

Chinook ELECTRIC FURNACE

🗥 WARNING

- Never tamper with the unit or its controls. User MUST contact a specialized contractor when a failure occurs. DO NOT ATTEMPT to repair.
- When using a humidifier make sure not to damage the heating element bank.
- We recommend that your unit be inspected by a specialized technician once a year.
- Poor maintenance of air filters OR an unbalanced static pressure may result in a performance decrease.
- Always use genuine parts for maintenance or service call. The use of unbranded parts will void the warranty.
- The use of this unit without an air distribution duct will void the warranty.
- It is strictly forbidden to use jumpers to simulate heat demand.
- Risk of electrical shock. Disconnect power before installation, servicing, maintenance or field wiring. Replace all panels before operating. Failure to do so can result in electrical shock causing severe injuries or death.
- When performing installation, servicing or cleaning the unit, it is recommended to wear safety glasses and gloves.
- To assure a proper performance of your furnace, we recommend that you use high quality name brand thermostats.
- When applicable local regulation comprises more restrictive installation and/or certification requirements, the aforementioned requirements prevail on those of this document and the installer agrees to conform to these at his own expenses.
- For your safety, do not store or use gasoline or other flammable liquids and vapors in the vicinity of this unit or any other appliance.
- These instructions are intended to be use by qualified personnel who have been trained in installing this type of furnace. Installation of this furnace by an unqualified person may lead to equipment damage and/or hazardous condition which may lead to bodily harm.

- This furnace is not watertight and is not designed for outdoor installation. This furnace shall be installed in such a manner as to protect its electrical components from water. Outdoor installation leads to a hazardous electrical condition and to premature furnace failure, thus voiding the warranty.
- Do not block the combustion air openings in the furnace. Any blockage will result in improper overheat situation and may result in a fire hazard and/or cause bodily harm.
- The unit must have an uninterrupted or unbroken electrical ground to minimize personal injury if an electrical fault should occur. When performing electrical connection, the ground conductor must be firmly attached to the ground lug in the furnace.
- Do not use this furnace as a construction heater. Use of this furnace as a construction heater exposes the furnace to abnormal conditions, contaminated combustion air and the lack of air filters. Failure to follow this warning can lead to premature furnace failure and/or vent failure which could result in a fire hazard and/or bodily harm.
- The owner and/or the user is responsible of the following: Always maintain the immediate surrounding of the furnace free from combustible and highly flammables materials. The furnace ambient air should not have an excessive dust concentration and humidity. Never operate this central heating appliance without an air filter.
- Before performing any service functions, unless operations specifically require the power to be on, make sure all utilities are turned "OFF" upstream of the appliance. Failure to comply with this warning will cause a fire hazard and/or bodily harm.
- All questions regarding the operation, maintenance or warranty of this unit should be addressed to the company where this product has been sold from.

CAUTION

- Never burn garbage or paper in the heating system and never leave rags or paper around the unit.
- Return air grilles and warm air registers must not be obstructed.

IMPORTANT: All local and national code requirements governing the electrical installation heating equipment, wiring and flue connections must be followed. Some of the codes that may be applicable are: ANSI/NFPA 70 NATIONAL ELECTRICAL CODE CSA C22.1 CANADIAN ELECTRICAL CODE Only the latest issues of the above codes should be used, and are available from either: The National Fire Protection Agency Batterymarch Park Qunicy, MA 02269 IMPORTANT: READ AND SAVE THESE INSTRUCTIONS.

180, 3° Avenue, L'Islet (Québec) GOR 2C0 CANADA Tel.: 418-247-3947 • Fax: 418-247-7801 www.ouellet.com

INSTALLATION AND OPERATING INSTRUCTIONS

This furnace has been designed and manufactured to give the most reliable performance possible. Each unit has been given a running inspection before shipment to assure that every component is operating efficiently.

The safe and dependable operation of the furnace depends upon proper installation and compliance with all national and local codes and standards.



GENERAL REQUIREMENTS AND SPECIFICATIONS

CAUTION

This unit must be installed in a dry place, in a non-corrosive, well-ventilated environment, without excessive dust. The ambient temperature must be over 10°C and under 27°C. If the ambient temperature is 10°C or less, the plenum must be insulated on 10 ft linear minimum length.

- 1. LOCATION The furnace should be centrally located to the heating area.
- 2. POSITIONS It can be installed for vertical, horizontal or downflow operation. When installed horizontally, the furnace should be positioned such as the door will not end up being on the top. The door should be on the side of the furnace, to ensure that the motor bearings are in their designed position. In vertical downflow installations, use only "L"- or "T"-shaped plenum with no openings or registers directly below furnace.
- INSTALLATION CLEARANCES As shipped from the factory, each unit is approved for "zero inch" clearance. If additional clearance is required, it will be indicated on the data label attached to the furnace.
- 4. TEMPERATURE RISE Furnaces are shipped to operate at 0.20" (5 mm) W.C. (50 Pa) external static pressure. They are certified for operation up to 0.50" (13 mm) W.C. (125 Pa). <u>Check</u> <u>the following page for temperature rise table on specification</u> <u>chart</u> and, if necessary, adjust the unit to match.
- 5. SERVICE CLEARANCE Units are serviced from the FRONT. Leave at least 24" (610 mm) clearance in front of the door.

GENERAL REQUIREMENTS AND SPECIFICATIONS (CONT'D)

240 VOLTS – SINGLE PHASE								TEMP. RISE @ 0.20 IN. W.C.			
MODEL NO.	KW	BTUH	AMPS INCL. MOTOR	HP	BLOWER	°C	°F	*SPEED	RPM		
OFO10000	10	34120	46	1/3		21	70	MED-LOW	814		
OFO15000	15	51180	67	1/3		24	75	MED-LOW	814		
OFO18000	18	61420	77	1/3	10" x 8"	27	81	MED-LOW	814		
OFO20000	20	68240	86	1/3	(254 mm x 203 mm)	33	91	MED-LOW	814		
OFO23000	22.5	76770	94	1/3		36	97	MED-LOW	814		
OFO25000	25	85300	107	1/3		37	99	MED-LOW	814		
OFO27000	27	92130	116	3/4	12" x 8" (304 mm x 203 mm)	36	97	MED-HI	707		

*FACTORY SETTINGS. SUBJECT TO CHANGE WITHOUT NOTICE.

10" x 8" (254 mm x 203 mm) BLOWER							12" x 8" (304 x 203 mm) BLOWER							
SPEED	FLOW RATE	STATIC PRESSURE (INCHES OF WATER COLUMN)						SPEED	FLOW RATE	STATIC PRESSURE (INCHES OF WATER COLUMN)				
		0.2	0.3	0.4	0.5	0.6	1			0.2	0.3	0.4	0.5	0.6
LOW**	CFM L/s	756 357	749 353	740 349	729 344	713 337	İ	LOW**	CFM L/s	727 343	699 330	667 315	636 300	606 286
MED-LOW	CFM L/s	1035 488	1018 480	997 470	971 458	935 441		MED-LOW**	CFM L/s	912 431	897 423	878 414	853 402	823 388
MED-HIGH	CFM L/s	1177 556	1157 546	1132 534	1102 520	1063 502		MED-HIGH	CFM L/s	1216 574	1200 566	1181 557	1157 546	1129 533
HIGH	CFM L/s	1301 614	1276 602	1247 588	1207 569	1145 540		HIGH	CFM L/s	1640 774	1601 755	1558 735	1513 714	1466 692

WARNING:

**These speeds can only be run with heater off, for cooling/ventilation purposes only.

OPERATING OPTIONS

The furnace is shipped from the factory in a "Standard Heating Mode" (narrow switches in the Down position, wide switch in the Middle — or Off — position). When the thermostat calls for heat, the automatic controls will be activated and the furnace turns "ON". The blower will run at low speed or higher speed (as selected by

Speed Selector switch). As the furnace heats up, it automatically switches to a medium



SPEED SELECTOR

The Speed Selector switch is used to control the fan speed. It is also used in conjunction with the Continuous Speed switch.

"Low" – The blower motor will operate at low speed.

"High" – The blower motor will operate at a higher speed.



SEASON SELECT

During spring or fall, you may require less rapid response when the thermostat calls for heat.

When "Mild" is selected, it takes more time to bring all the elements online.

When "Cold" is selected, the heating elements come online faster.

speed when additional elements are activated by the electronic control, if it was initially set to run at low speed. The timing of this blower speed change will depend on whether "Cold" or "Mild" is selected on the Season Select switch.

You may, however, change from the Standard Heating Mode by using the controls built into your furnace.



CONTINUOUS SPEED

When the "Low Heat" switch is selected only one element will offer continuous warmth. The blower will run continuously at either Low or High speed as selected by the Speed Selector switch.

When "No Heat" is selected the blower will run continuously at either Low or High speed as selected by the Speed Selector switch.

When "OFF" is selected the blower is not engaged.

1. COLD AIR RETURN

The duct can be attached to either side, rear or the bottom of the furnace.

For side return there are four $1\frac{1}{2}$ " (38 mm) knockouts which can be removed and used as an outline for cutting a 18" x 18" (457 mm x 457 mm) return air opening in the furnace left or right side. Mount the filter frame to the furnace over the opening with the open side of the frame facing front. Then attach the 19" x 19" (483 mm x 483 mm) air duct to the flanges on the filter frame. For bottom mounting, remove the screws holding the bottom plate to the furnace, discard the bottom plate and attach the filter frame to the bottom flanges with the open side of the frame facing front.

2. ELECTRICAL WIRING - POWER SUPPLY

The furnaces are completely factory wired. From a separate breaker, a two-wire plus ground supply wire is required. The ground conductor must be firmly attached to the ground lug in the furnace and the supply wires to the terminal block in the furnace.

NOTE: If a OFYO-120 kit will be used to supply an air cleaner and/or humidifier, a third (neutral) conductor must be brought into the furnace.

All wiring must conform to the latest editions of the Canadian Electrical Code and local codes. Copper or aluminum wire of the appropriate size may be used.

3. CONNECTING AND ADJUSTING THE LOW VOLTAGE THERMOSTAT

(Use only class 1 wires inside furnace compartments.)

Attach thermostat wires to the low voltage terminal connections located on the printed circuit board inside the furnace. Follow the diagrams supplied with the thermostat. As a general guide, remember that the R & W terminals control single stage heating; the R & Y terminals control cooling. Single stage cooling uses "Y/Y2" as first and only stage.

Two-stage cooling uses "Y1" as first stage and "Y/Y2" as second stage. Make sure the thermostat is levelled on the wall and in appropriate location as per instructions supplied with the thermostat.

CAUTION

Before turning the furnace on, the heat anticipator in the thermostat must be properly set to prevent its failure and to assure comfortable, economical heating.

Because each installation is different an accurate reading of the current draw should be made with an AC meter. Set the meter at a 2 A range.

- A. Set the anticipator at its highest setting.
- B. Disconnect the "W1" thermostat wire from the furnace low voltage terminal connections.
- C. Connect the AC meter between the "W1" terminal on the board and the loose "W1" wire.
- D. Turn the thermostat up to start the furnace and allow it to run, with all elements on, for three or four minutes.
- E. Read the current draw on the meter and reset the anticipator to match the meter reading.

FOR USE IN MOBILE HOMES

Chinook furnaces 10, 15, 18 and 20 kW models are certified for "L" -shape and "T"-shape shallow duct installation with model OFYOR-SO sub-base in downflow applications when the supply air ducts pass through the floor of the structure. Recommended size of a floor opening: 14¼" x 14¼" (362 mm x 362 mm). The duct system must be designed so that the external static pressure of the system does not exceed the maximum external static pressure of 0.50" (13 mm) W.C. (125 Pa).

SHALLOW DUCT AREA REQUIREMENTS Duct Depth Duct Width 4" (102 mm) 16" (406 mm) 5" (127 mm) 13" (330 mm)

10" (254 mm)

6" (152 mm)

1. TWO-STAGE OR OUTDOOR THERMOSTAT

(The "Season Select" switch must be in the "Mild" position). Follow the directions supplied with the two-stage or outdoor thermostat in conjunction with the furnace wiring diagram. When used, the furnace will supply heat as follows:

Mild "ON" (First Stage)	Cold "ON" (Second Stage)
Slow Response Sequence	Rapid Response Sequence
Element 1 - Heat on instantly	Element 1 - Heat on instantly
Blower on after 3 seconds delay	Blower on after a 3 seconds delay
Elements 3 and 5 after 1 minute delay	Elements 3 and 5 after 10 seconds delay
Element 2 after 2 minutes delay	Element 2 after 20 seconds delay
Elements 4 and 6 after 3-minute delay	Elements 4 and 6 after 30 seconds delay

NOTE: Elements 4, 5 and 6 only where applicable.

2. AIR CONDITIONING

Your furnace is equipped with all the controls required for the addition of air conditioning (except the heat-cool thermostat).

The evaporator coil may be installed by a local contractor in sheet metal plenum of his own manufacture. The coil should be located: Centered over the "chimney" of the furnace 4" (102 mm) to 6" (152 mm) above the top of the furnace.

Make sure no air is allowed to bypass the cooling coil during cooling operation. If the discharge opening is a great deal larger than the coil, and the ductwork is correspondingly larger than the coil, you may want to use a bypass damper for heating. The damper would be closed in summer, directing all air flow through the coil. In winter the damper would be open to allow air to bypass the coil.

Typical air-conditioning field wiring connections are shown in the following diagram:



WIRING COLOR CODES								
С	G	R	W1	W2	Y			
COMMON	GREEN	RED	WHITE	WHITE (BLUE OPTIONAL)	YELLOW			

3. ELECTRONIC AIR CLEANERS AND/OR POWERED FURNACE HUMIDIFIERS

These units operate at 120 V. Your 240 V furnace is designed so that Model OFYO-120 adaptor kit can be mounted inside the furnace to supply the required 120 V. Instructions for mounting and wiring are included with the kit.

4. WOOD ELECTRIC COMBINATION

When the electric furnace is used in combination with a wood burning furnace, connect the thermostat of the wood burning furnace across LOW VOLTAGE TERMINALS R and G. The thermostat in the wood burning furnace will then turn on automatically the blower in the electric furnace.

MAINTENANCE

MOTOR: The motor is lubricated for life and needs no oiling.

- FILTERS: Size is 20" x 20" x 1" (508 mm x 508 mm x 25 mm). Should be inspected and replaced when dirty. Ordinarily replacement is required twice per heating season and, perhaps, a third time if continuous blower operation is used.
- **NOTE:** Each element has an automatic reset thermal cut-out which is set to open at 160°F (71°C). If it opens, the element will be de-energized until the cut-out resets itself. In addition to that, there are 2 manual reset thermal cut-outs that open at 200°F (93°C). If any of them open, a front panel needs to be removed so the cut-out can be manually reset.

WARNING

Cut 240 V supply before removing the front panel!

The reason for the failure should be investigated before re-starting the furnace. The limit usually opens when airflow is reduced because of blocked ductwork or very dirty filters.



REPLACEMENT PARTS						
KEY NO.	PART NO.	DESCRIPTION				
1	30270032	Automatic Limit				
2	30030006	Season Select Switch				
3	30030025	Speed Selector Switch				
4	30030368	Continuous Speed Switch				
5	30280021	Thermostat Indicator Light				
6a	10941203	Motor 1/3 HP (10, 15, 18, 20, 22.5 and 25 kW models)				
6b	10941288	Motor 3/4 HP (27 kW model)				
7	30390553	Blower Wheel 12" x 8" (305 mm x 203 mm)				
8a	30270038	Motor Capacitor (10, 15, 18, 20 and 25 kW models)				
8b	30271114	Motor Capacitor (27 kW model)				
9	10940080	Element Assembly 5000 W, 240 V				
10	10940081	Element Assembly 4500 W, 240 V				
11	30274131	20 A Relay				
12	30274132	30 A Relay				
13	30280020	Manual Reset Limit				
14	624663	Electronic Control (PC Board)				
15	30300022	Transformer 240 V				
16	30010010	Fiberglass Filter 20" x 20" x 1" (508 mm x 508 mm x 25 mm)				
17a	10941149	Blower Assembly 10" x 8"				
17b	10941221	Blower Assembly 12" x 8"				
18*	624664	Daughterboard (22.5, 25 and 27 kW models only)				
19*	30274183	24 VAC, Relay, 30 A				

* Item not shown.

⚠ WARNING

Risk of electrical shock. Disconnect power before installation, servicing, maintenance or field wiring. Replace all panels before operating. Failure to do so can result in electrical shock causing severe injuries or death.





For the use of a two-stage heat thermostat or an outdoor thermostat, connect between W1and W2. Make sure that the Season Select switch is set to the Mild Position.

Heat

Neutral

Terminal Block

Transformer Class 2

240V Line Supply



A WARNING

Risk of electrical shock. Disconnect power before installation, servicing, maintenance or field wiring. Replace all panels before operating. Failure to do so can result in electrical shock causing severe injuries or death.



🗥 WARNING

Risk of electrical shock. Disconnect power before installation, servicing, maintenance or field wiring. Replace all panels before operating. Failure to do so can result in electrical shock causing severe injuries or death.



The first step in identifying an operational problem is to determine whether the fault is in the furnace or in the thermostat and/or its connecting wiring.

To help make this determination, the furnace is equipped with a "Thermostat ON" diagnostic light. If the light is "ON", it indicates the thermostat has closed and is calling for heat; the blower should be running. If the light is "OFF", the furnace should not be operating (unless the Continuous Speed switch is set to run the motor continuously).

1. If the furnace will not start:

Turn the thermostat to its highest setting. If the light goes on, the thermostat has closed, so the fault is in the furnace. If the light does not go on, the thermostat or its connecting wiring is the problem.

2. If the furnace will not turn off:

Turn the thermostat to its lowest setting. If the light goes off and the furnace continues to run, the thermostat has opened properly and the fault is in the furnace. If the light stays on, the fault is in the thermostat or its connecting wiring.

After the fault area is isolated by use of the diagnostic light, a check of the following components can be made more efficiently.

PROBLEM	POSSIBLE DEFECTIVE PARTS OR COMPONENTS
1. The furnace will not turn on	 Thermostat Circuit breaker or fuse is open Motor or capacitor Fan control switch Electronic control Transformer
2. Motor runs continuously	 Continuous Speed switch is not on "Off" position Thermostat wires incorrectly attached to furnace
3. Elements on, but motor does not run	Motor or capacitorElectronic control
 Motor going on and off in short cycles (or in too long cycles) 	 Heat anticipator in thermostat incorrectly set or may be defective
5. Must set thermostat much higher (or lower) than the desired house temperature	 Thermostat is not leveled or out of calibration
6. Not enough heat	 One or more defective elements or relays Season Select switch in "Mild" position Safety limits opening because duct obstruction or dirty filters are restricting air flow Defective or incorrectly wired two-stage or outdoor thermostat Lack of enough cold air returns in house
7. Two-stage or outdoor thermostat not operating properly	Season Select switch not in "Mild" position

LIMITED WARRANTY TO OWNER

The warranties herein set forth are in lieu of all other warranties expressed or implied and shall not apply to any accessory not part of the product. Ouellet Canada Inc., warrants its products to the owner against defects in material and workmanship for a sixty (60) month period under normal use and services following date of purchase when proof of such is provided to seller.

The obligation of Ouellet Canada Inc., under the terms of this warranty, shall be to supply a new part, or the repair of a defective part at the company's option with no cost to owner for the new or repaired part. Such parts are to be returned to the factory, or such other location as the company may designate at the owner's expense. This warranty does not obligate Ouellet Canada Inc. to bear the cost of labor in replacing any assembly, unit or component part thereof, nor does the company assume any liability for secondary charges, expenses for installing or removal, or any other consequential losses, freight or damages.

IN CASE OF PRODUCT FAILURE

It shall be the obligation of the owner or contractor to furnish to the company, within the designated warranty period the following information :

- 1. Model Number and serial number of product involved.
- 2. Complete description of the problem encountered with product.