YORK Technical Guide: Y82V Series - Non-condensing Residential Gas Furnaces

Two-Stage Variable Speed ECM Multi-position Standard and Low NOx

York International Corporation, 5005 York Drive, Norman, OK 73069

6583611-YTG-A-0125

Supersedes: Nothing

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2025-01-30

Contents

Description

These compact units employ induced combustion, reliable hot surface ignition, and high heat transfer aluminized tubular heat exchangers. The units are factory shipped for installation in upflow or horizontal applications and can be converted for downflow applications.

These furnaces are designed for residential installation in a basement, closet, alcove, attic, recreation room, or garage, and are also ideal for commercial applications. All units are factory assembled, wired, and tested to ensure safe, dependable, and economical installation and operation.

These units are Category I listed and can be common vented with another gas appliance as allowed by the National Fuel Gas Code.

Due to continuous product improvement, specifications are subject to change without notice. **This document is only for distribution use - it is not to be used at point of retail sale.**

Visit us at www.simplygettingthejobdone.com and www.york.com.

Additional rating information can be found at www.ahridirectory.org.

Certification

Assembled at a facility with an ISO 9001:2015-certified Quality Management System

Warranty

20-year limited warranty on the heat exchanger in residential applications.

10-year warranty on the heat exchanger in non-residential applications.

5-year limited parts warranty.

Extended residential limited lifetime heat exchanger and 10-year limited parts warranty when product is registered online within 90 days of purchase for replacement or within 90 days of closing for new home construction.

See the *Limited Warranty certificate* in the *Users Information Manual* for details.

Features

- Two-stage heating operation includes a two-stage gas valve, two-stage inducer operation, and variable speed ECM blower operation. Adjustable delay timer allows two-stage operation with a single-stage thermostat.
- Easily applied in upflow, horizontal left, horizontal right, or downflow installation with minimal conversion necessary
- The unit cabinet is compact and easy to install with an ideal height of 33 in.
- ECM variable speed drive for cooling SEER enhancement, improved comfort with optional airflow delay profiles, and continuous fan options for IAQ performance.
- Easy access to controls to connect power and control wiring
- Built-in, high-level self diagnostics with fault code displays standard on integrated control module for reliable operation
- Low unit current requirement for easy replacement application
- All models are convertible to use propane (LP) gas.
- Electronic hot surface ignition reduces fuel cost with increased dependability and reliability.
- 100% shut-off main gas valve for extra safety
- 24 V, 40 VA control transformer and control provisions supplied for add-on cooling
- Hi-tech tubular aluminized steel primary heat exchanger
- Solid removable bottom panel allows easy conversion for bottom return air applications
- Airflow leakage less than 1% of nominal airflow for duct performance testing conditions
- No electrical knockouts, making installation easier
- Fold-up duct connector flanges for application flexibility
- Quiet inducer, burner, and blower operation
- Inducer rotates for easy conversion of venting options
- Fully supported blower assembly for easy access and removal of blower
- External air filters are used for maximum flexibility in meeting customers' indoor air quality (IAQ) needs.
- Insulated blower compartment for thermal and acoustic performance
- Venting applications: install as a common vent with other gas-fired appliances or use a lined masonry chimney.
- 1/4 turn knobs are provided for easy independent door removal.
- These models may be connected as part of a communicating control system using a 4-wire connection bus.

Dimensions

Figure 1: Dimensions

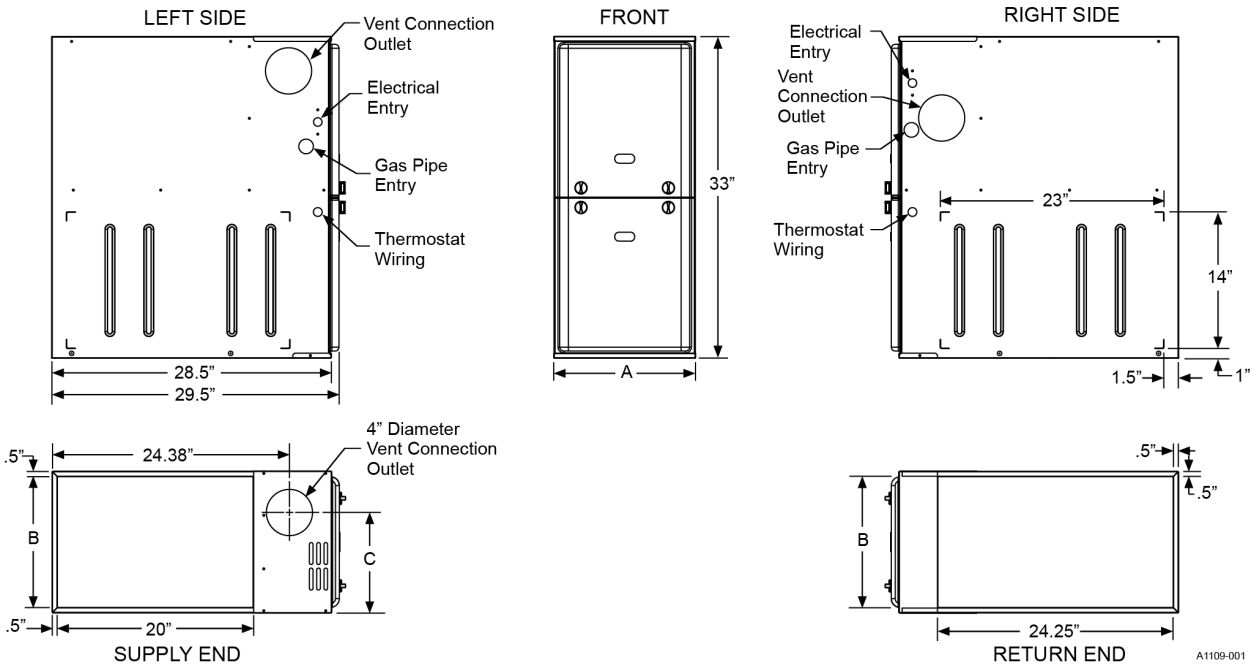

Table 1: Cabinet and duct dimensions

Models	Nominal CFM (m^3/min)	Cabinet size	A (in.)	A (cm)	B (in.)	B (cm)	C (in.)	C (cm)
Y82V060A12SMPC1	1200 (34.0)	A	14 1/2	36.8	13 3/8	34.0	10.3	26.2
Y82V080B12SMPC1	1200 (34.0)	B	17 1/2	44.4	16 3/8	41.6	11.8	29.9
Y82V080C16SMPC1	1600 (45.3)	C	21	53.3	19 7/8	50.5	13.6	34.5
Y82V100C16SMPC1	1600 (45.3)	C	21	53.3	19 7/8	50.5	13.6	34.5
Y82V100C20SMPC1	2000 (56.6)	C	21	53.3	19 7/8	50.5	13.6	34.5
Y82V120C20SMPC1	2000 (56.6)	C	21	53.3	19 7/8	50.5	13.6	34.5

Ratings and physical and electrical data

Table 2: Ratings and physical and electrical data

Models	Y82V060A12 SMPC1	Y82V080B12 SMPC1	Y82V080C16S MPC1	Y82V100C16S MPC1	Y82V100C20S MPC1	Y82V120C20S MPC1
High fire input (MBH)	60	80	80	100	100	120
Low fire input (MBH)	39	52	52	65	65	78
High fire output (MBH)	48	64	64	80	80	96
Low fire output (MBH)	31	42	42	52	52	62
Nominal airflow (CFM)	1200	1200	1600	1600	2000	2000
AFUE (%)	80					
Fuse or circuit breaker (A)	15					
Maximum outlet air temperature (°F)	190					
High fire air temperature rise (°F)	30 to 60					
Low fire air temperature rise (°F)	20 to 50					
Gas pipe connection, NPT (in.)	1/2					
Blower (hp)	1/2	1/2	3/4	3/4	1 1/5	1 1/5
Blower (A)	7.7	7.7	9.6	9.6	12.8	12.8
Blower size (in.)	11 x 8	11 x 8	11 x 10	11 x 10	11 x 11	11 x 11
Total unit (A)	10.3	10.3	12.2	12.1	15.3	15.3
Operating weight (lb)	94	103	114	118	122	129

Note:

- The nominal external static pressure is 0.5 in. W.C. at furnace outlet ahead of indoor coils.
- Annual fuel utilization efficiency (AFUE) numbers are determined in accordance with DOE test procedures.
- Wire size and overcurrent protection must comply with the National Electrical Code (NFPA-70-latest edition) and all local codes.

Horizontal sidewall venting

For applications where vertical venting is not possible, the only approved method of horizontal venting is the use of an auxiliary power vent. Auxiliary power venters must be approved by CSA, UL, or other recognized safety agencies. Follow all application and installation details provided by the manufacturer of the power vent.

Filter performance

CAUTION

In downflow furnace arrangement, the filter must be located a minimum of 12 in. from the return air inlet of the furnace.

All applications of these furnaces require the use of field-installed air filters. All filter media and mounting hardware or provisions must be field installed external to the furnace cabinet. **Do not** attempt to install any filters inside the furnace.

NOTICE

Single side return above 1800 CFM is approved as long as the filter velocity does not exceed the filter manufacturer's recommendation and a transition is used to allow use of a 20 x 25 filter.

Table 3: Recommended filter sizes

CFM (m^3/min)	Cabinet size	Side (in.)	Bottom (in.)
1200 (34.0)	A	16 x 25	14 x 25
1200 (34.0)	B	16 x 25	16 x 25
1600 (45.3)	C	16 x 25	20 x 25
2000 (56.6)	C	(2) 16 x 25	20 x 25

Note:

- Air velocity through disposable type filters must not exceed 300 ft/min (91.4 m/min). All velocities over this require the use of high velocity filters.
- Do not exceed 1800 CFM using a single side return and a 16 x 25 filter. For CFM greater than 1800, you may use two side returns or one side and the bottom or one return with a transition to allow use of a 20 x 25 filter.

Table 4: Unit clearances to combustibles (all dimensions in inches and all surfaces identified with the unit in an upflow configuration)

Application	Top	Front	Rear	Left side	Right side	Flue	Floor/ bottom	Closet	Alcove	Attic	Line contact
	in. (cm)	in. (cm)	in. (cm)	in. (cm)	in. (cm)	in. (cm)					
Upflow	1 (2.5)	1 (2.5)	0 (0.0)	0 (0.0)	0 (0.0)	6 (15.2)	Combustible	Yes	Yes	Yes	No
Upflow B-vent	1 (2.5)	1 (2.5)	0 (0.0)	0 (0.0)	0 (0.0)	1 (2.5)	Combustible	Yes	Yes	Yes	No
Downflow	1 (2.5)	1 (2.5)	0 (0.0)	0 (0.0)	0 (0.0)	6 (15.2)	1 (25.4)[1]	Yes	Yes	Yes	No
Downflow B-vent	1 (2.5)	1 (2.5)	0 (0.0)	0 (0.0)	0 (0.0)	1 (2.5)	1 (25.4)[1]	Yes	Yes	Yes	No
Horizontal	1 (2.5)	1 (2.5)	0 (0.0)	0 (0.0)	0 (0.0)	6 (15.2)	Combustible	No	Yes	Yes	Yes[2]
Horizontal B-vent	1 (2.5)	1 (2.5)	0 (0.0)	0 (0.0)	0 (0.0)	1 (2.5)	Combustible	No	Yes	Yes	Yes[2]

1 A combustion floor base accessory or indoor coil cabinet is required for use on a combustible floor.
2 Line contact is only permitted between lines formed by the intersection of the rear panel and side panel (top in horizontal position) of the furnace jacket and building joists, studs, or framing.

Accessories

Propane (LP) Conversion Kit

This accessory conversion kit can be used to convert natural gas units for LP operation.

S1-1NP0347 - all models

LP Stainless Steel Burner Kit

This accessory conversion kit may be used to convert existing burners to stainless steel burners for LP use only.

S1-32926889000 - all LP Models

Natural (NAT) Gas Stainless Steel Burner Kit

This accessory kit may be used to replace existing burners with stainless steel burners for NAT gas use only.

S1-32924441000 - all NAT gas models

Side Return Filter Racks

The S1-1SR0200 kit accommodates a 1 in., 2 in., or 4 in. filter. The S1-1SR0402 kit accomodates a 1 in. filter only.

S1-1SR0200 - all models

S1-1SR0402 - all models

Bottom Return Filter Racks

The S1-1BR05* series are galvanized steel filter racks. The S1-1FR03* series are pre-painted steel filter racks to match the appearance of the furnace cabinet. The S1-1BR05* and S1-1FR03* series filter racks accommodate a 1 in., 2 in., or 4 in. filter.

S1-1BR0514 or S1-1FR03014 - for 14 1/2 in. cabinets

S1-1BR0517 or S1-1FR03017 - for 17 1/2 in. cabinets

S1-1BR0521 or S1-1FR03021 - for 21 in. cabinets

Masonry Chimney Kit

This accessory kit allows upflow 80% models to be vented into a tile-lined masonry chimney.

S1-1CK0604 - all 80% Non-modulating Models

Combustible Floor Base Kit

These kits are required to prevent potential overheating situations when the furnaces are installed in downflow applications directly onto combustible flooring material. These kits are also required in any applications where the furnace is installed in a downflow configuration without an indoor coil and where the combustible floor base kit provides access for combustible airflow.

S1-1CB0514 - for 14 1/2 in. cabinets

S1-1CB0517 - for 17 1/2 in. cabinets

S1-1CB0521 - for 21 in. cabinets

High Altitude Pressure Switches

For installation where the altitude is less than 5,000 ft, it is not required to change the pressure switch. For altitudes above 5,000 ft, use an appropriate kit from below:

S1-1PS3309 - all models

Thermostats

Compatible thermostat controls are available through accessory sourcing. For optimum performance, these outdoor units are fully compatible with our residential touchscreen thermostat available through Source 1. For more information, refer to the *Thermostat & Controllers* section at http://www.simplygettingthejobdone.com.

Airflow data

Table 5: High and low speed cooling and heat pump CFM, 60A12 and 80B12

60A12		80B12		Settings	
High cool	**Low cool**	**High cool**	**Low cool**	**Cool**	**Adj**
1200	775	1200	800	A	B
1100	725	1100	725	A	A
1000	625	1000	650	A	C
925	600	925	600	B	B
850	550	850	550	B	A
775	475	775	500	B	C
700	425	725	475	C	B
600	400	650	425	C	A
550	350	575	375	C	C
500	325	500	325	D	B
450	300	450	300	D	A
400	275	400	275	D	C

Table 6: High and low speed cooling and heat pump CFM, 80C16 and 100C16

80C16		100C16		Settings	
High cool	**Low cool**	**High cool**	**Low cool**	**Cool**	**Adj**
1625	1075	1650	1100	A	B
1575	1025	1575	1025	B	B
1500	975	1525	975	A	A
1425	925	1425	925	B	A
1350	875	1375	900	A	C
1275	825	1300	850	C	B
1300	825	1275	825	B	C
1150	750	1200	750	C	A
1025	650	1050	675	C	C
875	550	875	575	D	B
800	500	800	500	D	A
725	450	725	450	D	C

Table 7: High and low speed cooling and heat pump CFM, 100C20 and 120C20

100C20		120C20		Settings	
High cool	**Low cool**	**High cool**	**Low cool**	**Cool**	**Adj**
2000	1300	1975	1300	A	B
1825	1175	1825	1175	A	A
1750	1150	1750	1125	B	B
1650	1050	1650	1050	A	C
1600	1025	1600	1025	B	A
1450	925	1450	925	B	C
1275	800	1275	800	C	B
1150	725	1150	725	C	A
1025	650	1025	650	C	C
975	600	1000	625	D	B
875	550	900	575	D	A
775	500	800	500	D	C

Table 8: High and low heat CFM

060A12		080B12		080C16		Settings	
High heat	**Low heat**	**High heat**	**Low heat**	**High heat**	**Low heat**	**Heat**	**Adj**
950	725	1225	1025	1300	1075	A	Any
1025	775	1375	1150	1450	1175	B	Any
825	625	1100	900	1075	875	C	Any
700	525	975	800	1000	825	D	Any
100C16		**100C20**		**120C20**		**Settings**	
High heat	**Low heat**	**High heat**	**Low heat**	**High heat**	**Low heat**	**Heat**	**Adj**
1600	1350	1600	1300	1975	1600	A	Any
1750	1475	1775	1450	2200	1800	B	Any
1400	1175	1450	1825	1825	1500	C	Any
1225	1025	1300	1625	1625	1350	D	Any

Third-party trademarks

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