



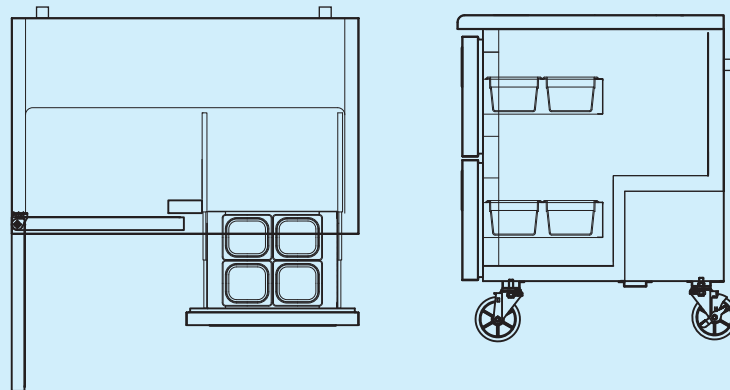
Turbo Air Speed up the Pace of Innovation

CAUTION!
PLEASE KEEP POWER
SWITCH ON BEFORE
OPERATING THIS EQUIPMENT

Commercial Undercounter Freezer Service Manual

Please read this manual completely before attempting to install or operate this equipment!

TUF-28SD-D2
TUF-48SD-D2
TUF-48SD-D4



© TABLE OF CONTENTS

1. EXPLODED VIEW

1-1. TUF-28SD-D2 EXPLODED VIEW

1-2. TUF-48SD-D2 / TUF-48SD-D4 EXPLODED VIEW

2. WIRING DIAGRAMS

2-1. TUF-28SD-D2

2-1. TUF-48SD-D2 / TUF-48SD-D4

3. MAIN COMPONENTS

4. TEMPERATURE CONTROL INSTRUCTION

5. PARTS LIST

6. REPLACEMENT OF MAIN COMPONENTS

6-1. REPLACING DOOR

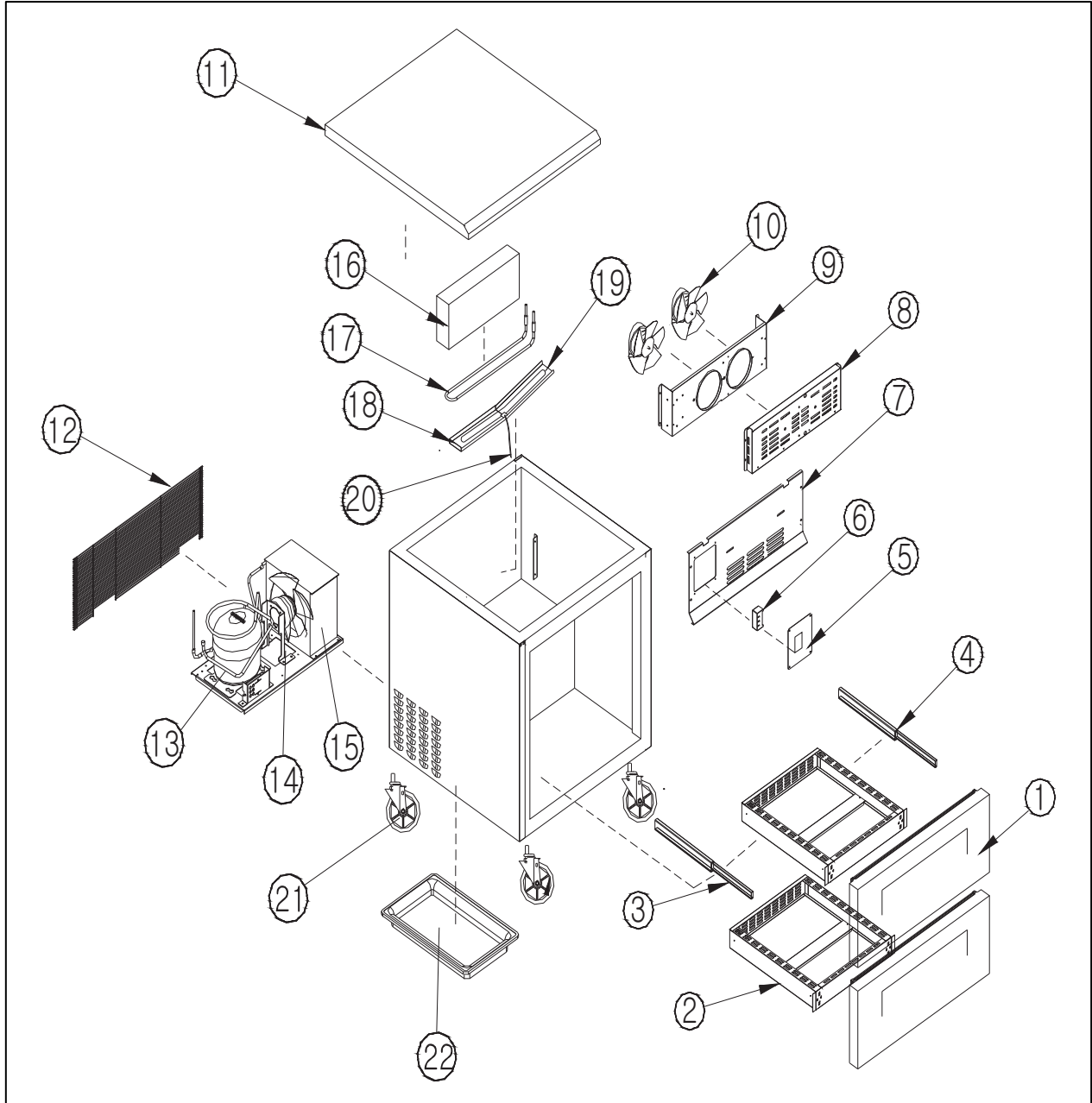
6-2. REFRIGERATION COMPARTMENT PARTS

6-3. COMPRESSOR COMPARTMENT PARTS

6-4. REPLACING THE EVAPORATOR & EVAPORATOR FAN MOTOR

1. EXPLODED VIEW

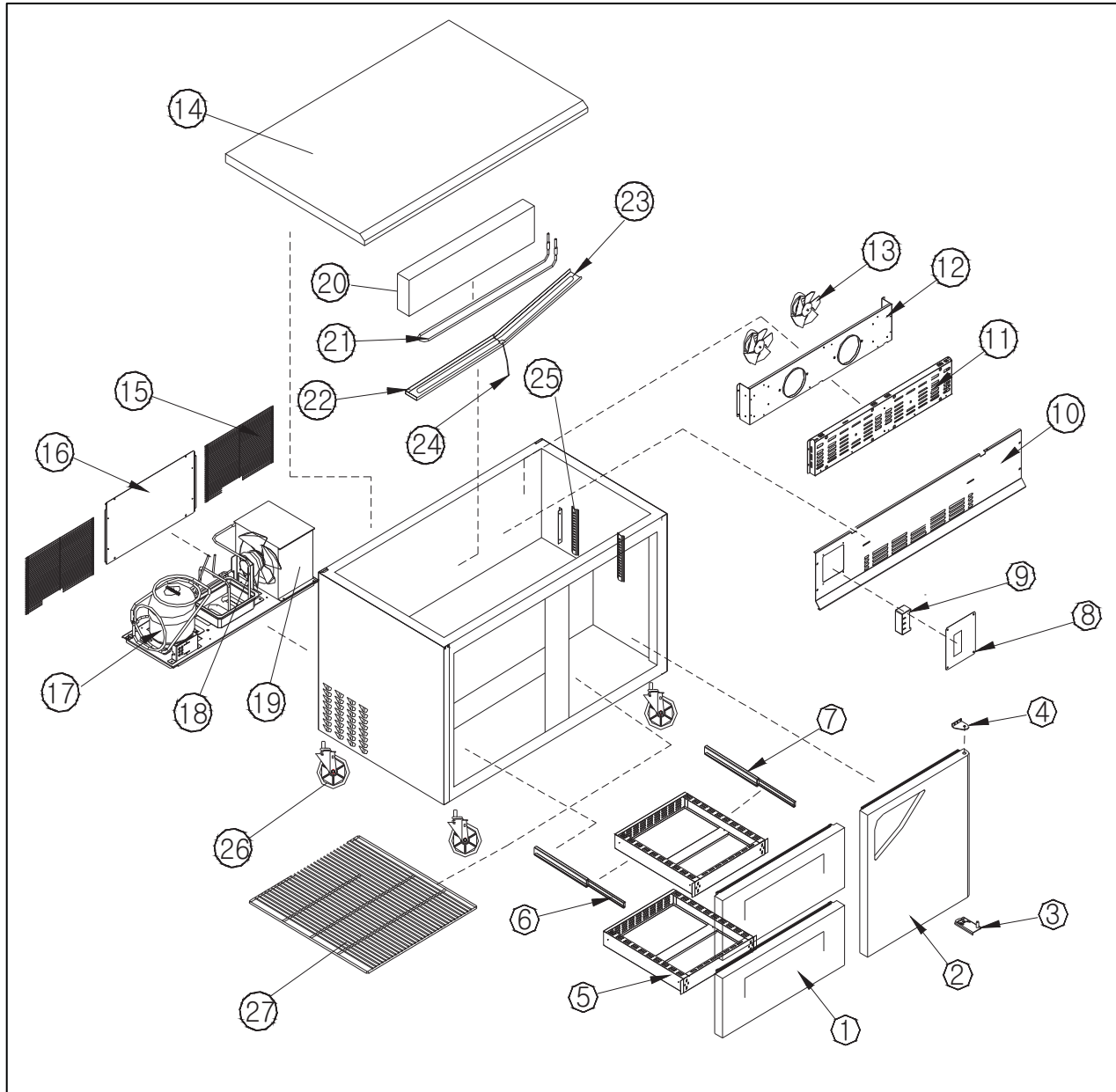
1-1. TUF-28SD-D2 EXPLODED VIEW



© Part Name

1	DRAWER DOOR ASSEMBLY	11	COUNTER TOP ASSEMBLY	21	CASTER
2	DRAWER ASSEMBLY	12	MECH COVER	22	DRAIN PAN
3	DRAWER GUIDE LF ASSEMBLY	13	COMPRESSOR	23	
4	DRAWER GUIDE RH ASSEMBLY	14	CONDENSER FAN MOTOR	24	
5	THERMOSTAT PANEL	15	CONDENSER	25	
6	THERMOSTAT	16	EVAPORATOR	26	
7	EVAPORATOR DUCT	17	DEFROST HEATER	27	
8	LOUVER	18	DRAIN GUIDE	28	
9	EVAPORATOR FAN DUCT	19	DRAIN GUIDE HEATER	29	
10	EVAPORATOR FAN MOTOR	20	DRAIN HOSE HEATER	30	

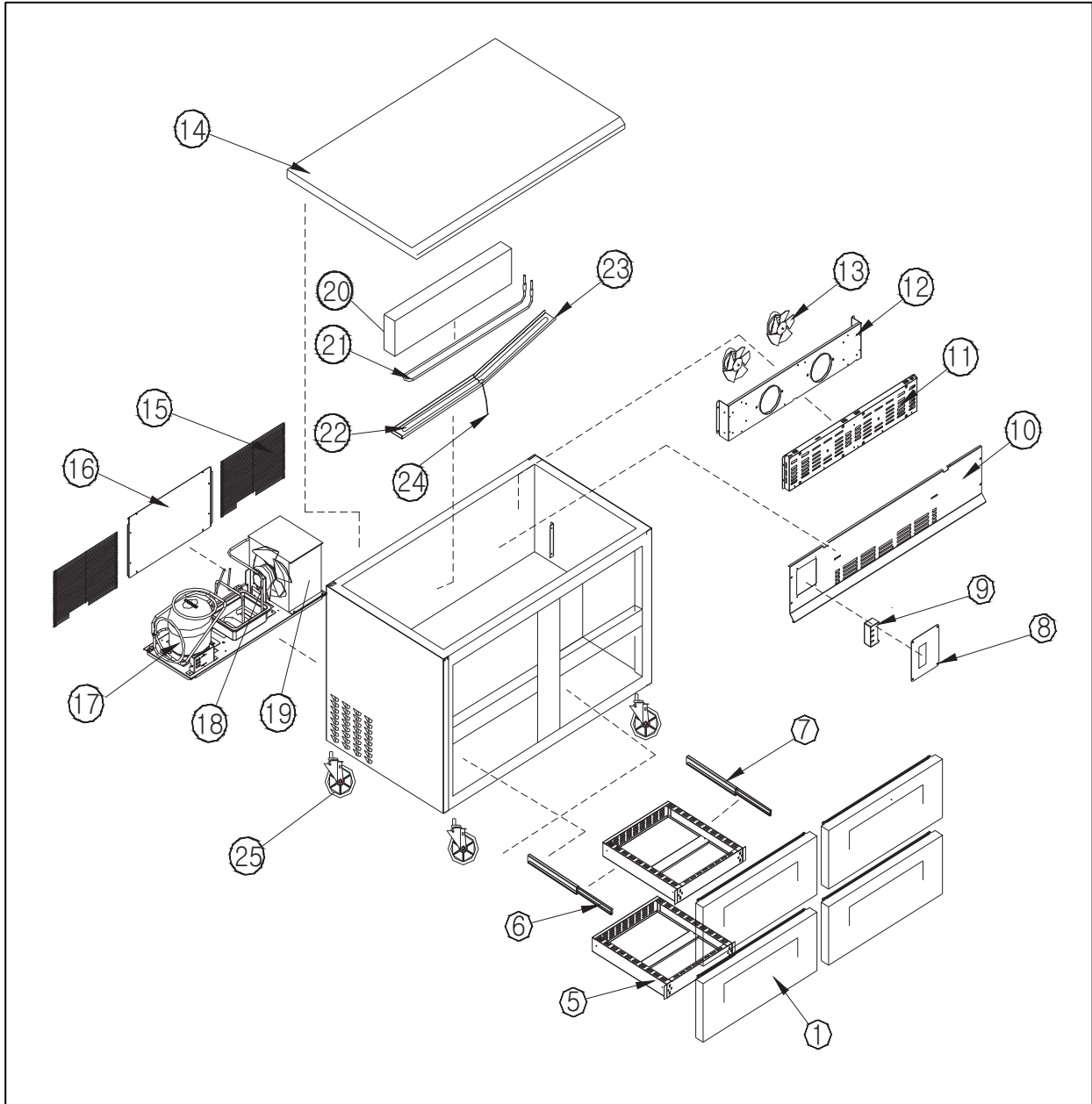
1-2. TUF-48SD-D2 EXPLODED VIEW



© Part Name

1	DRAWER DOOR ASSEMBLY	13	EVAPORATOR FAN MOTOR	25	SHELF STANDARD
2	SWING DOOR ASSEMBLY	14	COUNTER TOP ASSEMBLY	26	CASTER
3	BOTTOM HINGE (R)	15	MECH COVER	27	SHELF
4	TOP HINGE (R)	16	UNIT COVER	28	
5	DRAWER ASSEMBLY	17	COMPRESSOR	29	
6	DRAWER GUIDE LF ASSEMBL	18	CONDENSER FAN MOTOR	30	
7	DRAWER GUIDE RH ASSEMB	19	CONDENSER	31	
8	THERMOSTAT PANEL	20	EVAPORATOR	32	
9	THERMOSTAT	21	DEFROST HEATER	33	
10	EVAPORATOR DUCT	22	DRAIN GUIDE	34	
11	LOUVER	23	DRAIN GUIDE HEATER	35	
12	EVAPORATOR FAN DUCT	24	DRAIN HOSE HEATER	36	

1-3. TUF-48SD-D4 EXPLODED VIEW

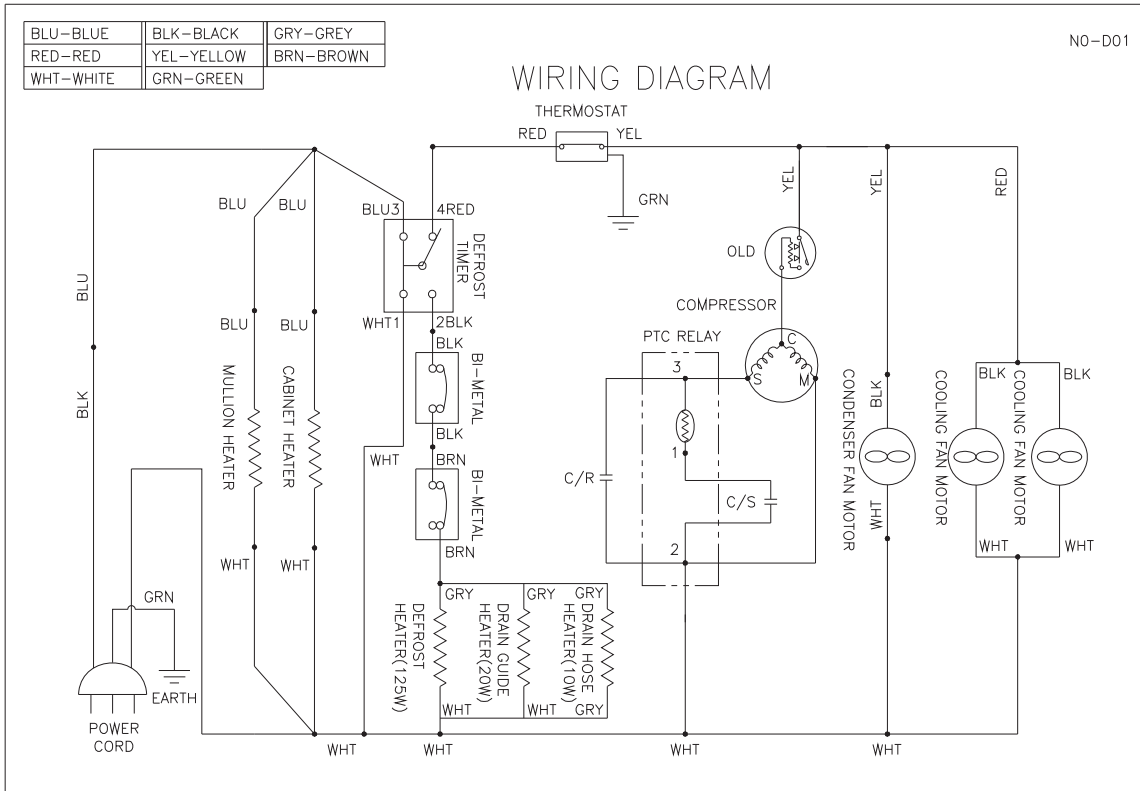


© Part Name

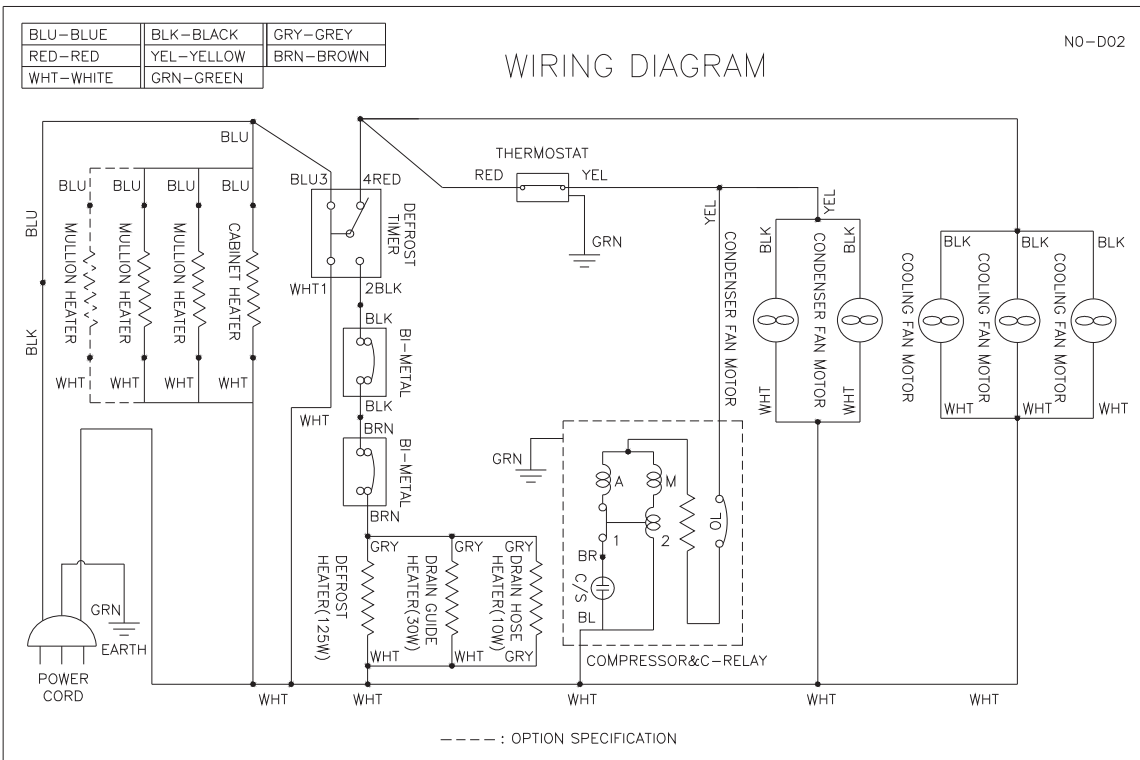
1	DRAWER DOOR ASSEMBLY	13	EVAPORATOR FAN MOTOR	25	CASTER
2	SWING DOOR ASSEMBLY	14	COUNTER TOP ASSEMBLY	26	
3	BOTTOM HINGE (R)	15	MECH COVER	27	
4	TOP HINGE (R)	16	UNIT COVER	28	
5	DRAWER ASSEMBLY	17	COMPRESSOR	29	
6	DRAWER GUIDE LF ASSEMBL	18	CONDENSER FAN MOTOR	30	
7	DRAWER GUIDE RH ASSEMB	19	CONDENSER	31	
8	THERMOSTAT PANEL	20	EVAPORATOR	32	
9	THERMOSTAT	21	DEFROST HEATER	33	
10	EVAPORATOR DUCT	22	DRAIN GUIDE	34	
11	LOUVER	23	DRAIN GUIDE HEATER	35	
12	EVAPORATOR FAN DUCT	24	DRAIN HOSE HEATER	36	

2. WIRING DIAGRAMS

2-1. TUF-28SD-D2



2-1. TUF-48SD-D2 ,D4



3.MAIN COMPONENTS

1.COMPRESSOR

MODEL	PART NAME	PART NO.	HORSE	CAPACITY	TYPE OF	INPUT	MAKER
28Series	SK1A1C-L2W	M609700100	1/3HP	~	CSIR	115V 60Hz	SAMSUNG
48Series	CAE2420Z	G2F5700100	1/2HP		CSR	115V 60Hz	TECUMSHE

2.COMPRESSOR RELAY ,OVERLOAD

MODEL	RELAY	OVERLOAD	MAKER	NOTE
28Series	J531Q34E220M3503	795TFBZZ-53	SAMSUNG	~
48Series	3ARR12	MST16AHN-3240	TECUMSHE	~

3.COMPRESSOR CAPACITOR

MODEL	STARTING	PART NO.	RUNNING	PART NO.	MAKER	NOTE
28Series	125V/125uF	~	250V/12uF	~	~	~
48Series	250V/160uF	~	~	~	~	~

4.CONDENSER FAN MOTOR

MODEL	PART NAME	PART NO.	POLE	INPUT	TYPE	BLADE	MAKER
28Series	IS-4420DWSN-2A	3963328120	4P	15V , 60Hz	SHADED POLE	AL 5	SUNGSHIN
48Series					INDUCTION		

5.EVAPORATOR FAN MOTOR

MODEL	PART NAME	PART NO.	POLE	INPUT	TYPE	BLADE	NO
						(NUMBER)	
28Series	IS-3220QTBA	M729900200	2P	115V,60Hz	SHADED POLE INDUCTION	ZYTEL	SUNGSHIN
48Series						4	

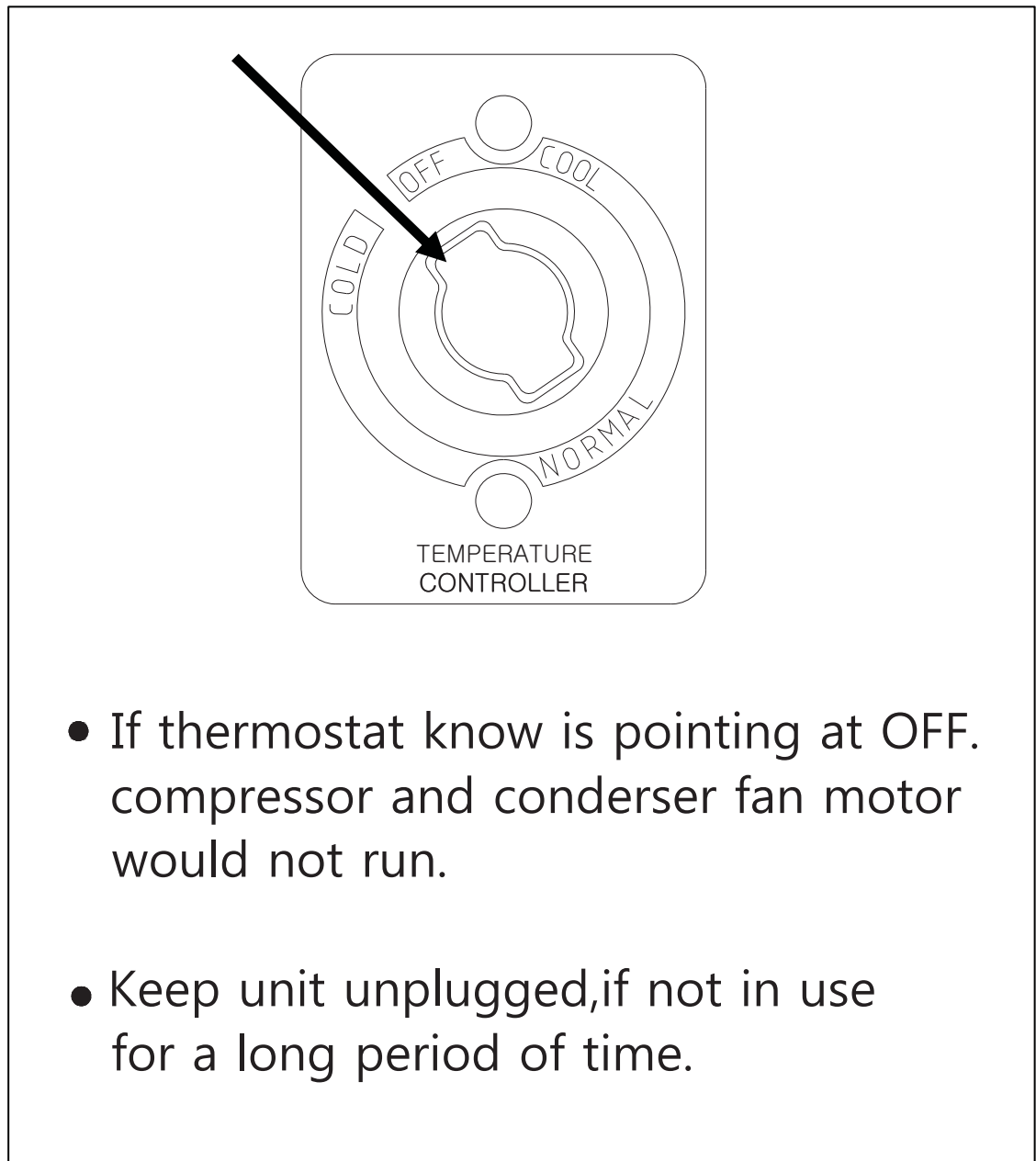
6.THERMOSTAT

PART NAME	Model	RATING	MAKER
THERMOSTAT	TUF-28	GNF-106D-06A-02	RANCO
THERMOSTAT	TUF-48	GNF-106D-06A-01	RANCO

4.TEMPERATURE CONTROL INSTRUCTION

- Temperature can be controlled by the user.
- Factory setting is at "NORMAL" Settings can be changed by Dial Knob.

© Indicates temperature level



5. PARTS LIST

Part Name	Part Code	Description	Model					Remark
			28-D2	48-D2	48-D4			
1. DOOR								
ASS'Y DOOR	DS2AF00100	DRAWER	2					
ASS'Y DOOR	DS4AF00100	DRAWER		2	4			
ASS'Y DOOR (R)	M720001100	SWING		1				
DOOR BUSHING	M720700100	PA-66	2	4	4			
DOOR GASKET	M722300101	PVC		1				
DOOR GASKET	DS23300100	PVC	2					
DOOR GASKET	DS43300100	PVC		2	4			
TOP HINGE (R)	M722900100	SUS		1				
BOTTOM HINGE (U)(R)	30229M0400	SUS		1				
SPRING BAR	30251M0103			1				

2. COUNTER TOP

COUNTER TOP ASSEMBLY	U279500100		1					
COUNTER TOP ASSEMBLY	U489500100			1	1			



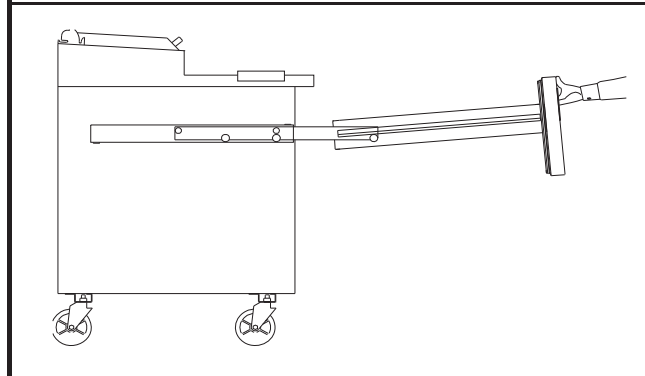
3. COMPRESSOR COMPARTMENT

COMPRESSOR	M609700100	SK1A1C-L2W (1/3HP)	1					
COMPRESSOR	G2F5700100	CAE2420Z		1	1			
CONDENSER FAN MOTOR	3963328120	IS-4420DWSN-2A	1	1	1			
DRAIN PAN	30211A0200	PP	1					
DRAIN PAN	M729300100	PP		1	1			
POWER CORD	M721300100		1	1	1			
CONDENSER FAN BLADE	M729800100	AL Ø200	1	1	1			
CONDENSER FAN BLADE	P8F27005400	AL Ø175	1	1	1			
CONDENSER	UF25900101	CU,SPG,AL	1					
CONDENSER	UF45900101	CU,SPG,AL		1	1			
DRAIN PIPE	UF44400500	CU		1	1			

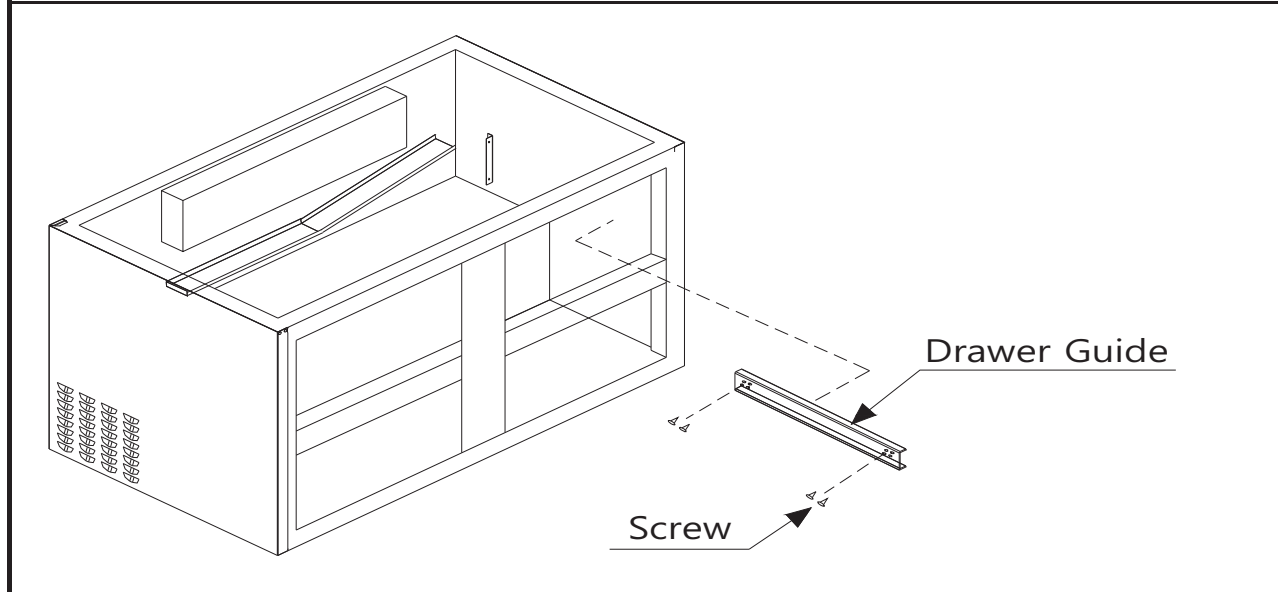
Part Name	Part Code	Description	Model					Remark
			28-D2	48-D2	48-D4			
4. REFRIGERATION COMPARTMENT								
LOUVER	UF25800103	SUS	1					
LOUVER	UF45800103	SUS		1	1			
SHELF	M727800100	SUS		1				
FIXTURE SHELF CLIP	30220L0900	PA-66		4				
SHELF STANDARD	M725300200	SUS		4				
EVAPORATOR AS	UF27000101	CU,SPG,AL	1					
EVAPORATOR AS	UF47000101	CU,SPG,AL		1	1			
THERMOSTAT	UF48300300		1					
THERMOSTAT	UF48300200			1	1			
EVAPOVATOR FAN DUCT	UF26900203	SUS	1					
EVAPOVATOR FAN DUCT	UF46900203	SUS		1	1			
EVAPOVATOR DUCT	UF26900102	SUS	1					
EVAPOVATOR DUCT	UF46900102	SUS		1	1			
MULLION FRAME	M722200400	PVC		1				
MULLION BACK FRAME	M722200200	SUS304-2B		1				
MULLION FRAME INSULATIO	M723300100	F-PS		1				
DRAWER GUIDE ASSEMBLY (DS62700100	SUS	2	2	4			
DRAWER GUIDE ASSEMBLY (DS62700200	SUS	2	2	4			
CASTER	M726500100	5' MOVING	2	2	2			
CASTER	M726500200	5' MOVING STOPPING	2	2	2			
FAN COOLING BLADE	3011802210	ZYTEL	2	3	3			
EVAP FAN MOTOR	CM25000100		2	3	3			

6. REPLACEMENT OF MAIN COMPONENTS

6-1. REPLACING DOOR

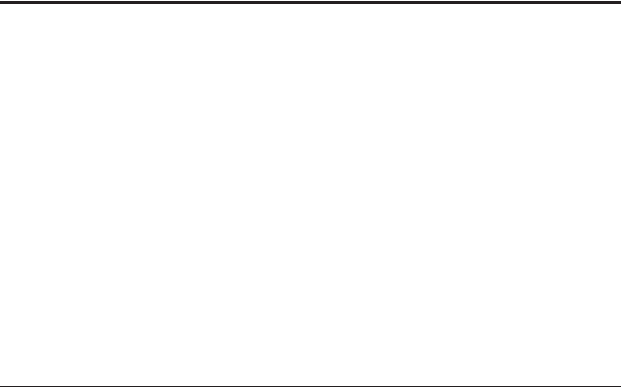
A. Unscrew the top hinge	B. Lift the door
	
A. Fully extend the drawer out toward you as pictured. After full extension, lift the drawer up and pull towards you. This will disengage the rollers from the roller guide.	
	

6-2. REPLACING DRAWER GUIDE

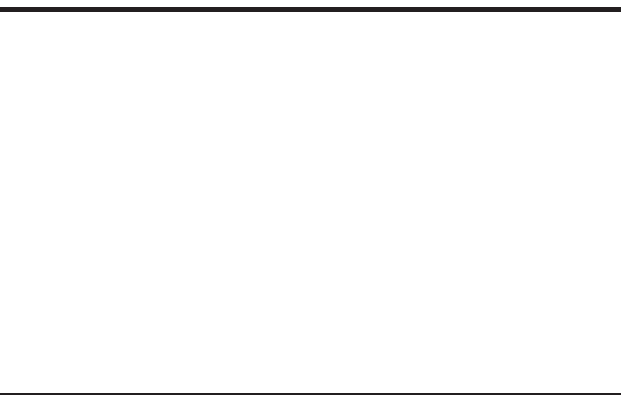
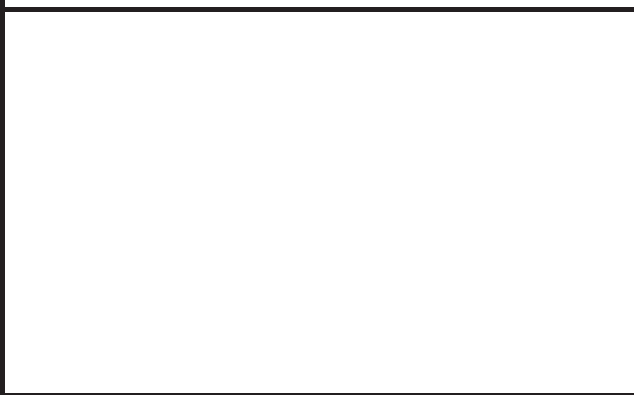
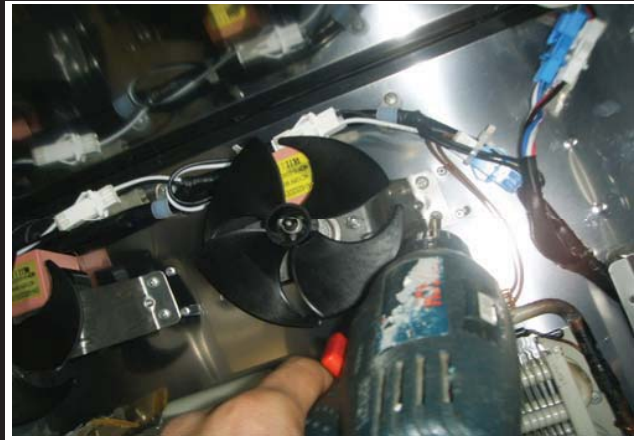
A. Remove the drawer guide by removing screws in the front and back.


6-2. REFRIGERATION COMPARTMENT PARTS

A .Disassemble the evaporator fan duct assembl



B.Disassemble the evaporator fan motor



6-3. REFRIGERATION COMPARTMENT PARTS

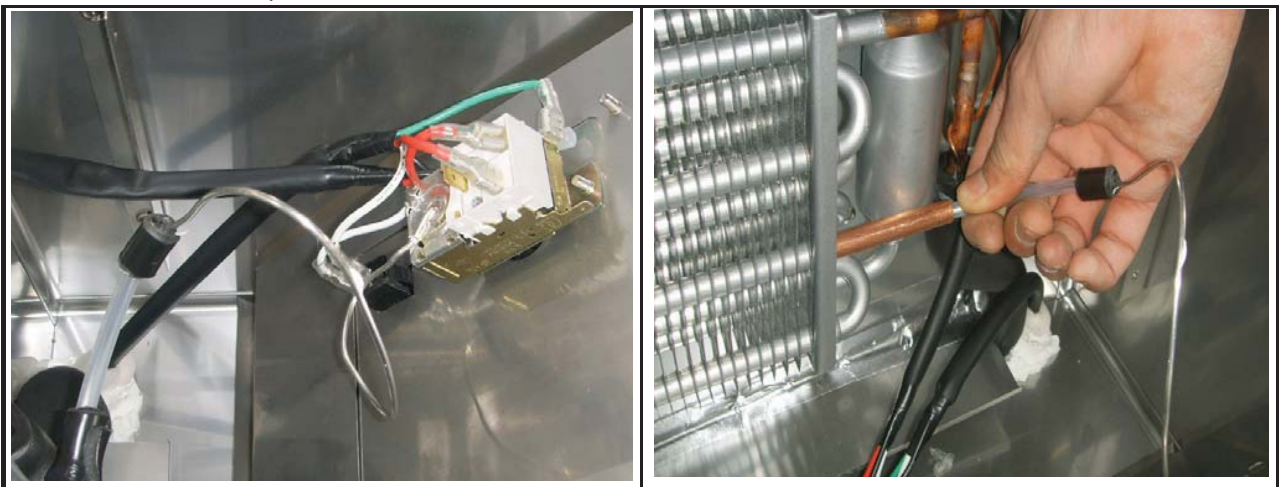
A. Disassemble the evaporator fan duct assembly



B. Disassemble the evaporator duct

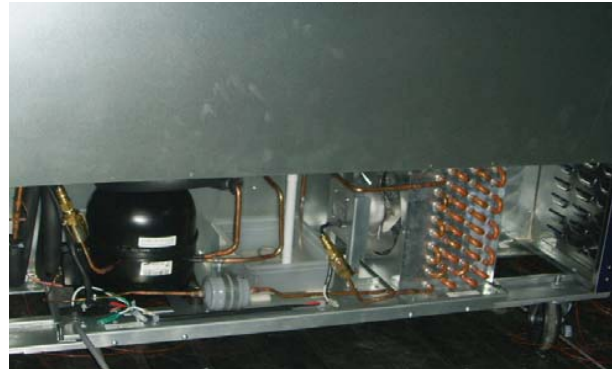


C. Remove the temperature & sensor



6-4. COMPRESSOR COMPARTMENT PARTS

A. Disassembly the rear grill



B. Disassembly the condensing unit



6-4. REPLACING THE EVAPORATOR & EVAPORATOR FAN MOTOR

A. Remove the evaporator coil



B. Remove the evaporator fan motor

