

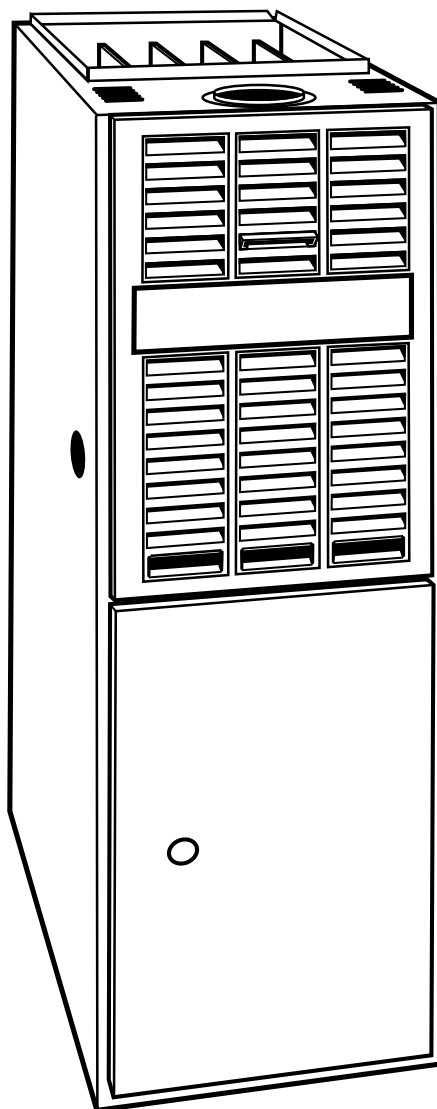


HEATING & COOLING

Product Data

58YAV High-Efficiency Upflow Furnace

Sizes:
070 thru 155



Advanced Technology for High-Efficiency Gas Furnaces

Carrier leads the industry with its new 58YAV Induced-Draft Gas Furnace. This furnace is built for venting into many exterior tile-lined masonry chimneys. It has the most advanced manufacturing equipment, processes, and technology available in order to ensure top quality. Packed into the cabinet are the industry's foremost dealer and homeowner features. The 58YAV Upflow Furnace is the newest addition to Carrier's list of product leadership in the gas furnace industry.

These induced-combustion, gas-fired furnaces offer not only low installation costs, but fuel economy as well — delivering an Annual Fuel Utilization Efficiency (AFUE) rating of 78.0%. The Carrier 58YAV utilizes a hot surface, silicon carbide ignition system to save energy and increase reliability.

Our design uses the patented S-shaped 4-pass heat exchanger, our soft mount inducer assembly, and a slow opening gas valve to improve sound level. The heat exchanger is constructed of aluminized steel and is backed by a 20-year Limited Warranty.

The Carrier 58YAV Gas Furnace will meet your home heating requirements.

The superior attention to cabinet detail is obvious. This Carrier furnace features 1-piece, seamless, wrap-around construction. There are no spot welds on the exterior surfaces of the furnace. There is also double protection for the cabinet. First, a galvanized steel substrate provides resistance to rusting. Then the cabinet is constructed of prepainted steel—the

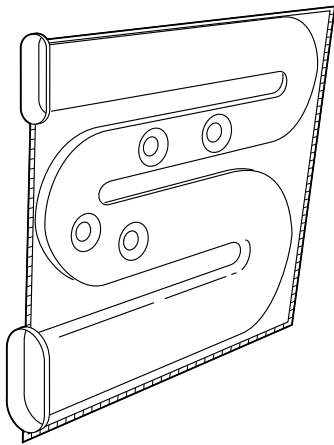
same high-quality finish found on refrigerators and dishwashers.

Perhaps the most advanced feature of the 58YAV is the microprocessor control. The simplified electronics in this control provide high reliability while performing many of the functions of older, electro-mechanical devices in other furnaces. Advanced features of the control show true leadership in furnace technology. The control provides blower delay at start-up and shutdown, while monitoring furnace

operations and functions. In the unlikely event of a service call, in less than a minute, the technician can use the self-test feature to determine if a major component has failed. The control will check itself, then the inducer, silicon carbide ignition, heating- and cooling-speed blower, and the electronic air cleaner connections. The control also features a 3-amp fuse that protects the transformer and control. Another feature on the control is an LED status indicator light to ensure top furnace

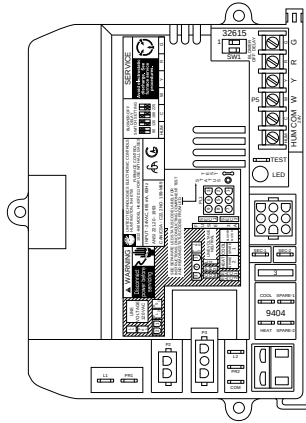
performance.

Best of all, the Carrier 58YAV is made to be easily installed. Many features make this furnace the easy choice for replacement or new construction markets. Left and right connections are provided for gas and electrical supplies. An easy-to-remove bottom, blower speed selector, cased or uncased cooling coils, low-voltage humidifier, and electronic air cleaner terminal connections are among other features.



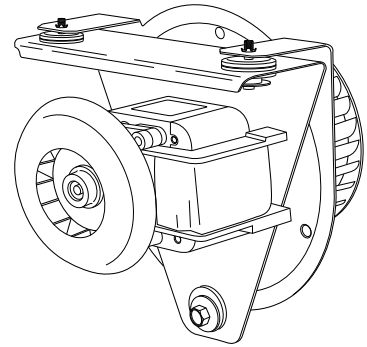
HEAT EXCHANGER

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CONTROL

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INDUCER BLOWER

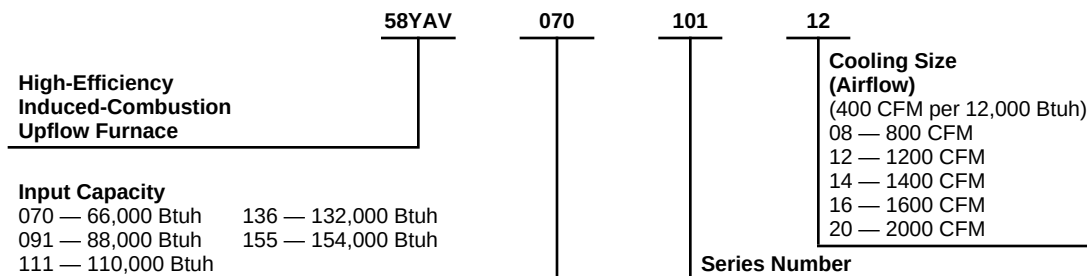
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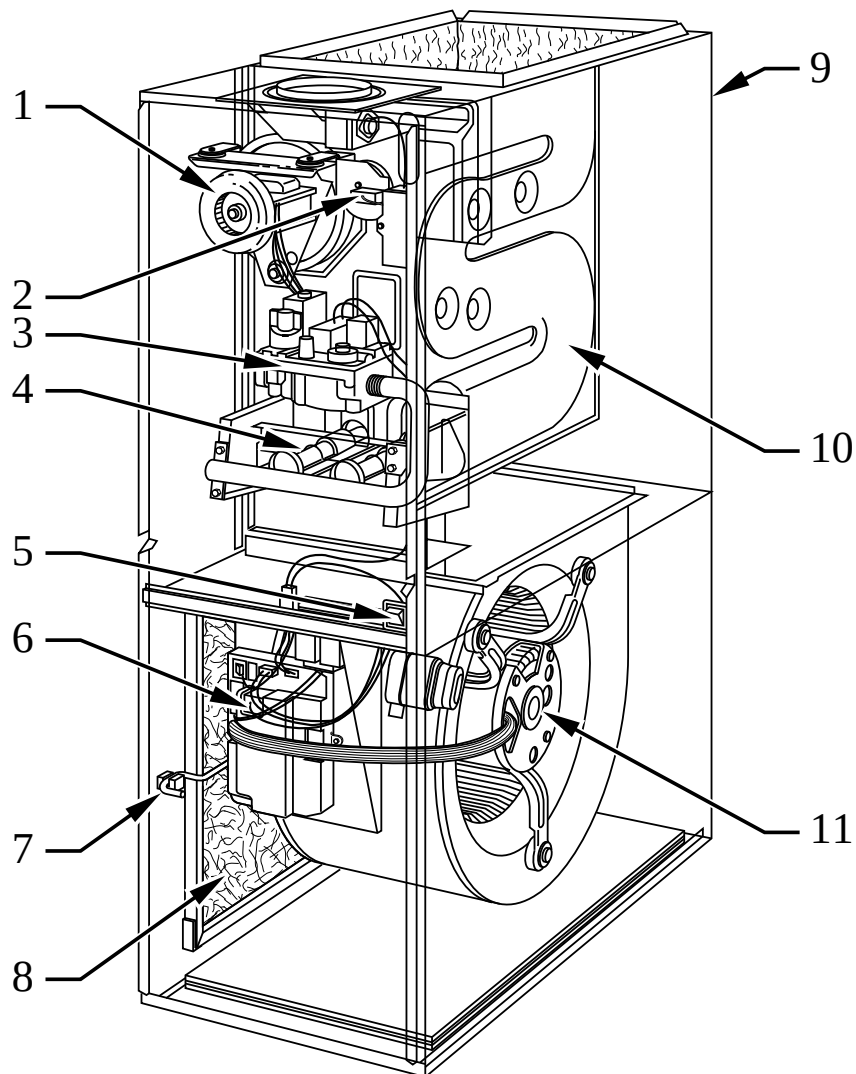


MEETS DOE RESIDENTIAL CONSERVATION SERVICES PROGRAM STANDARDS.

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

Model number nomenclature





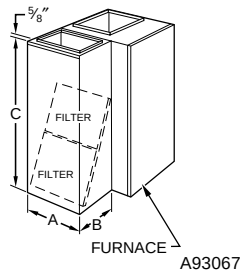
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NOTES:

1. The 58YAV Furnaces are for use with natural gas. These furnaces can be field-converted for propane gas with a factory-authorized and listed accessory conversion kit.
2. Control location and actual control may be different than shown above.

- | | |
|-----------------------------|---------------------------|
| ❶ Inducer Assembly | ❷ Air Filter Retainer |
| ❷ Pressure Switch | ❸ Air Filter |
| ❸ Gas Control Valve | ❹ Wrap-Around Casing |
| ❹ Burner Assembly | ❺ Heat Exchanger |
| ❺ Blower Door Safety Switch | ❻ Blower and Blower Motor |
| ❻ Control Box | |

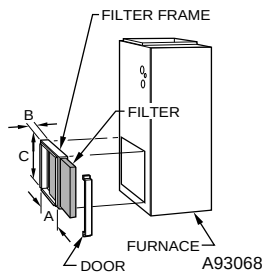
Carrier accessories*



**RETURN-AIR
PLENUM**

Custom made return-air plenum can be mounted on either side of the furnace. Includes washable filters.

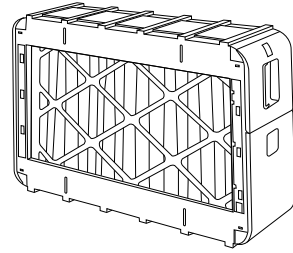
A	25 in.
B	16 in.
C	39-7/8 in.



SIDE FILTER RACK

Custom made filter rack for easy connection when a return plenum already exists. Provides easy access for cleaning filter.

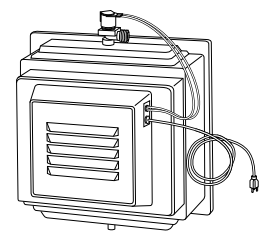
A	23-1/8 in.
B	2-3/8 in.
C	14-1/2 in.



**MECHANICAL OR
ELECTRONIC
AIR CLEANER**

Cleans the air of smoke, dirt, and many pollens commonly found. Saves decorating and cleaning expenses by keeping carpets, furniture, and drapes cleaner.

Mechanical air cleaner is shown.



**MODEL 49FH
HUMIDIFIER**

By adding moisture to winter-dry air, a Carrier humidifier can often improve the comfort and keep furniture, rugs, and draperies in better condition. Moisturizing household air also helps to retain normal body heat and provides comfort at lower temperatures.

UNIT SIZE		070-08 & 12	091-14	111-16	136-20	155-20
AIR CLEANER		Model AIRA, KEACA, 31MF, or MECH				
HUMIDIFIER		Model 49BF, 49BG, 49FH, 49FP, or 49WS				
THERMOSTAT — NON-PROGRAMMABLE		For Use With Air Conditioner — TSTATCCNAC01-A For Use With Heat Pump — TSTATCCNHP01-A				
THERMOSTAT — PROGRAMMABLE		For Use With Air Conditioner — TSTATCCPAC01-A For Use With Heat Pump — TSTATCCPHP01-A				
RETURN-AIR PLENUM (With Washable Filters)		KGARP0101ALL				
SIDE FILTER RACK (With Washable Filter)		KGAFR0101ALL				
EXTERIOR CHIMNEY ADAPTER KIT		KGACA01014FC (6-In. Outlet)			KGACA01015FC (7-In. Outlet)	
GAS CONVERSION KIT	Natural-To-Propane	KGANP2001ALL				
	Propane-To-Natural	KGAPN1601ALL				

* Factory-authorized and field installed. Gas conversion kits are A.G.A. and C.G.A. design-certified.

Physical data

UNIT SIZE		070		091	111	136	155
		08	12	14	16	20	20
OUTPUT CAPACITY (BTUH)†	Nonweatherized ICS	52,000	52,000	70,000	87,000	105,000	122,000
INPUT BTUH*		66,000	66,000	88,000	110,000	132,000	154,000
SHIPPING WEIGHT (Lb)		132	134	150	166	194	204
CERTIFIED TEMP RISE RANGE (°F)		40-70	30-60	40-70	45-75	40-70	50-80
CERTIFIED EXT STATIC PRESSURE	Heating	0.12	0.12	0.15	0.20	0.20	0.20
	Cooling	0.5	0.5	0.5	0.5	0.5	0.5
AIRFLOW CFM	Heating	830	1140	1170	1415	1975‡	1695‡
	Cooling	880	1195	1360	1575	1980‡	1905‡
LIMIT CONTROL		SPST					
HEATING BLOWER CONTROL		Solid-State Time Operation					
BURNERS (Monoport)		3	3	4	5	6	7
GAS CONNECTION SIZE		1/2-in. NPT					
GAS VALVE (Redundant) Manufacturer		White-Rodgers					
Minimum Inlet Pressure (In. wc)		4.5 (Natural Gas)					
Maximum Inlet Pressure (In. wc)		13.6 (Natural Gas)					
IGNITION DEVICE		Hot Surface					

* Gas input ratings are certified for elevations to 2000 ft. For elevations above 2000 ft, reduce ratings 4% for each 1000 ft above sea level. Refer to installation instructions.

† Tentative capacity in accordance with U.S. Government DOE test procedures.

‡ Air delivery above 1800 CFM requires that both sides, or a combination of 1 side and bottom, or bottom only, of the furnace be used for return air. A filter is required for each return-air inlet.

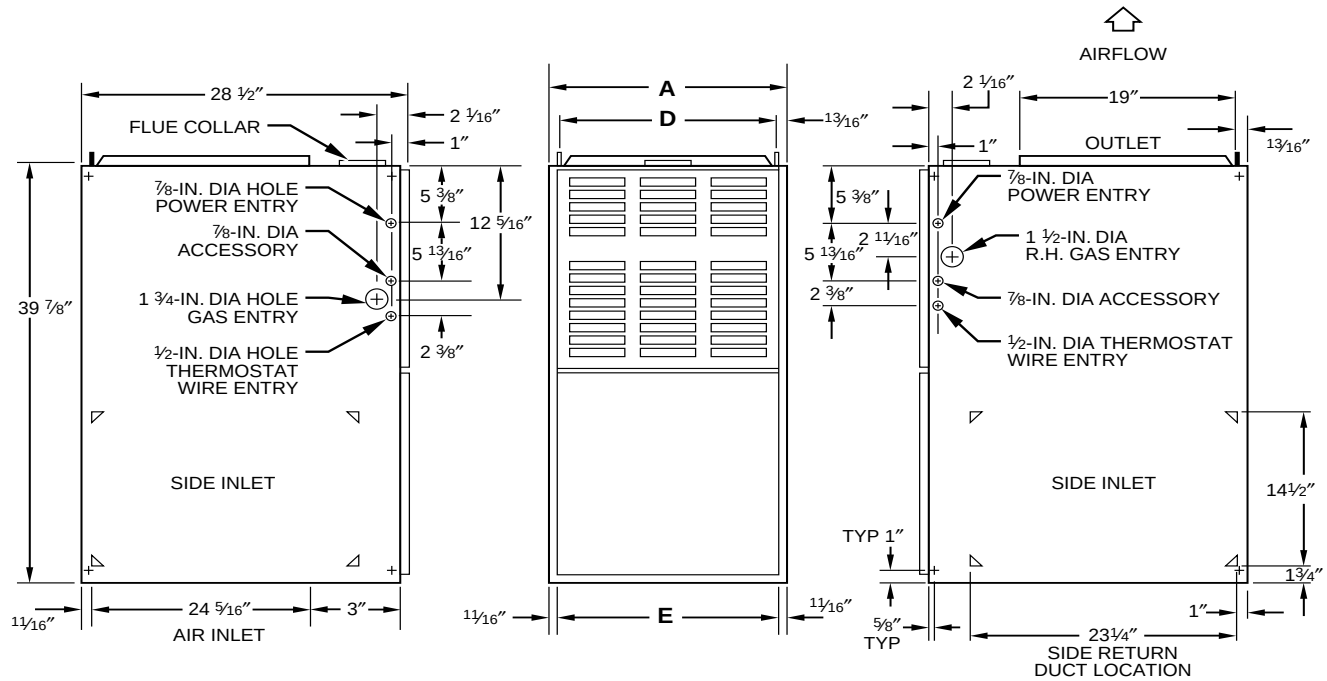
ICS—Isolated Combustion System

Dimensions

CLEARANCES (In.)

UNIT SIZE	070	091 — 155
Sides — Single-Wall Vent	1	0
Type B-1, Double-Wall Vent	0	0
Back	0	0
Top of Plenum	1	1
Vent Connector — Single-Wall Vent	6	6
Type B-1, Double-Wall Vent	1	1
Front* — Single-Wall Vent	6	6
Type B-1, Double-Wall Vent	3	3
Service	30	30

* The 3-in. front clearance is needed for combustion-air and ventilation-air entry.



- NOTES:**
- Two additional 7/8-in. dia holes are located in the top plate.
 - Minimum return-air opening at furnace:
 - For 800 CFM—16-in. round or 14 1/2 x 12-in. rectangle.
 - For 1200 CFM—20-in. round or 14 1/2 x 19 1/2-in. rectangle.
 - For 1600 CFM—22-in. round or 14 1/2 x 23 1/4-in. rectangle.
 - For airflow requirements above 1800 CFM, use both side inlets, a combination of 1 side inlet and the bottom, or the bottom only.

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DIMENSIONS (In.)

UNIT SIZE	A	D	E	VENT CONN*
070-08	14-3/16	12-9/16	11-11/16	4
070-12	14-3/16	12-9/16	11-11/16	4
091-14	17-1/2	15-7/8	16	4
111-16	21	19-3/8	18-1/2	4
136-20	24-1/2	22-7/8	22	5
155-20	24-1/2	22-7/8	22	5

* Refer to the furnace Installation Instructions for proper venting procedures.

Performance data

UNIT SIZE	070		091	111	136	155
	08	12	14	16	20	20
DIRECT-DRIVE MOTOR Hp (PSC)	1/5	1/3	1/3	1/2	3/4	3/4
MOTOR FULL LOAD AMPS	2.9	5.8	5.8	7.9	11.1	11.1
RPM (Nominal) — SPEEDS	1075-3	1075-4	1075-4	1075-4	1075-4	1075-4
BLOWER WHEEL DIAMETER x WIDTHS (In.)	10 x 6	10 x 6	10 x 7	10 x 8	11 x 10	11 x 10
WASHABLE 16 x 25 x 1-In. FILTER Qty	1	1	1	—	—	—
WASHABLE 20 x 25 x 1-In. FILTER Qty	—	—	—	1	—	—
WASHABLE 24 x 29 x 1-In. FILTER Qty	—	—	—	—	1	1

PSC—Permanent Split Capacitor

AIR DELIVERY—CFM (With Filter)*

UNIT SIZE	SPEED	EXTERNAL STATIC PRESSURE (In. wc)							
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
070-08	High	1040	1010	975	935	880	810	735	640
	Med-High	855	830	800	765	715	660	600	490
	Med-Low	745	715	690	650	605	550	475	385
070-12	High	1430	1380	1325	1265	1195	1125	1045	945
	Med-High	1310	1275	1235	1190	1135	1065	990	900
	Med-Low	1140	1130	1100	1065	1000	965	910	815
	Low	990	965	960	935	905	855	800	710
091-14	High	1570	1535	1480	1415	1360	1280	1185	1070
	Med-High	1370	1355	1330	1290	1240	1170	1080	955
	Med-Low	1170	1165	1150	1115	1085	1035	970	880
	Low	1010	1005	990	965	950	905	845	745
111-16	High	1880	1815	1745	1690	1575	1500	1400	1265
	Med-High	1660	1615	1570	1505	1435	1355	1260	1170
	Med-Low	1455	1410	1375	1350	1290	1235	1145	985
	Low	1265	1265	1240	1210	1180	1110	995	855
136-20	High	—	2210	2130	2055	1980	1895	1795	1680
	Med-High	2015	1975	1925	1880	1805	1735	1655	1555
	Med-Low	1730	1710	1670	1635	1590	1535	1470	1385
	Low	1525	1520	1495	1450	1410	1375	1315	1245
155-20	High	—	2145	2060	1975	1905	1800	1680	1565
	Med-High	—	1950	1885	1815	1710	1645	1545	1435
	Med-Low	1730	1695	1660	1600	1540	1465	1400	1305
	Low	1520	1500	1460	1410	1360	1310	1245	1155

* Air delivery above 1800 CFM requires that both sides, or a combination of 1 side and bottom, or bottom only of the furnace be used for return air. A filter is required for each return-air inlet.

—Indicates unstable operating conditions.

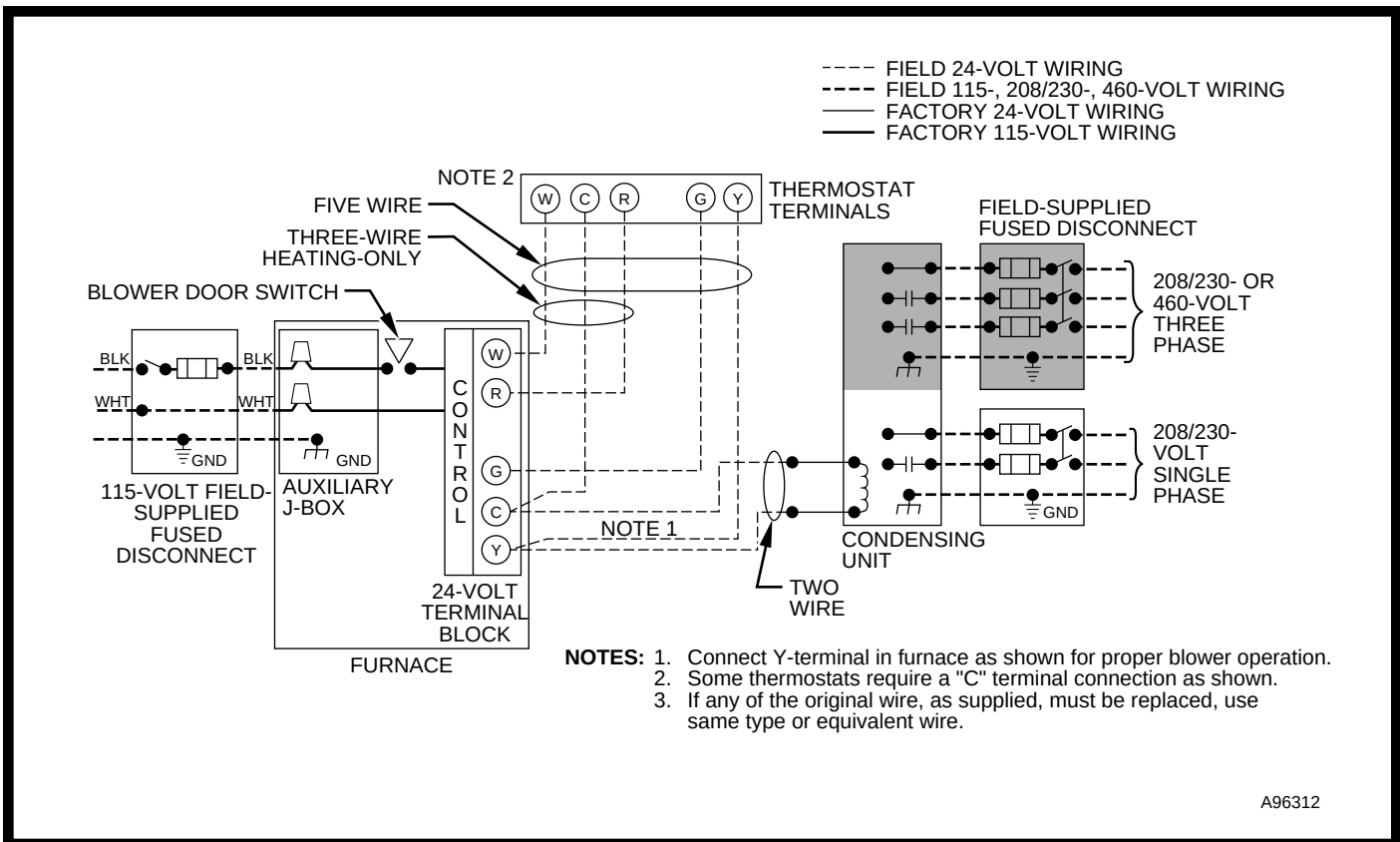
ENERGY EFFICIENCY

UNIT SIZE		070		091	111	136	155
		08	12	14	16	20	20
CAPACITY BTUH*	Nonweatherized ICS	52,000	52,000	70,000	87,000	105,000	122,000
AFUE%*	Nonweatherized ICS	78.0	78.0	78.0	78.0	78.0	78.0

* Tentative capacity and AFUE in accordance with U.S. Government DOE test procedures.

ICS—Isolated Combustion System

Typical wiring schematic



Electrical data

UNIT SIZE	070-08	070-12	091-14	111-16	136-20	155-20
UNIT VOLTS — HERTZ — PHASE	115 — 60 — 1					
MINIMUM WIRE SIZE (AWG)	14	14	14	14	12	12
MAXIMUM WIRE LENGTH (Ft)*	47	32	31	28	33	31
MAXIMUM UNIT AMPS	5.9	8.7	9.0	10.1	13.3	14.0
OPERATING VOLTAGE RANGE (Min—Max)†	104—127					
MAX FUSE SIZE OR HACR-TYPE CKT BKR (Amps)‡	15	15	15	15	20	20
TRANSFORMER (24v)	40va					
EXTERNAL CONTROL POWER AVAILABLE						
Heating	12va					
Cooling	35va					
AIR CONDITIONING BLOWER RELAY	Standard					

* Length shown is as measured 1 way along wire path between unit and service panel for maximum 2% voltage drop.

† Permissible limits of the voltage range at which the unit will operate satisfactorily.

‡ Time-delay fuse is recommended.

SERVICE TRAINING

Packaged Service Training programs are an excellent way to increase your knowledge of the equipment discussed in this manual, including:

- Unit Familiarization
- Maintenance
- Installation Overview
- Operating Sequence

A large selection of product, theory, and skills programs is available, using popular video-based formats and materials. All include video and/or slides, plus companion book.

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