

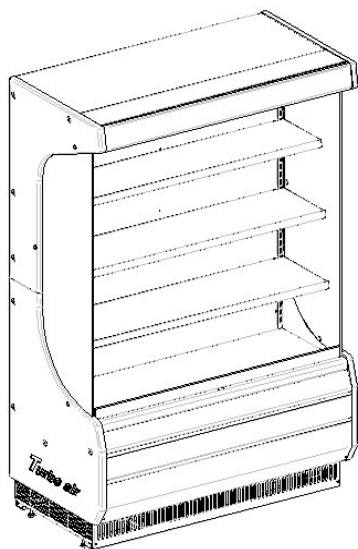
Turbo air Speeds UP the Pace of Innovation



OPEN DISPLAY MERCHANDISER

Commercial refrigerator Service Manual

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



TOM-40

TOM-50

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MAIN COMPONENTS

1. Compressor

Manufacturer	Tecumseh.
Designation	CAJ9513Z
Electrical Rating	
V, Hz, Phase	115 V, 60 Hz, 1 Ph
RLA(+)	15.66
LRA	75A

2. Overload Protector

Manufacturer	Texas Instruments
Model or Designation	CRA38012

3. Starting Capacitor, Run Capacitor

Rating, uF, V	315 uF, 160 V
Rating, uF, V	30 uF, 400 V

4. Condenser Fan Motor, Evaporator Fan Motor, Cone Pump Motor

Manufacturer	Geenam Electric
Model	SE-043
Rating V, Hz, Phase, A or W	115 V, 60 Hz, 1 Ph, 0.8 A, 9 W

5. Square Fan Motor

Manufacturer	SUNTRONIX
Model	SJ1238HA1
Rating V, Hz, Phase, A or W	110-120 V, 60 Hz, 1 Ph, 0.27 A

6. Thermostat (Refrigeration Controller)

Manufacturer	CAREL
Designation	PJ32S0E100
Electrical Rating, Minimum V, FLA, LRA	Input: 115 V ac, 3VA Output: 250 V ac, 2 FLA, 12 LRA

7. Magnetic Contactor

Manufacturer	GS
Designation	SMC-20P2
Rating, V	100-120 V

8. Condensate Heaters

Model	Length, mm	W/M	Temp. Rating, °C
ZKTB-1943	2400	7	105
ZKTB-1933	1800	7	105

9. Transformer

Manufacturer	Chun Sang Electronics
Designation	8004-8475-03
Electrical Ratings	
Primary	115/230 V ac, 50/60 HZ
Secondary	24 Vac, 0.7 A

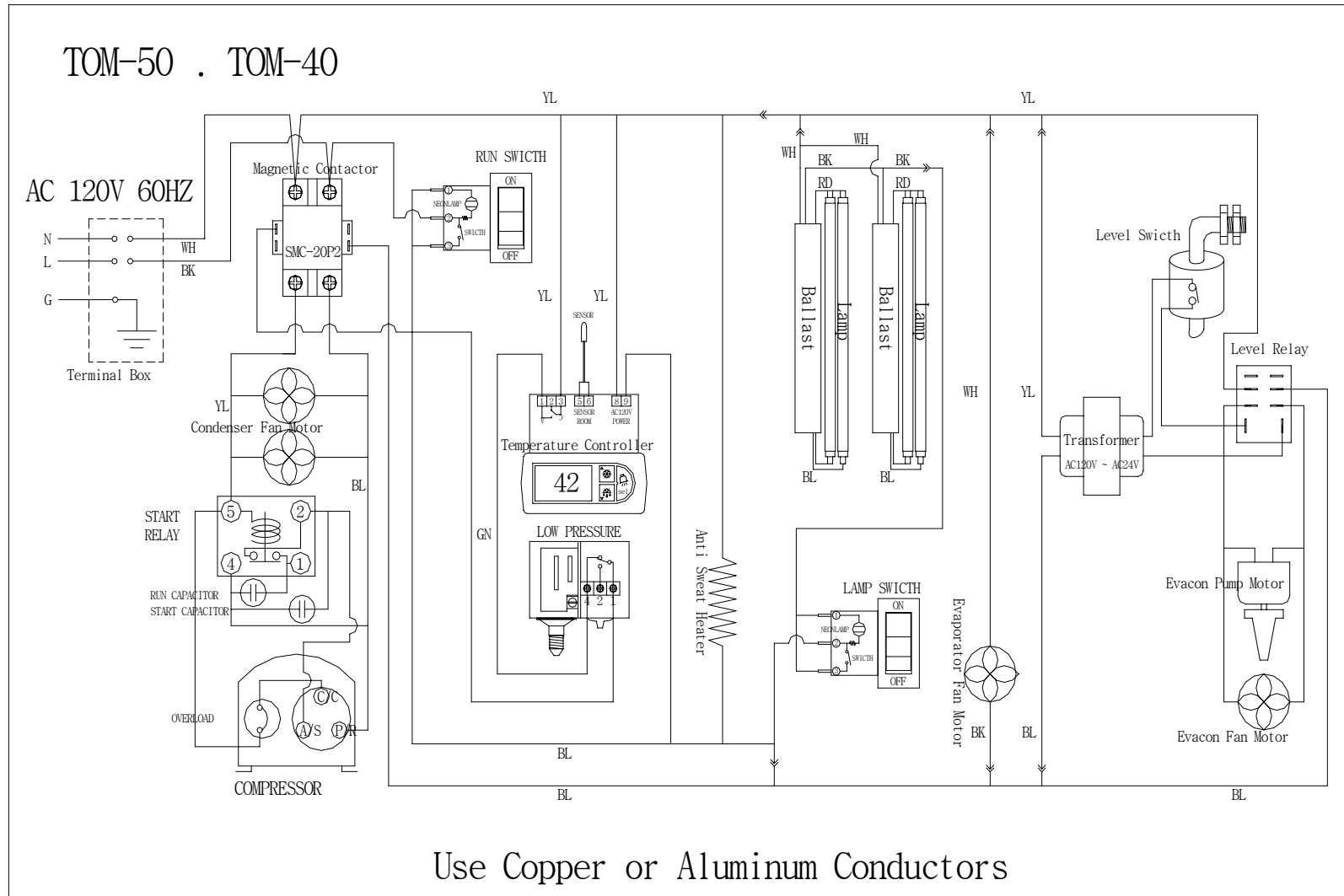
10. Level Relay

Manufacturer	TEXCELL ELECTRONICS
Designation	KML2
Ratings, V	24 Vac

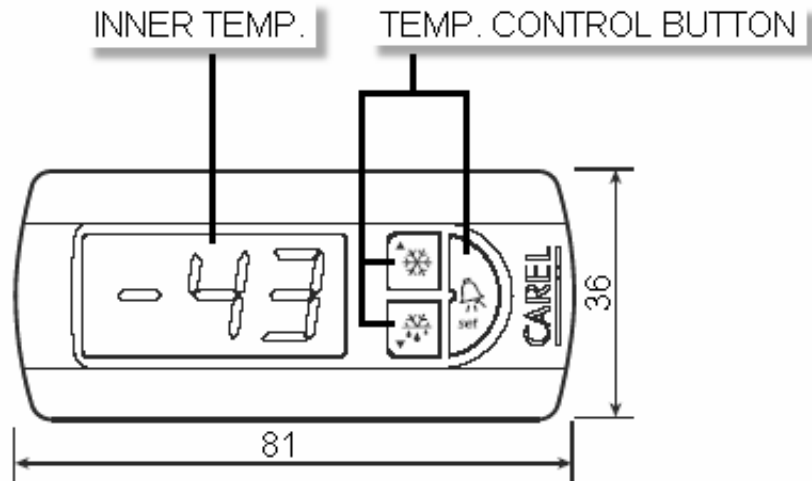
11. Ballast

Manufacturer	K-TRONIK INTERNATIONAL
Model	KT2-32-I-MVP
Rating V, A	120 - 277 Vac, 0.48 A





WIRING DIAGRAM




TEMPERATURE CONTROL INSTRUCITON



SET-POINT


- Press the SET  button for one second to display the Set-Point value;
- After two seconds, the set value blinks;
- Press UP  or DOWN  to increase or decrease the value; Press the  button to confirm the new value.

MANUAL DEFROST

- Defrost cycle is automatic. It is also possible to force a defrost cycle by pressing the  (DEF) button for more than 5 seconds (It occurs only if defrost conditions are present).








PARAMETERS

First section: frequent parameters (type F in the table); no PASSWORD is required to enter.


- Press the  button for more than 5 seconds (in case of alarm, silence the buzzer first):

- After the set-point, PS will be displayed. Press  or  to show the code of the parameters.

Second section: configuration parameters (type C in the table); a PASSWORD is required to enter.

- Press the  for more than 5 seconds, after the set-point, PS will be displayed;
 - Press the  and then  or  until 22 is displayed (PASSWORD); press  to confirm;
 - Press  or  up to the first modifiable parameter will be displayed.
- To modify parameters see “PARAMETERS MODIFICATION” below.

- Repeat the procedure from the beginning “press  or  to show...”.

To exit modifying the parameters with the new values: press  at least 5 seconds to confirm the new values and exit the “PARAMETERS MODIFICATION” procedure. For timing parameters only: switch off and switch on the controller in order to make them immediately effective (without waiting for the following cycle).

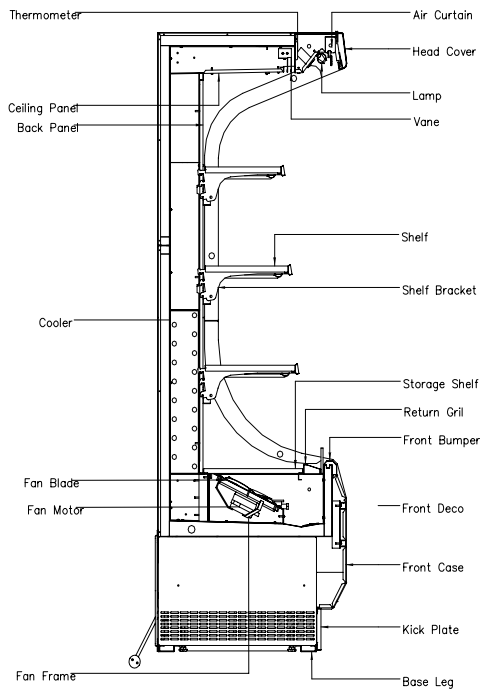
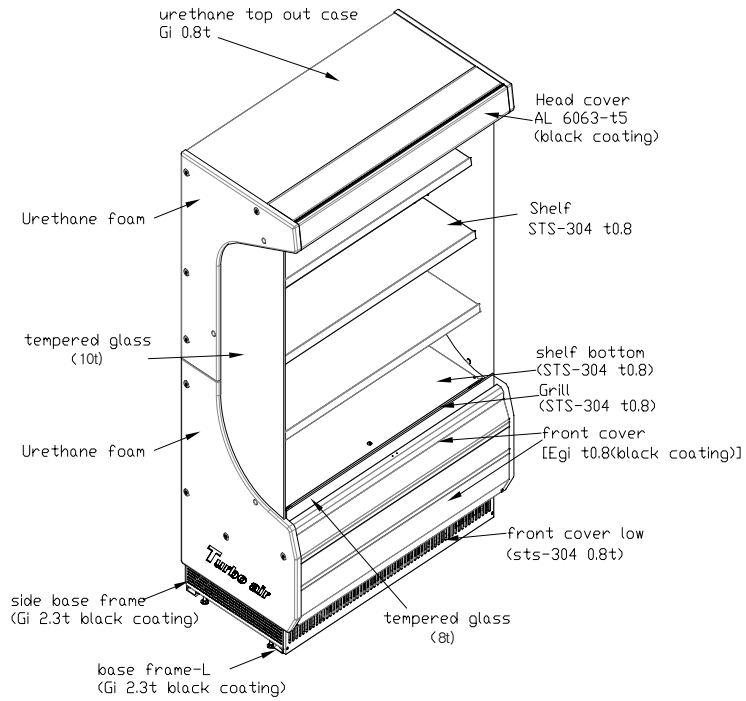
To exit without modifying any parameter: do not press any button for at least 60 seconds (TIME OUT).

LIST OF PARAMETERS

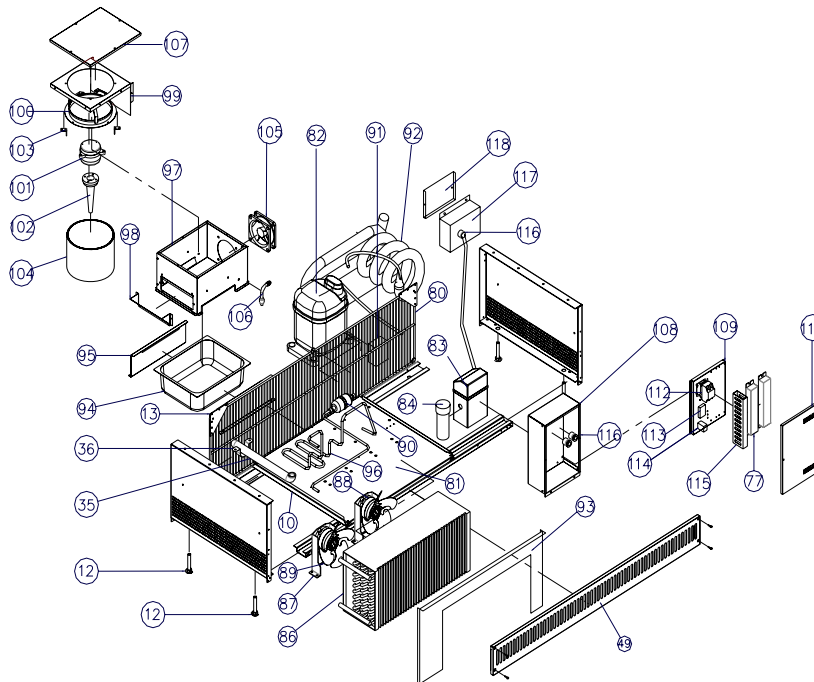
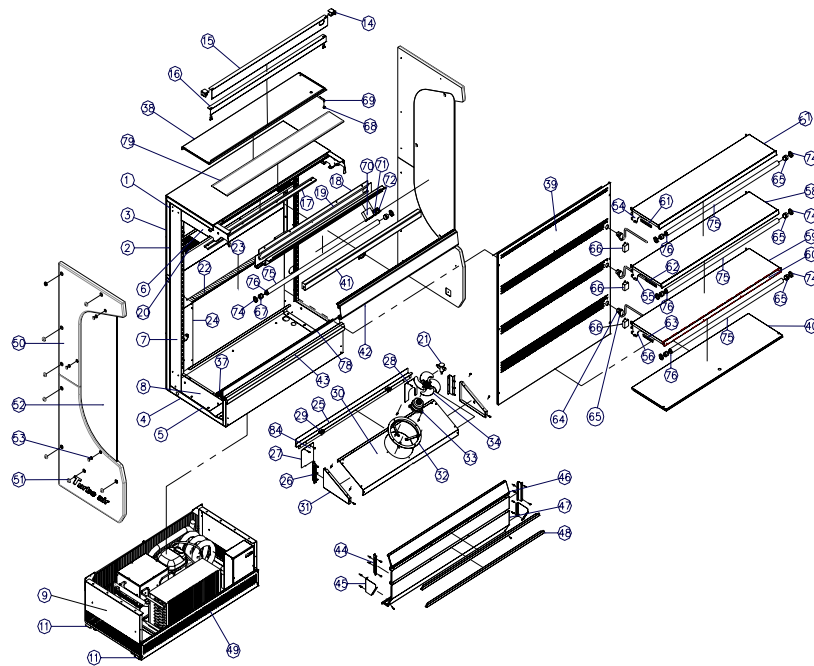
	parameter	Type	Min	Max	U.M.	Def
PS	PASSWORD	F	00	199		22
/	PROBE PARAMETERS					
/C	Calibration of ambient probe(x0.1 °C/°F)	F	-127	127	°C/°F	0.0
/2	Reading stability	C	1	15		4
/4	Display probe. 0= regulation probe, 1= food probe (second probe) Parameter not available for S and X models	C	0	1	flag	0
/5	°C/°F (0=°C, 1=°F)	C	0	1	flag	0
r	REGULATOR PARAMETERS					
rd	Regulator differential (hysteresis 0=0.5 °C/°F)	F	0	19	°C/°F	2
r 1	Minimum allowable set	C	-50	r 2	°C/°F	-50
r 2	Maximum allowable set	C	r 1	127	°C/°F	60
r 3	Enabling Ed alarm: max duration of Defrost reached (0= no, 1= yes) Parameter not available for S model	C	0	1	flag	0
r 4	Automatic variation of the Set-point with Curtain-switch closed(A4= 4)	C	-20	20	°C/°F	3
c	COMPRESSOR PARAMETERS					
c 0	Delay compressor insertion after control reset	C	0	15	Min	0
c 1	Minimum time between two insertions	C	0	15	Min	0
c 2	Minimum OFF routine	C	0	15	Min	0
c 3	Minimum ON routine	C	0	15	Min	0
c 4	Safety compressor (0= OFF, 100= ON)	C	0	100	Min	0
cc	Continuous cycle duration	C	0	15	hours	4
c 6	Alarm delay after continuous cycle	C	0	15	hours	2
d	DEFROST PARAMETERS					
d 0	Type of defrost(0= heater, 1= hot gas 2= water or resistance, 3= hot gas by time) Parameter not available for S model	C	0	3	flag	0
dl	Time interval between two defrost cycles	F	0	199	hours	8
dt	End defrost temperature	F	-50	127	°C/°F	4

	Parameter not available for S model					
dp	Max duration of the defrosting or effective duration if d0= 2 or 3	F	1	199	Min	30
d 4	Defrost after control Switch-ON (0= no, 1= yes)	C	0	1	flag	0
d 5	Delay defrost after control Switch-On, or from multifun. Input(A4 or A5= 4)	C	0	199	Min	0
d 6	Block of display during (0= no, 1=yes)	C	0	1	flag	1
Dd	Dripping time	F	0	15	Min	2
d 8	Alarm delay after defrost	F	0	15	hours	1
d 9	Priority of the defrost over anticogging	C	0	1	flag	0
d/	Defrost probe reading Parameter not available for S model	F			°C/°F	
dc	Time selection (0= hours/min, 1= min/s) Only for dl and dp	C	0	1	Flag	0

Part Name



Break down



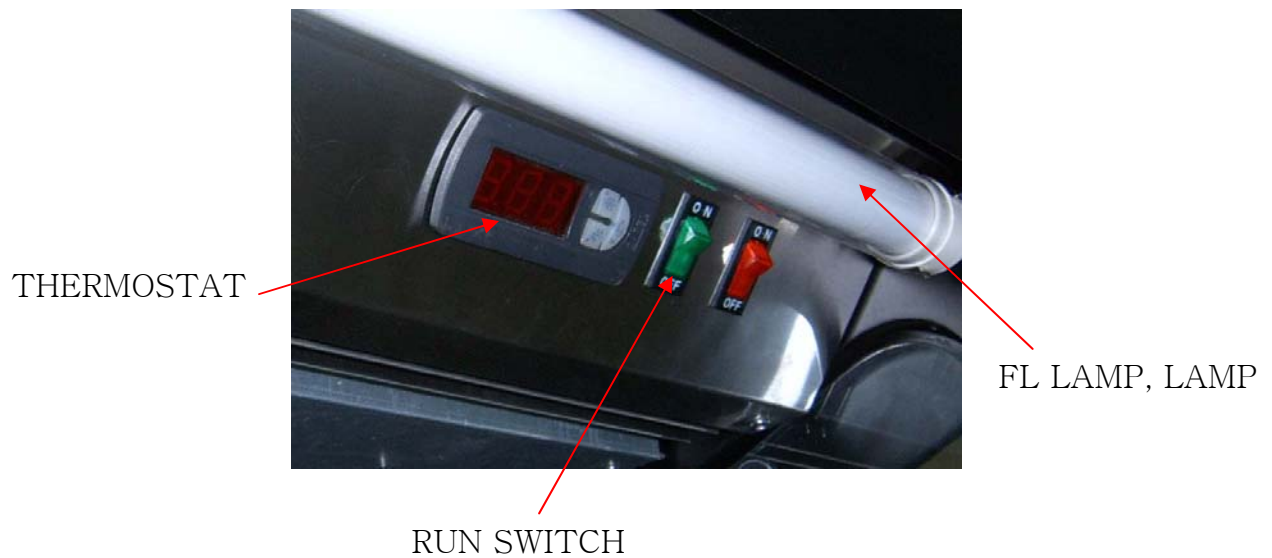
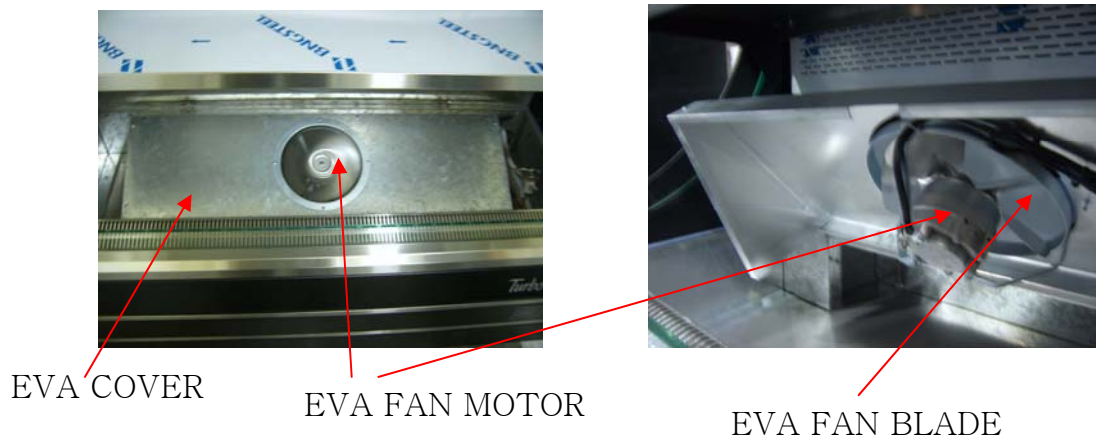
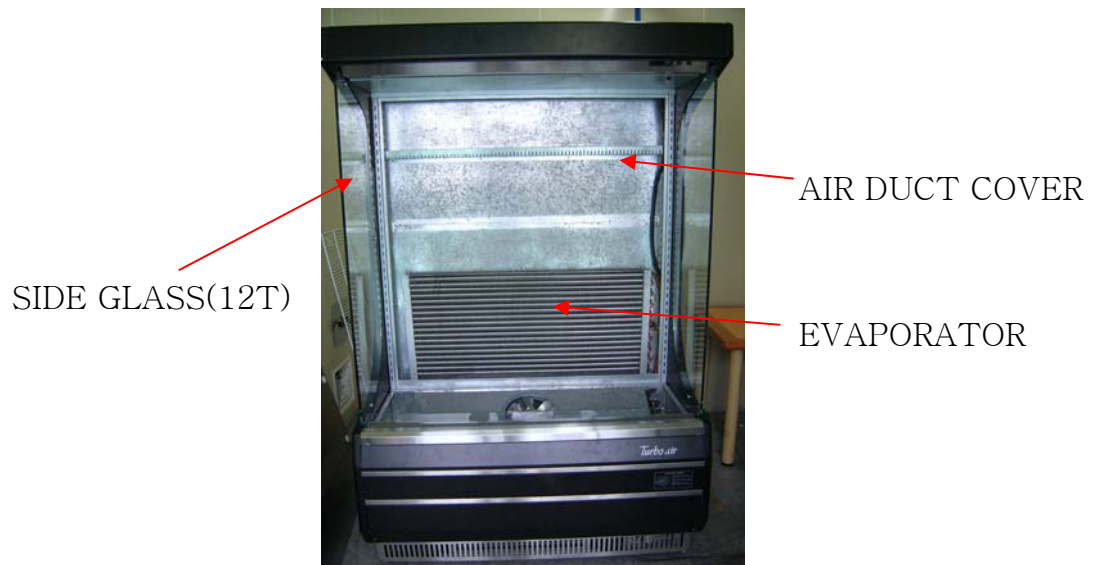
TOM-40,TOM50(Svc Part List)

No	Part Number	Part Number	Title	Quantity	Material
1	TOM-40-101	TOM-50-101	Urethane Wood	2	Wood
2	TOM-40-102	TOM-50-102	Urethane inner case	1	GI 0.8T
3	TOM-40-103	TOM-50-103	Urethane out case	1	Color 0.8T
4	TOM-40-104	TOM-50-104	Urethane Low out case	1	GI 0.8T
5	TOM-40-105	TOM-50-105	Urethane Low inner case	1	SUS 0.8T
6	TOM-40-106	TOM-50-106	Top frame R/L	좌 1,우 1	GI 2.3T(Paint)
7	TOM-40-107	TOM-50-107	Middle frame R/L	좌 1,우 1	GI 2.3T(Paint)
8	TOM-40-108	TOM-50-108	Low frame R/L	좌 1,우 1	GI 2.3T
9	TOM-40-109	TOM-50-109	Base cover R/L	좌 1,우 1	GI 2.3T(Paint)
10	TOM-40-110	TOM-50-110	Comp base Rail	2	GI 2.3T
11	TOM-40-111	TOM-50-111	Base leg R/L	좌 1,우 1	GI 2.3 T
12	TOM-40-112	TOM-50-112	Leg bolt(M12)	4	
13	TOM-40-113	TOM-50-113	Back bracket(2.3T)	2	GI 2.3T
14	TOM-40-301	TOM-50-301	Vane support R/L	좌 1,우 1	GI 2.3T
15	TOM-40-302	TOM-50-302	Vane guide A	1	SUS 0.8T
16	TOM-40-303	TOM-50-303	Vane guide B	1	SUS 0.8T
17	TOM-40-304	TOM-50-304	Top cover support	1	GI 1T
18	TOM-40-305	TOM-50-305	TC panel	1	SUS 0.8T
19	TOM-40-306	TOM-50-306	Heater plate	1	
20	TOM-40-307	TOM-50-307	Air duct cover	1	GI 0.8T
21	TOM-40-308	TOM-50-308	Expansion valve	1	2.1kw
22	TOM-40-309	TOM-50-309	Evaporator	1	
23	TOM-40-310	TOM-50-310	Eva cover	1	GI 0.8T
24	TOM-40-311	TOM-50-311	Eva side cover R/L	좌 1,우 1	GI 0.8T
25	TOM-40-312	TOM-50-312	Fan cover support	1	GI 1T
26	TOM-40-313	TOM-50-313	Fan cover bracket R/L	좌 1,우 1	GI 1T
27	TOM-40-315	TOM-50-315	Fan cover - A	1	GI 0.8T
28	TOM-40-316	TOM-50-316	Fan cover - B	1	GI 0.8T
29	TOM-40-317	TOM-50-317	Hinge-E	2	
30	TOM-40-318	TOM-50-318	Fan cover	1	GI 1T
31	TOM-40-319	TOM-50-319	Fan cover side R/L	좌 1,우 1	GI 1T

No	Part Number	Part Number	Title	Quantity	Material
32	TOM-40-320	TOM-50-320	Eva motor bracket	1	ø 220
33	TOM-40-321	TOM-50-321	Eva fan motor	1	AC115V 9W
34	TOM-40-322	TOM-50-322	Eva fan blade	1	
35	TOM-40-323	TOM-50-323	Drain hose	1	PVC
36	TOM-40-324	TOM-50-324	Drain support	1	GI 2.3T
37	TOM-40-325	TOM-50-325	Return grill	1	SUS 0.8T
38	TOM-40-326	TOM-50-326	Top panel	1	SUS 0.8T
39	TOM-40-327	TOM-50-327	Back cover	1	SUS 0.8T
40	TOM-40-328	TOM-50-328	Bottom Shelf	1	SUS 0.8T
41	TOM-40-329	TOM-50-329	Night cover	1	Purchase
42	TOM-40-501	TOM-50-501	Head cover	1	AL 6063-T5
43	TOM-40-502	TOM-50-502	Bottom bumper	1	SUS 0.8T
44	TOM-40-503	TOM-50-503	Front panel bracket A	2	GI 1T
45	TOM-40-504	TOM-50-504	Front panel bracket B R/L	좌 1, 우 1	GI 1T
46	TOM-40-505	TOM-50-505	Front panel A	1	EGI 0.8T(Paint)
47	TOM-40-506	TOM-50-506	Front panel B	1	EGI 0.8T(Paint)
48	TOM-40-507	TOM-50-507	Bumper band	2	SUS 0.8T
49	TOM-40-508	TOM-50-508	Base low cover	1	SUS 0.8T
50	TOM-40-509	TOM-50-509	Side panel R/L	좌 1, 우 1	Urethane
51	TOM-40-510	TOM-50-510	washer(M6)	16	
52	TOM-40-511	TOM-50-511	Side glass(10T)	2	Glass10T
53	TOM-40-512	TOM-50-512	washer(M8)	6	
54	TOM-40-513	TOM-50-513	Shelf bracket -A	2	EGI 2.8T(Paint)
55	TOM-40-514	TOM-50-514	Shelf bracket -B	2	EGI 2.8T(Paint)
56	TOM-40-515	TOM-50-515	Shelf bracket -C	2	EGI 2.8T(Paint)
57	TOM-40-516	TOM-50-516	Shelf-A	1	SUS 0.8T
58	TOM-40-517	TOM-50-517	Shelf-B	1	SUS 0.8T
59	TOM-40-518	TOM-50-518	Shelf-C	1	SUS 0.8T
60	TOM-40-519	TOM-50-519	Shelf support light	3	SUS 0.8T
61	TOM-40-520	TOM-50-520	Harness cover A	1	GI 1T
62	TOM-40-521	TOM-50-521	Harness cover B	1	GI 1T
63	TOM-40-522	TOM-50-522	Harness cover C	1	GI 1T
64	TOM-40-701	TOM-50-701	Harness light cord	3	
65	TOM-40-702	TOM-50-702	Harness light plug	3	

No	Part Number	Part Number	Title	Quantity	Material
66	TOM-40-703	TOM-50-703	Plug cover	3	SUS 0.8T
67	TOM-40-704	TOM-50-704	Light socket upper	1	
68	TOM-40-705	TOM-50-705	Sencer holder	1	Mold
69	TOM-40-706	TOM-50-706	TC sencer	1	
70	TOM-40-707	TOM-50-707	TC	1	
71	TOM-40-708	TOM-50-708	Run switch	1	
72	TOM-40-709	TOM-50-709	Lamp switch	1	
73	TOM-40-710	TOM-50-710	Control hareness	1	
74	TOM-40-711	TOM-50-711	Light holder	8	
75	TOM-40-712	TOM-50-712	FI lamp	4	
76	TOM-40-713	TOM-50-713	Lamp	4	40⇒30W, 50⇒32W
77	TOM-40-714	TOM-50-714	ballast	2	
78	TOM-40-523	TOM-50-523	Stopper galss	1	GLASS 8T
79	TOM-40-524	TOM-50-524	Upper cover	1	GI 0.8T
80	TOM-40-525	TOM-50-525	Wire steel cover	1	MSWR
81	TOM-40-901	TOM-50-901	Base comp	1	GI 2.3T
82	TOM-40-902	TOM-50-902	Compressor	1	
83	TOM-40-903	TOM-50-903	Start relay box	1	
84	TOM-40-904	TOM-50-904	Start Capacitor	1	
85	TOM-40-905	TOM-50-905	Unit harness	1	
86	TOM-40-906	TOM-50-906	Condenser	1	
87	TOM-40-907	TOM-50-907	Cond Motor bracket	2	GI 2.3T
88	TOM-40-908	TOM-50-908	Cond Fan motor	2	
89	TOM-40-909	TOM-50-909	Cond Fan blade	2	
90	TOM-40-910	TOM-50-910	Filter dryer	1	
91	TOM-40-911	TOM-50-911	Low pressure switch	1	
92	TOM-40-912	TOM-50-912	Dicharge pipe	1	
93	TOM-40-913	TOM-50-913	Condenser cover	1	
94	TOM-40-914	TOM-50-914	Eva con fan dish	1	SUS
95	TOM-40-915	TOM-50-915	Water tank bracket	2	GI 1T
96	TOM-40-916	TOM-50-916	Eva con coil	1	SUS
97	TOM-40-917	TOM-50-917	Eva con dish cover	1	SUS 0.8T
98	TOM-40-918	TOM-50-918	Drain guide	1	SUS 0.8T
99	TOM-40-919	TOM-50-919	Eva con Motor air vane	1	SUS 0.8T

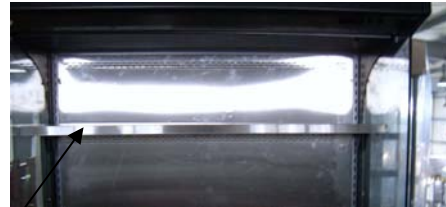
No	Part Number	Part Number	Title	Quantity	Material
100	TOM-40-920	TOM-50-920	Eva con Motor bracket	1	ø 196
101	TOM-40-921	TOM-50-921	Eva con motor	1	
102	TOM-40-922	TOM-50-922	Nozzle pump	1	PVC,mold
103	TOM-40-923	TOM-50-923	Steel bracket	3	GI 2.3T
104	TOM-40-924	TOM-50-924	Steel Mesh	1	
105	TOM-40-925	TOM-50-925	Square Fan motor	1	120*40
106	TOM-40-926	TOM-50-926	Level switch	1	
107	TOM-40-927	TOM-50-927	Eva con cover	1	SUS 0.8T
108	TOM-40-715	TOM-50-715	Control box	1	GI 1T
109	TOM-40-716	TOM-50-716	Control inner cover	1	GI 1T
110	TOM-40-717	TOM-50-717	Control cover	1	GI 1T
111	TOM-40-718	TOM-50-718	Control box harens	1	
112	TOM-40-719	TOM-50-719	Magnetic control	1	
113	TOM-40-720	TOM-50-720	Transformer	1	
114	TOM-40-721	TOM-50-721	Relay	1	24 Vac
115	TOM-40-722	TOM-50-722	lead wire duct	1	
116	TOM-40-723	TOM-50-723	Cable mesh	3	
117	TOM-40-724	TOM-50-725	Joint box	1	
118	TOM-40-725	TOM-50-726	Joint box cover	1	
119	TOM-40-001	TOM-50-001	Screw	150	



Shelf break down



[Front view]



[Shelf fixing view]

[Shelf]



[first step]

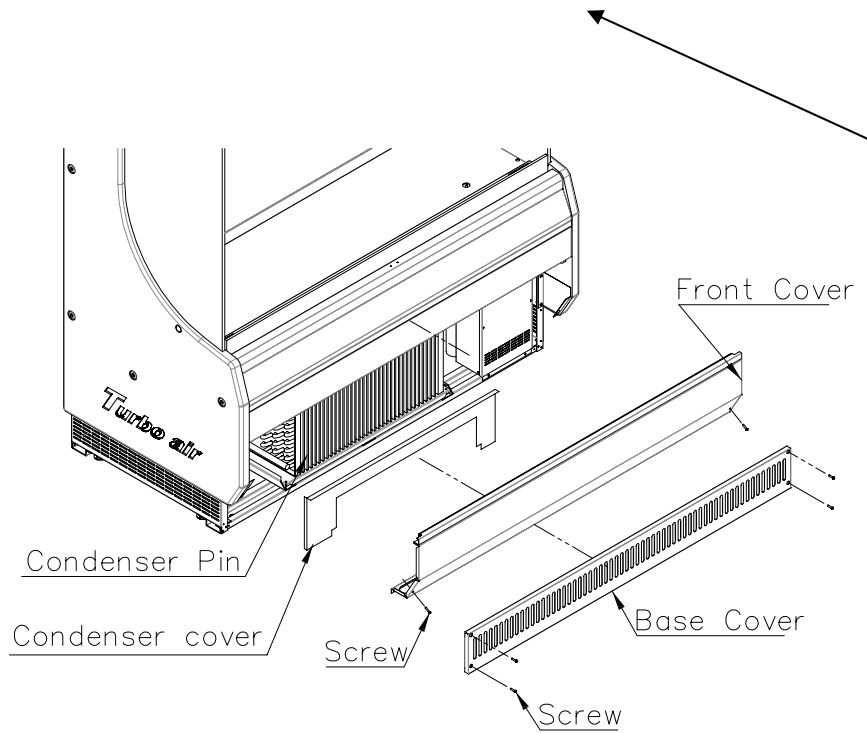


[second step]

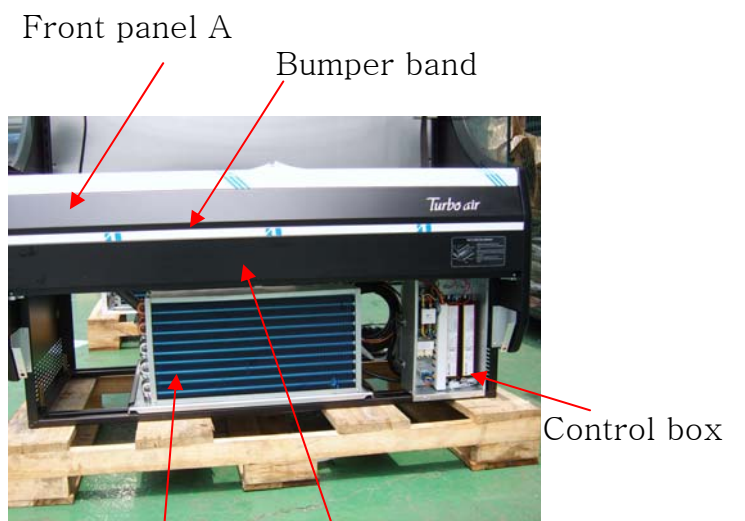


[Take off view]

Refrigeration Compartment



Condenser cover



Condenser

Front panel B

Eva con box

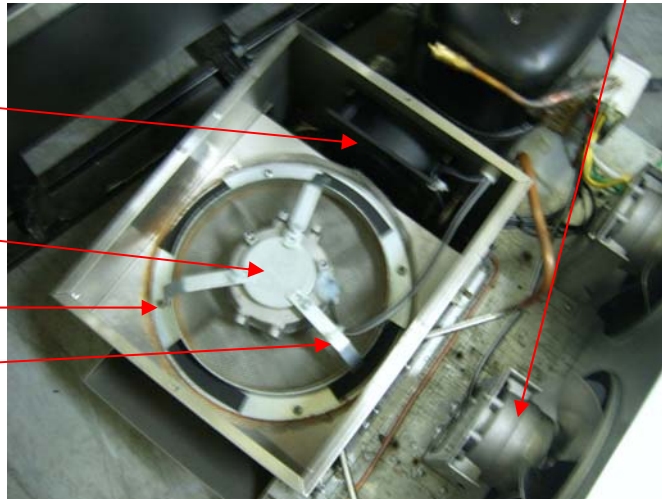


Compressor

Condenser

Cond fan Motor

Square fan motor

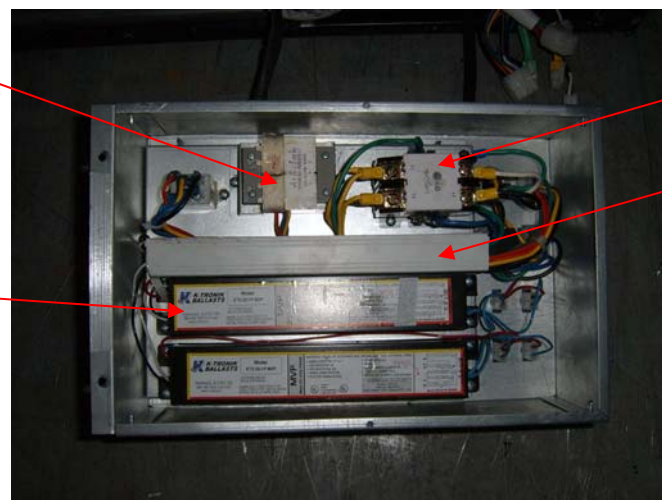


Eva con motor

Eva con air vane

Eva con Motor bracket

Transformer



Magnetic control

Lead wire duct

Electric ballast