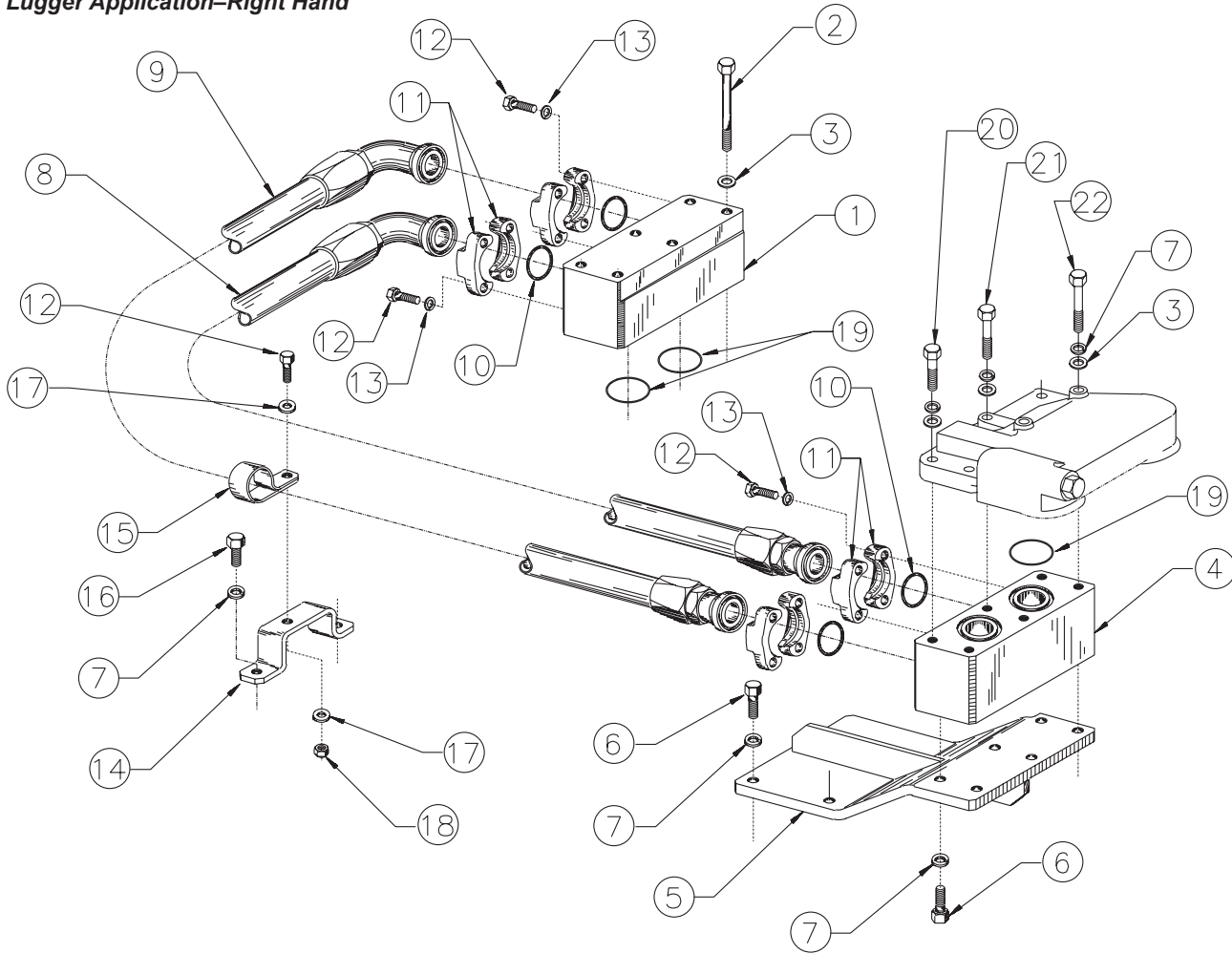
*A-9105/ C-6717*

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	36-74807	1	Oil Drain Pump	-
2	23-74912	1	Bracket	-
3	12-01802	2	Capscrew, Hex Head M18 x 2.5 x 40 mm	-
4	21-01802	2	Lock Washer, Helical M18	-
5	12-00031	5	Capscrew, Hex Head M6 x 1.0 x 25 mm	-
6	15-01132	5	Lock washer, Helical M6	-
7	21-00000	1	Nipple, 3/4 NPT x 3"	-
8	21-00020	1	Female Elbow, 45° BP 3/4 NPT x 3/4 NPT	-
9	21-00021	1	Close Nipple, BP 3/4 NPT x 1-3/8"	-
10	36-70001	1	3 Way Valve, Brass 3/4 NPT Female	-
11	21-74801	1	Male Connector, Steel 3/4 NPT x 5/8-37T	-
12	18-64813	1	Hose Assembly, 1/2" ID x 31"	-
13	21-62507	1	Male Elbow, 90° Steel 1/2 NPT x 5/8-37T	-
14	21-12530	1	Plug, Hex Head Brass 3/4 NPT	-

**GROUP 9 - ACCESSORIES AND OPTIONAL EQUIPMENT**

**OIL FILTER ASSEMBLY**

*Lugger Application—Right Hand*

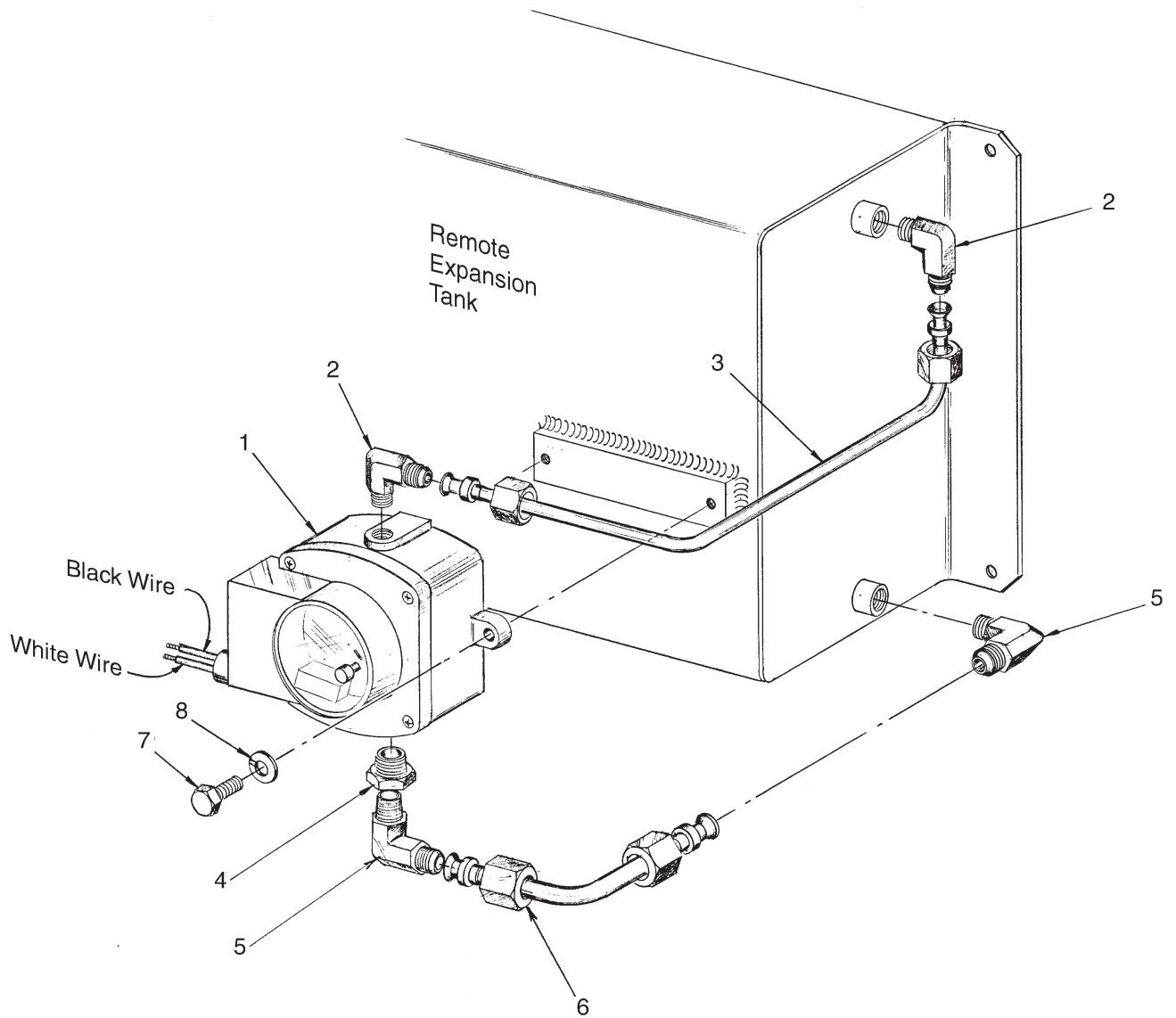


A-6730/C-3176

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	36-74907	1	Adapter, Remote Oil Filter	-
2	12-00924	6	Capscrew, Hex Head M12 x 1.75 x 100 mm	-
3	15-00007	12	Flat Washer M12	-
4	36-74906	1	Manifold	-
5	23-74904	1	Bracket	-
6	12-00953	10	Capscrew, Hex Head M12 x 1.75 x 30 mm	-
7	15-00912	18	Lock Washer, Helical M12	-
8	18-74901	1	Hose Assembly 1-1/8" ID x 37"	-
9	18-74902	1	Hose Assembly 1-1/8" ID x 43"	-
10	16-95401	4	O-ring	-
11	21-74903	8	Split Flange	-
12	12-00832	17	Capscrew, Hex Head M10 x 1.5 x 30 mm	-
13	15-00802	16	Lock Washer, Helical M10	-
14	23-74905	1	Bracket	-
15	19-14801	2	Adelle Clamp	-
16	12-00912	2	Capscrew, Hex Head M12 x 1.75 x 25 mm	-
17	15-00805	2	Flat Washer M10	-
18	14-00812	1	Hex nut, Nylock M10 x 1.5	-
19	07000-63050	4	O-ring	-
20	12-04802	3	Capscrew, Hex Head M12 x 1.75 x 40 mm	-
21	12-00906	1	Capscrew, Hex Head M12 x 1.75 x 50 mm	-
22	12-00965	2	Capscrew, Hex Head M12 x 1.75 x 70 mm	-

**WATER LEVEL SWITCH/GAUGE**

*Lugger Application*



A-4155A/ C-2318A

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
1	22-10003	1	Water Level Switch/Gauge	-
2	21-71049	2	Male Elbow, 90° Steel 1/4 NPT x 1/4 -37T	-
3	27-75005	1	Tube Assembly	-
4	21-00135	1	Brass Bushing 1/2 NPT x 1/4 NPT	-
5	21-00015	1	Male Elbow, 90° Steel 1/4 NPT x 3/8 -37T	-
6	27-75004	1	Tube Assembly	-
7	12-00111	2	Capscrew, Hex Head 1/4 -20 x 3/4"	-
8	15-00103	2	Star Washer 1/4"	-
9	22-75015	1	Wire Harness (not shown)	-



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