



## TECHNICAL GUIDE

### 80% AFUE MODULATING ECM RESIDENTIAL GAS FURNACES MULTI-POSITION LOW NO<sub>x</sub> MODELS: YPLC

NATURAL GAS

60 - 120 MBH INPUT



Due to continuous product improvement, specifications are subject to change without notice.

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#### WARRANTY SUMMARY

A 20-year limited warranty on heat exchangers in residential applications.

A 10-year warranty on the heat exchanger in commercial applications.

Standard 5-year limited Parts warranty.

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

See Limited Warranty certificate in Users Information Manual for details.

## DESCRIPTION

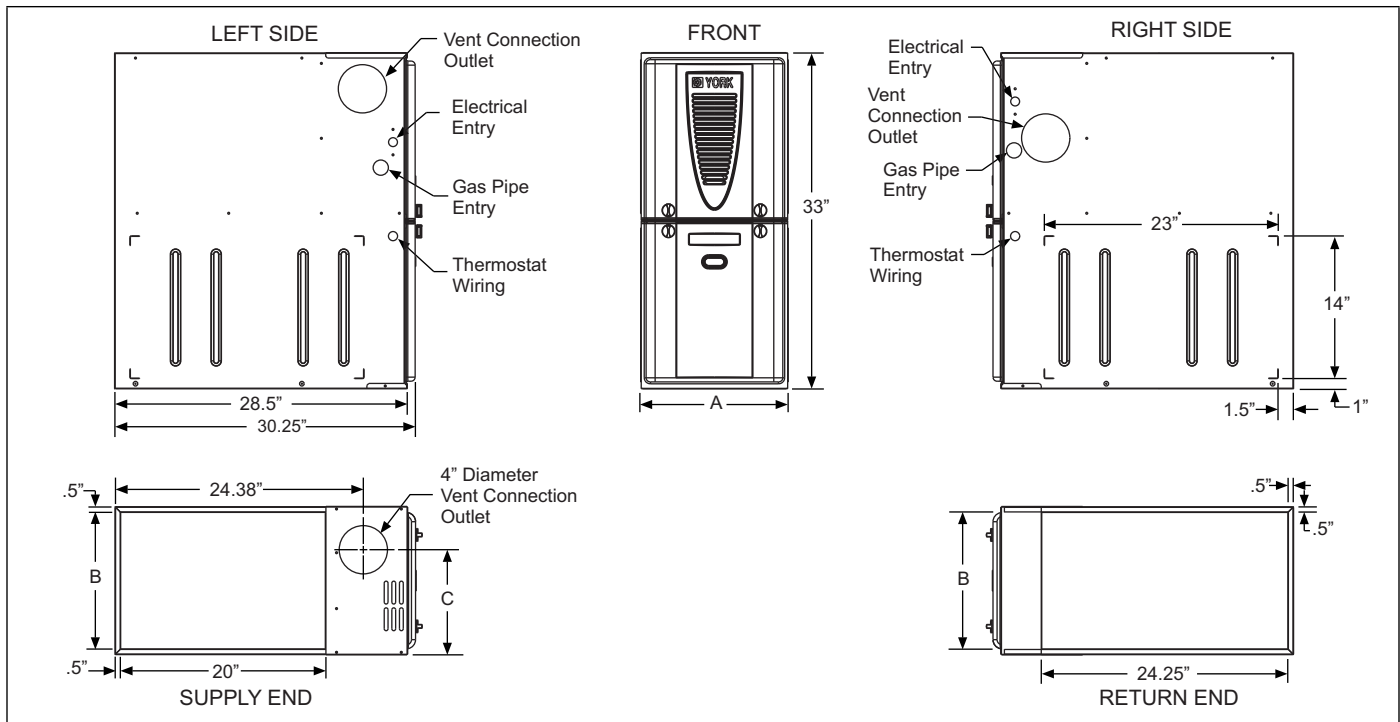
These compact units employ induced combustion, reliable hot surface ignition and high heat transfer aluminized tubular heat exchangers. The units are factory shipped for installation in upflow or horizontal applications and may be converted for downflow applications.

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 assure safe dependable and economical installation and operation.

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

## FEATURES

- Modulating heating operation includes:
  - Modulating gas valve, inducer and circulating blower
  - Modulating operation from 100% input to 50% input in 100% increments or from 100% to 65% input with chimney kit S1-1CK0605
- Easily applied in upflow, horizontal left or right, or downflow installation with minimal conversion necessary.
- Compact, easy to install, ideal height 33" tall cabinet.
- ECM variable speed motor for cooling SEER enhancement, blower delay options for comfort, and continuous fan options for IAQ performance.
- Easy access to controls to connect power/control wiring.
- Built-in, high level self diagnostics with fault code display.
- Low unit amp requirement for easy replacement application.
- All models are convertible to use propane (LP) gas.
- Electronic Hot Surface Ignition saves fuel cost with increased dependability and reliability.
- 100% shut off main gas valve for extra safety.
- 24V, 40 VA control transformer and blower relay supplied for add-on cooling.
- Hi-tech tubular aluminized steel primary heat exchanger.
- Blower door safety switch.
- Solid removable bottom panel allows easy conversion.
- Low NO<sub>x</sub> models have been designed to meet specific code requirements.
- Airflow leakage less than 1% of nominal airflow for duct performance testing conditions.
- No knockouts to deal with, making installation easier.
- Movable 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 used for maximum flexibility in meeting customers IAQ needs.
- Venting applications - may be installed as a common vent with other gas-fired appliances.
- Insulated blower compartment for thermal and acoustic performance.
- 1/4 turn knobs provided for easy door removal.



**Cabinet and Duct Dimensions**

| Models          | Nominal CFM (m <sup>3</sup> /min) | Cabinet Size | Cabinet Dimensions (Inches) |        |      |
|-----------------|-----------------------------------|--------------|-----------------------------|--------|------|
|                 |                                   |              | A                           | B      | C    |
| YPLC060A12MP12C | 1200                              | A            | 14 1/2                      | 13 1/4 | 10.3 |
| YPLC080B12MP12C | 1200                              | B            | 17 1/2                      | 16 1/4 | 11.8 |
| YPLC080C16MP12C | 1600                              | C            | 21                          | 19 3/4 | 13.6 |
| YPLC100C16MP12C | 1600                              | C            | 21                          | 19 3/4 | 13.6 |
| YPLC100C20MP12C | 2000                              | C            | 21                          | 19 3/4 | 13.6 |
| YPLC120C20MP12C | 2000                              | C            | 21                          | 19 3/4 | 15.8 |

**Ratings & Physical / Electrical Data**

| Models          | Input Max/Min        | Output Max/Min | AFUE | Nominal Airflow   | Total Unit Amps          | Air Temp. Rise Max Input             | Air Temp. Rise Min Input      |
|-----------------|----------------------|----------------|------|-------------------|--------------------------|--------------------------------------|-------------------------------|
|                 | MBH                  | MBH            |      | CFM               |                          | ° F                                  | ° F                           |
| YPLC060A12MP12C | 60/30                | 47/24          | 80.0 | 1200              | 7.0                      | 30-60                                | 20-50                         |
| YPLC080B12MP12C | 80/40                | 62/32          | 80.0 | 1200              | 7.5                      | 40-70                                | 20-50                         |
| YPLC080C16MP12C | 80/40                | 62/32          | 80.0 | 1600              | 10.0                     | 35-65                                | 20-50                         |
| YPLC100C16MP12C | 100/50               | 78/40          | 80.0 | 1600              | 10.0                     | 35-65                                | 20-50                         |
| YPLC100C20MP12C | 100/50               | 78/40          | 80.0 | 2000              | 12.0                     | 35-65                                | 20-50                         |
| YPLC120C20MP12C | 120/60               | 95/48          | 80.0 | 2000              | 12.0                     | 45-75                                | 25-55                         |
| Models          | Max. Outlet Air Temp | Blower         |      | Blower Wheel Size | Max Over-Current Protect | Min. wire Size (awg) @ 75 ft one way | Approximate Operating Weights |
|                 | ° F                  | HP             | Amps |                   |                          |                                      | Lbs                           |
| YPLC060A12MP12C | 190                  | 1/2            | 4.8  | 11 x 8            | 15                       | 14                                   | 94                            |
| YPLC080B12MP12C | 190                  | 1/2            | 4.8  | 11 x 8            | 15                       | 14                                   | 103                           |
| YPLC080C16MP12C | 190                  | 3/4            | 7.5  | 11 x 10           | 15                       | 14                                   | 114                           |
| YPLC100C16MP12C | 190                  | 3/4            | 7.5  | 11 x 10           | 15                       | 14                                   | 118                           |
| YPLC100C20MP12C | 190                  | 1              | 14.5 | 11 x 11           | 20                       | 12                                   | 122                           |
| YPLC120C20MP12C | 190                  | 1              | 14.5 | 11 x 11           | 20                       | 12                                   | 129                           |

**NOTES:**

Annual Fuel Utilization Efficiency (AFUE) numbers are determined in accordance with DOE Test procedures. Wire size and over current protection must comply with the National Electrical Code (NFPA-70-latest edition) and all local codes.

## FILTER PERFORMANCE

### ⚠ CAUTION

*In horizontal furnace arrangement, the filter must be located a minimum of 12" from the return air inlet of furnace.*  
*In downflow furnace arrangement, the filter must be located a minimum of 36" from the return air inlet of furnace.*

The airflow capacity data published in the "Blower Performance" table represents blower performance WITHOUT filters.

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.

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

### Unit Clearances to Combustibles

| Application       | Top | Front | Rear | Left Side | Right Side | Flue | Floor/Bottom   | Closet | Alcove | Attic | Line Contact     |
|-------------------|-----|-------|------|-----------|------------|------|----------------|--------|--------|-------|------------------|
| Upflow B-Vent     | 1   | 3     | 0    | 0         | 0          | 1    | Combustible    | Yes    | Yes    | Yes   | No               |
| Downflow B-Vent   | 1   | 3     | 0    | 0         | 0          | 1    | 1 <sup>1</sup> | Yes    | Yes    | Yes   | No               |
| Horizontal B-Vent | 1   | 3     | 0    | 0         | 0          | 1    | Combustible    | No     | Yes    | Yes   | Yes <sup>2</sup> |

#### NOTES:

- Special floor base or air conditioning coil required for use on combustible floor.
- Line contact 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.

### Recommended Filter Sizes

| CFM  | Cabinet Size | Side (in)   | Bottom (in) |
|------|--------------|-------------|-------------|
| 1200 | A            | 16 x 25     | 14 x 25     |
| 1200 | B            | 16 x 25     | 16 x 25     |
| 1600 | C            | 16 x 25     | 20 x 25     |
| 2000 | C            | (2) 16 x 25 | 20 x 25     |

#### NOTES:

- Air velocity through throwaway type filters may not exceed 300 feet per minute (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 16x25 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 20x25 filter.

## ACCESSORIES

**Propane (LP) Conversion Kit** - This accessory conversion kit may be used to convert natural gas units for LP operation.

Do not use Conversion Kit S1-1NP0680 with these models, as the control/gas valve combination have been updated, and that Kit S1-1NP0680 will not function correctly with these models.

S1-1NP0681 - 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", 2" or 4" filter. The S1-1SR0402 Kit accommodates a 1" filter only.

S1-1SR0200 - All Models

S1-1SR0402 - All Models

**Bottom Return Filter Racks** - The S1-1BR05\* series are galvanized steel filter racks. The S1-1BR06\* series are pre-painted steel filter racks to match the appearance of the furnace cabinet. The S1-1BR05\* and S1-1BR06\* series filter racks accommodate a 1", 2" or 4" filter.

S1-1BR0514 or S1-1BR0614 - For 14-1/2" cabinets

S1-1BR0517 or S1-1BR0617 - For 17-1/2" cabinets

S1-1BR0521 or S1-1BR0621 - For 21" cabinets

**Masonry Chimney Kit** - This accessory kit allows the 80% modulating upflow models to be vented into a tile-lined masonry chimney.

S1-1CK0605 - All 80% 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" cabinets

S1-1CB0517 - For 17-1/2" cabinets

S1-1CB0521 - For 21" cabinets

**High Altitude** - No high altitude kits are required.

**Thermostats** - Compatible thermostat controls are available through accessory sourcing. For optimum performance, these units are fully compatible with our residential Yorkl touch screen thermostat with proprietary (patent-pending) hexagon interface. For more information, see the thermostat section of the Product Equipment Catalog.

S1-THXU280 - All Models

**Blower Performance CFM - Any Position**

| <b>High / Low Speed Cooling CFM</b> |         |                 |         |                        |            |
|-------------------------------------|---------|-----------------|---------|------------------------|------------|
| <b>060A12°C</b>                     |         | <b>080B12°C</b> |         | <b>Jumper Settings</b> |            |
| Hi Cool                             | Lo Cool | Hi Cool         | Lo Cool | COOL Jumper            | ADJ Jumper |
| 1340                                | 900     | 1290            | 790     | H                      | B          |
| 1125                                | 750     | 1065            | 660     | MH                     | B          |
| 1225                                | 820     | 1165            | 720     | H                      | A          |
| 1050                                | 680     | 960             | 600     | MH                     | A          |
| 1100                                | 740     | 1050            | 590     | H                      | C          |
| 890                                 | 600     | 855             | 525     | ML                     | B          |
| 920                                 | 615     | 875             | 540     | MH                     | C          |
| 675                                 | 450     | 640             | 395     | L                      | B          |
| 815                                 | 545     | 775             | 495     | ML                     | A          |
| 600                                 | 440     | 580             | 380     | L                      | A          |
| 720                                 | 499     | 700             | 430     | ML                     | C          |
| 540                                 | 440     | 525             | 380     | L                      | C          |
| <b>High / Low Speed Cooling CFM</b> |         |                 |         |                        |            |
| <b>080C16°C</b>                     |         | <b>100C16°C</b> |         | <b>Jumper Settings</b> |            |
| Hi Cool                             | Lo Cool | Hi Cool         | Lo Cool | COOL Jumper            | ADJ Jumper |
| 1715                                | 1165    | 1600            | 1120    | H                      | B          |
| 1520                                | 1020    | 1450            | 980     | MH                     | B          |
| 1575                                | 1060    | 1500            | 1020    | H                      | A          |
| 1395                                | 930     | 1345            | 900     | MH                     | A          |
| 1430                                | 950     | 1315            | 930     | H                      | C          |
| 1320                                | 875     | 1265            | 845     | ML                     | B          |
| 1260                                | 840     | 1210            | 805     | MH                     | C          |
| 1100                                | 730     | 1080            | 700     | L                      | B          |
| 1200                                | 795     | 1165            | 765     | ML                     | A          |
| 1000                                | 665     | 980             | 635     | L                      | A          |
| 1080                                | 715     | 1050            | 695     | ML                     | C          |
| 900                                 | 600     | 885             | 585     | L                      | C          |
| <b>High / Low Speed Cooling CFM</b> |         |                 |         |                        |            |
| <b>100C20°C</b>                     |         | <b>120C20°C</b> |         | <b>Jumper Settings</b> |            |
| Hi Cool                             | Lo Cool | Hi Cool         | Lo Cool | COOL Jumper            | ADJ Jumper |
| 2110                                | 1360    | 1990            | 1290    | H                      | B          |
| 1670                                | 1085    | 1760            | 1030    | MH                     | B          |
| 1900                                | 1235    | 1900            | 1210    | H                      | A          |
| 1515                                | 990     | 1510            | 935     | MH                     | A          |
| 1710                                | 1130    | 1800            | 1095    | H                      | C          |
| 1465                                | 950     | 1540            | 900     | ML                     | B          |
| 1370                                | 890     | 1440            | 845     | MH                     | C          |
| 1255                                | 815     | 1320            | 790     | L                      | B          |
| 1330                                | 865     | 1400            | 835     | ML                     | A          |
| 1140                                | 740     | 1200            | 725     | L                      | A          |
| 1195                                | 780     | 1260            | 750     | ML                     | C          |
| 1025                                | 665     | 1080            | 650     | L                      | C          |

**NOTES:**

All CFM's are shown at 0.5" w.c. external static pressure. These units have variable speed motors that automatically adjust to provide constant CFM from 0.0" to 0.6" w.c. static pressure. From 0.6" to 1.0" static pressure, CFM is reduced by 2% per 0.1" increase in static. Operation on duct systems with greater than 1.0" w.c. external static pressure is not recommended.

At some settings, LOW COOL airflow may be lower than what is required to operate an airflow switch on certain models of electronic air cleaners. Consult the instructions for the electronic air cleaner for further details.

# NOTES