



SUBMITTAL

Project

Happy Tails

Date

Tuesday, January 16, 2018

Unit Report For Bryant System

Project: Happy Tails
Prepared By:

01/16/2018



Outdoor Unit Parameters

Unit Model:..... 113A
Unit Size:..... 4 Tons (Size 048)
Voltage:..... 208/230-1-60 V-Ph-Hz

Indoor Coil Parameters

Unit Model:..... CNPV
Unit Size:..... 5 Tons (Size 60)
Cabinet Finish:..... Painted
Cabinet Width:..... 24 inch
Refrigerant Type:..... Puron
Furnace Family:..... Bryant Non-SEER Enhancing

Outdoor Unit Dimensions and Weight

Unit Length:..... 31.1875 in
Unit Width:..... 31.1875 in
Unit Height:..... 35.5 in
Unit Shipping Weight:..... 205. lb

Indoor Coil Dimensions and Weight

Unit Length:..... 21 in
Unit Width:..... 24.5 in
Unit Height:..... 26.875 in
Unit Shipping Weight:..... 78. lb

RESIDENTIAL APPLICATIONS

This warranty is to the original purchasing owner and subsequent owners only to the extent and as stated in the Warranty Conditions and below. The limited warranty period in years, depending on the part and the claimant, is as shown in the table below.

Limited Warranty (Years)		
Item	Original Owner	Subsequent Owner
Parts	10* (or 5)	5
Compressor	10* (or 5)	5

*If properly registered within 90 days of original installation, otherwise 5 years (except in California and Quebec and other jurisdictions that prohibit warranty benefits conditioned on registration). See Warranty Conditions below.

OTHER APPLICATIONS

The warranty period is five (5) years on the compressor, and one (1) year on all other parts. The warranty is the original owner only and is not available for subsequent owners.

Per new Department of Energy regional efficiency standards, 13 SEER AC units manufactured after 1/1/2015 can only be sold and installed in the North region. Please consult the DOE standards for product eligibility in your area.

Ordering Information

Part Number	Description	Quantity
Outdoor Unit		
113ANA048BN0	Legacy 13 SEER Central Air Conditioner with Puron 4 Tons Cooling 13 SEER @ ARI Conditions	1
Indoor Coil		
CNPVP6024ALA	Cased Vertical N-Coil Evaporator Coil with Puron Painted 24 inch Aluminum	1
Furnace		
915SA48080S17	915 Legacy +95 Condensing Gas Furnace	1

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	Up to 1600 Cfg CFM on Evap Coil	
	80,000 Btuh (Size 080)	
	Single-Stage	

The Product and Ratings Data in this program is subject to change at any time and without notice. Please refer to the latest product literature and the AHRI directory at www.ahridirectory.org for the most up-to-date information.



Furnace Parameters and Dimensions and Weight

Furnace:..... **Non-SEER Enhancing Furnace**
 Furnace Model:..... **91**
 Furnace Efficiency:..... **+95 AFUE**
 Cfg Size Airflow: **Up to 1600 Cfg CFM on Evap Coil**
 Htg Capacity Size:..... **80,000 Btuh (Size 080)**
 Unit Length:..... **29.50** in
 Unit Width:..... **17.50** in
 Unit Height:..... **35.00** in
 Unit Shipping Weight:..... **154.** lb

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Performance Summary For Bryant System

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System Performance

System:	113A/CNPV	Actual Clg Airflow:.....	1400.0	CFM
System Quantity:.....	1	Standard Clg Airflow:.....	1400.0	CFM
Altitude:.....	0.0 ft	Total Net Clg Capacity:.....	44.00	MBH
Furnace Type:.....	Bryant Non-SEER Enhancing	Net Sensible Clg Capacity:.....	31.75	MBH
Linear Pipe Length:.....	0.0 ft	Total System Power:.....	4.20	kW
SEER @ ARI Conditions:.....	13.0			
EER @ ARI Conditions:.....	10.5			

System Parameters

Outdoor Unit Parameters

Unit Model:..... **113ANA048BN0**
Region:..... **North Region (B Design)**
Unit Size (Nominal):..... **4 Tons (Size 048)**
Voltage:..... **208/230-1-60** V-Ph-Hz
Clg Ent Air DB Ambient:..... **95.0** °F

Indoor Coil Parameters

Unit Model:..... **CNPVP6024ALA**
Unit Size (Nominal):..... **5 Tons (Size 60)**
Ent Air DB:..... **80.00** °F
Ent Air WB:..... **67.00** °F
Ent Enthalpy:..... **31.44** BTU/lb
Lvg Air DB:..... **59.00** °F
Lvg Air WB:..... **57.10** °F
Lvg Enthalpy:..... **24.45** BTU/lb
Total External Static:..... **0.50** in wg

Furnace Ratings

Furnace:..... **915SA48080S17**
Furnace Efficiency:..... **+95 AFUE**
Input Max Heat:..... **80,000** BTU/hr
Output Max Heat:..... **78,000** BTU/hr

Furnace Performance

Certified Temp High Rise Range:..... **40-70** F

The customer must ensure the specified airflow and static pressure are within furnace capabilities.

Electrical Data

Outdoor Electrical Data

Unit Voltage:..... **208/230-1-60** V-Ph-Hz
Fan Motor FLA:..... **1.40** Amps
MCA:..... **24.3** Amps
Max Fuse:..... **40** Amps
Operating Range Min:..... **197** V
Operating Range Max:..... **253** V
Compressor RLA:..... **18.3** Amps
Compressor LRA:..... **93.0** Amps

Furnace Electrical Data

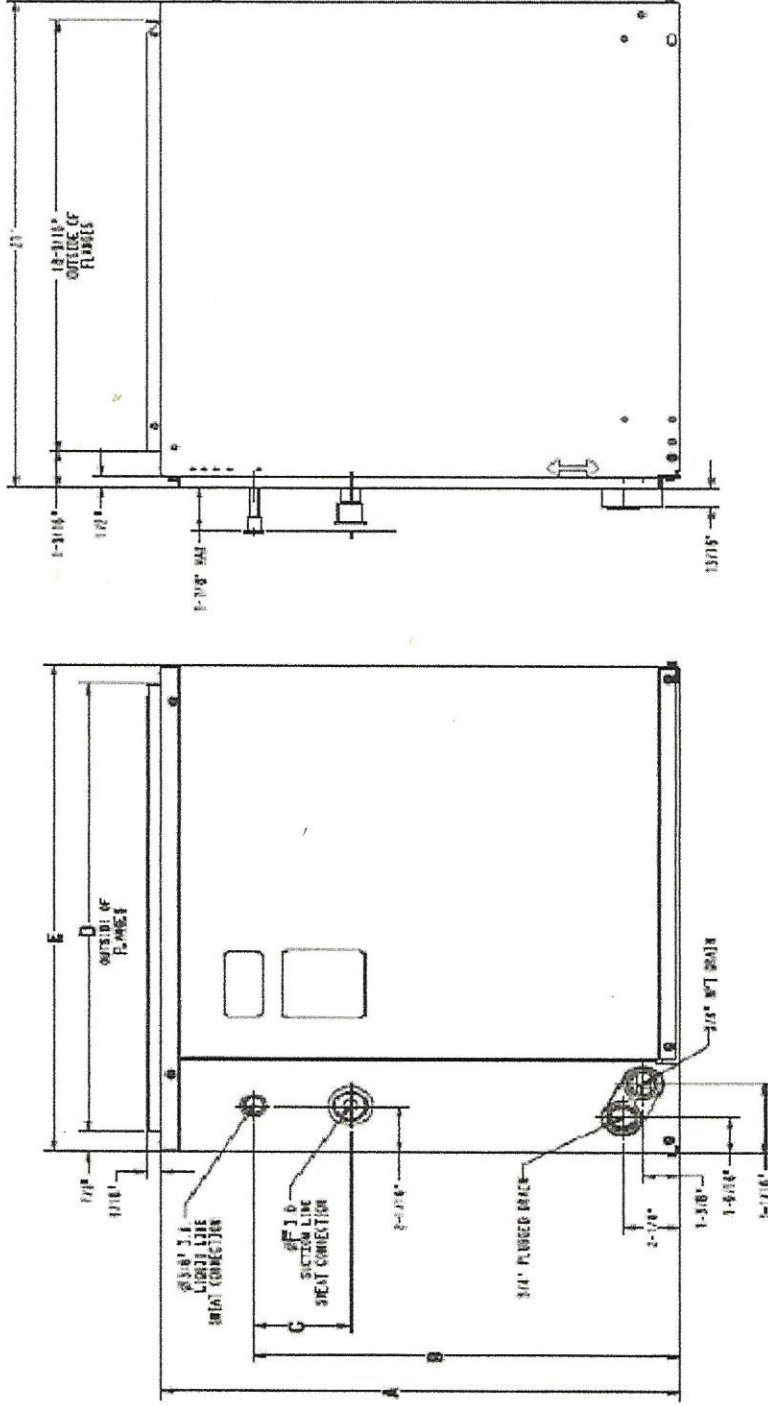
Unit Voltage:..... **115-1-60** V-Ph-Hz
Unit MCA:..... **9.6** Amps
Unit MOCP:..... **15** Amps

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Certified Drawing for Bryant System

Project: Happy Tails
Prepared By:

01/16/2018



Indoor Coil

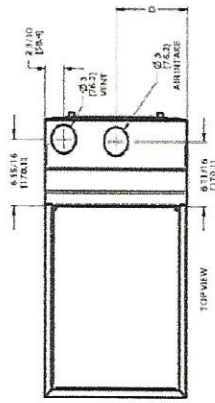
Unit Model:.....GNPV
Unit Size:.....5 Tons (Size 60)
Cabinet Finish:.....Painted
Cabinet Width:.....24 inch
PartNumber:.....GNPVP6024ALA

Dimensions and Weights		Indoor Coil
Height		26.88 in
Width		24.50 in
Length		21.00 in
Shipping Weight		78. lb

Dimensions					
A	B	C	D	E	F
26.88 in	17.94 in	3.56 in	22.75 in	24.50 in	0.88 in

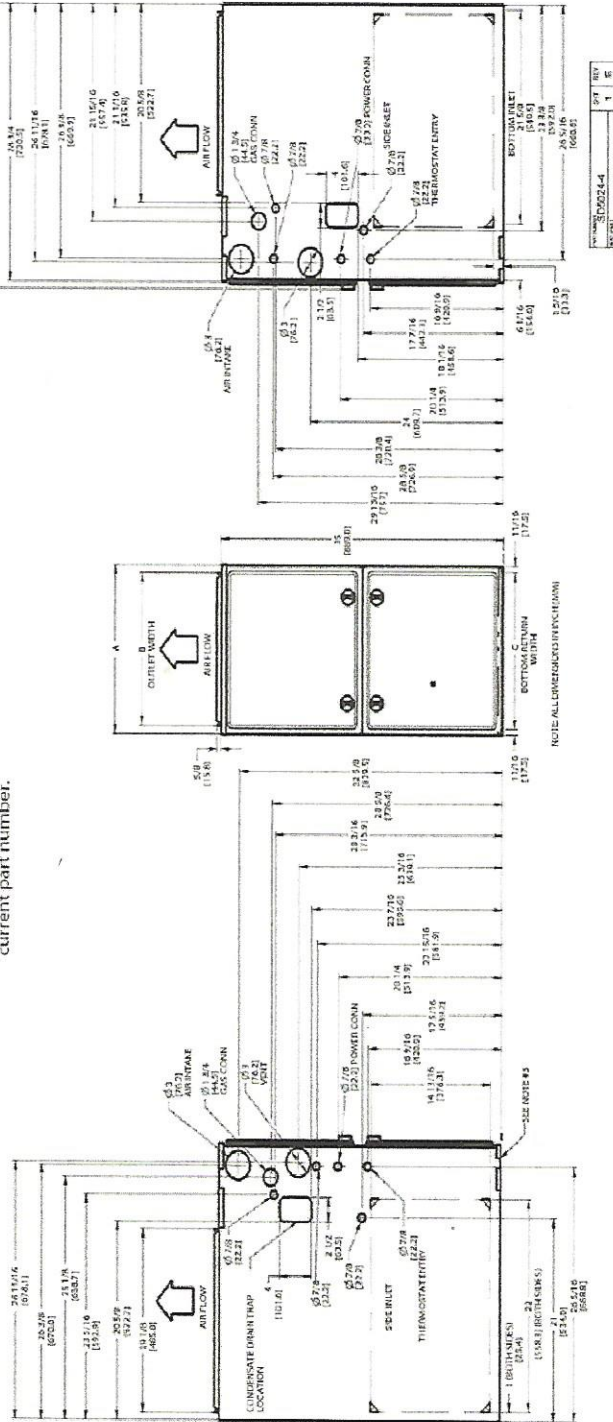
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Certified Drawing for Bryant System



- NOTES:**
- Doors may vary by model.
 - Minimum return-air openings at furnace, based on metal duct. If flex duct is used, see flex duct manufacturer's recommendations for equivalent diameters.
 - For 800 CFM: 16 in. (406 mm) round or 14 1/2 x 12 in. (368 x 305 mm) rectangle.
 - For 1200 CFM: 20 in. (508 mm) round or 14 1/2 x 19 1/2 in. (368 x 495 mm) rectangle.
 - For 1600 CFM: 22 in. (559 mm) round or 14 1/2 x 22 1/16 in. (368 x 560 mm) rectangle.
 - Return air above 1800 CFM at 0.5 in. w.c. ESP on 24.5" casing, requires one of the following configurations: 2 sides, 1 side and a bottom or bottom only. See Air Delivery table in this document for specific use to allow for sufficient airflow to the furnace.
 - Vent and Combustion air pipes through blower compartment must use accessory "Vent-Kit - Through the Cabinet". See accessory list for current part number.

DIMENSIONAL DRAWING



Furnace Model: **91**
 Furnace Efficiency: **+95 AFUE**
 Ctg Size Airflow: **Up to 1600 Ctg CFM on Evap Coil**

Htg Capacity Size: **80,000 Btu/h (Size 080)**
 Part Number: **9155A48080S17**

Dimensions			
A	B	C	D
17.50 in	15.88 in	16.00 in	8.75 in
			Shipping Wgt
			154.00 in

The Product and Ratings Data in this program is subject to change at any time and without notice. Please refer to the latest product literature and the AHRI directory at www.ahridirectory.org for the most up-to-date information.

- Align the screw holes in the plastic vent pipe adapter with the dimples in the casing.
- Pilot drill the screw holes for the adapter in the casing and attach the vent pipe adapter to the furnace with sheet metal screws
- Slide the end of the rubber vent coupling with notches in it over the standoffs on the vent pipe adapter.
- Insert a length of vent pipe through the coupling into the outlet of the vent elbow.
- Tighten the clamp around the outlet of the vent elbow. Torque the clamp to 15 lb-in.

NOTICE

The following instructions are for PVC/ABS DWV vent piping only. **DO NOT USE THESE TECHNIQUES FOR POLYPROPYLENE VENT PIPING SYSTEMS.** See the polypropylene vent system manufacturer's instructions for installing polypropylene venting systems.

Install the remaining vent and combustion air pipes as shown below. It is recommended that all pipes be cut, prepared, and pre-assembled before permanently cementing any joint.

- Working from furnace to outside, cut pipe to required length(s).
- De-burr inside and outside of pipe.
- Chamfer outside edge of pipe for better distribution of primer and cement.
- Clean and dry all surfaces to be joined.
- Check dry fit of pipe and mark insertion depth on pipe.
- Insert the vent pipe into the vent elbow.
- Torque clamp on vent elbow 15 lb-in.
- Torque clamp on vent coupling 15 lb-in.
- Insert the combustion air pipe into the adapter.
- Pilot drill a screw hole through the adapter into the combustion air pipe and secure the pipe to the adapter with sheet metal screws. **DO NOT DRILL INTO POLYPROPYLENE VENT PIPES.** Use an optional accessory vent coupling, if needed.
- Seal around the combustion air pipe with silicone or foil tape. **SILICONE SEALERS MAY NOT BE APPROPRIATE FOR POLYPROPYLENE VENT SYSTEMS. SEE POLYPROPYLENE VENT SYSTEM MANUFACTURER'S INSTRUCTIONS.**
- After pipes have been cut and pre-assembled, apply generous layer of cement primer to pipe fitting socket and end of pipe to insertion mark. Quickly apply approved cement to end of pipe and fitting socket (over primer). Apply cement in a light, uniform coat on inside of socket to prevent buildup of excess cement. Apply second coat. **DO NOT CEMENT POLYPROPYLENE FITTINGS.**
- While cement is still wet, twist pipe into socket with 1/4-in. turn. Be sure pipe is fully inserted into fitting socket.
- Wipe excess cement from joint. A continuous bead of cement will be visible around perimeter of a properly made joint.
- Handle pipe joints carefully until cement sets.
- Horizontal portions of the venting system shall be supported to prevent sagging. Space combustion air piping and vent piping hangars as shown in the table below. Support pipes using perforated metal hanging strap or commercially available hangars or straps designed to support plastic pipe.

Material	Hangar Spacing				
	Pipe Diameter				
	1 1/2-in. (38 mm)	2-in. (51 mm)	2 1/2-in. (64 mm)	3-in. (76 mm)	4-in. (102 mm)
PVC Sch 40	36-in. (914-mm)		42-in. (1067-mm)		48-in. (1219mm)
CPVC	36-in. (914 mm)		42-in. (1067-mm)		48-in. (1219mm)
ABS	36-in. (914-mm)		42-in. (1067-mm)		48-in. (1219mm)
Polypropylene	40-in. (1000-mm)				
SDR 21 & 26	30-in. (762-mm)		36-in.(914-mm)		42-in. (1067mm)

- Slope the vent and combustion air piping downward towards furnace. A minimum slope of at least 1/4-in. (6 mm) per linear ft.(1-in (25 mm) per 4 ft.(1.2 M)) with no sags between hangers is required. See Caution Box below.

⚠ CAUTION

FURNACE RELIABILITY HAZARD

Failure to follow this caution may result in nuisance short cycling, frozen vent termination, and/or no heat.

Slope the vent and combustion air piping downward towards furnace a minimum of 1/4-in. (6 mm) per linear ft. of pipe.

- Complete the vent and combustion air pipe installation by connecting the concentric vent or by installing the required termination elbows as shown in Figs. 51, 52 and 53. For Ventilated Combustion Air Termination, See Fig. 54.
- Use appropriate methods to seal openings where combustion air pipe and vent pipe pass through roof or sidewall.

⚠ WARNING

CARBON MONOXIDE POISONING HAZARD

Failure to follow this warning could result in personal injury or death.

DO NOT use cement to join polypropylene venting systems. Follow the polypropylene venting system manufacturer's instructions for installing polypropylene venting systems.

Optional Installation of the Vent Pipe

NOTE: DO NOT USE THIS TECHNIQUE FOR POLYPROPYLENE VENTING SYSTEMS.

This option provides a disconnect point for the vent pipe. The vent pipe must be cemented to the plastic vent pipe adapter to maintain a sealed vestibule. See Fig. 47.

- Insert a length of vent pipe through the casing into the outlet of the vent elbow.
- Slide the plastic vent pipe adapter over the length of the vent pipe down to the furnace casing. Mark the pipe where it is flush with the outlet of the adapter.
- Remove the pipe from the furnace and the adapter and cut off any excess pipe.
- Clean and prime the end of the pipe that is flush with the vent adapter with a primer that is appropriate for the type of pipe being used.
- Re-insert the pipe through the casing into the vent elbow.
- Tighten the clamp around the outlet of the vent elbow. Torque the clamp to 15 lb-in.
- Apply cement to the end of the pipe and to the inside of the plastic vent adapter.

8. Slide the adapter over the vent pipe and align the screw holes in the adapter with the dimples in the furnace casing.
9. Pilot drill 1/8-in. screw holes for the adapter in the casing and secure the adapter to the furnace with sheet metal screws.
10. Loosen the clamps on the rubber vent coupling.
11. Slide the end of the coupling with notches in it over the standoffs in the vent pipe adapter.
12. Tighten the clamp of the coupling over the vent pipe adapter. Torque the lower clamp around the vent pipe adapter to 15 lb-in.
13. Pilot drill a 1/8-in. hole in the combustion air pipe adapter.
14. Complete the vent and combustion air pipe as shown in "Install the Vent and Combustion Air Pipe."

NOTICE

FOR POLYPROPYLENE VENTING SYSTEMS

When using polypropylene venting systems, all venting materials used, including the vent terminations, must be from the same manufacturer.

Installing the Vent Termination

Roof Terminations

A roof termination of any type will require a 4-in. (102 mm) flashing for a 2 in. (50 mm ND) concentric vent or a 5-in. diameter (127 mm) flashing for a 3-in. (80 mm ND) concentric vent kit. For two-pipe or single pipe vent systems, a flashing for each pipe of the required diameter will be necessary.

It is recommended that the flashing be installed by a roofer or competent professional prior to installing the concentric vent. The terminations can be installed on a flat or pitched roof.

Concentric Vent

Single or multiple concentric vent must be installed as shown in Fig. 51. Maintain the required separation distance between vents or pairs of vents as shown in Fig. 51 and all clearance shown in Fig. 49.

NOTE: Follow the instructions of the vent terminal manufacturer. These instructions are provided as a reference, only.

Cut one 4-in. (102 mm) diameter hole for 2-in. (50 mm ND) kit, or one 5-in. (127 mm) diameter hole for 3-in. (80 mm ND) kit in the desired location.

Loosely assemble concentric vent/combustion air termination components together using instructions in kit.

Slide assembled kit with rain shield **REMOVED** through hole in wall or roof flashing.

NOTE: Do not allow insulation or other materials to accumulate inside of pipe assembly when installing it through hole.

Disassemble loose pipe fittings. Clean and cement using same procedures as used for system piping. **DO NOT CEMENT POLYPROPYLENE FITTINGS.**

Two-Pipe and Single-Pipe Terminations

Single and two pipe vent must be installed as shown in Fig. 51 and 52. Maintain the required separation distance between vents or pairs of vents as shown in Fig. 51 and 52 and all clearance shown in Fig. 49 and 50.

NOTICE

RECOMMENDED SUPPORT FOR VENT TERMINATIONS

It is recommended that rooftop vent terminations in excess of 36 inches (1 M) in vertical length be supported by **EITHER** the Direct Vent Termination Kit shown in Table 12 or by field-supplied brackets or supports fastened to the structure.

Cut the required number of holes in the roof or sidewall for vent and (when used) combustion air pipes. Sidewall holes for two-pipe vent terminations should be side-by-side, allowing space between the pipes for the elbows to fit on the pipes.

Holes in the roof for direct-vent two-pipe terminations should be spaced no more than 18 in. (457 mm) apart to help avoid vent gas recirculation into combustion air intake.

Termination elbows will be installed after the vent and (if used) combustion air pipe is installed.

Sidewall Terminations

Concentric Vent

NOTE: Follow the instructions of the vent terminal manufacturer. These instructions are provided as a reference only.

Determine an appropriate location for termination kit using the guidelines provided in section "Locating The Vent Termination" in this instruction.

1. Cut one 4-in. diameter hole for 2-in. kit, or one 5-in. diameter hole for 3-in. kit.
2. Loosely assemble concentric vent/combustion air termination components together using instructions in kit.
3. Slide assembled kit with rain shield **REMOVED** through hole.

NOTE: Do not allow insulation or other materials to accumulate inside of pipe assembly when installing it through hole.

4. Locate assembly through sidewall with rain shield positioned no more than 1-in. (25 mm) from wall as shown in Fig. 51.
5. Disassemble loose pipe fittings. Clean and cement using same procedures as used for system piping. **DO NOT CEMENT POLYPROPYLENE FITTINGS.**

2-Pipe and 1-Pipe Vent Termination

NOTE: Follow the instructions of the vent terminal manufacturer. These instructions are provided as a reference, only.

NOTICE

RECOMMENDED SUPPORT FOR VENT TERMINATIONS

It is recommended that sidewall vent terminations in excess of 24 inches (0.6 M) in vertical length be supported by **EITHER** the Direct Vent Termination Kit shown in Table 12 or by field-supplied brackets or supports fastened to the structure.

Determine an appropriate location for termination kit using the guidelines provided in section "Locating The Vent Termination" in this instruction.

1. Cut two holes, one for each pipe, of appropriate size for pipe size being used.
2. Loosely install elbow in bracket (if used) and place assembly on combustion-air pipe.
3. Install bracket as shown in Fig. 51 and 53.

NOTE: For applications using vent pipe option indicated by dashed lines in Fig. 51 and 52, rotate vent elbow 90° from position.

4. Disassemble loose pipe fittings. Clean and cement using same procedures as used for system piping. **DO NOT CEMENT POLYPROPYLENE FITTINGS.**

(Direct Vent / 2-Pipe System ONLY)

When two or more furnaces are vented near each other, two vent terminations may be installed as shown in Fig. 51, but next vent termination, or pair of vent terminations, must be at least 36 in. (914 mm) away from the first two terminations. It is important that vent terminations be made as shown in Fig. 51 to avoid recirculation of vent gases.

Inducer Outlet Restrictor

To improve efficiency and operation of 40,000 BTUH input models on very short vent systems, an inducer outlet restrictor is

required to be installed on the outlet of the inducer assembly. The outlet restrictor is shipped in the loose parts bag.

To determine if the outlet restrictor is required, see Table 15. **Failure to use an outlet choke when required may result in flame disturbance or flame sense lockout.**

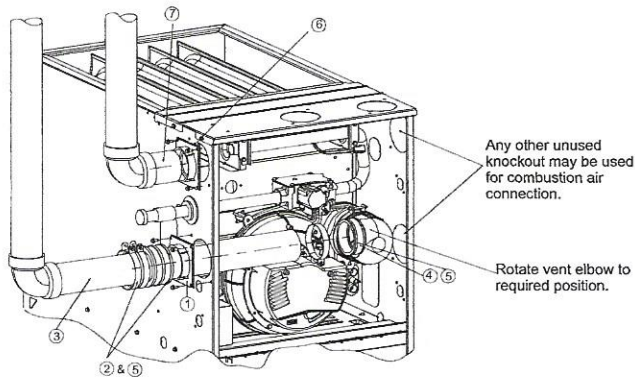
To install the outlet restrictor:

1. Remove the vent elbow from the inducer outlet.
2. Align the lock tabs on the outlet restrictor with the slots on inside outlet of the inducer assembly.
3. Snap the outlet restrictor in place.
4. Re-install the vent elbow.
5. Torque vent elbow clamp 15-lb-in.

Table 13 – Approved Combustion-Air and Vent Pipe, Fitting and Cement Materials (U.S.A. Installations)

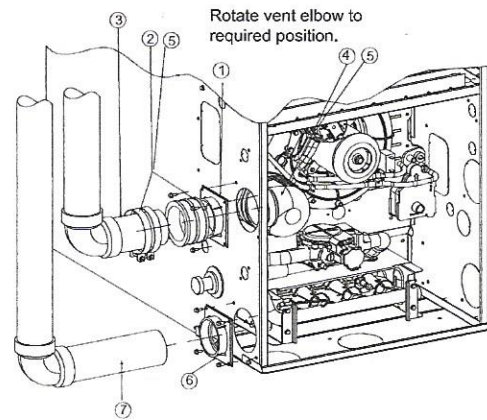
ASTM SPECIFICATION (MARKED ON MATERIAL)	MATERIAL	PIPE	FITTINGS	SOLVENT CEMENT AND PRIMERS	DESCRIPTION
D1527	ABS	Pipe	—	—	Schedule-40
D1785	PVC	Pipe	—	—	Schedule-40
D2235	For ABS	—	—	Solvent Cement	For ABS
D2241	PVC	Pipe	—	—	SDR-21 & SDR-26
D2466	PVC	—	Fittings	—	Schedule-40
D2468	ABS	—	Fittings	—	Schedule-40
D2564	For PVC	—	—	Solvent Cement	For PVC
D2661	ABS	Pipe	Fittings	—	DWV at Schedule-40 IPS sizes
D2665	PVC	Pipe	Fittings	—	DWV
F438	CPVC	—	Fittings	—	Schedule-40
F441	CPVC	Pipe	—	—	Schedule-40
F442	CPVC	Pipe	—	—	SDR
F493	For CPVC	—	—	Solvent Cement	For CPVC
F628	ABS	Pipe	—	—	Cellular Core DWV at Schedule-40 IPS sizes
F656	For PVC	—	—	Primer	For PVC
F891	PVC	Pipe	—	—	Cellular Core Schedule-40 & DWV

9155A



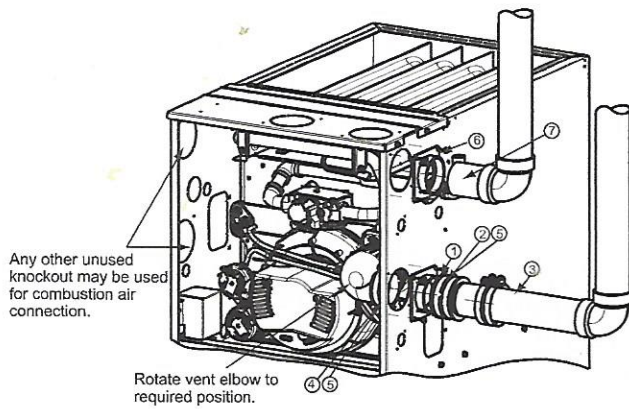
UPFLOW LEFT CONFIGURATION

A11309A



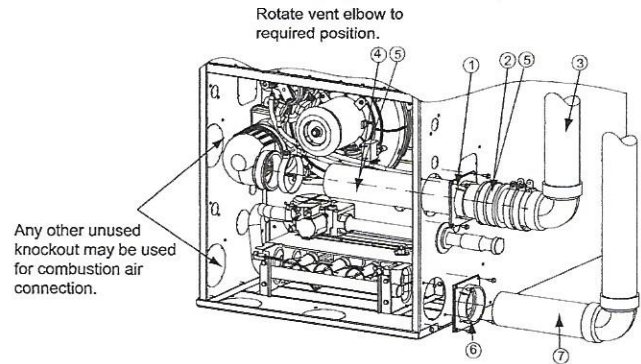
DOWNFLOW LEFT CONFIGURATION

A11311A



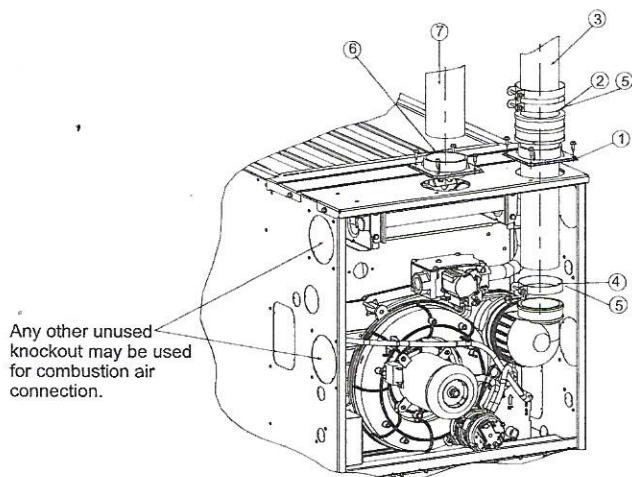
UPFLOW RIGHT CONFIGURATION

A11308A



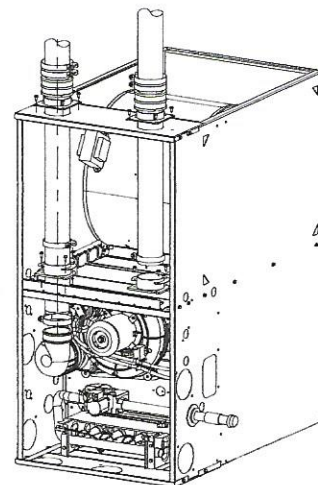
DOWNFLOW RIGHT CONFIGURATION

A11312A



UPFLOW VERTICAL VENT

A11310A



Requires Accessory Internal Vent Kit.
See Product Data for current kit number.
DOWNFLOW VERTICAL

A11313A

Fig. 43 - Upflow Configurations (Appearance may vary)
See "Notes for Venting Options"

Fig. 44 - Downflow Configurations (Appearance may vary)
See "Notes for Venting Options"



SPIRAL DUCT SUBMITTAL AND SPECIFICATION DATA

MATERIALS :

Spiral Duct is manufactured from Commercial Grade G60/G90 galvanized steel, conforming to ASTM A90, A568, A653, A924 prime lockforming material that allows this galvanized material to withstand a maximum of 400 Deg. F temperature. Stainless Steel, Aluminum, Paintable Galvanized and other materials are available upon request.

STANDARDS/CODES:

SMACNA, ASHRAE, U.L., UMC., L.A. CITY and other standards or codes upon request.

GAUGES:

28 gauge thru 14 gauge.

DIAMETERS :

Spiral Duct can be made available in diameters from 3" thru 80". Corrugation can be made available from 10" thru 80".

LENGTHS:

Stock lengths; 6', 7 ½', 10'

Other lengths up to 35' available upon request.

CONNECTIONS:

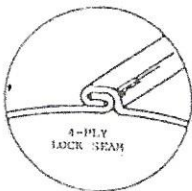
Stock is crimped one end and raw other end. Available with raw ends or flanges, for angle or flat rings.

FIELD CONNECTIONS:

Consult code and construction standards for proper mating of connections and sealants.

Under 2" S.P. - All ducts and fittings shall be securely joined by telescoping the crimped male end or connecting high velocity collar into the adjoining section and secure with proper approved fastening devices such as minimum ½" self tapping sheet metal screws.

Over 2" S.P. - All ducts and fittings shall be securely joined by male or female connecting collar or sleeve, with high velocity duct sealant applied to the surface of connections and approved fastening devices. Longitudinal seams must be sealed.



SPECIFICATIONS SUBJECT CHANGE WITHOUT NOTICE

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