

Up to 85% Hi-Boy, Lo-Boy & Counterflow Oil Furnaces with ECM Variable Speed Blower Motors



Hi-Boy



Lo-Boy



Counterflow

Standard Engineered Features



Combustion Chamber and Burner Mounting System

Enables dealer to remove the entire assembly to inspect the combustion chamber and ensure proper burner alignment.

Plug-In Connectors

Promote easy maintenance and service of burner and blower motors.

Heat Exchanger

Heavy 12 and 14 gauge steel construction has proven to be a superior design, with precision welding and the advantage of 4 easily accessible cleanout ports. Full front opening permits easy one-piece combustion chamber replacement.



Limited Lifetime Warranty.

Pyrolite Combustion Chamber

Sound absorbing, high temperature fiber provides faster heat build-up in heat exchanger for greater efficiency and quieter operation.



Beckett Flame Retention Oil Burner

- PSC motor for higher and more reliable static pressure.
- Electronic ignitor for more reliable ignition, especially with cold oil.
- Beckett CleanCut™ fuel pump with integrated solenoid for positive shut-off.
- Beckett GeniSys™ 7505B Advanced Burner Control — 15-second lockout, 15-second prepurge, interrupted duty, limited recycle, limited reset and cad cell diagnostics.

ECM 2.3 Variable Speed Blower Motors

High efficiency motors provide constant airflow delivery up to 0.50" ESP and are compatible with high efficiency A/C and HP systems including 2-stage.

ECM Blower Motor Control Board

Provides selectable heating and cooling airflow rates to match system requirements, selectable heating blower ON/OFF delay options, humidifier 115V line voltage output terminal, and 3A fuse for 24V transformer circuit.

Blower Door Safety Interlock Switch

Prevents system operation during inspection or maintenance.

Barometric Control

A high quality draft control is included with each furnace.

Secondary Limit Control

Line break limit operates above primary limit control setpoint for extra safety.

Galvanized 20 Gauge Zinc Coated Steel Cabinet

Cleaned, rinsed, sealed and dried before the polyurethane primer is applied. The cabinet is handsomely finished with a baked on textured enamel which allows it to withstand 1000 hours of salt spray exposure.

Fiberglass Insulation

Extra thick to retain internal heat, keep cabinet cool and effectively quiet operating sounds.

Air Filtration

Hi-Boy - External filter and filter rack available as field installed option.

Lo-Boy - High efficiency 1" pleated standard size filters are included and accessible by easy removal of access panel.

Counterflow - Field installed filter kit is available.

Flue Connection

Multi-position flue box allows connection out top or either side.

Utility Connections

Both oil and electrical connections can come in from either side.

Combustion Air Compatible

Designed for easy installation of an outdoor air combustion air boot (field supplied).

Sidewall Vent Compatible

Suitable for use with sidewall venting system (field supplied)

Full Length Vestibule

Interior burner and control compartment is entire height of furnace for easy access.

40VA Transformer

Combines with heat/cool blower relay to accommodate the addition of an optional air conditioning unit.

Warranty-Plus Program

5-year parts warranty standard on all FL, FH and FC ECM furnaces. Limited Lifetime Warranty on heat exchanger. 10-year parts warranty if registered online within 90 days at www.bardhvac.com



Intertek



• Intertek ETL Listed to Standard for Safety of Oil-Fired Furnaces UL 727 – Ninth Edition, dated April 7, 2006.

Specifications

Model Number	Flue Location	Beckett Burner Type	Nozzle		Input Btuh	① Heating Capacity	① AFUE	② Heating CFM 0 - 0.50" ESP	Temp Rise Range	③ Cooling CFM Range 0 - 0.50" ESP	Dimensions (inches)			Shipping Weight (Lbs.)		
			Size	Type							Pump Pressure	Furnace Casing HxWxD	Warm Air Supply		Cold Air Return	Flue Dia.
													WxD			
Hi-Boy																
FH085V42A	Front		0.75*		105,000	87,000		1075	60-90	575 - 1400	53 x 23 x 30½	22 x 20	16 x 19¼	6	265	
FH085V42A	Front	AFG	0.65	70° Hollow	91,000	76,000	83.0	930	60-90	575 - 1400	53 x 23 x 30½	22 x 20	16 x 19¼	6	265	
FH085V42A	Front		0.55		77,000	64,000		790	60-90	575 - 1400	53 x 23 x 30½	22 x 20	16 x 19¼	6	265	
FH110V48A	Front		0.85*	60° Solid	140,000	116,000	83.0	1280	60-90	725 - 1600	59 x 23 x 30½	22 x 20	16 x 19¼	6	300	
FH110V48A	Front	NX	0.75		119,000	99,000		1060	60-90	725 - 1600	59 x 23 x 30½	22 x 20	16 x 19¼	6	300	
Lo-Boy																
FLF075V42A	Front		0.50*	60° Solid	91,000	77,000	85.0	1035	60-90	575 - 1400	36-5/8 x 23 x 48-1/8	22 x 20	22 x 14	6	275	
FLR075V42A	Rear	NX	0.50*	60° Solid	91,000	77,000	85.0	1035	60-90	575 - 1400	36-5/8 x 23 x 48-1/8	22 x 20	22 x 14	6	275	
FLF110V48A	Front		0.85*	60° Solid	140,000	116,000	83.0	1280	60-90	725 - 1600	40-5/8 x 23 x 48-1/8	22 x 20	22 x 14	6	310	
FLF110V48A	Front	NX	0.75		119,000	99,000		1060	60-90	725 - 1600	40-5/8 x 23 x 48-1/8	22 x 20	22 x 14	6	310	
FLR100V48A	Rear	NX	0.75*	60° Solid	119,000	101,000	85.0	1225	60-90	725 - 1600	40-5/8 x 23 x 48-1/8	22 x 20	22 x 14	6	310	
FLR130V60A	Rear	NX	0.85*	60° Solid	154,000	130,000	85.0	1790	60-90	850 - 2000	47-5/8 x 26 x 50¼	25 x 20	25 x 16	6	365	
Counterflow																
FC085V42A	Front		0.75*		105,000	89,000		1035	60-90	575 - 1400	54 x 23 x 28½	18 x 19	22 x 20	6	260	
FC085V42A	Front	AFG	0.65	70° Hollow	91,000	77,000	85.0	930	60-90	575 - 1400	54 x 23 x 28½	18 x 19	22 x 20	6	260	
FC085V42A	Front		0.55		77,000	65,000		790	60-90	575 - 1400	54 x 23 x 28½	18 x 19	22 x 20	6	260	

* Factory installed standard nozzle size. All other firing rates (nozzle sizes) shown for FH085, FH110, FLF110 and FC085 are field installed options.

① Heating capacity and Annual Fuel Utilization Efficiency based upon U.S. Government standard tests using D.O.E. isolated combustion rating procedure.

② Factory set to CFM required for approximate mid-rise range for factory standard highest input. Refer to Heating Tap Select Settings on Page 3.

③ Cooling CFM is factory set to the highest CFM for each model. Refer to Cooling Tap Select Settings on Page 3 for other selections.

Electrical Ratings

Model Number	Volts	Hz	Phase	Total Unit Amps	Blower Motor		Burner Motor		Minimum Circuit Ampacity	Max. Time Delay Fuse or HACR Circuit Breaker
					HP	FLA	HP	FLA		
Hi-Boy										
FH085V42	115	60	1	8.6	1/2	6.9	1/7	1.7	10.3	15
FH110V48	115	60	1	10.3	3/4	8.6	1/7	1.7	12.5	15
Lo-Boy										
FLF075V42, FLR075V42	115	60	1	8.6	1/2	6.9	1/7	1.7	10.3	15
FLF110V48, FLR100V48	115	60	1	10.3	3/4	8.6	1/7	1.7	12.5	15
FLR130V60	115	60	1	14.5	1	12.8	1/7	1.7	17.7	20
Counterflow										
FC085V42	115	60	1	8.6	1/2	6.9	1/7	1.7	10.3	15

HEATING AIRFLOW TAP SELECT SETTINGS BY MODEL

Model	GPH Input	Pump Pressure PSIG	Tap Letter	Switch #1	Switch #2	Heating CFM (0" - 0.5" E.S.P.)
FH085V42A	0.75	100	A	OFF	OFF	1075
			B	ON	OFF	1035
	0.65	100	C	OFF	ON	930
			D	ON	ON	790
FC085V42A	0.75	100	A	OFF	OFF	1075
			B	ON	OFF	1035
	0.65	100	C	OFF	ON	930
			D	ON	ON	790
FLF075V42A FLR075V42A	0.50	175	A	OFF	OFF	1075
			B	ON	OFF	1035
			C	OFF	ON	930
			D	ON	ON	790
FH110V48A FLF110V48A	0.85	150	A	OFF	OFF	1280
			B	ON	OFF	1225
	0.75	150	C	OFF	ON	1060
			D	ON	ON	1060
FLR100V48A	0.75	150	A	OFF	OFF	1280
			B	ON	OFF	1225
			C	OFF	ON	1060
			D	ON	ON	1060
FLR130V60A	0.85	175	A	OFF	OFF	1860
			B	ON	OFF	1790
			C	OFF	ON	1645
			D	ON	ON	1645

**Shaded Info. is
FACTORY
SETTING**

COOLING TAP SELECT SETTINGS BY MODEL

Model	Tap Letter	Switch #1	Switch #2	Nominal Cooling Tonnage	COLUMN A	COLUMN B	COLUMN C
					Cooling Full Load CFM (0" - 0.5" E.S.P.)	Cooling Part Load CFM (0" - 0.5" E.S.P.)	Blower Only "G" Terminal
FC085V42A FH085V42A FLF075V42A FLR075V42A	A	OFF	OFF	3.5	1400	1000	700
	B	ON	OFF	3	1200	850	600
	C	OFF	ON	2.5	1000	725	500
	D	ON	ON	2	800	575	400
FH110V48A FLF110V48A FLR100V48A	A	OFF	OFF	4	1600	1150	800
	B	ON	OFF	3.5	1400	1000	700
	C	OFF	ON	3	1200	850	600
	D	ON	ON	2.5	1000	725	500
FLR130V60A	A	OFF	OFF	5	2000	1450	1000
	B	ON	OFF	4	1600	1150	800
	C	OFF	ON	3.5	1400	1000	700
	D	ON	ON	3	1200	850	600

Note: Part Load Airflow for 2-stage A/C or HP systems is achieved when removing the factory installed jumper wire on the Electronic Blower Control Interface Board that is (installed) between the thermostat connection screws "Y2" and "Y1" dependent upon the tap selected. This allows for 2-stage A/C or HP systems to be installed with this product. (See Figure(s) or the Wiring Diagrams.)

For 1-stage compressor systems requiring lower airflow than shown in Column A, remove "Y1-Y2" jumper to achieve Column B airflow delivery.

Hi-Boy Models - Dimensions and Clearances

Dimensions (Inches)

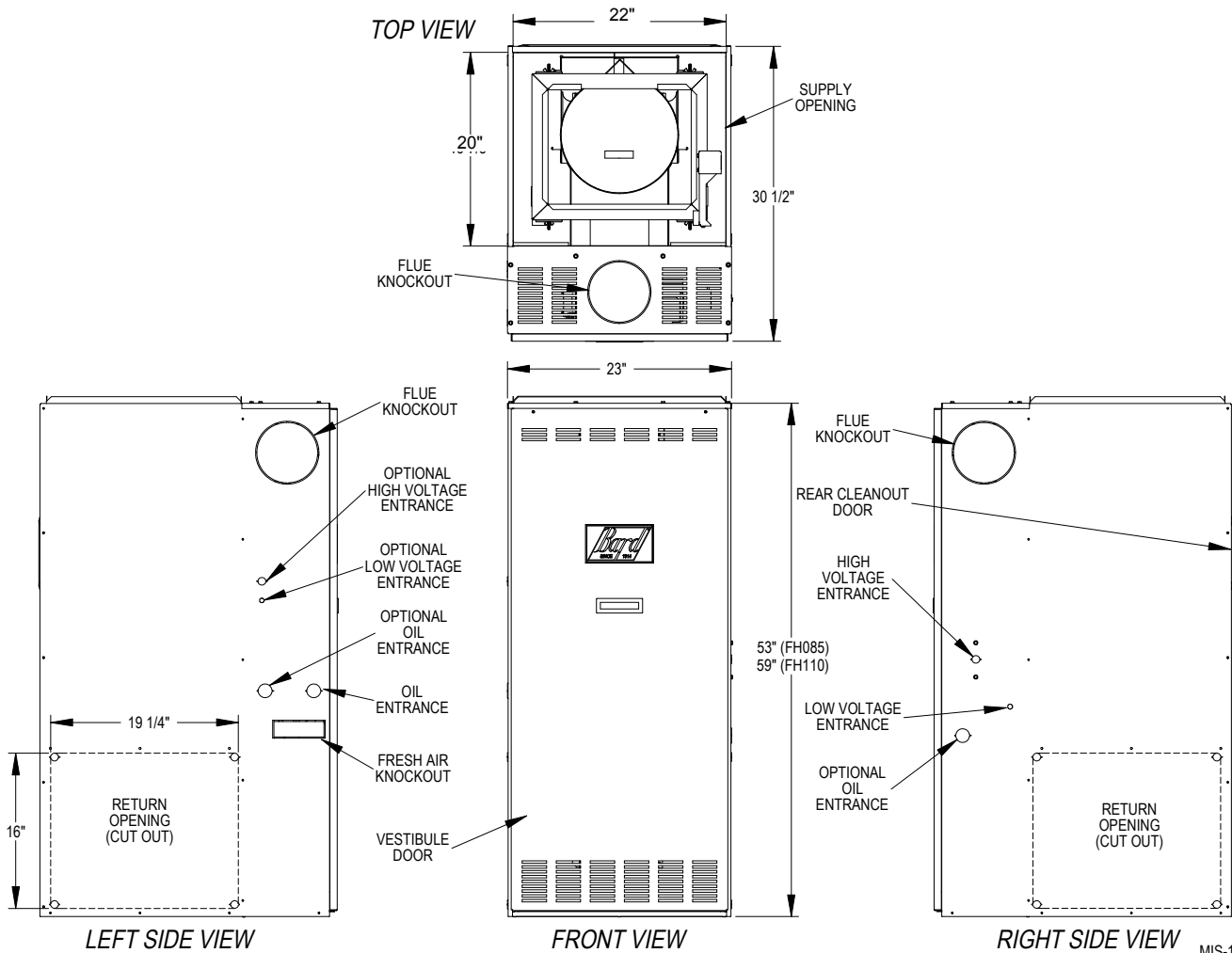
Model Number	Flue Dia.	Optional Filter Rack ②			Recommended Air Filter Size ①
		Model Number	Dimensions	Return Air Duct Size	
FH085V42	6	FR23	16 x 25 x 1	14 x 23	16 x 25 x 1
FH110V48	6	FR23	16 x 25 x 1	14 x 23	16 x 25 x 1

- ① No filters are supplied with the furnace. Filter velocities should not exceed 400 fpm for fiberglass (disposable) type, and 575 fpm for washable type filters.
 ② Washable aluminum mesh filters are supplied with the optional filter rack.

Clearance (Inches)

All Models	Installation	Front	4
		Back	1
Sides		2	
Plenum Top		2	
Plenum Sides		2	
Flue		9	
Duct		2 ②	
Service	Floor	C ③	
	Front	24	

- ② 0 inch after 1st 3 feet of duct.
 ③ May be installed on combustible floor material.



MIS-1814 A

Accessory Coil Cabinets

Furnace Model	Coil Cabinet Model No.	Fits Coils						Dimensions (inches)			Shipping Weight
		A30 2.5 Ton	A36 3 Ton	A37 3 Ton	A42 3.5 Ton	A48 4 Ton	A61 5 Ton	Width	Length	Height	
FH085V42	UCB23-22	X	X	X				23.00	21.00	23.50	30 lbs.
FH110V48	UCB23-22	X	X	X	X	X		23.00	21.00	23.50	32 lbs.

Lo-Boy Models - Dimensions and Clearances

Dimensions (Inches)

Model Number	Cabinet			Plenum Openings			Flue Connection				Air Filters ①	
	A Width	B Depth	C Height	D x E Supply	G	D x F Return	Location	Dia.	H	J	Size	No. Used
FLF075V42	23	48-1/8	36-5/8	22x20	3-1/4	22x14	Front	6	--	5-1/8	16x20x2	1
FLR075V42	23	48-1/8	36-5/8	22x20	3-1/4	22x14	Rear	6	34	-	16x20x2	1
FLF110V48	23	48-1/8	40-5/8	22x20	3-1/4	22x14	Front	6	--	5-1/8	20x20x2	1
FLR100V48	23	48-1/8	40-5/8	22x20	3-1/4	22x14	Rear	6	38	-	20x20x2	1
FLR130V60	26	50-1/4	47-5/8	25x20	4	25x16	Rear	6	43-5/8	-	20x25x2	1

① 2" pleated MERV 8 disposable filters are supplied with the furnace.

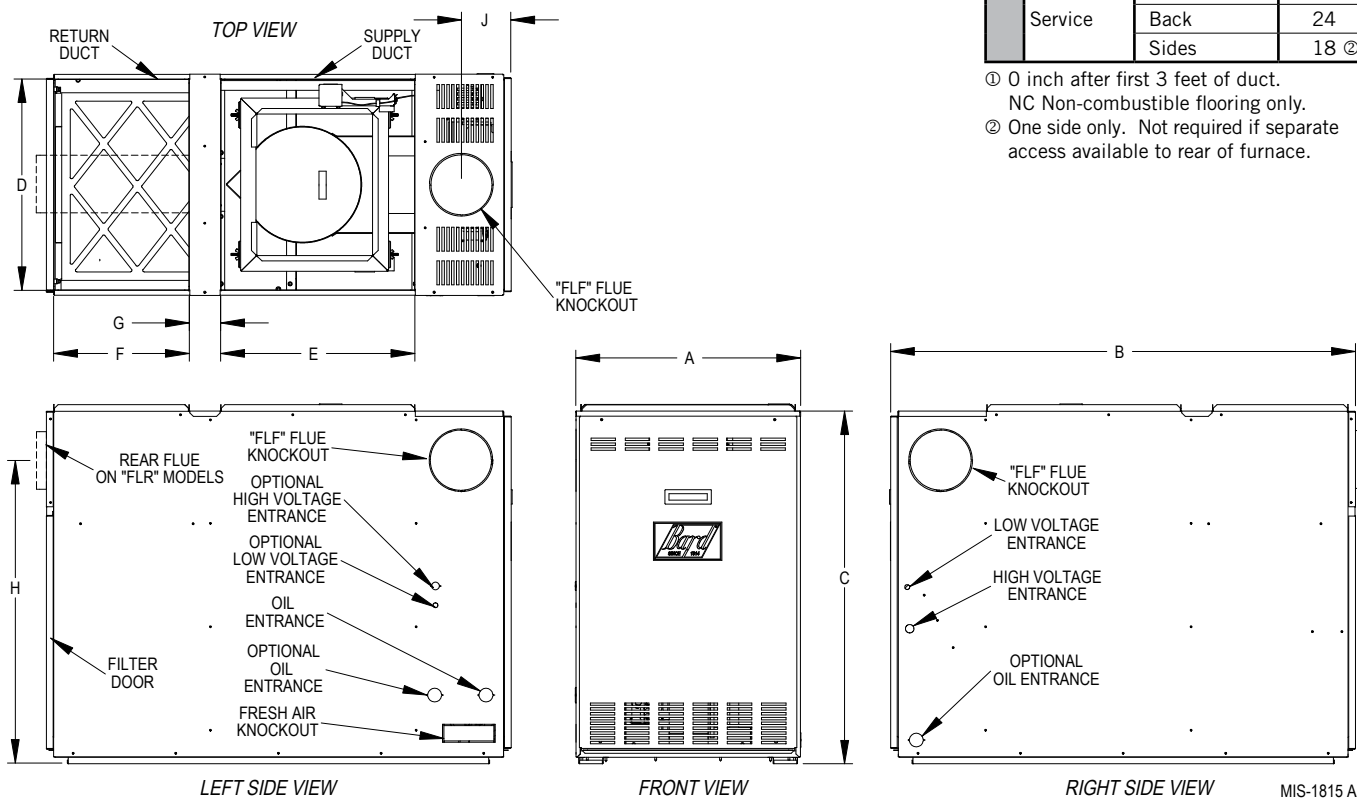
Clearance (Inches)

All Models	Installation	Front	6
		Back	18
Service	Sides	2	
	Plenum	2	
	Duct	2 ①	
	Flue	9	
	Floor	NC	
	Front	24	
Service	Back	24	
	Sides	18 ②	

① 0 inch after first 3 feet of duct.

NC Non-combustible flooring only.

② One side only. Not required if separate access available to rear of furnace.



MIS-1815 A

Accessory Coil Cabinets

Furnace Model	Coil Cabinet Model No.	Fits Coils						Dimensions (inches)			Shipping Weight
		A30 2.5 Ton	A36 3 Ton	A37 3 Ton	A42 3.5 Ton	A48 4 Ton	A61 5 Ton	Width	Length	Height	
FLF/FLR075V42	UCB23-22	X	X	X				23.00	21.00	23.50	30 lbs.
FLF110V48 FLR100V48	UCB23-22	X	X	X	X	X		23.00	21.00	23.50	32 lbs.
FLR130V60	UCB26-26	X	X	X	X	X	X	26.00	21.00	27.25	37 lbs.

Counterflow Model - Dimensions and Clearances

Duct Connection & Air Filter Sizes (Inches)

Model Number	Return Air W x D	Supply Air W x D	Recommended Filter Size
FC085V42	22 x 20	18 x 19	16 x 20 (2) ①

① No filters are supplied with the furnace. Two (2) 16x20x1 washable aluminum mesh filters are supplied with optional field installed kit, part number FR25. This kit also includes easy access front door panel plus 3 additional side pieces to form complete filter enclosure.

Combustible Base Dimensions (Inches)

Furnace Number	Base Model	Base Width	Floor Cut-Out		Duct Size	
			Width	Depth	Width	Depth
FC085V42	CFB23A	23.5	21.00	19.00	18.00	16.63

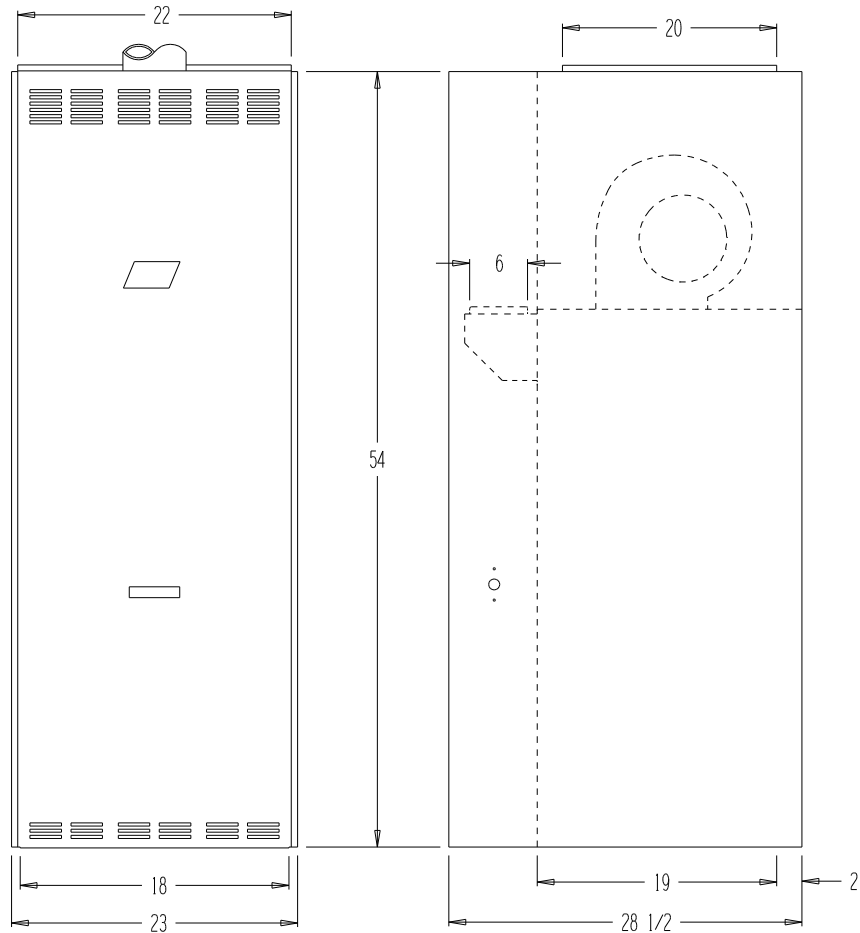
NOTE: Combustible base adds 1 inch to height of furnace. For air conditioning installations with DCB23-22 coil cabinet, an additional 23.5 inches is added.

Clearances (Inches)

Model	FC085	
Installation	Front	4
	Back	1
	Sides	2
	Plenum Top	2
	Plenum Sides	2
	Flue	9
Service	Duct	2 ②
	Floor	NC ③
Service	Front	24

② 0 inch after first 3 feet of duct. NC Non-combustible flooring only.

③ For installation on non-combustible floors only. When installed on combustible flooring, a CFB23A floor base is required.



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Accessory Coil Cabinet

Furnace Model	Coil Cabinet Model No.	Fits Coils			Dimensions (inches)			Shipping Weight
		A30 2.5 Ton	A36 3 Ton	A37 3 Ton	Width	Length	Height	
FC085V42	DCB23-22	X	X	X	23.00	21.00	23.50	35 lbs.



Bard Manufacturing Company, Inc.
Bryan, Ohio 43506
www.bardhvac.com

Due to our continuous product improvement policy, all specifications subject to change without notice.

Before purchasing this appliance, read important energy cost and efficiency information available from your retailer.

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