



## 80% A.F.U.E.† UPFLOW/ HORIZONTAL GAS FURNACES

The Thermal Zone® line of upflow/horizontal gas furnaces are designed for utility rooms, closets, alcoves, or attics. **Because of the model's low-profile 34 inch [864 mm] height, the upflow model can also be used to satisfy most applications that traditionally call for a horizontal furnace.**

The design is certified by CSA International.

### Features

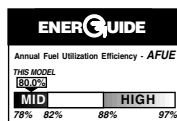
- Unique solid door design leads to quiet operation.
- Patented heat exchanger, constructed of both stainless and aluminized steel for the maximum in corrosion resistance.
- Low profile "34 inch" [864 mm] design is lighter and easier to handle, and leaves room for optional equipment.
- Convertible from upflow to horizontal left or right without field conversion.
- Left or right side gas and electric inlet connections allow quick and simple change.
- Direct spark ignition with remote sense, features a integrated board with an electronic air cleaner hookup.
- Prepaint galvanized steel cabinet.
- A slow-open gas valve and a specially designed draft inducer motor make it one of the quietest furnaces on the market today.
- Grab-holes in doors to aid in easy door removal and replacement.

A variety of cooling coils and plenums designed to use with Thermal Zone® gas furnaces are available as optional accessories.

†A.F.U.E. (Annual Fuel Utilization Efficiency) calculated in accordance with Department of Energy test procedures.

### TZ81UH- SERIES Models with Input Rates from 50,000 to 150,000 BTU/HR [15 to 44 kW]

Manufactured for  
**Thermal Zone®**  
Philadelphia, PA





# THERMAL ZONE® 80% UPFLOW/HORIZONTAL GAS FURNACE

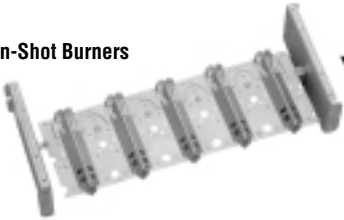
Patented Heat Exchanger



Draft Inducer Motor

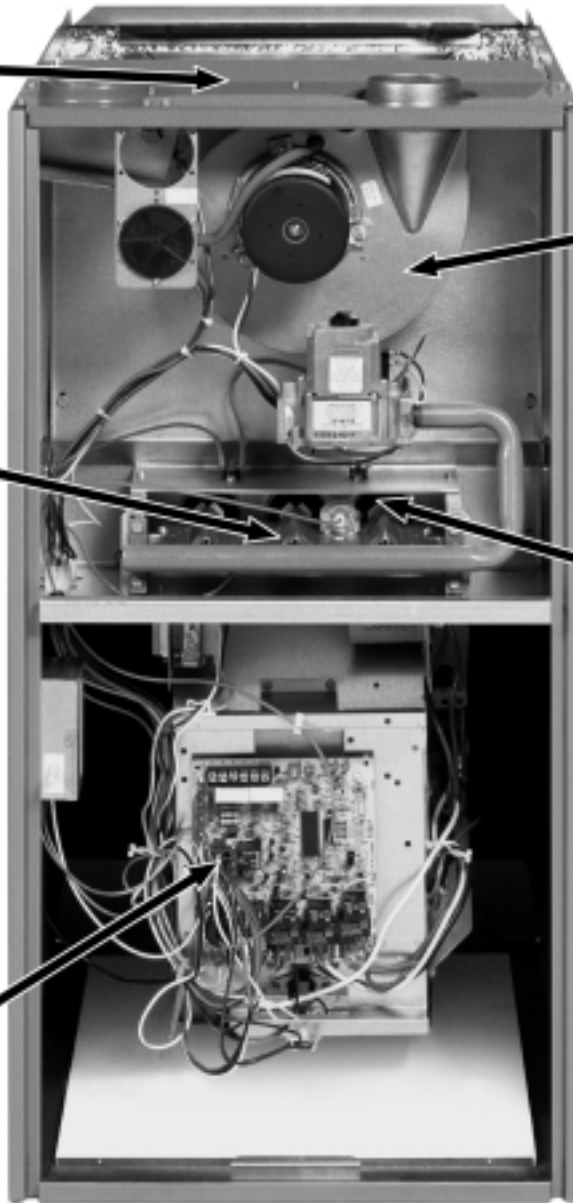
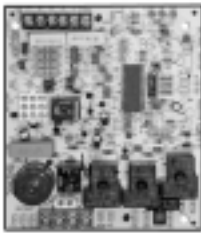


In-Shot Burners



Direct Spark Ignitor

Integrated Furnace Control



## STANDARD EQUIPMENT

Completely assembled and wired; induced draft; pressure switch; redundant main gas control; blower compartment door safety switch; solid state time on/time off blower control; limit control; manual shut-off valve, pressure regulator for natural and L.P. (propane) gas; transformer; direct drive multi-speed blower motor. Furnaces are equipped with cooling/heating relay and transformer (40VA) ready for air conditioning applications. (Please note: a thermostat is not included as standard equipment.) Flame sensor diagnostics.

## OPTIONAL EQUIPMENT

Twinning Kit

Side and bottom filter frame assembly. Return air cabinet for all sizes.

NOTE: Furnace is not listed for use with fuels other than natural or L.P. (propane) gas.

The complete terms of limited and other warranties are available at our sales office, or through local installer.

All models can be converted by a qualified Thermal Zone distributor or local service dealer to use L.P. (propane) gas without changing burners. Factory approved kits must be used to convert from natural to L.P. (propane) gas and may be ordered as optional accessories from a Thermal Zone parts distributor.

For L.P. (propane) operation, refer to Conversion Kit Index Form.

NOTE: For natural and L.P. (propane) gas models, standard hot surface ignition is 100% safety lockout type.

**WARNING**  
THIS FURNACE IS NOT APPROVED  
OR RECOMMENDED  
FOR USE IN MOBILE HOMES

**BEFORE PURCHASING THIS APPLIANCE, READ IMPORTANT ENERGY COST AND EFFICIENCY INFORMATION AVAILABLE FROM YOUR RETAILER.**

## PHYSICAL DATA AND SPECIFICATIONS

MODEL NUMBERS TZ81UH- SERIES	503TA N503TA	753TA N753TA	754TA N754TA	103TA	104TA	105TA N105TA	125TA	155TA
Input-BTU/Hr [kW] ②	50,000 [15]	75,000 [22]	75,000 [22]	100,000 [29]	100,000 [29]	100,000 [29]	125,000 [37]	150,000 [44]
Heating Capacity BTU/Hr [kW] ①	41,000 [12]	60,000 [18]	60,000 [18]	80,000 [23]	80,000 [23]	80,000 [23]	99,000 [29]	119,000 [35]
Heat Ext. Static Pressure [kPa]	.10 [.025]	.12 [.029]	.12 [.029]	.15 [.037]	.15 [.037]	.15 [.037]	.20 [.05]	.20 [.05]
Blower (D x W) [mm]	11 x 6 [279 x 152]	11 x 7 [279 x 178]	11 x 7 [279 x 178]	11 x 7 [279 x 178]	11 x 10 [279 x 254]	11 x 10 [279 x 254]	11 x 10 [279 x 254]	11 x 10 [279 x 254]
Motor H.P.–Speed– PSC Type [W]	1/2-4-PSC [373]	1/2-3-PSC [373]	1/2-3-PSC [373]	1/2-3-PSC [373]	1/2-3-PSC [373]	3/4-3-PSC [560]	3/4-3-PSC [560]	3/4-3-PSC [560]
Motor Full Load Amps	6.8	5.8	7.9	7.1	7.9	9.5	9.5	9.5
Heating Speed	Med-Low	Med	Med	Med	Med	Low	Low	Low
Cooling Speed	High	High	High	High	High	Med	Med	Med
Cooling CFM @ .5" E.S.P. (Nominal) [L/s]	1200 [566]	1200 [566]	1600 [755]	1200 [566]	1845 [871]	2060 [922]	2115 [998]	2080 [982]
Max. E.S.P. (In. W.C.) [kPa]	0.5 [.12]	0.5 [.12]	0.5 [.12]	0.5 [.12]	0.5 [.12]	0.5 [.12]	0.5 [.12]	0.5 [.12]
Temperature Rise Range °F [°C]	25-55 [13.9-30.6]	35-65 [19.4-36.1]	25-55 [13.9-30.6]	45-75 [25.0-41.7]	30-60 [16.7-33.3]	30-60 [16.7-33.3]	35-65 [19.4-36.1]	50-80 [27.8-44.4]
Max. Outlet Air Temp. °F [°C]	155 [68.3]	165 [73.8]	155 [68.3]	190 [87.7]	170 [76.6]	170 [76.6]	180 [82.2]	190 [87.7]
Approx. Shipping Weight (Lbs.) [kg]	85 [39]	105 [48]	105 [48]	115 [52]	120 [54]	120 [54]	140 [63]	150 [68]
Standard Filter (In.) [mm]	15 <sup>3</sup> / <sub>4</sub> x 25 [400 x 635]	15 <sup>3</sup> / <sub>4</sub> x 25 [400 x 635]	15 <sup>3</sup> / <sub>4</sub> x 25 [400 x 635]	15 <sup>3</sup> / <sub>4</sub> x 25 [400 x 635]	19 <sup>1</sup> / <sub>4</sub> x 25 [489 x 635]	19 <sup>1</sup> / <sub>4</sub> x 25 [489 x 635]	22 <sup>3</sup> / <sub>4</sub> x 25 [578 x 635]	22 <sup>3</sup> / <sub>4</sub> x 25 [578 x 635]
Return Air Cabinets (Opt.) RXGR- Filter Size [mm]	C14B (2) 12 x 16 [305 x 406]	C17B (2) 12 x 16 [305 x 406]	C17B (2) 12 x 16 [305 x 406]	C17B (2) 12 x 16 [305 x 406]	C21B (2) 20 x 16 [508 x 406]	C21B (2) 20 x 16 [508 x 406]	C24B (2) 24 x 16 [610 x 406]	C24B (2) 24 x 16 [610 x 406]
AFUE–H.S.I. Models ①	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%

NOTES: All models are 115V, 60HZ, 1 Ph. Gas connection size for all models is 1/2" [12 mm] N.P.T.

① In accordance with D.O.E. test procedures.

② See Conversion Kit Index Form for high altitude derate.

## MODEL IDENTIFICATION—UPFLOW/HORIZONTAL MODELS

<u>TZ</u>	<u>8</u>	<u>1</u>	<u>UH</u>	<u>A</u>	<u>50</u>	<u>3TA</u>
Thermal Zone®	80% Efficiency	Single Stage	Upflow/ Horizontal	Blower Designation [mm] A = Standard Cabinet 11 x 6 [279 x 152] 1/2 H.P. PSC B = Standard Cabinet 11 x 7 [279 x 178] 1/2 H.P. PSC/1200 CFM C = Wide Cabinet 11 x 10 [279 x 254] 1/2 H.P. PSC D = Standard Cabinet 11 x 10 [279 x 254] 3/4 H.P. PSC E = Standard Cabinet 11 x 7 [279 x 178] 1/2 H.P. PSC/1600 CFM	Heating Input Designation BTUH/HR [kW] 50/N50 = 50,000 [15] 75/N75 = 75,000 [22] 10/N10 = 100,000 [28] 12 = 125,000 [37] 15 = 150,000 [44]	Nominal Airflow 3TA = 3 TON 4TA = 4 TON 5TA = 5 TON

[ ] Designates Metric Conversions

## GENERAL TERMS OF LIMITED WARRANTY

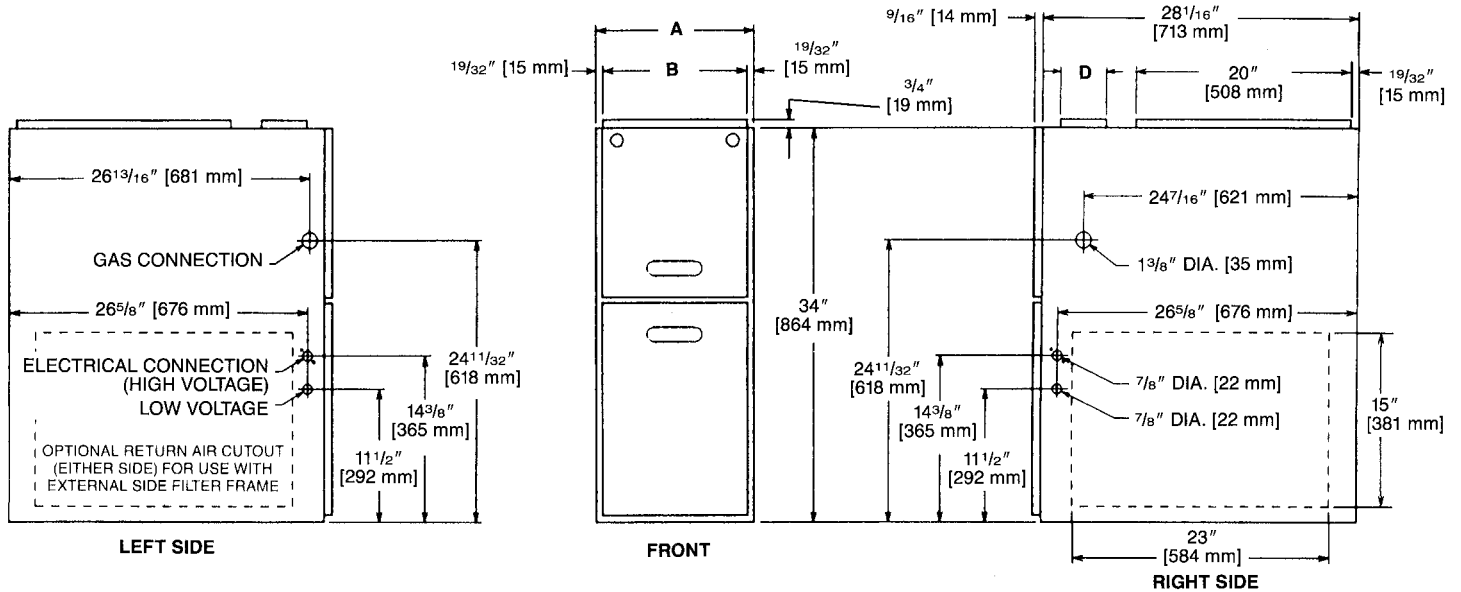
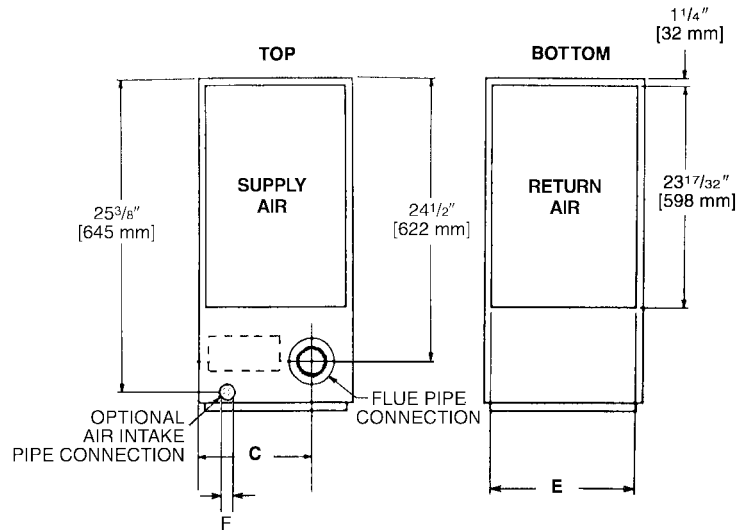
Thermal Zone® will furnish a replacement for any part of this product which fails in normal use and service within the applicable period stated, in accordance with the terms of the limited warranty.

For Complete Details of the Limited Warranty, Including Applicable Terms and Conditions, See Your Local Installer or Contact the Manufacturer for a Copy.

Gas Heat Exchanger Limited Warranty .....Twenty (20) Years  
\*Any Other Part.....Five (5) Years

\*This five year limited warranty is applicable only to single-phase products installed in residential applications on or after January 1, 2001.

# UPFLOW DIMENSIONS



## UPFLOW DIMENSIONS AND CLEARANCE TO COMBUSTIBLE MATERIAL (INCHES) [mm]

MODEL TZ81UH-	A	B	C	D	E	F	REDUCED CLEARANCE (IN.) [mm]						
							LEFT SIDE	RIGHT SIDE	BACK	TOP	FRONT	VENT	SHIP. WGTS. (LBS.) [Kg]
50	14 [356]	12 <sup>27</sup> / <sub>32</sub> [326]	10 <sup>5</sup> / <sub>8</sub> [270]	Ⓢ	11 <sup>1</sup> / <sub>2</sub> [292]	17 <sup>7</sup> / <sub>8</sub> [48]	0	4 [102] ②	0	1 [25]	3 [76]	6 [152] ③	85 [38.6]
75	17 <sup>1</sup> / <sub>2</sub> [445]	16 <sup>11</sup> / <sub>32</sub> [415]	12 <sup>3</sup> / <sub>8</sub> [314]	Ⓢ	15 [381]	2 <sup>1</sup> / <sub>2</sub> [64]	0	3 [76] ②	0	1 [25]	3 [76]	6 [152] ③	105 [47.6]
103TA	17 <sup>1</sup> / <sub>2</sub> [445]	16 <sup>11</sup> / <sub>32</sub> [415]	12 <sup>3</sup> / <sub>8</sub> [314]	Ⓢ	15 [381]	2 <sup>1</sup> / <sub>2</sub> [64]	0	3 [76] ②	0	1 [25]	3 [76]	6 [152] ③	115 [52.2]
104TA, 105TA	21 [533]	19 <sup>27</sup> / <sub>32</sub> [504]	14 <sup>1</sup> / <sub>8</sub> [359]	Ⓢ	18 <sup>1</sup> / <sub>2</sub> [470]	2 <sup>1</sup> / <sub>2</sub> [64]	0	0	0	1 [25]	3 [76]	6 [152] ③	120 [54.4]
125TA	24 <sup>1</sup> / <sub>2</sub> [622]	23 <sup>11</sup> / <sub>32</sub> [593]	15 <sup>7</sup> / <sub>8</sub> [403]	Ⓢ	22 [559]	2 <sup>1</sup> / <sub>2</sub> [64]	0	0	0	1 [25]	3 [76]	6 [152] ③	140 [63.5]
155TA	24 <sup>1</sup> / <sub>2</sub> [622]	23 <sup>11</sup> / <sub>32</sub> [593]	15 <sup>7</sup> / <sub>8</sub> [403]	Ⓢ	22 [559]	2 <sup>1</sup> / <sub>2</sub> [64]	0	0	0	1 [25]	3 [76]	6 [152] ③	150 [68]

NOTES: ① May require a 3" [76 mm] to 4" [102 mm] or 3" [76 mm] to 5" [127 mm] adapter.

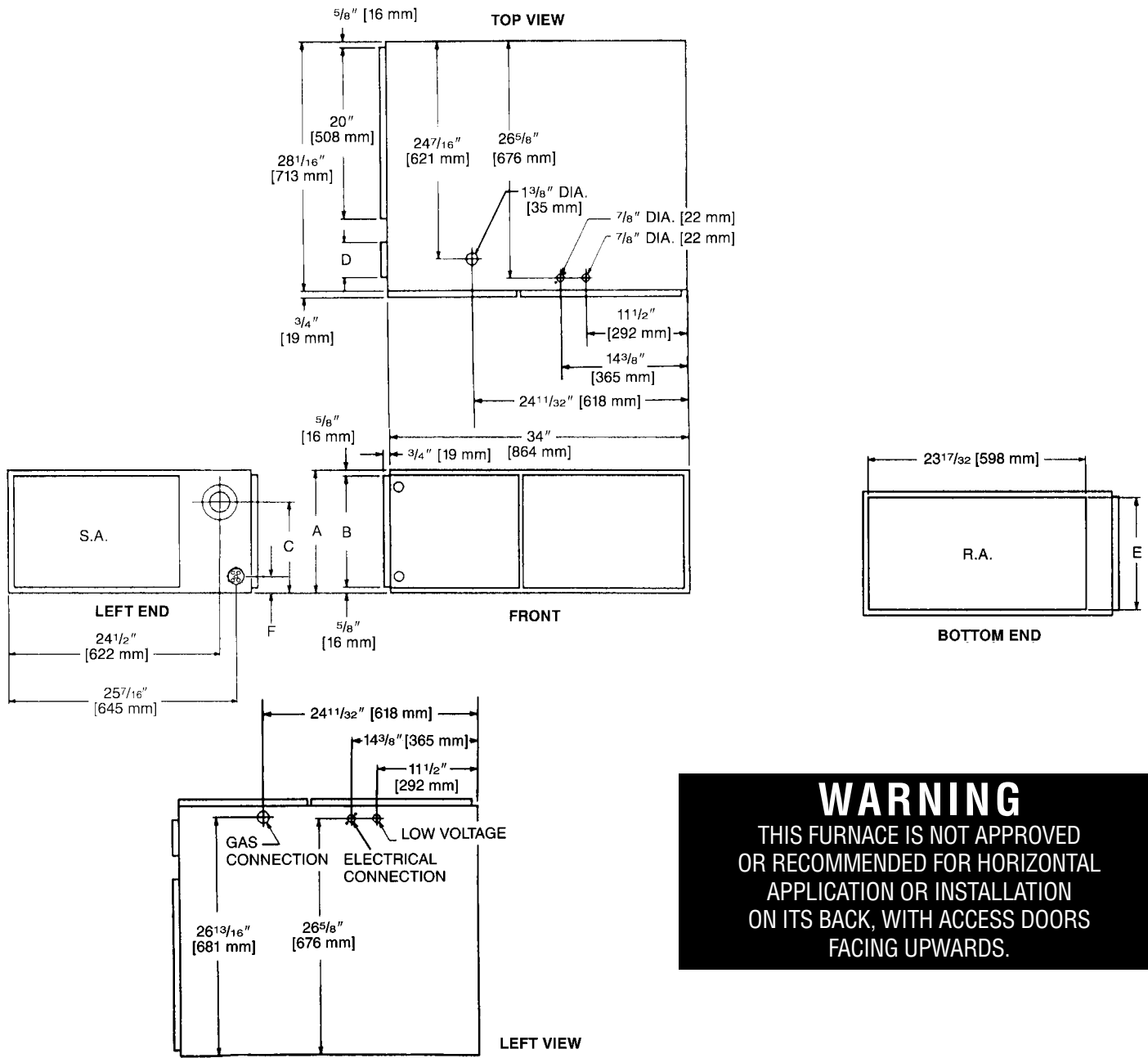
② May be 0" [0 mm] with type B vent.

③ May be 1" [25 mm] with type B vent.

Furnaces must be vented in accordance with the National Fuel Gas Code, ANSI Z223.1 and/or Can/CGA-B149 Installation Codes and in accordance with local codes.

[ ] Designates Metric Conversions

# HORIZONTAL DIMENSIONS



**WARNING**  
 THIS FURNACE IS NOT APPROVED OR RECOMMENDED FOR HORIZONTAL APPLICATION OR INSTALLATION ON ITS BACK, WITH ACCESS DOORS FACING UPWARDS.

## HORIZONTAL DIMENSIONS AND CLEARANCE TO COMBUSTIBLE MATERIAL (INCHES) [mm]

MODEL TZ81UH-	A	B	C	D	E	F	REDUCED CLEARANCE (IN.) [mm]						
							LEFT SIDE	RIGHT SIDE	BACK	TOP	FRONT	VENT	SHIP. WGTS. (LBS.) [Kg]
50	14 [356]	12 27/32 [326]	10 5/8 [270]	Ⓚ	11 1/2 [292]	17/8 [48]	0	4 [102] ②	0	1 [25]	3 [76]	6 [152] ③	85 [38.6]
75	17 1/2 [445]	16 11/32 [415]	12 3/8 [314]	Ⓚ	15 [381]	2 1/2 [64]	0	3 [76] ②	0	1 [25]	3 [76]	6 [152] ③	105 [47.6]
103TA	17 1/2 [445]	16 11/32 [415]	12 3/8 [314]	Ⓚ	15 [381]	2 1/2 [64]	0	3 [76] ②	0	1 [25]	3 [76]	6 [152] ③	115 [52.2]
104TA, 105TA	21 [533]	19 27/32 [504]	14 1/8 [359]	Ⓚ	18 1/2 [470]	2 1/2 [64]	0	0	0	1 [25]	3 [76]	6 [152] ③	120 [54.4]
125TA	24 1/2 [622]	23 11/32 [593]	15 7/8 [403]	Ⓚ	22 [559]	2 1/2 [64]	0	0	0	1 [25]	3 [76]	6 [152] ③	140 [63.5]
155TA	24 1/2 [622]	23 11/32 [593]	15 7/8 [403]	Ⓚ	22 [559]	2 1/2 [64]	0	0	0	1 [25]	3 [76]	6 [152] ③	150 [68]

NOTES: ① May require a 3" [76 mm] to 4" [102 mm] or 3" [76 mm] to 5" [127 mm] adapter.

② May be 0" [0 mm] with type B vent.

③ May be 1" [25 mm] with type B vent.

Furnaces must be vented in accordance with the National Fuel Gas Code, ANSI Z223.1 and/or Can/CGA-B149 Installation Codes and in accordance with local codes.

# ACCESSORIES—UPFLOW

## INTERNAL FILTER RACK FOR BOTTOM OR SIDE RETURN: RXGF-DA\*

Each order contains (1) one box of 10 filter racks supplied without filters.

\*Filters available through PROSTOCK®.

## SIDE RETURN FILTER RACK: RXGF-CA

## BOTTOM RETURN FILTER RACK FOR UPFLOW APPLICATION: RXGF-CB

FILTER RACK FILTER SIZES† INCHES [mm]	
MODEL TZ81UH-	RXGF-CA (SIDE)
50, 75, 103TA	15 <sup>3</sup> / <sub>4</sub> x 25 [400 x 635]
104TA, 105TA	15 <sup>3</sup> / <sub>4</sub> x 25 [400 x 635]
12, 15	15 <sup>3</sup> / <sub>4</sub> x 25 [400 x 635]

†Filter racks are shipped without filters.

A 1" [25.4 mm] filter may be used.

\*Designates "E" or "N".

## RXPF-F01 and F02

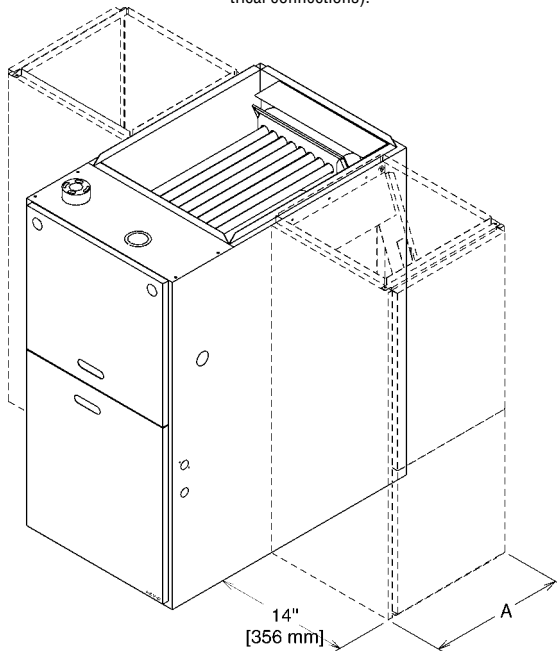
**FOSSIL FUEL KIT**—is for use with Thermal Zone® Heat Pumps and air furnaces. RXPF-F02 meets TVA requirements.

## RXGP-F03

**TWINNING KIT**—is for parallel operation requirements.

### ACCESSORY RETURN AIR CABINETS

Return Air Cabinets may be installed on either side application except RXGR-C24B (side application must be on side opposite gas and electrical connections).



**THE RXGR-C24B MUST ONLY BE INSTALLED ON THE SIDE OPPOSITE THE GAS AND ELECTRICAL CONNECTIONS.**

RETURN AIR CABINETS	A IN. [mm]	FILTER SIZE IN. [mm]
RXGR-C14B	14 [356]	(2) 12 x 16 [305 x 406]
RXGR-C17B	17 <sup>1</sup> / <sub>2</sub> [445]	(2) 12 x 16 [305 x 406]
RXGR-C21B	21 [533]	(2) 20 x 16 [508 x 406]
RXGR-C24B	24 <sup>1</sup> / <sub>2</sub> [622]	(2) 24 x 16 [610 x 406]

### WARNING: IMPORTANT NOTICE

A SOLID METAL BASE PLATE (SEE TABLE) MUST BE IN PLACE WHEN THE FURNACE IS INSTALLED WITH SIDE AIR RETURN DUCTS. FAILURE TO INSTALL A BASE PLATE COULD CAUSE PRODUCTS OF COMBUSTION TO BE CIRCULATED INTO THE LIVING SPACE AND CREATE POTENTIALLY HAZARDOUS CONDITIONS.

FURNACE WIDTH IN. [mm]	SOLID BOTTOM KIT NO.	BASE PLATE NO.	BASE PLATE SIZE IN. [mm]
14 [356]	RXGB-D14	AE-61874-01	11 <sup>5</sup> / <sub>8</sub> x 23 <sup>9</sup> / <sub>16</sub> [295 x 598]
17 <sup>1</sup> / <sub>2</sub> [445]	RXGB-D17	AE-61874-02	15 <sup>1</sup> / <sub>8</sub> x 23 <sup>9</sup> / <sub>16</sub> [384 x 598]
21 [533]	RXGB-D21	AE-61874-03	18 <sup>5</sup> / <sub>8</sub> x 23 <sup>9</sup> / <sub>16</sub> [473 x 598]
24 <sup>1</sup> / <sub>2</sub> [622]	RXGB-D24	AE-61874-04	25 <sup>5</sup> / <sub>8</sub> x 23 <sup>9</sup> / <sub>16</sub> [651 x 598]

## FOR HIGH ALTITUDES:

**HIGH ALTITUDE OPTION CODE:** U.S. & Canada – None required for high altitudes.

**HIGH ALTITUDE CONVERSION KITS:** U.S. & Canada – None required for high altitudes.

### 80+ HIGH ALTITUDE INSTRUCTIONS

**CAUTION:** Always follow National Fuel Gas Code (NFPA) guidelines when converting for high altitudes.

High altitude option codes are not required for these models. However, the burner orifice size needs to be recalculated and verified at elevations above 2000 ft. See Installation Instructions for more information.

**NOTE:** For Canadian installations only, an optional derate (manifold gas pressure reduction) method may be used to adjust the furnace for altitude. See Installation Instructions for more information. This optional method may **NOT** be used for U.S. installations.

[ ] Designates Metric Conversions

# BLOWER PERFORMANCE DATA—UPFLOW MODELS

MODEL NUMBER TZ81UH-SERIES	BLOWER SIZE [mm]	MOTOR H.P. [W]	BLOWER SPEED	CFM [L/s] AIR DELIVERY EXTERNAL STATIC PRESSURE INCHES [kPa] WATER COLUMN						
				.1 [.02]	.2 [.05]	.3 [.07]	.4 [.10]	.5 [.12]	.6 [.15]	.7 [.17]
				503TA N503TA	11 x 6 [279 x 152]	1/2 [373]	LOW <b>MED-LO</b> MED-HI HIGH	675 [319] <b>950 [448]</b> 1115 [526] 1270 [599]	655 [309] <b>930 [439]</b> 1090 [514] 1250 [590]	635 [300] <b>905 [427]</b> 1070 [505] 1225 [578]
753TA N753TA	11 x 7 [279 x 178]	1/2 [373]	LOW <b>MED</b> HIGH	1093 [563] <b>1241 [586]</b> 1393 [657]	1066 [503] <b>1212 [572]</b> 1359 [642]	1039 [490] <b>1183 [558]</b> 1326 [626]	1008 [476] <b>1150 [543]</b> 1293 [610]	977 [461] <b>1118 [528]</b> 1259 [594]	941 [444] <b>1076 [508]</b> 1214 [573]	905 [427] <b>1033 [487]</b> 1169 [552]
754TA N754TA	11 x 7 [279 x 178]	1/2 [373]	LOW <b>MED</b> HIGH	1245 [588] <b>1555 [734]</b> 1810 [854]	1220 [576] <b>1515 [715]</b> 1755 [828]	1195 [564] <b>1475 [696]</b> 1705 [805]	1165 [550] <b>1435 [677]</b> 1645 [776]	1135 [536] <b>1395 [658]</b> 1585 [748]	1105 [522] <b>1350 [637]</b> 1530 [722]	1065 [503] <b>1300 [614]</b> 1470 [694]
103TA	11 x 7 [279 x 178]	1/2 [373]	LOW <b>MED</b> HIGH	1050 [496] <b>1220 [576]</b> 1410 [665]	1040 [491] <b>1195 [564]</b> 1380 [651]	1030 [486] <b>1160 [547]</b> 1345 [635]	990 [467] <b>1140 [538]</b> 1300 [614]	960 [453] <b>1105 [522]</b> 1255 [592]	920 [434] <b>1065 [503]</b> 1205 [569]	890 [420] <b>1020 [481]</b> 1150 [543]
104TA	11 x 10 [279 x 254]	1/2 [373]	LOW <b>MED</b> HIGH	1295 [611] <b>1645 [776]</b> 2045 [965]	1275 [602] <b>1615 [762]</b> 2000 [944]	1250 [590] <b>1580 [746]</b> 1955 [923]	1225 [578] <b>1550 [732]</b> 1905 [899]	1195 [564] <b>1510 [713]</b> 1845 [871]	1165 [550] <b>1465 [691]</b> 1785 [842]	1135 [536] <b>1425 [673]</b> 1720 [812]
105TA N105TA	11 x 10 [279 x 254]	3/4 [559]	LOW MED HIGH	<b>1645 [776]</b> 2045 [965] 2320 [1095]	<b>1615 [762]</b> 2000 [944] 2260 [1067]	<b>1580 [746]</b> 1955 [923] 2200 [1038]	<b>1550 [732]</b> 1905 [899] 2130 [1005]	<b>1510 [713]</b> 1845 [871] 2060 [972]	<b>1465 [691]</b> 1785 [842] 1985 [937]	<b>1425 [673]</b> 1720 [812] 1910 [901]
125TA	11 x 10 [279 x 254]	3/4 [559]	LOW MED HIGH	<b>1645 [776]</b> 2050 [967] 2365 [1116]	<b>1635 [772]</b> 2015 [951] 2310 [1090]	<b>1615 [762]</b> 1980 [934] 2250 [1062]	<b>1590 [750]</b> 1935 [913] 2185 [1031]	<b>1560 [736]</b> 1885 [890] 2115 [998]	<b>1520 [717]</b> 1835 [866] 2035 [960]	<b>1470 [694]</b> 1775 [838] 1950 [920]
155TA	11 x 10 [279 x 254]	3/4 [559]	LOW MED HIGH	<b>1620 [765]</b> 2010 [949] 2340 [1104]	<b>1595 [753]</b> 1985 [937] 2275 [1074]	<b>1570 [741]</b> 1960 [925] 2215 [1045]	<b>1545 [729]</b> 1915 [904] 2145 [1012]	<b>1515 [715]</b> 1850 [873] 2080 [982]	<b>1480 [698]</b> 1800 [850] 2010 [949]	<b>1440 [680]</b> 1730 [816] 1940 [916]

**Note:** Recommended blower speeds are in bold.

[ ] Designates Metric Conversions

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**Before proceeding with installation, refer to installation instructions packaged with each model, as well as complying with all Federal, State, Provincial, and Local codes, regulations, and practices.**

*"In keeping with its policy of continuous progress and product improvement, the right is reserved to make changes without notice."*