



## VARIABLE SPEED DRIVE

**RENEWAL PARTS**

Supersedes: 160.00-RP2 (1298)

Form 160.00-RP2 (400)

Thermal Grease 013-03001-000

Ferrite Beads 025-32843-000

Door Handle Operating Mechanism 026-35044-000



28631A

**351, 503, 790 & 1100 HP – 60 Hz**  
**292, 419, 658 & 900 HP – 50 Hz**  
**Styles A, B, C & D**

ITEM NO.	DESCRIPTION	FIG. NO.	PART NUMBER	
			351 HP (292 HP)	503 HP (419 HP)
1	Circuit Breaker, 600 Amp, 65 KA rating for Style "C" and later	5	024-30906-000	—
	Circuit Breaker, 600 Amp, with GFCI, Prior to Style "C"	5	024-27273-000	—
	Circuit Breaker, 800 Amp, with GFCI, Style "A" and later	5	—	024-27822-000
	Circuit Breaker, 800 Amp, Non-GFCI, Original Style	5	—	024-26959-000
3	Shunt Trip Mechanism, Non-GFCI Breaker	5	—	024-26962-000
4	Ground Fault Module, Non-GFCI Breaker	2a	—	024-26961-000
5	Ground Fault Test Panel, Non-GFCI Breaker	2a	—	025-31708-000
7	Metal Oxide Varistors (MOV) 1 MOV, 2 MOV, 3 MOV	3	031-01644-000	031-01644-000
8	Input Current Transformers (7T, 8T)	3	531-01672-001	531-01660-001
9	Free-Wheeling Diode - (1 CR)	5	031-01636-000	031-01636-000
10	SCR Trigger Board	3	031-01472-000	031-01472-000
11	Internal Cooling Coil (Quantity = 2 on 503 HP)	5	026-34440-000	026-34440-000
12	Internal Cabinet Fan	5	025-32557-000	025-32557-000
13	DC Link Inductor	1	025-32542-000	025-31714-000
14	Resistor, Fltr. Pre-Charge, 10 Ω, 375 W. (11 RES, 12 RES, 13 RES)	3	025-32502-000	025-32502-000
15	Resistor, Pre-Charge, 35 Ω, 500 W. (1 RES, 2 RES)	3	025-31700-000	025-31700-000
16	Resistor, DC Balancing, 750 Ω, 225 W. (3 RES, 4 RES)	1	025-31494-000	025-31494-000
17	VSD Logic Board	2	031-01433-000	031-01433-000
18	Coolant Pump in Coolant Header (Quantity = 2 on 503 HP)	4	026-33890-000	026-33890-000
20	Plate Heat Exchanger	4	026-33878-000	026-33878-000
21	Coolant Header 3" PVC with Fill Plug (Old Style, Small Diameter Coolant Headers are no longer available.)	4	371-02289-401	371-02291-401
22	Coolant Manifold Pipe	4	371-01742-437	371-01484-437
23	Control Transformer, 120 VAC 60 Hz, 3 KVA	3	025-31499-000	025-31499-000
24	Transformer, 24 VAC, Class 2	3	025-27911-000	025-27911-000
25	Relay, Control Fan / Pump	3	024-26956-000	024-26956-000
26	K1 Contactor, 4 Pole, 25 AMP	3	024-26954-000	024-26954-000
27	Cartridge Fuse Holder, 30 AMP Max., 600 Volt Rated	2	025-17407-000	025-17407-000
28	5 AMP Cartridge Fuse (YT Style Chillers)	2	025-27922-000	025-27922-000
	7 AMP Cartridge Fuse (YK Style Chiller)	2	025-25515-000	025-25515-000
29	10 AMP Cartridge Fuse	2	025-27971-000	025-27971-000
30	15 AMP Cartridge Fuse	2	025-25584-000	025-25584-000
31	20 AMP Cartridge Fuse	2	025-28967-000	025-28967-000
32	Input Fuses - 1FU, 2FU, 3FU 500 AMP, 700 VOLT	5	025-32585-000	—
	Input Fuses - 1FU, 2FU, 3FU 700 AMP, 700 VOLT	5	—	025-31495-000
32A	Input Rectifiers Chill Plate	5	371-02760-101	371-02760-101
33	Filter Input Fuse, 150 AMP, 500 Volt (Used on Filter Models Only)	3	025-32581-000	—
	Filter Input Fuse, 200 AMP, 500 Volt (Used on Filter Models Only)	3	—	025-30992-000
34	Input Rectifiers (1 SCR, 2 SCR, 3 SCR) each	5	371-02047-001	371-02047-001
35	VSD Output Pole Assembly	3	371-02052-001	371-02048-001
36	Snubber Resistor, 10 ohm	3	025-30986-000	025-30986-000
37	Snubber Capacitor, .047 MFD	3	025-30987-000	025-30987-000
39	Filter Logic Boards - Style "D" VSD	2	031-01632-031	031-01632-032
	Filter Logic Boards - Style "C" VSD	2	031-01632-021	031-01632-022
	Filter Logic Boards - Style "B" VSD	2	031-01632-011	031-01632-012
	Filter Logic Boards - Original (Style "A" on 503 HP only) VSD	2	031-01632-001	031-01632-002
40	BUS Isolator Board	3	031-01624-000	031-01624-000
41	Line Isolator Board - Style "D" VSD	3	031-02022-000	031-02022-000
	Line Isolator Board - Prior to Style "D" VSD	3	031-01625-000	031-01625-000
42	Filter Trap Assembly	1	371-01485-331	371-01485-328
43	3-Phase Filter Inductor	1	025-32583-000	025-31715-000
44	Filter Input Contactor	3	024-25585-000	024-25533-000
45	Electronic Current Sensor, 200 AMP	3	025-32582-000	—
	Electronic Current Sensor, 300 AMP	3	—	025-30994-000

Based Shell and Tube Version 026-37572-000  
Install Kit VSD03036IK  
End Gaskets (2) 371-03716-001

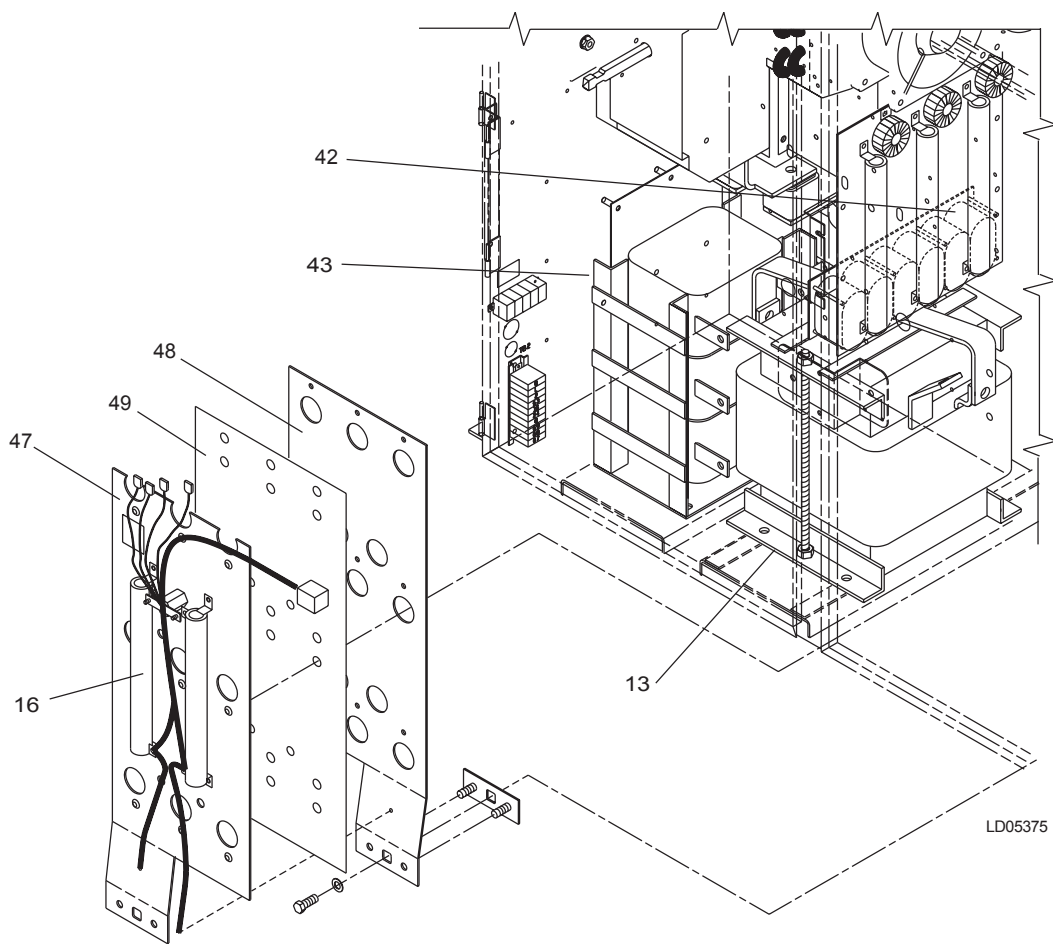


FIGURE 1

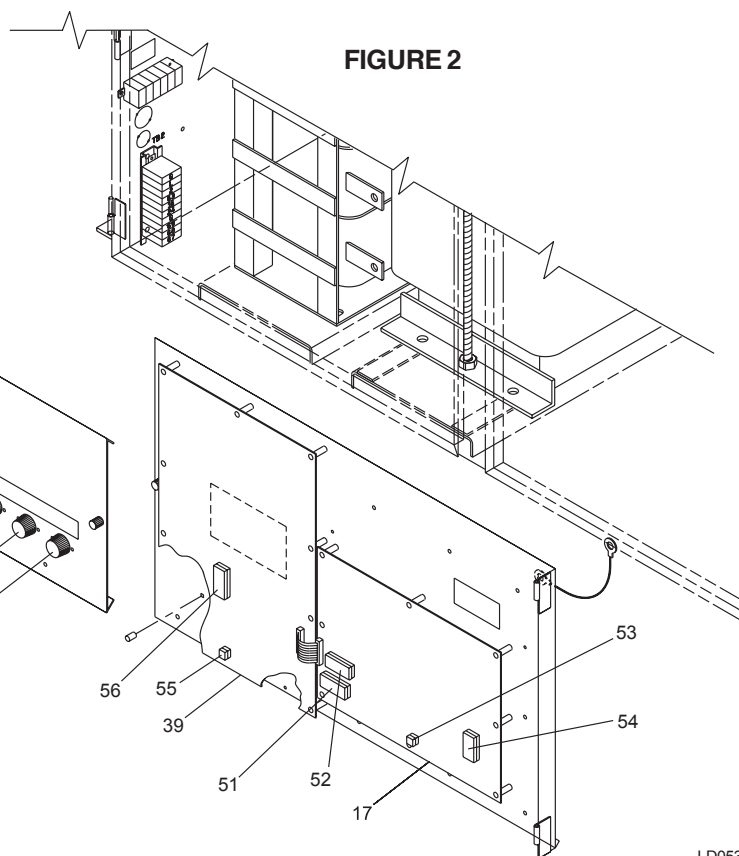
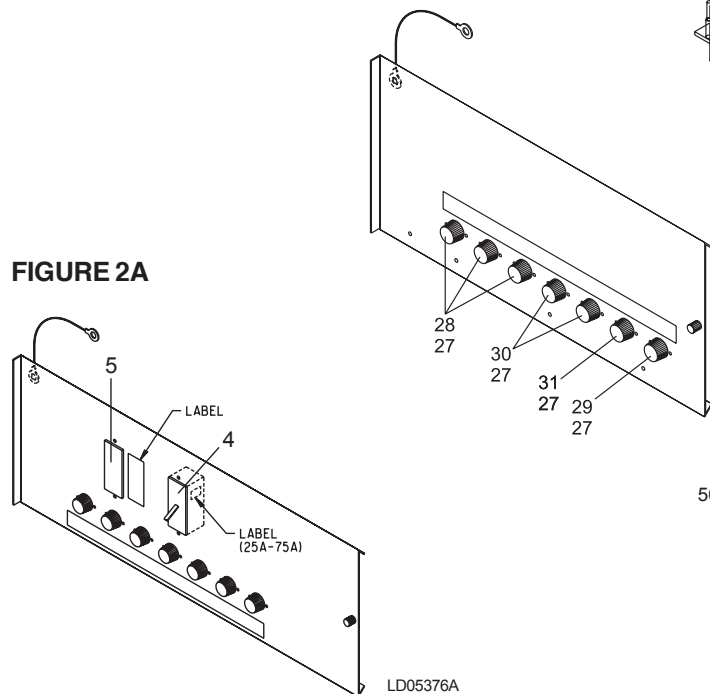


FIGURE 2

FIGURE 2A



LD05376A

LD05376

FIGURE 3

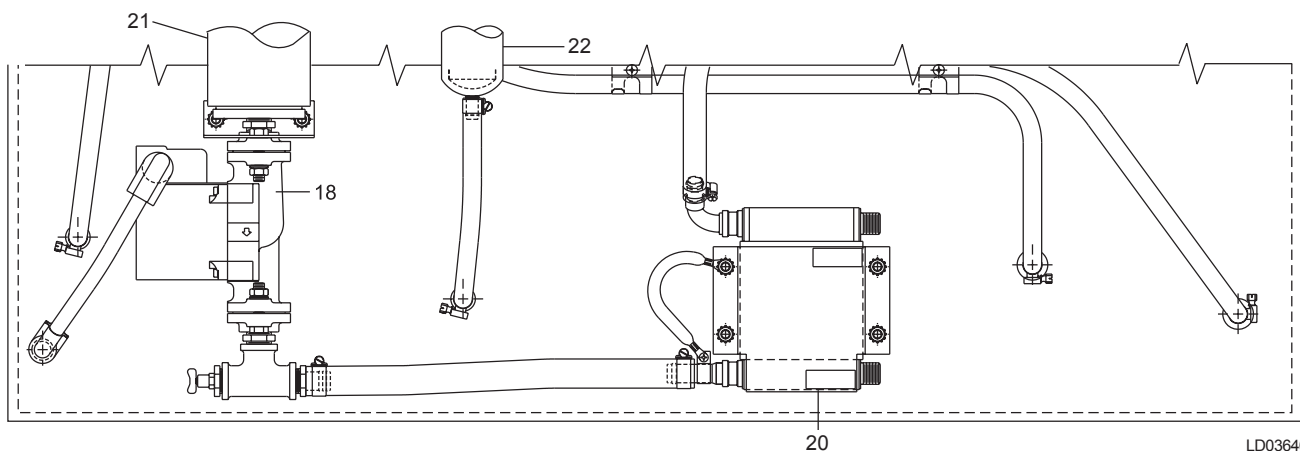
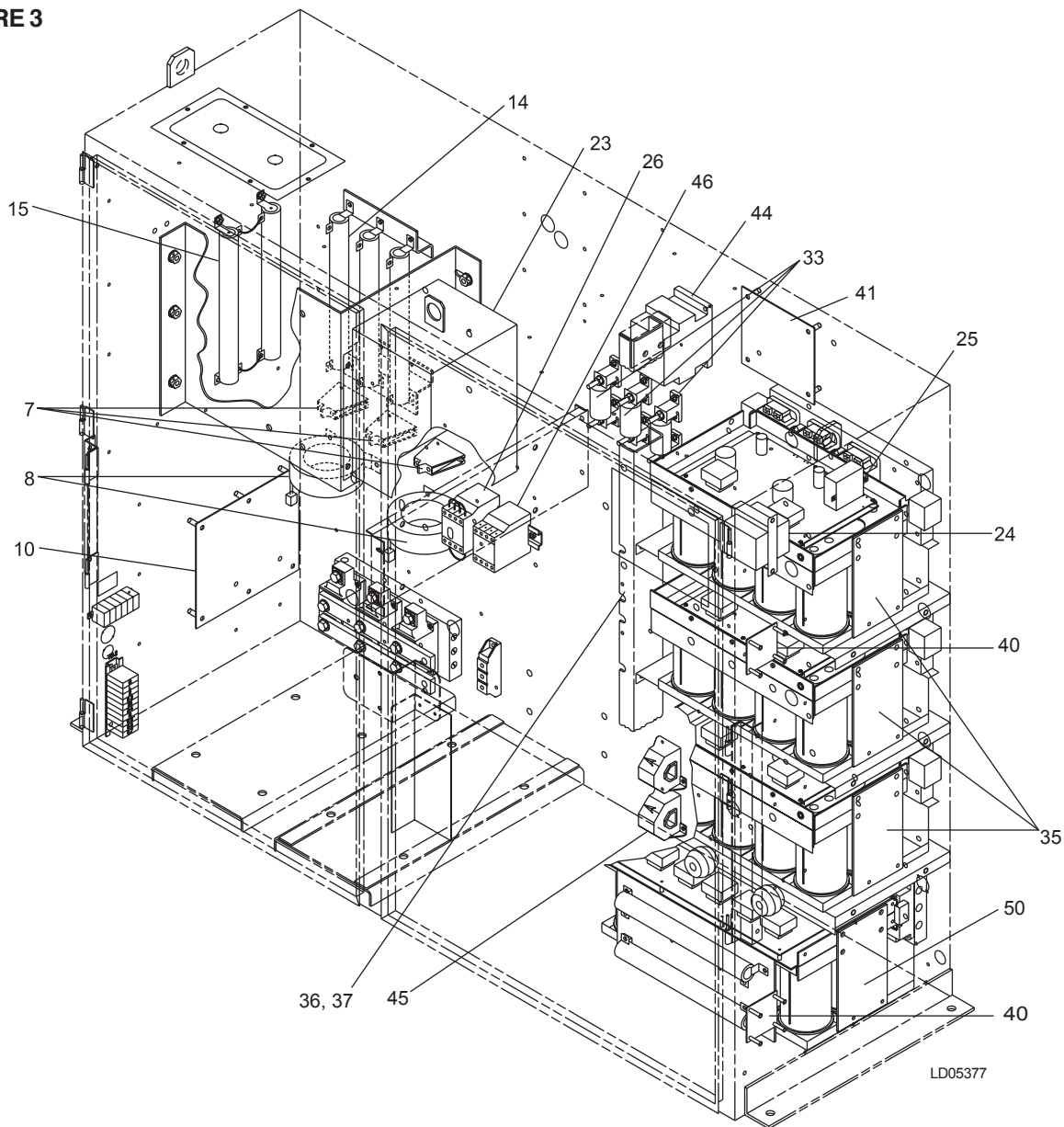


FIGURE 4

REAR OF VSD CABINET

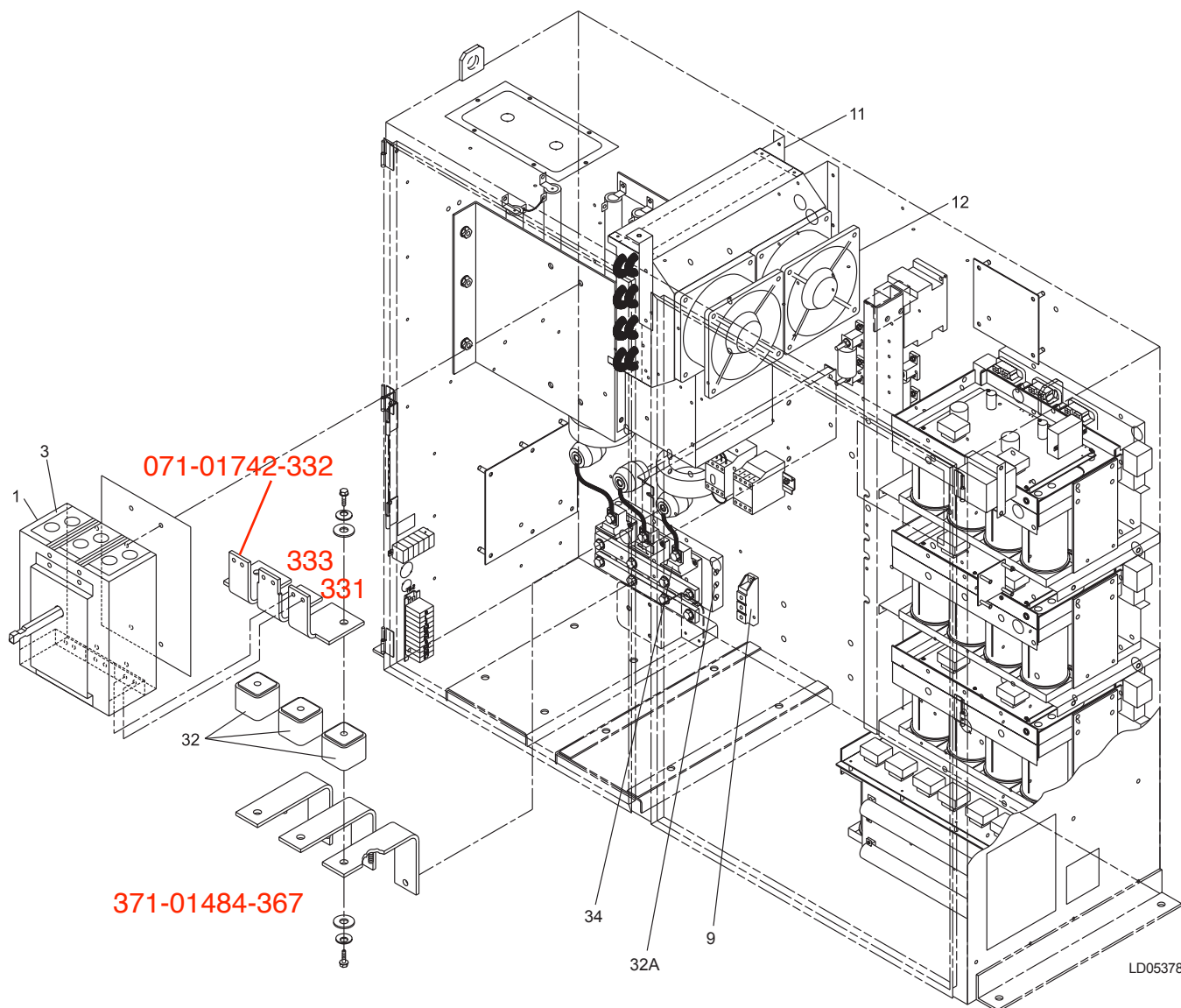
46	Filter Pre-Charge Contactor	3	571-01743-101	571-01743-101
47	Negative Bus Plate	1	371-01484-397	371-01484-397
48	Positive Bus Plate	1	371-01484-351	371-01484-351
49	Insulator Sheet	1	071-01484-349	071-01484-349
50	'519' Filter Pole Assembly – Style "C" and later VSD (IEEE-519 Filter) Shown for 351 HP only, 503 HP is mounted at the top of the VSD poles	3	371-02746-001	371-02745-001
	'519' Filter Pole Assembly - Prior to Style "C" VSD (will include Filter Logic, Harness, and Software)	3	371-01485-339	371-01485-333
Not Shown	Capacitor Bank (Present on 503 HP only)		—	371-01488-101
Not Shown	Optional Top-Hat Conduit Entrance		371-02051-001	371-02050-001

**IEEE-519 FILTER UPGRADE KITS (To Retrofit Filter to a Non-Filter Unit):**

Not Shown	Filter Upgrade (60 Hz)		371-01485-343	371-01485-337
Not Shown	Filter Upgrade (50 Hz)		371-02404-004 <sup>1</sup>	371-02404-008 <sup>2</sup>
Not Shown	Harness and Software Kit, Required on Filter Upgrade of Prior to Style "D" VSD		371-02748-000	371-02748-000

<sup>1</sup>292 HP

<sup>2</sup>419 HP



**FIGURE 5**

**MISCELLANEOUS PARTS** (Note: These parts are not horsepower dependent.)

ITEM NO.	DESCRIPTION	FIG. NO.	PART NUMBER
51	U33 Battery Backed RAM for the VSD Logic Board	2	031-01620-000
Not Shown	Temperature Sensor Supplied on Pole (As Separate Item)		571-01484-211
Not Shown	Y-Strainer, 1.5 Inch		029-21798-000
Not Shown	Rubber Hose, Black, 150# DWP, 1" ID Steel Adapter 023-18069-000		028-13503-000
Not Shown	Rubber Hose, Red, 300# DWP, 3/4" ID		028-11959-000
Not Shown	3/4" NPT Steel Hose Barb – for 1" Rubber Hose		023-18033-000
Not Shown	Suppressor		031-00808-000
Not Shown	Pre-Mixed Coolant (Inhibitor) 1 gallon container 4 Gallons		013-02987-000
Not Shown	Snubber for Motor Terminal Box – Remote Retrofits		375-22732-000
Not Shown	50/60 Hz Inverter for 50 Hz VSD Units		371-02202-101
Not Shown	Vane Pot with Couplings		371-02012-001
Not Shown	Bracket for Vane Pot Mtg. to Compressor		064-48851-000
Not Shown	16 Conductor Ribbon Wire - VSD Logic to Filter Logic Jumper		031-01658-000
Not Shown	Ferrite Beads		025-32843-000
Not Shown	Motor Adapter Plate (4" Deep) - 405S Frame Motors		025-28400-001
Not Shown	Motor Adapter Plate (4" Deep) - 404R, 405R, 444S, 445S, 447S, 449S, 503S, 504S, 505S, 507S, 509S, 588S & 5011S Frame Motors		025-28400-002
Not Shown	Motor Adapter Plate (4" Deep) - 445R, 447R, 449R, 5008R, 5010R, 5808R & 5810R Frame Motors		025-28400-003
Not Shown	Motor Adapter Plate (5 3/4" Deep) - 405T Frame Motors		025-28400-004
Not Shown	Motor Adapter Plate (7 3/4" Deep) - 405T, 445T, 447T, 449T Frame Motors		025-28400-005

**CLEAR PVC TUBING**

Not Shown	Clear PVC Tubing, 7/16" I.D.		028-12239-000
Not Shown	Clear PVC Tubing, 5/8" I.D.		028-13167-000
Not Shown	Clear PVC Tubing, 3/4" I.D.		028-13502-000
Not Shown	Hose Barb, Plastic - Threads Into Heat Sink		023-16247-000

**MICRO-COMPUTER CONTROL PANEL PARTS for VSD APPLICATION ( one line display)**

Not Shown	Adaptive Capacity Control Board		031-01579-000
Not Shown	Membrane Keypad for Control Panel		024-26943-000
Not Shown	ACC Installation Kit – Mounting rails, ribbon cables, hardware. Does not include ACC Board. (YT)		375-22734-000
Not Shown	ACC Installation Kit – Mounting rails, ribbon cables, hardware. Does not include ACC Board. (YK)		375-22733-000
Not Shown	Replacement Ribbon Cable – Micro Board to ACC (Quant. = 1)		031-01322-000
Not Shown	Condenser Transducer for R-11, R-123		025-29148-009

**SOFTWARE FOR THE MICRO-COMPUTER CONTROL PANEL WITH VSD**

Not Shown	U17 Micro Board EPROM (Style "B" and later VSD 60 Hz) YT chiller		031-01676-003
Not Shown	U17 Micro Board EPROM (Style "B" and later VSD 50 Hz) YT chiller		031-01676-002
Not Shown	U17 Micro Board EPROM (Prior to Style "B" VSD ) YT chiller		031-01676-001
Not Shown	U17 Micro Board EPROM (Style "B" and later VSD 60 Hz) YK chiller		031-01675-003
Not Shown	U17 Micro Board EPROM (Style "B" and later VSD 50 Hz) YK chiller		031-01675-002
Not Shown	U17 Micro Board EPROM (Prior to Style "B" VSD ) YK chiller		031-01675-001
Not Shown	U22 Adaptive Capacity Control Board EPROM (Style "B" and later VSD)		031-01674-002
Not Shown	U22 Adaptive Capacity Control Board EPROM (Prior to "B" VSD )		031-01674-001

**421 BRAM ACC Board 031-01620-000 SRAM  
1" Red Rubber 028-13507-000**

**MISCELLANEOUS PARTS** (Note: These parts are not horsepower dependent.)

<b>GRAPHIC CONTROL CENTER &amp; OPTIVIEW PANEL PARTS for VSD APPLICATION</b>			
Not Shown	Adaptive Capacity Control Board		031-01782-000
Not Shown	Membrane Keypad for Control Panel (NEMA 1)		031-01772-000
Not Shown	Membrane Keypad for Control Panel (NEMA 4/12 & CE)		031-02015-000
Not Shown	ACC Installation Kit – includes mounting hardware, cables, and ACC Board. (YT)		371-02725-001
Not Shown	ACC Installation Kit – includes mounting hardware, cables, and ACC Board. (YK)		371-02724-001
Not Shown	Replacement Ribbon Cable – Micro Board to ACC (Quant. = 1)		571-02264-411

**SOFTWARE FOR THE GRAPHIC CONTROL CENTER & OPTIVIEW PANEL WITH VSD**

Not Shown	U46 Micro Board EPROM (YK Only 50 / 60 Hz)		031-01797-001
Not Shown	U46 Micro Board EPROM (YT Only 50 / 60 Hz)		031-02004-001
Not Shown	U16 Adaptive Capacity Control Board EPROM (Style “B” and later VSD )		031-01674-002
Not Shown	U16 Adaptive Capacity Control Board EPROM (Prior to Style “B” VSD )		031-01674-001

**HARNESSES**

Not Shown	Vane Pot Wiring from Vane Pot to ACC Board		375-22735-402
Not Shown	VSD Cabinet to Control Panel Wiring Kit - 10 Feet		375-22736-000
Not Shown	VSD Cabinet to Control Panel Wiring Kit - 50 Feet		375-22737-000

**SOFTWARE FOR ALL HP SIZES**

52	U34 VSD Logic Board EPROM (Style “D” VSD 50Hz )	2	031-01617-004
	U34 VSD Logic Board EPROM (Style “D” VSD 60Hz )	2	031-01617-005
	U34 VSD Logic Board EPROM (Style “B” & “C” VSD 50Hz )	2	031-01617-002
	U34 VSD Logic Board EPROM (Style “B” & “C” VSD 60Hz )	2	031-01617-003
	U34 VSD Logic Board EPROM (Prior to Style “B” VSD 60Hz )	2	031-01617-001
53	U40 VSD Logic Board Serial PROM (Style Original & “A” – “D” )	2	031-01619-001
54	U45 VSD Logic Board EPROM (Style Original & “A” – “D” 60 Hz)	2	031-01618-001
	U45 VSD Logic Board EPROM (Style Original & “A” – “D” 50 Hz)	2	031-01618-002
55	U26 IEEE 519 Filter Logic Board Serial PROM (Style “B” and later VSD )	2	031-01680-002
	U26 IEEE 519 Filter Logic Board Serial PROM (Prior to Style “B” VSD )	2	031-01680-001
56	U42 IEEE 519 Filter Logic Board EPROM (Style “D” VSD 50Hz )	2	031-01633-004
	U42 IEEE 519 Filter Logic Board EPROM (Style “D” VSD 60Hz )	2	031-01633-005
	U42 IEEE 519 Filter Logic Board EPROM (Style “B” & “C” VSD 50Hz )	2	031-01633-002
	U42 IEEE 519 Filter Logic Board EPROM (Style “B” & “C” VSD 60Hz )	2	031-01633-003
	U42 IEEE 519 Filter Logic Board EPROM (Prior to Style “B” VSD 60Hz )	2	031-01633-001

ITEM NO.	DESCRIPTION	FIG. NO.	PART NUMBER	
			790 HP (658 HP)	1100 HP (900 HP)
1	Circuit Breaker, 1100 Amp, with GFCI	10	224-30463-000	—
	Circuit Breaker, 1200 Amp, with GFCI	10	—	224-30955-000
7	Metal Oxide Varistors (MOV) 1 MOV, 2 MOV, 3 MOV	8	031-01644-000	031-01644-000
8	Input & Output Current Transformers	8	531-01701-001	531-02026-001
9	Free-Wheeling Diode - (1 CR)	8	031-01636-000	031-01636-000
10	SCR Trigger Board	8	031-01472-000	031-01472-000
11	Internal Cooling Coil	10	026-34462-000	026-34461-000
12	Internal Cabinet Fan	10	025-32557-000	025-32557-000
13	DC Link Inductor	10	025-32832-000	025-34104-000
14	Resistor, Fitr. Pre-Charge, 10 $\Omega$ , 375 W. (11 RES, 12 RES, 13 RES)	8	025-32502-000	025-32502-000
15	Resistor, Pre-Charge, 35 $\Omega$ , 500 W. (1 RES, 2 RES)	8	025-31700-000	025-31700-000
16	Resistor, DC Balancing, 750 $\Omega$ , 225 W. (3 RES, 4 RES)	6	025-31494-000	025-31494-000
17	VSD Logic Board	7	031-01433-000	031-01433-000
18	Coolant Pump in Coolant Header	9	026-33890-000	026-33890-000
19	Coolant Pump at Heat Exchanger	9	026-35036-000	026-35036-000
20	Plate Heat Exchanger	9	026-34463-000	026-34463-000
21	Coolant Header 3" PVC with Fill Plug Older Style, Small Diameter Coolant Headers are no longer available.	9	371-02293-401	371-02293-401
23	Control Transformer, 120 VAC 60 Hz, 2 KVA	8	025-29627-002	025-29627-002
	Control Transformer, 120 VAC 50 Hz, 2 KVA	8	025-29627-003	—
24	Transformer, 24 VAC, Class 2	8	025-27911-000	025-27911-000
25	Relay, Control Fan / Pump Two relays are required for 790 HP & 1 100 HP units	8	024-30441-000	024-30441-000
26	K1 Contactor, 4 Pole, 25 AMP	8	024-26954-000	024-26954-000
27	Cartridge Fuse Holder, 15 AMP Max., 480 Volt Rated (Style "C" and later 790 HP)	7	025-33727-000	025-33727-000
27a	Cartridge Fuse Holder, 30 AMP Max., 600 Volt Rated (All Fuse Holders Prior to Style "C" 790 HP noted items on Style "C" & "D" 790 HP & 1100 HP)	7	025-17407-000	025-17407-000
28	5 AMP Cartridge Fuse (YT Style Chillers) (Prior to Style "C" 790 HP)	7	025-27922-000	—
	5 AMP Cartridge Fuse (YT Style Chillers) (Style "C" and later 790 HP)	7	025-33722-000	025-33722-000
	7 AMP Cartridge Fuse (YK Style Chiller) (Prior to Style "C" 790 HP)	7	025-25515-000	—
	7 AMP Cartridge Fuse (YK Style Chiller) (Style "C" and later 790 HP)	7	025-33724-000	025-33724-000
29	7 AMP Cartridge Fuse	7	025-25515-000	025-25515-000
30	10 AMP Cartridge Fuse (Prior to Style "C" 790 HP)	7	025-27971-000	—
	10 AMP Cartridge Fuse (Style "C" and later 790 HP)	7	025-33725-000	025-33725-000
31	20 AMP Cartridge Fuse	7	025-28967-000	025-28967-000
32	Input Fuses – 1FU, 2FU, 3FU 1100 AMP, 700 VOLT	10	025-32914-000	—
	Input Fuses – 1FU, 2FU, 3FU 1600 AMP, 700 VOLT	10	—	025-34166-000
33	Filter Input Fuse, 300 AMP, 500 Volt (Used on Filter Models Only)	10	025-32833-000	—
	Filter Input Fuse, 500 AMP, 500 Volt (Used on Filter Models Only)	10	—	025-34167-000
34	Input Rectifiers (1 SCR, 2 SCR, 3 SCR) each	11	371-01752-001	—
35	VSD Output Pole Assembly	6	371-01746-344	371-02513-344
36	Snubber Resistor, 10 ohm	11	025-30986-000	025-30986-000
37	Input SCR Replacement Kit (1 SCR, 2 SCR, 3 SCR) each	11	—	371-02536-001
38	Input Diode Replacement Kit (1D, 2D, 3D) each	11	—	371-02537-001
39	Filter Logic Boards - Style "D" VSD	7	031-01632-033	031-01632-034
	Filter Logic Boards - Style "C" VSD	7	031-01632-023	—
	Filter Logic Boards - Style "B" VSD	7	031-01632-013	—
	Filter Logic Boards – Original (Style "A" on 503 HP only) VSD	7	031-01632-003	—
40	BUS Isolator Board	8	031-01624-000	031-01624-000
41	Line Isolator Board - Prior to Style "D" VSD	8	031-01625-000	—
	Line Isolator Board - Style "D" VSD	8	031-02022-000	031-02022-000
42	Filter Trap Assembly	10	371-01748-328	371-02535-101
43	3-Phase Filter Inductor	10	025-32842-000	025-34103-000

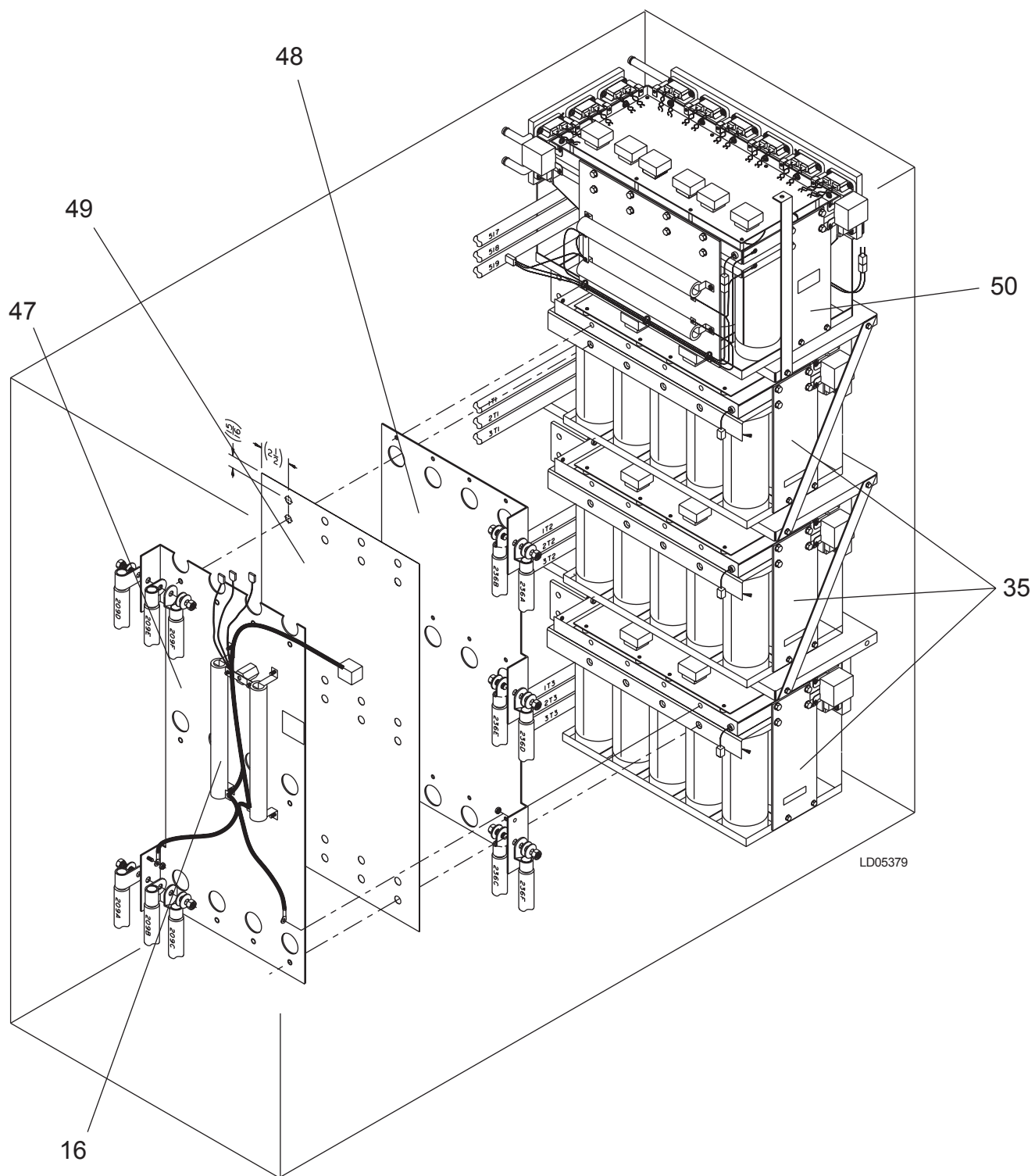


FIGURE 6

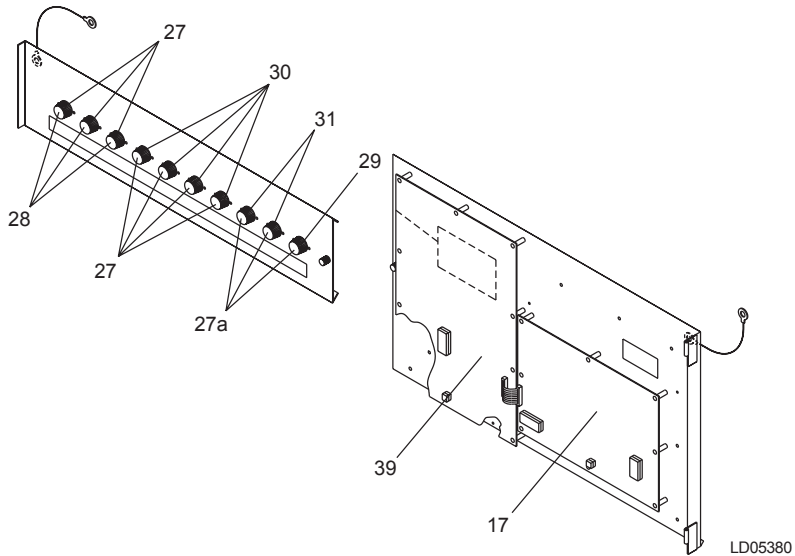


FIGURE 7

LD05380

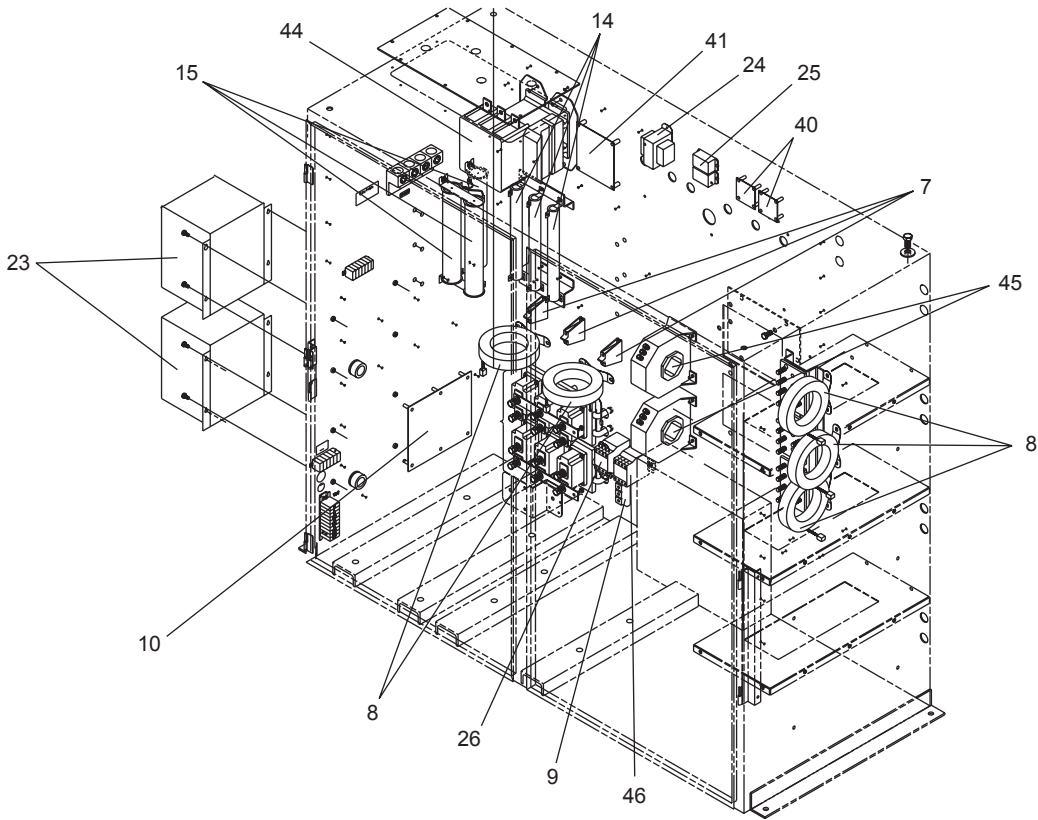


FIGURE 8

LD05381

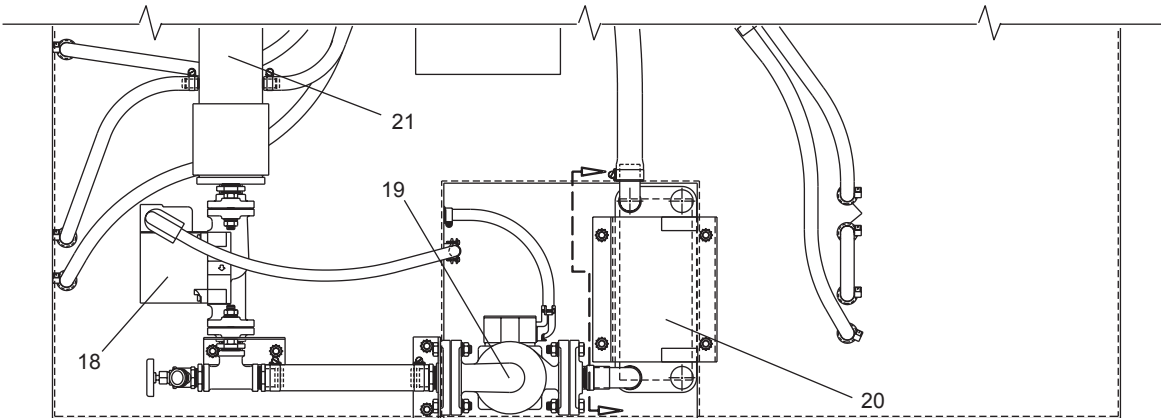


FIGURE 9

LD05382

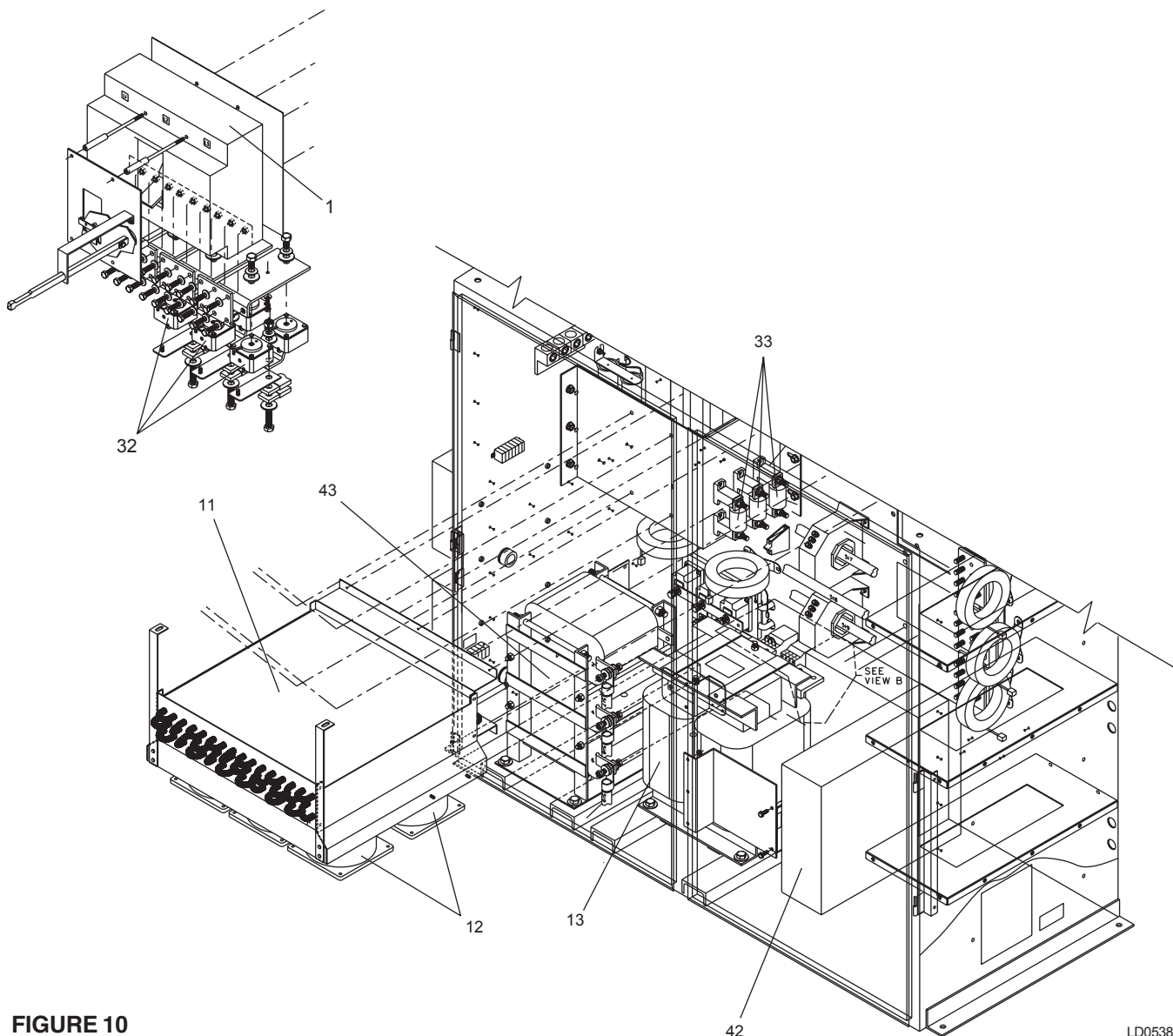
44	Filter Input Contactor	8	024-26972-000	024-30954-000
45	Electronic Current Sensor, 1000 AMP	8	025-32923-000	—
	Electronic Current Sensor, 2000 AMP	8	—	025-34168-000
46	Filter Pre-Charge Contactor	8	571-01743-101	571-01743-101
47	Negative Bus Plate	6	371-01746-321	371-01746-321
48	Positive Bus Plate	6	371-01746-341	371-01746-341
49	Insulator Sheet	6	071-01746-326	071-01746-326
50	'519' Filter Pole Assembly - Style "C" and later (IEEE-519 Filter)	6	371-02744-001	371-02517-344
	'519' Filter Pole Assembly - Prior to Style "C" (will include Filter Logic, Harness, and Software)	6	371-01748-338	—
51	Snubber Capacitor, .047 MFD	11	025-30987-000	025-30987-000

**MISCELLANEOUS**

Not Shown	Optional Top-Hat Conduit Entrance		371-01751-001	371-01751-001
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**IEEE-519 FILTER UPGRADE KITS (To Retrofit Filter to a Non-Filter Unit):**

Not Shown	Filter Upgrade (60 Hz)		371-01748-342	371-02517-366
Not Shown	Filter Upgrade (50 Hz)		371-02404-012 <sup>3</sup>	371-02517-362 <sup>4</sup>
Not Shown	Harness and Software Kit, Required on Filter Upgrade of Prior to Style "D"		371-02748-000	—
			<sup>3</sup> 658 HP	<sup>4</sup> 900 HP



**FIGURE 10**

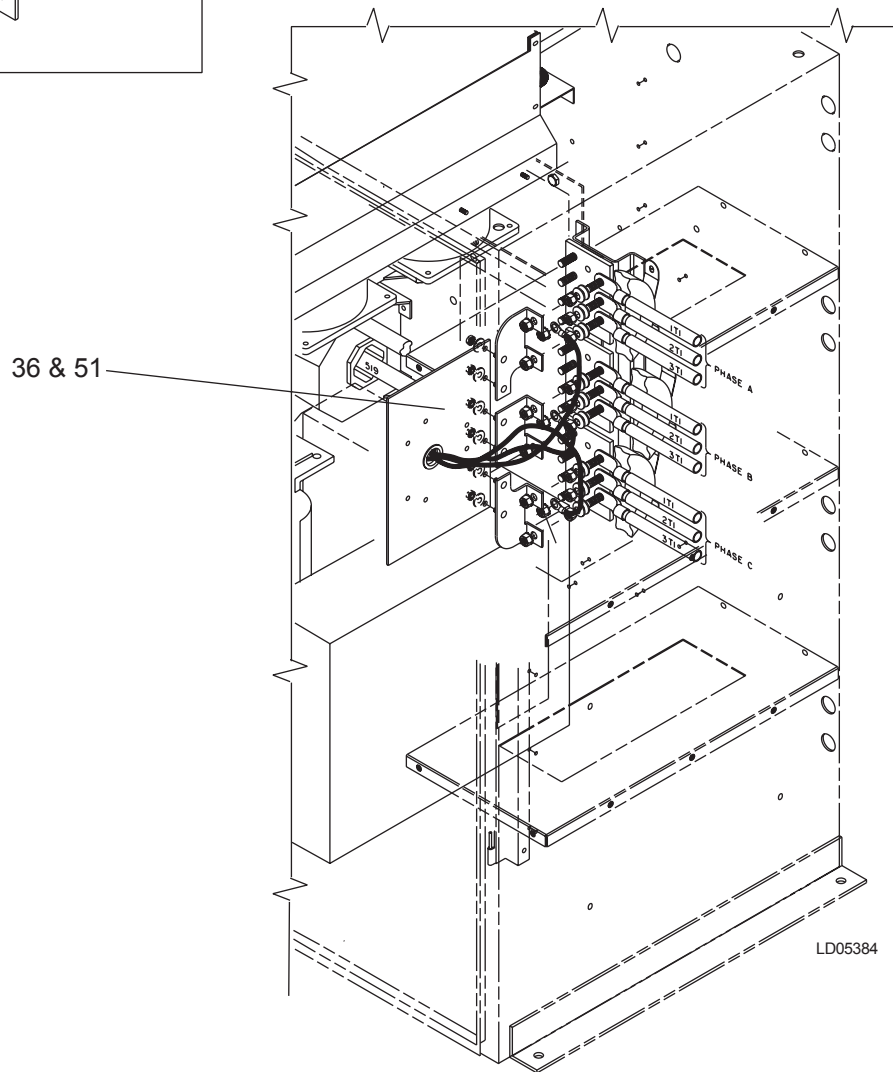
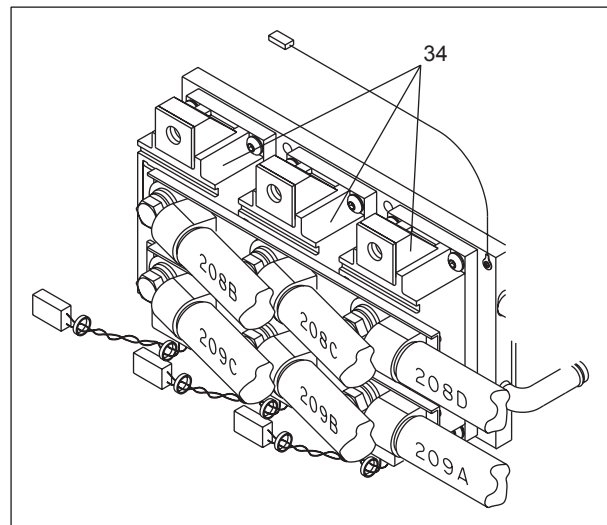
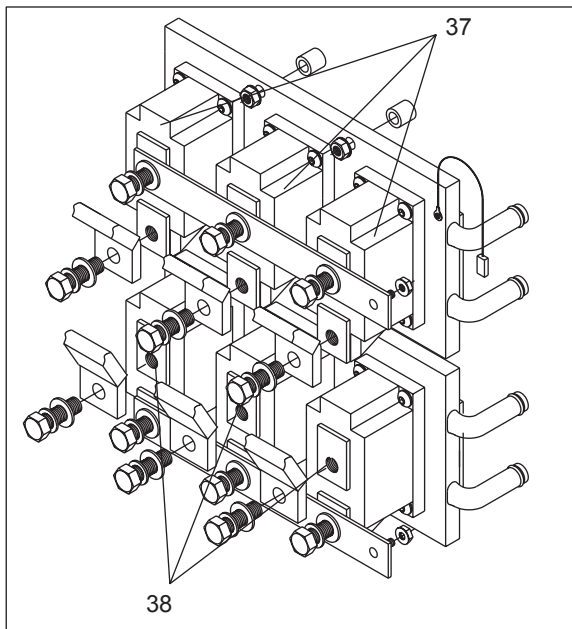


FIGURE 11

