Commercial Refrigerator & Freezer Service Manual

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

Premiere Series
SOLID DOOR

PRO-26R  PRO-26-2R
PRO-50R  PRO-50-4R
PRO-77R  PRO-77-6R

PRO-26F  PRO-26-2F
PRO-50F  PRO-50-4F
PRO-77F  PRO-77-6F
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MODEL: PRO-26R PRO-26F

FRONT VIEW

1. TOP GRILLE(T)
2. TOP GRILLE(B)
3. MASCOT
4. KEY
5. ASS'Y DOOR
6. DOOR HANDLE
7. CASTER
8. BOTTOM HINGE
9. TOP HINGE
10. FRONT PCB CASE
11. COMP BASE
12. COMPRESSOR
13. CAPACITOR
14. DRAIN CASE
15. DRAIN PIPE
16. CONDENSER MOTOR
17. CONDENSER
18. COMP BASE
   BRACKET
19. PRESSURE SWITCH
21. DRAIN GUIDE
22. EVAPORATOR
23. PRESSURE RELIEF
24. EVAPORATOR FAN
   MOTOR
25. COOLING MOTOR
   BRACKET
26. EVAP HOUSING
27. CONTROL BOX
28. DOOR GASKET
MODEL: PRO-26-2R PRO-26-2F
FRONT VIEW

1. TOP GRILLE(T)
2. TOP GRILLE(B)
3. MASCOT
4. KEY
5. ASS’Y DOOR
6. DOOR HANDLE
7. CASTER
8. BOTTOM HINGE
9. MIDDLE HINGE
10. TOP HINGE
11. FRONT PCB CASE
12. COMP BASE
13. COMPRESSOR
14. CAPACITOR
15. DRAIN CASE
16. DRAIN PIPE
17. CONDENSER
18. MOTOR
19. COMP BASE BRACKET
20. PRESSURE SWITCH
21. DRAIN GUIDE
22. EVAPORATOR
23. PRESSURE RELIEF
24. EVAPORATOR FAN MOTOR
25. COOLING MOTOR BRACKET
26. EVAP HOUSING
27. CONTROL BOX
28. DOOR GASKET
FEATURE CHART

MODEL: PRO-50-4R PRO-50-4F

FRONT VIEW

1 TOP GRILLE(T)
2 TOP GRILLE(B)
3 MASCOT
4 KEY
5 ASS’Y DOOR
6 DOOR HANDLE
7 CASTER
8 BOTTOM HINGE
9 MIDDLE HINGE
10 TOP HINGE
11 COMP BASE BRACKET
12 CONDENSER
13 CONDENSER FAN BLADE
14 CONDENSER FAN MOTOR
15 DRAIN CASE
16 DRAIN PIPE
17 COMPRESSOR
18 FILTER DRYER
19 SUCTION PIPE
20 EVAP HOUSING
21 DRAIN GUIDE
22 EVAPORATOR
23 PRESSURE RELIEF
24 DOOR GASKET
25 CONTROL BOX
26 COOLIN MOTOR BRACKET
27 EVAPORATOR FAN MOTOR
28 PRESSURE SWITCH
MODEL: PRO-77-6R PRO-77-6F

1. TOP GRILLE(T)
2. TOP GRILLE(B)
3. MASCOT
4. KEY
5. ASS’Y DOOR
6. DOOR HANDLE
7. CASTER
8. BOTTOM HINGE
9. MIDDLE HINGE
10. TOP HINGE
11. COMP BASE BRACKET
12. CONDENSER
13. CONDENSER FAN BLADE
14. CONDENSER FAN MOTOR
15. DRAIN CASE
16. DRAIN PIPE
17. COMPRESSOR
18. FILTER DRYER
19. SUCTION PIPE
20. EVAP HOUSING
21. DRAIN GUIDE
22. EVAPORATOR
23. PRESSURE RELIEF
24. DOOR GASKET
25. CONTROL BOX
26. COOLIN MOTOR BRACKET
27. EVAPORATOR FAN MOTOR
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- Condense Fan Motor
- Drain Case
- Comp Base
- Dryer Filter
- Compressor
- Pressure Switch
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- Drain Guide
- Evaporator Fan Motor
- Thermal Fuse
- D-Senser
- Clasp Clamp Body
- Pressure Relief
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50F,77F MODEL WITH TWO RELAY.
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- MAIN PCB
- TOP GRILLE(B)
- KEY
- FRONT PCB CASE
PART DETAIL

3-5.DOOR

FRONT PCB

MASCOT

ASS’Y DOOR

DOOR HANDLE
PART DETAIL

ASS’Y DOOR

DOOR HANDLE

FRAME DOOR

DOOR GASKET
3-6. DUCT COVER
# 4. MAIN COMPONENTS

## 4-1. COMPRESSOR

<table>
<thead>
<tr>
<th>Model</th>
<th>PRO-26R RRO-26-2R</th>
<th>PRO-26F RRO-26-2F</th>
<th>PRO-50R PRO-50-4R</th>
<th>PRO-50F PRO-50-4F</th>
<th>PRO-77R PRO-77-6R</th>
<th>PRO-77F PRO-77-6F</th>
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<td>Refrigerant</td>
<td>R-134a</td>
<td>R-404a</td>
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<td>115V</td>
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<td>115V</td>
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<td>CAJ2432Z</td>
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## 4-2. COMPRESSOR RELAY

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<th>PRO-26R RRO-26-2R</th>
<th>PRO-26F RRO-26-2F</th>
<th>PRO-50R PRO-50-4R</th>
<th>PRO-50F PRO-50-4F</th>
<th>PRO-77R PRO-77-6R</th>
<th>PRO-77F PRO-77-6F</th>
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## 4-3. CONDENSER DRYER

<table>
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<tr>
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<th>PRO-26R RRO-26-2R</th>
<th>PRO-26F RRO-26-2F</th>
<th>PRO-50R PRO-50-4R</th>
<th>PRO-50F PRO-50-4F</th>
<th>PRO-77R PRO-77-6R</th>
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## 4-4. CAPACITOR

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<th>PRO-26F RRO-26-2F</th>
<th>PRO-50R PRO-50-4R</th>
<th>PRO-50F PRO-50-4F</th>
<th>PRO-77R PRO-77-6R</th>
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<td>Running</td>
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<td>400V/30 µ F ± 10%</td>
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<tr>
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<td>160V/315 µ F</td>
<td>250V/128 µ F ± 20%</td>
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## 4-5. EVA FAN MOTOR

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<th>PRO-26R RRO-26-2R</th>
<th>PRO-26F RRO-26-2F</th>
<th>PRO-50R PRO-50-4R</th>
<th>PRO-50F PRO-50-4F</th>
<th>PRO-77R PRO-77-6R</th>
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### 4-6. Condenser Fan Motor

<table>
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<th>Model</th>
<th>PRO-26R</th>
<th>PRO-26F</th>
<th>PRO-50R</th>
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### 4-7. EVA Defrost Heater

<table>
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<tr>
<th>Model</th>
<th>PRO-26R</th>
<th>PRO-26F</th>
<th>PRO-50R</th>
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### 4-8. Lamp Bulb

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<th>Model</th>
<th>PRO-26R</th>
<th>PRO-26F</th>
<th>PRO-50R</th>
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### 4-9. Transformer

<table>
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<th>Model</th>
<th>PRO-26R</th>
<th>PRO-26F</th>
<th>PRO-50R</th>
<th>PRO-50F</th>
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### 4-10. Main PCB

<table>
<thead>
<tr>
<th>Model</th>
<th>PRO-26R</th>
<th>PRO-26F</th>
<th>PRO-50R</th>
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</table>
5. ELECTRONIC CONTROLLER INSTRUCTION

5-1. FREEZER CONTROLLER

HOW TO USE THE PANEL

BASIC OPERATION

PRO-26F   PRO-26-2F
PRO-50F   PRO-50-4F
PRO-77F   PRO-77-6F

1. Plug in and turn on the power switch located on the bottom of the top grille right side. The Display panel will be lighted and make a beep sound. The compressor will begin to run.

2. The default temperature setting is No. “5”.

3. The compressor is automatically cycled by the electronic controller (PCB, F-Sensor).

4. The Defrost cycle is automatically controlled by the D-sensor, and the PCB.

5. Set level toward “1” for higher temperatures and toward “9” for lower temperatures.

6. The interior light is activated by the rocker switch at the bottom of the grille when the door is opened.

7. Evaporator fan motor(s) will run after all doors are completely closed.

8. Good Air Flow in freezer unit is critical.

Be careful to load product so that it neither presses against the back wall, nor reaches within four inches from the evaporator compartment.
MANUAL DEFROST

1. If you push MANUAL DEFROST button for 5 seconds, the Defrost will start.
2. During the Manual Defrost mode, the Up/Down button for the temp, control can not make the compressor cycle ON or OFF.
3. If you want to change the Manual Defrost mode to the normal mode, push MANUAL DEFROST button for 5 seconds.

UP/DOWN BUTTON (Temperature control button)

1. By pushing the up/down button, you can set the inside temperature level from ‘1’ to ‘9’.
2. If you want lower temperatures, push the Down button to be lighted higher level numbers.

DEFROST

1. The electronic defrost controller is set at the factory to provide a defrost cycle every 6 hours (4 times per a day).
2. If it is necessary to change the intervals of defrost due to unusual operating conditions, it can be accomplished by adjusting the switch which is located on the inside of the top grille.
3. Once all frost is eliminated, the temperature continues to rise until it reaches 60°F (15°C). When this temperature is sensed by the defrost limit control, the defrost control changes to refrigeration mode.
4. The panel displays “dF” during the defrost cycle.
INNER TEMPERATURE DISPLAY

1. It displays inside temperature.
2. Display range is -50°F to 50°F (-45°C ~ +10°C).
3. When inside temperature is lower than -50°F, the panel will display ‘L O’.

![Image showing 'L O']

and, higher than +50°F, the panel will show ‘HI’.

![Image showing 'HI']

FAN RUNNING INDICATOR

1. If the fan motor is running, fan running indicator will be turned on.
2. Evaporator fan motor is activated when the door (both doors for TSF-35SD, TSF-49SD, all three doors for TSF-72SD) is closed.

DOOR OPENING INDICATOR

1. If any door is opened, door opening indicator will be turned on.
2. In case that any door was opened around 30 seconds, warning beep sound will be ring three (3) times.
3. In case of passing around 1 minute, warning beep sound will be ring again five (5) times.
4. In case of passing around 5 minutes, the beep sound will be ring continuously.
5. On all the conditions good, the beep sound will stop immediately if the door closed properly.
ELECTRONIC CONTROLLER INSTRUCTION

5-2. REFRIGERATOR CONTROLLER

HOW TO USE THE PANEL

BASIC OPERATION

PRO-26R  PRO-26-2R
PRO-50R  PRO-50-4R
PRO-77R  PRO-77-6R

1. Plug in and turn on the power switch located on the bottom of the top grille right side.
   The Display panel will be lighted and make a beep sound. The compressor will begin to run.

2. The default temperature setting is No. “5”.

3. The compressor is automatically cycled by the electronic controller (PCB, D-Sensor).

4. The Defrost cycle is automatically controlled by the R-sensor and the PCB.

5. Set level toward “1” for higher temperature and toward “9” for lower temperature.

6. The interior light is activated by the rocker switch at the bottom of the grille when the door is opened.

7. Evaporator fan motor(s) will run after all doors are completely closed.
ELECTRONIC CONTROLLER INSTRUCTION

TURBO COOLING

1. If you push the T.C. (Turbo Cooling) button, the compressor will run continuously until D-Senser detect 14°F (-10°C) to bring down the temperature more quickly. (max comp run time = 120 min)

2. If you push the T.C. button again during Turbo Cooling mode, the compressor will return to the normal operation.

3. During the Turbo Cooling mode works, the temperature Up/Down button will not affect the compressor’s operation.

UP/DOWN BUTTON (Temperature control button)

1. By pushing the up/down button, you can set the inside temperature level from ‘1’ to ‘9’.

2. If you want lower temperature, push the Down button to be lighted higher level numbers.
INNER TEMPERATURE DISPLAY

1. It displays the inside temperature.
2. Display range is 14°F to 69°F (-10°C ~ +20°C).
3. When the inside temperature is lower than 14°F, the panel will display ‘L 8’.

   88

and, higher than 69°F, the panel will display ‘H 8’.

   88

FAN RUNNING INDICATOR

1. If the fan motor is running, fan running indicator will be turned on.
2. Evaporator fan motor is activated when the door (both doors for TSR-35SD, TSR-49SD, all three doors for TSR-72SD) is closed.

DOOR OPENING INDICATOR

1. If any door is opened, door opening indicator will be turned on.
2. In case that any door was opened around 30 seconds, warning beep sound will be ring three (3) times.
3. In case of passing around 1 minute, warning beep sound will be ring again five (5) times.
4. In case of passing around 5 minutes, the beep sound will be ring continuously.
5. On all the conditions good, the beep sound will stop immediately if the door closed properly.
### PARTS LIST FOR TOP MOUNT

<table>
<thead>
<tr>
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# PARTS LIST FOR TOP MOUNT

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## Evap housing

- ASSY SENSOR (R)(D)   P8F6200400  SUS304
- CLASP BODY          P998100200  SUS304
- DEFROST HEATER      P8F5300500  PVC
- DEFROST HEATER      P2F5300300  PVC
- DRAIN HOSE HEATER   P8F5300400  PVC
- DRAIN HOSE HEATER   P2F5300200  PVC
- F SENSOR            P8F6200100  PVC
- MOTOR               P8F6600100  PVC
- MOTOR               P2F6600100  PVC
- PRESSURE RELIEF AIR CAP P993200500  PVC
- PRESSURE RELIEF BODY P993200300  PVC
- PRESSURE RELIEF CAP  P993200400  PVC
- T SENSOR            P8F6200200  PVC
- THERMAL FUSE        P8F6200500  PVC
- MULLION FRAME COVER (V) P8F3100200  PVC-H
- MULLION FRAME COVER (V) P8F3100900  PVC-H
- MULLION HEATER (VER) P8F5300200  PVC
- MULLION HEATER (VER) P8R5300200  PVC
- SHELF STANDARD      P8F2700100  AL

## Insert part

- ASSY SHELF           P8F0800100  AL
- ASSY SHELF           P8F0800200  AL
- CASTER BOX ASS'Y     P8F0800300  AL
- CASTER BOX ASS'Y     P8F0800400  AL
- LAMP                 P996300100  PVC
- LAMP COVER           P993200100  PVC
- LAMP SOCKET          P996400100  PVC
- SHELF CLIP           P993200800  PVC

## Notes

## PARTS LIST FOR TOP MOUNT

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7.REPLACEMENT OF MAIN COMPONENTS

7-1. TOP GRILLE PART
A. Unscrew the screw located on both side of top grille (t) with the top grille (t) fixture.

B. Hold up the top grille (t)

C. Unscrew the screw located on both side of top grille (b).
D. Unscrew the screws located on the top grille fixture under the top grille(b).

E. Pull out the harness display pcb and harness grille door s/w located on back of top grille (b).

You can replace the door switch, mascot, key, front pcb. and front pcb. case, etc.
7-2. CONTROL BOX PART

- Power relay
- Transformer
- Main pcb

A. Disassemble top grille (t) as described section 7-1 A B.
B. Pull out all connectors connected with control box.

C. Unscrew the screws located on front of evap-housing.

D. Unscrew the screws located on elec box.
REPLACEMENT OF MAIN COMPONENTS

E. Pull out the harness main.

F. Unscrew the screws used in fixing power relay and transformer.

G. Disconnect the main pcb fixture.
   Then you can replace the power relay, transformer and main pcb.
REPLACEMENT OF MAIN COMPONENTS

7-3. REPLACE DOOR

7-3-1. REPLACE DOOR (PRO-26R, PRO-26F, PRO-50R, PRO-50F, PRO-77R, PRO-77F)
A. Disassemble top grille (t) and top grille (b) as described section 7-1.
B. Unscrew the top hinge (L).
C. Lift the door (L) and pull it out.
REPLACEMENT OF MAIN COMPONENTS

D. Replace the door with the new one. First putting the door into bottom hinge, then put top hinge shaft into the spring bar as an angle with the door for keep elasticity.

F. Screw the top hinge (L). (this process is opposite to disassemble them.)

G. Do just like above instructions in replacing the door (R).
REPLACEMENT OF MAIN COMPONENTS

7-3-2. REPLACE DOOR (PRO-26-2R, PRO-26-2F, PRO-50-4R, PRO-50-4F, PRO-77-6R, PRO-77-6F)

A. Disassemble top grille (t) and top grille (b) as described section 7-1.

C. Unscrew the top hinge (L) as 7-3-1.

D. Lift the door (T) (L) and pull it out.

E. Unscrew the middle hinge (L).
REPLACEMENT OF MAIN COMPONENTS

F. Lift the door (U) (L) and pull it out.

Then you can replace new doors and assemble them, those processes are opposite to disassemble them.

G. Do just like above instructions in replacing the door (T)(R) and the door (U)(R).
7-4. REFRIGERATION COMPARTMENT’S PART

- Lamp
- F/T-sensor and D-sensor
- Defrost heater (freezer only)
- Evaporator fan motor and fan blade

7-4-1. REPLACE LAMP

A. Unscrew the screws of lamp cover.

B. Pull out the lamp socket and lamp

You can replace the lamp now.
REPLACEMENT OF MAIN COMPONENTS

7-4-2. REPLACE F/T SENSOR AND D SENSOR (F-SENSOR IS ORANGE COLOR, T-SENSOR IS WHITE AND D-SENSOR IS BLUE)

A. Disassemble the duct cover

B. Unscrew the screws located on sensor cover and pull out the F/T-sensor from the sensor guide.

C. Open the evap. housing cover.
REPLACEMENT OF MAIN COMPONENTS

E. Disconnect the connector of ass’y sensor(R)(D) and replace the new one.

7-4-3. REPLACE THE EVAPORATOR COIL, THERMAL FUSE

A. Welding off the connection suction pipe(A) and Capillary.

B. Unscrew the screw located on front and back side of evap. housing.
REPLACEMENT OF MAIN COMPONENTS

C. Lift the evaporator up.

d. Disconnect the connectors of thermal fuse and replace the new one. (freezer only).
REPLACEMENT OF MAIN COMPONENTS

7-4-4. REPLACE THE DEFROST HEATER (FREEZER ONLY)
A. After lift the evaporator up, disconnect the connectors with harness defrost heater and disassemble the heater fix spring and split the hooks of the evap..

B. Replace the new defrost heater and fix it with heater fix spring.

7-4-5. REPLACE THE EVAPORATOR FAN MOTOR AND FAN BLADE
A. After lift the evaporator up, unscrew the screw which used in fixing motor fixture.

B. Disconnect the connectors of harness motor.
   Then you can replace the evaporator fan motor and fan blade.
REPLACEMENT OF MAIN COMPONENTS

7-5. CONDENSER UNIT

- Compressor
- Condenser coil
- Condenser fan motor
- Dryer filter
- Pressure switch

The comp. Base is located on both side of the top of the cabinet by screw, and you can replace the Compressor, Condenser coil, Condenser fan motor, ETC. on it.
REPLACEMENT OF MAIN COMPONENTS

7-6. REPLACE THE CABINET HEATER AND MULLION HEATER

A. Disassemble the liner frame cover with the and edge of ‘—’ type screwdriver. (left/right/top/bottom side)

B. Disconnect the cabinet heater and pull it out.
   You can replace the cabinet heater with the new one.

C. Assemble the liner frame cover. (left/right/top/bottom side)
D. Disassemble the mullion frame cover(v) with the and edge of ‘—’type screwdriver.

E. Unscrew the screw located on both side of the mullion.

F. Take apart the mullion out cover(v) from the mullion, then disconnect the harness mullion heater.
G. Change the old mullion heater(v) and install the new one with the gap between wires 1.2 inch.

H. Insert the mullion out cover(v) into the original position, then screw it on both side of the mullion.(this process is opposite to disassemble the mullion out cover(v) )

J. Assemble the mullion frame cover(v).(this process is as alike as assembling the liner frame cover)

K. Do just like above instructions in replacing mullion heater(h). (PRO-26-2R, PRO-26-2F, PRO-50-4R, PRO-50-4F, PRO-77-6R, PRO-77-6F only, but before replacing mullion heater(h), doors should be disassembled. )