

Technical Support Start-Up Instructions

DGX – Packaged DX (PDX)



PRE-START-UP CHECKS

- ✓ Voltage and phase match the electrical label on unit.
- ✓ Gas type and pressure match the units gas label.
- ✓ Supply fan spins freely by hand.
- ✓ VFD set to AUTO.



REQUIRED TOOLS

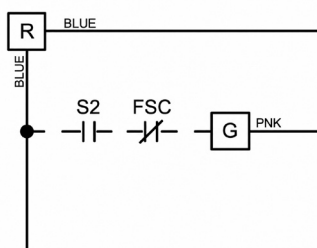
- Voltmeter
- Screwdrivers (Phillips & flathead)
- Metric hex keys
- Manometer
- Amperage Meter
- Temperature probes
- Pressure gauges & barb fittings



UNIT ENABLEMENT

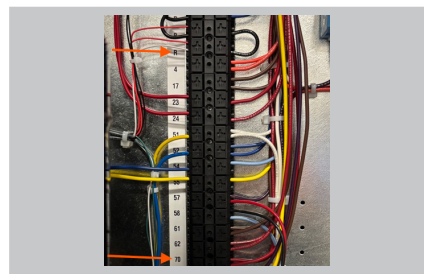
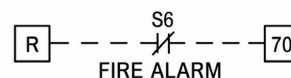
1

Close contacts: R to G and R to 70.



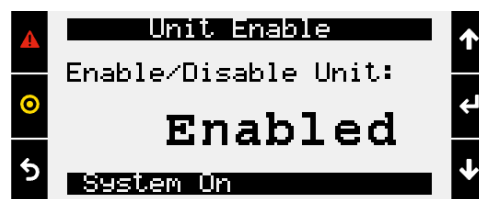
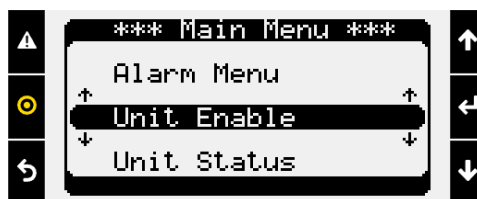
USER INTERFACE A2L BUILDING FIRE ALARM CONNECTION:
NORMAL CLOSE SWITCH OPENS ON ALARM
INSTALL JUMPER FROM TERMINALS 'R' TO '70'
IF NO FIRE DEVICES ARE INSTALLED.

REFERENCE PDX WIRING DIAGRAM IN COOLING MODULE
FOR MORE DETAILED WIRING.



2

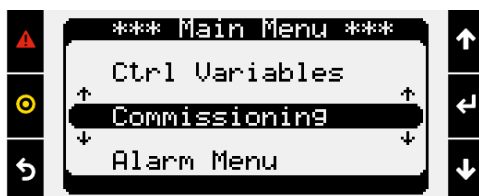
Enable via Carel controller and verify fan rotation.





CONTROLLER SETUP

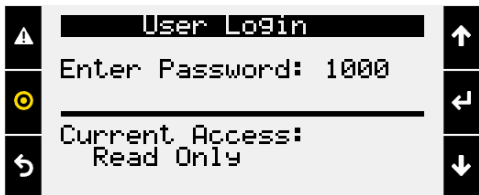
1



ENTER COMMISSIONING MENU

Navigate to the Commissioning Menu.

2



PASSWORD: 1000

Enter the password to access commissioning.

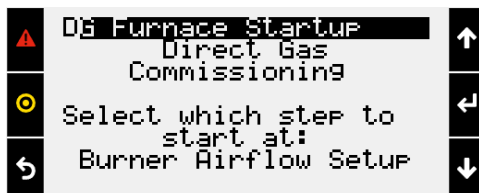
3



ACCESS DG FURNACE COMMISSION

PRESS ENTER to access DG furnace commission.

4



START BURNER AIRFLOW SETUP

Start Burner Airflow Setup and complete each step as requested.

5



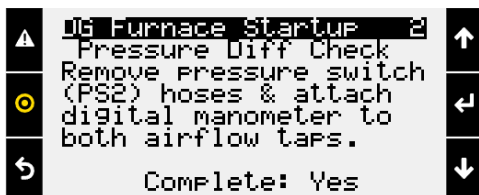
REFERENCE IOM 482886

Reference IOM 482886 for complete procedure.



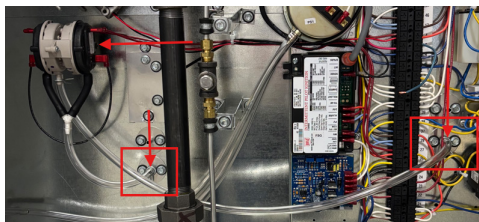
BURNER AIRFLOW SETUP

1



REMOVE PRESSURE SWITCH HOSES

Remove pressure switch hoses and attached digital manometer.



2

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DG Furnace Startup 3
Verify fan rotation &
OA damper is full open
Record burner pressure
drop at max fan speed.
Target PD: 0.5-0.8"wg
Actual PD: 0.65"wg
Complete: Yes

DG Furnace Startup 4
Measure burner
pressure differential
at minimum fan speed.
Target PD: 0.5-0.8"wg
Actual PD: 0.65"wg
Complete: Yes

```

VERIFY BURNER PRESSURE

Verify burner pressure is between 0.5 and 0.8 "wc. for both max and min fan speed. (The ideal differential is going to be 0.65 "wc.)

3

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DG Furnace Startup 12
Remove manometer from
pressure taps. Replace
pressure switch hoses.
Complete: Yes
Or press ESC to skip
burner gas setup.

```

REMOVE MANOMETER

Remove manometer from pressure taps and replace with pressure switch hoses. Continue to burner gas set up.



GAS SETUP

1

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DG Furnace Startup 14
Verify burner safety
components settings.
High limit(HLC1):160°F
Optional:
High Gas Press Sw:8"wg
Low Gas Press Sw:3"wg
Complete: Yes

```

VERIFY HIGH LIMIT

Verify HLC1 (high limit) is set to 160.

2

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DG Furnace Startup 15
Do values match gas
ratings label on unit?
Gas type: Natural
Max gas press: 0.0psi
Min for Max: 0.0"wg
Temp Rise: 0°F
Complete: Yes

```

VERIFY GAS TYPE

Verify gas type, pressure, and temp rise matches the unit's gas label provided.

3

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DG Furnace Startup 16
Connect manometer to
inlet gas pressure tap
Select UoM: "wg
Inlet Gas Pressure:
12.0"wg
Complete: Yes

```

CONNECT MANOMETER

Connect manometer to inlet gas pressure tap and record inlet gas pressure.

4

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DG Furnace Startup 19
Verify Ignition Type
Baso 120V
Complete: Yes

```

IGNITION VERIFICATION

Verify the ignition type on the unit.



PILOT GAS & OPERATION

1

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06 Furnace Startup 20
Connect manometer to
Pilot Gas Pressure tap
Zero manometer with
fan operating at 100%
Complete: Yes
  
```

CONNECT MANOMETER

Connect manometer to pilot gas pressure tap and zero the meter at 100% fan speed.

2

```

06 Furnace Startup 21
Burner is enabled. If
burner failed to light
purge gas line and
reset alarm to begin
another trial.
Reset Alarm: No
Is burner lit? Yes
  
```

VERIFY IGNITION

At this point, burner should be enabled. If the burner fails to light, purge the gas line and reset the alarm to begin another trial.

3

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06 Furnace Startup 23
Zero manometer with
fan on. Verify Pilot
Gas Pressure and
adjust if necessary.
Target: 1.5 - 3.0"wg
Actual: 2.0"wg
Complete: Yes
  
```

ZERO MANOMETER

Zero manometer, verify pilot gas pressure is between 1.5 and 3 "wc. Once this is done, you can remove the manometer.

4

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06 Furnace Startup 25
High Fire Verification
Adjust high fire to
achieve designed temp.
Watch for high limit.
Designed: 0°F
Actual: 2°F
Complete: Yes
  
```

HIGH FIRE CHECK

Confirm that unit reached designed temp rise.

5

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06 Furnace Startup 26
Adjust low fire
setting to achieve
small, even blue
ribbon across length
of burner.
OAT: 69°F >> SAT: 71°F
Complete: Yes
  
```

LOW FIRE ADJUSTMENT

Adjust Low fire setting on the modulating valve in the unit so there is a small, even blue ribbon across the burner. This can be verified by looking through the sight glass provided on the unit.

6

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06 Furnace Startup 27
Verify/Adjust unit
temperature setpoints
Temp Setpoint: 72.0°F
Heating Lockout: 120.0°F
Complete: Yes
  
```

SETPOINTS

Verify/adjust unit temp setpoints.

This completes the direct gas commissioning.



COOLING SETUP

1

INSTALL P-TRAP KIT

Install the P-trap kit that was shipped loose with the unit, following the provided installation instructions.

2

CONNECT GAUGE

Connect a gauge set to the service ports identified by the red A2L warning labels.

3



ENABLE COOLING

To enable cooling, access the Overrides menu in the controller and locate the Cooling Override setting. Override only one compressor at a time. The outdoor ambient temperature must be 65°F (18°C) or higher. If the temperature is below 65°F, accurate readings may not be obtained, and the cooling system may require recommissioning at a later date.



COOLING SETUP (cont.)

▲	Unit On Off	↑
	Override: Manual	←
●	Value: On	→
↶		↓
▲	Compressor Request	↑
	Override: Manual	←
●	1: On 2: Off	→
↶		↓
▲	Compressor Signal	↑
	Override: Manual	←
●	1: 100%	→
↶		↓
▲	Cooling Ramp	↑
	Override: Manual	←
●	Demand: 100%	→
↶		↓

4

STABILIZE THE REFRIGERATING SYSTEM

Leave the system at the factory refrigerant charge and allow the compressor to operate for 10–15 minutes before recording subcooling and superheat values. For units equipped with a hot gas bypass system, close the hot gas bypass ball valve and allow the system to run for 10–15 minutes before taking measurements.

5

VERIFY AND ADJUST SUBCOOLING

Verify that subcooling is between 6°F and 8°F. If subcooling is above this range, remove refrigerant. If subcooling is below this range, add refrigerant as needed. Any change to the refrigerant charge must be documented by updating the charge label located inside the compressor control cabinet.

Note: This unit utilizes a micro channel condenser coil. Excessive refrigerant charge resulting in subcooling above 15°F may cause nuisance high-pressure trips.

6

VERIFY AND ADJUST SUPERHEAT

Verify that superheat is between 8°F and 14°F. If adjustment is required, use a hex key to adjust the TXV spring adjustment screw. Turn the screw clockwise to increase superheat and counterclockwise to decrease superheat.

7

COMPLETE COOLING START-UP

Once subcooling and superheat are within the specified ranges, cooling start-up is complete. If the hot gas bypass ball valve was closed during start-up, reopen the valve before returning the unit to normal operation.