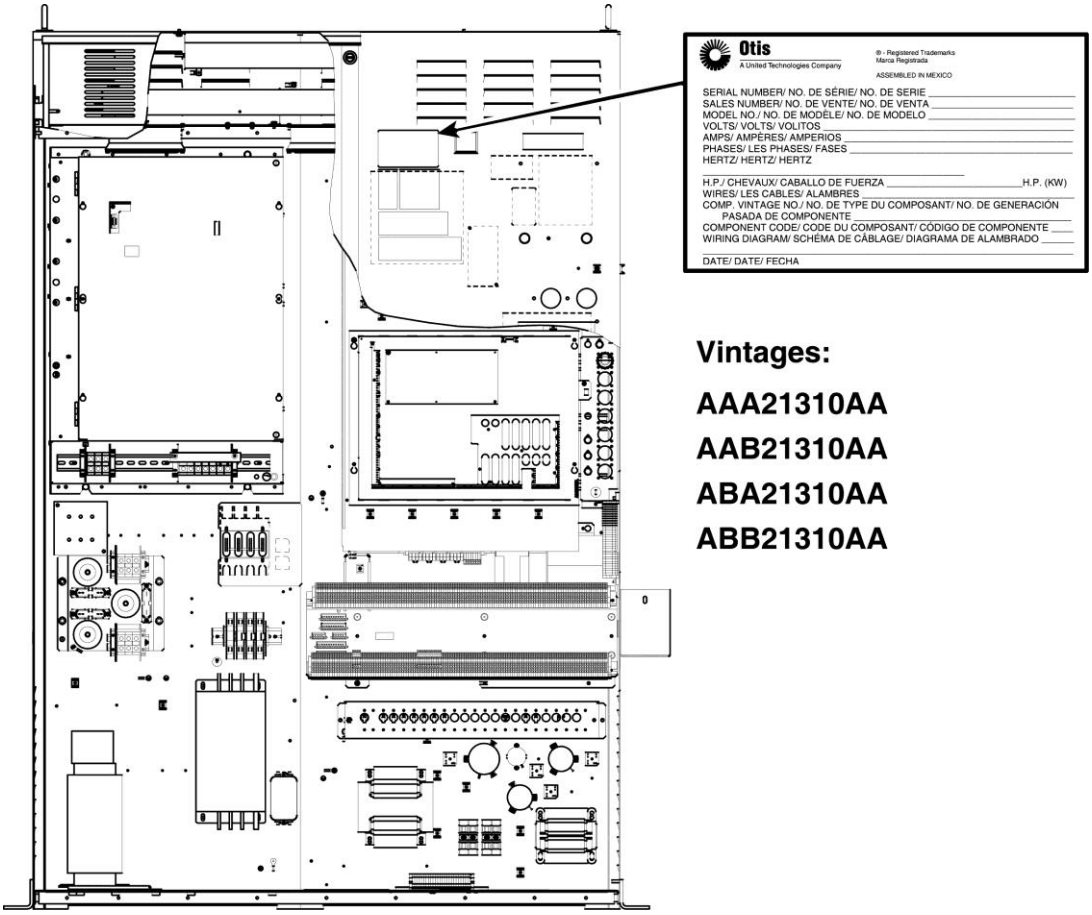
Controller, Modular Micro-Processor (NGGC)

Spare Parts Leaflet

10-AAA21310AA

OBSOLESCENCE NOTICE

The product covered in this SPL has been designated as obsolete and is no longer supported. See TIP 32.2-1, *Obsolete Components*, for potential upgrade. Replacement lower-level parts listed within and unique to this design will be reviewed for obsolescence.



Vintages:

AAA21310AA
AAB21310AA
ABA21310AA
ABB21310AA

OTIS

This document does not contain any technical data subject to EAR or ITAR

SERVICE ENGINEERING
Otis Elevator Company
Bloomfield, Connecticut USA

History

Leaflet Description

The NGGC is a gearless variable frequency controller based on the Otis GEM controller design but modified to work with the machine room-less components associated with the Gen2® system.

Leaflet Revisions

Date Revised	Subject Matter Expert	Reason for Revision
January 14, 2004	Brian Mierzejewski	New SPL
August 3, 2005	Starr Walker	Update LRUs to current production version.
October 2, 2006	Ali Bozorgzadeh	Add information to OCSS baseline software.
June 25, 2008	Ali Bozorgzadeh	Corrected part number from AAA638F12 to AAA638AF12 on p. 8.
February 3, 2010	Ali Bozorgzadeh	Modified illustration to show fan location on page 15.
June 9, 2010	Ali Bozorgzadeh	Added to the Related Drawings table on History page
June 1, 2011	Ali Bozorgzadeh	Changed battery p/n AAA718F1 to GAA718C1 in ref. 1 on p. 7
November 6, 2013	Ali Bozorgzadeh	Updated illustration of ABA26800KS1 (p. 5).
September 21, 2022	Juan Murillo	Updated to include OBSOLESCENCE note on cover

Related Drawings

Drawing No.	Title	Drawing No.	Title
AAA21310AA	Assembly and Arrangement, Unified Controller	AAA21305AZ	Miscellaneous Equipment, Unified/NGGC Control Section Subassembly
AAA21305AY	Miscellaneous Equipment, Unified/NGGC Drive Section Subassembly	AAB21290BU	Controller, Integrated Controller Top and D.B. Resistor Panel
ABA21305AP	Miscellaneous Equipment, Manual Rescue Assembly, NGGC/Unified Controller	AAA174AFW	Motor Power Wiring
AAA174AGA	Motor Thermal Contact Wiring	AAA174AGS	Machine Encoder (PVT) Wiring
AAA174AFQ	Rescue Encoder Wiring	AAA174AFK	Machine & Emergency Brake Switch Wiring
AAA174AFJ	Machine & Emergency Brake Coil Wiring	AAA174AFU	Top of Hoistway Devices Wiring

Related Documents

Document ID	Title
M.L. AAA27076BG	Material List for Drawing AAA21310AA
M.L. AAA27076BX	Material List for Drawing AAA21305AZ
M.L. AAA27076BZ	Material List for Drawing AAA21306AY
SPL 10-GAA26800BB	Brake (BRE), SPB & Service Panel Board CAN (SPBC)
SPL 31-AAA431AF	Fixture Part, Keylock
SPL 31-AAA636A	Fixture Part, Keyswitch Rotary Switch
SPL 10-AAA21290AK	Variable Frequency (OVF30) Drives: 70A-210A

Subject Matter Expert

Name	Department
Ali Bozorgzadeh	OSC Service Engineering

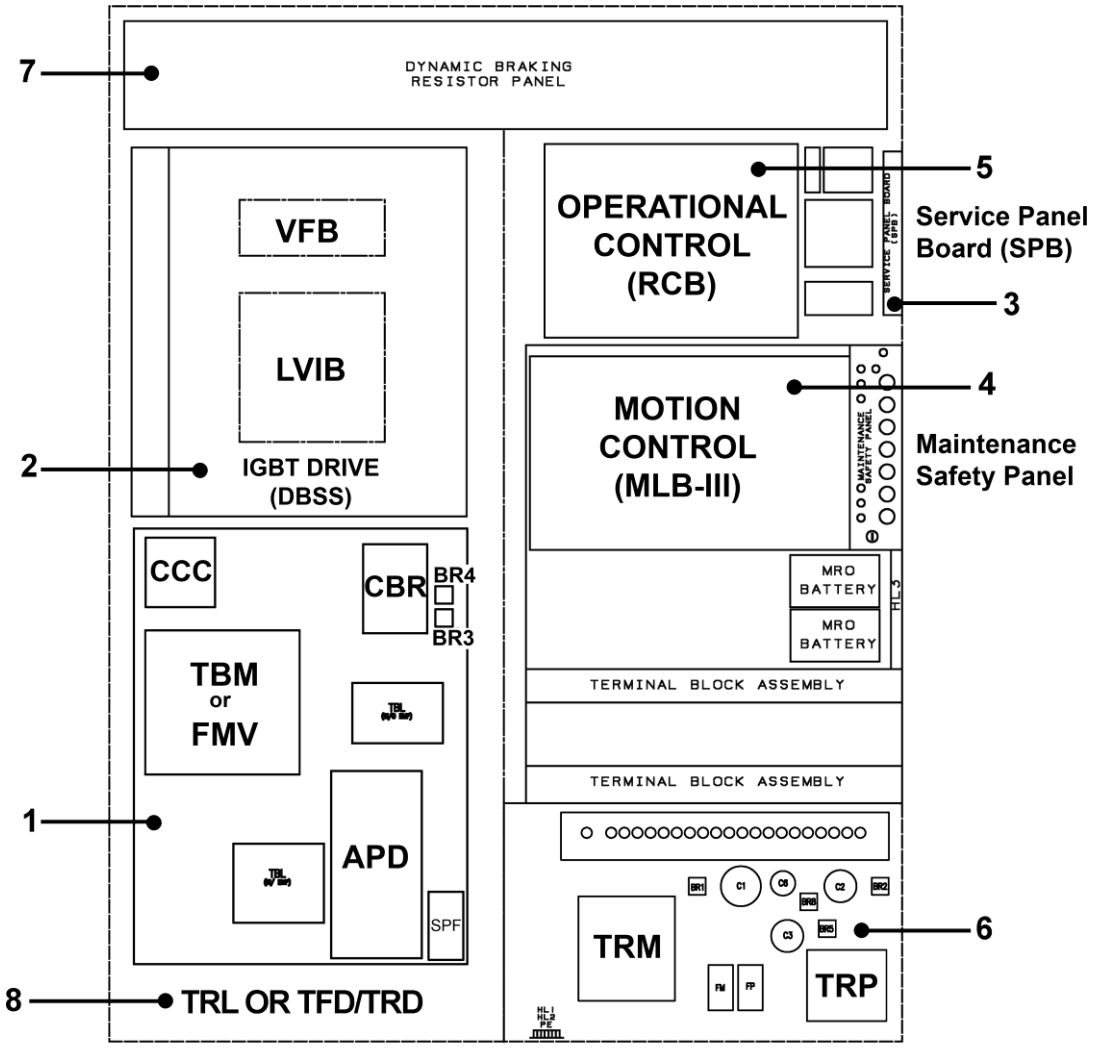
About Spare Parts Leaflets…

This document lists the lowest replaceable units (LRUs) for the standard version of the product. The LRUs are chosen by a team of Otis associates representing engineering and manufacturing.

While the goal of this document is to make parts identification as easy as possible, the document cannot be all-inclusive. Elevator and escalator contracts classified as “special” or “custom” are not addressed here. For such contracts, please refer to specified information, the contract folder, TIPs, Field Education Articles, Construction Letters, etc. for further information.

If you have any suggestions about this document, please contact the subject matter expert listed on this page.

Main Controller Layout

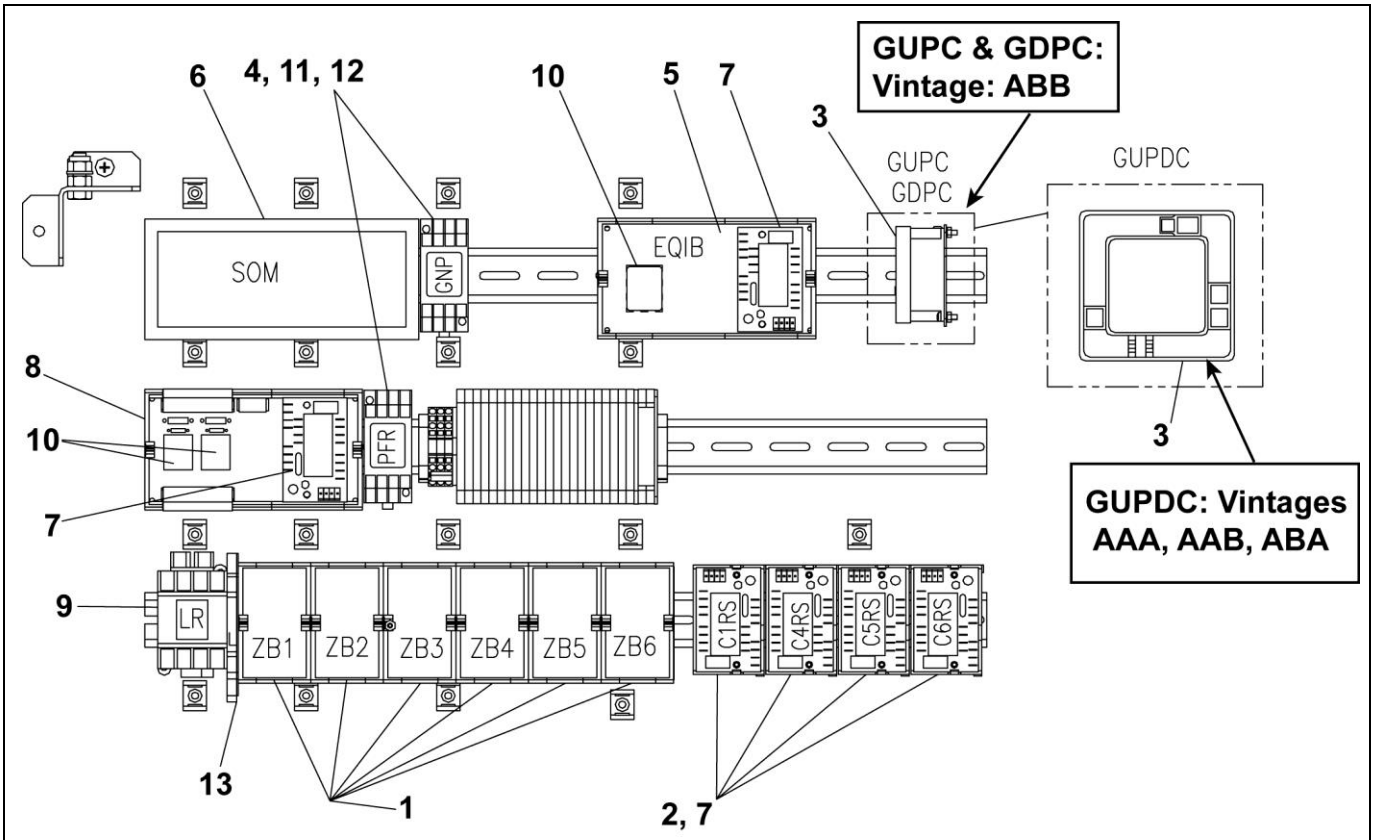


Main Controller Layout (XEMF)

REF. No.	PAGE No.	DESCRIPTION
1	15	Assembly, Drive Panel (Input/Output Power)
2	12	Assembly, IGBT Drive (DBSS)
3	17	Assembly, Manual Rescue Operation (MRO), Miscellaneous Equipment
4	8–11	Assembly, Motion Control Panel (MCSS)
5	5–7	Assembly, Operational Control Panel (OCSS)
6	13–14	Assembly, Power Supply
7	16	Resistors, Dynamic Braking (DBR)
8	18	Transformers, Door Operators

Operational Control Panel

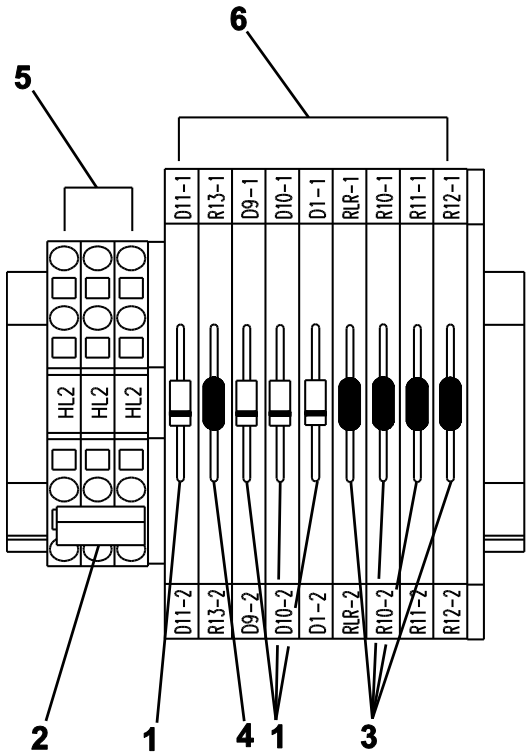
10-AAA21310AA



	ALL VINTAGES		
REF. NO.	**PART NO.**	**DESCRIPTION**	**SYMBOL**
1	AAA21380D1	Assembly, Filter Module	ZB1–ZB6
	AAA26800KP1	Assembly, Filter PCB	---
2	AAB26810A1	Assembly, Remote Station	C1RS, C4RS, C5RS, C6RS
3	623T1	Clock	GUPDC
	AAA623AG1	Timer (up peak clock)	GUPC
	AAA623AG1	Timer (down peak clock)	GDPC
4	AAA612AF3	Diode	PFR, GNP
5	ABB21380E3	Module, Seismic	EQIB
6	GDA26800AL1	Module, Switchover	SOM
7	GFA23550D1	PC Board, Remote Station	RS5
8	ABA26800KS1	PC Board, Standby Power Service	SPB
9	AAA613DL31	Relay, 120 VAC (2 NO, 2 NC	LR
10	AAA613CZ2	Relay, Seismic Module PCB	K1
11	AAA613CZ8	Relay, Socket Mount (24 VDC)	PFR, GNP
12	618AE2	Socket, Relay	PFR, GNP
13	AAA303EP199	Terminal Block, w/Relay 24 VDC	L

Operational Control Panel

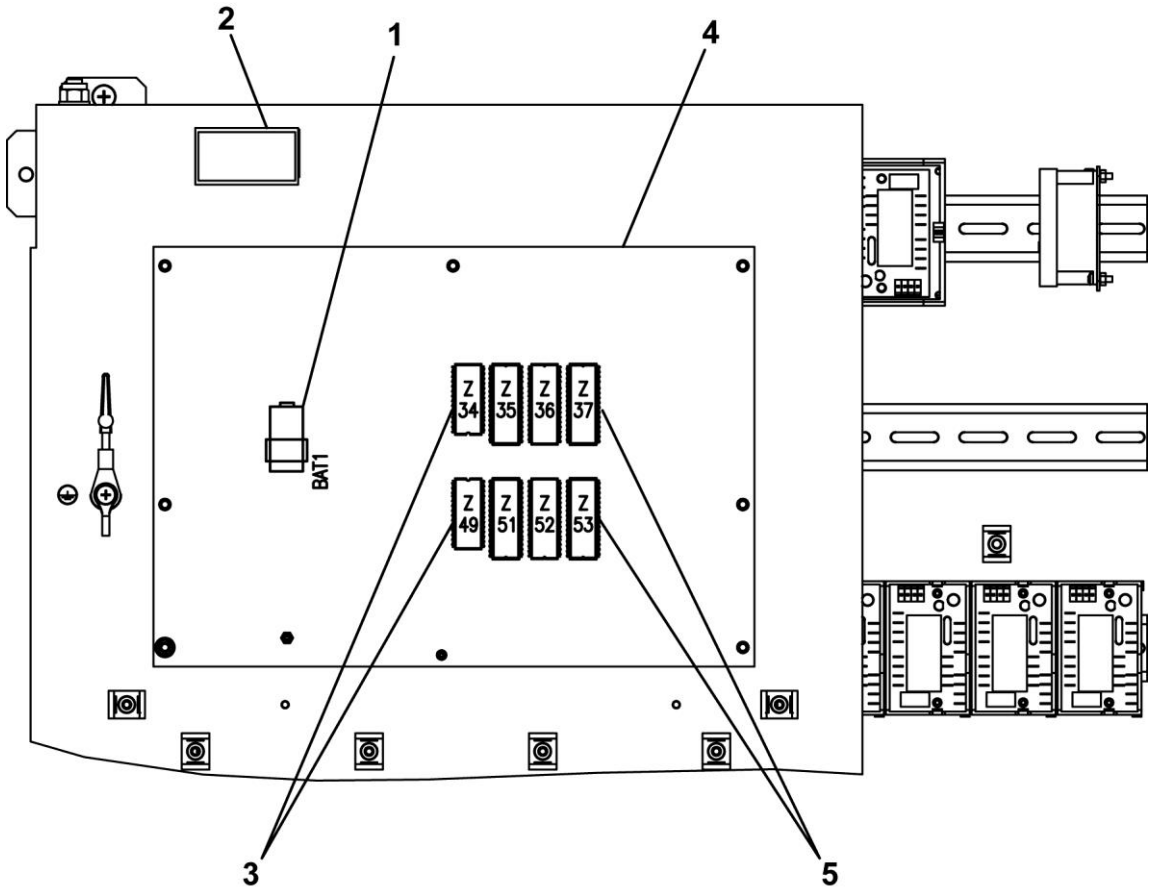
Terminal Blocks



	ALL VINTAGES		
REF. No.	**PART No.**	**DESCRIPTION**	**SYMBOL**
1	AAA612AK1	Diode	D1, D9, D10, D11
2	AAA303EP49	Jumper	HL2
3	AAA232FV73	Resistor, 1 K Ohm, 1/4 W 5%	R10, R11, R12, RLR
4	AAA232GJ33	Resistor, 180 Ohm, 5 W	R13
5	AAA303EP1	Terminal Block	HL2
6	AAA303EP42	Terminal Block	D1, D9, D10, D11, R10, R11, R12, R13, RLR

OCP—Ring Car PC Board

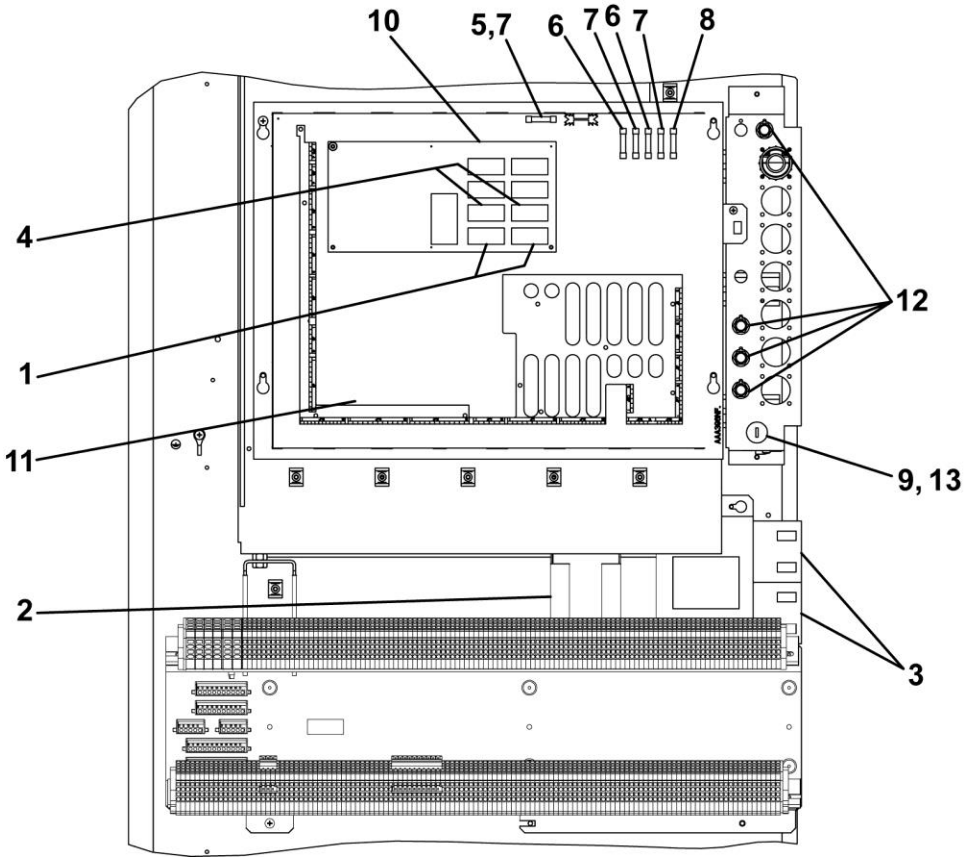
10-AAA21310AA



	ALL VINTAGES		
REF. No.	**PART No.**	**DESCRIPTION**	**SYMBOL**
1	GAA718C1	Battery, 3 V	RCBII
2	CAA623C2	Counter	---
3	AAA616KM2	EEPROM (blank)	Z34, Z49
4	GHA21270A3	PC Board, Ring Car II	RCBII
5	---	Software, OCSS Baseline, ---30005---, **NOTE**	Z37, Z53

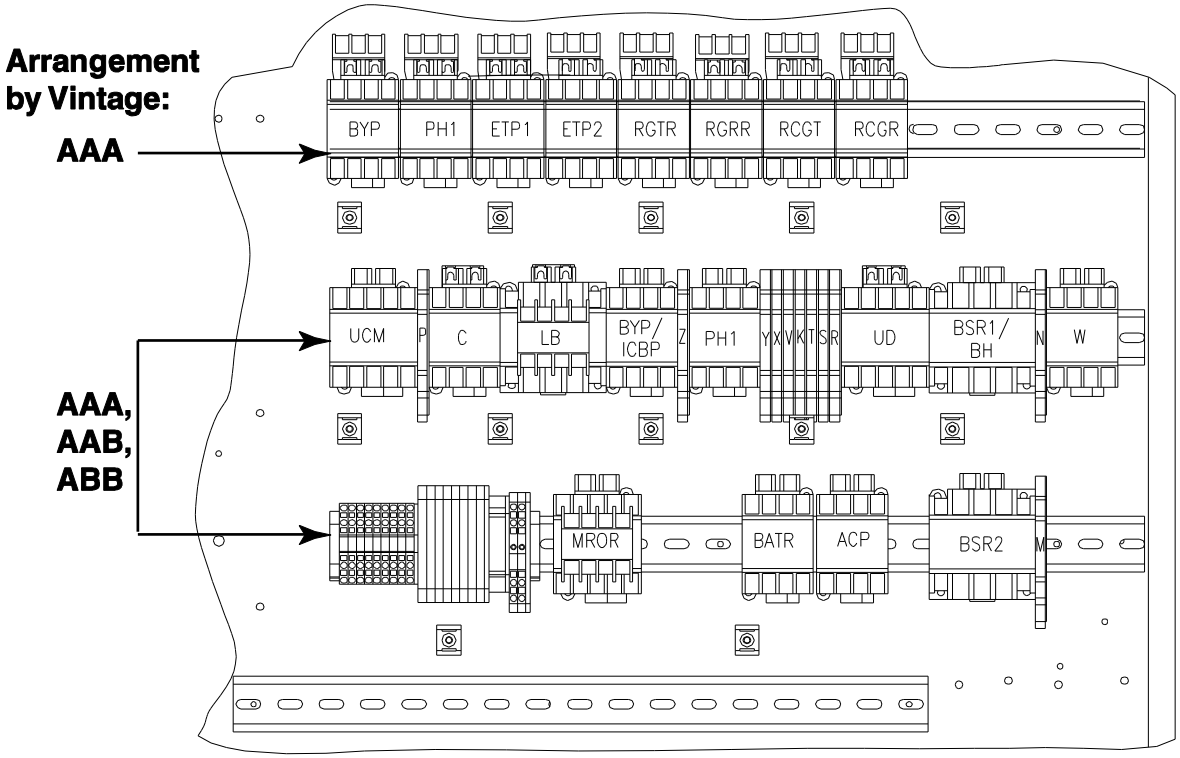
NOTE: Contact your OSC Customer Service Representative for the latest revision.

10-AAA21310AA Motion Control Panel



	ALL VINTAGES		
REF. No.	**PART No.**	**DESCRIPTION**	**SYMBOL**
1	AAA616NG1	Bat-RAM, CPU	U22, U23
2	AAA718E3	Battery, 12 V	BAT 1
3	AAA718E14	Battery, 12 V	BAT 2
4	AAA616KM3	EEPROM, CPU	U20, U21
5	AAA653L100	Fuse Cover	F1-F5
6	AAA375BR6	Fuse, 1 A	F3, F5
7	AAA375BR12	Fuse, 3 A	F2, F4, FT
8	AAA375BR14	Fuse, 4 A	F1
9	AAA431AF18	Lock, Keyed, SPL 31-AAA431AF	CIS
10	AAA26800QM1	PC Board, CPU	CPU
11	ABA26800AJV1	PC Board, Motion Logic Board	MLB III
---	---	Software, CPU, ---30396---, **NOTE**	CPU
12	AAA635L3	Switch, Button Assembly	Gov. Test, CUIB, CDIB, CCIB
13	ABA636A5	Switch, Rotary, SPL 31-AAA636A	CIS

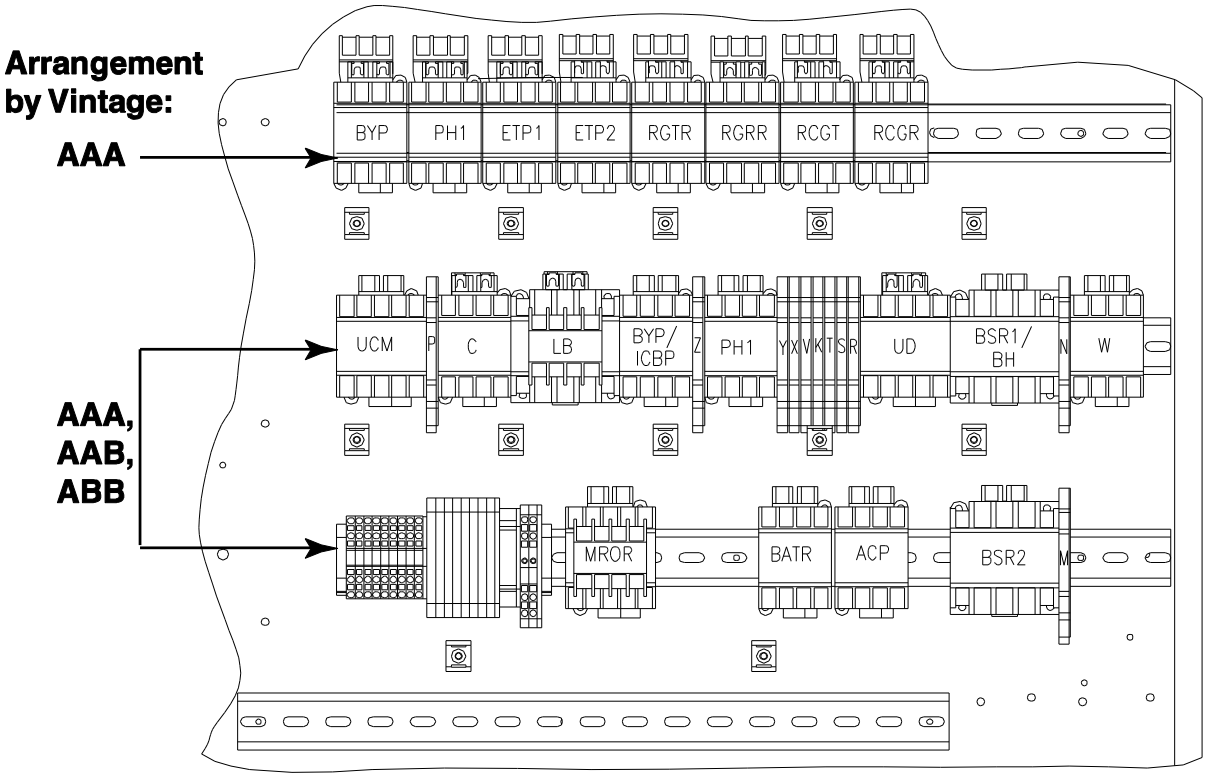
NOTE: Contact you OSC Customer Service Representative for the latest revision.



NOTE: The arrangement of relays is shown for illustrative purposes only. Actual placement of relays will vary on the panel assemblies. Refer to symbol column under your specific vintage.

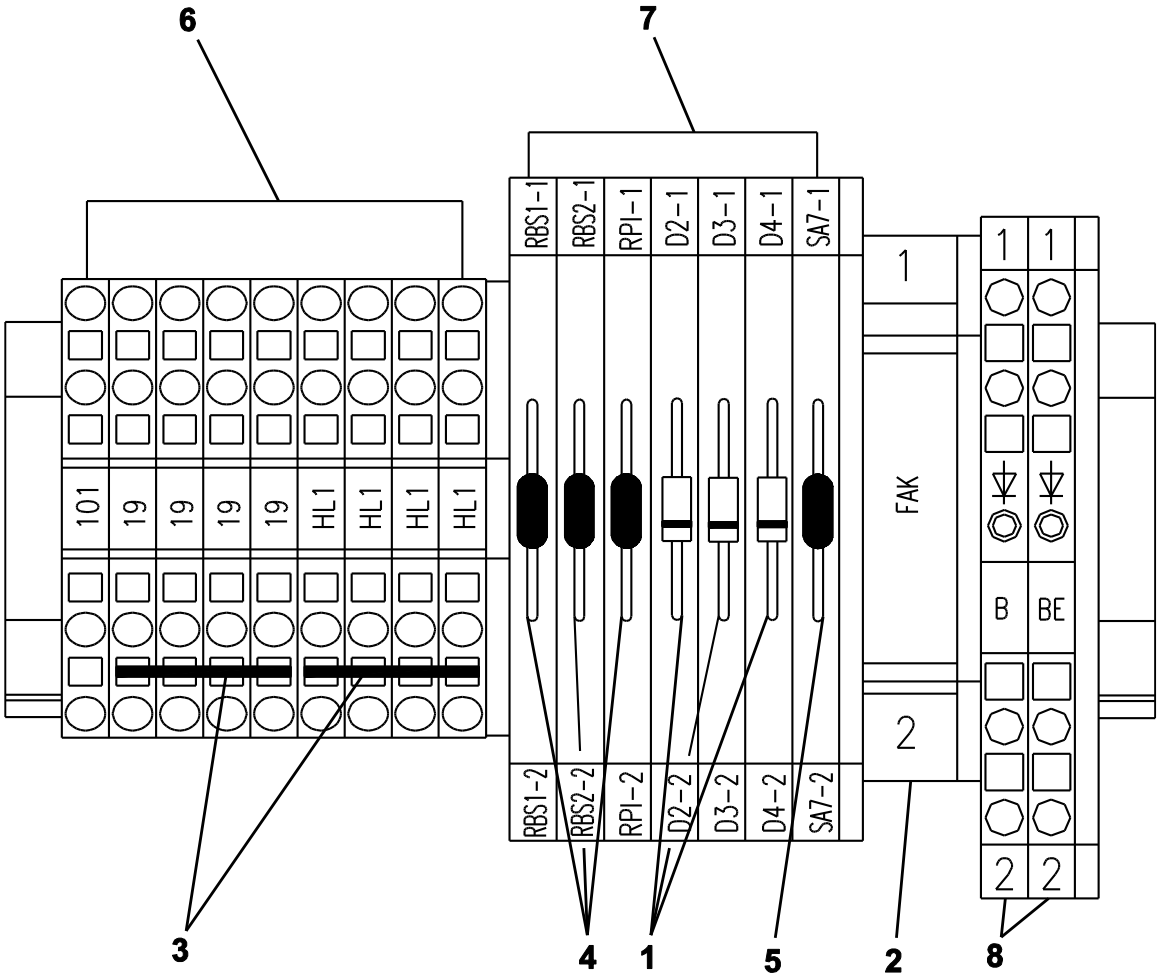
		A _ _21310AA			
		AAA	AAB	ABA	ABB
PART NO.	**DESCRIPTION**	**SYMBOL**			
AAA613DL72	Contact, Auxiliary, (2 NO, 2 NC)	LB	LB	LB	LB
AAA638AF12	Relay, Contactor, 100-110 VAC 50 HZ, 110-120 VAC 60 HZ, 3 NO Main Contacts, 1 NO, 1 NC Auxiliary Contacts	BSRI, BSR2, LB	BSRI, BSR2, LB	BH, LB	LB
AAA638AF15	Relay, Contactor, 100-120 VAC 50 HZ, 120-130 VAC 60 HZ, 3 NO Main Contacts, 1 NO, 1 NC Auxiliary Contacts	UCM, UD	UCM, UD	UCM, UD	UCM, UD
AAA638AF21	Relay, Contactor, 24 VDC, 3 NO Main Contacts, 1 NO, 1 NC Auxiliary Contacts	MROR	MROR	MROR	MROR
AAA613DL31	Relay, Control, 110-120 VAC 50 HZ, 120-130 VAC 60 HZ, 2 NO, 2 NC Contacts	BYP, C, ETPI, ETP2, PHI, RCGT, RCGR, RGRR, RGTR, W	BYP, C, PHI, W	ACP, C, ICBP, PHI, W	ACP, C, ICBP, PHI, W

(Continued on next page)



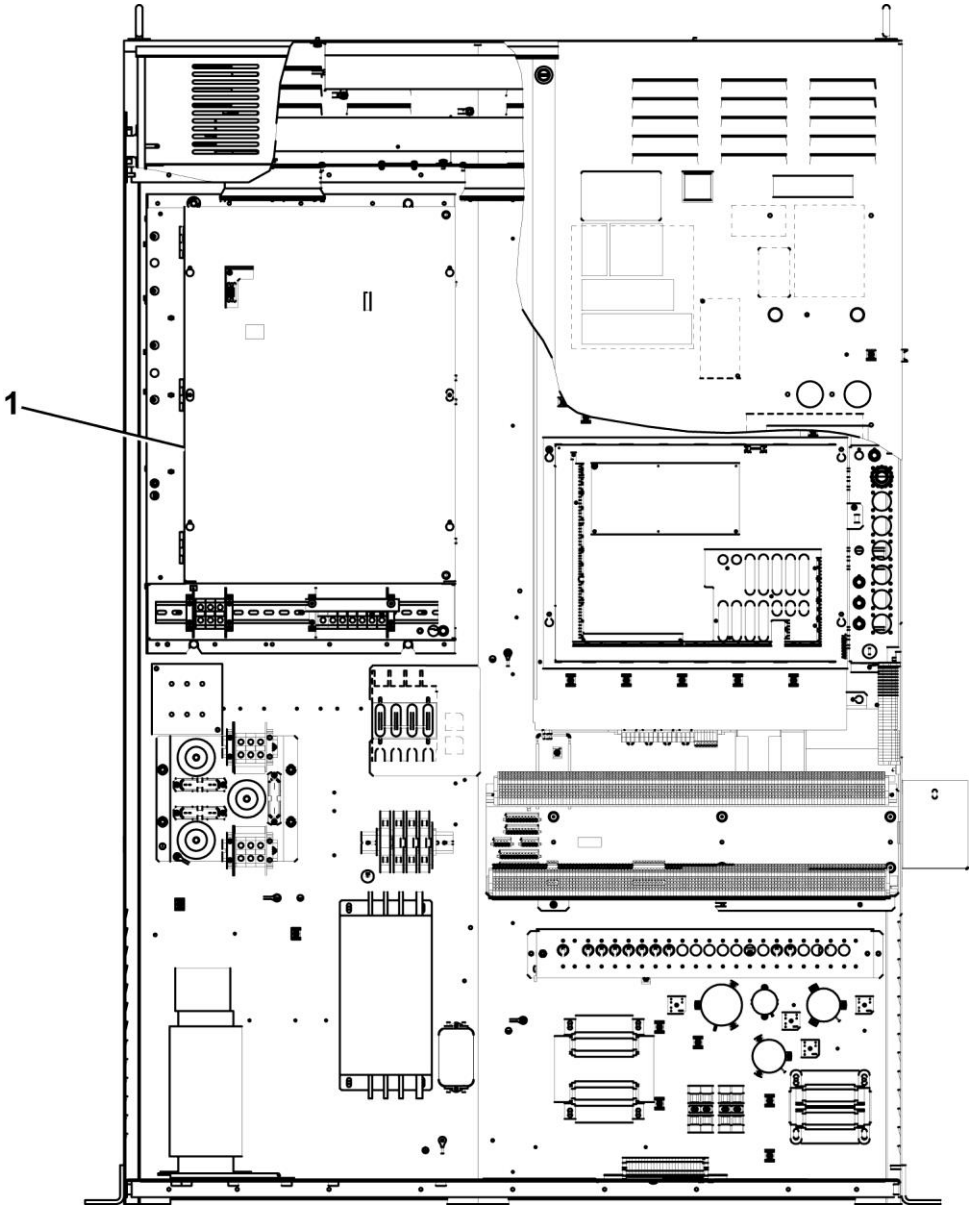
NOTE: The arrangement of relays is shown for illustrative purposes only. Actual placement of relays will vary on the panel assemblies. Refer to symbol column under your specific vintage.

		A _ _21310AA			
		AAA	AAB	ABA	ABB
PART NO.	DESCRIPTION	SYMBOL			
AAA613DL91	Relay, 24 VDC (3 NO, 1 NC)	---	---	BATR	BATR
AAA613DL61	Suppressor (RC)	C, LB, UD, W	BSRI, BSR2, BYP, C, LB, PHI, UCM, UD, W	ACP, BH, C, ICBP, LB, PHI, UCM, UD, W	ACP, C, ICBP, LB, PHI, UCM, UD, W
AAA303EP199	Terminal Block w/Relay, 24 VDC	---	K, M, N, P, R, S, T, V, X, Y, Z	K, N, P, R, S, V, X, Y, Z	K, P, R, S, T, X, Y, Z
AAA613DL81	Coil Driver, 24 VDC	BSRI, BSR2, BYP, ETPI, ETP2, RCGR, RCGT, RGRR, RGTR, PH1, UCM	---	---	---

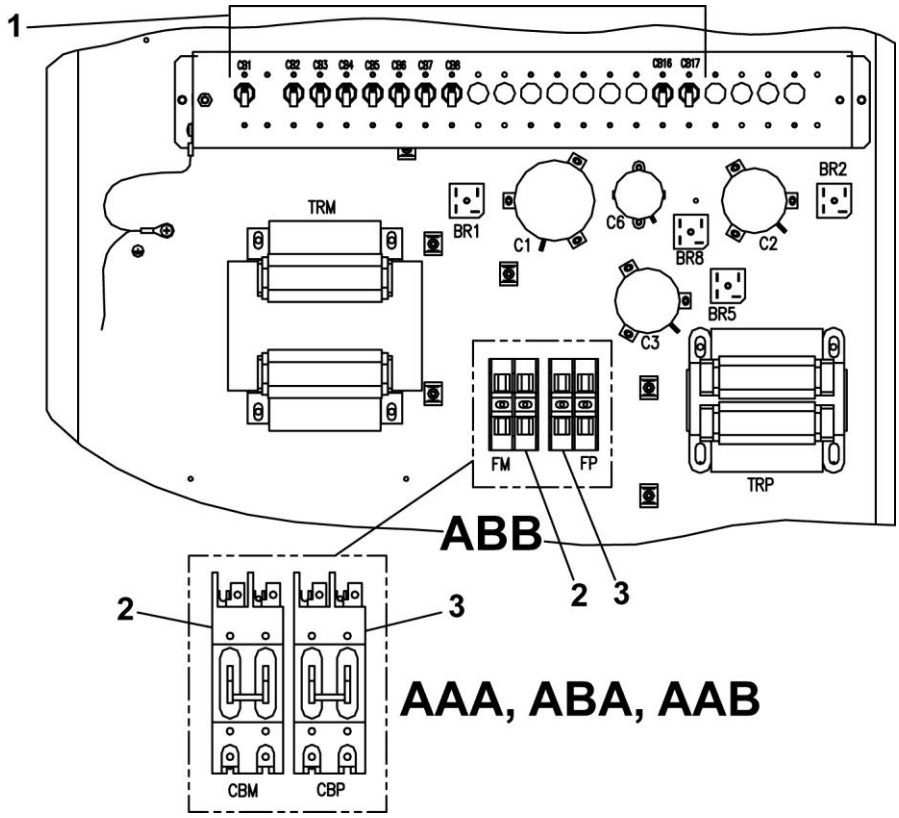


	ALL VINTAGES		
REF. No.	**PART No.**	**DESCRIPTION**	**SYMBOL**
1	AAA612AK1	Diode	D2, D3, D4
2	AAA375BT24	Fuse, Fast Acting	FAK
3	AAA303EP50	Jumper	HL1,19
4	AAA232FT55	Resistor,180 Ohm, 0.5 W	RPI, RBS2, RBS1
5	AAA605AA54	Suppressor	SA7
6	AAA303EP1	Terminal Block	HL1,19,101
7	AAA303EP42	Terminal Block	SA7, D4, D3, D2, RPI, RBS2, RBS1
8	AAA303EP205	Terminal Block, w/LED	B, BE

Drive-Brake Subsystem



	ALL VINTAGES			
REF. No.	**PART No.**	**DESCRIPTION**		**SYMBOL**
1	ACA21290BA2	Assembly, Drive, OVF-30, 120 A	SPL 10-AAA21290AK for LRUs	DBSS
	ACA21290BM1	Assembly, Drive, OVF-30, 210 A		
	ACA21290BJ2	Assembly, Drive, OVF-30, 90 A		

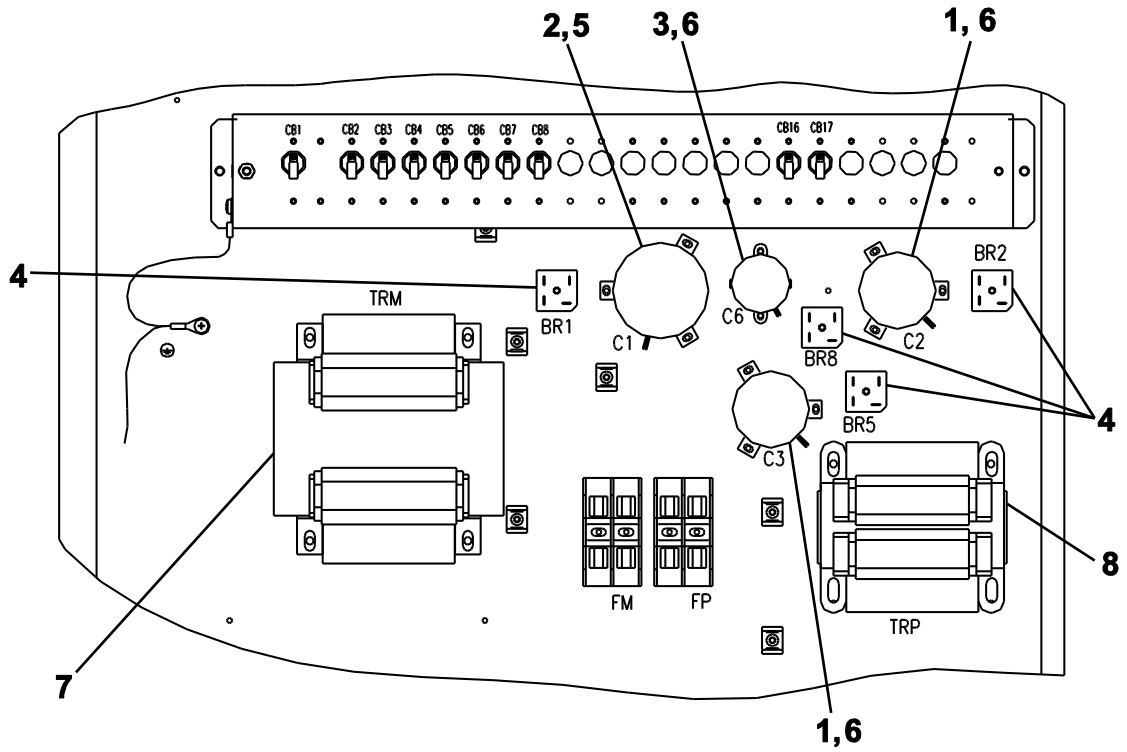


	ALL VINTAGES		
REF. NO.	**PART NO.**	**DESCRIPTION**	**SYMBOL**
1	AAA637C2	Circuit Breaker, 1 Pole, 2.5 A (short delay)	CB4, CB16
	AAA637C8	Circuit Breaker, 1 Pole, 5.0 A (long delay)	CB3, CB5, CB6, CB7, CB17
	AAA637C10	Circuit Breaker, 1 Pole, 10.0 A (long delay)	CB8
	AAA637C24	Circuit Breaker, 2 Pole, 15.0 A (long delay)	CB1
	AAA637C25	Circuit Breaker, 1 Pole, 2.5 A (Long Delay)	CB2
2	~~AAA637F12~~	~~Circuit Breaker, 5 A, <241,~~ **NOTE 1**	~~CBM~~
	~~AAA637F11~~	~~Circuit Breaker, 3 A, >240,~~ **NOTE 1**	~~CBM~~
	AAA375BK29	Fuse, 4 A, > 439 V, Limited Duty, **NOTE 2**	FM1,FM2
	AAA375BK39	Fuse,10 A, < 439 V, Limited Duty	FM1,FM2
	AAA375BK35	Fuse, 7 A, > 439 V, Extended Duty, **NOTE 2**	FM1,FM2
	AAA375BK41	Fuse,15 A, < 439 V, Extended Duty	FM1,FM2
3	~~AAA637F12~~	~~Circuit Breaker, 5 A, <241,~~ **NOTE 1**	~~CBP~~
	~~AAA637F9~~	~~Circuit Breaker, 2 A, >240,~~ **NOTE 1**	~~CBP~~
	AAA375BK21	Fuse, 2 A, > 439 V	FP1,FP2
	AAA375BK29	Fuse, 4 A, < 439 V	FP1,FP2

NOTE 1: Refer to CI 16-04-017.

NOTE 2: If TRM transformer is p/n AAA225LR1, 2, or 3, controller should be considered Extended Duty.

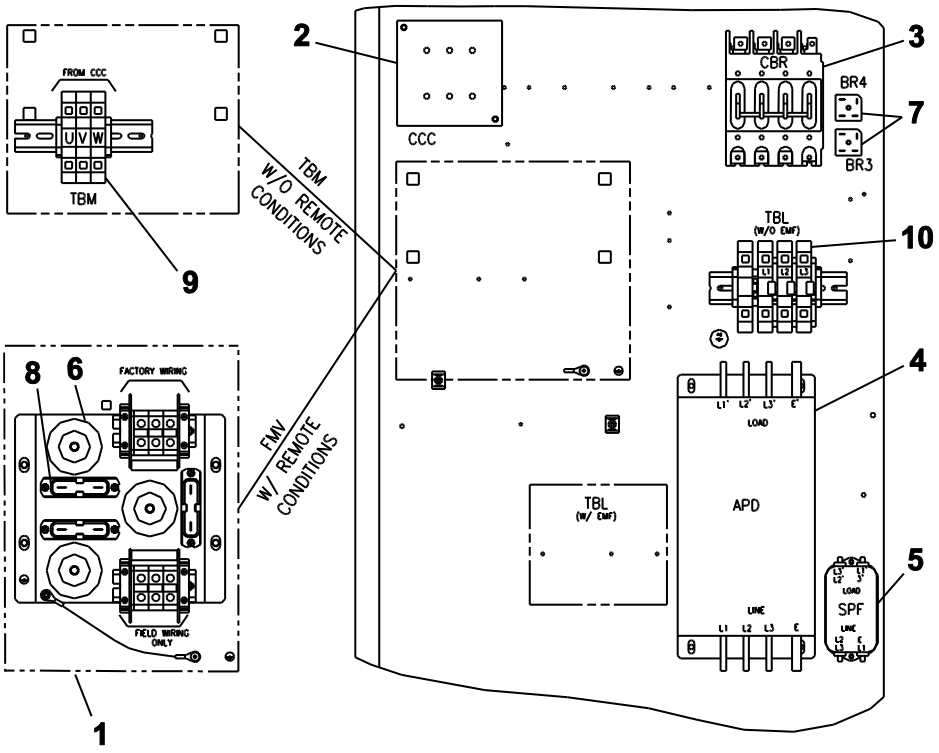
Power Supply—Transformers



	ALL VINTAGES		
REF. No.	**PART No.**	**DESCRIPTION**	**SYMBOL**
1	226EJ1	Capacitor, 19,000 μF, 60 V	C2, C3
2	226DR1	Capacitor, 400 μF, 450 V	C1
3	226DR9	Capacitor	C6
4	230BS3	Diode Bridge	BR1, BR2, BR5, BR8
5	AAA232FJ2	Resistor	R1
6	AAA605AA13	Suppressor, Transient	SA2, SA3, SA6
7	ABA225LB2	Transformer, 550–600 V, Limited Duty	TRM
	ABA225LB1	Transformer, 460–500 V, Limited Duty	
	ABA225LB3	Transformer, 200–240 V, Limited Duty	
	AAA225LR2	Transformer, 550–600 V, Extended Duty	
	AAA225LR1	Transformer, 460–500 V Extended Duty	
	AAA225LR3	Transformer, 200–240 V, Extended Duty	
8	ABA225GF6	Transformer, ≤ 240 V	TRP
	ABA225GF5	Transformer, 440–500 V	
	ABA225GF7	Transformer, ≥ 550 V	
	ABA225GF4	Transformer, 380–420 V	

Drive Interface Assembly

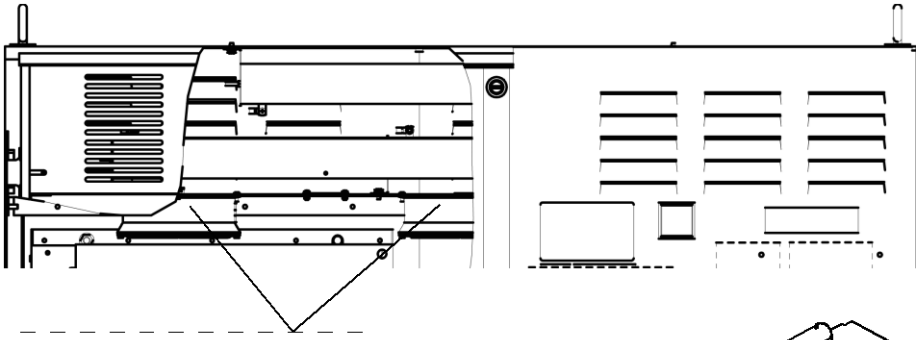
10-AAA21310AA

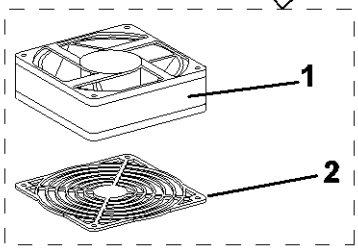


	ALL VINTAGES		
REF. No.	**PART No.**	**DESCRIPTION**	**SYMBOL**
1	AAA21305AS1	Assembly, Filter	~~DV/DT~~, FMV
2	GAA234AJ1	Choke, Current Compensated, 3-Phase, 70 A and 90 A Drives	CCC
	GAA234AJ2	Choke, Current Compensated, 3-Phase, 120 A Drive	CCC
	GAA234AJ3	Choke, Current Compensated, 3-Phase, 210 A Drive	CCC
3	AAA637G7	Circuit Breaker, 4 Pole, 40.0 A with Series Trip	CBR (90A)
	AAA637G4	Circuit Breaker, 4 Pole, 50.0 A with Series Trip	CBR (120A)
	AAA637G6	Circuit Breaker, 4 Pole, 77.0 A with Series Trip	CBR (210A)
4	GAA605J4	Device, Anti-Pollution (70 or 90 A drive)	APD
	GAA605J6	Device, Anti-Pollution (120 or 210 A drive)	APD
5	GAA657A4	Filter, Single Phase	SPF
6	AAA234R16	Inductor (coil, high current choke)	---
7	230BS3	Rectifier, Bridge	BR3, BR4
8	AAA232GX16	Resistor, Power, Fixed, 82 Ohm	---
9	AAA21303DA2	Terminal Blocks, High Current Input	TBM

10	AAA21303DA1	Terminal Blocks, High Current Input	TBL

Dynamic Brake Resistors





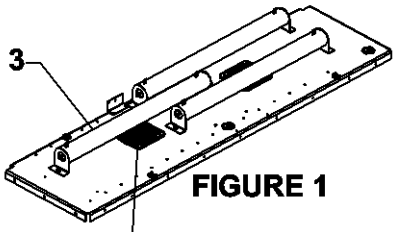


FIGURE 1

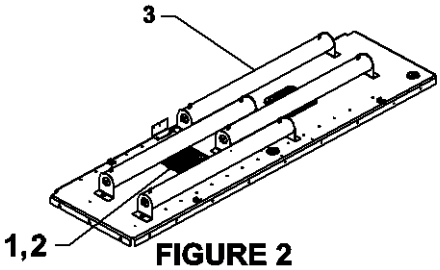
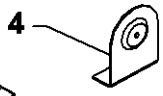


FIGURE 2



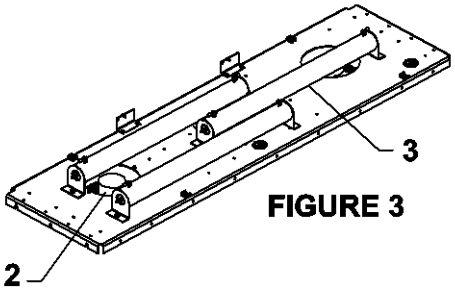


FIGURE 3

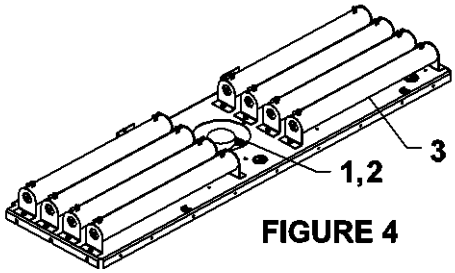
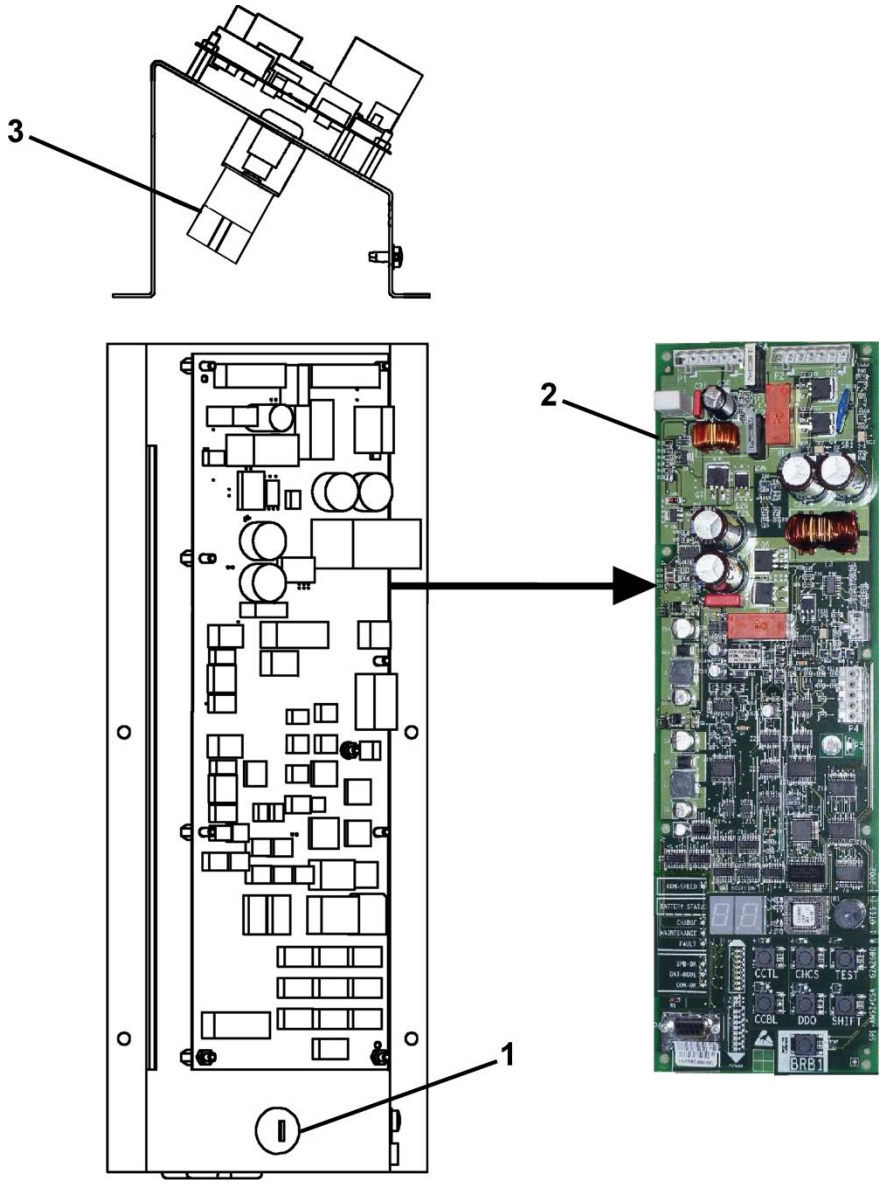


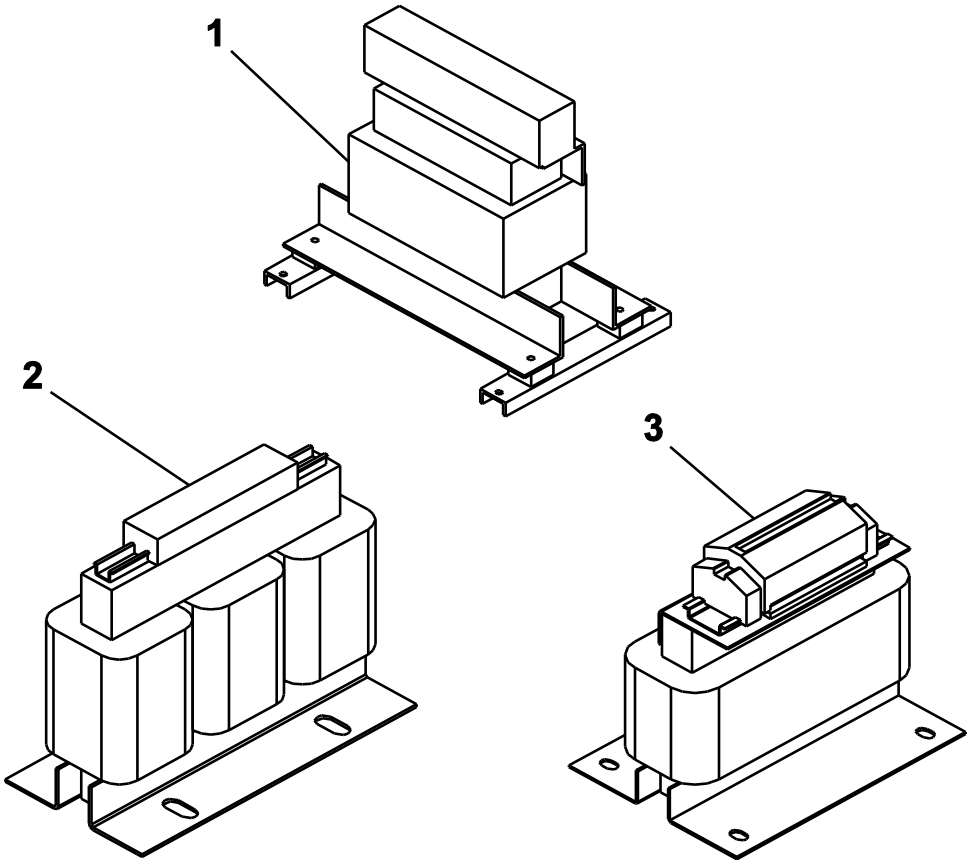
FIGURE 4

REF. No.	< 351 FPM			> 350 FPM		
	90 A DRIVE	120 A DRIVE	210 A DRIVE	---		
	FIGURE 1	FIGURE 2	FIGURE 3	FIGURE 4		
	PART No.				DESCRIPTION	
1	AAA6091AQ1	AAA6091AQ1	AAA6091AJ1	AAA6091AJ1	Fan	
2	AAA6091AQ2	AAA6091AQ2	AAA384YE1	AAA384YE1	Guard, Fan	
3	AAA232HK18	---	---	---	Resistor, 16 Ohm, 1000 W	**NOTE:** Select replacement based on p/n or resistance value stamped on the end of existing resistor.
	---	AAA232HK19	AAA232HK19	---	Resistor, 8 Ohm, 1000 W	
	---	---	---	AAA232HK20	Resistor, 2.5 Ohm, 750 W	
4	AAA232HK103				Mounting Bracket	



	ALL VINTAGES		
REF. No.	**PART No.**	**DESCRIPTION**	**SYMBOL**
1	AAA431AF6	Key Lock, SPL 31-AAA431AF	BRB2
2	GAA26800KS1	PC Board, Service Panel, SPL 10-GAA26800BB	SPB
3	ABA636A20	Switch, SPL 31-AAA636A	BRB2

10-AAA21310AA Door Operator Transformers



	ALL VINTAGES			
REF. No.	**PART NO.**	**DESCRIPTION**	**AMPS**	**SYMBOL**
1	ABA225JK5	204–240 V, 25.7 KVA	< 37	TRL
	ABA225JK6	204–240 V, 39.0 KVA	37–56	
	ABA225JK7	204–240 V, 66.5 KVA	57–96	
	ABA225JK2	360–440 V, 25.7 KVA	< 37	
	ABA225JK3	360–440 V, 39.0 KVA	37–56	
	ABA225JK4	360–440 V, 66.5 KVA	57–96	
	ABA225JK1	545–605 V, 66.5 KVA	< 97	
2	AAA225JN1	440–500 V	---	TFD, TRD
	AAA225JN2	200–240 V		
	AAA225JN3	380–440 V		
	AAA225JN4	545–605 V		
3	AAA225JR4	200–240 V		
	AAA225JR5	360–440 V		
	AAA225JR6	440–600 V		