# FG7T (C and L Series)

**iSEER, Smartlite®** ecoLogic™

## Two Stage, Variable Speed, Condensing Upflow/Horizontal and Downflow Gas Furnaces
### Induced Draft - 95.1 AFUE
### Input 60,000 - 120,000 Btuh

The high efficiency upflow gas furnace may be installed free standing in a utility room, basement, or enclosed in an alcove or closet. Upflow/horizontal units come ready for upflow or horizontal application. The extended flush jacket provides a pleasing "appliance appearance." Design certified by CSA for application in Canada and the United States.
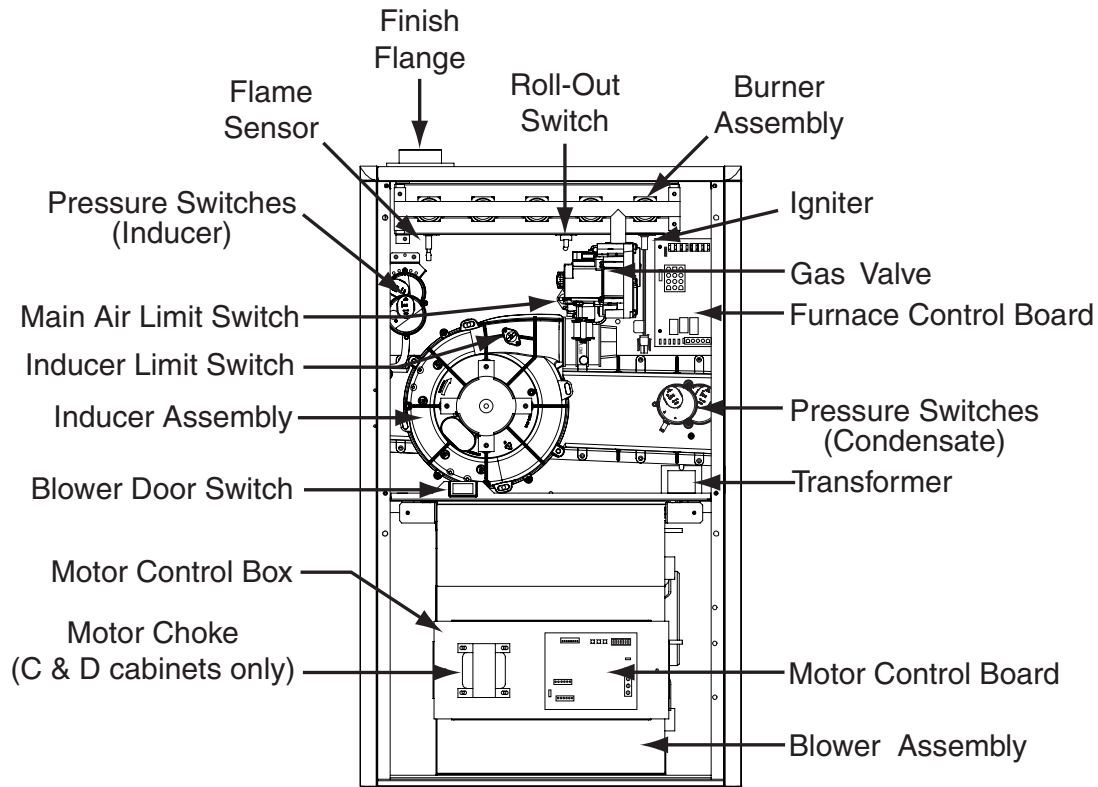


## WARRANTY

– 10 Year all-parts warranty.
– 10 Year Quality Pledge to replace the unit if the heat exchanger fails within the first 10 years of operation, to the original owner.
– Consumer product registration required for 10 year All Parts Warranty and Quality Pledge within a limited period of time after the installation. See current warranty document or visit our consumer web site listed on the back of this document for warranty details.
– When registered, this product is upgraded to a limited lifetime heat exchanger warranty.
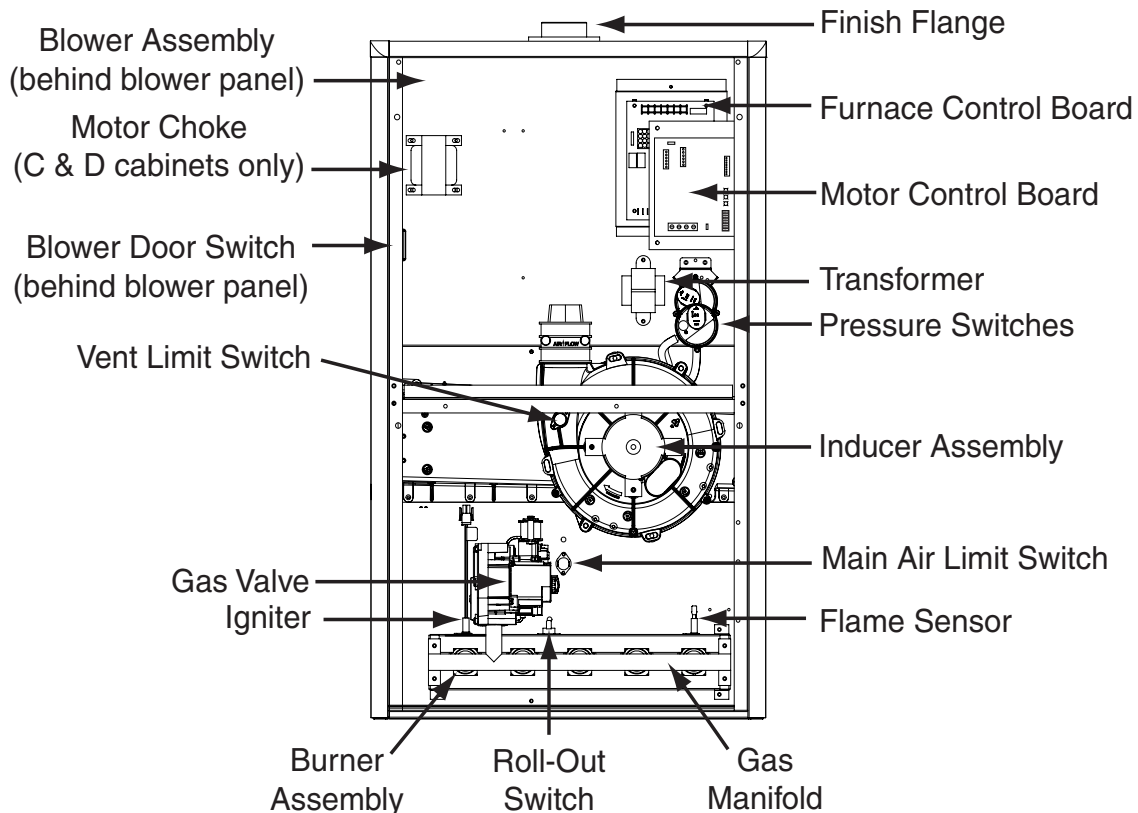
## FEATURES and BENEFITS

- **iSEER:** Energy efficient brushless DC (ECM) motor gives up to 1 SEER point efficiency gain in cooling.
- **100% fired and tested:** All units and each component are tested on the manufacturing line.
- **Best packaging in the industry:** Unique corner post design assures product will arrive to the homeowner dent free.
- **30 second blower delay:** At start-up assures a warm duct temperature at furnace start-up. Adjustable blower off settings (60, 90, 120 and 180 seconds).
- **30 second post purge:** Increases life of heat exchanger.
- **Two Stage Inducer:** Optimizes efficiency on first stage heat and reduces sound levels.
- **Hot surface igniter:** Innovative application of a silicon nitride type igniter. Utilizes proven Smartlite® technology.
- **Color coded wire harness:** Designed to fit the components, all with quick-connect fittings for ease of service and replacement.
- **Flexible category IV venting system:** May be vertically or horizontally vented using either a one-pipe or two-pipe system for maximum flexibility in installation.
- **High Static Blowers:** All models equipped with high static blowers.
- **Low Boy Height:** Easy to apply in low ceiling applications, works well with taller high SEER coils, easier to handle and install.
- **Tubular primary heat exchanger:** Heavy gauge aluminized steel heat exchanger and stainless steel secondary heat exchanger assures a long life.
- **90 second fixed cooling cycle blower-off delay (TDR):** Increases cooling performance when matched with a NORDYNE coil.
- **LP convertible:** Simple burner orifice and regulator spring change for ease of convertibility.
- **Diagnostic lights for easy troubleshooting without counting flashes:** Dedicated light for flame signal strength and 2 lights in combination to indicate all other fault codes with easy to recognize states without counting flashes.
- **Incorporates integrated control board:** With connections for electronic air cleaner and humidifier.
- **Two piece door design:** Enhances furnace appearance and uses captured screws to prevent losing door screws.
- **Blower Compartment:** Sealed door to reduce air leakage and insulated for ultra quiet operation.
- **Sealed Vestibule:** Reduces burner and inducer sound levels.
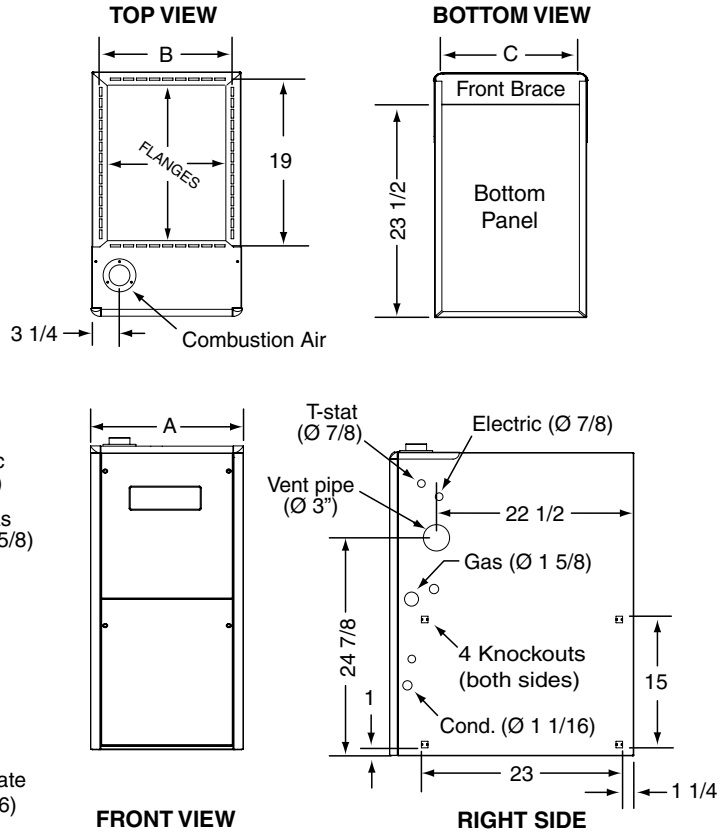
# LOCATION OF FURNACE COMPONENTS

Finish Flange

Flame Sensor

Roll-Out Switch

Burner Assembly

Pressure Switches (Inducer)

Igniter

Gas Valve

Main Air Limit Switch

Furnace Control Board

Inducer Limit Switch

Inducer Assembly

Pressure Switches (Condensate)

Blower Door Switch

Transformer

Motor Control Box

Motor Choke (C & D cabinets only)

Motor Control Board

Blower Assembly

**Upflow/Horizontal Gas Furnace Components**

Blower Assembly (behind blower panel)

Finish Flange

Motor Choke (C & D cabinets only)

Furnace Control Board

Motor Control Board

Blower Door Switch (behind blower panel)

Transformer

Pressure Switches

Vent Limit Switch

Inducer Assembly

Main Air Limit Switch

Gas Valve

Igniter

Flame Sensor

Burner Assembly

Roll-Out Switch

Gas Manifold

**Downflow Gas Furnace Components**

# DIMENSIONS

**TOP VIEW**

B

19

FLANGES

3 1/4 → Combustion Air

**BOTTOM VIEW**

C

Front Brace

Bottom Panel

23 1/2

| *TC Model #'s | Dimension "A" | Dimension "B" | Dimension "C" |
|---|---|---|---|
| 060D-VB | 17 ½ | 15 ⅞ | 16 ⅛ |
| 080D-VC | 21 | 19 ⅜ | 19 ⅝ |
| 100D-VC | | | |
| 120D-VD | 24 ½ | 22 ⅞ | 23 ⅛ |

NOTE: Dimensions shown in inches
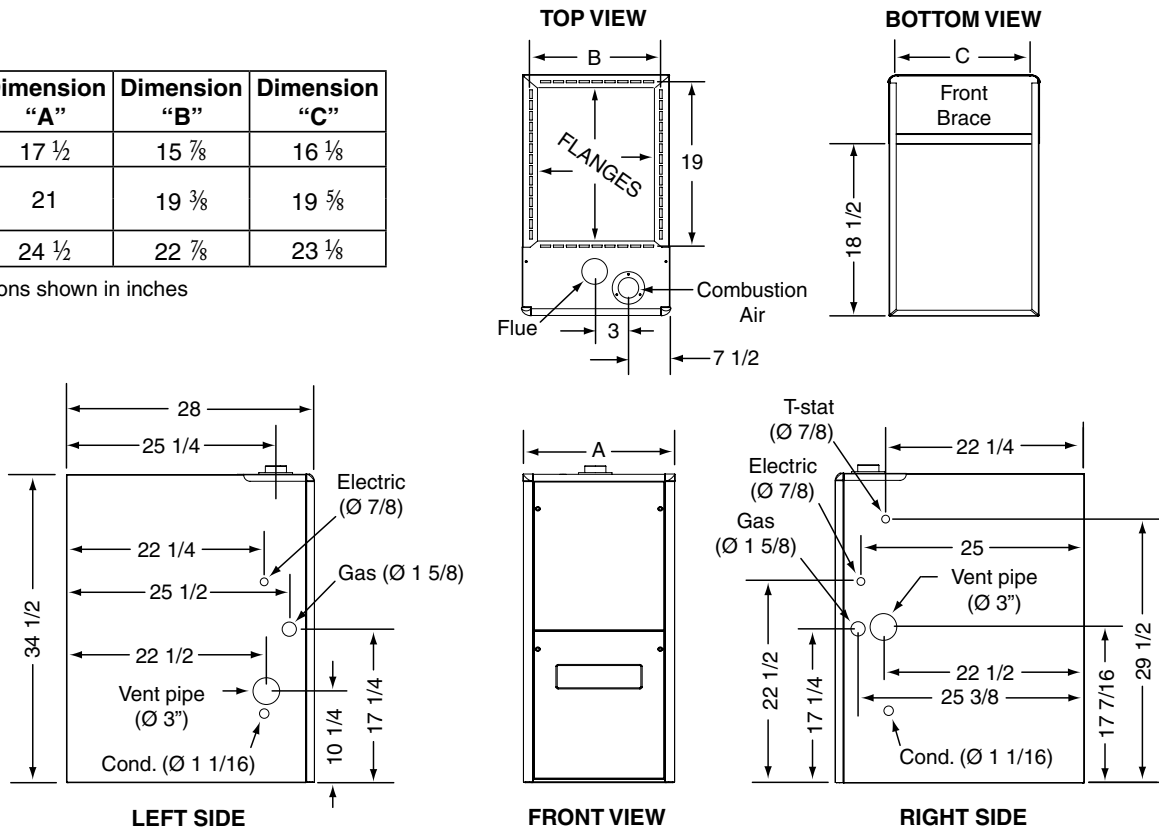
**LEFT SIDE**

2 3/4
22 1/2
T-stat (Ø 7/8)
Electric (Ø 7/8)
25 3/8
22 1/2
Gas (Ø 1 5/8)
Vent pipe (Ø 3")
34 1/2
17 1/4
17 7/8
28
Condensate (Ø 1 1/16)

**FRONT VIEW**

A

**RIGHT SIDE**

T-stat (Ø 7/8)
Electric (Ø 7/8)
Vent pipe (Ø 3")
22 1/2
Gas (Ø 1 5/8)
24 7/8
4 Knockouts (both sides)
1
Cond. (Ø 1 1/16)
23
15
1 1/4

**FG7TC 95.1+ High Efficiency Upflow/Horizontal Series**

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**TOP VIEW**

B

19

FLANGES

Combustion Air

Flue → 3 ←
7 1/2

**BOTTOM VIEW**

C

Front Brace

18 1/2

| *TL Model #'s | Dimension "A" | Dimension "B" | Dimension "C" |
|---|---|---|---|
| 060D-VB | 17 ½ | 15 ⅞ | 16 ⅛ |
| 080D-VC | 21 | 19 ⅜ | 19 ⅝ |
| 100D-VC | | | |
| 120D-VD | 24 ½ | 22 ⅞ | 23 ⅛ |

NOTE: Dimensions shown in inches

**LEFT SIDE**

28
25 1/4
Electric (Ø 7/8)
22 1/4
25 1/2
Gas (Ø 1 5/8)
22 1/2
34 1/2
Vent pipe (Ø 3")
Cond. (Ø 1 1/16)
10 1/4
17 1/4

**FRONT VIEW**

A

**RIGHT SIDE**

T-stat (Ø 7/8)
Electric (Ø 7/8)
22 1/4
Gas (Ø 1 5/8)
25
Vent pipe (Ø 3")
22 1/2
22 1/2
17 1/4
25 3/8
17 7/16
29 1/2
Cond. (Ø 1 1/16)

**FG7TL 95.1+ High Efficiency Downflow Series**

# BLOWER PERFORMANCE - FG7TC/TL

**Nominal Heating Airflows (CFM) and Temperature Rise (°F)**

| B Cabinet | | | | *TC/TL-060D-VB Models | |
|---|---|---|---|---|---|
| **Switch Settings HEAT** | | | | **Input (BTU) 60000** | |
| A/B | 2 | 3 | 4 | CFM | Temp Rise (°F) |
| 1 | 0 | 0 | 0 | 1000 | 53 |
| 1 | 0 | 0 | 1 | 1100 | 48 |
| 1 | 0 | 1 | 0 | 1200 | 44 |
| 1 | 0 | 1 | 1 | 1300 | 41 |
| 1 | 1 | 0 | 0 | 1400 | 38 |
| 1 | 1 | 0 | 1 | 1500 | 35 |
| 1 | 1 | 1 | 0 | 1600 | 33 |
| 1 | 1 | 1 | 1 | 1700 | 31 |

| C Cabinet | | | | *TC/TL-080D-VC Models | | *TC/TL-100D-VC Models | |
|---|---|---|---|---|---|---|---|
| **Switch Settings HEAT** | | | | **Input (BTU) 80000** | | **Input (BTU) 100000** | |
| A/B | 2 | 3 | 4 | CFM | Temp Rise (°F) | CFM | Temp Rise (°F) |
| # | 0 | 0 | 0 | 1000 | 70 | 1000 | 88 |
| # | 0 | 0 | 1 | 1115 | 63 | 1115 | 79 |
| # | 0 | 1 | 0 | 1230 | 57 | 1230 | 72 |
| # | 0 | 1 | 1 | 1345 | 52 | 1345 | 65 |
| # | 1 | 0 | 0 | 1460 | 48 | 1460 | 60 |
| # | 1 | 0 | 1 | 1575 | 45 | 1575 | 56 |
| # | 1 | 1 | 0 | 1690 | 42 | 1690 | 52 |
| # | 1 | 1 | 1 | 1805 | 39 | 1805 | 49 |

# Switch not used - can be 0 or 1

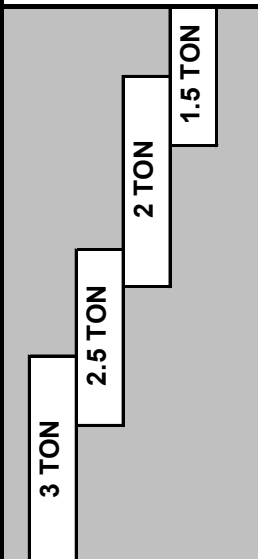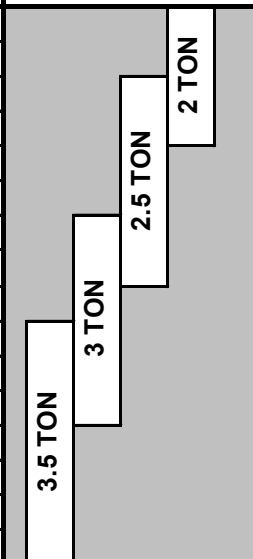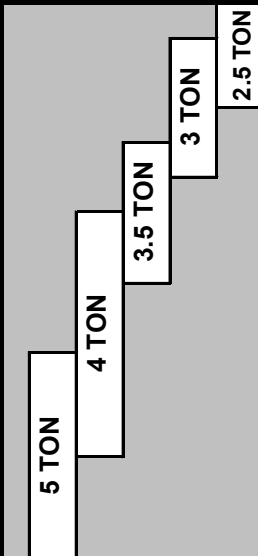| D Cabinet | | | | *TC/TL-120D-VD Models | |
|---|---|---|---|---|---|
| **Switch Settings HEAT** | | | | **Input (BTU) 120000** | |
| A/B | 2 | 3 | 4 | CFM | Temp Rise (°F) |
| # | 0 | 0 | 0 | 1500 | 70 |
| # | 0 | 0 | 1 | 1615 | 65 |
| # | 0 | 1 | 0 | 1730 | 61 |
| # | 0 | 1 | 1 | 1845 | 57 |
| # | 1 | 0 | 0 | 1960 | 54 |
| # | 1 | 0 | 1 | 2075 | 51 |
| # | 1 | 1 | 0 | 2190 | 48 |
| # | 1 | 1 | 1 | 2305 | 46 |

Notes:
1. Two openings are recommended for airflows above 1600 CFM if the filter(s) is (are) adjacent to the furnace.
2. Temperature rises in the table are approximate. Actual temperature rises may vary.
3. Temperature rises that are shaded in grey are for reference only. These conditions are not recommended.

# COOLING AIRFLOW

## A Cabinet

| HEAT | COOL | | | | CFM | | Nominal A/C and HP Capacity |
|---|---|---|---|---|---|---|---|
| A/B | 5 | 6 | 7 | 8 | LOW | HIGH | |
| 0 | 0 | 0 | 0 | 0 | 360 | 525 | |
| 0 | 0 | 0 | 0 | 1 | 400 | 580 | |
| 0 | 0 | 0 | 1 | 0 | 440 | 635 | |
| 0 | 0 | 0 | 1 | 1 | 475 | 690 | |
| 0 | 0 | 1 | 0 | 0 | 515 | 745 | |
| 0 | 0 | 1 | 0 | 1 | 550 | 800 | |
| 0 | 0 | 1 | 1 | 0 | 590 | 855 | |
| 0 | 0 | 1 | 1 | 1 | 630 | 910 | |
| 0 | 1 | 0 | 0 | 0 | 665 | 965 | |
| 0 | 1 | 0 | 0 | 1 | 705 | 1020 | |
| 0 | 1 | 0 | 1 | 0 | 740 | 1075 | |
| 0 | 1 | 0 | 1 | 1 | 780 | 1130 | |
| 0 | 1 | 1 | 0 | 0 | 820 | 1185 | |
| 0 | 1 | 1 | 0 | 1 | 855 | 1240 | |
| 0 | 1 | 1 | 1 | 0 | 895 | 1295 | |
| 0 | 1 | 1 | 1 | 1 | 930 | 1350 | |

Capacity ranges (A Cabinet): 3 TON, 2.5 TON, 2 TON, 1.5 TON

## B Cabinet

| HEAT | COOL | | | | CFM | | Nominal A/C and HP Capacity |
|---|---|---|---|---|---|---|---|
| A/B | 5 | 6 | 7 | 8 | LOW | CFM | |
| 1 | 0 | 0 | 0 | 0 | 485 | 700 | |
| 1 | 0 | 0 | 0 | 1 | 525 | 760 | |
| 1 | 0 | 0 | 1 | 0 | 565 | 820 | |
| 1 | 0 | 0 | 1 | 1 | 605 | 880 | |
| 1 | 0 | 1 | 0 | 0 | 650 | 940 | |
| 1 | 0 | 1 | 0 | 1 | 690 | 1000 | |
| 1 | 0 | 1 | 1 | 0 | 730 | 1060 | |
| 1 | 0 | 1 | 1 | 1 | 775 | 1120 | |
| 1 | 1 | 0 | 0 | 0 | 815 | 1180 | |
| 1 | 1 | 0 | 0 | 1 | 855 | 1240 | |
| 1 | 1 | 0 | 1 | 0 | 895 | 1300 | |
| 1 | 1 | 0 | 1 | 1 | 940 | 1360 | |
| 1 | 1 | 1 | 0 | 0 | 980 | 1420 | |
| 1 | 1 | 1 | 0 | 1 | 1020 | 1480 | |
| 1 | 1 | 1 | 1 | 0 | 1065 | 1540 | |
| 1 | 1 | 1 | 1 | 1 | 1105 | 1600 | |

Capacity ranges (B Cabinet): 3.5 TON, 3 TON, 2.5 TON, 2 TON

## C Cabinet

| HEAT | COOL | | | | CFM | | Nominal A/C and HP Capacity |
|---|---|---|---|---|---|---|---|
| A/B | 5 | 6 | 7 | 8 | LOW | CFM | |
| # | 0 | 0 | 0 | 0 | 705 | 1025 | |
| # | 0 | 0 | 0 | 1 | 750 | 1090 | |
| # | 0 | 0 | 1 | 0 | 795 | 1155 | |
| # | 0 | 0 | 1 | 1 | 840 | 1220 | |
| # | 0 | 1 | 0 | 0 | 885 | 1285 | |
| # | 0 | 1 | 0 | 1 | 930 | 1350 | |
| # | 0 | 1 | 1 | 0 | 975 | 1415 | |
| # | 0 | 1 | 1 | 1 | 1020 | 1480 | |
| # | 1 | 0 | 0 | 0 | 1065 | 1545 | |
| # | 1 | 0 | 0 | 1 | 1110 | 1610 | |
| # | 1 | 0 | 1 | 0 | 1155 | 1675 | |
| # | 1 | 0 | 1 | 1 | 1200 | 1740 | |
| # | 1 | 1 | 0 | 0 | 1245 | 1805 | |
| # | 1 | 1 | 0 | 1 | 1290 | 1870 | |
| # | 1 | 1 | 1 | 0 | 1335 | 1935 | |
| # | 1 | 1 | 1 | 1 | 1380 | 2000 | |

Capacity ranges (C Cabinet): 5 TON, 4 TON, 3.5 TON, 3 TON, 2.5 TON

## D Cabinet

| HEAT | COOL | | | | CFM | | Nominal A/C and HP Capacity |
|---|---|---|---|---|---|---|---|
| A/B | 5 | 6 | 7 | 8 | LOW | CFM | |
| # | 0 | 0 | 0 | 0 | 965 | 1400 | |
| # | 0 | 0 | 0 | 1 | 995 | 1440 | |
| # | 0 | 0 | 1 | 0 | 1020 | 1480 | |
| # | 0 | 0 | 1 | 1 | 1050 | 1520 | |
| # | 0 | 1 | 0 | 0 | 1075 | 1560 | |
| # | 0 | 1 | 0 | 1 | 1105 | 1600 | |
| # | 0 | 1 | 1 | 0 | 1130 | 1640 | |
| # | 0 | 1 | 1 | 1 | 1160 | 1680 | |
| # | 1 | 0 | 0 | 0 | 1185 | 1720 | |
| # | 1 | 0 | 0 | 1 | 1215 | 1760 | |
| # | 1 | 0 | 1 | 0 | 1240 | 1800 | |
| # | 1 | 0 | 1 | 1 | 1270 | 1840 | |
| # | 1 | 1 | 0 | 0 | 1295 | 1880 | |
| # | 1 | 1 | 0 | 1 | 1325 | 1920 | |
| # | 1 | 1 | 1 | 0 | 1350 | 1960 | |
| # | 1 | 1 | 1 | 1 | 1380 | 2000 | |

Capacity ranges (D Cabinet): 5 TON, 4 TON, 3.5 TON

# Switch not used - can be 0 or 1

# VENTING

All models are approved for vertical non direct (1 pipe) and direct (2 pipe) venting applications. See Vent Table below for specified sizes and allowable lengths.
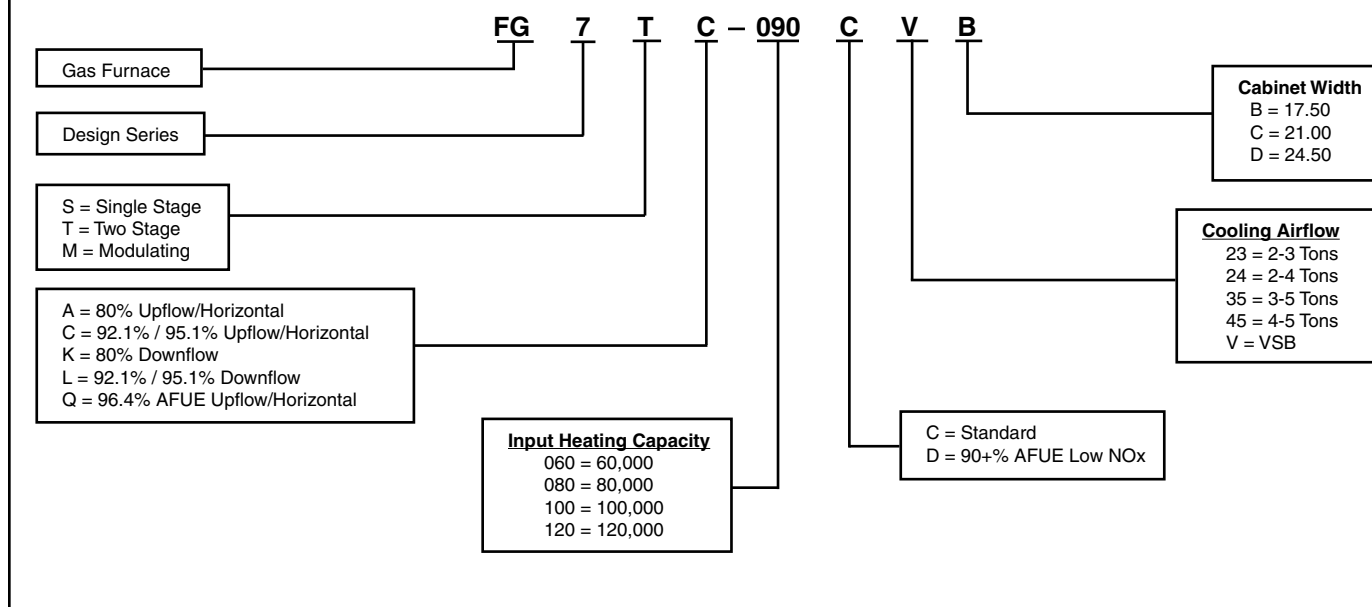
# VENT TABLE

| FURNACE MODELS (BTU) | FURNACE INSTALLATION | SINGLE PIPE LENGTH (FT.) with 1 long radius elbow** | | DIRECT VENT, DUAL PIPE LENGTH (ft.) WITH 1 long radius elbow on each pipe** | |
|---|---|---|---|---|---|
| | | OUTLET | OUTLET | INLET/OUTLET | INLET/OUTLET |
| | | 2" Diameter | 3" Diameter | 2" Diameter | 3" Diameter |
| 60,000 | Upflow | 90 | 90 | 90 | 90 |
| | Horizontal | 50 | 90 | 50 | 90 |
| | Downflow | 30 | 90 | 30 | 90 |
| | | | | | |
| 80,000 | Upflow | 90 | 90 | 90 | 90 |
| | Horizontal | 30 | 90 | 30 | 90 |
| | Downflow | 30 | 90 | 30 | 90 |
| | | | | | |
| 100,000 | Upflow | 60 | 90 | 60 | 90 |
| | Horizontal | 30 | 90 | 30 | 90 |
| | Downflow | 30 | 90 | 25 | 90 |
| | | | | | |
| 120,000 | Upflow | N/A | 90 | N/A | 90 |
| | Horizontal | N/A | 90 | N/A | 90 |
| | Downflow | N/A | 90 | N/A | 90 |

**\*NOTES:**

1. Subtract 2.5 ft. for each additional 2 inch long radius elbow, 5 ft. for each additional 2 inch short radius elbow, 3.5 ft. for each additional 3 inch long radius elbow, and 7 ft. for each additional 3 inch short radius elbow. Subtract 5ft for each 2" tee and 8ft for each 3" tee.

2. Two 45 degree elbows are equivalent to one 90 degree elbow.

3. This table applies for elevations from sea level to 2,000 ft. For higher elevations, decrease pipe lengths by 8% per 1,000 ft of altitude.

# MODEL IDENTIFICATION CODE

FG 7 T C – 090 C V B

Gas Furnace

Design Series

S = Single Stage
T = Two Stage
M = Modulating

A = 80% Upflow/Horizontal
C = 92.1% / 95.1% Upflow/Horizontal
K = 80% Downflow
L = 92.1% / 95.1% Downflow
Q = 96.4% AFUE Upflow/Horizontal

**Input Heating Capacity**
060 = 60,000
080 = 80,000
100 = 100,000
120 = 120,000

C = Standard
D = 90+% AFUE Low NOx

**Cabinet Width**
B = 17.50
C = 21.00
D = 24.50

**Cooling Airflow**
23 = 2-3 Tons
24 = 2-4 Tons
35 = 3-5 Tons
45 = 4-5 Tons
V = VSB

# SPECIFICATIONS

| FG7TC/TL MODELS NUMBERS: | -060D-VB | -080D-VC | -100D-VC | -120D-VD |
|---|---|---|---|---|
| Input - Btuh (a) | 60,000 / 39,000 | 80,000 / 52,000 | 100,000 / 65,000 | 120,000 / 78,000 |
| Heating Capacity - Btuh | 57,000 / 37,050 | 76,000 / 49,400 | 95,000 / 61,750 | 114,000 / 74,100 |
| **AFUE** | 95.1 | 95.1 | 95.1 | 95.1* |
| Blower D x W | 11 x 8 | 11 x 10 | 11 x 10 | 11 x 10 |
| Motor H.P. - Speed - Type | 1/2 - Variable | 3/4 - Variable | 3/4 - Variable | 1 - Variable |
| Motor FLA | 6.2 | 8.7 | 8.7 | 11.70 |
| Rated Ext. SP - In. W.C. | 0.5 | 0.5 | 0.5 | 0.5 |
| Temperature Rise Range - ºF | 30-60 | 35-65 | 35-65 | 40-70 |
| Shipping Weights | 125lbs | 135lbs | 145lbs | 160lbs |

*TL 120 is 94.8% AFUE

Note:
All models are 115V, 60 Hz.  Gas Connections are 1/2" N.P.T. AFUE = Annual Fuel Utilization Efficiency
(a) Ratings to 2,000 ft. Over 2,000 ft. reduce 4% for each 1,000 ft. above sea level.

# ACCESSORIES

| FG7TC/TL KITS | |
|---|---|
| **Description** | **SKU** |
| 2" Concentric vent kit | 904952 |
| 3" Concentric vent kit | 904953 |
| "A" Cabinet downflow sub base kit | 902974 |
| "B", "C", "D" Cabinet downflow sub base kit | 904911 |
| 2" Side wall vent kit | 904617 |
| 3" Side wall vent kit | 904347 |
| U.S. LP Conversion kit (0 to 10,000 ft.) | 904914 |
| Canada LP Conversion kit (0 to 4,500 ft.) | 904915 |
| Bottom return filter 20 per box, "A" cabinet | 903088 |
| Bottom return filter 20 per box, "B" cabinet | 904916 |
| Bottom return filter 20 per box, "C" cabinet | 904917 |
| Bottom return filter 20 per box, "D" cabinet | 904918 |
| Side return filter kit | 541036 |
| Neutralizer kit | 902377 |