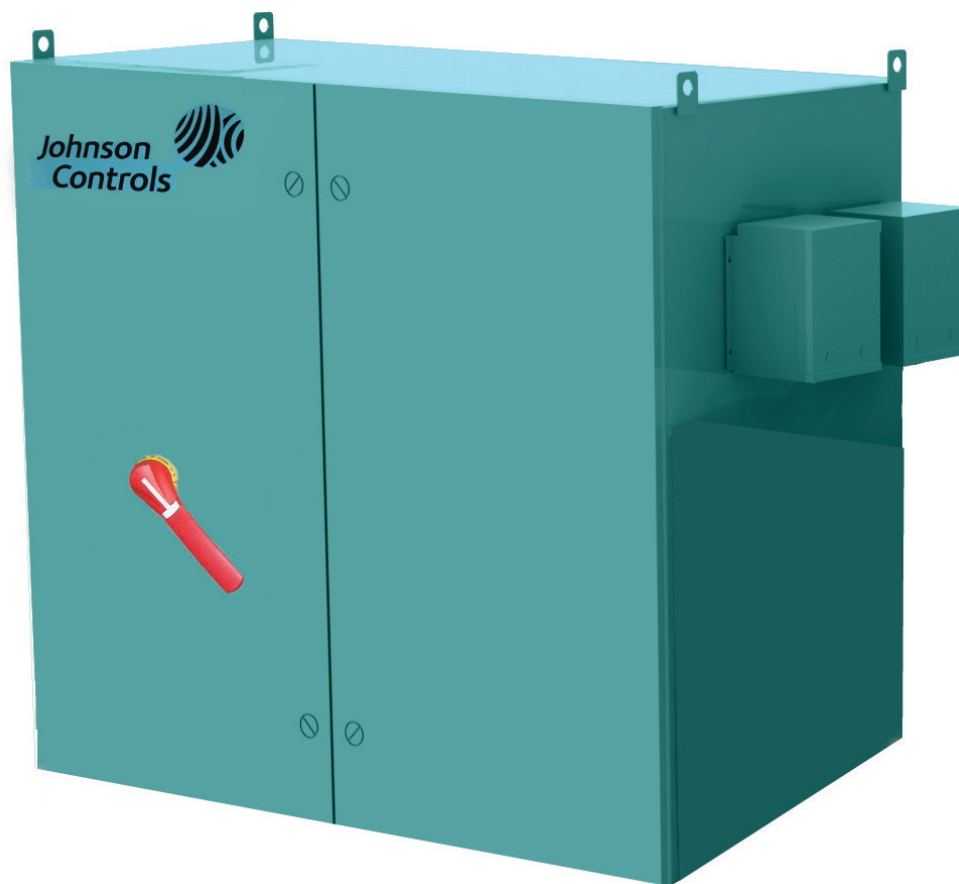


	OPTISPEED™ VARIABLE SPEED DRIVE	
REPLACEMENT PARTS	Supersedes: 160.78-RP3 (917)	Form 160.78-RP3 (522)

MODELS
HYP0490, HYP0490A,
HYP0744



LD14681

490 AMPS – 50/60 HZ, 380-460 VAC (P/N 371-05614-XXX)
490A AMPS – 50/60 HZ, 380-460 VAC (P/N 371-06755-XXX)
744 AMPS – 50/60 HZ, 380-460 VAC (P/N 371-05571-XXX)

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 individual 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.

SAFETY SYMBOLS

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



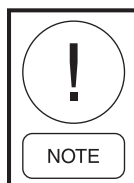
Indicates a possible hazardous situation which will result in death or serious injury if proper care is not taken.



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 cabinet. Devices such as relays, switches, transducers and controls and any external wiring must not be installed inside the micro 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
16, 34 and 50	Corrected part number 013-02987-000 to 013-04129-000

ASSOCIATED LITERATURE

MANUAL DESCRIPTION	FORM NUMBER
YMC ² Unit Operations and Maintenance Manual	160.78-O1
YMC ² OptiView™ Control Center Operation Manual	160.78-O2
YMC ² Unit Installation	160.78-N1
YMC ² Unit Wiring and Field Control Modifications	160.78-PW2
YMC ² Unit Renewal Parts	160.78-RP1

SYSTEM NOMENCLATURE

Y M C 2 - S 1301 A A

YORK _____ Mod Level
Magnetic Bearing _____ Refrigerant R-134a
Centrifugal Chiller _____ Capacity in KW
S = Single Stage
T = Two Stage

COMPRESSOR NOMENCLATURE

M1 B - 205 F A A

Motor _____ Gas Path Revision Level
Motor Design Level _____ Impeller Design Revision Level
Impeller Tip Diameter (mm) _____
Rotation _____
F = Forward
R = Reverse

VESSEL NOMENCLATURE

E A 25 10 321 C S 1 2 G C R

Vessel _____ Inlet from Front View
E = Evaporator R = Right
C = Condenser L = Left
Heat Exchanger Mod Level _____ Waterbox Type
Nominal Inside Diameter (Inches) _____ C = Compact
Nominal Length (Feet) _____ M = Marine
Marketing Tube Number _____ Water Connection Type
Tube Code _____ F = Flanges
B = 3/4" Code 1 G = Grooved Standard
C = 3/4" Code 2 A = Victaulic AGS
D = 3/4" Code 3
E = 3/4" Code 4
2 = 1" Code 1
3 = 1" Code 2
4 = 1" Code 3
5 = 1" Code 4
Vessel Refrigerant Pressure Code _____ Number of Passes
R = Code 180
S = Code 235
T = Code 300
U = Code 350
V = Code 400
Water Side Pressure Code
1 = 150 psi
3 = 300 psi

VARIABLE SPEED DRIVE NOMENCLATURE

HYP 0490 X H C 30 D - 40 A

Hyp _____ Mod Level
Amps _____ 40 = 380V 60Hz
0490, 0612, 0774, 1278 50 = 400V 50Hz
X = Factory Mount 46 = 460V 60Hz
R = Retrofit Model 68 = 415V 50Hz
H = YMC² Chiller D = Disconnect Switch
C = Condenser Cooled B = Circuit Breaker
E = Evaporator Cooled Liquid DWP
15 = 150 psi
30 = 300 psi

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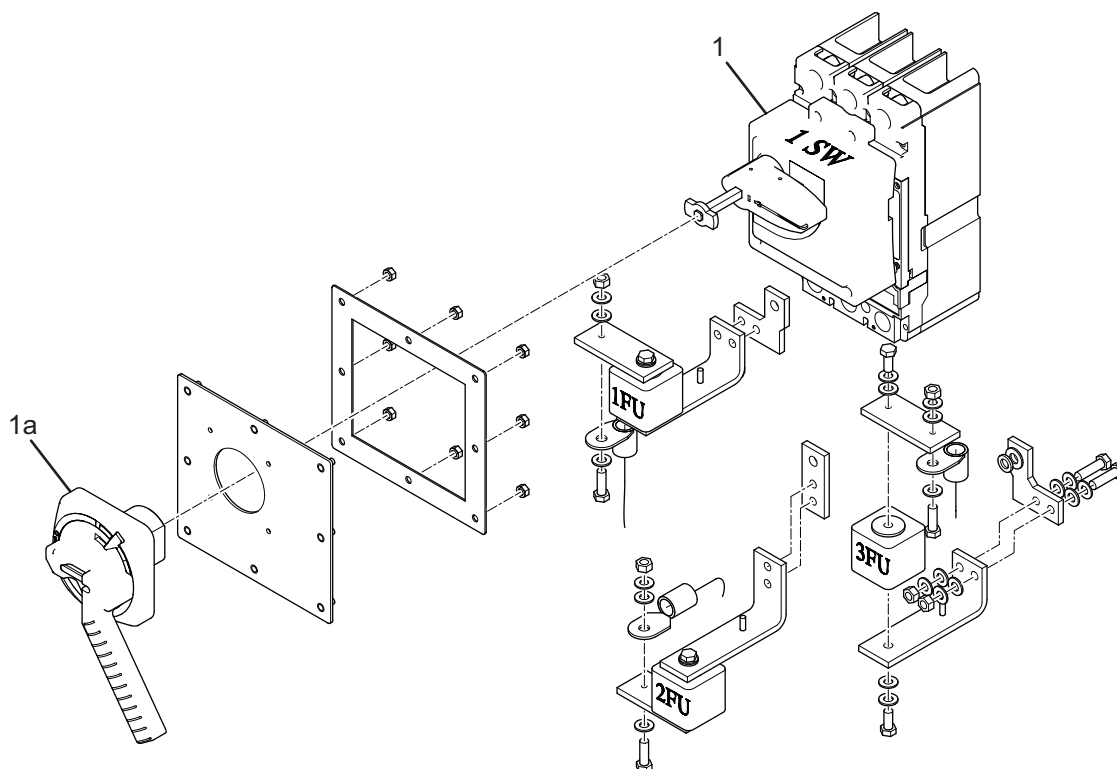
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SECTION 1 - 490 AMP VARIABLE SPEED DRIVE**TABLE 1 - INPUT COMPONENTS (490 AMPS)**

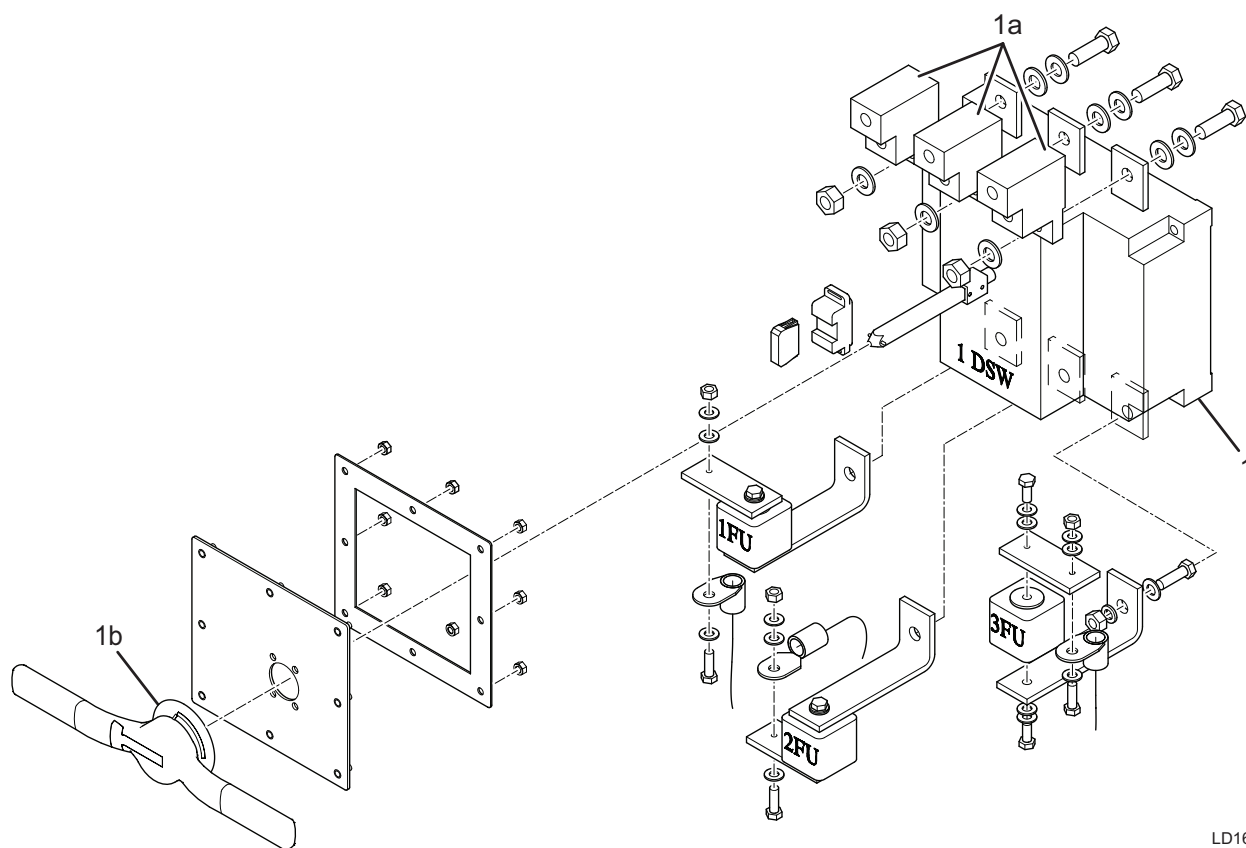
ITEM	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
1	Circuit Breaker, Calibrated, 450A	224-37879-000	839940	1	1
1a	Circuit Breaker Handle	024-35429-000	736285	1	1
1	Disconnect Switch	024-37442-000	839733	1	2
1a	Disconnect Switch Lug Kit	025-42181-000	680131	1	2
1b	Handle, Disconnect Switch	024-36614-000	736390	1	2
1c	Ground Lug	025-35173-000	117722	1	5
2	Input Current Transducer (DCCT)	025-42748-000	740133	3	3
3	Input Filter Assembly	371-05614-341	839967	1	4
4	Input Filter Capacitor for Assembly	025-44490-000	839745	6	4
5	Input Filter Capacitor	025-43928-000	740379	1	5
6	Input Inductor (L1/L2)	025-44458-000	835714	1	6
6a	Input Inductor Coolant Hose Elbow	023-25635-000	-	12	6
6b	Input Inductor Coolant Hose	028-16716-000	-	-	6
6c	Input Inductor Coolant Manifold	325-44864-603	-	4	6
6d	Input Inductor Coolant Valve	022-12389-000	-	4	6
7	Input Filter Resistor for Assembly	025-42616-000	740130	3	4
8	Input Voltage Isolator Board	031-02022-000	65064	1	5
9	Resistor, Bleeder	025-42616-000	740130	1	5
10	Resistor Kit (Includes 2 Resistors and Bracket)	025-44887-000	839758	1	7
12	Voltage Transient Board (Fuses are not included)	031-02453-000	743895	1	5

NOTE: Items with an * are NOT represented.

**FIGURE 1 - CIRCUIT BREAKER (CB)**

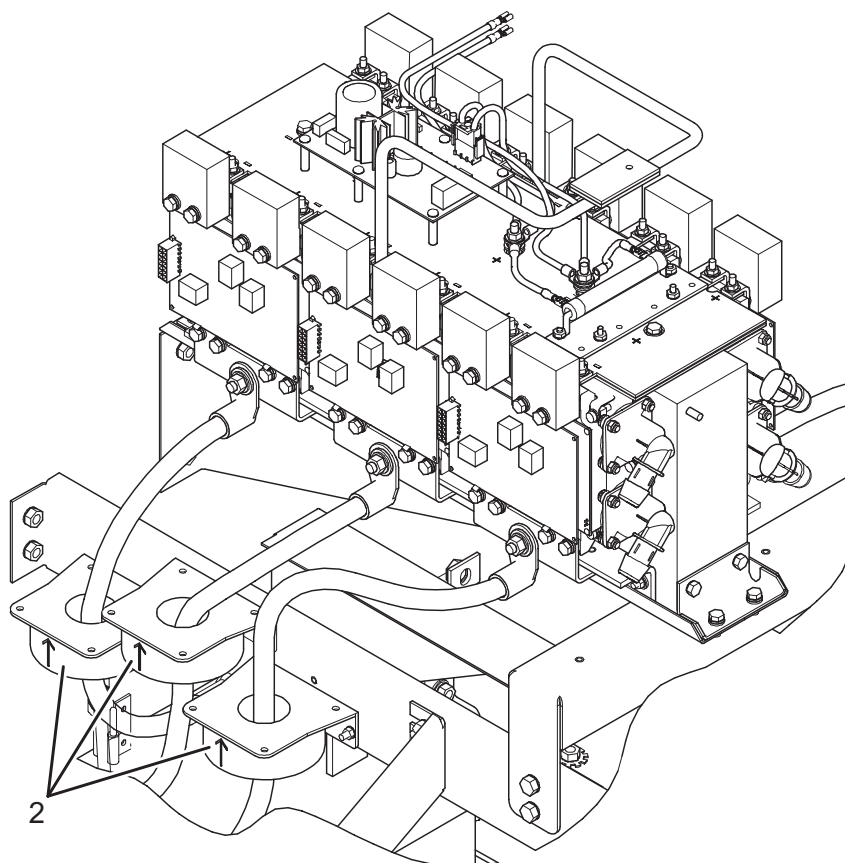
LD16521

490AMP VARIABLE SPEED DRIVE



LD16522

FIGURE 2 - DISCONNECT SWITCH (DS)



LD16523

FIGURE 3 - INPUT CURRENT TRANSDUCER (DCCT)

490AMP VARIABLE SPEED DRIVE

1

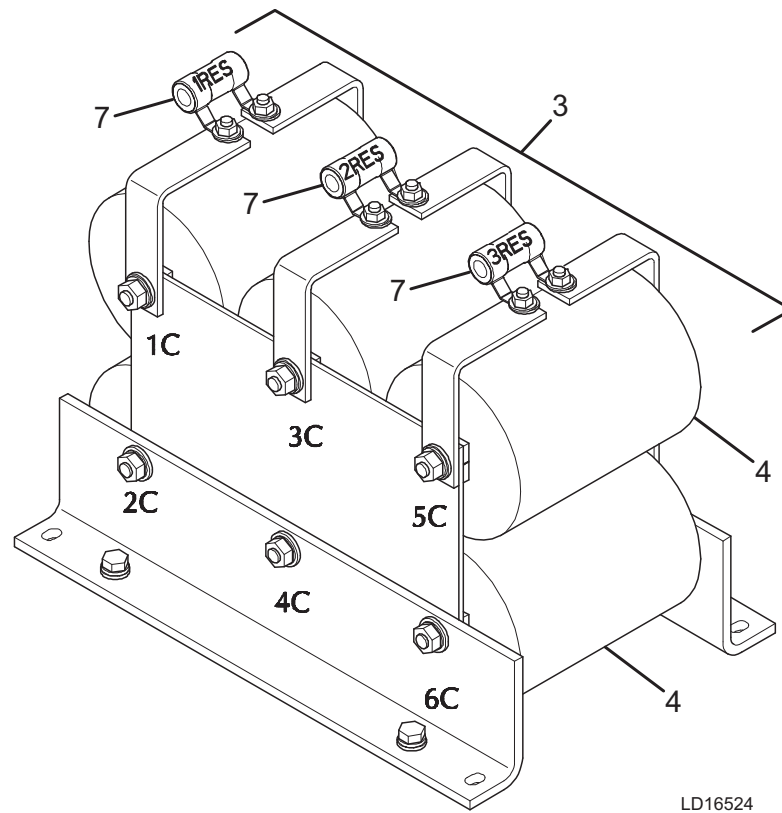


FIGURE 4 - INPUT FILTER CAPACITOR ASSEMBLY

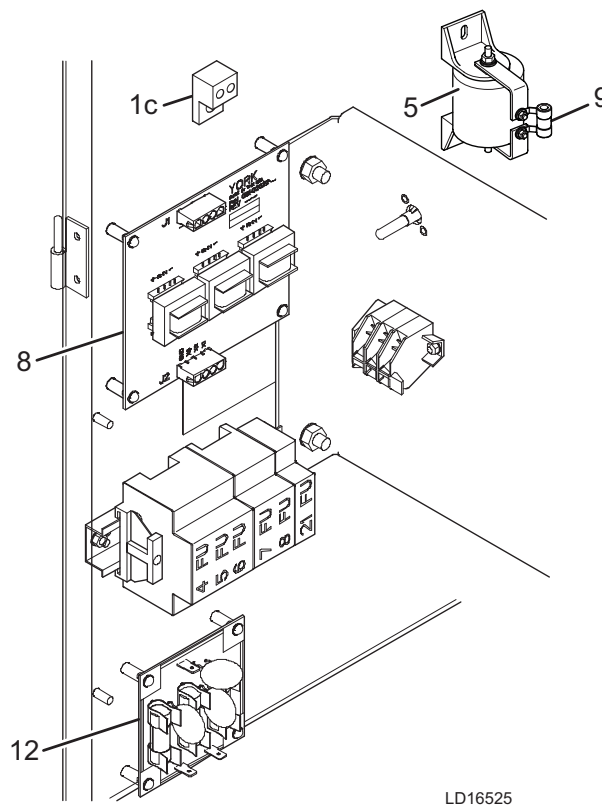


FIGURE 5 - VOLTAGE ISOLATION BOARD

490AMP VARIABLE SPEED DRIVE

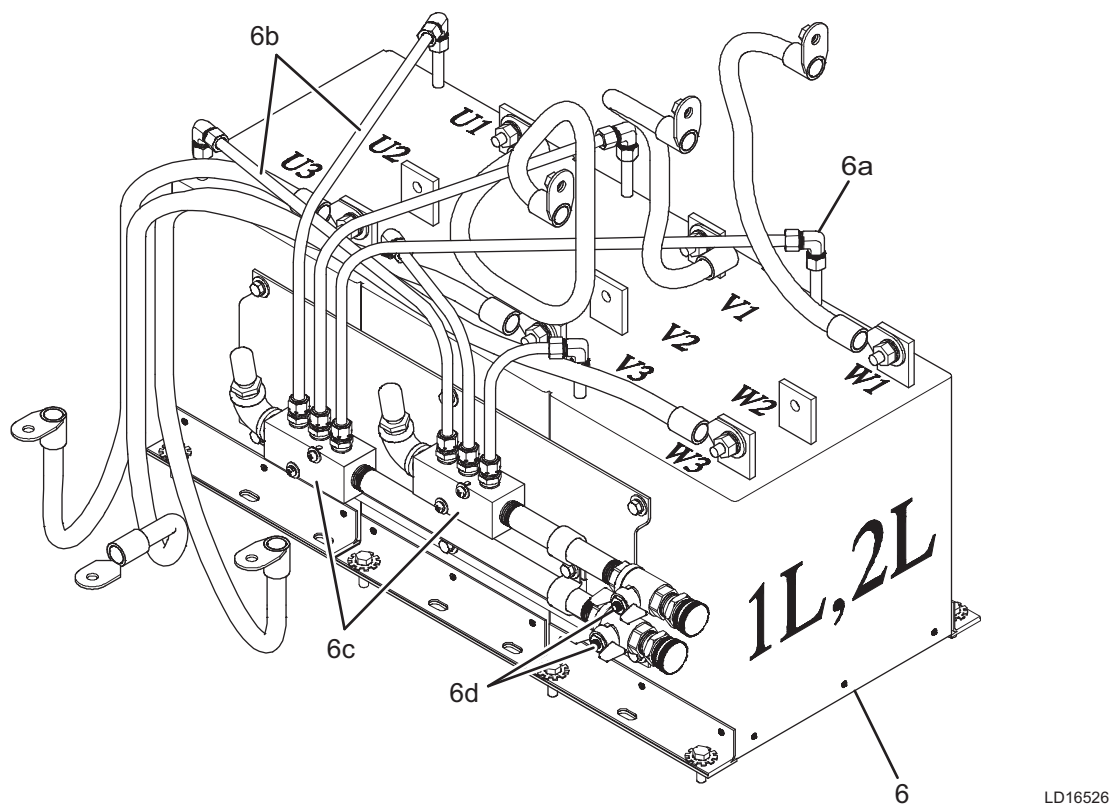


FIGURE 6 - INPUT INDUCTOR (L1, L2)

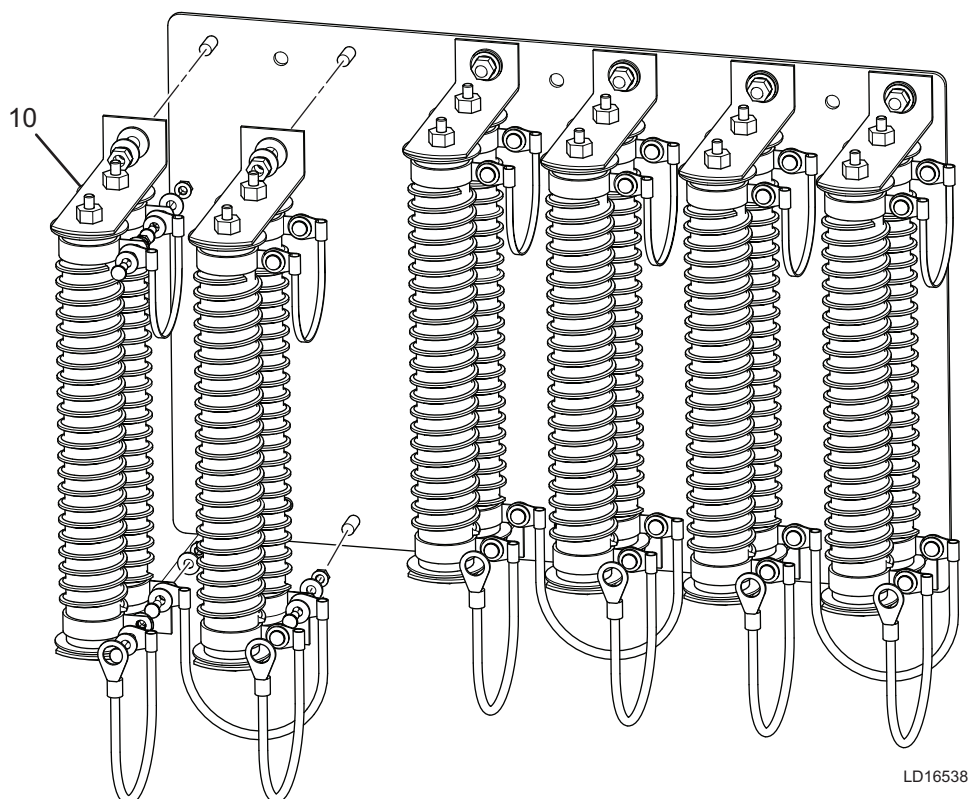


FIGURE 7 - RESISTOR ASSEMBLY

490AMP VARIABLE SPEED DRIVE

TABLE 2 - FUSE COMPONENTS (490 AMPS)

ITEM NUMBER	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
1	Fuse 1 AMP (4FU-6FU / 22FU-24FU)	025-43326-000	740259	6	8
2	Fuse 5 AMP (9FU)	025-35901-000	739233	1	8, 9
2	Fuse 5 AMP (16-19FU) Voltage Transient Board Fuses	025-38523-000	739590	3	8, 9
3	Fuse 6 AMP (14FU)	025-35902-000	264466	1	9
4	Fuse 9 AMP (15FU)	025-35904-000	839739	1	9
5	Fuse 10 AMP (25FU and 26FU)	025-43907-000	740371	2	9
6	Fuse 10 AMP (460VAC) (7FU - 10FU)	025-35905-000	739234	6	8
6	Fuse 12 AMP (400-415VAC) (7FU / 8FU)	025-35906-000	739234	2	8
7	Fuse 20 AMP (21FU)	025-35908-000	117823	1	8
8	1 Pole Fuse Holder (14FU / 15FU / 19FU / 21FU)	025-39951-000	359985	4	8, 9
9	2 Pole Fuse Holder (25FU / 26FU)	025-43899-000	740368	1	9
10	2 Pole Fuse Holder (7FU / 8FU)	025-44520-000	740518	1	8
11	3 Pole Fuse Holder (4FU / 5FU / 6FU)	025-39952-000	343433	2	8
12	Input Power Fuse Kit (All 3, 1FU-3FU)	371-05614-601	-	3	10
13	Fuse Clamp End	025-29189-000	-	-	8, 9
14	Terminal Block Ground	025-35619-000	-	-	9

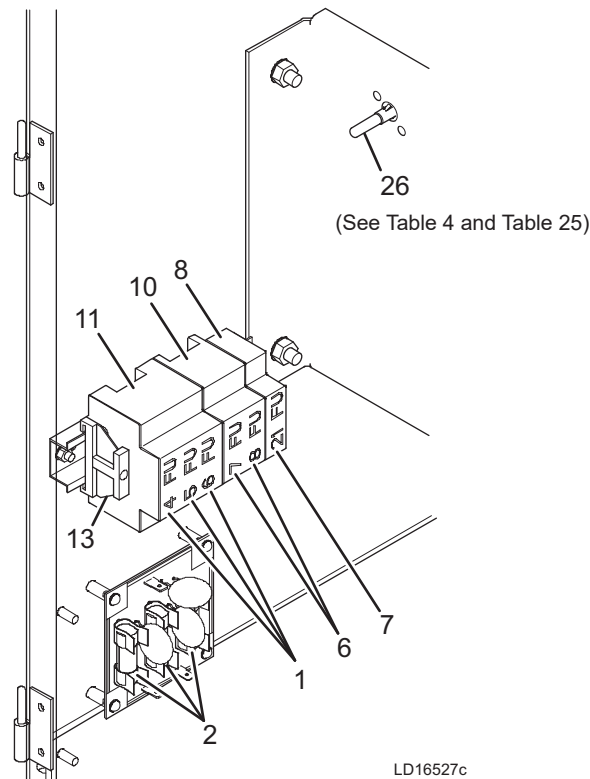


FIGURE 8 - FUSES AND FUSE HOLDERS

490AMP VARIABLE SPEED DRIVE

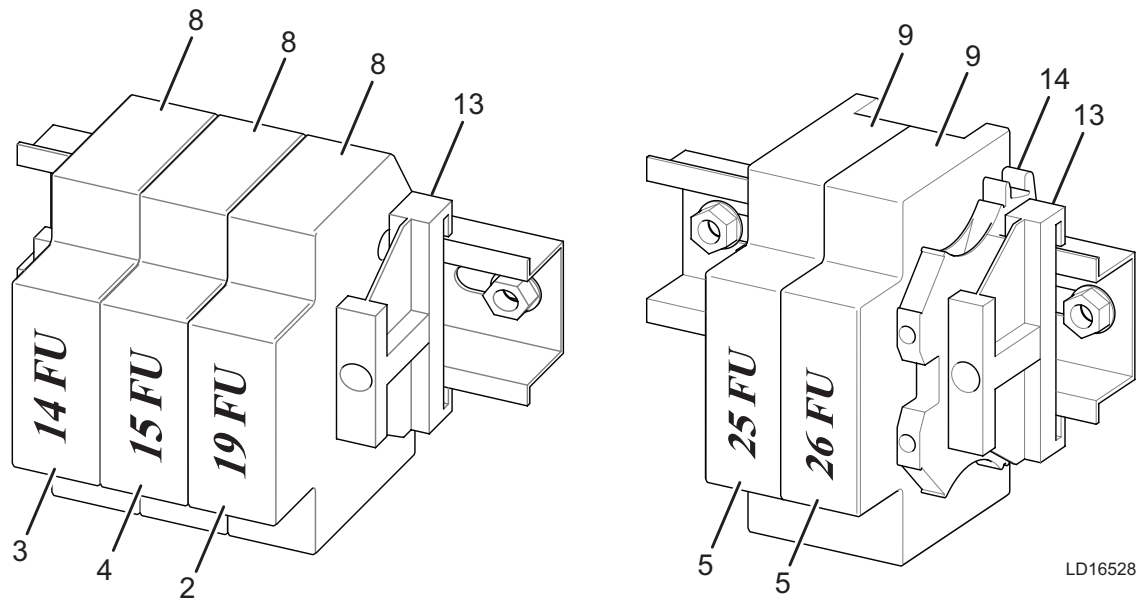


FIGURE 9 - FUSES AND FUSE HOLDERS

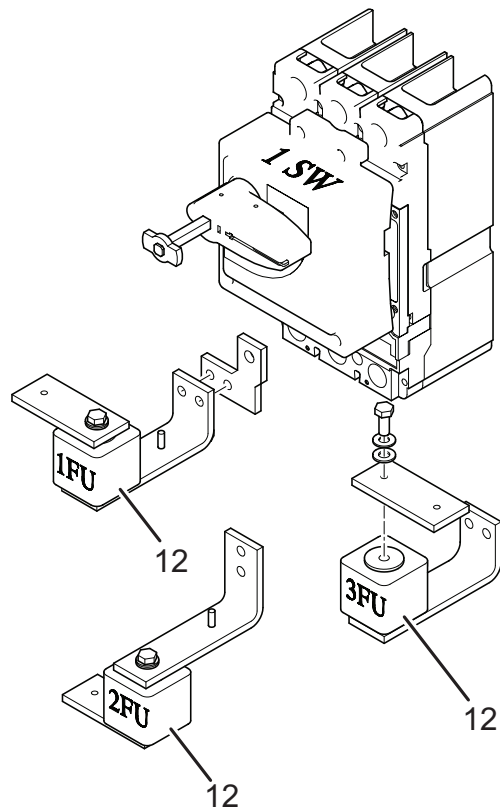


FIGURE 10 - INPUT POWER FUSES

LD16529

490AMP VARIABLE SPEED DRIVE

TABLE 3 - DOOR COMPONENTS (490 AMPS)

ITEM NUMBER	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
1	Circuit Breaker Door Mounting Kit	024-35429-000	736285	1	11
2	Disconnect Switch Handle	024-36614-000	736390	1	11
3	Door Ground Strap	525-32508-001	806677		11
4	Door Kit Left, 60Hz (Including all labels and latches)	371-05614-651	-	1	11
4	Door Kit Left, 50Hz w/ EMC (Including all labels and latches)	371-05614-653	-	1	11
5	Door Kit Right, 60Hz (Including all labels and latches)	371-05614-656	-	1	*
5	Door Kit Right, 50Hz w/ EMC (Including all labels and latches)	371-05614-658	-	1	*
6	Door Latch	029-25614-000	743380	2	11
-	Door Stop	029-23420-000	119865	1	*
-	Door Stop Mounting Plate	371-05614-553	840001	1	*
7	Label Front Door JCI Logo	035-23036-000	745608	1	11

NOTE: Items with an * are NOT represented.

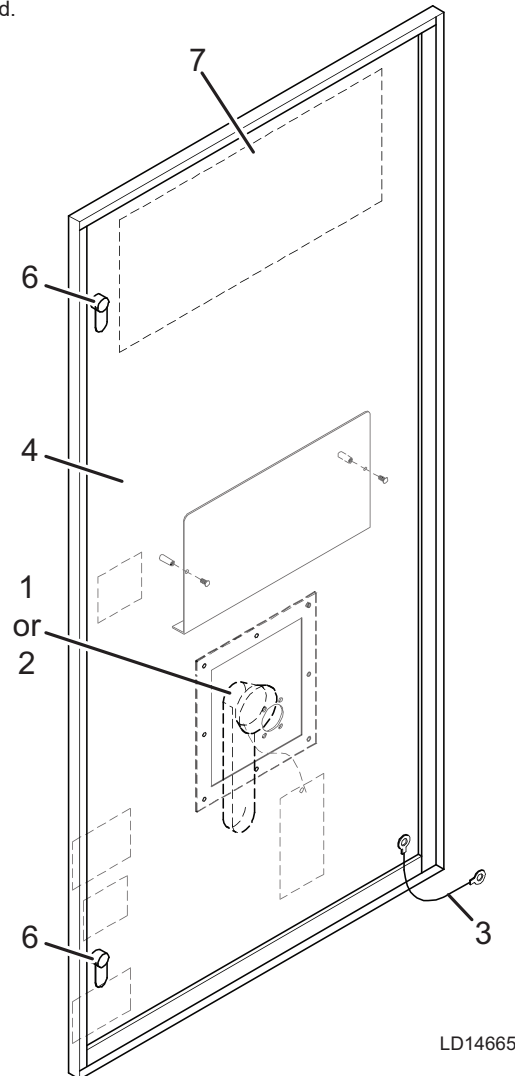


FIGURE 11 - DOOR COMPONENTS

490AMP VARIABLE SPEED DRIVE

TABLE 4 - COOLING SYSTEM COMPONENTS (490 AMPS)

ITEM NUMBER	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
1	Adapter, Conduit 90° Angle 1/2"	025-31316-000	839778	2	13
2	Conduit, Pump Power	025-31302-000	618155	1.2'	13
3	Coolant Drain Valve	022-12207-000	839729	1	13
3a	Coolant Drain Valve Cap	023-25526-000	839731	1	13
4	Coolant Hose Barb Straight Kit (hose barbs and hose)	371-05571-626	-	1	*
5	Coolant Hose Barb Elbow Kit (hose barbs and hose)	371-05571-631	-	1	*
6	Coolant Hose Clamp 1"	023-08856-000	617439	22	12
7	Coolant Hose Clamp 2"	021-32226-000	730939	4	13
8	Coolant Hose External 1-1/2"	028-16373-000	742214	18'	13
9	Coolant Hose Internal 3/4" ID by the foot	028-16379-000	742219	-	12
10	Coolant Manifold Kit Inlet	371-05614-636	-	1	12
11	Coolant Manifold Kit Outlet	371-05614-641	-	1	12
11a	Coolant Manifold Clamp	028-16554-000	839771	2	12
12	Coolant Pump	026-33890-000	3590	1	13
13	Coolant Reservoir Fill Plug	028-16378-000	742218	1	13
13a	Coolant Reservoir Hose Clamp	021-19150-000	564227	1	13
14	Coolant Reservoir 3" PVC with Fill Plug Kit	371-05614-671	-	1	13
15	Flow Restrictor	028-16620-000	839778	2	12
16	Inhibitor (per gallon)	013-04129-000	729086	5 gallon	*
17	Internal Cooling Fan	025-32557-000	738735	1	12
18	Internal Cooling Coil	026-46734-000	839767	1	12
19	Relay, Control Fan / Pump (1R)	024-30441-000	664298	1	*
20	Shell and Tube Heat Exchanger 150/300 PSI Condenser 3"	026-37572-000	104160	1	13
21	Shell and Tube Heat Exchanger Head Gaskets (set of two) 3"	371-03716-001	772263	1	*
26	Temperature Sensor with Connector	571-05182-283	807091	2	8

NOTE: Items with an * are NOT represented.

490AMP VARIABLE SPEED DRIVE

1

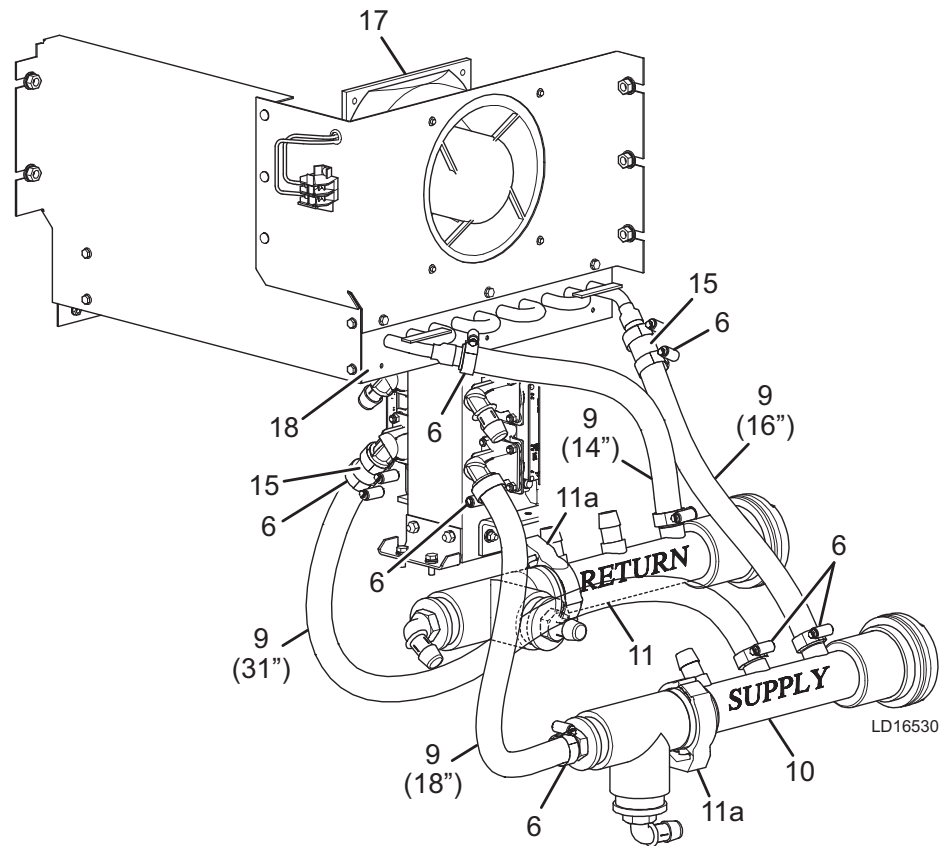


FIGURE 12 - COOLING SYSTEM COMPONENTS

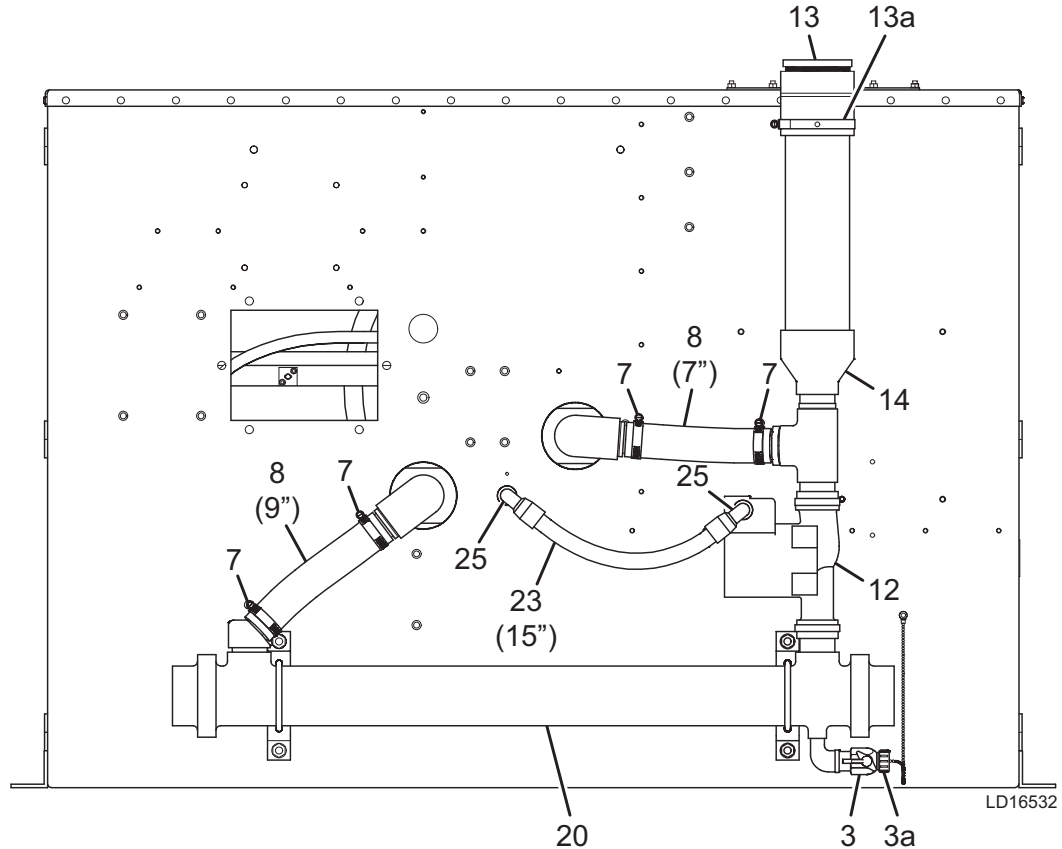
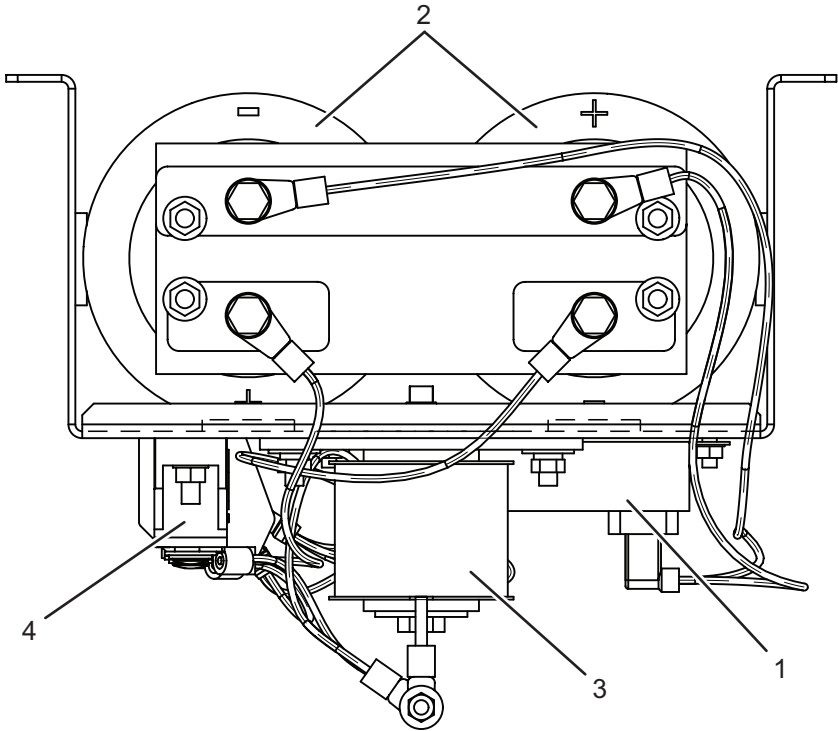


FIGURE 13 - COOLING SYSTEM COMPONENTS

490AMP VARIABLE SPEED DRIVE

TABLE 5 - MAGNET COMPONENTS

ITEM NUMBER	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
1	Output Bleeder Resistor	025-40408-000	739825		14
2	Output Capacitor	025-39573-000	739673		14
3	Output Inductor	025-45114-000	839764		14
4	Output Diode	031-01636-000	743789		14
-	Whole Assembly	371-05614-451	839982		*



LD17371

FIGURE 14 - MAGNET COMPONENTS

490AMP VARIABLE SPEED DRIVE

TABLE 6 - POWER ASSEMBLY COMPONENTS (490 AMPS)

ITEM NUMBER	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
1	Bus Bleeder Resistor Assembly (ea.)	371-06165-001	840018	1	15
2	Bus Plate Kit, Power Assembly	371-05904-601	-	1	15
3	Bus Snubber Capacitor (ea.)	025-42835-000	740149	12	15
4	Coolant Hose Barb on Power Assembly Kit	071-05526-606	749281	4	15
5a	IGBT Gate Driver Board (Rectifier)	031-02901-003	839194	3	15
5b	IGBT Gate Driver Board (Inverter)	031-02901-004	839195	3	15
6	Inverter Power Module Kit (Complete)	371-05904-611	-	1	*
	Inverter Power Module Kit (1 phase)	371-05904-608	-	-	*
	Inverter Power Module Kit (2 phase)	371-05904-609	-	-	*
7	Power Supply Board	031-02903-001	839199	1	15
7a	Power Supply Daughter Board	031-02905-000	839202	1	15
9a	Power Unit Mounting Foot, Rear	071-05508-310	749268	1	15
9b	Power Unit Mounting Foot, Front	071-05508-312	749269	1	15
10	Rectifier Power Module Kit (Complete)	371-05904-616	-	1	*
	Rectifier Power Module Kit (1 phase)	371-05904-613	-	-	*
	Rectifier Power Module Kit (2 phase)	371-05904-614	-	-	*
11	VSD Rectifier/Inverter Power Unit Complete Kit (IGBT, Capacitors, Heatsink, Coolant)	371-05904-621	-	1	*
12	Strap, Wiring Ground	571-05526-241	807110	1	15

NOTE: Items with an * are NOT represented.

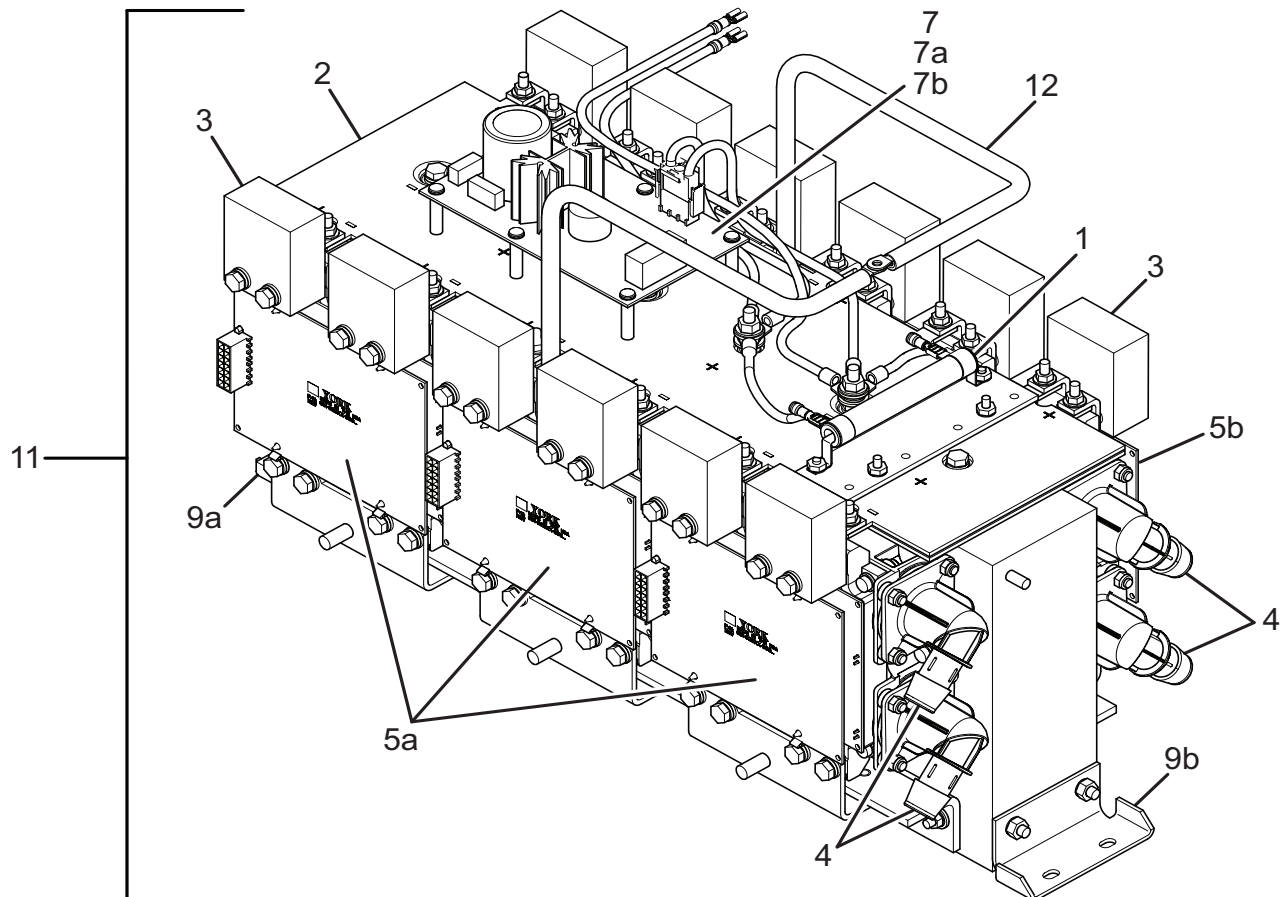


FIGURE 15 - POWER ASSEMBLY COMPONENTS

LD16533

490AMP VARIABLE SPEED DRIVE

TABLE 7 - OUTPUT COMPONENTS (490 AMPS)

ITEM NUMBER	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
1	Motor Connection Plate	371-05614-357	839971	1	16
2	Output Current Transducer Kit (w/ Bracket)	371-05614-561	873890	3	16
3	Output Harmonic Filter Capacitor	025-43983-000	-	12	17
4	Output Harmonic Filter Replacement Kit	325-44864-601	-	1	17
	Output Harmonic Filter Assembly	025-44864-000	740611	1	17
4a	Coolant Hose Elbows (used on Inductors)	023-25635-000			17
4b	Coolant Hose (used on Inductors)	028-16716-000			17
4c	Coolant Manifold (used on Inductors)	325-44864-603			17
4d	Coolant Valves (used on Inductors)	022-12389-000			17
7	Output Voltage Isolator Board	031-02022-001	743845	1	18
8	Output Bleeder Resistor (MBC)	025-45189-000	839766	4	*
9	Output Capacitor (MBC)	025-39573-000	739673	2	*
10	Output Inductor (MBC)	025-45114-000	839764	1	*
11	Output Diode (MBC)	031-01636-000	743789	1	*

NOTE: Items with an * are NOT represented.

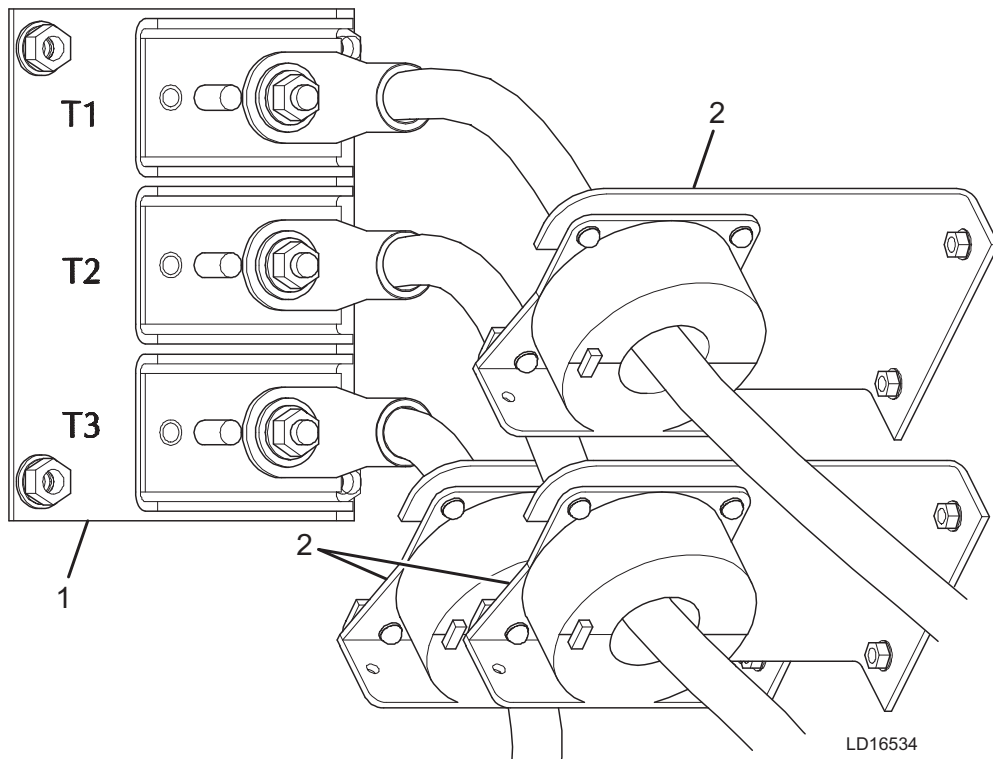


FIGURE 16 - OUTPUT COMPONENTS

490AMP VARIABLE SPEED DRIVE

1

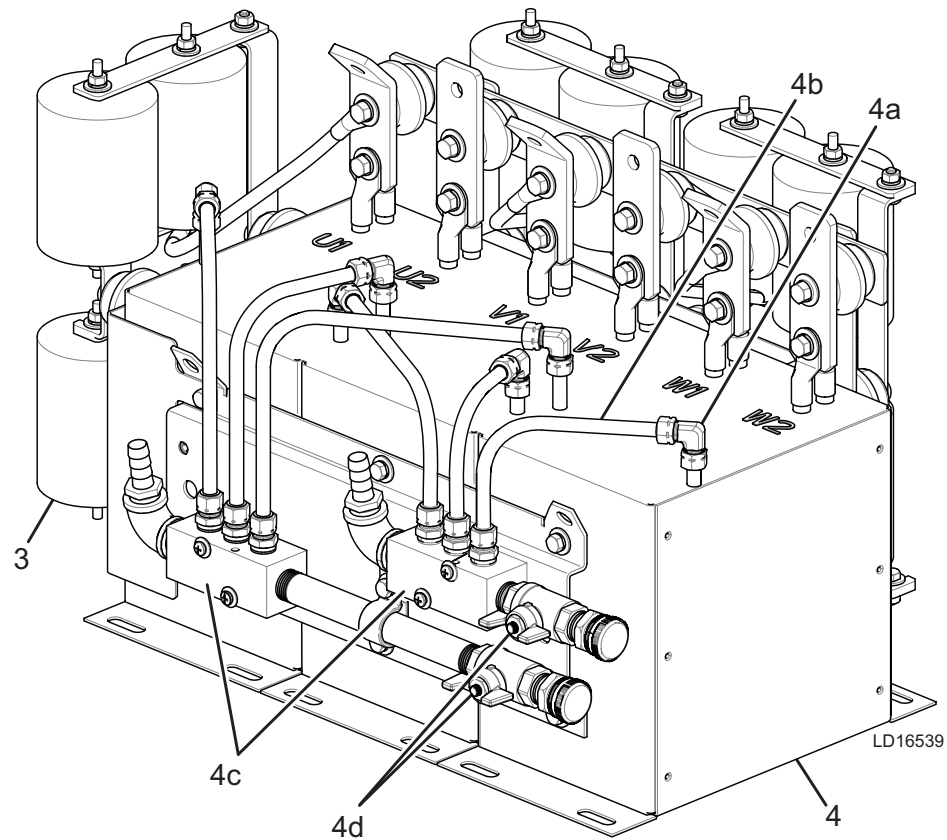


FIGURE 17 - HARMONIC FILTER

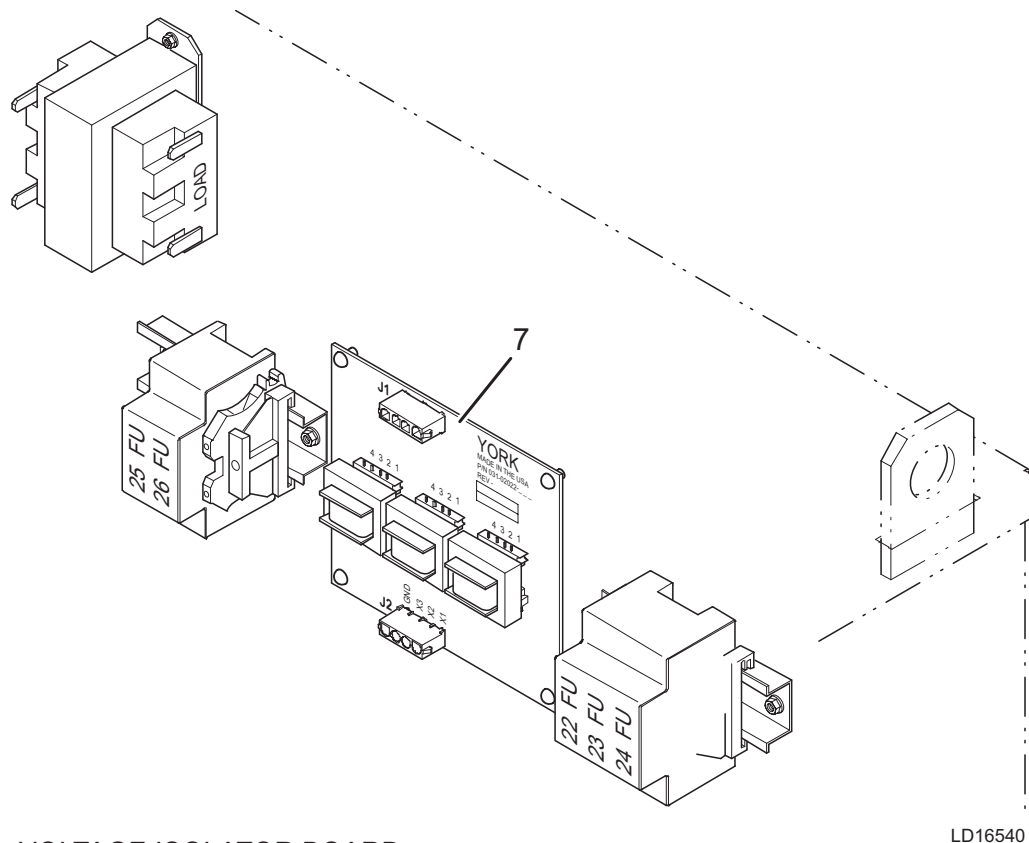


FIGURE 18 - VOLTAGE ISOLATOR BOARD

490AMP VARIABLE SPEED DRIVE

TABLE 8 - DRIVE LOGIC BOARD AND COMPONENTS (490 AMPS)

ITEM NUMBER	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
1	PROM Chip U35 (for 031-02911-003 board) <i>(Both chips must be ordered together)</i>	031-03048-001	744215	1	19
2	PROM Chip U38 (for 031-02911-003 board) <i>(Both chips must be ordered together)</i>	031-03049-001	744216	1	19
3	VSD Logic Board	031-02911-003	839782	1	19
	VSD Logic Board Kit (includes all software)	331-02911-603	1053043	1	19
4	U66 485 Communications Driver	031-02074-000	743866	1	19



*PROM Chips U35 and
U38 must be ordered
as a set.*

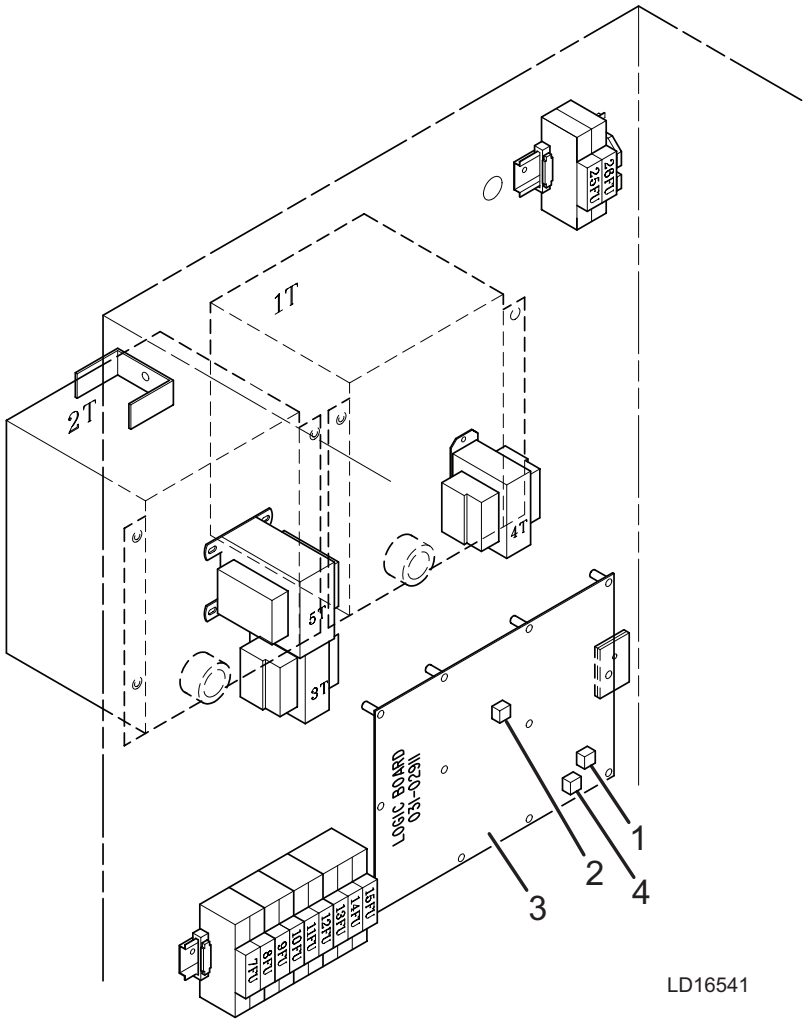
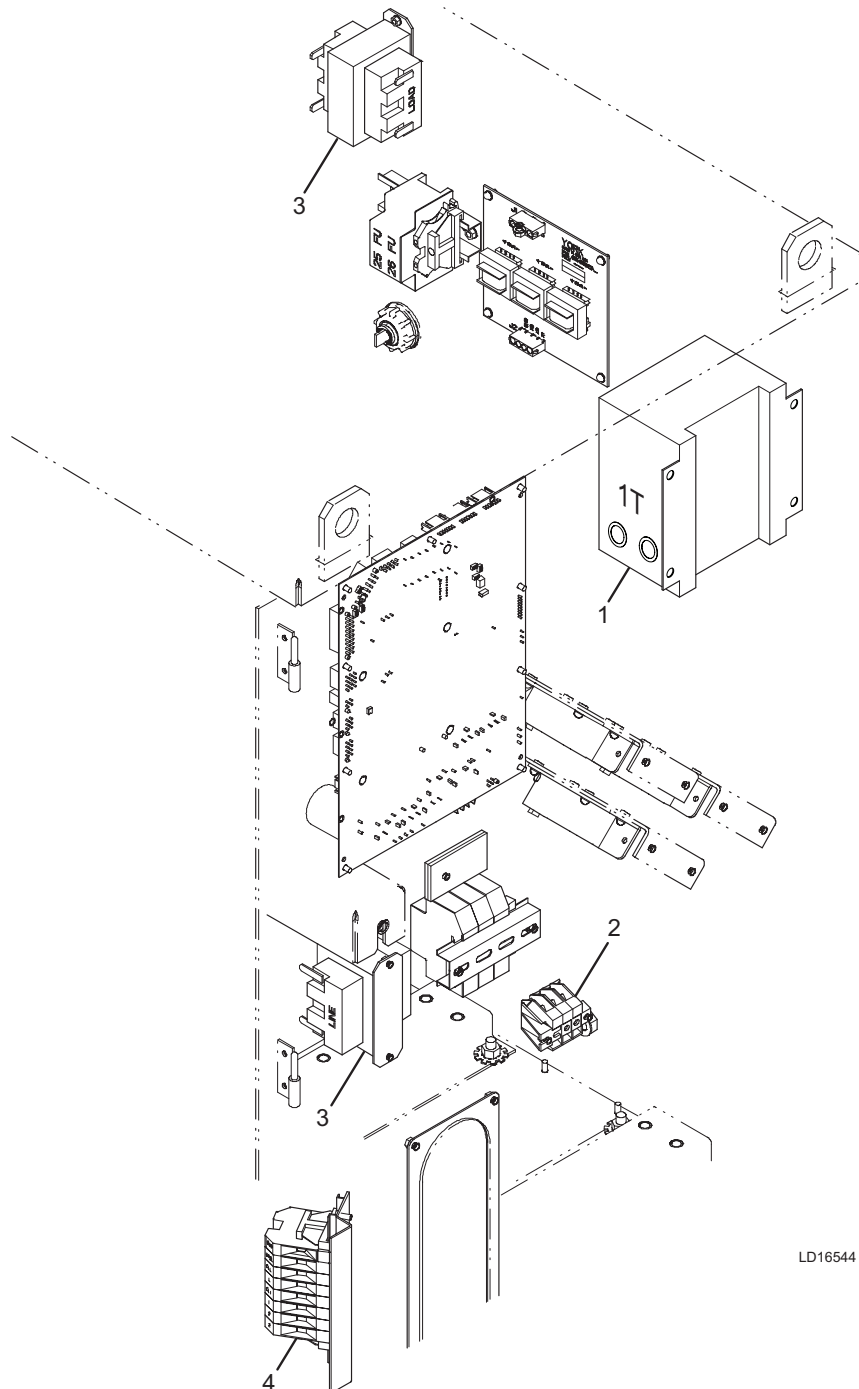


FIGURE 19 - DRIVE LOGIC BOARD AND COMPONENTS

490AMP VARIABLE SPEED DRIVE

TABLE 9 - MISCELLANEOUS COMPONENTS (490 AMPS)

ITEM NUMBER	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
1	Control Transformer, 240/480 VAC, 2 KVA	025-44858-000	839757	1	20
1	Control Transformer, 380/400/415 VAC, 2 KVA	025-44972-000	839760	1	20
2	Terminal Block, 3-pole	025-44853-003	839753	1	20
3	Transformer, 24 VAC, 75 VA	025-27911-000	1312	2	20
4	Terminal Block, 8-pole	025-45041-000	839762	1	20



LD16544

FIGURE 20 - MISCELLANEOUS COMPONENTS

490AMP VARIABLE SPEED DRIVE

TABLE 10 - WIRING HARNESSES AND CONNECTORS (490 AMPS)

BOARD NAME	BOARD PART NUMBER	POSITION	HOUSING PART NUMBER (SAP PART NUMBER)	PIN PART NUMBER (SAP PART NUMBER)
Line Voltage Isolator Board	031-02022-000	J1	025-19671-000 (737534)	025-22215-000 (62701)
Line Voltage Isolator Board	031-02022-000	J2	025-21417-000 (737658)	025-22215-000 (62701)
Output Voltage Isolator Board	031-02022-001	J1	025-21417-000 (737658)	025-22215-000 (62701)
Output Voltage Isolator Board	031-02022-001	J2	025-21417-000 (737658)	025-22215-000 (62701)
Input DC Current Transducer	-	-	025-43356-000 (740274)	025-43357-000 (740275)
Output DC Current Transducer	-	-	025-43356-000 (740274)	025-43357-000 (740275)
Output DC Current Transformer (complete cable)	-	-	571-05571-213 (807121)	-
VSD Logic Board	031-02911-003	J1	025-19672-000 (737535)	025-22215-000 (62701)
VSD Logic Board	031-02911-003	J2	025-42614-000 (740129)	025-28386-000 (737925)
VSD Logic Board	031-02911-003	J3	025-35964-000 (739253)	025-28386-000 (737925)
VSD Logic Board	031-02911-003	J4	025-28384-000 (737920)	025-28386-000 (737925)
VSD Logic Board	031-02911-003	J5	025-28959-000 (738246)	025-28386-000 (737925)
VSD Logic Board	031-02911-003	J6	025-28382-000 (737916)	025-28386-000 (737925)
VSD Logic Board	031-02911-003	J7	025-35966-000 (550505)	025-28386-000 (737925)
VSD Logic Board	031-02911-003	J8 - J13	Assembly # 571-05571-241	N/A
VSD Logic Board	031-02911-003	J14	025-28959-000 (738246)	025-28386-000 (737925)
VSD Logic Board	031-02911-003	J15	025-29130-000 (738262)	025-28386-000 (737925)
VSD Logic Board	031-02911-003	J17	025-21136-000 (737636)	025-19674-000 (737537)
VSD Logic Board	031-02911-003	J18	Assembly # 571-05571-227 (807122)	N/A
VSD Logic Board	031-02911-003	J19	025-21137-000 (737637)	025-19674-000 (737537)
VSD Logic Board	031-02911-003	J25	025-35966-000 (550505)	025-28386-000 (737925)
VSD Logic Board	031-02911-003	J36	Assembly # 571-05571-291 (807129)	N/A

490AMP VARIABLE SPEED DRIVE**TABLE 9 - WIRING HARNESSES AND CONNECTORS (490 AMPS) (CONT'D)**

BOARD NAME	BOARD PART NUMBER	POSITION	HOUSING PART NUMBER (SAP PART NUMBER)	PIN PART NUMBER (SAP PART NUMBER)
IGBT Gate Driver Board - Rectifier	031-02901-003	J1	025-42614-000 (740129)	025-28386-000 (737925)
IGBT Gate Driver Board - Inverter	031-02901-004	J1	025-42614-000 (740129)	025-28386-000 (737925)
Gate Driver Power Supply Board	031-02903-001	J1	025-29185-000 (62736)	025-19674-000 (737537)
Gate Driver Power Supply Board	031-02903-001	J2	025-44494-000 (839746)	025-28386-000 (737925)
Gate Driver Power Supply Board	031-02903-001	J7	025-19671-000 (737534)	025-11083-000 (737290)
Gate Driver Power Supply Board	031-02903-001	J8	025-19672-000 (737535)	025-22215-000 (62701)
Ambient Temperature at Sensor	-	-	025-29130-000 (738262)	025-28386-000 (737925)
Ambient Temperature at Cable	-	-	025-32564-000 (738737)	025-30999-000 (738540)
CPC Connectors				
Motor Monitoring	-	-	025-44974-000 (828162)	025-40463-000 (873883)
Magnet Bearing Controller	-	-	025-37873-000 (739490)	025-40463-000 (873883)
OptiView Communication	-	-	025-37873-000 (739490)	025-40463-000 (873883)
UPS	-	-	025-44974-000 (828162)	025-37875-000 (739491)
OptiView Power	-	-	025-44974-000 (828162)	025-37875-000 (739491)

Note: All items in Table 9 are NOT shown

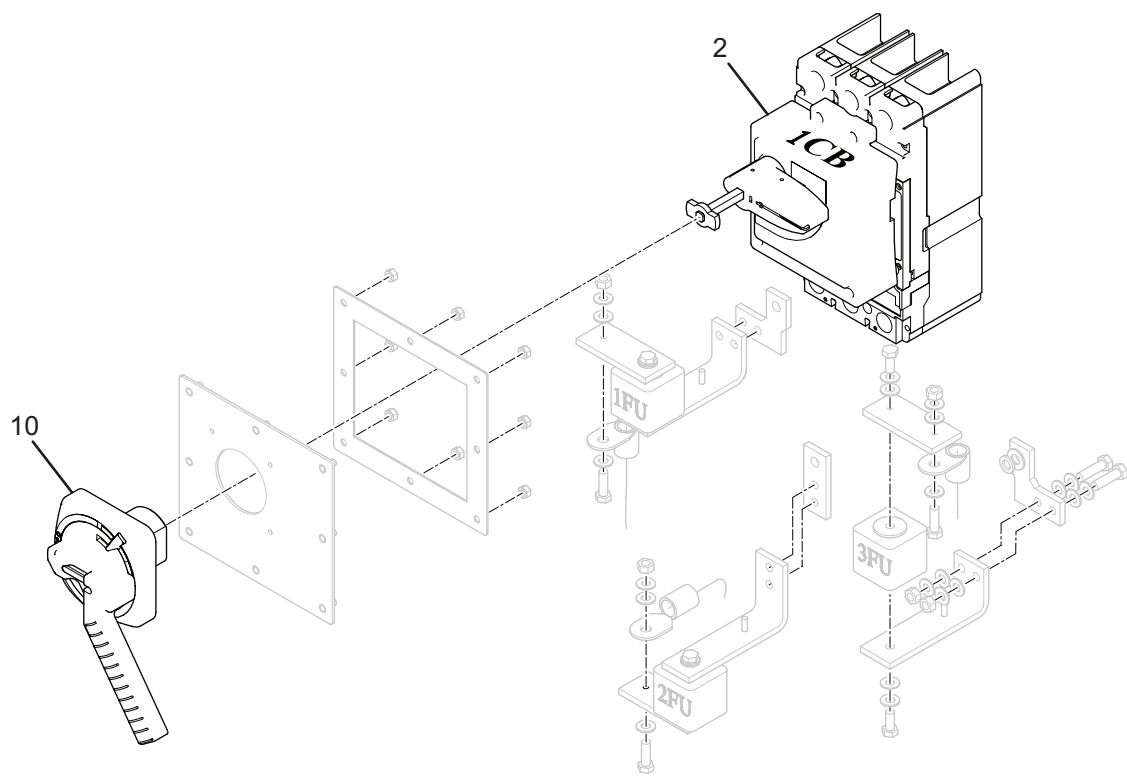
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SECTION 2 - 0490A AMP VARIABLE SPEED DRIVE

TABLE 11 - INPUT COMPONENTS

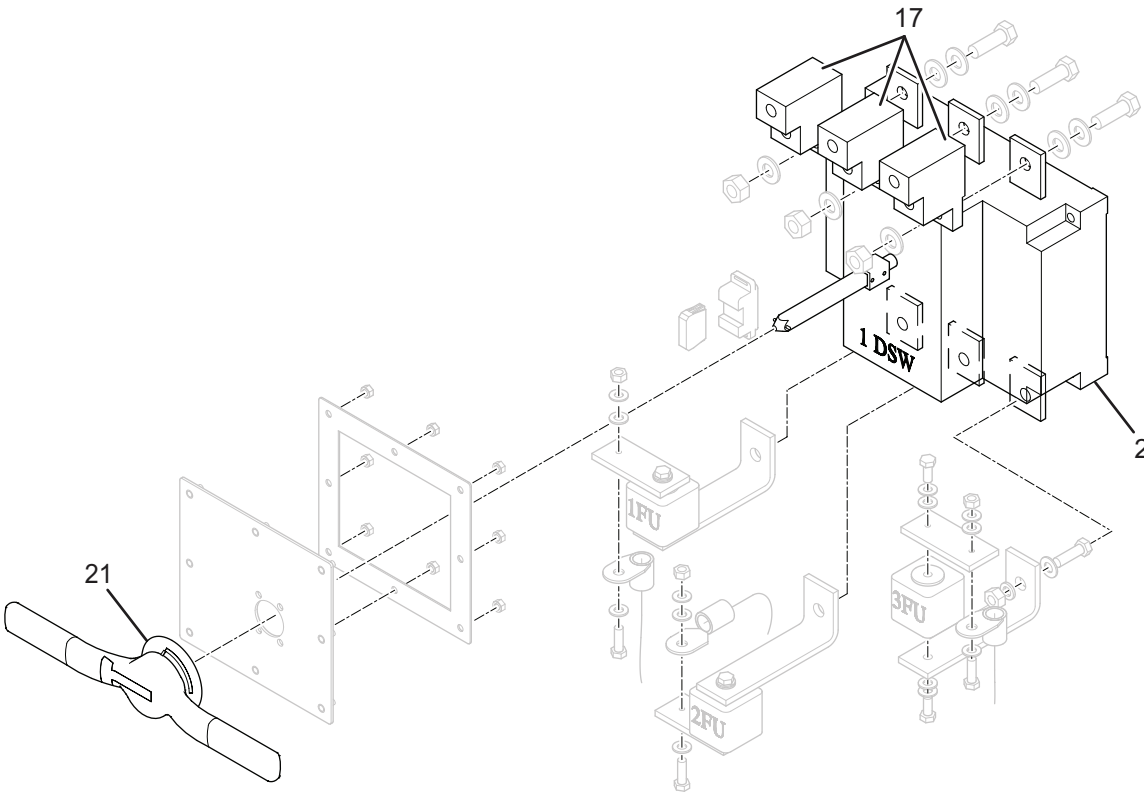
ITEM NUMBER	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
2	Circuit Breaker	224-39359-000	5170051	1	21
10	Circuit Breaker Handle	024-38125-000	1088783		
1	Common Mode Capacitor with Resistor	371-05614-531	839995	1	25
6	Capacitor used in Assembly 371-05614-531	025-43928-000	740379	1	25
7	Resistor used in Assembly 371-05614-531	025-42616-000	740130	1	25
29	Damping Resistor Kit (includes 2 resistors & bracket)	025-47571-000	5170004	3	25, 26
2	Disconnect Switch	024-37442-000	839733	1	22
21	Disconnect Switch Handle	024-36614-000	736390		
17	Disconnect Switch Lug Kit	025-42181-000	680131		
41	Ground Lug	025-35173-000	117722	1	25
20	Ground Lug	025-35619-000	739224	1	33
22	Input Current Transducer (DCCT)	025-42748-000	740133	3	23
9	Input Filter Assembly	371-05614-341	839967	1	24
1	Capacitor used in Assembly 371-05614-341	025-44490-000	839745	6	24
7	Resistor used in Assembly 371-05614-341	025-42616-000	740130	3	24
24	Input Line Inductor (1L) 165 LBS (Kit includes inhibitor, hose and wiring)	325-47565-601	N/A	1	23
25	Input Load Inductor (2L) 315 LBS. (Kit includes inhibitor, hose and wiring)	325-47564-601	N/A	1	23
40	Input Voltage Isolator Board	031-02022-000	65064	1	25
42	Pre-Charge Contactor	024-30985-000	735841	1	25
43	Pre-Charge Resistors	025-46179-000	1160773	3	23
26	Supply Contactor	024-38524-000	1160772	1	23
34	Supply Contactor Pilot Relay	024-30441-000	664298	1	31
15	Voltage Transient Board (Fuses are not included)	031-02453-000	743895	1	25
30	Wiring For Damping Resistors	571-06755-251	5170128	1	26

490A AMP VARIABLE SPEED DRIVE



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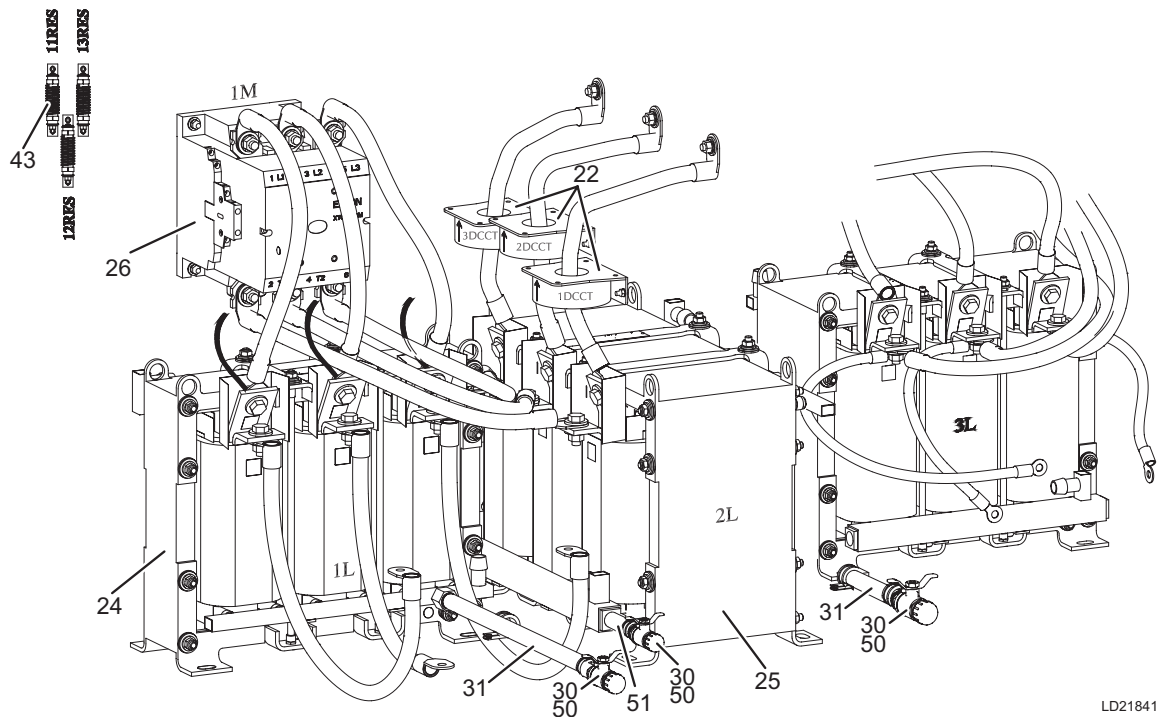
FIGURE 21 - CIRCUIT BREAKER (CB)



LD16522a

FIGURE 22 - DISCONNECT SWITCH (DS)

490A AMP VARIABLE SPEED DRIVE



For Items 30, 31, 50 & 51 See Table 14

FIGURE 23 - INPUT CURRENT TRANSDUCER (DCCT), INPUT INDUCTOR (L1, L2)

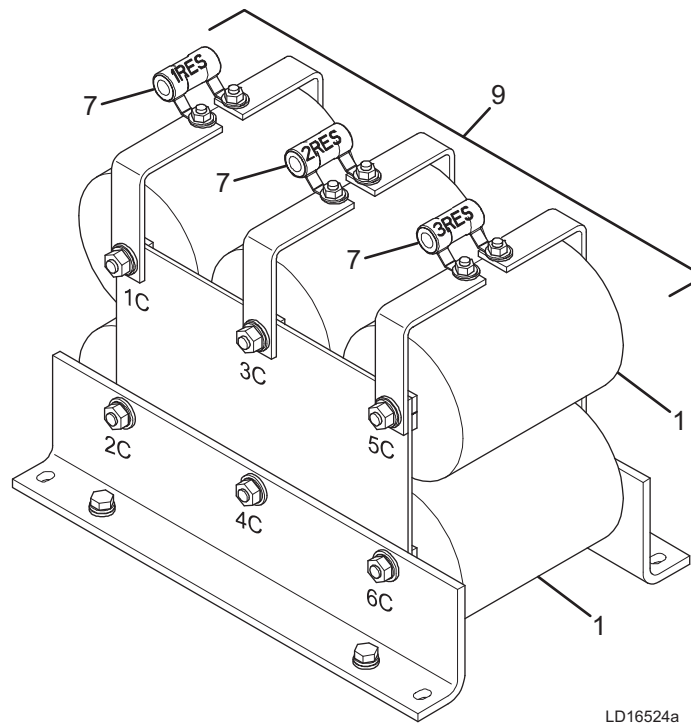


FIGURE 24 - INPUT FILTER CAPACITOR ASSEMBLY

490A AMP VARIABLE SPEED DRIVE

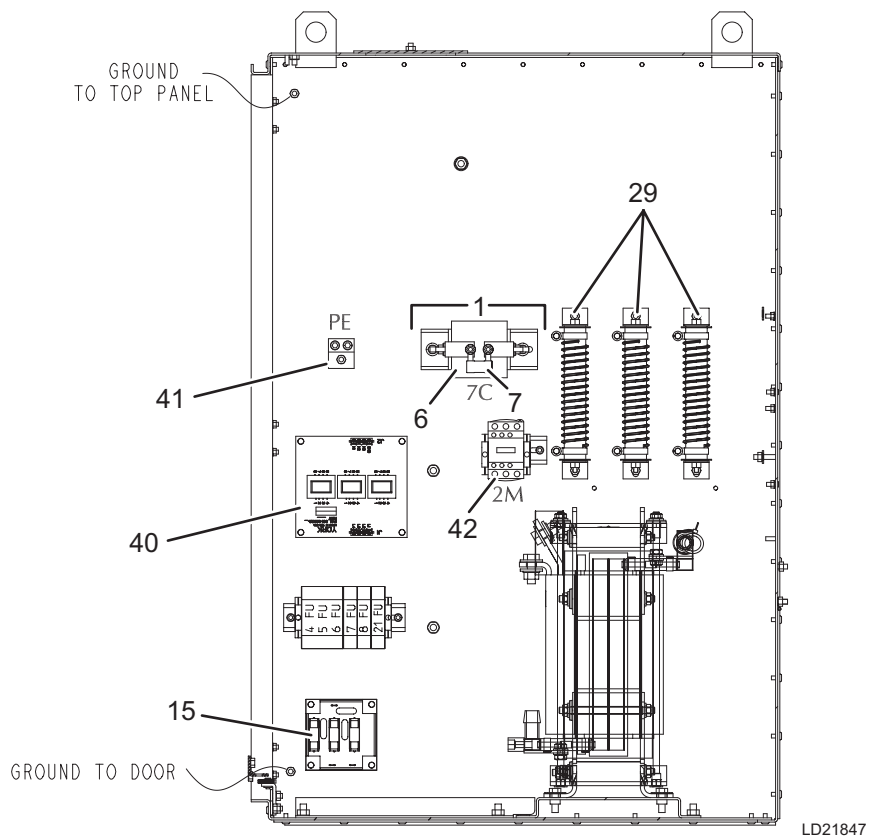


FIGURE 25 - LEFT SIDE OF VSD ENCLOSURE

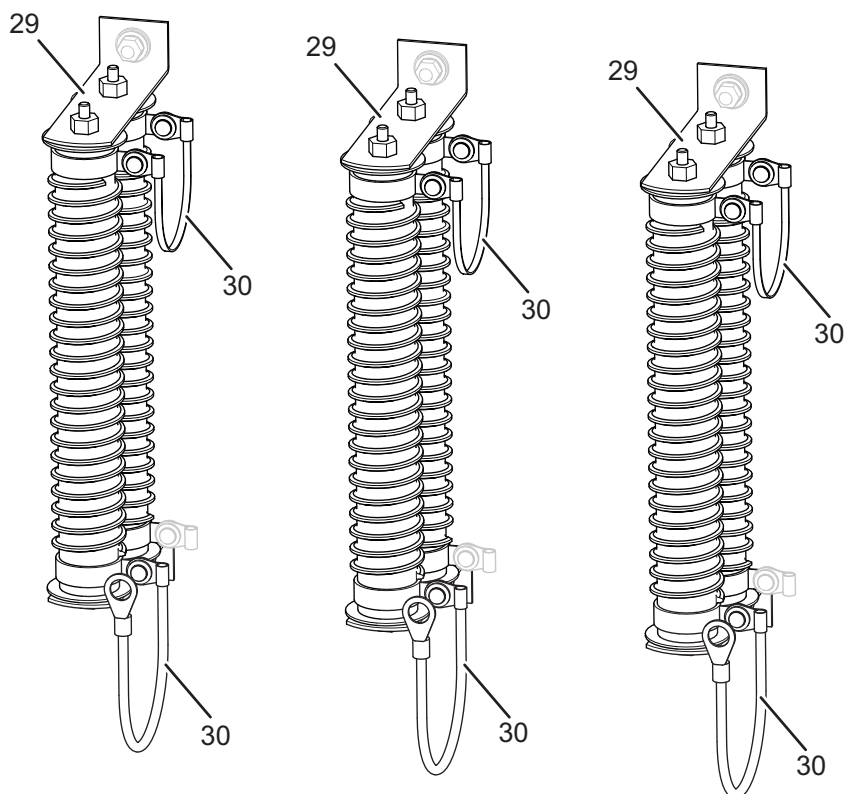


FIGURE 26 - DAMPING RESISTOR ASSEMBLY

490A AMP VARIABLE SPEED DRIVE

TABLE 12 - FUSE COMPONENTS

ITEM NUMBER	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
117	Fuse 1 AMP (4FU-6FU & 22FU-24FU)	025-43326-000	740259	6	27, 28
105	Fuse 5 AMP Voltage Transient Board Fuses (16FU-18FU)	025-38523-000	739590	3	27
119	Fuse 8 AMP (19FU)	025-30962-000	158041	1	28
122	Fuse 9 AMP (15FU)	025-35904-000	839739	1	28
10	Fuse 10 AMP (25 FU and 26FU)	025-35907-000	740371	2	33
16	Fuse 10 AMP (30FU)	025-35905-000	739234	1	28
123	Fuse 12 AMP (14FU)	025-35906-000	652698	1	28
12	Fuse 15 AMP (7FU & 8FU)	025-35907-000	117822	2	27
118	Fuse 20 AMP (21FU)	025-35908-000	117823	1	27
34	1 Pole Fuse Holder 30A	025-39951-000	359985	4	27, 28
33	2 Pole Fuse Holder 30A	025-44520-000	740518	1	27
35	2 Pole Fuse Holder	025-43899-000	740368	1	33
27	3 Pole Fuse Holder 30A	025-39952-000	343433	3	27, 28
4	Input Power Fuse (1FU-3FU set of three)	371-06755-601	N/A	1	29

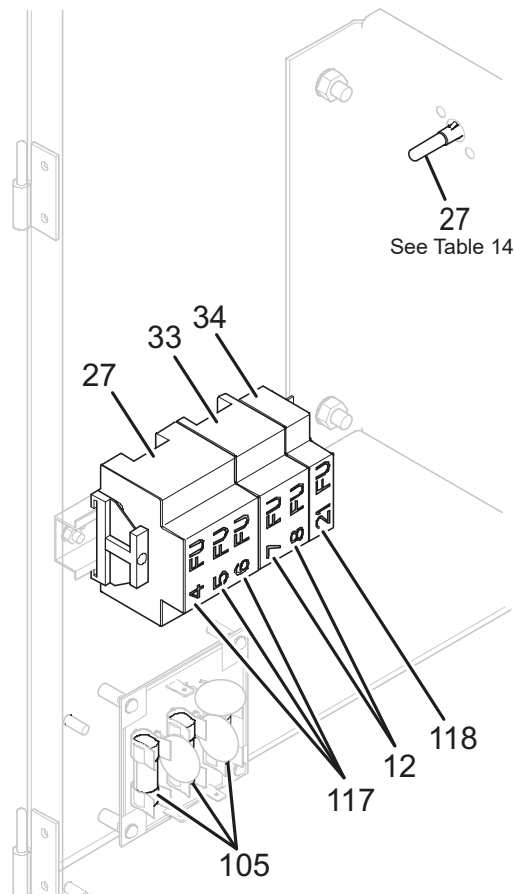


FIGURE 27 - FUSES AND FUSE HOLDERS (4FU-8FU, 16FU-18FU & 21FU)

490A AMP VARIABLE SPEED DRIVE

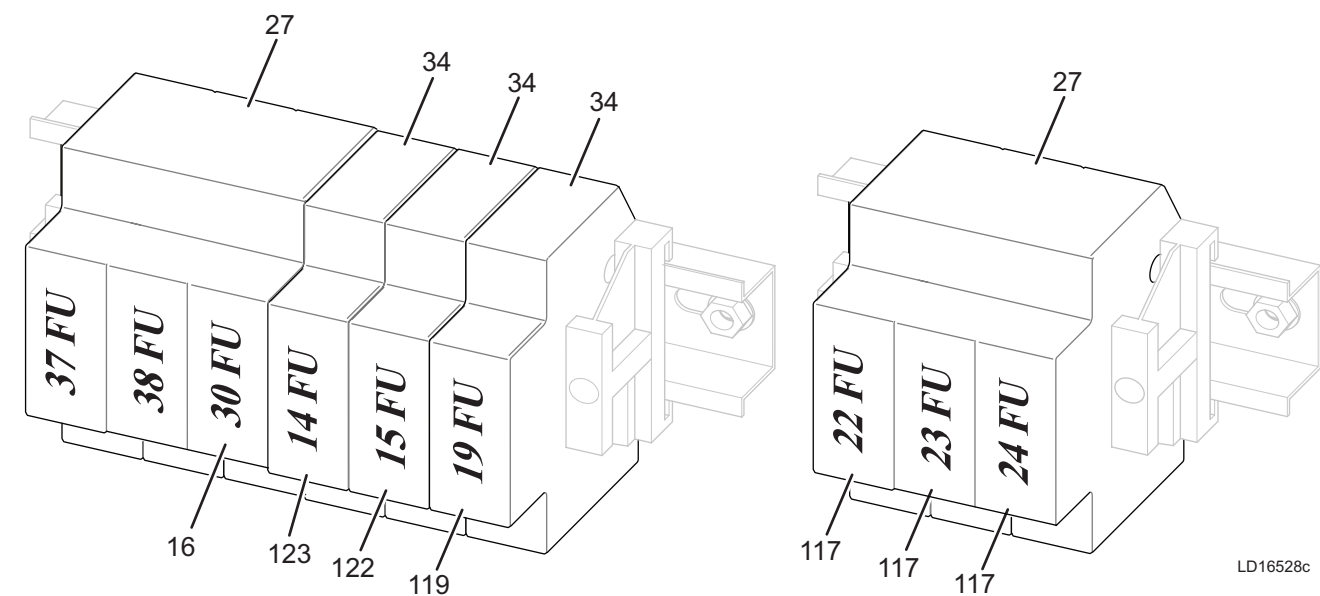


FIGURE 28 - FUSES AND FUSE HOLDERS (14FU, 15FU, 19FU, 22FU-24FU, 30FU, 37FU, & 38FU))

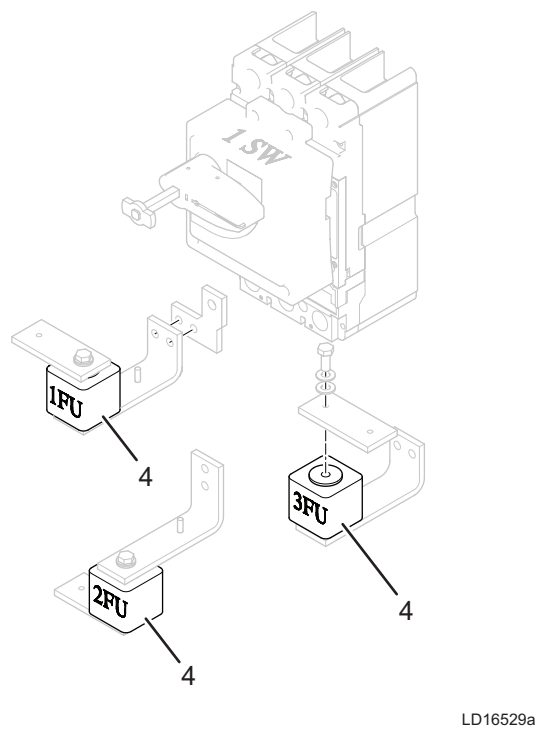
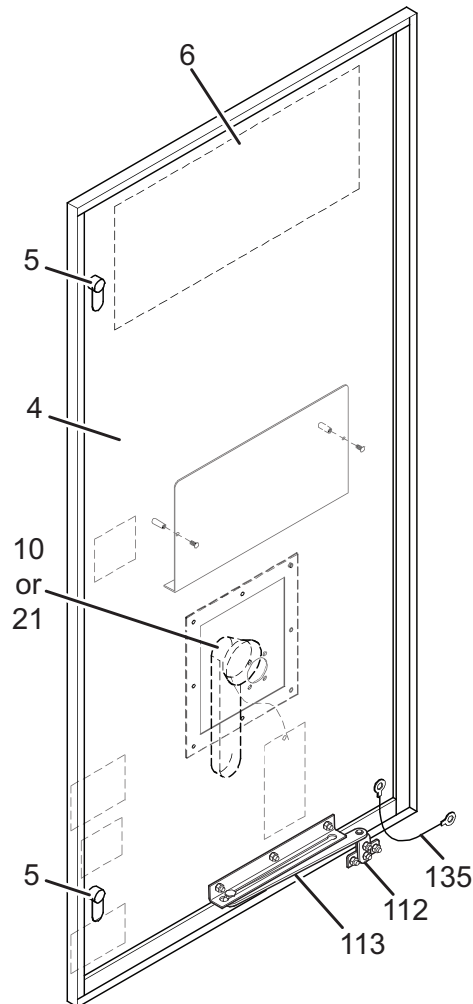


FIGURE 29 - INPUT POWER FUSES (1FU-3FU)

490A AMP VARIABLE SPEED DRIVE

TABLE 13 - DOOR COMPONENTS

ITEM NUMBER	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
135	Door Ground Strap	525-32508-001	806677	2	30
N/A	Door Kit Left for CE Requirements (Including all labels and latches)	371-06755-653	N/A	1	
N/A	Door Kit Left Without CE Requirements (Including all labels and latches)	371-06755-651	N/A	1	
N/A	Door Kit Right for CE Requirements (Including all labels and latches)	371-06172-658	N/A	1	
N/A	Door Kit Right Without CE Requirements (Including all labels and latches)	371-06755-656	N/A	1	
5	Door Latch	029-25614-000	743380	4	30
113	Door Stop	029-23420-000	119865	1	30
112	Door Stop Mounting Plate	371-05614-553	840001	1	30
6	Label Front Door JCI Logo	035-23036-000	745608	1	30



LD14665a

FIGURE 30 - DOOR COMPONENTS

490A AMP VARIABLE SPEED DRIVE

TABLE 14 - COOLING SYSTEM COMPONENTS

ITEM NUMBER	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
1	Coolant Drain Valve	022-10090-000	692414	1	32
2	Coolant Drain Valve Cap	023-25526-000	839731	1	32
3	Coolant Hose Barb Elbow	028-16005-000	742183	3	31
4	Coolant Hose Barb Straight	028-16001-000	742180	1	31
5	Coolant Hose Clamp 7/8"	021-17547-000	730066	4	32
2	Coolant Hose Clamp 1"	023-08856-000	617439	20	31,34
6	Coolant Hose Clamp 1 1/2"	021-32226-000	730939	4	32
8	Coolant Hose External 1/2" ID by the foot (To the power panel)	028-16692-000	864411		32
9	Coolant Hose Internal 3/4" ID by the foot	028-16768-000	1056103		31,34
7	Coolant Hose 1 1/2" ID by the foot	028-16373-000	742214		32
45	Coolant Manifold Return Kit	371-06755-641	N/A	1	31
15	Coolant Manifold Clamp Return	028-16554-000	839771	1	31
46	Coolant Manifold Supply Kit	371-06755-636	N/A	1	31
16	Coolant Manifold Clamp Supply	028-16632-000	913766	1	31
19	Coolant Pump	026-47723-000	1160779	1	32
20	Coolant Pump Flange Set	023-20283-000	733193	1	32
21	Coolant Reservoir Fill Plug	028-16378-000	742218	1	32
22	Coolant Reservoir Clamp	021-19150-000	564227	1	32
23	Coolant Reservoir 3" PVC with Fill Plug Kit	371-05614-671	1053053	1	32
25	Elbow 45° at Heat Exchanger	028-16559-000	839776	1	32
27	Enclosure Temperature Sensor with connector	571-05182-283	807091	2	27,37
N/A	Inhibitor	013-04129-000	729086	5	-
	Inductor Drain Valve Kit L1 (Valve, Nipple, Instructions)	325-47563-605	N/A	1	-
	Inductor Drain Valve Kit L2 (Valve, Nipple, Instructions)	325-47564-605	N/A	1	-
	Inductor Drain Valve Kit L3 (Valve, Nipple, Instructions)	325-47565-605	N/A	1	-
30	Inductor Drain Valve	022-13187-000	N/A	3	23
50	Inductor Drain Valve Cap	022-13187-002	5241701	3	23
31	Inductor Nipple 8 inch	023-26292-800	5169608	2	23
51	Inductor Nipple 1.125 inch	023-13880-006	5169606	1	23
30	Internal Cooling Fan	025-32557-000	738735	2	31
31	Internal Cooling Coil	026-49357-000	5170006	1	31
36	Power Panel Coolant Return	022-12386-000	913757	1	32
35	Power Panel Coolant Supply	022-12384-000	864392	1	32
34	Relay, Control Fan / Pump	024-30441-000	664298	1	31
42	Shell and Tube Heat Exchanger, 150/300 PSI with Head Gaskets (100 LBs.)	026-37572-000	104160	1	32
N/A	Shell and Tube Heat Exchanger Head Gaskets (set of two)	371-03716-001	772263	1	-
40	Shell and Tube Heat Exchanger Nipple	023-18209-000	60695	1	32

NOTE: Items with an * are NOT represented.

490A AMP VARIABLE SPEED DRIVE



FIGURE 31 - COOLING SYSTEM COMPONENTS

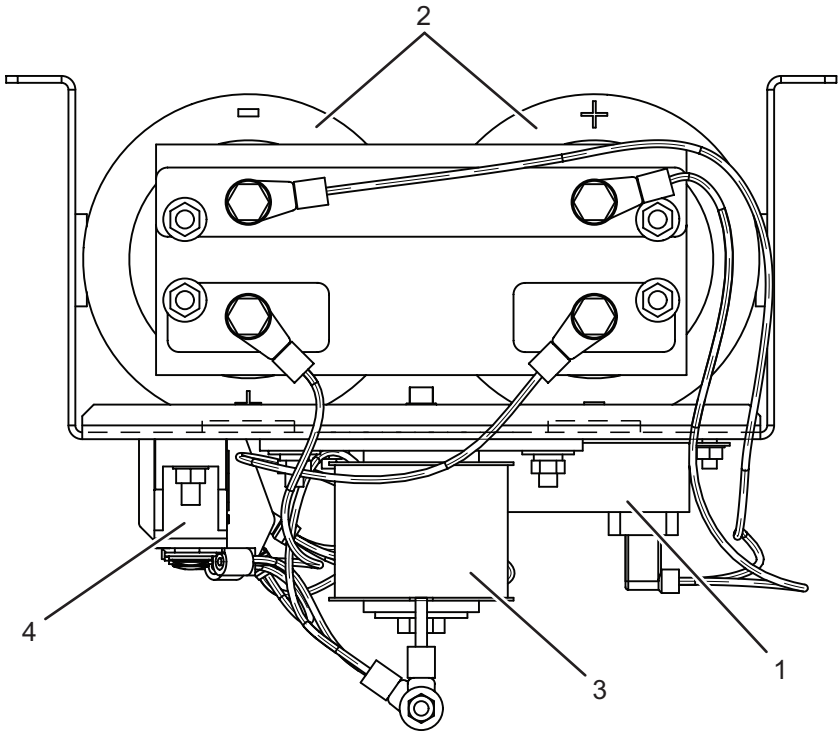


FIGURE 32 - COOLING SYSTEM COMPONENTS

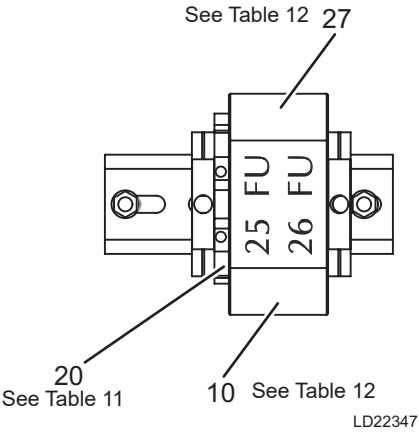
490A AMP VARIABLE SPEED DRIVE

TABLE 15 - AUXILLARY CAPACITOR ASSEMBLY

ITEM NUMBER	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
1	Bleeder Resistor	025-40408-000	739825	2	33
2	Capacitor	025-39573-000	739673	2	33
4	Diode	031-01636-000	743789	1	33
3	Inductor	025-45114-000	839764	1	33
5	Whole Assembly	371-05614-451	839982	1	33
	Wiring Harness	571-06755-263	5170130	1	



LD17371



LD22347

FIGURE 33 - AUXILIARY CAPACITOR ASSEMBLY

490A AMP VARIABLE SPEED DRIVE

TABLE 16 - POWER ASSEMBLY COMPONENTS

ITEM NUMBER	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
1	Bus Bleeder Resistor (ea.)	025-44011-000	839742	1	34
4	Bus Bleeder Resistor Assembly (ea.) includes resistor and mounting assembly	371-06165-001	840018	1	34
2	Bus Plate Assembly Kit (for power assembly)	371-06619-601	1110657	1	34
3	Bus Snubber Capacitor (ea.)	025-42835-000	740149	12	34
9	Gate Driver Board (for rectifier and inverter)	031-02901-004	839195	6	34
5	Inverter Power Module Kit (All three phases)	371-05904-611	1053057	1	34
6	Power Supply Board	031-02903-002	839200	1	34
7	Power Unit Mounting Foot Front	071-05508-312	749269	1	34
8	Power Unit Mounting Foot Rear	071-05508-310	749268	1	34
16	Rectifier Power Module Kit (All three phases)	371-06969-616	N/A	1	34
10	VSD Rectifier/Inverter Power Unit Complete Kit (105 LBs)	371-06969-621	N/A	1	34
11	Wiring Ground	571-05526-241	807110	2	34

NOTE: Items with an * are NOT represented.

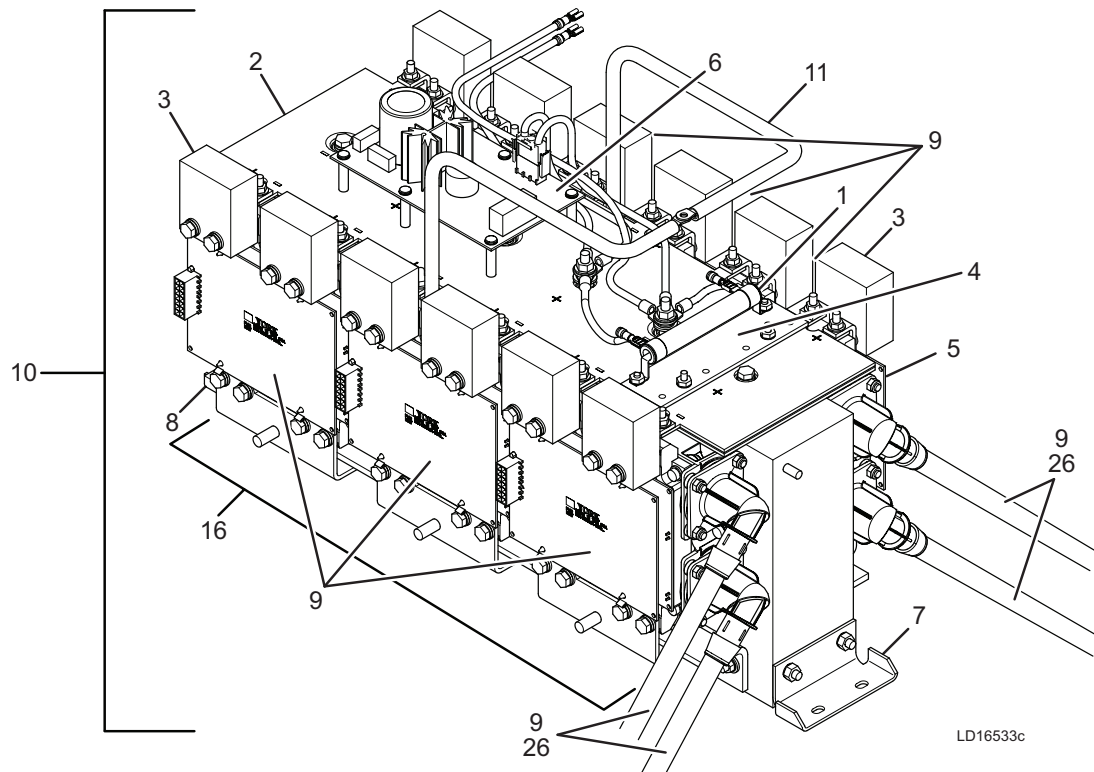


FIGURE 34 - POWER ASSEMBLY COMPONENTS

490A AMP VARIABLE SPEED DRIVE

TABLE 17 - OUTPUT COMPONENTS

ITEM NUMBER	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
1	Motor Terminal Assembly	371-05614-357	839971	1	35
2	Output Current Transducer (DCCT)	025-45590-000	1045992	3	35
4	Output Capacitor Assembly	371-06755-538	5170086	1	35
5	Output Capacitor (used in assembly 371-06755-538)	025-45337-000	913762	12	35
6	Output Capacitor Assembly Bleeder Resistor (used in assembly 371-06755-538)	025-42616-000	740130	3	35
7	Output Capacitor Assembly Power Wire (used in assembly 371-06755-538)	571-06755-238	5170126	1	35
8	Output Inductor (357 LBs.) Kit (inductor, hoses, wiring, and inhibitor)	325-47565-601	N/A	1	35
147	Output Power Wiring (Wiring between 3L & motor connection plate)	571-06755-236	5170124	1	35
5	Output Voltage Isolator Board	031-02022-001	743845	1	37

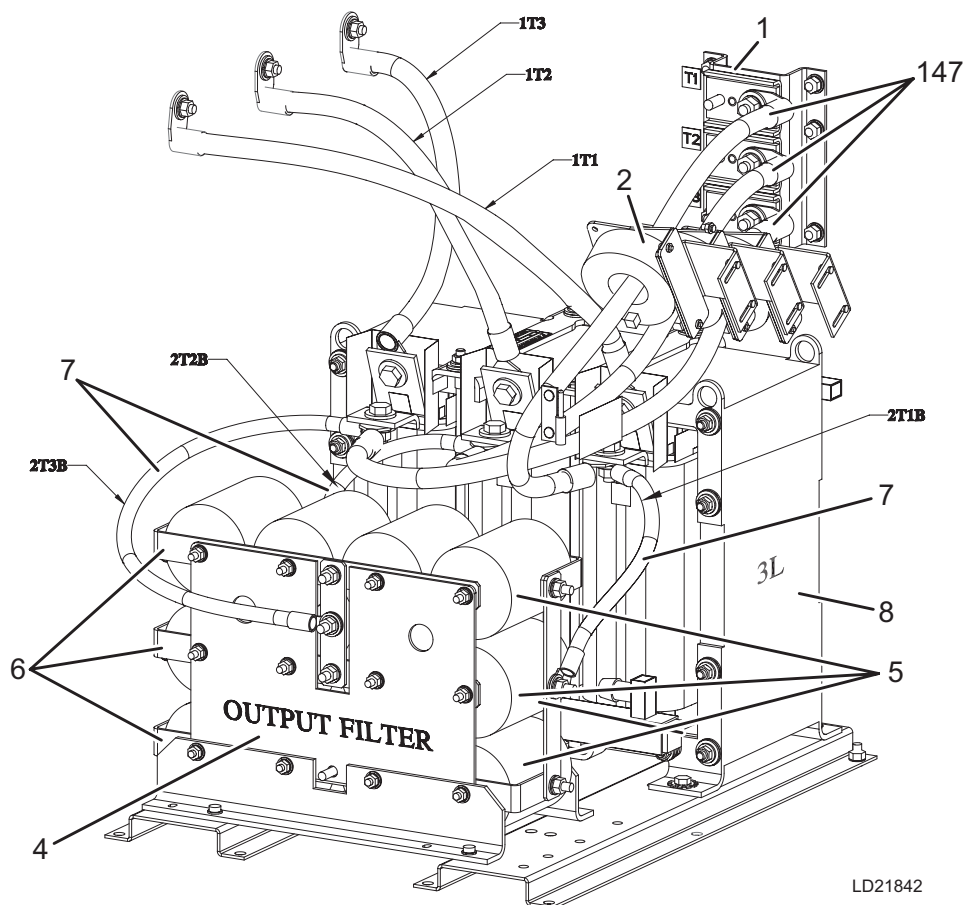


FIGURE 35 - OUTPUT COMPONENTS AND HARMONIC FILTER

490A AMP VARIABLE SPEED DRIVE

TABLE 18 - DRIVE LOGIC BOARD AND COMPONENTS

ITEM NUMBER	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
2	BRAM Chip U36	031-02482-000	5323419	1	36
3	BRAM Chip U37	031-02483-000	5323418	1	36
122	PROM Chip U35 (for 031-02911-00X board)	031-03048-001	744215	1	36
123	PROM Chip U38 (for 031-02911-00X board)	031-03049-001	744216	1	36
1	U66 485 Communications Driver	031-02074-000	743866	1	36
20	VSD Logic Board Kit (includes all software)	331-02911-610	5171297	1	36

NOTE: Items with an * are NOT represented.

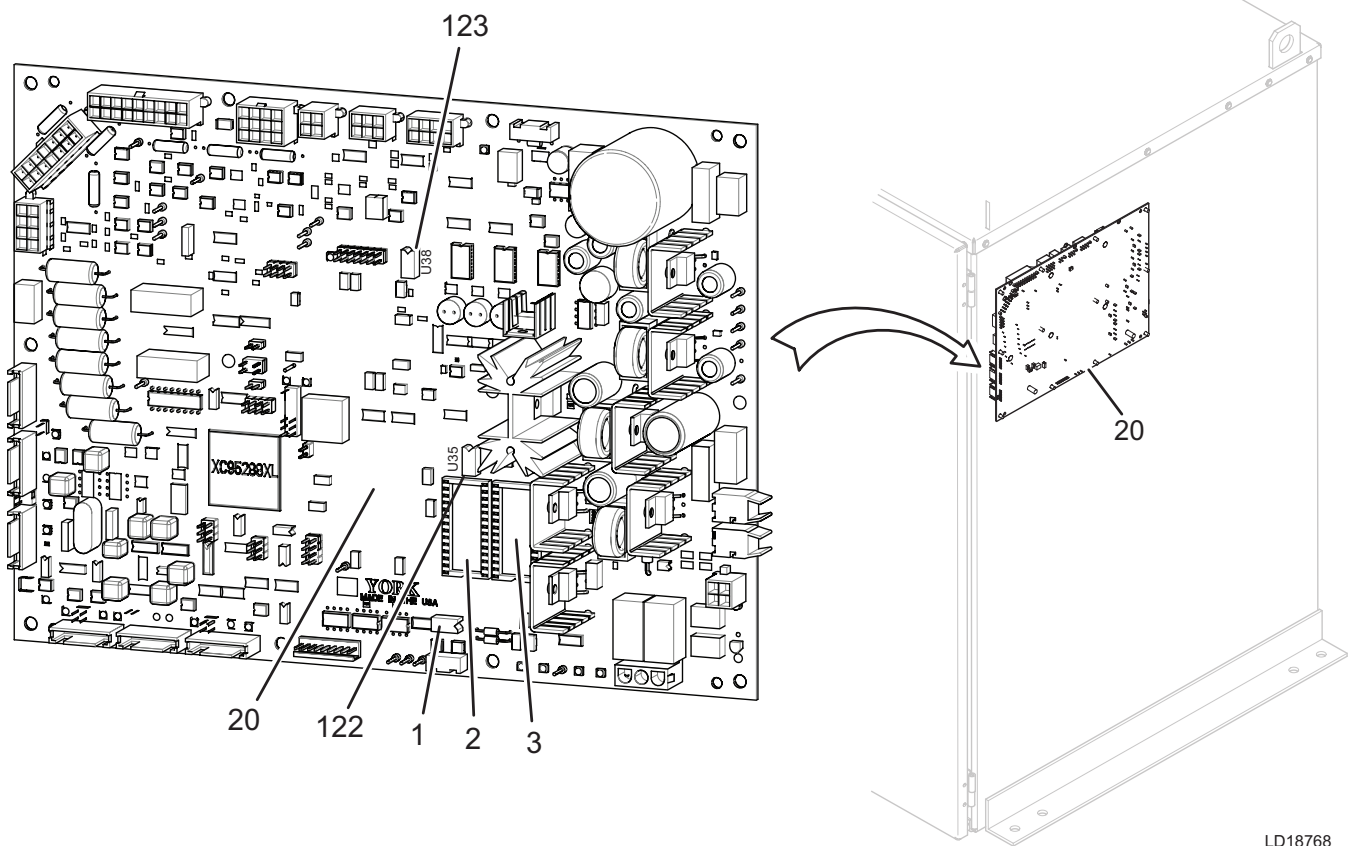
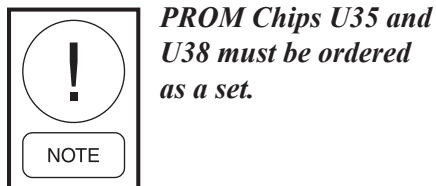


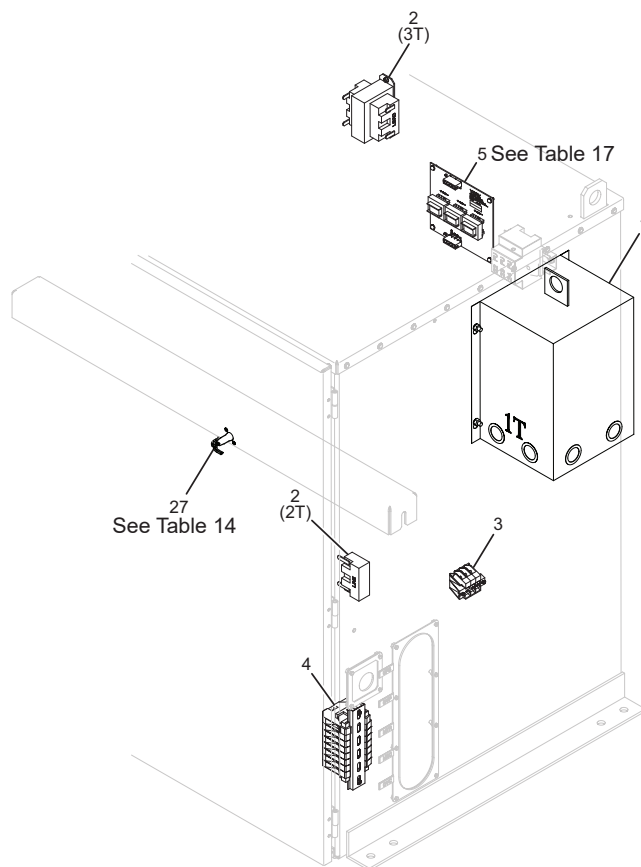
FIGURE 36 - DRIVE LOGIC BOARD AND COMPONENTS

490A AMP VARIABLE SPEED DRIVE

TABLE 19 - MISCELLANEOUS COMPONENTS

ITEM NUMBER	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
1	Control Transformer 460 VAC 60 Hz 3KVA (25 LBs.)	025-31499-000	738608	1	37
	Control Transformer 380/400/415 VAC 50Hz 380 VAC 60 Hz 3KVA (25 LBs.)	025-32983-000	117599	1	37
	Control Transformer 400 VAC 50/60 Hz 3KVA (25 LBs.)	025-40114-006	739755	1	37
2	Control Transformer 24 VAC 75 VA (2T/3T)	025-27911-000	1312	2	37
N/A	Suppressor for contactors and relays	031-00808-000	618876	4	-
5	Terminal Block 2-pole	025-44853-002	839752	1	31
3	Terminal Block 3-pole	025-44853-003	839753	1	37
4	Terminal Block Assembly	025-45041-000	839762	1	37
N/A	Terminal Block 1-pole used in part number 025-45041-000	025-31476-000	618185	7	-
N/A	Ground Terminal Block used in part number 025-45041-000	025-31444-000	618180	1	-
N/A	End Clamp used in part number 025-45731-000	025-29189-000	117471	1	-
N/A	120 VAC Power Plug	025-47414-000	5000684	1	-

NOTE: Items with an * are NOT represented.



LD17779a

FIGURE 37 - MISCELLANEOUS COMPONENTS

490A AMP VARIABLE SPEED DRIVE**TABLE 20 - WIRING HARNESSES AND CONNECTORS**

BOARD NAME	BOARD PART NUMBER	POSITION	HOUSING PART NUMBER (SAP PART NUMBER)	PIN PART NUMBER (SAP PART NUMBER)
Line Voltage Isolator Board	031-02022-000	J1	025-19671-000 (737534)	025-22215-000 (62701)
Line Voltage Isolator Board	031-02022-000	J2	025-21417-000 (737658)	025-22215-000 (62701)
Output Voltage Isolator Board	031-02022-001	J1	025-21417-000 (737658)	025-22215-000 (62701)
Output Voltage Isolator Board	031-02022-001	J2	025-21417-000 (737658)	025-22215-000 (62701)
Input DC Current Transducer	-	-	025-43356-000 (740274)	025-43357-000 (740275)
Input DC Current Transformer (Complete Cable)				Assembly # 571-05614-211 (840019)
Output DC Current Transducer	-	-	025-43356-000 (740274)	025-43357-000 (740275)
Output DC Current Transformer (complete Cable)	-	-		Assembly # 571-06755-212 (5170118)
VSD Logic Board	031-02911-010	J1	025-21159-000 (737640)	025-22215-000 (62701)
VSD Logic Board	031-02911-010	J2	025-42614-000 (740129)	025-28386-000 (737925)
VSD Logic Board	031-02911-010	J3	025-35964-000 (739253)	025-28386-000 (737925)
VSD Logic Board	031-02911-010	J4	025-28384-000 (737920)	025-28386-000 (737925)
VSD Logic Board	031-02911-010	J5	025-28959-000 (738246)	025-28386-000 (737925)
VSD Logic Board	031-02911-010	J6	025-28382-000 (737916)	025-28386-000 (737925)
VSD Logic Board	031-02911-010	J7	025-35966-000 (550505)	025-28386-000 (737925)
VSD Logic Board	031-02911-010	J8 - J13	Assembly # 571-06755-240 (5170127)	N/A
VSD Logic Board	031-02911-010	J14	025-28959-000 (738246)	025-28386-000 (737925)
VSD Logic Board	031-02911-010	J15	025-29130-000 (738262)	025-28386-000 (737925)
VSD Logic Board	031-02911-010	J17	025-21137-000 (737637)	025-19674-000 (737537)

490A AMP VARIABLE SPEED DRIVE

TABLE 20 - WIRING HARNESSES AND CONNECTORS (CONT'D)

BOARD NAME	BOARD PART NUMBER	POSITION	HOUSING PART NUMBER (SAP PART NUMBER)	PIN PART NUMBER (SAP PART NUMBER)
VSD Logic Board	031-02911-010	J18	Assembly # 571-06755-227 (5242481)	N/A
VSD Logic Board	031-02911-010	J19	025-21137-000 (737637)	025-19674-000 (737537)
VSD Logic Board	031-02911-010	J25	025-35966-000 (550505)	025-28386-000 (737925)
VSD Logic Board	031-02911-010	J36	Assembly # 571-06755-286 (5310232)	N/A
IGBT Gate Driver Board - Inverter	031-02901-004	J1	025-42614-000 (740129)	025-28386-000 (737925)
IGBT Gate Driver Board - Rectifier	031-02901-004	J1	025-42614-000 (740129)	025-28386-000 (737925)
Gate Driver Power Supply Board	031-02903-001	J1	025-29185-000 (62736)	025-19674-000 (737537)
Gate Driver Power Supply Board	031-02903-001	J2	025-44494-000 (839746)	025-28386-000 (737925)
Gate Driver Power Supply Board	031-02903-001	J7	025-19671-000 (737534)	025-11083-000 (737290)
Gate Driver Power Supply Board	031-02903-001	J8	025-19672-000 (737535)	025-22215-000 (62701)
Ambient Temperature at Sensor	-	-	025-29130-000 (738262)	025-28386-000 (737925)
Ambient Temperature at Cable	-	-	025-32564-000 (738737)	025-30999-000 (738540)
CPC CONNECTORS				
CPC CONNECTORS	HOUSING PART NUMBER (SAP PART NUMBER)		PIN PART NUMBER (SAP PART NUMBER)	COMPLETE CABLE (SAP PART NUMBER)
Magnet Bearing Controller	025-37873-000 (739490)		025-40463-000 (873883)	571-06755-291 (5310233)
Motor Monitoring	025-44974-000 (828162)		025-40463-000 (873883)	571-06755-286 (5310232)
OptiView Communication	025-37873-000 (739490)		025-40463-000 (873883)	571-06755-227 (5242481)
OptiView Power	025-44974-000 (828162)		025-37875-000 (739491)	571-06755-216 (5310231)
UPS	025-44974-000 (828162)		025-37875-000 (739491)	571-06755-215 (5310230)

Note: All items in Table 20 are NOT shown

490A AMP VARIABLE SPEED DRIVE

TABLE 21 - POWER WIRING SECTION

SECTION	PART NUMBER	SAP NUMBER
Input Power Wiring (from input power fuses to input of 1L)	571-06755-237	5170125
Input Power Wiring (from output of 1L to input of supply contactor)	571-06755-232	5170120
Input Power Wiring (from output of supply contactor to L2)	571-06755-233	5170121
Rectifier Power Wiring (from output of L2 to rectifier)	571-06755-234	5170122
Inverter Power Wiring (from Inverter to 3L)	571-06755-235	5170123
Output Power Wiring (from 3L to the motor terminal block)	571-06755-236	5170124

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SECTION 3 - 774 AMP VARIABLE SPEED DRIVE

TABLE 22 - INPUT COMPONENTS (744 AMPS)

ITEM	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
1	Circuit Breaker 800 amp	224-37419-000	769678	1	39
1	Disconnect Switch	024-36974-000	704473	1	39
1	Disconnect Switch Lug Kit	025-43345-000	740272	1	*
2	Input Current Transducer (DCCT)	025-42749-000	740134	3	38
3	Input Filter Assembly	371-05182-341	772950	1	39
4	Input Filter Capacitor for Assembly	025-42834-000	740148	9	39
5	Input Filter Capacitor	025-43928-000	740379	1	39
6	Input Line Inductor (L1)	025-42768-000	740137	1	39
	Inductor Cooling Hose	028-16716-000	-	-	
	Inductor Cooling Hose Elbow	025-25635-000	-	6	
	Inductor Cooling Manifold	325-44864-603	-	2	
	Inductor Cooling Valves	022-12389-000	-	2	
7	Input Filter Resistor for Assembly	025-42616-000	740130	3	39
8	Input Load Inductor (L2)	025-42767-000	740136	1	39
9	Input Voltage Isolator Board	031-02022-000	65064	1	39
10A	Resistor Kit - After 8/11 (Includes 2 Resistors and Bracket)	025-44707-000	740584	1	39
10B	Resistor Kit - Before 8/11 (Includes 2 Resistors and Bracket)	025-44672-000	-	1	39
11	Ground Lug	025-32835-000	738755	4	39
12	Voltage Transient Board (Fuses are not included)	031-02453-000	743895	1	39

NOTE: Items with an * are NOT represented.

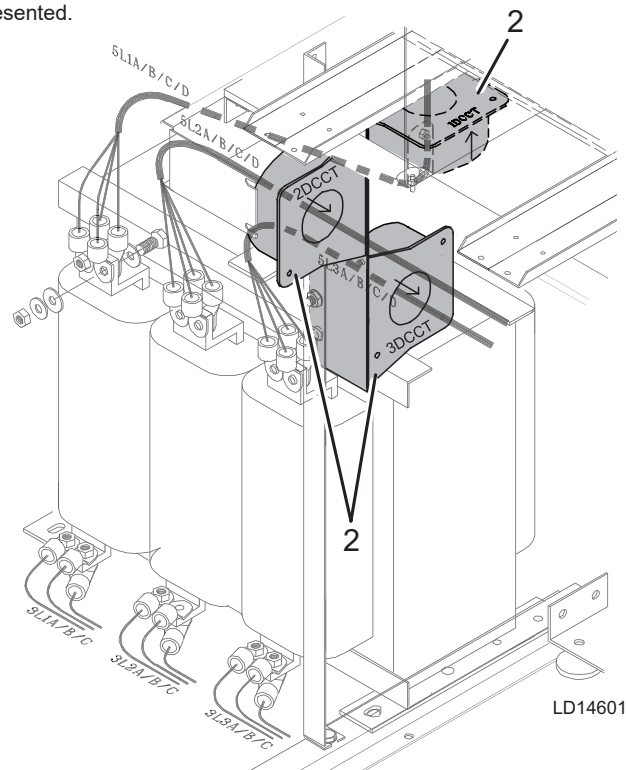
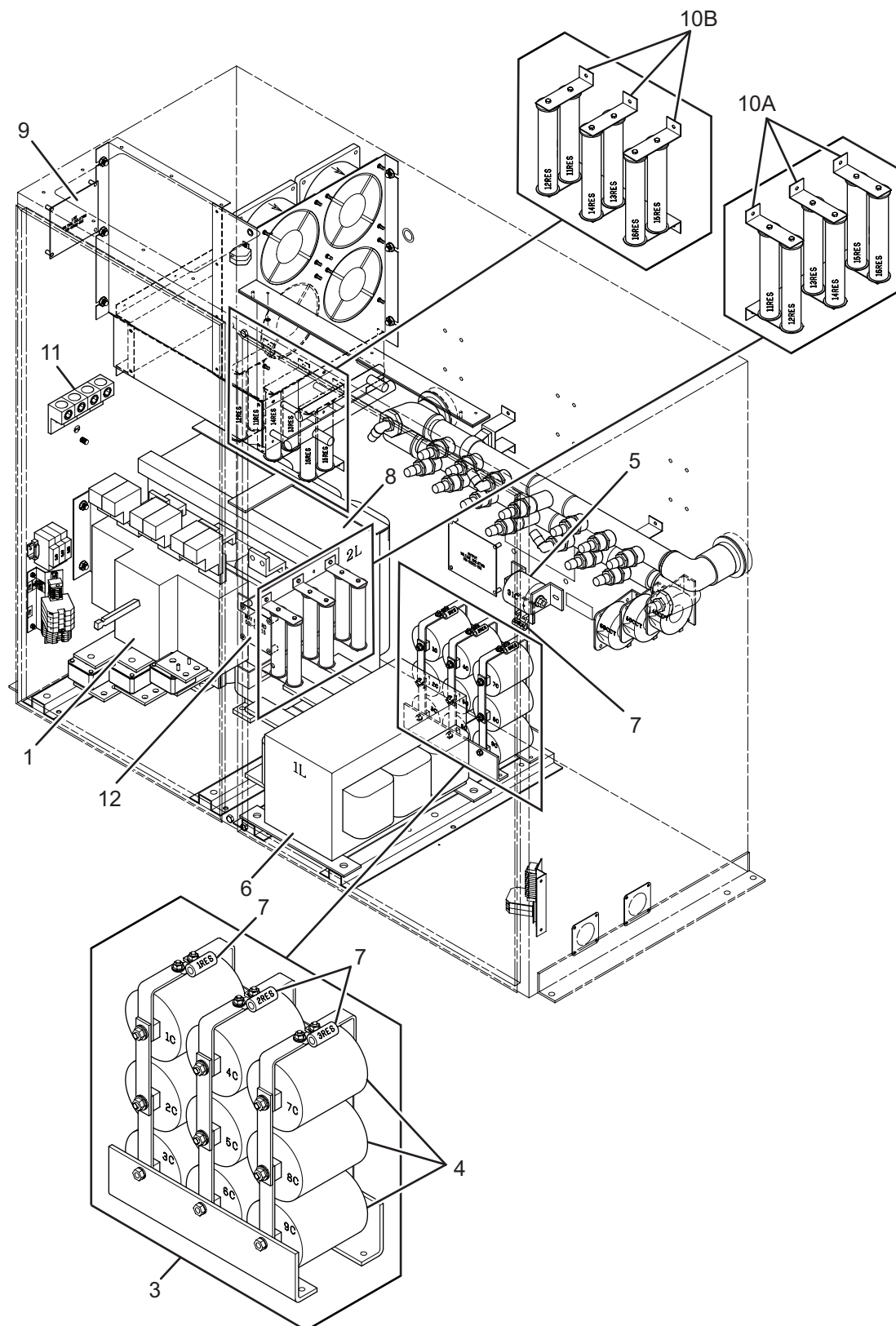


FIGURE 38 - CURRENT TRANSDUCER (DCCT)

744AMP VARIABLE SPEED DRIVE



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FIGURE 39 - INPUT FILTER COMPONENTS

744AMP VARIABLE SPEED DRIVE

TABLE 23 - FUSE COMPONENTS (744 AMPS)

ITEM NUMBER	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
1	Fuse 1 AMP (19FU-21FU)	025-43326-000	740259	3	41
2	Fuse 5 AMP (16FU-18FU) Voltage Transient Board Fuses	025-38523-000	739590	3	40, 42
3	Fuse 7 AMP (4FU-6FU and 13FU-15FU)	025-35903-000	117821	6	40
4	Fuse 10 AMP (25FU and 26FU)	025-43907-000	740371	2	42
5	Fuse 10 AMP (7FU-10FU) (460 VAC 60 Hz)	025-35905-000	739234	4	42
5	Fuse 12 AMP (400 VAC 60 Hz, and 400/415 VAC 50Hz, 7FU-10FU)	025-35906-000	652698	4	42
6	Fuse 20 AMP (11FU and 12FU and 27FU)	025-35908-000	117823	3	41, 42
7	2-Pole Fuse Holder (800v) (25FU / 26FU)	025-43899-000	740368	1	42
8	3-Pole Fuse Holder (30A) (4FU-6FU, 13FU-15FU, 19FU-21FU)	025-39952-000	343433	3	40, 41, 42
9	Input Power Fuse Kit (All 3, 1FU-3FU)	371-05571-601	-	1	40
10	1-Pole Fuse Holder (30A) (27FU)	025-39951-000	359985	1	41
11	2-Pole Fuse Holder (30A) (7FU-12FU)	025-44520-000	740518	3	42

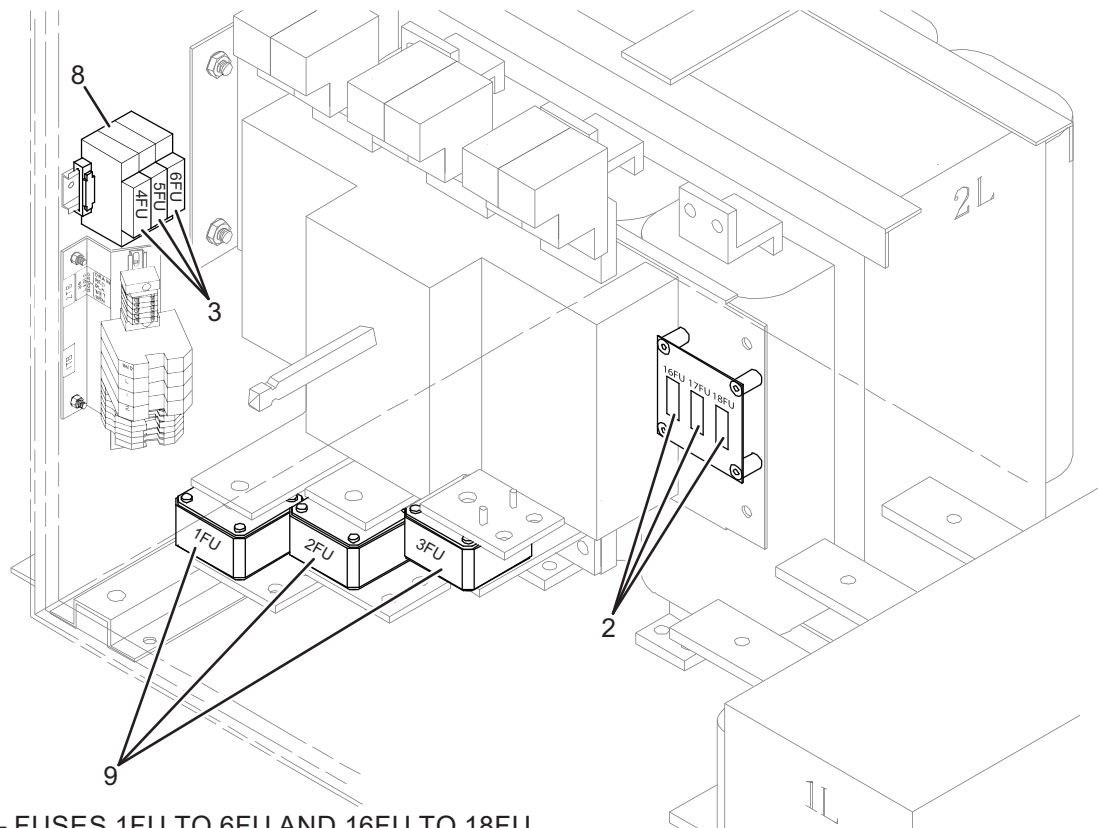


FIGURE 40 - FUSES 1FU TO 6FU AND 16FU TO 18FU

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744AMP VARIABLE SPEED DRIVE

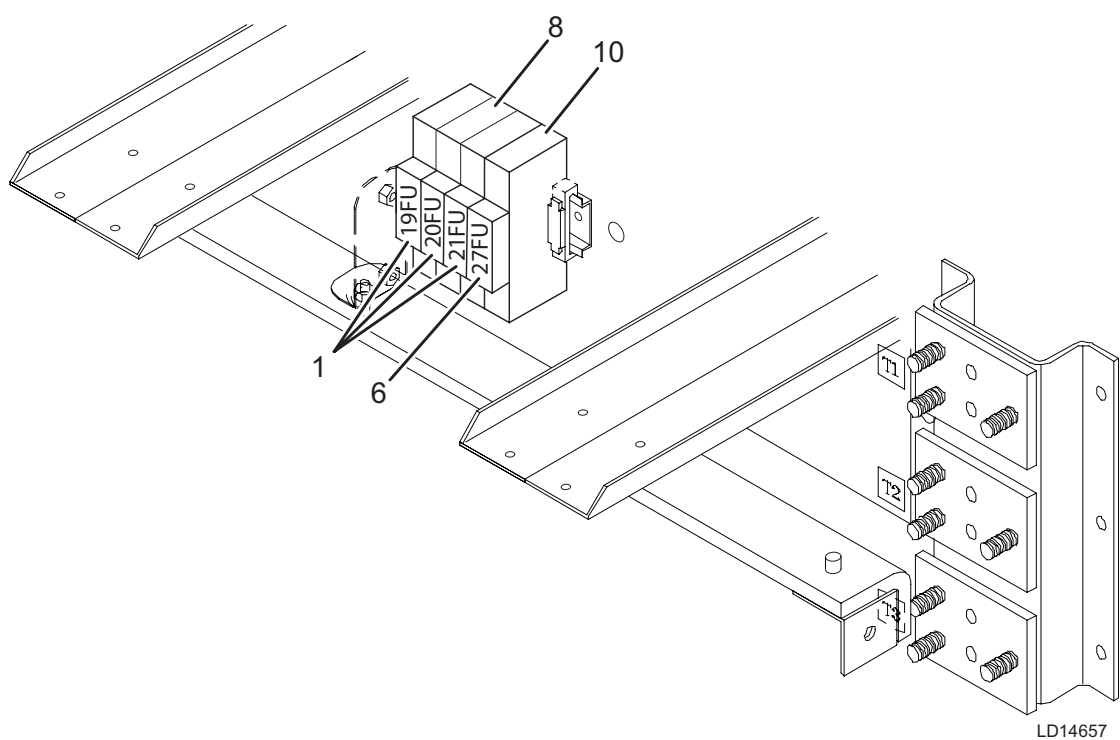


FIGURE 41 - AUXILIARY FUSES 19FU TO 21FU AND 27FU

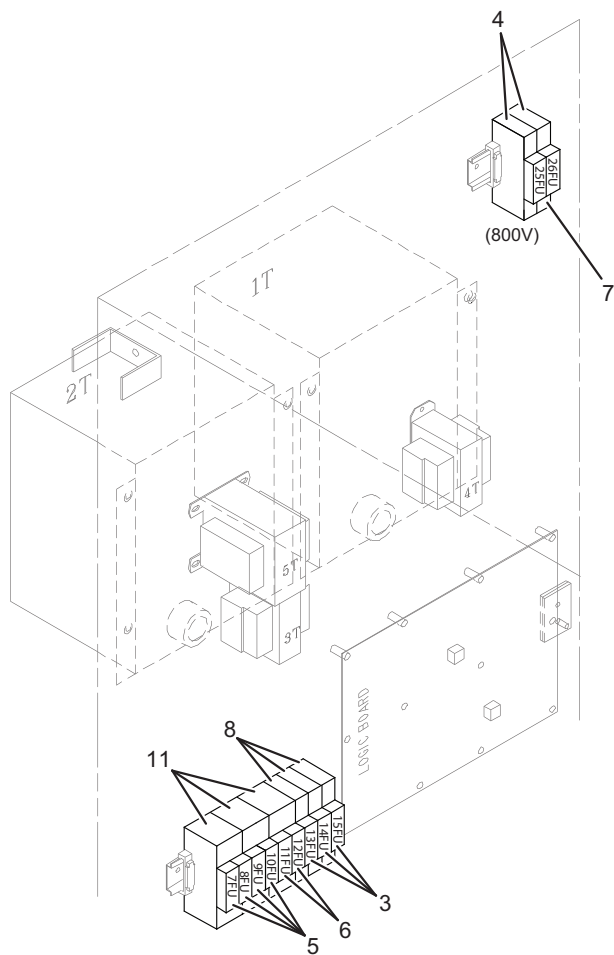


FIGURE 42 - FUSES 7FU TO 15FU AND 25FU TO 26FU

744AMP VARIABLE SPEED DRIVE

TABLE 24 - DOOR COMPONENTS (744 AMPS)

ITEM NUMBER	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
1	Circuit Breaker Door Mounting Kit	026-46045-000	741273	1	43
2	Disconnect Switch Handle	024-36614-000	736390	1	43
3	Door Ground Strap (Used on Left And Right Door)	525-32508-001	806677	2	43
4	Door Kit Left 60Hz (Including all labels and latches)	371-05571-651	-	1	43
4	Door Kit Left 50Hz w/ EMC (Including all labels and latches)			1	43
5	Door Kit Right 60Hz (Including all labels and latches)	371-05571-656	-	1	*
5	Door Kit Right 50Hz w/ EMC (Including all labels and latches)			1	*
6	Door Latch (Used On Left And Right Door)	029-25614-000	743380	2	43
	Door Stop	029-23420-000	119865	1	*
7	Label, Front Door Johnson Controls Logo	035-23036-000	745608	1	43
8	EMC Upgrade Kit (Drive side only)	371-05581-000	-	-	*

NOTE: Items with an * are NOT represented.

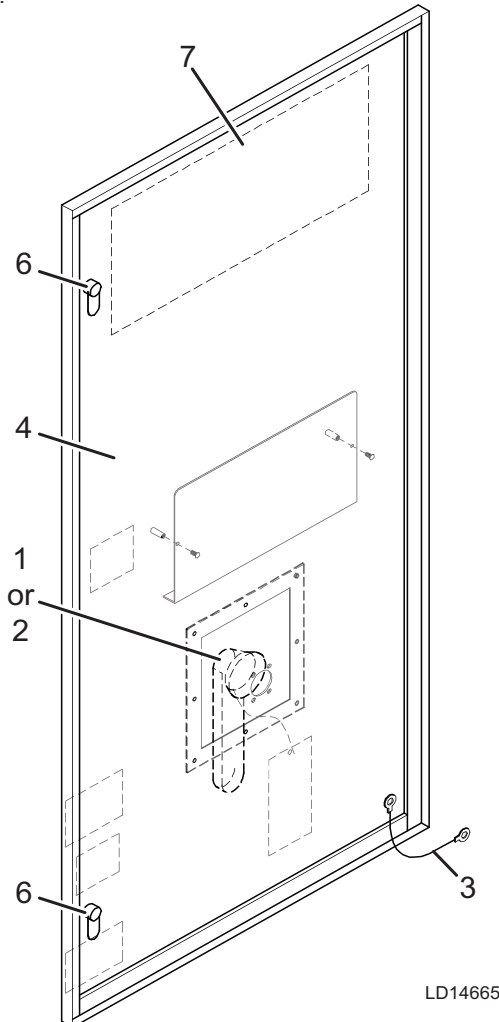


FIGURE 43 - DOOR COMPONENTS

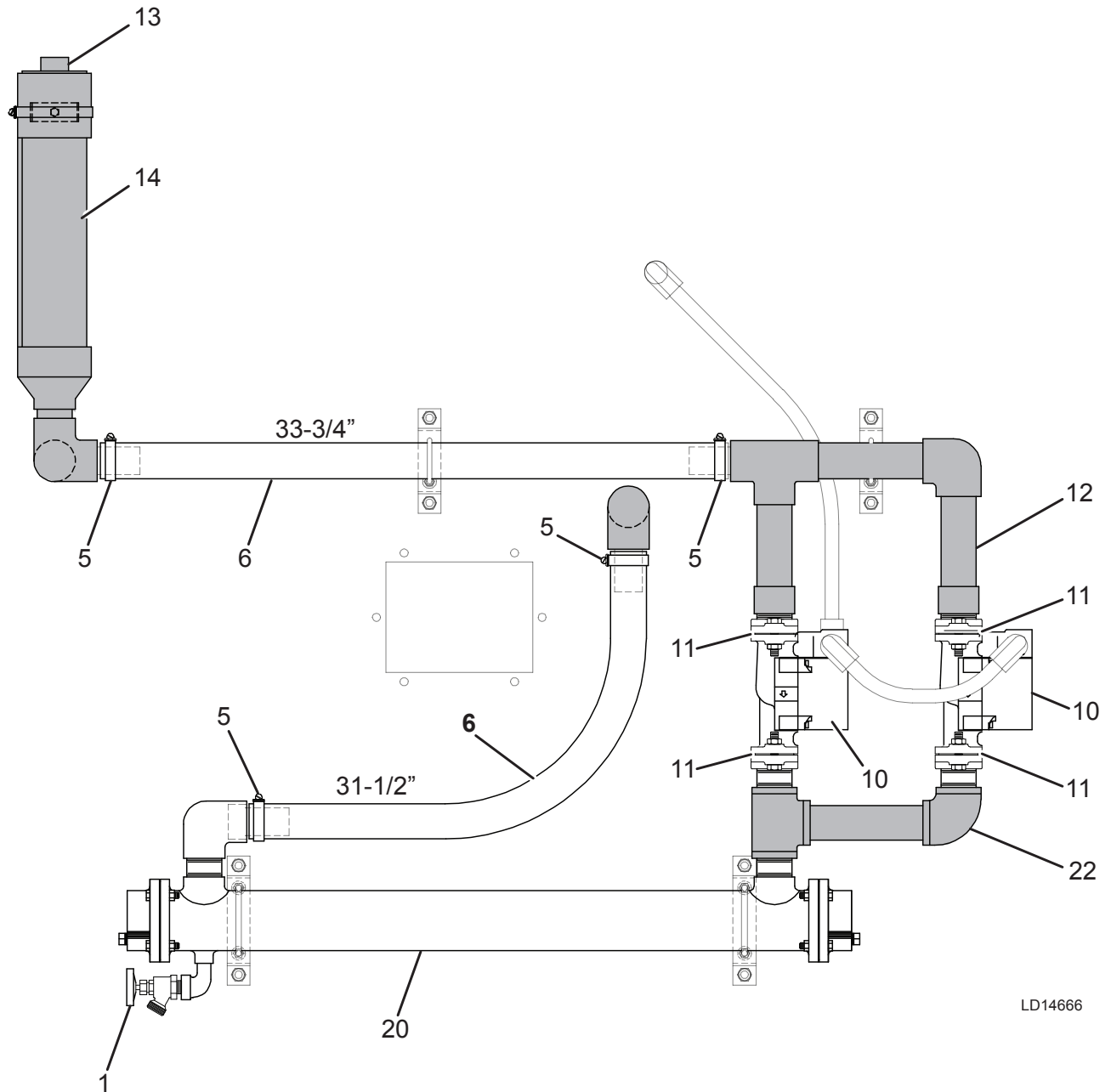
744AMP VARIABLE SPEED DRIVE

TABLE 25 - COOLING SYSTEM COMPONENTS (744 AMPS)

ITEM NUMBER	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
1	Coolant Drain Valve	022-10090-000	692414	1	44
2	Coolant Hose Barb Straight Kit (hose barbs and hose)	371-05571-626	-	-	46
3	Coolant Hose Barb Elbow Kit (hose barbs and hose)	371-05571-631	-	-	46
4	Coolant Hose Clamp 1"	023-08856-000	617439	32	45,46
5	Coolant Hose Clamp 2"	021-32226-000	730939	4	44
6	Coolant Hose External 1-1/2"	028-16373-000	742214	6'	44
7	Coolant Hose Internal 3/4" ID by the foot	028-16379-000	742219	50'	46
8	Coolant Manifold Kit Inlet	371-05571-636	-	-	45
8	Coolant Manifold Kit Inlet (Injection Molded)	371-05571-414	865782	-	45
9	Coolant Manifold Kit Outlet (Coolant Reservoir 3" PVC with Plug Kit)	371-05571-671	-	-	45
9	Coolant Manifold Kit Outlet (Injection Molded)	371-05571-404	865781	-	45
10	Coolant Pump	026-33890-000	3590	2	44
11	Coolant Pump Flange Set	023-20283-000	733193	2	44
12	Coolant Pump Input Assembly Kit 60/50 Hz	371-05571-646	-	-	44
13	Coolant Reservoir Fill Plug	028-16378-000	742218	1	44
16	Inhibitor (per gallon)	013-04129-000	729086	5 gallon	*
17	Internal Cooling Fan	025-32557-000	738735	1	45
18	Internal Cooling Coil	026-45982-000	741251	1	45
19	Relay, Control Fan / Pump	024-30441-000	664298	1	45
20	Shell and Tube Heat Exchanger (150/300 PSI Condenser 3")	026-37572-000	104160	1	44
21	Shell and Tube Heat Exchanger Head Gaskets (set of two) 3"	371-03716-001	772263	1	*
22	Shell and Tube Heat Exchanger Assembly Kit	371-05571-661	-	-	44
23	Valve Ball 3/4" Npt Female	023-25462-000	-	6	45
26	Temperature Sensor with Connector	571-05182-283	807091	2	8

NOTE: Items with an * are NOT represented.

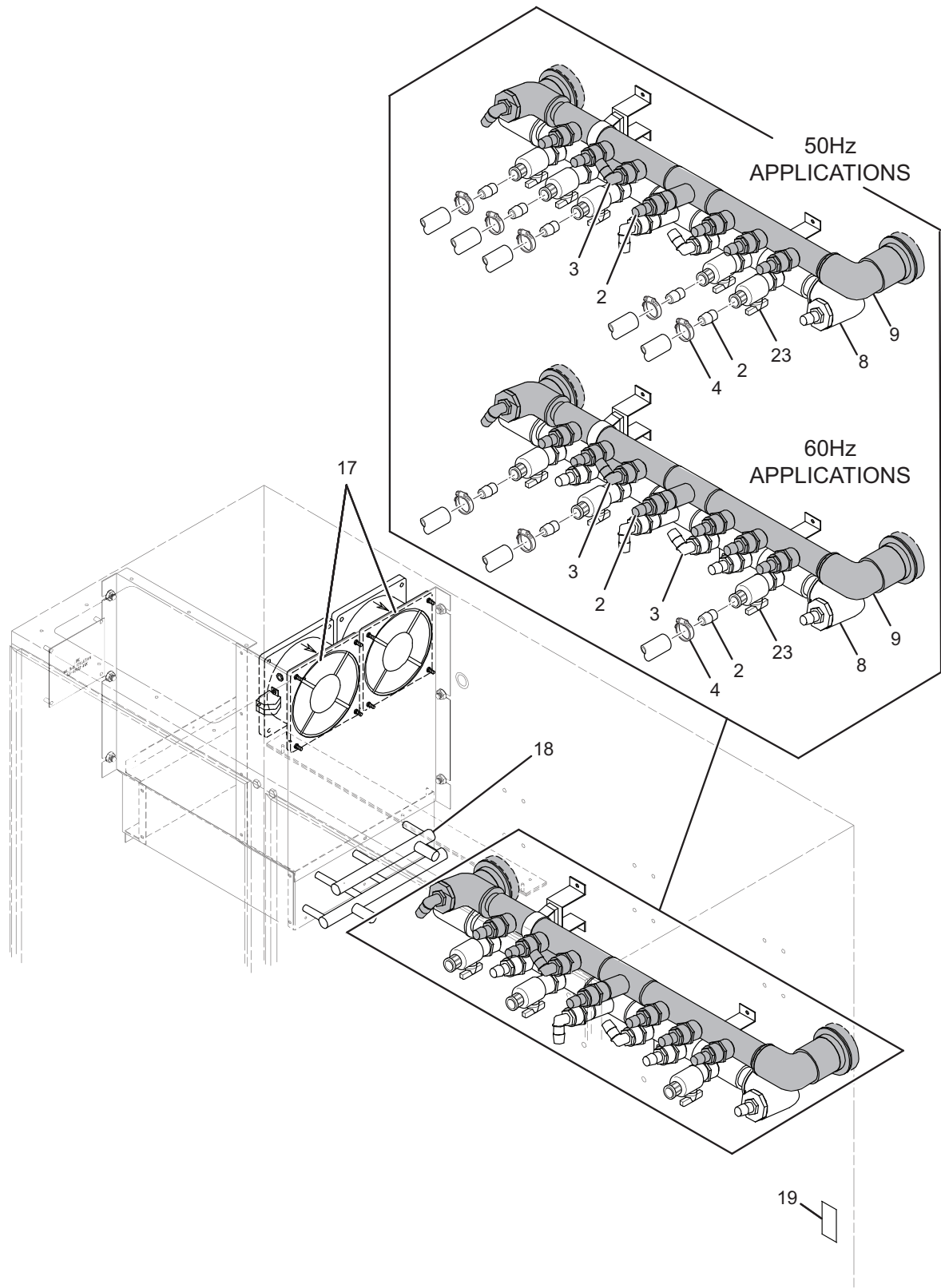
744AMP VARIABLE SPEED DRIVE



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FIGURE 44 - EXTERNAL COOLANT SYSTEM PIPING

744AMP VARIABLE SPEED DRIVE



LD14667

FIGURE 45 - INTERNAL MANIFOLD HEADER ASSEMBLY

744AMP VARIABLE SPEED DRIVE

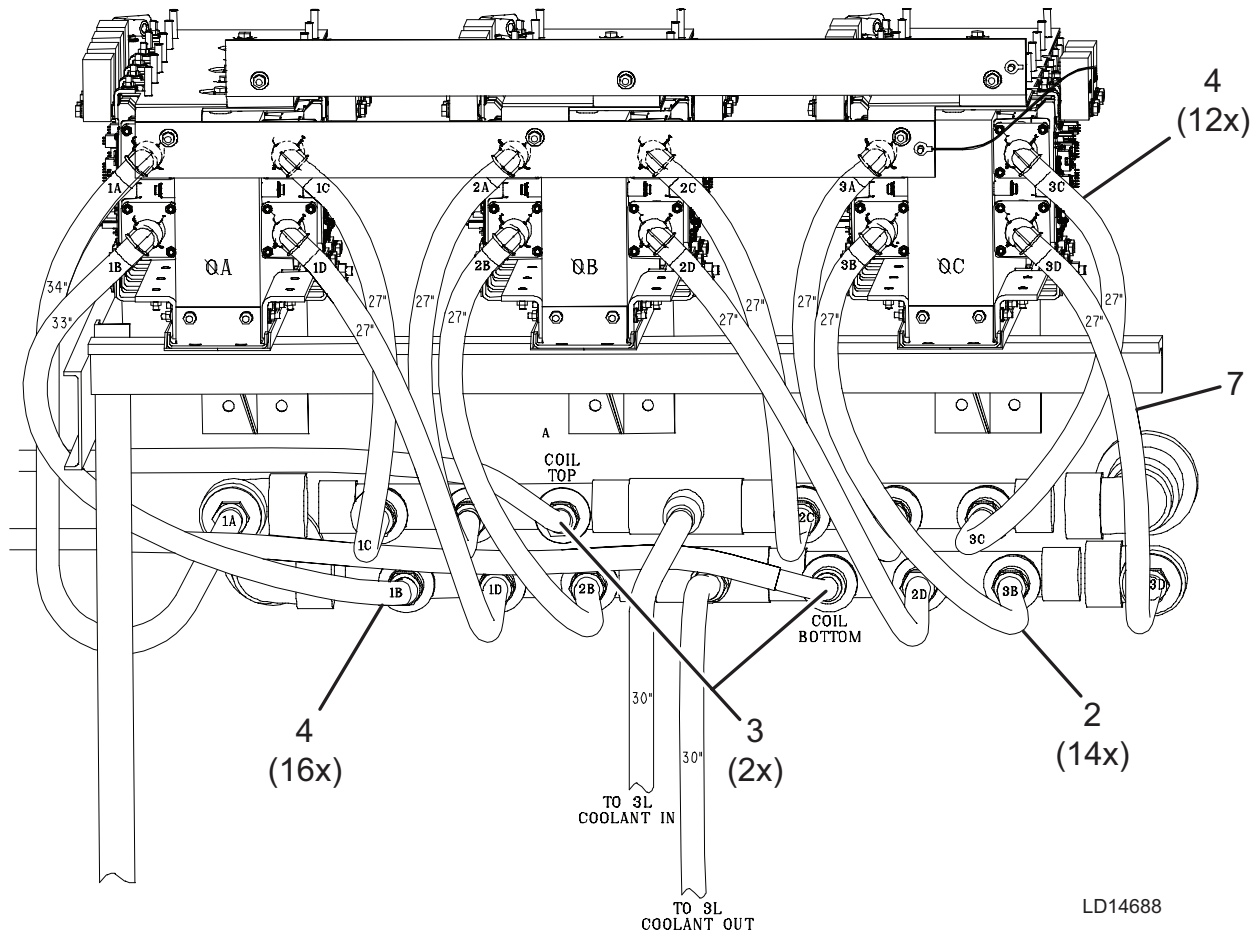


FIGURE 46 - PIPING FROM POWER ASSEMBLY TO MANIFOLD HEADER

744AMP VARIABLE SPEED DRIVE

TABLE 26 - POWER ASSEMBLY COMPONENTS (744 AMPS)

ITEM NUMBER	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
1	Bus Bleeder Resistor (ea.)	025-42616-000	740130	2	48
2	Bus Plate Kit for power assembly	371-05526-601	774036	1	48
3	Bus Snubber Capacitor (ea.)	025-42835-000	740149	12	48
4	Coolant Hose Barb on power assembly Kit	371-05526-606	774037	-	48
5	IGBT Gate Driver Board	031-02762-001	744086	1	48
6	Inverter Power Module Kit	371-05526-611	774038	-	48
7A	Negative Bus Plate	071-05571-352	749310	1	47
7B	Positive Bus Plate	071-05571-480	749312	1	47
8	Power Unit Mounting Foot Front	071-05508-312	749269	1	48
9	Power Unit Mounting Foot Rear	071-05508-310	749268	1	48
10	Rectifier Power Module Kit	371-05526-616	774039	-	48
11	VSD Rectifier/Inverter Power Unit Complete Kit (IGBT, Capacitors, Heatsink, Coolant)	371-05526-621	774040	-	47
12	Strap, Wiring Inverter Ground	571-05526-241	807110	6	47

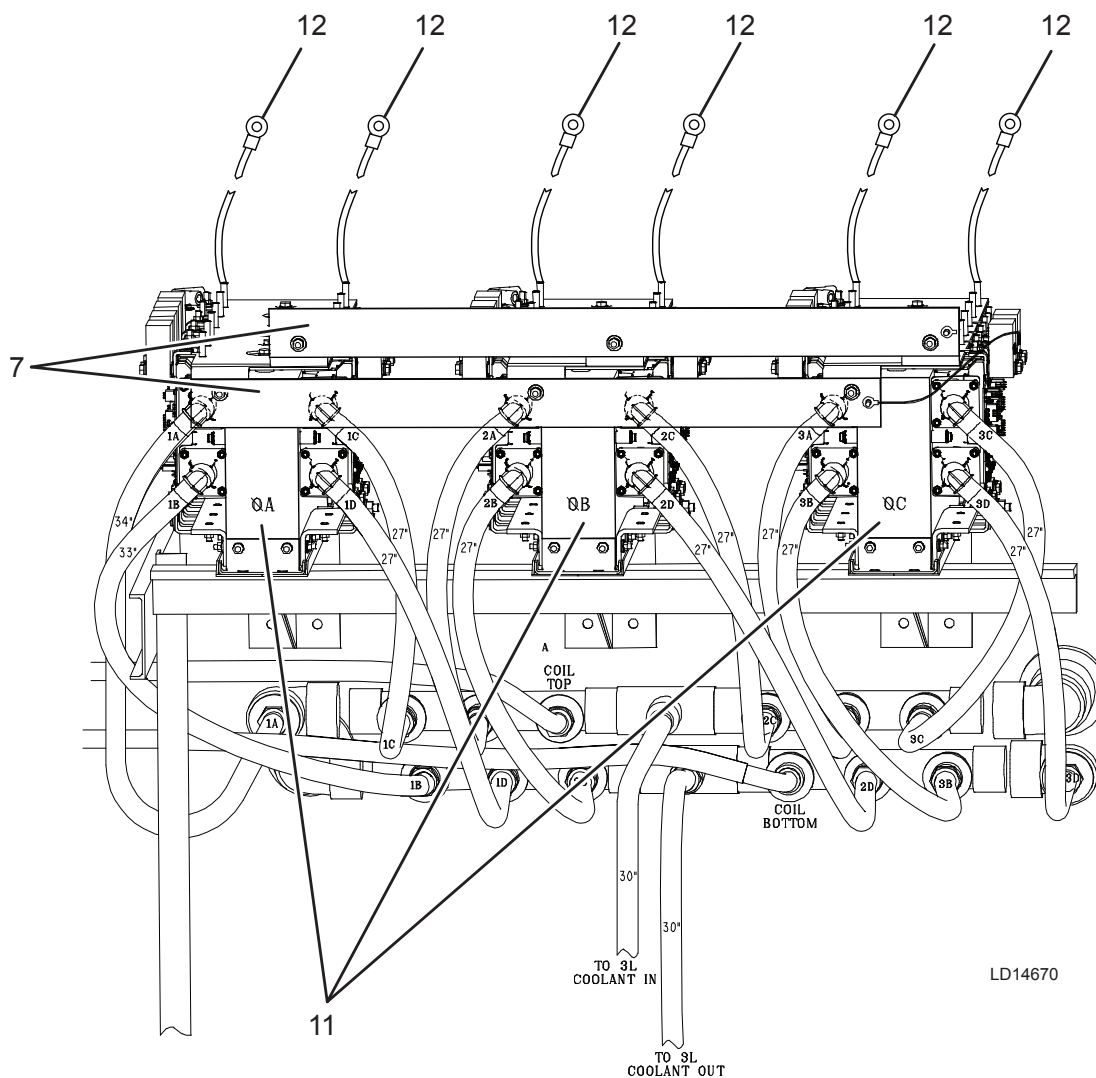
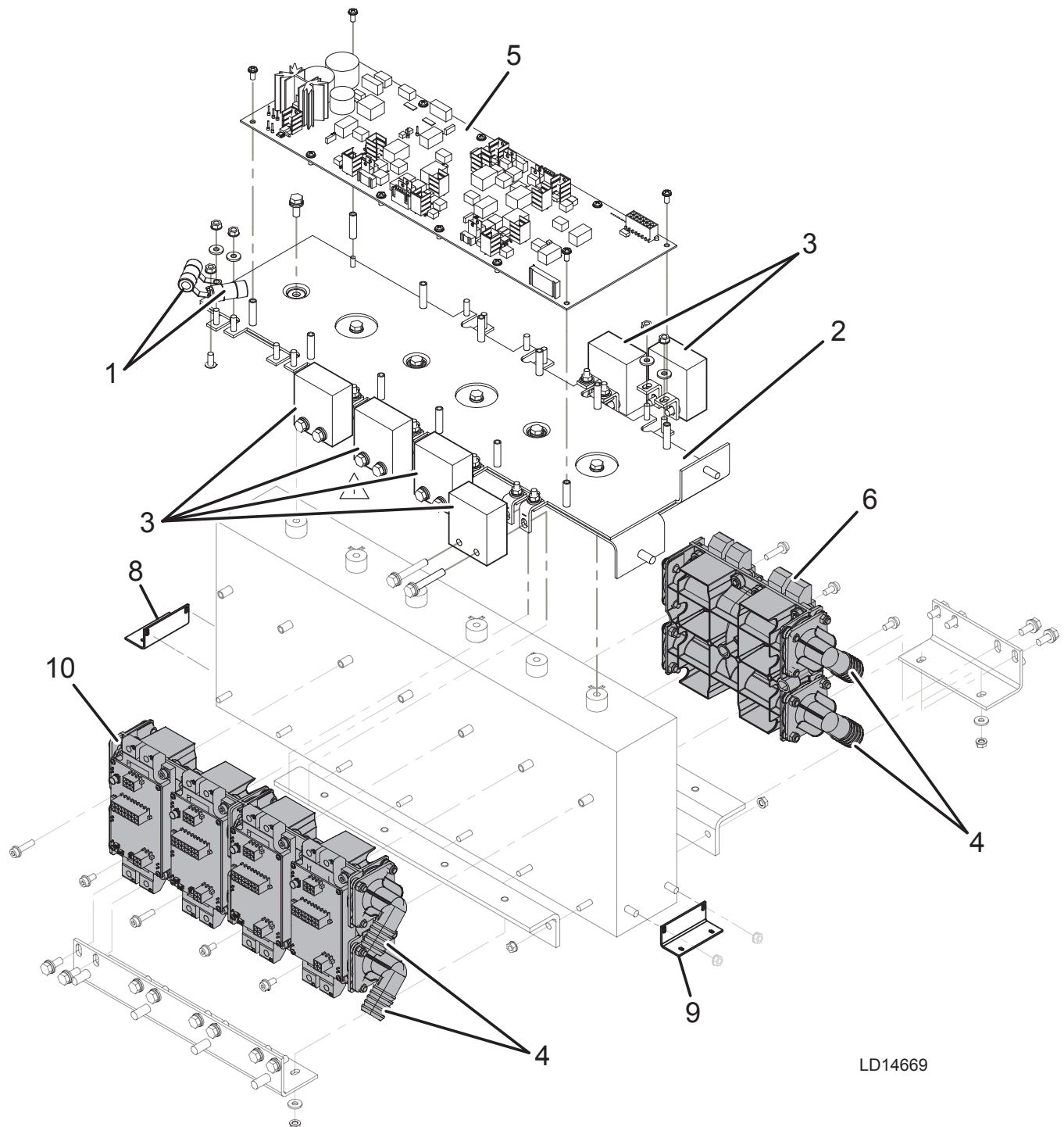


FIGURE 47 - POWER ASSEMBLY COMPONENTS

744AMP VARIABLE SPEED DRIVE



LD14669

FIGURE 48 - POWER POLE ASSEMBLY

744AMP VARIABLE SPEED DRIVE

TABLE 27 - OUTPUT COMPONENTS (744 AMPS)

ITEM NUMBER	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
1	Motor Connection Plate	371-05571-361	774161	3	50
2	Output Current Transducer (DCCT)	025-42748-000	740133	3	49
3	Output Harmonic Filter Capacitor (used in production until 11/11)	025-45369-000	865769	12	50
3	Output Harmonic Filter Capacitor (used in production after 11/11,)	025-43983-000	920390	12	50
4	Output Harmonic Filter Assembly (used in production before 11/11, 282 Lbs., no longer available see kit below)	025-43927-000	740378	1	50
4	Output Harmonic Filter Assembly Kit (Replacement Kit for 025-43927-000, 230 Lbs.)	325-44864-601	921621	1	50
4	Output Harmonic Filter Assembly (230 Lbs., used in production after 11/11)	025-44864-000	740611	1	50
4a	Inductor Cooling Hose Elbow	025-25635-000	-	6	50
4b	Inductor Cooling Hose	028-16716-000	1053011	-	50
4c	Inductor Cooling Manifold	325-44864-603	1053030	2	50
4D	Inductor Cooling Valves	022-12389-000	1052998	2	50
5	Output Power Wiring Kit (used before 11/11)	571-05571-236	865794	-	*
5	Output Power Wiring Kit (used after 11/11)	571-05571-238	807124	-	*
8	Output Voltage Isolator Board	031-02022-001	743845	1	49

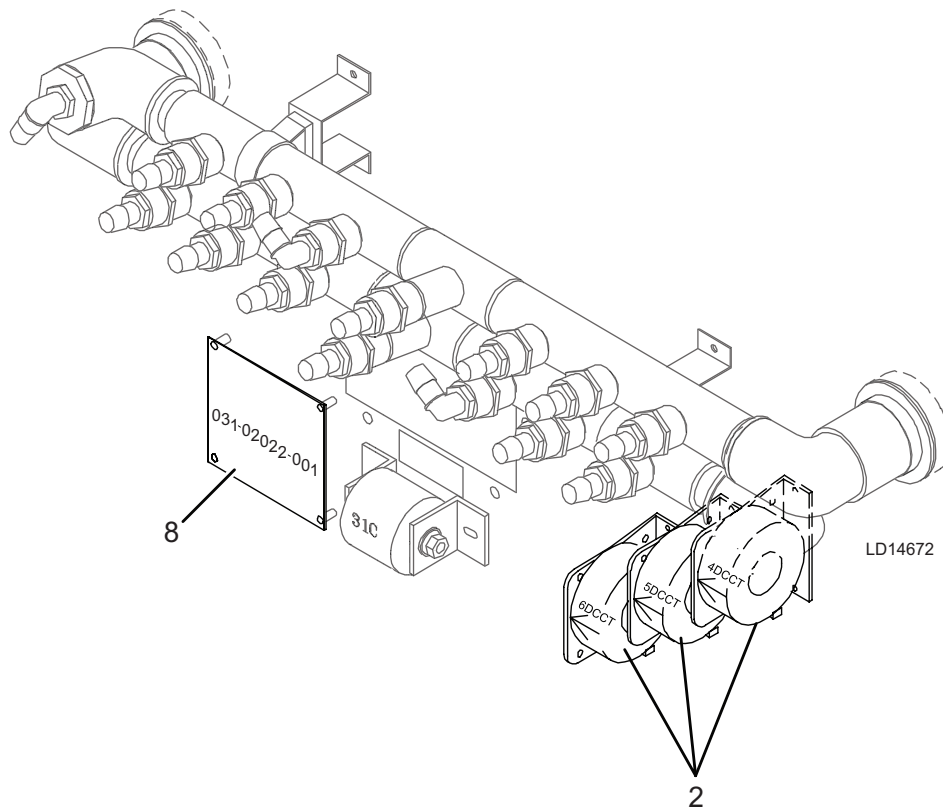
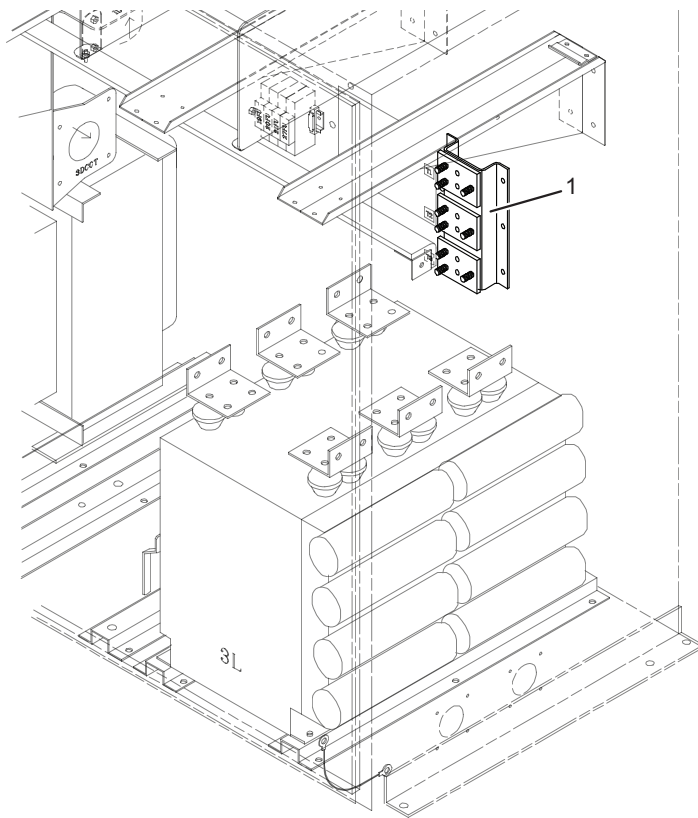
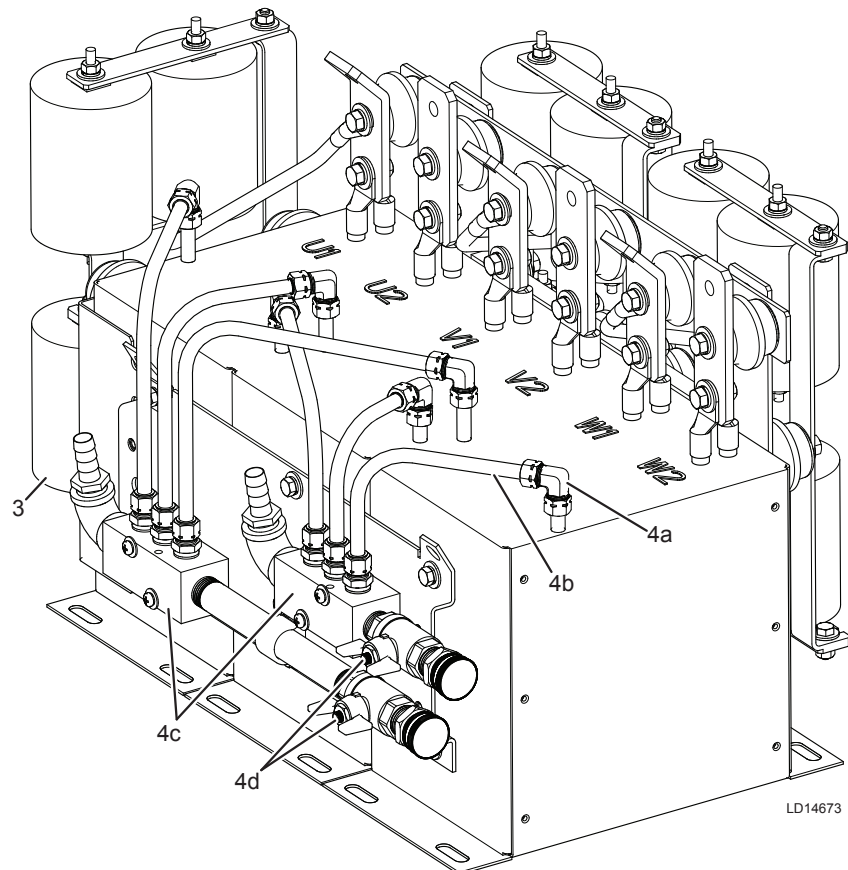


FIGURE 49 - OUTPUT HARMONIC FILTER COMPONENTS #1

744AMP VARIABLE SPEED DRIVE



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LD14673

FIGURE 50 - OUTPUT HARMONIC FILTER COMPONENTS #2

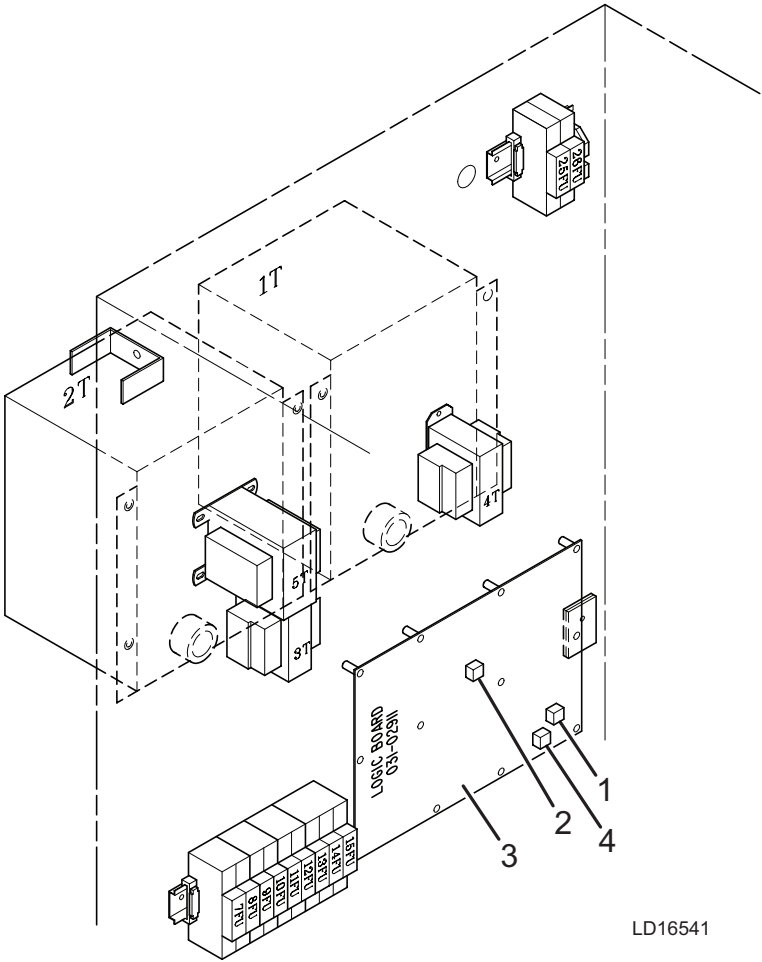
744AMP VARIABLE SPEED DRIVE

TABLE 28 - DRIVE LOGIC BOARD AND COMPONENTS (744 AMPS)

ITEM NUMBER	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
1	PROM Chip U35 (for 031-02911-001 board) (NOTE: Both chips must be ordered together)	031-03048-001	744215	1	51
2	PROM Chip U38 (for 031-02911-001 board) (NOTE: Both chips must be ordered together)	031-03049-001	744216	1	51
3	VSD Logic Board	031-02911-001	744204	1	51
	VSD Logic Board kit (includes all software)	331-02911-601	696710	1	51
4	U66 485 Communications Driver	031-02074-000	743866	1	19



PROM Chips U35 and U38 must be ordered as a set.



LD16541

FIGURE 51 - DRIVE LOGIC BOARD AND COMPONENTS

ITEM NUMBER	DESCRIPTION	YORK PART NUMBER	SAP PART NUMBER	QUANTITY	FIGURE
1	Control Transformer, 240/480 VAC 2 KVA	025-29627-002	117496	1	52
1	Control Transformer, 380/400/415 VAC 2 KVA	025-29627-003	738308	1	52
2	Terminal Block	025-20944-000	62696	6	52
3	Transformer, 24 VAC, 75 VA	025-27911-000	1312	2	52
4	Transformer, 175 VA	025-43339-000	740269	1	52



LD14671

744AMP VARIABLE SPEED DRIVE

TABLE 30 - WIRING HARNESSES AND CONNECTORS (744)

BOARD NAME	BOARD PART NUMBER	POSITION	HOUSING PART NUMBER (SAP PART NUMBER)	PIN PART NUMBER (SAP PART NUMBER)
Line Voltage Isolator Board	031-02022-000	J1	025-19671-000 (737534)	025-22215-000 (62701)
Line Voltage Isolator Board	031-02022-000	J2	025-21417-000 (737658)	025-22215-000 (62701)
Output Voltage Isolator Board	031-02022-001	J1	025-21417-000 (737658)	025-22215-000 (62701)
Output Voltage Isolator Board	031-02022-001	J2	025-21417-000 (737658)	025-22215-000 (62701)
Input DC Current Transducer	-	-	025-43356-000 (740274)	025-43357-000 (740275)
Output DC Current Transducer	-	-	025-43356-000 (740274)	025-43357-000 (740275)
VSD Logic Board	031-02911-001	J1	025-19672-000 (737535)	025-22215-000 (62701)
VSD Logic Board	031-02911-001	J2	025-42614-000 (740129)	025-28386-000 (737925)
VSD Logic Board	031-02911-001	J3	025-35964-000 (739253)	025-28386-000 (737925)
VSD Logic Board	031-02911-001	J4	025-18355-000 (-)	025-19674-000 (737537)
VSD Logic Board	031-02911-001	J5	025-28959-000 (738246)	025-28386-000 (737925)
VSD Logic Board	031-02911-001	J6	025-28382-000 (737916)	025-28386-000 (737925)
VSD Logic Board	031-02911-001	J7	025-35966-000 (550505)	025-28386-000 (737925)
VSD Logic Board	031-02911-001	J8 and J11	Assembly # 571-05571-205 (807117)	N/A
VSD Logic Board	031-02911-001	J9 and J12	Assembly # 571-05571-207 (807118)	N/A
VSD Logic Board	031-02911-001	J10 and J13	Assembly # 571-05571-209 (807119)	N/A
VSD Logic Board	031-02911-001	J14	025-28959-000 (738246)	025-28386-000 (737925)
VSD Logic Board	031-02911-001	J15	025-29130-000 (738262)	025-28386-000 (737925)
VSD Logic Board	031-02911-001	J17	025-21136-000 (737636)	025-19674-000 (144 774)
VSD Logic Board	031-02911-001	J18	Assembly # 571-05571-227 (807122)	N/A
VSD Logic Board	031-02911-001	J19	025-21137-000 (737637)	025-19674-000 (737537)

744AMP VARIABLE SPEED DRIVE**TABLE 30 - WIRING HARNESSES AND CONNECTORS (744) (CONT'D)**

BOARD NAME	BOARD PART NUMBER	POSITION	HOUSING PART NUMBER (SAP PART NUMBER)	PIN PART NUMBER (SAP PART NUMBER)
VSD Logic Board	031-02911-001	J25	025-35966-000 (550505)	025-28386-000 (737925)
VSD Logic Board	031-02911-001	J36	Assembly # 571-05571-291 (807129)	N/A
IGBT Gate Driver Board	031-02762-001	J1	025-21136-000 (737636)	025-32506-000 (738721)
IGBT Gate Driver Board	031-02762-001	J2	025-42614-000 (740129)	025-28386-000 (737925)
IGBT Gate Driver Board	031-02762-001	J3	025-19671-000 (737534)	025-19673-000 (737536)
IGBT Gate Driver Board	031-02762-001	J4	025-19672-000 (737535)	025-22215-000 (62701)
IGBT Gate Driver Board - Inverter	031-02762-001	J5 and J6	Assembly # 571-05526-201 (807106)	N/A
IGBT Gate Driver Board - Rectifier	031-02762-001	J7 and J8	Assembly # 571-05526-211 (807107)	N/A
IGBT Gate Driver Board - Rectifier	031-02762-001	J9 and J11	Assembly # 571-05526-221 (807107)	N/A
IGBT Gate Driver Board - Inverter	031-02762-001	J10	Assembly # 571-05526-231 (807109)	N/A
Converter Resistor Board	031-02764-001	J1 and J4	Assembly # 571-05526-221 (807108)	N/A
Converter Resistor Board	031-02764-001	J2 and J3	Assembly # 571-05526-211 (807107)	N/A
Inverter Resistor Board	031-02765-001	J1	Assembly # 571-05526-231 (807109)	N/A
Inverter Resistor Board	031-02765-001	J2 and J3	Assembly # 571-05526-201 (807106)	N/A
Ambient Temperature at Sensor	-	-	025-29130-000 (738262)	025-28386-000 (737925)
Ambient Temperature at Cable	-	-	025-32564-000 (738737)	025-30999-000 (738540)

Note: All items in Table 8 are NOT shown

NOTES

The following factors can be used to convert from English to the most common SI Metric values.

TABLE 31 - SI METRIC CONVERSION

MEASUREMENT	MULTIPLY ENGLISH UNIT	BY FACTOR	TO OBTAIN METRIC UNIT
Capacity	Tons Refrigerant Effect (ton)	3.516	Kilowatts (kW)
Power	Horsepower	0.7457	Kilowatts (kW)
Flow Rate	Gallons / Minute (gpm)	0.0631	Liters / Second (l/s)
Length	Feet (ft)	0.3048	Meters (m)
	Inches (in)	25.4	Millimeters (mm)
Weight	Pounds (lbs)	0.4536	Kilograms (kg)
Velocity	Feet / Second (fps)	0.3048	Meters / Second (m/s)
Pressure Drop	Feet of Water (ft)	2.989	Kilopascals (kPa)
	Pounds / Square Inch (psi)	6.895	Kilopascals (kPa)

TEMPERATURE

To convert degrees Fahrenheit (°F) to degrees Celsius (°C), subtract 32° and multiply by 5/9 or 0.5556.

Example: $(45.0^{\circ}\text{F} - 32^{\circ}) \times 0.5556 = 7.22^{\circ}\text{C}$

To convert a temperature range (i.e., a range of 10°F) from Fahrenheit to Celsius, multiply by 5/9 or 0.5556.

Example: $10.0^{\circ}\text{F range} \times 0.5556 = 5.6^{\circ}\text{C range}$



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