

1352 Miscellaneous Parts List (fuses, fans, etc.)

Fuses

KVA	1 - 3F	4 - 6F	7F	8F	INU-F DC Bus Fuse	
	Input Power	Precharge	(115V)	(220V)	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-Z/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-Z/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 TR-6-1/4 101720	FRN, 15A,250V B FRN-R-15 101723	(2) 450A,1000V B SPJ-6B450 122825	(4) 700A,700V B SPP-6B450 123632
730	(6) 600A,700V B SPP-6K 600 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-7 K700 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-6K 400 118049	FRS, 10A, 600V B FRS-R-10 GS TRS10-R 101721	FRN, 6.25A,250V 8 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,600 B FRS-R-10 101721	FRN,15A, 250V 8 FRN-R-15 101723	FRN,15A, 250V 8 FRN-R-15 101723	(2) 450A,1000V 8 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

1352 Miscellaneous Parts List (fuses, fans, etc.)

Circuit Board Fuses (Glass Tube) Cross Reference

Part No.	Used On	Board Used in:	Fuse No.	Fuse Rating
501662	3500-APC SAFT 166 APC	All GTO Drives	F1	2.5A, 250V, 5x20mm
501663	3500-P72	30 kVA to	F1	1.0A, 1200V, 8.3 x 50mm
501662	SAFT 172 POW	115 kVA	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	F1	1.0A, 1200V, 8.3 x 50mm
501109	SAFT 110 POW	460 kVA	F2	1.0A, 250V, 5x20mm
501102	Power Supply	@460V	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	F1	1.0A, 1200V, 8.3 x 50mm
501109	SAFT 112 POW	540 kVA	F1	1.0A, 250V, 5x20mm
501102	Power Supply	@575V	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	F101	2.5A, 250V 5x20mm
501662	SAFT 168 PAC to	115 kVA	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,	F1	2.5A, 250V 5x20mm
501662	SAFT 120 PAC Pulse Amp	180 kVA & 210 kVA	F2	2.5A, 250V 5x20mm
501662	3500-A21	290 kVA &	F1	2.5A, 250V 5x20mm
501662	SAFT 121 PAC Pulse Amp Card	340 kVA	F2	2.5A, 250V 5x20mm
501102	3500-A22	460 kVA	F1	4.0A, 250V 5x20mm
501102	SAFT 122 PAC Pulse Amp Card		F2	4.0A, 250V 5x20mm
501664	3500-A23	730 kVA	F1	6.3A, 250V 5x20mm
501664	SAFT 123 PAC Pulse Amp Card		F2	6.3A, 250V 5x20mm
501662	3500-CHC SAFT 125 CHC Chopper Control Card	All 460V GTO Drives	F1	2.5A, 250V 5x20mm
501662	3500-CH7 SAFT 127 CHC Chopper Control Auxiliary Power Supply	All 575V GTO Drives	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

1352 Miscellaneous Parts List (fuses, fans, etc.)

Memory Chips

Type	Series	Rev. **	D17 ** Control Card	D18 ** Control Card	D16 * Control Card	D2 I/O Card
Scalar	A & B	2.02C	502148	502147	502121	
	C	3.03A thru D	504435	504434	503597	
	C	3.03E	507723	507724	503597	
	C-Plus	4.04	506996	506997	503597	
	C-Plus	4.04B thru D	507658	507659	503597	
	C+ Rev. 1	4.04E	165824	165823	503597	
			4.04G#	172584#	172583#	
Vector w/ No Blocks	C	3.05B thru D	504036	504037	503597	
	C	3.05E	507721	507722	503597	
Vector w/Blocks	C	3.05B	504135	504136	503597	
	C-Plus	4.00A & B	506283 ***	506284 ***	503597	
	C-Plus	4.00C	507660	507661	503597	
	C+ Rev. 1	4.00D	507660	507661	503597	
			4.00F	162026	162025	
		4.00G	166624	166623		
LGU	C	3.04C	504258	504259	503597	
	C	3.04E	172498****	172497****	503597	
CP1-Interface	C-Plus	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.

**** Replaces obsolete part numbers 507718 & 507717

For both chips order part number 165940

Fiber Optic Connectors

Part No.	Description
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)
507334	Fiber Optic Cable 15" (Hewlett Packard both ends) for TBX
505971	Fiber Optic Cable 13 ft (For Parallel Units)

Green Molex Connectors

Part	Description
506489	4 Position
506490	6 Position
506491	10 Position
506492	12 Position
113715	Molex pins for connectors

1352 Miscellaneous Parts List (fuses, fans, etc.)

Optional Circuit Cards

Part	Designation	Description
503498	SAFT 21 PAN	CP5
503596	SAFT 162 INP	Isolated Analog Input Card
503345	SAFT164 AIO	Isolated Analog I/O Card
504537	SAFT 176 ACC	115V Input Card
503352	SAFT 175 RDO	Relay Output Card
503203	3500-NA1	PLC Interface Module (Series A & B)
129745	3500-NA2	PLC Interface Module (Series C & C+)
506157	SAFT 176 MAC	Master Control Card
506158	SAFT 177 SAC	Slace Control Card
506159	SAFT 180 PCC	Matching Card (Parallel)
501578	SAFT 135 BRC	Braking Chopper Control Card
502164	SAFT 158 EFS	Ground Fault Sensing Board
503351	SAFT 173 TSI*	Tach & Serial Interface Card (Series C)
143676	SAFT 189 TSI*	Tach & Series Interface Card (Series C+)
143735		Conversion Kit from 103 CON to 187 CON
143679		Conversion Kit from 163 IOC to 188 IOC

*Alternate Part Numbers. Refer to Drive Enclosure, Alternate Part Numbers are Not Interchangeable

THYRISTOR BRAKING UNITS (TBU)

Part No.	Designation	Description
505757	SAFT 185 TBC	Control Card
104750	SAMC 11 POW	Power Supply Card
110972	SAFT 19 INF	Interface Board
505758	SAFT 181 INF	Interface Board
107392	SAMT 11 PAC	Pulse Amp Card
505760	SAFT 183 VMC	Measuring Card
503211		Fan
504489		Circuit Breaker
505761		Capacitor, 1MFD
504532		Choke 290KVA
504497		Choke 460KVA
504500		Choke 730KVA/340KVA
505840		Choke 540/870KVA
505841		SCR Thyristor 290KVA
505842		SCR Thyristor 460/730/540/870KVA
505843		SCR Thyristor 340KVA
503459		Thermostat 290/340KVA
104743		Thermostat 460/730/540/870KVA
505846		Resistor 460/730/540/870KVA
505845		Resistor 290/340KVA

1352 Miscellaneous Parts List (fuses, fans, etc.)

C1 Option (#503653)

503596	PCB, SAFT 162 INP, Analog Input card	(1)
118809	Ribbon Cable, 10 cond, 40"	(1)
504905	Screw 3 X 10 mm	(8)

C3 Option (#503654)

504537	PCB, SAFT 176 ACC, 115V input card	(1)
503352	PCB, SAFT 175 RDO, Relay output card	(1)
504459	Ribbon cable, 20 cond, 9'	(1)
105005	Spacer, 1", 6-32 Thread, Male/Female	(4)
103258	Spacer, 1 1/2", 6-32 Thread, Male/Female	(4)
103090	Screw 6-32 X .375	(4)
103211	Lockwasher #6	(4)
503193	Mounting Bracket	(1)

C9 Option (#503656)

503345	PCB, SAFT 164 AIO, Analog Input/Output card	(1)
118809	Ribbon cable 10 cond, 40"	(1)
504905	Screw, metric 3 x 10mm	(8)

C10 Option (#507446)

504537	PCB, SAFT 176 ACC, 115V input card	(1)
504459	Ribbon cable, 20 Cond, 9'	(1)
105005	1" X .25 diameter	(4)
103090	Screw 6-32 X .375"	(4)
103211	Lockwasher #6	(4)
103254	Spacer, .5", 6-32 Thread, Male/Female	(4)
503193	Mounting Bracket	(1)

C11 Option (#507447)

503352	PCB, SAFT 175 RDO, Relay output card	(1)
504459	Ribbon cable, 20 cond, 9'	(1)
105005	Spacer, 6-32 X .25	(4)
103090	Screw, 6-32 X .375	(4)
103211	Lockwasher, #6	(4)
103254	Spacer, .5", 6-32 Thread, Male/Female	(4)
503193	Mounting Bracket	(1)

1352 Miscellaneous Parts List (fuses, fans, etc.)

Ribbon Cable Assemblies

Part	Code	Description
506493	57419610	40-cond, 180kVA-460kVA, daisy from A2X1 to A3X1 to A7X1 to A6X1.
506494	57419628	40-cond, 180kVA - 460kVA, daisy chain from pulse amp to pulse amp.
506495	58096504	40-cond, 730 and 870kVA daisy from: A2X1 to A3X1 to A7X1 to A6X1.
506496	57419628	40-cond, 730 and 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 & 540kVA.
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 to A3X2 to A6X3 to A5X3 to A4X3.
504789	58101095	40-cond, split 20 A2X1 to A3X1 and A4X1, 30kVA-115kVA.
504458	58101095	40 Pin conductor 163 IOC to 174 TBC.
504458		40 Conn, I/O to TBC, 4 ft
502670		20 Cond, CP1 to I/O Card, 8 ft.
118809		10 Cond, 40 Inch (C 1 or C9)
504459		20 Cond (C3, 10 or 11), 9 ft.

Drive Maintenance System Part Numbers (DMS)

DESCRIPTION	PART #	DESCRIPTION	PART #
3251 - UPGRADE	507509	MODEM Adapter	504852
3251 - Fiber Optic Kit	507508	DISKS (3.5)	507511
Power Supply	504453	LINE DRIVER-Fiber Optic Cable	504358
Fiber Optic Driver	504851	Twisted Pair Cable	503285
Fiber Optic Cable (BLACK)	504371	Serial Cable	505259
Fiber Optic Cable (BLUE/GRAY)	507337		
DMS Cable Assembly	505967		
RS232 Converter	504850		

DMS SOFTWARE COMPATIBILITY

DMS 2.01	DMS 2.02	DMS 2.03	Bulletin Number	Firmware Revision	Control Type	File Name
	X	X	SER. A	2.02A thru C	SCALAR	1352B5
	X	X	SER. B	2.02A thru C	SCALAR	1352B5
X	X	X	SER. C	3.03A thru E	SCALAR	1352C4
	X	X	SER. C+	4.04A	SCALAR	1352C5
		X	SER. C+	4.04B thru D	SCALAR	1352C6
X	X	X	SER. C	3.05A and B	VECTOR VA/NB	1352V4
X	X	X	SER. C	3.05C	VECTOR VA/NB	1352V4
X	X	X	SER. C	3.05 VB	VECTOR VB/WB	1352V5
X	X	X	3500 C	4.01 VA	VECTOR VA/NB	1352V6
	X	X	SER. C+	4.00A and B	VECTOR VC/WB	1352V7
		X	SER. C+	4.00C and D	VECTOR VC/WB	1352V8
X	X	X	SER. C	3.04	LGU	1352L3
	X	X	3400 A	SGEA3.07	DC	3400AA
	X	X	3400 B	SGEA3.08	DC	3400BA

1352 Miscellaneous Parts List (fuses, fans, etc.)

Dynamic Brake Unit Spare Parts

Part No.	Designation	Description
501578	SAFT 135 BCC	Braking Control Card
144442	V11	GTO Replacement Kit (75KVA)
144443	V11	GTO Replacement Kit (115KVA)
144444	V11	GTO Replacement Kit (180 KVA)
144447	V11	GTO Replacement Kit (90KVA)
144448	V11	GTO Replacement Kit (140KVA)
144449	V11	GTO Replacement Kit (210KVA)
501655	V12	Auxiliary Diode (75/115/180/210KVA)
104724	V13	Auxiliary Diode (75/115/180/210KVA)
117928		Overload Relay w/blue fluid (75KVA)
101458		Overload Relay w/blue fluit (115KVA)
101462		Overload Relay w/blue fluid (180/210KVA)
501886	SAFUK 80F500	Chopper Module (75KVA)
501887	SAFUK 125F500	Chopper Module (115KVA)
501888	SAFUK 200F500	Chopper Module (180KVA)
506442	SAFUK 90F575	Chopper Module (90KVA)
506443	SAFUK 140F575	Chopper Module (140KVA)
505874	SAFUK 210F575	Chopper Module (210KVA)
116573		DC Fuse (75KVA)
113238		DC Fuse (115KVA)
118164		DC Fuse (180KVA)
138720		DC Fuse (140KVA)
139175		Dashpot fluid for Overload

LINE GENERATING UNITS

Part No.	Designation	Description
501600	SAFT 180FG460	Matching Card 180KVA
501601	SAFT 290FG460	Matching Card 290KVA
501602	SAFT 460FG460	Matching Card 460KVA
501603	SAFT 730FG460	Matching Card 730KVA
503360	SAFT 140FG575	Matching Card 140KVA
503361	SAFT 210FG575	Matching Card 210KVA
503362	SAFT 340FG575	Matching Card 340KVA
503363	SAFT 540FG575	Matching Card 540KVA
503364	SAFT 870FG575	Matching Card 870KVA