



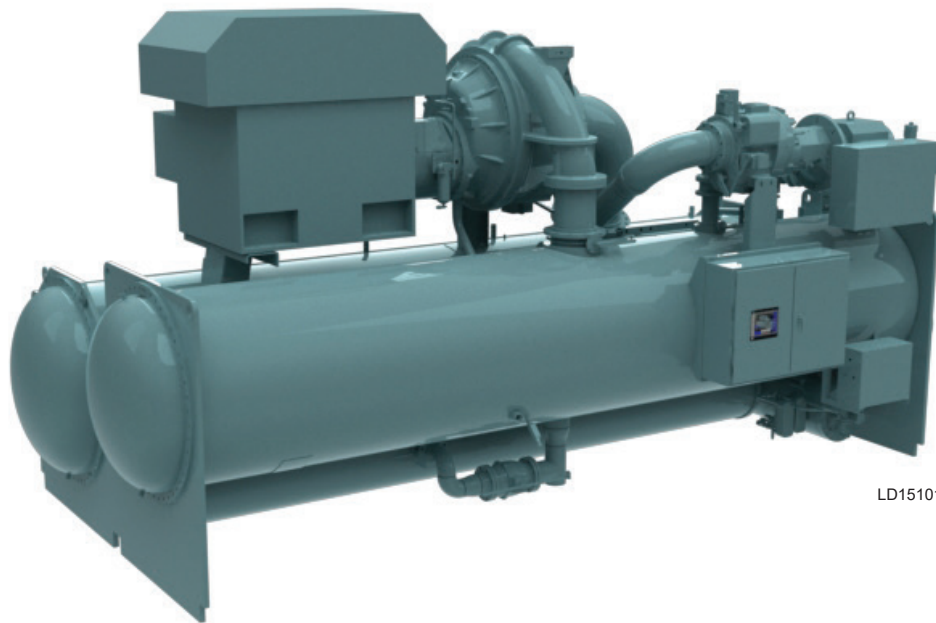
## CENTRIFUGAL LIQUID CHILLER WITH ECONOMIZER COMPRESSOR

RENEWAL PARTS

Supersedes: 160.77-RP1 (612)

Form 160.77-RP1 (522)

### MODEL YKEP 2700 - 3200 TON



LD15101

**R-134a**

Issue Date:  
May 31, 2022



# IMPORTANT!

## READ BEFORE PROCEEDING!

### GENERAL SAFETY GUIDELINES

This equipment is a relatively complicated apparatus. During installation, operation maintenance or service, individuals may be exposed to certain components or conditions including, but not limited to: refrigerants, materials under pressure, rotating components, and both high and low voltage. Each of these items has the potential, if misused or handled improperly, to cause bodily injury or death. It is the obligation and responsibility of operating/service personnel to identify and recognize these inherent hazards, protect themselves, and proceed safely in completing their tasks. Failure to comply with any of these requirements could result in serious damage to the equipment and the property in

which it is situated, as well as severe personal injury or death to themselves and people at the site.

This document is intended for use by owner-authorized operating/service personnel. It is expected that these individuals possess independent training that will enable them to perform their assigned tasks properly and safely. It is essential that, prior to performing any task on this equipment, this individual shall have read and understood this document and any referenced materials. This individual shall also be familiar with and comply with all applicable governmental standards and regulations pertaining to the task in question.

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### SAFETY SYMBOLS

The following symbols are used in this document to alert the reader to specific situations:



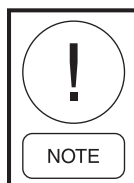
*Indicates a possible hazardous situation which will result in death or serious injury if proper care is not taken.*



*Identifies a hazard which could lead to damage to the machine, damage to other equipment and/or environmental pollution if proper care is not taken or instructions are not followed.*



*Indicates a potentially hazardous situation which will result in possible injuries or damage to equipment if proper care is not taken.*



*Highlights additional information useful to the technician in completing the work being performed properly.*



*External wiring, unless specified as an optional connection in the manufacturer's product line, is not to be connected inside the control panel cabinet. Devices such as relays, switches, transducers and controls and any external wiring must not be installed inside the control panel. All wiring must be in accordance with Johnson Controls' published specifications and must be performed only by a qualified electrician. Johnson Controls will NOT be responsible for damage/problems resulting from improper connections to the controls or application of improper control signals. Failure to follow this warning will void the manufacturer's warranty and cause serious damage to property or personal injury.*

## CHANGEABILITY OF THIS DOCUMENT

In complying with Johnson Controls' policy for continuous product improvement, the information contained in this document is subject to change without notice. Johnson Controls makes no commitment to update or provide current information automatically to the manual or product owner. Updated manuals, if applicable, can be obtained by contacting the nearest Johnson Controls Service office or accessing the Johnson Controls Knowledge Exchange website at <https://docs.johnsoncontrols.com/chillers/>.

It is the responsibility of rigging, lifting, and operating/service personnel to verify the applicability of these documents to the equipment. If there is any question regarding the applicability of these documents, rigging, lifting, and operating/service personnel should verify whether the equipment has been modified and if current literature is available from the owner of the equipment prior to performing any work on the chiller.

## REVISION NOTES

Revisions made to this document are indicated in the following table. These revisions are to technical information, and any other changes in spelling, grammar, or formatting are not included.

| AFFECTED PAGES | DESCRIPTION                                                                                                |
|----------------|------------------------------------------------------------------------------------------------------------|
| 5              | Added Nomenclature from page 3                                                                             |
| 52             | Corrected part number 013 02987 000 to 013 04129 000                                                       |
| 63             | Added part number 022 12412 000 for steel valve where brass valve part number 022 10074 000 is also listed |

## ASSOCIATED LITERATURE

| MANUAL DESCRIPTION                                                          | FORM NUMBER |
|-----------------------------------------------------------------------------|-------------|
| YKEP Installation & Re-assembly                                             | 160.77-N1   |
| YKEP Unit Operation & Maintenance                                           | 160.77-O1   |
| YKEP Control Center Operation                                               | 160.77-O2   |
| YKEP Unit & Control Panel Renewal Parts                                     | 160.77-RP1  |
| YKEP Installation Checklist                                                 | 160.77-CL1  |
| YKEP Startup Checklist                                                      | 160.77-CL2  |
| YKEP Wiring Diagram - Field Connections                                     | 160.77-PW1  |
| YKEP Wiring Diagram - Unit Wiring and Field Control Modification            | 160.77-PW2  |
| Liquid Cooled Solid State Starter - Operation                               | 160.00-O2   |
| Medium Voltage Variable Speed Drive (2300v - 6600v) - Operation             | 160.00-O6   |
| Medium Voltage Variable Speed Drive (10,000v - 13,800v) - Operation         | 160.00-O8   |
| Unit Mounted Medium Voltage Solid State Starter (2300v - 4160v) - Operation | 160.00-O7   |
| Long-Term Storage Requirements - General                                    | 50.20-NM1   |
| Long-Term Storage Requirements - Field Preparation                          | 50.20-NM5   |
| Long-Term Storage - Periodic Checklist and Logs                             | 50.20-CL5   |

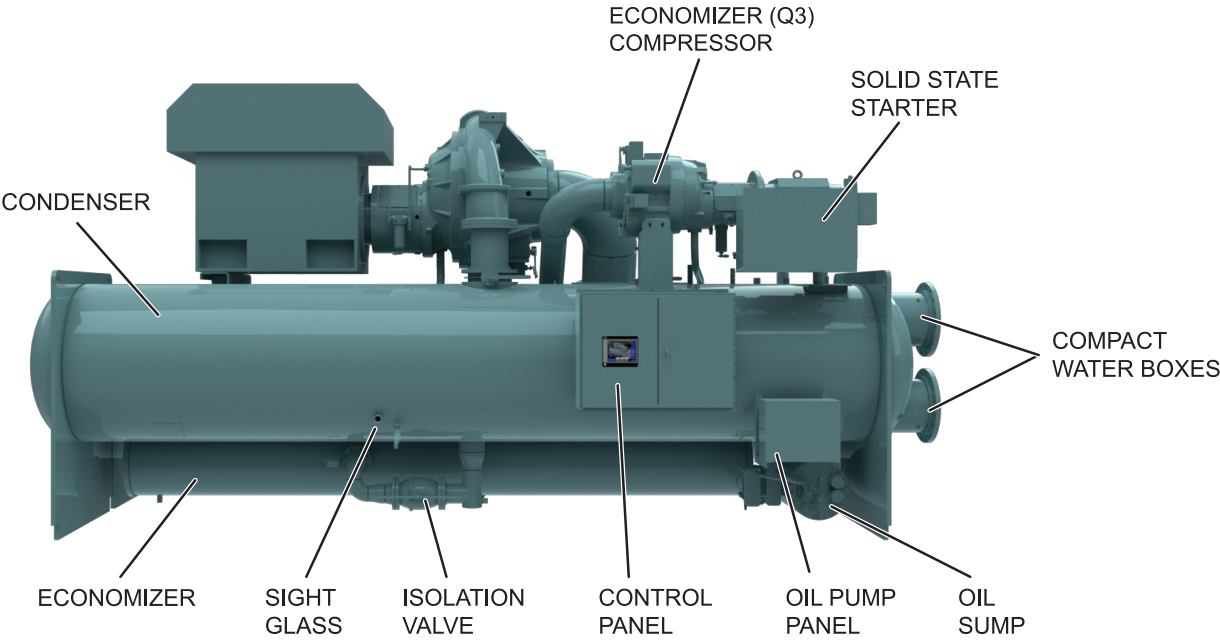


FIGURE 1 - YKEP CHILLER FRONT VIEW

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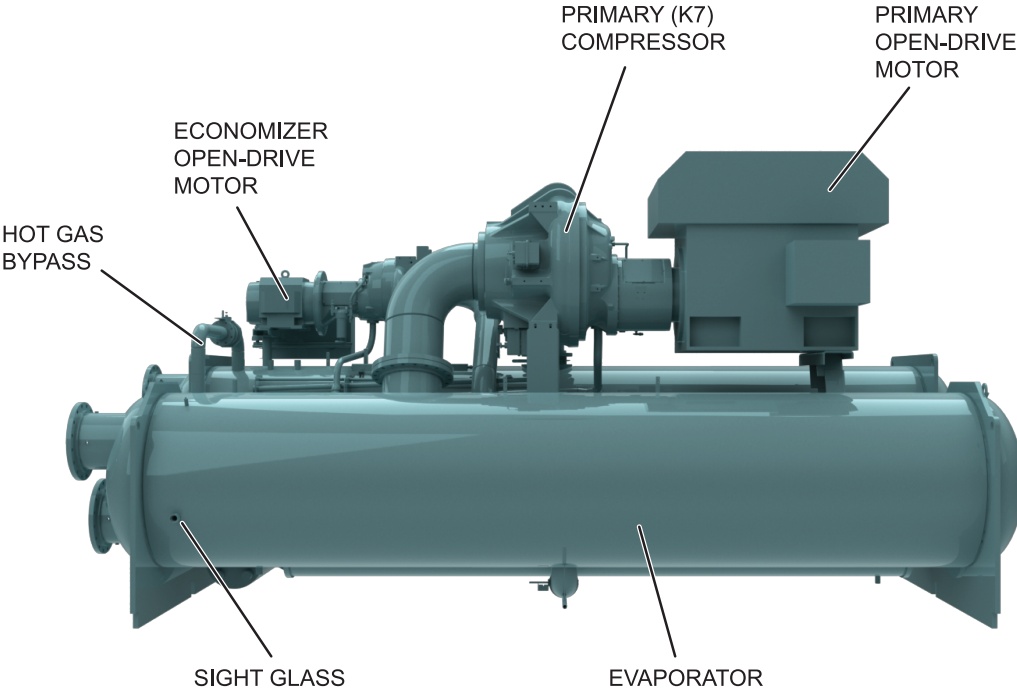
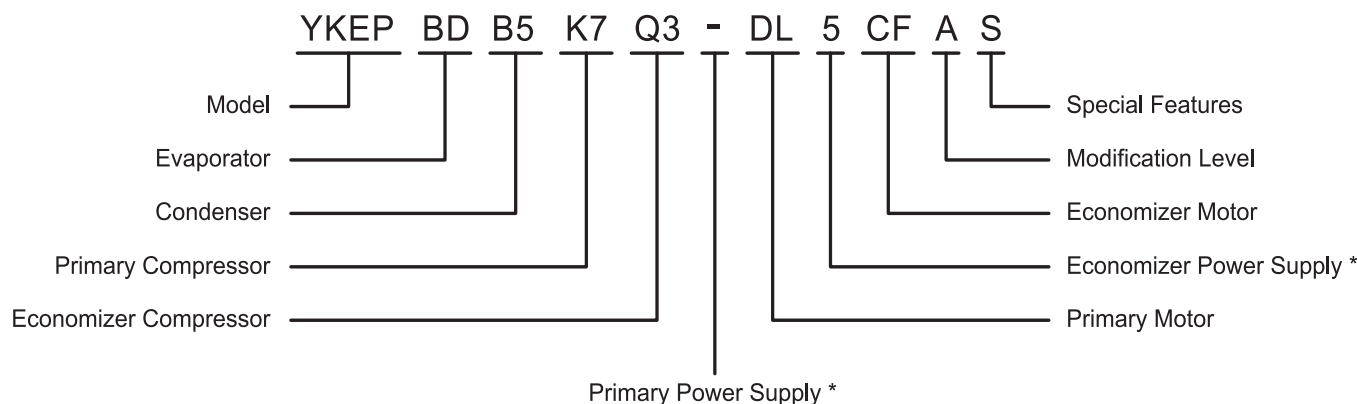


FIGURE 2 - YKEP CHILLER REAR VIEW

LD15706

## NOMENCLATURE



\* For both Primary and Economizer power supply: "-" = 60Hz and "5" = 50Hz

LD15116

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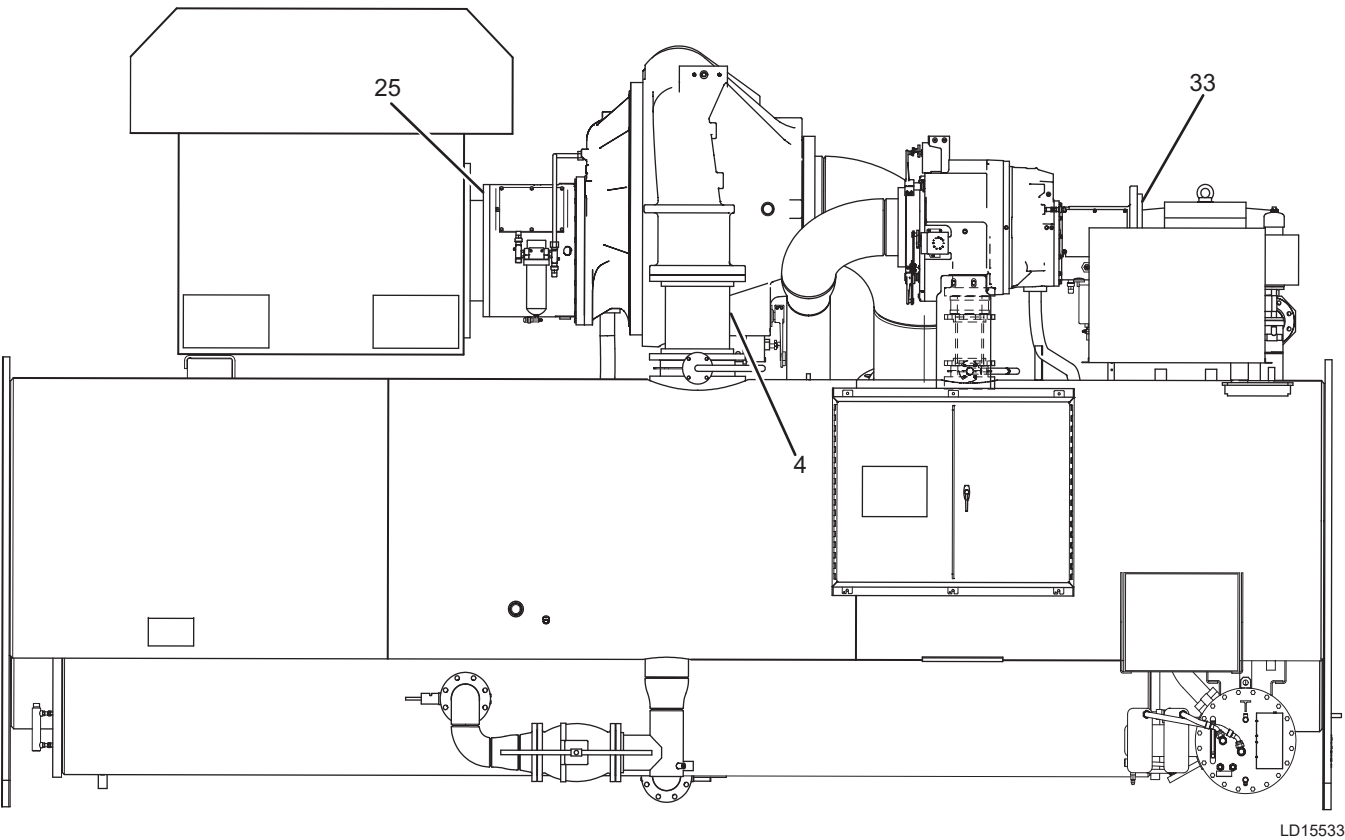
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## UNIT COMPONENTS

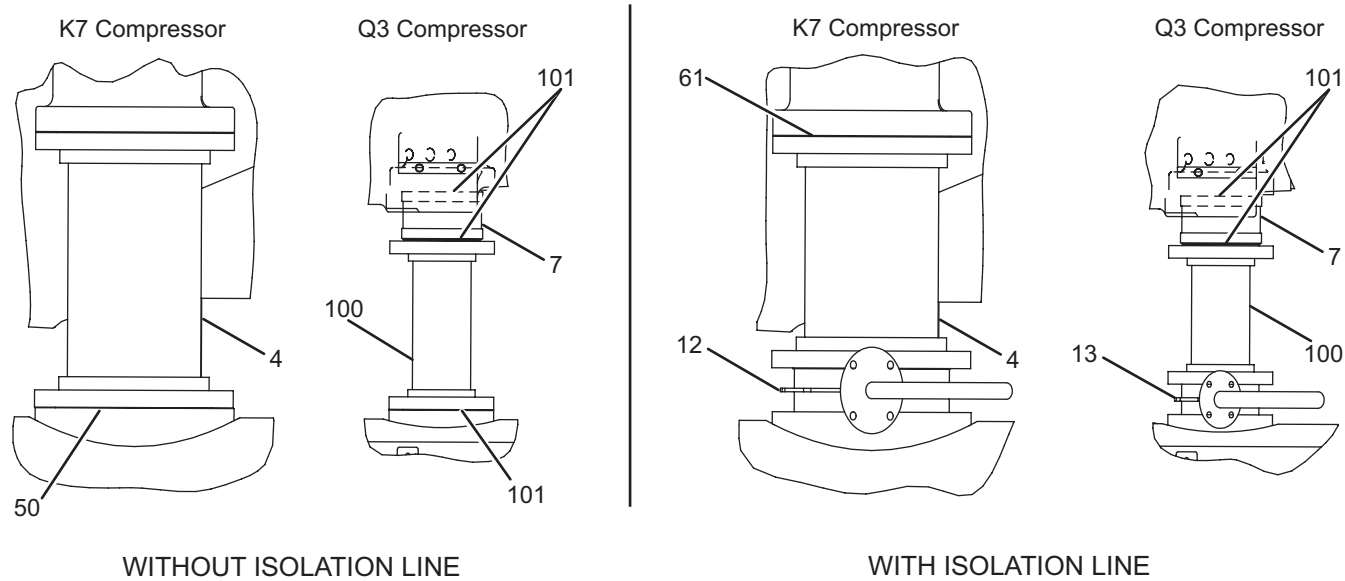
**TABLE 1 - UNIT COMPONENTS**

| ITEM | DESCRIPTION                                             | PART NUMBER   | QUANTITY | FIGURE |
|------|---------------------------------------------------------|---------------|----------|--------|
| 4    | Discharge Assembly, 12"X19-3/16" w/o Isolation Valves   | 375 67669 007 | 1        | 3, 4   |
| 4    | Discharge Assembly, 12"X16-3/16" w/ Isolation Valves    | 375 67669 008 | 1        | 4      |
| 7    | Valve Check 5" External                                 | 022 11744 000 | 1        | 4      |
| 8    | Flange Oil Drain                                        | 075 52450 000 | 1        | 7      |
| 9    | O-Ring Neo1 03.100id .210thk M                          | 028 12597 000 | 1        | 7      |
| 10   | O-Ring Neo1 3.475 I.D. X .210                           | 028 15980 000 | 1        | 7      |
| 12   | Valve Butterfly Size 12                                 | 022 10641 012 | 1        | 4      |
| 13   | Valve Butterfly Size 5                                  | 022 10641 005 | 1        | 4      |
| 15   | Bolt U 3/8 Dia X 3-5/8                                  | 021 13905 000 | 1        | 7      |
| 25   | Stud Conts Thd 3/4 - 10                                 | 021 12773 000 | 8        | 3      |
| 33   | Stud Conts Thd 3/4-10 X 3-1/2"                          | 021 12772 000 | 8        | 3      |
| 50   | Gasket Ansi 12-150#                                     | 028 15075 115 | 1        | 4      |
| 51   | Gasket Ansi 20-150#                                     | 028 15075 119 | 1        | 6      |
| 52   | Gasket Round                                            | 028 15129 106 | 1        | 6      |
| 61   | O-Ring Neo1 13.475id .275thk M                          | 028 11977 000 | 1        | 4      |
| 100  | Discharge Spool Assembly 5" Sch 80 w/o Isolation Valves | 375 84131 001 | 1        | 4      |
| 100  | Discharge Spool Assembly 5" Sch 80 w/ Isolation Valves  | 375 84131 002 | 1        | 4      |
| 101  | Gasket Ansi 5-150#                                      | 028 15075 111 | 3        | 4      |
| 109  | Gasket                                                  | 028 15129 101 | 1        | 6      |
| 115  | Gasket Ansi 8-150#                                      | 028 15075 113 | 1        | 6      |
| 120  | Hose Flexible Corrugated Sst                            | 026 34468 007 | 1        | 7      |
| 122  | Flange, Oil Drain                                       | 075 84118 000 | 1        | 7      |
| 123  | Flange Oil Drain Oil Pump Housing                       | 075 38403 000 | 1        | 7      |
| 124  | O-Ring Neo1 02.600id .210thk M                          | 028 14469 000 | 1        | 7      |
| 130  | Gasket Ansi 4-150#                                      | 028 15075 110 | 1        | 9      |
| 131  | Valve Ball 4" Flanged                                   | 022 09740 000 | 1        | 9      |
| 132  | Valve Butterfly Size 4                                  | 022 10643 004 | 1        | 9      |
| 133  | Hcs5 0.625-11x4.750 Gr 5 Zn                             | 021 32010 038 | 8        | 9      |
| 136  | Valve Ball 6" Flanged                                   | 022 10609 000 | 1        | 8      |
| 138  | Hcs5 0.750-10 X 3.250 Gr 5 Zn                           | 021 32012 026 | 16       | 8      |
| 139  | Gasket Ansi 6-150#                                      | 028 15075 112 | 2        | 8      |
| 144  | Valve Butterfly Size 5                                  | 022 10642 005 | 2        | 8      |
| 150  | Gasket Ansi 2-150#                                      | 028 15075 106 | 1        | 7      |



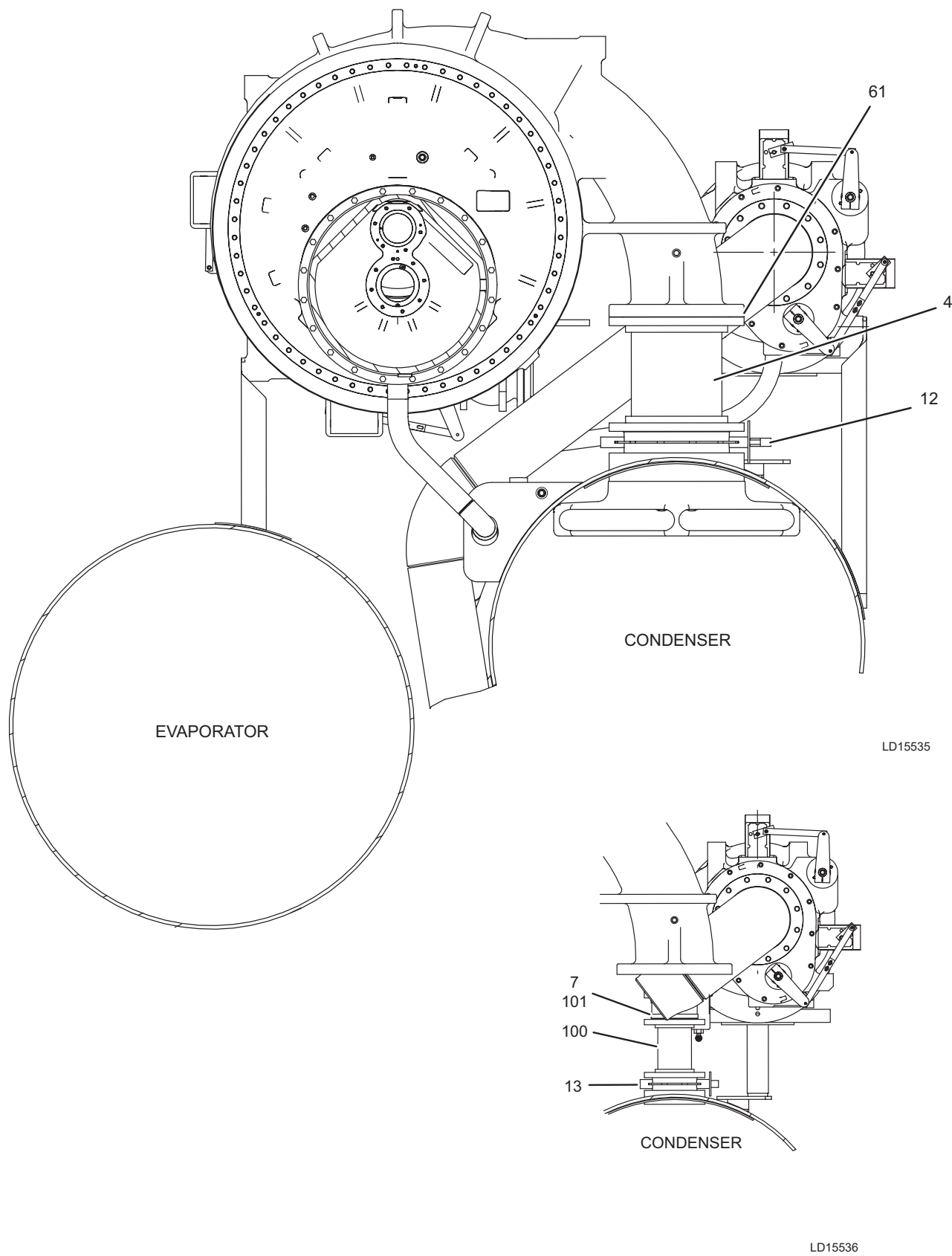
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FIGURE 3 - UNIT COMPONENTS

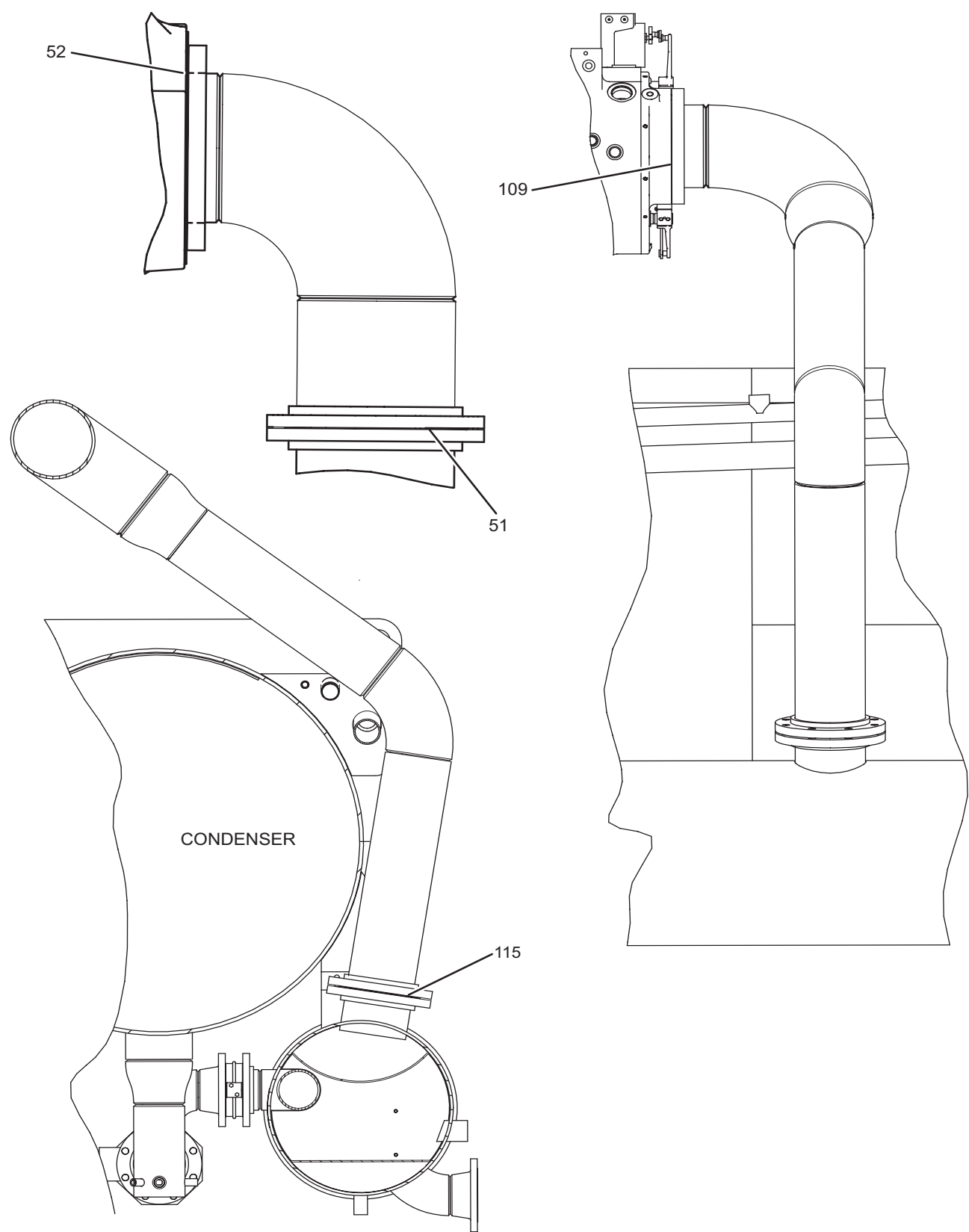


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FIGURE 4 - UNIT COMPONENTS COMPRESSOR DISCHARGE

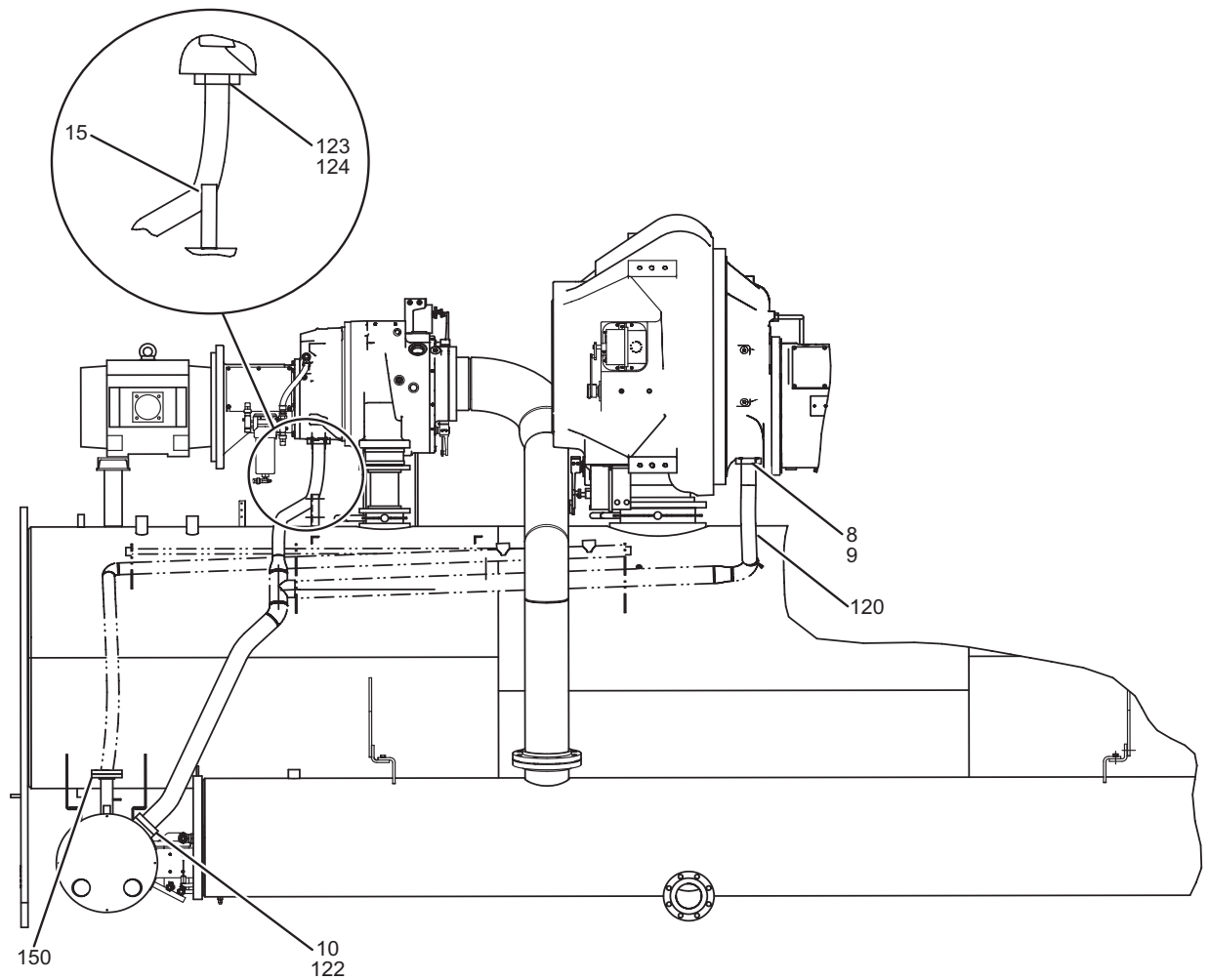


**FIGURE 5 - UNIT COMPONENTS MOUNTINGS**



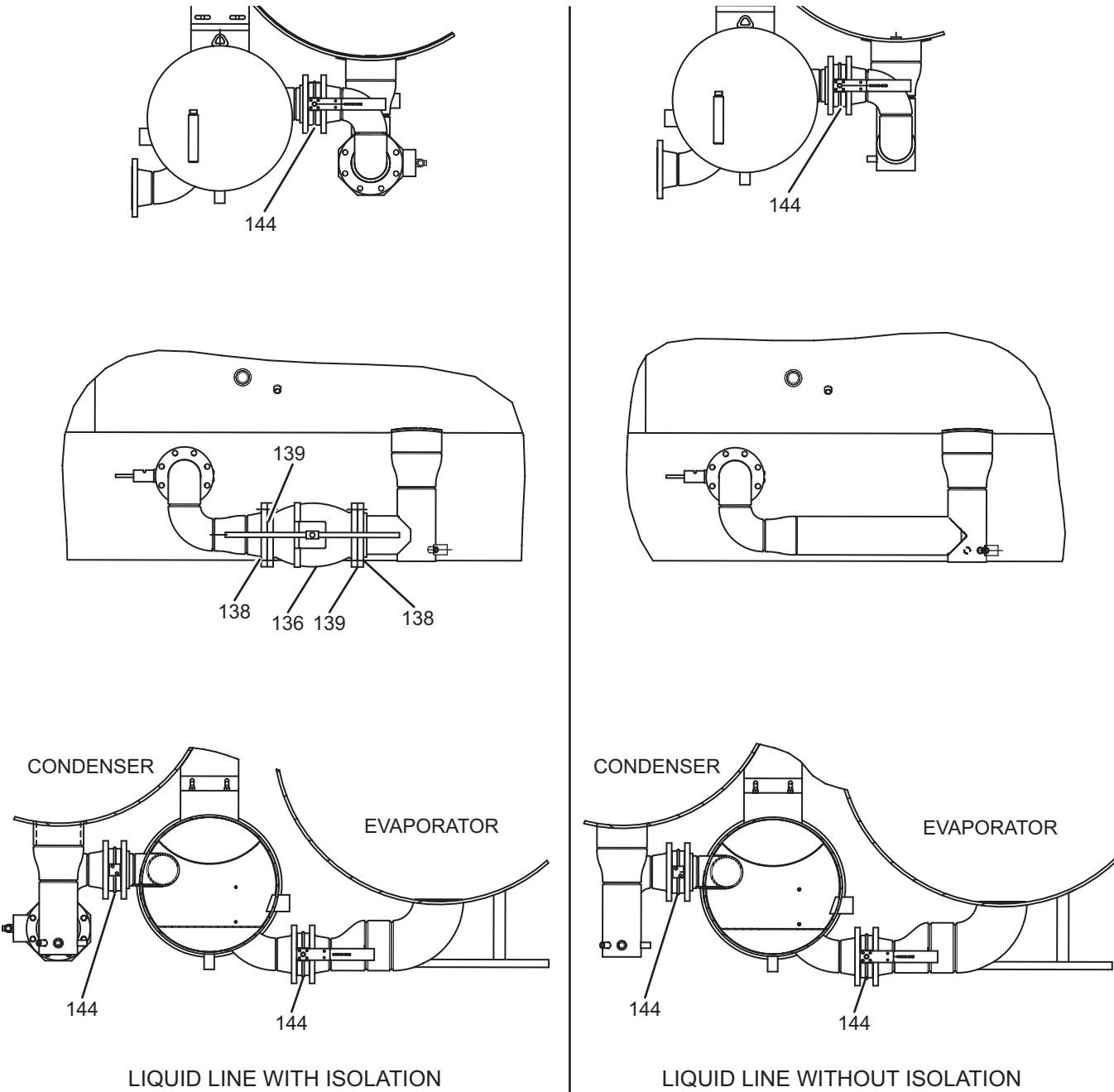
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**FIGURE 6 - UNIT COMPONENTS ISOLATION VALVE**



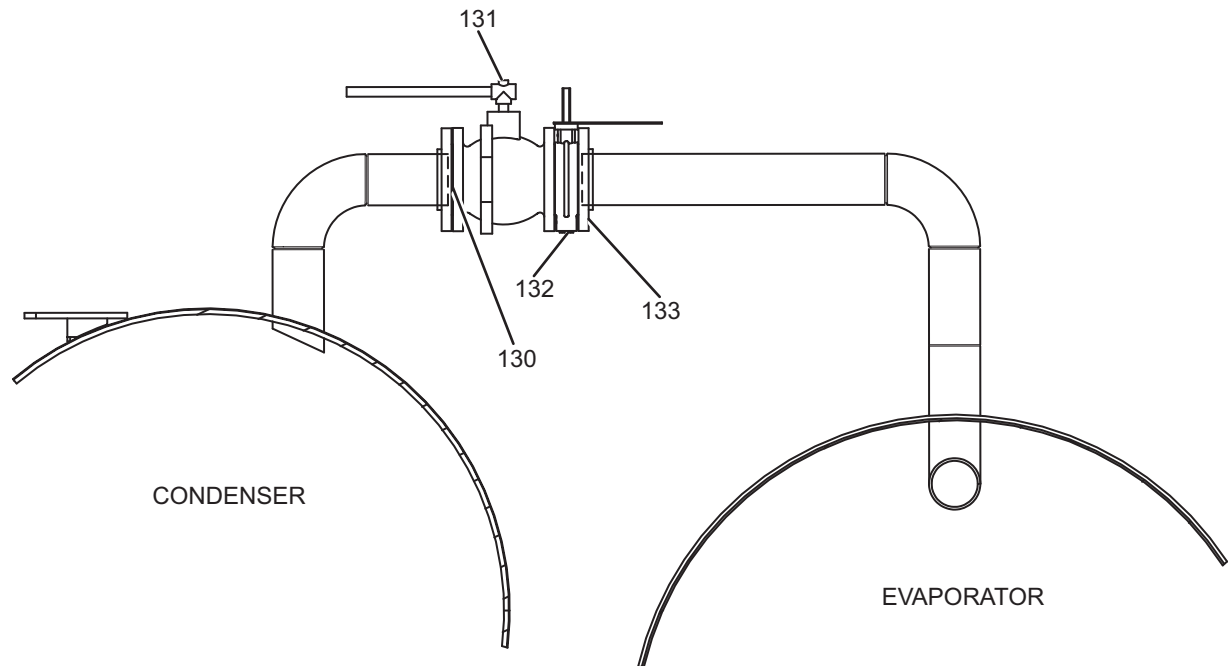
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**FIGURE 7 - UNIT COMPONENTS OIL DRAIN LINES**

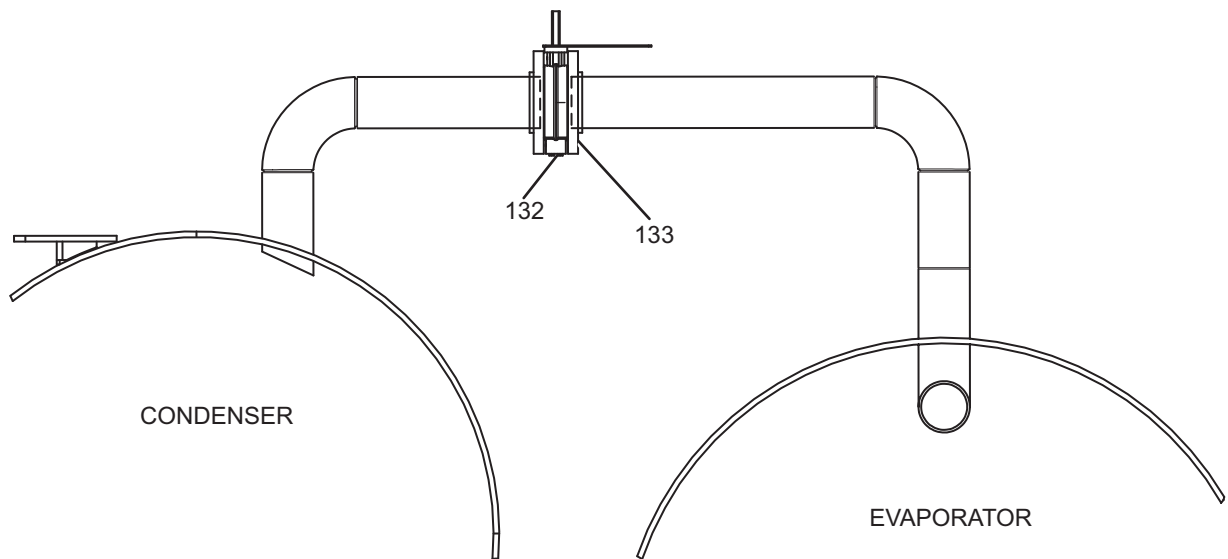


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FIGURE 8 - UNIT COMPONENTS LIQUID LINE



4" HOT GAS WITH ISOLATION



4" HOT GAS WITHOUT ISOLATION

LD15600

**FIGURE 9 - UNIT COMPONENTS HOT GAS LINE**

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## UNIT PIPING

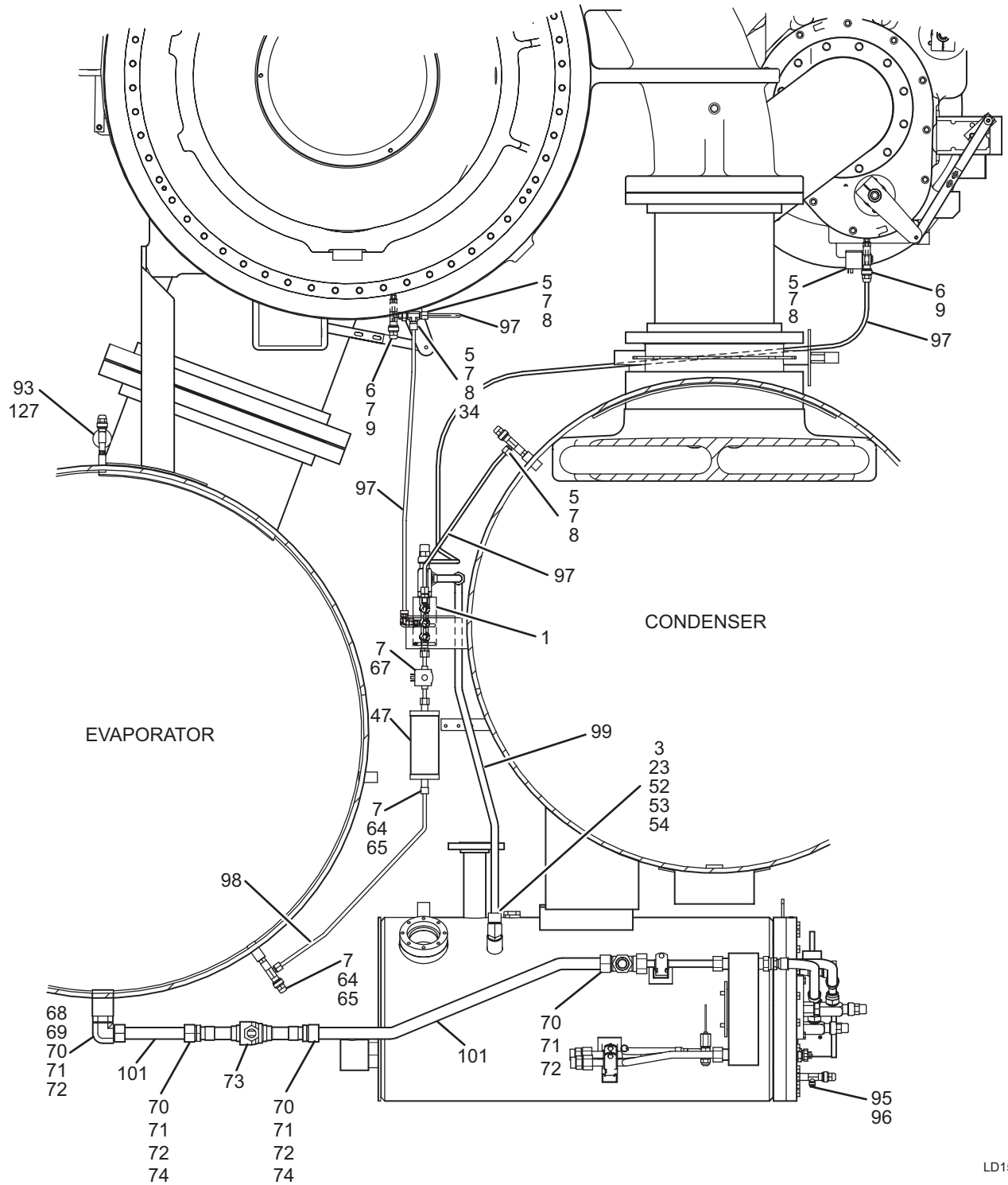
**TABLE 2 - UNIT PIPING**

| ITEM | DESCRIPTION                     | PART NUMBER   | QUANTITY | FIGURE             |
|------|---------------------------------|---------------|----------|--------------------|
| 1    | Block, Oil Eductor              | 026 45972 000 | 1        | 10                 |
| 2    | Hose, 3/4" Orfs                 | 026 45976 130 | 1        | 12                 |
| 3    | O-Ring Neo1 00.739id .070thk M  | 028 12961 015 | 10       | 10, 11, 12, 13, 14 |
| 4    | Connr 3/8 O.D. Tube Male        | 023 18976 000 | 2        | 11                 |
| 5    | Nut 3/8 O.D. Tube               | 023 18977 000 | 16       | 10, 11, 13, 14     |
| 6    | O-Ring Neo1 00.468id .078thk M  | 028 12961 003 | 13       | 10, 11, 13, 14     |
| 7    | O-Ring Neo1 00.364id .070thk M  | 028 12961 012 | 22       | 10, 11, 13, 14     |
| 8    | Sleeve 3/8 O.D. Tube            | 023 18978 000 | 15       | 10, 11, 13, 14     |
| 9    | Valve Stop Ang Vertical         | 022 10054 000 | 5        | 10, 13             |
| 10   | Valve Solenoid 3/8 Orfs N.C.    | 025 35150 002 | 1        | 10, 13             |
| 11   | Fitting 3/8 O.D. Tube Male      | 023 25551 000 | 2        | 13, 14             |
| 16   | Connr 1-1/2" O.D. Tube Male     | 023 24364 000 | 1        | *                  |
| 17   | O-Ring Neo1 01.489id .070thk M  | 028 12961 019 | 4        | 13                 |
| 18   | O-Ring Neo1 01.720id .118thk M  | 028 12961 020 | 4        | 13                 |
| 19   | Sleeve 1-1/2 O.D. Tube          | 023 17556 000 | 4        | 13                 |
| 20   | Elbow 1-1/2"Od Tube 90deg Male  | 023 21906 000 | 1        | 13                 |
| 21   | Nut 1-1/2 O.D. Tube             | 023 19073 000 | 4        | 13                 |
| 22   | Connr 3/4 O.D. Tube Male        | 023 18290 000 | 2        | 12, 13             |
| 23   | O-Ring Neo1 00.924id .116thk M  | 028 12961 006 | 4        | 10, 11, 12, 13     |
| 25   | Hose, Refrig Orfs 3/4"          | 026 43093 090 | 1        | 12                 |
| 29   | Hose, 3/4" Orfs                 | 026 45976 068 | 1        | 13, 14             |
| 34   | Tee Swivel Nut Run 3/8"         | 023 23573 000 | 1        | 10                 |
| 36   | Elbow 3/8 O.D. Tube 90 Deg Male | 023 18980 000 | 1        | 11                 |
| 47   | Filter Drier 3/8 Orfs           | 026 37563 000 | 2        | 10, 11, 13         |
| 49   | Valve Stop Ang Vertical         | 022 10047 000 | 1        | 11                 |
| 52   | Sleeve 3/4 O.D. Tube            | 023 20827 005 | 4        | 10, 11, 13         |
| 53   | Nut Ofss .750 Tube 1.187-12     | 023 17535 000 | 2        | 10, 11             |
| 54   | Elbow Ofss45d .750ts 1.062-12p  | 023 22601 000 | 1        | 10                 |
| 55   | Bottle, High Density            | 028 10579 000 | 2        | 13, 14             |
| 64   | Sleeve 3/8" O.D. Tube           | 023 20827 002 | 2        | 10, 11             |
| 65   | Nut Ofss .375 Tube .687-16      | 023 17533 000 | 2        | 10, 11             |
| 66   | Connr 3/8 Od Tube Male          | 023 17529 000 | 1        | 11                 |
| 67   | Solenoid, Valve 3/8 Orfs Nc     | 025 35150 001 | 1        | 10, 11             |
| 68   | Elbow 1-1/4" O.D. Tube 90 Deg   | 023 24359 000 | 1        | 10                 |
| 69   | O-Ring Neo1 01.475id .118thk M  | 028 12961 017 | 1        | 10                 |
| 70   | O-Ring Neo1 01.176id .070thk M  | 028 12961 022 | 4        | 10, 12             |
| 71   | Sleeve 1-1/4" O.D. Tube         | 023 20827 007 | 4        | 10, 12             |
| 72   | Nut 1-1/4 O.D. Tube             | 023 24355 000 | 4        | 10, 12             |
| 73   | Valve, Ball 1-3/8 Ods Conn      | 022 09750 000 | 1        | 10                 |
| 74   | Adapter 1-1/4 Orfs X 1-3/8      | 023 20879 000 | 2        | 10                 |
| 79   | Connr 1-1/2" O.D. Tube Male     | 023 24363 000 | 3        | 13                 |
| 81   | Connr 1 O.D. Tube Male          | 023 18972 000 | 1        | 13                 |
| 82   | O-Ring Neo1 01.171id .116thk M  | 028 12961 008 | 2        | 13, 14             |

**TABLE 2 - UNIT PIPING (CONT'D)**

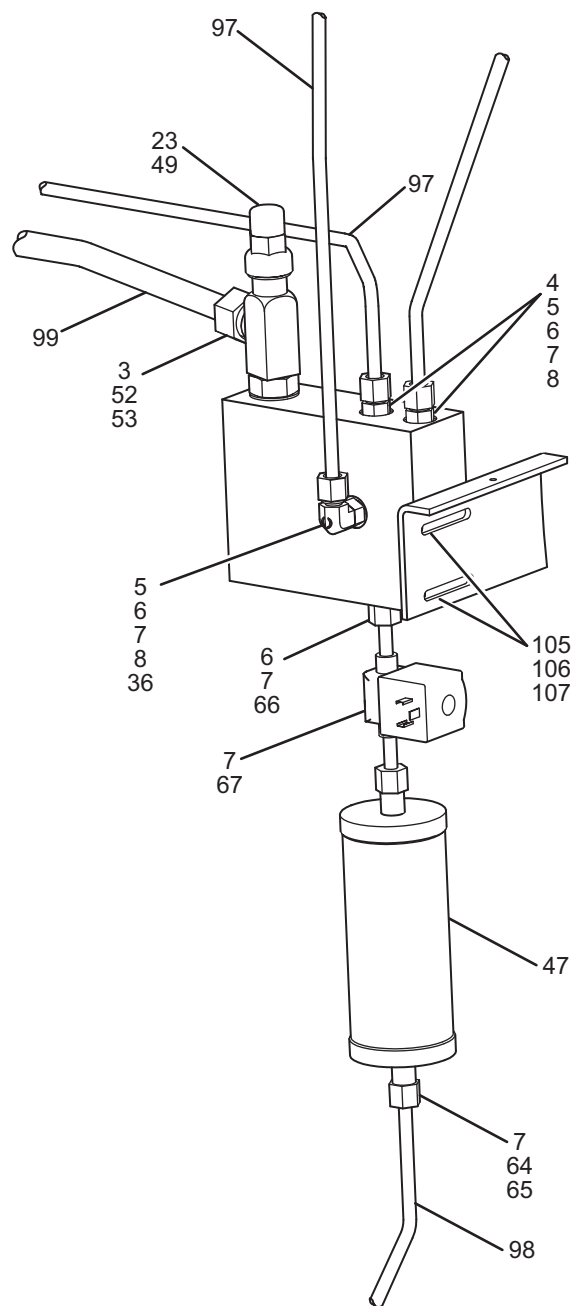
| ITEM | DESCRIPTION                    | PART NUMBER   | QUANTITY | FIGURE             |
|------|--------------------------------|---------------|----------|--------------------|
| 83   | O-Ring Neo1 00.926id .070thk M | 028 12961 016 | 2        | 12, 13, 14         |
| 84   | Valve Ball 1" Idf X 1" Odm     | 022 09797 000 | 1        | 13                 |
| 85   | Sleeve 1" O.D. Tube            | 023 18911 000 | 2        | 12, 14             |
| 86   | Nut 1" O.D. Tube               | 023 18287 000 | 2        | 12, 14             |
| 87   | Channel 24 Lg Single Clamp:    | 075 01001 000 | 1        | 13                 |
| 88   | Clamp Tube 1 Od W/Cushion:     | 023 12693 000 | 1        | 13                 |
| 89   | O-Ring Neo1 00.755id .097thk M | 028 12961 005 | 1        | 12                 |
| 90   | Plug Hex Hd 7/8                | 023 18961 000 | 1        | 12                 |
| 92   | Valve, Relief 1-5/16 -12un-2a  | 022 10078 000 | 1        | 14                 |
| 93   | O-Ring Neo1 00.414id .072thk M | 028 12961 002 | 6        | 10, 13, 14         |
| 94   | Transducer Pressure            | 025 28678 006 | 5        | 13, 14             |
| 95   | Gasket Flare 3/8 Od Tube       | 028 01258 000 | 1        | 10, 14             |
| 96   | Cap Flare 3/8 Od Tube          | 023 00977 000 | 1        | 10, 14             |
| 97   | Tube Steel 3/8 Od X .035 X     | 003 00969 000 | 55       | 10, 11, 12, 13, 14 |
| 98   | Tube Sst 3/8 Od X .035 X 20    | 003 02407 000 | 2.5      | 10, 11             |
| 99   | Tube Sst Smls 3/4 Od X .065 X  | 003 02487 017 | 11       | 10, 11, 12         |
| 100  | Tube Steel 1 Od X .065 X       | 003 03515 000 | 30       | 12, 14             |
| 101  | Tube Sst Smls 1-1/4 Od X .065x | 003 02487 024 | 4        | 10                 |
| 102  | Tube Steel 1-1/2 Od X .065 X   | 003 02231 000 | 10       | 13, 14             |
| 105  | Wash Pln 0.250 Zn, 0.625/0.065 | 021 32004 503 | 2        | 11                 |
| 106  | Wash Hel Spr-Lck 0.250 Reg, Zn | 021 32004 504 | 2        | 11                 |
| 107  | Hcs5 0.250-20 X 0.750 Gr 5 Zn  | 021 32004 006 | 2        | 11                 |
| 110  | Screw Mach Pan Hd Recd 1       | 021 03744 000 | 12       | *                  |
| 111  | Nut Hex Mach Scr #8 - 32       | 021 08661 000 | 12       | *                  |
| 112  | Lkwash Hel Spg #8 Hvy:         | 021 05286 000 | 12       | *                  |
| 115  | Clamp Tube 3/8 Od With         | 023 06552 000 | 12       | 12, 13, 14         |
| 116  | Clamp Tube 3/4 Od With         | 021 10652 000 | 10       | 12                 |
| 117  | Clamp Tube 1-1/2 Od With       | 021 13568 000 | 2        | 12                 |
| 124  | Union Cinch 3/4 Tube           | 023 07871 000 | 1        | 13                 |
| 125  | Valve Stop Ang Vertical        | 022 09577 000 | 2        | 13, 14             |
| 126  | O-Ring Neo1 00.351id .072thk M | 028 12961 001 | 2        | 13, 14             |
| 127  | Transducer Pressure            | 025 28678 112 | 1        | 10, 14             |

NOTE: Items with an \* are NOT represented.



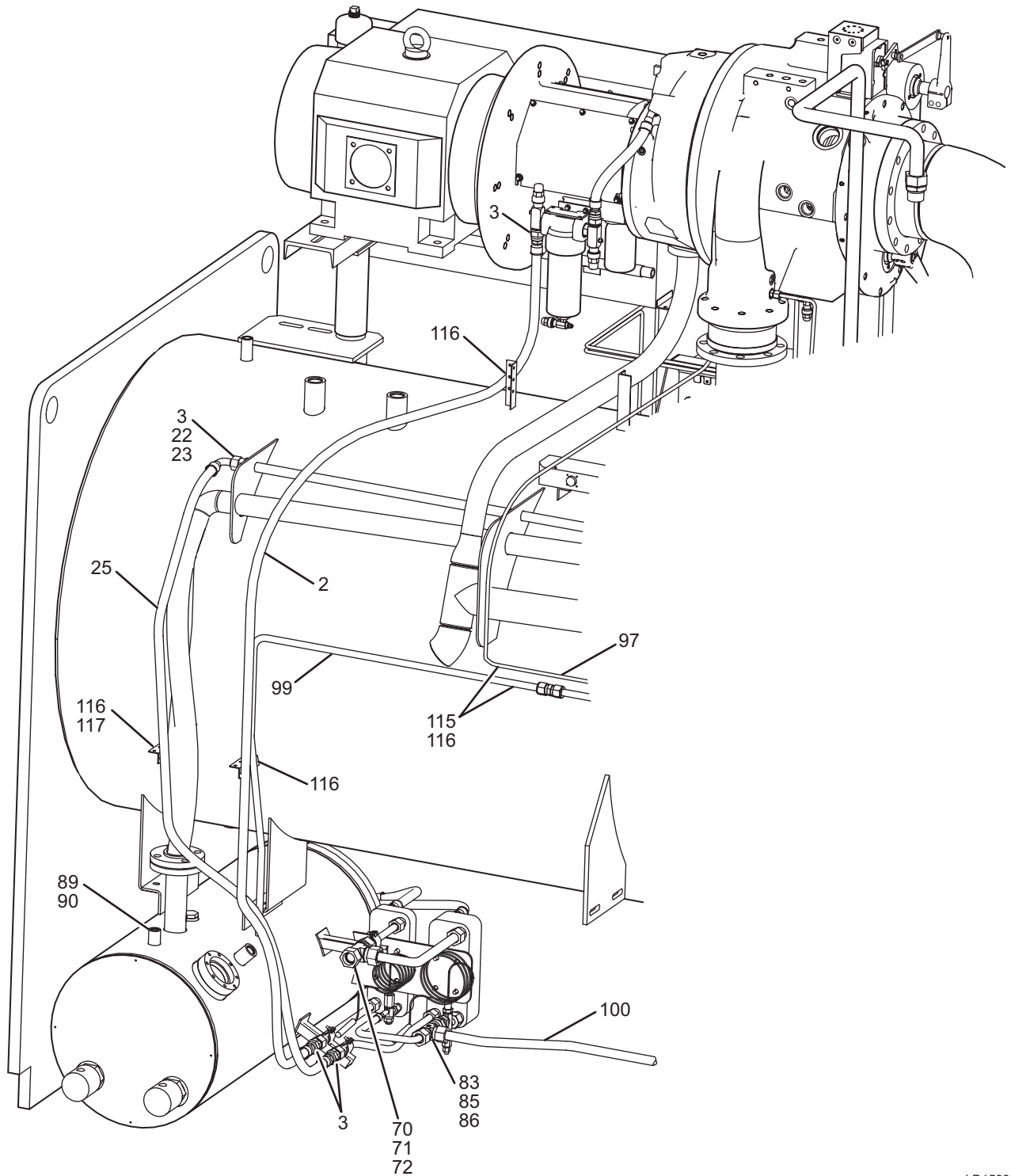
LD15678

**FIGURE 10 - UNIT PIPING**



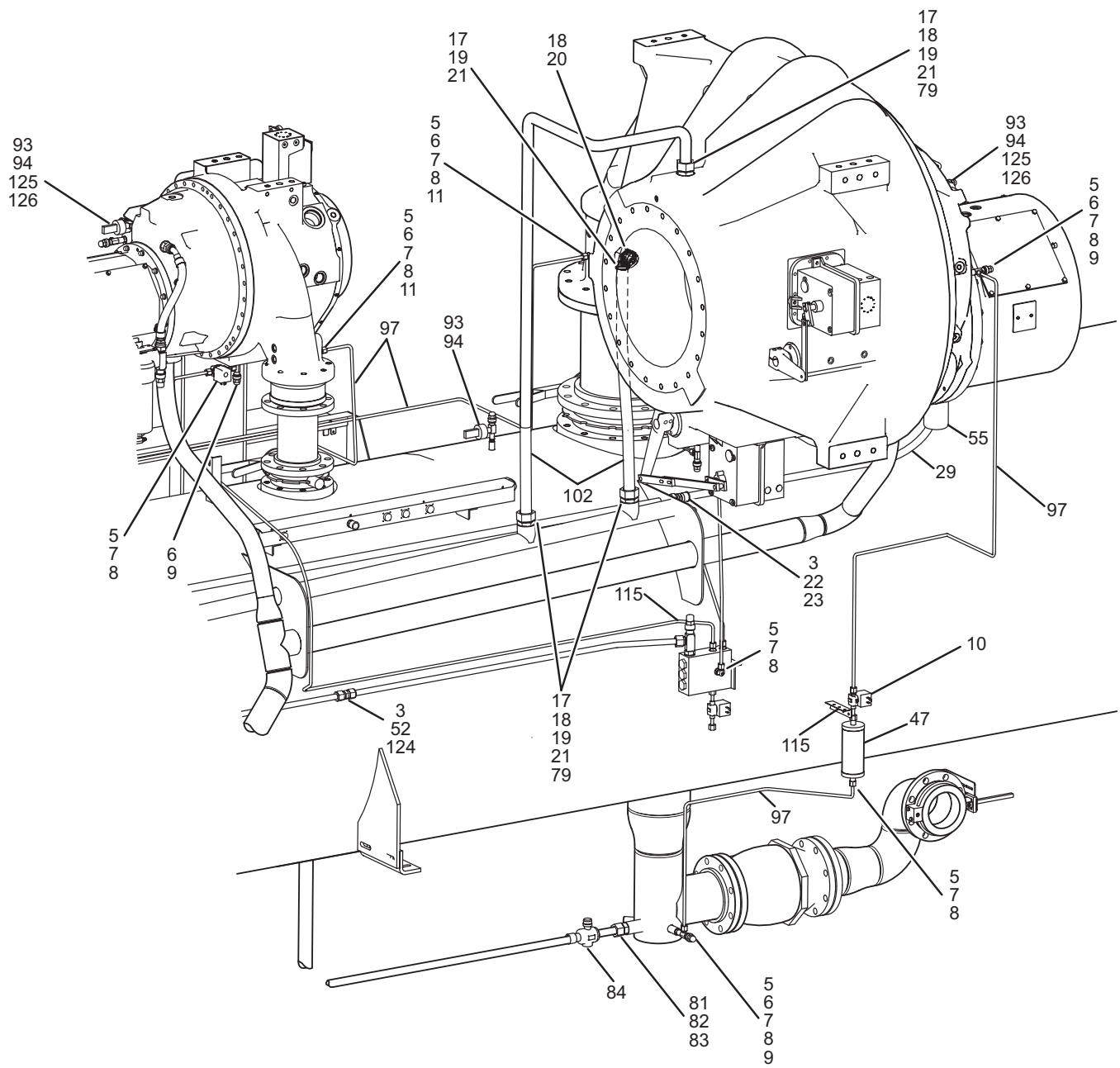
LD15679

**FIGURE 11 - UNIT PIPING (CONT'D)**



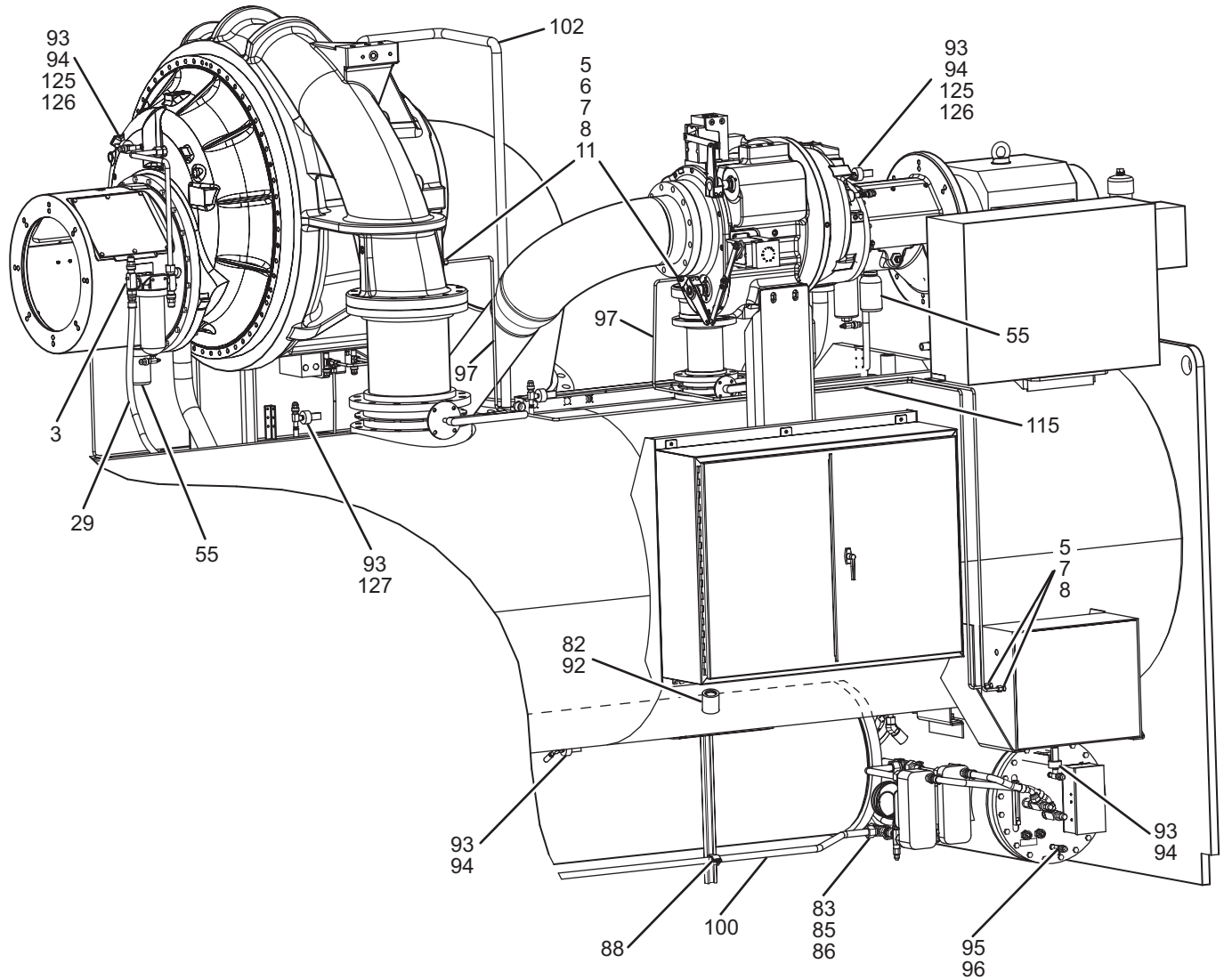
LD15680

**FIGURE 12 - UNIT PIPING (CONT'D)**



LD15681

**FIGURE 13 - UNIT PIPING (CONT'D)**



LD15682

**FIGURE 14 - UNIT PIPING (CONT'D)**

## OIL PUMP HOUSING

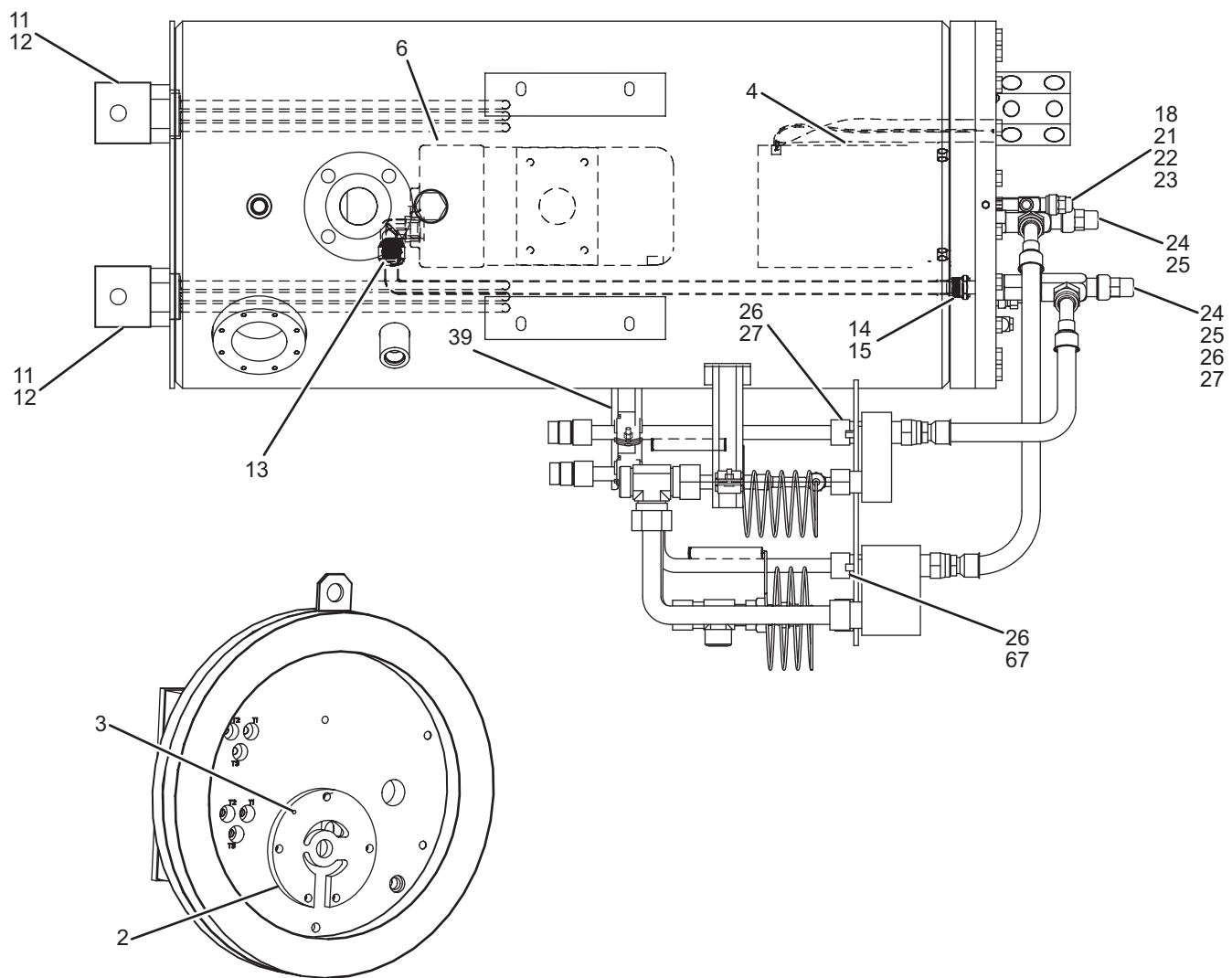
**TABLE 3 - OIL PUMP HOUSING**

| ITEM | DESCRIPTION                              | PART NUMBER   | QUANTITY | FIGURE     |
|------|------------------------------------------|---------------|----------|------------|
| 2    | Plate, Oil Pump Mounting Mach            | 075 54038 000 | 1        | 15         |
| 3    | Pin Slot Spg 3/16 X 1/2                  | 029 04138 000 | 1        | 15         |
| 4    | Pump Oil 20 Gpm, Yk                      | 026 46326 001 | 1        | 15, 16, 17 |
| 6    | Pump Oil 20 Gpm, Yk                      | 026 46715 001 | 1        | 15, 16, 17 |
| 11   | Heater Elec Immer Type 2000 W, 240 V     | 025 40704 000 | 2        | 15         |
| 11   | Heater Elec Immer Type 2000 W, 400 V     | 025 40705 000 | 2        | 15         |
| 11   | Heater Elec Immer Type 2000 W, 480 V     | 025 40706 000 | 2        | 15         |
| 11   | Heater Elec Immer Type 2000 W, 575-600 V | 025 42479 000 | 2        | 15         |
| 12   | O-Ring Neo1 02.337id .118thk M           | 028 12961 010 | 2        | 15, 16     |
| 13   | Elbow Flare Hydraulic 3/4 Od             | 023 10700 000 | 1        | 15, 17     |
| 14   | Connr Flare Hydraulic 3/4 Od             | 023 10696 000 | 1        | 15         |
| 15   | Tube Steel 3/4 Od X .049 X               | 003 00952 000 | 3        | 15, 17     |
| 16   | Box Elec 4 Octagon X 4 Deep              | 025 33238 000 | 2        | 16, 17     |
| 16   | Cover Filter Output Assembly             | 325 43382 000 | 1        | 16, 17     |
| 18   | O-Ring Neo1 00.351id .072thk M           | 028 12961 001 | 7        | 15, 16, 17 |
| 19   | Terminal Hv Fused Glass                  | 025 32933 000 | 6        | 16, 17     |
| 20   | Cover Filter Output Assembly             | 375 26580 000 | 2        | 16         |
| 21   | Valve Stop Ang Vertical                  | 022 09577 000 | 1        | 15, 16     |
| 22   | Valve Stop Ang Vertical                  | 022 09578 000 | 1        | 15, 16     |
| 23   | O-Ring Neo1 00.468id .078thk M           | 028 12961 003 | 1        | 15, 16     |
| 24   | Valve Stop Ang Vertical                  | 022 10047 000 | 2        | 15, 16     |
| 25   | O-Ring Neo1 00.924id .116thk M           | 028 12961 006 | 2        | 15, 16     |
| 26   | O-Ring Neo1 00.739id .070thk M           | 028 12961 015 | 14       | 15, 16, 17 |
| 27   | Female Straight Thread Adapter           | 023 23904 000 | 1        | 15, 16     |
| 28   | Hose Refrig Orfs 3/4 X 20                | 026 39123 020 | 1        | 16, 17     |
| 29   | Hose Refrig Orfs 3/4 X 14                | 026 39123 014 | 1        | 16         |
| 30   | Gage Liquid Level Sight Front            | 026 37571 000 | 1        | 16         |
| 31   | O-Ring Neo1 00.487id .103thk M           | 028 12961 035 | 2        | 16         |
| 32   | Cooler Oil Q3                            | 026 45980 000 | 1        | 16, 17     |
| 33   | Cooler Oil K7 Compr                      | 026 45981 000 | 1        | 16, 17     |
| 34   | Plate Spacer                             | 075 46386 000 | 2        | 16, 17     |
| 39   | Clamp Tube 3/4 Od W/Cushion:             | 023 12691 000 | 3        | 15, 17     |
| 40   | Sensor Temp 50,000 Ohms Din              | 025 39993 000 | 1        | 16         |
| 41   | O-Ring Neo1 00.644id .087thk M           | 028 12961 004 | 1        | 16         |
| 44   | Tee Union 1-1/4                          | 023 24340 000 | 1        | 17         |
| 45   | O-Ring Neo1 01.176id .070thk M           | 028 12961 022 | 2        | 17         |
| 47   | Tube Sst 3/4 Od X .065 X                 | 003 03570 000 | 0.75     | 17         |
| 48   | Tube Sst 1 Od X .065 X 20 Ft             | 003 03571 000 | 1.5      | 17         |
| 50   | Union 3/4"                               | 023 20731 000 | 2        | 17         |
| 51   | Valve Thermal Expansion                  | 025 35133 000 | 1        | 17         |
| 52   | Valve Thermal Expansion                  | 025 38170 000 | 1        | 17         |
| 53   | Cplg Sld C X C 3/4 X 1/2:                | 023 16299 000 | 1        | 17         |
| 54   | Tee Swivel Nut Run 1"                    | 023 24361 000 | 1        | 17         |

**TABLE 3 - OIL PUMP HOUSING (CONT'D)**

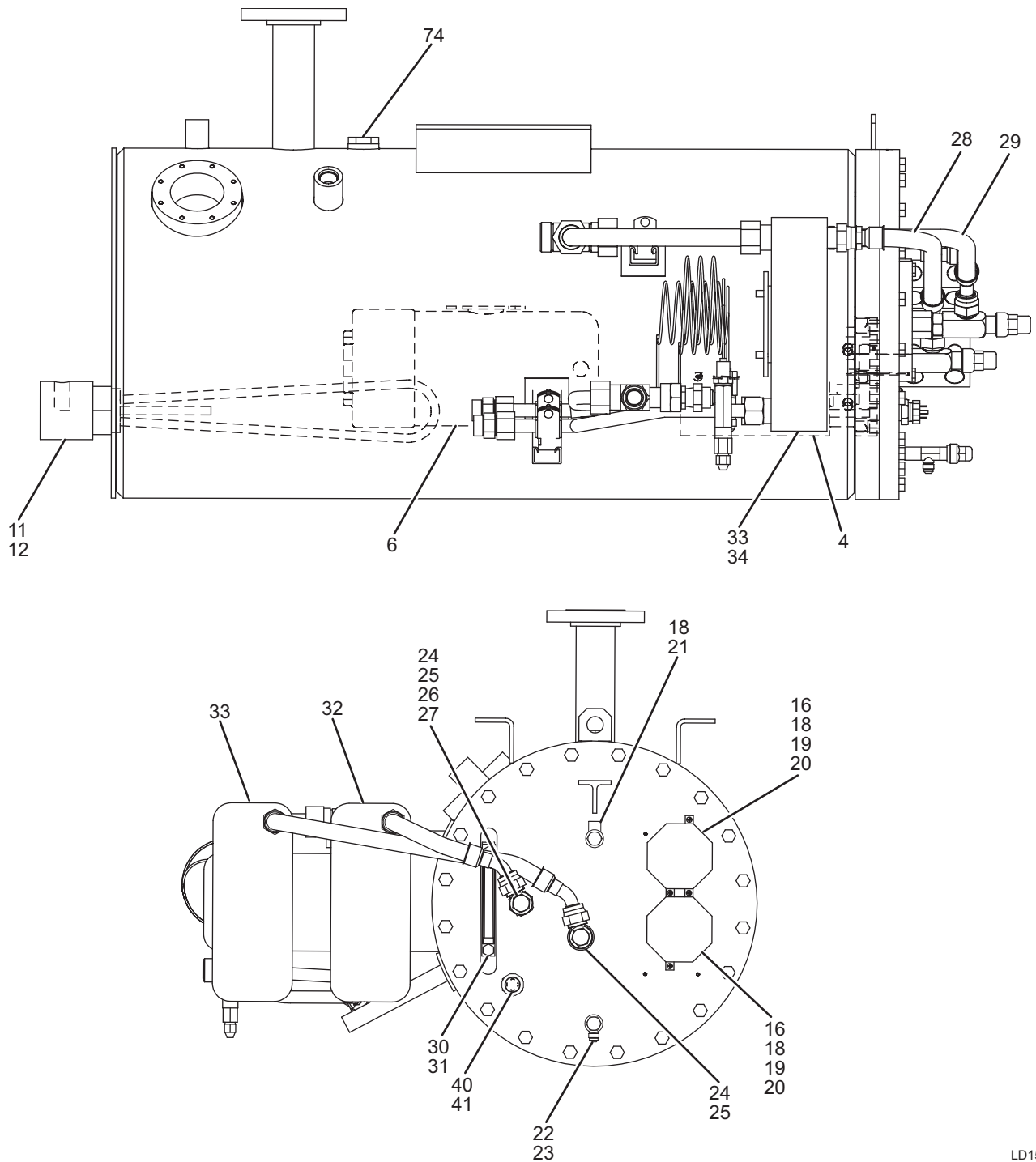
| ITEM | DESCRIPTION                    | PART NUMBER   | QUANTITY | FIGURE |
|------|--------------------------------|---------------|----------|--------|
| 55   | Connr Tube End Extender/Expand | 023 24362 000 | 1        | 17     |
| 56   | O-Ring Neo1 00.926id .070thk M | 028 12961 016 | 3        | 17     |
| 57   | Tube Steel 3/4 Od X .065 X     | 003 03518 000 | 4        | 17     |
| 58   | Nut 1" O.D. Tube               | 023 18287 000 | 1        | 17     |
| 59   | O-Ring Neo1 00.489id .070thk M | 028 12961 013 | 1        | 17     |
| 61   | Term Push On Str 18-14         | 025 25920 000 | 6        | *      |
| 62   | Strap Cable T and B L7-50-9-M  | 025 09607 000 | 3        | *      |
| 63   | Sleeve 1" O.D. Tube            | 023 20827 006 | 1        | 17     |
| 64   | Sleeve Reducing 1-1/4 To 1     | 023 20880 017 | 1        | 17     |
| 65   | Sleeve Reducing 1-1/4 To 3/4   | 023 20880 016 | 1        | 17     |
| 66   | Sleeve 3/4 O.D. Tube           | 023 20827 005 | 1        | 17     |
| 67   | Sleeve 3/4 O.D. Tube           | 023 18284 000 | 4        | 15, 16 |
| 68   | Well Thermal Expansion         | 026 37568 000 | 2        | 17     |
| 70   | Sleeve Reducing 1 To 3/4       | 023 20880 014 | 1        | 17     |
| 72   | Bush Pipe 1 - 11-1/2 Npte      | 023 04045 000 | 1        | *      |
| 74   | O-Ring Neo1 01.171id .116thk M | 028 12961 008 | 1        | 16     |

NOTE: Items with an \* are NOT represented.



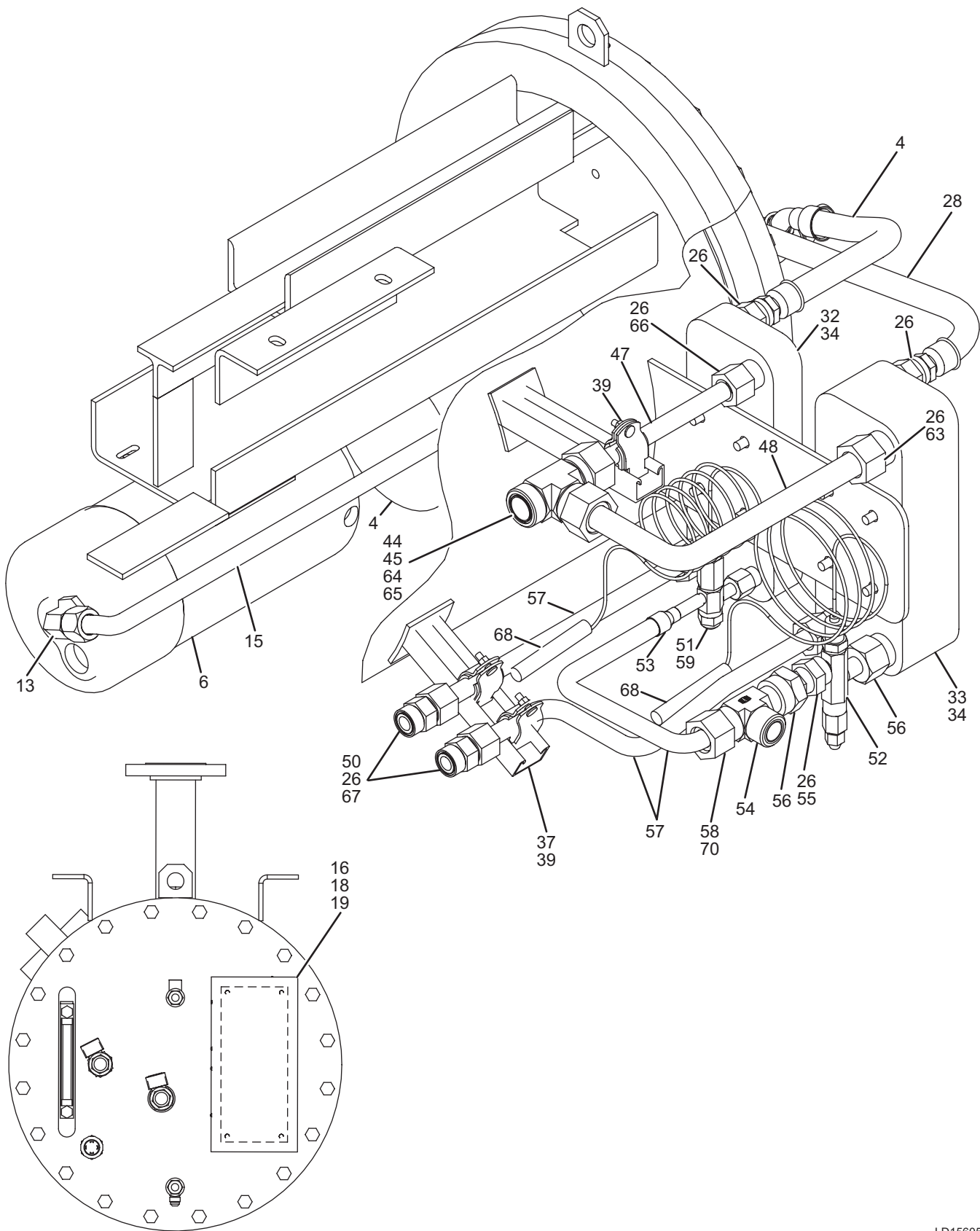
LD15603

**FIGURE 15 - OIL PUMP HOUSING**



LD15604

**FIGURE 16 - OIL PUMP HOUSING (CONT'D)**



LD15605

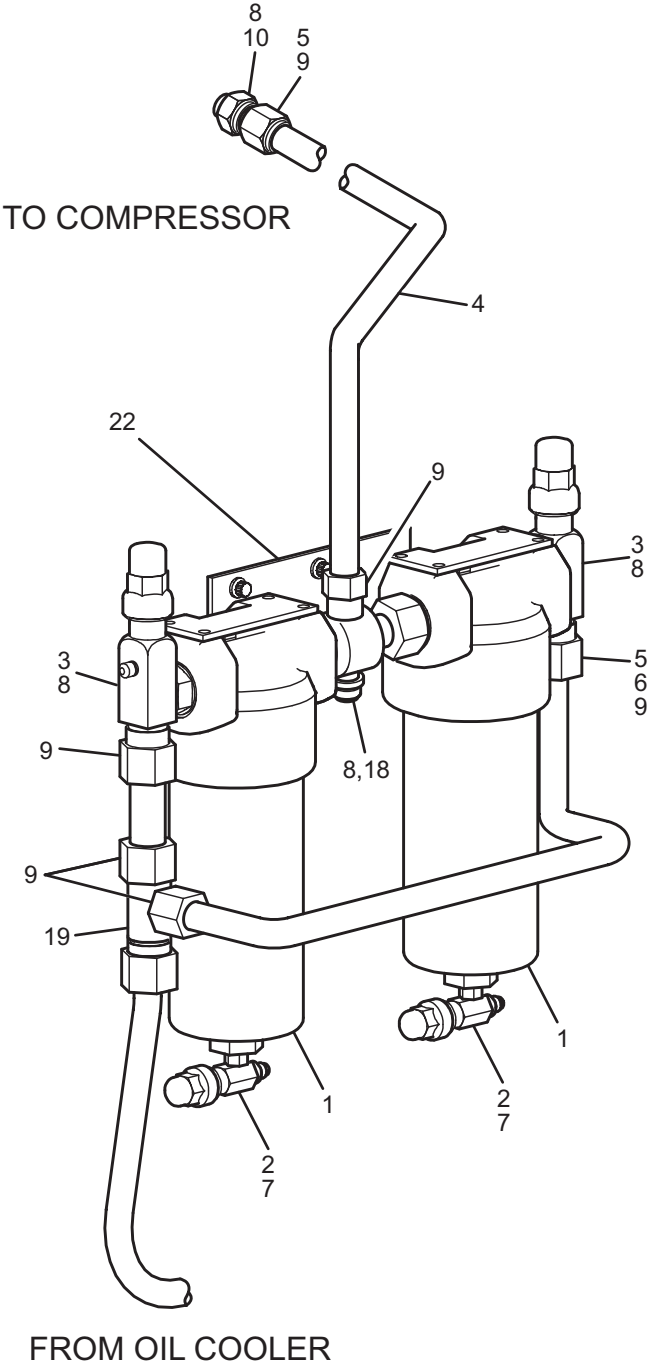
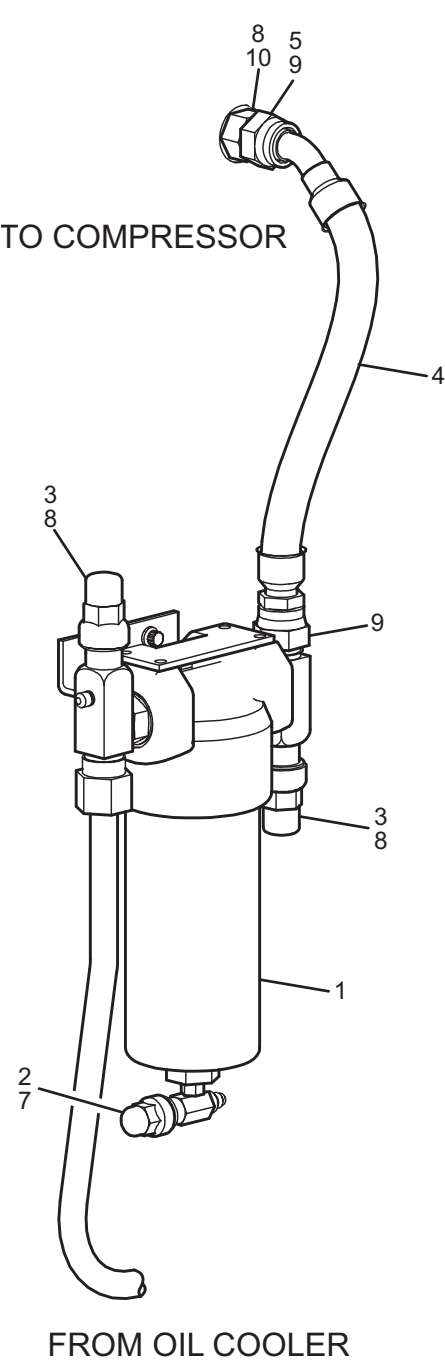
**FIGURE 17 - OIL PUMP HOUSING (CONT'D)**

## OIL FILTER ARRANGEMENT

**TABLE 4 - OIL FILTER ARRANGEMENT**

| ITEM                                           | DESCRIPTION                       | PART NUMBER   | QUANTITY | FIGURE |
|------------------------------------------------|-----------------------------------|---------------|----------|--------|
| <b>SINGLE OIL FILTER ARRANGEMENT (Q3)</b>      |                                   |               |          |        |
| 1                                              | Filter, Oil Seubert Housing W/    | 026 37589 002 | 1        | 18     |
| 2                                              | Valve Stop Ang Vertical           | 022 10092 000 | 1        | 18     |
| 3                                              | Valve Stop Ang Vertical           | 022 10046 000 | 2        | 18     |
| 4                                              | Refrig And Hose Assembly 3/4 X 17 | 026 39123 017 | 1        | 18     |
| 4                                              | Tube Steel 3/4 Od X .065 X        | 003 03518 000 | 2        | *      |
| 7                                              | O-Ring Neo1 00.351id .072thk M    | 028 12961 001 | 1        | 18     |
| 8                                              | O-Ring Neo1 00.924id .116thk M    | 028 12961 006 | 3        | 18     |
| 9                                              | O-Ring Neo1 00.739id .070thk M    | 028 12961 015 | 2        | 18     |
| 10                                             | Connr 3/4 O.D. Tube Male          | 023 18290 000 | 1        | 18     |
| <b>SINGLE OIL FILTER ARRANGEMENT (K7)</b>      |                                   |               |          |        |
| 1                                              | Filter, Oil Seubert Housing W/    | 026 37589 002 | 1        | 18     |
| 2                                              | Valve Stop Ang Vertical           | 022 10092 000 | 1        | 18     |
| 3                                              | Valve Stop Ang Vertical           | 022 10046 000 | 2        | 18     |
| 4                                              | Tube Steel 3/4 Od X .065 X        | 003 03518 000 | 2        | 18     |
| 5                                              | Sleeve 3/4 O.D. Tube              | 023 18284 000 | 2        | 18     |
| 7                                              | O-Ring Neo1 00.351id .072thk M    | 028 12961 001 | 1        | 18     |
| 8                                              | O-Ring Neo1 00.924id .116thk M    | 028 12961 006 | 3        | 18     |
| 9                                              | O-Ring Neo1 00.739id .070thk M    | 028 12961 015 | 2        | 18     |
| 10                                             | Connr 3/4 O.D. Tube Male          | 023 18290 000 | 1        | 18     |
| <b>DUAL OIL FILTER ARRANGEMENT (Q3 and K7)</b> |                                   |               |          |        |
| 1                                              | Filter, Oil Seubert Housing W/    | 026 37589 002 | 2        | 18     |
| 2                                              | Valve Stop Ang Vertical           | 022 10092 000 | 2        | 18     |
| 3                                              | Valve Stop Ang Vertical           | 022 10046 000 | 2        | 18     |
| 4                                              | Tube Steel 3/4 Od X .065 X        | 003 03518 000 | 5        | 18     |
| 5                                              | Sleeve 3/4 O.D. Tube              | 023 18284 000 | 6        | 18     |
| 7                                              | O-Ring Neo1 00.351id .072thk M    | 028 12961 001 | 2        | 18     |
| 8                                              | O-Ring Neo1 00.924id .116thk M    | 028 12961 006 | 5        | 18     |
| 9                                              | O-Ring Neo1 00.739id .070thk M    | 028 12961 015 | 6        | 18     |
| 10                                             | Connr 3/4 O.D. Tube Male          | 023 18290 000 | 1        | 18     |
| 18                                             | Valve 3-Way Ball                  | 022 10094 000 | 1        | 18     |
| 19                                             | Tee Union 3/4"                    | 023 18913 000 | 1        | 18     |
| 22                                             | Bracket Dual Oil Filter           | 075 82934 000 | 1        | 18     |

NOTE: Items with an \* are NOT represented.



LD15602

FIGURE 18 - OIL FILTER ARRANGEMENTS

## PRIMARY COMPRESSOR (K7) COMPONENTS

**TABLE 5 - PRIMARY COMPRESSOR (K7) COMPONENTS**

| ITEM | DESCRIPTION                       | PART NUMBER   | QUANTITY | FIGURE     |
|------|-----------------------------------|---------------|----------|------------|
| * 2  | Bearing H.S. Front Hj-119         | 064 51495 000 | 1        | 19         |
| 4    | O-Ring Neo1 00.301ID .064thk M    | 028 12961 021 | 1        | 19         |
| 6    | Wiring PRV Motor Actuator         | 375 49340 105 | 2        | 19, 21, 22 |
| 6A   | Motor Actuator 150 Deg 1.875      | 025 40490 001 | 1        | 19         |
| 6B   | Harness System Wiring             | 575 49340 201 | 1        | 22         |
| 6C   | Surge Suppressor                  | 031 00808 000 | 2        | 22         |
| 6D   | Term Wire 22-16 AWG               | 025 19407 000 | 2        | 21         |
| 6E   | Term Wire 16-14 AWG               | 025 18732 000 | 1        | 22         |
| 7    | O-Ring Neo1 00.301ID .070thk M    | 028 12513 000 | 3        | 22         |
| * 8  | Bearing H.S. Rear Hj-119          | 064 51494 000 | 1        | 21         |
| * 9  | Bearing L.S. Rear Ha65/73         | 064 47858 000 | 1        | 21         |
| * 10 | Bearing L.S. Front Ha65/75        | 064 47857 000 | 1        | 21         |
| * 11 | Bearing H.S. For Thrust Hj-119    | 029 24759 000 | 1        | 22         |
| * 13 | Collar H.S. Thrust Hj-119         | 064 51493 000 | 1        | 22         |
| * 14 | Collar L.S. Thrust Hj-119         | 064 51492 000 | 1        | 19, 21     |
| 16   | Elbow Cinch 3/8 Tube X            | 023 22141 000 | 2        | 19         |
| 17   | Bearing H.S. Reverse Thrust Hj    | 029 24758 001 | 1        | 21         |
| † 18 | O-Ring Neop 10.484ID .139thk M    | 028 12226 000 | 1        | 21         |
| 20   | Cover Shaft Control               | 064 51671 000 | 2        | 21         |
| 21   | Shaft Contl VGD                   | 364 51673 000 | 2        | 21         |
| 21A  | Disk Shaft Control                | 064 51670 000 | 1        | 21         |
| 21B  | Shaft VGD Device                  | 064 51219 000 | 1        | 21         |
| 22   | O-Ring Neop 02.234ID .139thk M    | 028 03803 000 | 2        | 19         |
| 26   | Spacer .50 Lg X .33 Id X .63od    | 064 50611 000 | 1        | 22         |
| 27   | Orifice H.S. Oil Feed Hd 46-61    | 064 49203 000 | 1        | 19         |
| 31   | Connr Cinch 3/8 Tube X            | 023 06801 000 | 3        | 19, 20     |
| 32   | Seal Double Shaft Hj-119          | 029 24762 000 | 1        | 21         |
| 33   | Lever Internal Hj-119             | 064 51516 000 | 1        | 22         |
| 34   | Lever PRV External                | 064 51518 000 | 1        | 22         |
| 35   | Arm Motor                         | 064 51522 000 | 1        | 22         |
| 36   | Link External PRV                 | 064 51788 000 | 1        | 22         |
| 37   | Rod, Adjustable PRV and VGD       | 364 51754 800 | 1        | 22         |
| 37A  | Rod Adjustable                    | 064 51521 000 | 1        | 22         |
| 37B  | Bearing Rod End W/SST Isrt Chrome | 029 07015 000 | 2        | 22         |
| 38   | Plug Hex Hd 1-1/16                | 023 18295 000 | 1        | 21         |
| † 39 | O-Ring Neo1 00.924ID .116thk M    | 028 12961 006 | 1        | 21         |
| 40   | Retnr Bearing S Stage Turbo       | 064 46886 000 | 2        | 20         |
| 42   | Tube L.S. Oil Drain Ha 65-104     | 064 51222 000 | 1        | 20         |
| 43   | Connr Fla M X M 1/4 OD Fla        | 023 23367 000 | 1        | 21         |
| 44   | Tube Oil Drain Shaft Seal         | 064 51637 000 | 1        | 19         |
| 46   | Ring Bal.Pist. Seal Hj-119        | 064 51509 000 | 1        | 19         |

\* Included in Bearing Kit      † Included in O-Ring Kit

**TABLE 5 - PRIMARY COMPRESSOR (K7) COMPONENTS (CONT'D)**

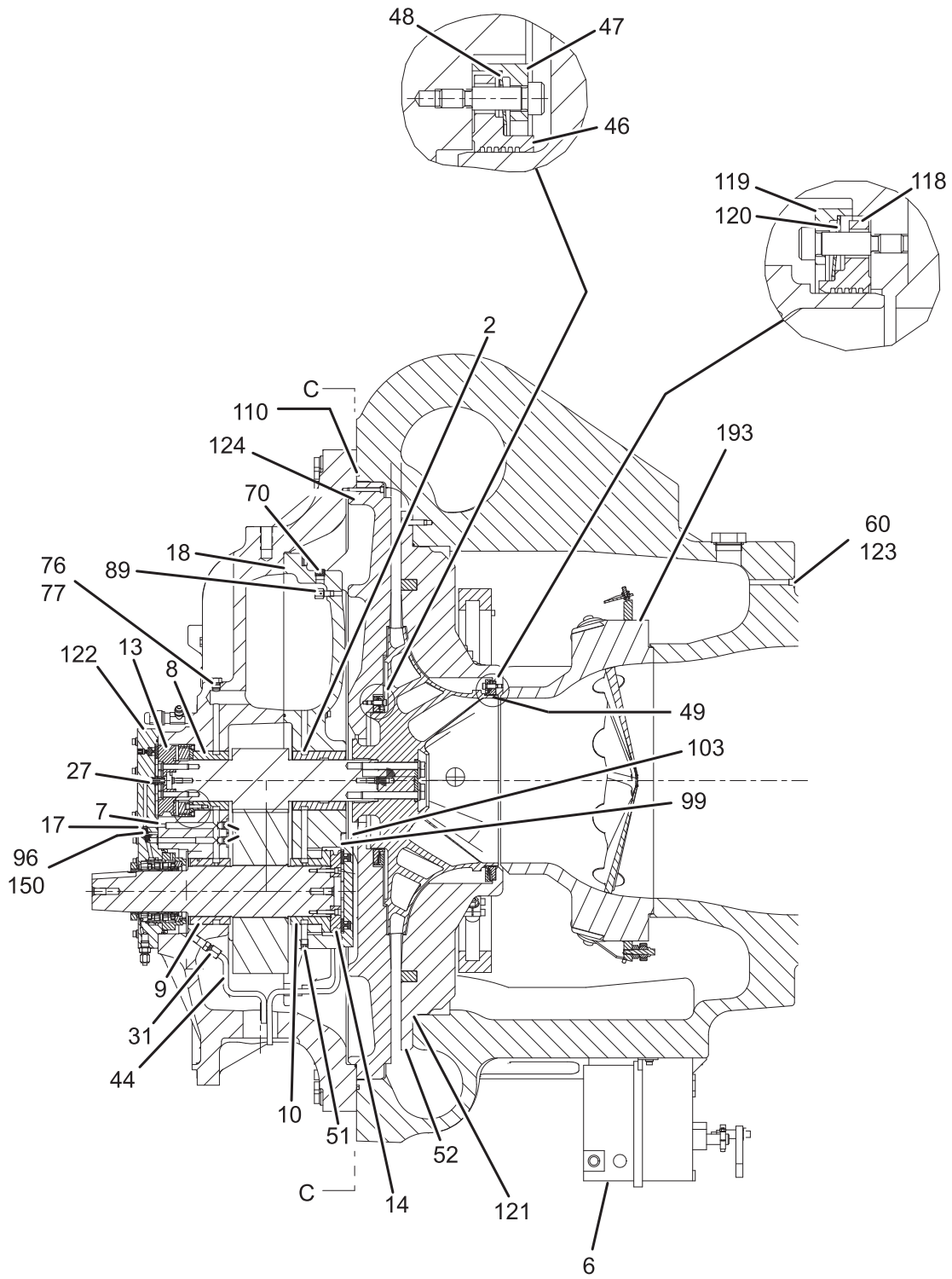
| ITEM  | DESCRIPTION                      | PART<br>NUMBER | QUANTITY | FIGURE     |
|-------|----------------------------------|----------------|----------|------------|
| 47    | Retnr B.P. Seal Washer Hj119     | 064 51510 000  | 1        | 19         |
| 48    | Washer Spring Hj-119 Balance     | 064 51511 000  | 1        | 19         |
| 49    | Impeller 11.892 Eye Hard Coat J7 | 064 51499 001  | 1        | 19         |
| 51    | Plug Pipe 1/4 Hex Socket         | 023 01973 000  | 3        | 19         |
| 52    | Device VGD Hj-119                | 364 51517 000  | 1        | 19         |
| 53    | Plug Hex Hd 7/16                 | 023 18279 000  | 1        | 21         |
| 55    | Fillpiece PRV Device             | 064 51523 000  | 1        | 22         |
| 57    | Dowel Pin Str                    | 029 24130 000  | 2        | 22         |
| 60    | Plug- Hollow Hex 7/16"           | 023 18921 000  | 4        | 20         |
| 62    | Tube Oil Drain H.S. Thrust       | 064 51638 000  | 1        | 20         |
| 65    | Lever PRV External               | 064 51703 000  | 1        | 22         |
| 69    | Link External                    | 064 51549 000  | 1        | 22         |
| 70    | Orifice Pipe Plug YORK Compr     | 064 51852 000  | 1        | 19         |
| 72    | Plug Hex Hd 3/4                  | 023 18280 000  | 2        | 21, 22     |
| 73    | Plate Mtg Ha50-73                | 064 47998 000  | 1        | 20         |
| 75    | Header Spray Ha65-73             | 064 47999 000  | 1        | 20         |
| 76    | Plug Hex Hd 9/16                 | 023 18962 000  | 8        | 19, 21, 22 |
| † 77  | O-Ring Neo1 00.468ID .078thk M   | 028 12961 003  | 10       | 19, 21, 22 |
| 78    | Tube Gear Cooling Ha65-104       | 064 51248 000  | 1        | 20         |
| 82    | Pin Dowel Tapped 3/8 Dia         | 029 18459 000  | 3        | 20         |
| 85    | Plug - Hollow Hex 1-7/8"         | 023 18926 000  | 2        | 22         |
| 86    | O-Ring Special 3 - 924           | 028 13865 000  | 2        | 22         |
| 87    | O-Ring Neo1 02.112ID .103thk M   | 028 15432 000  | 2        | 22         |
| 88    | Bracket Support Lower PRV        | 064 48851 000  | 1        | 22         |
| 89    | Valve Check Oil 1/8 Npte         | 022 04444 000  | 1        | 19         |
| 91    | Plate Handhole Cover H 65-104    | 064 50139 000  | 1        | 22         |
| † 92  | O-Ring Neo1 05.859ID .139thk M   | 028 12204 000  | 1        | 21         |
| † 94  | O-Ring Neo1 01.109ID .139thk M   | 028 12200 000  | 4        | 22         |
| 95    | Plug PRV Assembly                | 064 50632 000  | 2        | 22         |
| 96    | Plug Hollow Hex 5/16-24unf-2a    | 023 24908 000  | 3        | 19         |
| † 97  | O-Ring Neo1 00.755ID .097thk M   | 028 12961 005  | 2        | 22         |
| † 99  | O-Ring Hnbr 06.737ID .103thk M   | 028 15446 000  | 1        | 19         |
| * 103 | Bearing L.S. Thrust Hj-119       | 029 24757 000  | 1        | 19         |
| 104   | Arm Motor                        | 064 51548 000  | 1        | 22         |
| 108   | Fillpiece VGD Device             | 064 51551 000  | 2        | 22         |
| † 110 | O-Ring Hnbr 44.050ID .275thk M   | 028 15443 000  | 1        | 19         |
| 111   | Link External PRV                | 064 51789 000  | 1        | 22         |
| 112   | Probe Proximity                  | 025 40496 000  | 1        | 21         |
| 114   | Valve Stop Ang Vertical          | 022 09578 000  | 1        | 21         |
| 117   | Rod, Adjustable PRV and VGD      | 364 51753 860  | 1        | 22         |
| 118   | Ring Eye Seal J7                 | 064 52028 000  | 1        | 19         |
| 119   | Retainer Eye Seal Hj-119         | 064 51507 000  | 1        | 19         |

\* Included in Bearing Kit      † Included in O-Ring Kit

**TABLE 5 - PRIMARY COMPRESSOR (K7) COMPONENTS (CONT'D)**

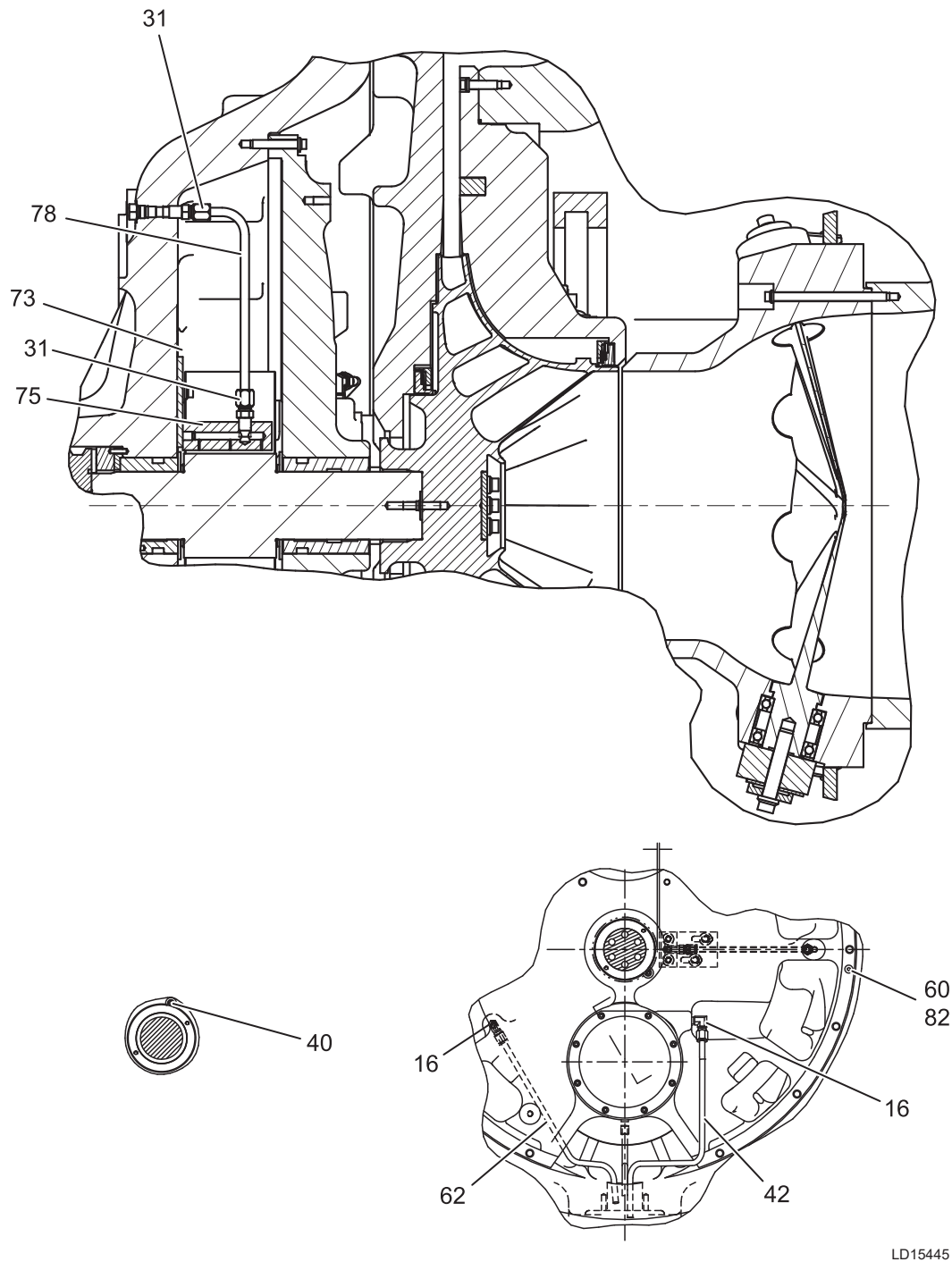
| ITEM         | DESCRIPTION                    | PART<br>NUMBER | QUANTITY | FIGURE     |
|--------------|--------------------------------|----------------|----------|------------|
| <b>120</b>   | Washer Spring Hj-119 Eye       | 064 51508 000  | 1        | 19         |
| † <b>121</b> | O-Ring Hnbr 33.510ID .139thk S | 028 15445 000  | 1        | 19         |
| † <b>122</b> | O-Ring Neop 05.609ID .139thk M | 028 12258 000  | 1        | 19         |
| † <b>123</b> | O-Ring Neo1 00.351ID .072thk M | 028 12961 001  | 3        | 19, 21, 22 |
| † <b>124</b> | O-Ring Hnbr 40.690ID .139thk S | 028 15444 000  | 1        | 19         |
| <b>126</b>   | Spacer Flanged, PRV and VGD    | 064 50612 000  | 2        | 22         |
| <b>128</b>   | Lever Internal VGD             | 064 51216 000  | 1        | 22         |
| † <b>130</b> | O-Ring Neo1 00.644ID .087thk M | 028 12961 004  | 2        | 21         |
| <b>135</b>   | Bushing, Garlock 16du12        | 029 24100 000  | 2        | 22         |
| <b>139</b>   | Fillpiece PRV Device           | 064 47727 000  | 1        | 22         |
| † <b>141</b> | O-Ring Hnbr 00.424ID .103thk M | 028 15428 000  | 1        | 21         |
| <b>142</b>   | Clamp Tube 1/8 OD              | 023 06163 000  | 1        | 21         |
| <b>147</b>   | Sleeve Flare Hydraulic 1/4 OD  | 023 10000 000  | 1        | 21         |
| <b>148</b>   | Spacer .75lg X .33 Id X .63 OD | 064 51538 000  | 1        | 22         |
| <b>149</b>   | Spacer Flanged PRV and VGD     | 064 51854 000  | 2        | 22         |
| <b>150</b>   | O-Ring Hnbr 00.239ID .064thk M | 028 15846 000  | 4        | 19, 21     |
| <b>193</b>   | Device PRV Hj-119              | 364 51515 000  | 1        | 19         |
|              | Bearing Kit, Compressor (K7)   | 464 51830 000  | *        |            |
|              | O-Ring Kit, Compressor (K7)    | 464 51832 000  | *        |            |
|              | Tool Kit, Compressor (K7)      | 364 51665 001  | *        |            |

\* Included in Bearing Kit      † Included in O-Ring Kit

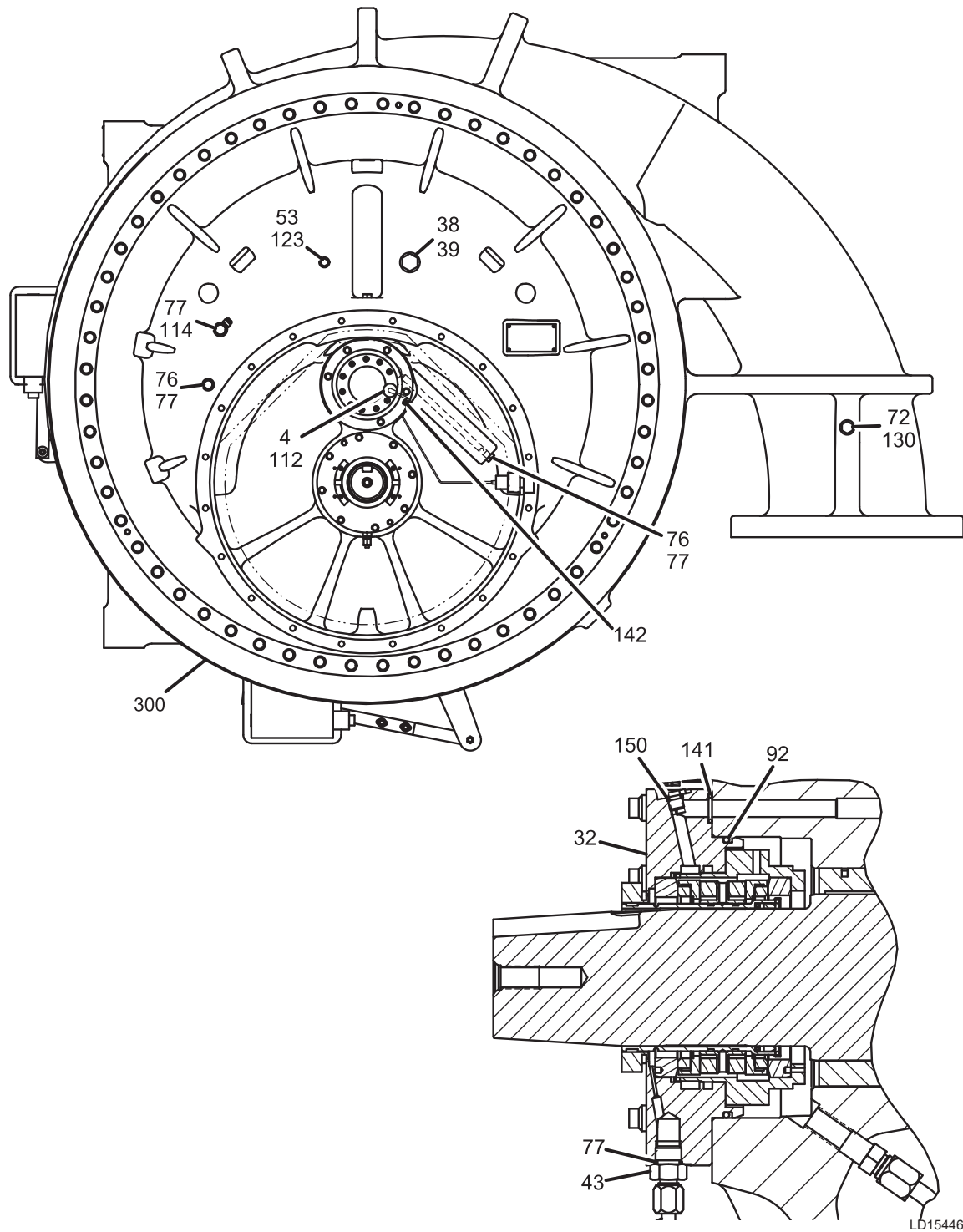


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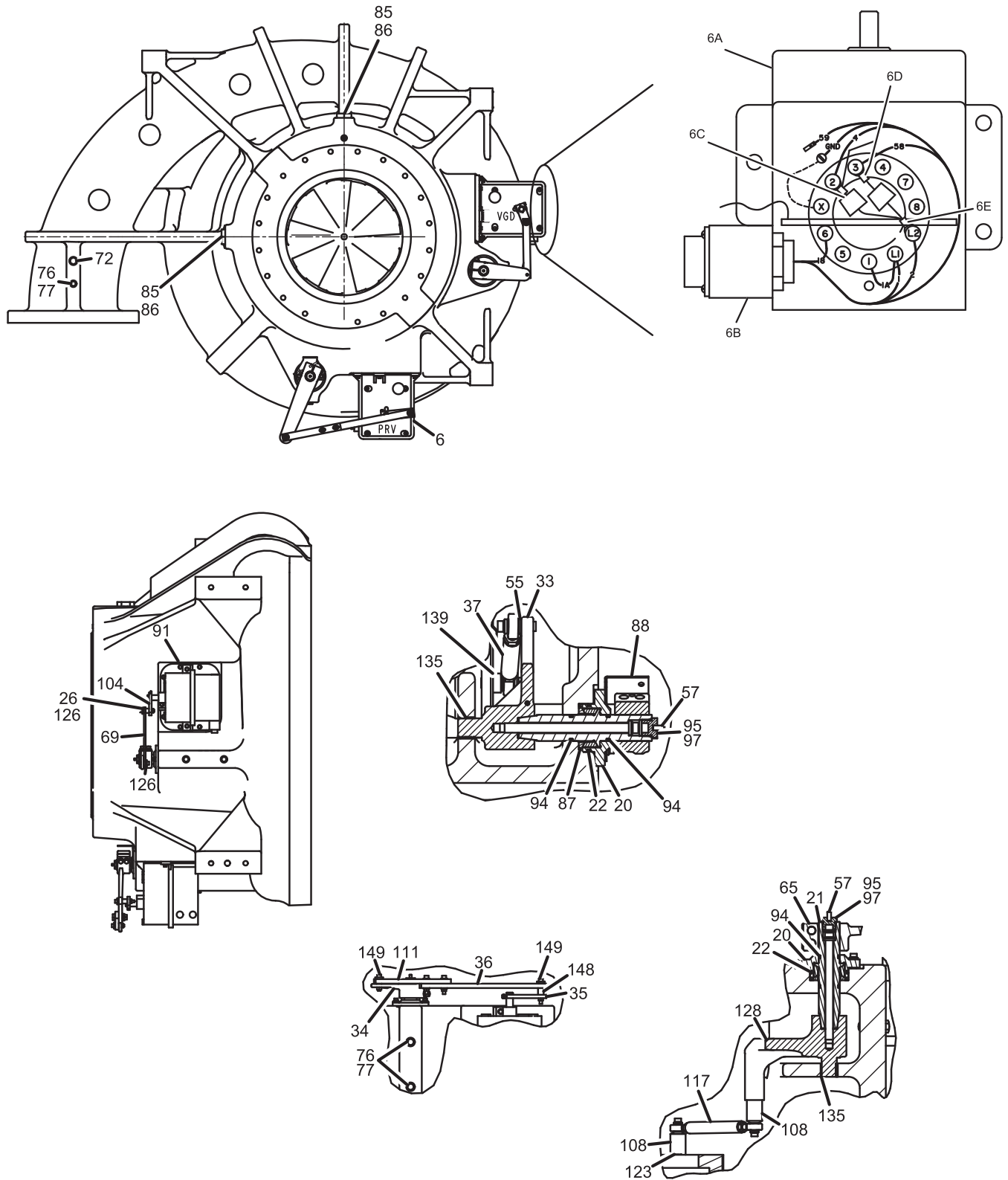
**FIGURE 19 - PRIMARY COMPRESSOR (K7) COMPONENTS**



**FIGURE 20 - PRIMARY COMPRESSOR (K7) COMPONENTS (CONT'D)**



**FIGURE 21 - PRIMARY COMPRESSOR (K7) COMPONENTS (CONT'D)**



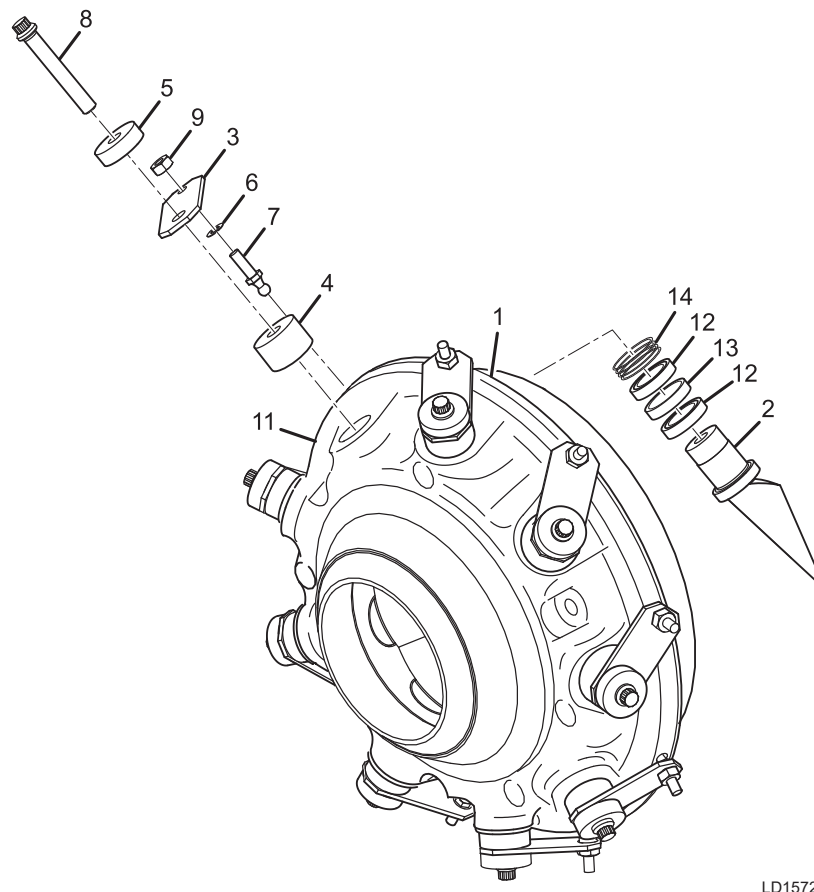
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**FIGURE 22 - PRIMARY COMPRESSOR (K7) COMPONENTS (CONT'D)**

## PRIMARY COMPRESSOR (K7) PRE-ROTATIONAL DEVICE

**TABLE 6 - PRIMARY COMPRESSOR (K7) PRE-ROTATIONAL DEVICE**

| ITEM | DESCRIPTION                  | PART NUMBER   | QUANTITY | FIGURE |
|------|------------------------------|---------------|----------|--------|
| 1    | Ring Vane Driving Hj-119     | 064 51514 000 | 1        | 23     |
| 2    | Vane Pre-Rot Hj119 (9-05046) | 064 51503 000 | 9        | 23     |
| 3    | Arm PRV Vane Hj-119          | 064 51513 000 | 9        | 23     |
| 4    | Spacer PRV Arm Hj-119        | 064 51512 000 | 9        | 23     |
| 5    | Washer Special Pre-Rot       | 064 47318 000 | 9        | 23     |
| 6    | Washer Plain Lt 17/64 Id 1/2 | 021 11973 000 | 18       | 23     |
| 7    | Stud Ball 1/4 -28 Unf W/     | 029 15924 000 | 9        | 23     |
| 8    | Screw Cap 12 Pt Hd 5/8       | 021 17265 000 | 9        | 23     |
| 9    | Nut Self Lock 1/4 - 28UNF    | 021 12943 000 | 9        | 23     |
| 11   | Housing PRV Hj-119           | 064 51502 000 | 1        | 23     |
| 12   | Bearing, Ball Deep Groove    | 029 25081 000 | 18       | 23     |
| 13   | Spacer                       | 064 51783 000 | 9        | 23     |
| 14   | Spring, Overlap Type Wave    | 029 25082 000 | 18       | 23     |



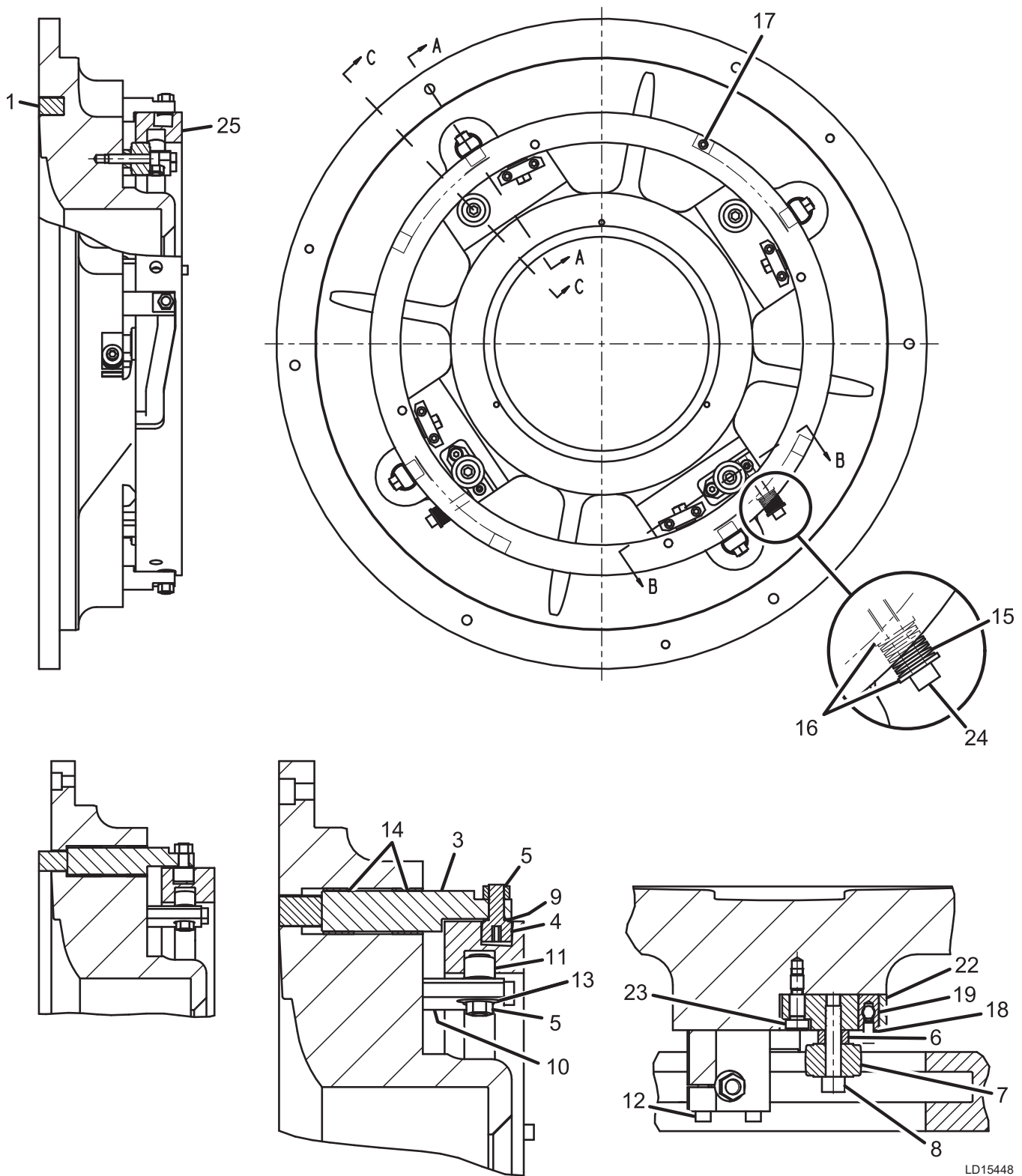
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**FIGURE 23 - PRIMARY COMPRESSOR (K7) PRE-ROTATIONAL DEVICE**

## PRIMARY COMPRESSOR (K7) VARIABLE GEOMETRY DIFFUSER

**TABLE 7 - PRIMARY COMPRESSOR (K7) VARIABLE GEOMETRY DIFFUSER**

| ITEM | DESCRIPTION                    | PART NUMBER   | QUANTITY | FIGURE |
|------|--------------------------------|---------------|----------|--------|
| 1    | Ring Diffuser Hj-119           | 064 51535 000 | 1        | 24     |
| 3    | Pin Drive VGD                  | 064 51533 000 | 4        | 24     |
| 4    | Bearing, Mcgill Cf-1-B         | 029 24890 000 | 4        | 24     |
| 5    | Nut Hex 7/16 - 20UNF-2b        | 021 31755 000 | 8        | 24     |
| 6    | Spacer VGD                     | 064 50758 000 | 4        | 24     |
| 7    | Bearing, Mcgill Cyr 1 3/8      | 029 24104 000 | 4        | 24     |
| 8    | Screw Cap Hex Soc Hd 3/8       | 021 01508 000 | 4        | 24     |
| 9    | Washer Plain .453 ID X .750 Od | 021 31756 000 | 4        | 24     |
| 10   | Support Axial Bearing          | 064 51534 000 | 4        | 24     |
| 11   | Bearing, Mcgill Cfe-1-B        | 029 24891 000 | 4        | 24     |
| 12   | Screw Cap Hex Soc Hd 5/16      | 021 31754 000 | 8        | 24     |
| 13   | Washer Plain 15/32 ID X 59/64  | 021 14111 000 | 4        | 24     |
| 14   | Bushing, Garlock 16du12        | 029 24100 000 | 8        | 24     |
| 15   | Washer Conical Disk            | 021 31324 000 | 24       | 24     |
| 16   | Washer Plain Hardened 3/8 ID   | 021 31323 000 | 4        | 24     |
| 17   | Screw Cap Hex Soc Hd 1/4       | 021 18994 000 | 1        | 24     |
| 18   | Screw Set Hex Socket 1/4       | 021 31328 000 | 2        | 24     |
| 19   | Pin Tensioner VGD Drive Ring   | 064 50830 000 | 2        | 24     |
| 22   | Block Tensioner VGD Drive Ring | 064 50824 000 | 2        | 24     |
| 23   | Screw Shoulder Soc Hd 5/16     | 021 31322 000 | 2        | 24     |
| 24   | Screw Cap Hex Soc Hd 5/16      | 021 31762 000 | 2        | 24     |
| 25   | Ring Drive J7                  | 064 51536 000 | 1        | 24     |



LD15448

**FIGURE 24 - PRIMARY COMPRESSOR (K7) VARIABLE GEOMETRY DIFFUSER**

## ECONOMIZER COMPRESSOR (Q3) COMPONENTS

**TABLE 8 - ECONOMIZER COMPRESSOR (Q3) COMPONENTS**

| ITEM | DESCRIPTION                    | PART NUMBER   | QUANTITY | FIGURE |
|------|--------------------------------|---------------|----------|--------|
| 1    | Impeller 4.16 Eye Hard Coat Q3 | 364 51661 001 | 1        | 26, 29 |
| 2    | Collar Impeller Clamp Q3-Q4    | 064 51423 000 | 1        | 26, 29 |
| 3    | Screw Special                  | 064 50052 000 | 1        | 26, 29 |
| * 4  | Bearing H.S. Front Hf          | 064 50065 000 | 1        | 26, 29 |
| * 5  | Bearing H.S. Rear Hf           | 064 50064 000 | 1        | 26, 29 |
| † 6  | O-Ring Neo1 01.987id .103thk M | 028 14419 000 | 3        | 26, 29 |
| 7    | Retnr Bearing S Stage Turbo    | 064 46886 000 | 2        | 26, 29 |
| * 9  | Bearing H.S. Forward Thrust Hf | 029 22936 000 | 1        | 26, 29 |
| 11   | Collar H.S. Thrust Hf          | 064 49636 001 | 1        | 26, 29 |
| * 12 | Bearing H.S. Reverse Thrust    | 029 22937 001 | 1        | 26, 29 |
| 13   | Orifice H.S. Oil Feed Hf       | 064 49650 000 | 1        | 26, 29 |
| 14   | Plug Hollow Hex 5/16-24UNF-2a  | 023 24908 000 | 2        | 26, 29 |
| † 15 | O-Ring Neo1 00.301id .070thk M | 028 12513 000 | 2        | 26, 29 |
| † 16 | O-Ring Neo1 03.484id .139thk M | 028 14404 000 | 1        | 26, 29 |
| * 18 | Bearing L.S. Front Hf          | 064 50085 000 | 1        | 26, 29 |
| * 19 | Pin Slot Spg 3/16 X 1/2        | 029 04138 000 | 1        | 26, 29 |
| * 20 | Bearing L.S. Rear Hf           | 064 50084 000 | 1        | 26, 29 |
| † 21 | O-Ring Neo1 03.237id .103thk M | 028 14420 000 | 2        | 26     |
| 22   | Bearing L.S. Thrust Hf         | 029 22935 000 | 1        | 26     |
| † 23 | O-Ring Neo1 05.237id .103thk M | 028 14403 000 | 1        | 26     |
| 24   | Collar L.S. Thrust Hf          | 064 49637 000 | 1        | 26     |
| 26   | Seal Double Shaft Hf           | 029 22938 000 | 1        | 27     |
| † 27 | O-Ring Neo1 04.359id .139thk M | 028 13111 000 | 1        | 27     |
| 29   | Ring Eye Seal Q3               | 064 51575 000 | 1        | 26     |
| 30   | Washer Spring Eye Seal         | 064 51591 000 | 1        | 26     |
| 31   | Retainer Eye Seal Q3 and Q4    | 064 51563 000 | 1        | 26     |
| 33   | Ring Bal.Pist. Seal Q3-Q4      | 064 51573 000 | 1        | 26     |
| 34   | Washer Spring Hf52 Bal. Piston | 064 50749 000 | 1        | 26     |
| 35   | Retnr B.P. Seal Washer Hf52    | 064 50747 000 | 1        | 26, 28 |
| 36   | Slinger Oil Q3 - Q7            | 064 51585 000 | 1        | 26     |
| 37   | Plate Slinger Mtg Q3 - Q7      | 064 51586 000 | 1        | 26     |
| † 39 | O-Ring Neo1 01.109id .139thk M | 028 12200 000 | 5        | 26, 28 |
| 40   | Orifice Pipe Plug Yk Compr     | 064 51852 000 | 1        | 26     |
| 41   | Valve Check Oil 1/8 Npte       | 022 04444 000 | 1        |        |
| 42   | Plug Pipe 1/4 Hex Socket       | 023 01973 000 | 2        | 26     |
| 43   | Shield Hf                      | 064 49638 000 | 2        | 26     |
| † 46 | O-Ring Neo1 05.984id .139thk M | 028 14405 000 | 1        | 26     |
| 47   | Connr Instm 3/8 Tube X         | 023 12229 000 | 4        | 26     |
| 48   | Tube Oil Drain Hd 46-61        | 064 49154 000 | 1        | 26     |
| 49   | Tube Oil Return Hf             | 064 49620 000 | 1        | 26     |
| 50   | Clamp Tube 3/8 Od              | 023 05284 000 | 1        | 26     |

\* Included in Bearing Kit      † Included in O-Ring Kit

**TABLE 8 - ECONOMIZER COMPRESSOR (Q3) COMPONENTS (CONT'D)**

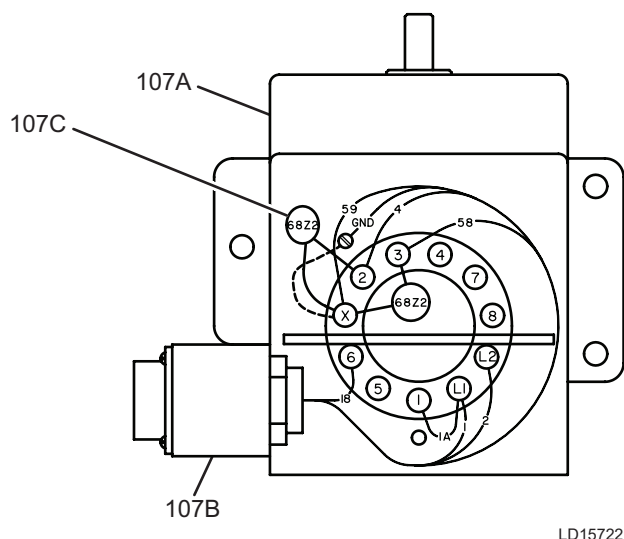
| ITEM | DESCRIPTION                    | PART NUMBER   | QUANTITY | FIGURE     |
|------|--------------------------------|---------------|----------|------------|
| 51   | Tube Oil Feed Internal Hf      | 064 49621 000 | 1        | 26         |
| 54   | Pin Dowel Tapped 3/8 Dia       | 029 18459 000 | 3        | 26         |
| † 55 | O-Ring Neo1 21.955id .275thk M | 028 14406 000 | 1        | 26         |
| † 57 | O-Ring Neo1 19.955id .210thk M | 028 14413 000 | 1        | 26         |
| † 58 | O-Ring Neo1 11.484id .139thk M | 028 13977 000 | 1        | 26         |
| 60   | O-Ring Neo1 18.955id .275thk M | 028 14414 000 | 1        | 26         |
| 62   | Elbow Flare Hydraulic 3/8 Od   | 023 18920 000 | 2        | 27         |
| † 63 | O-Ring Neo1 00.468id .078thk M | 028 12961 003 | 10       | 26, 27, 28 |
| 64   | O-Ring Hnbr 00.239id .064thk M | 028 15846 000 | 2        | 26         |
| 65   | O-Ring Neo1 02.337id .118thk M | 028 12961 010 | 1        | 28         |
| 66   | Tubing, Oil Feed               | 364 52414 000 | 1        | 27         |
| 67   | Elbow Flare Hydraulic 1/4 Od   | 023 20242 000 | 1        | 27         |
| 68   | Nut Flare Hydraulic 1/4 Od     | 023 09670 000 | 1        | 27         |
| 69   | Sleeve Flare Hydraulic 1/4 Od  | 023 10000 000 | 1        | 27         |
| 70   | Probe Pressure Switch          | 025 34535 001 | 1        | 27         |
| † 71 | O-Ring Neo1 00.301id .064thk M | 028 12961 021 | 2        | 27         |
| 74   | Plug Hex Hd 9/16               | 023 18962 000 | 5        | 26, 27, 28 |
| 75   | Plug Hex Hd                    | 023 20217 000 | 1        | 27         |
| 76   | Plug Hex Hd 3/4                | 023 18280 000 | 3        | 27, 28     |
| † 77 | O-Ring Neo1 00.644id .087thk M | 028 12961 004 | 2        | 27, 28     |
| 78   | Plug Hex Hd 7/16               | 023 18279 000 | 1        | 27, 28     |
| † 79 | O-Ring Neo1 00.351id .072thk M | 028 12961 001 | 1        | 27         |
| 80   | Valve Stop Ang Vertical        | 022 09578 000 | 1        | 27         |
| 81   | Plug Hex Hd 1-1/16             | 023 18295 000 | 1        | 27         |
| † 82 | O-Ring Neo1 00.924id .116thk M | 028 12961 006 | 1        | 27         |
| 83   | Plug Hex Hd 1-5/16             | 023 18282 000 | 2        | 28         |
| † 84 | O-Ring Neo1 01.171id .116thk M | 028 12961 008 | 2        | 28         |
| 86   | Fillpiece Prerot Device        | 064 09288 000 | 2        | 28         |
| 87   | Plug Hex Head                  | 023 24993 000 | 1        | 28         |
| 88   | Reducer, Straight Thread 3/4   | 023 22870 000 | 1        | *          |
| 89   | Rod, Adjustable PRV and VGD    | 364 51753 458 | 1        | 28         |
| 90   | Lever Internal                 | 064 51594 000 | 1        | 28         |
| 91   | Shaft Contl Prerot Device      | 364 51672 000 | 1        | 28         |
| 92   | Cover Shaft Control            | 064 51671 000 | 2        | 28         |
| 94   | Bracket Support Lower PRV      | 064 48851 000 | 1        | 28         |
| 95   | Lever PRV External             | 064 51703 000 | 2        | 28         |
| 96   | Link External                  | 064 51615 000 | 2        | 28         |
| 98   | Spacer .38 Lg .33 Id X .63 Od  | 064 51593 000 | 2        | 28         |
| 100  | Nut Hex 1/4 - 20 Unc-2b:       | 021 00450 000 | 4        | 28         |
| 102  | Spacer Flanged, PRV and VGD    | 064 50612 000 | 4        | 28         |
| 103  | Spacer .50 Lg X .33 Id X .63od | 064 50611 000 | 2        | 28         |
| 105  | Arm PRV Motor                  | 064 51704 000 | 2        | 28         |

\* Included in Bearing Kit      † Included in O-Ring Kit

**TABLE 8 - ECONOMIZER COMPRESSOR (Q3) COMPONENTS (CONT'D)**

| ITEM         | DESCRIPTION                    | PART NUMBER   | QUANTITY | FIGURE |
|--------------|--------------------------------|---------------|----------|--------|
| <b>107</b>   | Wiring PRV Motor Actuator      | 375 49340 101 | 2        | 28     |
| <b>107A</b>  | Motor Actuator 150 450 In      | 025 17175 002 | 1        | 25     |
| <b>107B</b>  | Harness System Wiring          | 075 49340 200 | 1        | 25     |
| <b>107C</b>  | Vris Metal Oxide Mov           | 066 87030 000 | 2        | 25     |
| <b>† 108</b> | O-Ring Neop 02.234id .139thk M | 028 03803 000 | 2        | 28     |
| <b>109</b>   | Plug PRV Assembly              | 064 50632 000 | 2        | 28     |
| <b>† 110</b> | O-Ring Neo1 00.755id .097thk M | 028 12961 005 | 2        | 28     |
| <b>111</b>   | Dowel Pin Str                  | 029 24130 000 | 2        | 28     |
| <b>113</b>   | Tab Drive Ring Q3 - Q6         | 064 51569 000 | 1        | 28     |
| <b>116</b>   | Fillpiece Prerot Device        | 064 10821 000 | 2        | 28     |
| <b>117</b>   | Rod, Adjustable PRV and VGD    | 364 51753 733 | 1        | 28     |
| <b>118</b>   | Lever Internal VGD             | 064 51215 000 | 1        | 28     |
| <b>119</b>   | Bushing, Garlock 16du12        | 029 24100 000 | 1        | 28     |
| <b>120</b>   | Shaft Contl VGD                | 364 51673 000 | 1        | 28     |
| <b>122</b>   | Link External                  | 064 51582 000 | 1        | 28     |
| <b>† 127</b> | O-Ring Neo1 02.112id .103thk M | 028 15432 000 | 2        | 28     |
| <b>128</b>   | Cap Sealing, Caplug 2,         | 028 05004 000 | 6        | 28     |
| <b>135</b>   | O-Ring Hnbr 02.109id .139thk M | 028 15845 000 | 1        | 27     |
| <b>193</b>   | Device PRV Q3                  | 364 51554 003 | 1        | 26     |
| <b>302</b>   | Device VGD Q3                  | 364 51553 001 | 1        | 26     |
|              | Bearing Kit, Compressor (Q3)   | 464 51890 000 | 1        | *      |
|              | O-Ring Kit, Compressor (Q3)    | 464 51888 000 | 1        | *      |
|              | Tool Kit, Compressor (Q3)      | 364 51881 000 | 1        | *      |

\* Included in Bearing Kit      † Included in O-Ring Kit



**FIGURE 25 - ECONOMIZER COMPRESSOR (Q3) COMPONENTS**

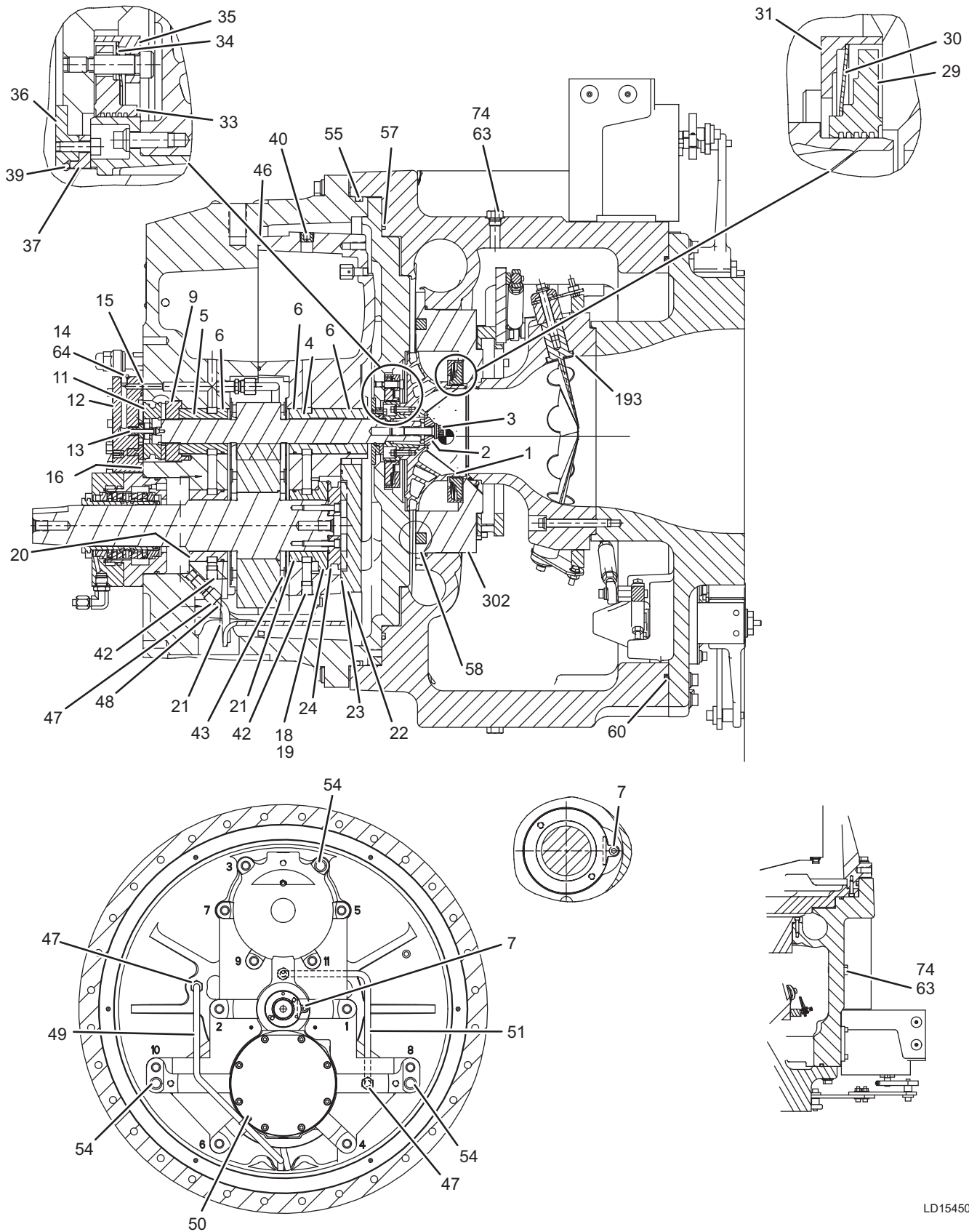
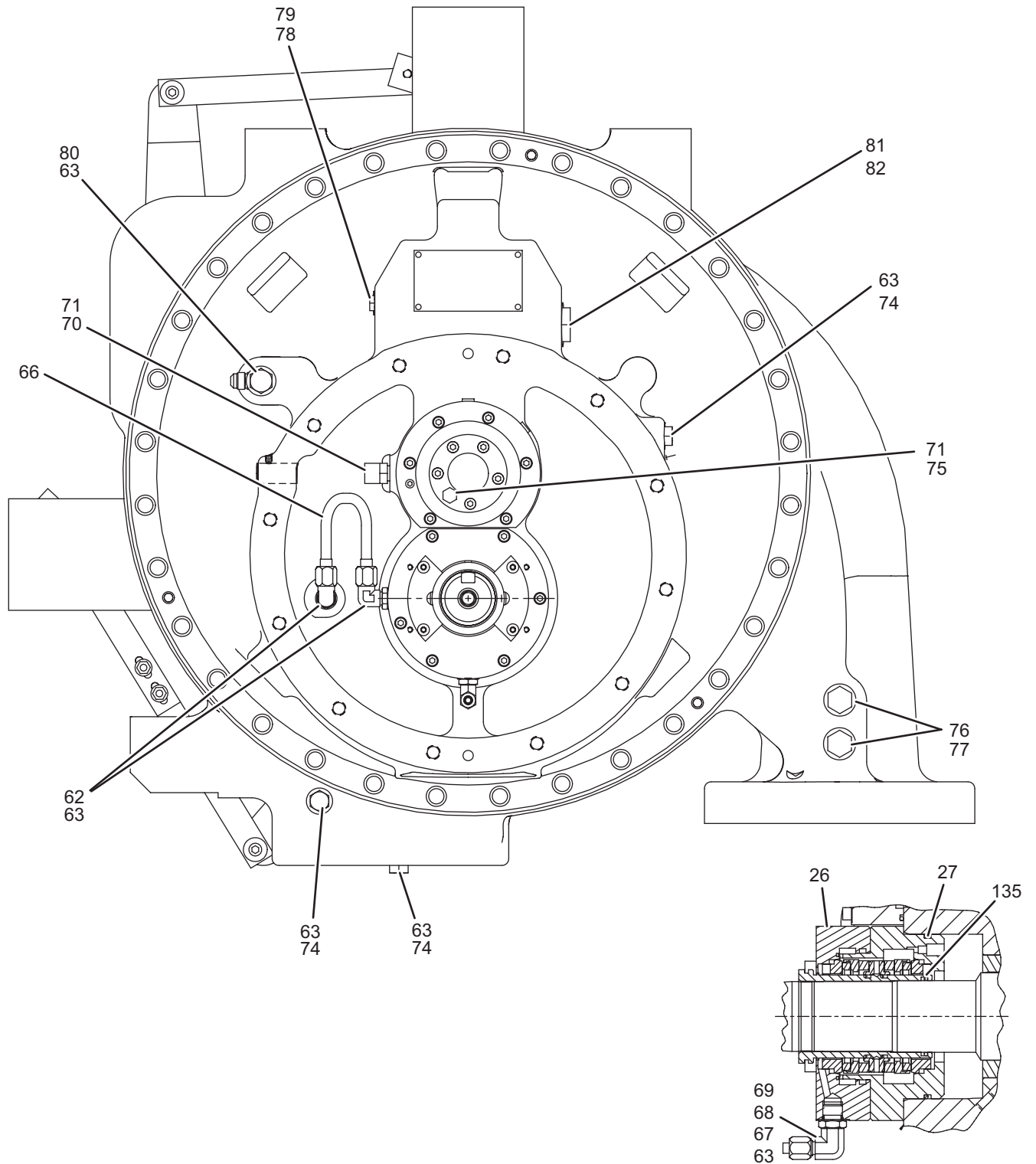
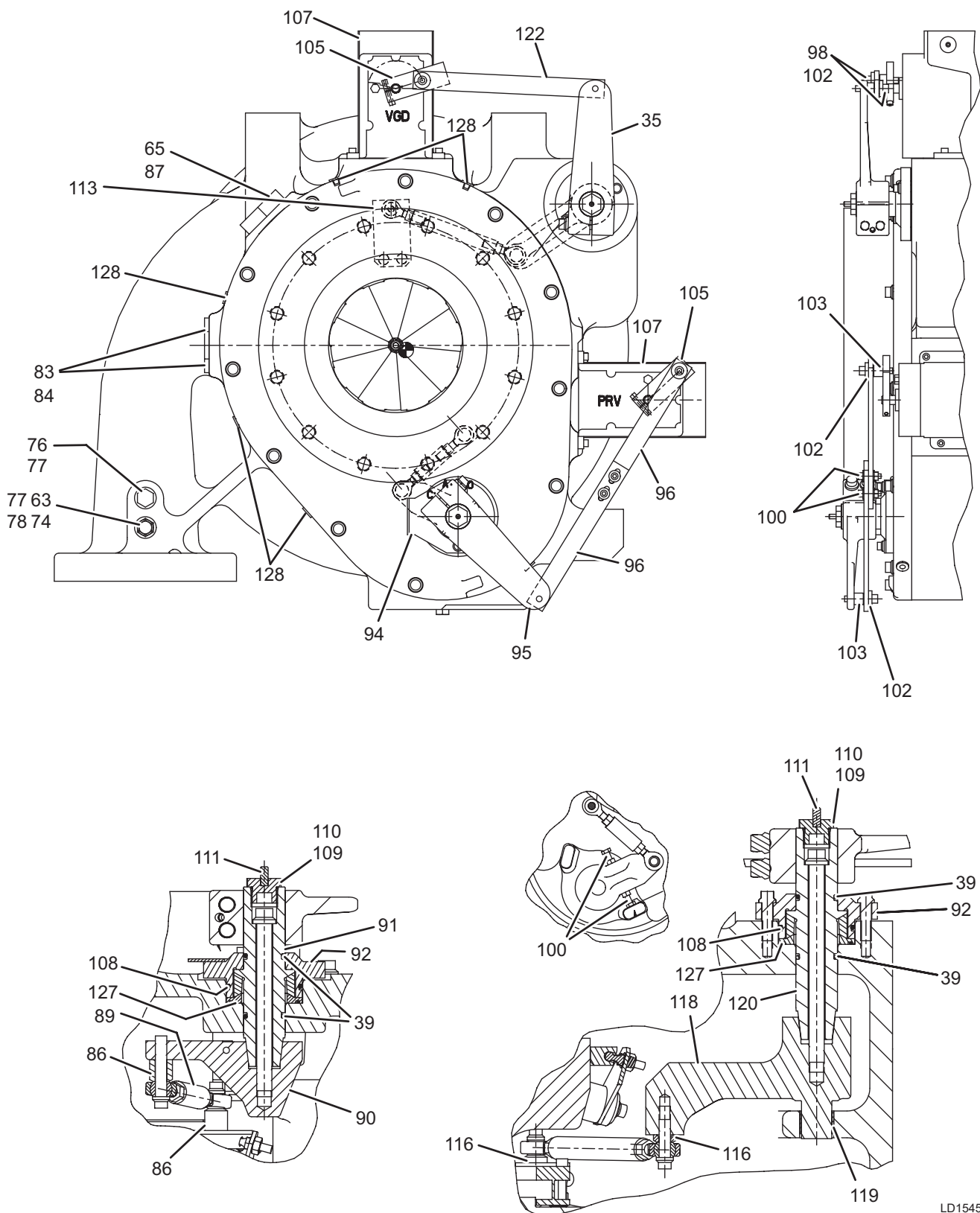


FIGURE 26 - ECONOMIZER COMPRESSOR (Q3) COMPONENTS (CONT'D)



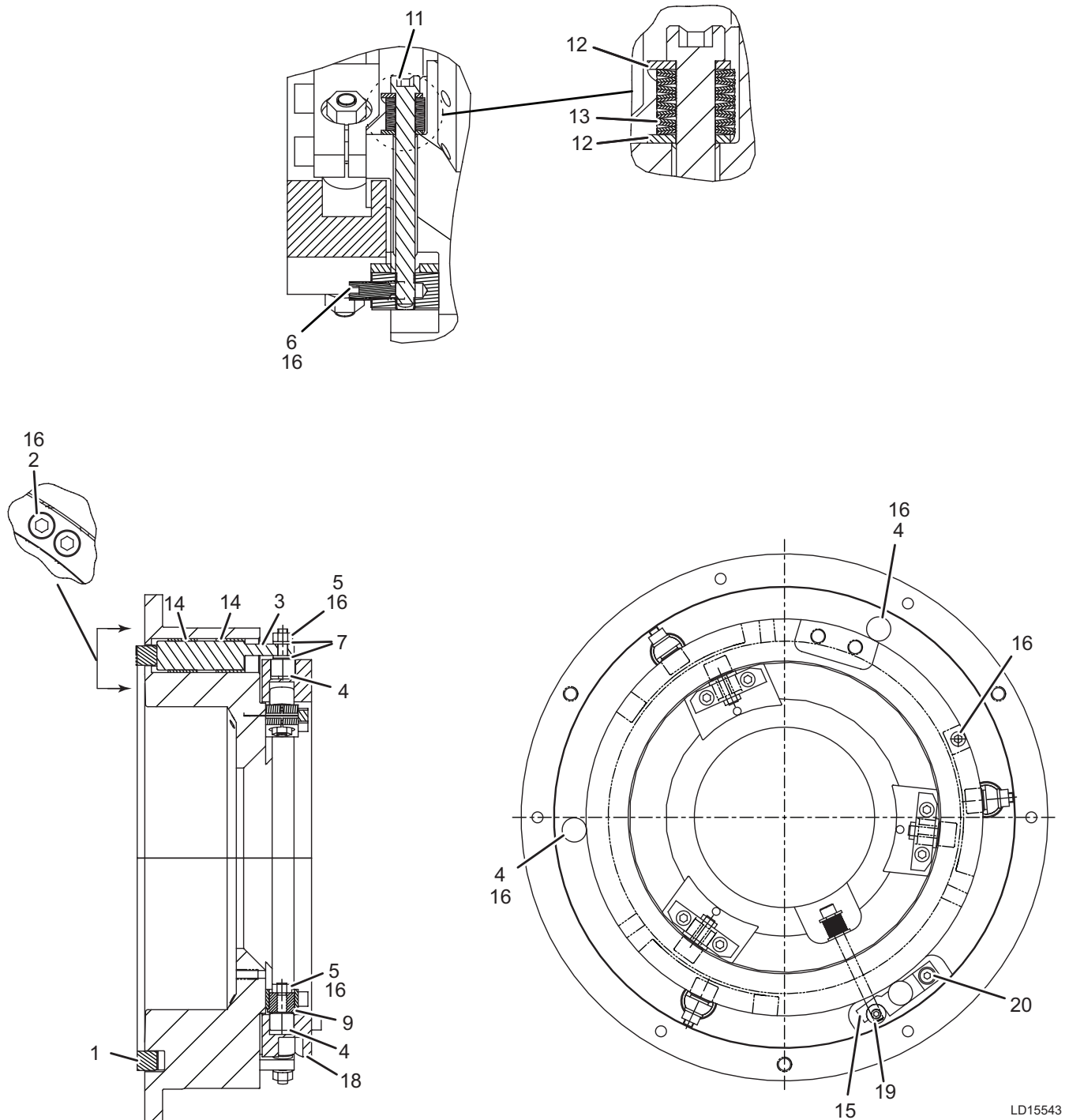
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**FIGURE 27 - ECONOMIZER COMPRESSOR (Q3) COMPONENTS (CONT'D)**



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**FIGURE 28 - ECONOMIZER COMPRESSOR (Q3) COMPONENTS (CONT'D)**

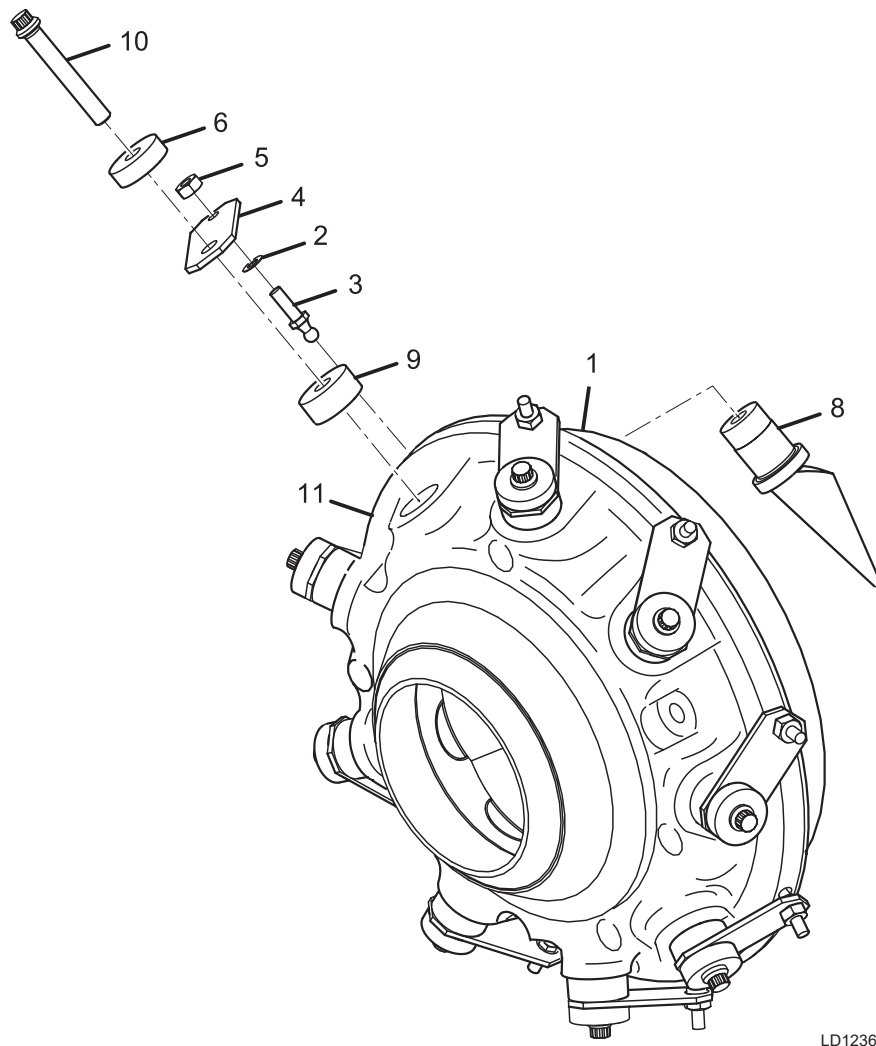


**FIGURE 29 - ECONOMIZER COMPRESSOR (Q3) COMPONENTS (CONT'D)**

## ECONOMIZER COMPRESSOR (Q3) PRE-ROTATIONAL DEVICE

**TABLE 9 - ECONOMIZER COMPRESSOR (Q3) PRE-ROTATIONAL DEVICE**

| ITEM | DESCRIPTION                  | PART NUMBER   | QUANTITY | FIGURE |
|------|------------------------------|---------------|----------|--------|
| 1    | Ring Vane Driving Q3 - Q7    | 064 51590 000 | 1        | 30     |
| 2    | Washer Plain Lt 17/64 Id 1/2 | 021 11973 000 | 10       | 30     |
| 3    | Stud Ball 1/4 -28 Unf W/     | 029 15924 000 | 9        | 30     |
| 4    | Arm Vane PRV Ha50-73         | 064 47952 000 | 9        | 30     |
| 5    | Nut Self Lock 1/4 - 28unf    | 021 12943 000 | 9        | 30     |
| 6    | Washer Spl 25/64 Id X        | 064 09289 000 | 9        | 30     |
| 8    | Vane Pre-Rotation Hd 46-50   | 029 22449 000 | 9        | 30     |
| 9    | Spacer Arm PRV Hd 46/50      | 064 49205 000 | 9        | 30     |
| 10   | Screw Cap 12 Pt Hd 3/8 -     | 021 11956 000 | 9        | 30     |
| 11   | Housing PRV Q3               | 064 51570 000 | 1        | 30     |

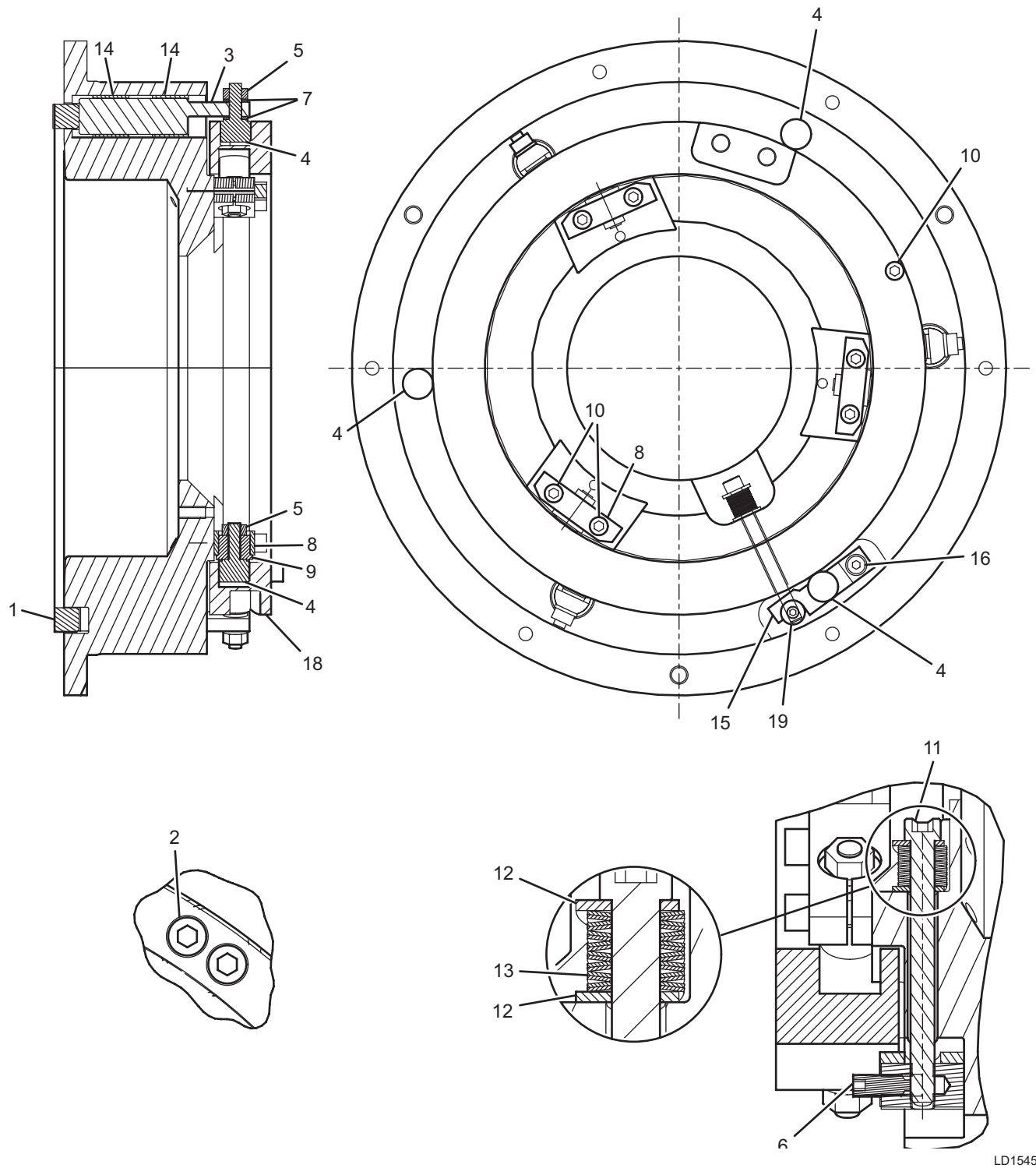


**FIGURE 30 - ECONOMIZER COMPRESSOR (Q3) PRE-ROTATIONAL DEVICE**

## ECONOMIZER COMPRESSOR (Q3) VARIABLE GEOMETRY DIFFUSER

**TABLE 10 - ECONOMIZER COMPRESSOR (Q3) VARIABLE GEOMETRY DIFFUSER**

| ITEM | DESCRIPTION                    | PART<br>NUMBER | QUANTITY | FIGURE |
|------|--------------------------------|----------------|----------|--------|
| 1    | Ring Diffuser Q3 and Q4 VGD    | 064 51565 000  | 1        | 31     |
| 2    | Screw Cap Hex Soc Hd #10       | 021 31850 000  | 6        | 31     |
| 3    | Pin Drive Q3 and Q4            | 064 51564 000  | 3        | 31     |
| 4    | Bearing, Mcgill Cf-5/8-B       | 029 24917 000  | 9        | 31     |
| 5    | Nut Hex 1/4 - 28 Unf-2b:       | 021 00442 000  | 10       | 31     |
| 6    | Screw Set Hex Socket 1/4       | 021 31328 000  | 1        | 31     |
| 7    | Washer Plain .265 Id X 1/2 Od  | 021 10189 000  | 6        | 31     |
| 8    | Support Axial Bearing          | 064 51567 000  | 3        | 31     |
| 9    | Bushing Eccentric              | 064 51584 000  | 3        | 31     |
| 10   | Screw Cap Hex Soc Hd 1/4       | 021 02578 000  | 7        | 31     |
| 11   | Screw Cap Hex Soc Hd 1/4       | 021 31852 000  | 1        | 31     |
| 12   | Washer Plain Clipped           | 021 31779 000  | 2        | 31     |
| 13   | Washer Conical Disc            | 021 31780 000  | 16       | 31     |
| 14   | Bushing, Garlock 12du12        | 029 24117 000  | 6        | 31     |
| 15   | Block Tensioner Drive Ring VGD | 064 51701 000  | 1        | 31     |
| 18   | Ring Drive Q3 and Q4 VGD       | 064 52700 000  | 1        | 31     |
| 19   | Pin Tensioner Drive Ring VGD   | 064 51702 000  | 1        | 31     |
| 20   | Screw Shoulder Soc Hd          | 021 17557 000  | 1        | 31     |



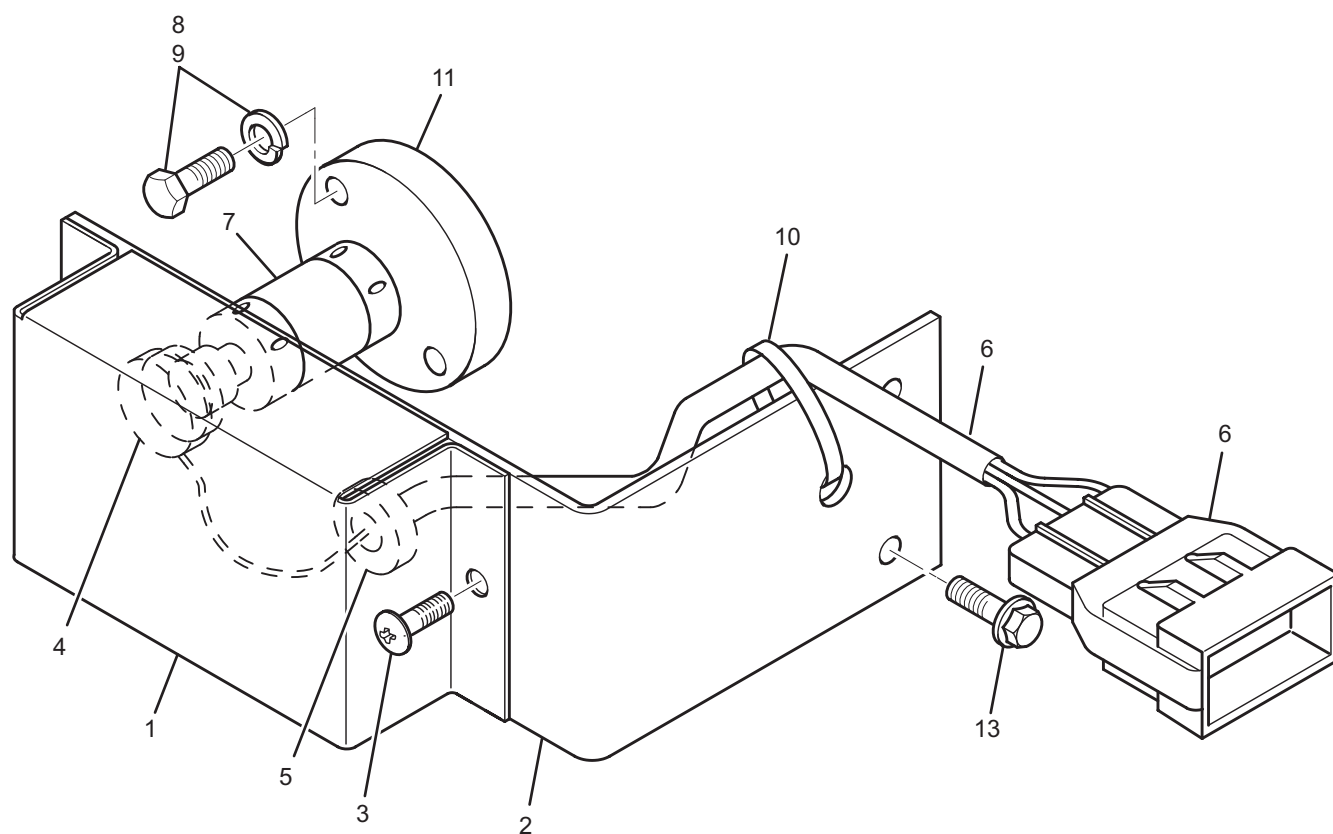
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**FIGURE 31 - ECONOMIZER COMPRESSOR (Q3) VARIABLE GEOMETRY DIFFUSER**

## ECONOMIZER COMPRESSOR (Q3) PRV POSITION SENSOR KIT

**TABLE 11 - ECONOMIZER COMPRESSOR (Q3) PRV POSITION SENSOR KIT**

| ITEM | DESCRIPTION                    | PART NUMBER   | QUANTITY | FIGURE |
|------|--------------------------------|---------------|----------|--------|
| 1    | Cover PRV Position Sensor VSD  | 071 02012 002 | 1        | 32     |
| 2    | Bracket Support Upper PRV      | 371 02012 209 | 1        | 32     |
| 3    | Screw Tapping Thread Forming   | 021 13757 000 | 2        | 32     |
| 4    | Pot 2500 Ohms 2 Watt           | 025 32570 000 | 1        | 32     |
| 5    | Bushing Strain Relief Straight | 025 09080 000 | 1        | 32     |
| 6    | Cable PRV Sensor VSD           | 571 02012 005 | 1        | 32     |
| 7    | Cplg, Shaft, Flexible          | 029 24196 000 | 1        | 32     |
| 8    | Screw Cap Hex Soc Hd #10       | 021 18674 000 | 2        | 32     |
| 9    | Lkwash Hel Spg #10 Reg:        | 021 08292 000 | 2        | 32     |
| 10   | Strap Cable T and B L4-18-9-M  | 025 18167 000 | 1        | 32     |
| 11   | Cap PRV Sensor                 | 071 02012 006 | 1        | 32     |
| 12   | Shaft PRV Position Sensor      | 071 02012 007 | 1        | 32     |
| 13   | Screw/Washer Assembly (Sems)   | 021 18487 000 | 2        | 32     |



LD15455

**FIGURE 32 - ECONOMIZER COMPRESSOR (Q3) PRV POSITION SENSOR KIT**

## LIQUID COOLED SOLID STATE STARTER

**TABLE 12 - COMMON PARTS FOR ALL LIQUID COOLED SOLID STATE STARTER**

| DESCRIPTION                                                  | PART NUMBER   |
|--------------------------------------------------------------|---------------|
| Logic / trigger Board 60Hz applications                      | 371 02757 002 |
| Logic / trigger Board 50Hz applications                      | 371 02757 003 |
| Capacitor Assembly                                           | 371 01086 000 |
| Fuseholder for 7FU                                           | 025 34186 000 |
| Fuseholder for 1FU-6FU (1 of 2)                              | 025 34185 000 |
| Fuse, 4 Amp 7FU                                              | 025 27973 00  |
| Fastener, Panel Adj.                                         | 021 17252 000 |
| Hose Barb, Plastic - Threads into SCR Brick Assembly         | 023 16247 000 |
| Hose, Clear Plastic (order by the foot)                      | 028 12239 000 |
| Coolant Header, 3" PVC with Fill Plug                        | 371 02561 513 |
| Heat Exchanger                                               | 026 36596 000 |
| Temperature Sensor Kit (Thermistor, Lugs, and Plug           | 371 02758 000 |
| U16 Logic trigger Board Eprom (for Board 031 02505 001) 60Hz | 031 02029 001 |
| U16 Logic trigger Board Eprom (for Board 031 02505 002) 50Hz | 31 02029 002  |
| U15 Battery Backed RAM for the Logic / Trigger Board         | 031 01620 000 |
| Coolant Pump 50 / 60Hz                                       | 026 32813 000 |
| Inhibitor, Coolant                                           | 013 04129 000 |
| Hose (Heat Exchanger to Condenser Water)                     | 028 11958 000 |
| Hose, 300lb                                                  | 028 11959 000 |

**TABLE 13 - LIQUID COOLED SOLID STATE STARTER**

| COMMON PARTS PER MODEL     |               |               |               |               |
|----------------------------|---------------|---------------|---------------|---------------|
| DESCRIPTION                | 7LK           | 14LK          | 26LK          | 33LK          |
| Ground Terminal            | 025 34196 000 | 025 34197 000 | 025 34198 000 | 025 34198 000 |
| Bus Bar (L1)               | 371 02500 003 | 371 02500 003 | 371 02500 006 | 371 02500 006 |
| Bus Bar (L2)               | 371 02500 002 | 371 02500 002 | 371 02500 005 | 371 02500 005 |
| Bus Bar (L3)               | 371 02500 001 | 371 02500 001 | 371 01082 004 | 371 01082 004 |
| Output Current Transformer | 025 34195 001 | 025 34195 002 | 025 34195 003 | 025 34195 004 |
| Terminal Lug Kit           | 371 02576 101 | 371 02576 102 | 371 02576 103 | 371 02576 104 |

| VARIABLE PARTS FOR 7LK MODELS |               |               |               |               |
|-------------------------------|---------------|---------------|---------------|---------------|
| DESCRIPTION                   | 7LK-40        | 7LK-46        | 7LK-58        | 7LK-50        |
| SCR Assembly Kit (1 of 3)     | 375 03048 002 | 375 03048 002 | 375 03048 003 | 375 03048 002 |
| Fuse (1FU - 3FU)              | 025 34136 000 | 025 34136 000 | 025 34540 000 | 025 34136 000 |
| Fuse (4FU - 5FU)              | 025 34140 000 | 025 34139 000 | 025 34137 000 | 025 34140 000 |
| Fuse (6FU)                    | 025 34142 000 | 025 34142 000 | 025 34142 000 | 025 34142 000 |
| Snubber, Resistor             | 371 02564 003 | 371 02564 003 | 371 02564 003 | 371 02564 003 |
| Control Power Transformer     | 371 02569 003 | 371 02569 004 | 371 02569 005 | 371 02569 006 |

**TABLE 13 - LIQUID COOLED SOLID STATE STARTER (CONT'D)**

| VARIABLE PARTS FOR 14LK MODELS |               |               |               |
|--------------------------------|---------------|---------------|---------------|
| DESCRIPTION                    | 14LK-17       | 14LK-28       | 14LK-40       |
| SCR Assembly Kit (1 of 3)      | 375 03048 004 | 375 03048 004 | 375 03048 004 |
| Fuse (1FU - 3FU)               | 025 34141 000 | 025 34141 000 | 025 34136 000 |
| Fuse (4FU - 5FU)               | 02 34142 000  | 025 34142 000 | 025 34140 000 |
| Fuse (6FU)                     | 025 34142 000 | 025 34142 000 | 025 34142 000 |
| Snubber, Resistor              | 371 02564 002 | 371 02564 002 | 371 02564 003 |
| Control Power Transformer      | 371 02569 002 | 371 02569 003 | 371 02569 006 |

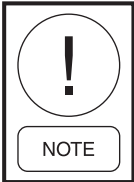
| VARIABLE PARTS FOR 14LK MODELS (CONT'D) |               |               |               |
|-----------------------------------------|---------------|---------------|---------------|
| DESCRIPTION                             | 14LK-46       | 14LK-58       | 14LK-50       |
| SCR Assembly Kit (1 of 3)               | 375 03048 004 | 375 03048 005 | 375 03048 004 |
| Fuse (1FU - 3FU)                        | 025 34136 000 | 025 34540 000 | 025 34136 000 |
| Fuse (4FU - 5FU)                        | 025 34139 000 | 025 34137 000 | 025 34140 000 |
| Fuse (6FU)                              | 025 34142 000 | 025 34142 000 | 025 34142 000 |
| Snubber, Resistor                       | 371 02564 003 | 371 02564 004 | 371 02564 003 |
| Control Power Transformer               | 371 02569 004 | 371 02569 005 | 371 02569 006 |

| VARIABLE PARTS FOR 26LK MODELS |               |               |               |
|--------------------------------|---------------|---------------|---------------|
| DESCRIPTION                    | 26LK-17       | 26LK-28       | 26LK-40       |
| SCR Assembly Kit (1 of 3)      | 375 03048 006 | 375 03048 006 | 375 03048 006 |
| Fuse (1FU - 3FU)               | 025 34141 000 | 025 34141 000 | 025 34136 000 |
| Fuse (4FU - 5FU)               | 025 34142 000 | 025 34142 000 | 025 34140 000 |
| Fuse (6FU)                     | 025 34142 000 | 025 34142 000 | 025 34142 000 |
| Snubber, Resistor              | 371 02564 002 | 371 02564 002 | 371 02564 003 |
| Control Power Transformer      | 371 02569 002 | 371 02569 003 | 371 02569 00  |

| VARIABLE PARTS FOR 26LK MODELS (CONT'D) |               |               |
|-----------------------------------------|---------------|---------------|
| DESCRIPTION                             | 26LK-46       | 26LK-50       |
| SCR Assembly Kit (1 of 3)               | 375 03048 006 | 375 03048 006 |
| Fuse (1FU - 3FU)                        | 025 34136 000 | 025 34136 000 |
| Fuse (4FU - 5FU)                        | 025 34139 000 | 02534140 000  |
| Fuse (6FU)                              | 025 34142 000 | 025 34142 000 |
| Snubber, Resistor                       | 371 02564 003 | 371 02564 003 |
| Control Power Transformer               | 371 02569 004 | 371 02569 006 |

| VARIABLE PARTS FOR 33LK MODELS |               |               |
|--------------------------------|---------------|---------------|
| DESCRIPTION                    | 33LK-17       | 33LK-28       |
| SCR Assembly Kit (1 of 3)      | 375 03048 008 | 375 03048 008 |
| Fuse (1FU - 3FU)               | 025 34141 000 | 025 34141 000 |
| Fuse (4FU - 5FU)               | 025 34142 000 | 025 34142 000 |
| Fuse (6FU)                     | 025 34140 000 | 025 34142 000 |
| Snubber, Resistor              | 371 02564 002 | 371 02564 002 |
| Control Power Transformer      | 371 02569 002 | 371 02569 003 |

**TABLE 14 - INPUT POWER REPLACEMENTS AND OPTIONS FOR LIQUID COOLED SOLID STATE STARTER**

| DESCRIPTION                                                                    | NOTES                                                                                                                                               | PART NUMBER   |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| Replacement Disconnect Switch 250A                                             |                                                                                                                                                     | 024 30963 000 |
| Replacement Disconnect Switch 400A                                             |                                                                                                                                                     | 024 30964 000 |
| Replacement Disconnect Switch 600A                                             |                                                                                                                                                     | 024 30965 000 |
| Replacement Disconnect Switch 1200A                                            |                                                                                                                                                     | 024 30966 000 |
| Optional Disconnect Switch Kit 250A                                            |  <i>The optional Disconnect Switch Kits include the high hat.</i>  | 371 02565 101 |
| Optional Disconnect Switch Kit 400A                                            |                                                                                                                                                     | 371 02565 102 |
| Optional Disconnect Switch Kit 600A                                            |                                                                                                                                                     | 371 02565 103 |
| Optional Disconnect Switch Kit 1200A                                           |                                                                                                                                                     | 371 02565 104 |
| Replacement Circuit Breaker 250A                                               |  <i>These replacement Circuit Breakers are calibrated.</i>         | 224 30959 000 |
| Replacement Circuit Breaker 400A                                               |                                                                                                                                                     | 224 30960 000 |
| Replacement Circuit Breaker 600A                                               |                                                                                                                                                     | 224 30961 000 |
| Replacement Circuit Breaker 1000A                                              |                                                                                                                                                     | 224 30973 000 |
| Replacement Circuit Breaker 1200A                                              |                                                                                                                                                     | 224 30962 000 |
| Channel Insulator for 1000A Disconnect Switch, 1000A and 1200A Circuit Breaker |                                                                                                                                                     | 071 01127 000 |
| Optional Circuit Breaker Kit 250A                                              |  <i>The optional Disconnect Switch Kits include the high hat.</i> | 371 02566 101 |
| Optional Circuit Breaker Kit 400A                                              |                                                                                                                                                     | 371 02566 102 |
| Optional Circuit Breaker Kit 600A                                              |                                                                                                                                                     | 371 02566 103 |
| Optional Circuit Breaker Kit 1000A                                             |                                                                                                                                                     | 371 02566 104 |
| Optional Circuit Breaker Kit 1200A                                             |                                                                                                                                                     | 371 02566 105 |


***Normally, the disconnect switches and circuit breakers are factory installed. However, there may be times when the customer may desire to have these options installed after the starter has already been shipped from the factory. The part numbers for the kits are provided in the Input Power Replacements and Options table above.***

**TABLE 15 - FULL LOAD RATINGS FOR LIQUID COOLED SOLID STATE STARTER**

| DISCONNECT SWITCH SIZE | FULL LOAD RANGE | CIRCUIT BREAKER SIZE | FULL LOAD RANGE |
|------------------------|-----------------|----------------------|-----------------|
| 250 Amps               | 0-217 Amps      | 250 Amps             | 100-250 Amps    |
| 400 Amps               | 0-348 Amps      | 400 Amps             | 178-400 Amps    |
| 600 Amps               | 0-522 Amps      | 600 Amps             | 267-600 Amps    |
| 1200 Amps              | 0-1043 Amps     | 1000 Amps            | 480-1080 Amps   |
|                        |                 | 1200 Amps            | 533-1200 Amps   |


***Refer to 160.00-RP3 for Additional Details.***

## VARIABLE SPEED OIL PUMP (VSOP) PANEL

[200/208V 60HZ] [220/230/240V 60 HZ] [440/460/480V 60HZ] [346/380/400/415V 50 HZ]  
[346V 50HZ] [575/600V 60HZ]

TABLE 16 - VARIABLE SPEED OIL PUMP (VSOP) PANEL

| ITEM | DESCRIPTION                                                                                            | PART NUMBER   | QUANTITY | FIGURE |
|------|--------------------------------------------------------------------------------------------------------|---------------|----------|--------|
| 100  | Parts Comm Panel Vs Oil Pump                                                                           | 371 05501 010 | 1        | 33     |
| 101  | Vs Oil Pump Drive 2hp 200-346v<br>(200/208V 60Hz, 220/230/240V 60Hz, 346V 50Hz)                        | 024 36133 001 | 2        | 33     |
| 101  | Vs Oil Pump Drive 2hp 380-600v (440/460/480V 60Hz, 380/416V 60Hz,<br>380/400/415V 50Hz, 575/600V 60Hz) | 024 36133 002 | 2        | 33     |
| 102  | Transformer Kit (200/208V 60Hz)                                                                        | 375 48198 001 | 1        | 33     |
| 102  | Transformer Kit (220/230/240V 60 Hz)                                                                   | 375 48198 002 | 1        | 33     |
| 102  | Transformer Kit (440/460/480V 60Hz)                                                                    | 375 48198 003 | 1        | 33     |
| 102  | Transformer Kit (346/380/400/415V 50 Hz)                                                               | 375 48198 005 | 1        | 33     |
| 102  | Transformer Kit (575/600V 60 Hz)                                                                       | 375 48198 004 | 1        | 33     |
| 102A | Parts Common Kit, Transformer                                                                          | 375 48198 010 | 1        | *      |
| 102B | Transformer 2kva, 208 (200/208V 60Hz)                                                                  | 025 29627 001 | 1        | *      |
| 102B | Transformer 2kva, 240/480 (220/230/240V 60 Hz, 440/460/480V 60Hz)                                      | 025 29627 002 | 1        | *      |
| 102B | Transformer 2kva, 380/400/415 (346/380/400/415V 50 Hz)                                                 | 025 29627 003 | 1        | *      |
| 102B | Transformer 2kva, 600 (575/600V 60 Hz)                                                                 | 025 29627 004 | 1        | *      |
| 102C | Ferr Splice Cap For Use With (200/208V 60Hz, 220/230/240V 60 Hz)                                       | 025 10372 000 | 4        | *      |
| 102C | Ferr Splice Cap For Use With (440/460/480V 60Hz)                                                       | 025 10372 000 | 5        | *      |
| 102C | Ferr Splice Cap For Use With<br>(346/380/400/415V 50 Hz, 575/600V 60Hz)                                | 025 10372 000 | 6        | *      |
| 102D | Insr Elec For Use With<br>(200/208V 60Hz, 220/230/240V 60 Hz, 575/600V 60 Hz)                          | 025 10371 000 | 4        | *      |
| 102D | Insr Elec For Use With (440/460/480V 60Hz)                                                             | 025 10371 000 | 5        | *      |
| 102D | Insr Elec For Use With (346/380/400/415V 50 Hz)                                                        | 025 10371 000 | 6        | *      |
| 103  | Label Input Voltage<br>(200/208V 60Hz, 220/230/240V 60 Hz, 575/600V 60Hz)                              | 035 22316 000 | 1        | 33     |
| 103  | Label Input Voltage<br>(440/460/480V 60Hz, 346/380/400/415V 50 Hz, 346V 50Hz)                          | 035 22315 000 | 1        | 33     |
| 104  | Label Vs Oil Pump Panel                                                                                | 035 22181 000 | 1        | 33     |
| 105  | Fuse, Cartridge Type 15 Amp<br>(200/208V 60Hz, 220/230/240V 60 Hz, 346V 50Hz)                          | 025 35907 000 | 2        | 33     |
| 105  | Fuse, Cartridge Type 5 Amp (440/460/480V 60Hz, 575/600V 60Hz)                                          | 025 35901 000 | 2        | 33     |
| 105  | Fuse, Cartridge Type 6 Amp (346/380/400/415V 50 Hz)                                                    | 025 35902 000 | 2        | 33     |
| 106  | Fuse, Cartridge Type 15 Amp (200/208V 60Hz, 220/230/240V 60 Hz)                                        | 025 35907 000 | 3        | 33     |
| 106  | Fuse, Cartridge Type 7 Amp (440/460/480V 60Hz, 575/600V 60Hz)                                          | 025 35903 000 | 3        | 33     |
| 106  | Fuse, Cartridge Type 10 Amp (346/380/400/415V 50 Hz, 346V 50Hz)                                        | 025 35905 000 | 3        | 33     |
| 107  | Fuse, Cartridge Type 12 Amp (200/208V 60Hz, 220/230/240V 60 Hz)                                        | 025 35906 000 | 6        | 33     |
| 107  | Fuse, Cartridge Type 7 Amp (346/380/400/415V 50 Hz, 346V 50Hz,<br>440/460/480V 60Hz, 575/600V 60Hz)    | 025 35903 000 | 6        | 33     |
| 108  | Reactor                                                                                                | 025 38063 000 | 1        | 33     |

NOTE: Items with an \* are NOT represented.

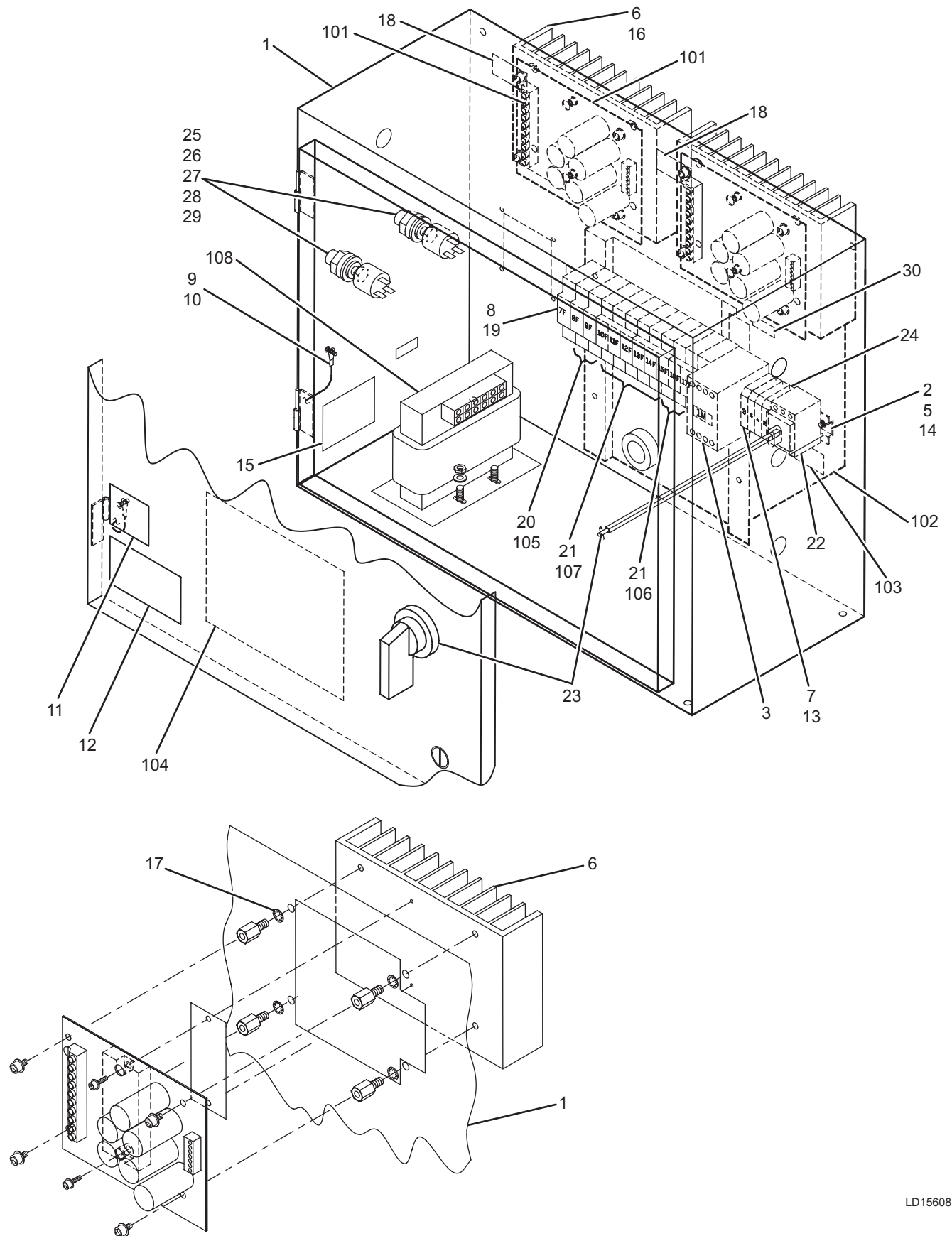
## VARIABLE SPEED OIL PUMP (VSOP) PANEL - COMMON PARTS

[200/208V 60HZ] [220/230/240V 60 HZ] [440/460/480V 60HZ] [346/380/400/415V 50 HZ]  
[346V 50HZ] [575/600V 60HZ]

**TABLE 17 - VARIABLE SPEED OIL PUMP (VSOP) PANEL - COMMON PARTS**

| ITEM | DESCRIPTION                    | PART<br>NUMBER | QUANTITY | FIGURE |
|------|--------------------------------|----------------|----------|--------|
| 1    | Enclosure Vs Oil Pump Pnl Yd   | 371 05501 311  | 1        | 33     |
| 1A   | Gasket. Self Gripping          | 028 14415 000  | 6.4'     | *      |
| 2    | Rail, Mtg, 35 X 7.5 Mm, 2m Lg  | 025 29167 000  | 1        | 33     |
| 3    | Contactor W/Suppressor 3 Pole  | 024 25522 000  | 1        | 33     |
| 4    | Harness Vsop Panel Yd Chiller  | 571 05501 201  | 1        | *      |
| 5    | Clamp, End For 35mm X 7mm      | 025 29189 000  | 2        | 33     |
| 6    | Heatsink Vsop Drive Yk Chiller | 071 05505 000  | 2        | 33     |
| 7    | Block Terminal                 | 025 33268 000  | 3        | 33     |
| 8    | Fuse, Cartridge Type 20 Amp    | 025 35908 000  | 1        | 33     |
| 9    | Strap Grounding                | 525 32508 001  | 1        | 33     |
| 10   | Nut/Washer Assembly (Keps)     | 021 17664 000  | 2        | 33     |
| 11   | Label Warning German Vde       | 035 11929 000  | 1        | 33     |
| 12   | Label Warning                  | 035 03908 000  | 1        | 33     |
| 13   | Marker Terminal Block          | 025 33271 000  | 3        | 33     |
| 14   | Nut Hex Mach Scr #10 - 24      | 021 08282 000  | 2        | 33     |
| 15   | Label Fault Codes              | 035 22183 000  | 1        | 33     |
| 16   | Sealant Silicon Rubber         | 013 02469 000  | 1        | 33     |
| 17   | Lkwash Th Extnl Int 1/4        | 021 12507 000  | 4        | 33     |
| 18   | Label Caution                  | 035 22182 000  | 2        | 33     |
| 19   | Fuseholder 1 Pole 30 Amp 600v  | 025 37862 000  | 1        | 33     |
| 20   | Fuseholder 2 Pole 30 Amp 600v  | 025 37864 000  | 1        | 33     |
| 21   | Fuseholder 3 Pole 30 Amp 600v  | 025 37863 000  | 3        | 33     |
| 22   | Switch Disconnect              | 024 34015 000  | 1        | 33     |
| 23   | Kit, Door Mtg. Disconnect      | 024 34016 000  | 1        | 33     |
| 24   | Block Terminal                 | 025 39564 000  | 1        | 33     |
| 25   | O-Ring Neo1 00.301id .064thk M | 028 12961 021  | 2        | 33     |
| 26   | Switch, High Press. Cutout     | 025 37890 204  | 2        | 33     |
| 27   | Adapter, Bulkhead Conversion   | 023 20859 000  | 2        | 33     |
| 28   | Lknt Cnd 1/2 Ips               | 025 05701 000  | 2        | 33     |
| 29   | Ring Seal O 1/2 Elec Cnd       | 025 09613 000  | 2        | 33     |
| 30   | Label Ground                   | 030 15990 000  | 1        | 33     |

NOTE: Items with an \* are NOT represented.



LD15608

**FIGURE 33 - VARIABLE SPEED OIL PUMP PANEL**

## 3/4" EVAPORATOR TUBES

**TABLE 18 - EVAPORATOR SHELLS WITH 3/4" TUBES**

| EVAP<br>CODE | LENGTH | TUBE<br>QTY. | COPPER        |               |               |               |               |
|--------------|--------|--------------|---------------|---------------|---------------|---------------|---------------|
|              |        |              | 0.025 Wall    | 0.028 Wall    | 0.035 Wall    |               |               |
|              |        |              | MT #271       | MT #272       | MT #273       |               |               |
| BB           | 22'    | 1000         | 007-10048-000 | 007-10049-000 | 007-10050-000 |               |               |
| BC           |        | 1234         |               |               |               |               |               |
| BD           |        | 1493         |               |               |               |               |               |
| EVAP<br>CODE | LENGTH | TUBE<br>QTY. | COPPER NICKEL |               |               |               |               |
|              |        |              | 0.028         | 0.035         | 0.025         | 0.028         | 0.035         |
|              |        |              | MT #177       | MT #179       | MT #321       | MT #322       | MT #323       |
| BB           | 22'    | 1000         | 007-10038-000 | 007-10039-000 | 007-10212-000 | 007-10213-000 | 007-10214-000 |
| BC           |        | 1234         |               |               |               |               |               |
| BD           |        | 1493         |               |               |               |               |               |

## 1" EVAPORATOR TUBES

**TABLE 19 - EVAPORATOR SHELLS WITH 1" TUBES**

| EVAP<br>CODE | LENGTH | TUBE<br>QTY. | COPPER        |               |               |               |               |               |
|--------------|--------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|
|              |        |              | 0.025 Wall    | 0.028 Wall    | 0.035 Wall    | 0.025 Wall    | 0.028 Wall    | 0.035 Wall    |
|              |        |              | MT #286       | MT #287       | MT #288       | MT #326       | MT #327       | MT #328       |
| B5           | 22'    | 537          | 007-10098-000 | 007-10099-000 | 007-10100-000 | 007-10227-000 | 007-10228-000 | 007-10222-000 |
| B6           |        | 643          |               |               |               |               |               |               |
| B7           |        | 727          |               |               |               |               |               |               |
| B8           |        | 815          |               |               |               |               |               |               |

## 3/4" CONDENSER TUBES

**TABLE 20 - CONDENSER SHELLS WITH 3/4" TUBES**

| COND CODE | LENGTH | TUBE COUNT  |             | COPPER        |               |               |               |               |
|-----------|--------|-------------|-------------|---------------|---------------|---------------|---------------|---------------|
|           |        | MAIN BUNDLE | SUB-COOL-ER | 0.025 Wall    | 0.028 Wall    | 0.035 Wall    | 0.028 Wall    | 0.028 Wall    |
|           |        |             |             | MT #260       | MT #261       | MT #262       | MT #225       | MT #226       |
| BB        | 22'    | 1522        | 179         | 007-10051-000 | 007-10052-000 | 007-10053-000 | 007-10042-000 | 007-10043-000 |
| BC        |        | 1688        | 179         |               |               |               |               |               |
| BD        |        | 1854        | 179         |               |               |               |               |               |
| COND CODE | LENGTH | TUBE COUNT  |             | COPPER NICKEL |               |               |               |               |
|           |        | MAIN BUNDLE | SUB-COOL-ER | 0.028 Wall    |               | 0.035 Wall    |               |               |
|           |        |             |             | MT #201       |               | MT #203       |               |               |
| BB        | 22'    | 1522        | 179         | 007-10040-000 |               | 007-10041-000 |               |               |
| BC        |        | 1688        | 179         |               |               |               |               |               |
| BD        |        | 1854        | 179         |               |               |               |               |               |

## 1" CONDENSER TUBES

**TABLE 21 - CONDENSER SHELLS WITH 1" TUBES**

| COND CODE | LENGTH | TUBE COUNT  |             | COPPER              |                     |                     |                     |
|-----------|--------|-------------|-------------|---------------------|---------------------|---------------------|---------------------|
|           |        | MAIN BUNDLE | SUB-COOL-ER | 0.025 Wall          | 0.028 Wall          | 0.035 Wall          | 0.028 Wall          |
|           |        |             |             | MT #266 / 260       | MT #267 / 261       | MT #268 / 262       | MT #317 / 261       |
| B5        | 22'    | 594         | 179         | MT 266              | MT 267              | MT 268              | MT 317              |
| B6        |        | 757         | 179         | (M) = 007-10068-000 | (M) = 007-10069-000 | (M) = 007-10070-000 | (M) = 007-10124-000 |
| B7        |        | 899         | 179         | MT 260              | MT 261              | MT 262              | MT 261              |
| B8        |        | 1003        | 179         | (S) = 007-10051-000 | (S) = 007-10052-000 | (S) = 007-10053-000 | (S) = 007-10052-000 |

## PRIMARY COMPRESSOR (K7) GEAR SET

**TABLE 22 - PRIMARY COMPRESSOR (K7) GEAR SET**

| COMPRESSOR | SPEED CODE | GEAR RATIO | PART NUMBER   |
|------------|------------|------------|---------------|
| K7         | MC         | 1.1552     | 029-14400-111 |
| K7         | MD         | 1.1897     | 029-14400-112 |
| K7         | ME         | 1.2281     | 029-14400-113 |
| K7         | MF         | 1.2679     | 029-14400-114 |
| K7         | MG         | 1.3091     | 029-14400-115 |
| K7         | MH         | 1.3330     | 029-14400-116 |
| K7         | MJ         | 1.3774     | 029-14400-117 |
| K7         | MK         | 1.4231     | 029-14400-118 |
| K7         | ML         | 1.4615     | 029-14400-119 |
| K7         | MM         | 1.5098     | 029-14400-120 |
| K7         | MN         | 1.5510     | 029-14400-121 |
| K7         | MP         | 1.6042     | 029-14400-122 |
| K7         | MQ         | 1.6458     | 029-14400-123 |
| K7         | MR         | 1.7021     | 029-14400-124 |
| K7         | MS         | 1.7391     | 029-14400-125 |
| K7         | MT         | 1.8000     | 029-14400-126 |
| K7         | MU         | 1.8636     | 029-14400-127 |
| K7         | MV         | 1.9091     | 029-14400-128 |
| K7         | MW         | 1.9762     | 029-14400-129 |
| K7         | MX         | 2.0238     | 029-14400-130 |
| K7         | MY         | 2.0976     | 029-14400-131 |
| K7         | MZ         | 2.1500     | 029-14400-132 |
| K7         | AG         | 2.2051     | 029-14400-133 |
| K7         | AH         | 2.2810     | 029-14400-134 |
| K7         | AJ         | 2.3421     | 029-14400-135 |
| K7         | AK         | 2.4054     | 029-14400-136 |
| K7         | AL         | 2.5000     | 029-14400-137 |
| K7         | AM         | 2.5714     | 029-14400-138 |
| K7         | AN         | 2.6571     | 029-14400-139 |

## ECONOMIZER COMPRESSOR (Q3) GEAR SET

**TABLE 23 - ECONOMIZER COMPRESSOR (Q3) GEAR SET**

| COMPRESSOR | SPEED CODE | GEAR RATIO | PART NUMBER   |
|------------|------------|------------|---------------|
| Q3         | WA         | 2.4634     | 029-14400-053 |
| Q3         | WB         | 2.5500     | 029-14400-054 |
| Q3         | WC         | 2.6410     | 029-14400-055 |
| Q3         | WD         | 2.7297     | 029-14400-056 |
| Q3         | WE         | 2.8108     | 029-14400-057 |
| Q3         | WF         | 2.8889     | 029-14400-058 |
| Q3         | WG         | 2.9714     | 029-14400-059 |
| Q3         | WH         | 3.0588     | 029-14400-060 |
| Q3         | WJ         | 3.1471     | 029-14400-061 |
| Q3         | WK         | 3.2424     | 029-14400-062 |
| Q3         | WL         | 3.3438     | 029-14400-063 |
| Q3         | WM         | 3.4375     | 029-14400-064 |
| Q3         | WN         | 3.5484     | 029-14400-065 |
| Q3         | WP         | 3.6667     | 029-14400-066 |
| Q3         | WQ         | 3.7931     | 029-14400-067 |
| Q3         | WR         | 3.8929     | 029-14400-068 |
| Q3         | WS         | 4.0000     | 029-14400-069 |
| Q3         | WT         | 4.1111     | 029-14400-070 |
| Q3         | WU         | 4.2222     | 029-14400-071 |
| Q3         | WV         | 4.3462     | 029-14400-072 |
| Q3         | WW         | 4.4800     | 029-14400-073 |
| Q3         | WX         | 4.6000     | 029-14400-074 |
| Q3         | WY         | 4.7500     | 029-14400-075 |
| Q3         | WZ         | 4.8750     | 029-14400-076 |
| Q3         | XA         | 5.0435     | 029-14400-077 |
| Q3         | XB         | 5.1818     | 029-14400-078 |
| Q3         | XC         | 5.3636     | 029-14400-079 |
| Q3         | XD         | 5.5238     | 029-14400-080 |
| Q3         | XE         | 5.7000     | 029-14400-081 |
| Q3         | XF         | 5.8500     | 029-14400-082 |
| Q3         | XG         | 6.0526     | 029-14400-083 |
| Q3         | XH         | 6.2105     | 029-14400-084 |

RELIEF VALVES (EVAPORATOR)

TABLE 24 - KIT, EVAPORATOR DUAL RELIEF VALVE

| ITEM | DESCRIPTION                | PART NUMBER   | QUANTITY | FIGURE |
|------|----------------------------|---------------|----------|--------|
| 1A   | Valve Relief 1-1/4 X 1-1/2 | 022 07893 025 | 2        | 34     |
| 2    | Valve Stop Dual Relf Manf  | 022 07892 003 | 1        | 34     |
| 9    | Bush Pipe 1-1/2 - 11-1/2   | 023 05791 000 | 1        | 34     |

TABLE 25 - KIT, EVAPORATOR RELIEF VALVE, SINGLE

| ITEM | DESCRIPTION                   | PART NUMBER   | QUANTITY | FIGURE |
|------|-------------------------------|---------------|----------|--------|
| 1A   | Valve Relief 1-1/4 X 1-1/2    | 022 07893 025 | 1        | 34     |
| 2    | Flange Relief Valve Companion | 023 13837 003 | 1        | 34     |

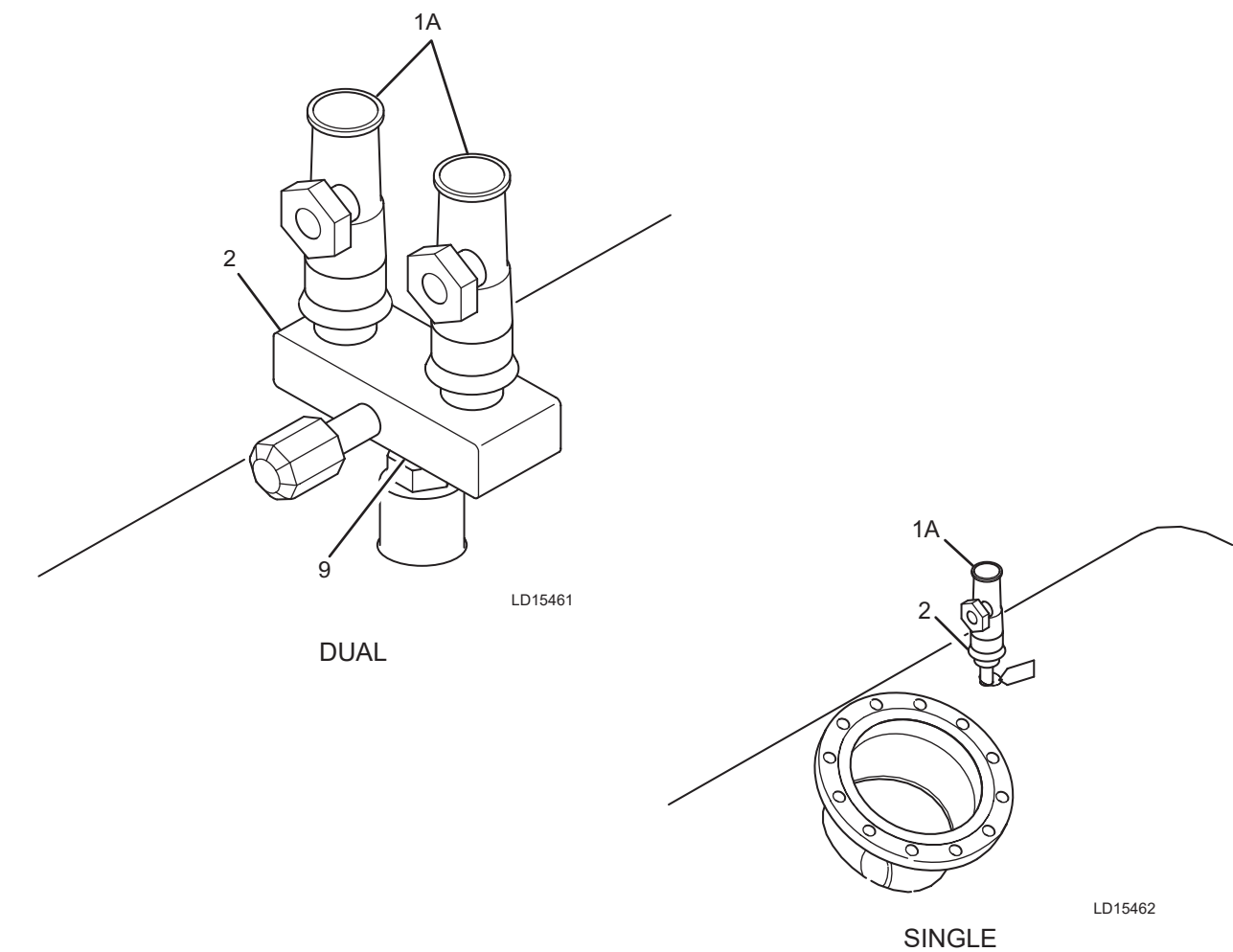
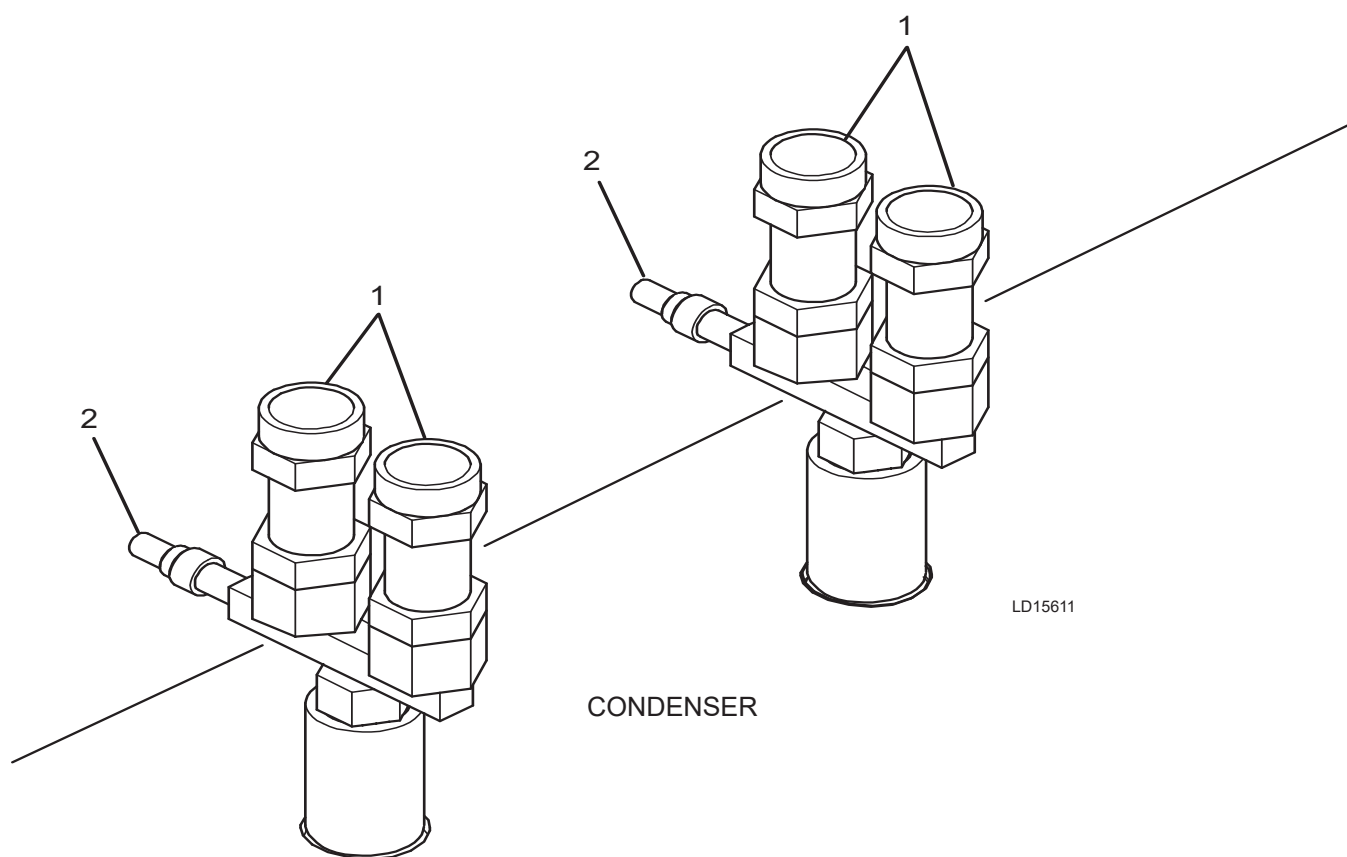


FIGURE 34 - EVAPORATOR RELIEF VALVES

## RELIEF VALVES (CONDENSER)

**TABLE 26 - KIT, CONDENSER DUAL RELIEF VALVE**

| ITEM | DESCRIPTION                    | PART NUMBER   | QUANTITY | FIGURE |
|------|--------------------------------|---------------|----------|--------|
| 1    | Valve, Relief 1-5/8 -12un-2a   | 022 10079 000 | 4        | 35     |
| 2    | Brass Valve, Stop 3 Way 1-5/8  | 022 10074 000 | 2        | 35     |
|      | Steel Valve, Stop 3 Way 1-5/8  | 022 12412 000 |          |        |
| 3    | O-Ring Neo1 01.475id .118thk M | 028 12961 017 | 6        | *      |



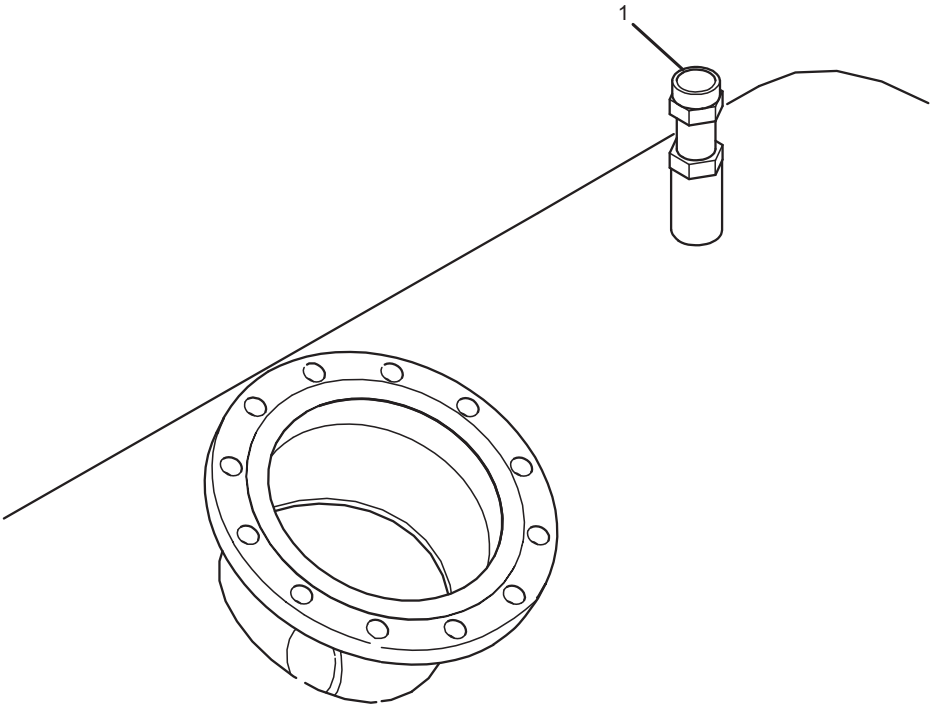
**FIGURE 35 - CONDENSER RELIEF VALVES**

RELIEF VALVES (ECONOMIZER)

TABLE 27 - KIT, DUAL RELIEF VALVE

| ITEM | DESCRIPTION                    | PART NUMBER   | QUANTITY | FIGURE |
|------|--------------------------------|---------------|----------|--------|
| 1    | Valve, Relief 1-5/8 -12un-2a   | 022 10079 000 | 1        | 36     |
| 3    | O-Ring Neo1 01.475id .118thk M | 028 12961 017 | 1        | *      |

NOTE: Items with an \* are NOT represented.



ECONOMIZER

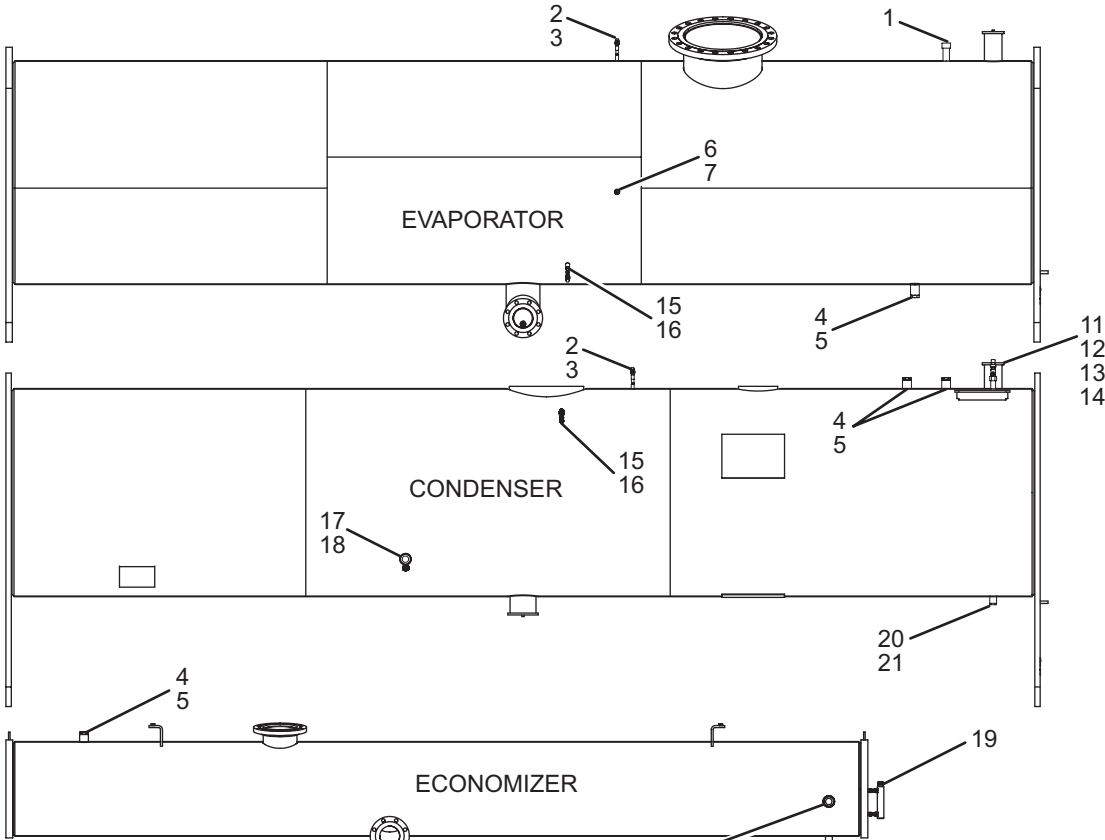
LD15612

FIGURE 36 - ECONOMIZER RELIEF VALVES

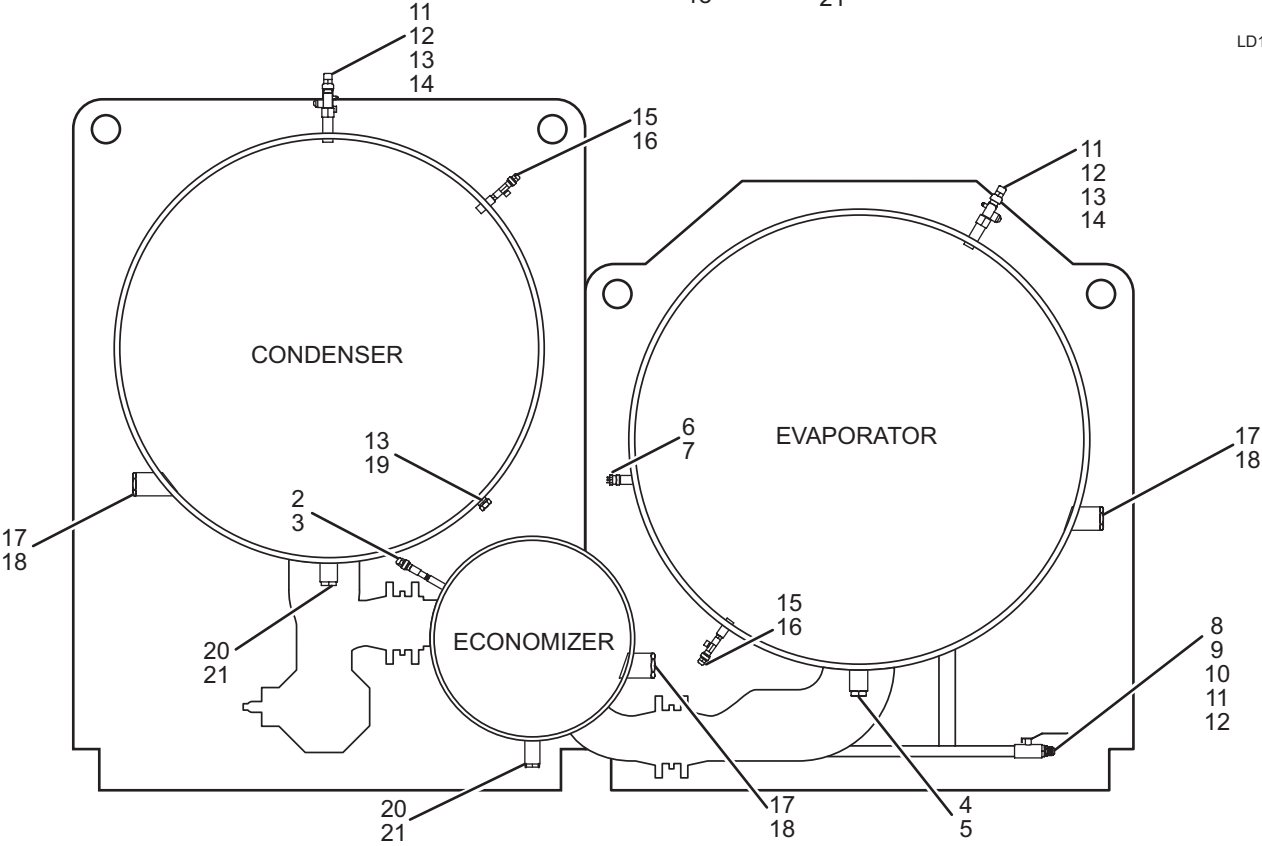
## EVAPORATOR / CONDENSER

**TABLE 28 - EVAPORATOR / CONDENSER**

| ITEM | DESCRIPTION                    | PART<br>NUMBER | QUANTITY | FIGURE |
|------|--------------------------------|----------------|----------|--------|
| 1    | Cap Pipe 1-1/4 - 11-1/2        | 023 02073 000  | 1        | 37     |
| 2    | O-Ring Neo1 00.351id .072thk M | 028 12961 001  | 3        | 37     |
| 3    | Valve Stop Ang Vertical        | 022 09577 000  | 3        | 37     |
| 4    | Plug Hex Hd 1-5/8              | 023 18283 000  | 4        | 37     |
| 5    | O-Ring Neo1 01.475id .118thk M | 028 12961 017  | 4        | 37     |
| 6    | O-Ring Neo1 00.644id .087thk M | 028 12961 004  | 1        | 37     |
| 7    | Sensor, Temperature 3000 Ohms  | 025 41904 000  | 1        | 37     |
| 8    | Valve Ball 1 Npti X 1 Npti     | 022 06873 000  | 1        | 37     |
| 9    | Bush Pipe 1 - 11-1/2 Npte      | 023 04045 000  | 1        | 37     |
| 10   | Connr 3/4 Ext Fla X 3/4        | 023 00934 000  | 1        | 37     |
| 11   | Cap Flare 3/4 Od Tube          | 023 00984 000  | 3        | 37     |
| 12   | Gasket Fla 3/4 Od Tube         | 028 09211 000  | 3        | 37     |
| 13   | Gasket, Seal 1 Od X 7/8 Id X   | 028 04836 000  | 3        | 37     |
| 14   | Valve Stop Ang Vertical        | 022 09573 000  | 2        | 37     |
| 15   | O-Ring Neo1 00.468id .078thk M | 028 12961 003  | 2        | 37     |
| 16   | Valve Stop Ang Vertical        | 022 10054 000  | 2        | 37     |
| 17   | O-Ring Neo1 02.090id .118thk M | 028 12961 036  | 3        | 37     |
| 18   | Plug Sight 2-1/4 -12 Un-2a     | 023 17197 000  | 3        | 37     |
| 19   | Nut Seal                       | 023 18278 000  | 2        | 37     |
| 20   | O-Ring Neo1 01.171id .116thk M | 028 12961 008  | 2        | 37     |
| 21   | Plug Hex Hd 1-5/16             | 023 18282 000  | 2        | 37     |



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FIGURE 37 - EVAPORATOR / CONDENSER

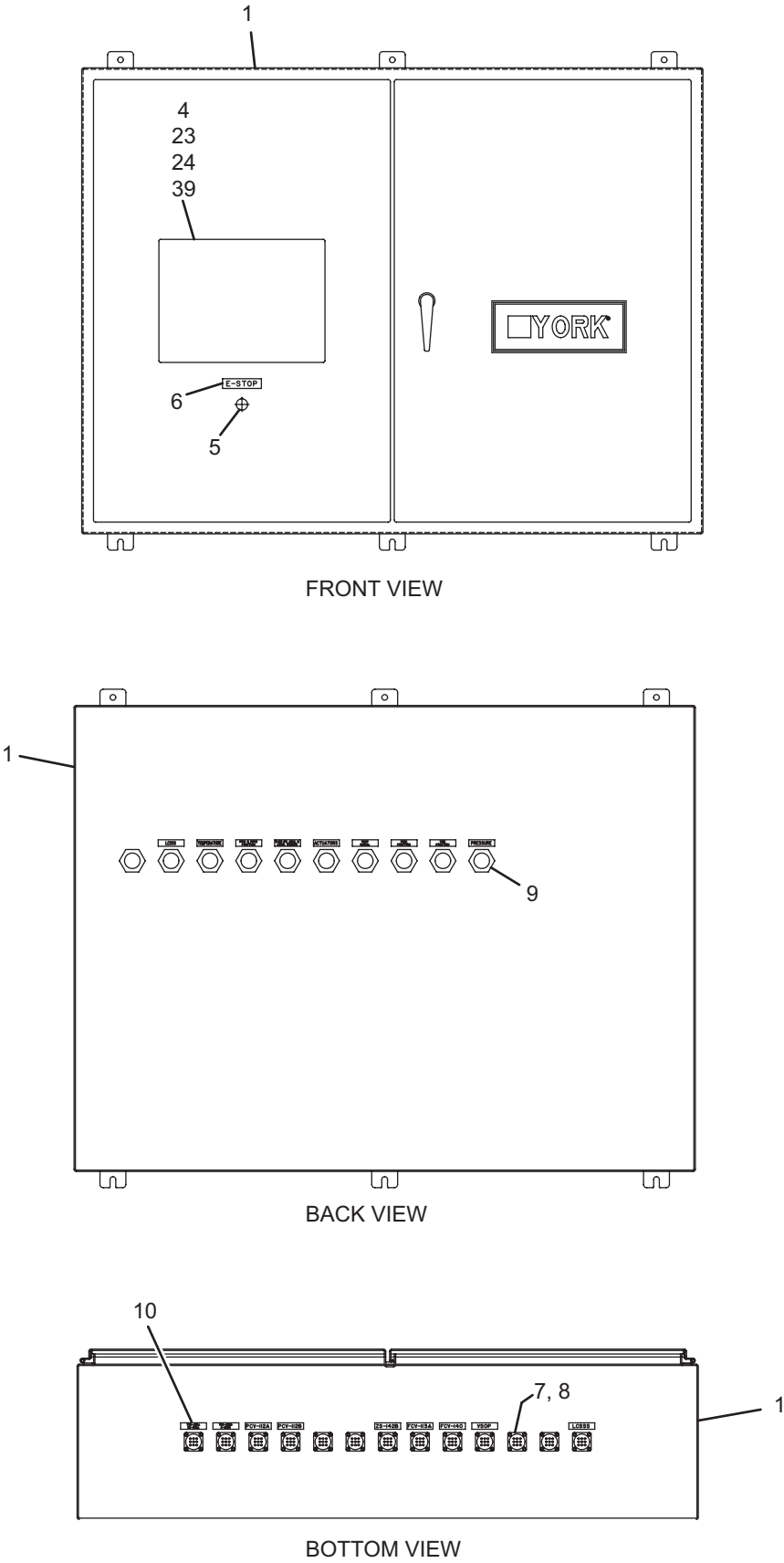
## CONTROL PANEL

**TABLE 29 - CONTROL PANEL (771 97055 001)**

| ITEM | DESCRIPTION                      | PART NUMBER   | QUANTITY | FIGURE |
|------|----------------------------------|---------------|----------|--------|
| 1    | Enclosure YKEP Control           | 371 05620 311 | 1        | 38, 39 |
| 4    | Control Programm. Display        | 025 44362 000 | 1        | 38, 39 |
| 5    | Switch Emergency Stop            | 025 44356 000 | 1        | 38, 39 |
| 6    | Nameplate Emergency Stop         | 029 25900 000 | 1        | 38, 39 |
| 7    | Connector Recp Housing, 9 Pos    | 025 37873 000 | 11       | 38, 39 |
| 9    | Fitting Liquid Tight 1/2 Npt     | 025 44363 000 | 10       | 38, 39 |
| 10   | Kit, Nameplate YKEP              | 029 25901 000 | 1        | 38, 39 |
| 11   | Cable, Pre-Wired                 | 025 44364 000 | 1        | 39     |
| 12   | Cable, Pre-Wired                 | 025 44365 000 | 2        | 39     |
| 13   | Control Programmable             | 025 40303 000 | 1        | 39     |
| 14   | Control Programmable             | 025 42753 000 | 1        | 39     |
| 15   | Control Programmable             | 025 42261 000 | 1        | 39     |
| 16   | Control Programmable             | 025 42259 000 | 3        | 39     |
| 17   | Control Programmable             | 025 42258 000 | 2        | 39     |
| 18   | Control Programmable             | 025 40298 000 | 1        | 39     |
| 19   | Control Programmable             | 025 42263 000 | 1        | 39     |
| 20   | Control Programmable             | 025 40299 000 | 1        | 39     |
| 21   | Control Programm. Output Module  | 025 44366 000 | 1        | 39     |
| 22   | Control Programmable             | 025 42262 000 | 2        | 39     |
| 23   | Cable, Cat. 5 Stp Ethernet       | 025 44367 000 | 1        | 38, 39 |
| 24   | Cable, Ethernet, 14 Ft.          | 025 44368 000 | 1        | 38, 39 |
| 25   | Duct Wire                        | 025 34364 033 | 3        | 39     |
| 26   | Cover Wire Duct                  | 025 34364 003 | 3        | 39     |
| 36   | Transformer, Stepdown; 50 Va     | 025 44521 000 | 1        | 39     |
| 37   | Bar Neutral IlSCO D-167-8        | 025 36043 000 | 1        | 39     |
| 38   | Suppressor, Transient            | 025 35277 000 | 1        | 39     |
| 39   | Compact Flash Memory             | 025 42947 000 | 2        | 38, 39 |
| 40   | Surge Suppressor                 | 031 00808 000 | 4        | 39     |
| 41   | Resistor 30k Ohm 1 Watt          | 025 34379 000 | 8        | 39     |
| 42   | Resistor 2k Ohm Tol.2% Watt      | 025 39996 000 | 2        | 39     |
| 43   | Control VGD Stall Detector Board | 031 02418 001 | 2        | 39     |
| 44   | Cable Stall Detector Cable       | 377 18332 401 | 1        | 39     |
| 45   | Cable Stall Detector Cable       | 377 18332 402 | 1        | 39     |
| 60   | Relay Power                      | 024 36886 000 | 8        | 39     |
| 61   | Receptacle                       | 025 40313 000 | 1        | 39     |
| 62   | Ckt Bkr                          | 024 34902 000 | 4        | 39     |
| 63   | Ckt Bkr                          | 024 34903 000 | 1        | 39     |
| 64   | Ckt Bkr                          | 024 34956 000 | 1        | 39     |
| 65   | Block Term End Blk               | 025 39642 000 | 15       | 39     |
| 67   | Block Ter Conta-Clip             | 025 39641 000 | 52       | 39     |
| 68   | Block Term Conta-Clip            | 025 39646 000 | 18       | 39     |
| 69   | Block Term Partition Plate       | 025 39643 000 | 6        | 39     |

**TABLE 28 - CONTROL PANEL (771 97055 001) (CONT'D)**

| ITEM | DESCRIPTION                   | PART NUMBER   | QUANTITY | FIGURE |
|------|-------------------------------|---------------|----------|--------|
| 70   | Jumper Bar Assembly 2 Pole    | 025 39648 000 | 2        | 39     |
| 71   | Jumper Bar Assembly 10 Pole   | 025 39649 000 | 2        | 39     |
| 72   | Jumper Bar Assembly 2 Pole    | 025 40152 000 | 2        | 39     |
| 73   | Jumper Bar Assembly 10 Pole   | 025 39974 000 | 3        | 39     |
| 74   | Power Supply                  | 025 39960 000 | 1        | 39     |
| 75   | Power Supply                  | 025 39959 000 | 1        | 39     |
| 76   | Socket Relay                  | 024 32218 000 | 1        | 39     |
| 77   | Relay Power                   | 024 32217 000 | 1        | 39     |
| 78   | Control Programmable          | 025 42264 000 | 3        | 39     |
| 79   | Regulator Voltage Fixed       | 025 42272 000 | 1        | 39     |
| 80   | Rail, Mtg, 35 X 7.5 Mm, 2m Lg | 025 29167 000 | 2        | 39     |
| 82   | Jumper Bar Assembly 3 Pole    | 025 39664 000 | 1        | 39     |
| 83   | Converter, Seal               | 025 44506 000 | 2        | 39     |
| 84   | Fuse Ctg Ty 2 Amp             | 025 44515 000 | 24       | 39     |



LD15617

**FIGURE 38 - CONTROL PANEL**

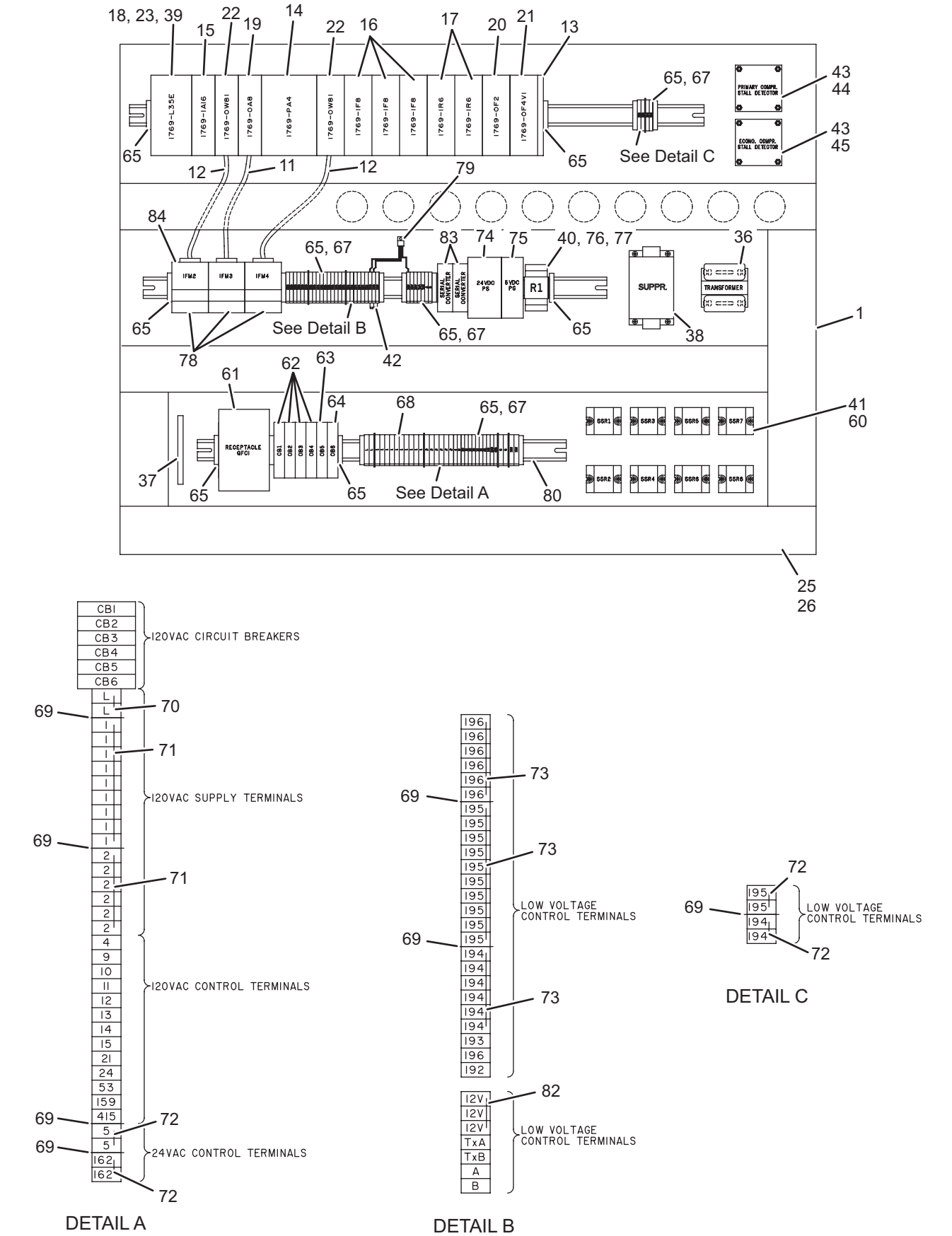


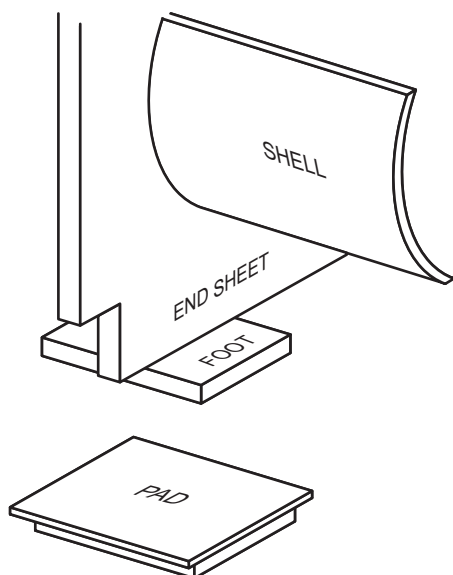
FIGURE 39 - CONTROL PANEL (CONT'D)

## NEOPRENE VIBRATION ISOLATORS

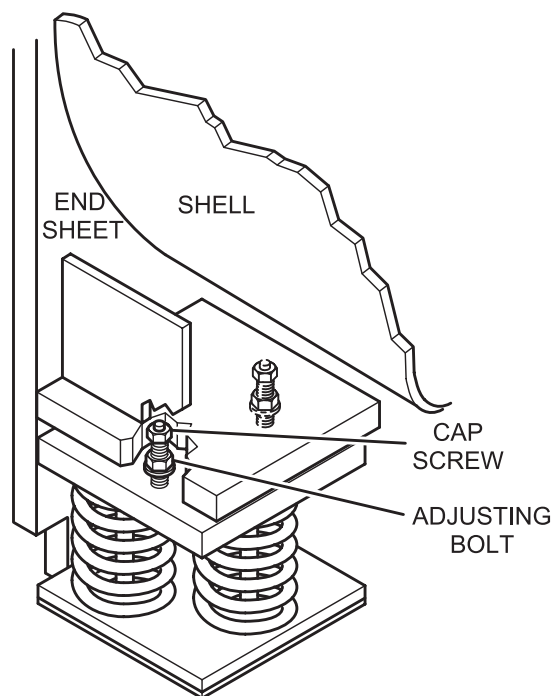
| SYSTEM OPERATING WEIGHT |               | PART NUMBER<br>(Includes Quantity of 4 Pads) | PAD SIZE               |
|-------------------------|---------------|----------------------------------------------|------------------------|
| KILOGRAMS               | POUNDS        |                                              |                        |
| Up to 91,332            | Up to 200,928 | 028 14461 000                                | 11" x 10" (28 x 25 cm) |

## SPRING VIBRATION ISOLATORS

| SYSTEM OPERATING WEIGHT |               | PART NUMBER<br>(Includes Qty. 4 Spring Bolts) | QUANTITY<br>(Number of Mounts Per Package) |
|-------------------------|---------------|-----------------------------------------------|--------------------------------------------|
| KILOGRAMS               | POUNDS        |                                               |                                            |
| Up to 22,044            | Up to 190,000 | 029 24384 001                                 | 4                                          |



LD15606



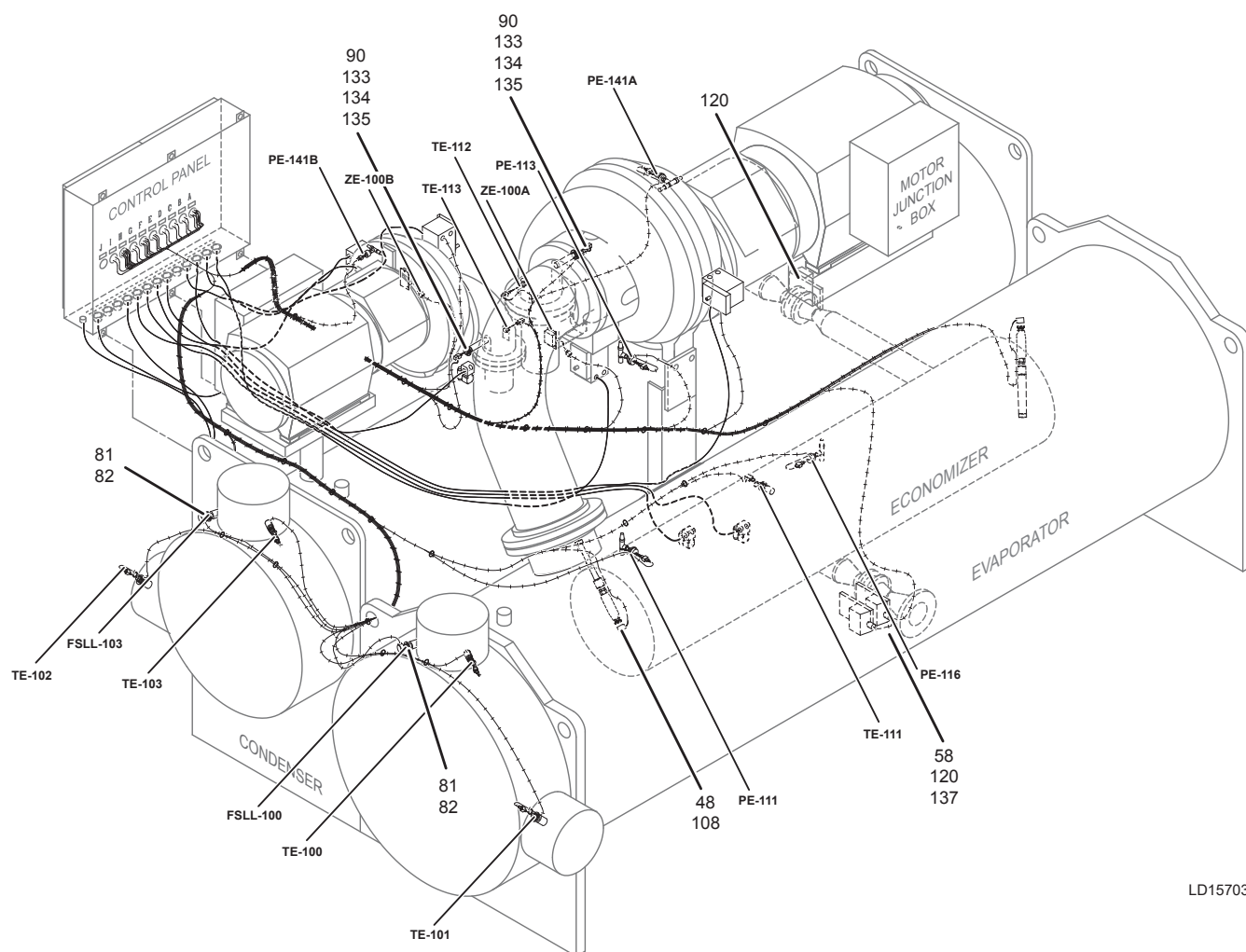
LD15607

**FIGURE 40 - NEOPRENE AND SPRING VIBRATION ISOLATORS**

## SYSTEM WIRING

**TABLE 30 - SYSTEM WIRING**

| ITEM | DESCRIPTION                        | PART NUMBER   | QUANTITY | FIGURE |
|------|------------------------------------|---------------|----------|--------|
| 3    | Sensor Temperature 100 Ohms        | 025 40010 000 | 5        | 42     |
| 11   | Contact Receptacle, 070 Series     | 025 28952 000 | 24       | 42     |
| 12   | Collar Rubber, Black, 070          | 025 28950 000 | 24       | 42     |
| 13   | Connector Plug Housing, 3 Position | 025 28954 000 | 8        | 42     |
| 42   | Sensor Temperature 100 Ohms        | 025 40009 000 | 1        | 42     |
| 44   | Connector Din 43650                | 025 37805 000 | 14       | 42     |
| 48   | Gasket, Seal 1 Od X 7/8 Id X       | 028 04836 000 | 2        | 41     |
| 58   | Connector Iso 4400/Din             | 025 37877 000 | 2        | 41     |
| 59   | Housing Connr Electrical Cap       | 025 21159 000 | 1        | 42     |
| 81   | Sensor Flow 1/2" Npt Conn          | 025 41573 000 | 2        | 41     |
| 82   | Connector, Micro 5 Pole            | 025 42799 000 | 2        | 41, 42 |
| 90   | O-Ring Neo1 00.644id .087thk M     | 028 12961 004 | 6        | 41, 42 |
| 91   | Sensor Temperature 100 Ohms        | 025 40008 000 | 3        | 42     |
| 108  | Sensor, Level R-134a               | 025 43950 008 | 2        | 41     |
| 120  | Actuator, Electric                 | 025 38180 000 | 4        | 41     |
| 133  | Valve, Ball 3/4-16unf-2a           | 022 11715 000 | 2        | 41     |
| 134  | Transducer Pressure R-22 and 134   | 025 40088 000 | 2        | 41, 42 |
| 135  | O-Ring Neo1 00.414id .072thk M     | 028 12961 002 | 2        | 41     |
| 137  | Connector, Multi Control           | 025 37887 000 | 2        | 41     |



LD15703

| DETAIL   | SENSOR                                                                |
|----------|-----------------------------------------------------------------------|
| DETAIL A | TE-100, TE-101, TE-102, TE-103, and TE-114                            |
| DETAIL B | TE-112, TE-113, and TE-140                                            |
| DETAIL C | FSSL-100 and FSSL-103                                                 |
| DETAIL D | PE-111, PE-113, PE-116, PE-140, PE-141A, and PE-141B                  |
| DETAIL E | TE-111                                                                |
| DETAIL F | PE-111, PE-113, PE-116, PE-140, PE-141A, PE-141B, ZE-100A and ZE-100B |

\* See Figure 42 for Details A-F.

**FIGURE 41 - SYSTEM WIRING**

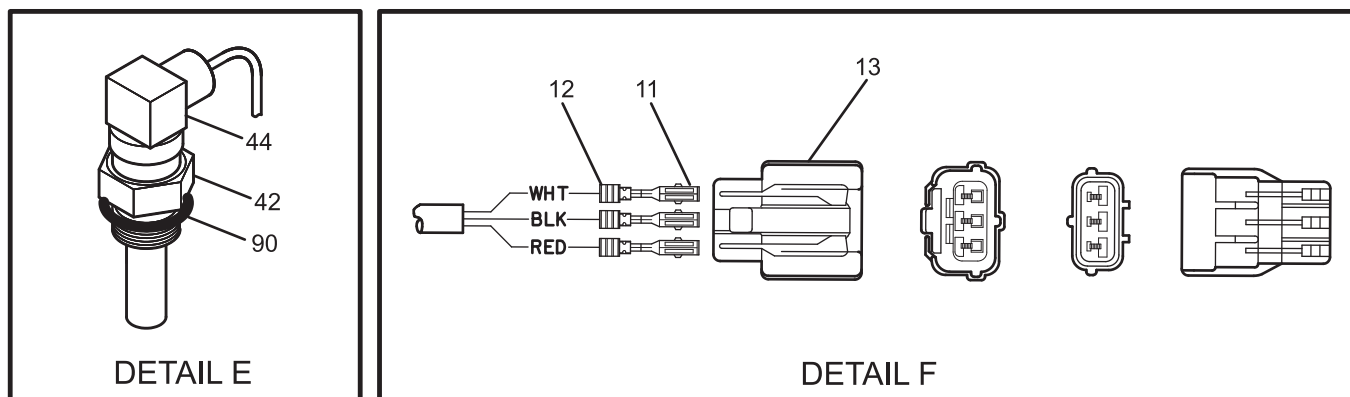
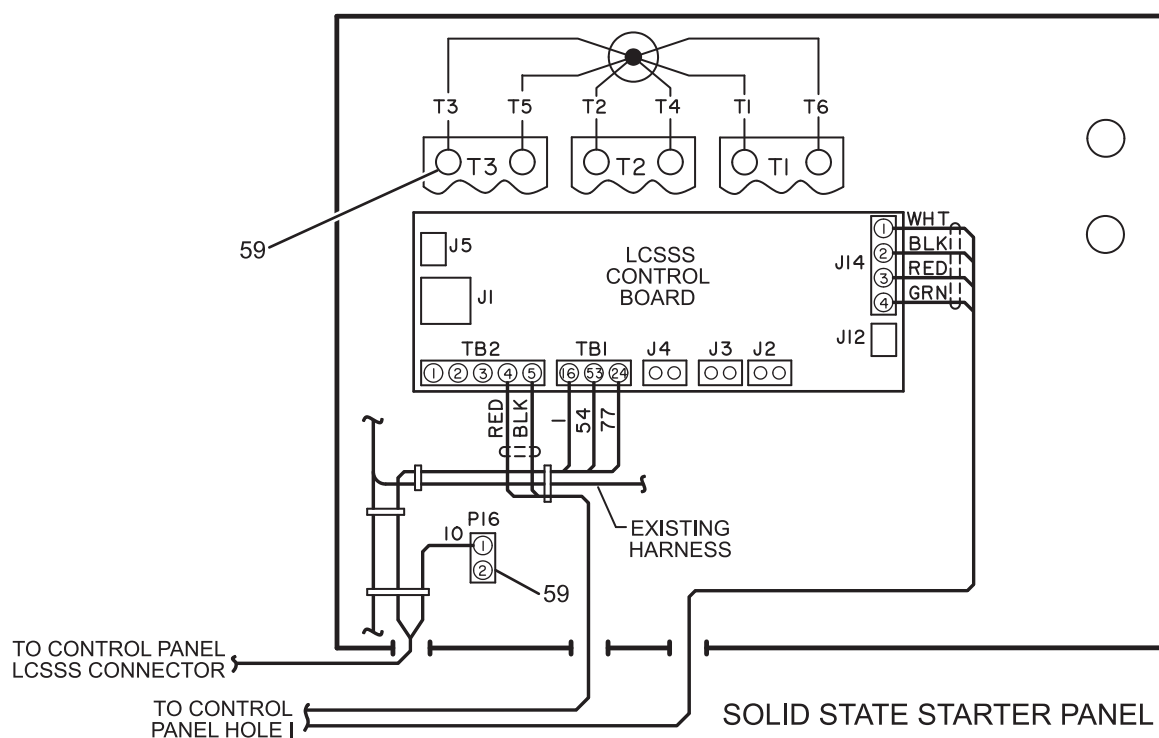
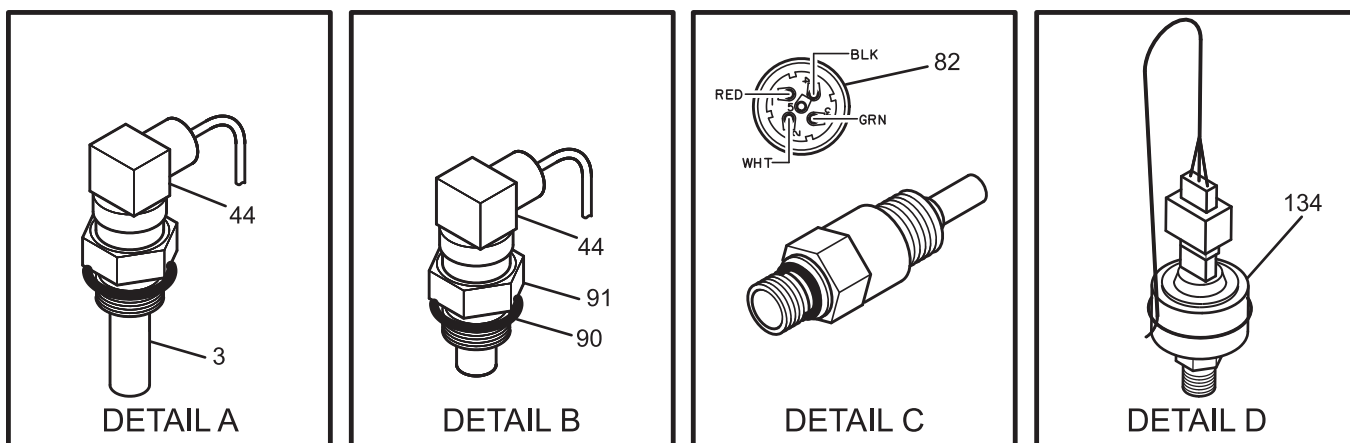


FIGURE 42 - SYSTEM WIRING (CONT'D)

LD15704

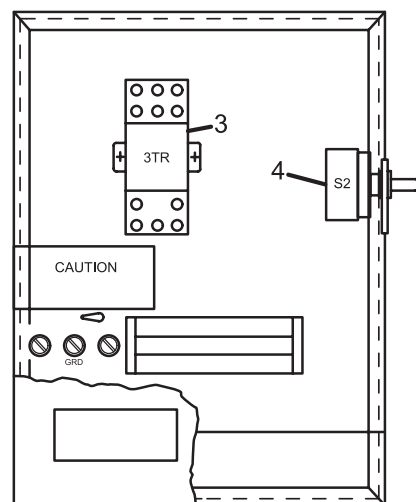
**INLET CHILLED WATER STRAINER**  
**(COMPACT HEADS AND MARINE WATERBOXES)**

| NOZZLE SIZE | PART NUMBER   |
|-------------|---------------|
| 14"         | 029 12948 000 |
| 18"         | 029 12949 000 |
| 20"         | 029 12951 000 |

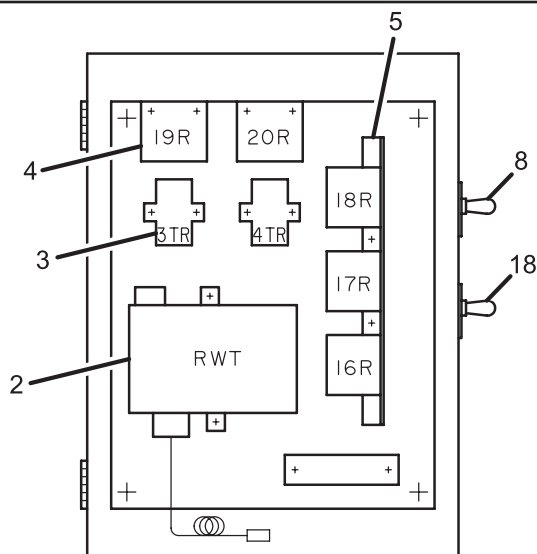
## MULTIPLE UNIT SEQUENCE KIT CONTROLS

| TWO UNIT (466 61597 000) |                   |               |          |
|--------------------------|-------------------|---------------|----------|
| ITEM                     | DESCRIPTION       | PART NUMBER   | QUANTITY |
| 1 <sup>1</sup>           | Controller, RWT   | 025-15154-000 | 1        |
| 3                        | Relay, Time Delay | 024-30497-000 | 1        |
| 4                        | Switch, Toggle    | 024-14057-000 | 1        |

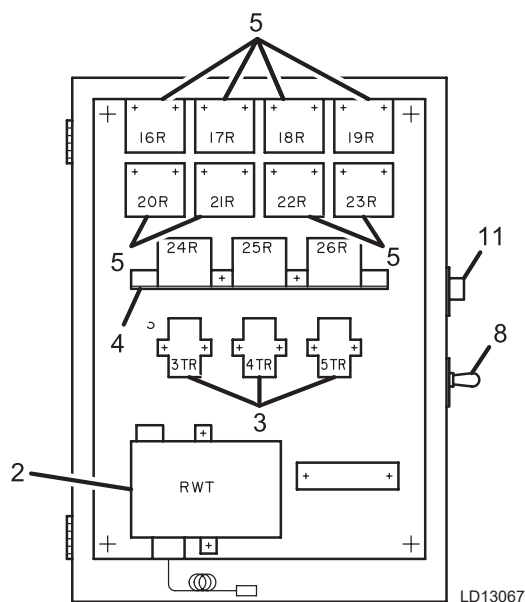
<sup>1</sup> Not Shown. Remote Mounted.



| THREE UNIT (366 44684 000) |                           |               |          |
|----------------------------|---------------------------|---------------|----------|
| ITEM                       | DESCRIPTION               | PART NUMBER   | QUANTITY |
| 2                          | Control, Temp 2 Stage     | 025-10215-000 | 1        |
| 3                          | Relay, TD 115V            | 024-30497-000 | 2        |
| 4                          | Relay, Control 120V Coil  | 024-14519-000 | 2        |
| 5                          | Relay Assembly            | 375-21706-000 | 1        |
| 8                          | Switch, Toggle 3 Position | 024-17026-000 | 1        |
| 18                         | Switch, Toggle            | 024-11736-000 | 1        |



| FOUR UNIT (366 52529 000) |                          |               |          |
|---------------------------|--------------------------|---------------|----------|
| ITEM                      | DESCRIPTION              | PART NUMBER   | QUANTITY |
| 2                         | Control, Temp. 3-Stage   | 025-10214-000 | 1        |
| 3                         | Relay, TD 115V           | 024-30497-000 | 3        |
| 4                         | Relay Assembly           | 375-21706-000 | 1        |
| 5                         | Relay, Control 120V Coil | 024-14519-000 | 8        |
| 8                         | Switch, Toggle           | 024-11736-000 | 1        |
| 11                        | Switch, Rotary 4 Ckt 15A | 024-20494-000 | 1        |



LD13067

## MISCELLANEOUS AND ACCESSORIES

### COMPOUNDS

| DESCRIPTION                                       | PART NUMBER   | QUANTITY |
|---------------------------------------------------|---------------|----------|
| Compound, Heat Conductive (for Thermometer Wells) | 013 00898 000 | 4 oz.    |
| Grease, POE                                       | 044 03199 000 | 1 lb.    |
| Lub, Valve Stem                                   | 360 00125 000 | 2 oz.    |
| Primer, Locquic Grade N                           | 013 01753 000 | 1.75 oz. |
| Sealer, Gasket Eliminator                         | 013 02827 000 | 300ml    |
| Sealer, Grade AVV Loctite 086                     | 013 01671 000 | 250ml    |
| Sealer, Refrigerant Pipe                          | 013 02894 000 | 250ml    |
| Sealer, Removable Thread                          | 013 03375 000 | 250ml    |
| Adhesive 5 Oz Tube 3M Scotch                      | 013 00995 000 | 5 oz.    |
| Sealant Silicon Rubber                            | 013 02469 000 | 3 oz.    |
| Tape Ribbon Dope Thread                           | 044 01702 000 | 117 ft.  |
| Comp Electrical Joint Alcoa #2                    | 044 02837 000 | 8 oz.    |

### COMMON PIPING PARTS

| DESCRIPTION | STEEL TUBING  | STAINLESS STEEL TUBING | NUT           | STEEL SLEEVE  | STAINLESS STEEL SLEEVE |
|-------------|---------------|------------------------|---------------|---------------|------------------------|
| 3/8"        | 003 00969 000 | 003 02407 000          | 023 18977 000 | 023 20760 000 | 023 17534 000          |
| 1/2"        | 003 00243 000 | -                      | 023 17541 000 | 023 19089 000 | 023 17542 000          |
| 3/4"        | 003 03518 000 | 003 02487 017          | 023 18286 000 | 023 18914 000 | 023 17536 000          |
| 1"          | 003 03515 000 | -                      | 023 18287 000 | 023 18911 000 | 023 17538 000          |

### FLOW SWITCH CONTROL

| DESCRIPTION | PART NUMBER   |
|-------------|---------------|
| 150 DWP     | 024 26116 000 |
| 300 DWP     | 024 12144 000 |

### TEMPERATURE RECORDER

| DESCRIPTION |                | PART NUMBER   |
|-------------|----------------|---------------|
| HZ          | NUMBER OF PENS |               |
| 60          | 1              | 025 09658 000 |
|             | 2              | 025 09823 000 |
| 50          | 1              | 025 12650 000 |
|             | 2              | 025 12330 000 |

### DIFFERENTIAL PRESSURE CONTROL

| DESCRIPTION                     | PART NUMBER   |
|---------------------------------|---------------|
| CONTROL, Differential Pressure* | 025 30919 000 |

\* 300 PSI Maximum Working Pressure

### TOUCH-UP PAINTS - SPRAY CANS

| DESCRIPTION            | PART NUMBER      |
|------------------------|------------------|
| CARIBBEAN BLUE ENAMEL  | 013 01835 000    |
| BLACK (Control Center) | PURCHASE LOCALLY |

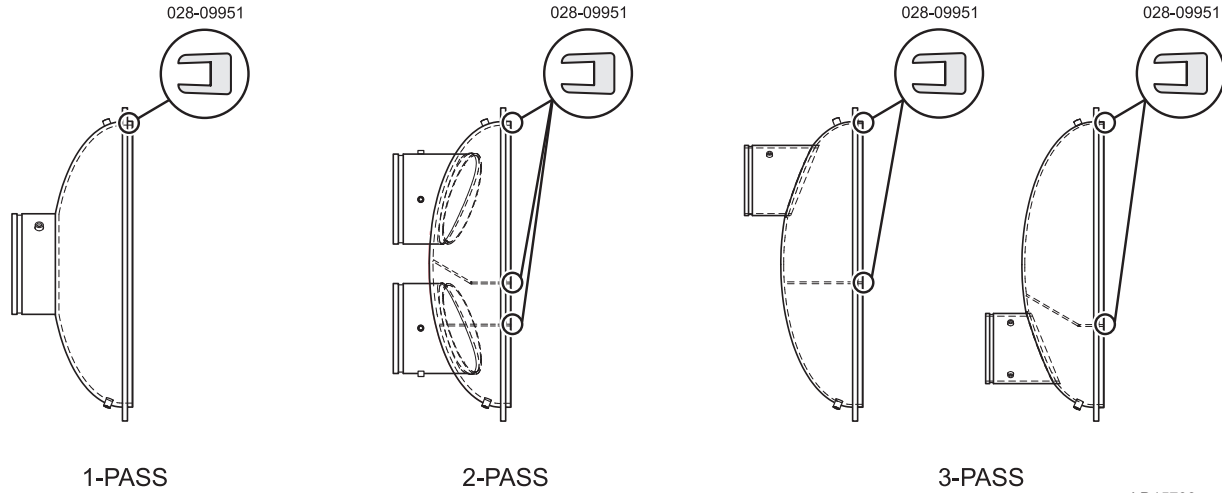
## EVAPORATOR WATERBOX GASKETS

**TABLE 31 - EVAPORATOR 150 PSI COMPACT WATERBOX**

| 1 PASS (20" NOZZLE) |            | 2 PASS (18" NOZZLE) |            | 3 PASS (14" NOZZLE) |            |
|---------------------|------------|---------------------|------------|---------------------|------------|
| GASKET P/N          | FEET REQ'D | GASKET P/N          | FEET REQ'D | GASKET P/N          | FEET REQ'D |
| 028 09951 000       | 29.6'      | 028 09951 000       | 34.5'      | 028 09951 000       | 38.2'      |

**NOTE:**

When ordering Gasket Material specify length required by replacing the -000 with either -025 for 25', -050 for 50', or -100 for 100'.



LD15793

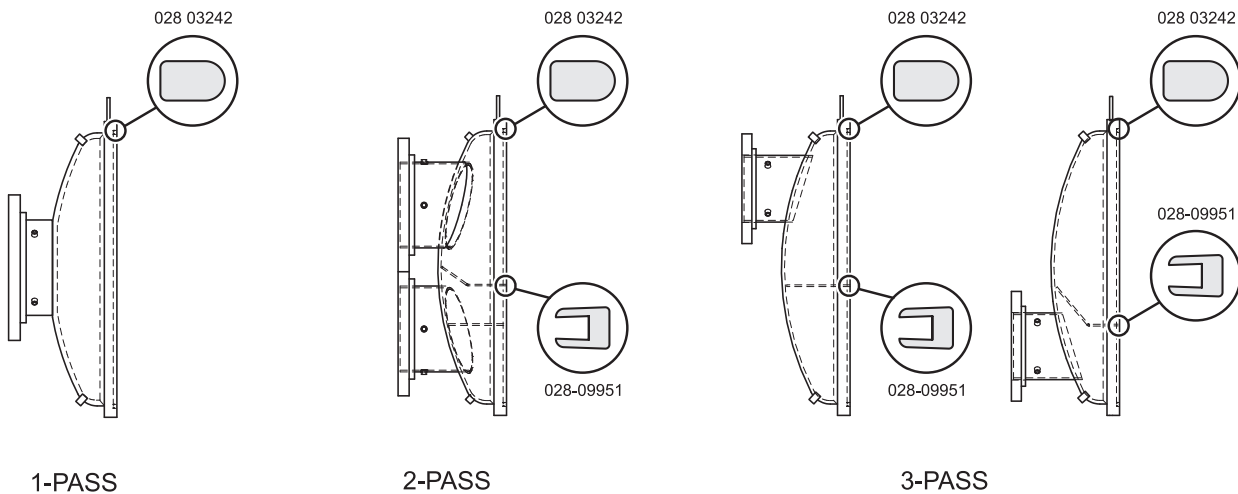
**FIGURE 43 - EVAPORATOR 150 PSI COMPACT WATERBOX**

**TABLE 32 - EVAPORATOR 300 PSI COMPACT WATERBOX**

| 1 PASS (20" NOZZLE) |            | 2 PASS (18" NOZZLE) |            | 3 PASS (14" NOZZLE) |            |
|---------------------|------------|---------------------|------------|---------------------|------------|
| GASKET P/N          | FEET REQ'D | GASKET P/N          | FEET REQ'D | GASKET P/N          | FEET REQ'D |
| 028 03242 000       | 30'        | 028 09951 000       | 4.9'       | 028 09951 000       | 8.7'       |
|                     |            | 028 03242 000       | 30'        | 028 03242 000       | 30'        |

**NOTE:**

When ordering Gasket Material specify length required by replacing the -000 with either -025 for 25', -050 for 50', or -100 for 100'.



LD15794

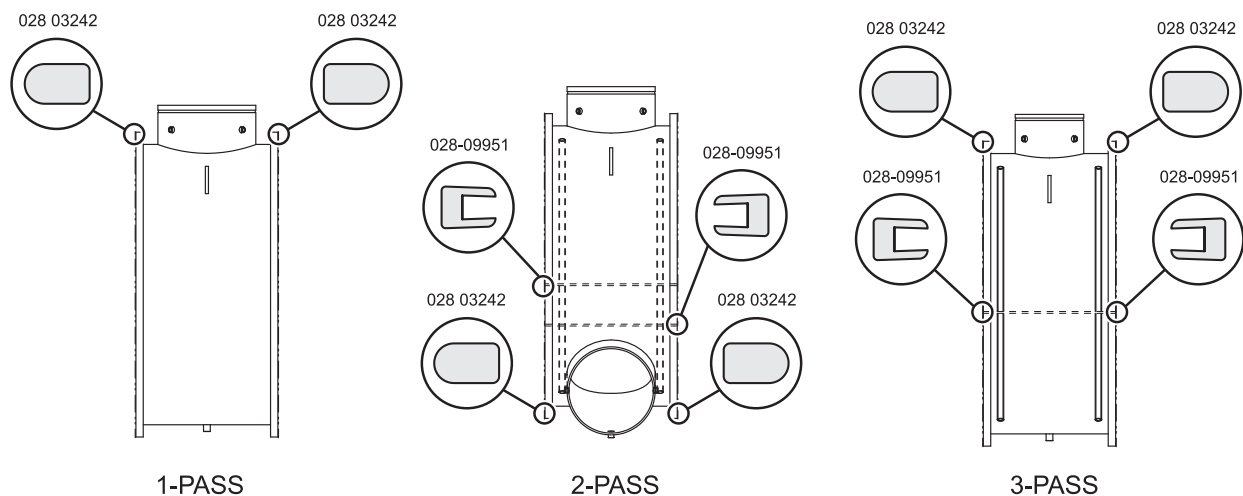
**FIGURE 44 - EVAPORATOR 300 PSI COMPACT WATERBOX**

**TABLE 33 - EVAPORATOR 150 PSI MARINE WATERBOX**

| 1 PASS (20" NOZZLE) |            | 2 PASS (18" NOZZLE) |            | 3 PASS (14" NOZZLE) |            |
|---------------------|------------|---------------------|------------|---------------------|------------|
| GASKET P/N          | FEET REQ'D | GASKET P/N          | FEET REQ'D | GASKET P/N          | FEET REQ'D |
| 028 03242 000       | 60.1'      | 028 09951 000       | 25.5'      | 028 09951 000       | 18'        |
|                     |            | 028 03242 000       | 30'        | 028 03242 000       | 60.1'      |

**NOTE:**

When ordering Gasket Material specify length required by replacing the -000 with either -025 for 25', -050 for 50', or -100 for 100'.



LD15795

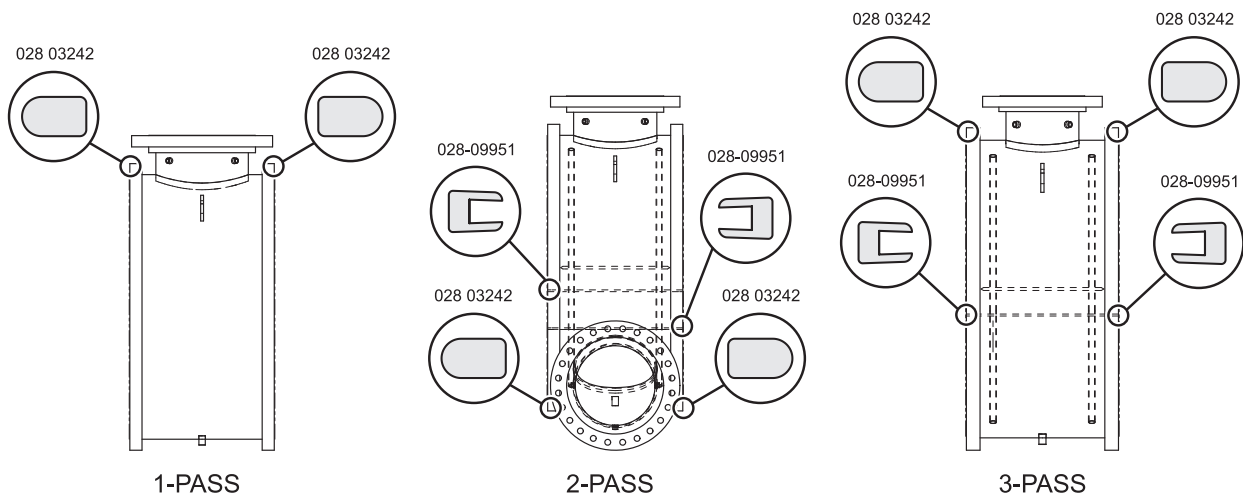
**FIGURE 45 - EVAPORATOR 150 PSI MARINE WATERBOX**

**TABLE 34 - EVAPORATOR 300 PSI MARINE WATERBOX**

| 1 PASS (20" NOZZLE) |            | 2 PASS (18" NOZZLE) |            | 3 PASS (14" NOZZLE) |            |
|---------------------|------------|---------------------|------------|---------------------|------------|
| GASKET P/N          | FEET REQ'D | GASKET P/N          | FEET REQ'D | GASKET P/N          | FEET REQ'D |
| 028 03242 000       | 60'        | 028 09951 000       | 10.5'      | 028 09951 000       | 17.5'      |
|                     |            | 028 03242 000       | 45'        | 028 03242 000       | 60'        |

**NOTE:**

When ordering Gasket Material specify length required by replacing the -000 with either -025 for 25', -050 for 50', or -100 for 100'.



LD15796

**FIGURE 46 - EVAPORATOR 300 PSI MARINE WATERBOX**

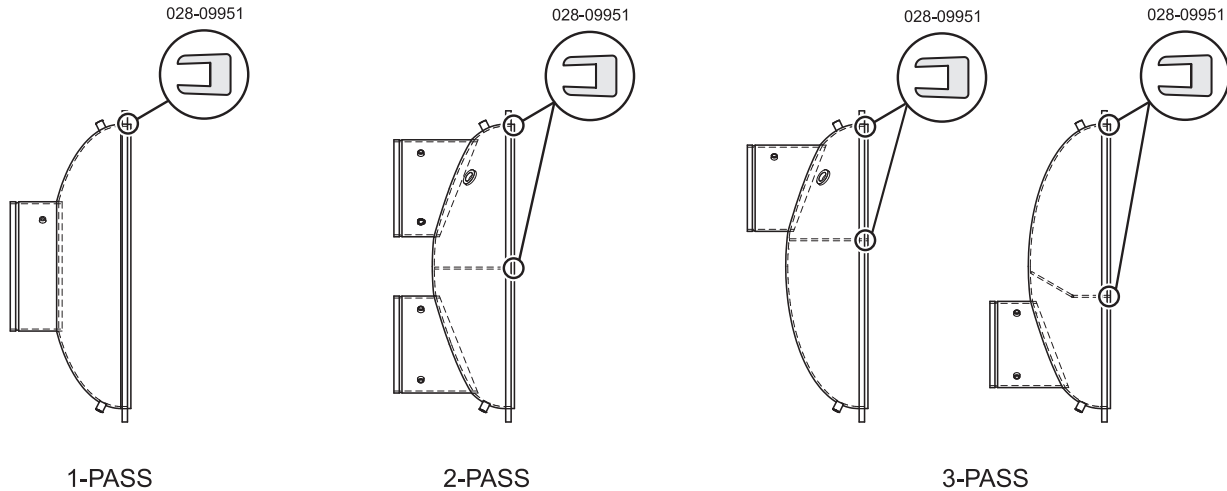
## CONDENSER WATERBOX GASKETS

**TABLE 35 - CONDENSER 150 PSI COMPACT WATERBOX**

| 1 PASS (24" NOZZLE) |            | 2 PASS (18" NOZZLE) |            | 3 PASS (16" NOZZLE) |            |
|---------------------|------------|---------------------|------------|---------------------|------------|
| GASKET P/N          | FEET REQ'D | GASKET P/N          | FEET REQ'D | GASKET P/N          | FEET REQ'D |
| 028 09951 000       | 27.4'      | 028 09951 000       | 31.7'      | 028 09951 000       | 35.8'      |

**NOTE:**

When ordering Gasket Material specify length required by replacing the -000 with either -025 for 25', -050 for 50', or -100 for 100'.



LD15797

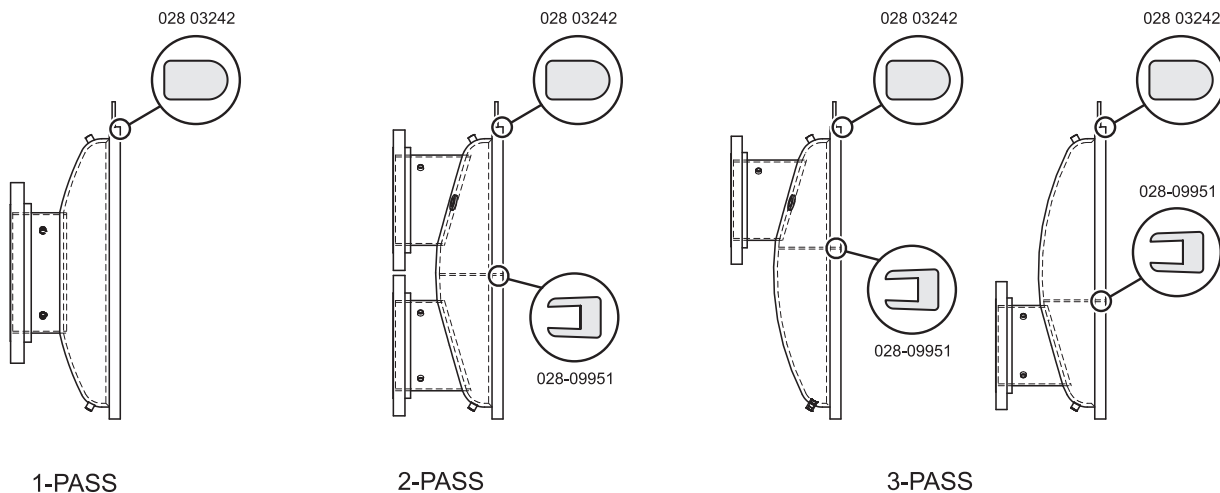
**FIGURE 47 - CONDENSER 150 PSI COMPACT WATERBOX**

**TABLE 36 - CONDENSER 300 PSI COMPACT WATERBOX**

| 1 PASS (24" NOZZLE) |            | 2 PASS (18" NOZZLE) |            | 3 PASS (16" NOZZLE) |            |
|---------------------|------------|---------------------|------------|---------------------|------------|
| GASKET P/N          | FEET REQ'D | GASKET P/N          | FEET REQ'D | GASKET P/N          | FEET REQ'D |
| 028 03242 000       | 28.1'      | 028 09951 000       | 4.4'       | 028 09951 000       | 8.5'       |
|                     |            | 028 03242 000       | 28.1'      | 028 03242 000       | 28.1'      |

**NOTE:**

When ordering Gasket Material specify length required by replacing the -000 with either -025 for 25', -050 for 50', or -100 for 100'.



LD15798

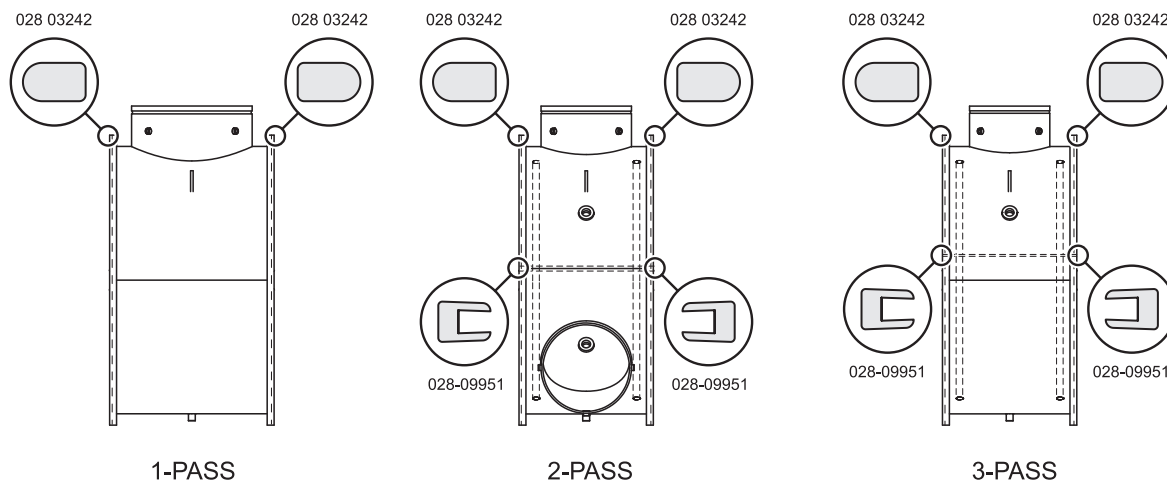
**FIGURE 48 - CONDENSER 300 PSI COMPACT WATERBOX**

**TABLE 37 - CONDENSER 150 PSI MARINE WATERBOX**

| 1 PASS (24" NOZZLE) |            | 2 PASS (18" NOZZLE) |            | 3 PASS (16" NOZZLE) |            |
|---------------------|------------|---------------------|------------|---------------------|------------|
| GASKET P/N          | FEET REQ'D | GASKET P/N          | FEET REQ'D | GASKET P/N          | FEET REQ'D |
| 028 03242 000       | 56'        | 028 09951 000       | 22.5'      | 028 09951 000       | 17'        |
|                     |            | 028 03242 000       | 28.5'      | 028 03242 000       | 56'        |

**NOTE:**

When ordering Gasket Material specify length required by replacing the -000 with either -025 for 25', -050 for 50', or -100 for 100'.



LD15799

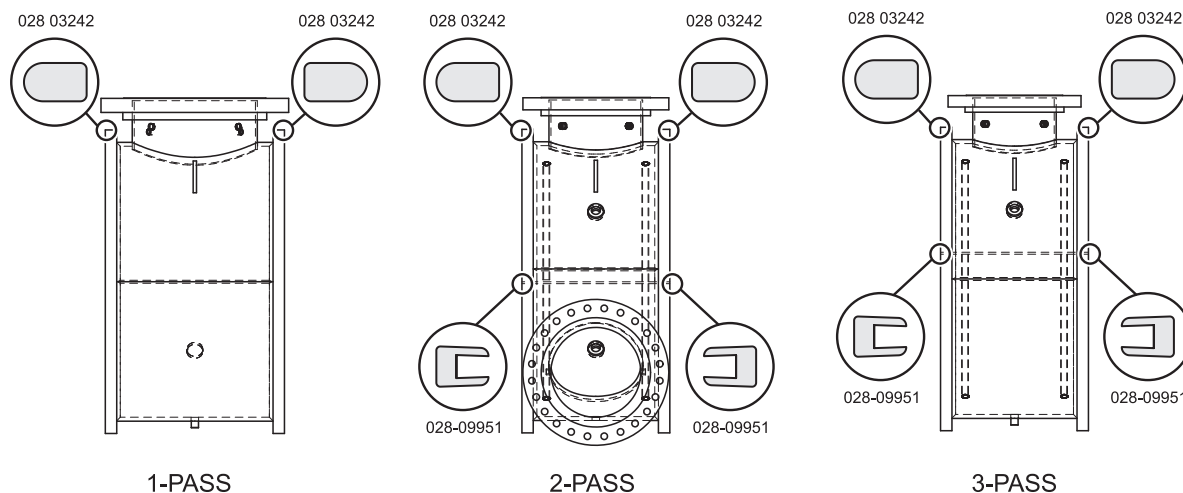
**FIGURE 49 - CONDENSER 150 PSI MARINE WATERBOX**

**TABLE 38 - CONDENSER 300 PSI MARINE WATERBOX**

| 1 PASS (24" NOZZLE) |            | 2 PASS (18" NOZZLE) |            | 3 PASS (16" NOZZLE) |            |
|---------------------|------------|---------------------|------------|---------------------|------------|
| GASKET P/N          | FEET REQ'D | GASKET P/N          | FEET REQ'D | GASKET P/N          | FEET REQ'D |
| 028 03242 000       | 56'        | 028 09951 000       | 9.4'       | 028 09951 000       | 18.2'      |
|                     |            | 028 03242 000       | 42'        | 028 03242 000       | 56'        |

**NOTE:**

When ordering Gasket Material specify length required by replacing the -000 with either -025 for 25', -050 for 50', or -100 for 100'.



LD15800

**FIGURE 50 - CONDENSER 300 PSI MARINE WATERBOX**



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Form 160.77-RP1 (522)  
Issue Date: May 31, 2022  
Supersedes: 160.77-RP1 (612)

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