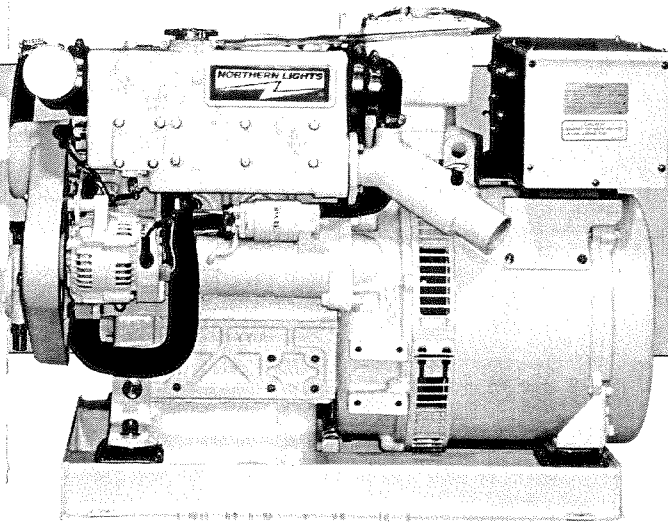


For your convenience, Diesel Parts Direct is providing access to this Northern Lights Parts Catalog to assist you with purchasing the correct parts for your generator or engine.

Any of the parts listed in this catalog are available for purchase from the Northern Lights Generator Parts website.

Use the table of contents to search the catalog and identify your part number.

Once you have located the part number in the catalog, return to the Northern Lights Generator Parts website and type the part number in the Store Search Box. Then, add the item to your shopping cart to complete your purchase.



P773LK

For Model: M773LK

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.



www.northern-lights.com

Northern Lights
4420 14th Avenue N.W.
Seattle, WA 98107
Tel: (206) 789-3880
Fax: (206) 782-5455

Copyright ©2003 Alaska Diesel Electric, Inc.
All rights reserved. Northern Lights™, and
the Northern Lights logo are trademarks of
Alaska Diesel Electric, Inc.

Printed in U.S.A.
PART NO.: P773LK 09/03

PARTS CATALOG

for Model
M773LK

Please read thoroughly before attempting to use this manual:

Table of Contents	I
Model Designation & Serial Numbers	II
Reading a Parts Page	III

Table of Contents

GROUP 1 - ENGINE

Cylinder Block Assembly	0 - 1
Crankshaft Assembly	2 - 3
Oil Pump	4
Camshaft	5
Cylinder Head	6
Rocker Arm	7
Rocker Arm Cover	8

GROUP 2 - INTAKE & EXHAUST SYSTEM

Air Intake and Filter	0
-----------------------------	---

GROUP 3 - COOLING SYSTEM

Exhaust Manifold and Heat Exchanger	0 - 1
Coolant Pump	2
Raw Water Pump and Mounting	3
Raw Water Pump	4
Coolant Recovery Tank	5

GROUP 4 - FUEL SYSTEM

General Arrangement	0 - 1
Governor and Timing Gear Case	2 - 3
Fuel Filter and Piping	4 - 5
Fuel Line Connection	6
Fuel Injector	8
Fuel Feed Pump	9

GROUP 5 - ELECTRICAL SYSTEM

12 Volt Engine	0
Alternator and Starter	1
Alternator	2 - 3
Starter Assembly	4
Series 1 Control Panel, 12 and 24 Volt	5
Series 1-B Control Panel, 12 and 24 Volt	6
Belt Guard Assembly	7

GROUP 6 - GASKET SETS

Gasket Kit	0
------------------	---

GROUP 8 - FRAME & MOUNTING

Base Frame Assembly	1
---------------------------	---

GROUP 9 - ACCESSORIES

& OPTIONAL EQUIPMENT

Flush Mount Dual Station Panel	0
S 3-B Control Panel	1
Oil Drain Kit	2

Proprietary Information

This publication is the property of Alaska Diesel Electric, Inc.
It may not be reproduced in whole or in part without the written permission of Alaska Diesel Electric, Inc.
© Alaska Diesel Electric, Inc. All rights reserved. Litho U.S.A. Publication number P773LK 09/03

MODEL DESIGNATION

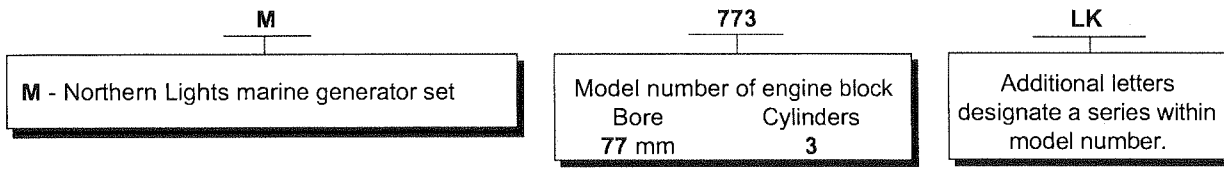
MODELS INCLUDED

This manual covers the operating instructions for:

M773LK which uses the 773LK engine

MODEL NUMBERS

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

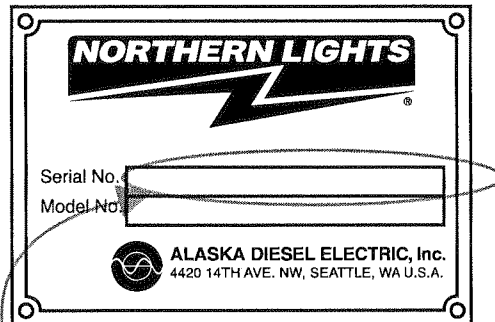


M773LK Northern Lights marine diesel generator set with an 773 engine and a PX309K generator.

SERIAL NUMBERS

NORTHERN LIGHTS

Your set has three serial numbers: ① an engine number stamped on the block, ② a generator plate, and ③ a generator set plate. Use the serial number on the **generator set plate** when ordering parts or in correspondence. The generator set plate is found on the service side of the generator and resembles the drawing below.



*Generator Set Serial Number
for units with PXX
generators*

READING A PARTS PAGE

IMPORTANT:

Before selecting parts, be sure that you are choosing parts from the correct page.
 Check the model designation at the page top.
 Do not use this illustration for parts purchasing.

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIAL NUMBER
0	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:

- | | |
|--|--|
| <ol style="list-style-type: none"> 1. Grouping section title. 2. Model designation of equipment that uses parts listed on this page. 3. Title and description of assembly. 4. Drawing numbers that correspond to key column numbers for parts identification. 5. Key column for locating parts shown on drawing. 6. Part number. | <ol style="list-style-type: none"> 7. Quantity of parts used. 8. Description of each component part. 9. Serial number of unit the part fits. 10. Assembly or kit designated by Key 0 or ••/•. 11. Grouping index number. 12. Page number within the grouping index. 13. Manual title. 14. Page publication date. |
|--|--|

NOTE: ⇨ Arrows always point toward the front of the engine.

Cylinder Block Assembly M773LK

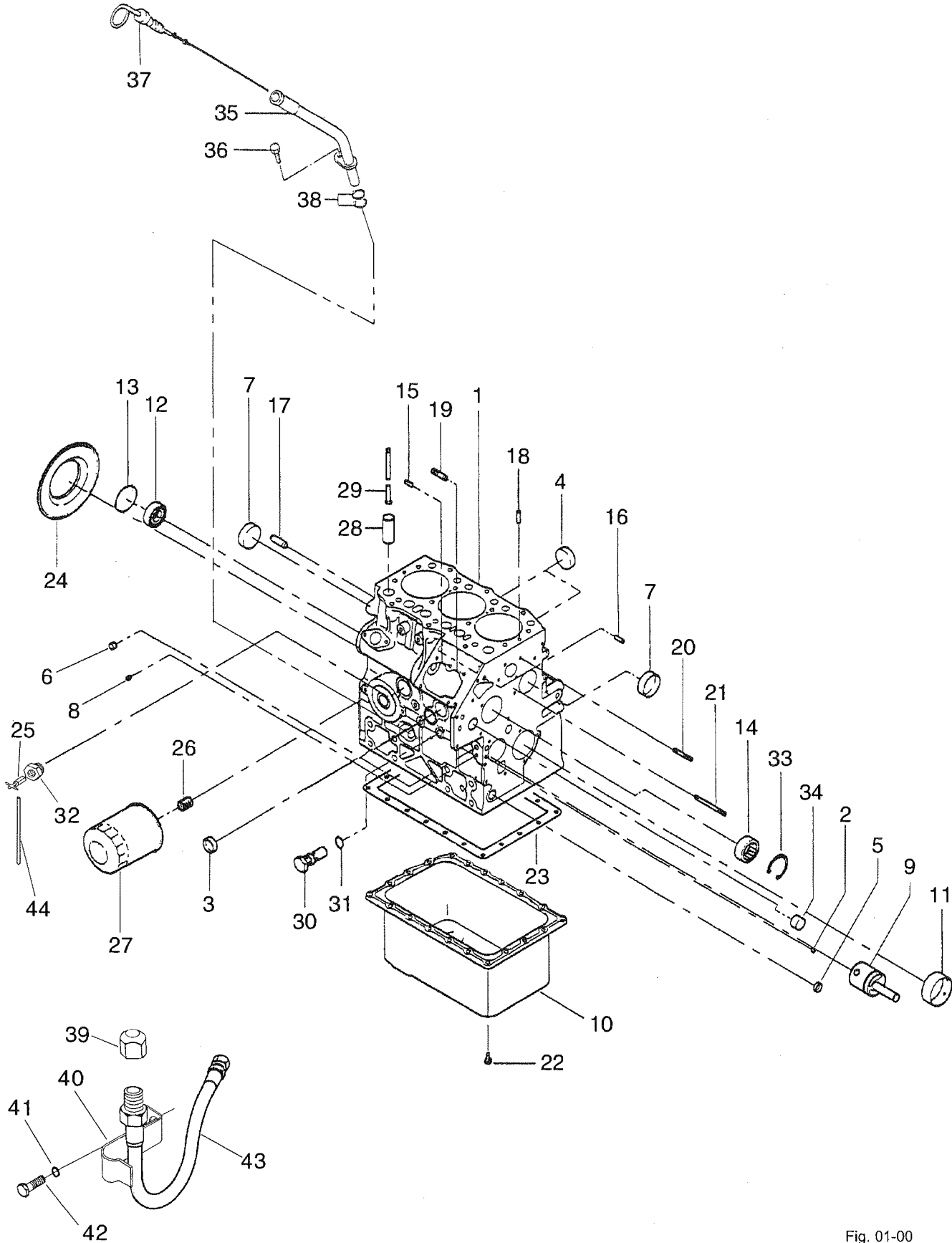


Fig. 01-00

Cylinder Block Assembly M773LK

KEY	PART NUMBER	QTY	DESCRIPTION	S/N
1	110103541	1	Cylinder Block Assembly (Includes keys #2 - #21, formerly #110103540)	-
2	198466050	1	Blank Plug	-
3	064210025	1	Expansion Plug, 25 mm	-
4	064210035	2	Expansion Plug, 35 mm	-
5	064210015	1	Expansion Plug, 15 mm	-
6	198466010	4	Blank Plug	-
7	064210040	2	Expansion Plug, 40 mm	-
8	198466030	4	Blank Plug	-
9	165296142	1	Idle Gear Shaft Assembly	-
10	110708620	1	Oil Pan	-
11	198517592	1	Bush; S.T.D. (formerly #198517591)	-
	198517596	1	Bush; U.S. 0.25 (formerly #198517595)	-
	198517599	1	Bush; U.S. 0.50 (formerly #198517598)	-
12	040106203	1	Bearing	-
13	064100045	1	Expansion Plug, 45 mm	-
14	042303015	1	Bearing	-
15	030500512	2	Dowel Pin	-
16	030500616	2	Dowel Pin	-
17	030501025	2	Dowel Pin	-
18	030309005	2	Spring Pin	-
19	012100620	2	Stud	-
20	012100635	1	Stud	-
21	012110660	1	Stud	-
22	010109235	20	Capscrew, Hex Head M6 x 1.0 x 14 mm (with Lock Washer)	-
23	110996800	1	Gasket	-
24	050209107	1	Oil Seal	-
25	198736050	1	Drain Cock	-
26	140546020	1	Joint	-
27	24-02001	1	Oil Filter	-
28	120116160	6	Tappet	-
29	120456222	6	Push Rod	-
30	140036220	1	Relief Valve Assembly	-
31	052109078	1	O-Ring	-
32	198486770	1	Bushing	-
33	036509005	1	Snap Ring	-
34	198466060	1	Plug	-
35	110756490	1	Dipstick Tube	-
36	011310612	1	Bolt	-
37	198416270	1	Dipstick	-
38	052100100	2	O-ring	-
39	21-00003	1	Cap	-
40	23-78601	1	Bracket	-
41	15-00302	1	Lock Washer 3/8	-
42	12-00311	1	Capscrew, Hex Head 3/8-16 x 3/4"	-
43	18-72004	1	Oil Drain Hose	-
44	068115200	1	Tube	-

Crankshaft Assembly

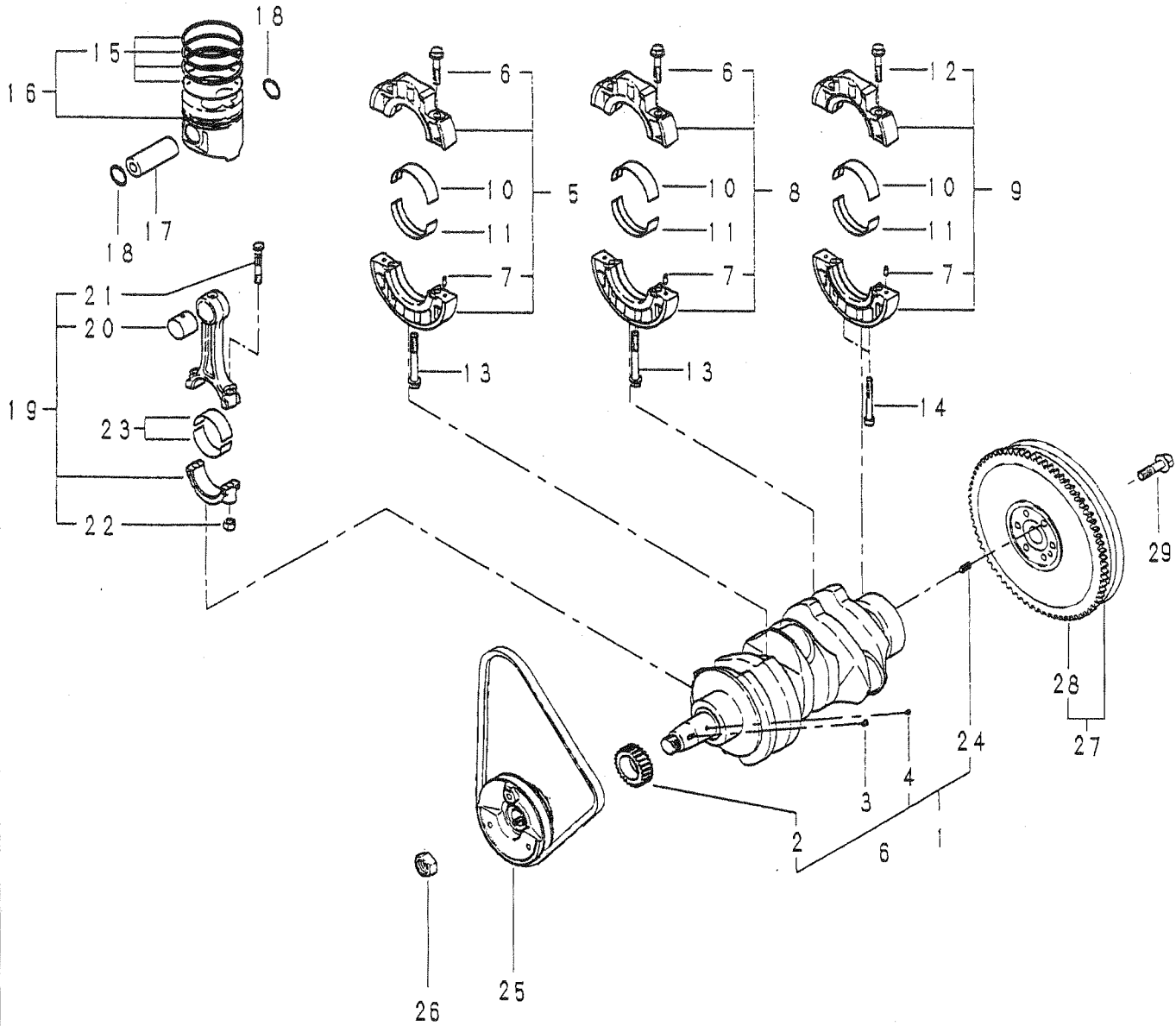


Fig. 1-2

Crankshaft Assembly

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	115256830	1	Crankshaft Assembly (includes keys #2 - 4 & #24)	-
2	115276180	1	Crankshaft Gear	-
3	034100508	1	Key	-
4	030509020	1	Dowel Pin	-
5	110156400	1	Bearing Holder Assembly (includes keys #6 & #7)	-
6	010810840	4	Bolt	-
7	030500612	6	Dowel Pin	-
8	110156410	1	Bearing Holder Assembly (includes keys #6 & #7)	-
9	110156420	1	Bearing Holder Assembly (includes keys #6 & #7)	-
10	198517572	3	Bearing; Upper S.T.D. (formerly #198517571 & 198517571)	-
	198517576	3	Bearing; Upper U.S. 0.25 mm (formerly #198517574 & 198517575)	-
	198517579	3	Bearing; Upper U.S. 0.50 mm (formerly #198517577 & 198517578)	-
11	198517582	3	Bearing; Lower S.T.D. (formerly #198517580 & 198517581)	-
	198517586	3	Bearing; Lower U.S. 0.25 mm (formerly #198517584 & 198517585)	-
	198517589	3	Bearing; Lower U.S. 0.50 mm (formerly #198517587 & 198517588)	-
12	010810845	2	Bolt	-
13	011510840	2	Bolt	-
14	010700835	2	Bolt	-
15	115107900	3	Ring Kit; S.T.D.	-
	115107430	3	Ring Kit; O.S. 0.50 mm	-
16	115017460	3	Piston Kit; S.T.D.	-
	115017450	3	Piston Kit; O.S. 0.50	-
17	115326231	3	Piston Pin	-
18	036500021	6	Snap Ring	-
19	115026340	3	Connecting Rod Assembly (includes keys #20 - #22)	-
20	198517125	3	Bushing	-
21	115176150	6	Connecting Rod Bolt	-
22	020109075	6	Nut	-
23	198517602	6	Bearing; S.T.D. (formerly #198517600 & 198517601)	-
	198517606	6	Bearing; U.S. 0.25 (formerly #198517604 & 198517605)	-
	198517609	6	Bearing; U.S. 0.50 (formerly #198517607 & 198517608)	-
24	030300816	1	Spring Pin	-
25	115396650	1	Crankshaft Pulley	-
26	020800018	1	Nut	-
27	115356720	1	Flywheel Assembly (includes key #28)	-
28	115376130	1	Ring Gear	-
29	010109340	6	Bolt	-

Oil Pump & Pick-up

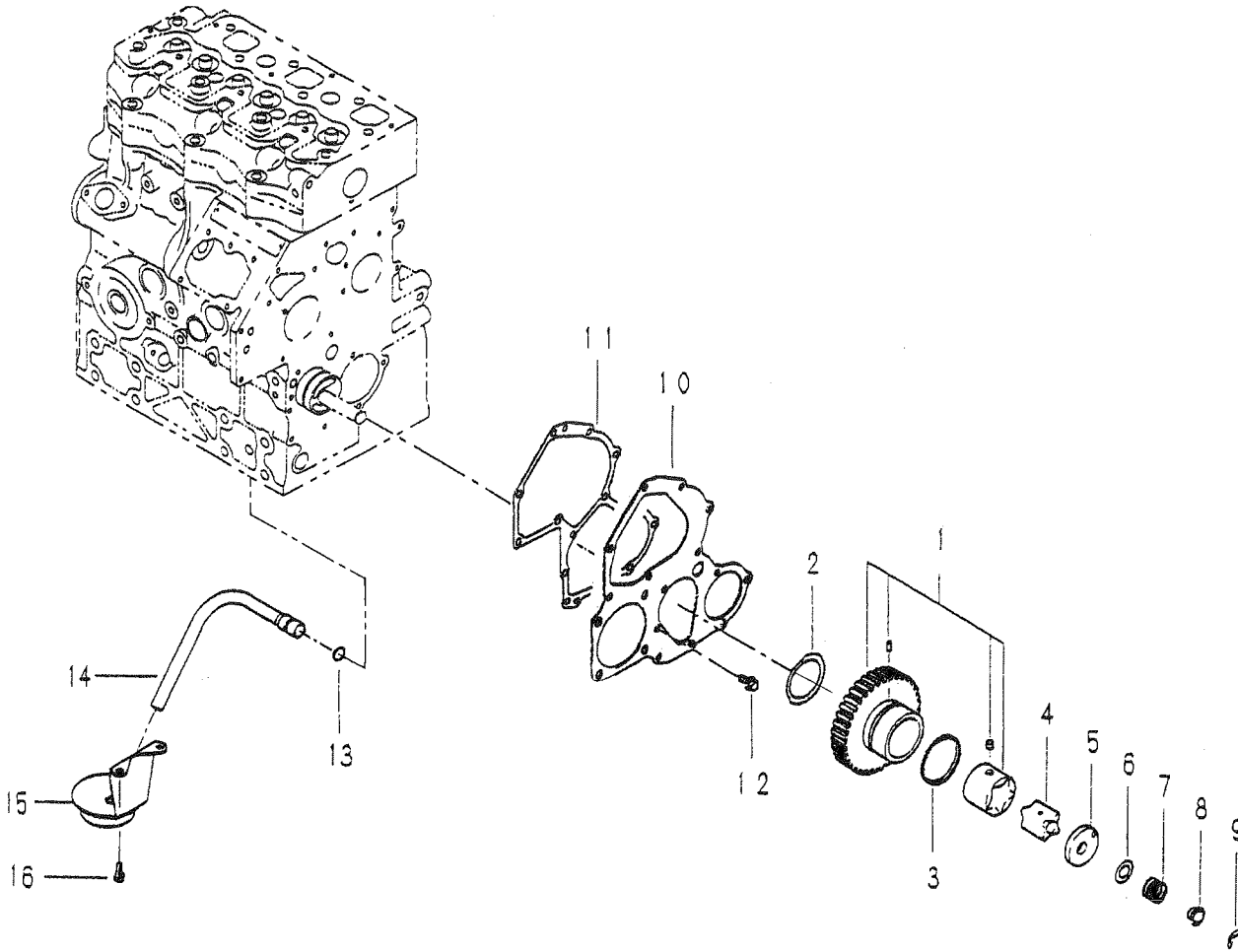


Fig. 1-4

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	165026100	1	Idle Gear Assembly	-
2	199266180	1	Thrust Washer	-
3	198216821	1	Spring	-
4	140166130	1	Rotor	-
5	140116140	1	Oil Pump Cover	-
6	199286150	**	Shim, 0.1 mm	-
	199286160	**	Shim, 0.15 mm	-
	199286170	**	Shim, 0.2 mm	-
	199286180	**	Shim, 0.5 mm	-
7	198216720	1	Spring	-
8	199236540	1	Collar	-
9	036800010	1	Snap Ring	-
10	165166240	1	Front Plate	-
11	165996520	1	Gasket	-
12	011310612	3	Bolt	-
13	052109076	1	O-ring	-
14	140986830	1	Oil Pipe	-
15	140406500	1	Pick-up	-
16	011310612	2	Bolt	-
			**As required	

Camshaft

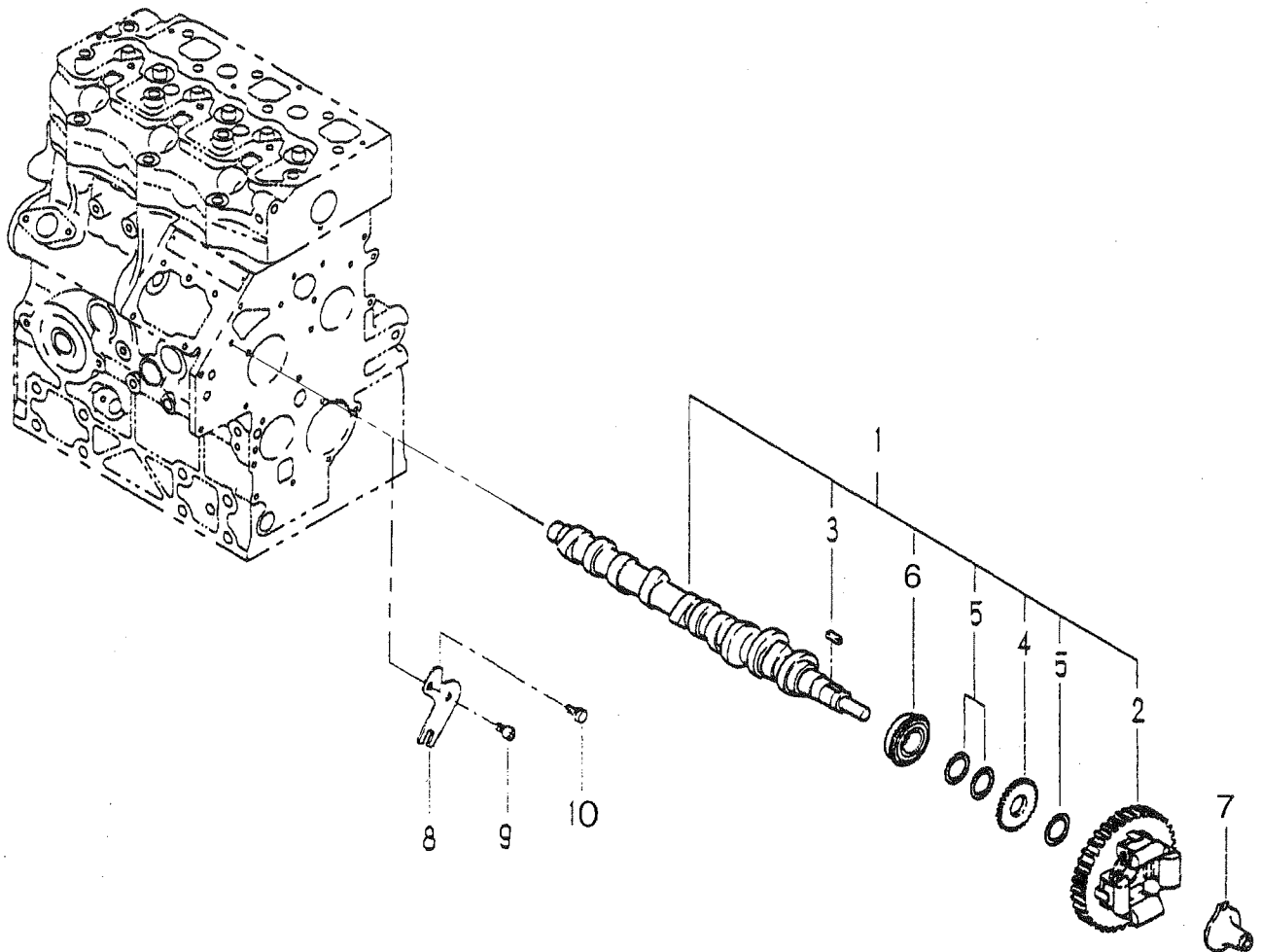


Fig. 1-5

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	120026570	1	Cam Shaft Assembly	-
2	120016021	1	Cam Gear Assembly	-
3	034100508	1	Key	-
4	120736081	1	Gear	-
5	199216230	3	Spacer	-
6	040109059	1	Bearing	-
7	125256120	1	Slider	-
8	199566651	1	Plate	-
9	010700610	1	Bolt	-
10	011310612	1	Bolt	-

Cylinder Head

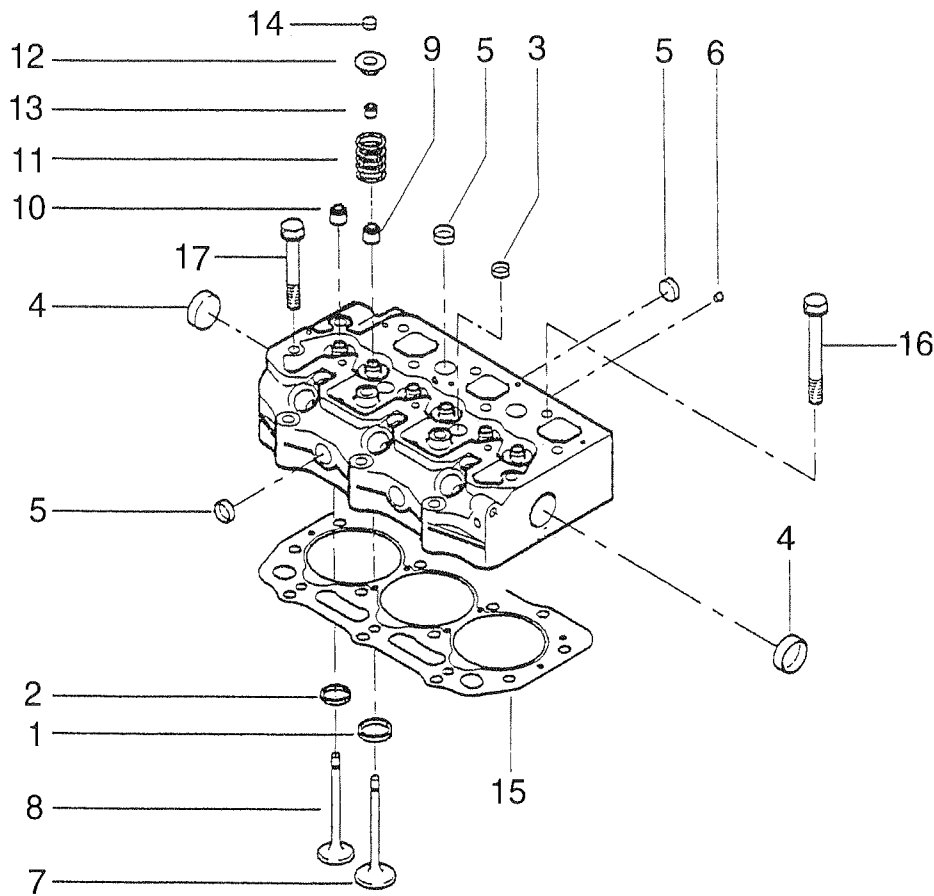


Fig. 1-6

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
••	111010290	1	Cylinder Head Assembly - (Includes keys #1 - #14)	-
1	110136300	3	Valve Seat	-
2	110136280	3	Valve Seat	-
3	064210015	2	Expansion Plug, 15 mm	-
4	064210030	2	Expansion Plug, 30 mm	-
5	064210018	6	Expansion Plug, 18 mm	-
6	198466030	2	Plug	-
7	120166360	3	Intake Valve	-
8	120176250	3	Exhaust Valve	-
9	120406070	3	Intake Valve Guide Seal	-
10	120406050	3	Exhaust Valve Guide Seal	-
11	198216700	6	Spring	-
12	120186080	6	Retainer	-
13	120226070	12	Cotter	-
14	120216040	6	Cap	-
15	111147560	1	Head Gasket; t = 1.2	-
	111147570	1	Head Gasket; t = 1.3	-
16	111136440	11	Head Bolt	-
17	111136450	3	Head Bolt	-

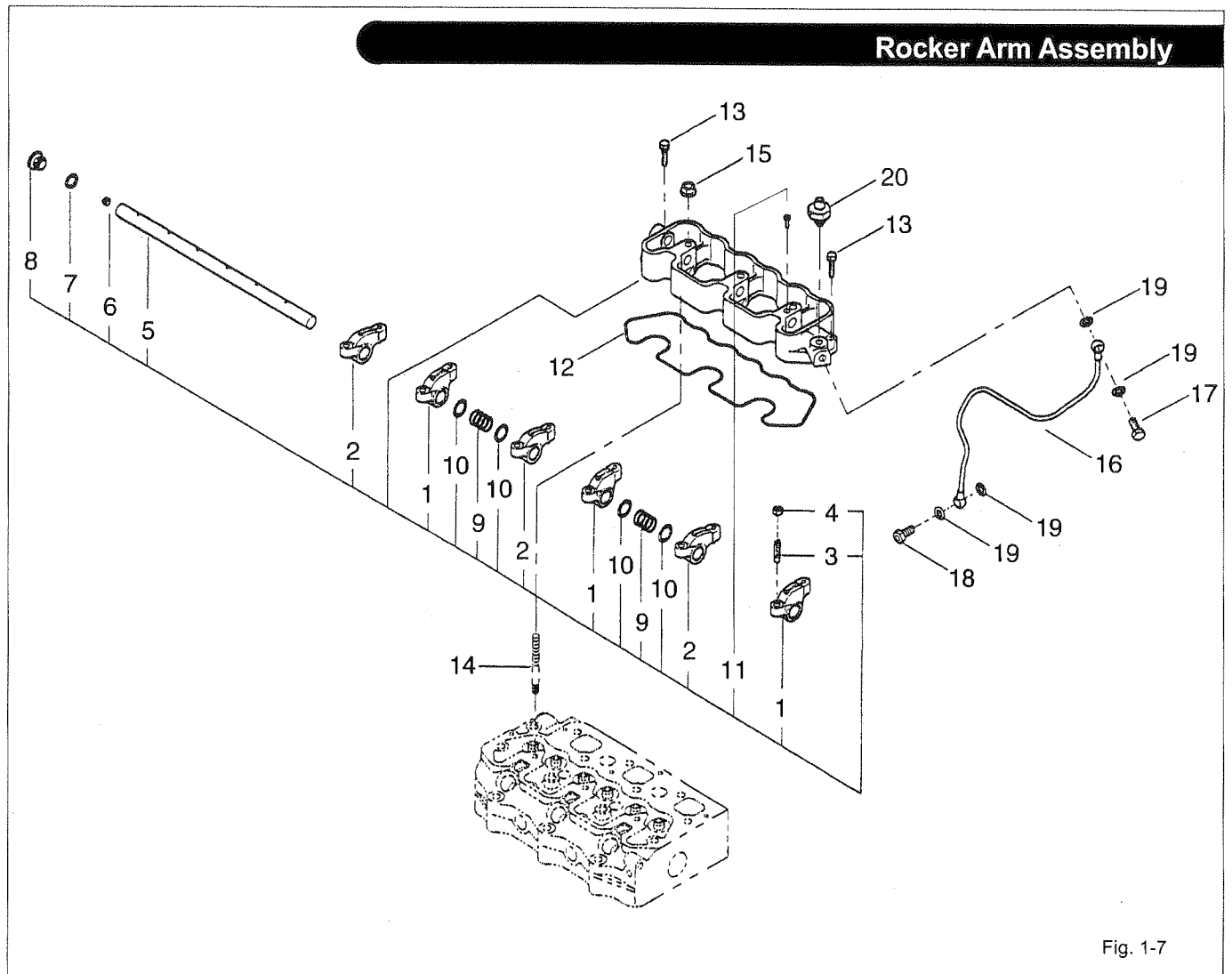


Fig. 1-7

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
••	120036880	1	Rocker Arm Assembly (includes keys #1-10)	-
1	120356200	3	Intake Rocker Arm	-
2	120356210	3	Exhaust Rocker Arm	-
3	199486220	6	Screw	-
4	020109076	6	Nut	-
5	120316300	1	Rocker Arm Shaft	-
6	199486320	1	Screw	-
7	052100120	1	O-ring	-
8	198436150	1	Plug	-
9	198216780	2	Spring	-
10	199280280	4	Shim	-
11	015100412	1	Screw	-
12	052109101	1	Gasket	-
13	011310625	2	Bolt	-
14	012109177	3	Stud	-
15	023100008	3	Nut	-
16	140607270	1	Oil Pipe	-
17	198486780	1	Banjo Bolt	-
18	198487590	1	Banjo Bolt (Tapped 1/8 NPT Female)	-
19	140996260	4	Sealing Washer	-
20		1	Oil Pressure Switch (see Electrical System)	-

Rocker Arm Cover

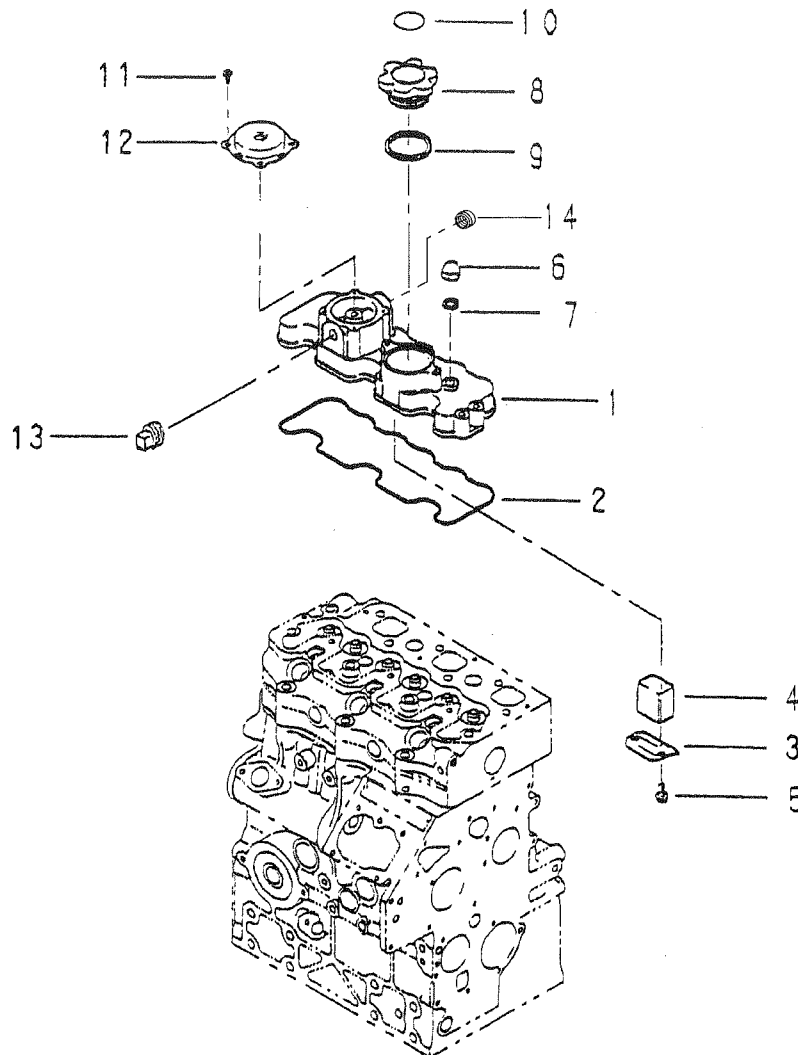
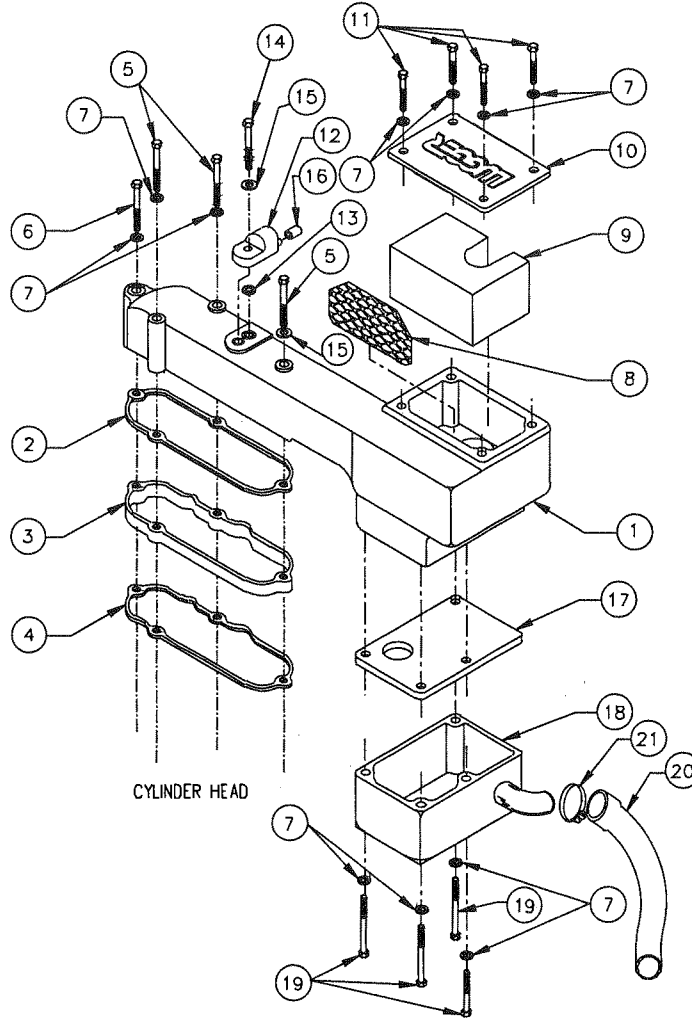


Fig. 1-8

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	111217470	1	Rocker Arm Cover Assembly (includes keys #3 - #5)	-
2	052109099	1	Gasket	-
3	110666050	1	Retainer	-
4	110666060	1	Vent Filter	-
5	010110610	2	Bolt	-
6	024600008	3	Cap Nut	-
7	140996260	3	O-ring	-
8	198436010	1	Cap	-
9	052100400	1	O-ring	-
10	390190460	1	Caution Label	-
11	011100408	4	Bolt	-
12	110566080	1	Breather Valve	-
13	064510020	1	Plug	-
14	21-28601	1	Bushing	-

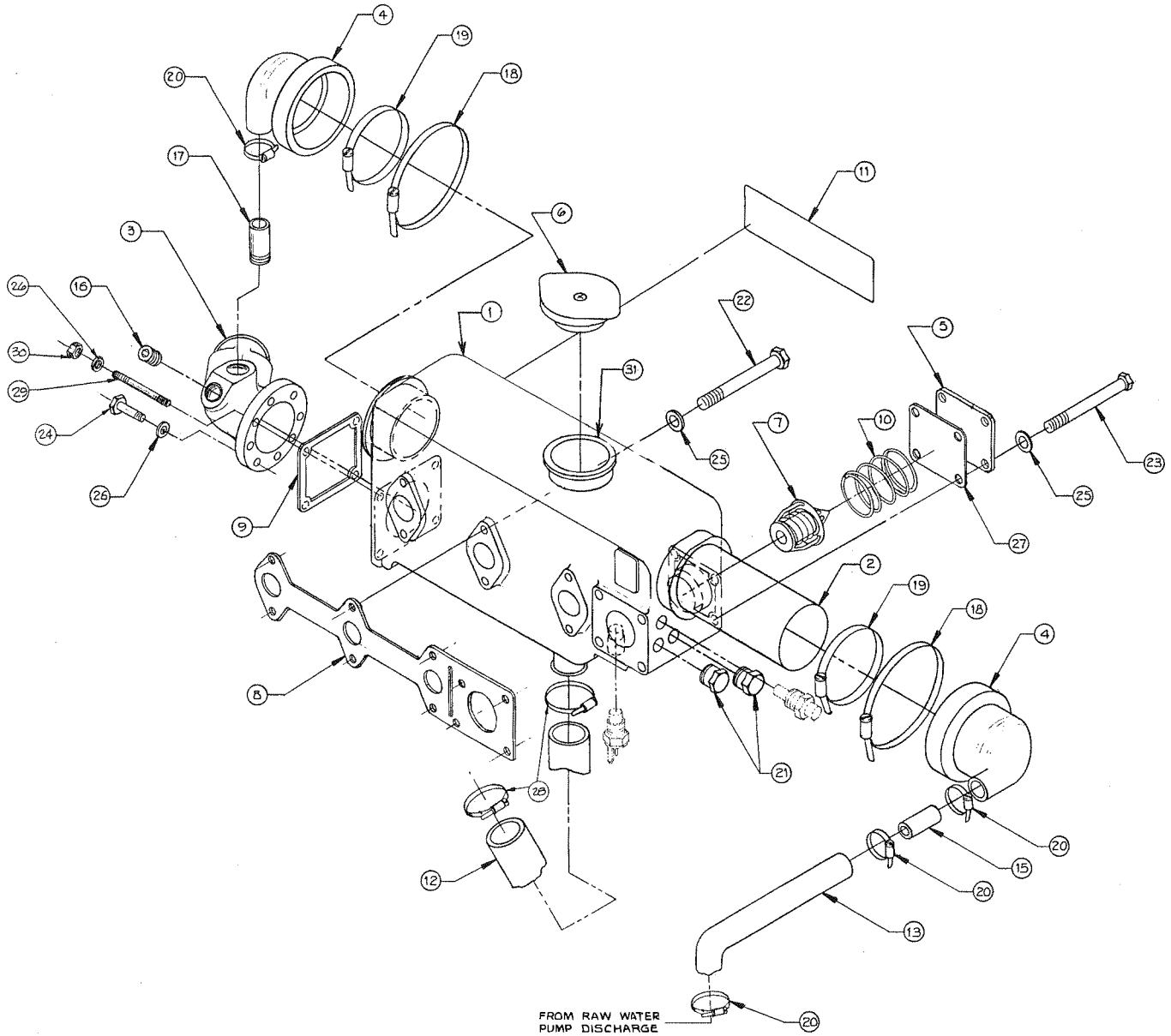
Intake Manifold and Filter



A-9313 / C-4828

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	10-28601	1	Air Intake Manifold	-
2	135996930	1	Gasket	-
3	135597640	1	Spacer	-
4	135996940	1	Gasket	-
5	12-01132	3	Capscrew, Hex Head M6 x 1.0 x 85 mm	-
6	12-01125	1	Capscrew, Hex Head M6 x 1.0 x 65 mm	-
7	15-00008	11	Flat Washer M6	-
8	24-28601	1	Screen	-
9	24-28602	1	Air Filter Element	-
10	10-28602	1	Cover	-
11	12-01131	4	Capscrew, Hex Head M6 x 1.0 x 20 mm	-
12	31-08601	1	Crankcase Vent Adapter	-
13	16-08601	1	O-ring	-
14	12-00031	1	Capscrew, Hex Head M6 x 1.0 x 25 mm	-
15	15-19502	2	Sealing Washer	-
16	21-28601	1	Bushing	-
17	28-28601	1	Plate	-
18	10-28603	1	Cover, Lower Air Intake with 1-3/8" Hose Barb	-
19	12-01124	4	Capscrew, Hex Head M6 x 1.0 x 50 mm	-
20	18-28601	1	Air Intake Hose	-
21	19-00020	1	Hose Clamp #20	-
22	19-70022	1	Clamp	-

Exhaust Manifold and Heat Exchanger



A-9289/ D-3465

Exhaust Manifold and Heat Exchanger

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	10-08601	1	Exhaust Manifold/ Expansion Tank	-
2	20-12002	1	Heat Exchanger Element	-
3	27-32003	1	Wet Exhaust Elbow S/S	-
4	145536370	2	Heat Exchanger End Cap	-
5	28-18601	1	Thermostat Cover Plate	-
6	21-12013	1	Filler Cap	-
7	145206022	1	Thermostat	-
8	11-08601	1	Gasket	-
9	11-31902	1	Gasket	-
10	00-13101	1	Spring	-
11	00-08301	1	"Northern Lights" Decal	-
12	18-18601	1	Coolant Pump Inlet Hose	-
13	41-00004	13"	Hose 3/4" ID x 18-1/2"	-
15	21-13102	1	Union 3/4" Hose Barb	-
16	198436140	1	Socket Head Plug 1/2 BSPT, Steel	-
17	145986150	1	Connector 1/2 BSPT x 3/4 HB, Steel	-
18	19-00048	2	Hose Clamp #48	-
19	19-00040	2	Hose Clamp #40	-
20	19-00012	4	Hose Clamp #12	-
21	21-31003	**	Hex Head Plug, Brass 3/8 NPT	-
22	12-09136	6	Capscrew, Hex Head M6 x 1.0 x 90 mm S/S	-
23	12-09130	4	Capscrew, Hex Head M6 x 1.0 x 95 mm S/S	-
24	12-09712	3	Capscrew, Hex Head M8 x 1.25 x 25 mm S/S	-
25	15-01134	10	Flat Washer M6 S/S	-
26	15-00706	4	Flat Washer M8 S/S	-
27	11-18602	1	Gasket	-
28	19-00016	2	Hose Clamp #16	-
29	13-09710	1	Stud M8 x 1.25 x 25 mm (35 mm LOA S/S)	-
30	14-09711	1	Hex Nut, M8 x 1.25 S/S	-
31	20-12207	1	Filler Neck	-
32	22-42014	1	Switch, High Exhaust Temperature	up to xxxx-31698
	22-42070	1	Switch, High Exhaust Temperature	from xxxx-31699
33	22-40482	1	Harness, Exhaust Temperature Switch	from xxxx-31699

**As required

Coolant Pump

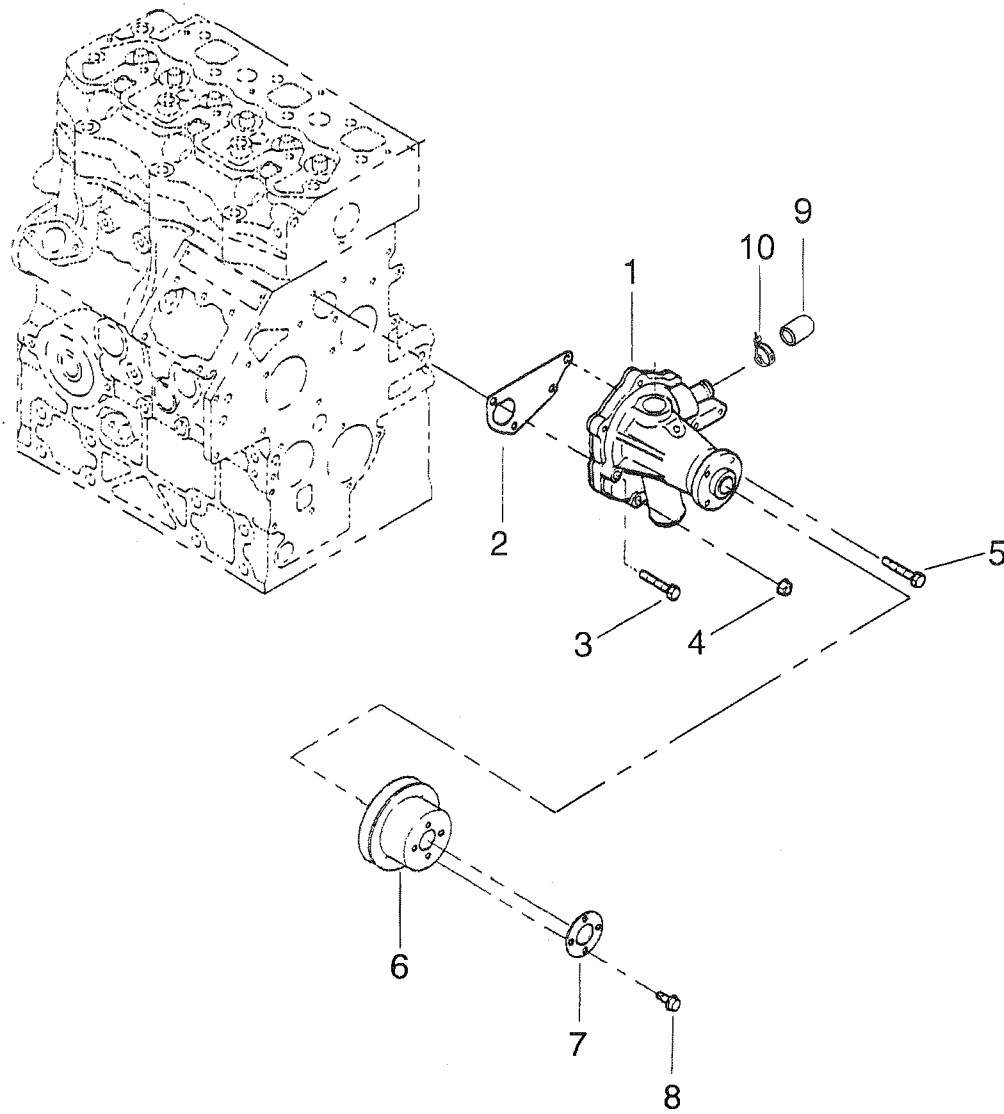
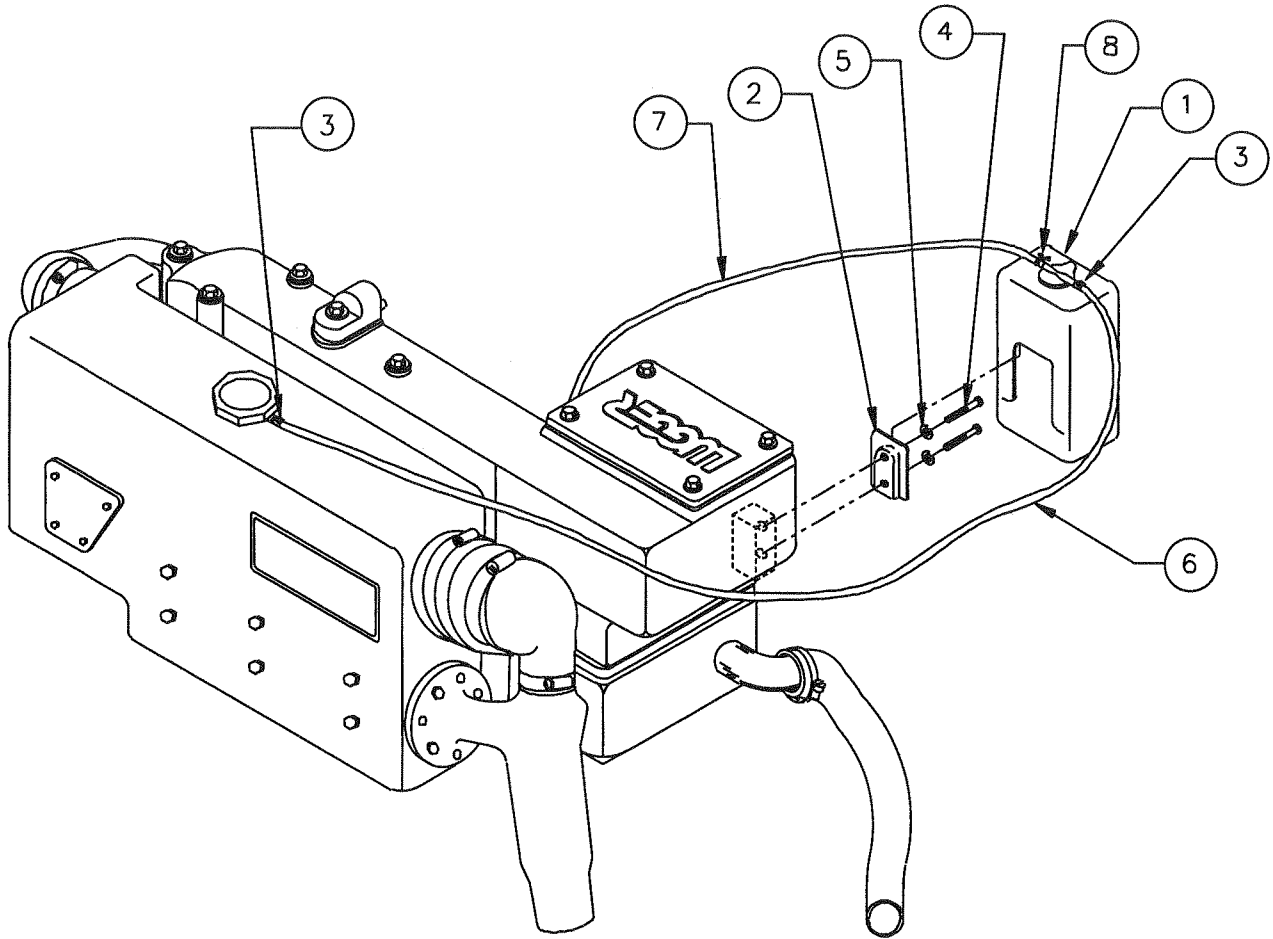


Fig. 3-2

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	145017910	1	Coolant Pump Assembly	-
2	145996830	1	Gasket	-
3	011310635	4	Bolt	-
4	023100006	2	Nut	-
5	011310640	2	Bolt	-
6	145336490	1	Pulley	-
7	145386520	1	Spacer	-
8	011310614	4	Bolt	-
9	21-18601	1	Cap	-
10	19-18601	1	Clamp	-

Coolant Recovery Tank



A-9347/ C-4870

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	310550130	1	Coolant Recovery Tank	-
2	222300090	1	Coolant Recovery Tank Mounting Bracket	-
3	19-18602	2	Hose Clamp	-
4	12-00030	2	Capscrew, Hex Head, M6 x 1.0 x 16 mm	-
5	15-01132	2	Lock Washer	-
6	27-18601	1	Tube 5/16" ID x 23" Polyurethane	-
7	18-18602	1	Hose 5/16" ID x 28" Polyvinyl	-
8	19-18602	1	Hose Clamp	-

General Arrangement

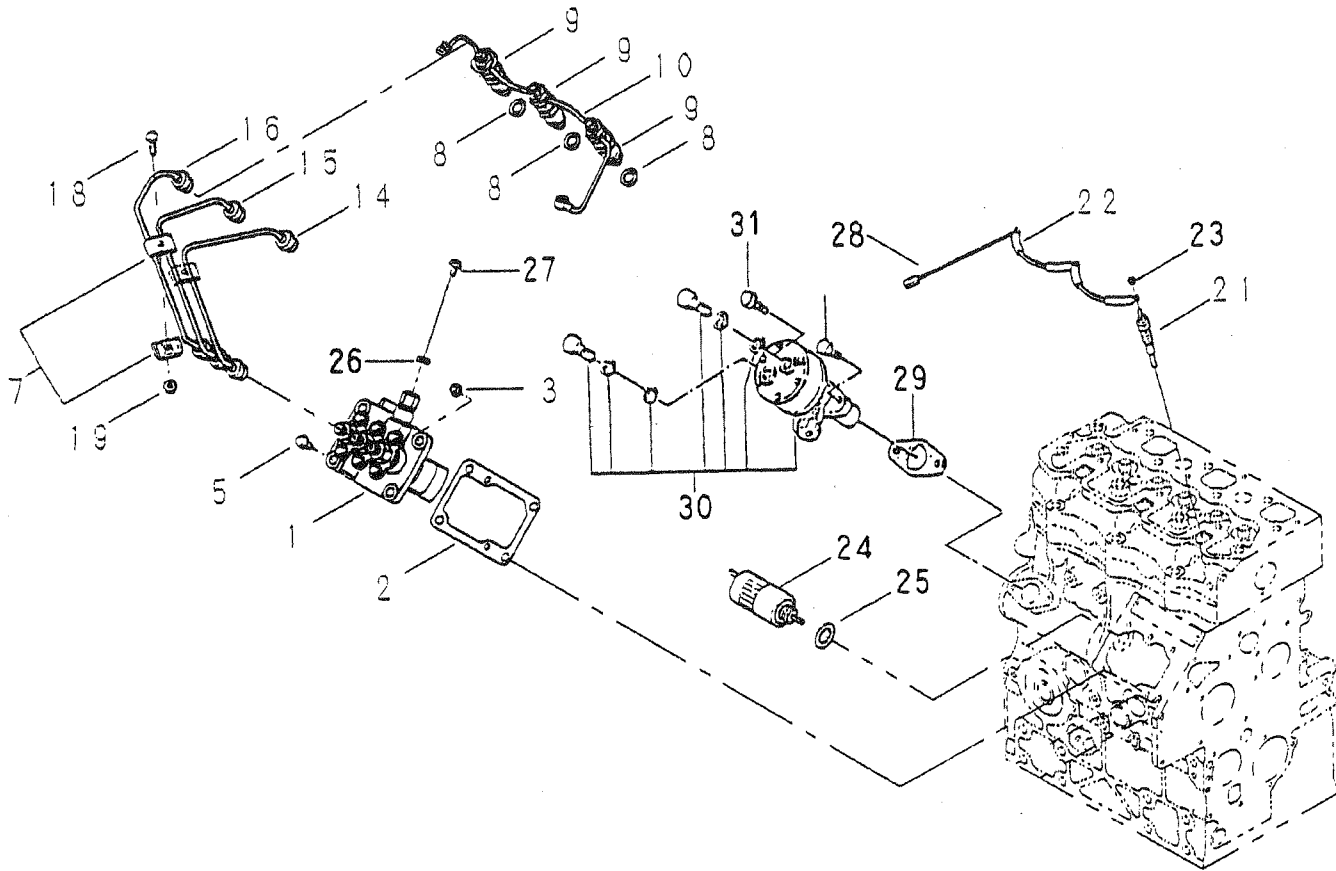


Fig. 4-00

General Arrangement

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	131017920	1	Injection Pump Assembly	-
2	131426300	1	Shim Set	-
3	023100006	2	Nut	-
5	011310620	2	Bolt	-
8	131426200	3	Gasket	-
9	131406340	3	Injector Assembly	-
10	131606880	1	Return Line	-
14	131507740	1	Injection Line #1	-
15	131507750	1	Injection Line #2	-
16	131507760	1	Injection Line #3	-
17	199106020	4	Clamp	-
18	010110625	2	Bolt	-
19	023100006	2	Nut	-
21	185366220	3	Glow Plug, 12 Volt	-
22	185376370	2	Connector, Glow Plugs (former Harness part # 184606360)	-
23	023100004	3	Nut	-
24	185206083	1	Solenoid, 12 Volt	-
25	025100016	1	Seal Washer	-
26	025100006	1	Seal Washer	-
27	131236280	1	Screw	-
28	185606170	1	Wire Harness	-
29	130996130	1	Gasket	-
30	130506140	1	Feed Pump	-
31	011140614	2	Bolt	-

Governor and Timing Gear Case

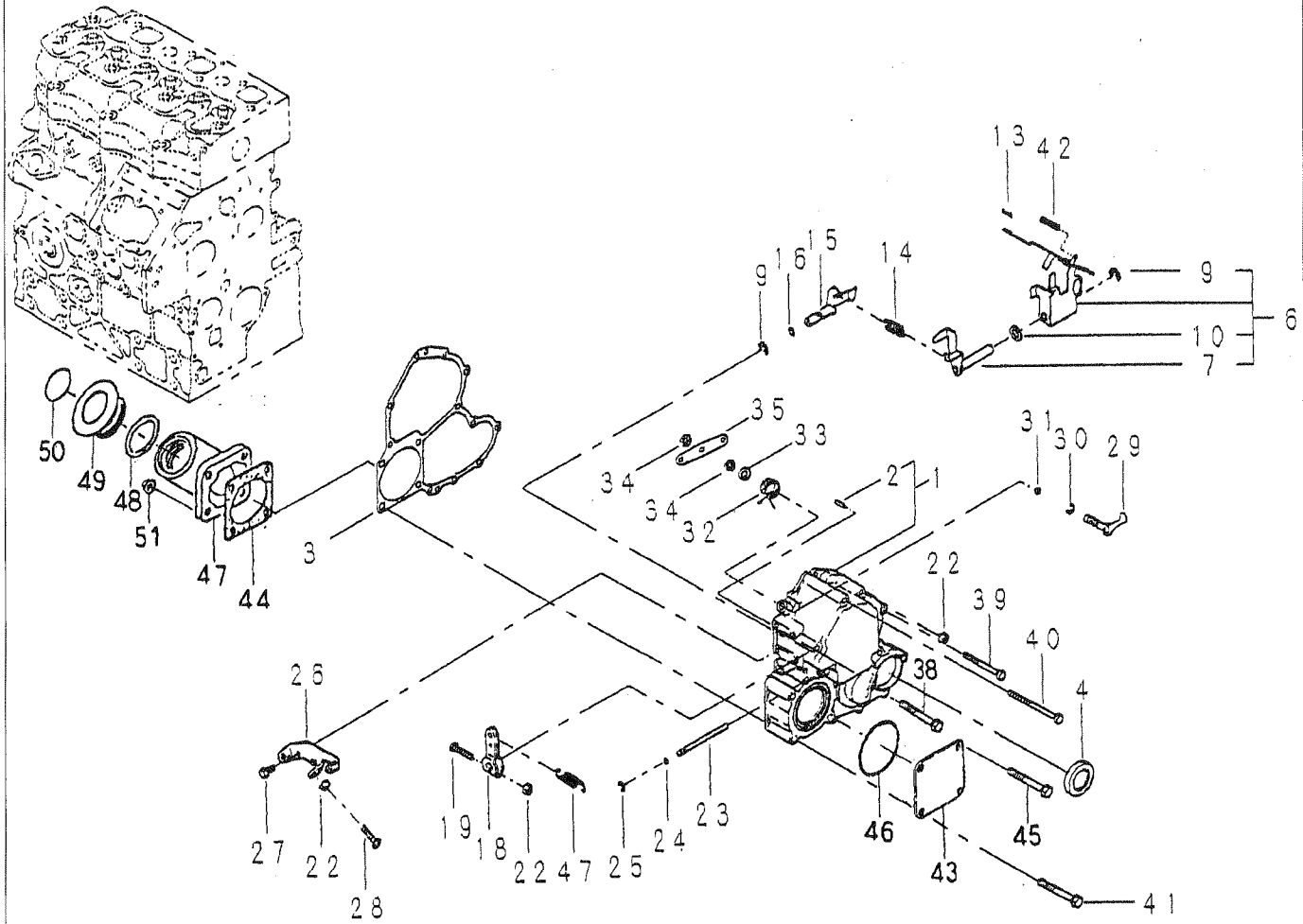


Fig. 4-2

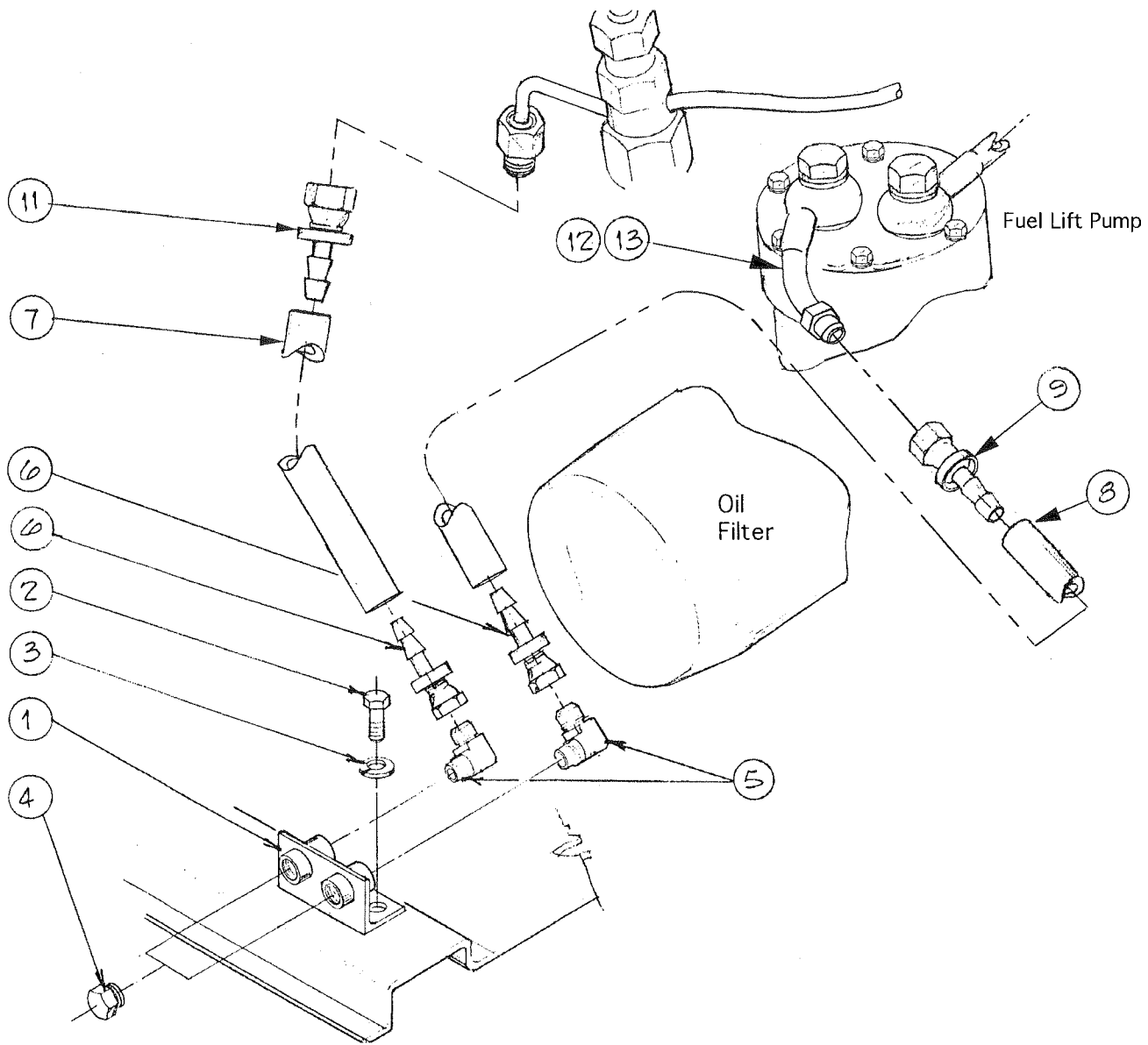
Governor and Timing Gear Case

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	165106111	1	Timing Gear Case	-
2	030300414	1	Spring Pin	-
3	165996530	1	Gasket	-
4	198636090	1	Oil Seal	-
6	125046260	1	Governor Lever Assembly	-
7	125406071	1	Tension Lever	-
9	036800008	2	Snap Ring	-
10	026200010	1	Washer	-
13	031100004	1	Snap Pin	-
14	198217040	1	Spring	-
15	125156170	1	Arm	-
16	052100070	1	O-ring	-
18	125416020	1	Governor Lever	-
19	010110630	1	Bolt	-
22	023100006	3	Nut	-
23	125116131	1	Shaft	-
24	052100030	2	O-ring	-
25	036800005	1	Snap Ring	-
26	125976120	1	Stay	-
27	011310614	2	Bolt	-
28	010109264	1	Bolt	-
29	125156180	1	Arm	-
30	036800006	1	Snap Ring	-
31	052100050	1	O-ring	-
32	198216760	1	Spring	-
33	026200008	1	Washer	-
34	020700008	2	Nut	-
35	125176180	1	Stop Lever (formerly #125176080)	-
38	011310640	5	Bolt	-
39	011310660	3	Bolt	-
40	011310680	2	Bolt	-
41	011510865	3	Bolt	-
42	198216731	1	Start Spring	-
43	165206320	1	Cover (Keel Cooled Units Only)	-
44	340990011	1	Gasket	-
45	010310860	1	Bolt	-
46	052300700	1	O-ring	-
47	110766200	1	Holder	-
48	052300400	1	O-ring	-
49	198436010	1	Cap	-
50	390190460	1	Plate	-
51	023100008	3	Nut	-

Fuel Filter and Piping

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	130306190	1	Fuel Filter Assembly (includes keys #1 - #6 & #19 - #20)	-
3	24-52020	1	Fuel Filter	-
4	130326051	5	Gasket	-
5	130396030	1	Plug	-
6	130436011	2	Joint Bolt	-
7	011301025	2	Bolt	-
8	131976270	1	Bracket, Filter Support & Lifting Eye (can use 23-08601)	-
9	199216330	1	Spacer	-
10	131606880	1	Return Pipe	-
11	131236280	1	Screw	-
12	025100006	1	Seal Washer	-
13	131236190	1	Bolt	-
14	140996270	4	Gasket	-
15	140036141	1	Valve Assembly	-
16	198487002	1	Connector	-
17	048100010	1	Steel Ball	-
18	198116230	1	Rubber	-
19	130516092	2	Bolt	-
20	140996260	4	Gasket (formerly #198996060)	-
21	130556920	1	Pipe	-
22	130556681	1	Pipe	-
23	130556931	1	Pipe	-
24	010700820	4	Bolt	-
25	027100008	4	Spring Washer	-

Fuel Line Connection



A-9317/ B-7019

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	10-51099	1	Fuel Manifold 1/4 NPT	-
2	12-00031	2	Capscrew, Hex Head M6 x 1.0 x 20 mm S/S	-
3	15-01132	2	Lock Washer M6	-
4	21-00046	2	Plug, Plastic, 1/4 NPT (for shipping)	-
5	21-71044	2	Male Elbow 90°, brass 1/4 NPT x 1/4-45T	-
6	21-71045	2	Female Swivel, brass 1/4 HB x 1/4-45T	-
7	41-01011	12"	Hose 1/4" ID Push-on	-
8	41-01011	18"	Hose 1/4" ID Push-on	-
9	21-71048	1	Female Swivel, brass 1/4 HB x 5/16-45T	-
11	21-80002	1	Female Swivel, steel 1/4 HB x 1/4-37T	-
12	130556681	1	Fitting, Fuel Inlet M8 Banjo x 5/16-37T	-
13	130516069	2	Sealing Washer (not shown)	-

Notes

Fuel Injector

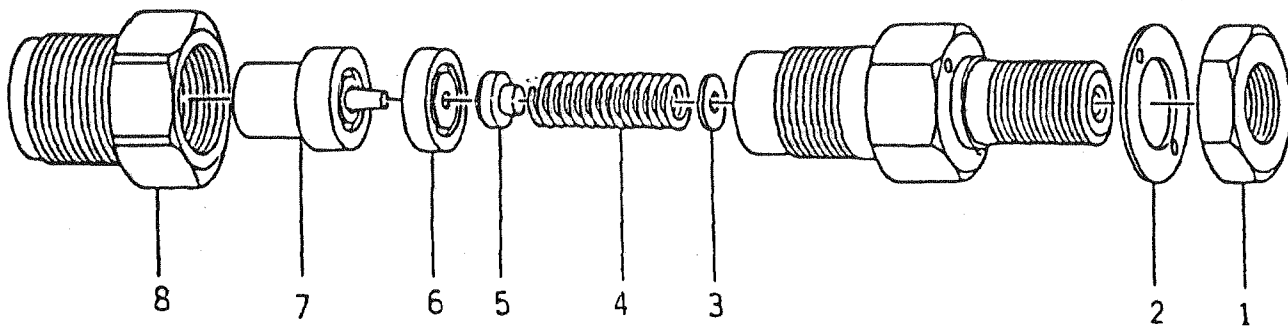


Fig. 4-10

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
**	131406340	1	Injector Assembly (includes keys #1 - #8)	-
1	131446069	1	Nut	-
2	131426210	1	Gasket	-
3		*	Shim	-
4	131446066	1	Spring	-
5	131446070	1	Spring seat	-
6	131446068	1	Spacer	-
7	131416150	1	Nozzle	-
8		*	Nut	-
			*Not sold separately	

Fuel Feed Pump

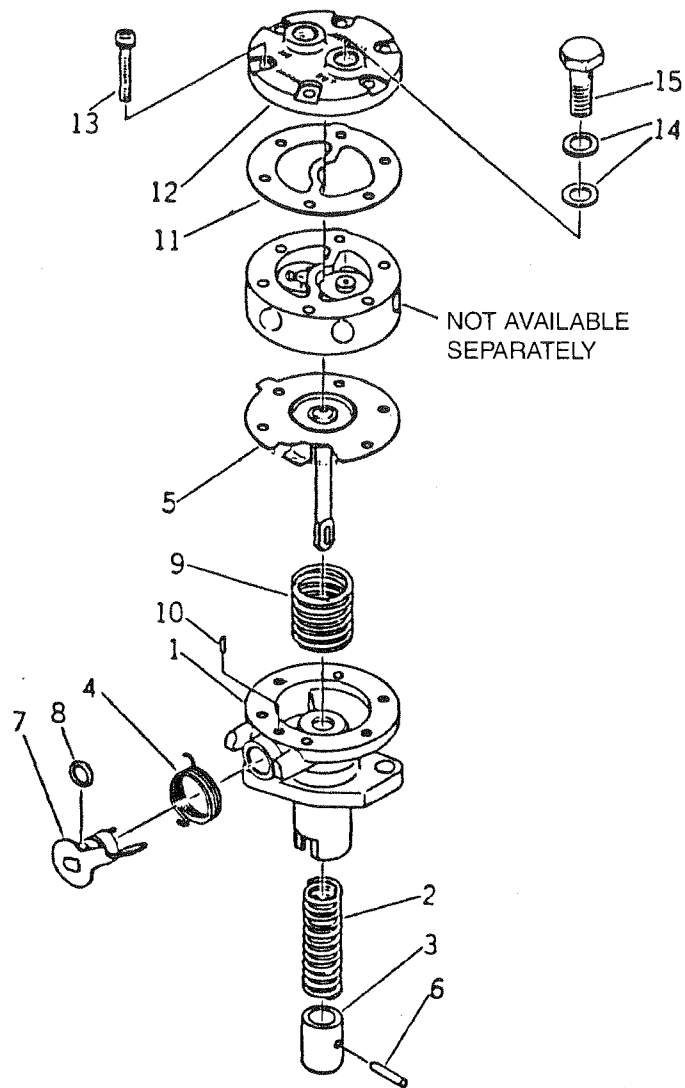
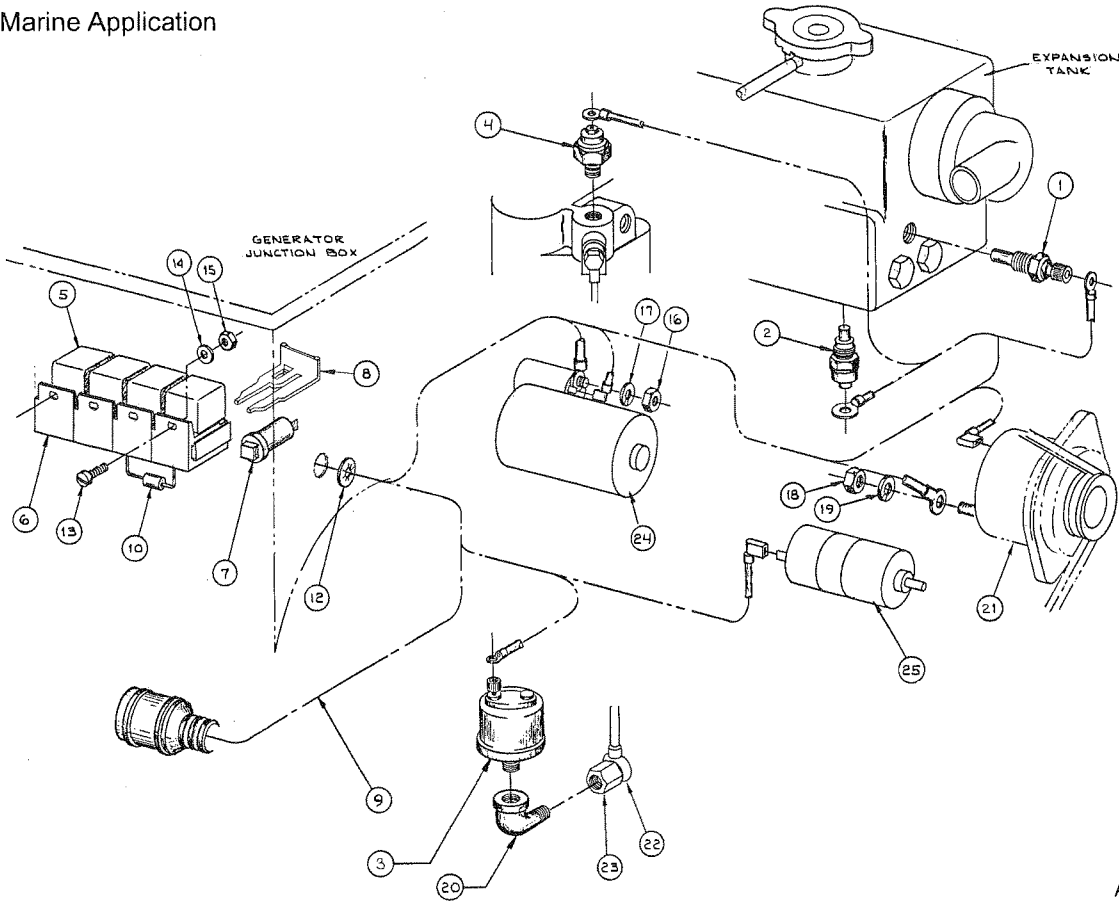


Fig. 4-11

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
••	130506140	1	Feed Pump Assembly (includes keys #1 - #15)	-
1	130516080	1	Housing	-
2	130516081	1	Spring	-
3	130516082	1	Piston	-
4	130516083	1	Spring	-
5	130516084	1	Diaphragm	-
6	130516085	1	Pin	-
7	130516086	1	Lever	-
8	131226180	1	O-Ring	-
9	130516087	1	Spring	-
10	130516088	1	Guide	-
11	130516089	1	Gasket	-
12	130516090	1	Cap	-
13	130516091	6	Screw	-
14	130516069	4	Gasket	-
15	130516092	2	Joint Bolt	-

Engine Electrical - 12 Volt Standard Ground

Marine Application



A-4786/ C-2490B

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	22-42055	1	Temperature Sender, 0-250°F Single Station 3/8 NPT	-
2	385720110	1	Temperature Switch 95°C	-
3	22-41016	1	Oil Pressure Sender 0-80 PSI, Single Station 1/8 NPT	-
4	185246011	1	Oil Pressure Switch	-
5	22-42047	4	Relay, 12 Volt SPDT	-
6	22-40391	4	Relay Base	-
7	22-42043	1	Circuit Breaker	-
8	22-40393	4	Terminal Retainer	-
9	22-48601	1	Engine Wire Harness (includes key #10)	-
10	22-41060	2	Diode, 6 Amp 50 Volt	-
11	22-40930	1	Wire Harness Extension 20'	-
12	00-40028	1	Grommet	-
13	12-00094	2	Machine Screw #10-32 x 3/8" Stainless Steel	-
14	15-00032	2	Flat Washer #10	-
15	14-00001	2	Hex Nut, #10-32	-
16	14-00711	1	Hex Nut, M8 x 1.25	-
17	15-00702	1	Lock Washer M8	-
18	14-04401	1	Hex Nut, M5 x 0.8	-
19	15-04400	1	Lock Washer M5	-
20	21-04801	1	Street Elbow 90°, 1/8 NPT Steel	-
21	185046220	1	Alternator 12 Volt (see parts detail)	-
22	140607270	1	Oil Line	-
23	198487590	1	Banjo Bolt (Tapped 1/8 NPT Female)	-
24	185086551	1	Starter 12 Volt (marked #M001T66081, see parts detail)	-
25	185206083	1	Fuel Solenoid	-

Alternator and Starter

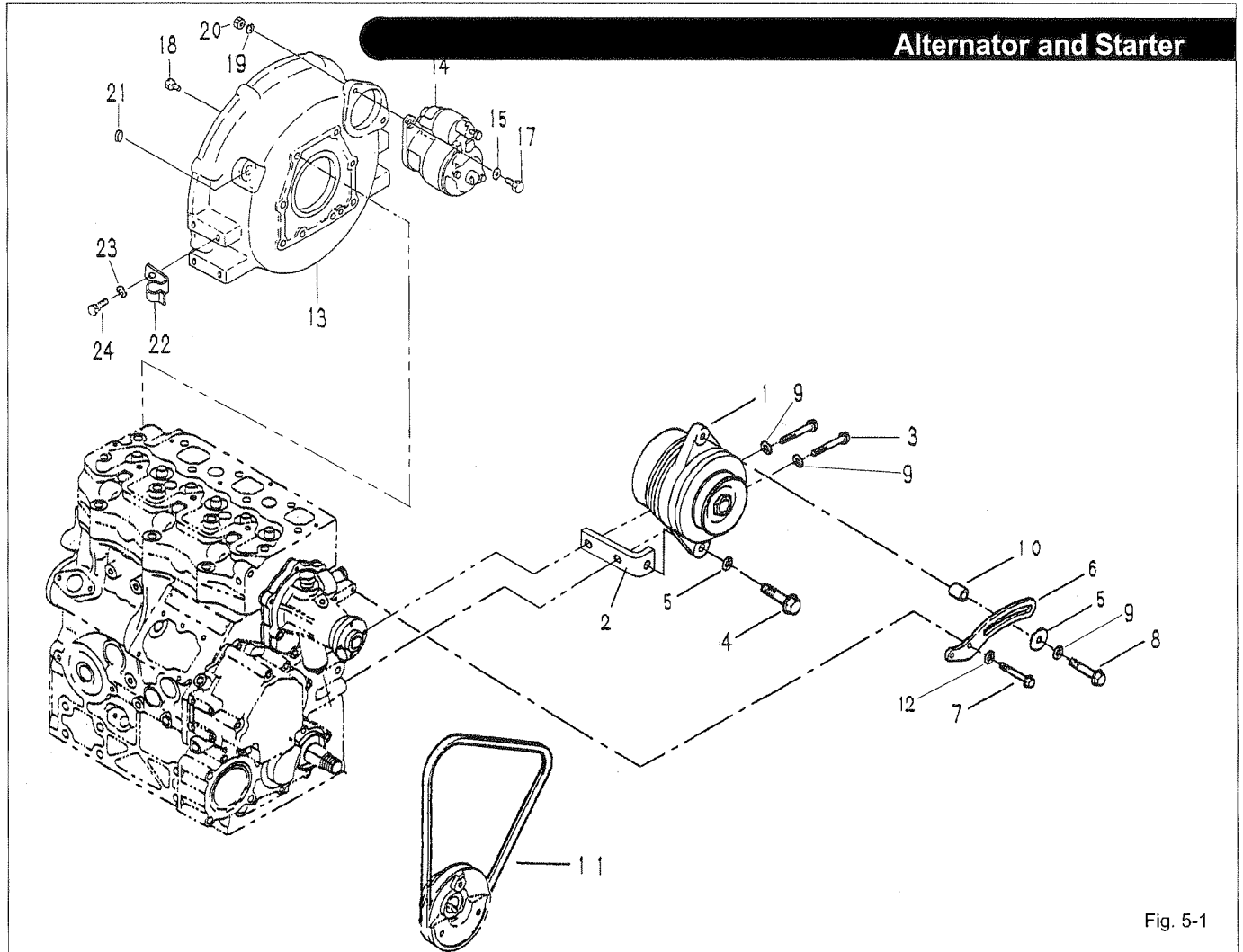


Fig. 5-1

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	185046220	1	Alternator 12 Volt, 40 Amp (see parts detail)	-
2	23-48601	1	Bracket, Alternator Mounting	-
3	12-09712	2	Capscrew, Hex Head M8 x 1.25 x 25 mm S/S	-
4	12-09814	1	Capscrew, Hex Head M10 x 1.5 x 35 mm S/S	-
5	15-09805	2	Flat Washer M10 S/S	-
6	23-48602	1	Tensioning Arm	-
7	12-01102	2	Capscrew, Hex Head M6 x 1.0 x 16 mm S/S	-
8	12-09714	1	Capscrew, Hex Head M8 x 1.25 x 40 mm S/S	-
9	15-00705	2	Lock Washer M8 S/S	-
10	199236680	1	Spacer	-
11	40-08601	1	Drive Belt	-
12	15-00610	2	Lock Washer M6 S/S	-
13	110446421	1	Flywheel Housing	-
14	185086551	1	Starter, 12 Volt (see parts detail)	-
15	026100010	2	Washer	-
17	010311045	2	Bolt	-
18	010311020	8	Bolt	-
19	027100010	2	Spring Washer	-
20	020900010	2	Nut	-
21	398460091	1	Plug	-
22	140976080	1	Bracket	-
23	027100010	1	Spring Washer	-
24	199436350	1	Bolt	-

Alternator Assembly

12 Volt / 40 Amp Standard Ground

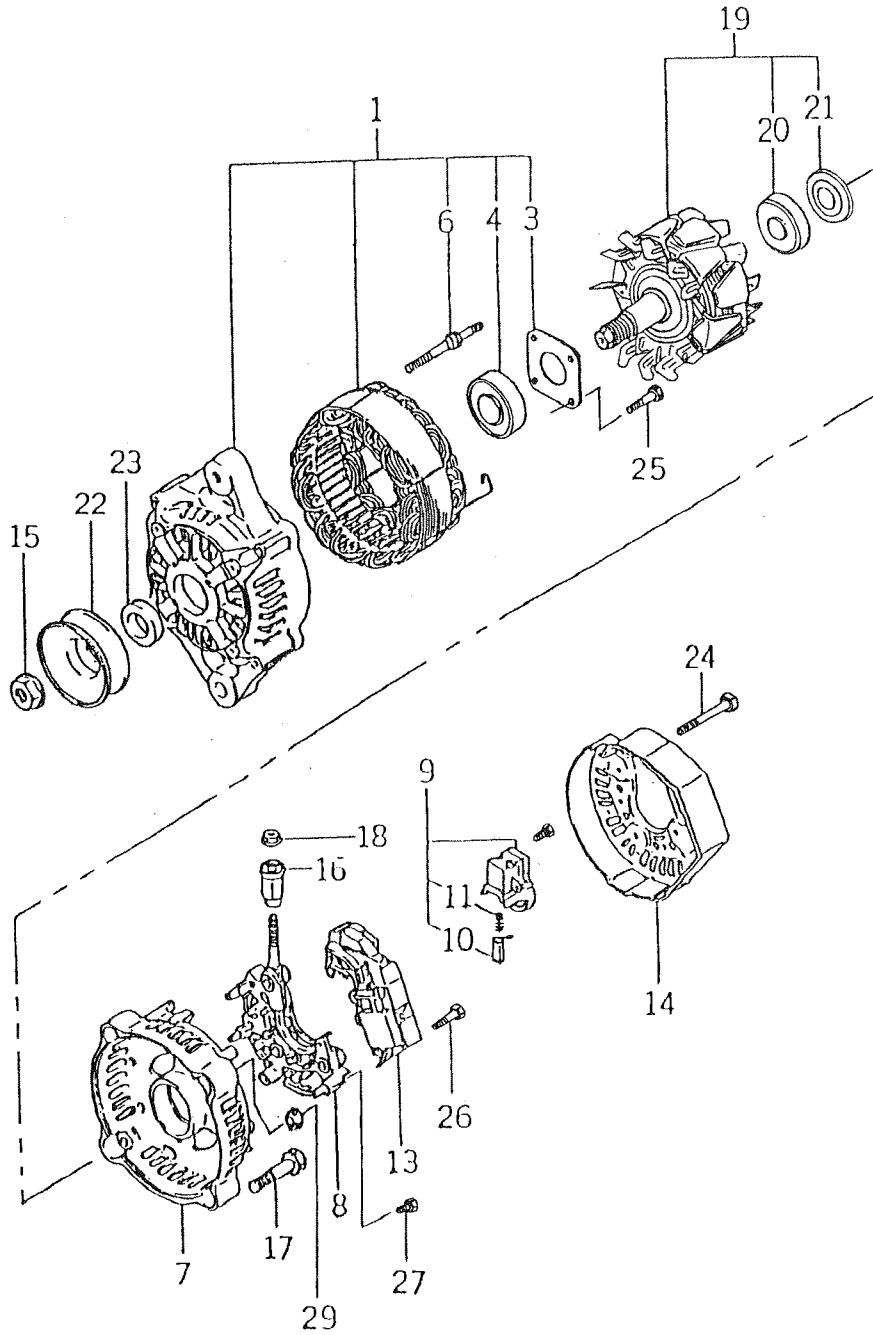


Fig. 5-4

Alternator Assembly**12 Volt / 40 Amp Standard Ground**

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
••	185046220	1	Alternator Assembly (includes keys #1 - #28)	-
1	185446221	1	Frame Sub Assembly	-
3	185446223	1	Retainer Plate	-
4	185446224	1	Ball Bearing	-
6	185446227	2	Stud Bolt	-
7	185446228	1	Rear End Frame	-
8	185446229	1	Rectifier Holder	-
9	185446230	1	Brush Holder	-
10	185426231	2	Brush	-
11	185446232	2	Spring	-
13	185446234	1	Regulator Assembly	-
14	185446235	1	Rear End Cover	-
15	185446236	1	Nut	-
16	185446237	1	Insulation Brush	-
17	185446238	2	Bolt	-
18	185446239	1	Nut	-
19	185446240	1	Rotor Assembly	-
20	185446241	1	Ball Bearing	-
21	185446242	1	Bearing Cover	-
22	185446243	1	Pulley	-
23	185446244	1	Collar	-
24	185446245	3	Bolt	-
25	185446258	4	Screw	-
26	185446262	2	Screw	-
27	185446260	6	Screw	-
28	185446261	1	Screw	-

12 Volt Starter Assembly

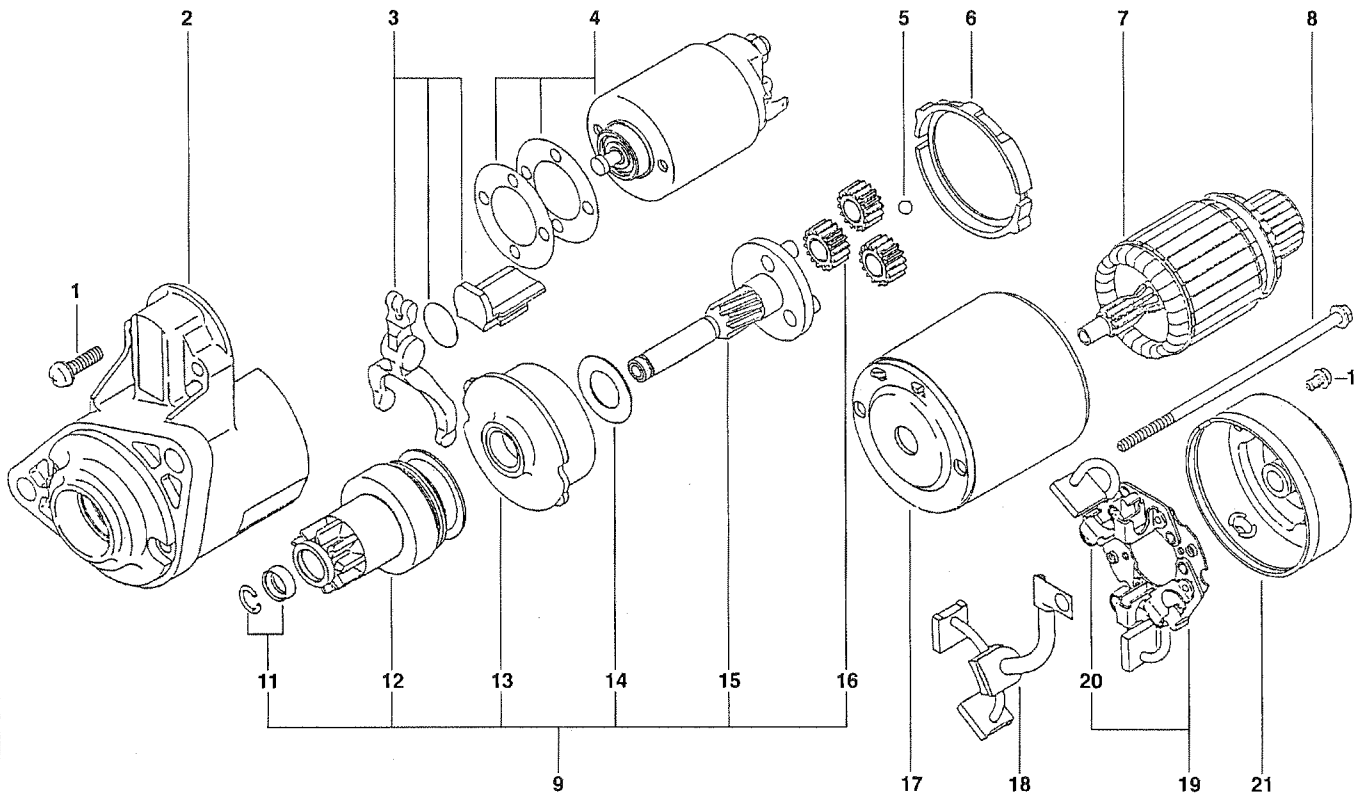
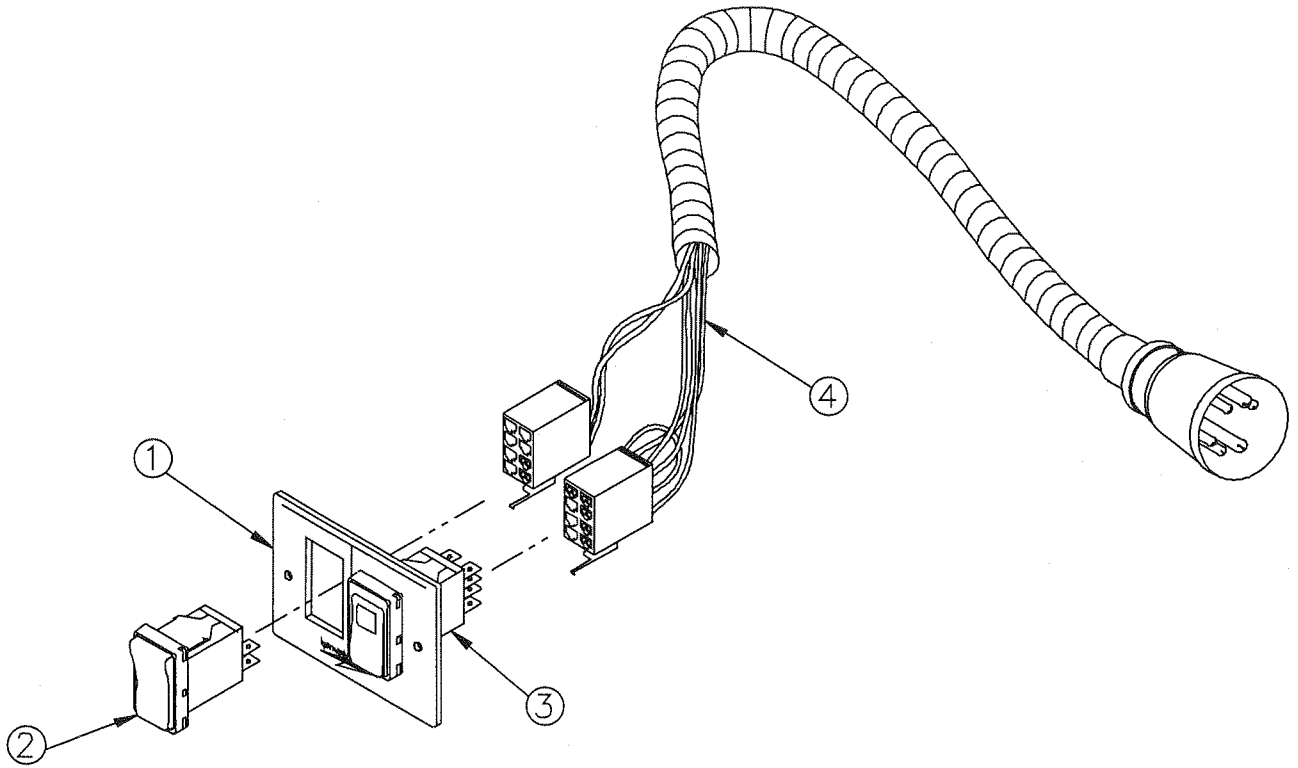


Fig. 03-03

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
●●	185086551	1	Starter (includes all keys)	-
1	185846468	1	Screw Set	-
2	185846610	1	Front Housing	-
3	185846615	1	Lever Assembly	-
4	185816340	1	Solenoid	-
5	185846616	1	Ball	-
6	185846617	1	Packing Ring	-
7	185846618	1	Armature	-
8	185846621	1	Bolt Set	-
9	185866391	1	Drive Assembly (includes keys #11 - #16)	-
11	185846614	1	Stopper Set	-
12	185866411	1	Pinion Assembly	-
13	185846612	1	Internal Gear Assembly	-
14	185846611	1	Washer	-
15	185866400	1	Shaft Assembly	-
16	185846613	3	Gear Assembly	-
17	185846619	1	Housing and Field Coil Assembly	-
18	185416490	1	Brush Assembly	-
19	185416500	1	Brush Holder Assembly	-
20	185886070	1	Spring	-
21	185846620	1	Rear Housing	-

S-1 Control Panel 12 & 24 Volt

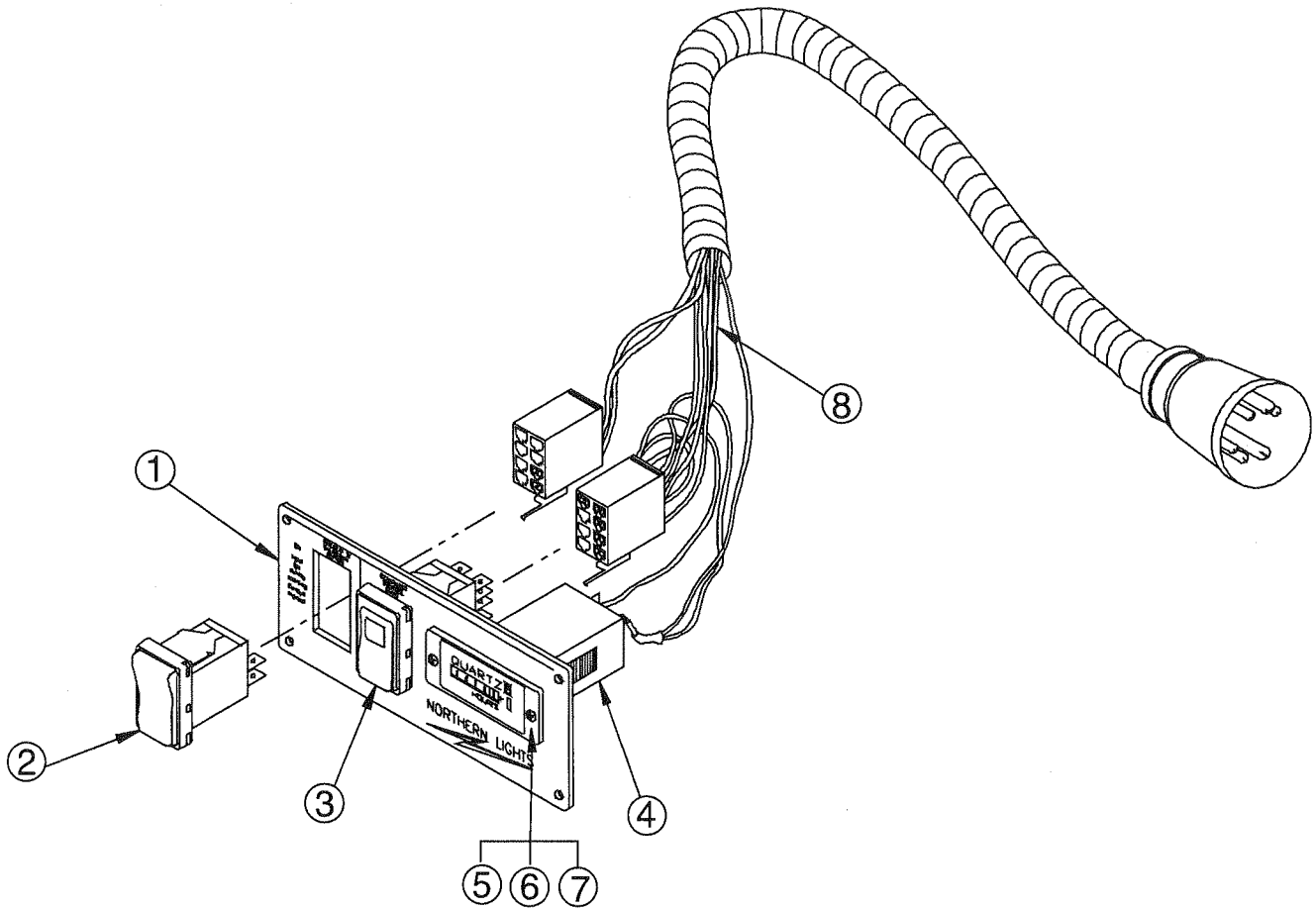


A-8551, A-8552/ B-5970

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
●●	22-92110	1	S-1 Start/Stop Control Panel, 12 Volt (includes all keys)	-
●●	22-92115	1	S-1 Start/Stop Control Panel, 24 Volt (includes all keys)	-
1	00-40013	1	Plate, S-1 Control Panel	-
2	22-90167	1	Rocker Switch	-
3	22-90168	1	Rocker Switch	-
4	22-42066	1	Wire Harness, 12 Volt	-
	22-42067	1	Wire Harness, 24 Volt	-
5	00-00013	1	Label "12 Volt" *	-
	00-00014	1	Label "24 Volt" *	-
6	22-40012	1	Resistor, 200 Ohm, 3 Watt (24 Volt Panel only) *	-
			*Not shown	

Series 1-B Start-Stop Control Panel

12 and 24 Volts, Late Production

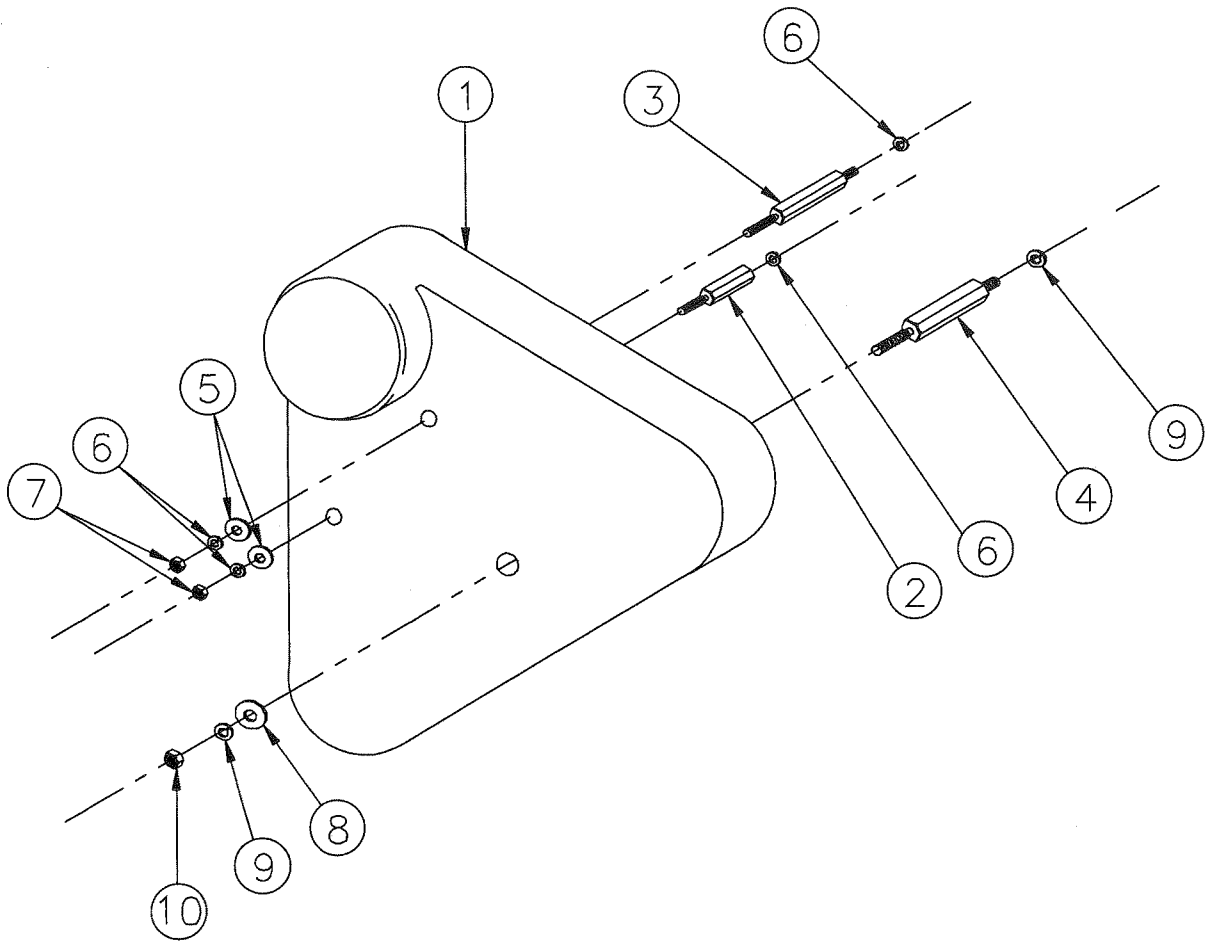


A-8553/ B-5971

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
••	22-92120	1	S 1-B Start/Stop Control Panel - 12 Volt (includes all keys)	-
••	22-92125	1	S 1-B Start/Stop Control Panel - 24 Volt (includes all keys)	-
1	28-90003	1	Plate	-
2	22-90167	1	Rocker Switch	-
3	22-90168	1	Rocker Switch	-
4	22-90009	1	Hour Meter	-
5	12-00093	2	Machine Screw, Round Head Philips #6 - 32 x 1/2"	-
6	15-00030	2	Star Washer, Internal #6, Stainless Steel	-
7	14-00015	2	Hex Nut #6 - 32, Stainless Steel	-
8	22-42063	1	Wire Harness - 12 Volt Panels	-
	22-42064	1	Wire Harness - 24 Volt Panels	-

Belt Guard Assembly

Standard Small Frame Alternators



A-9314/ B-6972

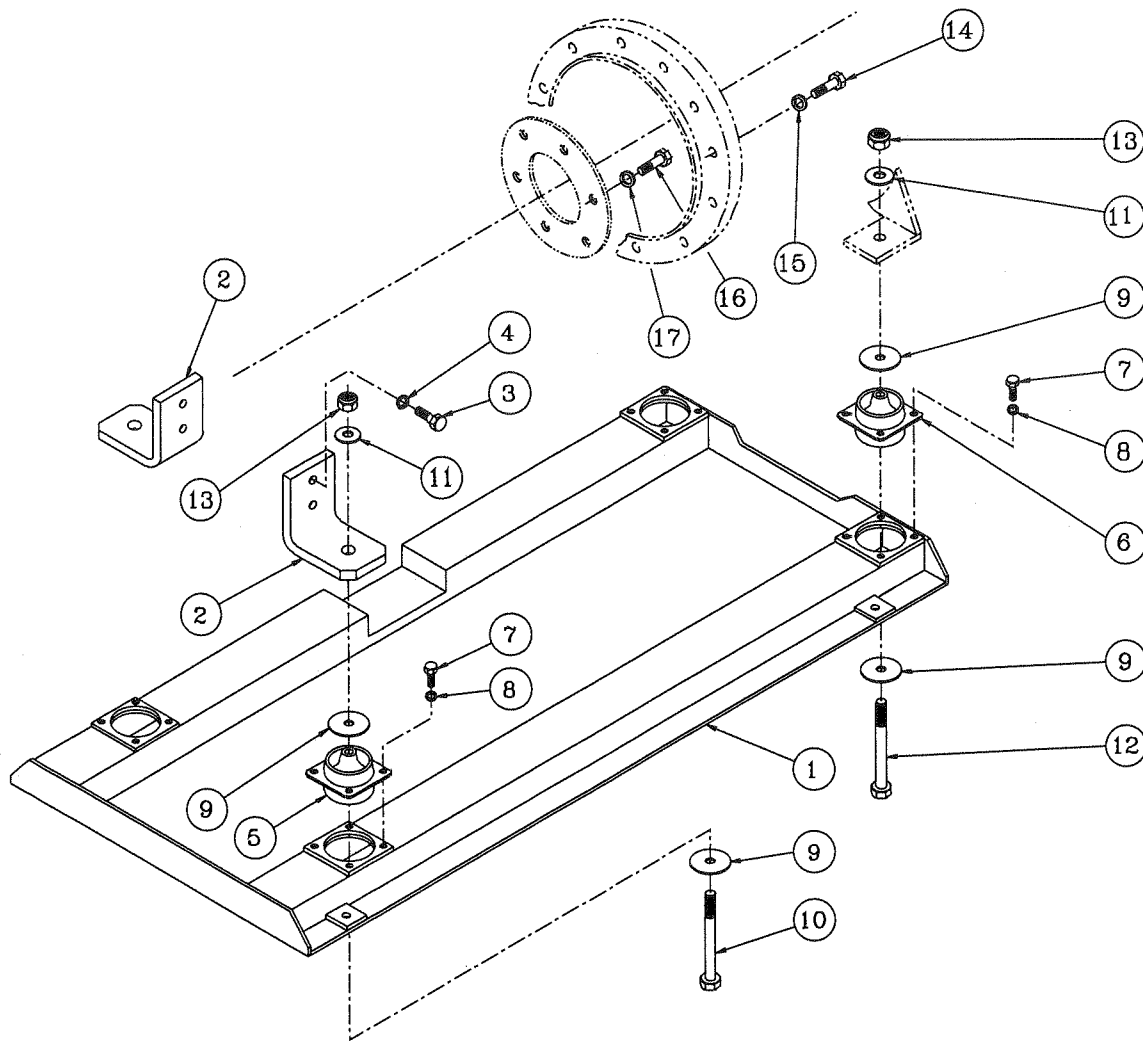
KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	00-08601	1	Belt Guard	-
2	12-90049	1	Capscrew, Hex Head M6 x 1.0 x 15 mm (Head tapped M6 x 1.0 x 10 mm Special)	-
3	13-91132	1	Stud, M6 x 1.0 x 111.4 mm	-
4	13-90070	1	Stud, M10 x 1.5 x 110.8 mm	-
5	15-01134	2	Flat Washer M6 S/S	-
6	15-00610	4	Lock Washer, Helical M6 S/S	-
7	14-01132	2	Hex Nut M6 x 1.0 S/S	-
8	15-09805	1	Flat Washer M10 S/S	-
9	15-00808	2	Lock Washer, Helical M10 S/S	-
10	14-00817	1	Hex Nut M10 x 1.5 mm S/S	-

GROUP 6 - GASKET SETS

Gasket Kit

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
••	29-08600	1	Gasket Kit	-
1	050209107	1	Oil Seal, Rear	-
2	198636090	1	Oil Seal, Front	-
3	052100100	2	O-ring, Gauge Guide	-
4	052100400	2	O-ring, Oil Filter Cap	-
5	052109076	1	O-ring, Suction Oil Pipe	-
6	052109078	1	O-ring, Relief Valve	-
7	052109099	1	O-ring, Head Cover	-
8	052109101	1	O-ring, Rocker Arm	-
9	110996800	1	Gasket, Oil Pan	-
10	111147570	1	Head Gasket, t=1.3	-
11	120406050	3	Valve Guide Seal, Exhaust	-
12	120406070	3	Valve Guide Seal, Intake	-
13	130996130	1	Gasket, Feed Pump	-
14	131426200	3	Gasket, Injector Lower	-
15	131426210	3	Gasket, Injector Upper	-
16	131426300	1	Adjusting Shim Kit	-
17	135996930	1	Gasket, Intake	-
18	135996940	1	Gasket, Spacer	-
19	140996260	7	Gasket, Oil Line	-
20	145996830	1	Gasket, Water Pump	-
21	340990011	1	Gasket, Holder	-
22	165996520	1	Gasket, Front Plate	-
23	165996530	1	Gasket, Gear Case	-
24	11-08601	1	Gasket, Exhaust Manifold/ Expansion Tank Mtg.	-
25	11-18602	1	Gasket, Thermostat Cover	-
26	11-31902	1	Gasket, Exhaust Outlet Mtg.	-
27	15-19502	2	Sealing Washer	-
28	16-08601	1	O-ring	-
29	16-13101	1	O-ring	-

Base Frame Assembly

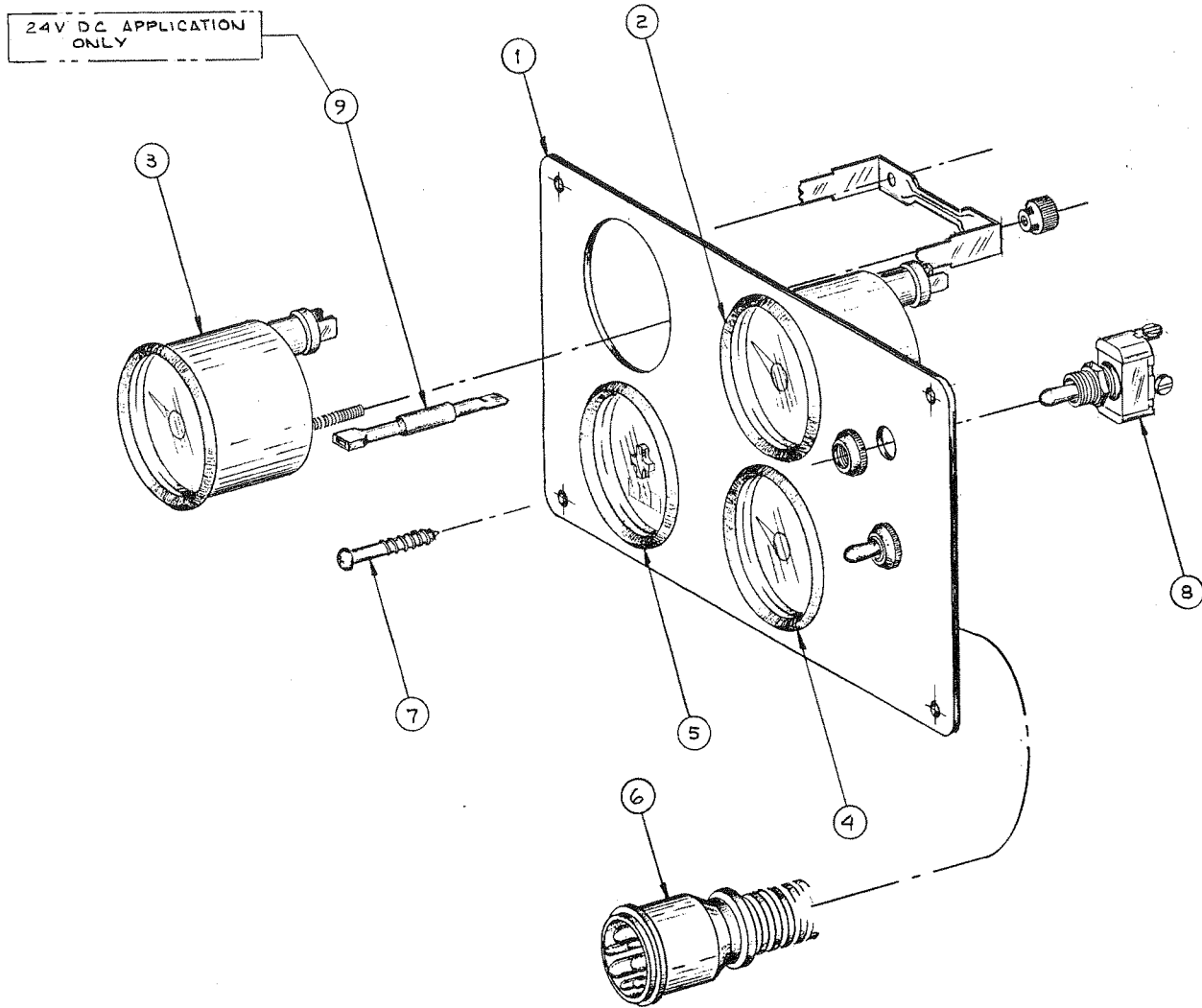


A-9314/ D-3472

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	39-88601	1	Base Frame, Steel	-
2	23-88211	2	Bracket	-
3	12-00943	4	Capscrew, Hex Head M12 x 1.25 x 30 mm	-
4	15-00912	4	Lock Washer, Helical M12	-
5	33-83108	2	Platform Mount, 155 lb.	-
6	33-83108	2	Platform Mount, 155 lb.	-
7	12-00776	16	Capscrew, Hex Head M8 x 1.25 x 20 mm, Stainless Steel	-
8	15-00705	16	Lock Washer, Helical M8, S/S	-
9	15-00020	8	Snubbing Washer 2.88 x 0.52 x 0.125	-
10	12-09956	2	Capscrew, Hex Head M12 x 1.75 x 65 mm, S/S	-
11	15-09007	4	Flat Washer M12, S/S	-
12	12-09956	2	Capscrew, Hex Head M12 x 1.75 x 65 mm S/S	-
13	14-09830	4	Hex Nut, Nylock M12 x 1.75, S/S	-
14	12-00313	8	Capscrew, Hex Head 3/8-16 x 1-1/4"	-
15	15-00302	8	Lock Washer, Helical 3/8	-
16	12-00753	6	Capscrew, Hex Head M8 x 1.25 x 30 mm	-
17	15-00702	6	Lock Washer, Helical M8	-

Flush Mount Dual Station Control Panel 12 & 24 Volt

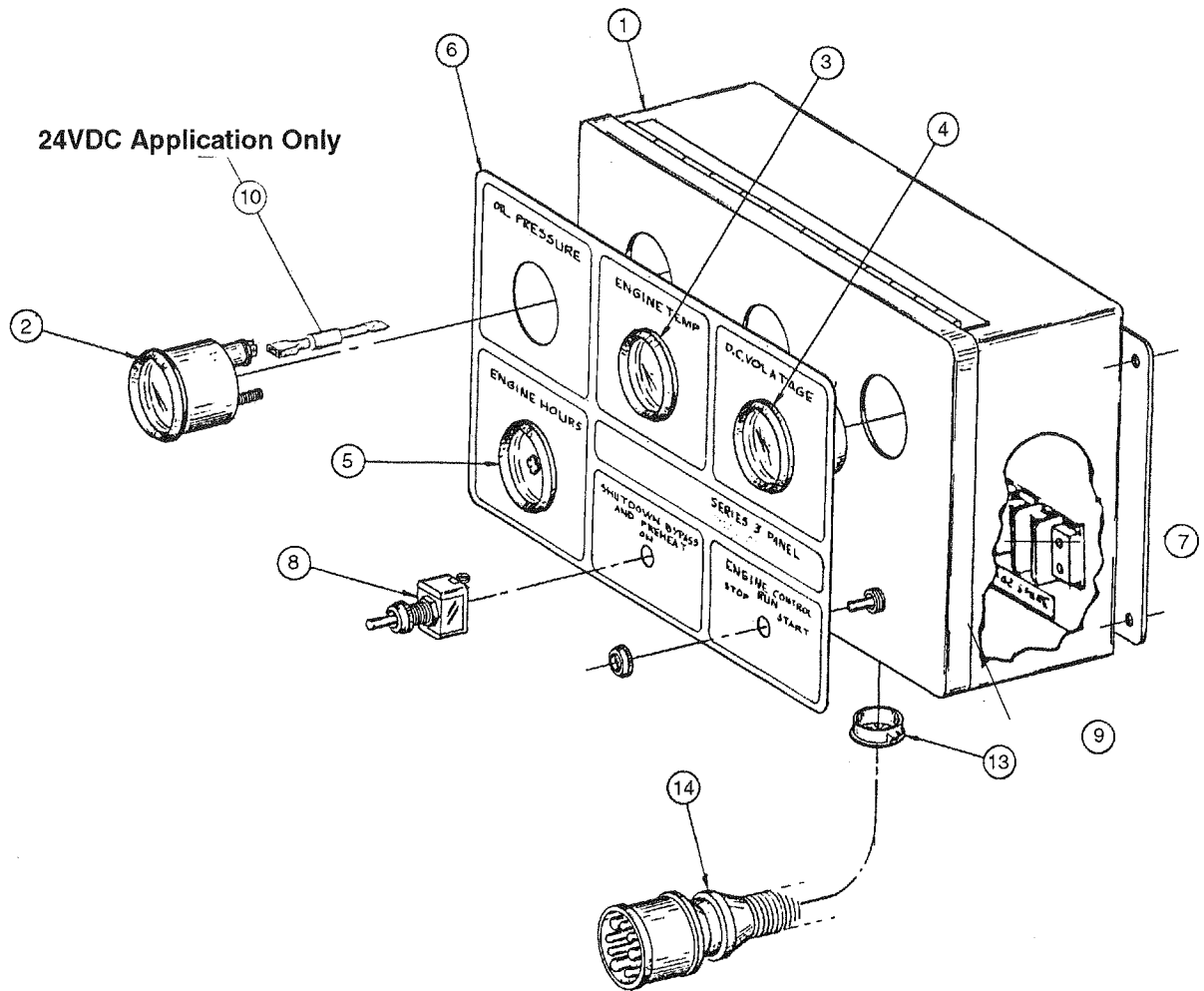
VDO Standard Line Black Bezel Gauges



A-4732, A-4597/ C-2441

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
••	22-92015	1	S-3C Control Panel, 12 Volt (includes all keys)	-
••	22-92014	1	S-3C Control Panel, 24 Volt (includes all keys)	-
1	28-90010	1	Panel Plate	-
2	37-40010	1	Oil Pressure Gauge, 0-80 PSI	-
3	37-40011	1	Engine Temperature Gauge, 0-250° F	-
4	37-40012	1	DC Voltmeter, 12 Volt	-
	37-40014	1	DC Voltmeter, 24 Volt	-
5	37-40013	1	Hourmeter	-
6	22-42024	1	Panel Wire Harness (not shown)	-
7	12-90007	**	Self Tapping Screw, Oval Head Phillips #6 x 3/4"	-
8	22-41051	2	Toggle Switch	-
9	22-40004	2	Resistor Kit (24 volt panel only)	-
10	22-44852	**	12 Volt Bulb (not shown)	-
	22-44853	**	24 Volt Bulb (not shown)	-
			**As required	

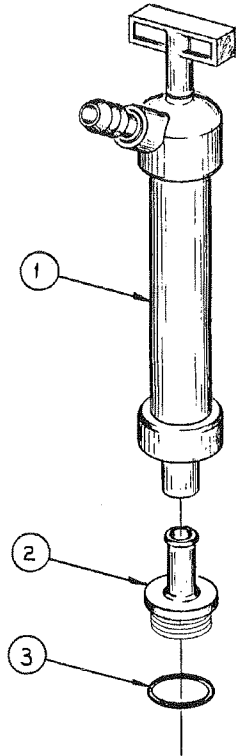
S-3B Control Panel 12 & 24 Volt



A-4722, A-4723/ C-2470

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
**	22-92031	1	S-3B Control Panel, 12 Volt (includes all keys)	-
**	22-95420	1	S-3B Control Panel, 24 Volt (includes all keys)	-
1	39-40008	1	Enclosure	-
2	37-40010	1	Oil Pressure Gauge, 0-80 PSI	-
3	37-40011	1	Engine Temperature Gauge, 0-250° F	-
4	37-40012	1	DC Voltmeter, 12 Volt	-
	37-40014	1	DC Voltmeter, 24 Volt	-
5	37-40013	1	Hourmeter	-
6	00-91018	1	Panel Decal	-
7	22-41077	1	Terminal Board	-
8	22-41051	2	Toggle Switch	-
9	22-00052	1	Number Strip	-
10	22-40004	2	Resistor Kit (24 volt panel only)	-
11	22-44852	**	12 Volt Bulb (not shown)	-
	22-44853	**	24 Volt Bulb (not shown)	-
12	22-40257	1	Wire Harness (not shown)	-
13	00-41015	1	Plastic Bushing	-
14	22-40062	1	Connection Harness	-
			**As required	

Oil Drain Kit



A-5024/ B-3990

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
••	34-70010		Oil Drain Kit Complete (includes all keys)	-
1	36-72002	1	Hand Pump	-
2	31-70001	1	Adapter, Oil Drain	-
3	16-70001	1	O-Ring	-

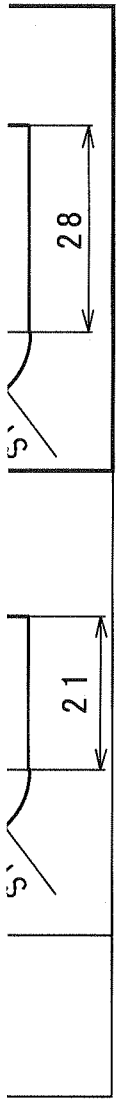


4420 14th Ave. NW., Seattle WA 98107

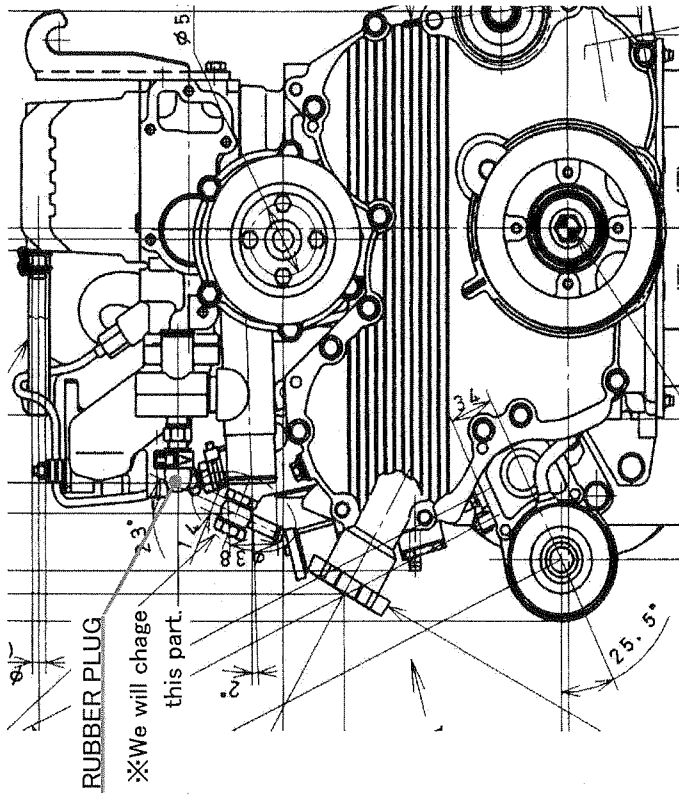
Tel: (206) 789-3880 • 1-800-762-0165 • Fax: (206) 782-5455

Northern Lights and Lugger are registered trademarks of Alaska Diesel Electric, Inc.

© 2003 All rights reserved. Litho USA.



L
P773LK



【Detail of revision items】

Revision	Current	New
Part No.	90339-13009	90339-13006
Part Name	PLUG	CAP
Material	CR (chloroprene rubber)	EPDM (ethylene-propylene rubber)
Shape	