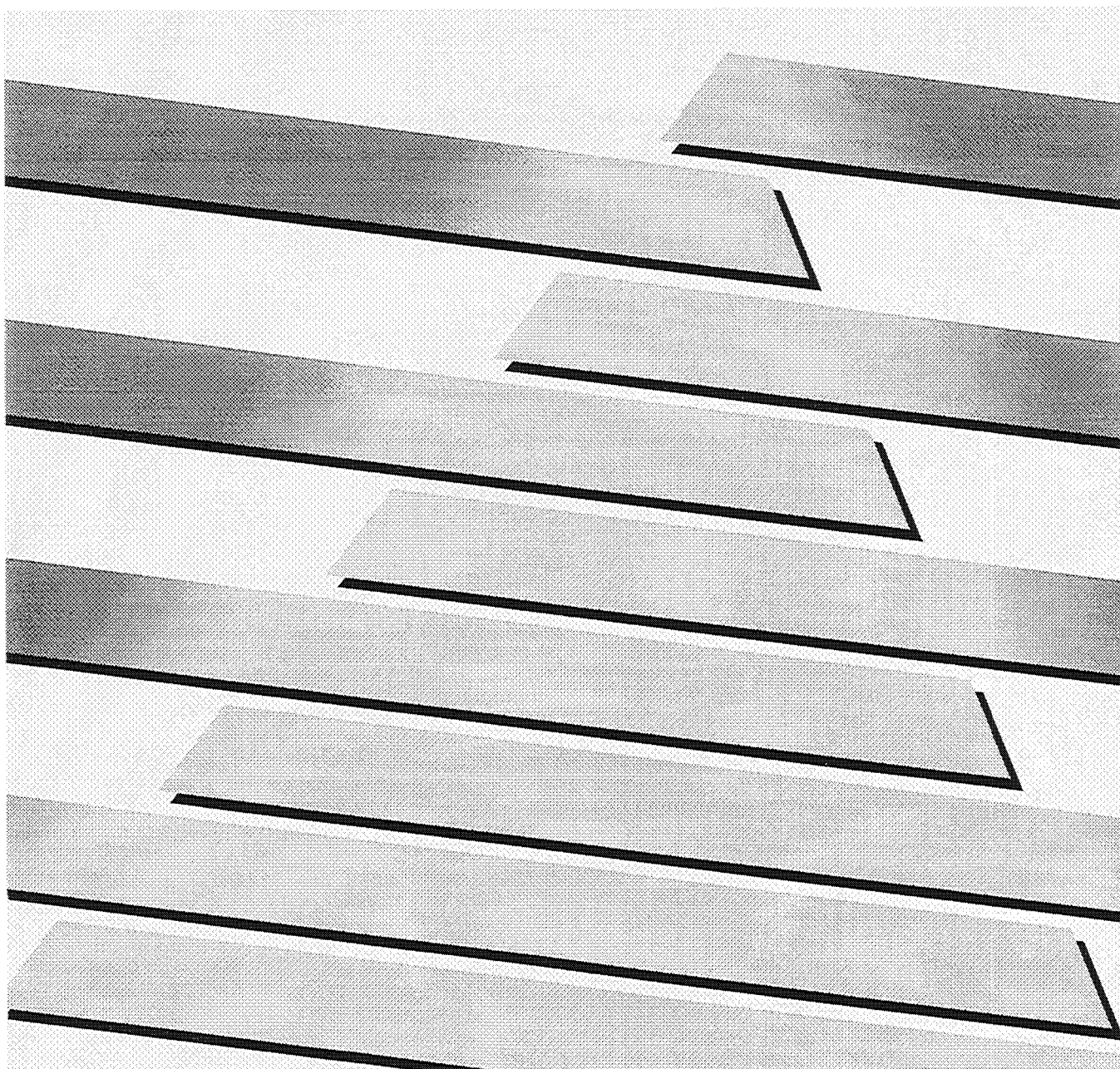




Bulletin 1352C-6.0

Renewal Parts Manual



**Repair or Repair/Exchange
Procedure**

For your convenience, the Allen-Bradley Company Motion Control Division, and the Allen-Bradley Area Sales/Support Centers, provide an efficient and convenient method of returning equipment eligible for repair or repair/exchange.

A Product Service Report (P.S.R.) number is required to return any equipment for repair. This may be obtained from your area Allen-Bradley Distributor or Allen-Bradley Area Sales/Support Center.

Return any equipment to be repaired to the Area Sales/Support Center nearest you. Be sure to reference the P.S.R. number on the carton and packing slip. Include your company name and address, your repair purchase order number, and a brief description of the problem. This will facilitate quick return of your equipment.

A complete listing of Area Sales/Support Centers may be obtained by calling your Area Allen-Bradley Distributor or Area Sales/Support Center.

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List of Revisions

<u>Revision</u>	<u>Date</u>	<u>Affected Pages</u>
New Release	February, 1990	
A	August, 1990	Copyright List of Revisions Current Revisions Table of Contents Pages 3, 4, 7, 9, 11, 13, 14, 15, 17, 19, 21, 22, 23, 24, 25, 27, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42
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Revisions throughout this text are indicated by **shading** the changed portion. A changed page will always have a REV level indicated on the lower portion of the page. The Current Revision Level Table lists all pages within this document and their latest revision level.

Always replace changed pages immediately upon receiving revised copy to ensure that your Renewal Parts Book is up-to-date and remains useful.

Current Revision Level

Page	Revision
Cover	New
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List of Revisions	D
Current Revisions	D
Table of Contents I	C
Table of Contents II	C
Table of Contents III	B
Text 1	C
Text 2	D
Text 3	D
Text 4	D
Text 5	D
Text 6	D
Text 7	D
Text 8	D
Text 9	D
Text 10	D
Text 11	D
Text 12	D
Text 13	D
Text 14	D
Text 15	D
Text 16	D
Text 17	D
Text 18	D
Text 19	D
Text 20	D
Text 21	D
Text 22	D
Text 23	D

Page	Revision
Text 24	D
Text 25	D
Text 26	D
Text 27	C
Text 28	C
Text 29	B
Text 30	D
Text 31	D
Text 32	D
Text 33	D
Text 34	C
Text 35	C
Text 36	D
Text 37	D
Text 38	D
Text 39	D
Text 40	C
Text 41	C
Text 42	C
Text 43	D
Text 44	C
Text 45	C
Text 46	D
Text 47	B
Text 48	C
Text 49	B
Text 50	B

TABLE OF CONTENTS

1352C-6.0 Renewal Parts

1.0	General Information	1
2.0	GTO Replacement	1
3.0	Recommended Spare Parts List	2
<i>Tables</i>		
3.1	30 kVA	2
3.2	40 & 50 kVA	3
3.3	60 & 75 kVA	4
3.4	100 & 115 kVA	5
3.5	180 kVA	6
3.6	290 kVA	8
3.7	460 kVA	10
3.8	730 kVA	12
3.9	140 kVA	14
3.10	210 kVA	16
3.11	340 kVA	18
3.12	540 kVA	20
3.13	870 kVA	22
4.0	Listing by Part Description	24
<i>Tables</i>		
4-1A	Circuit Cards	24
4-1B	Prior Series Circuit Cards	25
4-1C	Conversion Kits, Series "C" to "C-Plus"	25
4-2	Matching Cards	25
4-3	Parts Where Used	26
4-4	Semiconductors	27
4-5	Circuit Board Fuses (Glass Tube) Cross Reference	28
4-6	Fuses	29
4-7	Fans	30

4-8	GTO Installation Kits Only	31
4-9	GTO Replacement Kits	31
4-10A	Diodes & Diode Modules	32
4-10B	Diodes & Diode Modules	34
4-11	Giant Transistor Modules	34
4-12	Miscellaneous	35
4-13	Dynamic Brake Unit Spares	35
4-14	Optional Equipment	36
4-15	Memory Chips	36
4-16	Ribbon Cable Assemblies	37
4-17	Green Molex Connectors	37
5.0	Parts by kVA Rating	38
<i>Tables</i>		
5-1	30 kVA 460 V	38
5-2	40 & 50 kVA 460V	38
5-3	60 & 75 kVA 460V	39
5-4	100 & 115 kVA 460V	39
5-5	180 kVA 460V	40
5-6	290 kVA 460V	40
5-7	460 kVA 460V	41
5-8	730 kVA 460V	41
5-9	140kVA, 575V	42
5-10	210kVA, 575V	42
5-11	340kVA	43
5-12	540kVA	44
5-13	870kVA	45

6.0	Parts by Module	46
	<i>Tables</i>	
6-1	LCU's, 1150 kVA, 460V	46
6-2	LCU's, 1400 kVA, 575V	46
6-3	LCU's, 1800 kVA, 460V	46
6-4	LCU's, 2100 kVA, 575V	46
6-5	Thyristor Braking Units (TBUs)	47
6-6	TBU Parts Specific to Units	47
7.0	Roll Out Modules	48
	<i>Tables</i>	
7-1A	Inverters, 460V	48
7-1B	Inverters, 575V	48
7-2A	Other Modules, 460V	49
7-2B	Other Modules, 575V	49

SERIES C RENEWAL PARTS

**1.0
General Information**

This manual provides a listing of recommended spare parts for each size drive. Since design improvements are made periodically, the part number should be compared to the final test data sheet that is glued to the inside of the enclosure door.

The recommended parts are provided at three different levels depending on the down time that can be allowed and the proximity of the customer to an Allen-Bradley Sales/Support Office. The additional parts required at each higher level are identified by bold letters in the table.

Level 1

Minimum stocking level for all applications. This insures the minimum level of protection and is recommended for all installations.

Level 2

Normal stocking level for applications that in most instances should be repaired from parts in the customers stock . This level of protection is recommended for users desiring more complete parts backup but limited by budget restraints.

Level 3

This level of parts is recommended for users desiring a high level of protection to minimize potential downtime.

IMPORTANT: *The recommended spare parts lists only include standard components. Any optional devices must be added separately.*

In addition to the three level numerical parts lists, tables are provided by part family and by alphabetical part description.

**2.0
GTO Replacement**

In most applications, more than one manufacturer is an approved supplier for the GTO's. The spare parts lists specify GTO kits which may contain any one of several manufacturers devices. An installation hardware kit included with the GTO Kit allows for ease of use no matter which manufacturers device is used.

IMPORTANT: *Use Pentrox A or GE Silicon Tube #G3226 when mounting Power Semiconductor Devices.*

**3.0
 Spare Parts List**

3.1 30 kVA

Table 3-1.1. Level 1, 30 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
131418			Fuse 8F, 6A, 250V, FRN-R-6	1	2
101718			Fuse 7F, 3.2A, 250V, FRN	1	2
116573			Fuse 1-3F, Input Power 100A, 700V	3	6
118345			Fuse 4-6F, pre-charge JHC 10A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503350	SAFT	172 POW	Power Supply	1	1
507670	SAFT	192 POW	Power Supply	1	1

Table 3-1.2. Level 2, 30 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
131418			Fuse 8F, 6A, 250V, FRN-R-6	1	2
101718			Fuse 7F, 3.2A, 250V, FRN	1	2
116573			Fuse 1-3F, Input Power 100A, 700V	3	6
118345			Fuse 4-6F, pre-charge JHC 10A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503350	SAFT	172 POW	Power Supply	1	1
507670	SAFT	192 POW	Power Supply	1	1
503346	SAFT	168 PAC	Pulse Amplifier	1	1
507618			Control Panel Assembly, CP-1	1	1

Table 3-1.3. Level 3, 30 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
131418			Fuse 8F, 6A, 250V, FRN-R-6	1	2
101718			Fuse 7F, 3.2A, 250V, FRN	1	2
116573			Fuse 1-3F, Input Power 100A, 700V	3	6
118345			Fuse 4-6F, pre-charge JHC 10A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503350	SAFT	172 POW	Power Supply	1	1
503346	SAFT	168 PAC	Pulse Amplifier	1	1
507618			Control Panel Assembly, CP-1	1	1
507670	SAFT	192 POW	Power Supply	1	1
104724		V1, V14..V16	Diode, Snubber	4	2
118327			Fan, LSU TN3A2	1	1
118926			Diode Module Input LSU	3	1
501590	SAFW	400	Hall Effect Current Transducer	2	1
501604*		V1, V2, V3	GTR Transistor Module (2D175Z-120)	3	2
501655		V11, V12, V13	Diode Snubber INU	3	1
503182	SAFT	174 TBC	Terminal Block Card	1	1
503210			Fan, INU TN3A3	1	1

* For alternate Part Numbers. Refer to Table 4-10.

3.2 40 & 50 kVA

Table 3-2.1. Level 1, 40 kVA & 50 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
131418			Fuse 8F, 6A, 250V, FRN-R-6	1	2
101718			Fuse 7F, 3.2A, 250V, FRN	1	2
116573			Fuse 1-3F, Input Power 100A, 700V	3	6
118345			Fuse 4-6F, pre-charge JHC 10A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503350	SAFT	172 POW	Power Supply	1	1
507670	SAFT	192 POW	Power Supply	1	1

Table 3-2.2. Level 2, 40 kVA & 50 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
131418			Fuse 8F, 6A, 250V, FRN-R-6	1	2
101718			Fuse 7F, 3.2A, 250V, FRN	1	2
116573			Fuse 1-3F, Input Power 100A, 700V	3	6
118345			Fuse 4-6F, pre-charge JHC 10A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503350	SAFT	172 POW	Power Supply	1	1
507670	SAFT	192 POW	Power Supply	1	1
503346	SAFT	169 PAC	Pulse Amplifier	1	1
507618			Control Panel Assembly, CP-1	1	1

Table 3-2.3. Level 3, 40 kVA & 50 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
131418			Fuse 8F, 6A, 250V, FRN-R-6	1	2
101718			Fuse 7F, 3.2A, 250V, FRN	1	2
116573			Fuse 1-3F, Input Power 100A, 700V	3	6
118345			Fuse 4-6F, pre-charge JHC 10A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503350	SAFT	172 POW	Power Supply	1	1
507670	SAFT	192 POW	Power Supply	1	1
503346	SAFT	169 PAC	Pulse Amplifier	1	1
507618			Control Panel Assembly, CP-1	1	1
104724		V1, V14..V16	Diode, Snubber	4	2
118327			Fan, LSU TN3A2	1	1
118926			Diode Module Input LSU	3	1
501590	SAFW	400	Hall Effect Current Transducer	2	1
501606*		V1, V2, V3	GTR Transistor Module (2DI150A-120)	3	2
501655		V11, V12, V13	Diode Snubber INU	3	1
503182	SAFT	174 TBC	Terminal Block Card	1	1
503210			Fan, INU TN3A3	1	1

* For alternate Part Numbers. Refer to Table 4-10.

3.3 60 & 75 kVA

Table 3-3.1. Level 1, 60 kVA & 75 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
131418			Fuse 8F, 6A, 250V, FRN-R-6	1	2
101718			Fuse 7F, 3.2A, 250V, FRN	1	2
124877			Fuse 1-3F, Input Power 150A, 700V	3	6
118345			Fuse 4-6F, pre-charge JHC 10A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503350	SAFT	172 POW	Power Supply	1	1
507670	SAFT	192 POW	Power Supply	1	1

Table 3-3.2. Level 2, 60 kVA & 75 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
131418			Fuse 8F, 6A, 250V, FRN-R-6	1	2
101718			Fuse 7F, 3.2A, 250V, FRN	1	2
124877			Fuse 1-3F, Input Power 150A, 700V	3	6
118345			Fuse 4-6F, pre-charge JHC 10A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503350	SAFT	172 POW	Power Supply	1	1
507670	SAFT	192 POW	Power Supply	1	1
503348	SAFT	170 PAC	Pulse Amplifier	1	1
507618	SAFP	11	Control Panel Assembly, CP-1	1	1

Table 3-3.3. Level 3, 60 kVA & 75 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
131418			Fuse 8F, 6A, 250V, FRN-R-6	1	2
101718			Fuse 7F, 3.2A, 250V, FRN	1	2
124877			Fuse 1-3F, Input Power 150A, 700V	3	6
118345			Fuse 4-6F, pre-charge JHC 10A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503350	SAFT	172 POW	Power Supply	1	1
507670	SAFT	192 POW	Power Supply	1	1
503348	SAFT	170 PAC	Pulse Amplifier	1	1
507618			Control Panel Assembly, CP-1	1	1
104724		V1, V14..V16	Diode, Snubber	4	2
118327			Fan, LSU TN3A2	1	1
118926			Diode Module Input	3	1
501590	SAFW	400	Hall Effect Current Transducer	2	1
501608*	or	V1..V6	GTR Transistor Module (QM200HA-24)	3	2
501655		V11, V12, V13	Diode ,Snubber INU	3	1
503182	SAFT	174 TBC	Terminal Block Card	1	1
503210			Fan, INU TN3A3	1	1

* For alternate Part Number. Refer to Table 4-10.

3.4 100 & 115 kVA

Table 3-4.1. Level 1, 100 kVA & 115 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
131418			Fuse 8F, 6A, 250V, FRN-R-6	1	2
101718			Fuse 7F, 3.2A, 250V, FRN	1	2
124878			Fuse 1-3F, Input Power 200A, 700V	3	6
118345			Fuse 4-6F, pre-charge JHC 10A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503350	SAFT	172 POW	Power Supply	1	1
507670	SAFT	192 POW	Power Supply	1	1

Table 3-4.2. Level 2, 100 kVA & 115 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
131418			Fuse 8F, 6A, 250V, FRN-R-6	1	2
101718			Fuse 7F, 3.2A, 250V, FRN	1	2
124878			Fuse 1-3F, Input Power 200A, 700V	3	6
118345			Fuse 4-6F, pre-charge JHC 10A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503350	SAFT	172 POW	Power Supply	1	1
507670	SAFT	192 POW	Power Supply	1	1
503349	SAFT	171 PAC	Pulse Amplifier	1	1
507618			Control Panel Assembly, CP-1	1	1

Table 3-4.3. Level 3, 100 kVA & 115 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
131418			Fuse 8F, 6A, 250V, FRN-R-6	1	2
101718			Fuse 7F, 3.2A, 250V, FRN	1	2
124878			Fuse 1-3F, Input Power 200A, 700V	3	6
118345			Fuse 4-6F, pre-charge JHC 10A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503350	SAFT	172 POW	Power Supply	1	1
507670	SAFT	192 POW	Power Supply	1	1
503349	SAFT	171 PAC	Pulse Amplifier	1	1
507618			Control Panel Assembly, CP-1	1	1
104724		V1, V14..V16	Diode, Snubber INU	4	2
118327			Fan, LSU TN3A2	1	1
118291			Diode Module Input	3	2
501590	SAFW	400	Hall Effect Current Transducer	2	1
501611*		V1..V6	GTR Transistor Module (QM300HA-24)	6	2
501655		V11, V12, V13	Diode Snubber INU	3	1
503182	SAFT	174 TBC	Terminal Block Card	1	1
503210			Fan, INU TN3A3	1	1

* For alternate Part Numbers. Refer to Table 4-10.

3.5 180 kVA

Table 3-5.1. Level 1, 180 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
131418			Fuse 8F, 6A, 250V, FRN-R-6	1	2
101718			Fuse 7F, 3.2A, 250V, FRN	1	2
125157			Fuse 1-3F, Input Power 300A, 700V	3	6
101741			Fuse 4-6F, pre-charge FRSR, 5A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
501565	SAFT	110 POW	Power Supply	1	1
127408			Fuse INU-F, DC Bus Fuse 350A, 1000V STUD	1	2

Table 3-5.2. Level 2, 180 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
131418			Fuse 8F, 6A, 250V, FRN-R-6	1	2
101718			Fuse 7F, 3.2A, 250V, FRN	1	2
125157			Fuse 1-3F, Input Power 300A, 700V	3	6
101741			Fuse 4-6F, pre-charge FRSR, 5A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
501565	SAFT	110 POW	Power Supply	1	1
127408			Fuse INU-F, DC Bus Fuse 350A, 1000V STUD	1	2
501571	SAFT	120 PAC	Pulse Amplifier Card	3	1
504083	SAFT	125 CHC	Chopper Control Card	1	1
501577	SAFT	133 CHS	Snubber Card	1	1
503339	SAFT	166 APC	Auxiliary Power Supply	1	1
507618			Control Panel Assembly, CP-1	1	1
507657	SAFT	198 APC	Auxiliary Power Supply	1	1

* Alternate Part Numbers. Refer to list in Drive enclosure

Table 3-5.3. Level 3, 180 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
131418			Fuse 8F, 6A, 250V, FRN-R-6	1	2
101718			Fuse 7F, 3.2A, 250V, FRN	1	2
125157			Fuse 1-3F, Input Power 300A, 700V	3	6
118345			Fuse 4-6F, pre-charge FRSR, 10A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
501565	SAFT	110 POW	Power Supply	1	1
127408			Fuse INU-F, DC Bus Fuse 350A, 1000V STUD	1	2
501571	SAFT	120 PAC	Pulse Amplifier Card	3	1
504083	SAFT	125 CHC	Chopper Control Card	1	1
501577	SAFT	133 CHS	Snubber Card	1	1
503339	SAFT	166 APC	Auxiliary Power Supply	1	1
507618			Control Panel Assembly, CP-1	1	1
507657	SAFT	190 APC	Auxiliary Power Supply	1	1
104722		V1..V6, V27	Diode, Freewheeling INU	7	2
104724		V1	Diode, Snubber LCU	1	1
501591	SAFW	1000	Hall Effect Current Transducer	3	1
501652		V24..V26, V28, V29	Diode, Snubber INU	5	1
501656		V21..V23, V30	Diode, Snubber INU	4	1
118291		G1..G3	Diode Module LRU	3	1
144442		V17	GTO Thyristor with Installation Kit	1	1
144443		V11..V16	GTO Thyristor with Installation Kit	6	2
503182	SAFT	174 TBC	Terminal Block Card	1	1
503210**			Fan, LSU TN3A3	1	1
503211			Fan, INU 7.5J	1	1
104832			Force Measuring Indicator Type SLZF (33)		1

** See alternate Part Number Table 4-7.

3.6 290 kVA

Table 3-6.1. Level 1, 290 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
101690			Fuse 8F, 10A, 250V, FRN-R-10	1	2
101718			Fuse 7F, 3.2A, 250V, FRN	1	2
125156			Fuse 1-3F, Input Power 450A, 700V, SPP	3	6
101712			Fuse 4-6F, pre-charge FRSR 8A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
501565	SAFT	110 POW	Power Supply	1	1
124913			Fuse INU-F, 500A, 1000V, SPJ-6B 500	1	2

Table 3-6.2. Level 2, 290 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
101690			Fuse 8F, 10A, 250V, FRN-R-10	1	2
101718			Fuse 7F, 3.2A, 250V, FRN	1	2
125156			Fuse 1-3F, Input Power 450A, 700V, SPP	3	6
101712			Fuse 4-6F, pre-charge FRSR, 8A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
501565	SAFT	110 POW	Power Supply	1	1
124913			Fuse INU-F, 500A, 1000V, SPJ-6B 500	1	2
501572	SAFT	121 PAC	Pulse Amplifier Card	3	1
504083	SAFT	125 CHC	Chopper Control Card	1	1
501577	SAFT	133 CHS	Snubber Card	1	1
503339	SAFT	166 APC	Auxiliary Power Supply	1	1
507618			Control Panel Assembly, CP-1	1	1
507657	SAFT	190 APC	Auxiliary Power Supply	1	1

Table 3-6.3. Level 3, 290 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
101690			Fuse 8F, 10A, 250V, FRN-R-10	1	2
101718			Fuse 7F, 3.2A, 250V, FRN	1	2
125156			Fuse 1-3F, Input Power 450A, 700V, SPP	3	6
101712			Fuse 4-6F, pre-charge FRSR, 8A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
501565	SAFT	110 POW	Power Supply	1	1
124913			Fuse INU-F, 500A, 1000V, SPJ-6B 500	1	2
501572	SAFT	121 PAC	Pulse Amplifier Card	3	1
504083	SAFT	125 CHC	Chopper Control Card	1	1
501577	SAFT	133 CHS	Snubber Card	1	1
503339	SAFT	166 APC	Auxiliary Power Supply (GTO)	1	1
507618			Control Panel Assembly, CP-1	1	1
507657	SAFT	190 APC	Auxiliary Power Supply	1	1
104722		V27	Diode, Freewheeling	1	1
104724		V57	Diode, Snubber LRU	1	1
501591	SAFW	1000	Hall Effect Current Transducer	3	1
501652		V24..V26, V28, V29	Diode, Snubber INU	5	2
501654		V1..V6	Diode, Freewheeling	6	2
501656		V21..V23, V30	Diode Snubber	4	1
501658		G51, 52, 53	Diode Module Input	3	1
144442		V17	GTO Thyristor with Installation Kit	1	1
144444		V11..V16	GTO Thyristor with Installation Kit	6	2
503211			Fan, LRU 7.5 J	1	1
503212			Fan, INU 9.5 J ①	1	1
503182	SAFT	174 TBC	Terminal Block Card	1	1
104832			Force Measuring Indicator Type SLZF (33)		1
501576		132-CBS	CBU Monitor Card	1	1

Note: ① A different fan (#505986) is being used on 290 kVA Inverters with Code #58118516C and 340 kVA Inverters with Code #58118524C. 290 kVA Inverters with Code #58100188C and 340 kVA Inverters with Code #58100251C use fan #503212.

The fans are NOT interchangeable as each uses its own custom mounting plate. Verify fan type before ordering.

3.7 460 kVA

Table 3-7.1. Level 1, 460 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
101720			Fuse 7F, 6.25A, 250V, FRN	1	2
101723			Fuse 8F, 15A, 150V, FRN	1	2
502318			Fuse 1-3F, Input Power 700A, 700V, SPP	3	6
101721			Fuse 4-6F, pre-charge FRSR, 10A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
501565	SAFT	110 POW	Power Supply Card	1	1
122825			Fuse INU-F, DC Bus Fuse 450A, 1000V, SPJ-6B450	1	2
502744			Fuse, Bus Capac Protection 50A, 250V DC, 660V AC	39	10

Table 3-7.2. Level 2, 460 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
101720			Fuse 7F, 6.25A, 250V, FRN	1	2
101723			Fuse 8F, 15A, 150V, FRN	1	2
502318			Fuse 1-3F, Input Power 700A, 700V, SPP	3	6
101721			Fuse 4-6F, pre-charge FRSR, 10A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
501565	SAFT	110 POW	Power Supply Card	1	1
122825			Fuse INU-F, DC Bus Fuse 450A, 1000V, SPJ-6B450	1	2
502744			Fuse, Bus Capac Protection 50A, 250V DC, 660V AC	39	10
501573	SAFT	122 PAC	Pulse Amplifier Card	3	1
504083	SAFT	125 CHC	Chopper Control Card	1	1
501581	SAFT	139 CHS	Snubber Card	1	1
503339	SAFT	166 APC	Auxiliary Power Supply	1	1
507618			Control Panel Assembly, CP-1	1	1
507657	SAFT	190 APC	Auxiliary Power Supply	1	1

Table 3-7.3. Level 3, 460 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
101720			Fuse 7F, 6.25A, 250V, FRN	1	2
101723			Fuse 8F, 15A, 150V, FRN	1	2
502318			Fuse 1-3F, Input Power 700A, 700V, SPP	3	6
101721			Fuse 4-6F, pre-charge FRSR, 10A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
501565	SAFT	110 POW	Power Supply Card	1	1
122825			Fuse INU-F, DC Bus Fuse 450A, 1000V, SPJ-6B450	2	4
502744			Fuse, Bus Capac Protection 50A, 250V DC, 660V AC	39	10
501573	SAFT	122 PAC	Pulse Amplifier Card	3	1
504083	SAFT	125 CHC	Chopper Control Card	1	1
501581	SAFT	139 CHS	Snubber Card	1	1
503339	SAFT	166 APC	Auxiliary Power Supply (GTO)	1	1
507618			Control Panel Assembly, CP-1	1	1
507657	SAFT	190 APC	Auxiliary Power Supply	1	1
144443		V17	GTO Thyristor with Installation Kit	1	1
501592	SAFW	2500	Hall Effect Current Transducer	3	1
501652		V29	Diode, Snubber INU	1	1
104719		V1..V6	Diode, Freewheeling	7	2
501656		V30	Diode Snubber	1	1
144445		V11..V16	GTO Thyristor with Installation Kit	6	2
503210			Fan, CBU TN3A3	2	1
503211			Fan, LCU 7.5 J	1	1
503213			Fan, INU 9.5 KG/60Hz	1	1
503182	SAFT	174 TBC	Terminal Block Card	1	1
104832			Force Measuring Indicator Type SLZF (33)		1
104724		V57	Diode, Snubber LCU	1	1
104721		V51..V56	Diode, Input	6	2
104722		V27	Diode, Freewheeling	1	1
505597		V21..V23	Diode, Snubber	3	2
505598		V24..V26, V28	Diode, Snubber	4	2
501576		132 CBS	CBU Monitor Card	1	1

3.8 730 kVA

Table 3-8.1. Level 1, 730 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
101723			Fuse 8F, 15A, 250V, FRN	1	2
101770			Fuse 7F, 9A, 250V, FRN	1	2
125320			Fuse 1-3F, Input Power 600A, 700V, SPP	6	12
101697			Fuse 4-6F, Pre-charge 15A, 600V, FRS	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
501566	SAFT	111 POW	Power Supply Card	1	1
124914			Fuse DC Bus 700A, 1000V, SJP-6B700	2	4
502744			Fuse, Bus Capac Protection 50A, 250V DC, 660V AC	39	10

Table 3-8.2. Level 2, 730 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
101723			Fuse 8F, 15A, 250V, FRN	1	2
101770			Fuse 7F, 9A, 250V, FRN	1	2
125320			Fuse 1-3F, Input Powr 600A, 700V, SPP	6	12
101697			Fuse 4-6F, Pre-charge 15A, 600V, FRS	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
501566	SAFT	111 POW	Power Supply Card	1	1
124914			Fuse DC Bus 700A, 1000V, SJP-6B700	2	4
502744			Fuse, Bus Capac Protection 50A, 250V DC, 660V AC	39	10
501574	SAFT	123 PAC	Pulse Amplifier Card	3	1
504083	SAFT	125 CHC	Chopper Control Card	1	1
503339	SAFT	166 APC	Auxiliary Power Supply	1	1
507618			Control Panel Assembly, CP-1	1	1
507657	SAFT	190 APC	Auxiliary Power Supply	1	1

Table 3-8.3. Level 3, 730 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
101723			Fuse 8F, 15A, 250V, FRN	1	2
101770			Fuse 7F, 9A, 250V, FRN	1	2
125320			Fuse 1-3F, Input Power 600A, 700V, SPP	6	12
101697			Fuse 4-6F, Pre-charge 15A, 600V, FRS	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
501566	SAFT	111 POW	Power Supply Card	1	1
124914			Fuse DC Bus 700A, 1000V, SJP-6B700	2	4
502744			Fuse, Bus Capac Protection 50A, 250V DC, 660V AC	39	10
501574	SAFT	123 PAC	Pulse Amplifier Card	3	1
504083	SAFT	125 CHC	Chopper Control Card	1	1
503339	SAFT	166 APC	Auxiliary Power Supply	1	1
507618			Control Panel Assembly, CP-1	1	1
507657	SAFT	190 APC	Auxiliary Power Supply	1	1
501592	SAFW	2500	Hall Effect Current Transducer	3	1
501652		V29	Diode, Snubber INU	1	1
501653		V1..V6	Diode, Freewheeling	6	2
501656		V30	Diode, Snubber	1	1
144444		V17	GTO Thyristor with Installation Kit	1	1
144446		V11..V16	GTO Thyristor with Installation Kit	6	2
503210			Fan, CBU TN3A3	2	1
503213			Fan, INU 9.5	1	1
503213*			Fan, INU 9.5 KG/60Hz	1	1
503182	SAFT	174 TBC	Terminal Block Card	1	1
104721		V51..V56	Diode, Input, LCU	6	2
104724		V57	Diode, Snubber LCU	1	1
104722		V27	Diode, Freewheeling	1	1
104832			Force Measuring Indicator Type SLZF (33)	1	1
503483			Force Measuring Indicator Type SLZF (85)	1	1
503552		C8	Snubber Capacitor 2mf 1000/2000V, 42A	1	1
505597		V21..V23	Diode, Snubber	3	2
505598		V24..V26, V28	Diode, Snubber	4	2
501576		132 CBS	CBU Monitor Card	1	1

* See alternate Part Numbers Table 4-8.

3.9 140 kVA

Table 3-9.1. Level 1, 140 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
122753			Fuse INU-F, DC Bus Fuse 200A, 1000V, SPJ-6B	1	2
101718			Fuse 7F & 8F, 3.2A, 250V, FRN	2	4
124878			Fuse 1-3F, Input Power 200A, 700V	3	6
101719			Fuse 4-6F, Pre-charge FRSR, 6.25A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503341	SAFT	112 POW	Power Supply Card	1	1

Table 3-9.2. Level 2, 140 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
122753			Fuse INU-F, DC Bus Fuse 200A, 1000V, SPJ-6B	1	2
101718			Fuse 7F & 8F, 3.2A, 250V, FRN	2	4
124878			Fuse 1-3F, Input Power 200A, 700V	3	6
101719			Fuse 4-6F, Pre-charge FRSR, 6.25A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503341	SAFT	112 POW	Power Supply Card	1	1
501571	SAFT	120 PAC	Pulse Amplifier Card	1	1
501577	SAFT	133 CHS	Snubber Card	1	1
507618			Control Panel Assembly, CP-1	1	1
504082	SAFT	127 CHC	Chopper Control Card	1	1
507657	SAFT	190 APC	Auxiliary Power Supply	1	1

Table 3-9.3. Level 3, 140 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
122753			Fuse INU-F, DC Bus Fuse 200A, 1000V, SPI-6B	1	2
101718			Fuse 7F & 8F, 3.2A, 250V, FRN	2	4
124878			Fuse 1-3F, Input Power 200A, 700V	3	6
101719			Fuse 4-6F, Pre-charge FRSR, 6.25A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503341	SAFT	112 POW	Power Supply Card	1	1
501571	SAFT	120 PAC	Pulse Amplifier Card	3	1
501577	SAFT	133 CHS	Snubber Card	1	1
507618			Control Panel Assembly, CP-1	1	1
504082	SAFT	127 CHC	Chopper Control Card	1	1
507657	SAFT	190 APC	Auxiliary Power Supply	1	1
503758		V1..V6	Diode, Freewheeling INU	6	2
503210			Fan, LSU TN3A2	1	1
104721		V1..V6	Diode LSU	6	2
501591	SAFW	1000	Hall Effect Current Transducer	3	1
144447		V11..V17	GTO Thyristor with Installation Kit	7	3
503462		V24..V26, V28, V29	Diode, Snubber INU	5	2
503463		V21..V23, V30	Diode, Snubber INU	4	1
503182	SAFT	174 TBC	Terminal Block Card	1	1
503211			Fan, INU 7.5 J	1	1
503339	SAFT	166 APC	Auxiliary Power Supply	1	1
104832			Force Measuring Indicator Type SLZF (33)		1
104722		V27	Diode, Freewheeling	1	1
104724		V1	Diode, Snubber LSU	1	1

3.10 210 kVA

Table 3-10.1. Level 1, 210 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
101718			Fuse 7F & 8F, 3.2A, 250V, FRN	2	4
125735			Fuse 1-3F, Input Power 275A, 700V, SPP	3	6
101712			Fuse 4-6F, Pre-charge FRS, 8A6	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503341	SAFT	112 POW	Power Supply	1	1
125736			Fuse INU-F, 350A, 1000V, SPJ-7B350	1	2

Table 3-10.2. Level 2, 210 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
101718			Fuse 7F & 8F, 3.2A, 250V, FRN	2	4
125735			Fuse 1-3F, Input Power 275A, 700V, SPP	3	6
101712			Fuse 4-6F, Pre-charge, FRS, 8A6	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503341	SAFT	112 POW	Power Supply	1	1
125736			Fuse INU-F, 350A, 1000V, SPJ-7B350	1	2
501571 *	SAFT	120 PAC	Pulse Amplifier Card	3	1
507618			Control Panel Assembly, CP-1	1	1
504082	SAFT	127 CHC	Chopper Control Card	1	1
501577	SAFT	133 CHS	Snubber Card	1	1
503339	SAFT	166 APC	Auxiliary Power Supply	1	1
507657	SAFT	190 APC	Auxiliary Power Supply	1	1

*Note: On this unit, the 501572 (121 PAC) is an acceptable alternate part.

Table 3-10.3. Level 3, 210 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
101718			Fuse 7F & 8F, 3.2A, 250V, FRN	2	4
125735			Fuse 1-3F, Input Power 275A, 700V, SPP	3	6
101712			Fuse 4-6F, Pre-charge, FRS 8A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503341	SAFT	112 POW	Power Supply	1	1
125736			Fuse INU-F, 350A, 1000V, SPJ-7B350	1	2
501571	SAFT	120 PAC	Pulse Amplifier Card	3	1
507618			Control Panel Assembly, CP-1	1	1
504082	SAFT	127 CHC	Chopper Control Card	1	1
501577	SAFT	133 CHS	Snubber Card	1	1
503339	SAFT	166 APC	Auxiliary Power Supply	1	1
507657	SAFT	190 APC	Auxiliary Power Supply	1	1
503758		V1..V6	Diode, Freewheeling	6	2
104721		V51, V56	Diode Module	6	1
501591	SAFW	1000	Hall Effect Current Transducer	3	1
144447		V17	GTO Thyristor with Installation Kit	1	1
503463		V21..V23, V30	Diode Snubber	4	2
503182	SAFT	174 TBC	Terminal Block Card	1	1
503210			Fan, LCU TN3A3	2	1
104724		V57	Diode, Snubber LRU	1	1
503211			Fan, INU 9.5 J	1	1
144448		V11..V16	GTO Thyristor with Installation Kit	6	2
503462		V24..V26, V28, V29	Diode Snubber	5	2
104722		V27	Diode, Freewheeling	1	1
104832			Force Measuring Indicator Type SLZF (33)		1

3.11 340 kVA

Table 3-11.1. Level 1, 340 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
101720			Fuse 7F, 6.25A, 250V, FRN	1	2
101690			Fuse 8F, 250V, FRN-R-10	1	2
124913			Fuse INU-F, DC Bus Fuse 500A, 1000V, SPJ-6	1	2
118049			Fuse 1-3F, Input Power 400A, 700V, SPP	3	6
101721			Fuse 4-6F, Pre-charge FRS, 10A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503341	SAFT	112 POW	Power Supply Card	1	1
502744			Fuse, Bus Capac Protection 50A, 250V DC, 660V AC	36	10

Table 3-11.2. Level 2, 340 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
101720			Fuse 7F, 6.25A, 250V, FRN	1	2
101690			Fuse 8F, 250V, FRN-R-10	1	2
124913			Fuse INU-F, DC Bus Fuse 500A, 1000V, SPJ-6	1	2
118049			Fuse 1-3F, Input Power 400A, 700V, SPP	3	6
101721			Fuse 4-6F, Pre-charge FRS, 10A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503341	SAFT	112 POW	Power Supply Card	1	1
502744			Fuse, Bus Capac Protection 50A, 250V DC, 660V AC	36	10
501572	SAFT	121 PAC	Pulse Amplifier Card	1	1
503339	SAFT	166 APC	Auxiliary Power Supply Card	1	1
507618			Control Panel Assembly, CP-1	1	1
504082	SAFT	127 CHC	Chopper Control Card	1	1
501577	SAFT	133 CHS	Snubber Card	1	1
507657	SAFT	190 APC	Auxiliary Power Supply	1	1

Table 3-11.3. Level 3, 340 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
101720			Fuse 7F, 6.25A, 250V, NON	1	2
101690			Fuse 8F, 250V, FRN-R-10	1	2
124913			Fuse INU-F, DC Bus Fuse 500A, 1000V, SPJ-6	1	2
118049			Fuse 1-3F, Inut Power 400A, 700V, SPP	3	6
101721			Fuse 4-6F, Pre-charge FRS, 10A, 600V	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503341	SAFT	112 POW	Power Supply Card	1	1
502744			Fuse, Bus Capac Protection 50A, 250V DC, 660V AC	36	10
501572	SAFT	121 PAC	Pulse Amplifier Card	3	1
503339	SAFT	166 APC	Auxiliary Power Supply Card	1	1
507618			Control Panel Assembly, CP-1	1	1
504082	SAFT	127 CHC	Chopper Control Card	1	1
501577	SAFT	133 CHS	Snubber Card	1	1
507657	SAFT	190 APC	Auxiliary Power Supply	1	1
501654		V1..V6	Diode, Freewheeling	6	2
104721		V51..V56	Diode Module	6	1
501591	SAFW	1000	Hall Effect Current Transducer	3	1
144447		V17	GTO Thyristor with Installation Kit	1	1
503463		V21..V23, V30	Diode, Snubber	4	2
503182	SAFT	174 TBC	Terminal Block Card	1	1
503210			Fan, CBU TN3A3	2	1
104724		V57	Diode, Snubber LCU	1	1
503212			Fan, INU 9.5 J/60Hz ①	1	1
144449		V11..V16	GTO Thyristor with Installation Kit	6	2
503462		V24..V26, V28, V29	Diode, Snubber	5	2
104722		V27	Diode, Freewheeling	1	1
104832			Force Measuring Indicator Type SLZF (33)		1
503211			Fan, LCU, 7.5 J	1	1
501576		132 CBS	CBU Monitor Card	1	1

Note: ① A different fan (#505986) is being used on 290 kVA Inverters with Code #58118516C and 340 kVA Inverters with Code #58118524C. 290 kVA Inverters with Code #58100188C and 340 kVA Inverters with Code #58100251C use fan #503212.

The fans are NOT interchangeable as each uses its own custom mounting plate. Verify fan type before ordering.

3.12 540 kVA

Table 3-12.1. Level 1, 540 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
101723			Fuse 7F & 8F, 250V, FRN-R-15	2	4
502318			Fuse 1-3F, Input Power 700V, SPP	3	6
101721			Fuse 4-6F, Pre-charge FRS, 600V, 10A	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503341	SAFT	112 POW	Power Supply Card	1	1
122825			Fuse INU-F, DC Bus Fuse, 1000V, SPI-6B, 450A	2	4
502744			Fuse, Bus Capac Protection 50A, 250V DC, 660V AC	52	15

Table 3-12.2. Level 2, 540 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
101723			Fuse 7F & 8F, 250V, FRN-R-15	2	4
502318			Fuse 1-3F, Input Power 700V, SPP, 700A	3	6
101721			Fuse 4-6F, Pre-charge FRS, 600V, 10A	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503341	SAFT	112 POW	Power Supply Card	1	1
122825			Fuse INU-F, DC Bus Fuse 1000V, SPI-6B, 450A	2	4
502744			Fuse, Bus Capac Protection 50A, 250V DC, 660V AC	52	15
501573	SAFT	122 PAC	Pulse Amplifier Card	3	1
504082	SAFT	127 CHC	Chopper Control Card	1	1
501581	SAFT	139 CHS	Snubber Card	1	1
503339	SAFT	166 APC	Auxiliary Power Supply	1	1
507618			Control Panel Assembly, CP-1	1	1
507657	SAFT	190 APC	Auxiliary Power Supply	1	1

Table 3-12.3. Level 3, 540 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
101723			Fuse 7F & 8F, 250V, FRN-R-15	2	4
502318			Fuse 1-3F, Input Power 700V, SPP 700A	3	6
101721			Fuse 4-6F, Pre-charge FRS, 600V, 10A	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503341	SAFT	112 POW	Power Supply Card	1	1
122825			Fuse INU-F, DC Bus Fuse 1000V, SPJ-6B 450A	2	4
502744			Fuse, Bus Capac Protection 50A, 250V DC, 660V AC	52	15
501573	SAFT	122 PAC	Pulse Amplifier Card	3	1
504082	SAFT	127 CHC	Chopper Control Card	1	1
501581	SAFT	139 CHS	Snubber Card	1	1
503339	SAFT	166 APC	Auxiliary Power Supply	1	1
507618			Control Panel Assembly, CP-1	1	1
507657	SAFT	190 APC	Auxiliary Power Supply	1	1
104719		V1..V6	Diode, Freewheeling	6	2
501592	SAFW	2500	Hall Effect Current Transducer	3	1
503462		V29	Diode, Snubber	1	1
503182	SAFT	174 TBC	Terminal Block Card	1	1
503210			Fan, INU TN3A3	2	1
104724		V57	Diode, Snubber LCU	1	1
503213			Fan, INU 9.5 KG/60Hz	1	1
144450		V11..V16	GTO Thyristor with Installation Kit	6	2
503463		V30	Diode, Snubber	1	1
104832			Force Measuring Indicator Type SLZF (33)	1	1
503211			Fan, LCU, 7.5 J		1
144448		V17	GTO Thyristor with Installation Kit	1	1
104722		V27	Diode, Freewheeling	1	1
505853		V21..V23	Diode, Snubber	3	2
505855		V24..V26, V28	Diode, Snubber	4	2
501576		132 CBS	CBU Monitor Card	1	1
104721		V51..V56	Diode, LCU Input	6	2

3.13 870 kVA

Table 3-13.1. Level 1, 870 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
101723			Fuse 7F & 8F, 250V, FRN-R-15	2	4
125320			Fuse 1-3F, Input Power A, 700V, SPP 600A	6	12
101697			Fuse 4-6F, Pre-charge FRS, 600V, 15A	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503342	SAFT	113 POW	Power Supply Card	1	1
124914			Fuse DC Bus A, 1000V, SJP-6B 700, 700A	2	4
502744			Fuse, Bus Capac Protection 50A, 250V DC, 660V AC	52	15

Table 3-13.2. Level 2, 870 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
101723			Fuse 7F & 8F, 250V, FRN-R-15	2	4
125320			Fuse 1-3F, Input Power A, 700V, SPP 600A	6	12
101697			Fuse 4-6F, Pre-charge FRS, 600V, 15A	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503342	SAFT	113 POW	Power Supply Card	1	1
124914			Fuse DC Bus A, 1000V, SJP-6B 700, 700A	2	2
502744			Fuse, Bus Capac Protection 50A, 250V DC, 660V AC	52	15
501574	SAFT	123 PAC	Pulse Amplifier Card	3	1
504082	SAFT	127 CHC	Chopper Control Card	1	1
503339	SAFT	166 APC	Auxiliary Power Supply	1	1
507618			Control Panel Assembly, CP-1	1	1
507657	SAFT	190 APC	Auxiliary Power Supply	1	1

Table 3-13.3. Level 3, 870 kVA Spares

Part No.	Type	Designation	Description	Qty. Used	Rcmd. Spares
101723			Fuse 7F & 8F, 250V, FRN-R-15	2	4
125320			Fuse 1-3F, Input PowerA, 700V, SPP 600A	6	12
101697			Fuse 4-6F, Pre-charge FRS, 600V, 15A	3	6
143678	SAFT	187 CON	Control Card	1	1
143677	SAFT	188 IOC	Input/Output Card	1	1
503342	SAFT	113 POW	Power Supply Card	1	1
124914			Fuse DC Bus A, 1000V, SPJ-6B 700, 700A	2	4
502744			Fuse, Bus Capac Protection 50A, 250V DC, 660V AC	52	15
501574	SAFT	123 PAC	Pulse Amplifier Card	3	1
504082	SAFT	127 CHC	Chopper Control Card	1	1
503339	SAFT	166 APC	Auxiliary Power Supply	1	1
507618			Control Panel Assembly, CP-1	1	1
507657	SAFT	190 APC	Auxiliary Power Supply	1	1
501653		V1..V6	Diode, Freewheeling	6	2
503462		V29	Diode, INU Snubber	1	1
501592	SAFW	2500	Hall Effect Current Transducer	3	1
144451		V11..V16	GTO Thyristor with Installation Kit	6	2
503463		V30	Diode, Snubber	1	1
503182	SAFT	174 TBC	Terminal Block Card	2	1
503210			Fan, INU TN3A3	2	1
104724		V57	Diode, Snubber LCU	1	1
503213			Fan, INU 12J/60Hz/A/S	1	1
104721		V51..V56	Diode, Input LCU	6	2
104832			Force Measuring Indicator Type SLZF (33)		1
503483			Force Measuring Indicator SLZF (85)	1	1
503211			Fan, LCU, 7.5 J	1	1
144449		V17	GTO Thyristor with Installation Kit	1	1
501654		V27	Diode, Freewheeling	1	1
503552		C8	Snubber Capacitor 2mf 1000/2000V, 42A	1	1
505853		V21..V23	Diode, Snubber	3	2
505855		V24, V26, V28	Diode, Snubber	4	2
501576		132 CBS	CBU Monitor Card	1	1

4.0
Listing by
Part Description

Table 4-1A. Circuit Cards

Part No.	Bulletin No.	Type Designation	Description	Series
503596	3500-INP	SAFT 162 INP	Analog Input Card (Option)	C
503345	3500-A10	SAFT 164 AIO	Analog IN and OUT Card (Option)	C
503339	3500-AP1	SAFT 166 APC	Auxiliary Power Supply (GTO)	C
507657		SAFT 190 APC	Auxiliary Power Supply	C Plus
501578	3500-BRC	SAFT 135 BRC	Braking Chopper Control Card	C
504083	3500-CHC	SAFT 125 CHC	Chopper Control Card (All GTO 460V)	ABC
504082	3500-CH7	SAFT 127 CHC	Chopper Control Card (All GTO 575V)	C
502979	3500-CO3	SAFT 103 CON	Control Card (103 CON)	C
504711	3500-CPI	SAFP 11	Control Panel Assembly, CP-1	C
502164	3500-EFS	SAFT 158 EFS	Ground Fault Sensing Card	C
503183	3500-IOC	SAFT 163 IOC	I/O Card	C
504537	3500-AC3	SAFT 176 ACC	115V Input Card (Option)	C
501565	3500-P10	SAFT 110 POW	Power Supply Card (180-460 kVA, 460V)	ABC
501566	3500-P11	SAFT 111 POW	Power Supply Card (730 kVA, 460V)	ABC
503341	3500-P12	SAFT 112 POW	Power Supply Card (140-540 kVA, 575V)	C
503342	3500-P13	SAFT 113 POW	Power Supply Card (870 kVA, 575V)	C
503350	3500-P72	SAFT 172 POW	Power Supply (GTR)	C
507670		SAFT 192 POW	Power Supply	C Plus
501571	3500-A20	SAFT 120 PAC	Pulse Amplifier Card (140, 180 & 210 kVA)	ABC
501572	3500-A21	SAFT 121 PAC	Pulse Amplifier Card (290 & 340 kVA)	ABC
501573	3500-A22	SAFT 122 PAC	Pulse Amplifier Card (460 & 540 kVA)	ABC
501574	3500-A23	SAFT 123 PAC	Pulse Amplifier Card (730 & 870 kVA)	ABC
503346	3500-A68	SAFT 168 PAC	Pulse Amplifier Card (30 kVA)	C
503347	3500-A69	SAFT 169 PAC	Pulse Amplifier Card (40 & 50 kVA)	C
503348	3500-A70	SAFT 170 PAC	Pulse Amplifier Card (60 & 75 kVA)	C
503349	3500-A71	SAFT 171 PAC	Pulse Amplifier Card (100 & 115 kVA)	C
503352	3500-RDO	SAFT 175 RDO	Relay Output Card (Option)	C
501577	3500-S33	SAFT 133 CHS	Snubber Card (140 - 340 kVA)	ABC
501581	3500-S39	SAFT 139 CHS	Snubber Card 1.32 MFD (460 & 540 kVA)	C
503552		C8	Snubber Capacitor (730 & 870 kVA)	C
503351	3500-TS3	SAFT 173 TSI	Tach & Serial Interface Card	CV
503182	3500-T74	SAFT 174 TBC	Terminal Block Card	C
501576	3500-CB5	SAFT 132CB5	CBU Monitor Card (290 kVA and Larger)	ABC
505757		SAFT 185 TBC	Control Board	TBU
104750		SAMC 11 POW	Power Supply	TBU
110972		SAFT 19 INF	Interface Board	TBU
505758		SAFT 181 INF	Interface Board	TBU
107392		SAMT 11 PAC	Pulse Amp Board	TBU
505760		SAFT 183 VMC	Measuring Card	TBU
506157	3500-MAL	SAFT 176 MAC	Master Control Card	CP
506158	3500-SLV	SAFT 177 SAC	Slave Control Card	CP
506159	3501-180	SAFT 180 PCC	Matching Card (Parallel)	CP
505911	3500-C87	SAFT 187 CON	Control Card (H-Vector)	CHV
143678	3500-187	SAFT 187 CON	Control Card, 187 CON	C Plus
143677	3500-188	SAFT 188 IOC	I/O Card	C Plus
143676	3500-189	SAFT 189 TSI	Tach & Serial Interface Card	C Plus
143735			Conv. Kit 103 CON to 187 CON	
143679			Conv. Kit 163 IOC to 188 IOC	

Table 4-1B. Prior Series Circuit Cards

Part No.	Bulletin No.	Type Designation	Description	Series
501066	3500-CTS	SAFT CTS	Contacting Unit Card	A
501560	3500-C01	SAFT 101 CON	Control Card (101 CON)	AB
501563	3500-P06	SAFT 106 POW	Power Supply (30 kVA - 50 kVA)	AB
501564	3500-P07	SAFT 107 POW	Power Supply (60 kVA - 115 kVA)	AB
501567	3500-A15	SAFT 115 PAC	Pulse Amp (30 kVA)	AB
501568	3500-A17	SAFT 117 PAC	Pulse Amp (40 kVA - 50 kVA)	AB
501569	3500-A18	SAFT 118 PAC	Pulse Amp (60 kVA - 75 kVA)	AB
501570	3500-A19	SAFT 119 PAC	Pulse Amp (100 kVA - 115 kVA)	AB
501582	3500-TBC	SAFT 143 TBC	Terminal Block Card	AB
501583	3500-APC	SAFT APC	Auxiliary Power Supply	AB
501585	3500-FOC	SAFT 148 FOC	Fiber-Optic Connection Card	AB
501586	3500-INP	SAFT 149 INP	Analog Input Card (Option)	AB

Table 4-1C. Conversion Kits, Series "C" to "C Plus"

Part No.	Kit Description
143735	Conversion Kit Main Control Card - SAFT 103 CON to SAFT 187 CON. Kit includes Main Control Card, D17, D18 Firmware programmed with 4.04 Version, D16 programmed with SO (Standard Software) and 6 Fiber Optic Cables (Hewlett Packard to Toshiba). ①
143679	Conversion Kit IOC Card - SAFT 163 IOC to SAFT 188 IOC. Kit includes IOC Card with 6 Fiber Optic Cables (Hewlett Packard to Toshiba). ①

① If both boards are upgraded, different Fiber Optic cables are required
(Qty. 6 - 506995 Hewlett Packard to Hewlett Packard)

Table 4-2. Matching Cards

Part No.	Bulletin No.	Type Designation	Description	Series
501600	3502-180	SAFT 180FG460	Matching Card, LGU, 180 kVA, 460V	ABC
501601	3502-290	SAFT 290FG460	Matching Card, LGU, 290 kVA, 460V	ABC
501602	3502-460	SAFT 460FG460	Matching Card, LGU, 460 kVA, 460V	ABC
501603	3502-730	SAFT 730FG460	Matching Card, LGU, 730 kVA, 460V	ABC
501593	3501-050	SAFT 050F460	Matching Card, INU, 50 kVA, 460V	ABC
501594	3501-075	SAFT 075F460	Matching Card, INU, 75 kVA, 460V	ABC
501595	3501-115	SAFT 115F460	Matching Card, INU, 115 kVA, 460V	ABC
501596	3501-180	SAFT 180F460	Matching Card, INU, 180 kVA, 460V	ABC
501597	3501-290	SAFT 290F 460	Matching Card, INU, 290 kVA, 460V	ABC
501598	3501-730	SAFT 460F460	Matching Card, INU, 460 kVA, 460V	ABC
501599	3501-460	SAFT 730F460	Matching Card, INU, 730 kVA, 460V	ABC
501619	3501-030	SAFT 030F460	Matching Card, INU, 30 kVA, 460V	ABC
503360	3502-140	SAFT 140FG575	Matching Card, LGU, 140 kVA, 575V	C
503361	3502-210	SAFT 210FG575	Matching Card, LGU, 210 kVA, 575V	C
503362	3502-340	SAFT 340FG575	Matching Card, LGU, 340 kVA, 575V	C
503363	3502-540	SAFT 540FG575	Matching Card, LGU, 540 kVA, 575V	C
503364	3502-870	SAFT 870FG575	Matching Card, LGU, 870 kVA, 575V	C
502808	3501-140	SAFT 140F575	Matching Card, INU, 140 kVA, 575V	C
503335	3501-210	SAFT 210F575	Matching Card, INU, 210 kVA, 575V	C
503336	3501-340	SAFT 340F575	Matching Card, INU, 340 kVA, 575V	C
503337	3501-540	SAFT 54-F575	Matching Card, INU, 540 kVA, 575V	C
503338	3501-870	SAFT 870F575	Matching Card, INU, 870 kVA, 575V	C

Table 4-3. Parts Where Used

Part Number	Description	KVA			KVA		KVA		KVA		KVA		KVA	
		30	40 & 50	60 & 75	100 & 115	180	290	460	730	140	210	340	540	870
104750	Power Supply SAMC 11 POW (TBU)						1	1	1			1	1	1
107392	Pulse Amp Board SAMT 11 PAC (TBU)						1	1	1			1	1	1
110972	Interface Board SAFT 19 INF (TBU)						1	1	1			1	1	1
501565	Power Supply Card					1	1	1						
501566	Power Supply Card								1					
501571	Pulse Amplifier Card					3				3	3			
501572	Pulse Amplifier Card						3					3		
501573	Pulse Amplifier Card							3					3	
501574	Pulse Amplifier Card								3					3
501577	Snubber Card					1	1			1	1	1		
501581	Snubber Card							1					1	
501590	Hall Effect Current Transducer	2	2	2	2									
501591	Hall Effect Current Transducer					3	3			3	3	3		
501592	Hall Effect Current Transducer							3	3				3	3
502743	Capacitor, LSU, 3300 µF w/mounting stud					*18	27	39		16	24	36	52	
502637	Capacitor, 3300 µF without mounting stud	6	6	6	12	*18								
502744	Fuse, Bus Capacitor Protection 50A, 66VAC/250VD							39	39			36	52	52
143678	Control Card (SAFT 187 CON)	1	1	1	1	1	1	1	1	1	1	1	1	1
503182	Terminal Block Card	1	1	1	1	1	1	1	1	1	1	1	1	1
143677	Input/Output Card (SAFT 188 IOC)	1	1	1	1	1	1	1	1	1	1	1	1	1
503339	Auxiliary Power Supply (GTO)					1	1	1	1	1	1	1	1	1
507657	Auxiliary Power Supply					1	1	1	1	1	1	1	1	1
503341	Power Supply Card									1	1	1	1	
503342	Power Supply Card													1
503346	Pulse Amp Card	1												
503347	Pulse Amplifier Card		1											
503348	Pulse Amplifier Card			1										
503349	Pulse Amplifier Card				1									
503350	Power Supply (GTR)	1	1	1	1									
507670	Power Supply	1	1	1	1									
503461	Capacitor, CBU 4700 µF, 350V								39					52
504083	Chopper Control Card (All GTO Units 460V)					1	1	1	1					
504082	Chopper Control Card (All GTO Units 575V)									1	1	1	1	1
507618	Control Panel Assembly, CP-1	1	1	1	1	1	1	1	1	1	1	1	1	1
503495	Chopper Capacitor (C9) 4700 µF, 250V					4	5	7	11	4	4	6	9	13
505757	Control Board SAFT 185 TBC (TBU)						1	1	1			1	1	1
505758	Interface Board SAFT 181 INF (TBU)						1	1	1			1	1	1
505760	Measuring Card SAFT 183 VMC (TBU)						1	1	1			1	1	1

* Alternate Part Numbers. Refer to list in Drive enclosure.

Table 4-4. Semiconductors

Part Number	Description	KVA			KVA		KVA		KVA		KVA			
		30	40 & 50	60 & 75	100 & 115	180	290	460	730	140	210	340	540	870
104719	Diode, Freewheeling INU						6					6		
104721	Diode Input, LCU						6	6	6	6	6	6	6	
104722	Diode, Freewheeling					7	1	1	1	1	1	1	1	
104724	Diode, Snubber	4	4	4	4	1	1	1	1	1	1	1	1	
118291	Diode Module, LRU				3	3								
118926	Diode Module, Input	3	3	3										
501604	GTR Transistor Module (2DI75A-120)	3*												
501605	GTR Transistor Module (QM75DY-24)	3*												
501606	GTR Transistor Module (2DI150A-120)		3*											
501607	GTR Transistor Module (QM150DY-24)		3*											
501608	GTR Transistor Module (QM200HA-24)			6*										
501609	GTR Transistor Module (1DI200A-120)			6*										
501610	GTR Transistor Module (1DI300A-120)				6*									
501611	GTR Transistor Module (QM300HA-24)				6*									
501652	Diode, Snubber INU					5	5	8	12					
501653	Diode							6					6	
501654	Diode, Freewheeling						6				6		1	
501655	Diode, Snubber INU	3	3	3	3									
501656	Diode, Snubber INU					4	4	7	10					
501658	Diode Module, LCU						3							
144442	GTO Thyristor Kit					1	1							
144443	GTO Thyristor Kit					6		1						
144444	GTO Thyristor Kit						6		1					
144445	GTO Thyristor Kit							6						
144446	GTO Thyristor Kit								6					
144451	GTO Thyristor Kit												6	
144450	GTO Thyristor Kit											6		
144449	GTO Thyristor Kit										6		1	
144447	GTO Thyristor Kit								7	1	1			
144448	GTO Thyristor Kit									6		1		
503462	Diode, Snubber INU									5	5	5	8	12
503463	Diode, Snubber INU									4	4	4	7	10
503758	Diode, Freewheeling									6	6			

*Alternate Part Numbers. Refer to list in drive enclosure.

Table 4-5. Circuit Board Fuses (Glass Tube) Cross Reference

Fuse Part No.	Used On Board Type	Board Used	Fuse No.	Fuse Rating
501662	3500-APC SAFT 166 APC	All GTO Drives	F1	2.5A, 250V, 5x20mm
501663	3500-P72	30 kVA to 115 kVA	F1	1.0A, 1200V, 8.3 x 50mm
501662	SAFT 172 POW		F2	2.5A, 250V, 5x20mm
501109	Power Supply		F3	1.0A, 250V, 5x20mm
501109			F4	1.0A, 250V, 5x20mm
501662			F5	2.5A, 250V, 5x20mm
501663	3500-P10	180 kVA to 460 kVA @460V	F1	1.0A, 1200V, 8.3 x 50mm
501109	SAFT 110 POW		F2	1.0A, 250V, 5x20mm
501102	Power Supply		F3	4.0A, 250V, 5x20mm
501109			F4	1.0A, 250V, 5x20mm
501663	3500-P11	730 kVA	F1	1.0A, 1200V, 8.3 x 50mm
501109	SAFT 111 POW		F2	1.0A, 250V, 5x20mm
501102	Power Supply		F3	4.0A, 250V, 5x20mm
501109			F4	1.0A, 250V, 5x20mm
501663	3500-P12	140 kVA to 540 kVA @575V	F1	1.0A, 1200V, 8.3 x 50mm
501109	SAFT 112 POW		F1	1.0A, 250V, 5x20mm
501102	Power Supply		F3	4.0A, 250V, 5x20mm
501109			F4	1.0A, 250V, 5x20mm
501663	3500-P13	870 kVA	F1	1.0A, 1200V, 8.3 x 50mm
501109	SAFT 113 POW		F2	1.0A, 250V, 5x20mm
501102	Power Supply		F3	4.0A, 250V, 5x20mm
501109			F4	1.0A, 250V, 5x20mm
501662	3500-A68...A71	30 kVA to 115 kVA	F101	2.5A, 250V 5x20mm
501662	SAFT 168 PAC to		F201	2.5A, 250V 5x20mm
501662	SAFT 171 PAC		F301	2.5A, 250V 5x20mm
501662	Pulse Amp Card		F401	2.5A, 250V 5x20mm
501662			F501	2.5A, 250V 5x20mm
501662			F601	2.5A, 250V 5x20mm
501662	3500-A20	140 kVA, 180 kVA & 210 kVA	F1	2.5A, 250V 5x20mm
501662	SAFT 120 PAC Pulse Amp		F2	2.5A, 250V 5x20mm
501662	3500-A21	290 kVA & 340 kVA	F1	2.5A, 250V 5x20mm
501662	SAFT 121 PAC Pulse Amp		F2	2.5A, 250V 5x20mm
501102	3500-A22	460 kVA	F1	4.0A, 250V 5x20mm
501102	SAFT 122 PAC Pulse Amp		F2	4.0A, 250V 5x20mm
501664	3500-A23	730 kVA	F1	6.3A, 250V 5x20mm
501664	SAFT 123 PAC Pulse Amp		F2	6.3A, 250V 5x20mm
501662	3500-CHC SAFT 125 CHC Chopper Control	All 460V GTO Drives	F1	2.5A, 250V 5x20mm
501662	3500-CH7 SAFT 127 CHC Chop Control Auxiliary Power Supply	All 575V GTO Drive	F1	2.5A, 250V 5x20mm
501662	3500-IOC SAFT 163 IOC I/O Card	All Standard Drives	F1	2.5A, 250V 5x20mm
501662	3500-IOC SAFT 188 IOC I/O Card	All Standard C Plus Drives	F1	2.5A, 250V 5x20mm

Table 4-6. Fuses

kVA	1- 3F Input Power	4- 6F Precharge	7F (115V)	8F (220V)	INU-F DC Bus Fuse	
					Single Drive	Common Bus
30	100A, 700V B FWP-100 116573	JHC, 10A, 600V B JHC-10 GS AJT10 118345	FRN, 3.2A, 250V B FRN-R-3-2/10 101718	FRN, 6A, 250V B FRN-R-6 131418	NA	(2) 60A, 700V B SPP-4F60 504273
40 & 50	100A, 700V B FWP-100 116573	JHC, 10A, 600V B JHC-10 GS AJT10 118345	FRN, 3.2A, 250V B FRN-R-3-2/10 101718	FRN, 6A, 250V B FRN-R-6 131418	NA	(2) 100A, 700V B SPP-4F100 504314
60 & 75	150A, 700V B FWP-150 124877	JHC, 10A, 600V B JHC-10 GS AJT10 118345	FRN, 3.2A, 250V B FRN-R-3-2/10 101718	FRN, 6A, 250V B FRN-R-6 131418	NA	(2) 150A, 700V B SPP-4F150 504274
100 & 115	200A, 700V GS A70P200 124878	JHC, 10A, 600V B JHC-10 GS AJT10 118345	FRN, 3.2A, 250V B FRN-R-3-2/10 101718	FRN, 6A, 250V B FRN-R-6 131418	NA	(2) 225A, 700V B SPP-4F225 504315
180	300A, 700V B SPP-5K300 125157	FRSR, 5A, 600V B FRS-R-5 GS TR55-R 118345	FRN, 3.2A, 250V B FRN-R-3-2/10 101718	FRN, 6A, 250V B FRN-R-6 131418	350A, 1000V Stud B SPJ-6K350 127408*	(2) 350A, 700V B SPP-6B350 128005
290	450A, 700V B SPP-6K450 125156	FRS, 8A, 600V B FRS-R-8 GS TRS8-R 101712	FRN, 3.2A, 250V B FRN-R-3-2/10 101718	FRN, 10A, 250V B FRN-R-10 101690	500A, 1000V B SPJ-6B500 124913	(2) 500A, 700V B SPP-6B500 127539
460	700A, 700V B SPP-7K700 502318	FRS, 10A, 600V B FRS-R-10 GS TRS10-R 101721	FRN, 6.25A, 250V B FRN-R-6-1/4 GS TR6-1/4-R 101720	FRN, 15A, 250V B FRN-R-15 101723	(2) 450A, 1000V B SPJ-6B450 122825	(4) 450A, 700V B SPP-6B450 123632
730	(6) 600A, 700V B SPP-6K600 125320	FRS, 15A, 600V B FRS-R-15 GS TRS15-R 101697	FRN, 6.25A, 250V B FRN-R-9 GS TR9-R 101770	FRN, 15A, 250V B FRN-R-15 101723	(2) 700A, 1000V B SPJ-6B700 124914	(4) 700A, 700V B SPP-7K700 502318
140	200A, 700V GS A70P200 124878	FRSR, 6.25A, 600V B FRS-R-6-1/4 GS TRS6-1/4-R 101719	FRN, 3.2A, 250V B FRN-R-3-2/10 101718	FRN, 3.2A, 250V B FRN-R-3-2/10 101718	200A, 1000V B SPJ-5B200 122753	(2) 225A, 700V B SPP-4F225 504315
210	275A, 700V B SPP-4K275 125735	FRS, 8A, 600V B FRS-R-8 GS TRS8-R 101712	FRN, 3.2A, 250V B FRN-R-3-2/10 101718	FRN, 3.2A, 250V B FRN-R-3-2/10 101718	350A, 1000V B SPJ-7B350 125736	(2) 350A, 700V B SPP-6B350 128005
340	400A, 700V B SPP-6K400 118049	FRS, 10A, 600V B FRS-R-10 GS TRS10-R 101721	FRN, 6.25A, 250V B FRN-R-6-1/4 GS TR6-1/4-R 101720	FRN, 10A, 250V B FRN-R-10 101690	500A, 1000V B SPJ-6B500 124913	(2) 500A, 700V B SPP-6B500 127539
540	700A, 700V B SPP-7K700 502318	FRS, 10A, 600V B FRS-R-10 GS TRS10-R 101721	FRN, 15A, 250V B FRN-R-15 101723	FRN, 15A, 250V B FRN-R-15 101723	(2) 450A, 1000V B SPJ-6B450 122825	(4) 450A, 700V B SPP-6B450 123632
870	(6) 600A, 700V B SPP-6K600 125320	FRS, 15A, 600V B FRS-R-15 GS TRS15-R 101697	FRN, 15A, 250V B FRN-R-15 101723	FRN, 15A, 250V B FRN-R-15 101723	(2) 700A, 1000V B SPJ-6B700 124914	(4) 700A, 700V B SPP-6B700 123633

* Alternate Part Numbers. Check your Drive to see if stud or spade type fuse was used. Spade type is #124912.

B = Bussmann
GS = Gould/Shawmut

Table 4-7. Fans

Part Number	Description	KVA			KVA		KVA		KVA		Cap Size
		30	50	75	115	180	290	460	730	140	
503211	Fan 7.5J Woods 2800RPM					1I	1L	1L	1L	1L	4mF
503212	Fan 9.5J Woods						1I*				8mF
505986	Fan 7.5Kg/60Hz ①						1I				8mF
503210	Fan TN3A3 Rotron ②	1I	1I	1I	1I	1L*		2C	2C	1L	N/A
503213	Fan 9.5KG/60Hz Woods							1I	1I*		15mF
503215	Fan, 12J / 60Hz / A / S Woods (Alternate)								1I*		20mF
118327	Fan, LSU TN3A2 Rotron	1L	1L	1L	1L	1L*					N/A

Part Number	Description	KVA		KVA		KVA	KVA	KVA	KVA	Cap Size
		210	340	540	870	1150	1400	1800	2100	
503211	Fan 7.5J Woods 2800RPM	1I	1L	1L	1L					4mF
503212	Fan 9.5J Woods		1I							8mF
505986	Fan 7.5Kg/60Hz ①		1I			1L	1L			8mF
503210	Fan TN3A3 Rotron ②	1L	2C	2C	2C					N/A
503213	Fan 9.5KG/60Hz Woods			1I	1I*			1L	1L	15mF
503215	Fan, 12J / 60Hz / A / S Woods (Alternate)				1I*					20mF
118327	Fan, LSU TN3A2 Rotron									N/A

* Alternate Part Numbers

- L Designates LSU or LCU or LRU
- C Designates CBU
- I Designates INU

Note: ① A different fan (#505986) is being used on 290 kVA Inverters with Code #58118516C and 340 kVA Inverters with Code #58118524C. 290 kVA Inverters with Code #58100188C and 340 kVA Inverters with Code #58100251C use fan #503212.

The fans are **NOT** interchangeable as each uses its own custom mounting plate. Verify fan type before ordering.

② All Line Filter Units use quantity 2, #503210

Table 4-8. GTO Hardware Installation Kits ONLY (DOES NOT Include GTO)

Part No.	Description	KVA		KVA		KVA		KVA		
		180	290	460	730	140	210	340	540	870
144455	Installation Kit ONLY to interchange the following list of GTO's: #501666 - Toshiba, S6476R #503429 - Mitsubishi, FG600AL-26-5620 #504066 - Westcode, WG6013/ZA	M		C						
144456	Installation Kit ONLY to interchange the following list of GTO's: #501667 - Toshiba, S6425R/S6723R #506509 - Westcode, WG9013/A3A #503430 - Mitsubishi, FG1000AL-26-8830		M		C					
144457	Installation Kit ONLY to interchange the following list of GTO's: #501668 - Toshiba, S6594R #506510 - Westcode, WG14513C2H #504063 - Mitsubishi FG1000AL-26-1540			M						
144458	Installation Kit ONLY to interchange the following list of GTO's: #504069 - Mitsubishi FG600AL-34-5320 #504068 - Westcode WG6017D2F #503358 - Toshiba S6476W						M		C	
144459	Installation Kit ONLY to interchange the following list of GTO's: #503356 - Toshiba, S6425W/S6723W #504067 - Mitsubishi, FG600AL-34-8430							M		C
144460	Installation Kit ONLY to interchange the following list of GTO's: #503355 - Toshiba, S6594W/S6426W #506511 - Westcode, WG14017 #503359 - Mitsubishi, FG1000AL-34-1340/1440								M	

M = Main GTO (V11 - V16) C = Chopper GTO (V17)

Note: Installation Kits will include all hardware, such as insulator tubes, longer or shorter bolts and plexiglass centering plates, to allow interchangeability between the different GTO vendors.

GTO Replacement Kits are available to provide an easy method of changing a suspected malfunctioning GTO. The replacement kits are available for all kVA ratings and are specified in Table 4-9.

Table 4-9. GTO Replacement Kits (includes GTO)

Drive kVA (460V AC)	Main GTO	Chopper GTO
180	144443	144442
290	144444	144442
460	144445	144443
730	144446	144444
Drive kVA (575V AC)		
140	144447	144447
210	144448	144447
340	144449	144447
540	144450	144448
870	144451	144449
Dynamic Braking Units (460V AC)		
75	144442	
115	144443	
180	144444	
Dynamic Braking Units (575V AC)		
90	144447	
140	144448	
210	144449	

Table 4-10A. Diodes & Diode Modules

Part No.	Code	Description	Typical Use	KVA															
				30	40 & 50	60 & 75	100 & 115	180	290	460	730	140	210	340	540	870			
118291	09813110	DD151N 1600 AEG-TELEF/Germany 1600 Volts SM 4500 A 105 A	LSU G1-G3				3												
118926	09813136	IRKD 71-16 I.R./U.S.A. 1600 Volts 70A	LSU G1-G3	3	3	3													
104724	09805702	SM12PCN074, Westcode/Gr. Brit. 1200 Volts SM 1000 A, 4.3kN 50A	LSU Snubber V1 LCU, LRU V57 INU Snubber V14..V16	4	4	4	4	1	1	1	1	1	1	1	1	1	1	1	
104722	09805761	SM13XC174, Westcode/Gr. Brit. 1300 Volts SM 4500A, 4.5kN	INU Freewheeling V1..V6, V27					7	1	1	1	1	1	1	1	1	1	1	
501656 or 505852	09916539 or 10000505	DSD35-16A BBC/CH 1600 Volts SM 600 A, 1µs (50A/µs) SKN-60-F15 SEMIKR See Note #3	INU Snubber V21..23,30					4	4	1	1								
503463 or 505853	09915664 or 10000521	DSD35-16 AV BBC/CH or DSD35-18A 1800 Volts SM 600 A, 1µs (50A/µs) SKN-60-F17 See Notes #1 & #3	INU Snubber V21..23,30								4	4	4	4	1	1	1	1	
501652 or 505854	09915605 or 10000513	DSD135-16A BBC/CH 1600 Volts SM 600 A, 1µs (50A/µs) SKR-60-F15 SEMIKR See Note #3	INU Snubber V24..26,28,29					5	1	1									
503462 or 505855	09915613 or 10000530	DSD135-16 AV BBC/CH or DSD135-18A 1800 Volts SM 600 A, 1µs (50A/µs) SKR-60-F17 See Notes #1 & #3	INU Snubber V24..26,28,29											5	5	5	1	1	
501655	09916555	SM12PCR074, Westcode/Gr. Brit. 1200 Volts SM 1000 A, 4.3kN	INU Snubber V11..13	3	3	3	3												
505597	10000343	SKN-141-F15 SEMIKR 1500V RM 2500A, 800Hz, 10mm See Note #2	INU Snubber V21..23											3	3				
505598	10000335	SKR-141-F15 SEMIKR 1500V, 2500A, 10mm See Note #2	INU Snubber V24..26,28											4	4				
501654	09916512	SM16XC190VR, Westcode/Gr. Brit. 1600 Volts SM 9500 A, 6.0kN	INU Free wheeling V1..V6, V27											6				1	
503758	09805559	SM18XC176, Westcode/Gr. Brit 1800 Volts SM 4500A, 5.0kN	INU Freewheeling V1..V6												6	6			
104719	09805800	SM18XC805TU, Westcode/Gr. Brit. 1800 Volts SM 16700 A, 17kN	INU Freewheeling V1..V6												6			6	
501653	09805796	SM18XC924YP, Westcode/Gr. Brit. 1700 Volts SM 19600 A, 23kN	INU Freewheeling V1..V6												6			6	
104721	09805613	G1552 PDE/R30E 1R 2200V SM12, 200A, 8.9kN	Input V51..56												6	6	6	6	
501658	09813152	IRKD 240-16 1R 1600V, SM7500A	Input G51..53											3					
505853	10000165	SKN-141-F17 SEMIKR 1700V, RM 2500A, 800Hz See Note #2	INU Snubber V21..V23															3	3
505855	10000157	SKR-141-F17 SEMIKR 1700V, RM 2500A, 800Hz See Note #2	INU Snubber V24..V26, V28															4	4

NOTE SECTION **Note #1:**

In earlier revisions of the 540 kVA & 870 kVA Units, 575 Volt V21..V23, V30 were designated as DSD35-16AV (PN #503463) and V24..V26, V28, V29 were designated as DSDI35-16AV (PN#503462). These parts have been replaced with: DSD35-18A (PN#503463) and DSDI35-18A (PN#503462) respectively.

Note #2:

(Change effective approximately in December 1989.) The mechanical construction was changed to eliminate all parallel snubber diodes. This also changes part numbers.

Units affected: 460 Volt - 460 kVA & 730 kVA
575 Volt - 540 kVA & 870 kVA

Because of the mechanical change, older diodes part numbers will not fit.

New Part Number	Inverter kVA	Diode Type	Stromberg Code	Part Designation
505597	460, 730	SKN141F15	10000343	V21..V23
505598	460, 730	SKR141F15	10000335	V24..V26, V28
505853	540, 870	SKN141F17	10000165	V21..V23
505855	540, 870	SKR141F17	10000157	V24..V26, V28

Note: Snubber Diodes V29, V30 will not change to the larger diode type, you will still use the BBC/Semikron Type (See Note #3).

Note #3:

The BBC power diode type has been changed to Semikron Type power diodes.

A-B Part Number	BBC Type	Semikron Type
501652 or 505854	DSDI35-16A	SKR 60 F15
501656 or 505852	DSD35-16A	SKN 60 F15
503462 or 505865	DSDI35-18A	SKR 60 F17
503463 or 505853	DSD35-18A	SKN 60 F17

Note: Reorganize the following precautions before using the replacement types:

1. All diodes have to be changed in the same branch
2. When connected in parallel, all the diodes must be changed, even if only one is damaged.

Note #4:

Always replace Modules with like manufacturers.

Table 4-10B. Diodes & Diode Modules

Part No.	Code	Description	Typical Use	KVA			
				1150	1400	1800	2100
104724	09805702	Diode Snubber 1200V SM 1000A, 4.3NM	LCU Snubber V57	1	1	1	1
503460	09805907	Diode Power 2200V SM 34000A, 22KN	LCU V1..V6	6	6	6	6

Table 4-11. Giant Transistor Modules

Part No.	Code	Description	KVA			
			30	50	75	115
501604	09810048	2DI75A-120 or 2DI75A-180 Fuji/Japan 1200 Volts IC 75 A SAT 2.8 V	3			
501605	09810056	2DI75Z-120 Fuji/Japan 1200 Volts IC 75 A SAT 2.8 V QM75DY-24 Mitsubishi/Japan 1200 Volts IC 75 A SAT 2.8 V KD221275A7 Powerex 1200 Volts IC 75 A SAT 2.8 V MG75Q2YK1 Toshiba 1200 Volts IC 75 A SAT 2.8 V	3			
501606	09810129	2DI150A-120 Fuji/Japan 1200 Volts IC 150 A SAT 2.8V		3		
501607	09810137	2DI150Z-120 Fuji/Japan 1200 Volts IC 150 A SAT 2.8 V QM150DY-24 Mitsubishi/Japan 1200 Volts IC 150 A SAT 2.8 V MG150Q2YK1 Toshiba 1200 Volts IC 150 A SAT 2.8 V		3		
501608	09810269	1DI200Z-120 Fuji/Japan 1200 Volts IC 150 A SAT 2.8 V QM200HA-24 Mitsubishi/Japan 1200 Volts IC 150 A SAT 2.8 V KS621220A7 Powerex 1200 Volts IC 150 A SAT 2.8 V MG200Q1UK1 Toshiba 1200 Volts IC 150 A SAT 2.8 V			6	
501609	09810323	1DI200A-120 Fuji/Japan 1200 Volts IC 200 A SAT 2.8 V			6	
501610	09810331	1DI300A-120 Fuji/Japan 1200 Volts IC 300 A SAT 2.8V				6
501611	09810340	1DI300Z-120 Fuji/Japan 1200 Volts IC 300 A SAT 2.8 V QM300HA-24 Mitsubishi/Japan 1200 Volts IC 300 A SAT 2.8 V KS621230 Powerex 1200 Volts IC 300 A SAT 2.8 V MG300Q1UK1 Toshiba 1200 Volts IC 300 A SAT 2.8 V				6

Note: Always replace Modules with like manufacturers.

Table 4-12. Miscellaneous

Part No.	Bulletin No.	Type Designation	Description
501590	3500-HO4	SAFW 400	Hall Effect Current Transducer
501591	3500-H10	SAFW 1000	Hall Effect Current Transducer
501592	3500-H25	SAFW 2500	Hall Effect Current Transducer
502743	*		Capacitor, 3300 μ F, (140 - 540KVA) with mounting stud
504458			Ribbon Cable, 40 Conn, I/O to TBC, 4'
110423			Capacitor Mounting Clamp
503461			Capacitor, 4700 μ F, (730 & 870 KVA) with mounting stud
104832		SLZF (33)	Force Measuring Indicator Type SLZF (33)
503483		SLZF (85)	Force Measuring Indicator Type SLZF (85)
502636			Fiber Optic Cable 8" (Toshiba connectors on both ends)
506995			Fiber Optic Cable 8" (Hewlett Packard connectors on both ends)
507248			Fiber Optic Cable 8" (Hewlett Packard to Toshiba, HP side blue)
507249			Fiber Optic Cable 8" (Hewlett Packard to Toshiba, HP side gray)
505971			Fibre Optic Cable 13' (For Parallel Units)
502670			Ribbon Cable, CP1 to I/O Card, 20 Cond, 8'
502637	*		Capacitor 3300 μ F. (30 - 180 KVA) without mounting stud.
503495		C-9	Chopper Capacitor 4700 μ F 250V (All GTO Units)

*Alternate Part Numbers. Refer to list in Drive enclosure.

Table 4-13. Dynamic Brake Unit Spares

Part No.	Type Designation	Description	75KVA	90KVA	115KVA	140KVA	180KVA	210KVA
501578	SAFT 135 BCC	3500-BRC Braking Control Card	1		1		1	1
144442	V11	GTO Replacement Kit	1					
144443	V11	GTO Replacement Kit			1			
144444	V11	GTO Replacement Kit					1	
144447	V11	GTO Replacement Kit		1				
144448	V11	GTO Replacement Kit				1		
144449	V11	GTO Replacement Kit						1
501655	V12	Aux Diode	1		1		1	1
104724	V13	Aux Diode	1		1		1	1
117928	Bulletin 810-A15C	Overload Relay with Blue Fluid	1					
101458	Bulletin 810-A20C	Overload Relay with Blue Fluid			1			
101462	Bulletin 810-A24C	Overload Relay with Blue Fluid					1	1
501886	SAFUK 80F500	Chopper Module	1					
501887	SAFUK 125F500	Chopper Module			1			
501888	SAFUK 200F500	Chopper Module					1	
506442	SAFUK 90F575	Chopper Module		1				
506443	SAFUK 140F575	Chopper Module				1		
505874	SAFUK 210F575	Chopper Module						1
116573		DC Fusing	2					
113238		DC Fusing			2			
118164		DC Fusing					2	
138720		DC Fusing				2		
139175		Dashpot Fluid for Overload						

Table 4-14. Optional Equipment

Part No.	Bulletin No.	Type Designation	Description
503596	C1	3500-INP	Isolated Analog Input Card
503345	C9	3500-A10	Isolated Analog I/O Card
118809			Ribbon Cable 10 Cond, 40 Inch (C1 or C9)
504537	C10	3500-AC3	115V Input Card
503352	C11	3500-RDO	Relay Output Card
504459			Ribbon Cable, 20 Cond (C3, 10 or 11) , 9 ft.
129745	C6	3500-NA2	PLC Interface Module (Series C)
502470		3500-NA1	PLC Interface Module (Series A & B)
103247			Spacer Standoff, 1-1/2" 6-32 (Qty. 4 on C3,10,11)
105005			Spacer Standoff, 1" 6-32 (Qty 4 on C3)
503498	CP5	SAFT 21 PAN	CP5
503193			Bracket for 174 TBC Card or some option cards
504905			Screw M3 × 10mm

Table 4-15. Memory Chips

Type	Series	Rev. **	D17 ** CON-Card	D18 ** CON-Card	D16 * CON-Card	D2 IOC-Card
Scalar	A & B	2.02C	502148	502147	502121	
	C	3.03D	504435	504434	503597	
	C-Plus	4.04	506996	506997	503597	
		4.04B	507658	507659	503597	
Vector No Blocks	C	3.05B	504036	504037	503597	
Vector w/Blocks	C	3.05B	504135	504136	503597	
	C-Plus	4.00B	506283 ***	506283 ***	503597	
		4.00C	507660	507661	503597	
LGU	C	3.04C	504258	504259	503597	
CP1-Interface	C	2.01E	-	-	-	504309
	C-Plus	2.01E	-	-	-	504309
CP5	C	2.02B	-	-	-	504619
	C-Plus	2.02B	-	-	-	504619

- * This is a blank chip with no memory installed. If a programmed chip is required, consult factory for part number and price; the factory will require Drive serial number.
- ** Both D17 and D18 chips must utilize the same firmware; either 3.03C or 3.03D. YOU CANNOT MIX FIRMWARE!
- *** Version 4.0 Vector firmware is a combination of "with" or "without" blocks.

Table 4-16. Ribbon Cable Assemblies

Part No.	Code	Description
506493	57419610	40-cond, 180kVA-460kVA, daisy from A2X1 => A3X1 => A7X1 => A6X1
506494	57419628	40-cond, 180kVA-460kVA, daisy from pulse amp to pulse amp
506495	58096504	40-cond, 730/870kva daisy from A2X1 => A3X1 => A7X1 => A6X1
506496	57419628	40-cond, 730/870kVA, daisy from pulse amp to pulse amp
506497	58101087	(2) 10-cond, Hall effect, 30kVA-115kVA
506721	—	Set of 10-cond, Hall effect ribbon cables (506499/506500/506501) 460kVA & 575kVA
506722	—	Set of 10-cond, Hall effect ribbon cables (506500/506501/506502) 730kVA & 870kVA
506720	—	Set of 10-cond, Hall effect ribbon cables (506498/506499/506500) 140kVA thru 340kVA
506503	58107361	4-cond, molex cable assy from A7X2 => A3X2 => A6X3 => A5X3 => A4X3
504789	58101095	40-cond, split 20 A2X1 => A3X1 and A4X1, 30kVA-115kVA
504458	58101095	40 pin cond. 163IOC to 174TBC

Table 4-17. Green Molex Connectors

Part No.	Code	Description
506489	35065661	4 Position
506490	09881611	6 Position
506491	35065822	10 Position
506492	35066594	12 Position
113715	—	Molex pins for connectors

5.0
Parts by kVA Rating

The following is a listing of parts that are not included in the recommended spare parts levels.

Table 5-1. 30 kVA, 460V

Name	Symbol	Code	Part No.	Qty.	Module
Transformer	T1	57415207	504483	1	INU
Circuit Breaker 2A	F2	35077758	505860	1	INU
Temperature Sensor	F3	35044582	104743	1	INU
Choke	L1	58101656	504490	1	INU
Choke	L1		502485	1	LSU
Transformer	T2		502481	1	LSU
Relay	TR1		117221	1	LSU
Relay	K2		117222	1	LSU
Timer	TR1		117220	1	LSU
Relay	K1		118324	1	LSU
Contactor	K4		118323	1	LSU
Contactor	K3		117137	1	LSU
Temperature Sensor	S1		104743	1	LSU
Fused Switch	S2		501440	1	LSU
Capacitor	C1, C2, C3		502637	6	LSU
Control Panel Keyboard and Display	CP1		501067	1	CP1
Pushbutton	1S		103932	1	
Pushbutton Contact Block	1S		111814	1	
MOV	D1		115547	1	LSU
Output Terminal	U ₂ V ₂ W ₂		504733	3	INU
Disconnect Handle	S2		502606	1	LSU

Table 5-2. 40 & 50 kVA, 460V

Name	Symbol	Code	Part No.	Qty.	Module
Transformer	T1	57415207	504483	1	INU
Circuit Breaker 2A	F2	35077758	505860	1	INU
Temperature Sensor	F3	35044582	104743	1	INU
Choke	L1	58101656	504490	1	INU
Transformer	T2		502481	1	LSU
Choke	L1		502485	1	LSU
Relay	TR1		117221	1	LSU
Timer	TR1		117220	1	LSU
Relay	K2		117222	1	LSU
Relay	K1		118324	1	LSU
Contactor	K4		118323	1	LSU
Contactor	K3		117137	1	LSU
Temperature Sensor	S1		104743	1	LSU
Fused Switch	S2		501440	1	LSU
Capacitor	C1, C2, C3		502637	6	LSU
Pushbutton	1S		103932	1	
Pushbutton Contact Block	1S		111814	1	
MOV	D1		115547	1	LSU
Output Terminal	U ₂ V ₂ W ₂		504733	3	INU
Disconnect Handle	S2		502606	1	LSU

Table 5-3. 60 & 75 kVA, 460V

Name	Symbol	Code	Part No.	Qty.	Module
Transformer	T1	57415207	504483	1	INU
Circuit Breaker 2A	F2	35077758	505860	1	INU
Temperature Sensor	F3	35044582	104743	1	INU
Choke	L1	58097802	504491	1	INU
Transformer	T2		502481	1	LSU
Choke	L1		502484	1	LSU
Relay	TR1		117221	1	LSU
Timer	TR1		117220	1	LSU
Relay	K2		117222	1	LSU
Relay	K1		118324	1	LSU
Contactactor	K4		118322	1	LSU
Contactactor	K3		117137	1	LSU
Temperature Switch	S1		104743	1	LSU
Disconnect	S2		501440	1	LSU
Capacitors	C1, C2, C3		502637	9	LSU
Pushbutton	1S		103932	1	
Pushbutton Contact Block	1S		111814	1	
MOV	D1		115547	1	LSU
Output Terminal	U ₂ V ₂ W ₂		504733	3	INU
Disconnect Handle	S2		502606	1	LSU

Table 5-4. 100 & 115 kVA, 460V

Name	Symbol	Code	Part No.	Qty.	Module
Transformer	T1	57415207	504483	1	INU
Circuit Breaker 2A	F2	35077758	505860	1	INU
Temperature Sensor	F3	35044582	104743	1	INU
Choke	L1	58097802	504491	1	INU
Transformer	T2		502481	1	LSU
Choke	L1		502482	1	LSU
Relay	TR1		117221	1	LSU
Timer	TR1		117220	1	LSU
Relay	K2		117222	1	LSU
Relay	K1		118324	1	LSU
Contactactor	K4		118322	1	LSU
Contactactor	K3		117137	1	LSU
Temperature Sensor	S1		104743	1	LSU
Disconnect	S2		501441	1	LSU
Capacitors	C1, C2, C3		502637	12	LSU
Pushbutton	1S		103932	1	
Pushbutton Contact Block	1S		111814	1	
MOV	D1		115547	1	LSU
Output Terminal	U ₂ V ₂ W ₂		504733	3	INU
Disconnect Handle	S2		502606	1	LSU

Table 5-5. 180 kVA, 460V

Name	Symbol	Code	Part No.	Qty.	Module
Transformer	T1	57415207	504483	1	INU
Circuit Breaker	F11	35011102	504485	1	INU
Temperature Sensor	S1	35046852	503459	2	INU & LSU
Choke	L1	57427957	504492	1	INU
Choke	L2	57413409	504493	1	INU
Circuit Breaker	S2		125049	1	LSU
Pushbutton	1S		103932	1	
Pushbutton Contact Block	1S		111814	1	
Transformer	T2		502481	1	LSU
Choke	L1		502482*	1	LSU
Choke	L1		504193*	1	LSU
Relay	TR1		117222	1	LSU
Timer	TR1		117220	1	LSU
Relay	K2		117222	1	LSU
Relay	K1		118324	1	LSU
Contactactor	K4		120485	1	LSU
Contactactor	K3		117137	1	LSU
MOV	D1		115547	1	LSU
Disconnect Handle	S2		503408	1	LSU

Table 5-6. 290 kVA, 460V

Name	Symbol	Code	Part No.	Qty.	Module
Transformer	T1	57415207	504483	1	INU
Circuit Breaker	F11	35011111	504486	1	INU
Choke	L1	57428236	504494	1	INU
Choke	L2	57413409	504493	1	INU
Temperature Sensor	S1, S51, S52	35046852	503459	3	LRU, INU
Choke	L51	57436603	504532	1	LRU
Circuit Breaker	F51	35044931	504489	1	LRU
Circuit Breaker	S2		125049	1	CTU
Transformer	T2		503426	1	CTU
Relay	K2, K5, TR1		117222	3	CTU
Timer	TR1		117220	1	CTU
Relay	K1		118324	1	CTU
Contactactor*	K4		503393	1	CTU
Contactactor*	K4		122487	1	CTU
Relay	K6A		101215	1	CTU
Contactactor	K3		117137	1	CTU
Relay	K6		502296	1	CTU
Door Switch	1DI		101934	1	
Pushbutton	1S		103932	1	
Pushbutton Contact Block	1S		111814	1	
Disconnect Handle	S2		503408	1	CTU

* Alternate Part Numbers. Refer to list in Drive enclosure.

Table 5-7. 460 kVA, 460V

Name	Symbol	Code	Part No.	Qty.	Module
Transformer	T1	57415207	504483	1	INU
Circuit Breaker	F11	35011137	504487	1	INU
Temperature Sensor	S1	35046852	503459	1	INU
Choke	L1	57428244	504495	1	INU
Choke	L2	57420537	504496	1	INU
Temperature Sensor	S1	35046852	503459	1	CBU
Circuit Breaker	F51	35044931	504489	1	LCU
Choke	L51	57433124	504497	1	LCU
Temperature Sensor	S51	35044582	104743	1	LCU
Circuit Breaker	S2		130754	1	CTU
Relay	K2, K5, TR1		117222	3	CTU
Timer	TR1		117220	1	CTU
Relay	K1		118324	1	CTU
Contact* [*]	K4		502595	1	CTU
Contact* [*]	K4		122486	1	CTU
Relay	K6A		101215	1	CTU
Contact* [*]	K3		116880	1	CTU
Transformer	T2		503427	1	CTU
Relay	K6		502296	1	CTU
Door Switch	1DI, 2DI		101934	2	
Pushbutton	1S		103932	1	
Pushbutton Contact Block	1S		111814	1	
Disconnect Handle	S2		200368	1	CTU

* Alternate Part Numbers. Refer to list inside Drive enclosure.

Table 5-8. 730 kVA, 460V

Name	Symbol	Code	Part No.	Qty.	Module
Transformer	T1	57415207	504483	1	INU
Circuit Breaker	F11	35011145	504488	1	INU
Temperature Sensor	S1	35046852	503459	1	INU
Choke	L1	57442441	504498	1	INU
Choke	L2	57443677	504499	1	INU
Temperature Sensor	S1	35046852	503459	1	CBU
Circuit Breaker	F51	35011102	504485	1	LCU
Choke	L51	57421355	504500	1	LCU
Temperature Sensor	S51	35044582	104743	1	LCU
Circuit Breaker	S2		130755	1	CTU
Relay	K2, K5, TR1		117222	3	CTU
Timer	TR1		117220	1	CTU
Contact* [*]	K4		503241	1	CTU
Coil for K4			505877	1	CTU
Contact* [*]	K3		116946	1	CTU
Transformer	T2		503428	1	CTU
Relay	K6		502296	1	CTU
Door Switch	1DI, 2DI		101934	2	
Pushbutton	1S		103932	1	
Pushbutton Contact Block	1S		111814	1	
Relay	K6A		101215	1	CTU
Relay	K1		118324	1	CTU
Disconnect Handle	S2		200368	1	CTU

Table 5-9. 140 kVA, 575V

Name	Symbol	Code	Part No.	Qty.	Module
Transformer	T1	57415207	504483	1	INU
Circuit Breaker	F11	35011102	504485	1	INU
Temperature Sensor	S1	35046852	503459	1	INU
Choke	L1	57427884	506738	1	INU
Choke	L2	57427906	506739	1	INU
Temperature Sensor	S1	35044582	104743	1	LSU
Circuit Breaker	S2		122811	1	LSU
Pushbutton	1S		103932	1	
Pushbutton Contact Block	1S		111814	1	
Transformer	T2	57438053	506735	1	LSU
Transformer	T3	57438011	506736	1	LSU
Choke	L1	57438681	506737	1	LSU
Relay	TR1		117222	1	LSU
Timer	TR1		117220	1	LSU
Relay	K2		117222	1	LSU
Relay	K1		122754	1	LSU
Contactactor	K4		118322	1	LSU
Contactactor	K3		117137	1	LSU
MOV	D1		119909	1	LSU
Disconnect Handle	S2		503409	1	CTU

* Alternate Part Numbers. Refer to list inside Drive enclosure.

Table 5-10. 210 kVA, 575V

Name	Symbol	Code	Part No.	Qty.	Module
Transformer	T1	57415207	504483	1	INU
Circuit breaker	F11	35011102	504485	1	INU
Choke	L1	57427884	506738	1	INU
Choke	L2	57427906	506739	1	INU
Temperature Sensor	S1, S51, S52	35046852	503459	3	INU, LRU
Choke	L51	57433124	504497	1	LRU
Circuit Breaker	F51	35044931	504489	1	LRU
Circuit Breaker	S2		122811	1	CTU
Transformer	T2		503400	1	CTU
Relay	K2, K5, TR1		117222	3	CTU
Timer	TR1		117220	1	CTU
Relay	K1		122754	1	CTU
Contactactor	K4		120485	1	CTU
Relay	K6A		101215	1	CTU
Contactactor	K3		117137	1	CTU
Relay	K6		504098	1	CTU
Door Switch	1DI		101934	1	
Pushbutton	1S		103932	1	
Pushbutton Contact Block	1S		111814	1	
MOV	D1		119909	1	CTU
Disconnect Handle	S2		503409	1	CTU

* Alternate Part Numbers. Refer to list inside Drive enclosure.

Table 5-11. 340 kVA,

Name	Symbol	Code	Part No.	Qty.	Module
Transformer	T1	57415207	504483	1	INU
Circuit Breaker	F11	35011111	504486	1	INU
Temperature Sensor	S1	35046852	503459	1	INU
Choke	L1	57428261	506740	1	INU
Choke	L2	57427906	506739	3	INU
Temperature Sensor	S1	35046852	503459	1	CBU
Circuit Breaker	F51	35044931	504489	1	LCU
Choke	L51	57421355	504500	1	LCU
Temperature Sensor	SS1 / SS2	35046852	503459	1	LCU
Circuit Breaker	S2		125049	1	CTU
Relay	K2, K5, TR1		117222	3	CTU
Timer	TR1		117220	1	CTU
Relay	K1		122754	1	CTU
Contactactor	K4		122487	1	CTU
Relay	K6A		101215	1	CTU
Contactactor	K3		117137	1	CTU
Transformer	T2		503400	1	CTU
Relay	K6		504098	1	CTU
Door Switch	1DI, 2DI		101934	2	
Pushbutton	1S		103932	1	
Pushbutton Contact Block	1S		111814	1	
MOV	D1		119909	1	CTU
Disconnect Handle	S2		503408	1	CTU

* Alternate Part Numbers. Refer to list inside Drive enclosure.

Table 5-12. 540 kVA

Name	Symbol	Code	Part No.	Qty.	Module
Transformer	T1	57415207	504483	1	INU
Circuit Breaker	F11	35011137	504487	1	INU
Temperature Sensor	S1	35046852	503459	1	INU
Choke	L1	57420383	506741	1	INU
Choke	L2	57420537	504496	3	INU
Temperature Sensor	S1	35046852	503459	1	CBU
Circuit Breaker	F51	35044931	504489	1	LCU
Choke	L51	57423439	505840	1	LCU
Temperature Sensor	S51	35046852	503459	1	LCU
Circuit Breaker	S2		130755	1	CTU
Relay	K2, K5, TR1		117222	3	CTU
Timer	TR1		117220	1	CTU
Relay	K1		122754	1	CTU
Contactactor	K4		503241	1	CTU
Contactactor	K4		505877	1	CTU
Relay	K6A		101215	1	CTU
Contactactor	K3		118323	1	CTU
Transformer	T2		504534	1	CTU
Relay	K6		504098	1	CTU
Door Switch	1DI, 2DI		101934	2	
Pushbutton	1S		103932	1	
Pushbutton Contact Block	1S		111814	1	
MOV	D1		119909	1	CTU
Disconnect Handle	S2		200368	1	CTU

* Alternate Part Numbers. Refer to list inside Drive enclosure.

Table 5-13. 870 kVA

Name	Symbol	Code	Part No.	Qty.	Module
Transformer	T1	57415207	504483	1	INU
Circuit Breaker	F11	35011137	504487	1	INU
Temperature Sensor	S1	35046852	503459	1	INU
Choke	L1	57442450	506742	1	INU
Choke	L2	57420537	504496	3	INU
Temperature Sensor	S1	35046852	503459	1	CBU
Circuit Breaker	F51	35044931	504489	1	LCU
Choke	L51	57423439	505840	1	LCU
Temperature Sensor	S51	35046852	503459	1	LCU
Circuit Breaker	S2		130755	1	CTU
Relay	K2, K5, TR1		117222	3	CTU
Timer	TR1		117220	1	CTU
Relay	K1		122754	1	CTU
Contactactor	K4		503241	1	CTU
Coil for K4			505877	1	CTU
Relay	K6A		101215	1	CTU
Contactactor	K3		118323	1	CTU
Transformer	T2		504534	1	CTU
Relay	K6		504098	1	CTU
Door Switch	1DI, 2DI		101934	2	
Pushbutton	1S		103932	1	
Pushbutton Contact Block	1S		111814	1	
MOV	D1		119909	1	CTU
Disconnect Handle	S2		200368	1	CTU

* Alternate Part Numbers. Refer to list inside Drive enclosure.

6.0
Parts by Module

Table 6-1. LCUs, 1150 kVA, 460V

Name	Code	Part No.	Qty.
Capacitor	09833412	104799	1
Circuit Breaker	35011102	504485	1
Auxilliary Contact	35011170		1
DC Reactor	57423439	505840	1
Fan 7.5KG/60Hz Woods 1.0A	09858164	505986	1
Diode Snubber 1200V SM 1000A 4.3NM	09805702	104724	1
Diode Power 2200V SM 34000A 22KN	09805907	503460	6
Temperature Sensor	35044582	104743	1

Table 6-2. LCUs, 1400 kVA, 575V

Name	Code	Part No.	Qty.
Capacitor	09833412	104799	1
Circuit Breaker	35011102	504485	1
Auxilliary Contact	35011170		1
DC Reactor	51450061	505986	1
Fan 7.5KG/60Hz Woods 1.0A	09858164	505986	1
Diode Snubber 1200V SM 1000A 4.3NM	09805702	104724	1
Diode Power 2200V SM 34000A 22KN	09805907	503460	6
Temperature Sensor	35044582	104743	1

Table 6-3. LCUs, 1800 kVA, 460V

Name	Code	Part No.	Qty.
Capacitor	09833412	104799	1
Circuit Breaker	35011137	504487	1
Auxilliary Contact	35011170		1
DC Reactor	57449144		1
Fan 7.5KG/60Hz Woods 1.0A	09858121	505986	1
Diode Snubber 1200V SM 1000A 4.3NM	09805702	104724	1
Diode Power 2200V SM 34000A 22KN	09805907	503460	6
Temperature Sensor	35044582	104743	1

Table 6-4. LCUs, 2100 kVA, 575V

Name	Code	Part No.	Qty.
Capacitor	09833412	104799	1
Circuit Breaker	35011137	504487	1
Auxilliary Contact	35011170		1
DC Reactor	57449144		1
Fan 7.5KG/60Hz Woods 1.0A	09858121	505986	1
Diode Snubber 1200V SM 1000A 4.3NM	09805702	104724	1
Diode Power 2200V SM 34000A 22KN	09805907	503460	6
Temperature Sensor	35044582	104743	1

Table 6-5. Thyristor Braking Units (TBUs)

Name	Code	Part No.	Qty.
Control Board SAFT 185 TBC	58119687	505757	1
Power Supply SAMC 11 POW	57171847	104750	1
Interface Board SAFT 19 INF	57401389	110972	1
Interface Board SAFT 181 INF	58116076	505758	1
Pulse Amp Board SAMT 11 PAC	57211369	107392	1
Measuring Card SAFT 183 VMC	58115479	505760	1
Fan	09857931	503211	1
Circuit Breaker	35044931	504489	1
Capacitor	09833153	505761	3

Table 6-6. TBU Parts Specific to Units

Name	Code	Part No.	kVA					
			290	460	730	340	540	870
Choke	57433124	504497		1				
Choke	57436603	504532	1					
Choke	57423439	505840					1	1
Choke	57421355	504500			1	1		
SCR Thyristor	35077065	505841	3					
SCR Thyristor	09802011	505842		3	3		3	3
SCR Thyristor	10000556	505843				3		
Thermostat	35046852	503459	1			1		
Thermostat	35044582	104743		1	1		1	1
Resistor	09827323	505846		1	1		1	1
Resistor	09827315	505845	1			1		

7.0
Roll Out Modules

Table 7-1A. Inverters, 460V

KVA	Type			
	Scalar	Vector Std. Alone	Vector Sectional	LGU
30	504405	504440	504413	--
40 - 50	504406	504441	504414	--
60 - 75	504407	504442	504415	--
100 - 115	504408	504443	504416	--
180	504409	504444	504417	504425
290	504410	504445	504418	504426
460	504411	504446	504419	504427
730	504412	504447	504420	504428
C-Plus Inverters, 460V				
30	506786	506801	506816	
40 - 50	506787	506802	506817	
60 - 75	506788	506803	506818	
100 - 115	506789	506804	506819	
180	506790	506805	506820	
290	506791	506806	506821	
460	506792	506807	506822	
730	506793	506808	506823	

Table 7-1B. Inverters, 575V

KVA	Type			
	Scalar	Vector Std. Alone	Vector Sectional	LGU
140	504384	504448	504389	504429
210	504385	504449	504390	504430
340	504386	504450	504391	504431
540	504387	504451	504392	504432
870	504388	504452	504393	504433
C-Plus Inverters, 575V				
140	506795	506810	506825	
210	506796	506811	506825	
340	506797	506812	506827	
540	506798	506813	506828	
870	506799	506814	506829	

Table 7-2A. Other Modules, 460V

KVA	Type			
	LSU	LRU	LCU	CBU
30 - 50	503377			
60 - 75	503378			
100 - 115	503379			
180	504176			
290		503014		503022
460			503012	503015
730			503013	503003
1150			505469	
1800			505542	

Table 7-2B. Other Modules, 575V

KVA	Type			
	LSU	LRU	LCU	CBU
140	502807			
210			503251	503248
340			503252	503249
540			503253	503250
870			504360	502681
1400			504454	
2100			505542	

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