

***For Your Convenience: This Northern
Lights File Is Shared By Diesel Parts Direct***



YOUR ONE STOP SUPERSTORE FOR DIESEL ENGINE PARTS

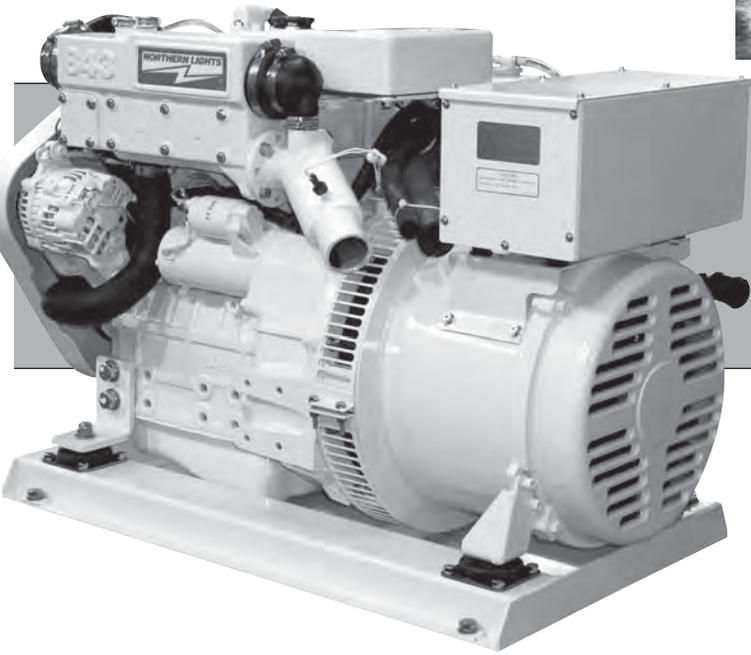
SHOP NOW

For your convenience, Diesel Specialists 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 PDF search function to search the catalog: press CTRL + F and the search box will appear.

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.



P843-2

For Models: M843NW2 and NL843NW2

PARTS MANUAL

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.

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

Copyright ©2005 Northern Lights, Inc.
All rights reserved. Northern Lights™, and
the Northern Lights logo are trademarks of
Northern Lights, Inc.

Printed in U.S.A.
PART NO.: P843-2 12/05



PARTS CATALOG

for Models

M843NW₂ AND NL843NW₂

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 and Flywheel Assembly	2 - 3
Camshaft and Oil Pump	4 - 5
Cylinder Head	6 - 7
Rocker Arm Assembly	8 - 10

GROUP 2 - INTAKE & EXHAUST SYSTEM

Air Filter and Housing	1
Air Filter and Mounting	2
Exhaust Manifold and Muffler	3

GROUP 3 - COOLING SYSTEM

Exhaust Manifold and Heat Exchanger	0 - 1
Coolant Pump	2
Coolant Pump, Fan, & Thermostat Housing	3
Raw Water Pump and Mounting	4 - 5
Radiator and Guard	6 - 9

GROUP 4 - FUEL SYSTEM

Injection Pump and Lines	0 - 1
Governor and Timing Gear Case	2 - 3
Fuel Filter and Piping	4 - 5
Fuel Line Connection	6
Coast Guard Fuel Line Connection	7
Fuel Injector	8
Fuel Feed Pump	9

GROUP 5 - ELECTRICAL SYSTEM

12 & 24 Volt Engine	0 - 4
Alternator, Starter, and Flywheel Housing	5
Alternator	6
Starter Assembly	7
Alternator Assembly	8
Control Panels	9 - 12
Belt Guard Assembly	13

GROUP 6 - GASKET SETS

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

GROUP 7 - GEAR AND ADAPTER SETS

Not available at this time.

GROUP 8 - FRAME & MOUNTING

Base Frame Assembly	1 - 2
---------------------------	-------

GROUP 9 - ACCESSORIES

& OPTIONAL EQUIPMENT

PTO Adapter	1
Electric Clutch	2
Oil Drain Kit	3
Keel Cooling Conversion	4
Coolant Recovery Tank	5
Remote Expansion Tank	6

Proprietary Information

This publication is the property of Northern Lights, Inc.

It may not be reproduced in whole or in part without the written permission of Northern Lights, Inc.

© Northern Lights, Inc. All rights reserved. Litho U.S.A. Publication number P843-2 12/05

INTRODUCTION

Model Designation

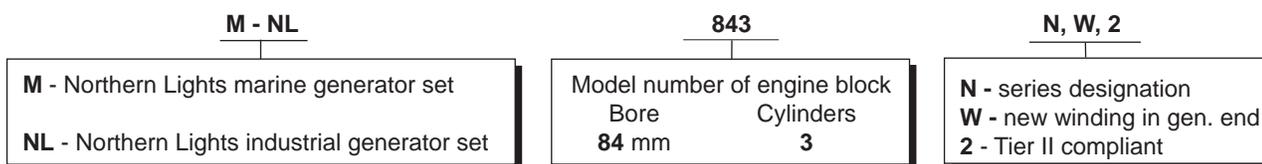
MODELS INCLUDED

This manual covers the operating instructions for:

M843nw2 and **NL843nw2**, which both use the 843 engine.

Model Numbers

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



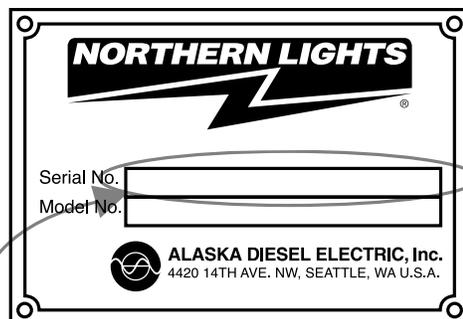
M843nw2 = Northern Lights marine diesel generator set with an 843 engine and a PX-312K2 generator, Tier II compliant.

NL843nw2 = Northern Lights industrial diesel generator set with an 843 engine and a PX-312K2 generator, Tier II compliant.

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.

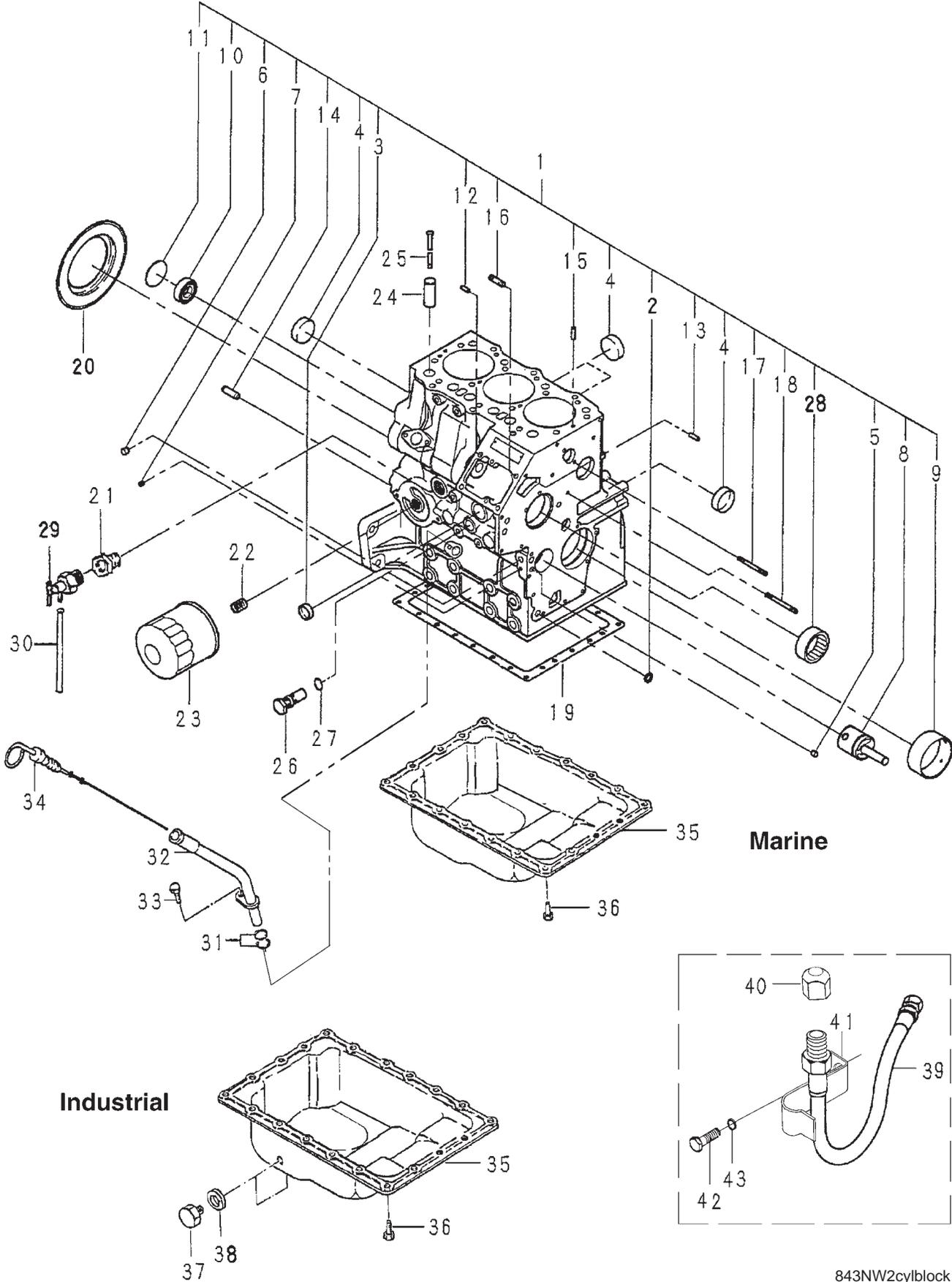
KEY	PART NUMBER	QTY.	DESCRIPTION	SERIALNUMBER
0	185046210	1	Alternator Assembly	-
1	185446219	1	Flywheel, complete	-
2	185446217	1	Plate, complete	-
3	185716200	1	Plate	-
4	185446218	1	Stator, complete	-
5	040126210	2	Bearing	-
6	020210010	1	Nut	-
7	027100010	1	Spring washer	-
8	026100010	1	Washer	-
9	185446220	1	Clamp	-
10	015140408	1	Screw	-
11	015140425	2	Screw	-
12	199236510	1	Collar	-

REFERENCES:

- 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.
- 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

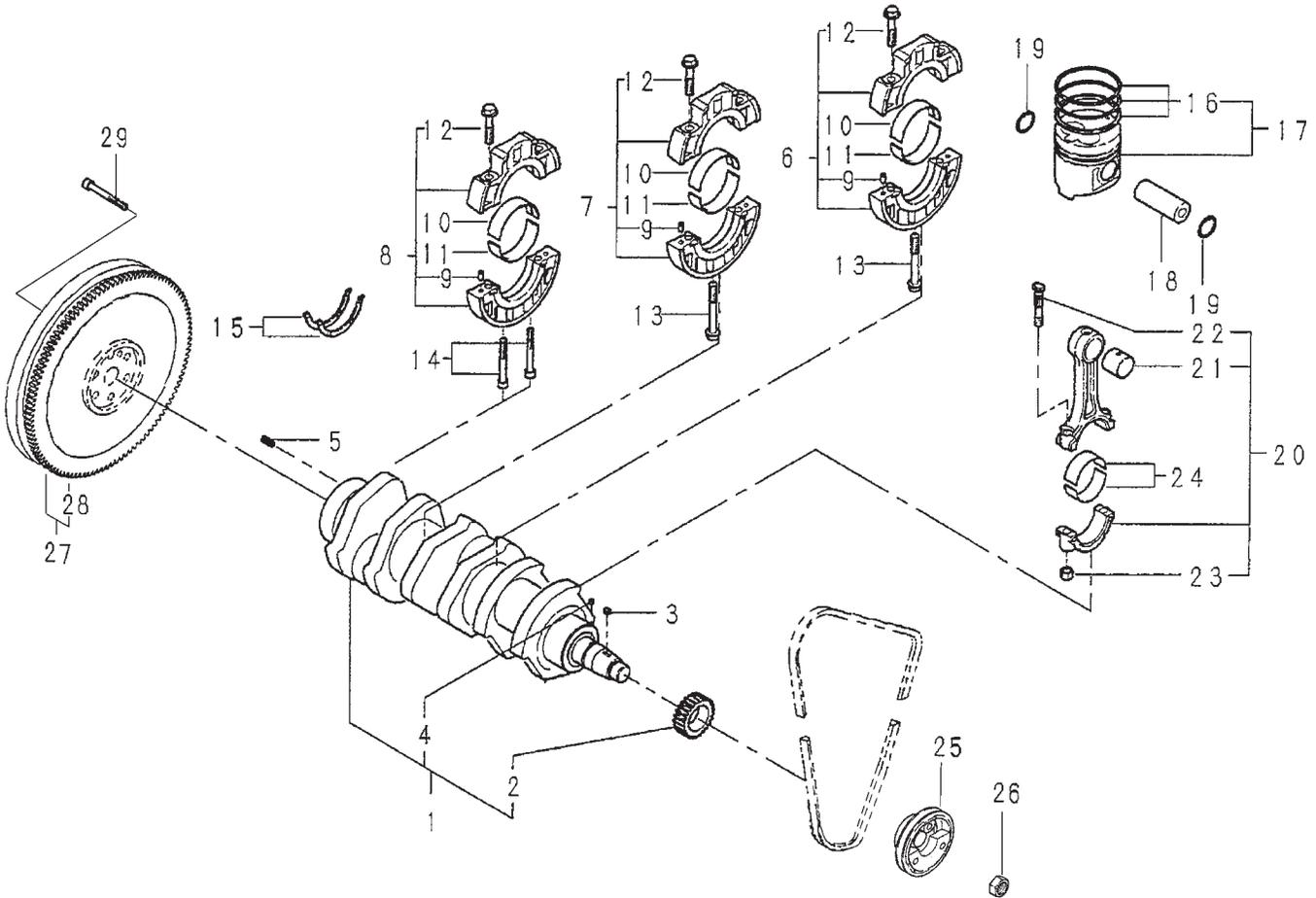


843NW2cylblock

Cylinder Block Assembly

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	110107645	1	Cylinder Block Assembly (Marine, includes keys #2 - 18, 28)	-
	110107604	1	Cylinder Block Assembly (Industrial, includes keys #2- 18, 28)	-
2	064210015	1	Expansion Plug 15 mm	-
3	064210025	1	Expansion Plug 25 mm	-
4	064210040	4	Expansion Plug 40 mm	-
5	198466010	2	Plug	-
6	198466020	3	Plug	-
7	198466030	4	Plug	-
8	165296132	1	Idle Gear Shaft Assembly	-
9	198517222	1	Bushing, Standard	-
	198517226	1	Bushing, Undersized 0.25 mm	-
	198517229	1	Bushing, Undersized 0.50 mm	-
10	040306203	1	Bearing	-
11	064100045	1	Expansion Plug	-
12	030500612	2	Dowel Pin	-
13	030500616	2	Dowel Pin	-
14	030501025	2	Dowel Pin	-
15	030309005	2	Spring Pin	-
16	012110820	2	Stud	-
17	012110635	1	Stud	-
18	012110660	1	Stud	-
19	110996820	1	Gasket	-
20	198636170	1	Oil Seal	-
21	198486770	1	Bushing	-
22	140546020	1	Filter Joint	-
23	140517020	1	Oil Filter Assembly	-
24	120116160	6	Tappet	-
25	120456250	6	Push Rod Assembly	-
26	140036220	1	Relief Valve Assembly	-
27	052109078	1	O-ring	-
28	042309013	1	Needle Bearing	-
29	198736050	1	Drain Cock	-
30	068105250	1	Tube	-
31	052109113	2	O-ring	-
32	110756140	1	Dipstick Holder	-
33	011310612	1	Bolt	-
34	198416320	1	Dipstick	-
35	110707450	1	Oil Pan (Marine)	-
	110707391	1	Oil Pan (Industrial, formerly #110707390)	-
36	010109235	26	Bolt (Marine & Industrial)	-
37	010411212	2	Plug, Hex Head M12 x 1 (Industrial)	-
38	025100012	2	Seal Washer (Industrial)	-
39	18-72004	1	Oil Drain Hose	-
40	21-00003	1	Cap	-
41	23-78601	1	Bracket	-
42	12-00311	1	Capscrew, Hex Head 3/8- 16 x 3/4"	-
43	15-00302	1	Lock Washer 3/8"	-

Crankshaft and Flywheel Assembly

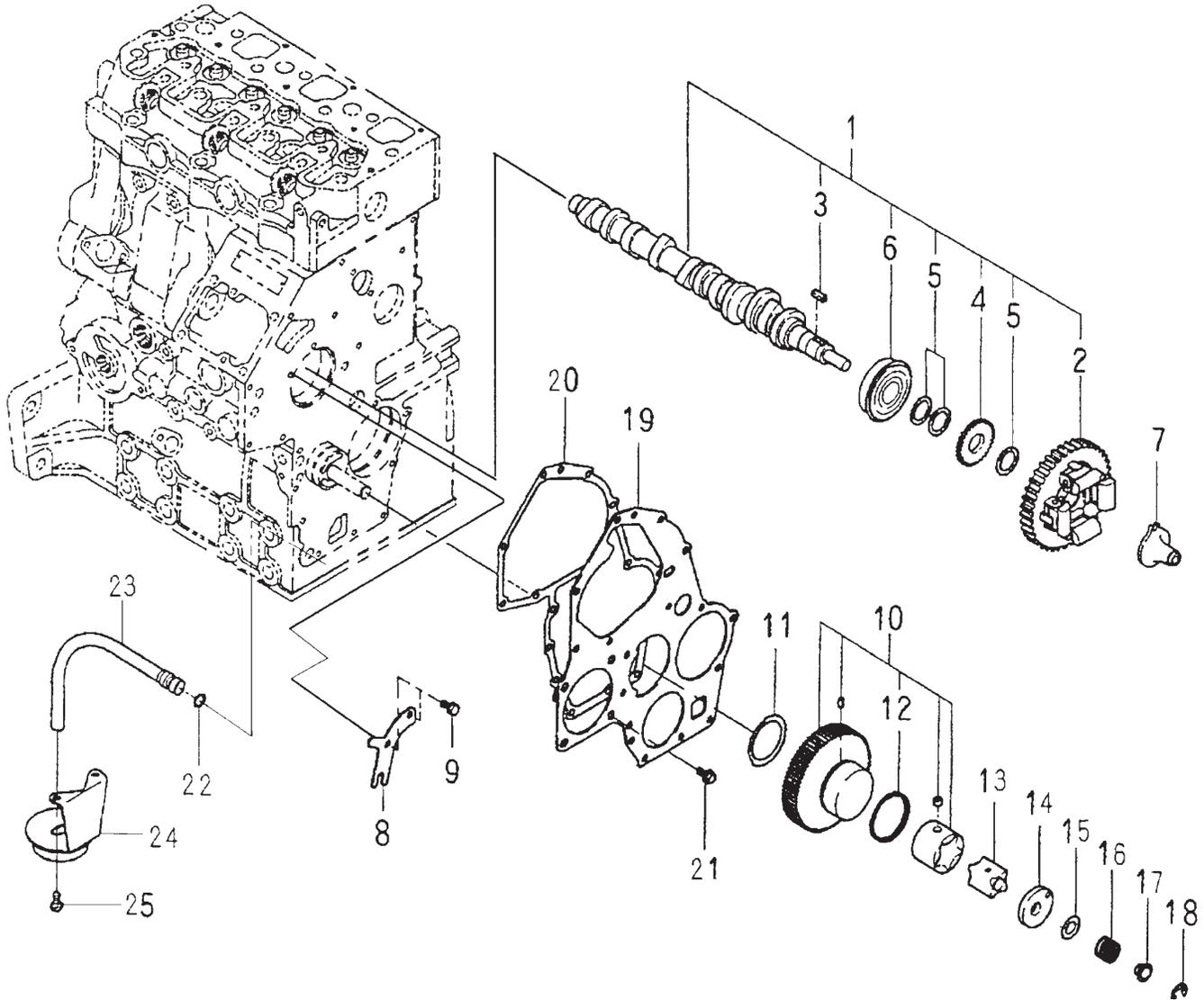


843NW2crankshaft

Crankshaft and Flywheel Assembly

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	115256580	1	Crankshaft Assembly (includes keys 2- 5)	-
2	115276200	1	Crankshaft Gear	-
3	034100508	1	Key	-
4	030509020	1	Dowel Pin	-
5	030300816	1	Spring Pin	-
6	110156171	1	Bearing Holder Assembly (includes keys 9 &12)	-
7	110156181	1	Bearing Holder Assembly (includes keys 9 &12)	-
8	110156191	1	Bearing Holder Assembly (includes keys 9 &12)	-
9	030500612	6	Dowel Pin	-
10	198517232	3	Bearing; Standard (Upper)	-
	198517236	3	Bearing; Undersized 0.25 mm (Upper)	-
	198517239	3	Bearing; Undersized 0.50 mm (Upper)	-
11	198517242	3	Bearing; Standard (Lower)	-
	198517246	3	Bearing; Undersized 0.25 mm (Lower)	-
	198517249	3	Bearing; Undersized 0.50 mm (Lower)	-
12	010109406	6	Bolt	-
13	011511070	2	Bolt	-
14	010700865	2	Bolt	-
15	199266200	2	Thrust Washer	-
16	115107970	3	Piston Ring Kit, Standard	-
17	115017541	3	Piston Kit, Standard (formerly #115017540)	-
18	115326220	3	Piston Pin	-
19	036500028	6	Snap Ring	-
20	115026251	3	Connecting Rod Assembly (includes keys 21-23)	-
21	198517265	3	Bushing	-
22	115176140	6	Connecting Rod Bolt	-
23	020109120	6	Nut	-
24	198517252	6	Bearing, Standard	-
	198517256	6	Bearing, 0.25 mm	-
	198517259	6	Bearing, 0.50 mm	-
25	115397390	1	Crankshaft Pulley (Marine)	-
	115396810	1	Crankshaft Pulley (Industrial)	-
26	020109086	1	Nut	-
27	115357040	1	Flywheel Assembly (includes key 28)	-
28	115376040	1	Ring Gear (109 Teeth)	-
29	010109341	6	Bolt	-

Camshaft and Oil Pump

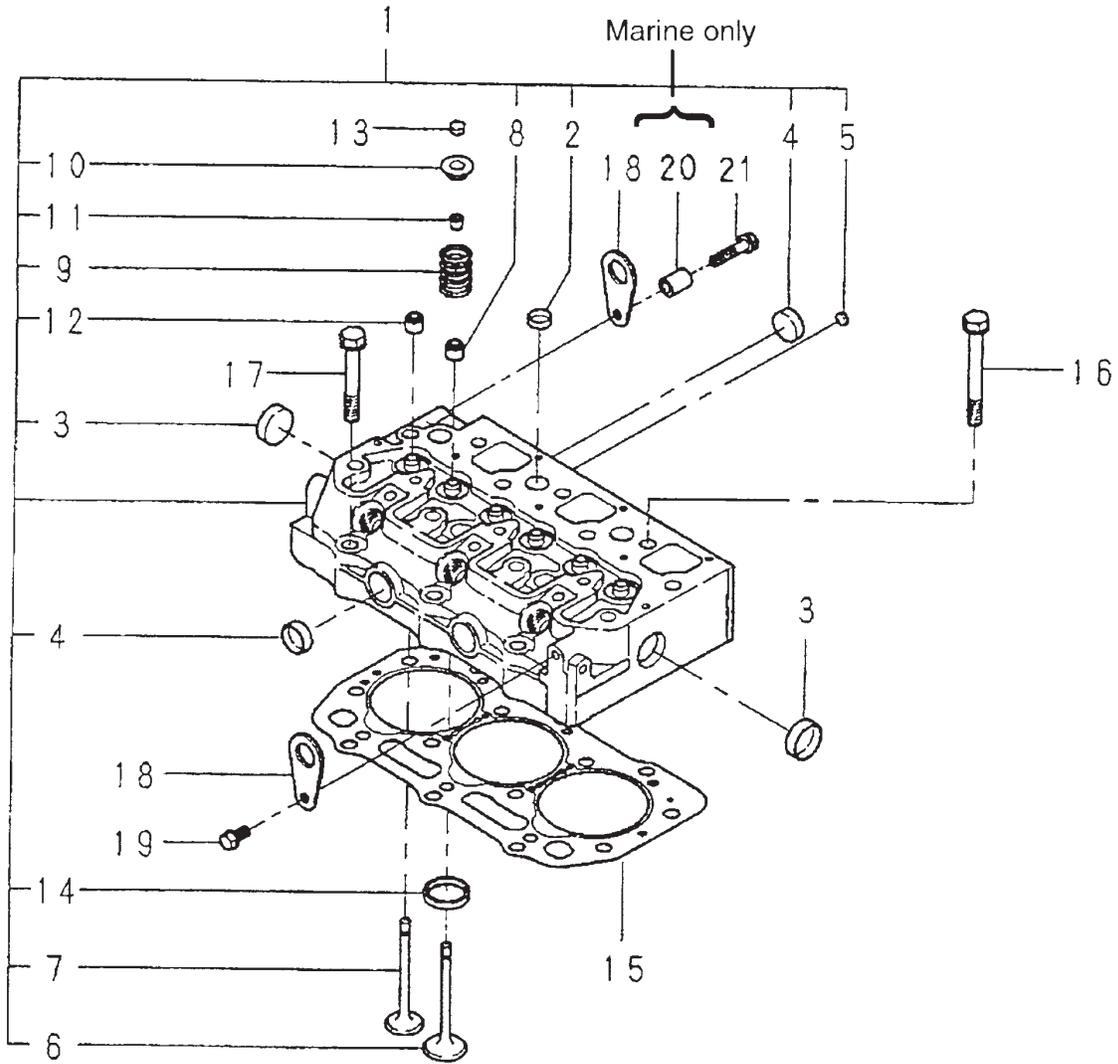


843NW2oilpump

Camshaft and Oil Pump

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	120026740	1	Camshaft Assembly (includes keys 2- 6)	-
2	120016050	1	Cam Gear	-
3	034100508	1	Key	-
4	120736081	1	Gear	-
5	199216230	3	Spacer	-
6	040156304	1	Bearing	-
7	125256120	1	Slider	-
8	199566651	1	Plate	-
9	011310612	2	Bolt	-
10	165026120	1	Idle Gear Assembly (includes key #12)	-
11	199266180	1	Thrust Washer	-
12	198216821	1	Spring	-
13	140166140	1	Rotor	-
14	140116140	1	Oil Pump Cover	-
15	199286150	1	Shim; t = 0.10	-
	199286160	1	Shim; t = 0.15	-
	199286170	1	Shim; t = 0.20	-
	199286180	1	Shim; t = 0.50	-
16	198216720	1	Spring	-
17	199236540	1	Collar	-
18	036800010	1	Snap Ring	-
19	165166450	1	Front Plate - Marine (white)	-
	165166290	1	Front Plate - Industrial (blue)	-
20	165996540	1	Gasket	-
21	011300612	2	Bolt	-
22	052109076	1	O-ring	-
23	140986530	1	Oil Pipe	-
24	140406310	1	Suction Filter Assembly	-
25	011310612	2	Bolt	-

Cylinder Head

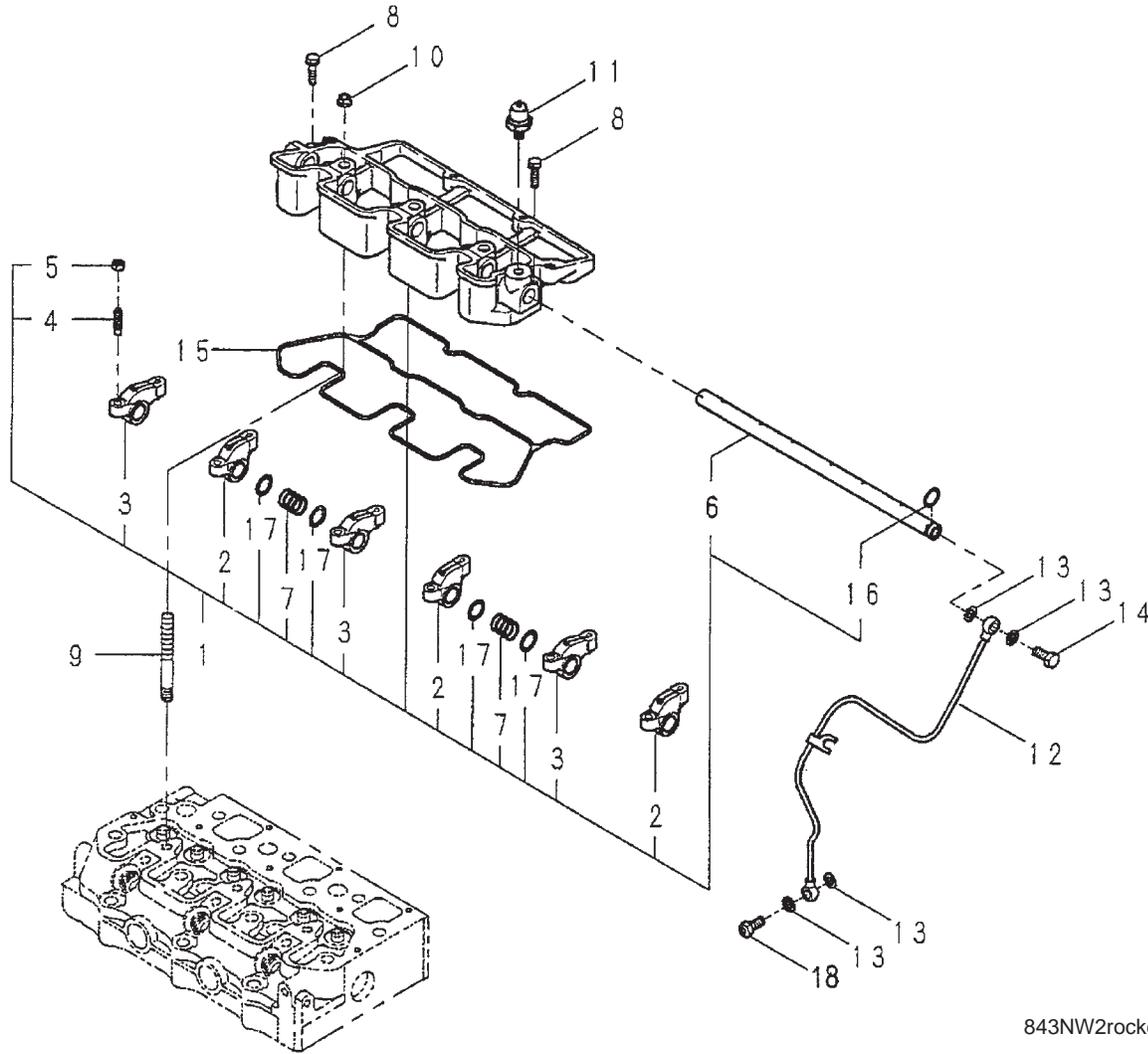


843NW2cylhead

Cylinder Head

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	111010590	1	Cylinder Head Assembly (Marine, includes keys 1-14)	-
	111010640	1	Cylinder Head Assembly (Industrial, includes keys 1-14)	-
2	064210018	5	Expansion Plug, 18 mm	-
3	064210030	2	Expansion Plug, 30 mm	-
4	064210025	4	Expansion Plug, 25 mm	-
5	064210010	2	Expansion Plug, 10 mm	-
6	120166350	3	Intake Valve	-
7	120176360	3	Exhaust Valve	-
8	120406070	3	Valve Guide Seal - Intake	-
9	198216700	6	Spring	-
10	120186080	6	Retainer	-
11	120226070	12	Cotter	-
12	120406050	3	Valve Guide Seal - Exhaust	-
13	120216040	6	Cap	-
14	110136400	3	Valve Seat - Intake	-
15	111147491	1	Head Gasket t=1.3 mm	-
	111147501	1	Head Gasket t=1.4 mm	-
16	111136480	11	Head Bolt	-
17	111136490	3	Head Bolt	-
18	195816340	2	Lifting Eye (Marine)	-
	195816030	1	Lifting Eye (Industrial)	-
19	011510816	1	Bolt	-
20	199236680	1	Spacer (Marine only)	-
21	011510830	1	Bolt (Marine only)	-

Rocker Arm Assembly

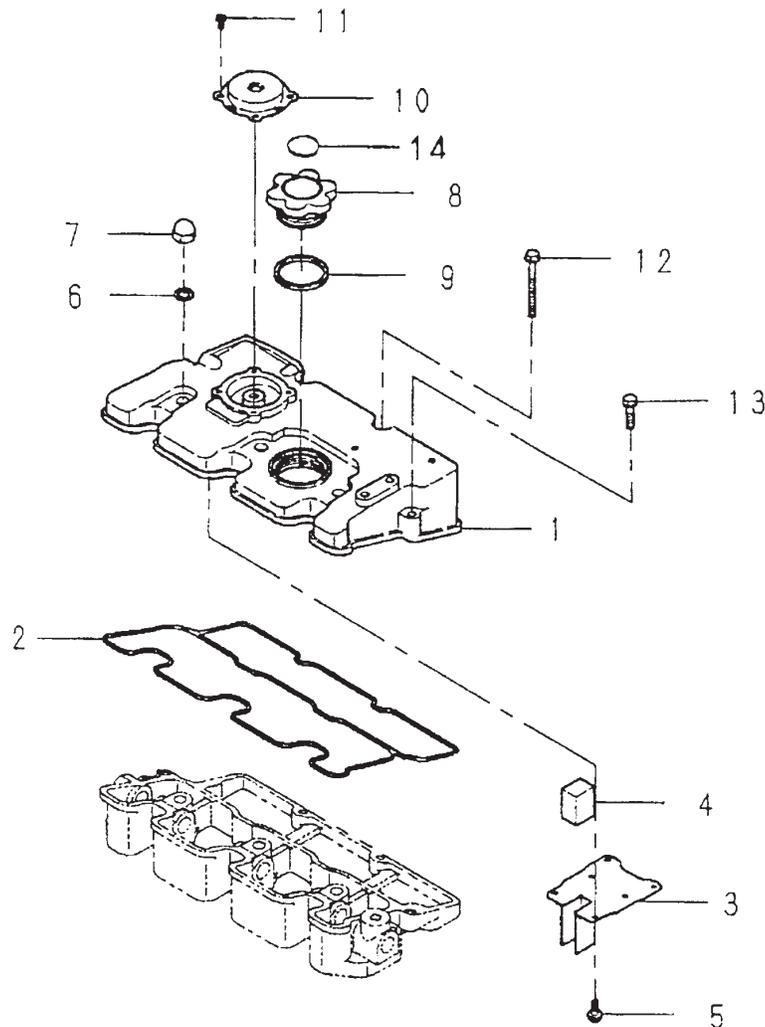


843NW2rockerarm

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	120036990	1	Rocker Arm Assembly (Marine, includes keys 2-7, 16-17)	-
	120037079	1	Rocker Arm Assembly (Industrial, includes keys 2-7, 16-17)	-
2	120356131	3	Intake Rocker Arm	-
3	120356141	3	Exhaust Rocker Arm	-
4	199486220	6	Screw	-
5	020109076	6	Nut	-
6	120316281	1	Rocker Arm Shaft	-
7	198217170	2	Spring	-
8	011310635	2	Bolt	-
9	012109044	3	Stud	-
10	023100010	3	Nut	-
11		1	Oil Pressure Switch (see Electrical System)	-
12	140606941	1	Oil Pipe Assembly	-
13	140996260	4	Sealing Washer	-
14	198486780	1	Banjo Bolt	-
15	120996140	1	Gasket	-
16	052109076	1	O-ring	-
17	199280300	4	Shim	-
18	198487590	1	Banjo Bolt (Tapped 1/8 NPT)	-

Rocker Arm Cover

Marine

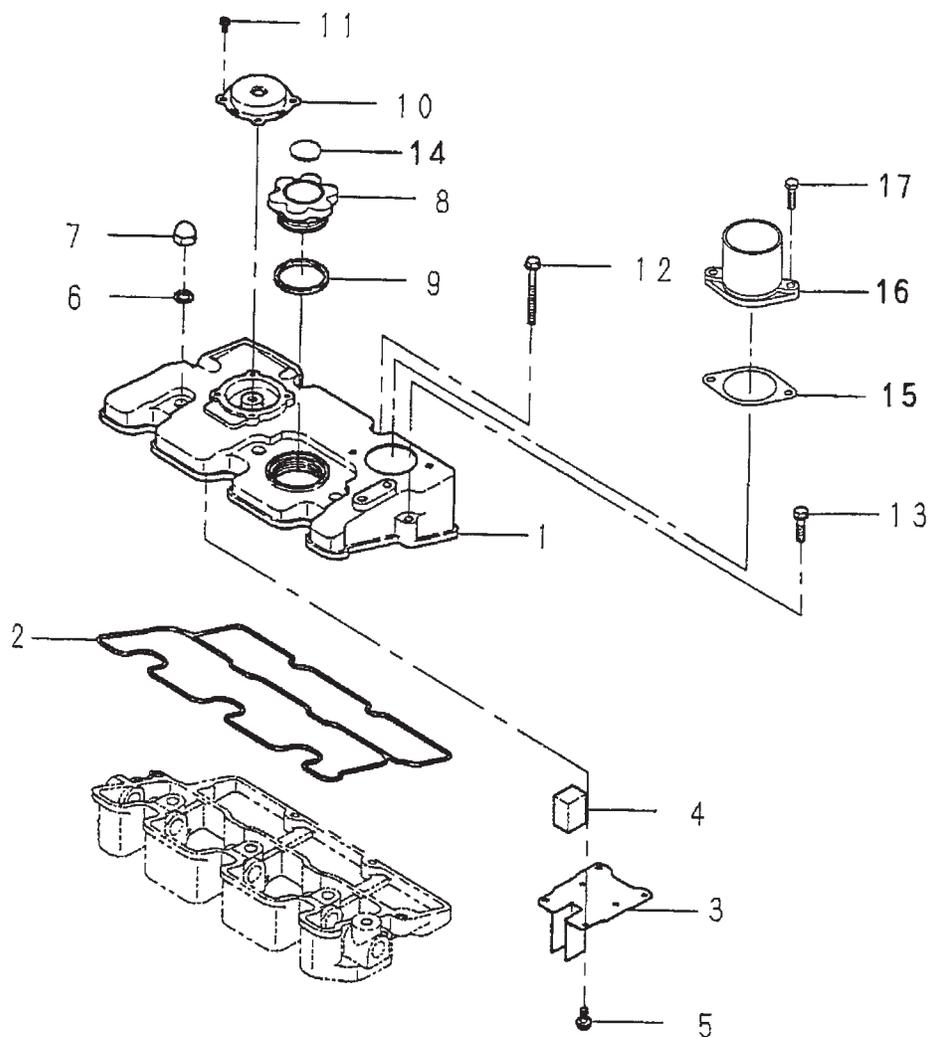


843NW2rockercover

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	111217780	1	Rocker Arm Cover	-
2	111996410	1	Gasket	-
3	110666210	1	Oil Stopper	-
4	110666060	1	Steel Wool	-
5	015600406	6	Screw	-
6	140996270	3	Gasket	-
7	024600010	3	Cap Nut	-
8	198436010	1	Cap	-
9	052100400	1	O-ring	-
10	110566080	1	Breather Valve	-
11	011100408	4	Bolt	-
12	011310660	2	Bolt	-
13	011310640	2	Bolt	-
14	190196630	1	Caution Plate	-

Rocker Arm Cover

Industrial

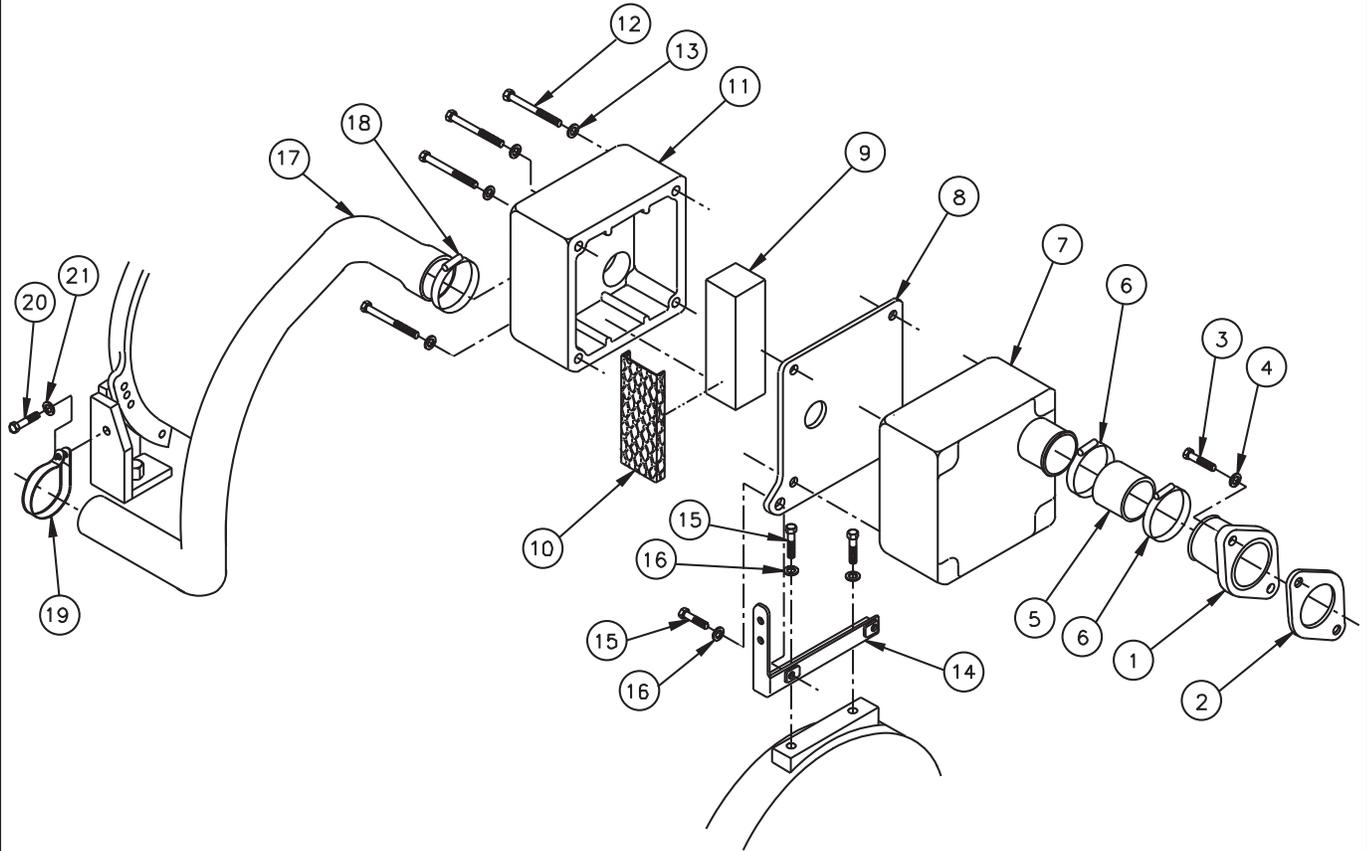


843NW2rockercoverind

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	111217830	1	Rocker Arm Cover	-
2	111996410	1	Gasket	-
3	110666210	1	Oil Stopper	-
4	110666060	1	Steel Wool	-
5	015600406	6	Screw	-
6	140996270	3	Gasket	-
7	024600010	3	Cap Nut	-
8	198436010	1	Cap	-
9	052100400	1	O-ring	-
10	110566080	1	Breather Valve	-
11	011100408	4	Bolt	-
12	011310660	2	Bolt	-
13	011310640	2	Bolt	-
14	190196630	1	Caution Plate	-
15	135996950	1	Gasket	-
16	135566550	1	Air Intake	-
17	011310620	2	Bolt	-

Air Filter and Housing

Marine

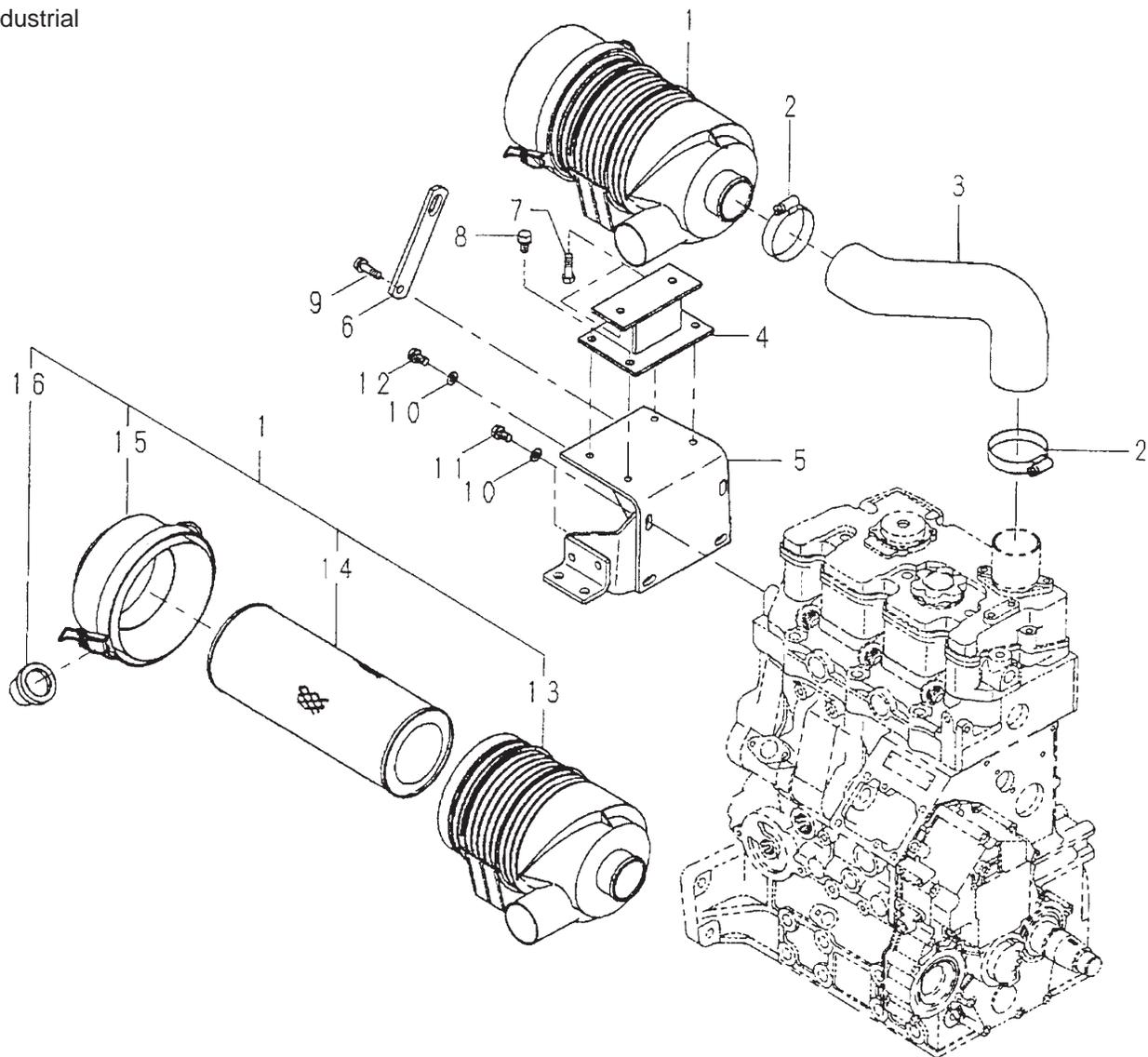


A-10262, A-10312 / C-5444

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	10-22004	1	Connector, Air Inlet	-
2	135996950	1	Gasket, Air Intake Mounting	-
3	12-01131	2	Capscrew, Hex Head M6 x 1.0 x 20 mm	-
4	15-99131	2	Wave Washer M6 S/S	-
5	18-22002	1	Hose 1-3/4" ID x 2-1/4"	-
6	19-01028	2	Hose Clamp #28	-
7	10-22006	1	Front Cover, Air Filter Housing	-
8	28-22001	1	Plate, Air Filter Baffle	-
9	24-22009	1	Element, Air Filter	-
10	24-22011	1	Screen, Air Filter Retaining	-
11	10-22003	1	Rear Cover, Air Filter Housing	-
12	12-09132	4	Capscrew, Hex Head M6 x 1.0 x 85 mm S/S	-
13	15-99131	4	Wave Washer M6 S/S	-
14	23-22001	1	Bracket, Air Filter Support	-
15	12-09751	4	Capscrew, Hex Head M8 x 1.25 x 16 mm S/S	-
16	15-99707	4	Wave Washer M8 S/S	-
17	18-22001	1	Hose, Air Intake (Molded)	-
18	19-01028	1	Hose Clamp #28	-
19	19-70028	1	Cushion Clamp #28	-
20	12-01102	1	Capscrew, Hex Head M6 x 1.0 x 16 mm S/S	-
21	15-01134	1	Flat Washer, M6 S/S	-

Air Filter and Mounting

Industrial

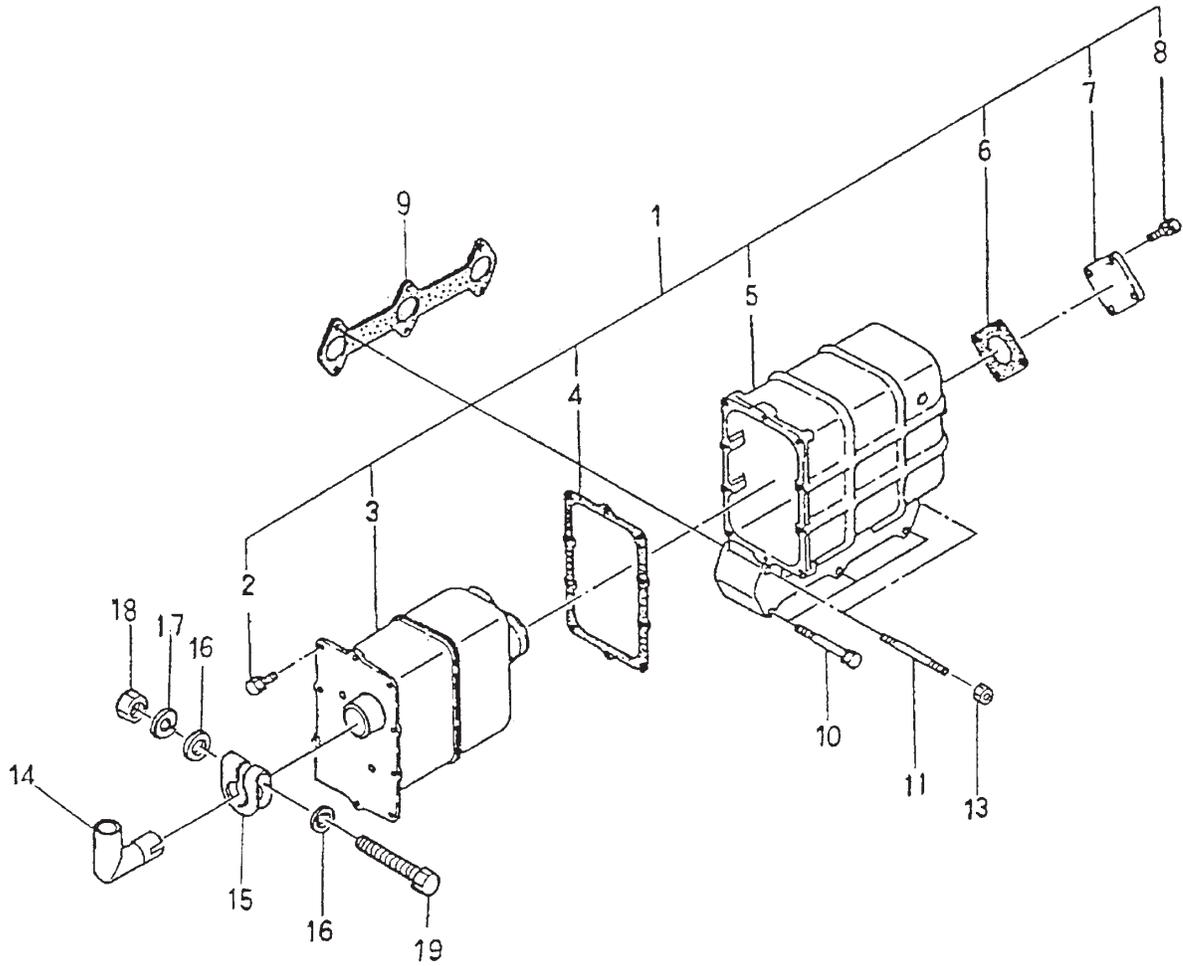


843NW2aircleaner

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	135016300	1	Air Filter Assembly (includes keys #13 - 16)	-
2	19-00036	2	Clamp #36	-
3	135597860	1	Hose	-
4	135876600	1	Bracket	-
5	135976420	1	Bracket	-
6	195816100	1	Lifting Eye	-
7	011510820	2	Bolt	-
8	011510816	4	Bolt	-
9	011510825	1	Bolt	-
10	026100008	4	Washer	-
11	011510825	2	Bolt	-
12	011510820	1	Bolt	-
13	135326197	1	Housing	-
14	24-27302	1	Element	-
15	135326199	1	Cover Assembly	-
16	314531163	1	Valve	-

Exhaust Manifold and Muffler

Industrial

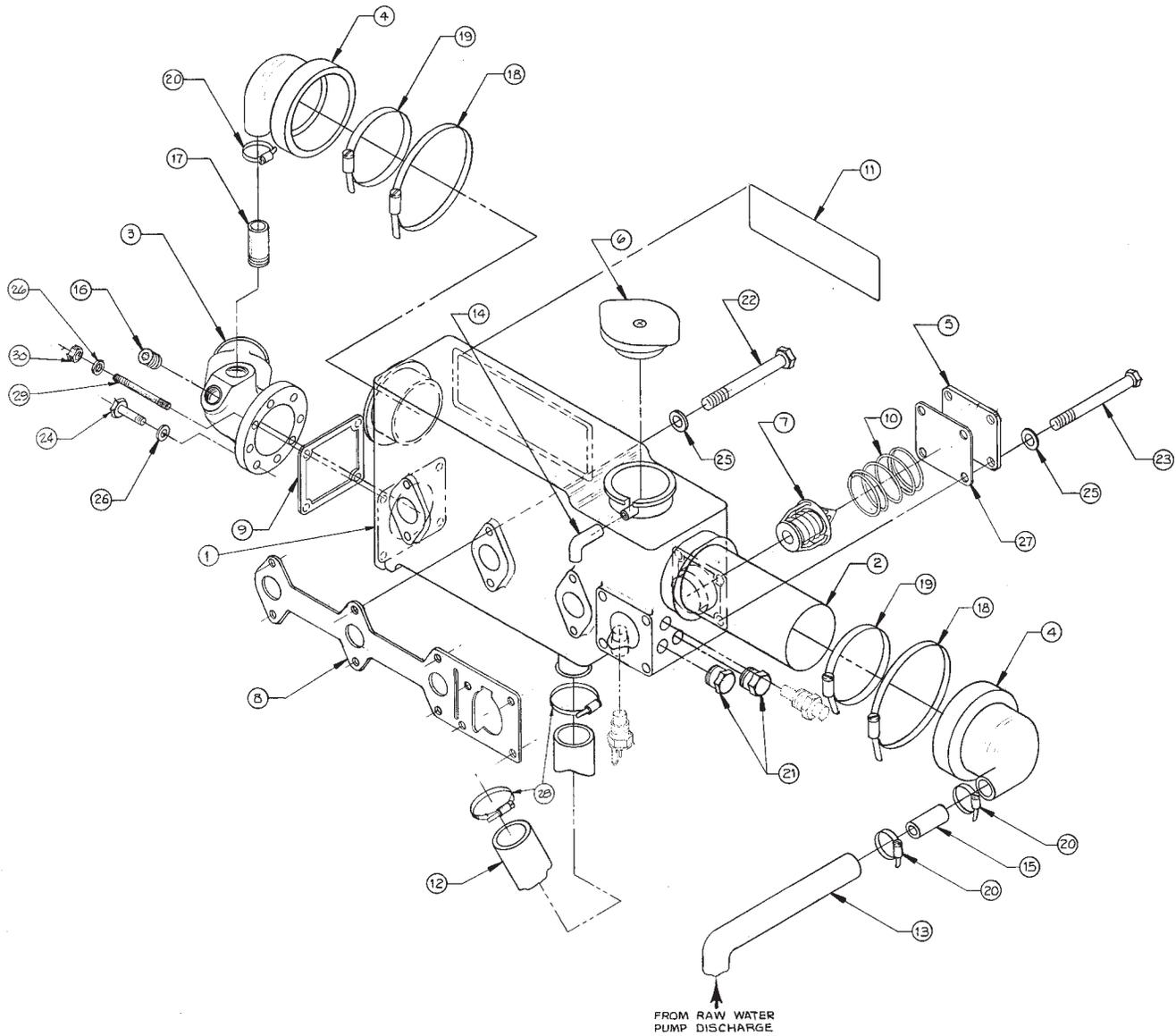


843NW2muffler

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	314011660	1	Muffler Assembly (includes keys #2 - 8)	-
2	011140612	10	Bolt	-
3	135406230	1	Muffler Element	-
4	135996900	1	Gasket	-
5	135616701	1	Exhaust Manifold	-
6	135996550	1	Gasket	-
7	314120300	1	Flange	-
8	011310620	4	Bolt	-
9	135996590	1	Gasket	-
10	011310670	4	Bolt	-
11	012110670	2	Stud	-
13	023100006	2	Nut	-
14	135606340	1	Exhaust Elbow (can use #27-33102)	-
	27-33103	1	Exhaust Elbow 1-1/2 NPT	-
15	314410020	1	Clamp	-
16	026100008	2	Washer	-
17	027110008	1	Spring Washer	-
18	020900008	1	Nut	-
19	010310865	1	Bolt	-

Exhaust Manifold and Heat Exchanger

Marine



A-4760B/ D-2106C

Exhaust Manifold and Heat Exchanger

Marine

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	10-33110	1	Exhaust Manifold / Expansion Tank	-
2	20-12002	1	Heat Exchanger Element	-
3	27-32003	1	Wet Exhaust Elbow S/S	-
	135616235	1	Wet Exhaust Elbow (Cast Iron)	-
4	145536370	2	Heat Exchanger End Cap	-
5	28-13101	1	Thermostat Housing Cover Plate	-
6	21-12013	1	Pressure Cap (formerly #21-12007)	-
7	145206022	1	Thermostat, 180°F / 82°C	-
8	11-33101	1	Exhaust Manifold Gasket	-
9	314990030	1	Wet Exhaust Elbow Gasket	-
10	00-13101	1	Spring	-
11	00-08301	1	"Northern Lights" Decal	-
12	18-13107	1	Formed Hose	-
13	18-13108	1	Hose 3/4" ID x 18-1/2"	-
14	18-13109	1	Overflow Hose 5/16" ID x 25"	-
15	21-13102	1	Union 3/4 HB x 3/4 HB	-
16	21-13101	1	Socket Head Plug 1/2 NPT	-
17	145986150	1	Connector 1/2 NPT x 3/4 HB	-
18	19-00048	2	Hose Clamp #48	-
19	19-00040	2	Hose Clamp #40	-
20	19-00012	3	Hose Clamp #12	-
21	21-31002	2	Hex Head Plug, Brass 3/8 NPT	-
22	12-09137	6	Capscrew, Hex Head M6 x 1.0 x 105 mm S/S	-
23	12-09138	4	Capscrew, Hex Head M6 x 1.0 x 110 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	11-13101	1	Thermostat Gasket	-
28	19-00024	2	Hose Clamp #24	-
29	13-09710	1	Stud M8 x 1.25 x 20 x 10 S/S (35 mm OAL)	-
30	14-09711	1	Hex Nut, M8 x 1.25 S/S	-
31	20-12207	1	Filler Neck	-
32	22-42070	1	Switch, High Exhaust Temperature (not shown)	-

Coolant Pump

Marine

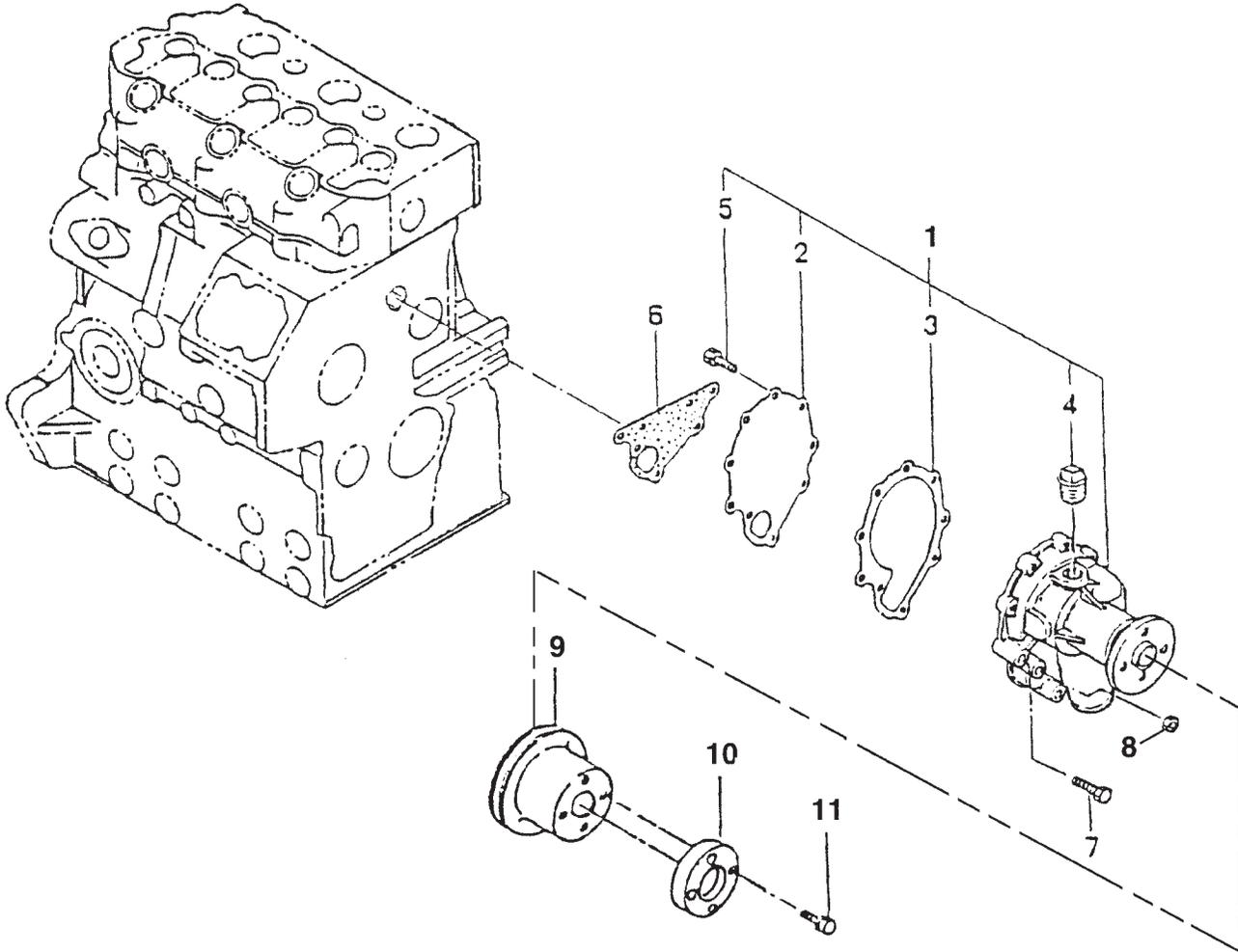
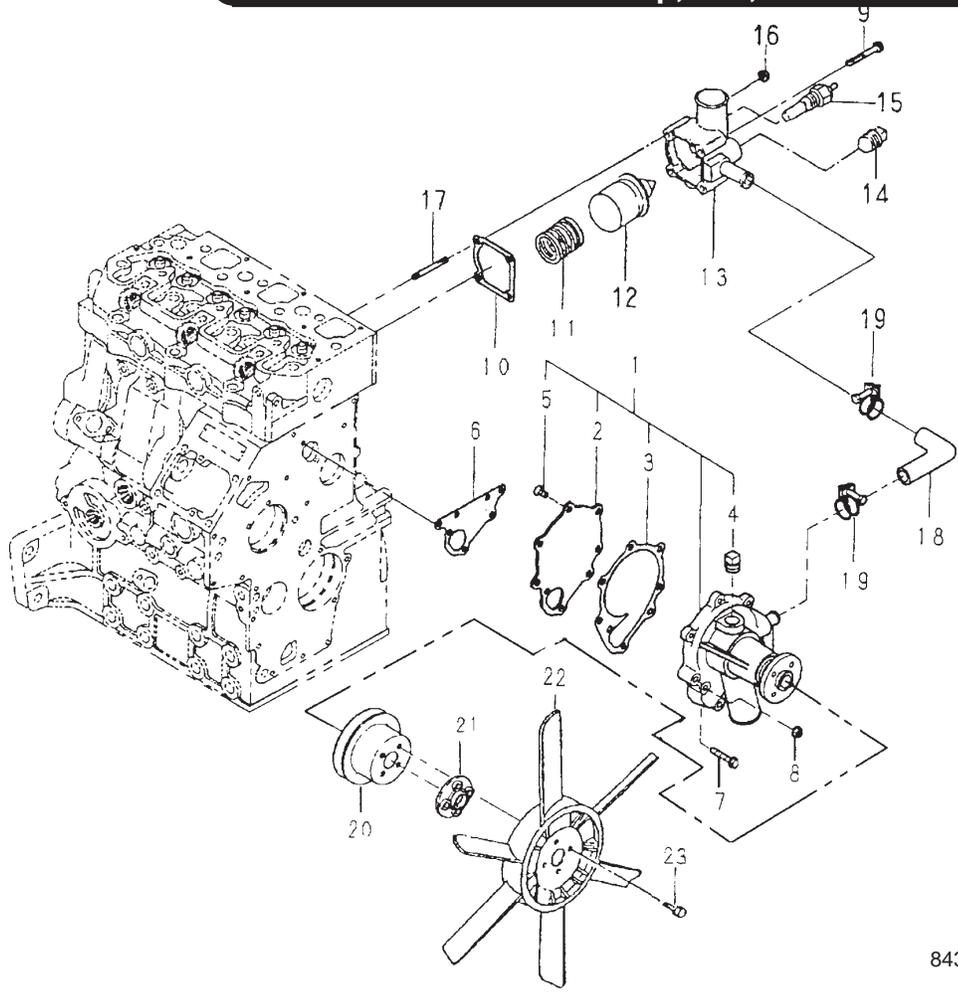


Fig. 3-2

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	145017800	1	Coolant Pump Assembly (includes keys #2 - 5)	-
2	145146320	1	Backing Plate	-
3	145996680	1	Gasket	-
4	064500030	1	Plug	-
5	015300614	5	Screw	-
6	145996670	1	Gasket	-
7	011300635	4	Bolt	-
8	023100006	1	Nut	-
9	145336620	1	Pulley	-
10	145386390	1	Spacer	-
11	011310620	4	Bolt	-

Coolant Pump, Fan, and Thermostat Housing

Industrial

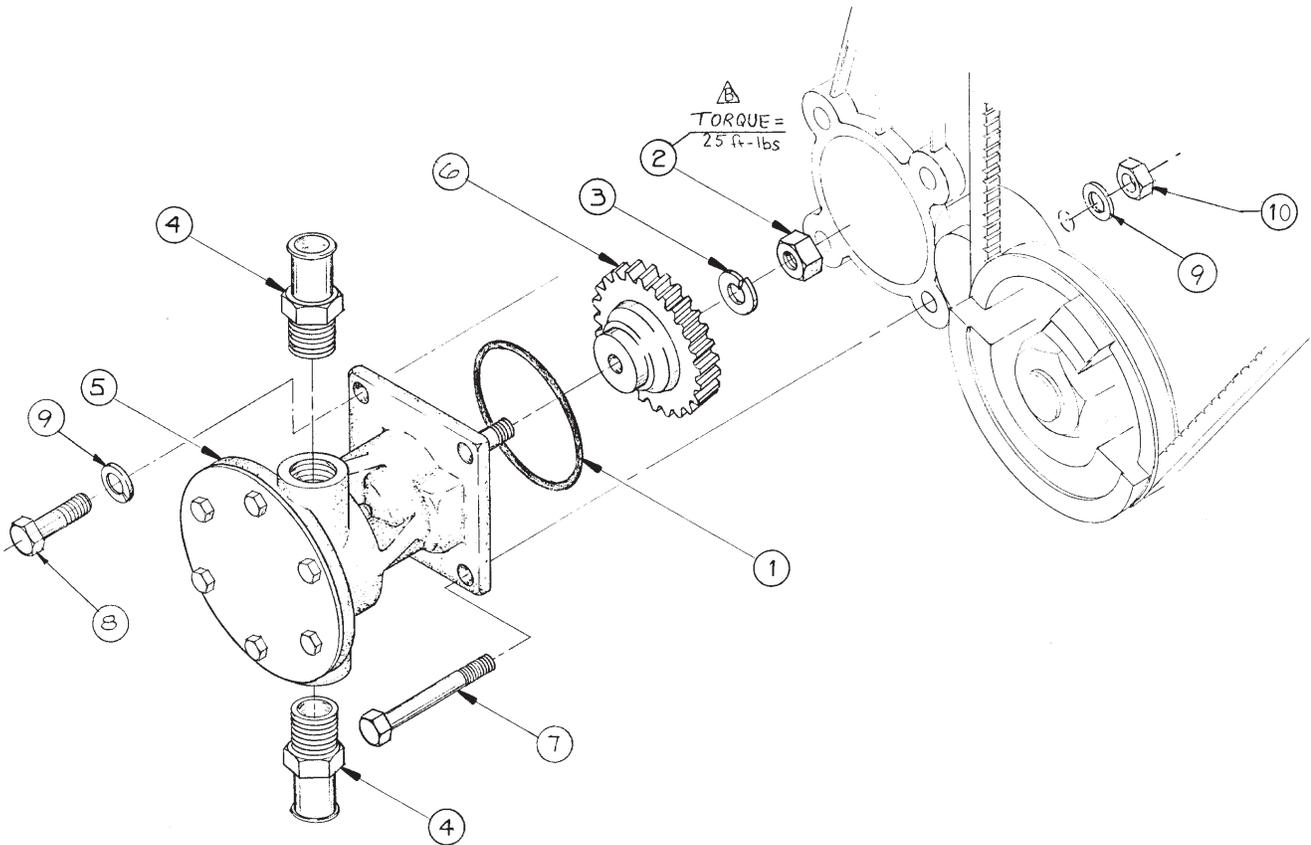


843NW2coolantpumpind

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	145017780	1	Coolant Pump Assembly (includes keys #2 - 5)	-
2	145146320	1	Backing Plate	-
3	145996680	1	Gasket	-
4	064500030	1	Plug	-
5	015300614	3	Screw	-
6	145996670	1	Gasket	-
7	011300635	4	Bolt	-
8	023100006	1	Nut	-
9	011300645	2	Bolt	-
10	145996710	1	Gasket	-
11	198217400	1	Spring	-
12	145206022	1	Thermostat, 180°F / 82°C	-
13	145216190	1	Thermostat Housing	-
14	064500030	1	Plug	-
15	385720101	1	Temperature Switch, 221°F/ 105°C	-
16	023100006	2	Nut	-
17	012110645	2	Stud	-
18	145536051	1	Hose	-
19	19-00006	2	Hose Clamp #6	-
20	145336620	1	Pulley	-
21	145386920	1	Spacer	-
22	145306620	1	Fan (Blower)	-
23	011310635	4	Bolt, M6 x 1.0 x 35 mm	-

Raw Water Pump and Mounting

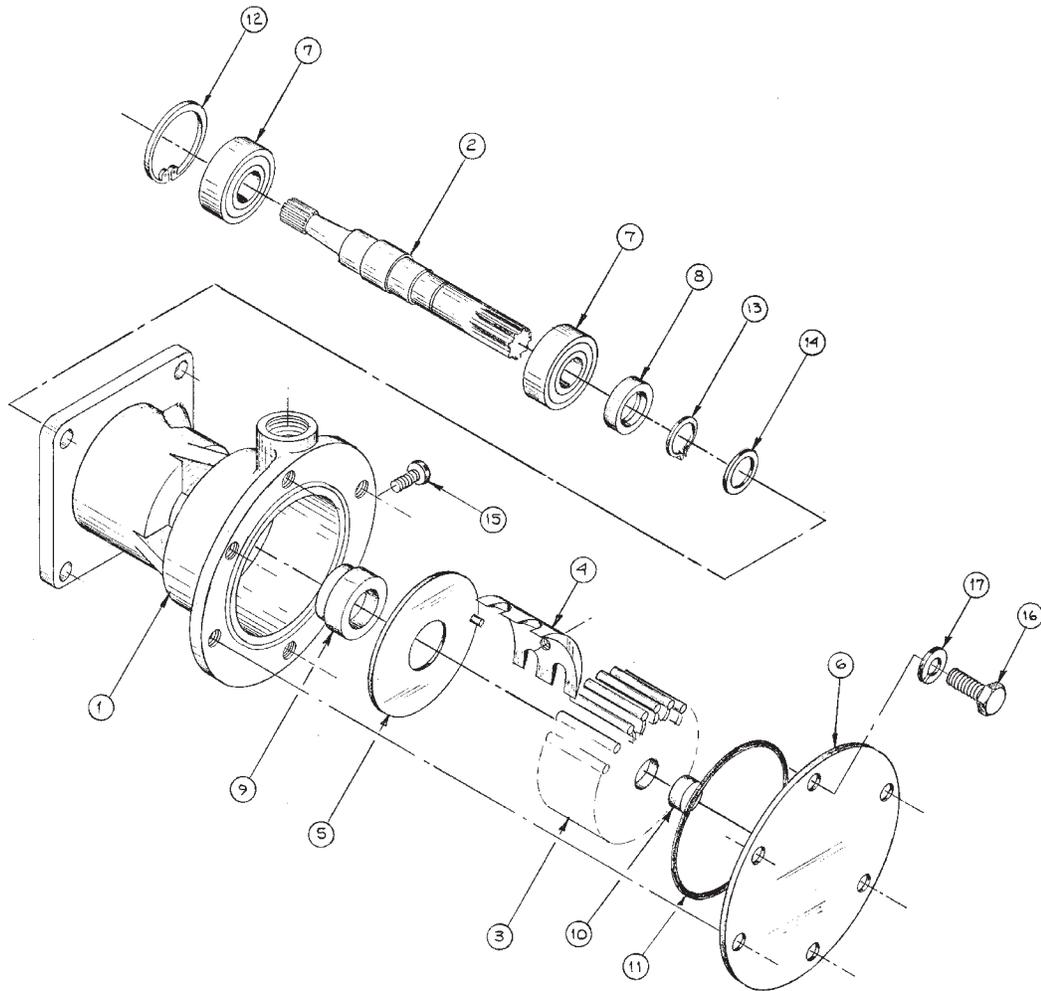
Marine



A-4779/ B-3842

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	16-13101	1	O-ring 2-1/2 x 2-3/4 x 1/8	-
2	14-00811	1	Nut M10 x 1.5	-
3	15-00802	1	Lock Washer M10	-
4	21-00129	2	Fitting 1/2 NPT x 3/4 HB	-
5	25-12057	1	Raw Water Pump (see parts detail)	-
6	340460141	1	Drive Gear	-
7	12-00710	3	Capscrew, Hex Head M8 x 1.25 x 90 mm	-
8	12-00754	1	Capscrew, Hex Head M8 x 1.25 x 85 mm	-
9	15-00702	4	Lock Washer, Helical M8	-
10	14-00711	3	Hex Nut M8 x 1.25	-

Raw Water Pump Detail

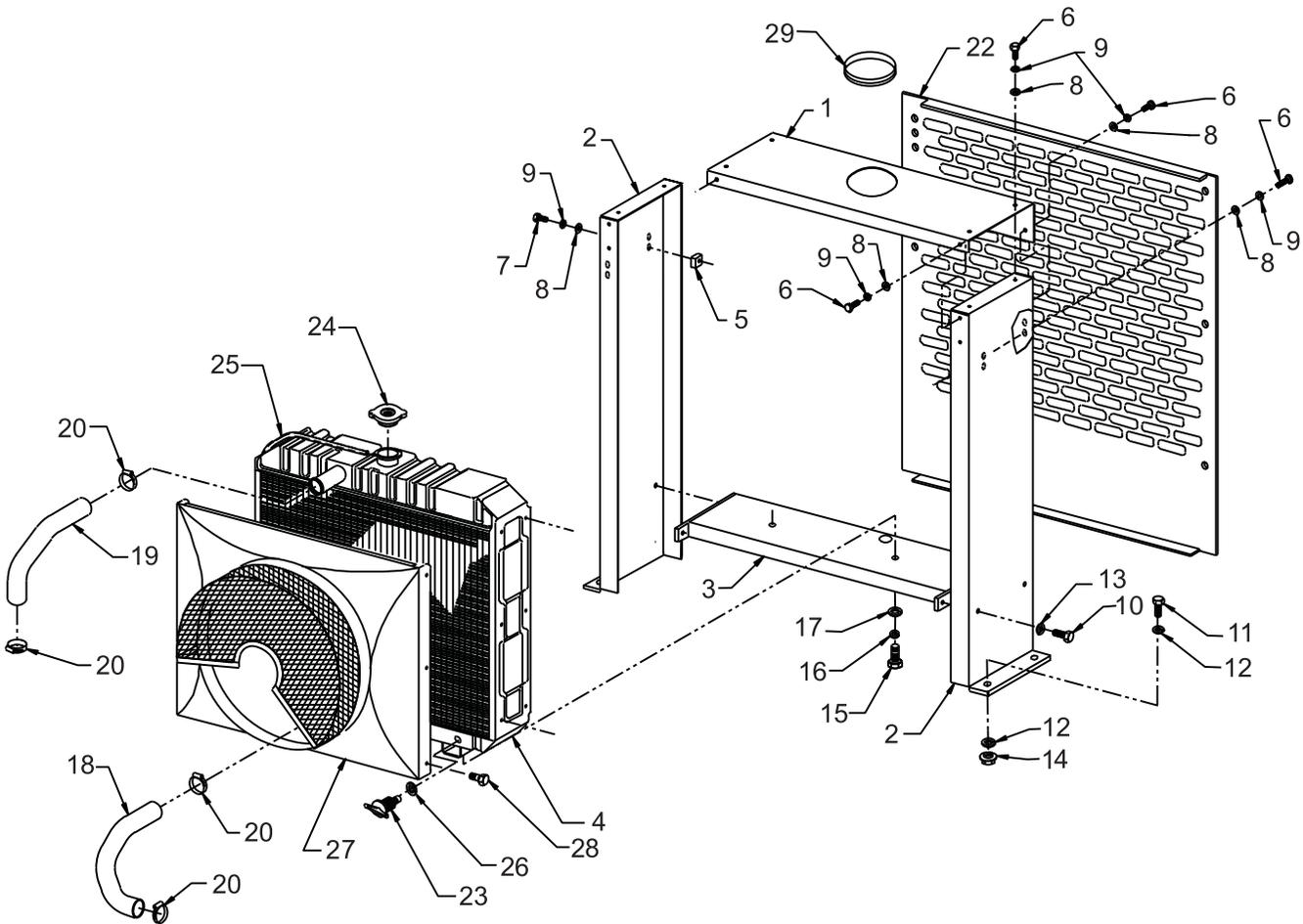


A-3706/ C-2204

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
••	25-12057	1	Raw Water Pump Assembly (includes keys 1 - 17)	-
•	25-12004	1	Repair Kit (includes keys 3- 9, 11)	-
1	25-12058	1	Raw Water Pump Body	-
2	25-12059	1	Shaft	-
3	25-12060	1	Impeller	-
4	25-12061	1	Cam	-
5	25-12062	1	Wear Plate	-
6	25-12063	1	End Cover	-
7	25-12064	1	Bearing	-
8	25-12065	1	Lip Seal	-
9	25-12066	1	Mechanical Seal	-
10	25-12017	1	Spline Seal	-
11	25-12067	1	O-ring	-
12	25-12068	1	Retaining Ring	-
13	25-12069	1	Retaining Ring	-
14	25-12070	1	Washer	-
15	25-12071	1	Pan Head Screw #10-32 x 3/8	-
16	25-12072	1	Hex Head Screw #10-32 x 3/8	-
17	25-12073	1	Split Lock Washer #10	-

Radiator and Guard

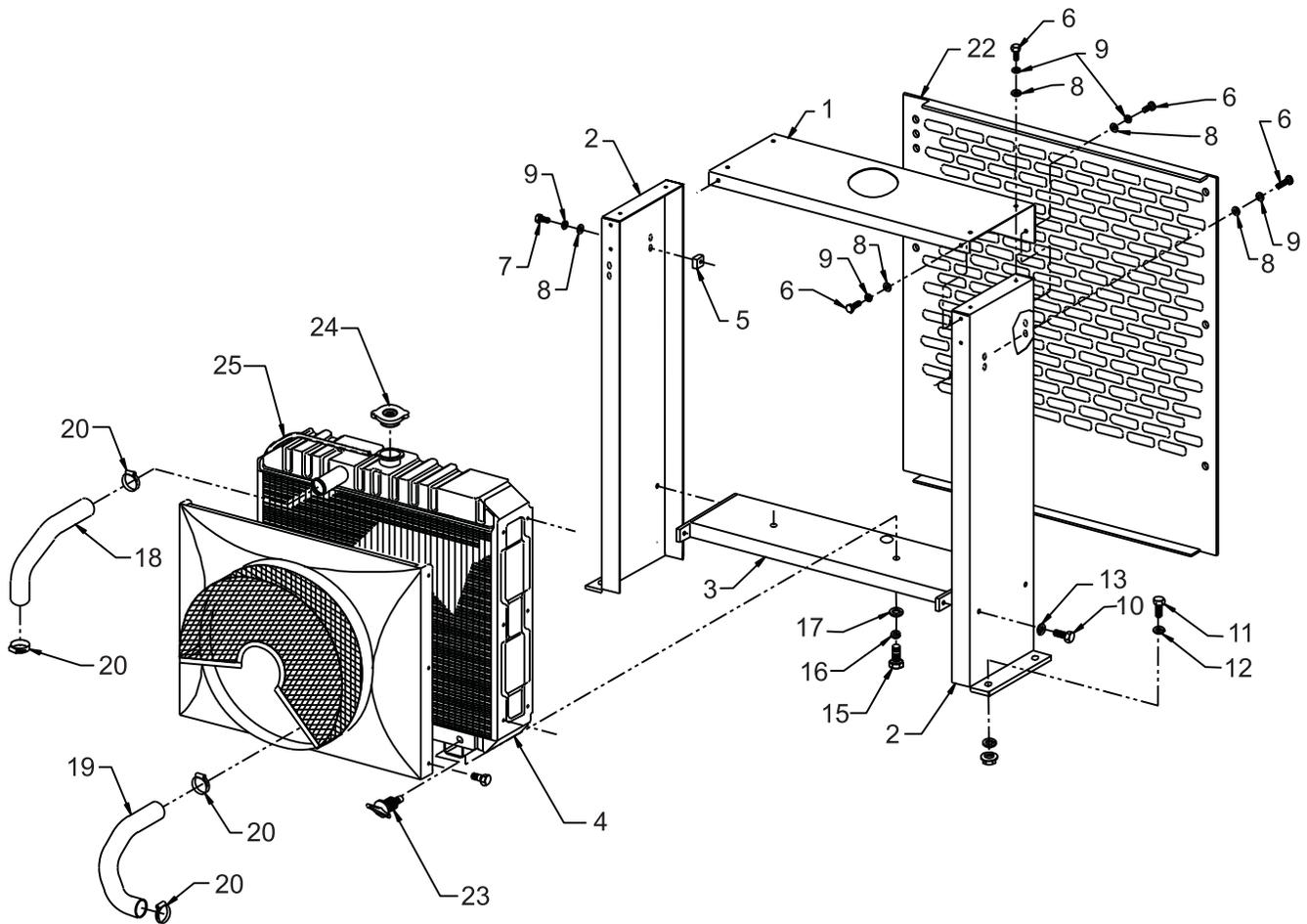
Early Production



A-6501/ B-9154z

Radiator and Guard

Late Production



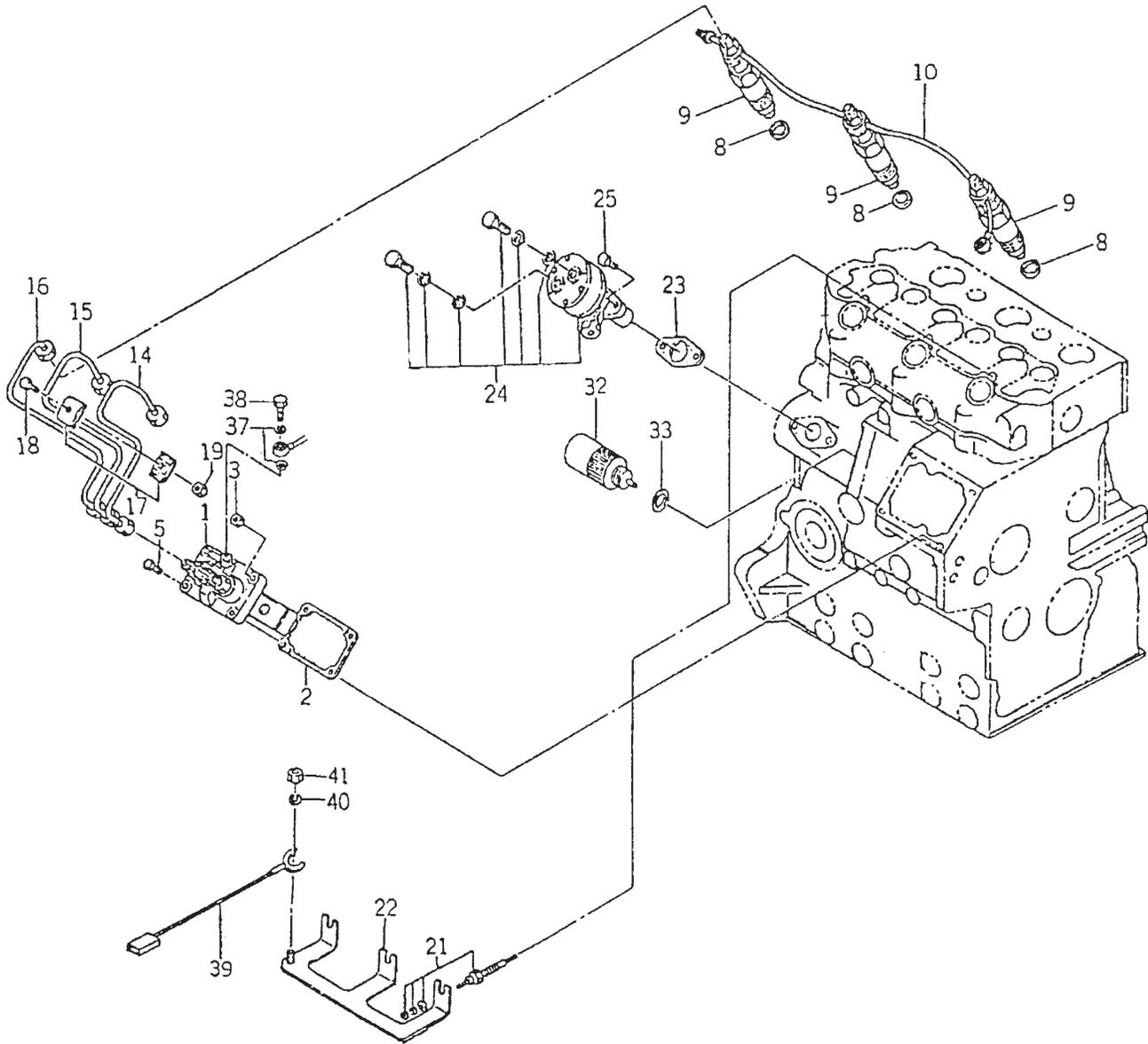
A-6501/ B-9154

Radiator and Guard

Late Production

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	39-13113	1	Top Panel	from xxxx-37737C 
2	39-13112	2	Side Panel	
3	39-13114	1	Radiator Support	
4	145506620	1	Radiator Assembly, Aluminum (includes keys 23 -25)	
5	21-18101	2	Spacer, Radiator Support	
6	12-00030	14	Capscrew, Hex Head M6 x 1.0 x 16 mm	
7	12-01131	2	Capscrew, Hex Head M6 x 1.0 x 20 mm	
8	15-00008	16	Flat Washer M6	
9	15-01132	16	Lock Washer, Helical M6	
10	12-00751	4	Capscrew, Hex Head M8 x 1.25 x 16 mm	
11	12-00711	4	Capscrew, Hex Head M8 x 1.25 x 20 mm	
12	15-00701	8	Flat Washer M8	
13	15-00702	4	Lock Washer, Helical M8	
14	14-04802	4	Hex Nut, Nylock M8 x 1.25	
15	12-04400	2	Capscrew, Hex Head M10 x 1.5 x 16 mm	
16	15-00802	2	Lock Washer, Helical M10	
17	15-00805	2	Flat Washer M10	
18	145537240	1	Hose, Radiator Inlet	
19	145537250	1	Hose, Radiator Outlet	
20	19-00020	4	Hose Clamp #20	
21	00-70079	1	Label "Northern Lights" (not shown)	
22	39-13101	1	Grille	
23	21-12016	1	Drain Cock	
24	310110200	1	Filler Cap	
25	18-11906	1	Vent Hose	

Injection Pump and Lines

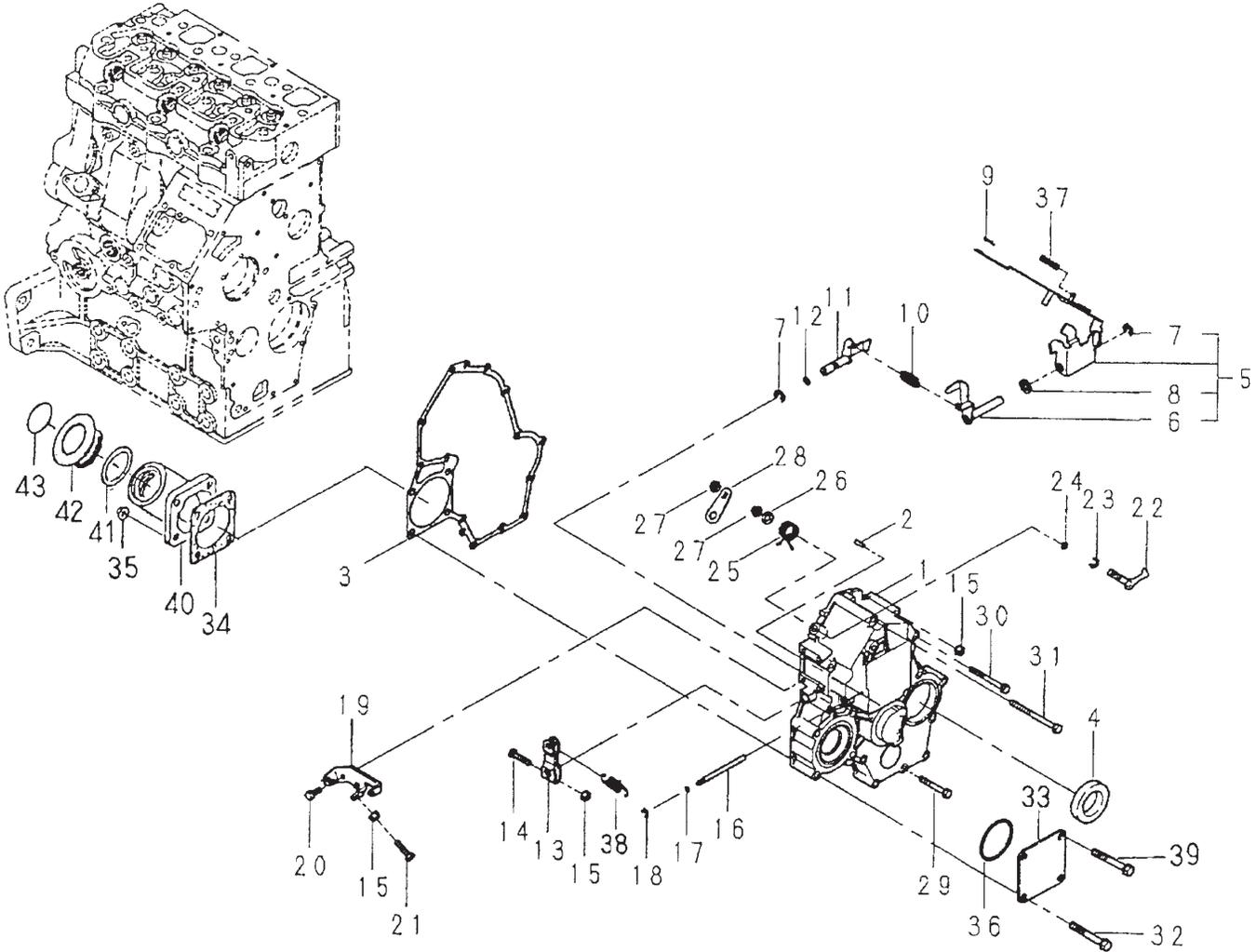


843NW2injectionlines

Injection Pump and Lines

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	131017591	1	Injection Pump Assembly	-
2	131426310	1	Shim Set	-
3	023100008	2	Nut	-
5	010800820	2	Bolt	-
8	131426200	3	Gasket	-
9	131406360	3	Injector Assembly	-
10	131606451	1	Return Line	-
14	131507450	1	Injection Line #1	-
15	131507460	1	Injection Pipe #2	-
16	121507470	1	Injection Pipe #3	-
17	199106020	4	Clamp	-
18	010110625	2	Bolt	-
19	023100006	2	Nut	-
21	185366060	3	Glow Plug, 12 Volt	-
	185366100	3	Glow Plug, 24 Volt	-
22	185376140	1	Connector	-
23	130996130	1	Gasket	-
24	130506140	1	Feed Pump Assembly (see parts detail)	-
25	011140616	2	Bolt	-
32	185206084	1	Solenoid, 12V Standard Ground	-
	185206192	1	Solenoid, 12V Isolated Ground	-
	185206200	1	Solenoid, 24V Isolated Ground	-
33	025100016	1	Seal Washer	-
37	025100008	2	Seal Washer	-
38	198487450	1	Screw	-
39	185606170	1	Wire Harness	-
40	027100004	1	Spring Washer	-
41	020100004	1	Nut	-

Governor and Timing Gear Case

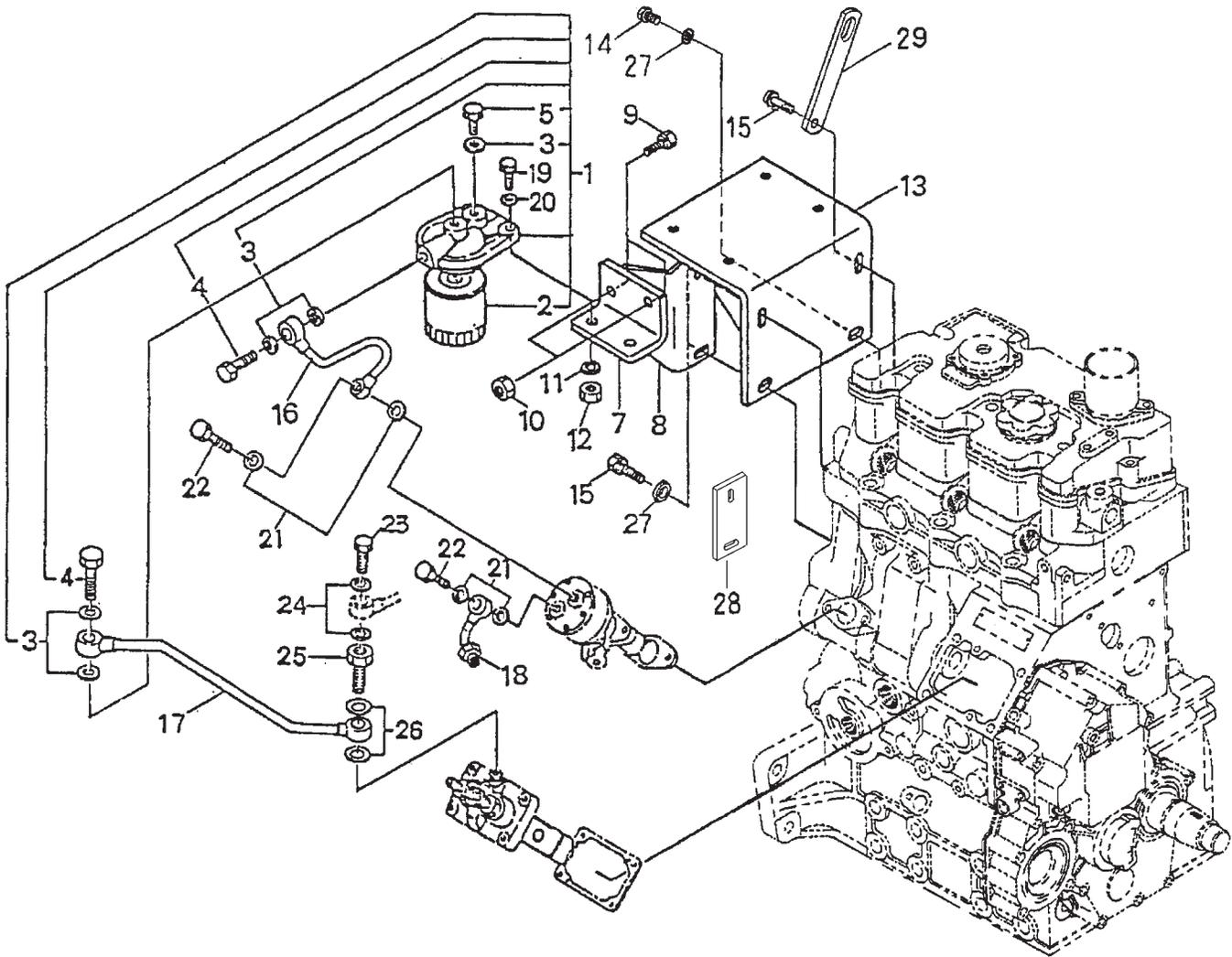


843NW2timinggear

Governor and Timing Gear Case

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	165106400	1	Timing Gear Case - Marine (white)	-
	165106380	1	Timing Gear Case - Industrial (blue) } (includes key #2)	-
2	030300414	1	Spring Pin	-
3	165996550	1	Gasket	-
4	198636160	1	Oil Seal	-
5	125046270	1	Governor Lever Assembly (includes keys 6- 8)	-
6	125406080	1	Tension Lever	-
7	036800008	2	Snap Ring	-
8	026200010	1	Washer	-
9	031100004	1	Snap Pin	-
10	198217390	1	Spring	-
11	125156170	1	Arm	-
12	052109110	1	O-ring	-
13	125416020	1	Governor Lever	-
14	010110630	1	Bolt	-
15	023100006	3	Nut	-
16	125116141	1	Shaft	-
17	052109108	2	O-ring	-
18	036800005	1	Snap Ring	-
19	125976120	1	Bracket	-
20	011300616	2	Bolt	-
21	012810640	1	Bolt	-
22	125156180	1	Arm	-
23	036800006	1	Snap Ring	-
24	052109109	1	O-ring	-
25	198216760	1	Spring	-
26	026200008	1	Washer	-
27	020700008	2	Nut	-
28	125176080	1	Stop Lever	-
29	011310645	7	Bolt	-
30	011310660	3	Bolt	-
31	011310680	2	Bolt	-
32	010310865	**	Bolt (**as required)	-
33	165206320	2	Cover (Marine only, Keel Cooled)	-
	165206150	2	Cover (Industrial only)	-
34	340990011	1	Gasket	-
35	023100008	3	Nut	-
36	052300700	1	O-ring	-
37	198216731	1	Start Spring	-
38	398210070	1	Spring	-
39	011510860	1	Bolt	-
40	110766200	1	Oil Fill	-
41	052300400	1	O-ring	-
42	198436010	1	Cap	-
43	190196630	1	Caution Plate	-

Fuel Filter and Piping



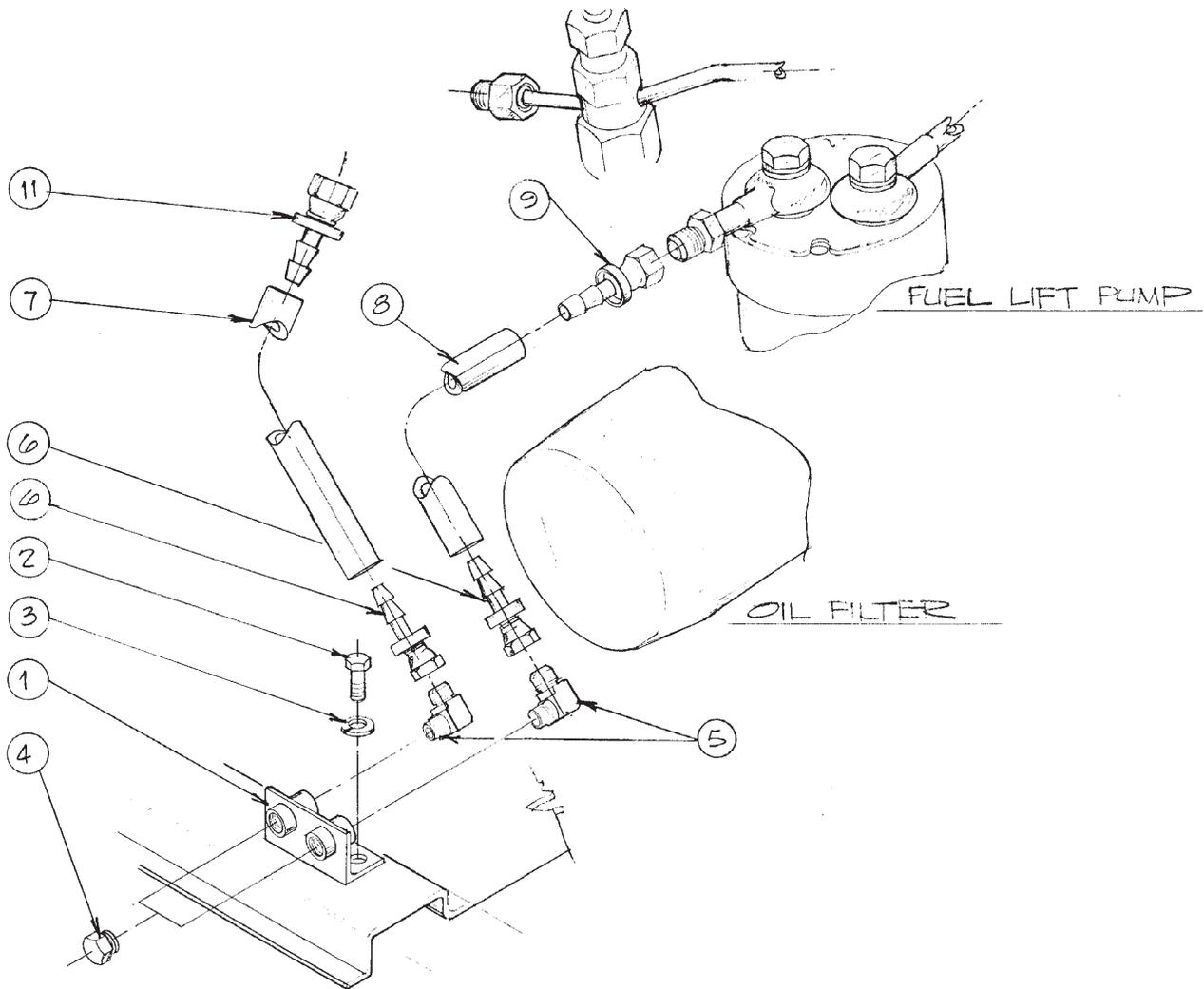
843NW2fuelfilter

Fuel Filter and Piping

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	130306190	1	Fuel Filter Assembly (includes keys #2 - 5)	-
2	24-52020	1	Fuel Filter	-
3	130326051	5	Gasket	-
4	130436011	2	Joint Bolt	-
5	130396030	1	Plug	-
7	130976470	1	Bracket (Marine)	-
	130976450	1	Bracket (Industrial)	-
8	130976460	1	Bracket (Marine)	-
	130976440	1	Bracket (Industrial)	-
9	010310820	2	Bolt	-
10	023100008	2	Nut	-
11	027100010	2	Spring Washer	-
12	020900010	2	Nut	-
13	135976420	1	Bracket - Industrial only	-
14	011510820	1	Bolt - Industrial only	-
15	011510825	**	Bolt	-
16	130556690	1	Pipe	-
17	130556701	1	Pipe	-
18	130556681	1	Connector, Fuel Inlet	-
19	010311030	2	Bolt	-
20	026200010	2	Washer	-
21	130516069	4	Gasket	-
22	130516092	2	Joint Bolt	-
23	198487450	1	Joint Bolt	-
24	025100008	2	Seal Washer	-
25	131246170	1	Joint Bolt	-
26	131296255	2	Sealing Washer M12	-
27	026100008	**	Washer	-
28	199216311	1	Spacer (Marine)	-
29	195816100	1	Lifting Eye	-
			**As required	

Fuel Line Connection

Marine and Industrial

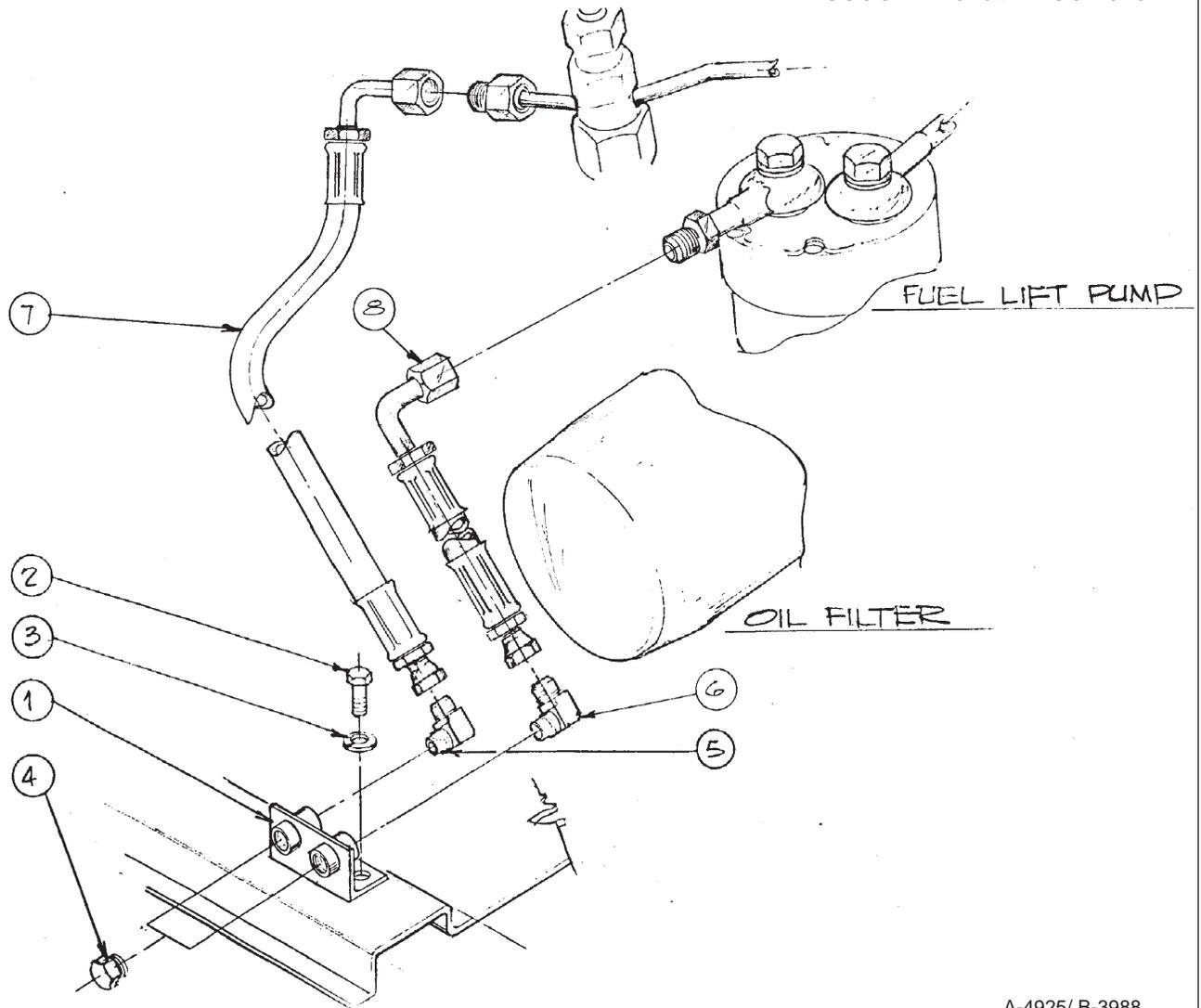


A-4922/ B-3987

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	-
3	15-01132	2	Lock Washer M6	-
4	21-31624	2	Plug, Hex Head, brass 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	18-52207	1	Hose 1/4" ID x 24" push-on	-
8	18-51902	1	Hose 1/4" ID x 15" 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	-

Coast Guard Fuel Line Connection

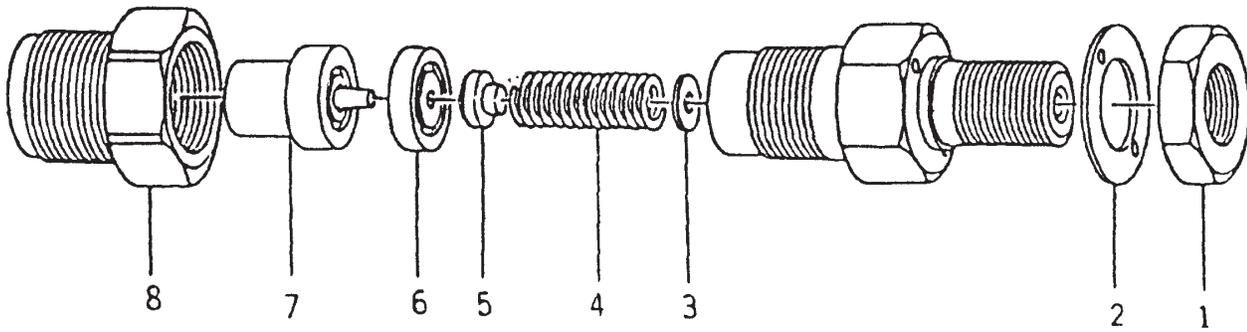
USCGA-1 - J1527 - ISO 7840



A-4925/ B-3988

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	-
3	15-01132	2	Lock Washer M6	-
4	21-31624	2	Hex Head plug, brass 1/4 NPT (for shipping)	-
5	21-71049	1	Male Elbow 90°, steel 1/4 NPT x 1/4-37T	-
6	21-74411	1	Male Elbow 90°, steel 1/4 NPT x 5/16-37T	-
7	18-65008	1	Hose Assembly 1/4" ID x 24" with 90°, 1/4 JIC x 1/4 JIC	-
8	18-53112	1	Hose Assembly 1/4" ID x 15" 5/16 JIC Both Ends	-
9	19-43201	1	Adelle Clamp (not shown)	-
10	15-00111	1	Flat Washer (not shown)	-

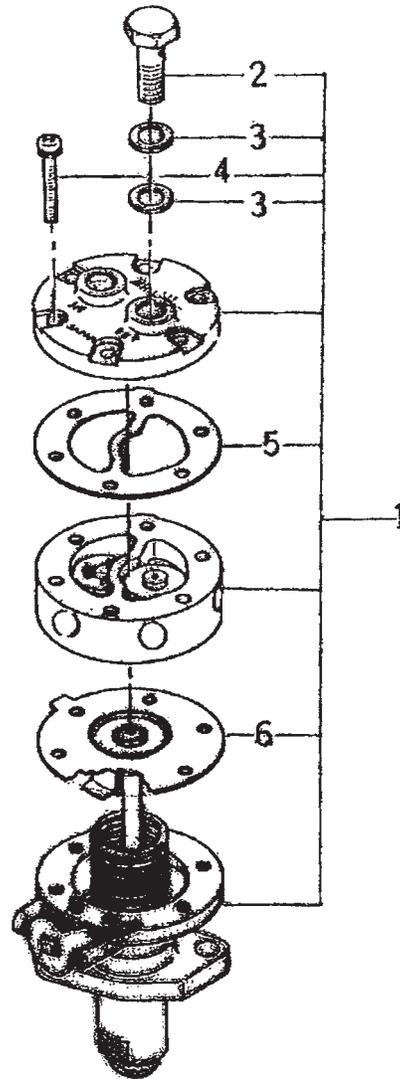
Fuel Injector



injector

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
••	131406360	1	Injector Assembly (includes keys #1 - 8)	-
1	131446006	1	Nut	-
2	131426230	1	Gasket	-
3	131437360	1	Shim	-
4	131446074	1	Spring	-
5	131446075	1	Spring seat	-
6	131446976	1	Spacer	-
7	131416170	1	Nozzle	-
8	131446077	1	Nut	-

Fuel Feed Pump

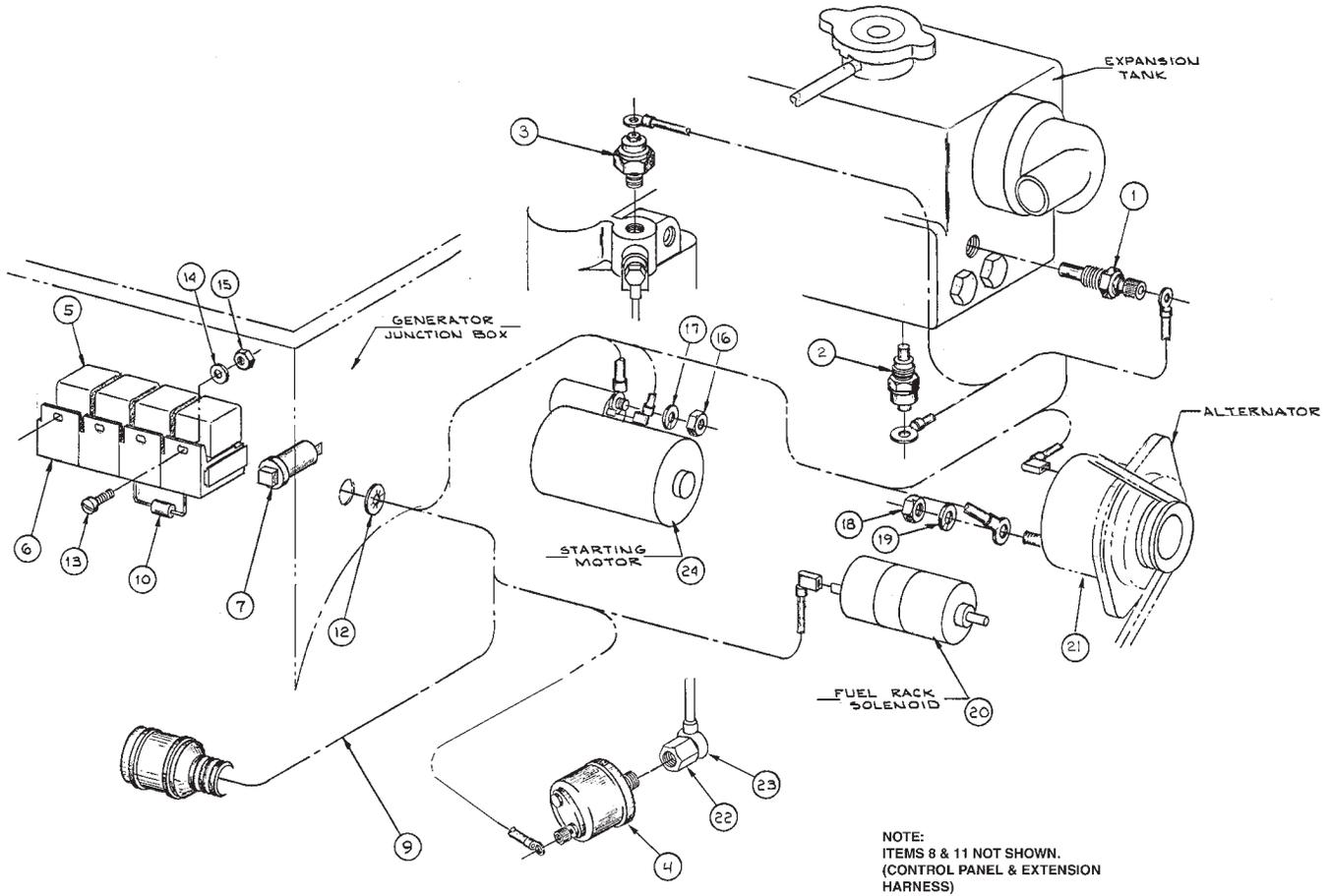


843NW2fuelfeedpump

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	130506140	1	Feed Pump Assembly (includes keys #2 - 6)	-
2	130516092	2	Joint Bolt	-
3	130516069	4	Gasket	-
4	130516091	6	Screw	-
5	130516101	1	Gasket	-
6	130516084	1	Diaphragm	-

Engine Electrical - 12 & 24 Volt Standard Ground

Marine Applications



A-4786, A-4985/ C-2490

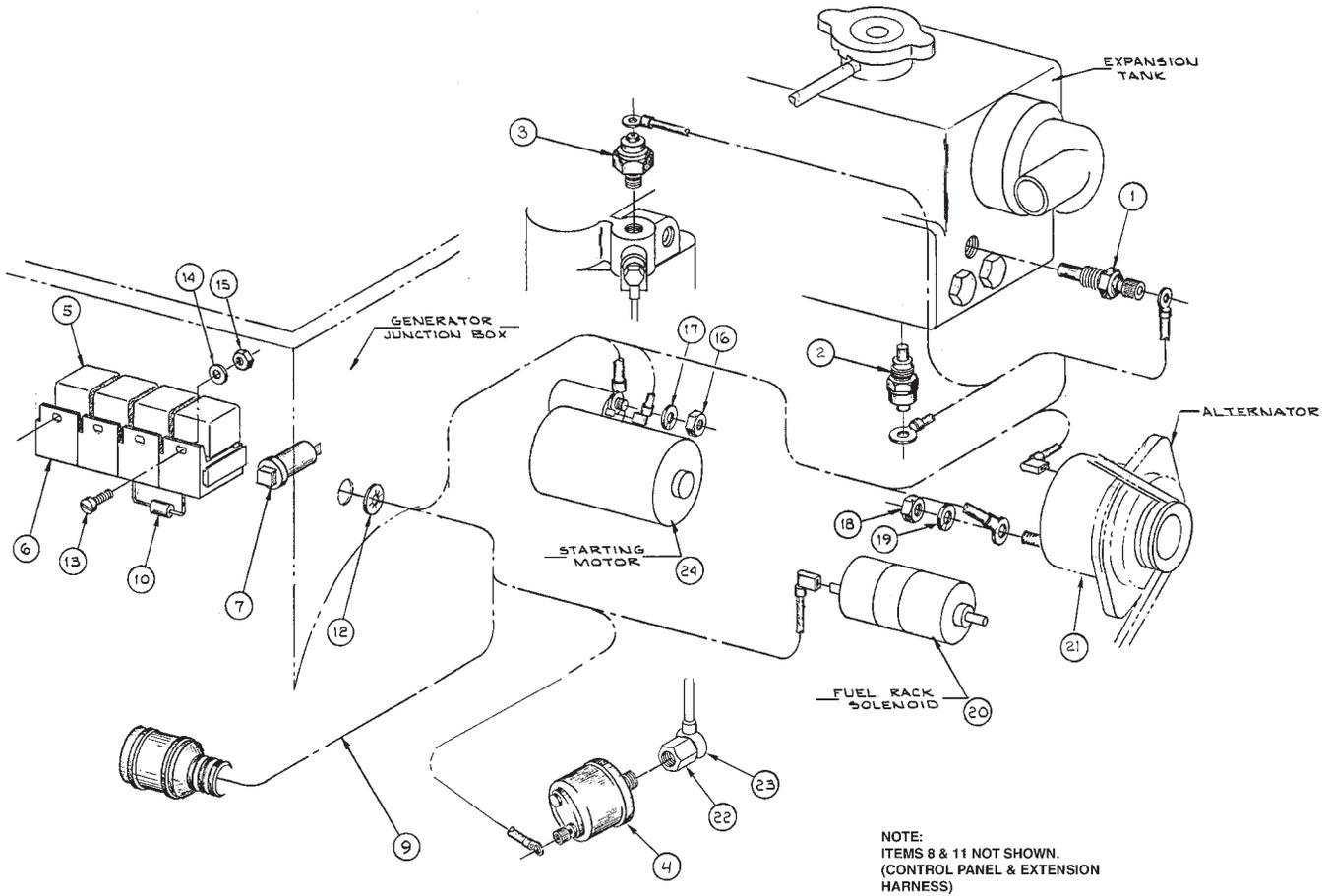
Engine Electrical - 12 & 24 Volt Standard Ground

Marine Applications

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	22-42055	1	Temperature Sender	-
2	385720110	1	Temperature Switch 95°C	-
3	185246011	1	Oil Pressure Switch	-
4	22-41016	1	Oil Pressure Sender	-
5	22-42047	4	Relay, 12 Volt SPDT	-
	22-40085	4	Relay, 24 Volt SPDT	-
6	22-40391	4	Relay Base	-
	22-40393	4	Retainer (not shown)	-
7	22-42043	1	Circuit Breaker, DC 15 Amp	-
8		1	Control Panel, S1-B (see panel detail)	-
9	22-43121	1	Engine Wire Harness (includes key #10)	-
10	22-41060	2	Diode, 6 Amp 50 Volt PIV	-
11	22-40930	1	Wire Harness Extension 20' (not shown)	-
12	00-40028	1	Grommet	-
13	12-00094	2	Machine Screw #10-32 x 3/4" Stainless Steel	-
14	15-00032	2	Flat Washer #10	-
15	14-00006	2	Hex Nut, Nylock #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	185206084	1	Stop Solenoid 12 Volt (see also Fuel System)	-
	185206200	1	Stop Solenoid 24 Volt	-
21	185046320	1	Alternator 12 Volt (see parts detail)	-
	22-40278	1	Alternator 24 Volt (see mounting detail)	-
22	198487590	1	Banjo Bolt	-
23	140606941	1	Oil Line	-
24	185086551	1	Starter 12 Volt (marked #M001T66081) (see parts detail)	-
	22-48221	1	Starter 24 Volt (supercedes 22-40274)	-
25	21-04801	1	Elbow, 1/8 NPT (not shown)	-

Engine Electrical - 12 & 24 Volt Isolated Ground

Marine Applications



A-6054, A-5777/ C-2490

Engine Electrical - 12 & 24 Volt Isolated Ground

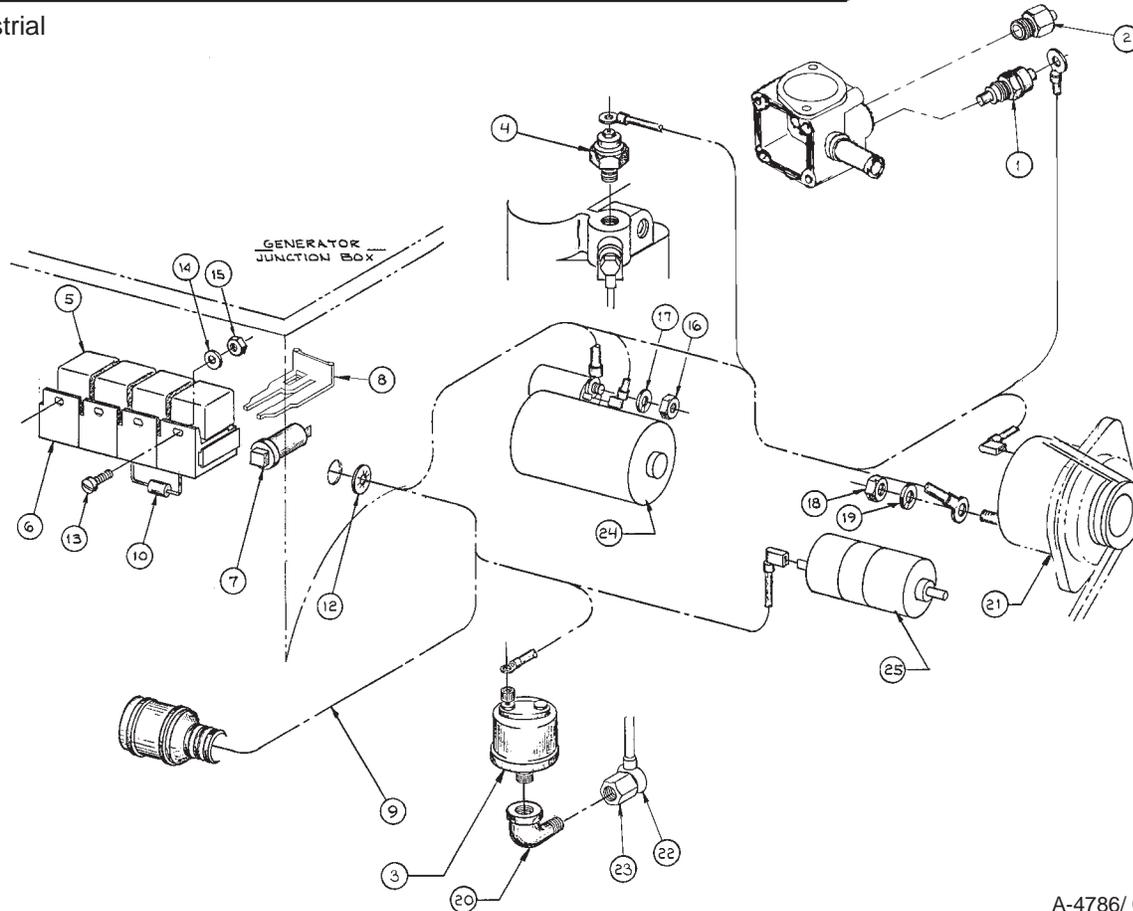
Marine Applications

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	22-44810	1	Temperature Sender	-
2	22-40358	1	Temperature Switch 95°C	-
3	22-40236	1	Oil Pressure Switch	-
4	22-42803	1	Oil Pressure Sender	-
5	22-42047	5	Relay, 12 Volt SPDT	-
	22-40085	5	Relay, 24 Volt SPDT	-
6	22-40391	5	Relay Base	-
	22-40393	5	Retainer (not shown)	-
7	22-42043	1	Circuit Breaker, DC 15 Amp	-
8		1	Control Panel, S1-B (see panel detail)	-
9	22-43121	1	Engine Wire Harness (includes key #10)	-
10	22-41060	2	Diode, 6 Amp 50 Volt PIV	-
11	22-40930	1	Wire Harness Extension 20' (not shown)	-
12	00-40028	1	Grommet	-
13	12-00094	2	Machine Screw #10-32 x 3/4" Stainless Steel	-
14	15-00032	2	Flat Washer #10	-
15	14-00006	2	Hex Nut, Nylock #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	185206192	1	Lock Washer M5	-
20	22-42032	1	Stop Solenoid 12 Volt (see also Fuel System)	-
	185206200	1	Stop Solenoid 24 Volt	-
21	22-42032	1	Alternator 12 Volt (see mounting detail)	-
	22-71052	1	Alternator 24 Volt (see mounting detail)	-
22	198487590	1	Banjo Bolt	-
23	140606941	1	Oil Line	-
24	22-42059	1	Starter 12 Volt (see parts detail)	-
	22-42022	1	Starter 24 Volt	-
25	21-05400	1	Street Tee 1/8 NPT (not shown)	-

GROUP 5 – ELECTRICAL SYSTEM

Engine Electrical - 12 Volt Standard Ground

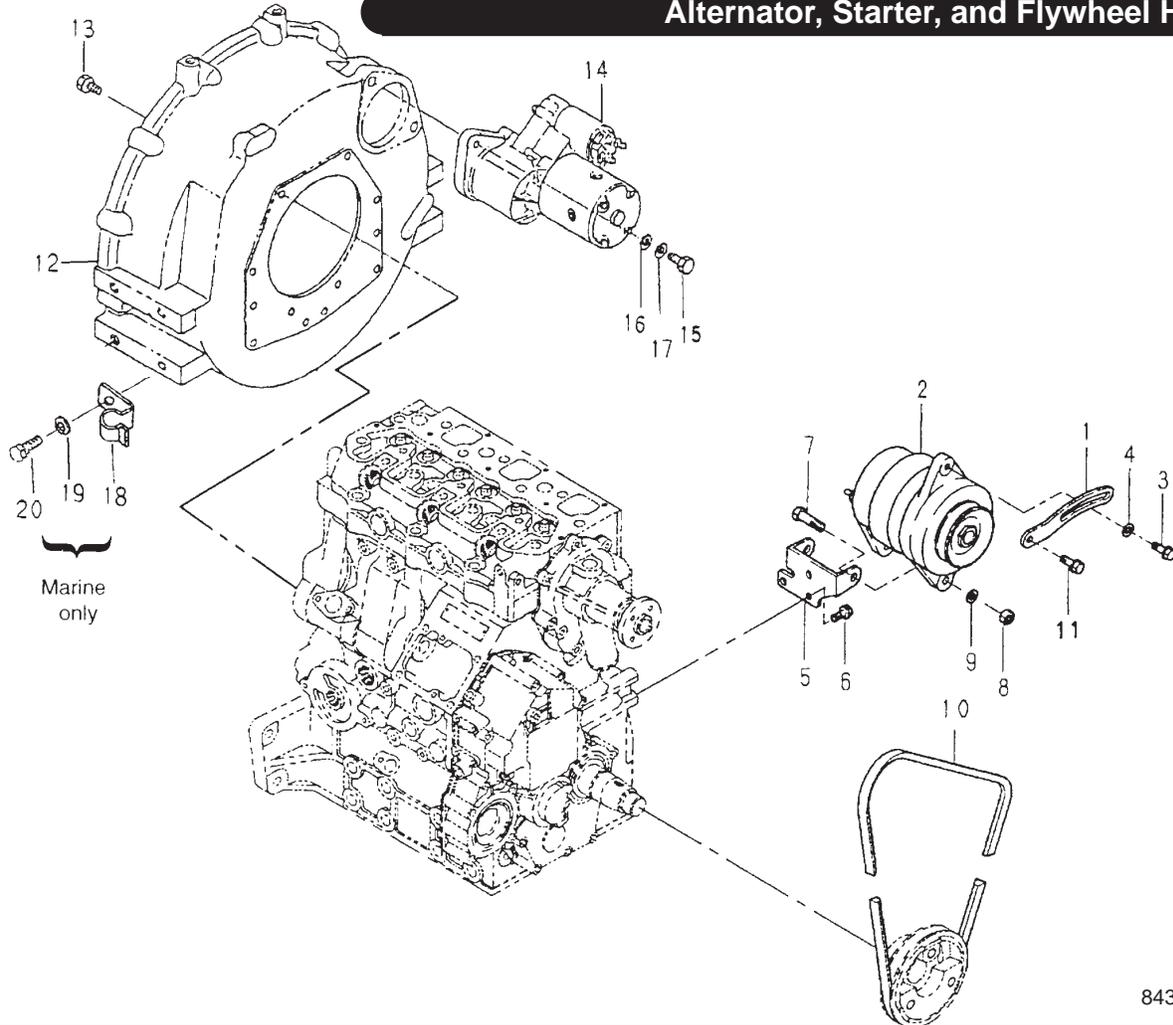
Industrial



A-4786/ C-2490Bnl

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	22-42055	1	Temperature Sender, 0-250°F Single Station 3/8 NPT	-
2	385720101	1	Temperature Switch 230°F/ 110°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	22-43121	1	Engine Wire Harness (includes key #10)	-
10	22-41060	2	Diode, 6 Amp 50 Volt	-
11	22-40930	1	Wire Harness Extension 20' (not shown)	-
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	185046320	1	Alternator 12 Volt (see parts detail)	-
22	140607941	1	Oil Line	-
23	198487590	1	Banjo Bolt (Tapped 1/8 NPT Female)	-
24	185086551	1	Starter 12 Volt (see parts detail)	-
25	185206084	1	Fuel Solenoid	-

Alternator, Starter, and Flywheel Housing

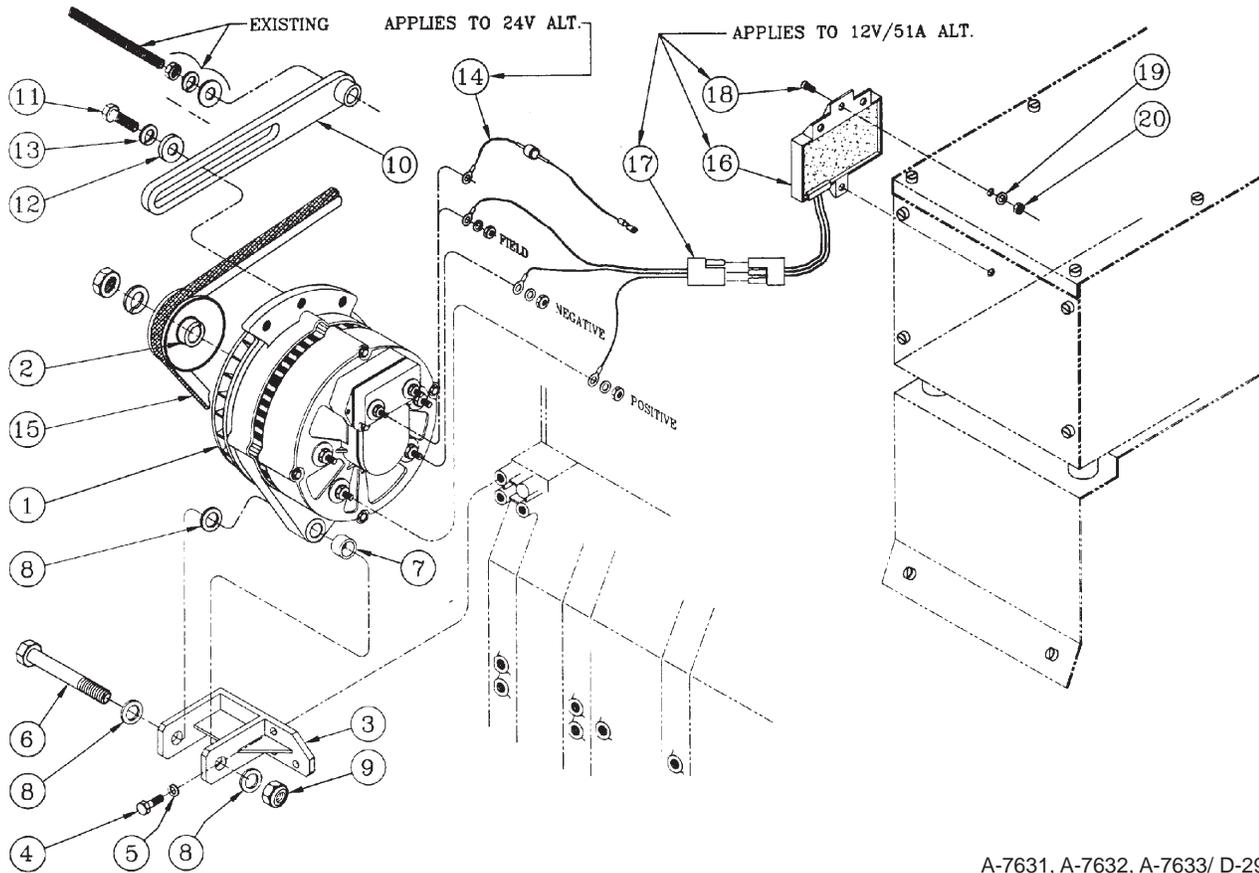


843NW2alternator

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	185727000	1	Tensioning Arm	-
2	185046320	1	Alternator, 12 Volt 40 Amp Standard Ground	-
	22-42032	1	Alternator, 12 Volt 40 Amp Isolated Ground	-
3	011510825	1	Bolt	-
4	026109017	1	Washer	-
5	185976510	1	Bracket	-
6	011510816	3	Bolt	-
7	010311035	2	Bolt	-
8	020900010	2	Nut	-
9	027100010	2	Spring Washer	-
10	40-02003	1	Drive Belt	-
11	011510820	1	Bolt	-
12	110446890	1	Flywheel Housing (Marine)	-
	110446880	1	Flywheel Housing (Industrial)	-
13	011510820	10	Bolt	-
14	185086551	1	Starter, 12 Volt Standard Ground	-
	22-42059	1	Starter, 12 Volt Isolated Ground	-
15	010311030	2	Bolt	-
16	026100010	2	Washer	-
17	027100010	2	Spring Washer	-
18	23-72003	1	Bracket, Drain Hose Support	-
19	027100010	1	Spring Washer	-
20	199436350	1	Bolt	-

Alternator

Isolated and Standard Ground



A-7631, A-7632, A-7633/ D-2926

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	22-40333	1	Alternator (12V/51A ISO Ground)	-
	22-40278	1	Alternator (24V/40A Standard Ground)	-
	22-71052	1	Alternator (24V/35A ISO Ground)	-
2	34-42001	1	Pulley, 1-A x 2-1/2" x 5/8" ID	-
3	23-43107	1	Alternator Mounting Bracket	-
4	12-00711	3	Capscrew, Hex Head M8 x 1.25 x 20 mm	-
5	15-00702	3	Lock Washer, Helical M8	-
6	12-00519	1	Capscrew, Hex Head 1/2-13 x 2-3/4"	-
7	21-42206	1	Spacer	-
8	15-00504	2	Flat Washer 1/2 SAE	-
9	14-00512	1	Hex Nut, Nylock 1/2-13	-
10	23-42006	1	Tensioning Arm	-
	23-42005	1	Tensioning Arm (24 Volt 35 Amp Alternator only)	-
11	12-00212	1	Capscrew, Hex Head 5/16-18 x 1"	-
12	15-00201	1	Stud Washer 5/16	-
13	15-00202	1	Lock Washer, Helical 5/16	-
14	22-70048	1	Diode Harness Addition	-
15	40-02005	1	Drive Belt	-
16	22-40334	1	D.C. Voltage Regulator 12 Volt	-
17	16-1	1	Wire Harness, 36"	-
18	12-00001	2	Machine Screw, BH Slotted #10-32 x 3/4" S/S	-
19	15-70002	2	Flat Washer #10 S/S	-
20	14-00032	2	Hex Nut, Nylock #10-32 S/S	-

12 Volt Starter Assembly

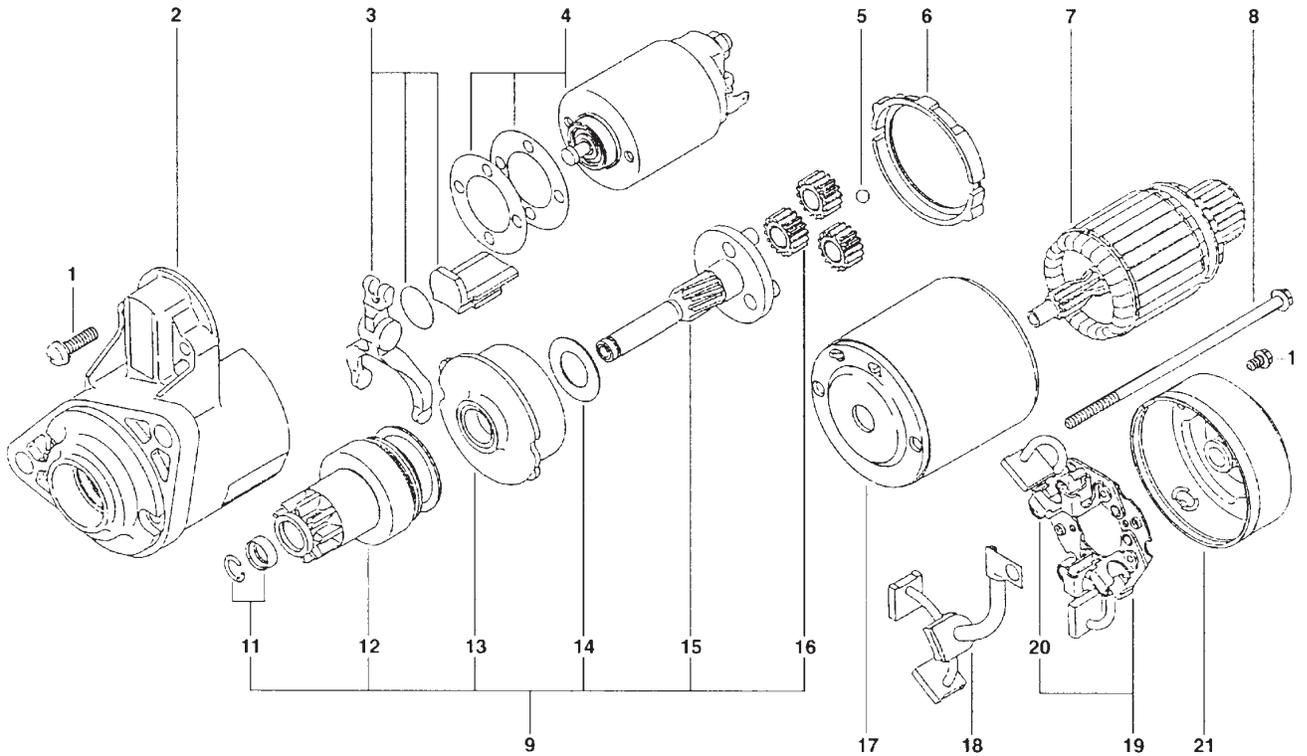
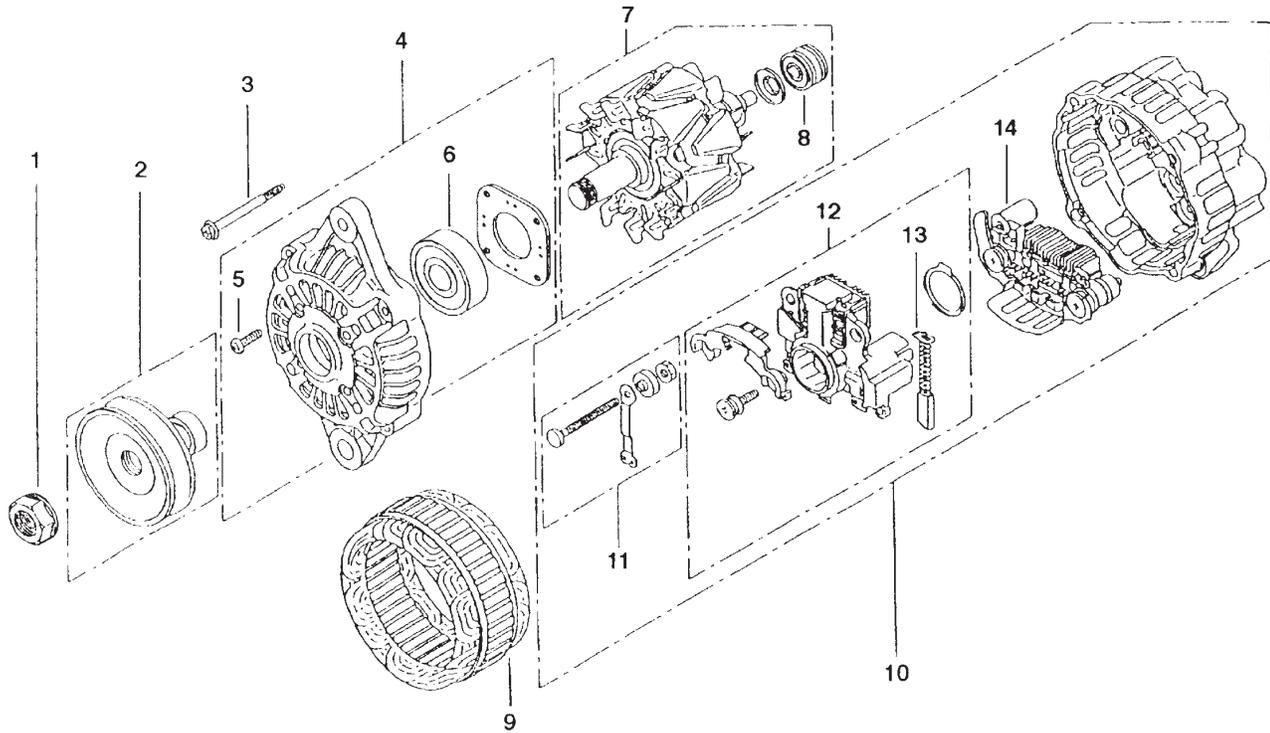


Fig. 03-03

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	-

Alternator Assembly

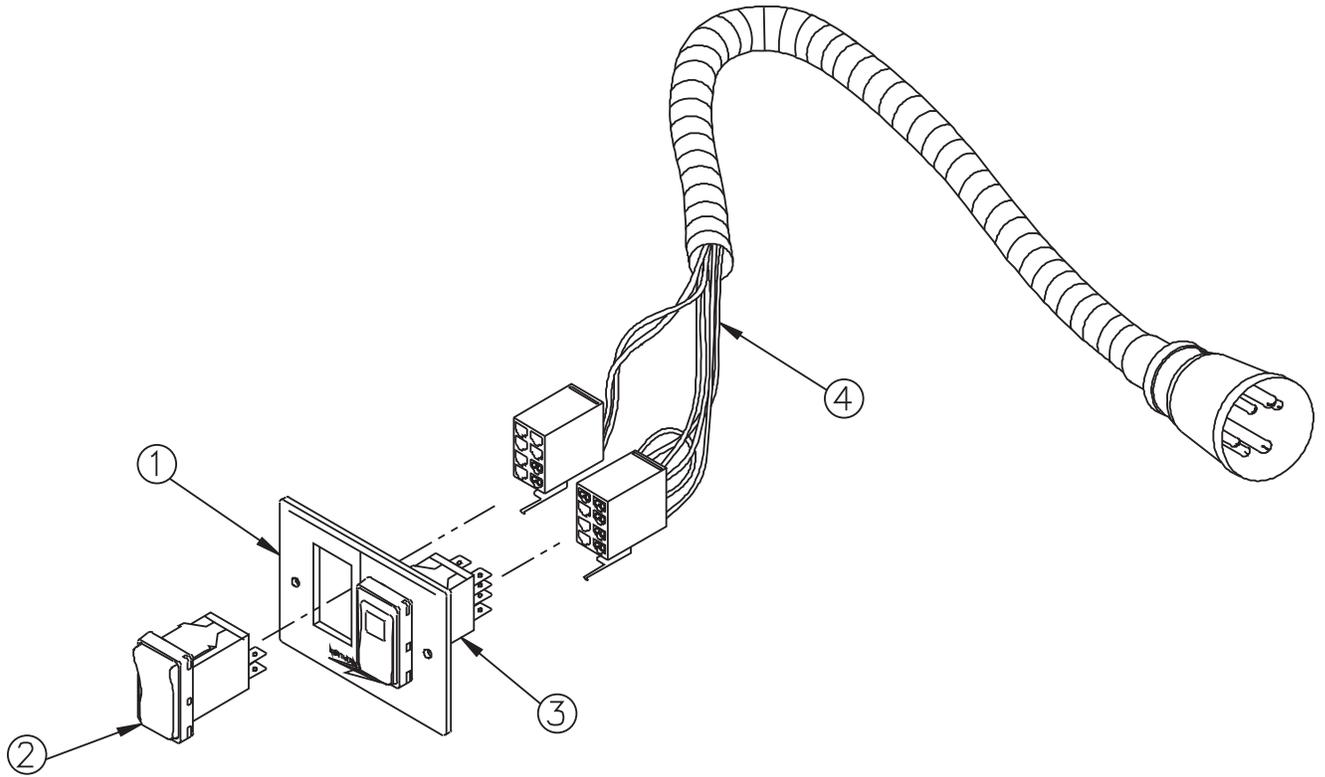
12 Volt / 40 Amp Standard Ground



843alternator assembly

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
••	185046320	1	Alternator Assembly (includes keys #1 - 14)	-
1	185446269	1	Nut	-
2	185436180	1	Pulley Assembly	-
3	185446270	1	Screw Set	-
4	185426210	1	Front Cover Assembly	-
5	185446271	1	Screw Set	-
6	185446272	1	Bearing	-
7	185446273	1	Rotor Assembly	-
8	185446274	1	Bearing	-
9	185446275	1	Stator Assembly	-
10	185426220	1	Rear Cover Assembly	-
11	185446278	1	Connector	-
12	185446277	1	Regulator Assembly	-
13	185416480	2	Brush	-
14	185446276	1	Rectifier Assembly	-

S-1 Control Panel 12 & 24 Volt

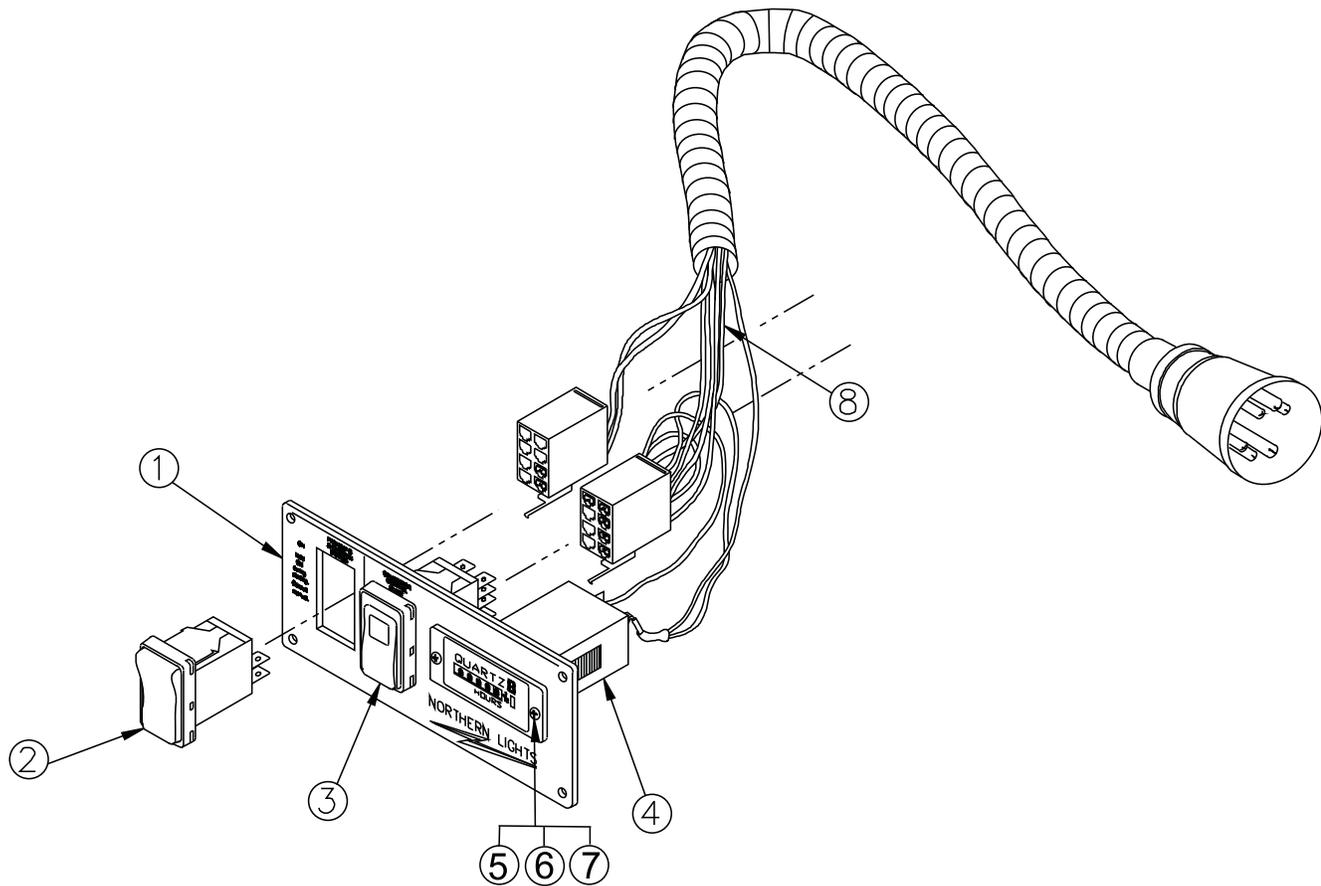


A-8551, A-8552/ B-5970

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

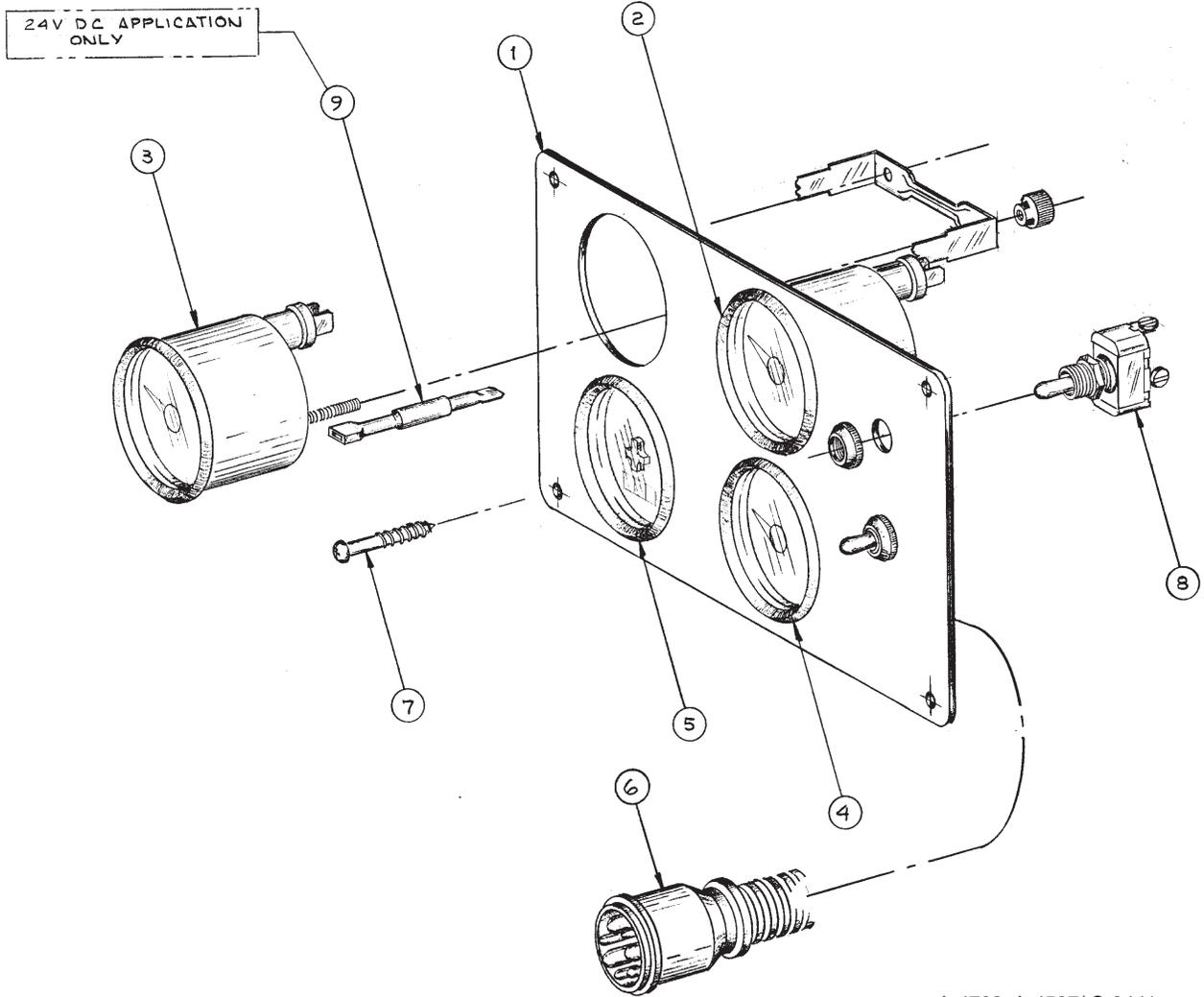


A-8553/ B-5971

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	-

Flush Mount Dual Station Control Panel 12 & 24 Volt

Marine Application - VDO Standard Line Black Bezel Gauges

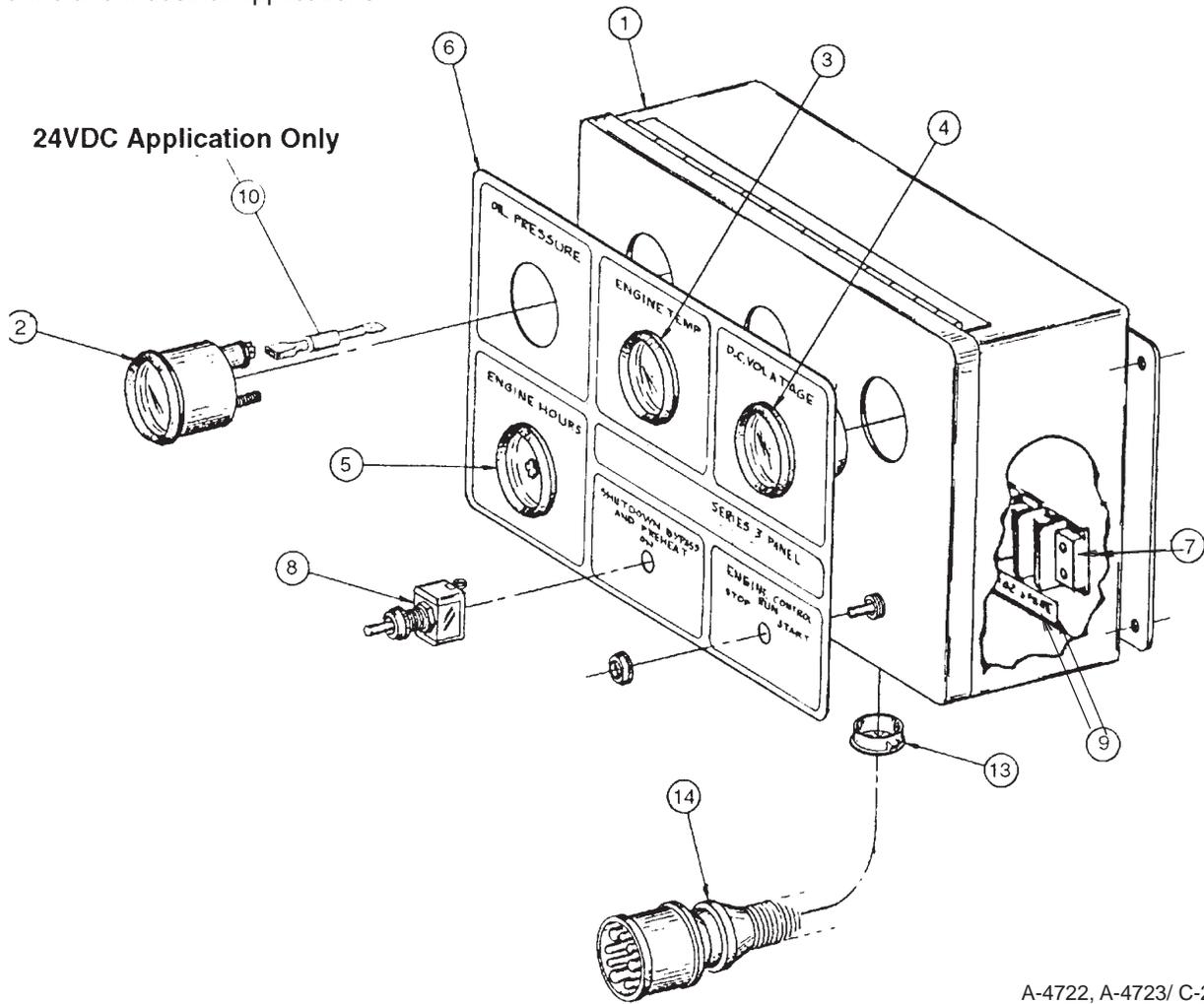


A-4732, A-4597/ C-2441

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

Marine and Industrial Applications

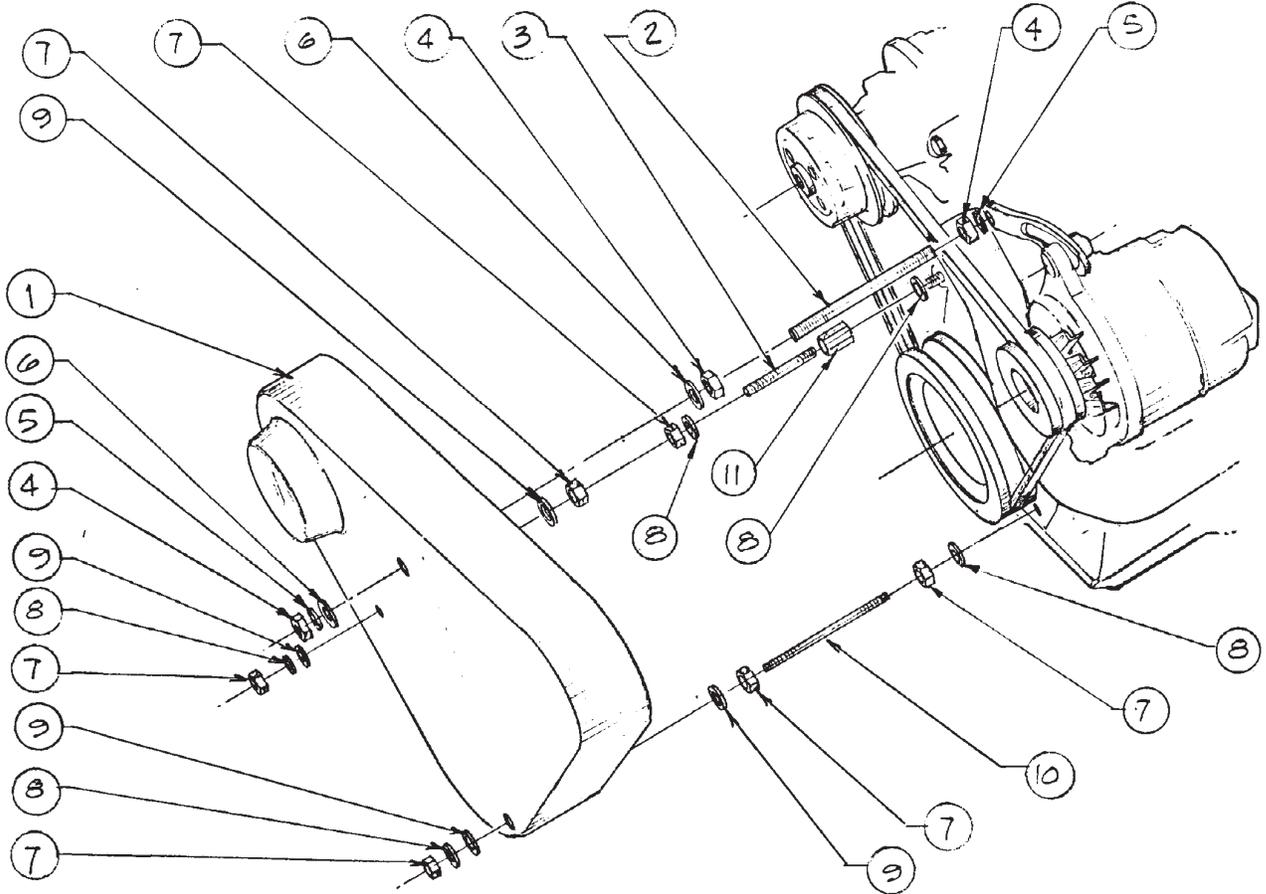


A-4722, A-4723/ C-2470

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	-

Belt Guard Assembly

Marine



A-5004, A-5020/ B-3986

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	00-73143	1	Belt Guard, Small Frame Alternators (without PTO)	-
	00-73148	1	Belt Guard, Small Frame Alternators (with PTO)	-
	00-08402	1	Belt Guard, Medium Frame Alternators (without PTO)	-
	00-08401	1	Belt Guard, Medium Frame Alternators (with PTO)	-
2	13-03101	1	Stud, All Thread M8 x 1.25 x 110 mm	-
3	13-03102	1	Stud, All Thread M6 x 1.0 x 140 mm	-
4	14-00711	3	Hex Nut M8 x 1.25	-
5	15-00702	2	Lock Washer M8	-
6	15-00701	2	Flat Washer M8	-
7	14-01131	6	Hex Nut M6 x 1.0	-
8	15-01132	5	Lock Washer M6	-
9	15-00008	4	Flat Washer M6	-
10	13-03103	1	Stud, All Thread M6 x 1.0 x 70 mm	-
11	14-73100	1	Hex Nut, X-L M6 x 1.0 x 19 mm	-
12	23-78403	**	Bracket (used with 00-73148 only – not shown)	-
	23-78402	**	Bracket (used with 00-08401 and 00-08402 only – not shown)	-
13	00-73147	1	PTO Guard (not shown)	-
			**As required	

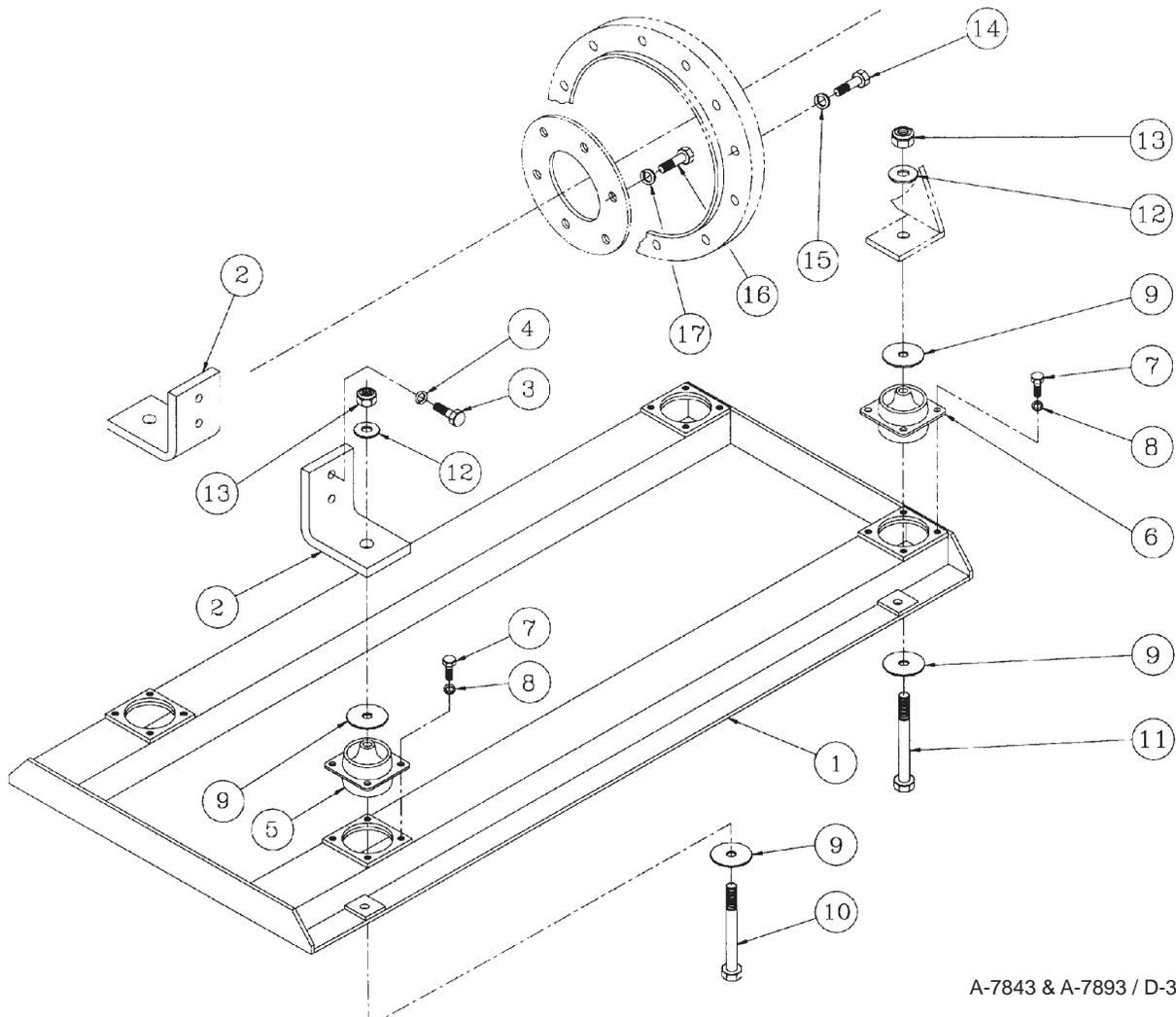
GROUP 6 – GASKET SETS

Gasket Kit

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
••	29-03101	1	Gasket Kit (Marine, includes all keys)	
•	195907320	1	Gasket Kit (Industrial, includes keys #1 - 39)	-
1	198636170	1	Oil Seal, Rear	-
2	052109076	1	O-ring, Oil Line	-
3	110996820	1	Gasket, Oil Pan	-
4	025100012	2	Seal Washer, Oil Pan Drain	-
5	165996540	1	Gasket, Front Plate	-
6	052109108	2	O-ring, Governor Shaft	-
7	052109110	1	O-ring	-
8	052109109	1	O-ring	-
9	165996550	1	Gasket, Timing Gear Case	-
10	198636160	1	Oil Seal, Front	-
11	340990011	1	Gasket, Gear Case Cover	-
12	131426310	1	Adjusting Shim Set, Injection Pump	-
13	025100008	2	Seal Washer, Air Bleed Screw	-
14	140996260	4	Gasket, Banjo Bolt	-
15	111147501	1	Head Gasket, t=1.3	-
16	120406050	3	Valve Guide Seal, Exhaust	-
17	120406070	3	Valve Guide Seal, Intake	-
18	131426200	3	Gasket, Lower side Injector	-
19	131426230	3	Gasket, Upper side injector	-
20	052109076	1	O-ring, Rocker Arm Shaft	-
21	120996140	1	Gasket, Rocker Arm Bracket	-
22	111996410	1	Gasket, Rocker Arm Cover	-
23	140996270	3	Gasket, Rocker Arm Cover	-
24	052100400	2	O-ring, Oil Fill Cap	-
25	135996950	1	Gasket, Air Intake	-
26	145996680	1	Gasket, Coolant Pump Set Plate	-
27	145996670	1	Gasket, Coolant Pump	-
28	145996710	1	Gasket, Thermostat Housing	-
29	130516069	4	Gasket, Fuel Pump Joint Bolt	-
30	130996130	1	Gasket, Fuel Feed Pump	-
31	052109113	2	O-ring, Dipstick Tube	-
32	025100016	1	Seal Washer, Solenoid	-
33	052109078	1	O-ring, Relief Valve	-
34	130326051	5	Gasket, Fuel Feed Pump Joint Bolt	-
35	135996900	1	Gasket	-
36	135996550	1	Gasket	-
37	135996590	1	Gasket, Exhaust Manifold	-
38	314990030	1	Gasket, Elbow	-
39	052300700	1	O-ring, Gear Case Cover	-
40	11-331101	1	Gasket, Exhaust Manifold/ Expansion Tank	-
41	11-13101	1	Gasket, Thermostat Cover	-
42	16-13101	1	O-ring, Raw Water Pump	-

Base Frame Assembly

Marine Application - PX-312K2 Generators



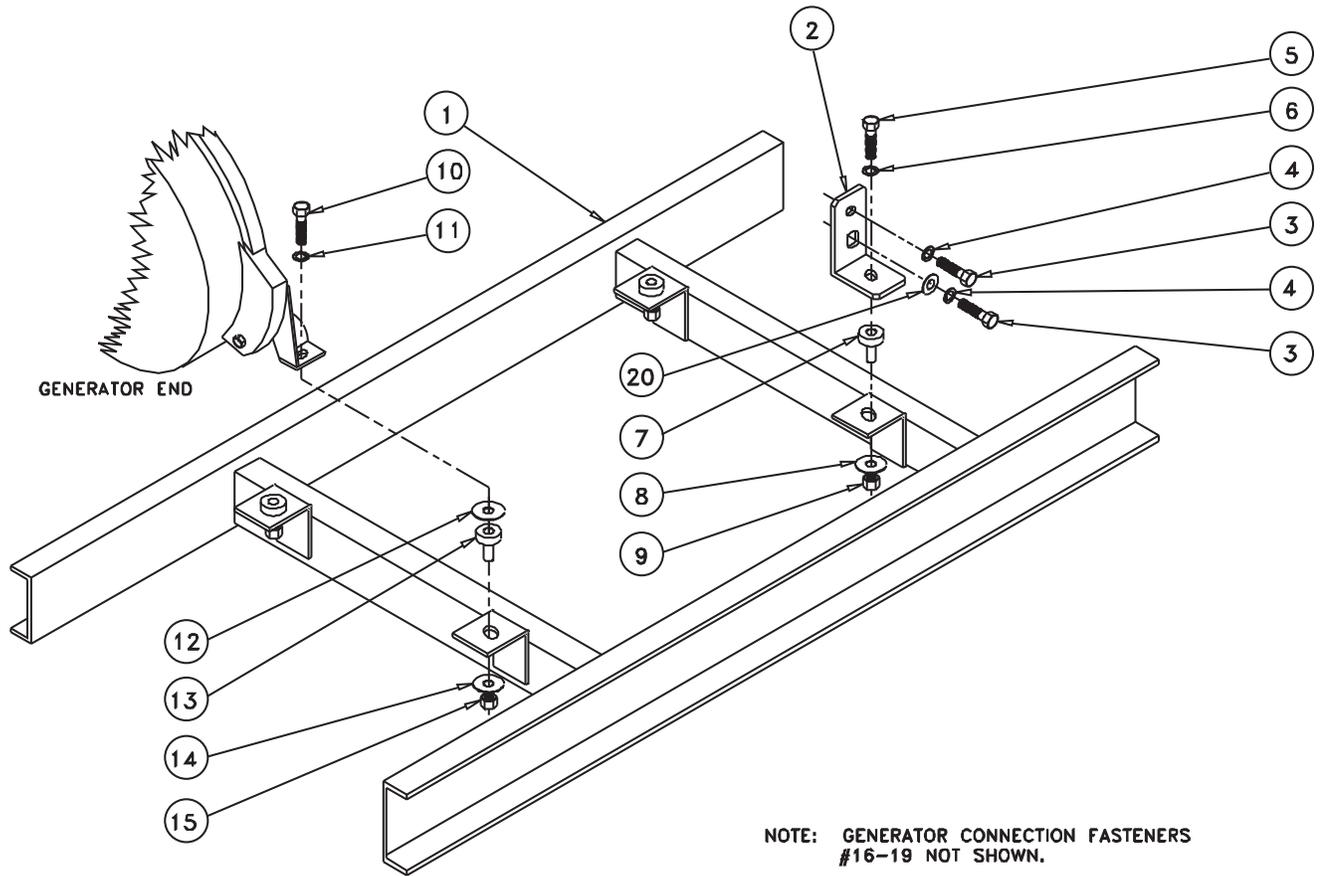
A-7843 & A-7893 / D-3012

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	39-83124	1	Base Frame, Steel	-
	39-83123	1	Base Frame, Aluminum	-
2	23-83123	2	Bracket	-
3	12-01100	4	Capscrew, Hex Head M14 x 1.5 x 30 mm	-
4	15-01402	4	Lock Washer, Helical M14	-
5	33-85402	2	Platform Mount, 220 lb. Standard	-
	33-82205	2	Platform Mount, 250 lb. (with PTO)	-
6	33-85402	2	Platform Mount, 220 lb.	-
7	12-00776	16	Capscrew, Hex Head M8 x 1.25 x 20 mm, Stainless Steel	-
8	12-00705	16	Lock Washer, Helical M8, Stainless Steel	-
9	15-00020	**	Snubbing Washer	-
10	12-00501	2	Capscrew, Hex Head 1/2-13 x 3" Stainless Steel	-
11	12-00502	2	Capscrew, Hex Head 1/2-13 x 3-1/2" Stainless Steel	-
12	15-00505	4	Flat Washer 1/2 Stainless Steel	-
13	14-00501	4	Hex Nut, Nylock 1/2-13 Stainless Steel	-
14	12-00313	12	Capscrew, Hex Head 3/8-16 x 1-1/4"	-
15	15-00302	12	Lock Washer, Helical 3/8	-
16	12-00214	8	Capscrew, Hex Head 5/16-18 x 1-1/2	-
17	15-00202	8	Lock Washer, Helical 5/16	-

(**As required)

Base Frame Assembly

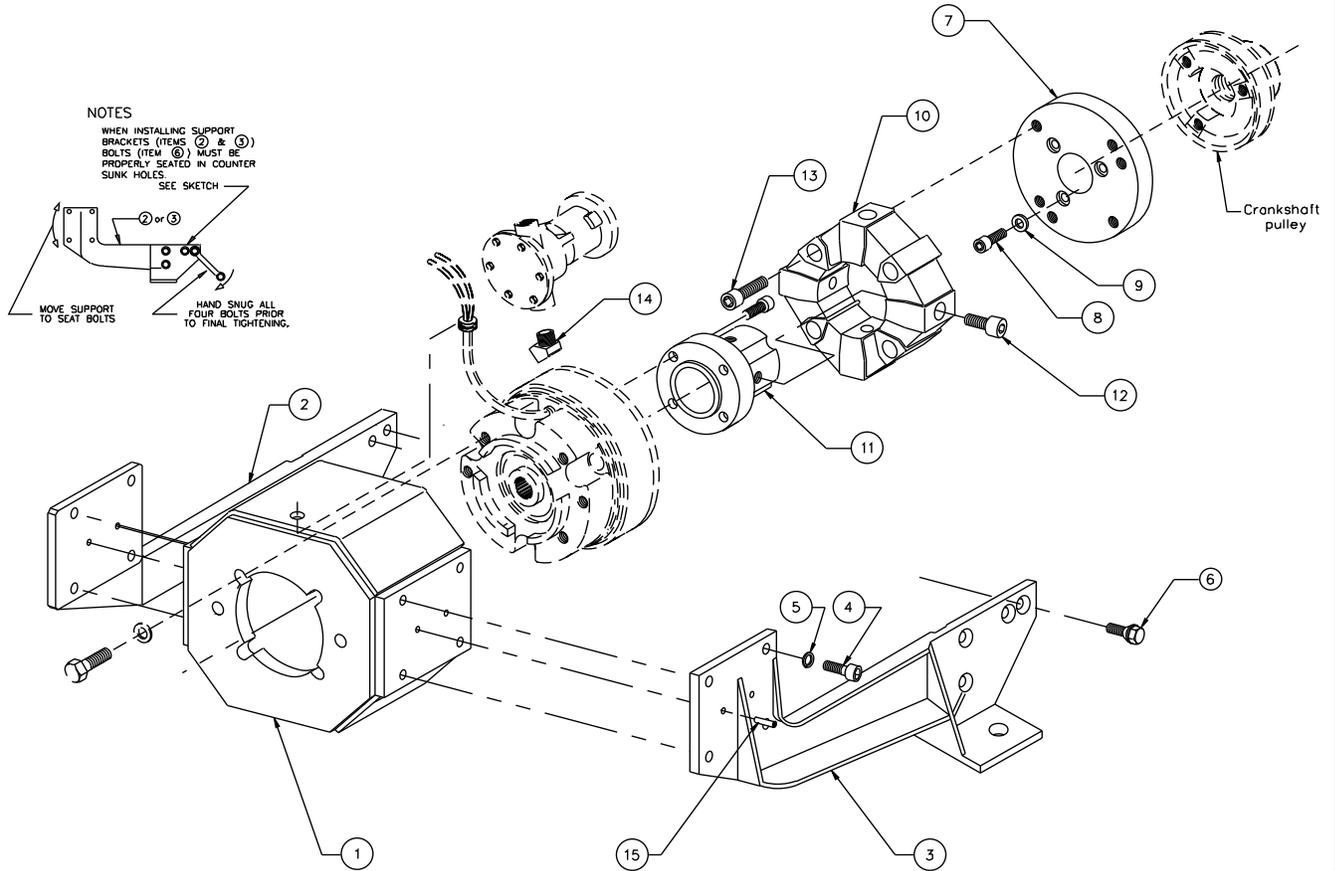
Industrial Application



A-7930/ B-6380

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	39-83126	1	Base Frame	-
2	23-88103	2	Bracket	-
3	12-01100	4	Capscrew, Hex Head M14 x 1.5 x 30 mm	-
4	15-01402	4	Lock Washer, Helical M14	-
5	12-00817	2	Capscrew, Hex Head M10 x 1.5 x 55 mm	-
6	15-00805	2	Flat Washer M10	-
7	33-83151	2	Mount, Centerbonded 200 lb.	-
8	15-00014	2	Head/Tail Washer	-
9	14-00812	2	Hex Nut, Nylock M10 x 1.5	-
10	12-00048	2	Capscrew, Hex Head M10 x 1.5 x 60 mm	-
11	15-00805	2	Flat Washer M10	-
12	15-00014	2	Head/Tail Washer	-
13	33-83151	2	Mount, Centerbonded 200 lb.	-
14	15-00014	2	Head/Tail Washer	-
15	14-00812	2	Hex Nut, Nylock M10 x 1.5	-
16	12-00313	12	Capscrew, Hex Head 3/8-16 x 1-1/4"	-
17	15-00302	12	Lock Washer, Helical 3/8	-
18	12-00213	8	Capscrew, Hex Head 5/16-18 x 1-1/4"	-
19	15-00202	8	Lock Washer, Helical 5/16	-
20	15-01401	2	Flat Washer M14	-

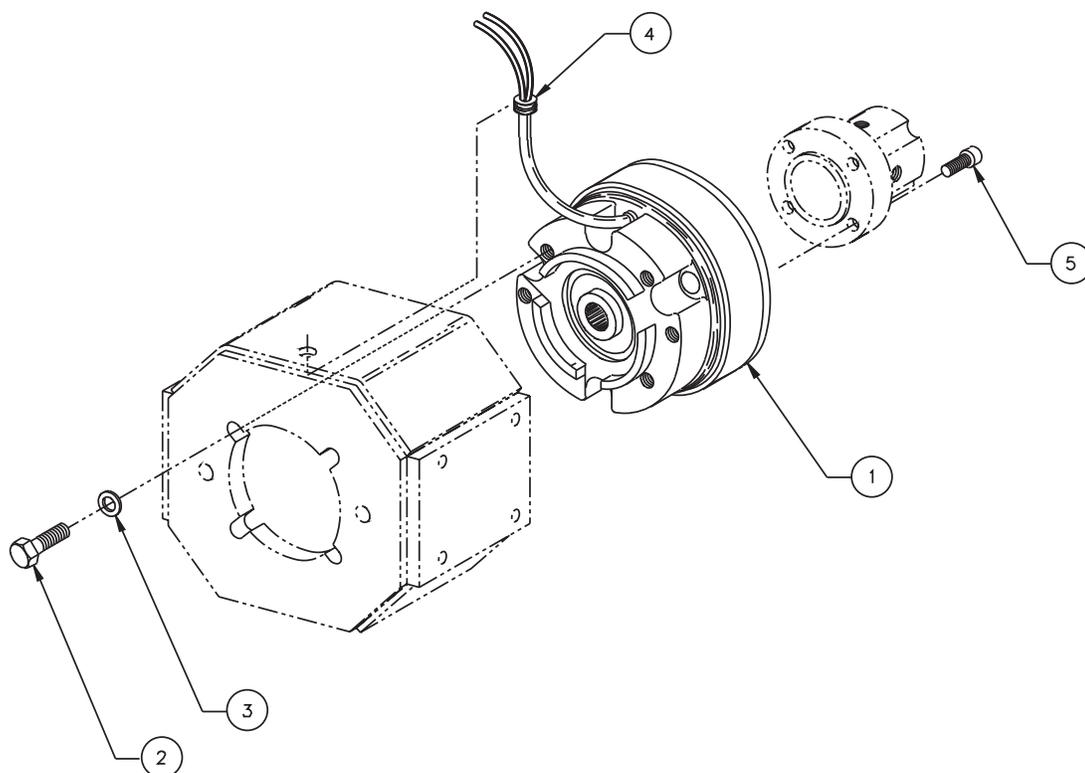
PTO Adapter Parts



A-8091/ D-3154

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
••	31-63105	1	PTO Adapter (includes all keys)	-
1	10-65401	1	PTO Clutch Housing, H-28 B-Pad	-
2	23-63103	1	Engine/ PTO Support Bracket, Right Hand	-
3	23-63104	1	Engine/ PTO Support Bracket, Left Hand	-
4	12-34803	8	Capscrew, Socket Head M10 x 1.5 x 25 mm	-
5	15-00803	4	Lock Washer, High Collar M10	-
6	12-68101	6	Capscrew, Hex Head with Tapered Seat, M14 x 1.5 x 30 mm	-
7	31-68101	1	PTO Drive Adapter	-
8	12-20912	3	Capscrew, Socket Head M12 x 1.75 x 25 mm	-
9	15-04802	3	Lock Washer, High Collar M12	-
10	34-65406	1	Coupling Assembly (with hardware, size 22 model)	-
11	34-65407	1	Hub	-
12	12-20920	4	Capscrew, Socket Head M12 x 1.75 x 40 mm	-
13	12-20914	4	Capscrew, Socket Head M12 x 1.75 x 35 mm	-
14	21-00128	1	Steel Elbow, 45 degrees, Brass 1/2 NPT x 1/2 NPT	-
15	32-60001	4	Taper Pin #4 x 1"	-

Electric Clutch

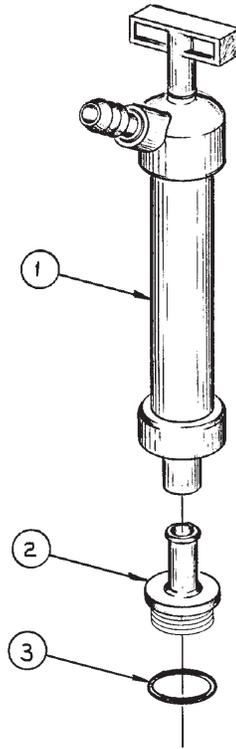


A-6291 & A-6346/ C-3020

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	34-60031	1	Electric Clutch Assembly (12 volt)	-
	34-60032	1	Electric Clutch Assembly (24 volt)	-
2	12-00513	4	Capscrew, Hex Head 1/2-13 x 1-1/4	-
3	15-00007	4	Flat Washer M12	-
4	00-61003	1	Grommet	-
5	12-63800	4	Capscrew, Socket Head 3/8-24 x 3/4	-

Oil Drain Kit

Marine Application

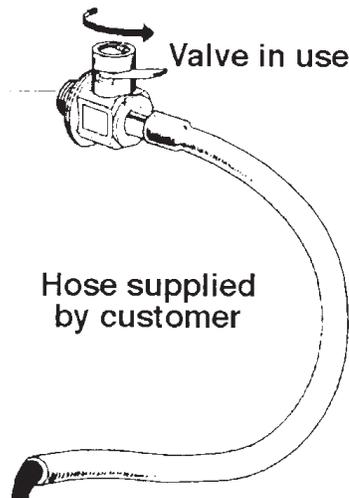


A-5024/ B-3990

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	-

Oil Drain

Industrial Application

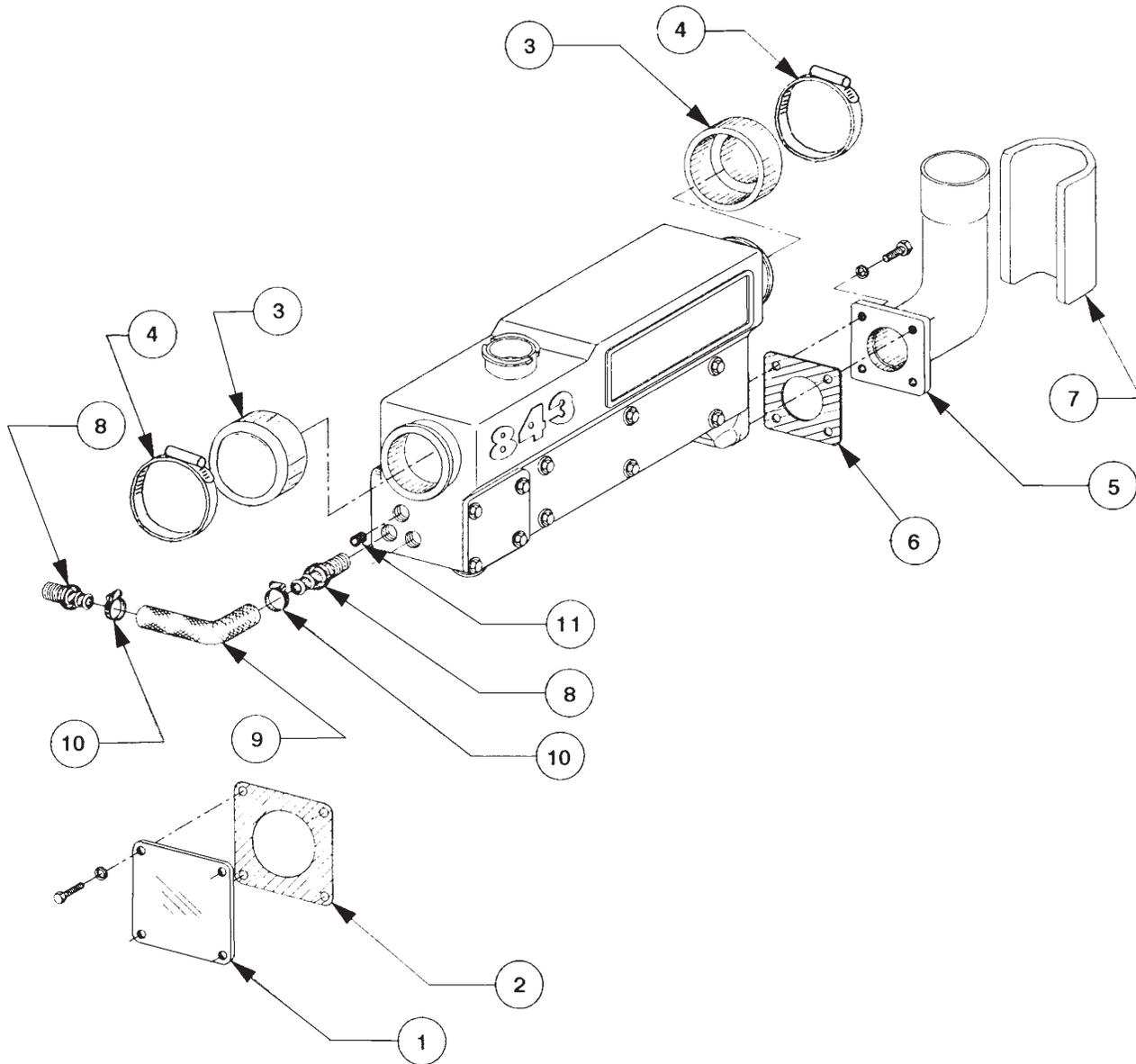


A-6480

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	36-72003	1	Drain Valve	-

Keel Cooling Conversion

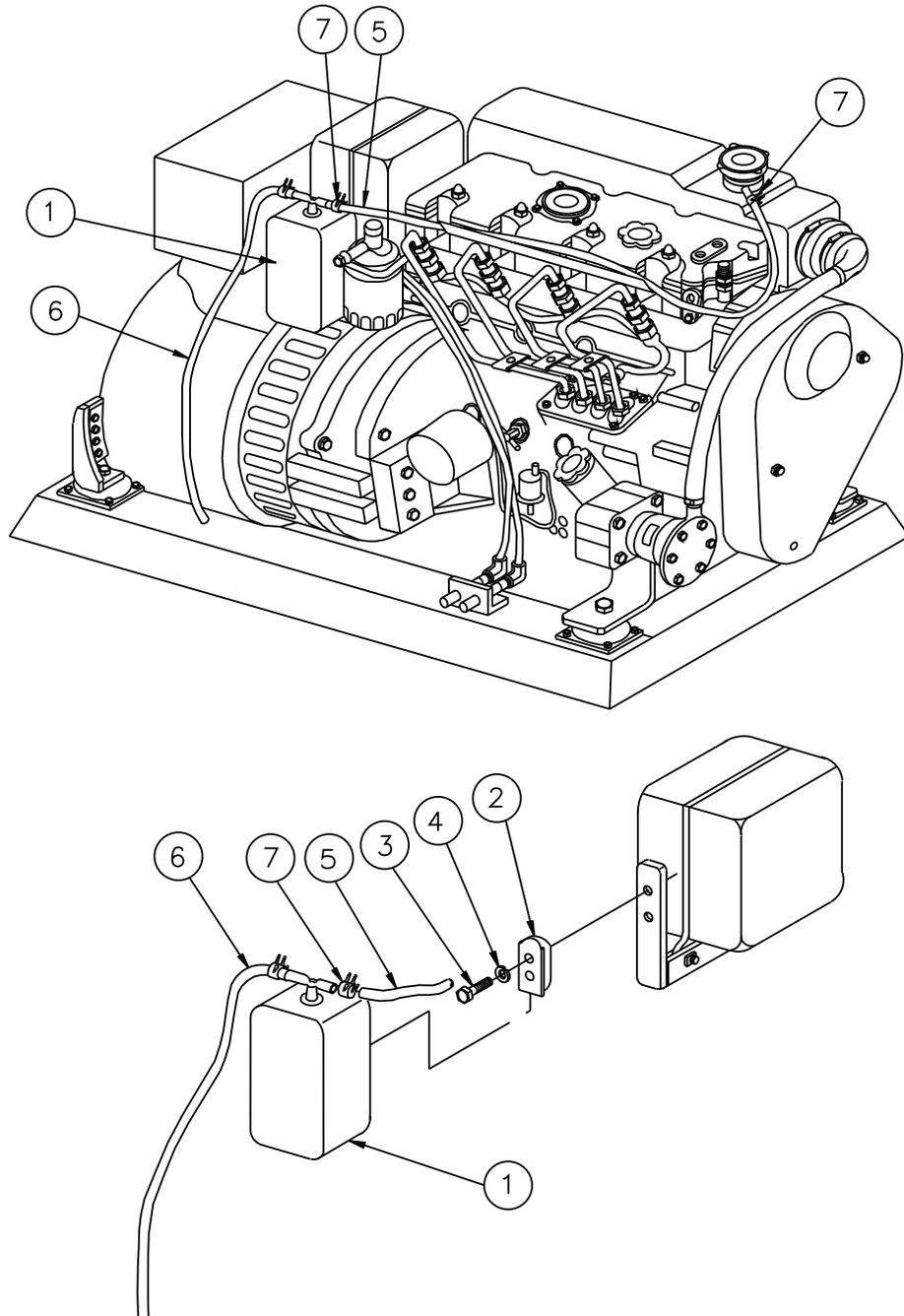
Marine Application - with Dry Exhaust



A-11305/ P843 kc

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	165206320	1	Cover (see Governor & Timing Gear Case)	-
2	11-12005	1	Gasket (see Governor & Timing Gear Case)	-
3	20-12019	2	End Cap	-
4	19-00044	2	Hose Clamp #44	-
5	27-32007	1	Elbow, Dry Exhaust 1-1/2 NPT	-
6	11-31902	1	Gasket	-
7	00-32008	1	Lagging	-
8	21-12014	2	Male Connector, Brass, 3/8 NPT x 1/2 HB	-
9	18-12003	1	Hose	-
10	19-00008	2	Hose Clamp #8	-
11	21-51900	1	Plug, Socket Head, Steel, 1/8 NPT	-

Coolant Recovery Tank

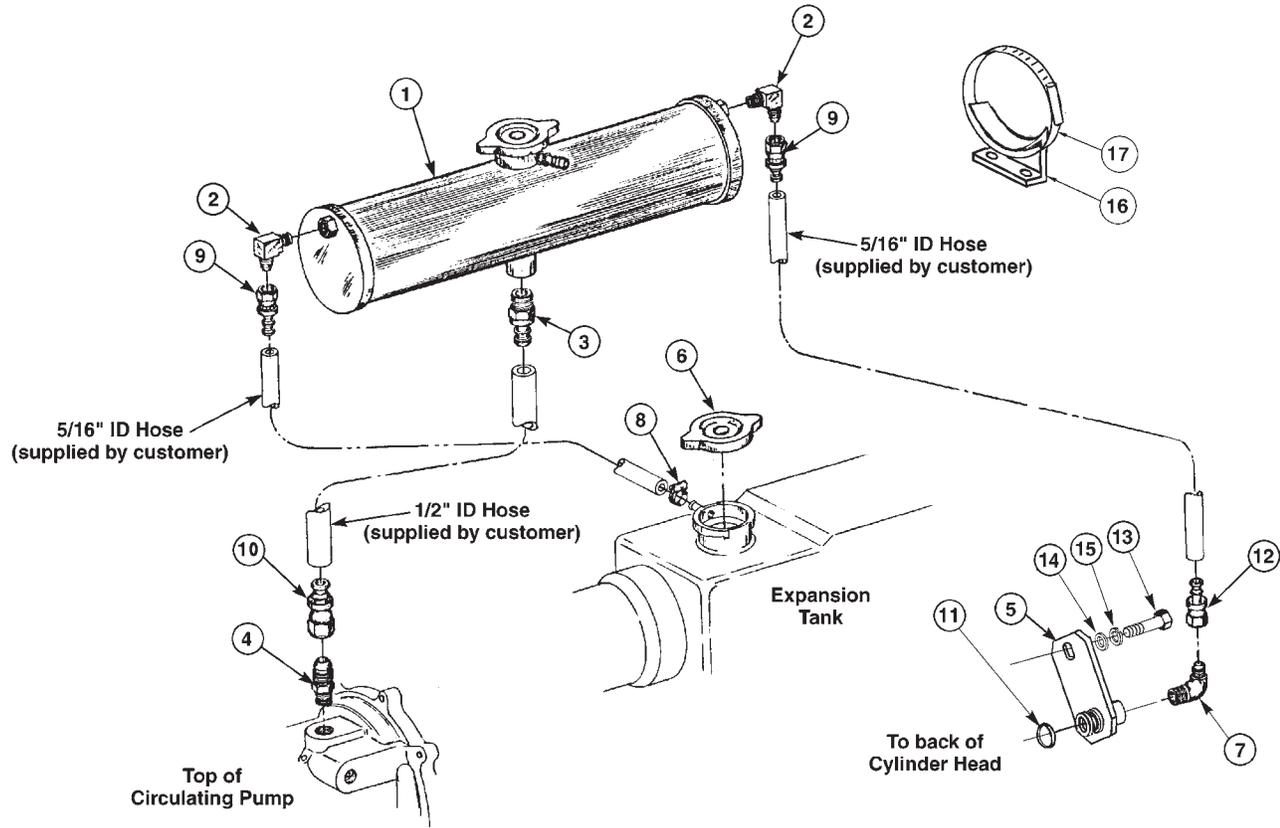


A-10342/ B-8022

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	310550130	1	Coolant Recovery Tank	-
2	222300090	1	Coolant Recovery Tank Mounting Bracket	-
3	12-00097	2	Capscrew, Hex Head, M6 x 1.0 x 12 mm	-
4	15-00007	2	Flat Washer, M12	-
5	27-12003	1	Hose, 5/16" x 26" Polyurethane	-
6	18-12006	1	Hose, 5/16" x 26" Polyvinyl	-
7	19-18602	3	Hose Clamp	-

Remote Expansion Tank

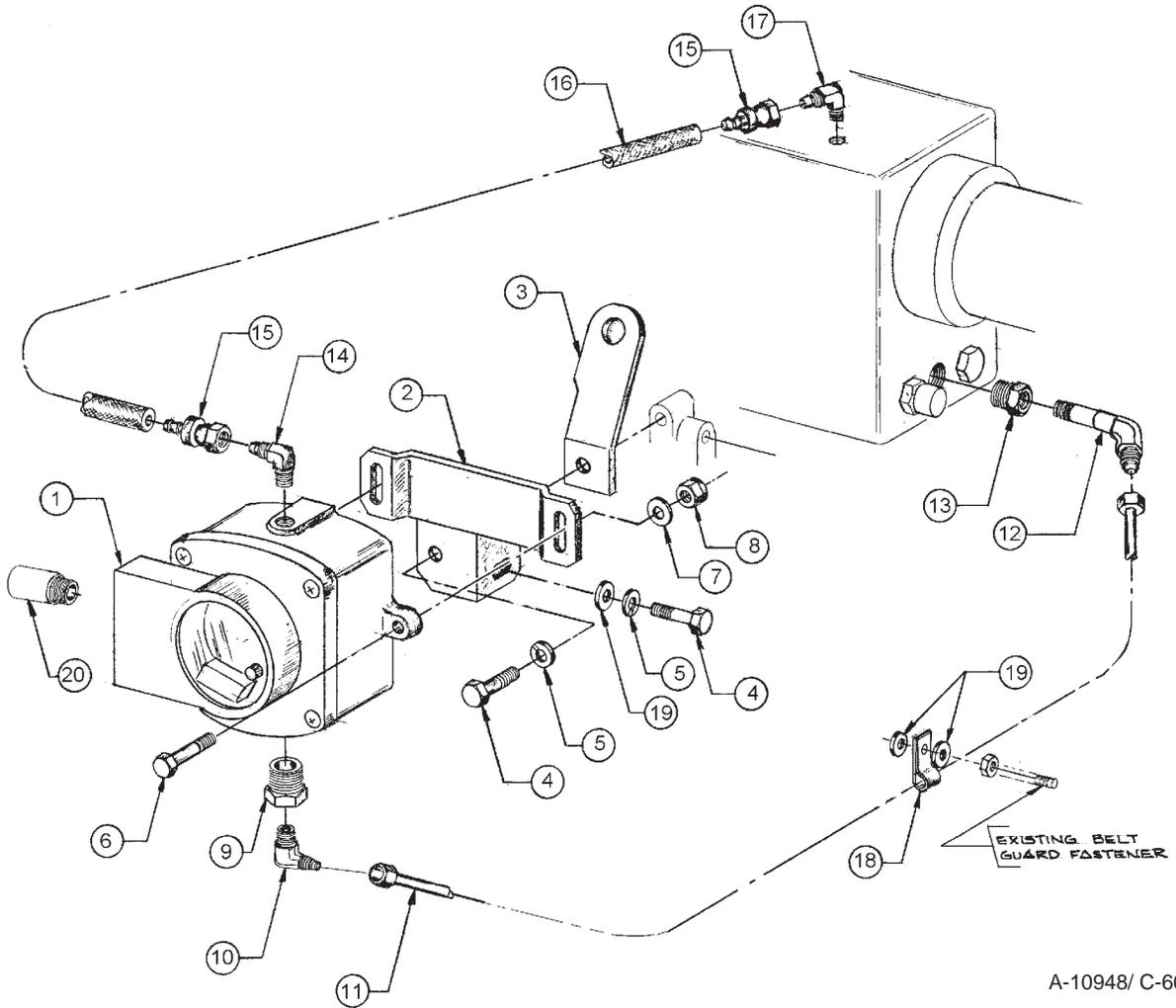
Marine



A-5931A/ D-2345

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	10-12002	1	Tank Assembly (includes keys #2 & #16 - #17)	-
2	21-52245	2	Male Elbow, Brass 1/4 NPT x 5/16-45T	-
3	21-51093	1	Male Connector, Brass 1/2 NPT x 1/2 HB	-
4	21-71093	1	Male Connector, Brass 3/8 NPT x 1/2 HB	-
5	31-12001	1	Port Adapter (requires key #11)	-
6	21-12008	1	Filler Cap	-
7	21-10030	1	Male Elbow, Steel 3/8 Port x 5/16-37T	-
8	19-00004	1	Hose Clamp	-
9	21-71056	2	Female Swivel, Brass 5/16 HB x 5/16-45T	-
10	21-71042	1	Female Swivel, Brass 1/2 HB x 1/2-45T	-
11	16-90001	1	O-ring (for Port Adapter)	-
12	21-70007	1	Female Swivel, Brass 5/16 HB x 5/16-37T	-
13	12-00751	1	Capscrew, Hex Head M8 x 1.25 x 16 mm	-
14	15-00701	1	Flat Washer M8	-
15	15-00702	1	Lock Washer M8	-
16	23-75404	2	Mounting Foot	-
17	19-00064	2	Hose Clamp #64 (for tank mounting)	-

Low Coolant Level Switch/ Gauge



A-10948/ C-6066

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	22-10003	1	Coolant Level Switch/ Gauge	-
2	23-73106	1	Bracket, Coolant Level Switch/ Gauge	-
3	00-73146	1	Lifting Eye, Front	-
4	12-00712	2	Capscrew, Hex Head M8 x 1.25 x 25 mm	-
5	15-00702	2	Lock Washer, Helical M8	-
6	12-00031	2	Capscrew, Hex Head M6 x 1.0 x 25 mm	-
7	15-00008	1	Flat Washer M6	-
8	14-04803	2	Hex Nut, Nylock M6 x 1.0	-
9	21-00135	1	Bushing, Brass 1/2 NPT x 1/4 NPT	-
10	21-71049	1	Male Elbow 90° Steel 1/4 NPT x 1/4- 37T	-
11	18-15408	1	Hose Assembly 1/4" I.D. x 15"	-
12	21-15710	1	Male Elbow 90° Steel 1/8 NPT x 1/4- 37T	-
13	21-55201	1	Bushing, Brass 3/8 NPT x 1/8 NPT	-
14	21-71044	1	Male Elbow 90° Brass 1/4 NPT x 1/4- 45T	-
15	21-71045	2	Female Swivel, Brass 1/4 HB x 1/4- 45T	-
16	18-52205	1	Hose, 1/4" I.D. x 13" Push-on	-
17	21-71053	1	Male Elbow 900 Steel 1/8 NPT x 1/4- 37T	-
18	19-72252	1	Adelle Clamp 3/8" I.D. x 3/8" Stud	-
19	15-00701	3	Flat Washer M8	-
20	00-40016	1	Strain Relief Connection 1/2 NPT	-



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 Northern Lights, Inc.

© 2005 All rights reserved. Litho USA.