

CAUTION!
PLEASE SWITCH POWER OFF
BEFORE SERVING UNIT

Commercial Refrigerator & Freezer Service Manual



<Solid Door>

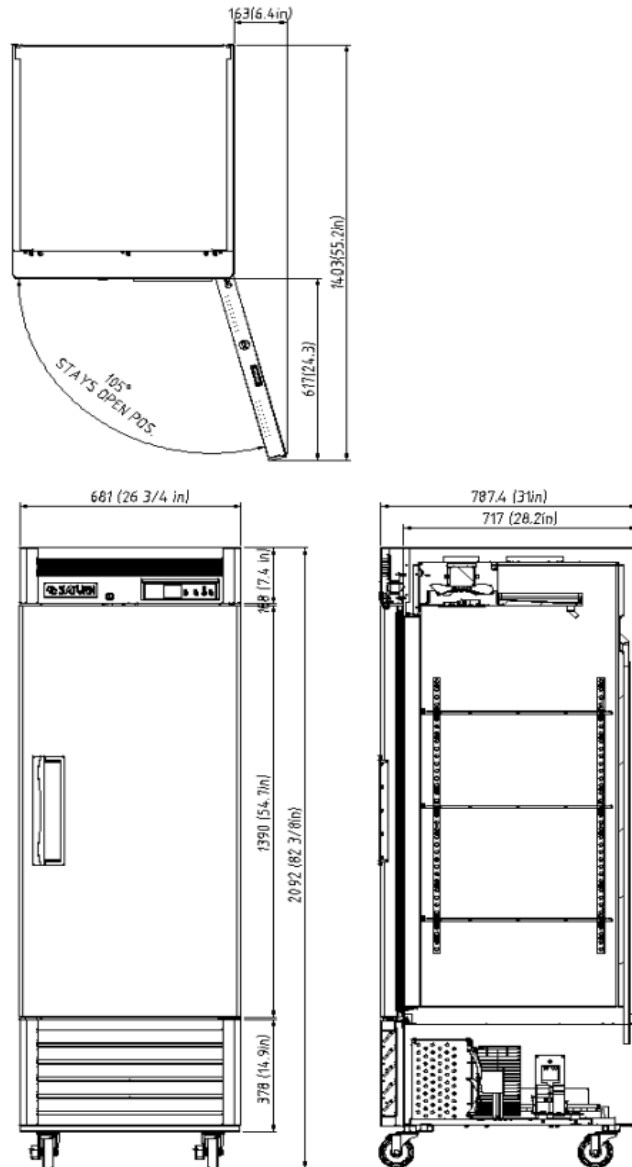
Refrigerator
S23R
S49R

Freezer
S23F
S49F

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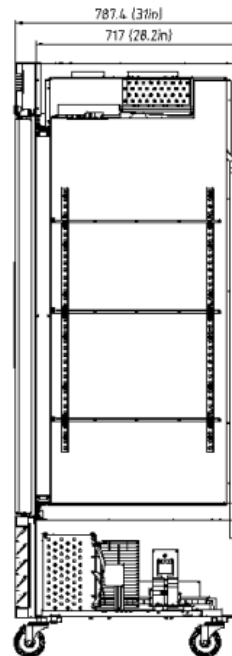
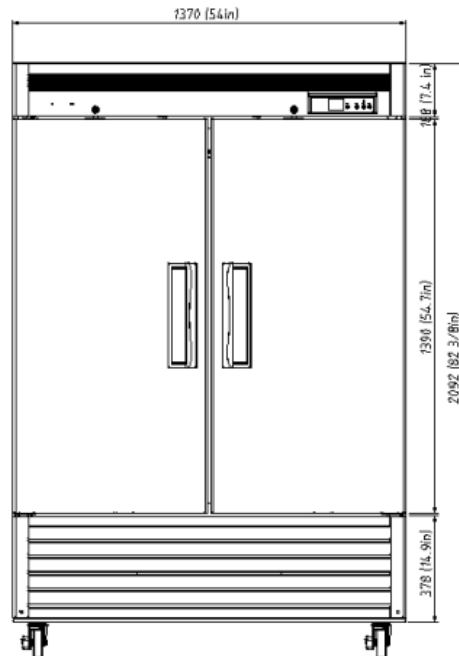
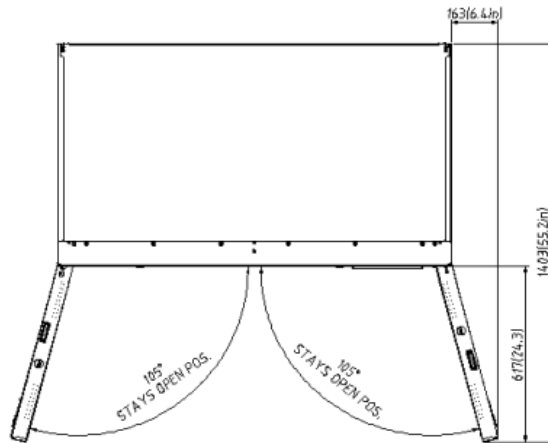
Refrigerator
S23RG
S49RG

■ Model – S23R



1. Technical Specifications		
Amp	115V	6.0A
Connection		15 Amp Plug
Refrigerant	Name	R-134a
	Q'ty(oz)	3.9
	Q'ty(gram)	110
	HP	1/3
Compressor	Samsung	SK1A1C-L2W
2. Function Specifications		
Temp Range	°F	29 ~ 39
Capacity	Cubic Feet	23
Climate		N
Max Ambient Temp	°F	89.6
	°F	59
Castor Front	4" Move	2 EA
Castor Rear	4" Stop	2 EA
Shelves		3 EA
Door		1 EA
Exterior Finish		Stainless Steel
Interior Finish		Stainless Steel
3. Sizes		
Dimensions	Width(Inches)	26 3/4
	Depth(Inches)	31
	Height(Inches)	82 3/8
	Net Weight	LBS

■ Model – S49R



1. Technical Specifications

Amp	115V	7.0A
Connection		15 Amp Plug
Refrigerant	Name	R-134a
	Q'ty(oz)	4.94
	Q'ty(gram)	140
	HP	1/3
Compressor	Samsung	SK1A1C-L2W

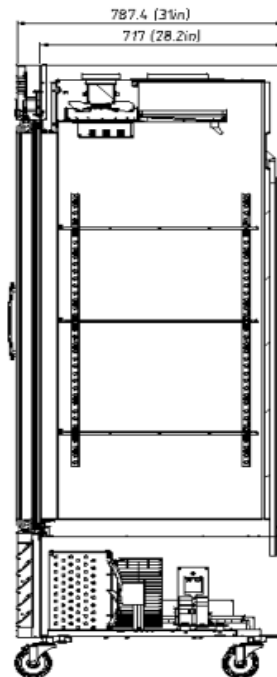
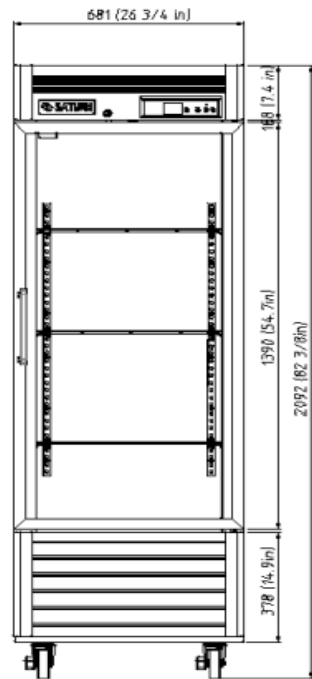
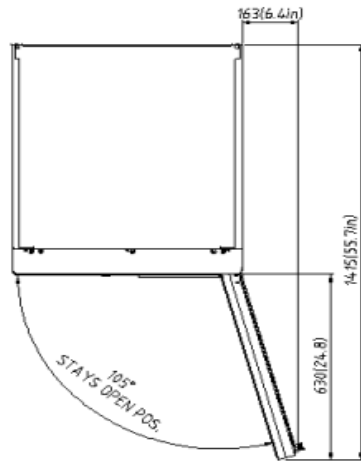
2. Function Specifications

Temp Range	°F	29 ~ 39
Capacity	Cubic Feet	49
Climate		N
Max Ambient Temp	°F	89.6
	°F	59
Castor Front	4" Move	2 EA
Castor Rear	4" Stop	2 EA
Shelves		6 EA
Door		2 EA
Exterior Finish		Stainless Steel
Interior Finish		Stainless Steel

3. Sizes

Exterior Dimensions	Width(Inches)	54
	Depth(Inches)	31
	Height(Inches)	82 3/8
Net Weight	LBS	370

■ Model – S23RG



1. Technical Specifications

Amp	115V	6.5A
Connection		15 Amp Plug
Refrigerant	Name	R-134a
	Q'ty(oz)	5.6
	Q'ty(gram)	160
	HP	1/3
Compressor	Samsung	SK1A1C-L2W

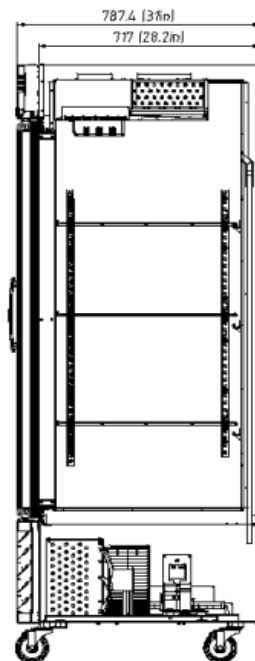
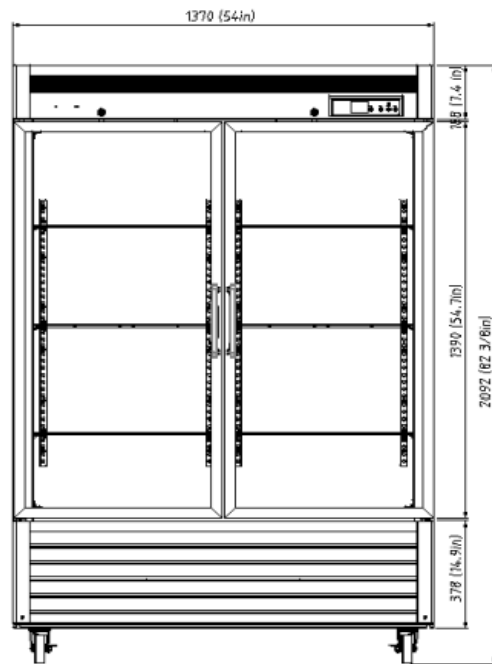
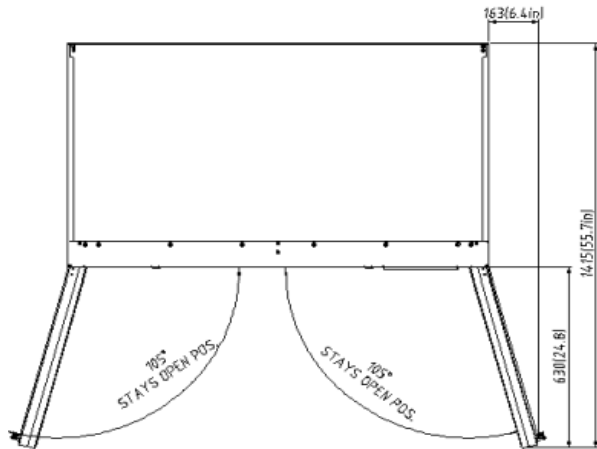
2. Function Specifications

Temp Range	°F	29 ~ 39
Capacity	Cubic Feet	23
Climate		N
Max Ambient Temp	°F	89.6
	°F	59
Castor Front	4" Move	2 EA
Castor Rear	4" Stop	2 EA
Shelves		3 EA
Door		1 EA
Exterior Finish		Stainless Steel
Interior Finish		Stainless Steel

3. Sizes

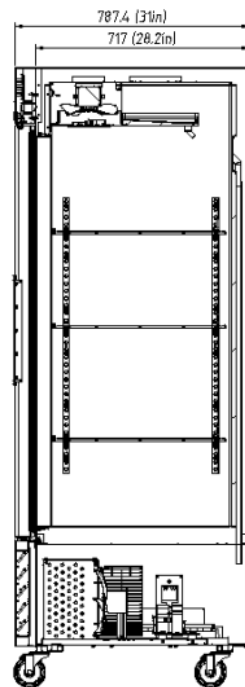
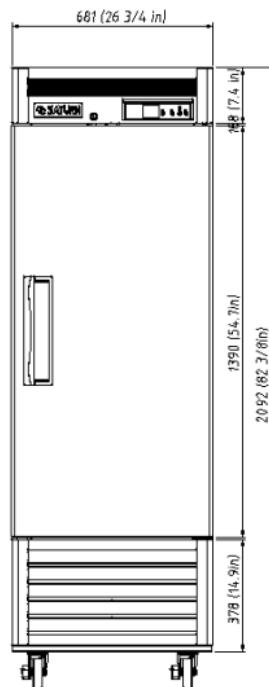
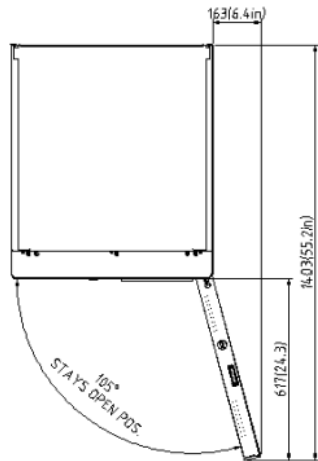
Dimensions	Width(Inches)	26 3/4
	Depth(Inches)	32 3/7
	Height(Inches)	82 3/8
	Net Weight	LBS 268

■ Model – S49RG



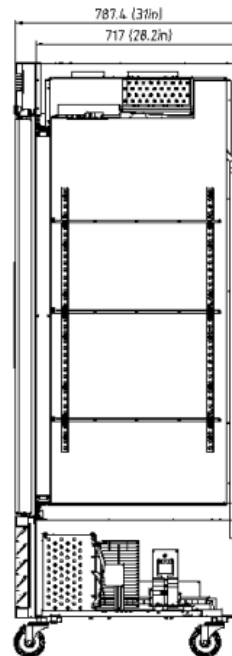
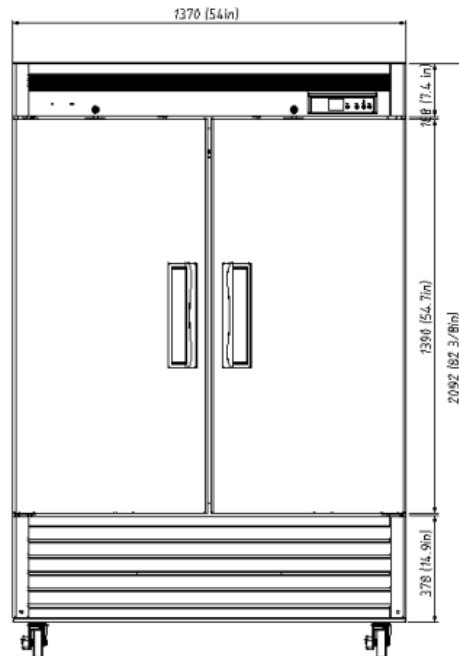
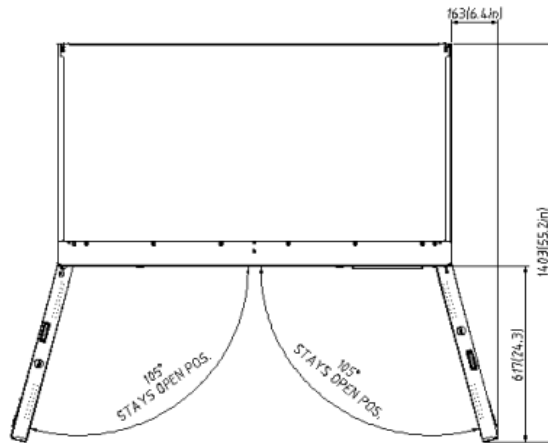
1. Technical Specifications		
Amp	115V	11.5A
Connection		15 Amp Plug
Refrigerant	Name	R-134a
	Q'ty(oz)	19.4
	Q'ty(gram)	550
	HP	3/4
Compressor	Samsung	CAJ4476Y
2. Function Specifications		
Temp Range	°F	29 ~ 39
Capacity	Cubic Feet	49
Climate		N
Max Ambient Temp	°F	89.6
	°F	59
Castor Front	4" Move	2 EA
Castor Rear	4" Stop	2 EA
Shelves		6 EA
Door		2 EA
Exterior Finish		Stainless Steel
Interior Finish		Stainless Steel
3. Sizes		
Exterior Dimensions	Width(Inches)	54
	Depth(Inches)	32 3/7
	Height(Inches)	82 3/8
Net Weight	LBS	454

Model – S23F



1. Technical Specifications		
Amp	115V	7.0A
Connection		15 Amp Plug
Refrigerant	Name	R-134a
	Q'ty(oz)	7.76
	Q'ty(gram)	220
	HP	1/3
Compressor	Samsung	SK1A1C-L2W
2. Function Specifications		
Temp Range	°F	-9 ~ 5
Capacity	Cubic Feet	23
Climate		N
Max Ambient Temp	°F	89.6
	°F	59
Castor Front	4" Move	2 EA
Castor Rear	4" Stop	2 EA
Shelves		3 EA
Door		1 EA
Exterior Finish		Stainless Steel
Interior Finish		Stainless Steel
3. Sizes		
Exterior Dimensions	Width(Inches)	26 3/4
	Depth(Inches)	31
	Height(Inches)	82 3/8
Net Weight	LBS	245

■ Model – S49F



1. Technical Specifications

Amp	115V	11.8A
Connection		15 Amp Plug
Refrigerant	Name	R-404A
	Q'ty(oz)	21.52
	Q'ty(gram)	610
	HP	3/4
Compressor	Samsung	SC18CLX.2

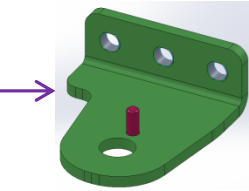
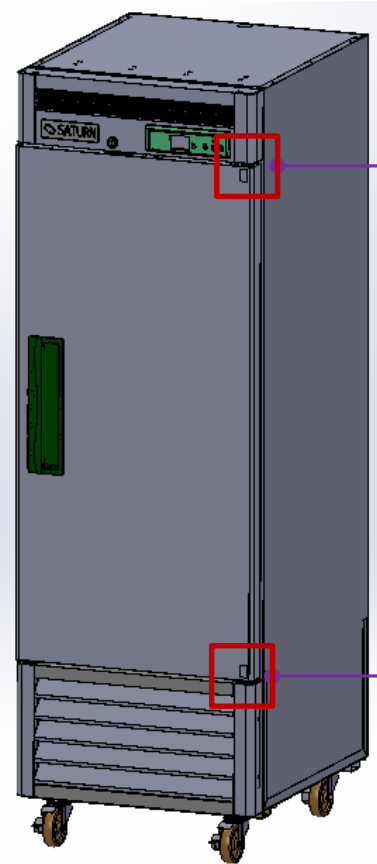
2. Function Specifications

Temp Range	°F	-9 ~ 5
Capacity	Cubic Feet	49
Climate		N
Max Ambient Temp	°F	89.6
	°F	59
Castor Front	4" Move	2 EA
Castor Rear	4" Stop	2 EA
Shelves		6 EA
Door		2 EA
Exterior Finish		Stainless Steel
Interior Finish		Stainless Steel

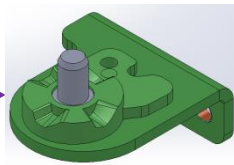
3. Sizes

Dimensions	Width(Inches)	54
	Depth(Inches)	31
	Height(Inches)	82 3/8
	Net Weight	LBS

■ Cabinet - 1



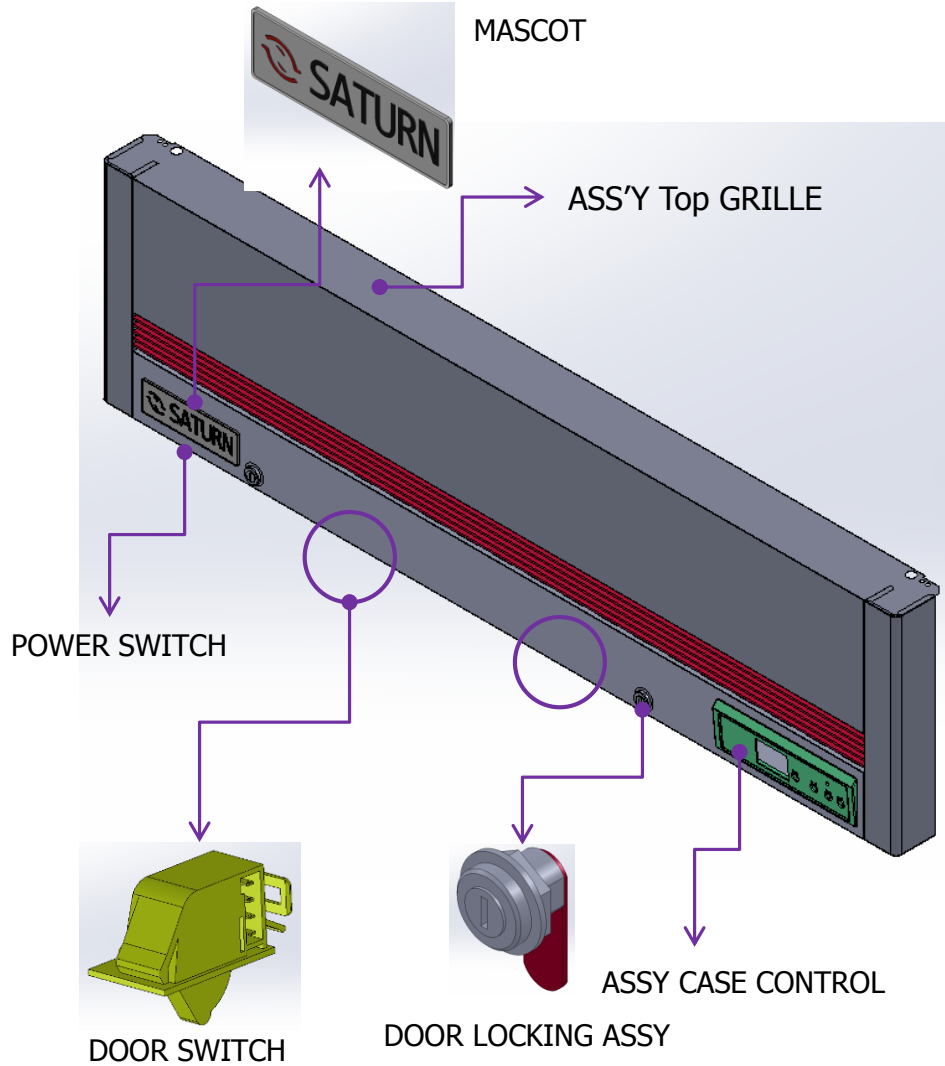
ASSY HINGE TOP,
RH



ASSY HINGE BOTTOM
, RH

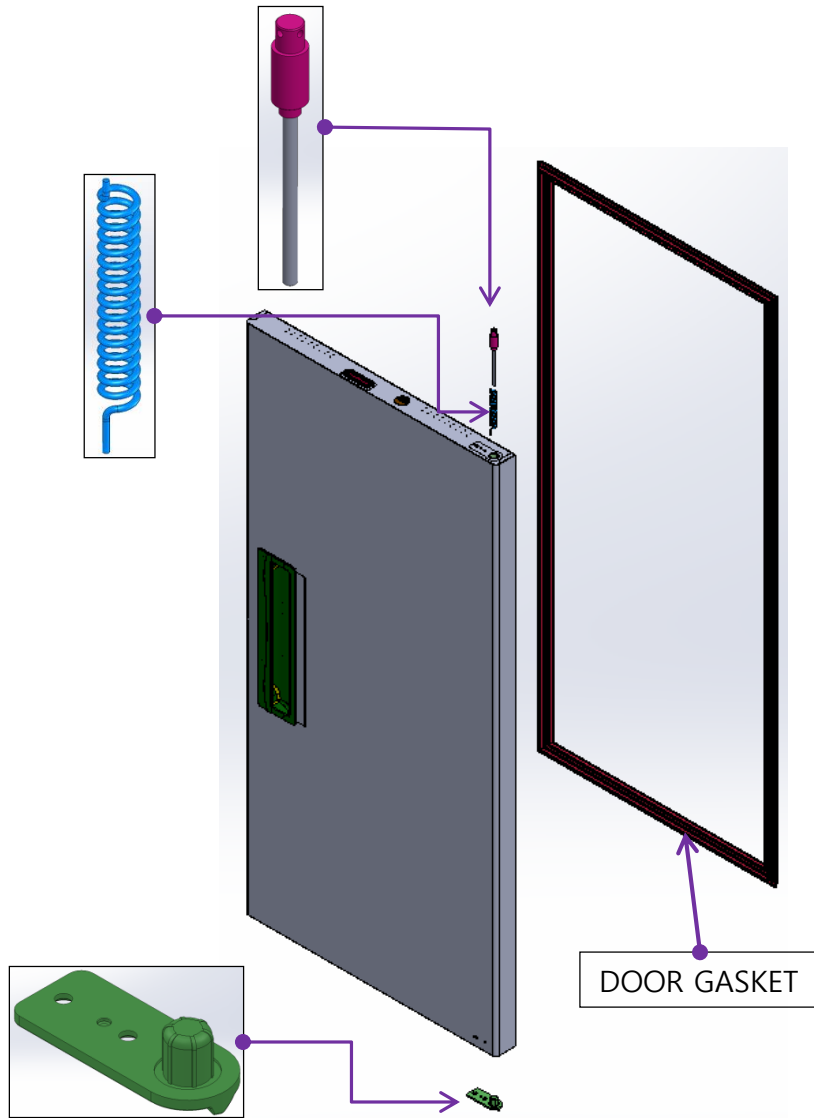
No	Part Number	Part Name	Description	S23R	S23F	S23RG	S49R	S49F	S49RG
1	R828A-054	ASSY HINGE TOP LF	STS304 T=4.0				1	1	
2	R828A-064	ASSY HINGE TOP RH	STS304 T=4.0	1	1		1	1	
3	R828A-032	ASSY HINGE BOTTOM LF	STS304 T=4.0				1	1	
3-1	R375A-020	STOPPER HINGE LF	POM(FW700S) 45.5*31*8				1	1	
4	R828A-022	ASSY HINGE BOTTOM RH	STS304 T=4.0	1	1		1	2	
4-1	R375A-020	STOPPER HINGE LF	POM(FW700S) 45.5*31*8	1	1		1	2	
5	R3393-312	DOOR HINGE TOP	T10*48*64*63 ZDC 2			1			2
6	R3393-342	DOOR HINGE BOTTOM RH	T11.6*48*65.6*63 ZDC 2			1			1
7	R3393-352	DOOR HINGE BOTTOM LF	T11.6*48*65.6*63 ZDC 2						1

■ Top Grille



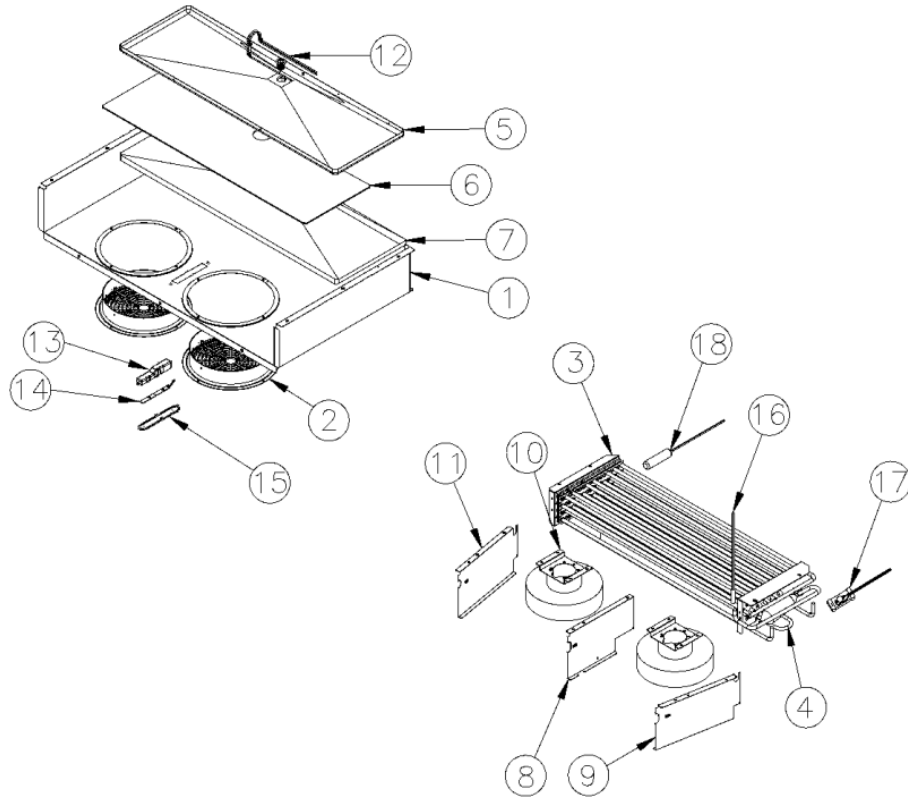
No	Part Number	Part Name	Description	S23R	S23F	S23RG	S49R	S49F	S49RG
1	R818A-280	ASSY GRILL TOP_23	SATURN, Bottom Mount, R10	1	1				
2	R8182-200	ASSY GRILL TOP_23RG	SATURN, Bottom Mount			1			
3	R818A-260	ASSY GRILL TOP_49	SATURN, Bottom Mount, R10				1	1	
4	R8182-510	ASSY GRILL TOP_49RG	SATURN, Bottom Mount						1
5	R4142-123	CONTROL BOARD	ABS, BM/TM T2*242*72	1	1	1	1	1	1
6	R7113-210	DISPLAY PCB (°F)	88 SEGMENT, °F	1	1	1	1	1	1
7	R7374-810	HARNESS-CONNECT	6P	1	1	1			
8	R7374-820	HARNESS-CONNECT	8P	1	1	1			
9	R7374-831	HARNESS CONNECT-6P,H	L=800, 6P				1	1	1
10	R7374-841	HARNESS CONNECT 8P,H	L=800 8P				1	1	1
11	R7203-020	DOOR SWITCH	WHT SP201R-9D	1	1	1	2	2	2
12	R7204-070	POWER SWITCH	SL112A, 125V 15A	1	1	2	1	1	2
13	R3734-030	DOOR LOCKING ASSY	ZDC, ZCR	1	1	1	2	2	2
14	R514A-044	MASCOT (SATURN)	AL T3.5 165*50	1	1	1	1	1	1
15	R4113-371	INLAY CONTROL	PC-SHEET,50*216	1	1	1	1	1	1

■ DOOR



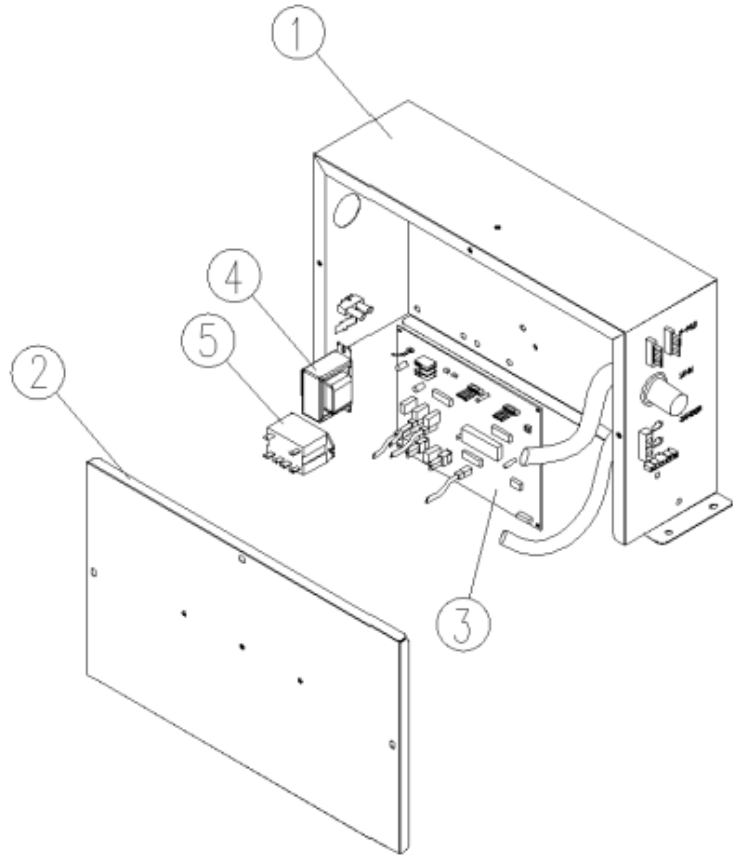
No	Part Number	Part Name	Description	S23R	S23F	S23RG	S49R	S49F	S49RG
1	R817A-232	ASSY DOOR LF_BM	SOLID DOOR R10_SATURN				1	1	
2	R858A-670	SHAFT TOP HINGE AS	SUM24L ϕ 15*123L	1	1		1	1	
3	R374A-012	SPRING DOOR LF	PW-C ϕ 2.3 PINK COLOR				1	1	
4	R375A-042	STOPPER DOOR LF	POM(FW700S)				1	1	
5	R817A-242	ASSY DOOR RH-BM	SOLID DOOR R10_SATURN	1	1		1	1	
6	R374A-022	SPRING DOOR RH	PW-C ϕ 2.3						
7	R375A-032	STOPPER DOOR RH	POM(FW700S)	1	1				
8	R338A-040	GASKET DOOR BM	RD-PVC 1353*610	1	1		2	2	
9	R817A-451	ASSY DOOR GLASS LR_115V	1390*675 115V/20W/23G			1			
10	R817A-431	ASSY DOOR GLASS LF_115V	1390*675 115V/20W/49G						1
11	R817A-441	ASSY DOOR GLASS RH_115V	1390*675 115V/20W/49G						1
12	R338A-050	GASKET DOOR BM-G	RD-PVC 1348*633			2			2

■ Evap. Cover & Evaporator Part _ S49F



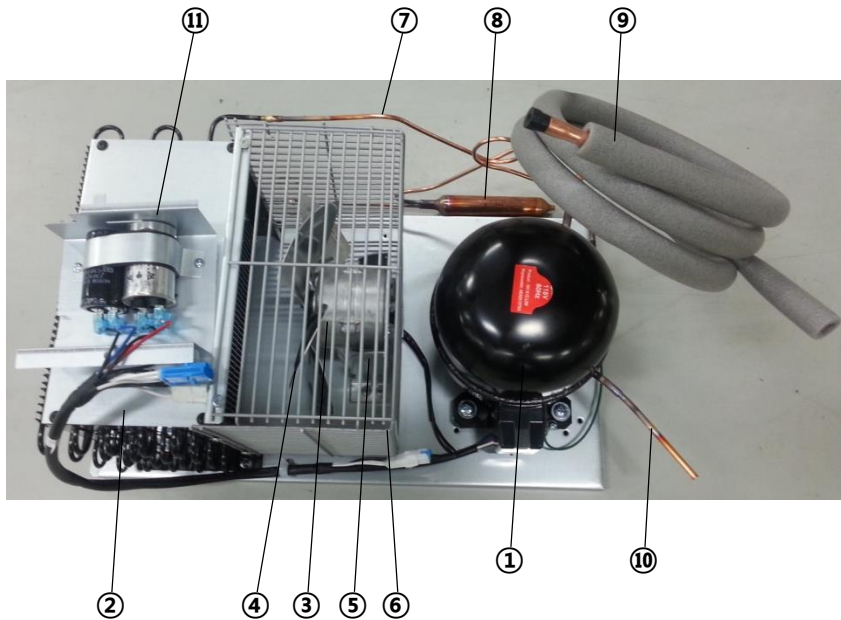
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1	R325A-170	COVER EVA (BM49F)	T0.5*1190.7*562.9 STS443CT	1
2	R3812-141	EVAPORATOR FAN MOTOR GUARD	HIPS (VH-1800EX) .WHITE	2
3	R2263-048	EVAPORATOR	CU+AL	1
4	R7303-412	DEFROST HEATER(F49)	UL 115V 600W	1
5	R3743-031	EVAPORATOR DRAIN PAN-LARGE	AL+COATING	1
6	R7303-184	HEATER DRAIN PAN	115V 140W	1
7	R1143-212	EVAPORATOR DRAIN INSUL-L	T17*256*800, FOAM-PS	1
8	R3853-101	EVAPORATOR AIR GUIDE MID	AL WHITE,T0.5*161.8*243	1
9	R3853-090	EVAPORATOR AIR GUIDE RH	AL WHITE,T0.5*162*247	1
10	R8329-060	EVAPORATOR FAN MOTOR ASSY	115V 60Hz	2
11	R3853-110	EVAPORATOR AIR GUIDE LF	AL WHITE,T0.5*162*247	1
12	R853A-020	ASSY HEATER DRAIN HOSE	115V, 10W	1
13	R313A-050	BODY LAMP	HIPS 60HRI 112*20.7*21	1
14	R723A-040	LAMP LED ASSY	FR1 DC 12V LED LAMP 4P	1
15	R325A-141	COVER LAMP	PC MILKI WHITE	1
16	R7213-082	TEMP-THERMISTOR,FRE	YELLOW	1
17	R7253-052	EVAPORATOR THERMAL FUSE	MAX 72±5°C	1
18	R7213-210	D-SENSOR	BLACK, L=180MM	1

■ ASS'Y CONTROL BOX



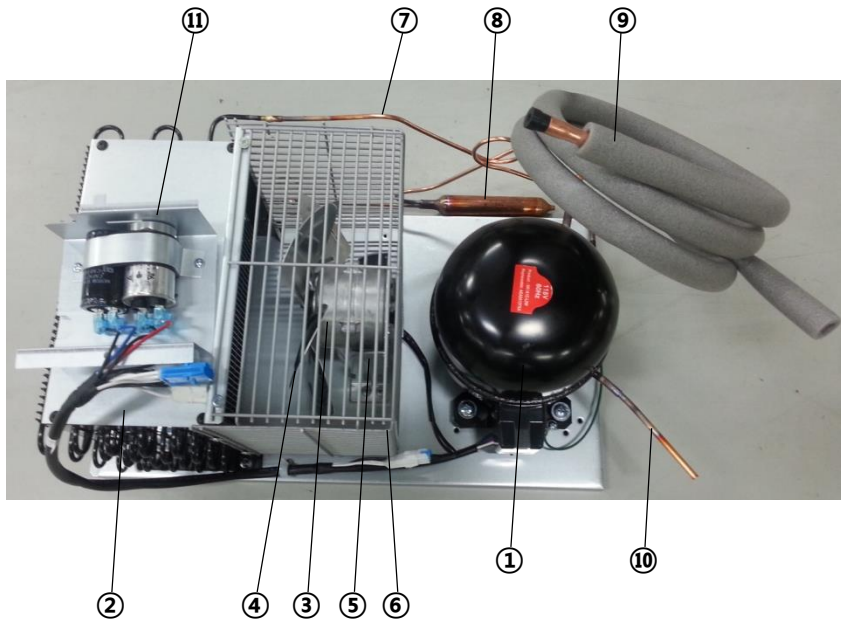
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1	R7119-873	BOX MAIN PCB	GI, T0.5*558.34*330.71	1	1	1	1	1	1
2	R7119-881	COVER MAIN PCB BOX	GI, T0.5*357.07*218.97			1	1		
3	R725A-290	MAIN PCB TMR	FR1 TM 115V °F TMR115F-00	1		1			
4	R725A-300	MAIN PCB TMF	FR1 TM 115V °F TMF115F-00		1				1
5	R725A-340	MAIN PCB TMR	FR1 TM 115V °F TMR115F-01					1	
6	R725A-350	MAIN PCB TMF	FR1 TM 115V °F TMF115F-01				1		
7	R7504-060	POWER TRANS (수출 115v)	120V/60HZ, DT-1213	1	1	1	1		
8	R738A-030	POWER TRANS (B72)	120V/60HZ DT-1215					1	1
9	R748A-020	POWER RELAY	HE1AN-Q-DC12V 30A				1	1	
10	R7253-040	POWER RELAY	OMRONG7L-2A-TUB						1
11	R7613-893	HARNESS MAIN DC TM-R	ASSY UL	1		1		1	
12	R7613-903	HARNESS MAIN DC TM-F	ASSY UL		1		1		1

■ Machine room (Refrigeration)-1
Condensing Unit Disassembly - S23R



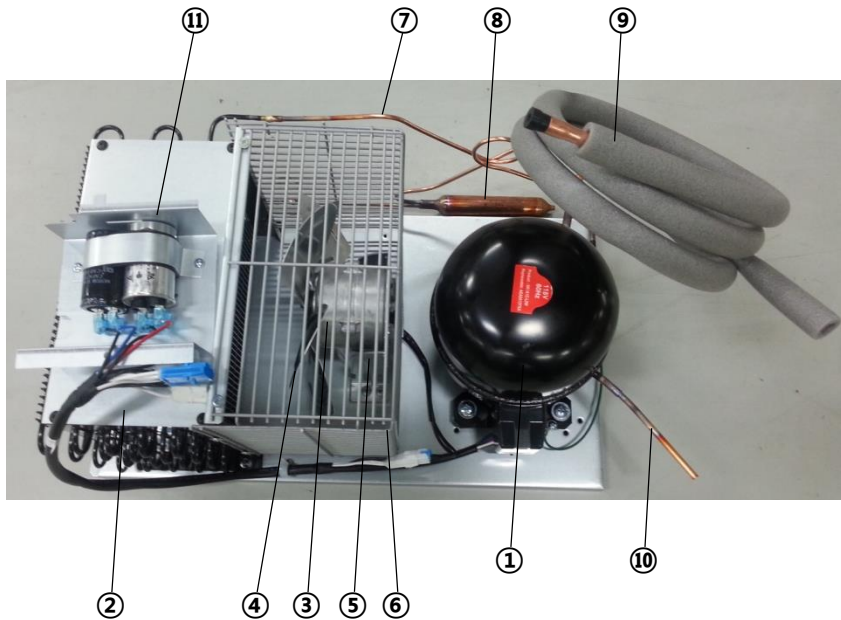
No	Part Number	Part Name	Description	Q'TY
1	R7439-110	COMPRESSOR	SK1A1C-L2W.115V/60HZ	1
2	R2202-031	CONDENSER COIL	SWST ϕ 4.76*13190	1
3	R7423-311	CONDENSER FAN MOTOR	115V60HZ DAI-8204DYCA CW	1
4	R3729-050	CONDENSER FAN MOTOR BLADE	115V FAN MOTOR AL 9" C.W	1
5	R315A-050	BRACKET C-FAN MOTOR	SBHG1-0 T2	1
6	R3813-781	FAN COVER WIRE	MSWR. ϕ 2.5	1
7	R319A-190	PIPE DISCHARGE	CU CT-1220 OD4.76*T0.7*330	1
8	R2183-032	DRYER	R-134A. 36G	1
9	R2103-445	COMPRESSOR PULL OUT	CU-PIPE, OD9.52*T0.6*1716	1
10	R319A-190	PIPE DISCHARGE	CU CT-1220 OD4.76*T0.7*330	1
11	R8393-070	ASSY COMPRESSOR RELAY H-N B	BM 23R, 115V	1

■ Machine room (Refrigeration)-2
Condensing Unit Disassembly - S23F



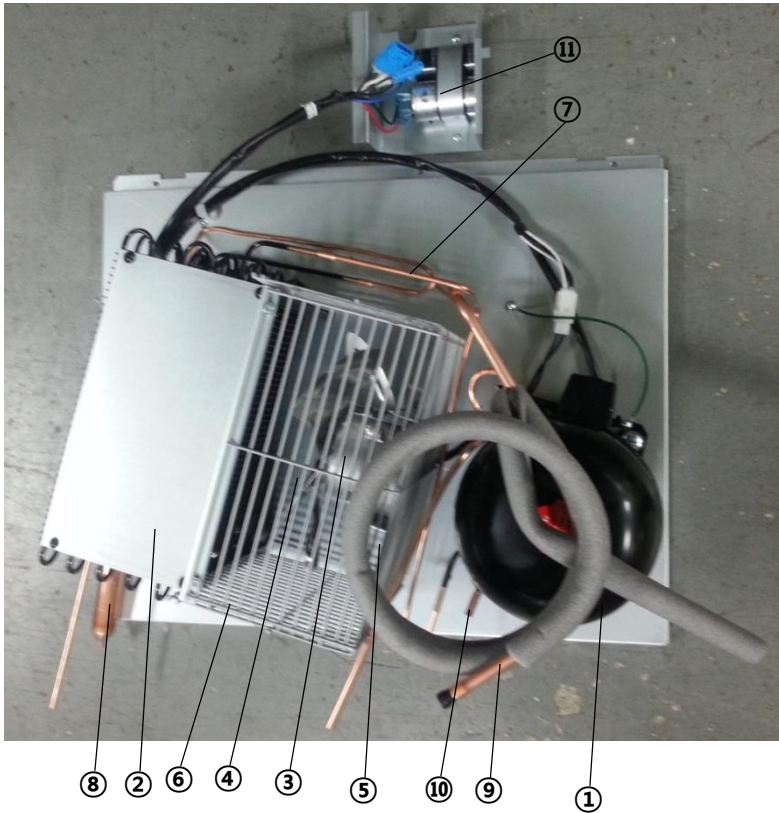
No	Part Number	Part Name	Description	Q'TY
1	R7439-110	COMPRESSOR	SK1A1C-L2W.115V/60HZ	1
2	R2202-031	CONDENSER COIL	SWST ϕ 4.76*13190	1
3	R7423-311	CONDENSER FAN MOTOR	115V60HZ DAI-8204DYCA CW	1
4	R3729-050	CONDENSER FAN MOTOR BLADE	115V FAN MOTOR AL 9" C.W	1
5	R315A-050	BRACKET C-FAN MOTOR	SBHG1-0 T2	1
6	R3813-781	FAN COVER WIRE	MSWR. ϕ 2.5	1
7	R319A-190	PIPE DISCHARGE	CU CT-1220 OD4.76*T0.7*330	1
8	R2183-032	DRYER	R-134A 36G	1
9	R2103-445	COMPRESSOR PULL OUT	CU-PIPE, OD9.52*T0.6*1716	1
10	R319A-190	PIPE DISCHARGE	CU CT-1220 OD4.76*T0.7*330	1
11	R8309-043	ASSY CONTROL BOX	BM 23F, 115V	1

■ Machine room (Refrigeration)-3
Condensing Unit Disassembly - S23RG



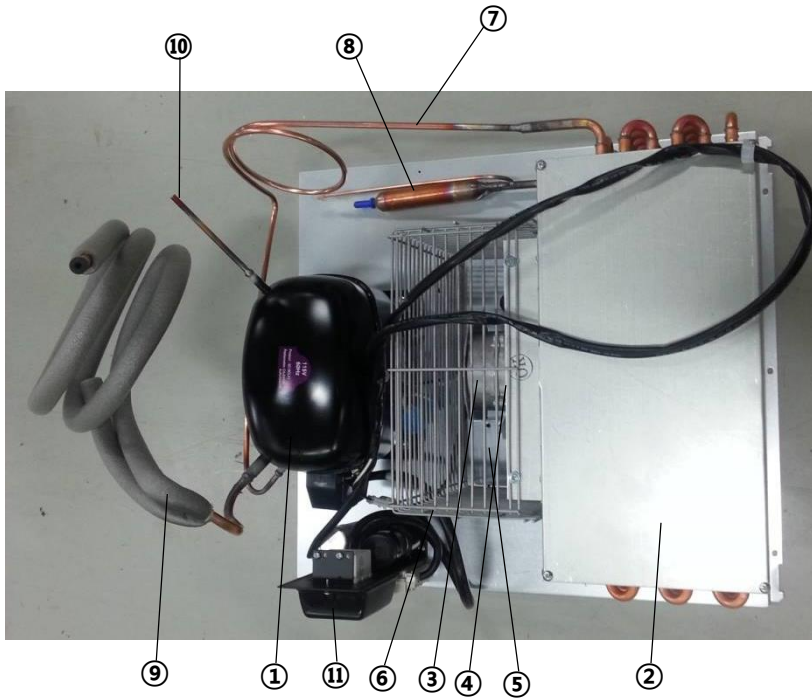
No	Part Number	Part Name	Description	Q'TY
1	R7439-110	COMPRESSOR	SK1A1C-L2W.115V/60HZ	1
2	R2202-031	CONDENSER COIL	SWST ϕ 4.76*13190	1
3	R7423-311	CONDENSER FAN MOTOR	115V60HZ DAI-8204DYCA CW	1
4	R3729-050	CONDENSER FAN MOTOR BLADE	115V FAN MOTOR AL 9" C.W	1
5	R315A-050	BRACKET C-FAN MOTOR	SBHG1-0 T2	1
6	R3813-781	FAN COVER WIRE	MSWR. ϕ 2.5	1
7	R319A-190	PIPE DISCHARGE	CU CT-1220 OD4.76*T0.7*330	1
8	R2183-032	DRYER	R-134A. 36G	1
9	R2103-445	COMPRESSOR PULL OUT	CU-PIPE, OD9.52*T0.6*1716	1
10	R319A-190	PIPE DISCHARGE	CU CT-1220 OD4.76*T0.7*330	1
11	R8349-420	ASSY COMPRESSOR RELAY H/N B	BM 23RG, 115V	1

■ Machine room (Refrigeration)-4
Condensing Unit Disassembly - S49R



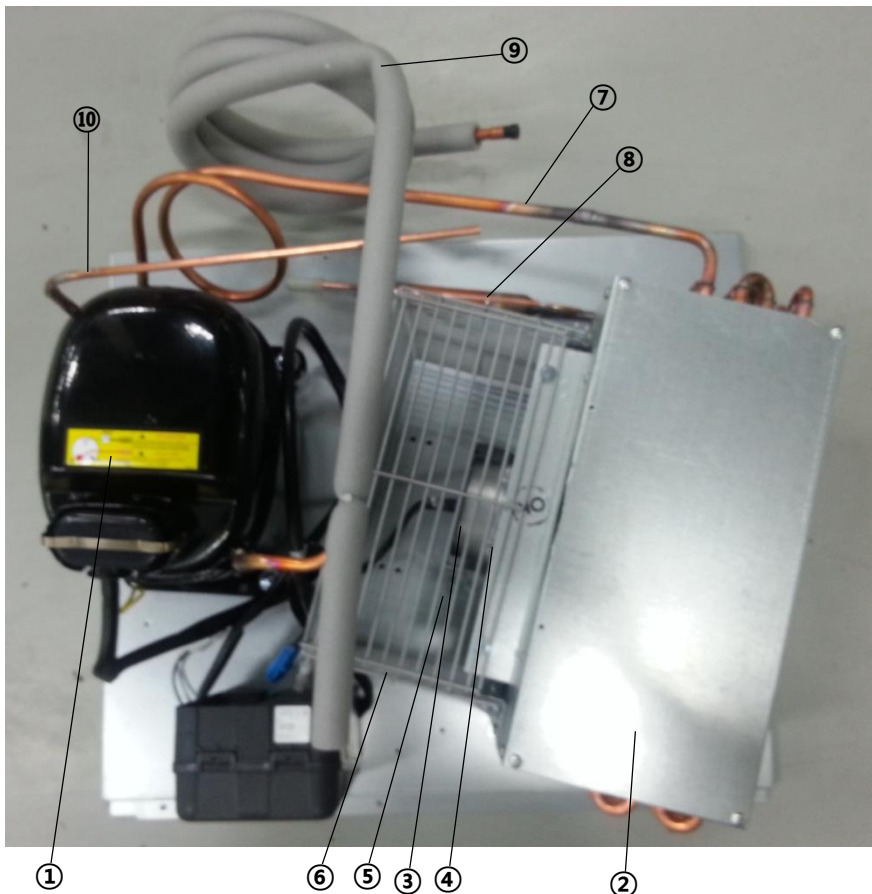
No	Part Number	Part Name	Description	Q'TY
1	R7439-110	COMPRESSOR	SK1A1C-L2W.115V/60HZ	1
2	R2202-031	CONDENSER COIL	SWST ϕ 4.76*13190	1
3	R7423-311	CONDENSER FAN MOTOR	115V60HZ DAI-8204DYCA CW	1
4	R3729-050	CONDENSER FAN MOTOR BLADE	115V FAN MOTOR AL 9" C.W	1
5	R315A-050	BRACKET C-FAN MOTOR	SBHG1-0 T2	1
6	R3813-781	FAN COVER WIRE	MSWR. ϕ 2.5	1
7	R2103-930	CONDENSER PIPE	T0.7* ϕ 4.76*654 CU	1
8	R2183-032	DRYER	R-134A. 36G	1
9	R2103-942	COMPRESSOR PULL OUT	CU-PIPE, T0.7*OD9.52*1566	1
10	R2104-492	COMPRESSOR PIPE	T0.7* ϕ 6.35*462	1
11	R8349-370	ASSY COMPRESSOR RELAY H/N D	BM 49, 115V	1

■ Machine room (Refrigeration)-5
Condensing Unit Disassembly - S49F



No	Part Number	Part Name	Description	QTY
1	R7439-600	COMPRESSOR (SC18CLX2)	SC18CLX2, 115V 60HZ	1
2	R2272-013	CONDENSER COIL	370*184	1
3	R7423-311	CONDENSER FAN MOTOR	115V60HZ DAI-8204DYCA CW	1
4	R3729-050	CONDENSER FAN MOTOR BLADE	115V FAN MOTOR AL 9" C.W	1
5	R315A-050	BRACKET C-FAN MOTOR	SBHG1-0 T2	1
6	R3813-791	FAN COVER WIRE	MSWR. ϕ 2.5	1
7	R2113-570	DISCHARGE CONNECTOR	CU PIPE. ϕ 6.35*T0.7*1215	1
8	R2183-200	DRYER ASSY	ϕ 25.73*0.8T*169. CU-PIPE	1
9	R2113-580	COMPRESSOR PULL OUT	CU-PIPE OD9.52*T0.7*1900	1
10	R2104-460	COMPRESSOR CHARGING PIPE	CU-PIPE. ϕ 6.35*T0.7*200	1
11	R7539-200	Stating Device	Code No : 117-7045	1
		Stating Capacitor	410uF	1
		Running Capacitor	23.5uF	1

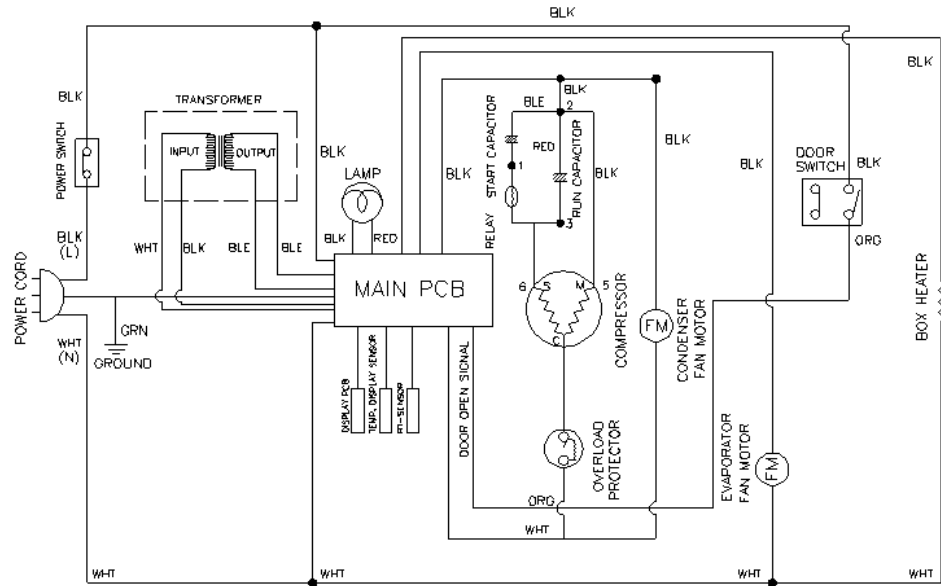
■ Machine room (Refrigeration)-6
Condensing Unit Disassembly - S49RG



No	Part Number	Part Name	Description	Q'TY
1	R7439-360	COMPRESSOR	CAJ4476Y.115V/60HZ	1
2	R2273-021	PIN-CONDENSER	BM 49RG	1
3	R7423-311	CONDENSER FAN MOTOR	115V60HZ DAI-8204DYCA CW	1
4	R3729-050	CONDENSER FAN MOTOR BLADE	115V FAN MOTOR AL 9" C.W	1
5	R315A-050	BRACKET C-FAN MOTOR	SBHG1-0 T2	1
6	R3813-791	FAN COVER WIRE	MSWR. ϕ 2.5	1
7	R2103-930	CONDENSER PIPE	T0.7* ϕ 4.76*654 CU	1
8	R2183-200	DRYER ASSY	ϕ 25.73*0.8T*169. CU-PIPE	1
9	R2113-590	COMPRESSOR PULL OUT	CU-PIPE. ϕ 9.52*T0.7*2150	1
10	R2104-492	COMPRESSOR PIPE	T0.7* ϕ 6.35*462	1

■ Circuit Diagram

CIRCUIT DIAGRAM (B23R)

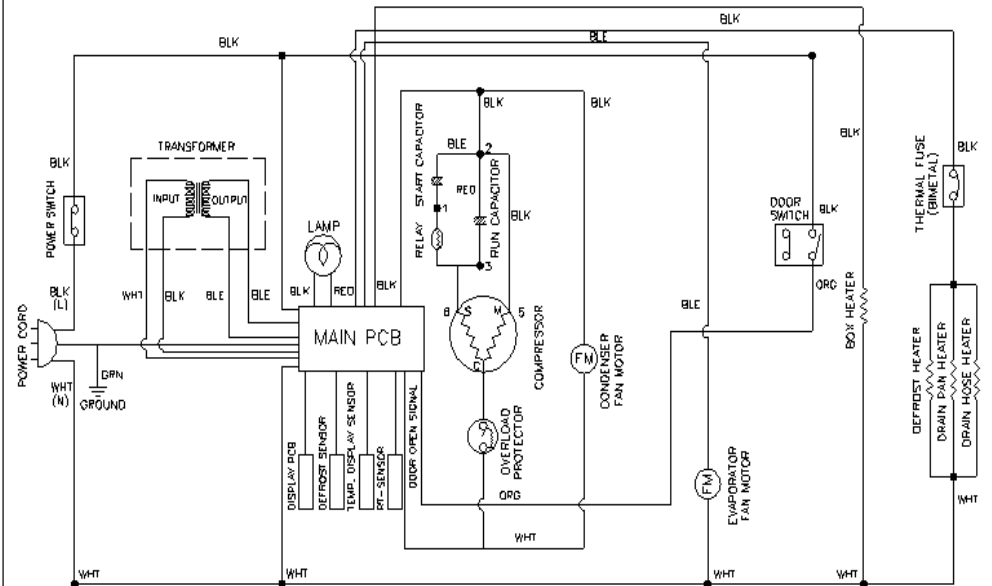


WHT - WHITE
 BLK - BLACK
 RED - RED
 BLE - BLUE
 ORC - ORANGE
 GRN - GREEN

115V/60Hz

R510A-450

CIRCUIT DIAGRAM (B23F)



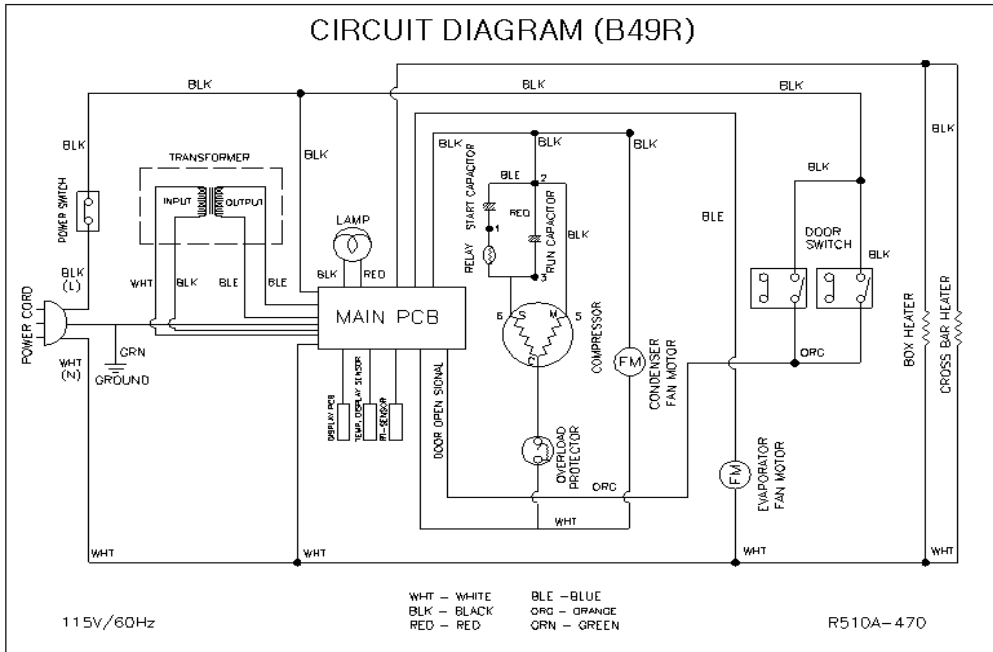
WHT - WHITE
 BLK - BLACK
 RED - RED
 BLE - BLUE
 ORC - ORANGE
 GRN - GREEN

115V/60Hz

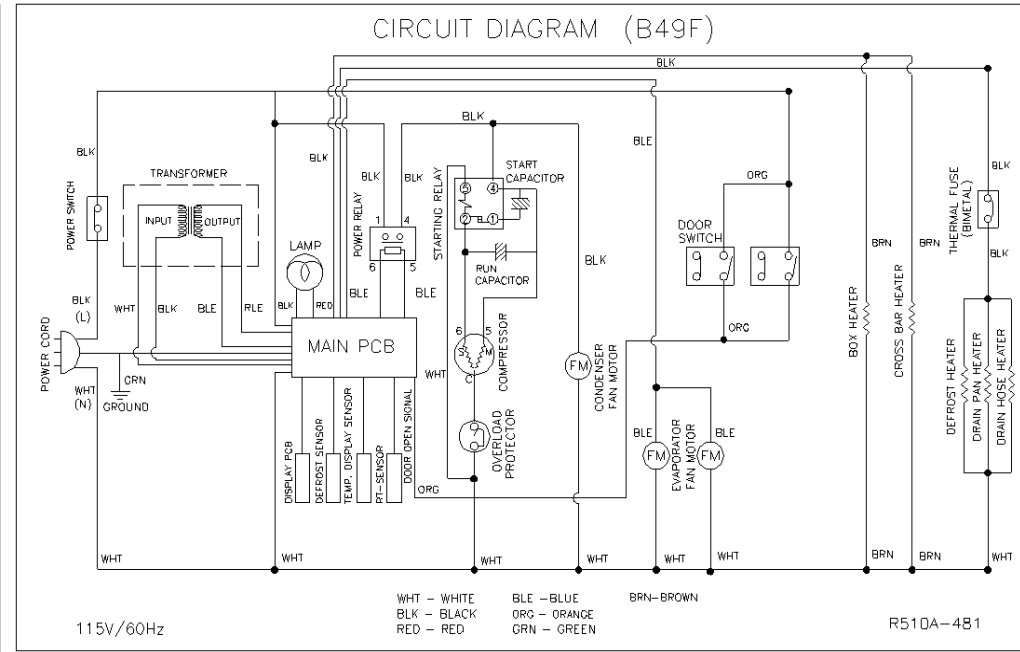
R510A-460

■ Circuit Diagram

CIRCUIT DIAGRAM (B49R)

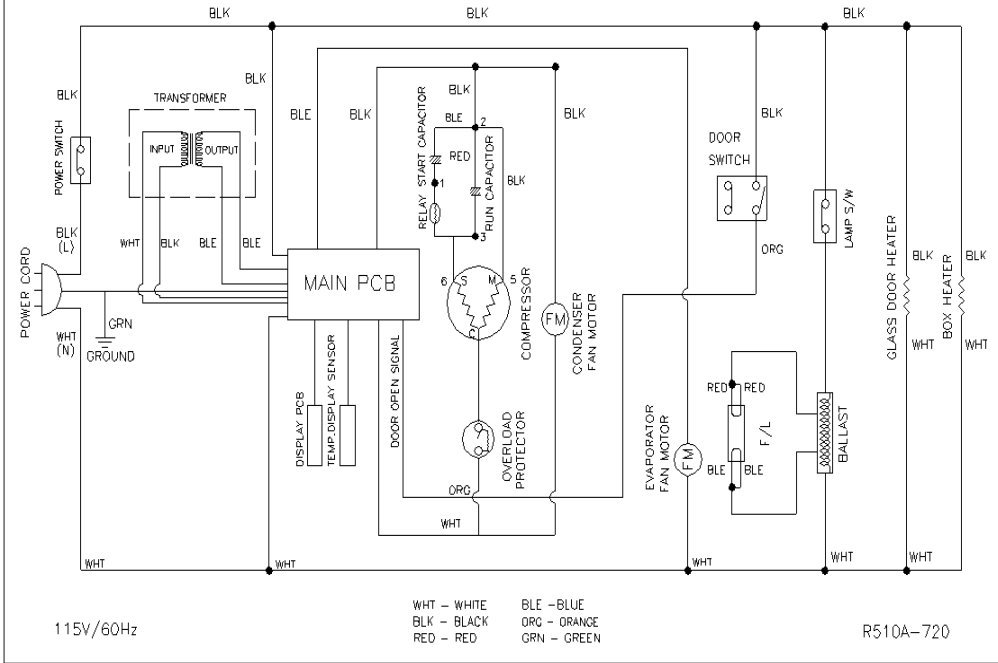


CIRCUIT DIAGRAM (B49F)



■ Circuit Diagram

CIRCUIT DIAGRAM (B23G)



CIRCUIT DIAGRAM (B49G)

