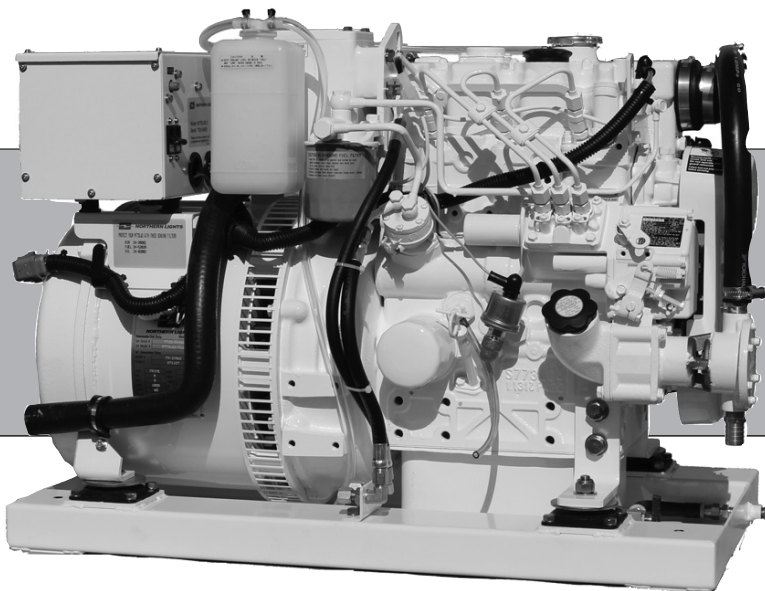




# PARTS MANUAL

## P773-3

For Models: M773LW3, M773LW3G and NL773LW3



[www.northern-lights.com](http://www.northern-lights.com)

**ULTRA LOW  
SULFUR FUEL  
ONLY**

RE529956

As of January 2011, U.S. EPA regulations require the application of a permanently applied label near the fuel tank fill port for diesel driven equipment. This label is to state:

**ULTRA LOW SULFUR FUEL ONLY**

Northern Lights is providing this label for application to the fuel inlet of the fuel supply tank for each engine or generator set. This is to be applied by the installer of the engine or gen set, or by the manufacturer of the equipment that the engine or gen set is installed in. The location of the label must be in clear site of personnel that refill the supply tank.



— CALIFORNIA —  
Proposition 65 Warning:

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

- \* Always start and operate the engine in a well-ventilated area.
- \* If in an enclosed area, vent the exhaust to the outside.
- \* Do not modify or tamper with the exhaust system.
- \* Do not idle the engine except as necessary.

**For more information, go to [www.P65warnings.ca.gov/diesel](http://www.P65warnings.ca.gov/diesel).**

**Northern Lights**

4420 14th Avenue NW  
Seattle, WA 98107  
Tel: (206) 789-3880  
Fax: (206) 782-5455

Copyright ©2020 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.: P773-3 3/20



# PARTS MANUAL

## for Models

### M773LW3, M773LW3G and NL773LW3

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

|                                          |   |
|------------------------------------------|---|
| Table of Contents .....                  | 1 |
| Model Designation & Serial Numbers ..... | 2 |
| Reading a Parts Page .....               | 3 |

## Table of Contents

### GROUP 1 - ENGINE

|                                   |         |
|-----------------------------------|---------|
| Cylinder Block Assembly .....     | 0 - 3   |
| Crankshaft Assembly .....         | 4 - 5   |
| Oil Drain and Valve .....         | 6       |
| Oil Pump & Pick-up .....          | 7       |
| Camshaft .....                    | 8       |
| Cylinder Head .....               | 9       |
| Rocker Arm Cover & Assembly ..... | 11 - 13 |

### GROUP 2 - INTAKE & EXHAUST SYSTEM

|                            |       |
|----------------------------|-------|
| Air Filter & Housing ..... | 0 - 1 |
| Muffler .....              | 2     |

### GROUP 3 - COOLING

|                                         |         |
|-----------------------------------------|---------|
| Coolant Recovery Tank .....             | 0       |
| Exhaust Manifold & Heat Exchanger ..... | 2 - 3   |
| Expansion Tank & Exhaust Manifold ..... | 4 - 5   |
| Coolant Pump .....                      | 6 - 7   |
| Raw Water Pump & Mounting .....         | 8       |
| Raw Water Pump Assembly .....           | 9       |
| Radiator & Guard .....                  | 10 - 11 |

### GROUP 4 - FUEL SYSTEM

|                                   |        |
|-----------------------------------|--------|
| Injection Pump & Lines .....      | 0 - 1  |
| Governor & Timing Gear Case ..... | 2 - 5  |
| Fuel Filter & Piping .....        | 6 - 7  |
| Fuel Lines .....                  | 8 - 12 |
| Fuel Injector .....               | 14     |
| Fuel Feed Pump .....              | 15     |

### GROUP 5 - ELECTRICAL SYSTEM

|                                               |         |
|-----------------------------------------------|---------|
| 12 Volt Standard Ground .....                 | 0 - 3   |
| 12 Volt Isolated Ground .....                 | 4 - 7   |
| 24 Volt Standard Ground .....                 | 8 - 11  |
| 24 Volt Isolated Ground .....                 | 12 - 15 |
| Small Frame Alternator & Starter .....        | 16 - 17 |
| Medium Frame Alternator & Starter .....       | 18      |
| Starter, Alternator, & Flywheel Housing ..... | 19      |
| Control Panels .....                          | 20 - 31 |
| Belt Guard Assembly .....                     | 32 - 33 |

### GROUP 6 - GASKET SETS

|                   |   |
|-------------------|---|
| Gasket Sets ..... | 0 |
|-------------------|---|

### GROUP 7 - FRAME & MOUNTING

|                              |       |
|------------------------------|-------|
| Base Frame Assembly .....    | 0 - 1 |
| Base Pan with Mounting ..... | 2 - 5 |

### GROUP 8 - ACCESSORIES & OPTIONAL EQUIPMENT

|                                   |   |
|-----------------------------------|---|
| Oil Drain Kit .....               | 0 |
| Keel Cooling Conversion Kit ..... | 1 |

#### Proprietary Information

This publication is the sole property of Northern Lights, Inc.  
It may not be reproduced in whole or part without the expressed written permission of Northern Lights, Inc.  
© Northern Lights, Inc. 2018 All rights reserved. Litho U.S.A. Publication number: P773-3 3/20

## Model Designation

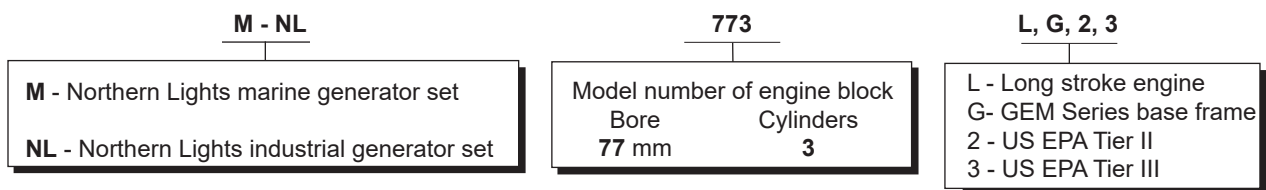
### MODELS INCLUDED

This manual covers the parts and components used in:

**M773LW3, M773LW3G and NL773LW3**

## Model Numbers

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

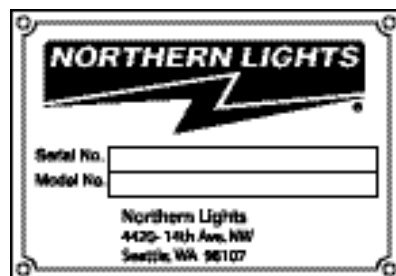


**M773LW3** = Northern Lights marine diesel generator set with an 773 engine and a PX-309K2 generator with a different winding, Tier III.

**NL773LW3** = Northern Lights industrial diesel generator set with an 773 engine and a PX-309K2 generator with a different winding, Tier III.

## Serial Numbers

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.



**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.*

15 Updated 3-31-16

1 ELECTRICAL SYSTEM

ALTERNATOR ASSEMBLY: M - NL773

| <span style="border: 1px solid black; padding: 2px;">5</span> KEY | PART NUMBER | QTY. | DESCRIPTION                                                                        | SERIAL NUMBER |
|-------------------------------------------------------------------|-------------|------|------------------------------------------------------------------------------------|---------------|
| 0                                                                 | 185046210   | 1    | Alternator Assembly <span style="border: 1px solid black; padding: 2px;">10</span> | -             |
| 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                                                                             | -             |

13 P773 06/02 14  
11 5-2 12

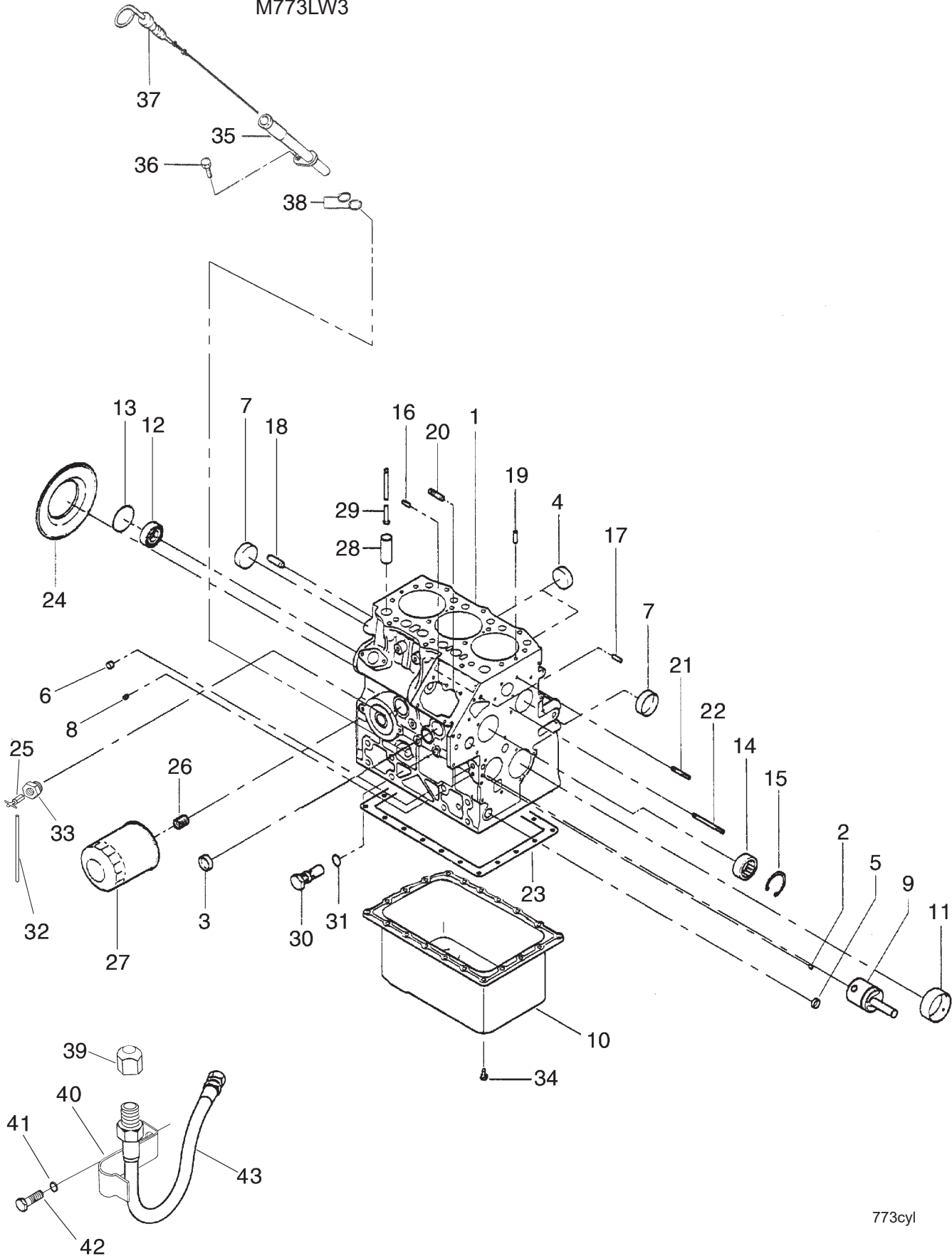
**REFERENCES:**

- |                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> <li>1. Grouping section title.</li> <li>2. Model designation of equipment that uses parts listed on this page.</li> <li>3. Title and description of assembly.</li> <li>4. Drawing numbers that correspond to key column numbers for parts identification.</li> <li>5. Key column for locating parts shown on drawing.</li> <li>6. Part number.</li> </ol> | <ol style="list-style-type: none"> <li>7. Quantity of parts used.</li> <li>8. Description of each component part.</li> <li>9. Serial number of unit the part fits.</li> <li>10. Assembly or kit designated by •• or •.</li> <li>11. Grouping index number.</li> <li>12. Page number within the grouping index.</li> <li>13. Manual title.</li> <li>14. Page publication date.</li> <li>15. Date of most recent update</li> </ol> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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

# Cylinder Block Assembly

M773LW3



773cyl

**Cylinder Block Assembly**

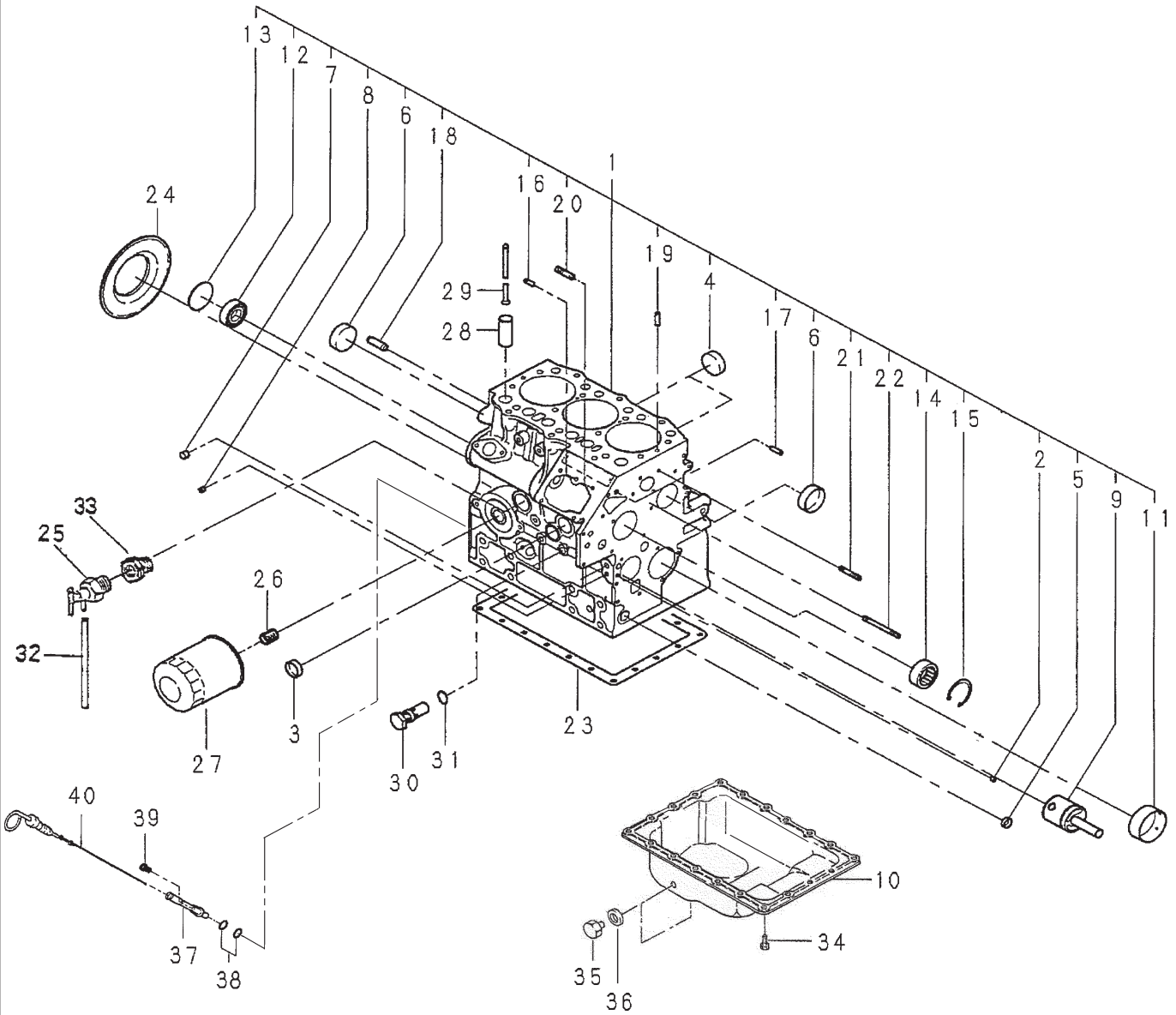
M773LW3

| KEY | PART NUMBER | QTY | DESCRIPTION                                                | S/N                    |
|-----|-------------|-----|------------------------------------------------------------|------------------------|
| 1   | 110103541   | 1   | Cylinder Block Assembly (Includes keys #2 - #21)           | -                      |
| 2   | 198466050   | 1   | 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   | Plug                                                       | -                      |
| 7   | 064209055   | 2   | Expansion Plug, 40 mm                                      | -                      |
| 8   | 198466030   | 4   | Plug                                                       | -                      |
| 9   | 165296142   | 1   | Idle Gear Shaft Assembly                                   | -                      |
| 10  | 110708620   | 1   | Oil Pan (Use with drain hose #43)                          | up to S/N xxxxx-46361C |
|     | 110701260   | 1   | Oil Pan (Use with oil drain valve-See parts detail pg.1-6) | from S/N xxxxx-46362C  |
| 11  | 198517592   | 1   | Bushing; S.T.D.                                            | -                      |
|     | 198517596   | 1   | Bushing; U.S. 0.25                                         | -                      |
|     | 198517599   | 1   | Bushing; U.S. 0.50                                         | -                      |
| 12  | 040106203   | 1   | Bearing                                                    | -                      |
| 13  | 064100045   | 1   | Expansion Plug, 45 mm                                      | -                      |
| 14  | 042303015   | 1   | Bearing                                                    | -                      |
| 15  | 036509005   | 1   | Snap Ring                                                  | -                      |
| 16  | 030500512   | 2   | Dowel Pin                                                  | -                      |
| 17  | 030500616   | 2   | Dowel Pin                                                  | -                      |
| 18  | 030501025   | 2   | Dowel Pin                                                  | -                      |
| 19  | 030309005   | 2   | Spring Pin                                                 | -                      |
| 20  | 012110620   | 2   | Stud                                                       | -                      |
| 21  | 012110635   | 1   | Stud                                                       | -                      |
| 22  | 012110660   | 1   | Stud                                                       | -                      |
| 23  | 110996800   | 1   | Gasket                                                     | -                      |
| 24  | 050209107   | 1   | Oil Seal                                                   | -                      |
| 25  | 198736050   | 1   | Drain Cock                                                 | -                      |
| 26  | 140546020   | 1   | Joint                                                      | -                      |
| 27  | 24-02002    | 1   | Oil Filter                                                 | -                      |
| 28  | 120116160   | 6   | Tappet                                                     | -                      |
| 29  | 120456223   | 6   | Push Rod                                                   | -                      |
| 30  | 140036220   | 1   | Relief Valve Assembly                                      | -                      |
| 31  | 052109078   | 1   | O-ring                                                     | -                      |
| 32  | 068115200   | 1   | Tube                                                       | -                      |
| 33  | 198486770   | 1   | Bushing                                                    | -                      |
| 34  | 010109235   | 20  | Capscrew, Hex Head M6 x 1.0 x 14 mm (with Lock Washer)     | -                      |
| 35  | 110756490   | 1   | Dipstick Tube                                              | -                      |
| 36  | 011310612   | 1   | Bolt                                                       | -                      |
| 37  | 198416270   | 1   | Dipstick                                                   | -                      |
| 38  | 052109113   | 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"                           | up to S/N xxxxx-46361C |
| 43  | 18-72004    | 1   | Oil Drain Hose                                             | -                      |



# Cylinder Block Assembly

NL773LW3



NL773cylblock

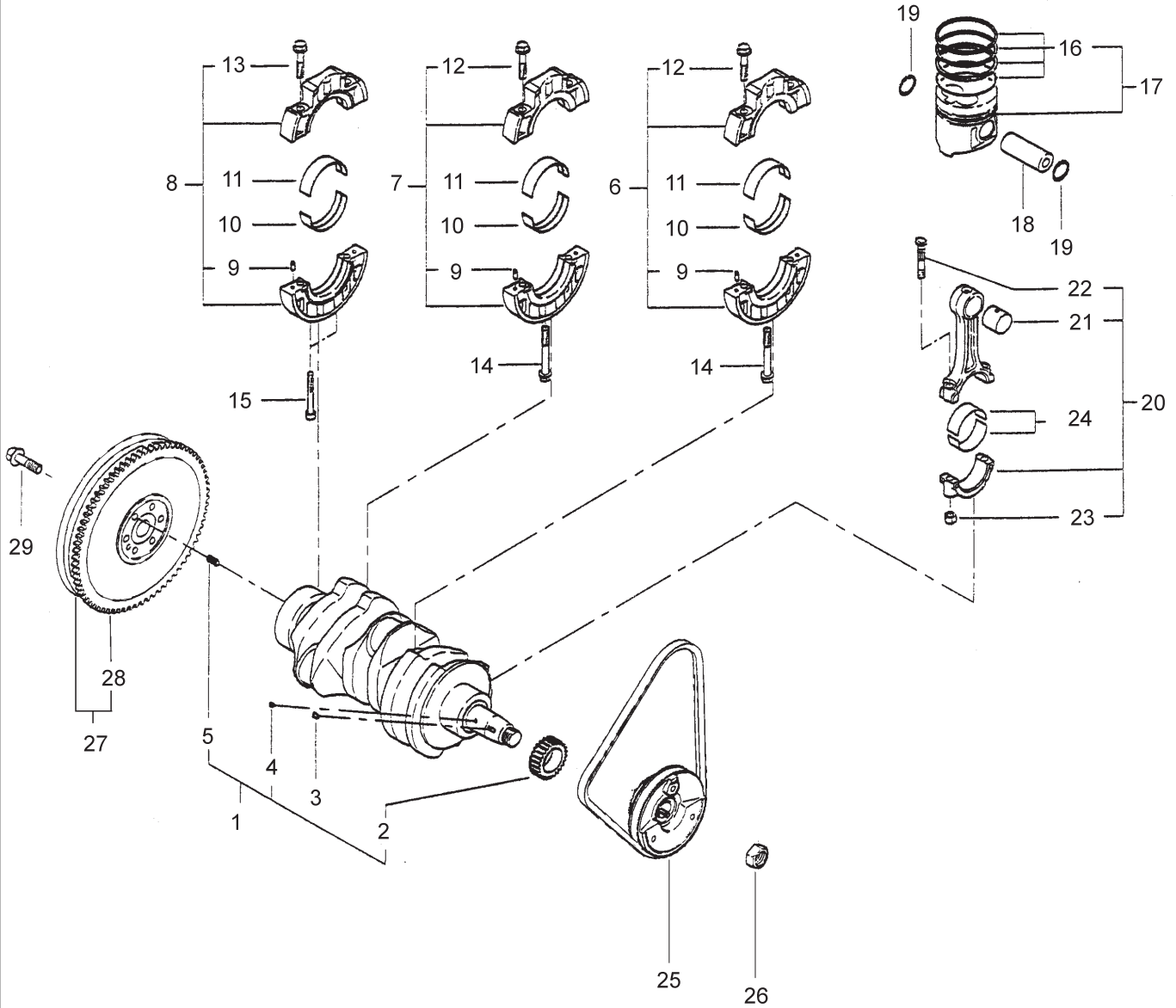


## Cylinder Block Assembly

NL773LW3

| KEY | PART NUMBER | QTY | DESCRIPTION                                      | SERIAL NUMBER |
|-----|-------------|-----|--------------------------------------------------|---------------|
| 1   | 110101520   | 1   | Cylinder Block Assembly - (includes keys #2- 21) | -             |
| 2   | 198466050   | 1   | Plug                                             | -             |
| 3   | 064210025   | 1   | Expansion Plug, 25 mm                            | -             |
| 4   | 064210035   | 2   | Expansion Plug, 35 mm                            | -             |
| 5   | 064210015   | 1   | Expansion Plug, 15 mm                            | -             |
| 6   | 064209055   | 2   | Expansion Plug, 40 mm                            | -             |
| 7   | 198466010   | 4   | Plug                                             | -             |
| 8   | 198466030   | 4   | Plug                                             | -             |
| 9   | 165296142   | 1   | Idle Gear Shaft                                  | -             |
| 10  | 110701110   | 1   | Oil Pan                                          | -             |
| 11  | 198517592   | 1   | Bushing, Standard                                | -             |
|     | 198517596   | 1   | Bushing, Undersize 0.25 mm                       | -             |
|     | 198517599   | 1   | Bushing, Undersize 0.50 mm                       | -             |
| 12  | 040106203   | 1   | Bearing                                          | -             |
| 13  | 064100045   | 1   | Expansion Plug, 45 mm                            | -             |
| 14  | 042303015   | 1   | Needle Bearing                                   | -             |
| 15  | 036509005   | 1   | Snap Ring                                        | -             |
| 16  | 030500512   | 2   | Dowel Pin                                        | -             |
| 17  | 030500616   | 2   | Dowel Pin                                        | -             |
| 18  | 030501025   | 2   | Dowel Pin                                        | -             |
| 19  | 030309005   | 2   | Spring Pin                                       | -             |
| 20  | 012110620   | 2   | Stud Bolt                                        | -             |
| 21  | 012110635   | 1   | Stud Bolt                                        | -             |
| 22  | 012110660   | 1   | Stud Bolt                                        | -             |
| 23  | 110996800   | 1   | Gasket                                           | -             |
| 24  | 050209107   | 1   | Oil Seal                                         | -             |
| 25  | 198736050   | 1   | Drain Cock                                       | -             |
| 26  | 140546020   | 1   | Filter Joint                                     | -             |
| 27  | 24-02002    | 1   | Oil Filter                                       | -             |
| 28  | 120116160   | 6   | Tappet                                           | -             |
| 29  | 120456223   | 6   | Push Rod                                         | -             |
| 30  | 140036220   | 1   | Relief Valve Assembly                            | -             |
| 31  | 052109078   | 1   | O-ring                                           | -             |
| 32  | 068115200   | 1   | Tube                                             | -             |
| 33  | 198486770   | 1   | Bushing                                          | -             |
| 34  | 010109235   | 20  | Bolt                                             | -             |
| 35  | 010109238   | 2   | Plug                                             | -             |
| 36  | 025100016   | 2   | Seal Washer                                      | -             |
| 37  | 110756490   | 1   | Dipstick Tube                                    | -             |
| 38  | 052109113   | 2   | O-ring                                           | -             |
| 39  | 011310612   | 1   | Bolt                                             | -             |
| 40  | 198416270   | 1   | Dipstick                                         | -             |

# Crankshaft Assembly



773crankshaft

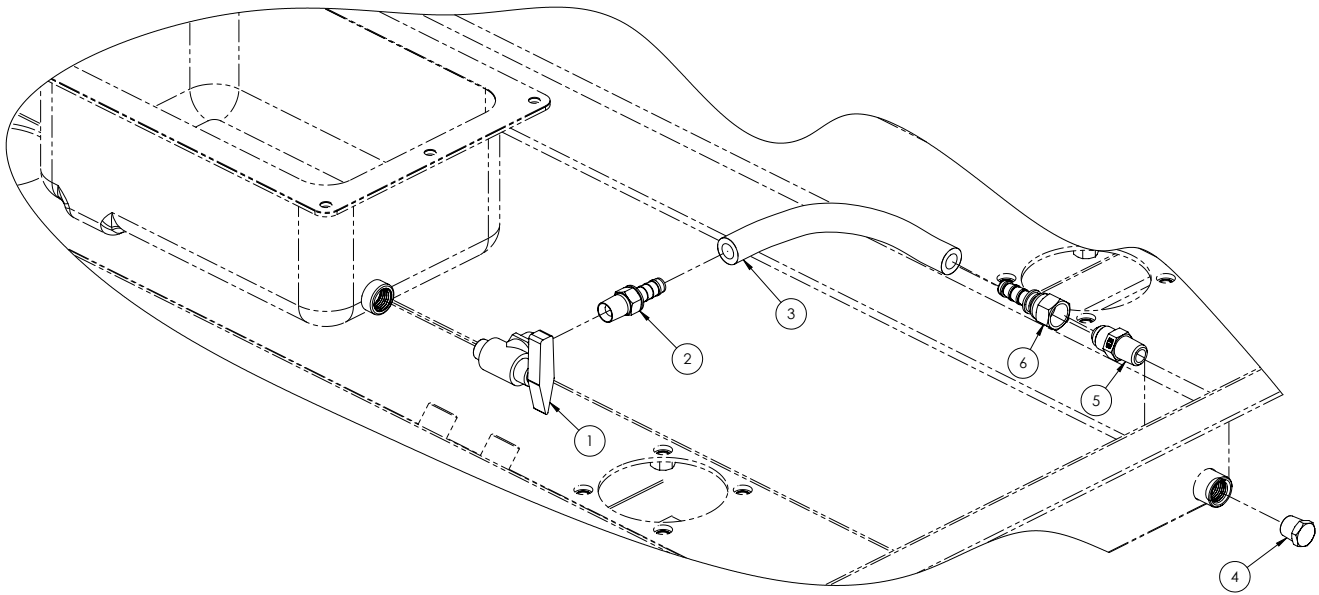
## Crankshaft Assembly

| KEY | PART NUMBER | QTY | DESCRIPTION                                      | SERIAL NUMBER |
|-----|-------------|-----|--------------------------------------------------|---------------|
| 1   | 115256830   | 1   | Crankshaft Assembly (includes keys #2 - 5)       | -             |
| 2   | 115276180   | 1   | Crankshaft Gear                                  | -             |
| 3   | 034100508   | 1   | Key                                              | -             |
| 4   | 030509020   | 1   | Dowel Pin                                        | -             |
| 5   | 030300816   | 1   | Spring Pin                                       | -             |
| 6   | 110156400   | 1   | Bearing Holder Assembly (includes keys #9 & 12)  | -             |
| 7   | 110156410   | 1   | Bearing Holder Assembly (includes keys #9 & 12)  | -             |
| 8   | 110156420   | 1   | Bearing Holder Assembly (includes keys #9 & 13)  | -             |
| 9   | 030500612   | 6   | Dowel Pin                                        | -             |
| 10  | 198517582   | 3   | Bearing; Lower S.T.D.                            | -             |
|     | 198517586   | 3   | Bearing; Lower U.S. 0.25 mm                      | -             |
|     | 198517589   | 3   | Bearing; Lower U.S. 0.50 mm                      | -             |
| 11  | 198517572   | 3   | Bearing; Upper S.T.D.                            | -             |
|     | 198517576   | 3   | Bearing; Upper Undersized 0.25 mm                | -             |
|     | 198517579   | 3   | Bearing; Upper Undersized 0.50 mm                | -             |
| 12  | 010810840   | 4   | Bolt                                             | -             |
| 13  | 010810845   | 2   | Bolt                                             | -             |
| 14  | 011510840   | 2   | Bolt                                             | -             |
| 15  | 010700835   | 2   | Bolt                                             | -             |
| 16  | 115107901   | 3   | Ring Kit; S.T.D.                                 | -             |
|     | 115107430   | 3   | Ring Kit; Oversized 0.50 mm                      | -             |
| 17  | 115017461   | 3   | Piston Kit; S.T.D.                               | -             |
|     | 115017450   | 3   | Piston Kit; Oversized 0.50 mm                    | -             |
| 18  | 115326231   | 3   | Piston Pin                                       | -             |
| 19  | 036500021   | 6   | Snap Ring                                        | -             |
| 20  | 115026340   | 3   | Connecting Rod Assembly (includes keys #21 - 23) | -             |
| 21  | 198517120   | 3   | Bushing                                          | -             |
| 22  | 115176150   | 6   | Connecting Rod Bolt                              | -             |
| 23  | 020109075   | 6   | Nut                                              | -             |
| 24  | 198517602   | 6   | Bearing; S.T.D.                                  | -             |
|     | 198517606   | 6   | Bearing; Undersized 0.25                         | -             |
|     | 198517609   | 6   | Bearing; Undersized 0.50                         | -             |
| 25  | 115396650   | 1   | Crankshaft Pulley                                | -             |
| 26  | 020800018   | 1   | Nut                                              | -             |
| 27  | 115356720   | 1   | Flywheel Assembly (includes key #28)             | -             |
| 28  | 115376130   | 1   | Ring Gear, 96 Teeth                              | -             |
| 29  | 010109340   | 6   | Bolt                                             | -             |

**GROUP 1 – ENGINE**

**Kit, Oil Drain and Valve**

M773LW3 From S/N xxxx-4632C  
to S/N xxxx-54637

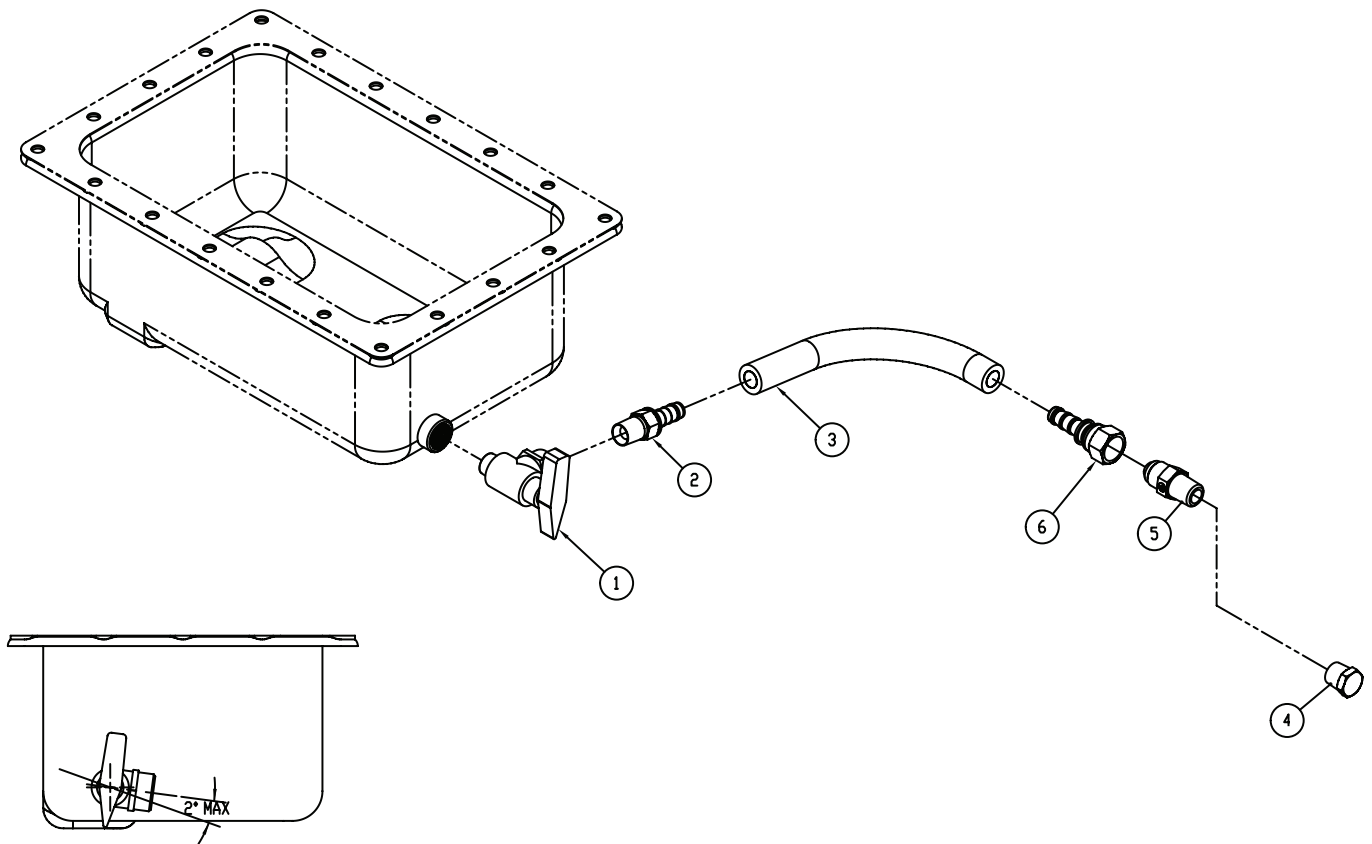


B-9826

| KEY | PART NUMBER | QTY | DESCRIPTION                                          | S/N |
|-----|-------------|-----|------------------------------------------------------|-----|
| 1   | 36-72012    | 1   | Ball valve, Brass 90 Deg 1/4NPT Male X 1/4NPT Female | -   |
| 2   | 21-71203    | 1   | Male Connector Brass 1/4NPT X 3/8HB Push-On          | -   |
| 3   | 18-71207    | 1   | Hose 3/8"ID X 7" Push-On                             | -   |
| 4   | 21-31624    | 1   | Plug, Hex Head, Brass 1/4NPT                         | -   |
| 5   | 21-00612    | 1   | Male Connector, Stl. 1/4NPT X 3/8-37T                | -   |
| 6   | 21-71034    | 1   | Female Swivel, Brass. 3/8HB X 3/8-37T Push-On        | -   |

**Kit, Oil Drain and Valve**

From S/N xxxx-54637



DRAIN VALVE ORIENTATION

B-9826A

| KEY | PART NUMBER | QTY | DESCRIPTION                                                 | S/N |
|-----|-------------|-----|-------------------------------------------------------------|-----|
| 1   | 36-72012    | 1   | Ball Valve,Brass 90 Degree Flow 1/4NPT Male X 1/4NPT Female | -   |
| 2   | 21-71203    | 1   | Male Connector, Brass 1/4NPT X 3/8HB PUSH-ON                | -   |
| 3   | 18-70003    | 1   | HOSE 3/8" ID X 6-1/2" PUSH-ON                               | -   |
| 4   | 21-31624    | 1   | PLUG,Hex Head, Brass. 1/4NPT                                | -   |
| 5   | 21-00612    | 1   | Male Connector STL. 1/4NPT X 3/8-37T                        | -   |
| 6   | 21-71034    | 1   | Female SWIVEL,Brass 3/8HB X 3/8-37T PUSH-ON                 | -   |

GROUP 1 – ENGINE

Oil Pump & Pick-up

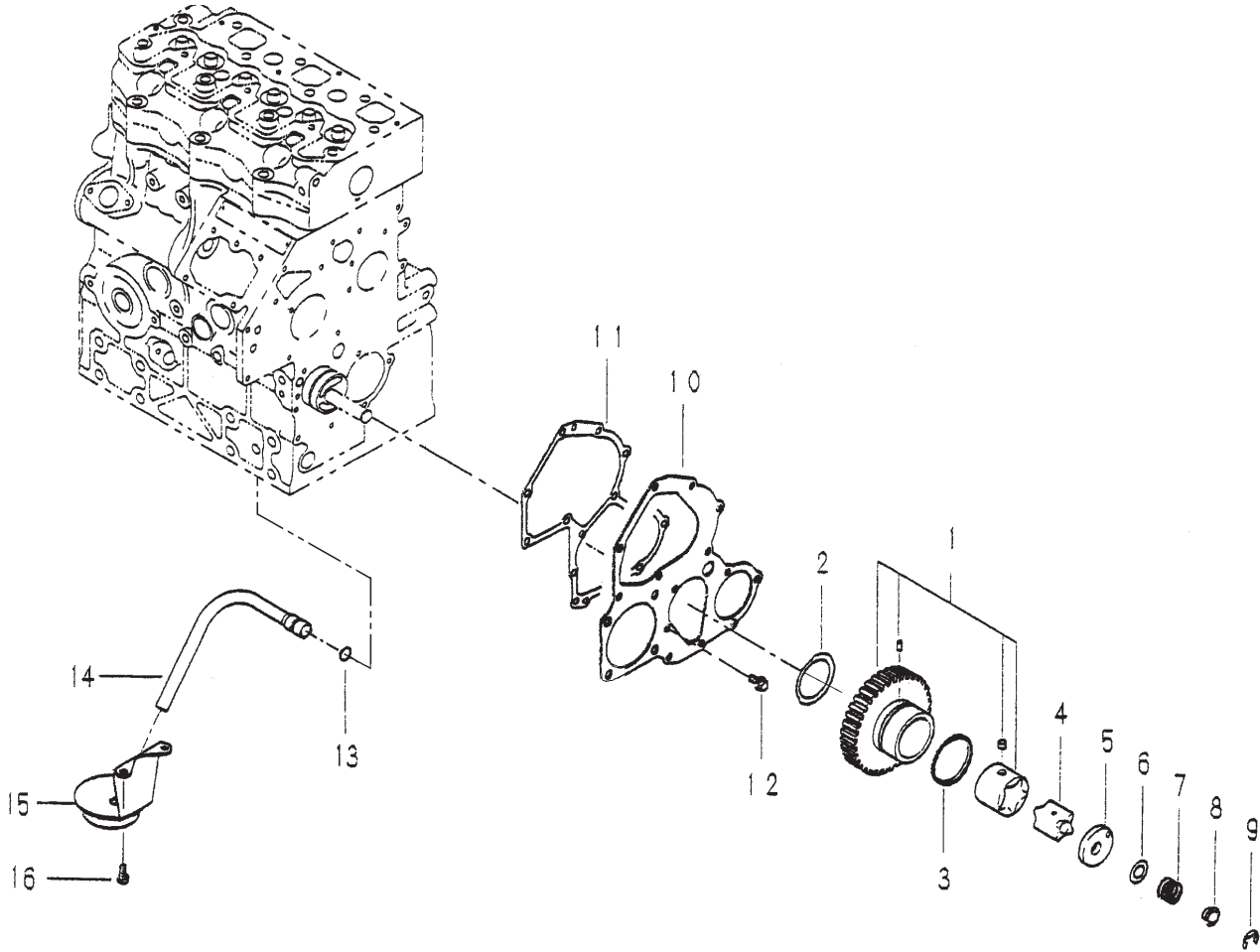


Fig. 1-4

| KEY | PART NUMBER | QTY | DESCRIPTION                             | SERIAL NUMBER |
|-----|-------------|-----|-----------------------------------------|---------------|
| 1   | 165026390   | 1   | Idle Gear Assembly (former # 165026100) | -             |
| 2   | 199266180   | 1   | Thrust Washer                           | -             |
| 3   | 198216821   | 1   | Spring                                  | -             |
| 4   | 140166400   | 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 (Marine)                    | -             |
|     | 165166191   | 1   | Front Plate (Industrial)                | -             |
| 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

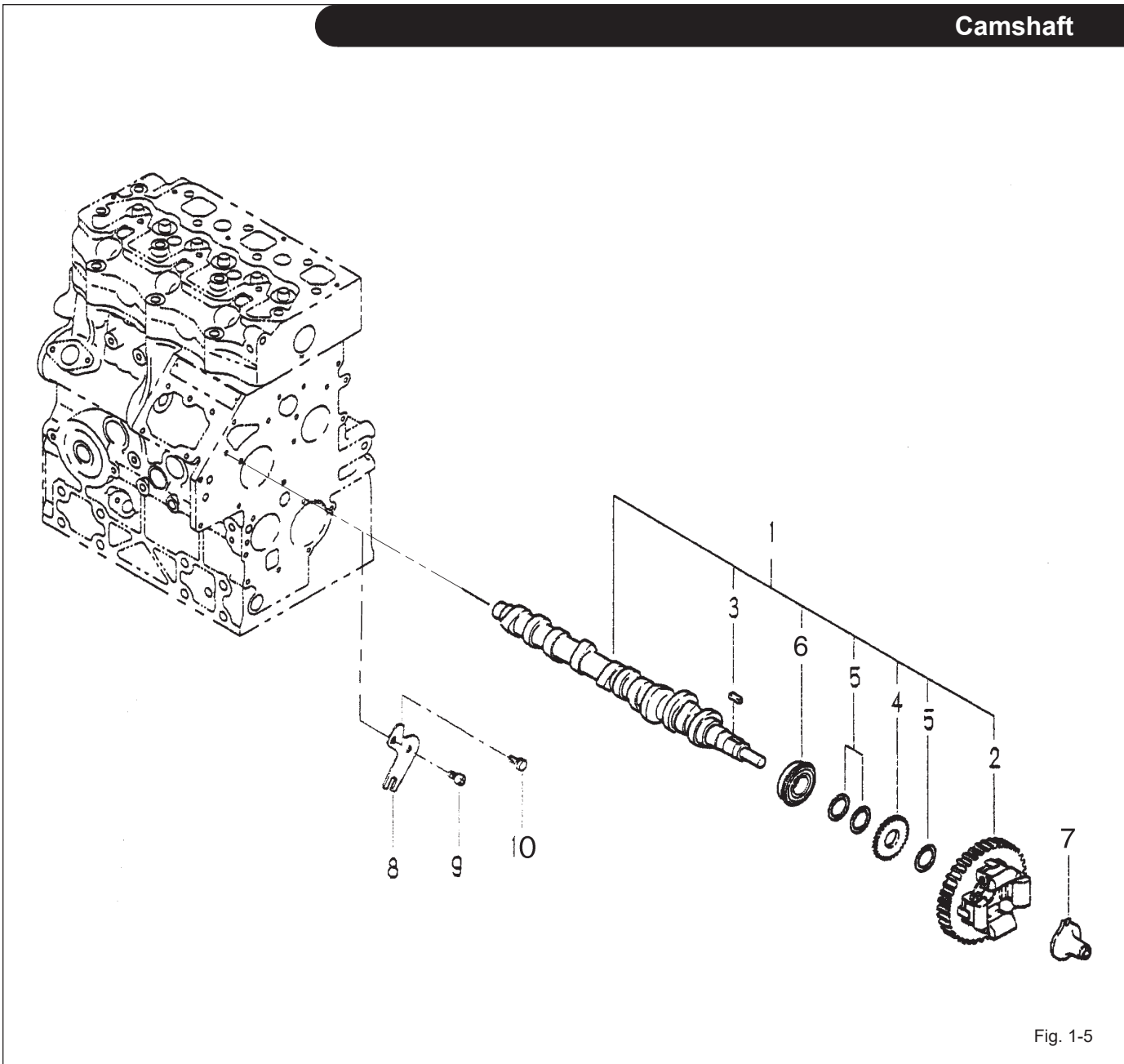
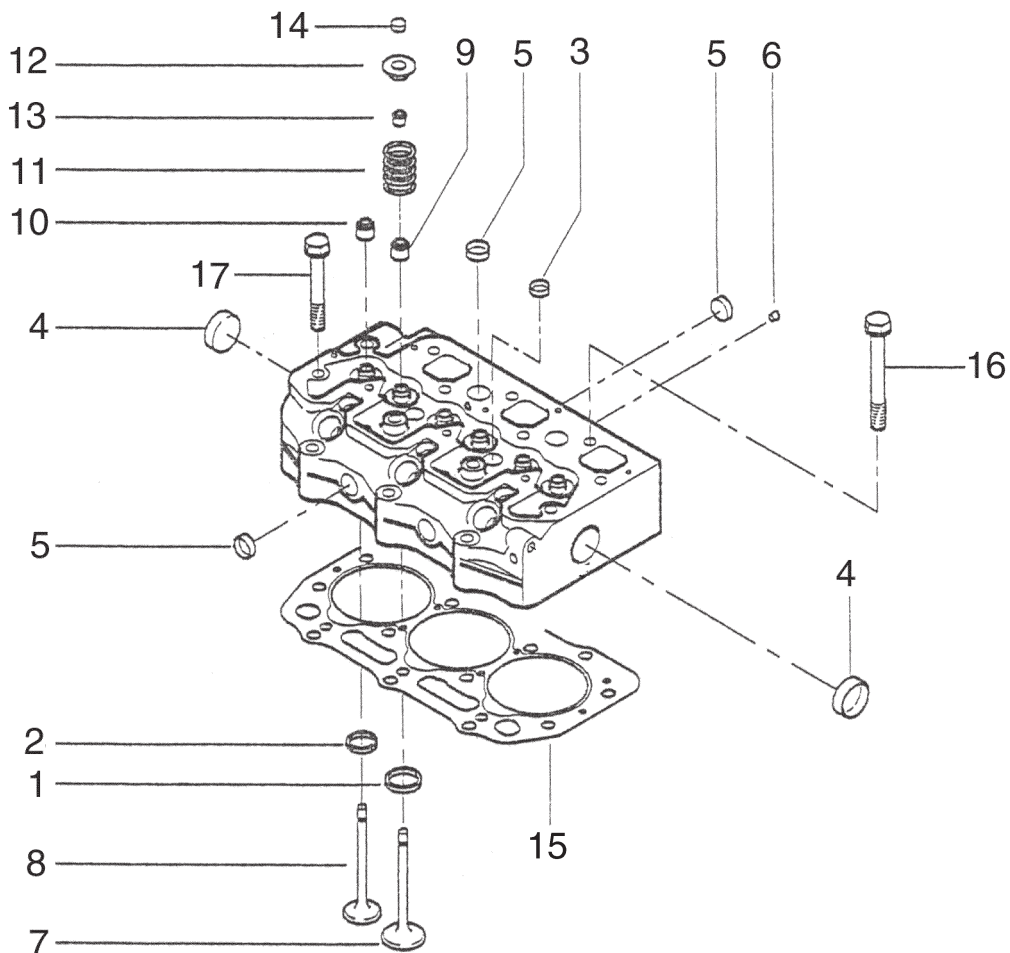


Fig. 1-5

| KEY | PART NUMBER | QTY | DESCRIPTION                              | SERIAL NUMBER |
|-----|-------------|-----|------------------------------------------|---------------|
| 1   | 120026830   | 1   | Cam Shaft Assembly (includes keys #2- 6) | -             |
| 2   | 120016021   | 1   | Cam Gear Assembly                        | -             |
| 3   | 034100508   | 1   | Key                                      | -             |
| 4   | 120736081   | 1   | Gear                                     | -             |
| 5   | 199216230   | 3   | Spacer                                   | -             |
| 6   | 040109048   | 1   | Bearing                                  | -             |
| 7   | 125256120   | 1   | Slider                                   | -             |
| 8   | 199566651   | 1   | Plate                                    | -             |
| 9   | 010700610   | 1   | Bolt                                     | -             |
| 10  | 011310612   | 1   | Bolt                                     | -             |

GROUP 1 – ENGINE

**Cylinder Head**

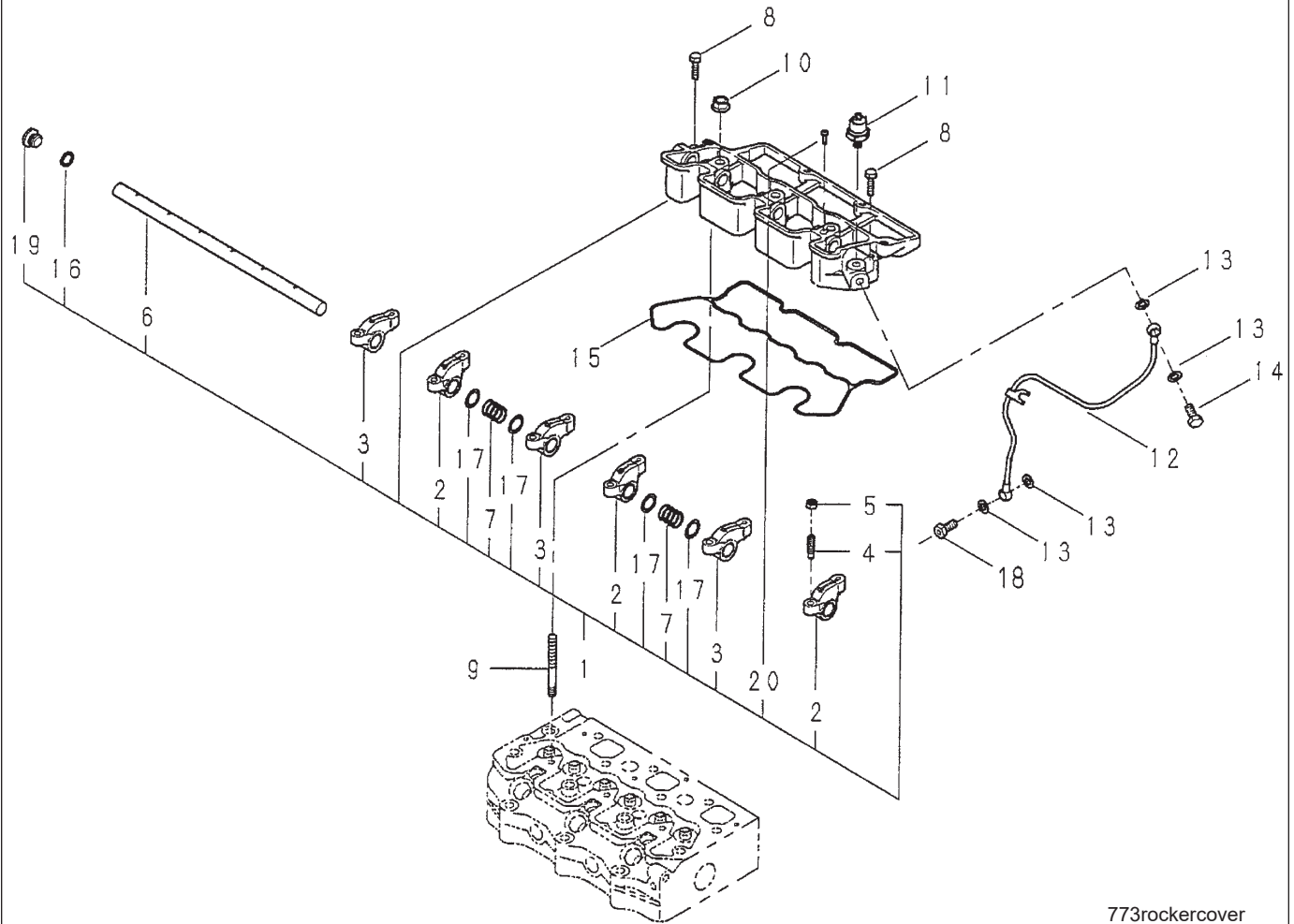


773 1-6a

| KEY | PART NUMBER | QTY | DESCRIPTION                                                          | SERIAL NUMBER |
|-----|-------------|-----|----------------------------------------------------------------------|---------------|
| ••  | 111013020   | 1   | Cylinder Head Assembly - (Marine, Includes keys #2-3, 6-13 & 19)     | -             |
|     | 111011630   | 1   | Cylinder Head Assembly - (Industrial, Includes keys #2-3, 6-13 & 19) | -             |
| 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  | 120216041   | 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                                                            | -             |



**Rocker Arm Assembly**



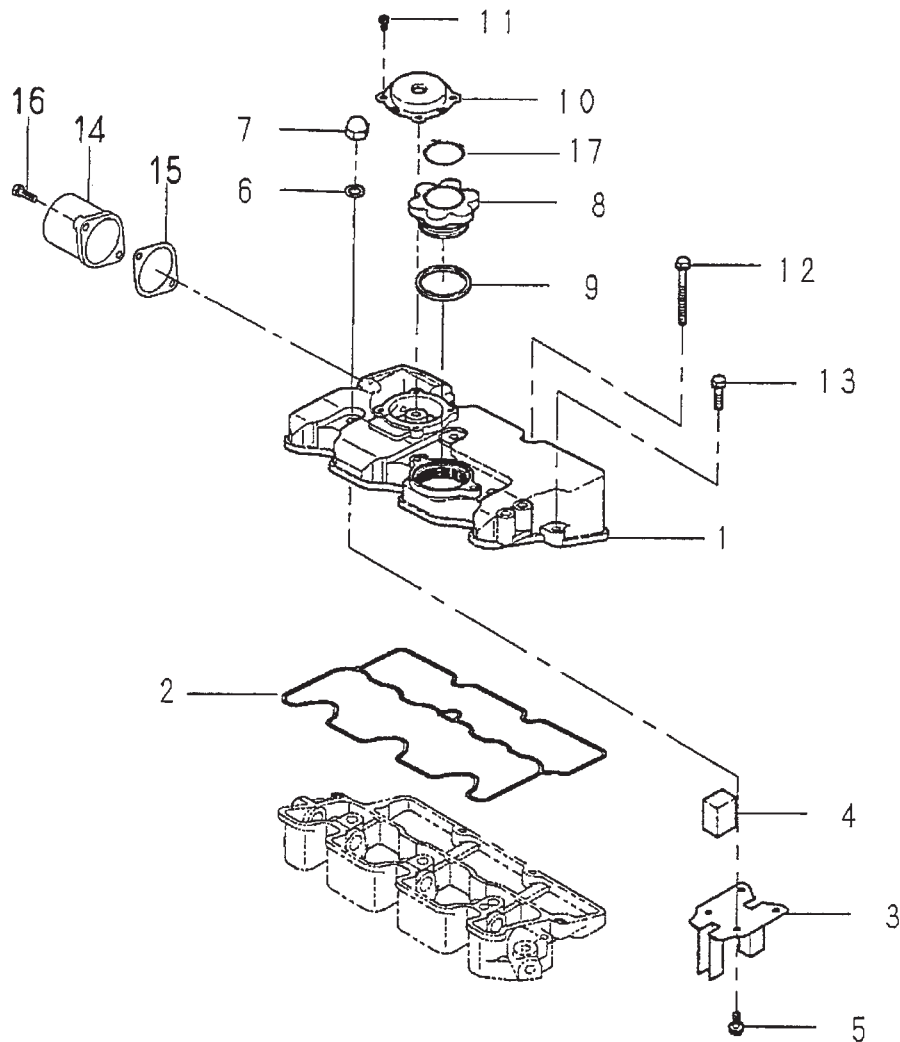
773rockercover

| KEY | PART NUMBER | QTY | DESCRIPTION                                                          | SERIAL NUMBER |
|-----|-------------|-----|----------------------------------------------------------------------|---------------|
| 1   | 120037130   | 1   | Rocker Arm Assembly (Marine, includes keys #2- 7, 16,17,19, & 20)    | -             |
|     | 120037170   | 1   | Rocker Arm Assembly (Industrial, includes keys #2-7, 16,17,19, & 20) | -             |
| 2   | 120356200   | 3   | Intake Rocker Arm                                                    | -             |
| 3   | 120356210   | 3   | Exhaust Rocker Arm                                                   | -             |
| 4   | 199486220   | 6   | Screw                                                                | -             |
| 5   | 020109076   | 6   | Nut                                                                  | -             |
| 6   | 120316300   | 1   | Rocker Arm Shaft                                                     | -             |
| 7   | 198216780   | 2   | Spring                                                               | -             |
| 8   | 011310625   | 2   | Bolt                                                                 | -             |
| 9   | 012109177   | 3   | Stud Bolt                                                            | -             |
| 10  | 023100008   | 3   | Nut                                                                  | -             |
| 11  |             | 1   | Oil Pressure Switch (see Electrical System)                          | -             |
| 12  | 140607270   | 1   | Oil Pipe                                                             | -             |
| 13  | 140996260   | 4   | Gasket                                                               | -             |
| 14  | 198486780   | 1   | Eye Bolt                                                             | -             |
| 15  | 120996150   | 1   | Gasket                                                               | -             |
| 16  | 052100120   | 1   | O-ring                                                               | -             |
| 17  | 199280280   | 4   | Shim                                                                 | -             |
| 18  | 198487590   | 1   | Banjo Bolt (Tapped 1/8 NPT Female)                                   | -             |
| 19  | 198436150   | 1   | Plug                                                                 | -             |
| 20  | 015100410   | 1   | Screw                                                                | -             |

GROUP 1 – ENGINE

**Rocker Arm Cover**

M773LW3

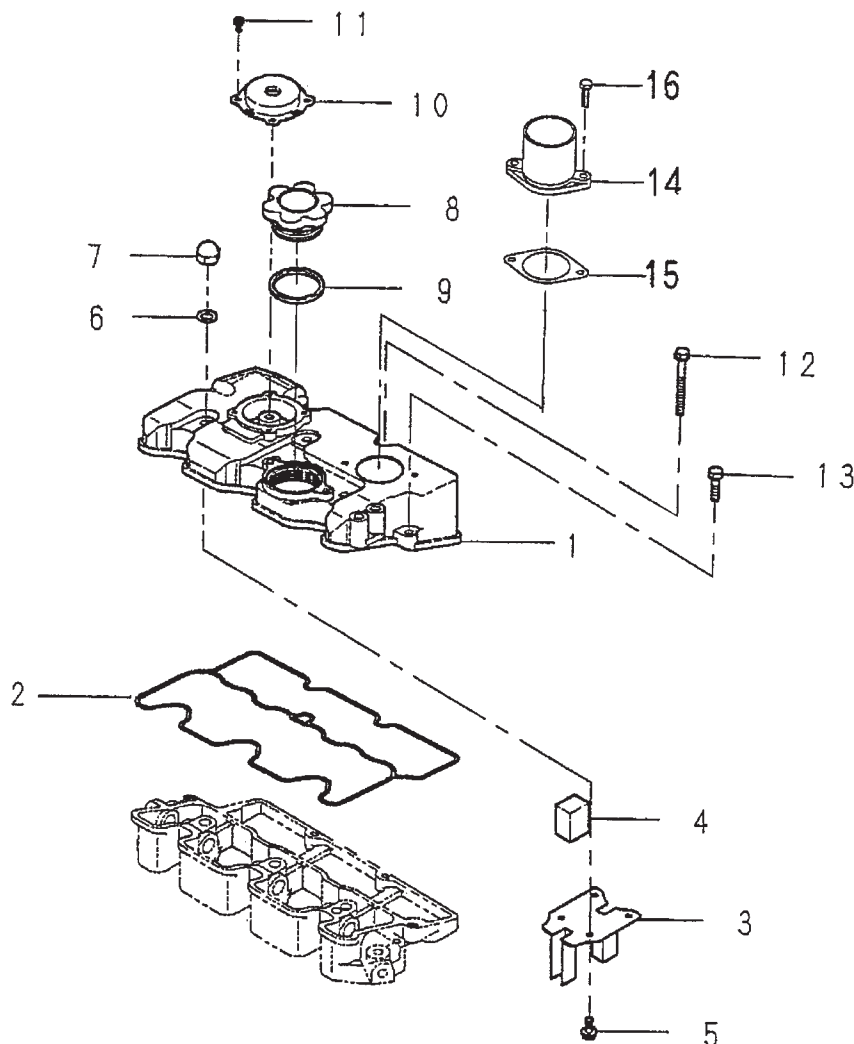


773rockerarmcover

| KEY | PART NUMBER | QTY | DESCRIPTION      | SERIAL NUMBER |
|-----|-------------|-----|------------------|---------------|
| 1   | 111217960   | 1   | Rocker Arm Cover | -             |
| 2   | 111996420   | 1   | Gasket           | -             |
| 3   | 110666220   | 1   | Baffle           | -             |
| 4   | 110666060   | 1   | Vent Filter      | -             |
| 5   | 015600406   | 4   | Screw            | -             |
| 6   | 140996260   | 3   | Gasket           | -             |
| 7   | 024600008   | 3   | Cap nut          | -             |
| 8   | 198436010   | 1   | Cap              | -             |
| 9   | 052100400   | 1   | O-ring           | -             |
| 10  | 110566080   | 1   | Valve            | -             |
| 11  | 011100408   | 4   | Bolt             | -             |
| 12  | 011310680   | 3   | Bolt             | -             |
| 13  | 011310625   | 2   | Bolt             | -             |
| 14  | 135566610   | 1   | Air Intake       | -             |
| 15  | 135996751   | 1   | Gasket           | -             |
| 16  | 011310620   | 2   | Bolt             | -             |
| 17  | 390190460   | 1   | Caution Label    | -             |

**Rocker Arm Cover & Intake**

NL773LW3



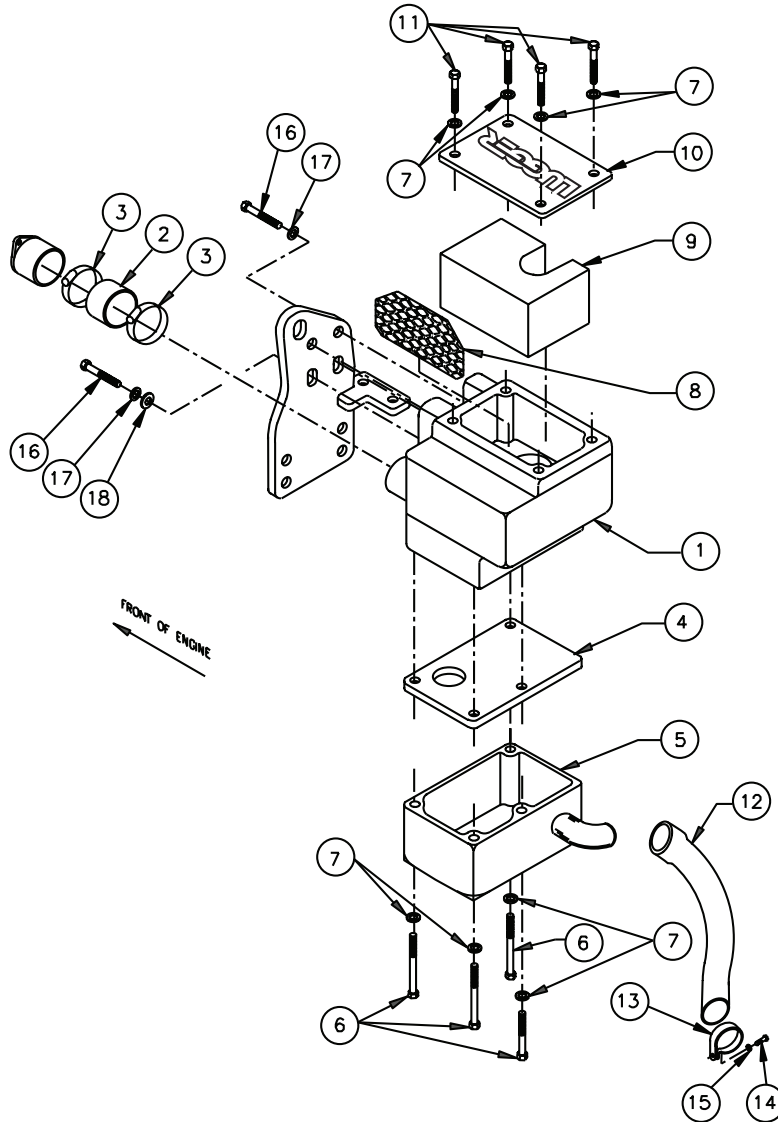
773rockerarmcover

| KEY | PART NUMBER | QTY | DESCRIPTION      | SERIAL NUMBER |
|-----|-------------|-----|------------------|---------------|
| 1   | 111210140   | 1   | Rocker Arm Cover | -             |
| 2   | 111996420   | 1   | Gasket           | -             |
| 3   | 110666220   | 1   | Baffle           | -             |
| 4   | 110666060   | 1   | Breather Element | -             |
| 5   | 015600406   | 4   | Screw            | -             |
| 6   | 140996260   | 3   | Gasket           | -             |
| 7   | 024600008   | 3   | Cap Nut          | -             |
| 8   | 198436010   | 1   | Cap              | -             |
| 9   | 052100400   | 1   | O-ring           | -             |
| 10  | 110566080   | 1   | Valve, Breather  | -             |
| 11  | 011100408   | 4   | Bolt             | -             |
| 12  | 011310680   | 3   | Bolt             | -             |
| 13  | 011310625   | 2   | Bolt             | -             |
| 14  | 135566630   | 1   | Air Intake       | -             |
| 15  | 135996751   | 1   | Gasket           | -             |
| 16  | 011310620   | 2   | Bolt             | -             |

GROUP 2 – INTAKE AND EXHAUST

**Air Filter and Housing**

M773LW3

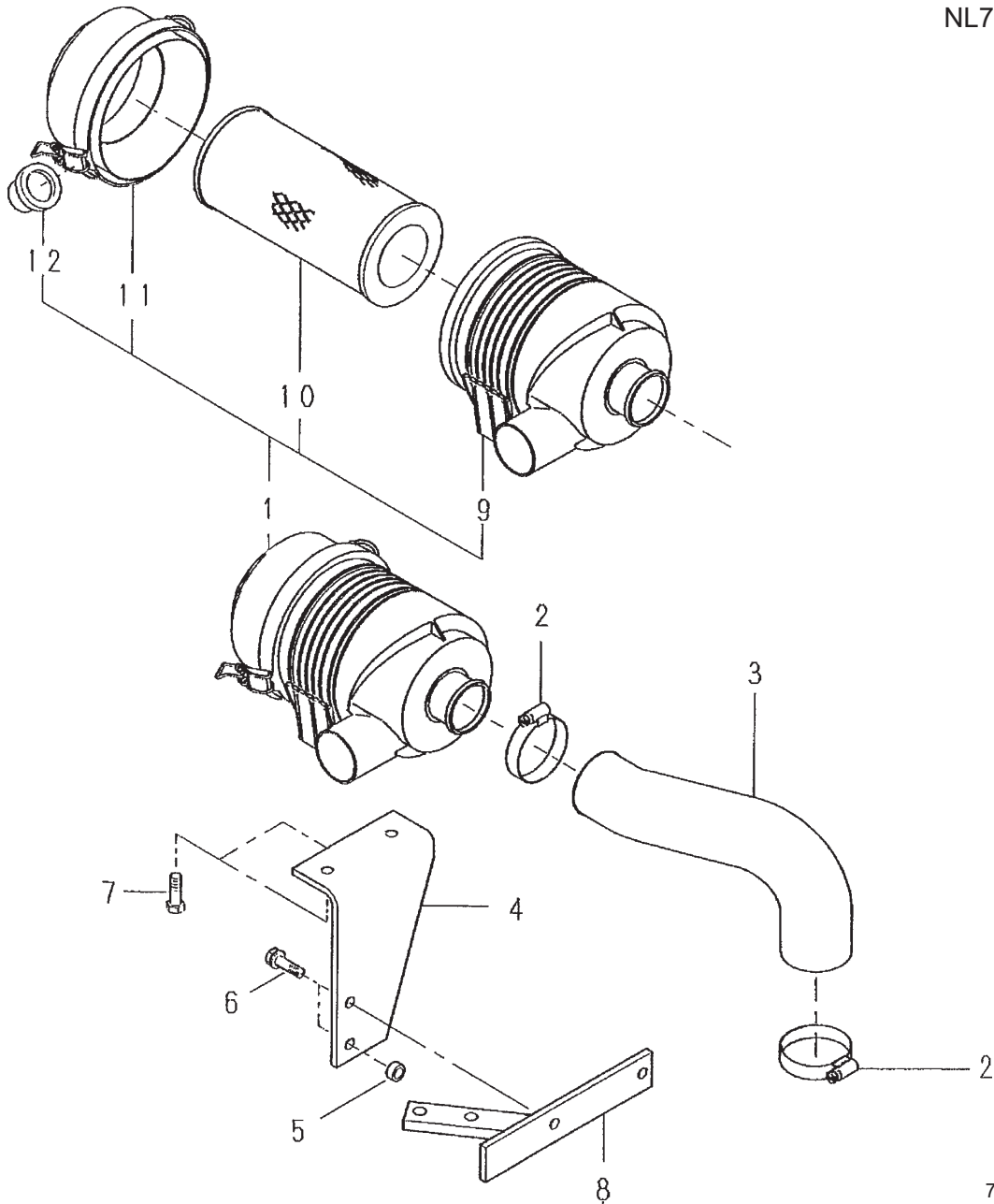


A-10836C / C-5742

| KEY | PART NUMBER | QTY | DESCRIPTION                              | SERIAL NUMBER |
|-----|-------------|-----|------------------------------------------|---------------|
| 1   | 10-28202    | 1   | Housing                                  | -             |
| 2   | 18-28201    | 1   | Hose 1- 5/8" ID x 1- 3/4" 3 Ply Silicone | -             |
| 3   | 19-01024    | 2   | Hose Clamp #24                           | -             |
| 4   | 28-28601    | 1   | Silencer Plate                           | -             |
| 5   | 10-28603    | 1   | Cover                                    | -             |
| 6   | 12-09124    | 4   | Capscrew, Hex Head M6 x 1.0 x 50 mm S/S  | -             |
| 7   | 15-01134    | 8   | Flat Washer M6 S/S                       | -             |
| 8   | 24-28601    | 1   | Screen                                   | -             |
| 9   | 24-28602    | 1   | Air Filter Element                       | -             |
| 10  | 10-28602    | 1   | Cover                                    | -             |
| 11  | 12-09131    | 4   | Capscrew, Hex Head M6 x 1.0 x 20 mm S/S  | -             |
| 12  | 18-28601    | 1   | Hose, Air Intake                         | -             |
| 13  | 19-70022    | 1   | Cushion Clamp #22                        | -             |
| 14  | 12-09751    | 1   | Capscrew, Hex Head M8 x 1.25 x 16 mm S/S | -             |
| 15  | 15-00706    | 1   | Flat Washer M8 S/S                       | -             |
| 16  | 12-09712    | 4   | Capscrew, Hex Head M8 x 1.25 x 25 mm     | -             |
| 17  | 15-00705    | 4   | Lock Washer, Helical M8 S/S              | -             |
| 18  | 15-00706    | 2   | Flat Washer M8 S/S                       | -             |

**Air Filter and Housing**

NL773LW3



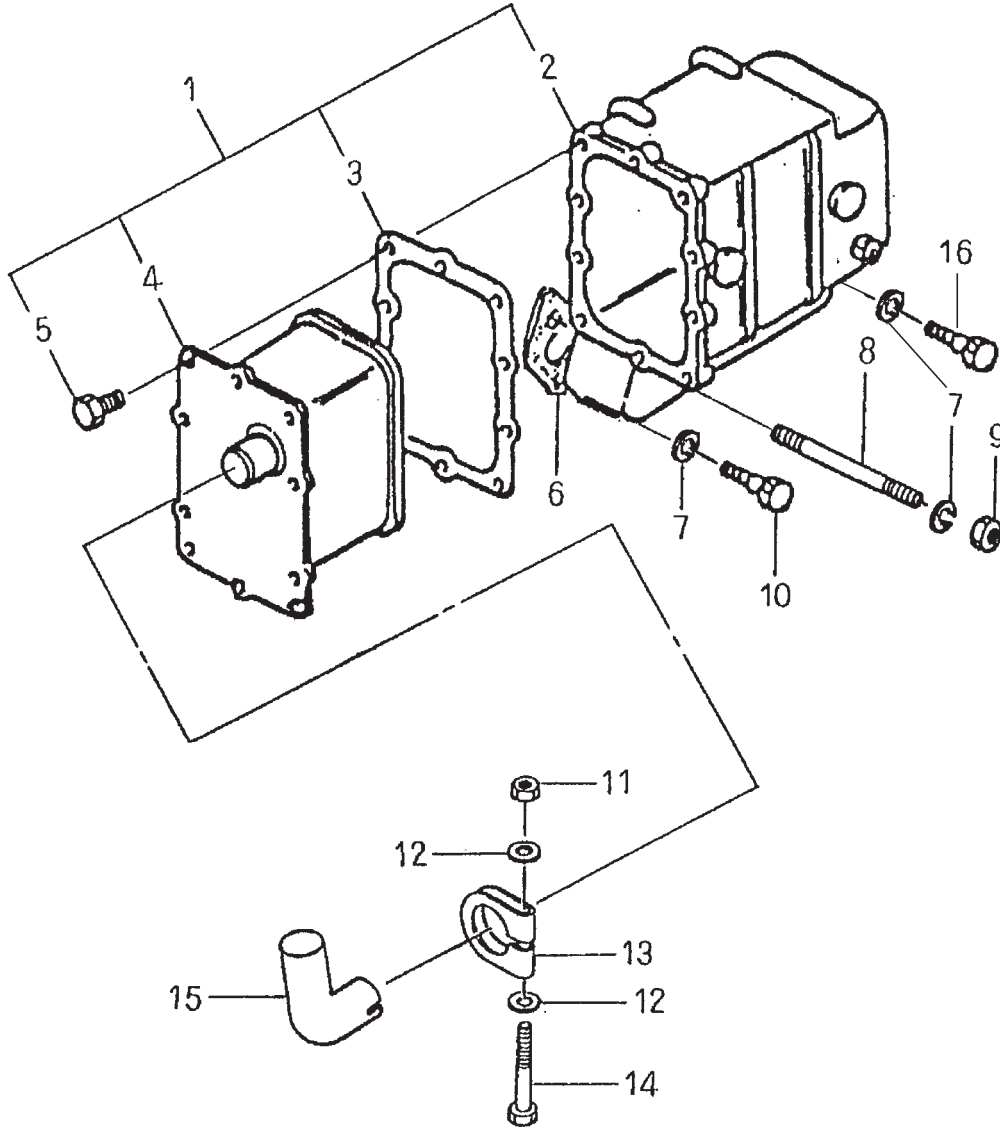
773aircleaner

| KEY | PART NUMBER | QTY | DESCRIPTION                                | SERIAL NUMBER |
|-----|-------------|-----|--------------------------------------------|---------------|
| 1   | 135016310   | 1   | Air Cleaner Assembly (includes keys #9-12) | -             |
| 2   | 19-00032    | 2   | Hose Band                                  | -             |
| 3   | 135597900   | 1   | Hose                                       | -             |
| 4   | 135976610   | 1   | Bracket                                    | -             |
| 5   | 199236730   | 1   | Collar                                     | -             |
| 6   | 011510825   | 2   | Bolt                                       | -             |
| 7   | 011510820   | 2   | Bolt                                       | -             |
| 8   | 131976050   | 1   | Bracket                                    | -             |
| 9   | 135326200   | 1   | Filter Housing                             | -             |
| 10  | 24-27301    | 1   | Element                                    | -             |
| 11  | 135326201   | 1   | Cover                                      | -             |
| 12  | 314531163   | 1   | Valve                                      | -             |

GROUP 2 – INTAKE & EXHAUST SYSTEM

**Exhaust Manifold & Muffler**

NL773L3

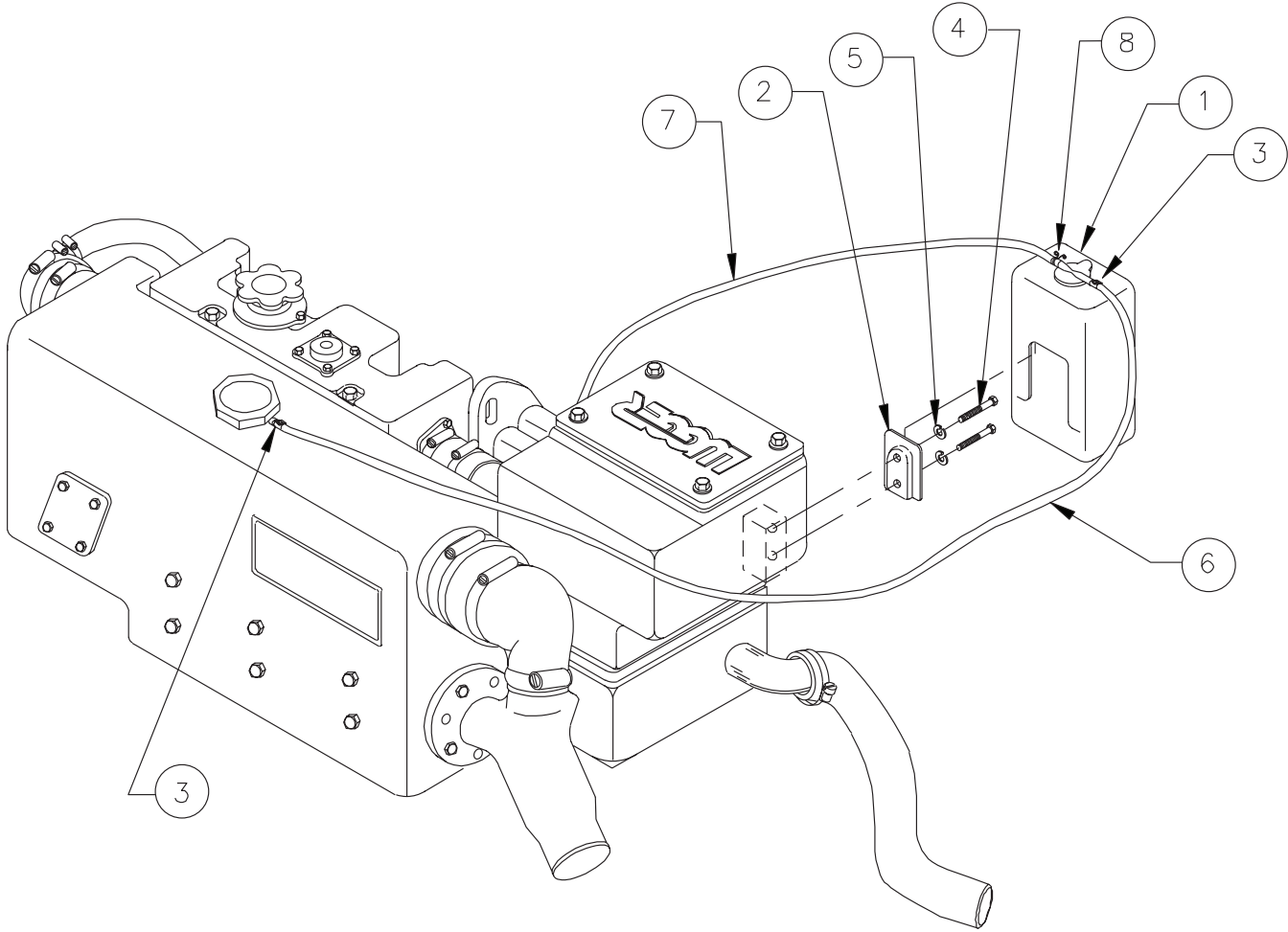


773exhmanifold

| KEY | PART NUMBER | QTY | DESCRIPTION                                     | SERIAL NUMBER |
|-----|-------------|-----|-------------------------------------------------|---------------|
| 1   | 135046212   | 1   | Exhaust Manifold Assembly (includes keys #2- 5) | -             |
| 2   | 135616832   | 1   | Exhaust Manifold                                | -             |
| 3   | 135996900   | 1   | Gasket                                          | -             |
| 4   | 135406170   | 1   | Housing                                         | -             |
| 5   | 011310612   | 10  | Bolt                                            | -             |
| 6   | 135996541   | 1   | Gasket                                          | -             |
| 7   | 15-01132    | 4   | Spring Washer                                   | -             |
| 8   | 012109215   | 2   | Stud                                            | -             |
| 9   | 023100006   | 2   | Nut                                             | -             |
| 10  | 010109381   | 4   | Bolt                                            | -             |
| 11  | 020900008   | 1   | Nut                                             | -             |
| 12  | 15-00701    | 2   | Washer                                          | -             |
| 13  | 408330011   | 1   | Band                                            | -             |
| 14  | 010310850   | 1   | Bolt                                            | -             |
| 15  | 135606150   | 1   | Exhaust Elbow                                   | -             |
|     | 27-38200    | 1   | Exhaust Elbow, 1- 1/4 NPT (optional)            | -             |
| 16  | 010109407   | 1   | Bolt                                            | -             |

**This Page Left Intentionally Blank**

Coolant Recovery Tank



A-9347/ B-8741

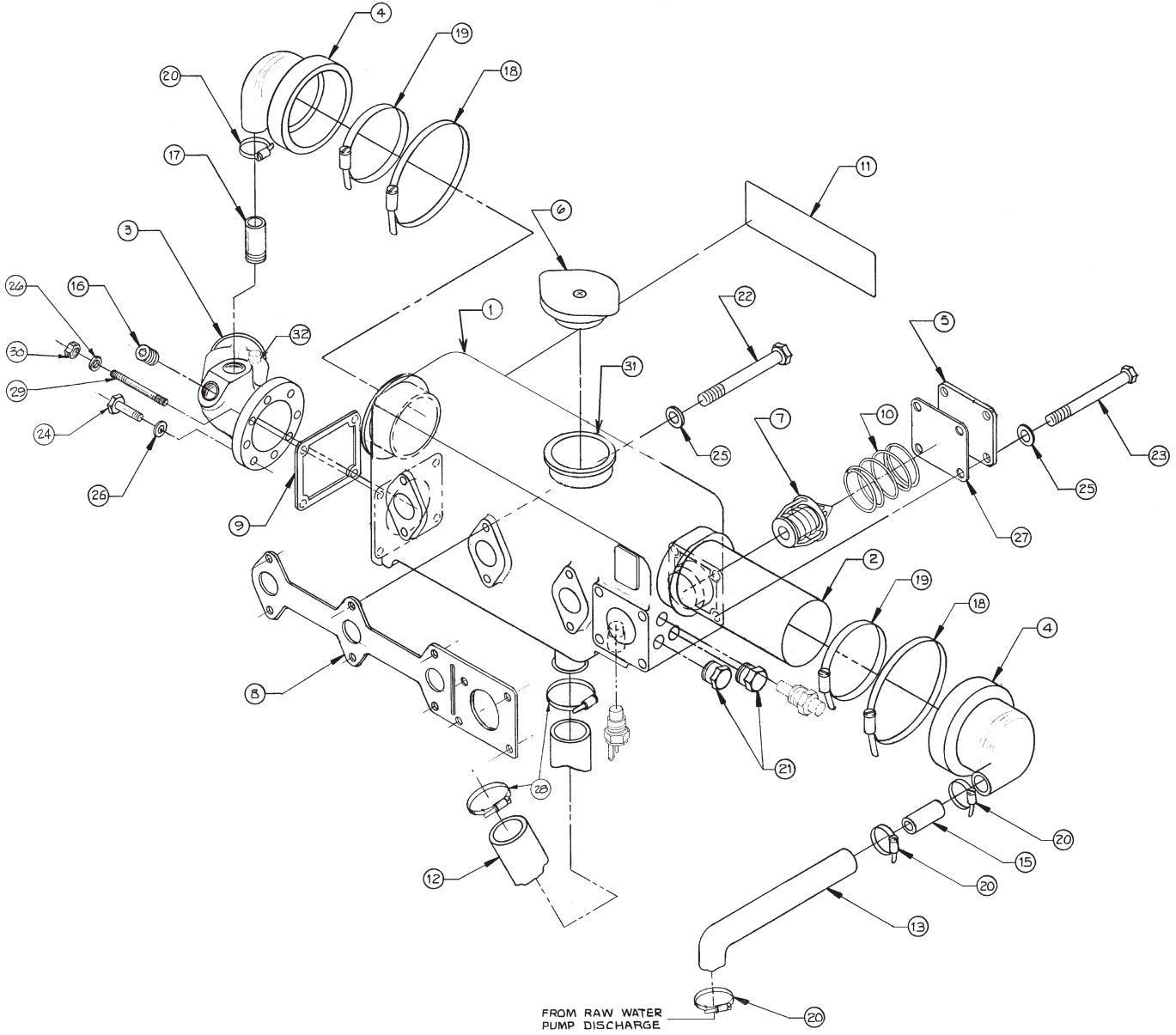
| KEY | PART NUMBER | QTY | DESCRIPTION                            | SERIAL NUMBER |
|-----|-------------|-----|----------------------------------------|---------------|
| 1   | 310550130   | 1   | Coolant Recovery Tank                  | -             |
| 2   | 222300090   | 1   | Coolant Recovery Tank 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                             | -             |



**This Page Left Intentionally Blank**

# Exhaust Manifold and Heat Exchanger

M773LW3



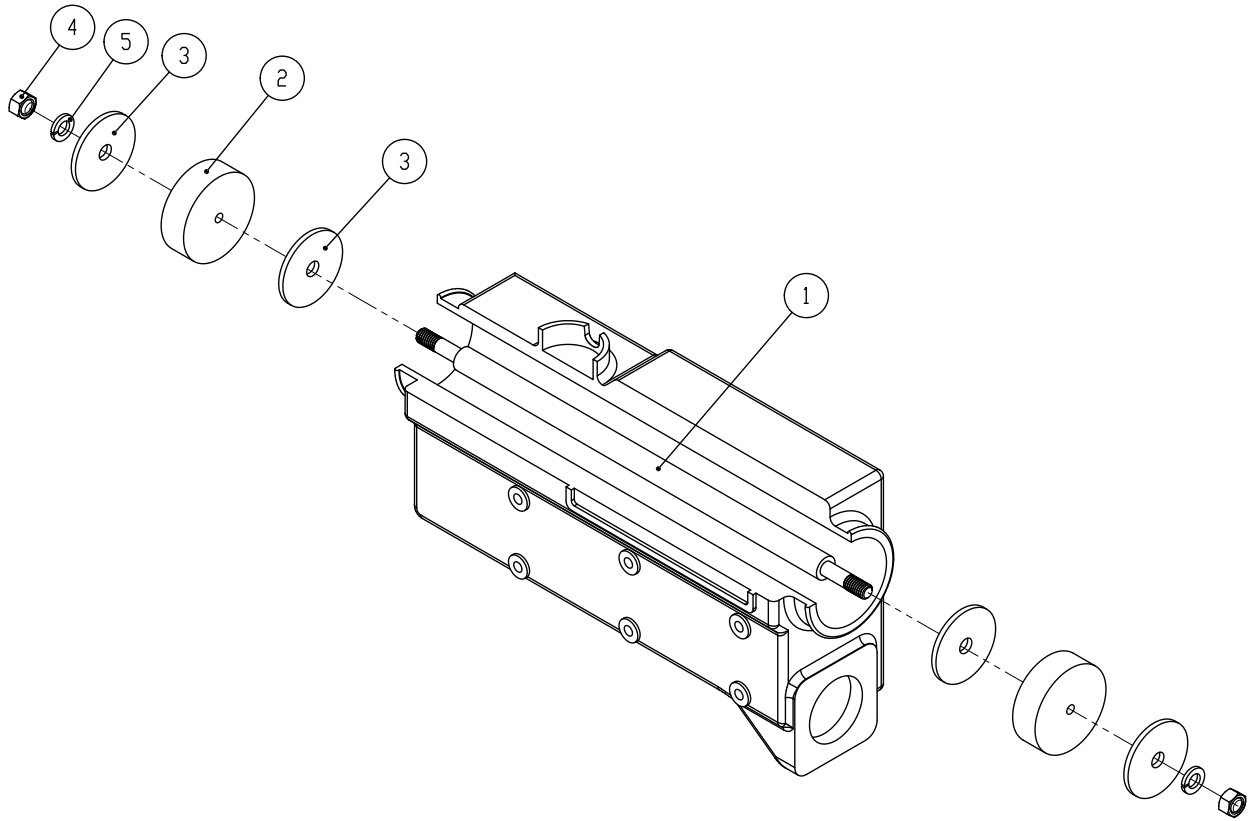
A-9289/ D-3465

## Exhaust Manifold and Heat Exchanger

M773LW3

| KEY | PART NUMBER | QTY | DESCRIPTION                                     | SERIAL NUMBER |
|-----|-------------|-----|-------------------------------------------------|---------------|
| 1   | 10-02001    | 1   | Exhaust Manifold/ Expansion Tank                | -             |
| 2   | 20-12002    | 1   | Heat Exchanger Element                          | -             |
| 3   | 27-32003    | 1   | Wet Exhaust Elbow, Stainless Steel              | -             |
|     | 27-32014    | 1   | Wet Exhaust Elbow, Cast Iron                    | -             |
| 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  | 21012012    | 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  | 22-42070    | 1   | Switch, High Exhaust Temperature                | -             |
| 33  | 22-40482    | 1   | Harness, Exhaust Temperature Switch (not shown) | -             |
|     |             |     | **As required                                   |               |

Expansion Tank & Exhaust Manifold M773L



B-11087

**Expansion Tank & Exhaust Manifold M773L**

| KEY | PART NUMBER | QTY | DESCRIPTION                                                 | SERIAL NUMBER |
|-----|-------------|-----|-------------------------------------------------------------|---------------|
| 1   | 20-12022    | 1   | Heat exchanger expansion plug connection rod (M773L - M844) | -             |
| 2   | 00-18202    | 2   | Partial expansion plug (rubber component) 2-3/8 to 2-1/2    | -             |
| 3   | 15-00039    | 4   | Washer 3/8" size with 2" OD (0.1" thickness)                | -             |
| 4   | 14-00311    | 2   | Hex Nut 3/8-16                                              | -             |
| 5   | 15-00302    | 2   | Lock washer, helical 3/8"                                   | -             |

GROUP 3 – COOLING SYSTEM

Coolant Pump

M773LW3

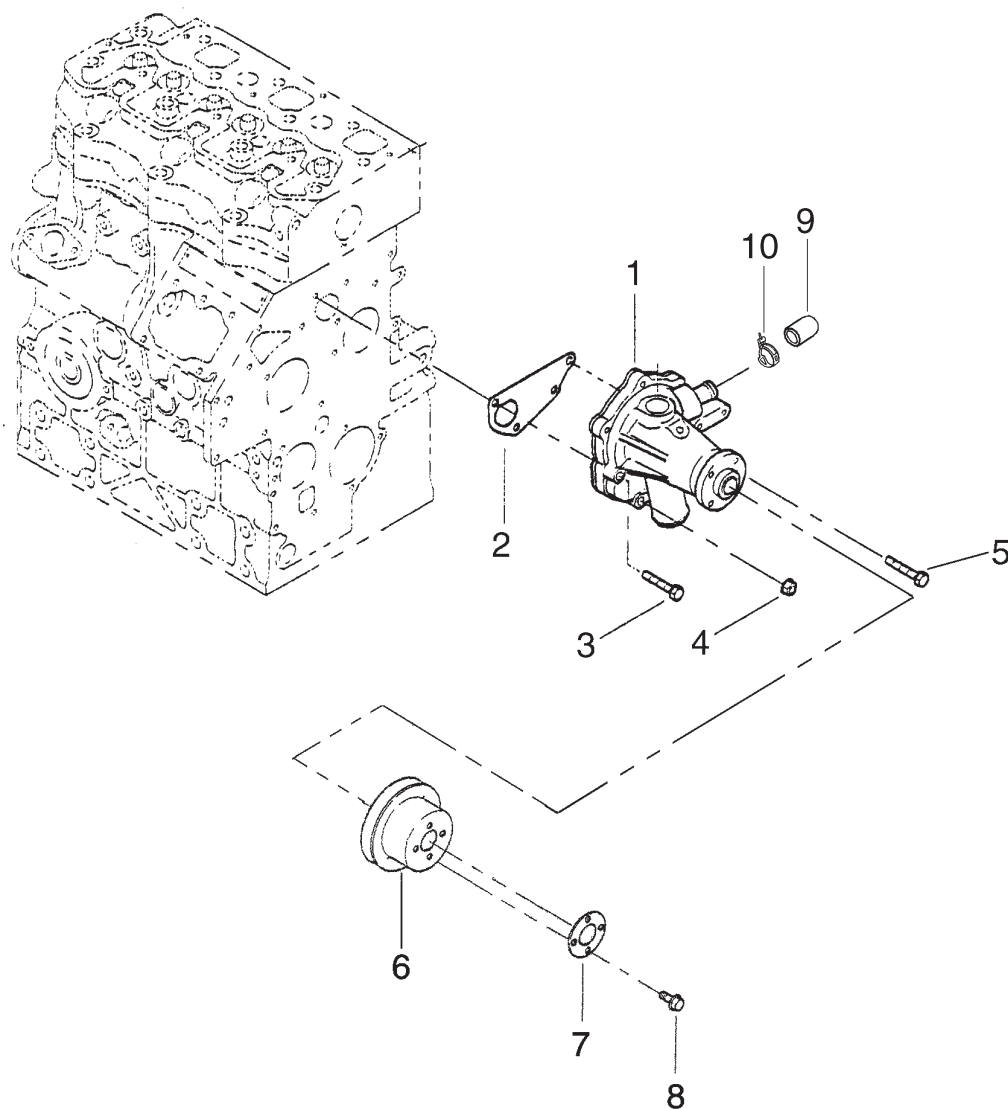
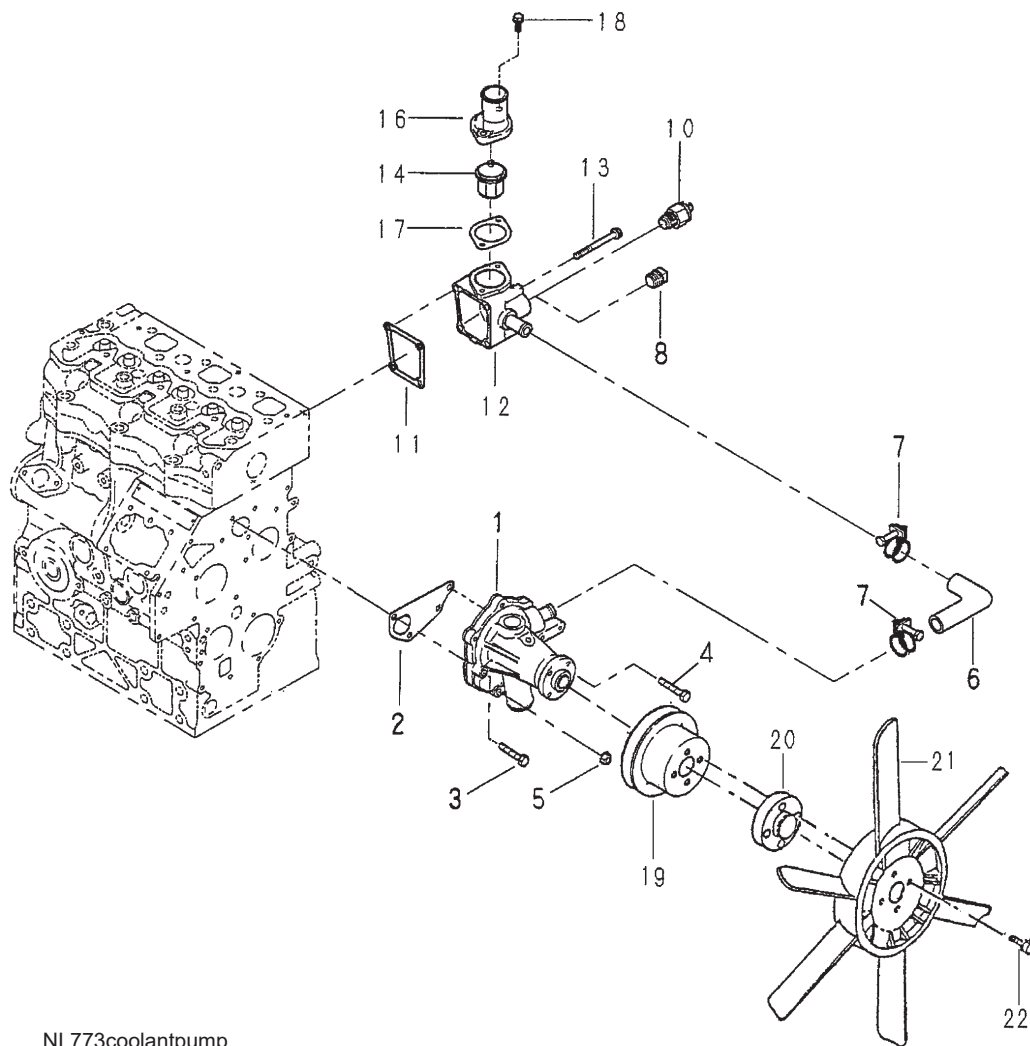


Fig. 3-2

| KEY | PART NUMBER | QTY | DESCRIPTION           | SERIAL NUMBER |
|-----|-------------|-----|-----------------------|---------------|
| 1   | 145017870   | 1   | Coolant Pump Assembly | -             |
| 2   | 145996830   | 1   | Gasket                | -             |
| 3   | 011310635   | 1   | Bolt                  | -             |
| 4   | 023100006   | 1   | Nut                   | -             |
| 5   | 011310630   | 2   | Bolt                  | -             |
| 6   | 145336490   | 1   | Pulley                | -             |
| 7   | 145386390   | 1   | Spacer                | -             |
| 8   | 011310614   | 4   | Bolt                  | -             |
| 9   | 21-18601    | 1   | Cap                   | -             |
| 10  | 19-18601    | 1   | Clamp                 | -             |

Coolant Pump and Thermostat Housing

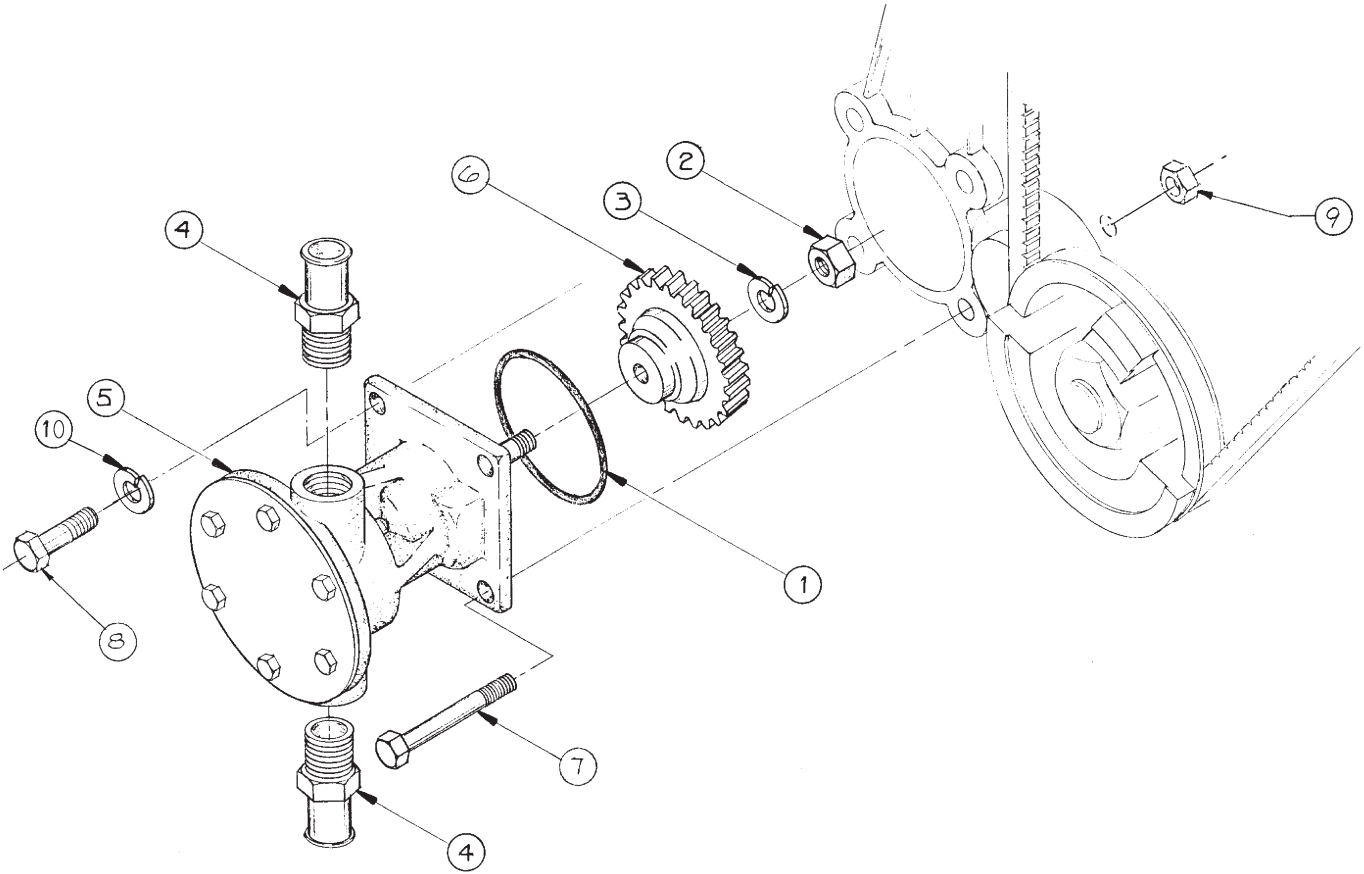
NL773LW3



NL773coolantpump

| KEY | PART NUMBER | QTY | DESCRIPTION                                      | SERIAL NUMBER |
|-----|-------------|-----|--------------------------------------------------|---------------|
| 1   | 145017870   | 1   | Coolant Pump Assembly                            | -             |
| 2   | 145996830   | 1   | Gasket                                           | -             |
| 3   | 011310635   | 1   | Bolt                                             | -             |
| 4   | 011310630   | 2   | Bolt                                             | -             |
| 5   | 023100006   | 1   | Nut                                              | -             |
| 6   | 145536051   | 1   | Hose                                             | -             |
| 7   | 19-00006    | 2   | Clamp #6                                         | -             |
| 8   | 064500030   | 1   | Plug                                             | -             |
| 10  | 385720030   | 1   | Temperature Switch 230°F (see Electrical System) | -             |
| 11  | 22-40366    | 1   | Gasket                                           | -             |
| 12  | 145216920   | 1   | Thermostat Housing                               | -             |
| 13  | 011310660   | 4   | Bolt                                             | -             |
| 14  | 145200320   | 1   | Thermostat                                       | -             |
| 16  | 145226530   | 1   | Thermostat Cover                                 | -             |
| 17  | 145996850   | 1   | Gasket                                           | -             |
| 18  | 011310620   | 1   | Bolt                                             | -             |
| 19  | 145336490   | 1   | Fan Pulley                                       | -             |
| 20  | 145386920   | 1   | Spacer                                           | -             |
| 21  | 145306380   | 1   | Cooling Fan (Blower 330 mm OD)                   | -             |
| 22  | 011310635   | 4   | Bolt                                             | -             |

**Raw Water Pump and Mounting**

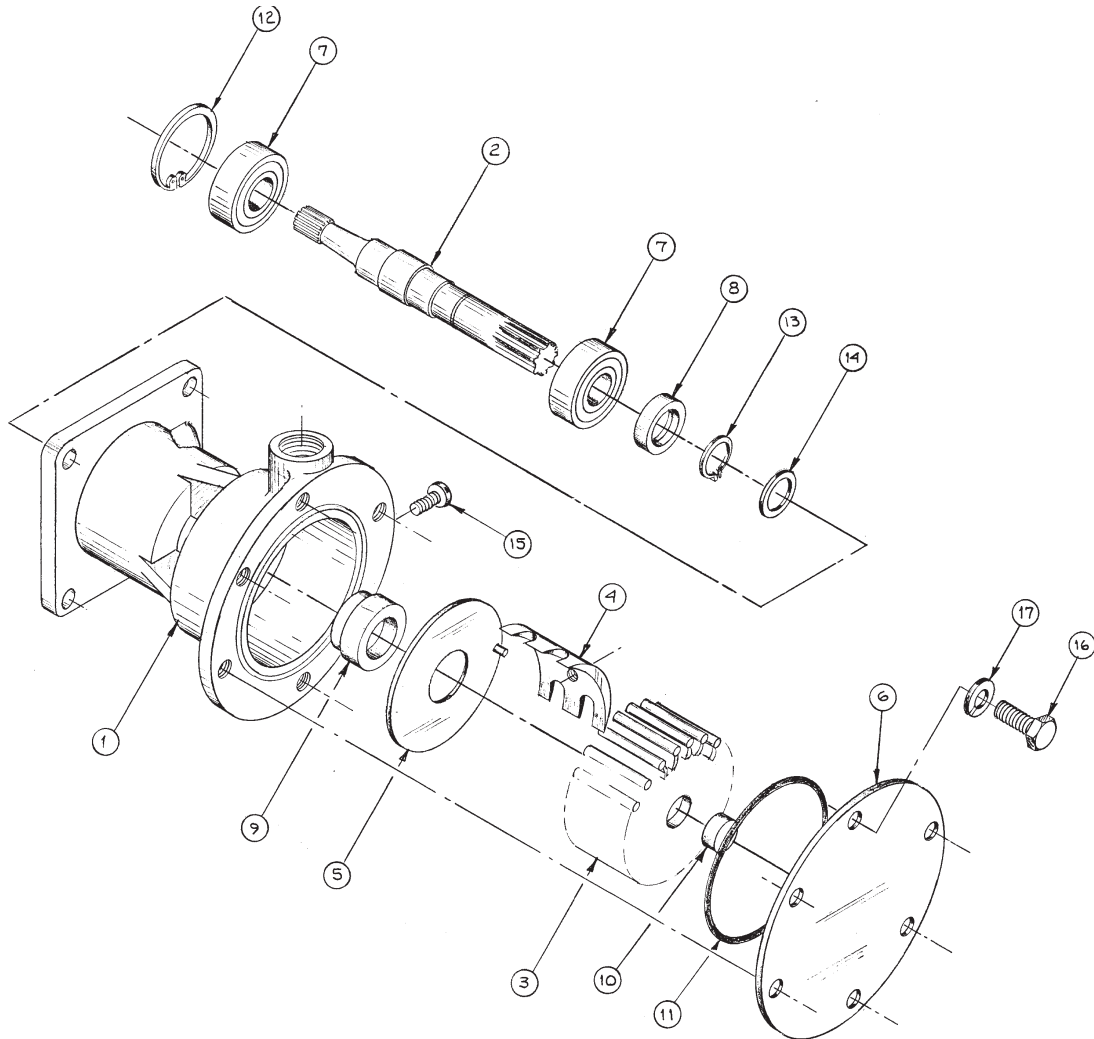


A-4779/ B-3842B

| KEY | PART NUMBER | QTY | DESCRIPTION                          | SERIAL NUMBER |
|-----|-------------|-----|--------------------------------------|---------------|
| 1   | 16-13101    | 1   | O-Ring                               | -             |
| 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 Hose Barb      | -             |
| 5   | 25-12057    | 1   | Raw Water Pump (see parts detail)    | -             |
| 6   | 340460141   | 1   | Drive Gear                           | -             |
| 7   | 12-34801    | 3   | Capscrew, Hex Head M8 x 1.25 x 70 mm | -             |
| 8   | 12-00718    | 1   | Capscrew, Hex Head M8 x 1.25 x 65 mm | -             |
| 9   | 023100008   | 3   | Hex Nut M8 x 1.25, Flanged           | -             |
| 10  | 15-00702    | 1   | Lock Washer M8                       | -             |



Raw Water Pump Assembly

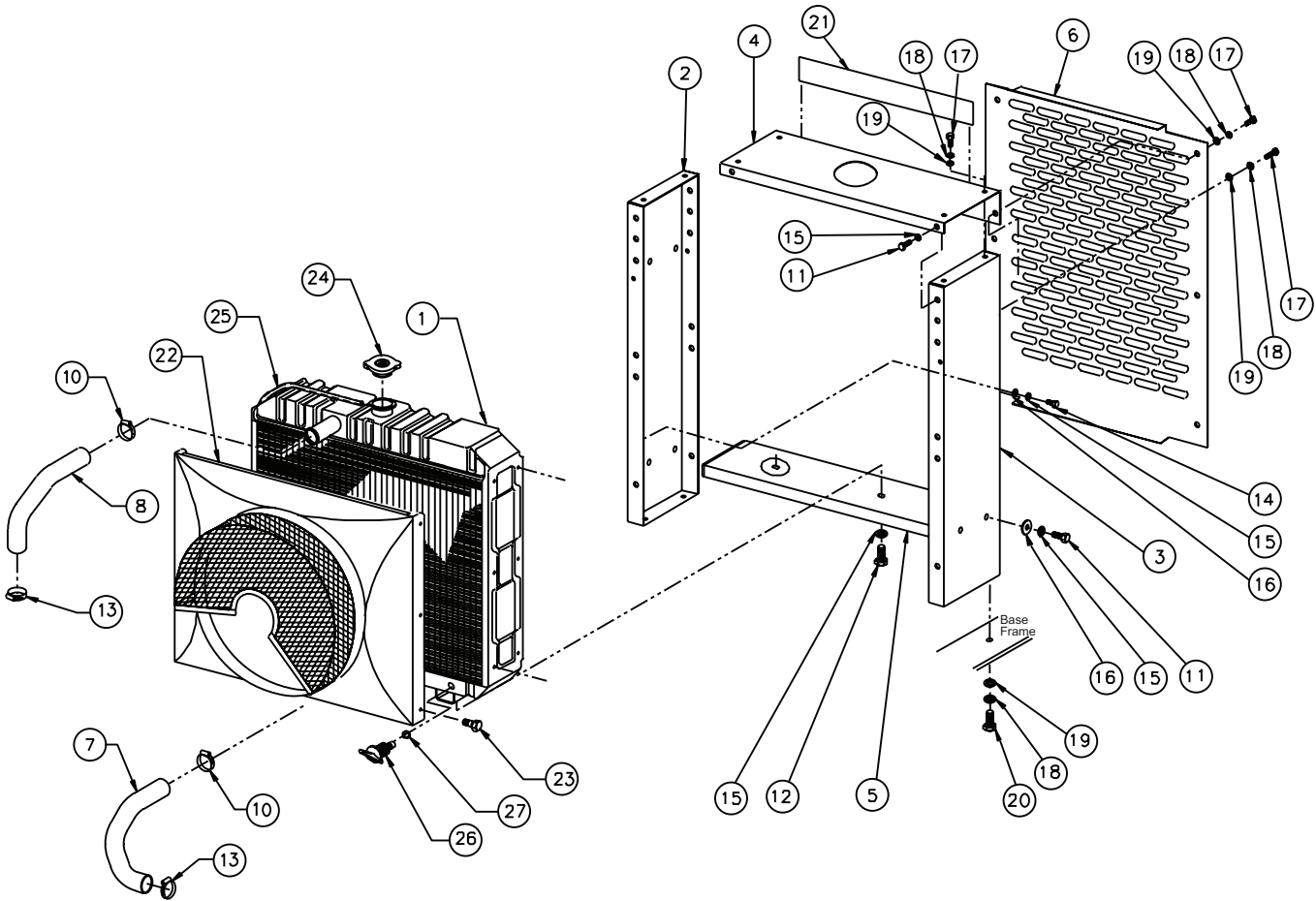


A-3706/ C-2204

| 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 Housing                          | -             |
| 2   | 25-12059    | 1   | Raw Water Pump 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    | 6   | Hex Head Screw #10-32 x 3/8                     | -             |
| 17  | 25-12073    | 6   | Split Lock Washer #10                           | -             |

Radiator and Guard, Aluminum

NL773LW3



A-11840/ D-3494z

## Radiator and Guard, Aluminum

NL773LW3

| KEY | PART NUMBER | QTY | DESCRIPTION                                            | SERIAL NUMBER |
|-----|-------------|-----|--------------------------------------------------------|---------------|
| 1   | 145506610   | 1   | Radiator                                               | -             |
| 2   | 39-18601    | 1   | Side Panel, Left hand                                  | -             |
| 3   | 39-18602    | 1   | Side Panel, Right hand                                 | -             |
| 4   | 39-18603    | 1   | Top Panel                                              | -             |
| 5   | 39-18604    | 1   | Radiator Support                                       | -             |
| 6   | 39-18209    | 1   | Grille                                                 | -             |
| 7   | 145537220   | 1   | Hose, Radiator Outlet                                  | -             |
| 8   | 145537440   | 1   | Hose, Radiator Inlet                                   | -             |
| 9   | 19-00016    | 2   | Hose Clamp #16                                         | -             |
| 10  | 19-00020    | 2   | Hose Clamp #20                                         | -             |
| 11  | 12-00751    | 4   | Capscrew, Hex Head M8 x 1.25 x 16 mm                   | -             |
| 12  | 12-00711    | 2   | Capscrew, Hex Head M8 x 1.25 x 20 mm                   | -             |
| 13  | 12-00753    | 1   | Capscrew, Hex Head M8 x 1.25 x 30 mm (left hand side)  | -             |
| 14  | 12-00714    | 1   | Capscrew, Hex Head M8 x 1.25 x 40 mm (right hand side) | -             |
| 15  | 15-00702    | 6   | Lock Washer, Helical M8                                | -             |
| 16  | 15-00701    | 8   | Flat Washer M8                                         | -             |
| 17  | 12-00030    | 14  | Capscrew, Hex Head M6 x 1.0 x 16 mm                    | -             |
| 18  | 15-01132    | 18  | Lock Washer, Helical M6                                | -             |
| 19  | 15-00008    | 18  | Flat Washer M6                                         | -             |
| 20  | 12-01131    | 4   | Capscrew, Hex Head M6 x 1.0 x 20 mm                    | -             |
| 21  | 00-71001    | 1   | Decal, "Northern Lights"                               | -             |
| 22  | 145546930   | 1   | Shroud with Fan Guard                                  | -             |
| 23  | 011150610   | 6   | Bolt                                                   | -             |
| 24  | 310110200   | 1   | Filler Cap                                             | -             |
| 25  | 310120170   | 2   | Overflow Hose                                          | -             |
| 26  | 21-12016    | 1   | Drain Cock                                             | -             |
| 27  | 310190477   | 1   | O-ring                                                 | -             |

Injection Pump and Lines

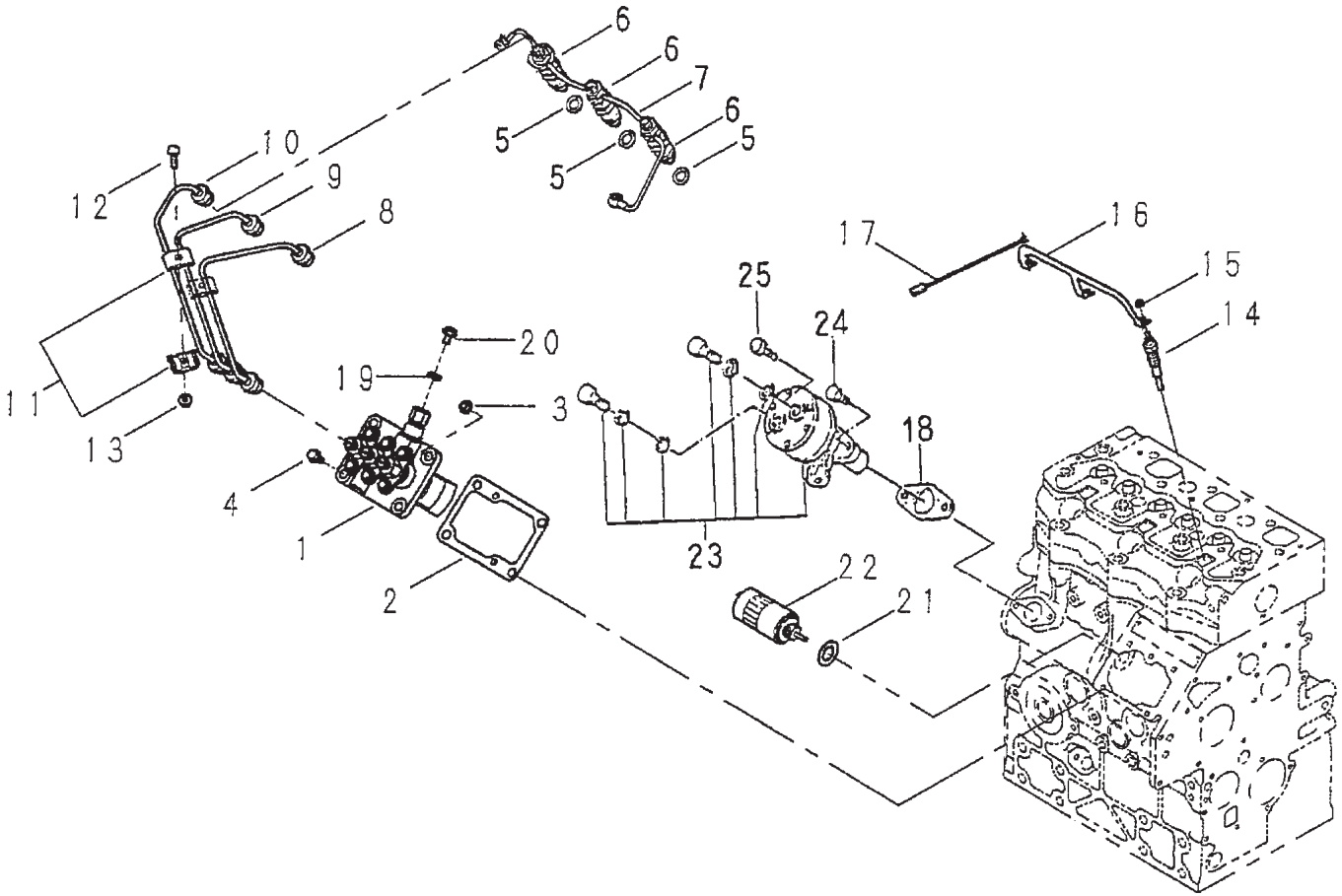


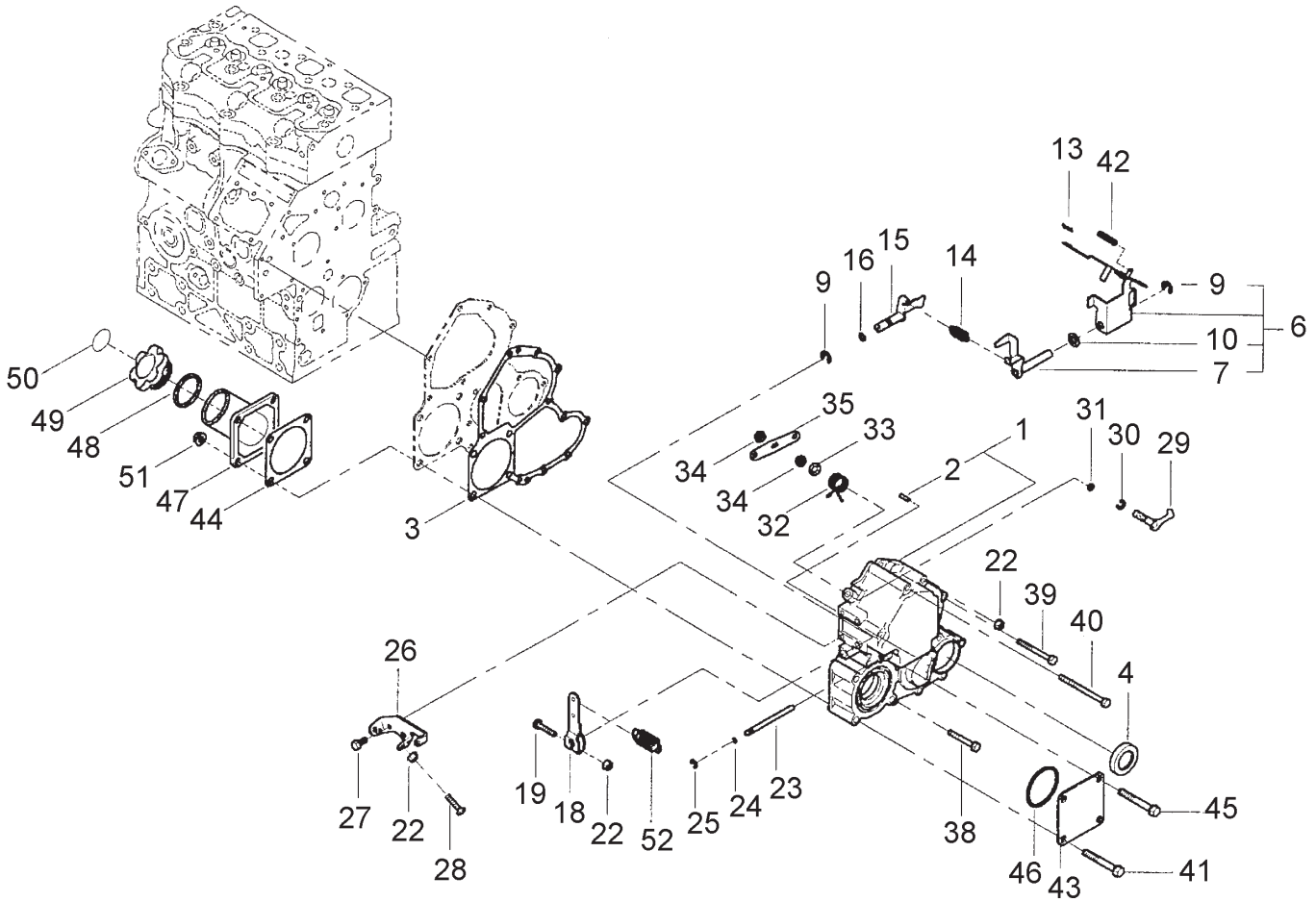
Fig. 4-00

## Injection Pump and Lines

| KEY | PART NUMBER | QTY | DESCRIPTION                       | SERIAL NUMBER |
|-----|-------------|-----|-----------------------------------|---------------|
| 1   | 131017921   | 1   | Injection Pump Assembly           | -             |
| 2   | 131426300   | 1   | Shim Set                          | -             |
| 3   | 023100006   | 2   | Nut                               | -             |
| 4   | 011310620   | 2   | Bolt                              | -             |
| 5   | 131426200   | 3   | Gasket                            | -             |
| 6   | 131406470   | 3   | Injector Assembly                 | -             |
| 7   | 131606880   | 1   | Return Line                       | -             |
| 8   | 131507740   | 1   | Injection Line #1                 | -             |
| 9   | 131507750   | 1   | Injection Line #2                 | -             |
| 10  | 131507760   | 1   | Injection Line #3                 | -             |
| 11  | 199106021   | 4   | Clamp                             | -             |
| 12  | 010110625   | 2   | Bolt                              | -             |
| 13  | 023100006   | 2   | Nut                               | -             |
| 14  | 185366220   | 3   | Glow Plug, 12 Volt                | -             |
| 15  | 023100004   | 3   | Nut                               | -             |
| 16  | 185376372   | 1   | Connector                         | -             |
| 17  | 185606170   | 1   | Wire Harness                      | -             |
| 18  | 130996130   | 1   | Gasket                            | -             |
| 19  | 025100006   | 1   | Seal Washer                       | -             |
| 20  | 131236280   | 1   | Screw                             | -             |
| 21  | 025100016   | 1   | Seal Washer                       | -             |
| 22  | 185206085   | 1   | Solenoid, 12 Volt Standard Ground | -             |
|     | 185206192   | 1   | Solenoid, 12 Volt Isolated Ground | -             |
|     | 185206203   | 1   | Solenoid, 24 Volt Isolated Ground | -             |
| 23  | 130506140   | 1   | Feed Pump                         | -             |
| 24  | 011140614   | 2   | Bolt                              | -             |
| 25  | 011140616   | 1   | Bolt                              | -             |

# Governor and Timing Gear Case

M773LW3



773governor,timinggearcase

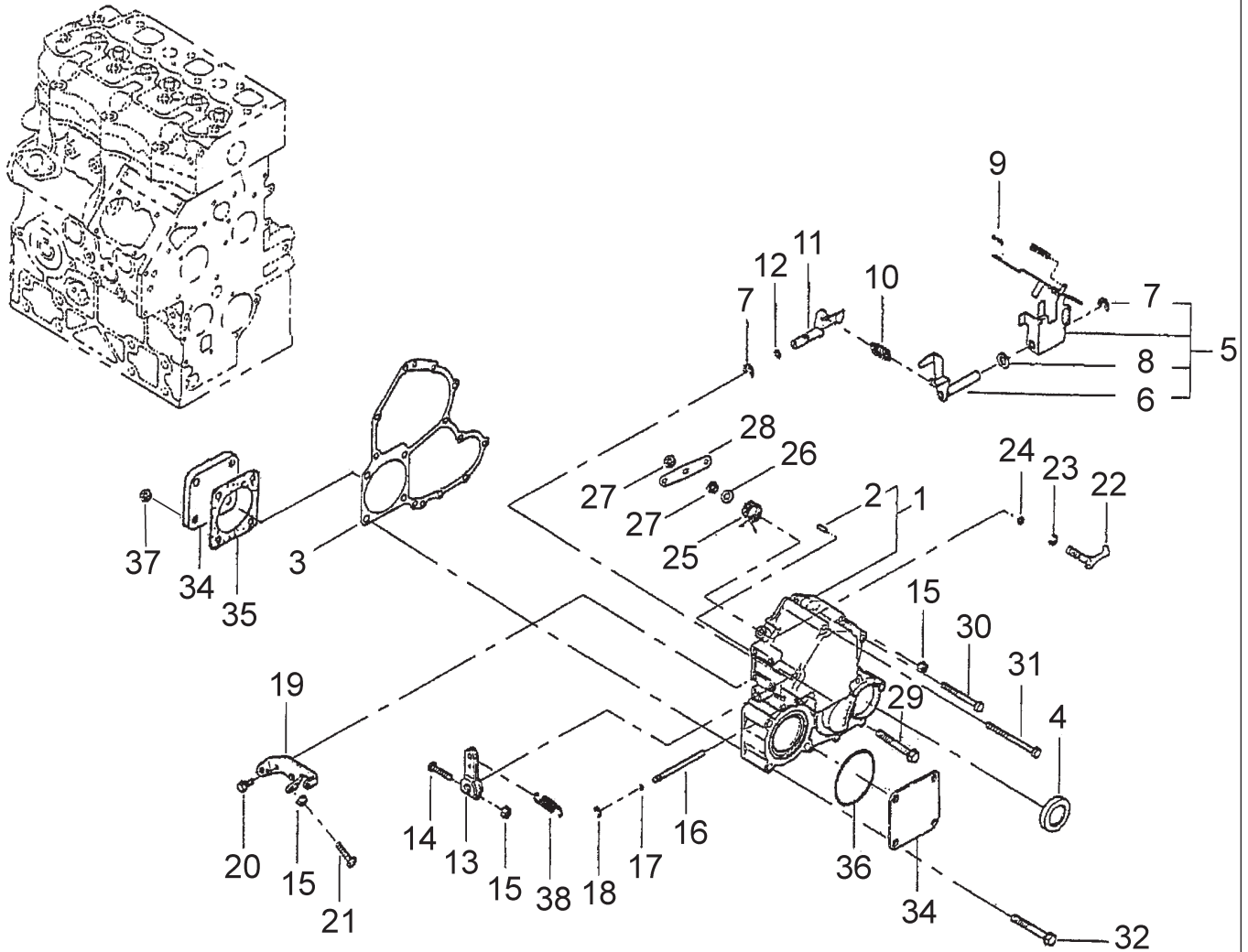
## Governor and Timing Gear Case

M773LW3

| KEY | PART NUMBER | QTY | DESCRIPTION                                      | SERIAL NUMBER |
|-----|-------------|-----|--------------------------------------------------|---------------|
| 1   | 165106111   | 1   | Timing Gear Case (includes key #2)               | -             |
| 2   | 030300410   | 1   | Spring Pin                                       | -             |
| 3   | 165996530   | 1   | Gasket                                           | -             |
| 4   | 198636140   | 1   | Oil Seal                                         | -             |
| 6   | 125046260   | 1   | Governor Lever Assembly (includes keys 7, 9, 10) | -             |
| 7   | 125406071   | 1   | Tension Lever                                    | -             |
| 9   | 036800008   | 2   | Snap Ring                                        | -             |
| 10  | 026200010   | 1   | Washer                                           | -             |
| 13  | 031100004   | 1   | Snap Pin                                         | -             |
| 14  | 198217390   | 1   | Spring                                           | -             |
| 15  | 125156250   | 1   | Armature                                         | -             |
| 16  | 052109110   | 1   | O-ring                                           | -             |
| 18  | 125416020   | 1   | Governor Lever                                   | -             |
| 19  | 010110630   | 1   | Bolt                                             | -             |
| 22  | 023100006   | 3   | Nut                                              | -             |
| 23  | 125116131   | 1   | Shaft                                            | -             |
| 24  | 052109108   | 2   | O-ring                                           | -             |
| 25  | 036800005   | 1   | Snap Ring                                        | -             |
| 26  | 125976120   | 1   | Bracket                                          | -             |
| 27  | 011310614   | 2   | Bolt                                             | -             |
| 28  | 012810640   | 1   | Bolt                                             | -             |
| 29  | 125156180   | 1   | Arm                                              | -             |
| 30  | 036800006   | 1   | Snap Ring                                        | -             |
| 31  | 052109109   | 1   | O-ring                                           | -             |
| 32  | 198216760   | 1   | Spring                                           | -             |
| 33  | 026200008   | 1   | Washer                                           | -             |
| 34  | 020700008   | 2   | Nut                                              | -             |
| 35  | 125176080   | 1   | Stop Lever                                       | -             |
| 38  | 011310640   | 5   | Bolt                                             | -             |
| 39  | 011310660   | 3   | Bolt                                             | -             |
| 40  | 011310680   | 2   | Bolt                                             | -             |
| 41  | 011510865   | 3   | Bolt                                             | -             |
| 42  | 198217420   | 1   | Start Spring                                     | -             |
| 43  | 165206320   | 1   | Cover (Keel Cooled Units Only)                   | -             |
| 44  | 11-12005    | 1   | Gasket (former #165996610)                       | -             |
| 45  | 011510860   | 1   | Bolt                                             | -             |
| 46  | 052300700   | 1   | O-ring                                           | -             |
| 47  | 110766200   | 1   | Holder                                           | -             |
| 48  | 052100400   | 1   | O-ring                                           | -             |
| 49  | 198436010   | 1   | Cap                                              | -             |
| 50  | 390190460   | 1   | Plate                                            | -             |
| 51  | 023100008   | 3   | Nut                                              | -             |
| 52  | 398210070   | 1   | Spring                                           | -             |

# Governor Housing and Timing Gear Case

NL773LW3



773governor,timinggearcase

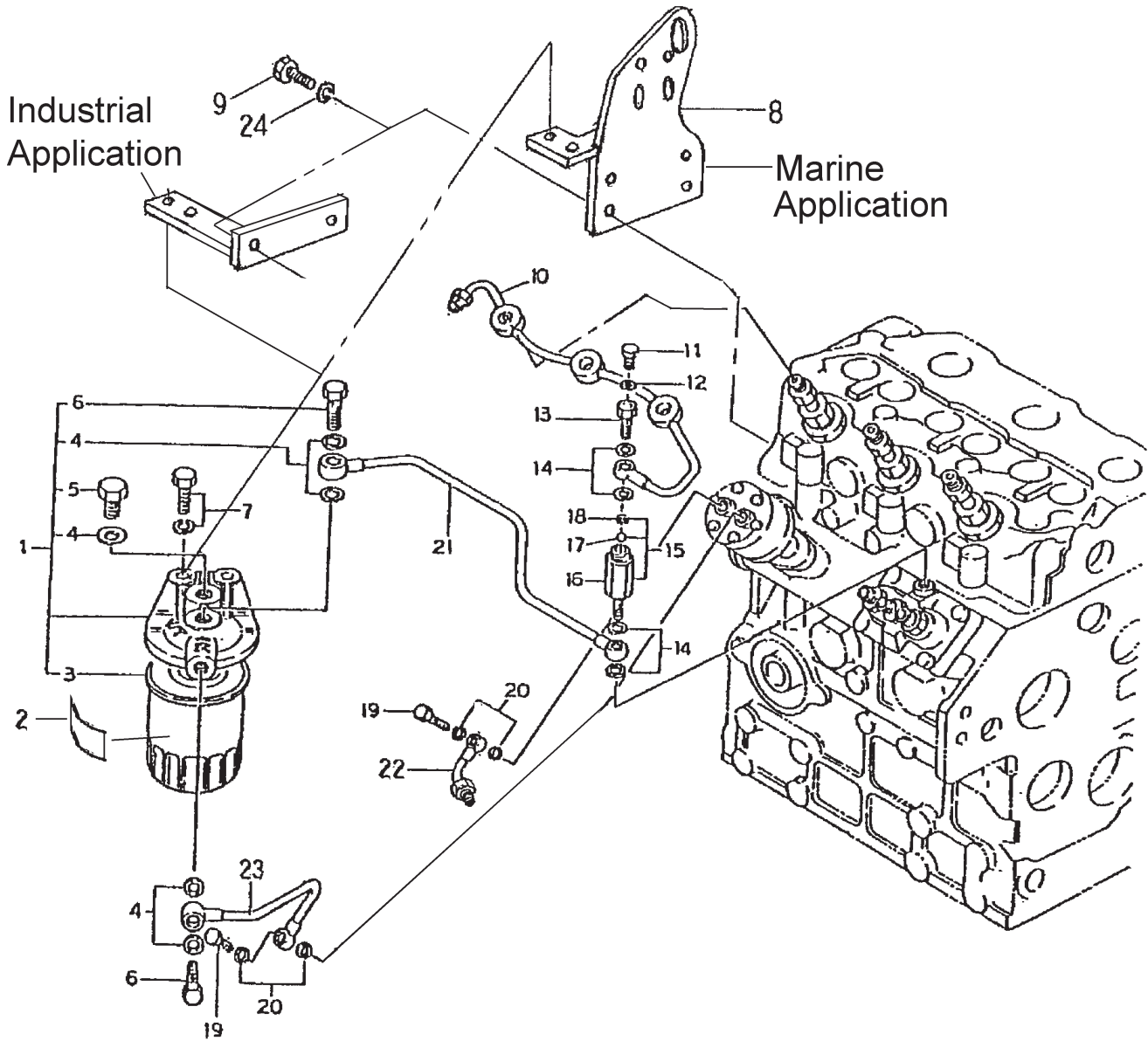


## Governor Housing and Timing Gear Case

NL773LW3

| KEY | PART NUMBER | QTY | DESCRIPTION                                      | SERIAL NUMBER |
|-----|-------------|-----|--------------------------------------------------|---------------|
| 1   | 165106071   | 1   | Timing Gear Case ( includes key #2)              | -             |
| 2   | 030300410   | 1   | Spring Pin                                       | -             |
| 3   | 165996530   | 1   | Gasket                                           | -             |
| 4   | 198636140   | 1   | Oil Seal                                         | -             |
| 5   | 125046260   | 1   | Governor Lever Assembly (includes keys #6, 7, 8) | -             |
| 6   | 125406071   | 1   | Tension Lever                                    | -             |
| 7   | 036800008   | 2   | Snap Ring                                        | -             |
| 8   | 026200010   | 1   | Washer                                           | -             |
| 9   | 031100004   | 1   | Snap Pin                                         | -             |
| 10  | 198217390   | 1   | Spring                                           | -             |
| 11  | 125156250   | 1   | Armature                                         | -             |
| 12  | 052109110   | 1   | O-ring                                           | -             |
| 13  | 125416020   | 1   | Governor Lever                                   | -             |
| 14  | 010110630   | 1   | Bolt                                             | -             |
| 15  | 023100006   | 3   | Nut                                              | -             |
| 16  | 125116131   | 1   | Shaft                                            | -             |
| 17  | 052109108   | 2   | O-ring                                           | -             |
| 18  | 036800005   | 1   | Snap Ring                                        | -             |
| 19  | 125976120   | 1   | Bracket                                          | -             |
| 20  | 011310614   | 2   | Bolt                                             | -             |
| 21  | 012810640   | 1   | Bolt                                             | -             |
| 22  | 125156180   | 1   | Armature                                         | -             |
| 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  | 011310640   | 5   | Bolt                                             | -             |
| 30  | 011310660   | 3   | Bolt                                             | -             |
| 31  | 011310680   | 2   | Bolt                                             | -             |
| 32  | 010310865   | 4   | Bolt                                             | -             |
| 33  | 198217420   | 1   | Start Spring                                     | -             |
| 34  | 165206150   | 2   | Cover                                            | -             |
| 35  | 11-12005    | 1   | Gasket (former #165996610)                       | -             |
| 36  | 052300700   | 1   | O-ring                                           | -             |
| 37  | 023100008   | 4   | Nut                                              | -             |
| 38  | 398210070   | 1   | Spring                                           | -             |

Fuel Filter and Piping



773fuelfilter

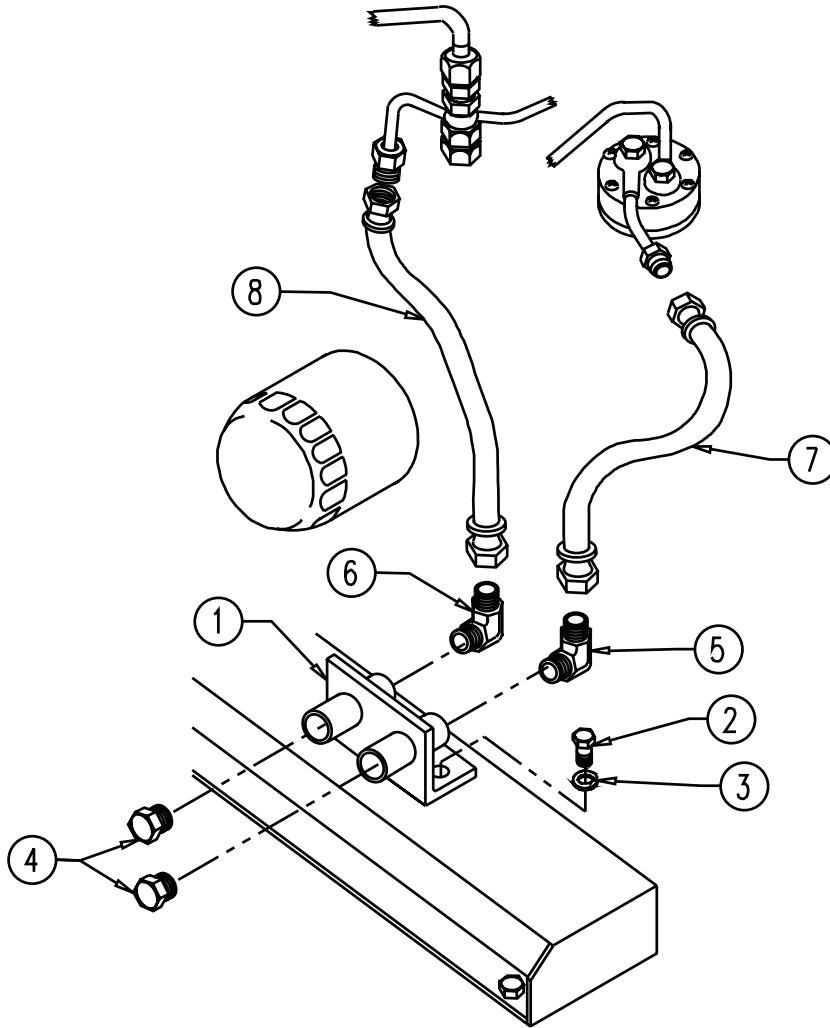
## Fuel Filter and Piping

| KEY | PART NUMBER | QTY | DESCRIPTION                                    | SERIAL NUMBER |
|-----|-------------|-----|------------------------------------------------|---------------|
| 1   | 130306190   | 1   | Fuel Filter Assembly (includes keys #3 - 6)    | -             |
| 2   | 190196830   | 1   | Caution Label                                  | -             |
| 3   | 24-52020    | 1   | Fuel Filter                                    | -             |
| 4   | 130326051   | 5   | Gasket                                         | -             |
| 5   | 130396030   | 1   | Plug                                           | -             |
| 6   | 130436011   | 2   | Joint Bolt                                     | -             |
| 7   | 011511025   | 2   | Bolt                                           | -             |
| 8   | 23-08603    | 1   | Bracket, Filter Support & Lifting Eye (Marine) | -             |
|     | 131976050   | 1   | Bracket (Industrial)                           | -             |
| 9   | 010700820   | 4   | Bolt                                           | -             |
| 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 (includes keys 16- 18)          | -             |
| 16  | 198487002   | 1   | Connector                                      | -             |
| 17  | 048100010   | 1   | Steel Ball                                     | -             |
| 18  | 198116230   | 1   | Rubber                                         | -             |
| 19  | 130516092   | 2   | Bolt                                           | -             |
| 20  | 140996200   | 4   | Gasket                                         | -             |
| 21  | 130556921   | 1   | Pipe (Marine)                                  | -             |
|     | 130556960   | 1   | Pipe (Industrial)                              | -             |
| 22  | 130556681   | 1   | Pipe                                           | -             |
| 23  | 130556931   | 1   | Pipe (Marine)                                  | -             |
|     | 130556970   | 1   | Pipe (Industrial)                              | -             |
| 24  | 15-00702    | 4   | Spring Washer                                  | -             |

GROUP 4 – FUEL SYSTEM

**USCG SAE J1527 ISO 7840 Fuel Lines**

M773LW3 Up to S/N xxxx-46361C  
 NL773LW3 All

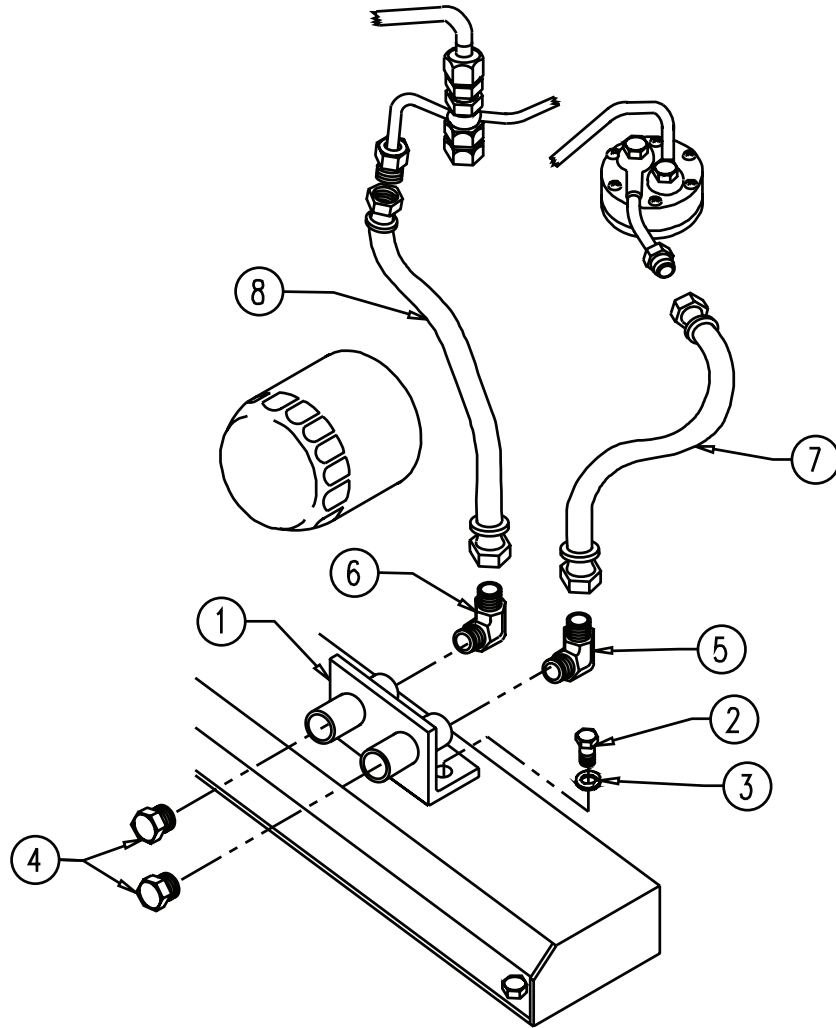


A-118520/ B-9278

| KEY | PART NUMBER | QTY | DESCRIPTION                              | SERIAL NUMBER |
|-----|-------------|-----|------------------------------------------|---------------|
| 1   | 10-51099    | 1   | Fuel Manifold 1/4 NPT                    | -             |
| 2   | 12-01102    | 2   | Capscrew, Hex Head M6 x 1.0 x 16 mm S/S  | -             |
| 3   | 15-00610    | 2   | Lock Washer, Helical M6 S/S              | -             |
| 4   | 21-31624    | 2   | Plug, Hex Head Brass 1/4 NPT             | -             |
| 5   | 21-52245    | 1   | Male Elbow 90°, Brass 1/4 NPT x 5/16-45T | -             |
| 6   | 21-71044    | 1   | Male Elbow 90°, Brass 1/4 NPT x 1/4-45T  | -             |
| 7   | 18-58602    | 1   | Hose Assembly 1/4" ID x 12-1/2"          | -             |
| 8   | 18-58603    | 1   | Hose Assembly 1/4" ID x 19"              | -             |

**USCG SAE J1942 ABS Fuel Lines**

M773LW3 Up to S/N xxxx-46361C



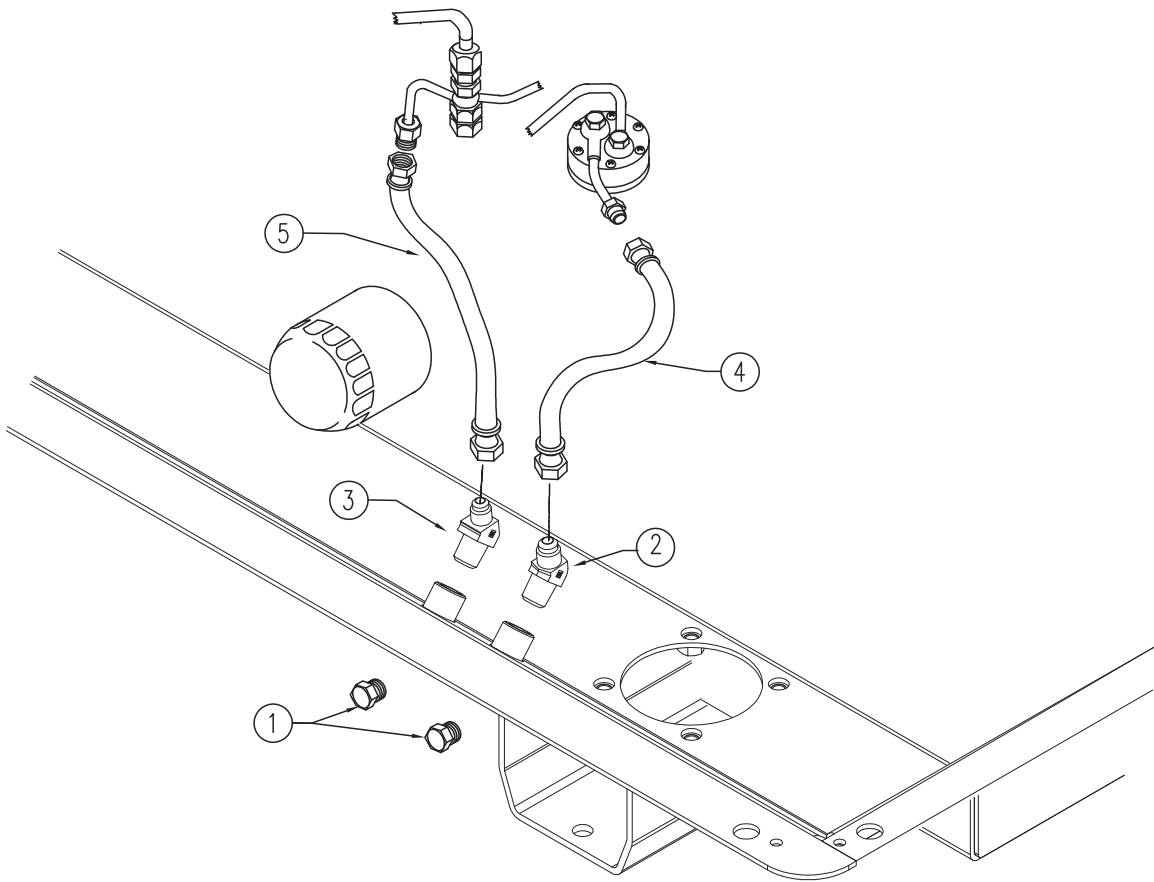
A-10003/ B-9278

| KEY | PART NUMBER | QTY | DESCRIPTION                              | SERIAL NUMBER |
|-----|-------------|-----|------------------------------------------|---------------|
| 1   | 10-51099    | 1   | Fuel Manifold 1/4 NPT                    | -             |
| 2   | 12-01102    | 2   | Capscrew, Hex Head M6 x 1.0 x 16 mm S/S  | -             |
| 3   | 15-00610    | 2   | Lock Washer, Helical M6 S/S              | -             |
| 4   | 21-31624    | 2   | Plug, Hex Head Brass 1/4 NPT             | -             |
| 5   | 21-74411    | 1   | Male Elbow 90°, Steel 1/4 NPT x 5/16-37T | -             |
| 6   | 21-71049    | 1   | Male Elbow 90°, Steel 1/4 NPT x 1/4-37T  | -             |
| 7   | 18-58602    | 1   | Hose Assembly 1/4" ID x 12-1/2"          | -             |
| 8   | 18-58710    | 1   | Hose Assembly 3/16" ID x 19"             | -             |

**GROUP 4 – FUEL SYSTEM**

**USG A-1 SAE J1527 ISO 7840 Fuel Lines**

M773LW3 From S/N xxxx-46362C

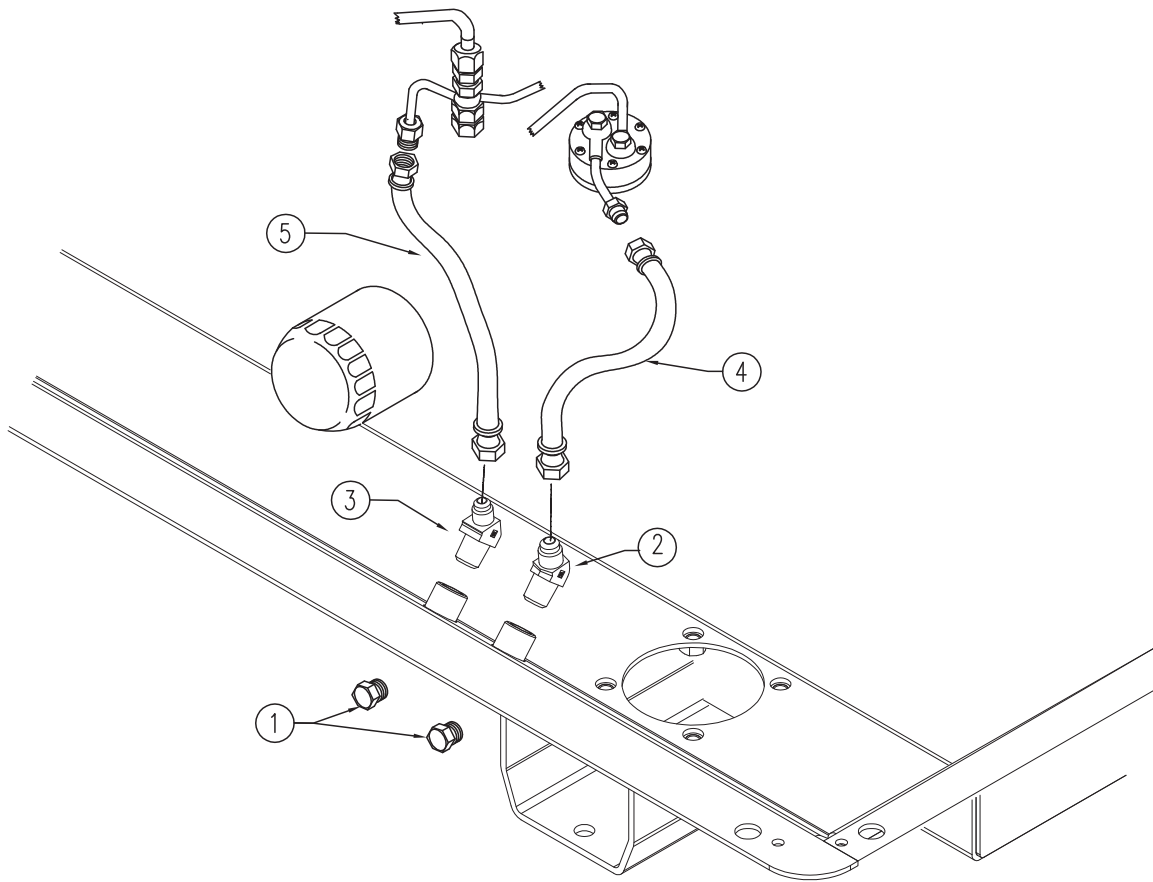


B-9827

| Key | Part Number | Qty | Description                               | Serial Number |
|-----|-------------|-----|-------------------------------------------|---------------|
| 1   | 21-31624    | 2   | Plug, Hex Head Brass 1/4 NPT              | -             |
| 2   | 21-51204    | 1   | Male Elbow, 45°, Brass. 1/4NPT X 5/16-45T | -             |
| 3   | 21-50054    | 1   | Male Elbow, 45°, Brass. 1/4NPT X 1/4-45T  | -             |
| 4   | 18-58602    | 1   | Hose Assembly 1/4" ID x 12-1/2"           | -             |
| 5   | 18-58603    | 1   | Hose Assembly 1/4" ID x 19"               | -             |

**USG A-1 SAE J1942 ABS Fuel Lines**

M773LW3 From S/N xxxx-46362C



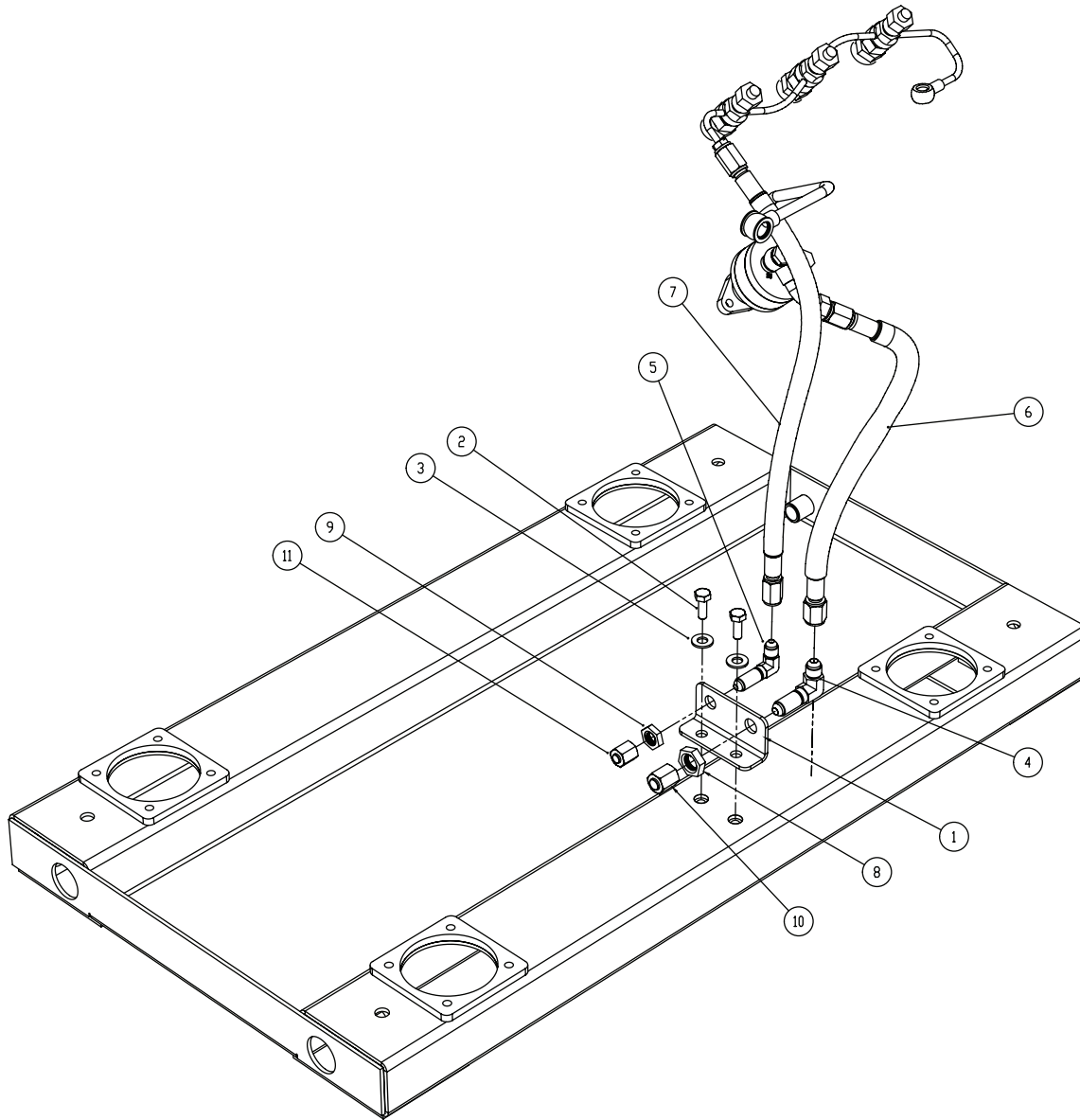
B-9827

| Key | Part Number | Qty | Description                               | Serial Number |
|-----|-------------|-----|-------------------------------------------|---------------|
| 1   | 21-31624    | 2   | Plug, Hex Head Brass 1/4 NPT              | -             |
| 2   | 21-00600    | 1   | Male Elbow, 45°, Steel. 1/4NPT X 5/16-37T | -             |
| 3   | 21-05404    | 1   | Male Elbow, 45°, Steel. 1/4NPT X 1/4-37T  | -             |
| 4   | 18-58604    | 1   | Hose Assembly 1/4" ID x 12-1/2"           | -             |
| 5   | 18-58710    | 1   | Hose Assembly 3/16" ID x 19"              | -             |

## GROUP 4 – FUEL SYSTEM

**USG A-1 SAE J1527 ISO 7840 Fuel Lines**

M773LW3 From S/N xxxx-54637



D-5044

| Key | Part Number | Qty | Description                                             | Serial Number |
|-----|-------------|-----|---------------------------------------------------------|---------------|
| 1   | 10-52002    | 1   | Fuel Manifold for 1/4-37T and 5/16-37T union elbow 90   | -             |
| 2   | 12-09751    | 2   | Capscrew Hex Head M8x1.25 X 16mm S/S                    | -             |
| 3   | 15-00705    | 2   | LOCK WASHER,HELICAL M8 S/S                              | -             |
| 4   | 21-52019    | 1   | Bulkhead Union Elbow 90,STL. 5/16-37T (w/o Locking Nut) | -             |
| 5   | 21-59527    | 1   | Bulkhead Union Elbow 90,STL. 1/4-37T (w/o Locking Nut)  | -             |
| 6   | 18-50007    | 1   | Hose Assy 5/16"ID X 12" 5/16FMS X 5/16FMS               | -             |
| 7   | 18-58603    | 1   | Hose Assy 1/4"ID X 19" 1/4FMS X 1/4FMS                  | -             |
| 8   | 14-00509    | 1   | Jam Nut 1/2-20 STL                                      | -             |
| 9   | 14-00508    | -   | Jam Nut 7/16-20 STL                                     | -             |
| 10  | 21-50071    | 1   | Cap, Hex Head STL 5/16-37T                              | -             |
| 11  | 21-50072    | 1   | Cap, Hex STL 1/4-37T                                    | -             |



**This Page Left Intentionally Blank**

Fuel Injector

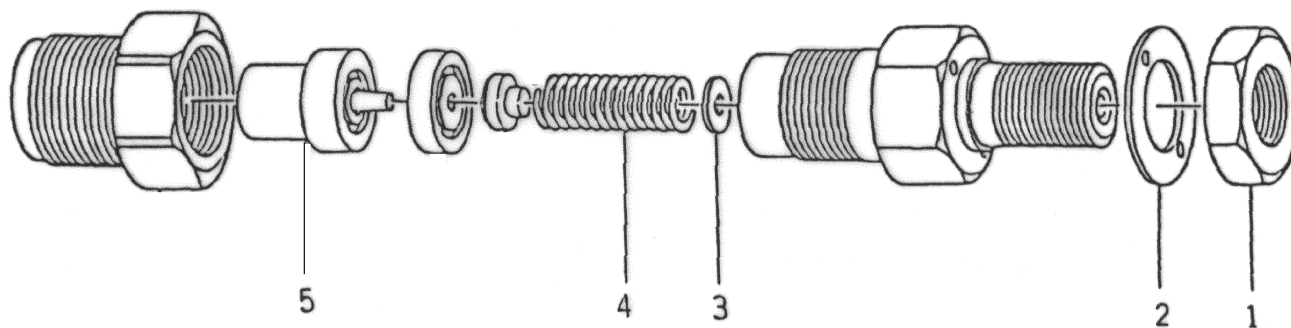


Fig. 4-10

| KEY | PART NUMBER | QTY | DESCRIPTION                               | SERIAL NUMBER |
|-----|-------------|-----|-------------------------------------------|---------------|
| ••  | 131406470   | 1   | Injector Assembly (includes keys #1 - #5) | -             |
| 1   | 131446069   | 1   | Nut (Marine)                              | -             |
|     | 131446987   | 1   | Nut (Industrial)                          | -             |
| 2   | 131426210   | 1   | Gasket                                    | -             |
| 3   | 131437640   | 1   | Shim                                      | -             |
| 4   | 131446986   | 1   | Spring                                    | -             |
| 5   | 131416250   | 1   | Nozzle                                    | -             |

Fuel Feed Pump

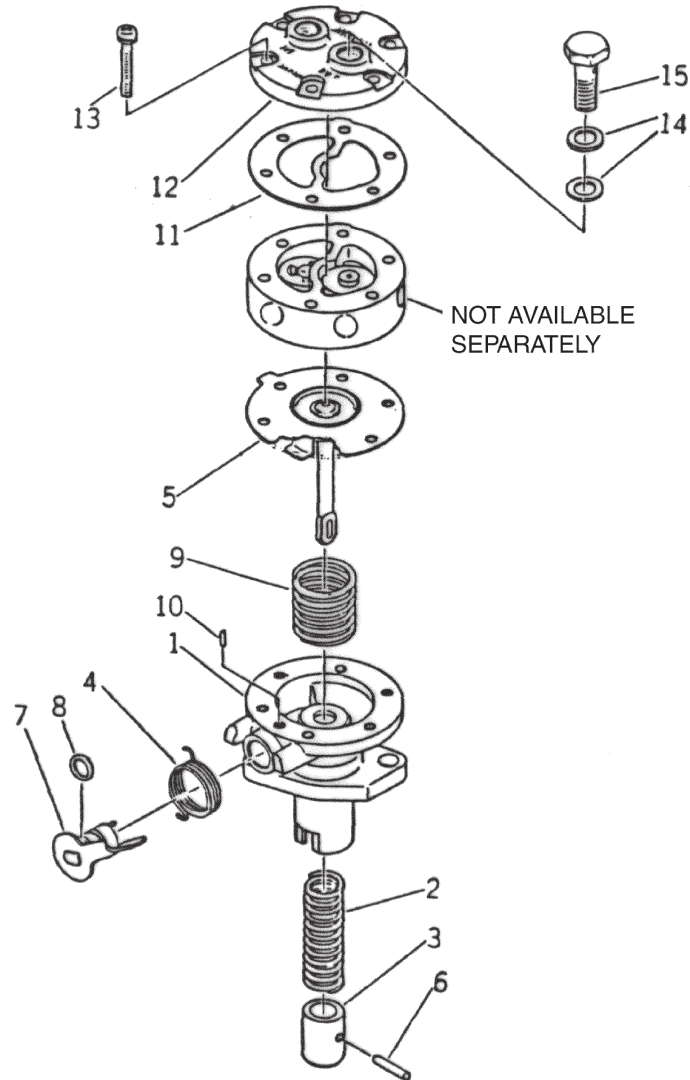


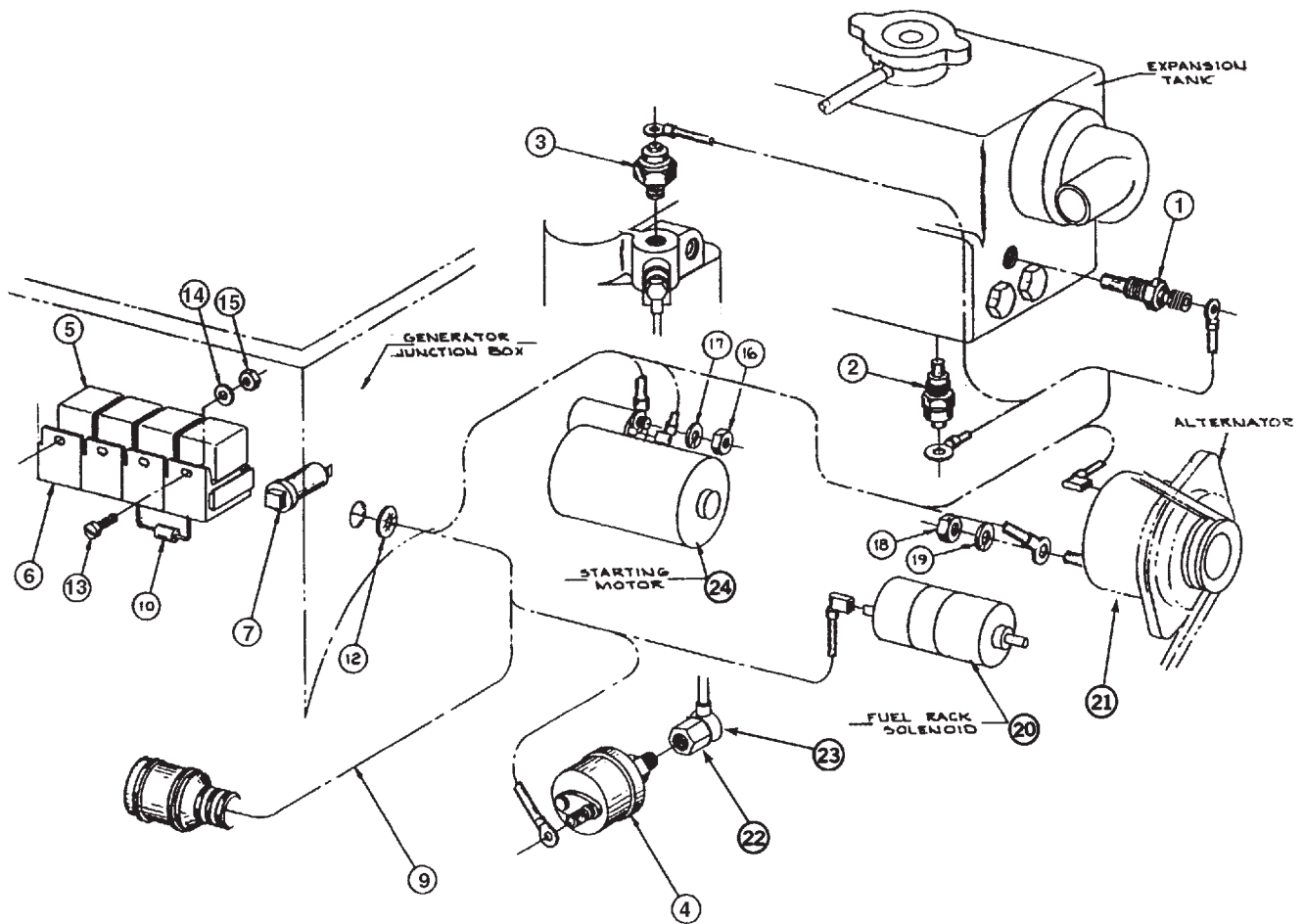
Fig. 4-11

| 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  | 130516101   | 1   | Gasket                                     | -             |
| 12  | 130516090   | 1   | Cap*                                       | -             |
| 13  | 130516091   | 6   | Screw                                      | -             |
| 14  | 130516069   | 4   | Gasket                                     | -             |
| 15  | 130516092   | 2   | Joint Bolt                                 | -             |

\*Not available separately

Engine Electrical 12 Volt Standard Ground

Marine Units



## Engine Electrical 12 Volt Standard Ground

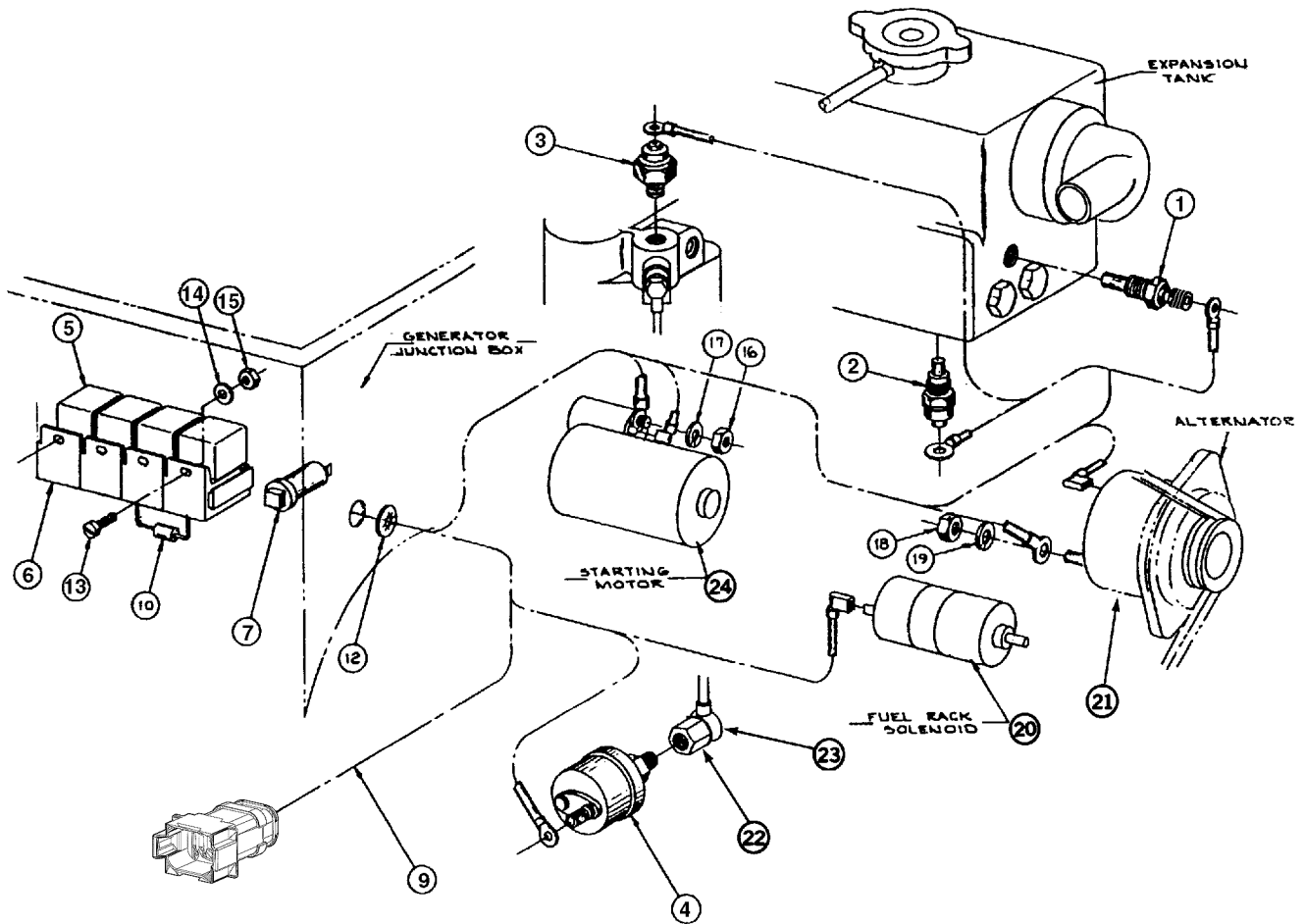
Marine Units

| KEY | PART NUMBER | QTY | DESCRIPTION                                                       | SERIAL NUMBER |
|-----|-------------|-----|-------------------------------------------------------------------|---------------|
| 1   | 22-42055    | 1   | Temperature Sender 250°F 3/8 NPT                                  | -             |
|     | 22-74802    | 1   | Dual Station Temperature Sender 250°F 1/8 NPT *                   | -             |
| 2   | 38720110    | 1   | Temperature Switch 95°C M16 X 1.5                                 | -             |
| 3   | 185246011   | 1   | Oil Pressure Switch 1/8 NPT                                       | -             |
| 4   | 22-41016    | 1   | Oil Pressure Sender 1/8 NPT                                       | -             |
|     | 22-71026    | 1   | Dual Station Oil Pressure Sender 1/8 NPT                          | -             |
| 5   | 22-42047    | 4   | Relay, 12 Volt SPDT                                               | -             |
| 6   | 22-40391    | 4   | Relay Base                                                        | -             |
|     | 22-40393    | 4   | Retainer                                                          | -             |
| 7   | 22-40674    | 1   | Circuit Breaker 15 Amp - Screw mount type *                       | -             |
|     | 22-42043    | 1   | Circuit Breaker 15 Amp - Snap-in Type                             | -             |
| 8   | 22-92120    | 1   | Control Panel S-1B (not shown,see detail)                         | -             |
| 9   | 22-48601    | 1   | Engine Wire Harness - Round "Merc" Plug Connector                 | -             |
| 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 3/8" S/S                                  | -             |
| 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)                      | -             |
| 21  | 185206085   | 1   | Alternator 12 Volt (see mounting detail)                          | -             |
| 22  | 198487590   | 1   | Banjo Bolt - M8 x 1.25 x 18mm (Tapped 1/8 NPT)                    | -             |
| 23  | 140606701   | 1   | Oil Line                                                          | -             |
| 24  | 185086551   | 1   | Starter 12 Volt (see mounting detail)                             | -             |
| 25  | 21-04801    | **  | Elbow 90° Steel 1/8 NPT x 1/8 NPT (not shown)                     | -             |
|     |             |     | * Replaces 22-40352 (NLA) Required 3/8 x 1/8 NPT Bushing 21-55201 |               |
|     |             |     | **As required                                                     |               |

GROUP 5 – ELECTRICAL SYSTEM

Engine Electrical 12 Volt Standard Ground

B+ System Marine Units



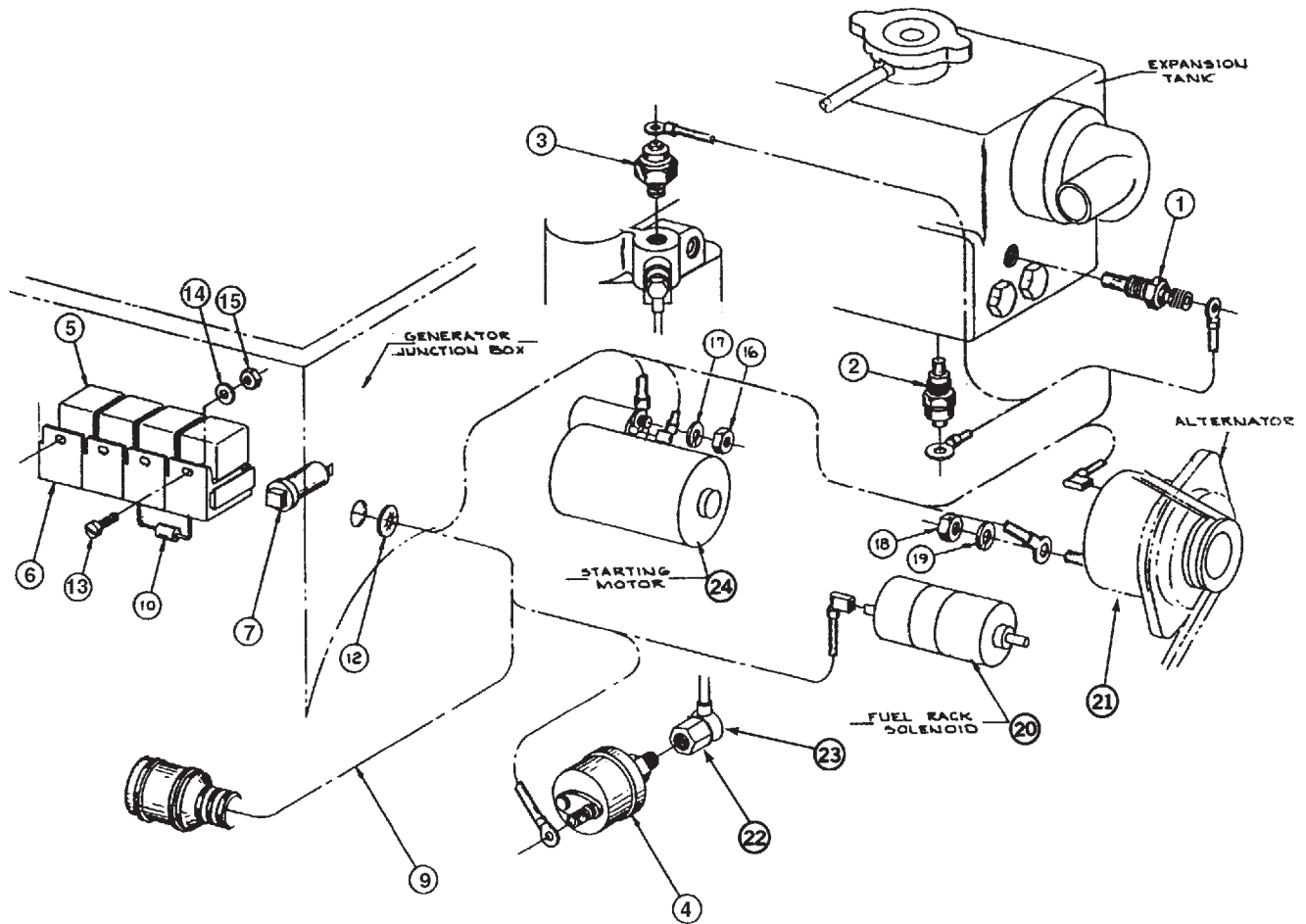
## Engine Electrical 12 Volt Standard Ground

B+ System Marine Units

| KEY | PART NUMBER | QTY | DESCRIPTION                                                       | SERIAL NUMBER |
|-----|-------------|-----|-------------------------------------------------------------------|---------------|
| 1   | 22-42055    | 1   | Temperature Sender 250°F 3/8 NPT                                  | -             |
|     | 22-74802    | 1   | Dual Station Temperature Sender 250°F 1/8 NPT *                   | -             |
| 2   | 38720110    | 1   | Temperature Switch 95°C M16 X 1.5                                 | -             |
| 3   | 185246011   | 1   | Oil Pressure Switch 1/8 NPT 14.2 PSI                              | -             |
| 4   | 22-41016    | 1   | Oil Pressure Sender 1/8 NPT                                       | -             |
|     | 22-71026    | 1   | Dual Station Oil Pressure Sender 1/8 NPT                          | -             |
| 5   | 22-42047    | 4   | Relay, 12 Volt SPDT                                               | -             |
| 6   | 22-40391    | 4   | Terminal Retainer                                                 | -             |
|     | 22-40393    | 4   | Retainer                                                          | -             |
| 7   | 22-40018    | 1   | Circuit Breaker DC 15 Amp - Screw mount type *                    | -             |
| 8   | 22-95605    | 1   | Control Panel S-1B (not shown,see detail)                         | -             |
| 9   | 22-48608    | 1   | Engine Wire Harness - Round "Merc" Plug Connector                 | -             |
| 10  | 22-40299    | 2   | Diode, 1 Amp 200 Volt PIV                                         | -             |
| 11  | 22-49520    | 1   | Wire Harness Extension 20' (not shown)                            | -             |
| 12  | 00-40028    | 1   | Grommet                                                           | -             |
| 13  | 12-00094    | 2   | Machine Screw #10- 32 x 3/8" S/S                                  | -             |
| 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  | 185206085   | 1   | Stop Solenoid 12 Volt (see also Fuel System)                      | -             |
| 21  | 185046220   | 1   | Alternator 12 Volt (see mounting detail)                          | -             |
| 22  | 198487590   | 1   | Banjo Bolt - M8 x 1.25 x 18mm (Tapped 1/8 NPT)                    | -             |
| 23  | 140606701   | 1   | Oil Line                                                          | -             |
| 24  | 185086551   | 1   | Starter 12 Volt (see mounting detail)                             | -             |
| 25  | 21-04801    | **  | Elbow 90° Steel 1/8 NPT x 1/8 NPT (not shown)                     | -             |
|     |             |     | * Replaces 22-40352 (NLA) Requires 3/8 x 1/8 NPT Bushing 21-55201 |               |
|     |             |     | **As required                                                     |               |

# Engine Electrical 12 Volt Isolated Ground

Marine Units





### Engine Electrical 12 Volt Isolated Ground

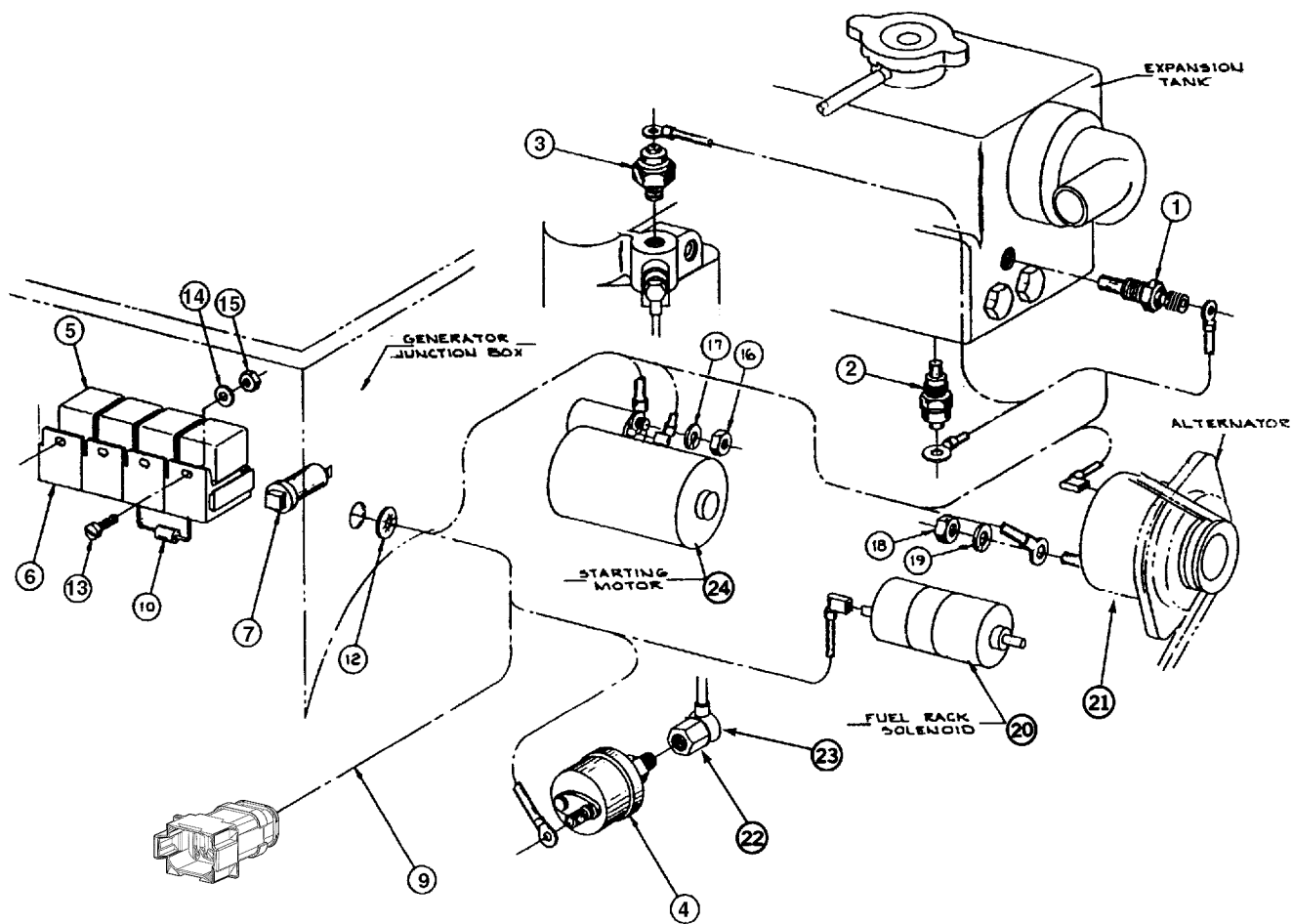
Marine Units

| KEY | PART NUMBER | QTY | DESCRIPTION                                                     | SERIAL NUMBER |
|-----|-------------|-----|-----------------------------------------------------------------|---------------|
| 1   | 22-44810    | 1   | Temperature Sender 250°F 3/8 NPT                                | -             |
|     | 22-74802    | 1   | Dual Station Temperature Sender 250°F 1/4 NPT *                 | -             |
| 2   | 22-40358    | 1   | Temperature Switch 95°C M16 x 1.5                               | -             |
| 3   | 22-40236    | 1   | Oil Pressure Switch 1/8 NPT                                     | -             |
| 4   | 22-42803    | 1   | Oil Pressure Sender 1/8 NPT                                     | -             |
|     | 22-74803    | 1   | Dual Station Oil Pressure Sender 1/8 NPT                        | -             |
| 5   | 22-42047    | 4   | Relay, 12 Volt SPDT                                             | -             |
| 6   | 22-40391    | 4   | Relay Base                                                      | -             |
|     | 22-40393    | 4   | Retainer                                                        | -             |
| 7   | 22-40674    | 1   | Circuit Breaker 15 Amp (Screw Mount Type)                       | -             |
|     | 22-42043    | 1   | Circuit Breaker 15 Amps (Snap-In Type)                          | -             |
| 8   | 22-92120    | 1   | Control Panel, S1-B (see detail)                                | -             |
| 9   | 22-48601    | 1   | Engine Wire Harness - Round Merc Plug Connector                 | -             |
|     | 22-78603    | 1   | Harness Ground Circuit Addition                                 | -             |
| 10  | 22-41060    | 2   | Diode, 6 Amp 50 Volt PIV (included in 22-48601                  | -             |
| 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" S/S                                 | -             |
| 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  | 185206192   | 1   | Stop Solenoid 12 Volt (see also Fuel System)                    | -             |
| 21  | 22-48206    | 1   | Alternator 12 Volt (see mounting detail)                        | -             |
| 22  | 198487590   | 1   | Banjo Bolt M8 x 1.25 x 18mm (Tapped 1/8 NPT)                    | -             |
| 23  | 140606701   | 1   | Oil Line                                                        | -             |
| 24  | 22-42129    | 1   | Starter 12 Volt (see mounting detail)                           | -             |
| 25  | 21-21001    | **  | Street Tee Steel 1/8 NPT x 1/8 NPT (not shown)                  | -             |
| 26  | 21-00050    | **  | Plug 1/8 NPT (not shown)                                        | -             |
|     |             |     | * Replaces 22-40353 (NLA) Requires 3/8" x 1/4" Bushing 21-51099 |               |
|     |             |     | **As required                                                   |               |

GROUP 5 – ELECTRICAL SYSTEM

Engine Electrical 12 Volt Isolated Ground

B+ System Marine Units



A-6258 / C-2490A

## Engine Electrical 12 Volt Isolated Ground

B+ System Marine Units

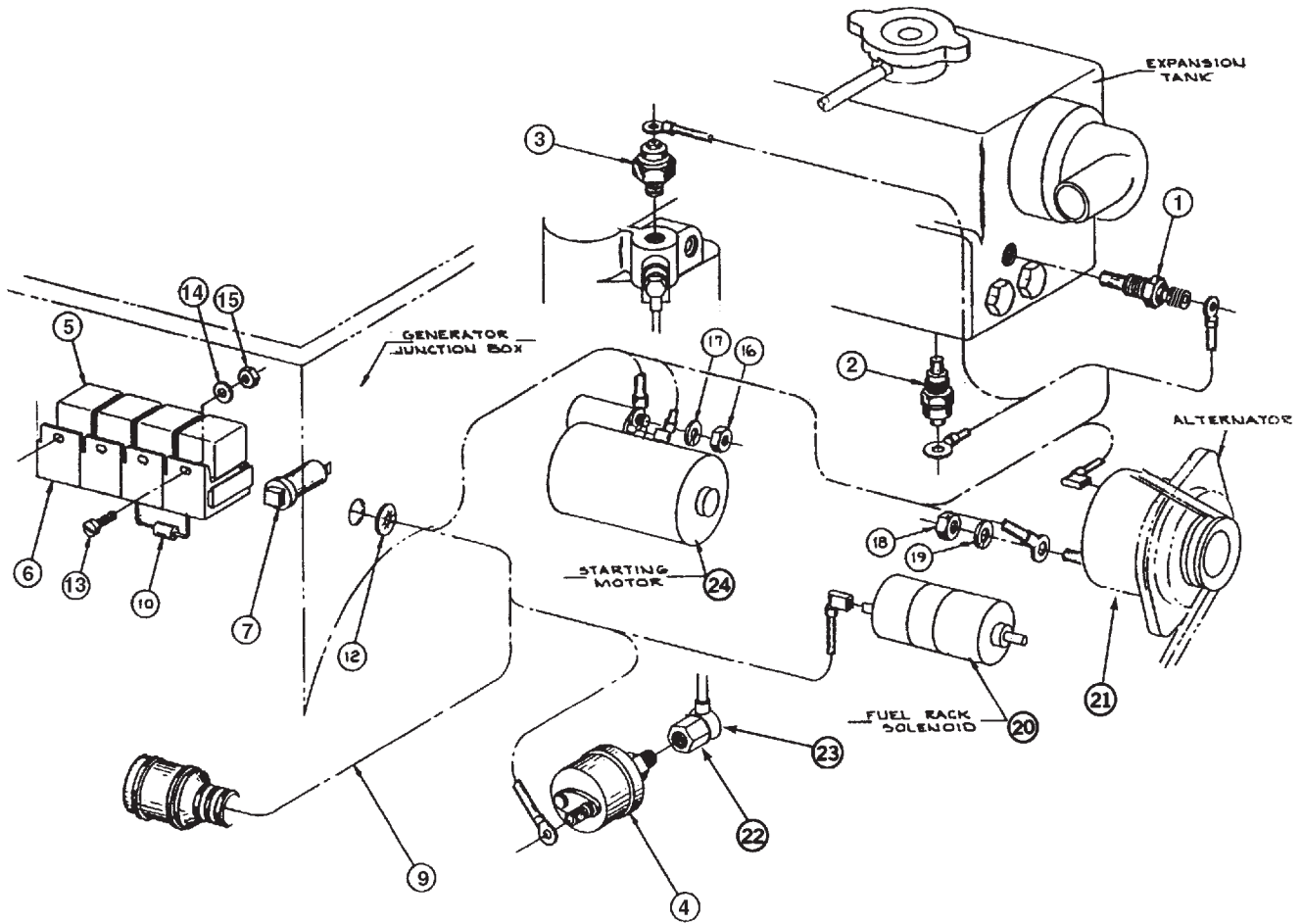
| KEY | PART NUMBER | QTY | DESCRIPTION                                         | SERIAL NUMBER |
|-----|-------------|-----|-----------------------------------------------------|---------------|
| 1   | 22-44810    | 1   | Temperature Sender 250°F 3/8 NPT                    | -             |
|     | 22-74802    | 1   | Dual Station Temperature Sender 250°F 1/4 NPT *     | -             |
| 2   | 22-40358    | 1   | Temperature Switch 95°C M16 x 1.5                   | -             |
| 3   | 22-40236    | 1   | Oil Pressure Switch 1/8 NPT                         | -             |
| 4   | 22-42803    | 1   | Oil Pressure Sender 1/8 NPT                         | -             |
|     | 22-74803    | 1   | Dual Station Oil Pressure Sender 1/8 NPT            | -             |
| 5   | 22-42047    | 4   | Relay, 12 Volt SPDT                                 | -             |
| 6   | 22-40391    | 4   | Relay Base                                          | -             |
|     | 22-40393    | 4   | Terminal Retainer                                   | -             |
| 7   | 22-40018    | 1   | Circuit Breaker, 10 Amp (Screw Mount Type)          | -             |
| 8   | 22-95605    | 1   | Control Panel, S1-B (see detail)                    | -             |
| 9   | 22-48608    | 1   | Engine Wire Harness - Square Deutsch Plug Connector | -             |
|     | 22-78603    | 1   | Harness Ground Circuit Addition                     | -             |
| 10  | 22-40299    | 2   | Diode, 1 Amp 200 Volt PIV (included in 22-48608)    | -             |
| 11  | 22-45620    | 1   | Wire Harness Extension 20' (not shown)              | -             |
| 12  | 00-40028    | 1   | Grommet                                             | -             |
| 13  | 12-00094    | 2   | Machine Screw #10-32 x 3/8" S/S                     | -             |
| 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  | 185206192   | 1   | Stop Solenoid 12 Volt (see also Fuel System)        | -             |
| 21  | 22-48206    | 1   | Alternator 12 Volt (see mounting detail)            | -             |
| 22  | 198487590   | 1   | Banjo Bolt M8 x 1.25 x 18mm (Tapped 1/8 NPT)        | -             |
| 23  | 140606701   | 1   | Oil Line                                            | -             |
| 24  | 22-42129    | 1   | Starter 12 Volt (see mounting detail)               | -             |
| 25  | 21-21001    | **  | Branch Tee Steel 1/8 NPT x 1/8 NPT (not shown)      | -             |
| 26  | 21-00050    | **  | Plug 1/8 BSPT                                       | -             |

\* Replaces 22-40353 (NLA) requires  
3/8 NPT x 1/4 NPT Bushing 21-51099

\*\*As required

Engine Electrical 24 Volt Standard Ground

Marine Units



A-6258 / C-2490A

| Engine Electrical 24 Volt Standard Ground |             |     |                                                      |               |
|-------------------------------------------|-------------|-----|------------------------------------------------------|---------------|
|                                           |             |     |                                                      | Marine Units  |
| KEY                                       | PART NUMBER | QTY | DESCRIPTION                                          | SERIAL NUMBER |
| 1                                         | 22-42055    | 1   | Temperature Sender 250°F 3/8 NPT                     | -             |
|                                           | 22-74802    | 1   | Dual Station Temperature Sender 250°F 1/8 NPT *      | -             |
| 2                                         | 385720110   | 1   | Temperature Switch 95°C M16 X 1.5                    | -             |
| 3                                         | 185246011   | 1   | Oil Pressure Switch 1/8 NPT                          | -             |
| 4                                         | 22-41016    | 1   | Oil Pressure Sender 1/8 NPT                          | -             |
|                                           | 22-71016    | 1   | Dual Station Oil Pressure Sender 1/8 NPT             | -             |
| 5                                         | 22-40710    | 4   | Relay, 24 Volt SPDT                                  | -             |
| 6                                         | 22-40391    | 4   | Relay Base                                           | -             |
|                                           | 22-40393    | 4   | Terminal Retainer                                    | -             |
| 7                                         | 22-40674    | 1   | Circuit Breaker, 15 Amp (Screw Mount Type)           | -             |
|                                           | 22-42043    | 1   | Circuit Breaker 15 Amp (Snap-In Type)                | -             |
| 8                                         | 22-92125    | 1   | Control Panel, S1-B (see detail)                     | -             |
| 9                                         | 22-48601    | 1   | Engine Wire Harness - with Round Merc Plug Connector | -             |
|                                           | 22-48602    | 1   | Wire Harness, Glow Plug Pulse Circuit                | -             |
| 10                                        | 22-41060    | 2   | Diode, 6 Amp 50 Volt PIV (included in 22-48601)      | -             |
| 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" S/S                      | -             |
| 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                                        | 185206203   | 1   | Stop Solenoid 24 Volt (see also Fuel System)         | -             |
| 21                                        | 22-40278    | 1   | Alternator 24 Volt 40 Amp (see mounting detail)      | up to S/N     |
|                                           | 22-48603    | 1   | Alternator 24 Volt 25 Amp                            | from S/N      |
|                                           | 198487590   | 1   | Banjo Bolt M8 x 1.25 x 18mm (Tapped 1/8 NPT)         | xxxx-46361C   |
| 22                                        | 140606701   | 1   | Oil Line                                             | xxxx-46362C   |
| 23                                        | 22-42121    | 1   | Starter 24 Volt (see mounting detail)                | -             |
| 24                                        | 21-21001    | **  | Branch Tee Steel 1/8 NPT x 1/8 NPT (not shown)       | -             |
| 25                                        | 22-48611    | 1   | Timer                                                | -             |
| 26                                        | 22-41079    | 1   | Soleniod 24 VDC 85 Amp                               | -             |
| 27                                        | 23-48605    | 1   | Bracket, Solenoid Mounting                           | -             |
| 28                                        | 12-00030    | 2   | Capscrew, Hex Head M6 x 1.0 x 16mm                   | -             |
| 29                                        | 15-00008    | 4   | Flat Washer M6                                       | -             |
| 30                                        | 14-04803    | 2   | Hex Nut, Nylock M12 x 1.0                            | -             |
| 31                                        | 12-50941    | 2   | Capscrew, Hex Head M12 x 1.25 x 20mm S/S             | -             |
| 32                                        | 15-00912    | 2   | Laco Washer M12                                      | -             |
| 33                                        | 12-09032    | 1   | Capscrew, Hex Head M6 x 1.0 x 30mm S/S               | -             |
| 34                                        | 15-01134    | 2   | Flat Washer M6 S/S                                   | -             |
| 35                                        | 14-01133    | 1   | Hex Nut, Nylock M6 x 1.0                             | -             |
| 36                                        | 21-00050    | **  | Plug 1/8 BSPT                                        | -             |
| 37                                        |             |     |                                                      |               |

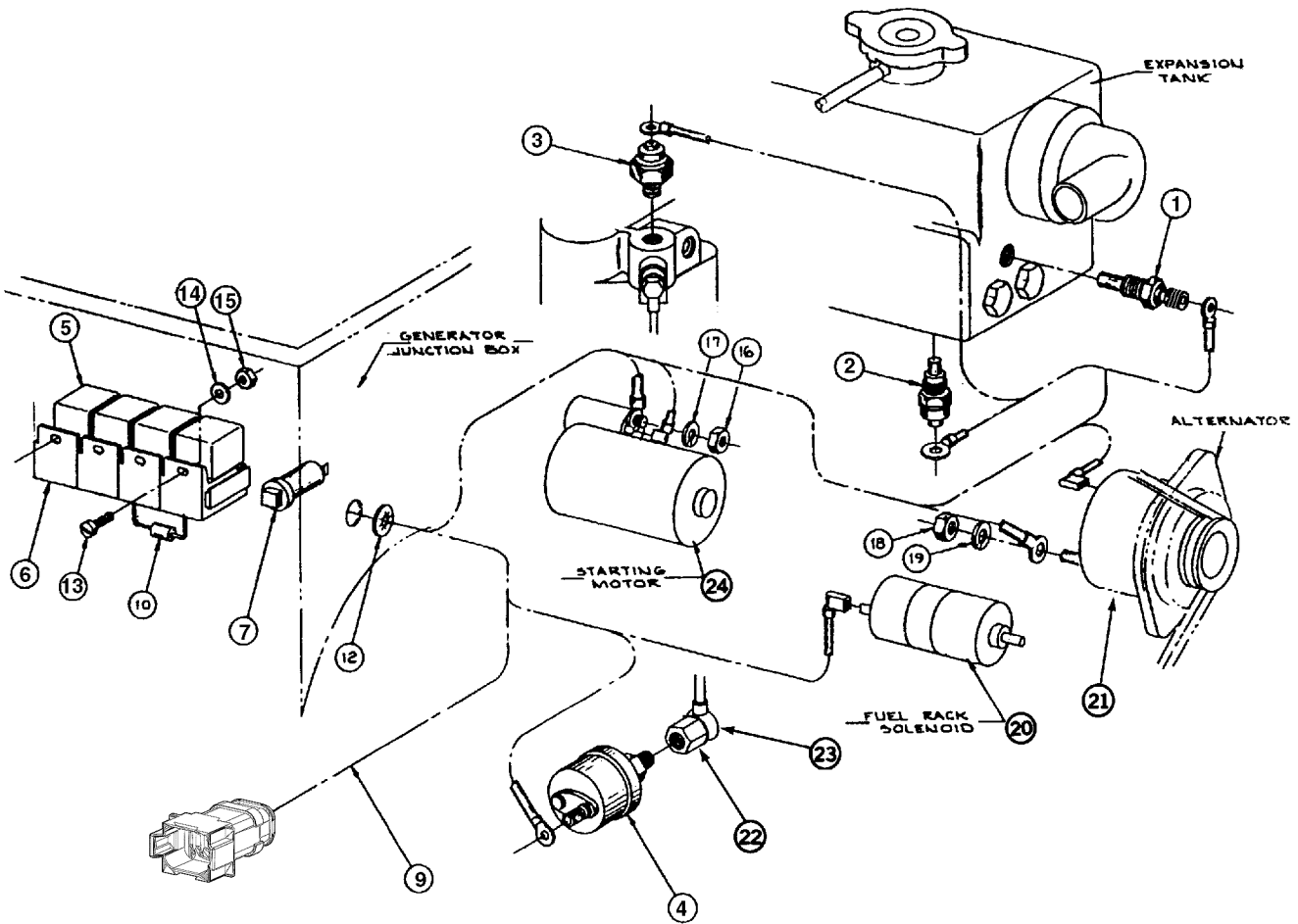
\* Replaces 22-40352 (NLA) requires  
3/8 NPT x 1/8 NPT Bushing 21-55201

\*\* As required

GROUP 5 – ELECTRICAL SYSTEM

Engine Electrical 24 Volt Standard Ground

B+ System Marine Units



A-6258 / C-2490A

## Engine Electrical 24 Volt Standard Ground

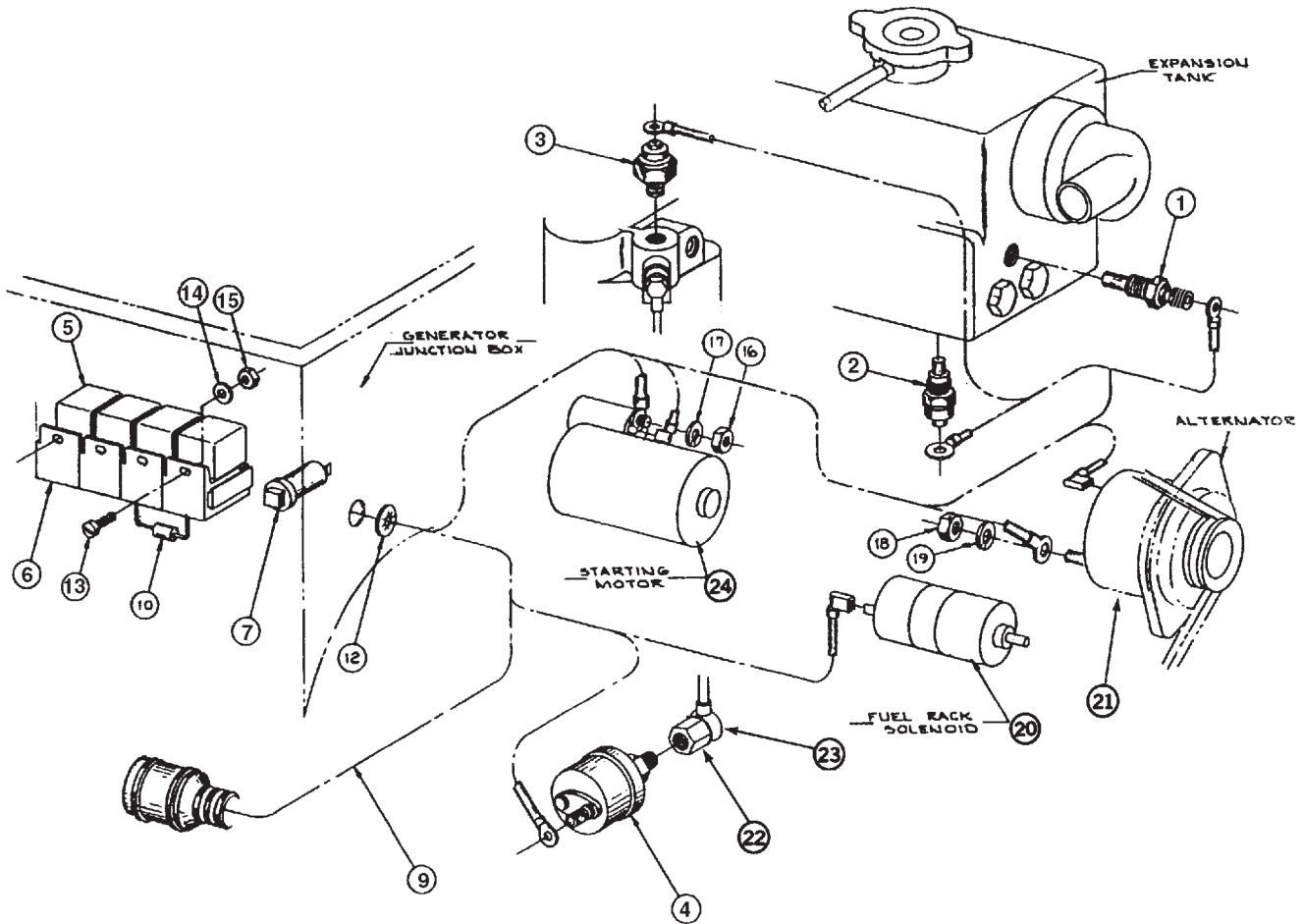
B+ System Marine Units

| KEY | PART NUMBER | QTY | DESCRIPTION                                              | SERIAL NUMBER |
|-----|-------------|-----|----------------------------------------------------------|---------------|
| 1   | 22-42055    | 1   | Temperature Sender 250°F 3/8 NPT                         | -             |
|     | 22-74802    | 1   | Dual Station Temperature Sender 250°F 1/8 NPT *          | -             |
| 2   | 385720110   | 1   | Temperature Switch 95°C M16 X 1.5                        | -             |
| 3   | 185246011   | 1   | Oil Pressure Switch 1/8 NPT                              | -             |
| 4   | 22-41016    | 1   | Oil Pressure Sender 1/8 NPT                              | -             |
|     | 22-71016    | 1   | Dual Station Oil Pressure Sender 1/8 NPT                 | -             |
| 5   | 22-40710    | 4   | Relay, 24 Volt SPDT                                      | -             |
| 6   | 22-40391    | 4   | Relay Base                                               | -             |
|     | 22-40393    | 4   | Terminal Retainer                                        | -             |
| 7   | 22-40018    | 1   | Circuit Breaker, DC 10 Amp (Screw Mount Type)            | -             |
| 8   | 22-95605    | 1   | Control Panel, S1-B (see detail)                         | -             |
| 9   | 22-48608    | 1   | Engine Wire Harness - with Square Deutsch Plug Connector | -             |
|     | 22-48602    | 1   | Wire Harness, Glow Plug Pulse Circuit                    | -             |
| 10  | 22-40299    | 2   | Diode, 1 Amp 200 Volt PIV (included in 22-48608)         | -             |
| 11  | 22-45620    | 1   | Wire Harness Extension 20' (not shown)                   | -             |
| 12  | 00-40028    | 1   | Grommet                                                  | -             |
| 13  | 12-00094    | 2   | Machine Screw #10-32 x 3/8" S/S                          | -             |
| 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  | 185206203   | 1   | Stop Solenoid 24 Volt (see also Fuel System)             | -             |
| 21  | 22-48603    | 1   | Alternator 24 Volt 25 Amp                                | -             |
| 22  | 198487590   | 1   | Banjo Bolt M8 x 1.25 x 18mm (Tapped 1/8 NPT)             | -             |
| 23  | 140606701   | 1   | Oil Line                                                 | -             |
| 24  | 22-42121    | 1   | Starter 24 Volt (see mounting detail)                    | -             |
| 25  | 21-21001    | 1   | Branch Tee Steel 1/8 NPT x 1/8 NPT (not shown)           | -             |
| 26  | 22-48611    | 1   | Timer                                                    | -             |
| 27  | 22-41079    | 1   | Solenoid 24 VDC 85 Amp                                   | -             |
| 28  | 23-48605    | 1   | Bracket, Solenoid Mounting                               | -             |
| 29  | 12-00030    | 2   | Capscrew, Hex Head M6 x 1.0 x 16mm                       | -             |
| 30  | 15-00008    | 4   | Flat Washer M6                                           | -             |
| 31  | 14-04803    | 2   | Hex Nut, Nylock M12 x 1.0                                | -             |
| 32  | 12-50941    | 2   | Capscrew, Hex Head M12 x 1.25 x 20mm S/S                 | -             |
| 33  | 15-00912    | 2   | Lock Washer M12                                          | -             |
| 34  | 12-09032    | 1   | Capscrew, Hex Head M6 x 1.0 x 30mm S/S                   | -             |
| 35  | 15-01134    | 2   | Flat Washer M6 S/S                                       | -             |
| 36  | 14-01133    | 1   | Hex Nut, Nylock M6 x 1.0                                 | -             |
| 37  | 21-00050    | 1   | Plug 1/8 BSPT                                            | -             |

\* Replaces 22-40352 (NLA) requires  
3/8 NPT x 1/8 NPT Bushing 21-55201

Engine Electrical 24 Volt Isolated Ground

Marine Units





## Engine Electrical 24 Volt Isolated Ground

Marine Units

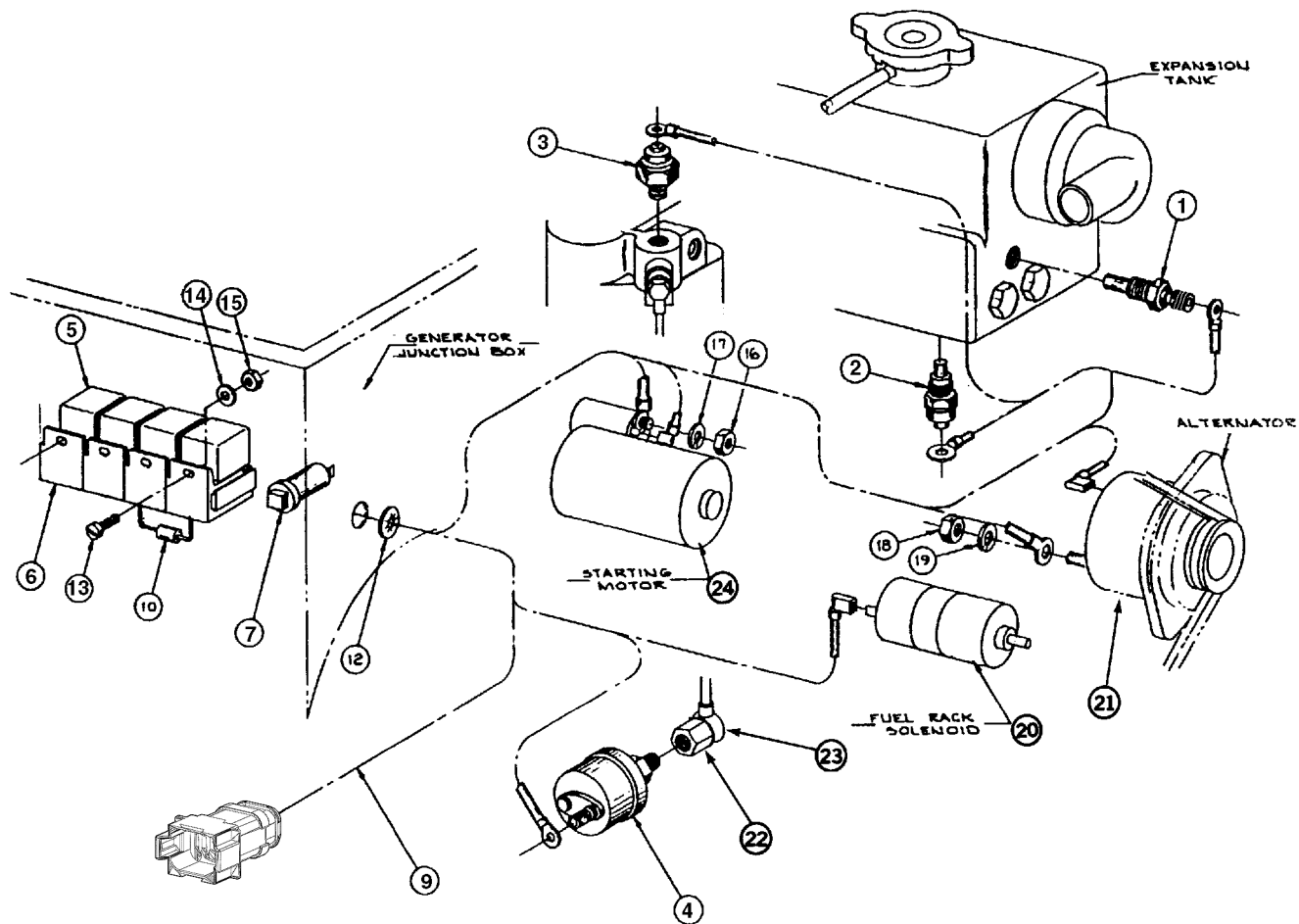
| KEY | PART NUMBER | QTY | DESCRIPTION                                     | SERIAL NUMBER              |
|-----|-------------|-----|-------------------------------------------------|----------------------------|
| 1   | 22-44810    | 1   | Temperature Sender 250°F 3/8 NPT                | -                          |
|     | 22-74802    | 1   | Dual Station Temperature Sender 250°F 1/4 NPT * | -                          |
| 2   | 22-40358    | 1   | Temperature Switch 95°C M16 x 1.5               | -                          |
| 3   | 22-40236    | 1   | Oil Pressure Switch 1/8 NPT                     | -                          |
| 4   | 22-42803    | 1   | Oil Pressure Sender 1/8 NPT                     | -                          |
|     | 22-74803    | 1   | Dual Station Oil Pressure Sender 1/8 NPT        | -                          |
| 5   | 22-40710    | 4   | Relay, 24 Volt SPDT                             | -                          |
| 6   | 22-40391    | 4   | Relay Base                                      | -                          |
|     | 22-40393    | 4   | Retainer                                        | -                          |
| 7   | 22-40674    | 1   | Circuit Breaker, 15 Amp (Screw Mount Type)      | -                          |
|     | 22-42043    | 1   | Circuit Breaker, 15 Amp (Snap-in Type)          | -                          |
| 8   | 22-92125    | 1   | Control Panel, S1-B (see detail)                | -                          |
| 9   | 22-48601    | 1   | Engine Wire Harness - Round Merc Plug Connector | -                          |
|     | 22-48602    | 1   | Harness Assembly, Glow Plug Pulse Circuit       | -                          |
| 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 3/8" S/S                | -                          |
| 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  | 185206203   | 1   | Stop Solenoid 24 Volt (see also Fuel System)    | -                          |
| 21  | 22-40763    | 1   | Alternator 24 Volt 35 Amp (see mounting detail) | up to S/N<br>from S/N      |
|     | 22-48604    | 1   | Alternator 24 Volt 25 Amp                       | xxxx-46361C<br>xxxx-46362C |
| 22  | 198487590   | 1   | Banjo Bolt M8 x 1.25 x 18mm (Tapped 1/8 NPT)    | -                          |
| 23  | 140606701   | 1   | Oil Line                                        | -                          |
| 24  | 22-42122    | 1   | Starter 24 Volt (see mounting detail)           | -                          |
| 25  | 21-21001    | **  | Branch Tee Steel 1/8 NPT x 1/8 NPT (not shown)  | -                          |
| 26  | 22-48611    | 1   | Timer                                           | -                          |
| 27  | 22-41079    | 1   | Solenoid 24 Volt 85 Amp                         | -                          |
| 28  | 23-48605    | 1   | Bracket, Solenoid Mounting                      | -                          |
| 29  | 12-00030    | 2   | Capscrew, Hex Head M6 x 1.0 x 16mm              | -                          |
| 30  | 15-00008    | 4   | Flat Washer M6                                  | -                          |
| 31  | 14-04803    | 2   | Hex Nut, Nylock M12 x 1.0                       | -                          |
| 32  | 12-50941    | 2   | Capscrew, Hex Head M12 x 1.25 x 20mm S/S        | -                          |
| 33  | 15-00912    | 2   | Lock Washer M12                                 | -                          |
| 34  | 12-09032    | 1   | Capscrew, Hex Head M6 x 1.0 x 30mm S/S          | -                          |
| 35  | 15-01134    | 2   | Flat Washer M6 S/S                              | -                          |
| 36  | 14-01133    | 1   | Nylock Nut, Nylock M6 x 1.0                     | -                          |
| 37  | 21-00050    | 1   | Plug 1/8 BSPT                                   | -                          |

\* Replaces 22-40353(NLA) requires  
3/8 NPT x 1/4 NPT Bushing 21-51099

GROUP 5 – ELECTRICAL SYSTEM

Engine Electrical 24 Volt Isolated Ground

B+ System Marine Units



A-6398, A-6402 / C-2490A

## Engine Electrical 24 Volt Isolated Ground

B+ System Marine Units

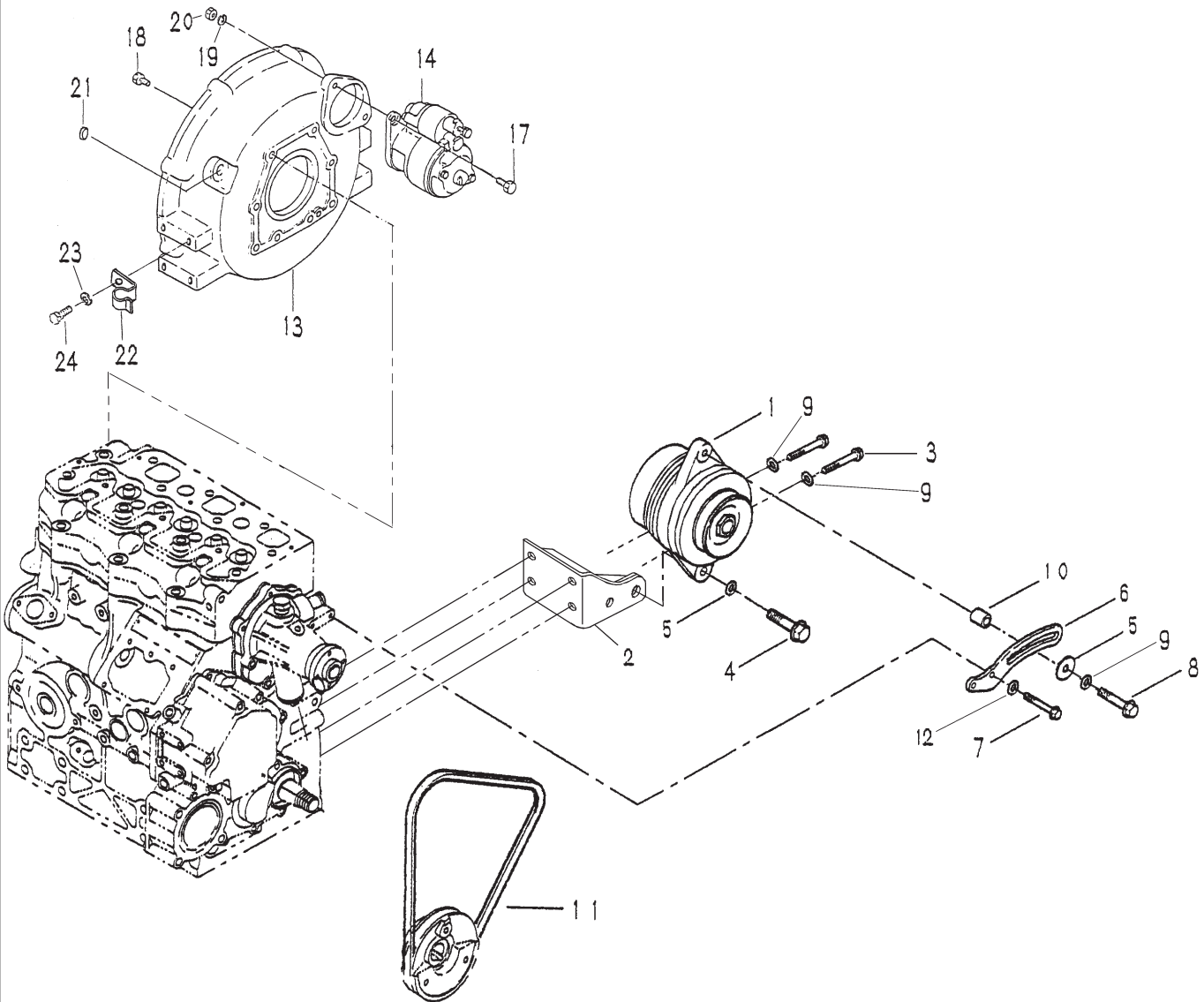
| KEY | PART NUMBER | QTY | DESCRIPTION                                         | SERIAL NUMBER |
|-----|-------------|-----|-----------------------------------------------------|---------------|
| 1   | 22-44810    | 1   | Temperature Sender 250°F 3/8 NPT                    | -             |
|     | 22-74802    | 1   | Dual Station Temperature Sender 250°F 1/4 NPT *     | -             |
| 2   | 22-40358    | 1   | Temperature Switch 95°C M16 x 1.5                   | -             |
| 3   | 22-40236    | 1   | Oil Pressure Switch 1/8 NPT                         | -             |
| 4   | 22-42803    | 1   | Oil Pressure Sender 1/8 NPT                         | -             |
|     | 22-74803    | 1   | Dual Station Oil Pressure Sender 1/8 NPT            | -             |
| 5   | 22-40710    | 4   | Relay, 24 Volt SPDT                                 | -             |
| 6   | 22-40391    | 4   | Relay Base                                          | -             |
|     | 22-40393    | 4   | Terminal Retainer                                   | -             |
| 7   | 22-40018    | 1   | Circuit Breaker, DC 10 Amp (Screw Mount Type)       | -             |
| 8   | 22-95605    | 1   | Control Panel, S1-B (see detail)                    | -             |
| 9   | 22-48608    | 1   | Engine Wire Harness - Square Deutsch Plug Connector | -             |
|     | 22-48602    | 1   | Harness Assembly, Glow Plug Pulse Circuit           | -             |
| 10  | 22-40299    | 2   | Diode, 1 Amp 200 Volt PIV (included in 22-48604)    | -             |
| 11  | 22-45620    | 1   | Wire Harness Extension 20' (not shown)              | -             |
| 12  | 00-40028    | 1   | Grommet                                             | -             |
| 13  | 12-00094    | 2   | Machine Screw #10- 32 x 3/8" S/S                    | -             |
| 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  | 185206203   | 1   | Stop Solenoid 24 Volt (see also Fuel System)        | -             |
| 21  | 22-48604    | 1   | Alternator 24 Volt 25 Amp                           | -             |
| 22  | 198487590   | 1   | Banjo Bolt M8 x 1.25 x 18mm (Tapped 1/8 NPT)        | -             |
| 23  | 140606701   | 1   | Oil Line                                            | -             |
| 24  | 22-42122    | 1   | Starter 24 Volt (see mounting detail)               | -             |
| 25  | 21-21001    | 1   | Branch Tee Steel 1/8 NPT x 1/8 NPT (not shown)      | -             |
| 26  | 22-48611    | 1   | Timer                                               | -             |
| 27  | 22-41079    | 1   | Solenoid 24 Volt 85 Amp                             | -             |
| 28  | 23-48605    | 1   | Bracket, Solenoid Mounting                          | -             |
| 29  | 12-00030    | 2   | Capscrew, Hex Head M6 x 1.0 x 16mm                  | -             |
| 30  | 15-00008    | 4   | Flat Washer M6                                      | -             |
| 31  | 14-04803    | 2   | Hex Nut, Nylock M12 x 1.0                           | -             |
| 32  | 12-50941    | 2   | Capscrew, Hex Head M12 x 1.25 x 20mm S/S            | -             |
| 33  | 15-00912    | 2   | Lock Washer M12                                     | -             |
| 34  | 12-09032    | 1   | Capscrew, Hex Head M6 x 1.0 x 30mm S/S              | -             |
| 35  | 15-01134    | 2   | Flat Washer M6 S/S                                  | -             |
| 36  | 14-01133    | 1   | Nylock Nut, Nylock M6 x 1.0                         | -             |
| 37  | 21-00050    | **  | Plug 1/8 BSPT                                       | -             |

Note: #26 - 36 Required for glow plug operation

\* Replaces 22-40353(NLA) requires  
3/8 NPT x 1/4 NPT Bushing 21-51099

GROUP 5 – ELECTRICAL SYSTEM

Small Frame Alternators and Starter



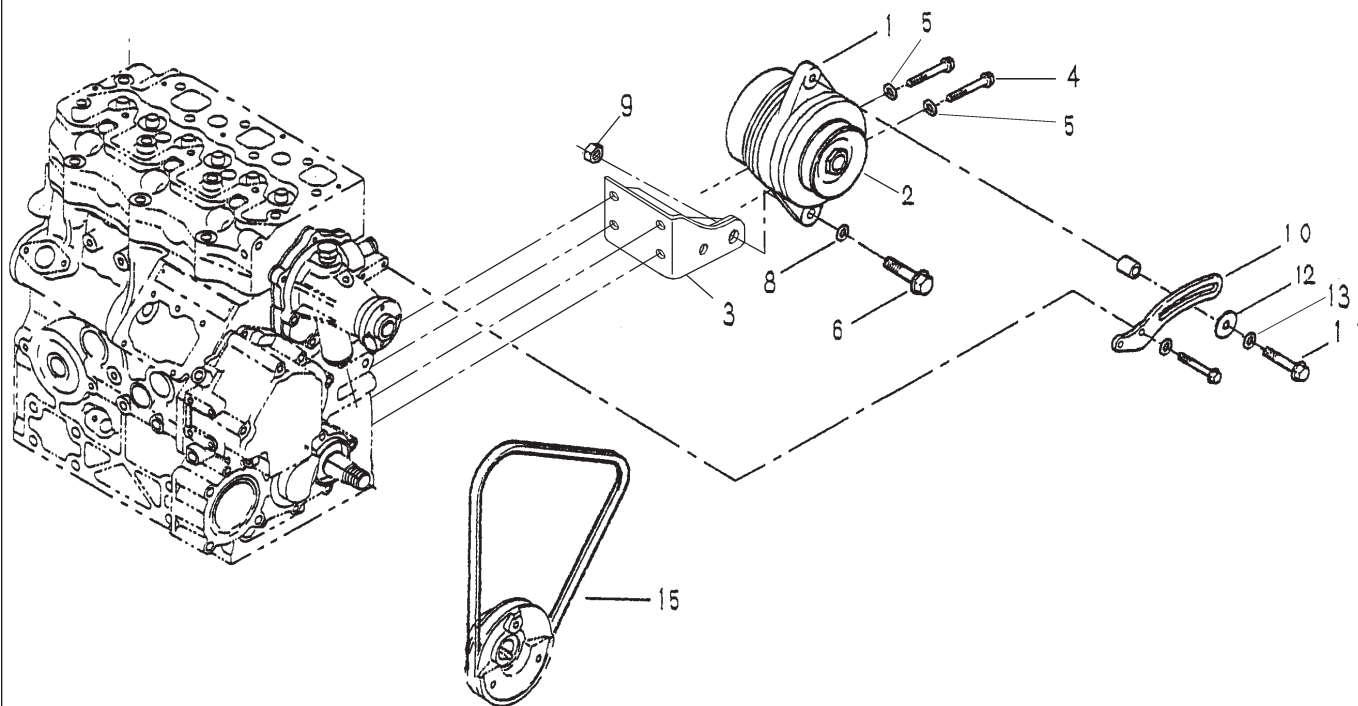
773altandstarter

### Small Frame Alternators and Starter

| KEY | PART NUMBER | QTY | DESCRIPTION                                                                                          | SERIAL NUMBER |
|-----|-------------|-----|------------------------------------------------------------------------------------------------------|---------------|
| 1   | 185046220   | 1   | Alternator 12 Volt, 40 Amp Standard Ground                                                           | -             |
|     | 22-48206    | 1   | Alternator 12 Volt, 40 Amp Isolated Ground                                                           | -             |
|     | 22-48603    | 1   | Alternator 24 Volt 25 Amp Standard Ground                                                            | -             |
|     | 22-48604    | 1   | Alternator 24 Volt 25 Amp Isolated Ground                                                            | -             |
| 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 (use with 185046220 & 22-48603)                                                           | -             |
|     | 40-08604    | 1   | Drive Belt (use with 22-48206 & 22-48604)                                                            | -             |
| 12  | 15-00610    | 2   | Lock Washer M6 S/S                                                                                   | -             |
| 13  | 110446421   | 1   | Flywheel Housing                                                                                     | -             |
| 14  | 185086551   | 1   | Starter, 12 Volt (see parts detail)                                                                  | -             |
|     | 22-42129    | 1   | Starter, 12 Volt Isolated Ground                                                                     | -             |
|     | 22-42121    | 1   | Starter, 24 Volt Standard Ground (former #22-42081)                                                  | -             |
|     | 22-42122    | 1   | Starter, 24 Volt Isolated Ground (former #22-42082)                                                  | -             |
| 17  | 01435-01045 | 2   | Capscrew, Hex Head M10 x 1.5 x 45 mm (use with starters #185086551 & 22-42079)                       | -             |
|     | 01435-01050 | 2   | Capscrew, Hex Head M10 x 1.5 x 50 mm (use with starters #22-42081 & 22-42082 - 21-42121 - 22-42122)) | -             |
| 18  | 010311020   | 8   | Bolt                                                                                                 | -             |
| 19  | 15-00802    | 2   | Spring Washer                                                                                        | -             |
| 20  | 020900010   | 2   | Nut                                                                                                  | -             |
| 21  | 398460090   | 1   | Plug (Marine)                                                                                        | -             |
| 22  | 140976080   | 1   | Bracket                                                                                              | -             |
| 23  | 15-00802    | 1   | Spring Washer                                                                                        | -             |
| 24  | 199436350   | 1   | Bolt                                                                                                 | -             |

**GROUP 5 – ELECTRICAL SYSTEM**

**Medium Frame Alternators 24 V/ 40 Amp & 24V/ 35 Amp**

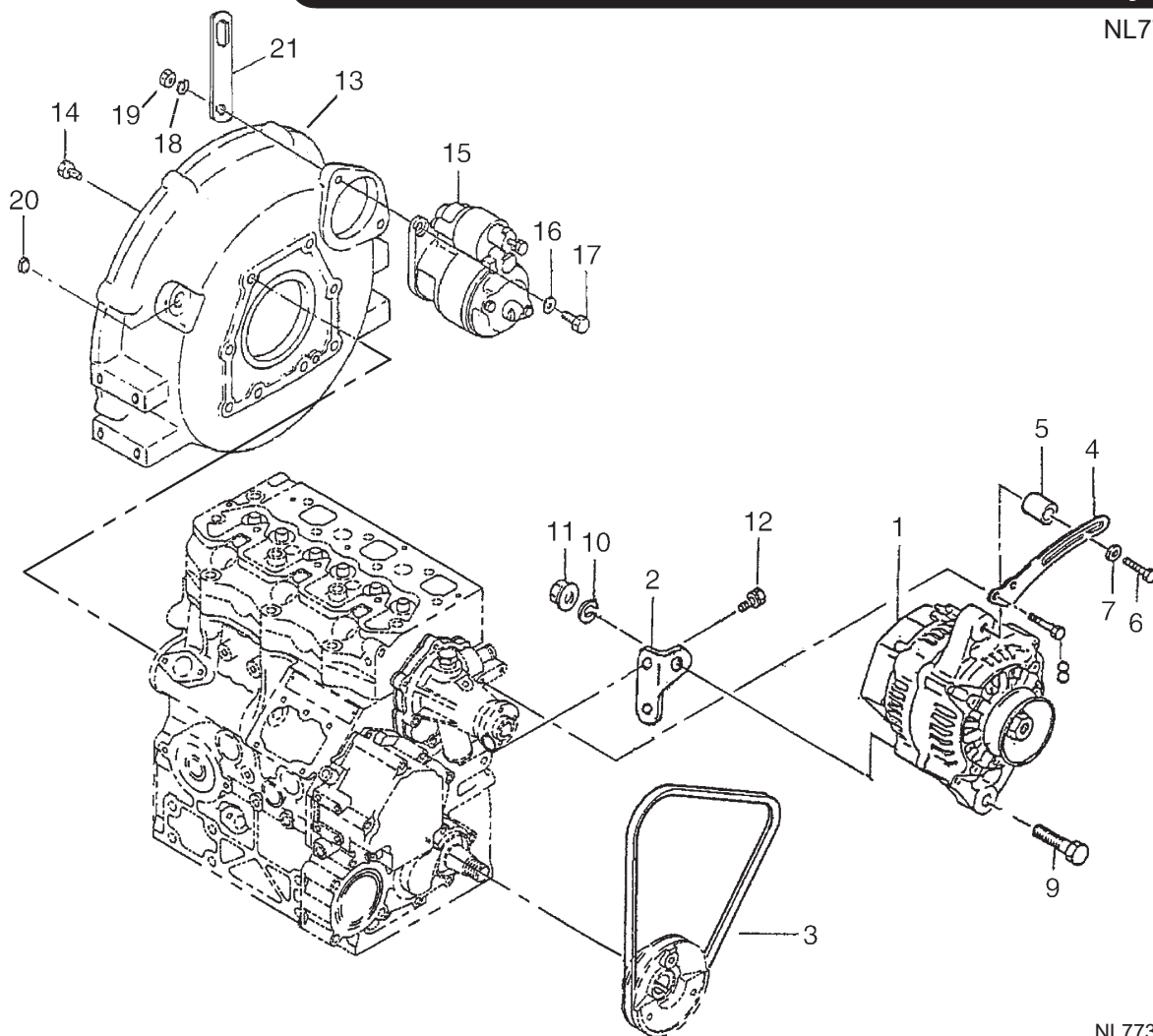


A-9711, A-9712

| KEY | PART NUMBER | QTY | DESCRIPTION                                | SERIAL NUMBER |
|-----|-------------|-----|--------------------------------------------|---------------|
| 1   | 22-40763    | 1   | Alternator 24 Volt, 35 Amp Isolated Ground | -             |
|     | 22-40278    | 1   | Alternator 24 Volt, 40 Amp Standard Ground | -             |
| 2   | 34-41017    | 1   | Pulley                                     | -             |
| 3   | 23-48603    | 1   | Bracket, Medium Frame Alternator Mtg.      | -             |
| 4   | 12-00776    | 4   | Capscrew, Hex Head M8 x 1.25 x 20 mm S/S   | -             |
| 5   | 15-00705    | 4   | Lock Washer, Helical M8 S/S                | -             |
| 6   | 12-00517    | 1   | Capscrew, Hex Head 1/2-13 x 2-1/4"         | -             |
| 8   | 15-00504    | 2   | Flat Washer 1/2" SAE                       | -             |
| 9   | 14-00512    | 1   | Hex Nut, Nylock 1/2-13                     | -             |
| 10  | 23-48604    | 1   | Tensioning Arm                             | -             |
| 11  | 12-09212    | 1   | Capscrew, Hex Head 5/16-18 x 1" S/S        | -             |
| 12  | 15-00201    | 1   | Stud Washer 5/16                           | -             |
| 13  | 15-00222    | 1   | Lock Washer, Helical 5/16 S/S              | -             |
| 14  | 22-70048    | 1   | Diode Harness Addition (not shown)         | -             |
| 15  | 40-08603    | 1   | Drive Belt                                 | -             |

Starter, Alternator, and Flywheel

NL773LW3

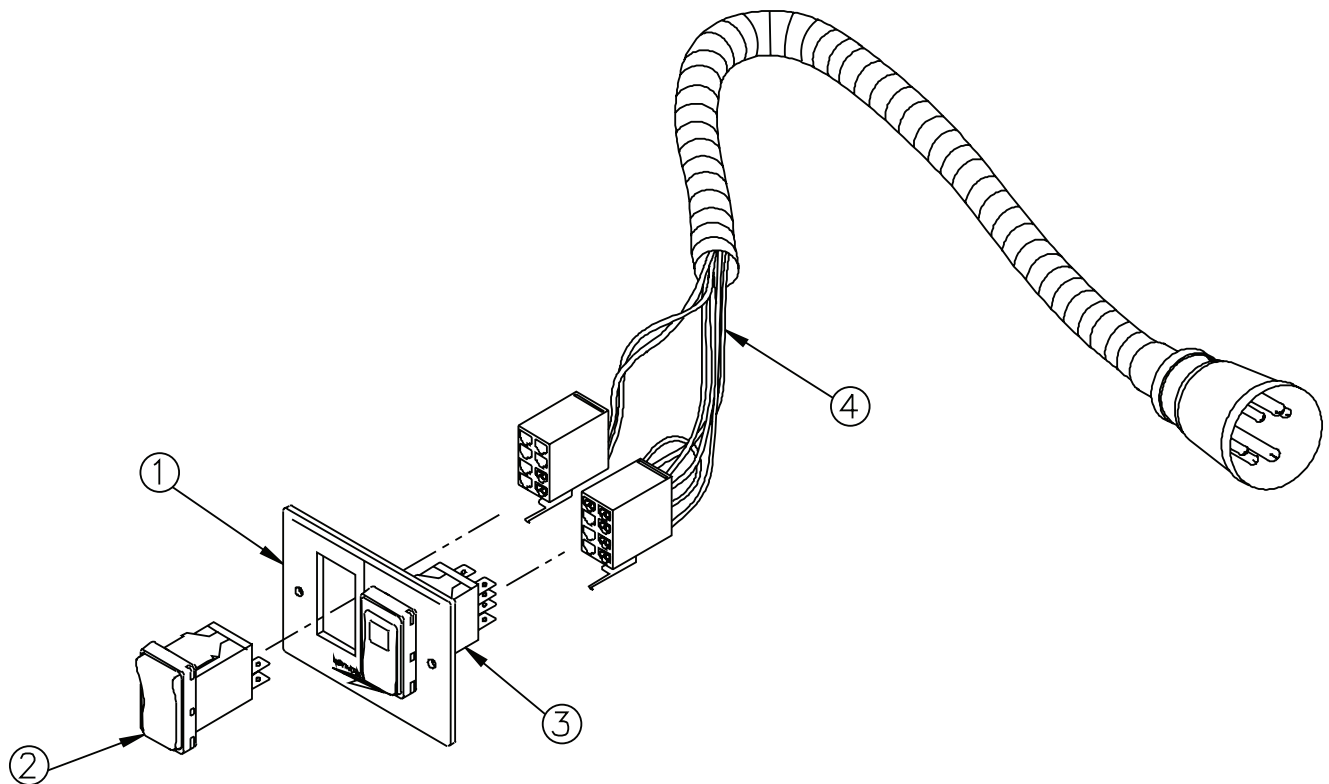


NL773alt&starter

| KEY | PART NUMBER | QTY | DESCRIPTION                     | SERIAL NUMBER |
|-----|-------------|-----|---------------------------------|---------------|
| 1   | 185046220   | 1   | Alternator, 12 Volt 40 Amp      | -             |
| 2   | 185976220   | 1   | Bracket                         | -             |
| 3   | 40-08605    | 1   | Drive Belt (former # 080109108) | -             |
| 4   | 185726971   | 1   | Tensioning Arm                  | -             |
| 5   | 199236680   | 1   | Collar                          | -             |
| 6   | 011510840   | 1   | Bolt                            | -             |
| 7   | 026109017   | 1   | Washer                          | -             |
| 8   | 011310614   | 2   | Bolt                            | -             |
| 9   | 010311045   | 1   | Bolt                            | -             |
| 10  | 15-00802    | 1   | Spring Washer                   | -             |
| 11  | 020900010   | 1   | Nut                             | -             |
| 12  | 011310820   | 2   | Bolt                            | -             |
| 13  | 110446363   | 1   | Flywheel Housing                | -             |
| 14  | 010311020   | 8   | Bolt                            | -             |
| 15  | 185086551   | 1   | Starting Motor 12 Volt          | -             |
| 16  | 026100010   | 2   | Washer                          | -             |
| 17  | 010311045   | 2   | Bolt                            | -             |
| 18  | 15-00802    | 2   | Spring Washer                   | -             |
| 19  | 020900010   | 2   | Nut                             | -             |
| 20  | 398460090   | 1   | Plug                            | -             |
| 21  | 195816100   | 1   | Lifting Eye                     | -             |

GROUP 5 – ELECTRICAL SYSTEM

**S-1 Control Panel 12 & 24 Volt**



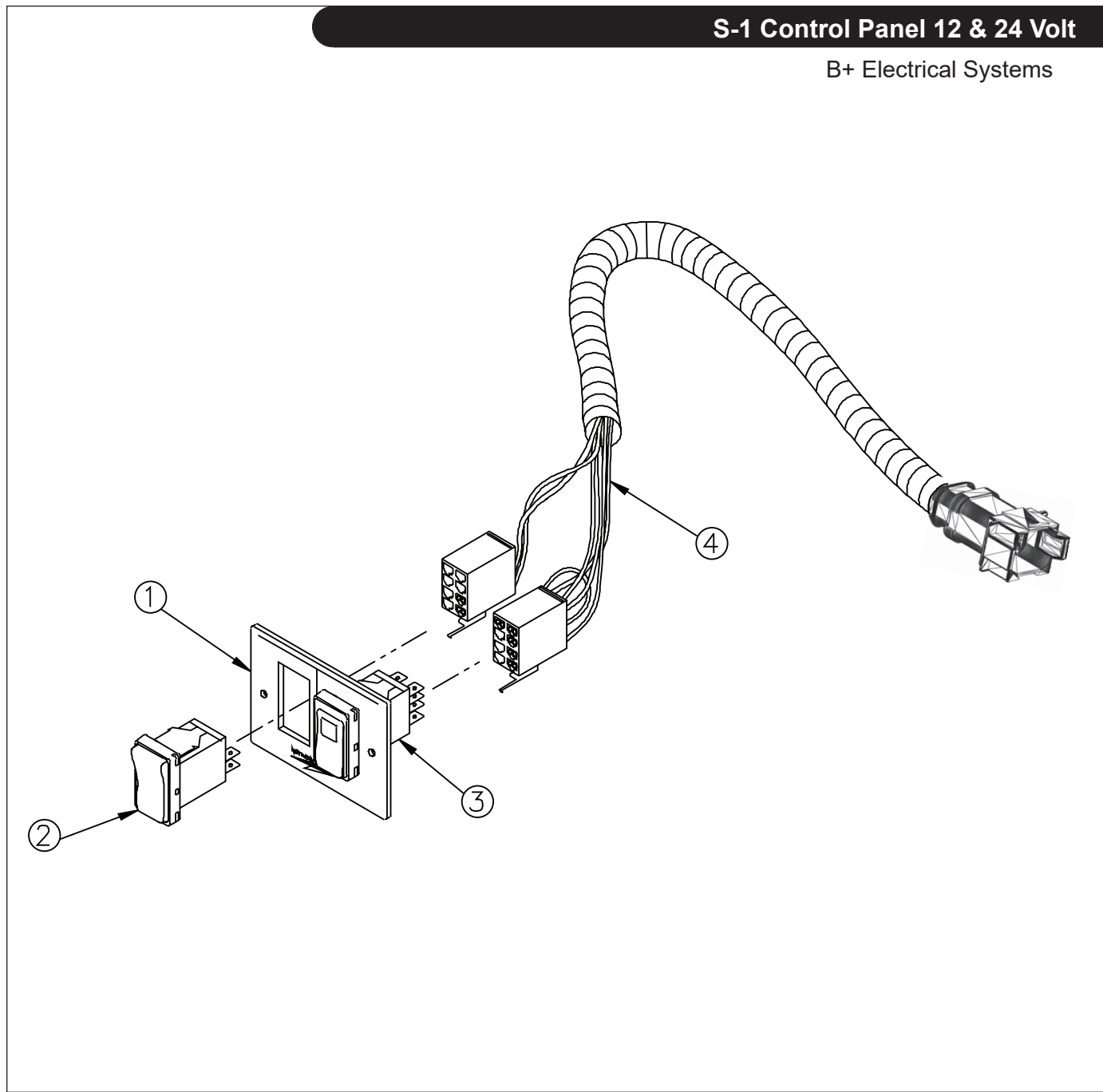
A-8551, A-8552 / B-5970

| KEY | PART NUMBER | QTY | DESCRIPTION                                                     | SERIAL NUMBER |
|-----|-------------|-----|-----------------------------------------------------------------|---------------|
| ••  | 22-92110    | 1   | S-1 Start/Stop Control Panel, 12 or 24 Volt (includes all keys) | -             |
| 1   | 00-40013    | 1   | Plate, S-1 Control Panel                                        | -             |
| 2   | 22-90167    | 1   | Rocker Switch                                                   | -             |
| 3   | 22-90362    | 1   | Rocker Switch                                                   | -             |
| 4   | 22-42063    | 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                                                      |               |



S-1 Control Panel 12 & 24 Volt

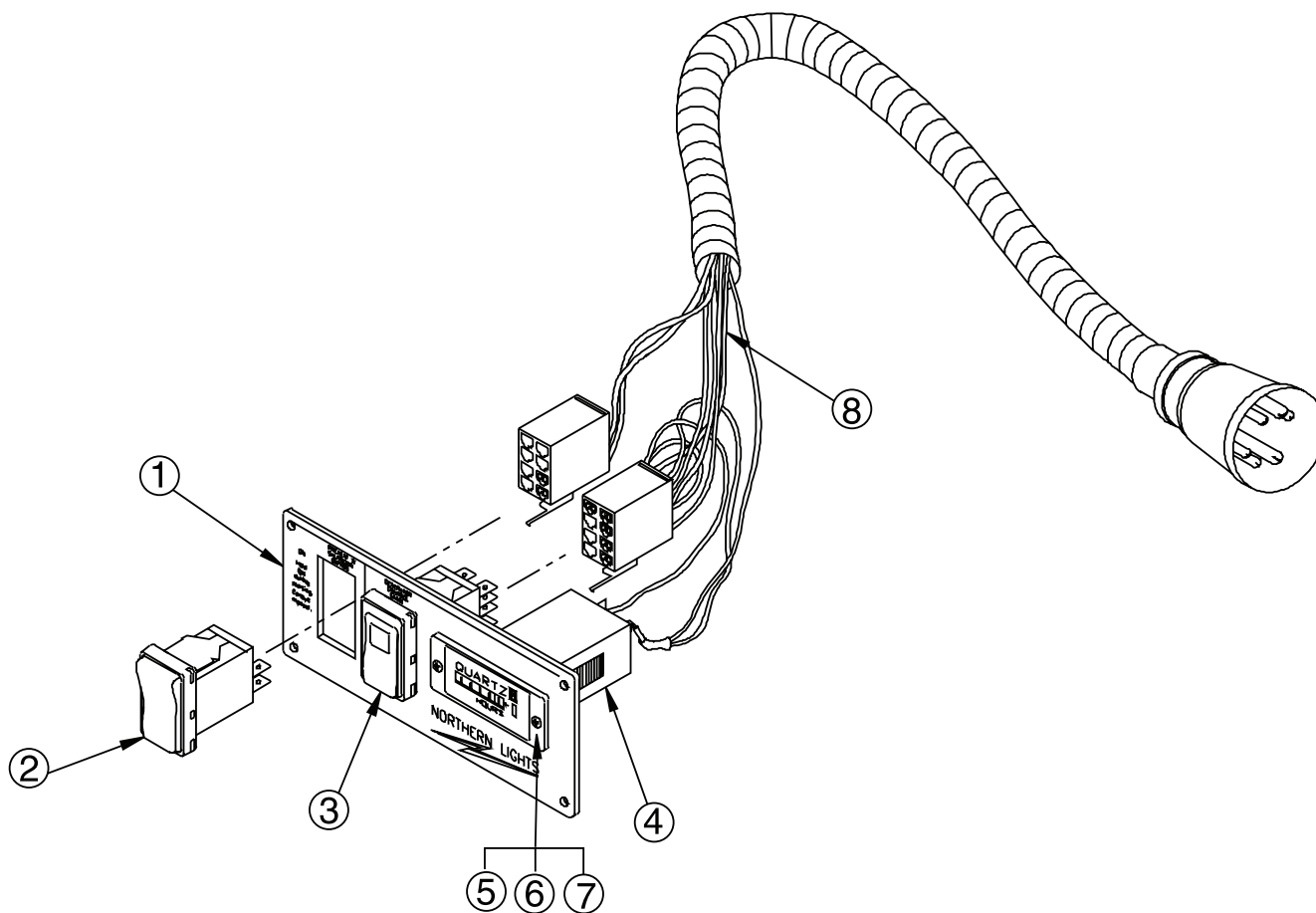
B+ Electrical Systems



| KEY | PART NUMBER | QTY | DESCRIPTION                                       | SERIAL NUMBER |
|-----|-------------|-----|---------------------------------------------------|---------------|
| ••  | 22-95600    | 1   | S-1 Start/Stop Control Panel (includes all keys)  | -             |
| 1   | 00-40013    | 1   | Plate, S-1 Control Panel                          | -             |
| 2   | 22-90167    | 1   | Rocker Switch, Momentary (On)-Off                 | -             |
| 3   | 22-90362    | 1   | Rocker Switch, Momentary (On)-Off-(On) Green Lamp | -             |
| 4   | 22-45602    | 1   | Wire Harness                                      | -             |
| 5   | 00-00048    | 1   | Label "12-24 Volt" (Not Shown)                    | -             |

GROUP 5 – ELECTRICAL SYSTEM

Series 1-B Start-Stop Control Panel 12 & 24 Volt

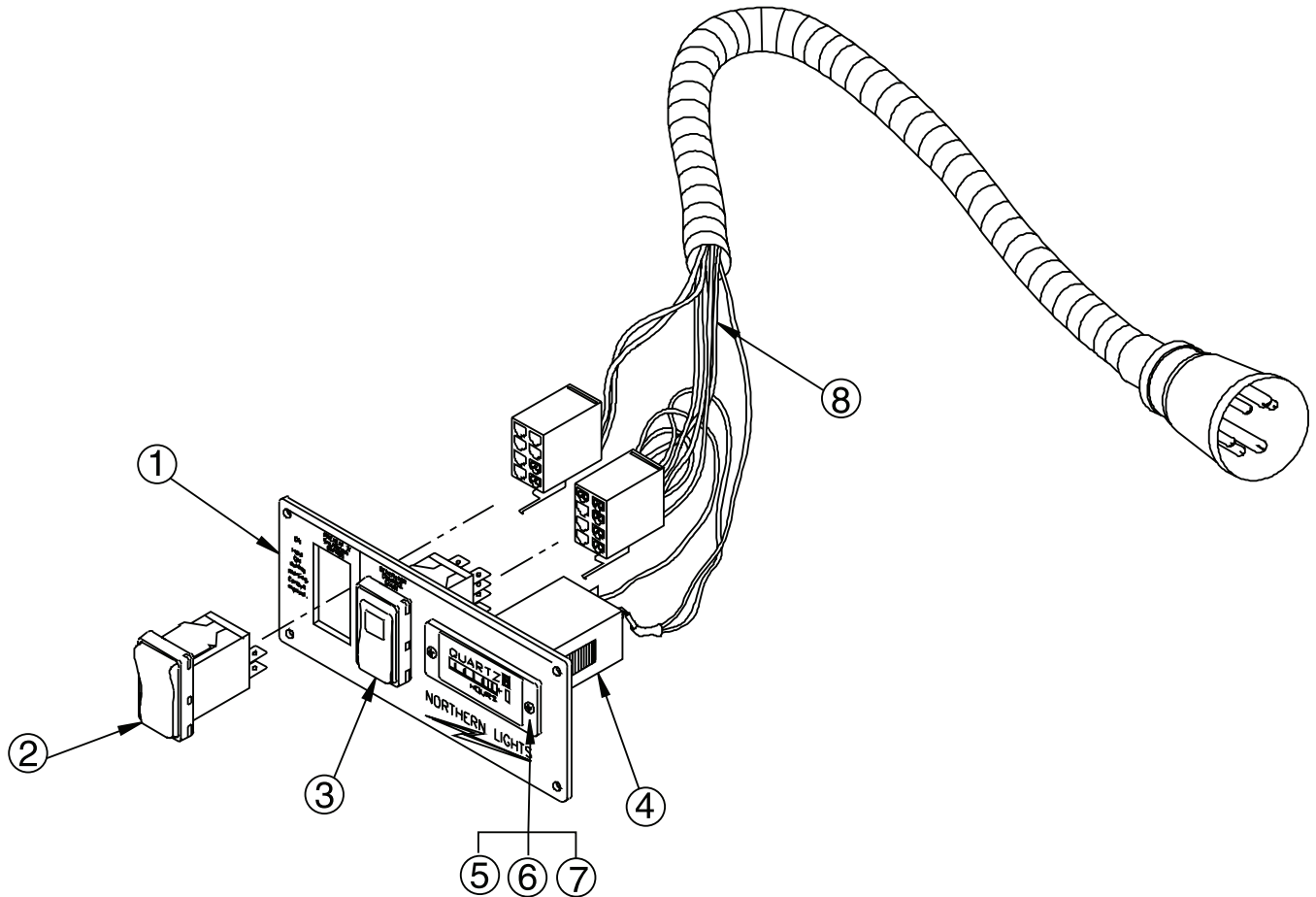


A-8553/ B-5971

| 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   | 22-90302    | 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                                | -             |

Series 1-B Start/Stop Control Panel

B+ Electrical Systems

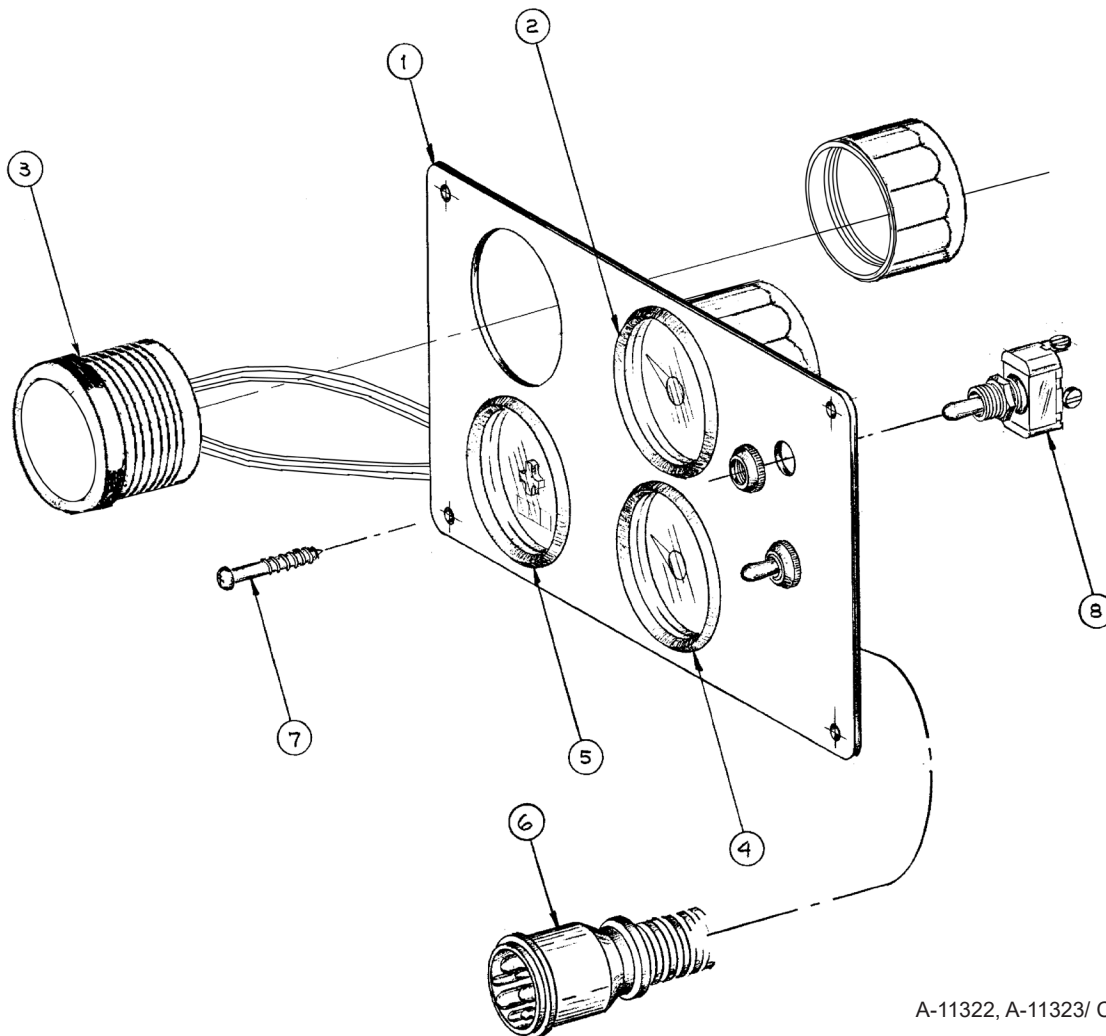


| KEY | PART NUMBER | QTY | DESCRIPTION                                                           | SERIAL NUMBER |
|-----|-------------|-----|-----------------------------------------------------------------------|---------------|
| ••  | 22-95605    | 1   | Series 1-B Start/Stop Control Panel 12 or 24 Volt (includes all keys) | -             |
| 1   | 28-90003    | 1   | Plate                                                                 | -             |
| 2   | 22-90167    | 1   | Rocker Switch, Momentary (On)-Off                                     | -             |
| 3   | 22-90362    | 1   | Rocker Switch, Green LED (On)-Off-(On) Green Lamp                     | -             |
| 4   | 22-90009    | 1   | Hour Meter                                                            | -             |
| 5   | 12-00093    | 2   | Machine Screw, Round Head Phillips #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   | 22-45603    | 1   | Wire harness                                                          | -             |
| 9   | 00-00048    | 1   | Label "12-24 Volts" (Not shown)                                       | -             |

GROUP 5 – ELECTRICAL SYSTEM

**S-3C Control Panel 12 & 24 Volt**

VDO Ocean Line Black Bezel Gauges

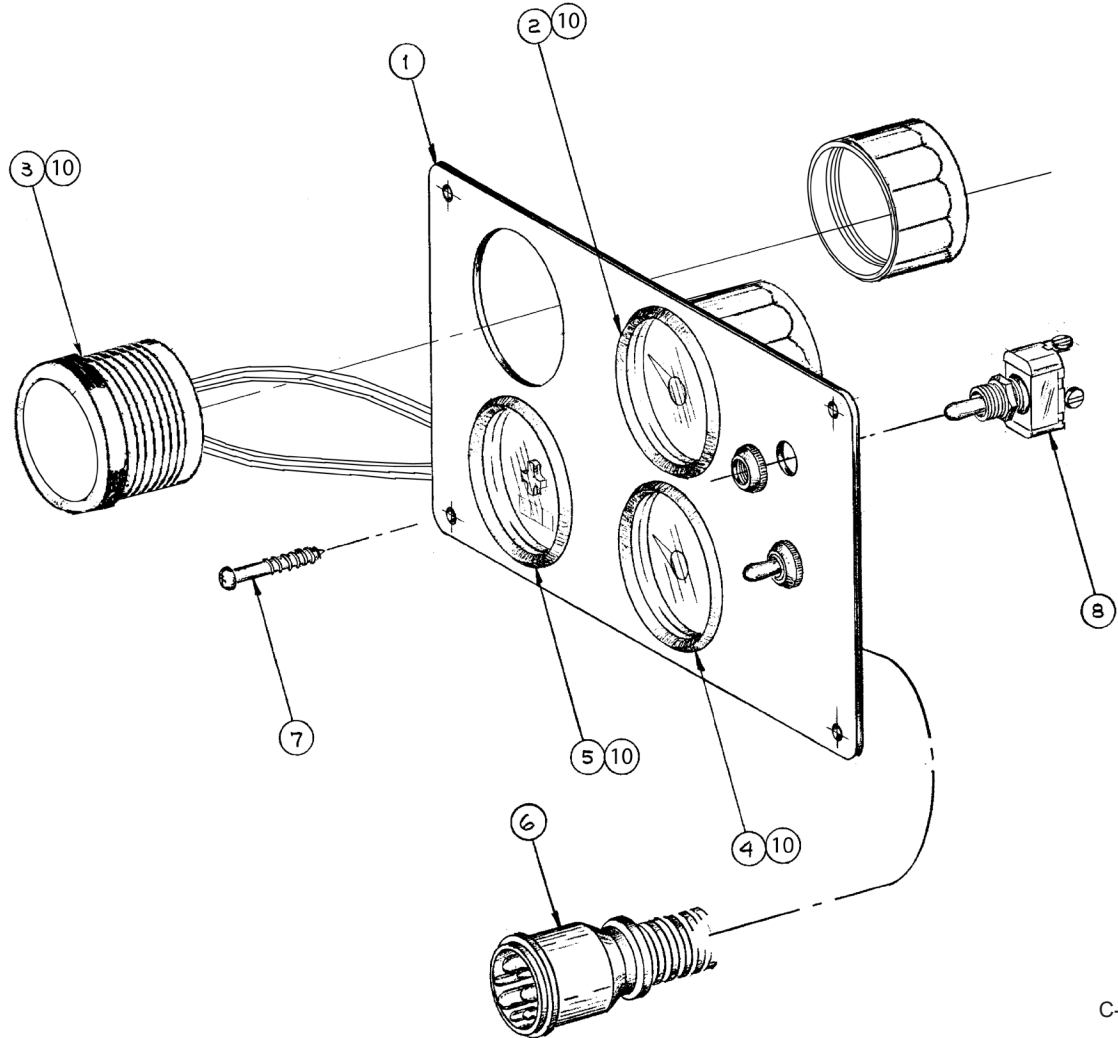


A-11322, A-11323/ C-2441

| KEY | PART NUMBER | QTY | DESCRIPTION                                      | SERIAL NUMBER |
|-----|-------------|-----|--------------------------------------------------|---------------|
| ••  | 22-91216    | 1   | S-3C Control Panel, 12 Volt (includes all keys)  | -             |
| ••  | 22-91217    | 1   | S-3C Control Panel, 24 Volt (includes all keys)  | -             |
| 1   | 28-90010    | 1   | Panel Plate                                      | -             |
| 2   | 37-90081-1  | 1   | Oil Pressure Gauge, 0-80 PSI 12 Volt             | -             |
|     | 37-90082-1  | 1   | Oil Pressure Gauge, 0-80 PSI 24 Volt             | -             |
| 3   | 37-90075-1  | 1   | Temperature Gauge, 0- 250°F 12 Volt              | -             |
|     | 37-90076-1  | 1   | Temperature Gauge, 0- 250°F 24 Volt              | -             |
| 4   | 37-90072-1  | 1   | DC Voltmeter, 8 - 16 VDC                         | -             |
|     | 37-90073-1  | 1   | DC Voltmeter, 18- 32 VDC                         | -             |
| 5   | 37-90074-1  | 1   | Hourmeter 12/ 24 Volt                            | -             |
| 6   | 22-42024    | 1   | Panel Wire Harness                               | -             |
| 7   | 12-90007    | 4   | Self Tapping Screw, Oval Head Phillips #6 x 3/4" | -             |
| 8   | 22-41051    | 2   | Toggle Switch                                    | -             |
| 9   | 00-00013    | 1   | Label 12 Volt (not shown)                        | -             |
|     | 00-00014    | 1   | Label 24 Volt (not shown)                        | -             |
| 10  | 37-41004    | **  | 12 Volt Bulb (not shown)                         | -             |
|     | 37-41003    | **  | 24 Volt Bulb (not shown)                         | -             |
|     |             |     | **As required                                    |               |

**S-3C Control Panel 12 Volt**

VDO Viewline Black Bezel Gauges



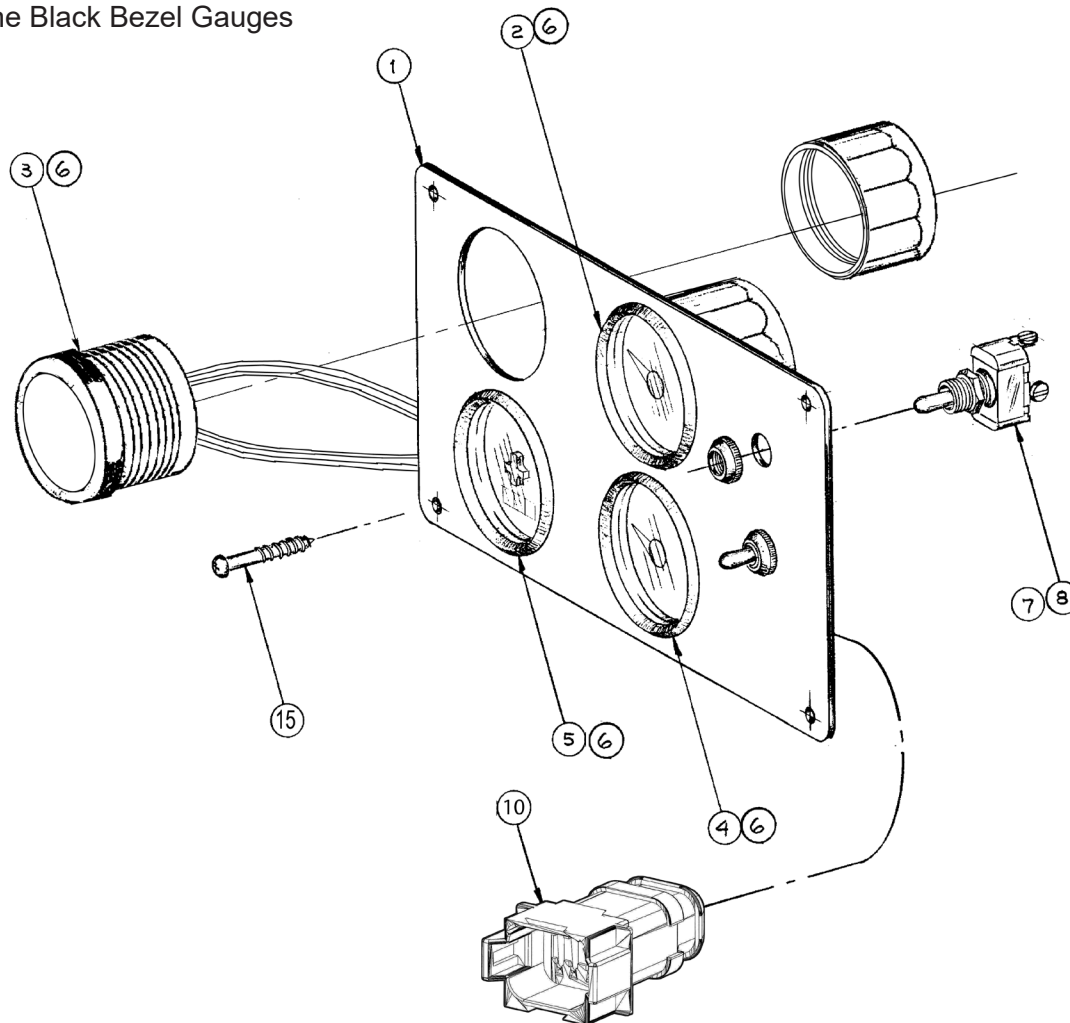
C-2441

| KEY | PART NUMBER | QTY | DESCRIPTION                                      | SERIAL NUMBER |
|-----|-------------|-----|--------------------------------------------------|---------------|
| ••  | 22-91216    | 1   | S-3C Control Panel, 12 Volt (includes all keys)  | -             |
| ••  | 22-91217    | 1   | S-3C Control Panel, 24 Volt (includes all keys)  | -             |
| 1   | 28-90010    | 1   | Panel Plate                                      | -             |
| 2   | 37-91075-1  | 1   | Oil Pressure Gauge, 0-80 PSI 12/24 Volt *        | -             |
| 3   | 37-91074-1  | 1   | Temperature Gauge, 0- 250°F 12/24 Volt *         | -             |
| 4   | 37-91070-1  | 1   | DC Voltmeter, 8 - 16 VDC *                       | -             |
|     | 37-91071-1  | 1   | Voltmeter 18 - 32 VDC *                          | -             |
| 5   | 37-91072-1  | 1   | Hourmeter 12/ 24 Volt                            | -             |
| 6   | 22-42096    | 1   | Panel Wire Harness                               | -             |
| 7   | 12-90007    | 4   | Self Tapping Screw, Oval Head Phillips #6 x 3/4" | -             |
| 8   | 22-41051    | 2   | Toggle Switch                                    | -             |
| 9   | 00-00013    | 1   | Label 12 Volt (not shown)                        | -             |
| 10  | 37-00014    | 4   | Bezel                                            | -             |
|     |             |     | * Note Bezel 37-00014 supplied separately        |               |

GROUP 5 – ELECTRICAL SYSTEM

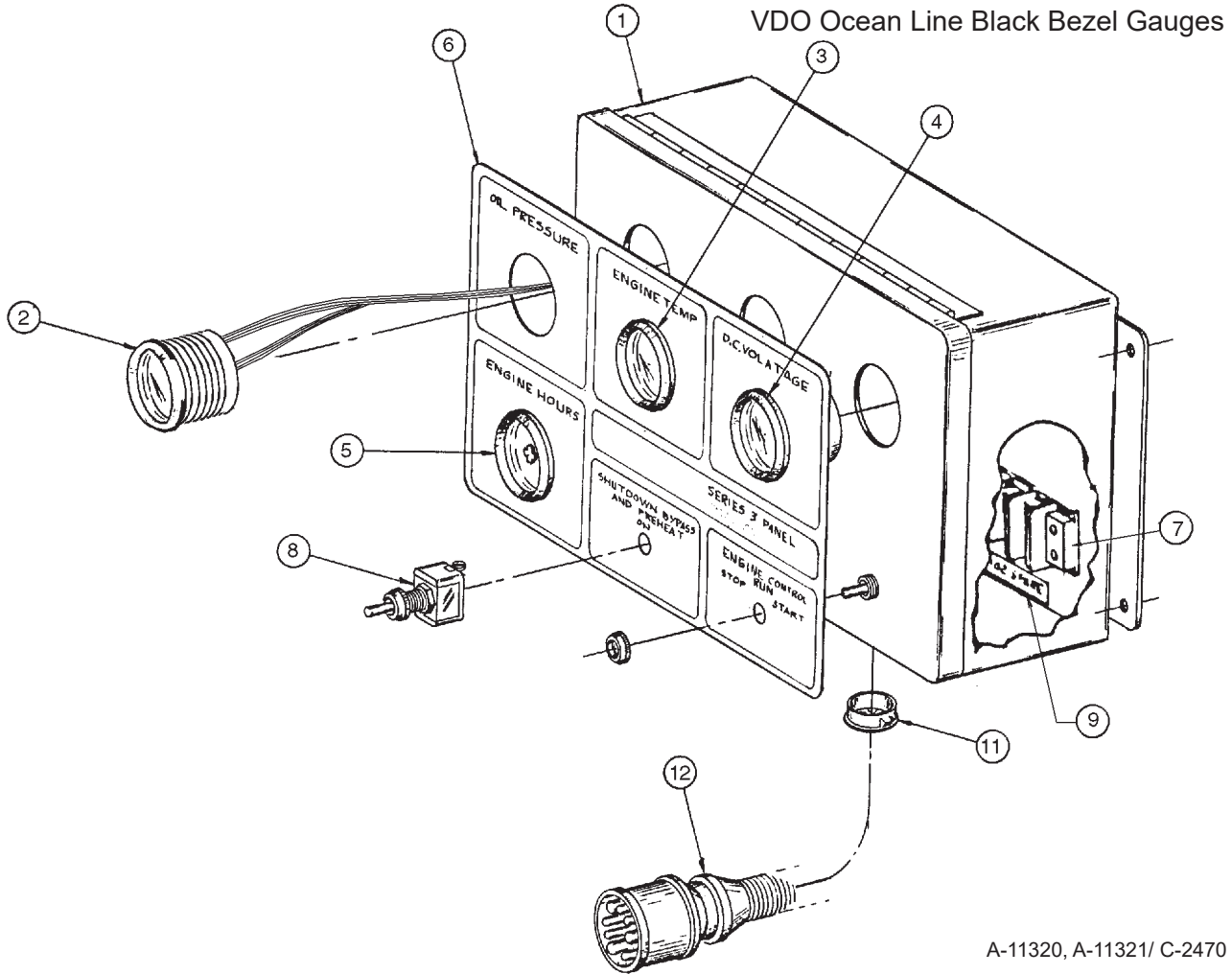
**S-3C Control Panel 12 - 24 Volt B+ Systems**

VDO Viewline Black Bezel Gauges



| KEY | PART NUMBER | QTY | DESCRIPTION                                      | SERIAL NUMBER |
|-----|-------------|-----|--------------------------------------------------|---------------|
| ••  | 22-95611    | 1   | S-3C Control Panel, 12 Volt (includes all keys)  | -             |
| ••  | 22-95612    | 1   | S-3C Control Panel, 24 Volt (includes all keys)  | -             |
| 1   | 28-90010    | 1   | Panel Plate                                      | -             |
| 2   | 37-91075-1  | 1   | Oil Pressure Gauge, 0-80 PSI 12/24 Volt *        | -             |
| 3   | 37-91074-1  | 1   | Temperature Gauge, 0- 250°F 12/24 Volt *         | -             |
| 4   | 37-91070-1  | 1   | DC Voltmeter, 8 - 16 VDC *                       | -             |
|     | 37-91071-1  | 1   | Voltmeter 18 - 32 VDC *                          | -             |
| 5   | 37-91072-1  | 1   | Hourmeter 12/ 24 Volt *                          | -             |
| 6   | 37-00014    | 4   | Bezel                                            | -             |
| 8   | 22-41051    | 1   | Toggle Switch                                    | -             |
|     | 22-40335    | 1   | Toggle Switch                                    | -             |
| 9   | 23-95601    | 1   | Bracket, Relay Base Mounting                     | -             |
| 10  | 22-45606    | 1   | Panel Wire Harness                               | -             |
| 11  | 12-00075    | 1   | Machine Screw #8-32 x 1/4"                       | -             |
| 12  | 15-00035    | 1   | Star Washer #8                                   | -             |
| 13  | 22-42047    | **  | Relay 12 Volt                                    | -             |
|     | 22-40710    | **  | Relay 24 Volt                                    | -             |
| 14  | 00-00013    | **  | Label 12 Volt (not shown)                        | -             |
|     | 00-00014    | **  | Label 24 Volt (not shown)                        | -             |
| 15  | 12-90007    | 4   | Self Tapping Screw, Oval Head Phillips #6 x 3/4" | -             |
|     |             |     | ** As Required                                   |               |

S-3B Control Panel 12 & 24 Volt



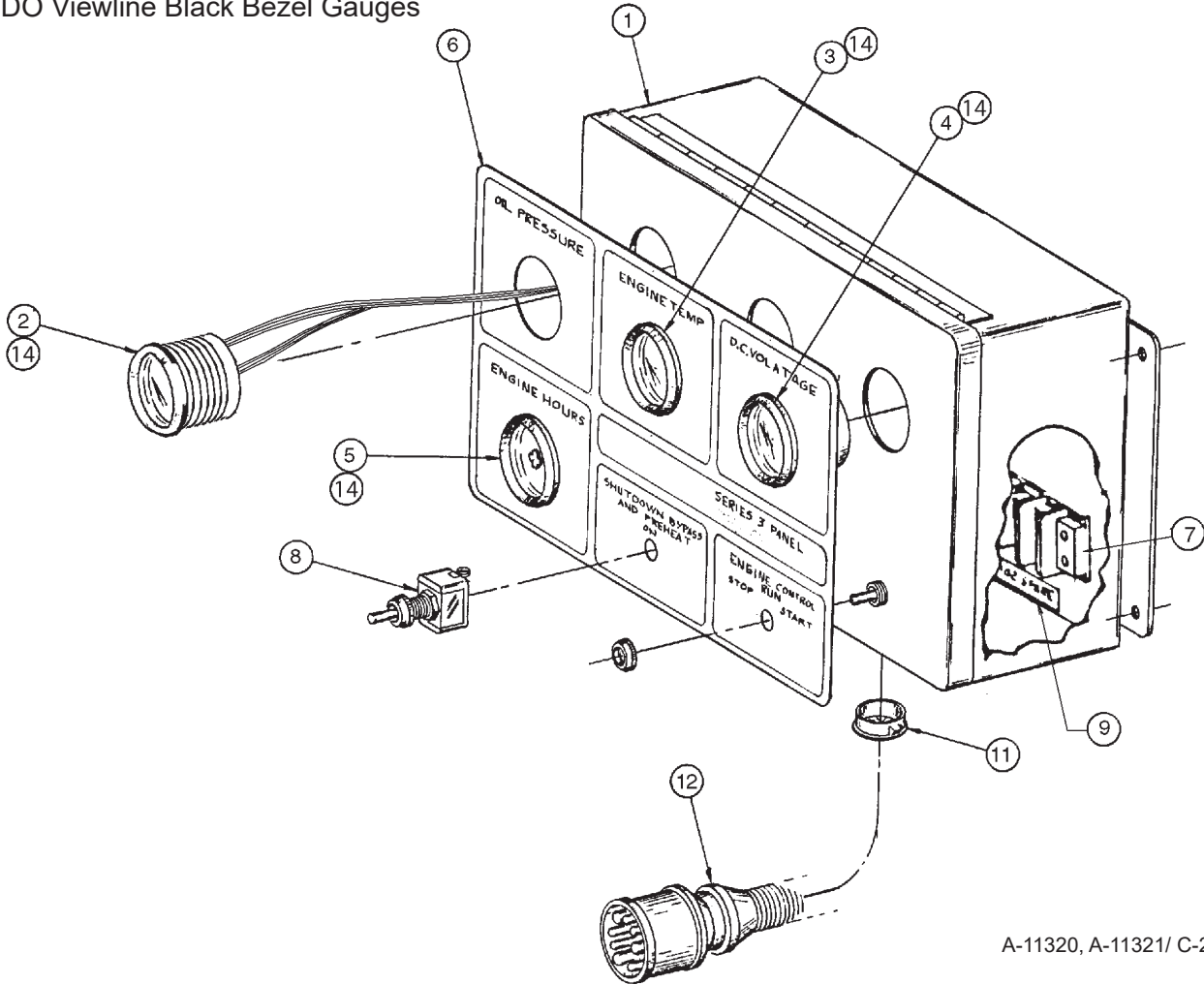
A-11320, A-11321/ C-2470

| KEY | PART NUMBER | QTY | DESCRIPTION                                     | SERIAL NUMBER |
|-----|-------------|-----|-------------------------------------------------|---------------|
| ••  | 22-91203    | 1   | S-3C Control Panel, 12 Volt (includes all keys) | -             |
| ••  | 22-91204    | 1   | S-3C Control Panel, 24 Volt (includes all keys) | -             |
| 1   | 39-40008    | 1   | Enclosure                                       | -             |
| 2   | 37-90081-1  | 1   | Oil Pressure Gauge, 0-80 PSI 12 Volt            | -             |
|     | 37-90082-1  | 1   | Oil Pressure Gauge, 0-80 PSI 24 Volt            | -             |
| 3   | 37-90075-1  | 1   | Temperature Gauge, 0- 250°F 12 Volt             | -             |
|     | 37-90076-1  | 1   | Temperature Gauge, 0- 250°F 24 Volt             | -             |
| 4   | 37-90072-1  | 1   | DC Voltmeter, 8 - 16 VDC                        | -             |
|     | 37-90073-1  | 1   | DC Voltmeter, 18- 32 VDC                        | -             |
| 5   | 37-90074-1  | 1   | Hourmeter 12/ 24 Volt                           | -             |
| 6   | 00-91018    | 1   | Panel Decal                                     | -             |
| 7   | 22-41077    | 1   | Terminal Strip                                  | -             |
| 8   | 22-41051    | 2   | Toggle Switch                                   | -             |
| 9   | 22-00052    | 1   | Number Strip                                    | -             |
| 10  | 22-40257    | 1   | Wire Harness (not shown)                        | -             |
| 11  | 00-40028    | 1   | Grommet                                         | -             |
| 12  | 22-42027    | 1   | Connection Harness                              | -             |
| 13  | 00-00013    | 1   | Label 12 Volt (not shown)                       | -             |
|     | 00-00014    | 1   | Label 24 Volt (not shown)                       | -             |
| 14  | 37-41004    | **  | 12 Volt Bulb (not shown)                        | -             |
|     | 37-41003    | **  | 24 Volt Bulb (not shown)                        | -             |
|     |             |     | **As required                                   |               |

GROUP 5 – ELECTRICAL SYSTEM

**S-3B Control Panel 12 Volt**

VDO Viewline Black Bezel Gauges



A-11320, A-11321/ C-2470

| KEY | PART NUMBER | QTY | DESCRIPTION                                     | SERIAL NUMBER |
|-----|-------------|-----|-------------------------------------------------|---------------|
| ••  | 22-91203    | 1   | S-3C Control Panel, 12 Volt (includes all keys) | -             |
| ••  | 22-91204    | 1   | S-3C Control Panel, 24 Volt (includes all keys) | -             |
| 1   | 39-40027    | 1   | Enclosure                                       | -             |
| 2   | 37-91075-1  | 1   | Oil Pressure Gauge, 0-80 PSI 12/24 Volt *       | -             |
| 3   | 37-91074-1  | 1   | Temperature Gauge, 0- 250°F 12/24 Volt *        | -             |
| 4   | 37-91070-1  | 1   | Voltmeter, 8 - 16 VDC *                         | -             |
|     | 37-91071-1  | 1   | Voltmeter 18 - 32 VDC *                         | -             |
| 5   | 37-91072-1  | 1   | Hourmeter 12/ 24 Volt                           | -             |
| 6   | 00-91018    | 1   | Panel Decal                                     | -             |
| 7   | 22-41077    | 1   | Terminal Strip                                  | -             |
| 8   | 22-41051    | 2   | Toggle Switch                                   | -             |
| 9   | 22-00052    | 1   | Number Strip                                    | -             |
| 10  | 22-40648    | 1   | Wire Harness (not shown)                        | -             |
| 11  | 00-40028    | 1   | Grommet                                         | -             |
| 12  | 22-42027    | 1   | Connection Harness                              | -             |
| 13  | 00-00013    | 1   | Label 12 Volt (not shown)                       | -             |
| 14  | 37-00014    | 4   | Bezel                                           | -             |
|     |             |     | * Note Bezel 37-00014 supplied separately       |               |

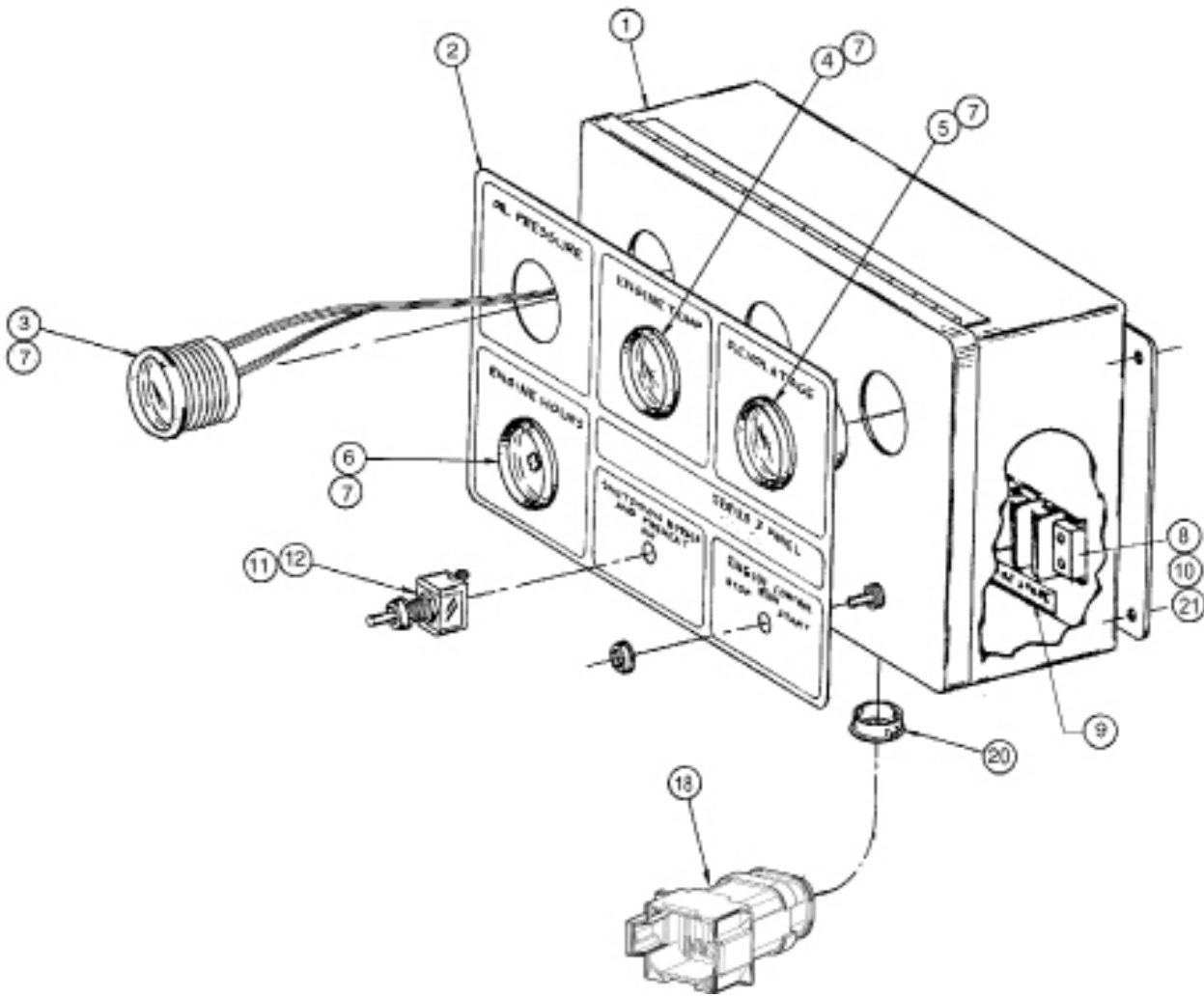


**This Page Left Intentionally Blank**

GROUP 5 – ELECTRICAL SYSTEM

**S-3B Control Panel 12 - 24 Volt B+ Systems**

VDO Viewline Black Bezel Gauges



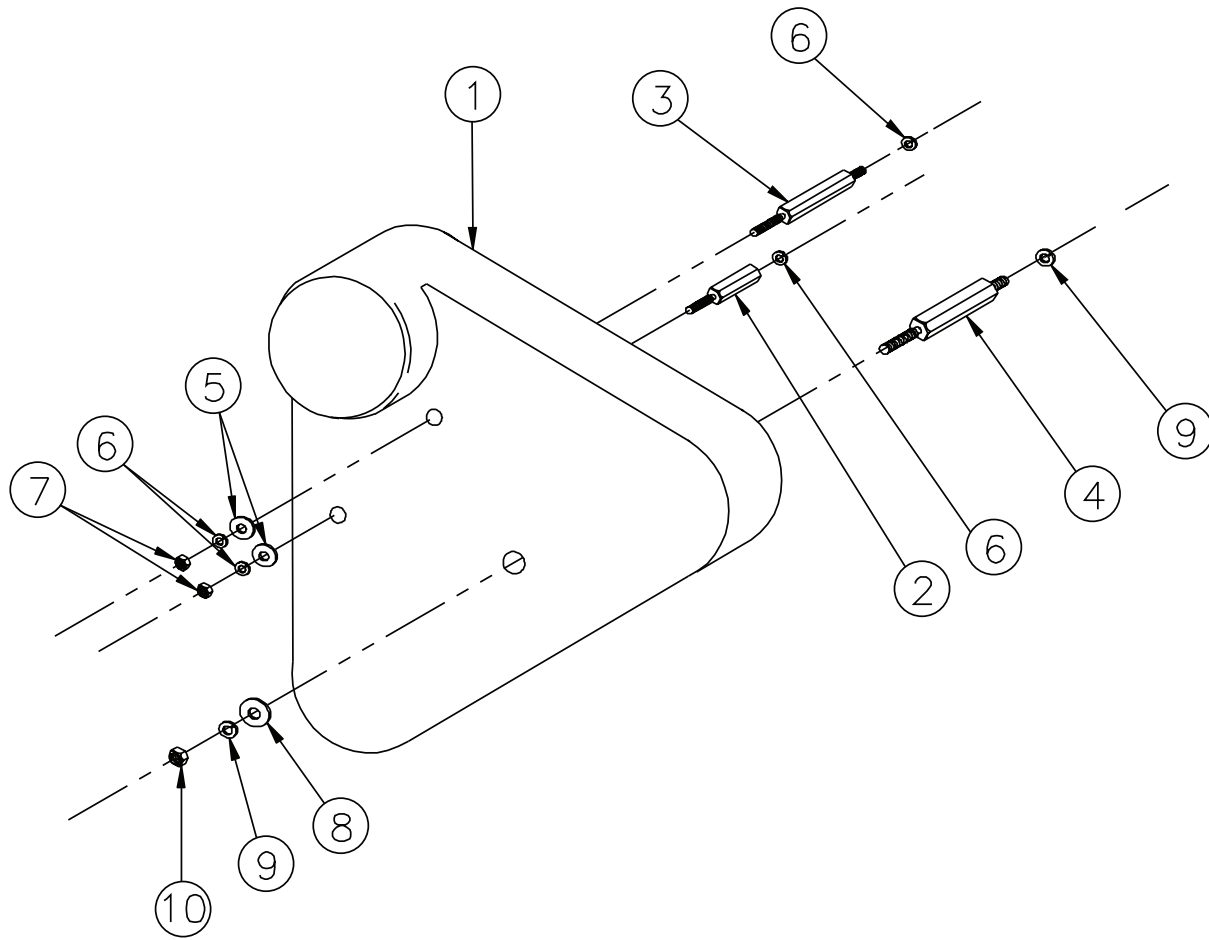
### S-3B Control Panel 12 - 24 Volt B+ Systems

VDO Viewline Black Bezel Gauges

| KEY | PART NUMBER | QTY | DESCRIPTION                                        | SERIAL NUMBER |
|-----|-------------|-----|----------------------------------------------------|---------------|
| ••  | 22-95601    | 1   | S-3C Control Panel, 12 Volt (includes all keys)    | -             |
| ••  | 22-95602    | 1   | S-3C Control Panel, 24 Volt (includes all keys)    | -             |
| 1   | 39-40027    | 1   | Enclosure                                          | -             |
| 2   | 00-91018    | 1   | Decal                                              | -             |
| 3   | 37-91075-1  | 1   | Oil Pressure Gauge, 0-80 PSI 12/24 Volt *          | -             |
| 4   | 37-91074-1  | 1   | Temperature Gauge, 0- 250°F 12/24 Volt *           | -             |
| 5   | 37-91070-1  | 1   | Voltmeter, 8 - 16 VDC *                            | -             |
|     | 37-91071-1  | 1   | Voltmeter 18 - 32 VDC *                            | -             |
| 6   | 37-91072-1  | 1   | Hourmeter 12/ 24 Volt                              | -             |
| 7   | 37-00014    | 4   | Bezel                                              | -             |
| 8   | 22-41077    | 1   | Terminal Strip                                     | -             |
| 9   | 22-00052    | 1   | Number Strip                                       | -             |
| 10  | 14-09021    | 2   | Jam Nut, Nylock #8-32 S/S                          | -             |
| 11  | 22-41051    | 1   | Toggle Switch                                      | -             |
| 12  | 22-40335    | 1   | Toggle Switch                                      | -             |
| 13  | 23-95602    | 1   | Bracket, Relay Mounting                            | -             |
| 14  | 22-45604    | 1   | Wire Harness (not shown) (Includes keys 22-23)     | -             |
| 15  | 12-00075    | 1   | Machine Screw, Phillips #8-32 x 1/4" S/S           | -             |
| 16  | 15-00035    | 1   | Star Washer #8 S/S                                 | -             |
| 17  | 22-42047    | **  | Relay 12 Volt                                      | -             |
|     | 22-40710    | **  | Relay 24 Volt                                      | -             |
| 18  | 22-45607    | 1   | Connection Harness                                 | -             |
| 19  | 00-00013    | **  | Label 12 Volt (not shown)                          | -             |
|     | 00-00014    | **  | Label 24 Volt                                      | -             |
| 20  | 00-40028    | 1   | Grommet                                            | -             |
| 21  | 12-42103    | 2   | Machine Screw, Pan Head, Phillips #8-32 x 5/8" S/S | -             |
| 22  | 22-40931    | 1   | Relay Base                                         | -             |
| 23  | 22-40393    | 1   | Retainer                                           | -             |
|     |             |     | * Note Bezel 37-00014 supplied separately          |               |

## Belt Guard Assembly

Standard Small Frame Alternators

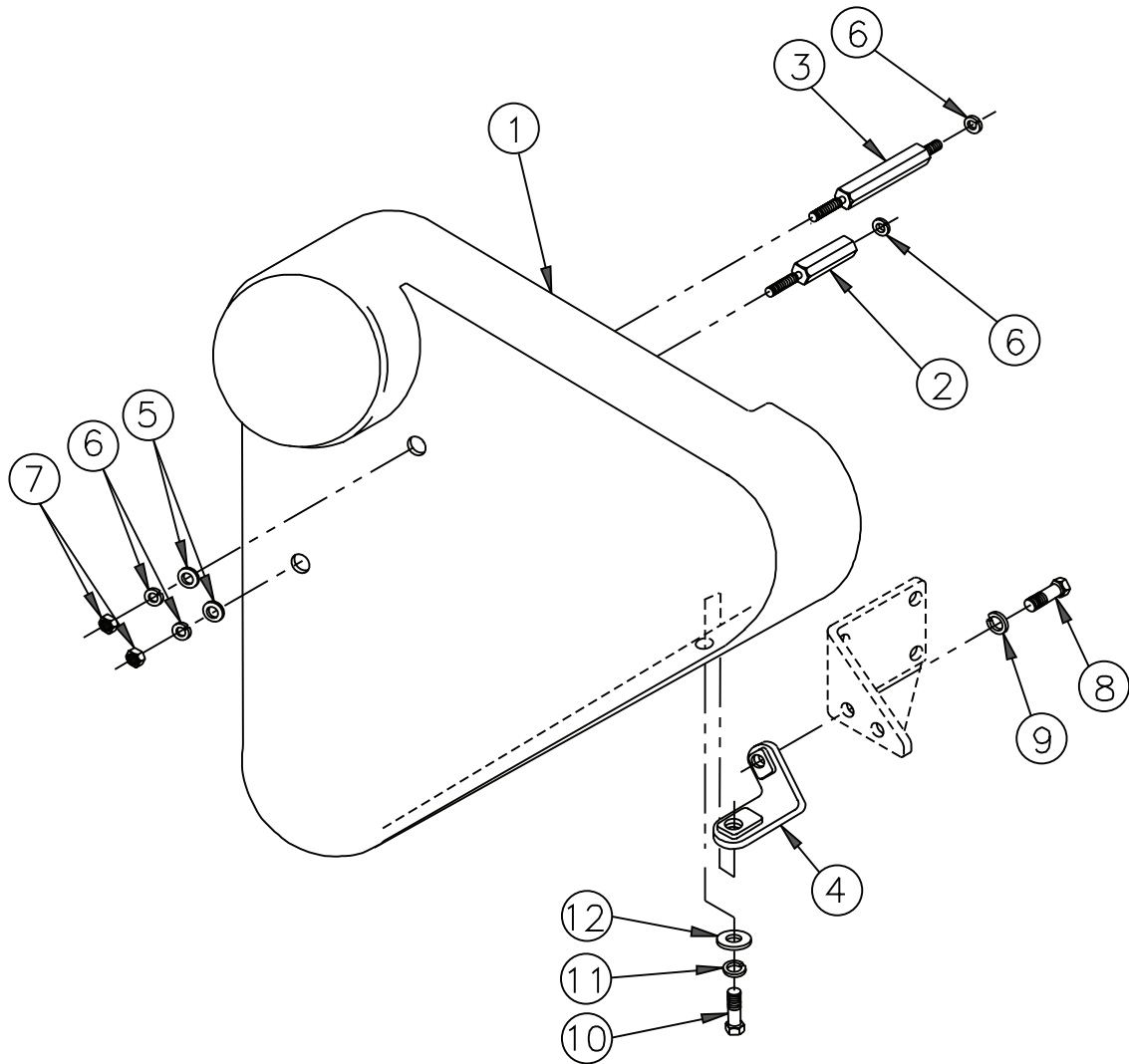


A-9314/ B-6972

| 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<br>(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                                                      | -             |

**Belt Guard Assembly**

*Optional Medium Frame Alternators*



A-9832/ B-9464

| KEY | PART NUMBER | QTY | DESCRIPTION                                                                   | SERIAL NUMBER |
|-----|-------------|-----|-------------------------------------------------------------------------------|---------------|
| 1   | 00-08603    | 1   | Belt Guard                                                                    | -             |
| 2   | 12-90049    | 1   | Capscrew, Hex Head M6 x 1.0 x 15 mm<br>(Head tapped M6 x 1.0 x 10 mm Special) | -             |
| 3   | 13-91132    | 1   | Stud, M6 x 1.0 x 111.4 mm                                                     | -             |
| 4   | 23-08602    | 1   | Bracket, Lower Belt Guard Mtg.                                                | -             |
| 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   | 12-00711    | 1   | Capscrew, Hex Head M8 x 1.25 x 20 mm                                          | -             |
| 9   | 15-00702    | 1   | Lock Washer, Helical M8                                                       | -             |
| 10  | 12-09712    | 1   | Capscrew, Hex Head M8 x 1.25 x 25 mm S/S                                      | -             |
| 11  | 15-00705    | 1   | Lock Washer, Helical M8 S/S                                                   | -             |
| 12  | 15-70004    | 1   | Snubbing Washer S/S                                                           | -             |

**GROUP 6 – GASKET SETS**

**Gasket Kits**

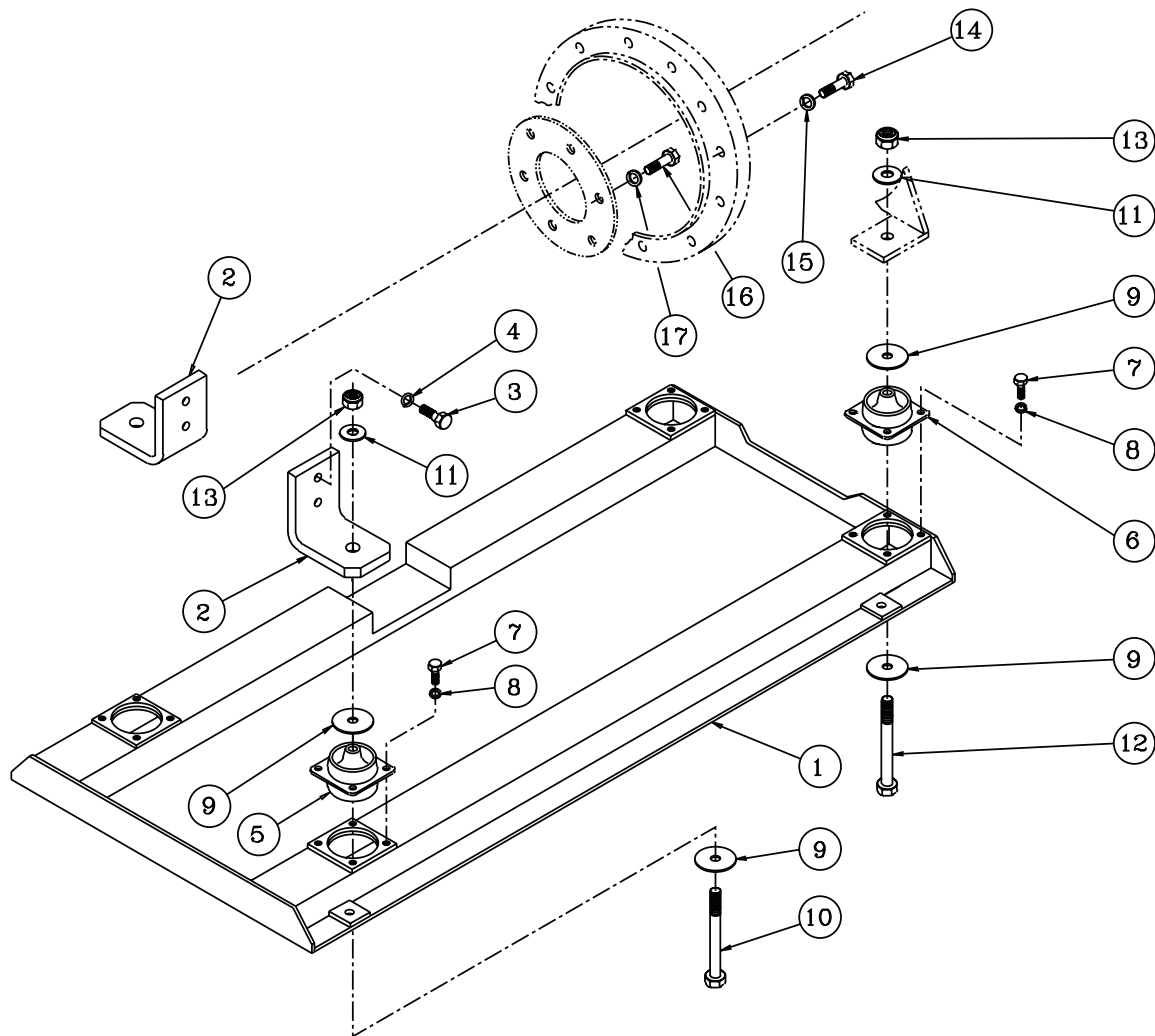
| KEY | PART NUMBER | QTY | DESCRIPTION                                 | SERIAL NUMBER |
|-----|-------------|-----|---------------------------------------------|---------------|
| ••  | 29-08602    | 1   | Gasket Kit (Marine, includes all keys)      | -             |
| •   | 195907460   | 1   | Gasket Kit (Industrial, includes keys 1-40) | -             |
| 1   | 050209107   | 1   | Oil Seal, Rear                              | -             |
| 2   | 052109076   | 1   | O-ring, Suction Oil Pipe                    | -             |
| 3   | 110996800   | 1   | Gasket, Oil Pan                             | -             |
| 4   | 025100016   | 2   | Seal Washer, Oil Pan Drain                  | -             |
| 5   | 165996520   | 1   | Gasket, Front Plate                         | -             |
| 6   | 052109108   | 2   | O-ring, Governor Shaft                      | -             |
| 7   | 052109110   | 1   | O-ring, Rocker Arm                          | -             |
| 8   | 052109109   | 1   | O-ring, Rocker Arm                          | -             |
| 9   | 165996530   | 1   | Gasket, Timing Gear                         | -             |
| 10  | 198636090   | 1   | Oil Seal, Front                             | -             |
| 11  | 165996610   | 1   | Gasket, Gear Case Cover                     | -             |
| 12  | 131426300   | 1   | Adjusting Shim Set, Injection Pump          | -             |
| 13  | 025100006   | 1   | Seal Washer, Air Bleed Screw                | -             |
| 14  | 140996260   | 4   | Gasket, Banjo Bolt                          | -             |
| 15  | 111147570   | 1   | Head Gasket, t=1.3                          | -             |
| 16  | 120406050   | 3   | Valve Guide Seal, Exhaust                   | -             |
| 17  | 120406070   | 3   | Valve Guide Seal, Intake                    | -             |
| 18  | 131426200   | 3   | Gasket, Injector Lower Side                 | -             |
| 19  | 131426210   | 3   | Gasket, Injector Upper Side                 | -             |
| 20  | 052100120   | 1   | O-ring, Rocker Arm Shaft                    | -             |
| 21  | 120996150   | 1   | Gasket, Rocker Arm Bracket                  | -             |
| 22  | 111996420   | 1   | Gasket, Rocker Arm Cover                    | -             |
| 23  | 140996260   | 3   | Gasket, Rocker Arm Cover                    | -             |
| 24  | 052100400   | 2   | O-ring, Oil Filler Cap                      | -             |
| 25  | 135996750   | 1   | Gasket, Air Intake                          | -             |
| 26  | 145996830   | 1   | Gasket, Coolant Pump                        | -             |
| 27  | 145996840   | 1   | Gasket, Thermostat Housing                  | -             |
| 28  | 145996850   | 1   | Gasket, Thermostat Cover                    | -             |
| 29  | 130516069   | 4   | Gasket, Joint Bolt                          | -             |
| 30  | 130996130   | 1   | Gasket, Fuel Pump                           | -             |
| 31  | 052109113   | 2   | O-ring, Dipstick Guide                      | -             |
| 32  | 025100016   | 1   | Seal Washer, Solenoid                       | -             |
| 33  | 052109078   | 1   | O-ring, Relief Valve                        | -             |
| 34  | 130326051   | 5   | Gasket, Joint Bolt                          | -             |
| 35  | 140996270   | 4   | Gasket, Valve Assembly                      | -             |
| 36  | 135996900   | 1   | Gasket                                      | -             |
| 37  | 135996541   | 1   | Gasket, Exhaust Manifold                    | -             |
| 38  | 314990013   | 1   | Gasket                                      | -             |
| 39  | 052300700   | 1   | O-ring, Gear Case Cover                     | -             |
| 40  | 314990030   | 1   | Gasket, Elbow                               | -             |
| 41  | 11-08601    | 1   | Gasket, Exhaust                             | -             |
| 42  | 11-18602    | 1   | Gasket, Thermostat Cover                    | -             |
| 43  | 16-13101    | 1   | O-ring, Raw Water Pump                      | -             |

**This Page Left Intentionally Blank**

GROUP 7 – FRAME AND MOUNTING

Base Frame Assembly

Marine Applications Up to S/N xxxx-46361C



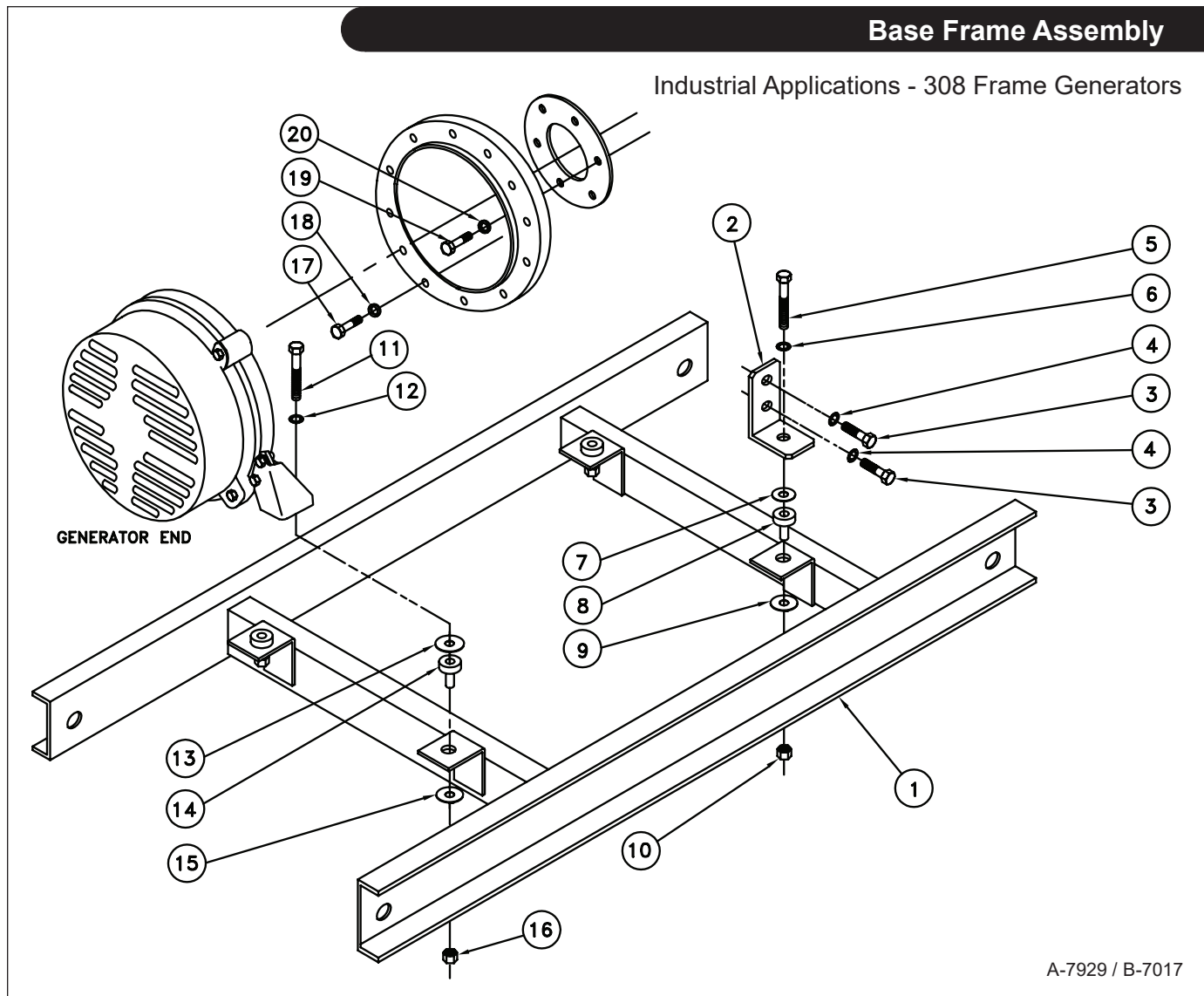
A-9314/ D-3472

| 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   | 15-00040    | 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                               | -             |



**Base Frame Assembly**

Industrial Applications - 308 Frame Generators



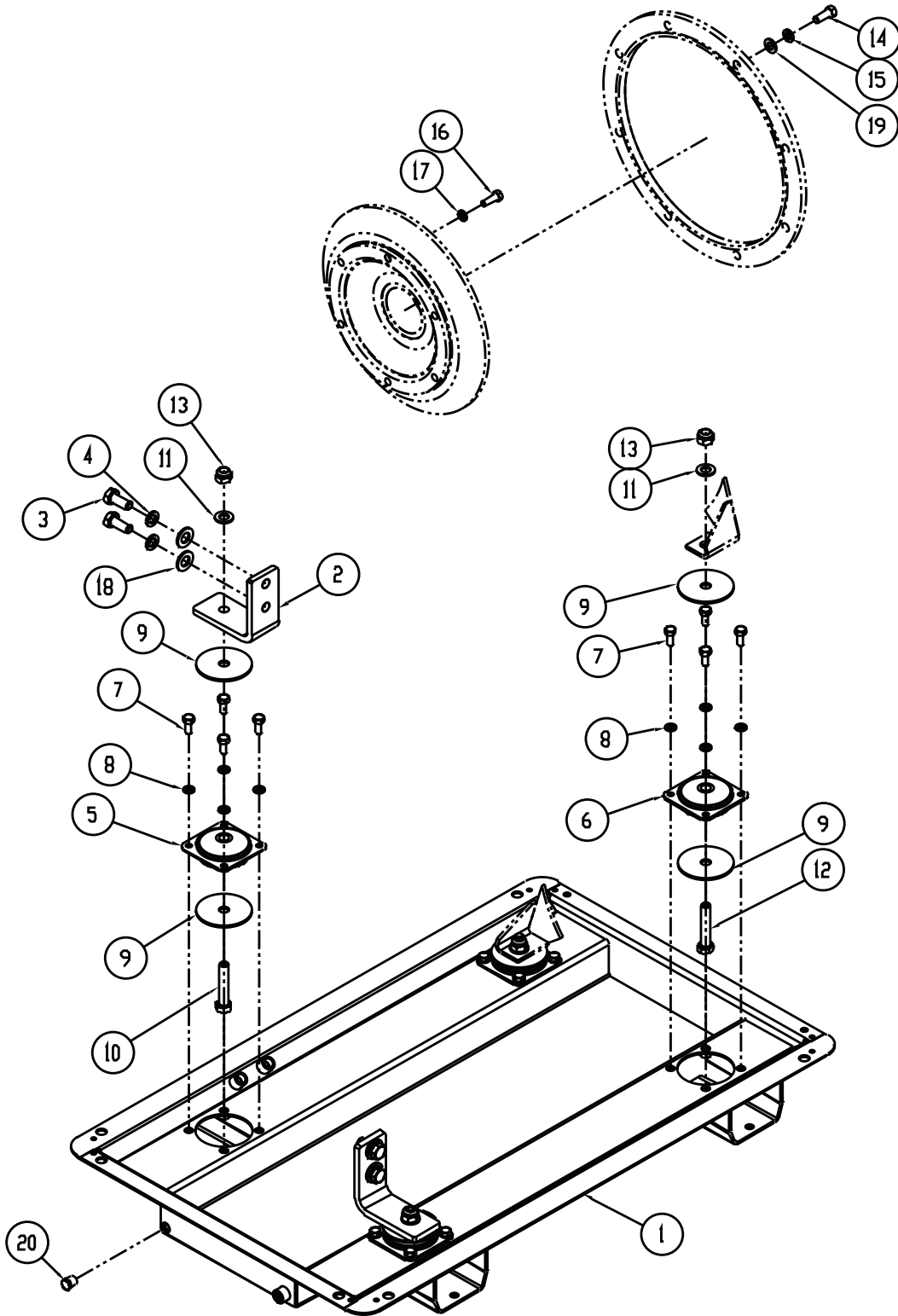
A-7929 / B-7017

| KEY | PART NUMBER | QTY | DESCRIPTION                           | SERIAL NUMBER |
|-----|-------------|-----|---------------------------------------|---------------|
| 1   | 39-88217    | 1   | Base Frame                            | -             |
| 2   | 23-88211    | 2   | Bracket, Front Engine Mount           | -             |
| 3   | 12-00943    | 4   | Capscrew, Hex Head M12 x 1.25 x 30 mm | -             |
| 4   | 15-00912    | 4   | Lock Washer                           | -             |
| 5   | 12-00048    | 2   | Capscrew, Hex Head M10 x 1.5 x 60 mm  | -             |
| 6   | 15-00809    | 2   | Flat Washer (Special)                 | -             |
| 7   | 15-00014    | 2   | Head/Tail Washer                      | -             |
| 8   | 33-83100    | 2   | Centerbonded Mount, 100 lb.           | -             |
| 9   | 15-00014    | 2   | Head/Tail Washer                      | -             |
| 10  | 14-00812    | 2   | Hex Nut, Nylock                       | -             |
| 11  | 12-00817    | 2   | Capscrew, Hex Head M10 x 1.5 x 55 mm  | -             |
| 12  | 15-00809    | 2   | Flat Washer (Special)                 | -             |
| 13  | 15-00014    | 2   | Head/Tail Washer                      | -             |
| 14  | 33-83100    | 2   | Centerbonded Mount, 100 lb.           | -             |
| 15  | 15-00014    | 2   | Head/Tail Washer                      | -             |
| 16  | 14-00812    | 2   | Hex Nut, Nylock                       | -             |
| 17  | 12-00312    | 8   | Capscrew, Hex Head 3/8-16 x 1"        | -             |
| 18  | 15-00302    | 8   | Lock Washer                           | -             |
| 19  | 12-00214    | 6   | Capscrew, Hex Head 5/16-18 x 1-1/2"   | -             |
| 20  | 15-00202    | 6   | Lock Washer                           | -             |

GROUP 7 – FRAME AND MOUNTING

Steel Base Pan with Platform Mounting

M773LW3 / PX309K2 from to S/N xxxx-46362C



D-4470B

## Kit, Steel Base Pan with Platform Mounting

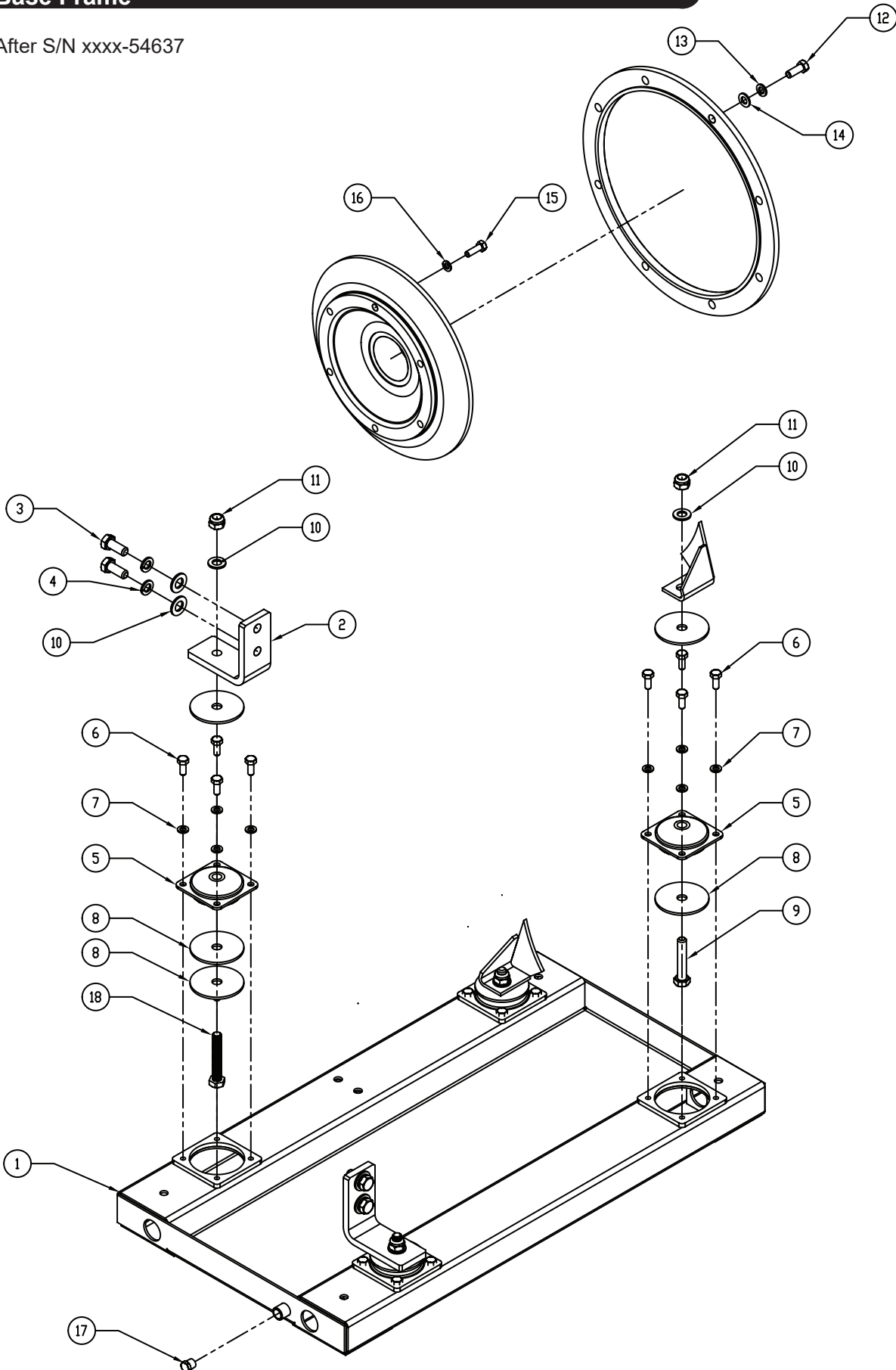
M773LW3 / PX309K2 from to S/N xxxx-46362C

| KEY | PART NUMBER | QTY | DESCRIPTION                                  | SERIAL NUMBER |
|-----|-------------|-----|----------------------------------------------|---------------|
| 1   | 39-88602    | 1   | Base Pan, Steel                              | -             |
| 2   | 23-88211    | 2   | Bracket, Front Engine Mtg                    | -             |
| 3   | 12-00943    | 4   | Capscrew, Hex Head M12 x 1.25 x 30 mm        | -             |
| 4   | 15-00912    | 4   | Lock Washer                                  | -             |
| 5   | 33-83108    | 2   | Mount, Plateform 155 Lb                      | -             |
| 6   | 33-83108    | 2   | Mount, Plateform 155 Lb                      | -             |
| 7   | 12-00776    | 16  | Capscrew, Hex Head M8x1.25 X 20 mm S/S (316) | -             |
| 8   | 15-00705    | 16  | Lock Washer, Helical M8 S/S (316)            | -             |
| 9   | 15-00040    | 8   | Snubbing Washer 2.88 X .531 X .125           | -             |
| 10  | 12-09956    | 2   | Capscrew, Hex Head M12x1.75 X 65mm S/S       | -             |
| 11  | 15-09007    | 4   | Flat Washer M12 S/S (316)                    | -             |
| 12  | 12-09956    | 2   | Capscrew, Hex Head M12x1.75 X 65mm S/S       | -             |
| 13  | 14-09830    | 4   | Hex Nut, Nylock M12x1.75 S/S (316)           | -             |
| 14  | 12-00312    | 8   | Capscrew, Hex Head 3/8-16 X 1"               | -             |
| 15  | 15-00302    | 8   | Lock Washer, Helical 3/8"                    | -             |
| 16  | 12-09213    | 6   | Capscrew, Hex Head 5/16-18 X 1- 1/4"         | -             |
| 17  | 15-00202    | 6   | Lock Washer, Helical 5/16                    | -             |
| 18  | 15-00907    | 4   | Flat Washer M12 S/S                          | -             |
| 19  | 15-00805    | 12  | Flat Washer M10                              | -             |
| 20  | 21-31624    | 1   | Plug, Hex Head Brass 1/4 NPT                 | -             |

GROUP 8 – FRAME & MOUNTING

Base Frame

After S/N xxxx-54637



D-5043

## Base Frame

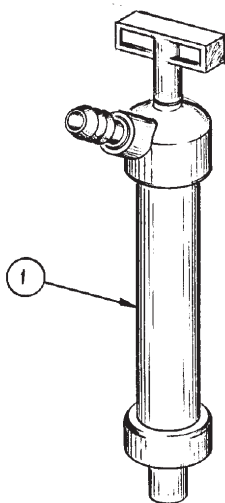
“Gem Series” Marine Unit From S/N xxxx-54637

| KEY | PART NUMBER | QTY | DESCRIPTION                                             | SERIAL NUMBER |
|-----|-------------|-----|---------------------------------------------------------|---------------|
| 1   | 39-88008    | 1   | Base Frame, Stainless Steel, Plateform Mtg (Gem Series) | -             |
| 2   | 23-88001    | 1   | Bracket, Front Engine Mtg R.h.                          | -             |
| 3   | 23-88002    | 1   | Bracket, Front Engine Mtg L.h. With Regulator Mtg Pad   | -             |
| 4   | 12-09831    | 3   | Capscrew, Hex Head M10x1.5 X 25mm S/S                   | -             |
| 5   | 15-00808    | 4   | Lock Washer, Helical M10 S/S                            | -             |
| 6   | 15-09805    | 4   | Flat Washer M10 S/S                                     | -             |
| 7   | 12-09956    | 4   | Capscrew, Hex Head, M12x1.75 X 65mm S/S                 | -             |
| 8   | 15-88002    | 10  | Snubbing Washer, STL. 0.510"ID X 2.680"OD X 0.125"      | -             |
| 9   | 33-83105    | 4   | Flex Mount, Plateform 120 LB                            | -             |
| 10  | 15-09007    | 4   | Flat Washer M12 S/S                                     | -             |
| 11  | 14-09830    | 4   | Hex Nut, Nylock M12x1.75 S/S                            | -             |
| 12  | 12-09751    | 16  | Capscrew, Hex Head M8x1.25 X 16mm S/S                   | -             |
| 13  | 15-00705    | 16  | LOCK WASHER, HELICAL M8 S/S                             | -             |
| 14  | 12-09753    | 6   | Capscrew, Hex Head M8x1.25 X 30mm S/S                   | -             |
| 15  | 15-00705    | 6   | LOCK WASHER, HELICAL M8 S/S                             | -             |
| 16  | 15-00706    | 6   | Flat Washer M8 S/S                                      | -             |
| 17  | 012110025   | 4   | STUD M10x1.25 X 25mm (37mmLOA)                          | -             |
| 18  | 14-00814    | 4   | Hex Nut M10x1.25 (17mm Hex) Property Class 8            | -             |
| 19  | 15-00802    | 4   | Lock Washer, Helical M10                                | -             |
| 20  | 12-09831    | 1   | Capscrew, Hex Head M10x1.5 X 25mm                       | -             |

**GROUP 8 – ACCESSORIES AND OPTIONAL EQUIPMENT**

**Oil Drain Kit**

Marine Application

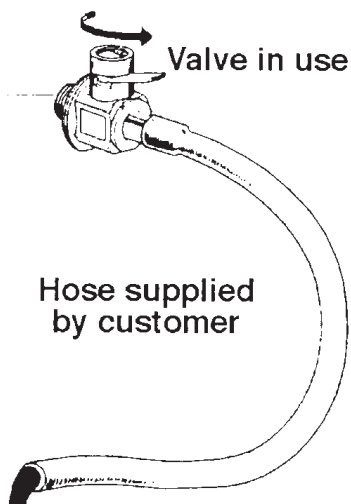


A-5024/ B-3990

| KEY | PART NUMBER | QTY | DESCRIPTION                                 | SERIAL NUMBER |
|-----|-------------|-----|---------------------------------------------|---------------|
| ••  | 36-70010    |     | Oil Drain Pump Kit (with hose & connectors) | -             |
| 1   | 36-72002    | 1   | Hand Pump                                   | -             |

**Oil Drain**

*Industrial Application*

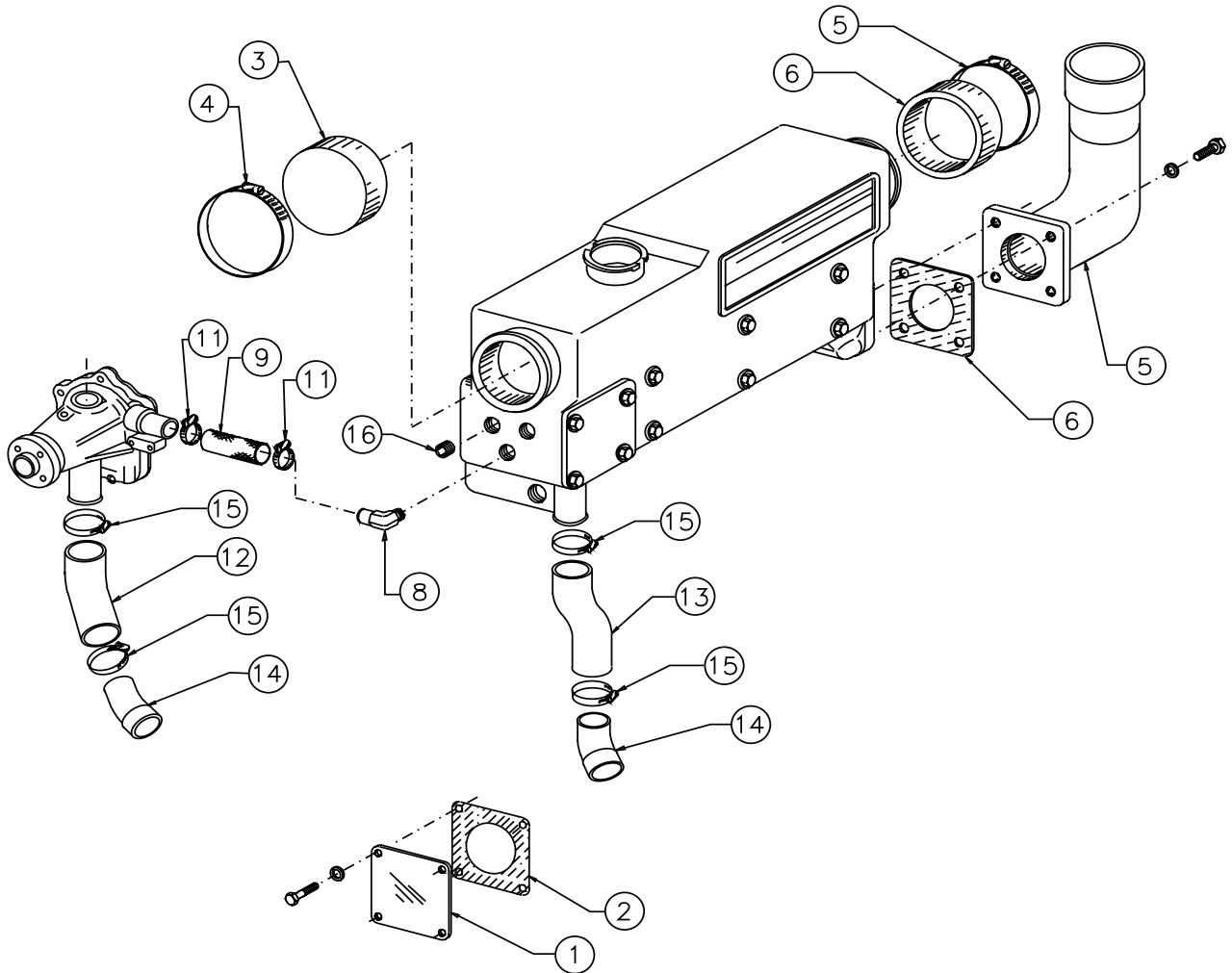


A-6480

| KEY | PART NUMBER | QTY | DESCRIPTION | SERIAL NUMBER |
|-----|-------------|-----|-------------|---------------|
| 1   | 36-77400    | 1   | Drain Valve | -             |

**Keel Cooling Conversion**

Marine Application - with Dry Exhaust



A-10008, A-11726/ B-9395

| KEY | PART NUMBER | QTY | DESCRIPTION                                         | SERIAL NUMBER |
|-----|-------------|-----|-----------------------------------------------------|---------------|
| 1   | 165206320   | 1   | Cover (white)                                       | -             |
| 2   | 052300700   | 1   | O-ring                                              | -             |
| 3   | 20-12019    | 2   | End Cap, Rubber                                     | -             |
| 4   | 19-04048    | 2   | Hose Clamp, #48 (formerly #19-00048)                | -             |
| 5   | 27-32007    | 1   | Elbow, Dry Exhaust 1-1/2" NPT                       | -             |
| 6   | 11-31902    | 1   | Gasket, Exhaust Outlet Mtg.                         | -             |
| 7   | 00-32008    | 1   | Exhaust Lagging (not shown)                         | -             |
| 8   | 21-10031    | 1   | Male Elbow 90° Brass 3/8 NPT x 1/2 HB (Beaded Barb) | -             |
| 9   | 18-18606    | 1   | Hose, 1/2" I.D. x 3-1/2" 3 Ply Silicone             | -             |
| 10  | 21-10044    | 1   | Adapter, 3/8 NPT x 3/8 NPT                          | -             |
| 11  | 19-01008    | 2   | Hose Clamp #8 Extended Band S/S                     | -             |
| 12  | 18-18604    | 1   | Hose, Coolant Pump Inlet                            | -             |
| 13  | 18-18605    | 1   | Hose, Expansion Tank Outlet                         | -             |
| 14  | 21-18602    | 2   | Male Elbow, 45°, Copper 1-1/8" HB x 1-1/4" HB       | -             |
| 15  | 19-00016    | 4   | Hose Clamp #16                                      | -             |
| 16  | 21-51900    | 1   | Plug, Socket Head 1/8 NPT                           | -             |









4420 14th Ave. NW., Seattle WA 98107

Tel: (206) 789-3880 • 1-800-762-0165 • [www.northern-lights.com](http://www.northern-lights.com)

Northern Lights and Lugger are registered trademarks of Northern Lights, Inc.

© 2020 All rights reserved. Litho USA.