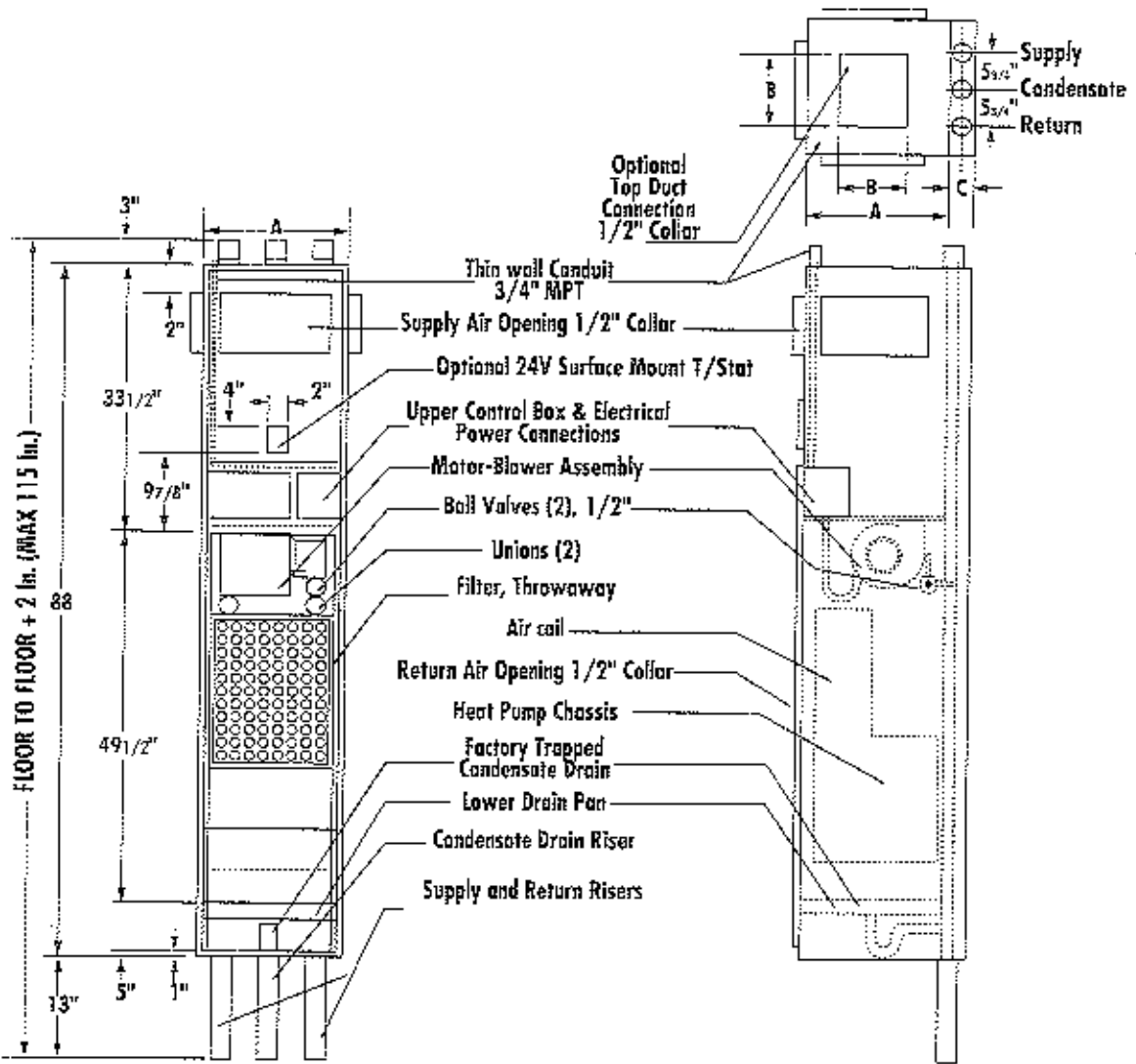




DIMENSIONS
 Model 816 Single Unit
 Furred in Cabinet (88 in. Height)

Submittal Data

Contractor: _____ P.O.: _____
 Engineer: _____
 Project Name: _____ Unit Tag: _____



	A	B	C
816-10	17	10	3 5/8
	432	254	92
816-15	17	10	3 5/8
	432	251	92
816-20	20	10	3 5/8
	508	330	92
816-28	24	17	3 5/8
	510	432	92
816-30	24	17	3 5/8
	610	432	92
816-36	24	17	3 5/8
	610	432	92

Notes:
 The riser compartment is defined as being the rear of each unit. Supply air grilles and return airboxes must be on any side except rear.
 ** C Dimension = 3 5/8" for risers up to 2 1/2" diameter.
 Consult factory for larger diameter risers.

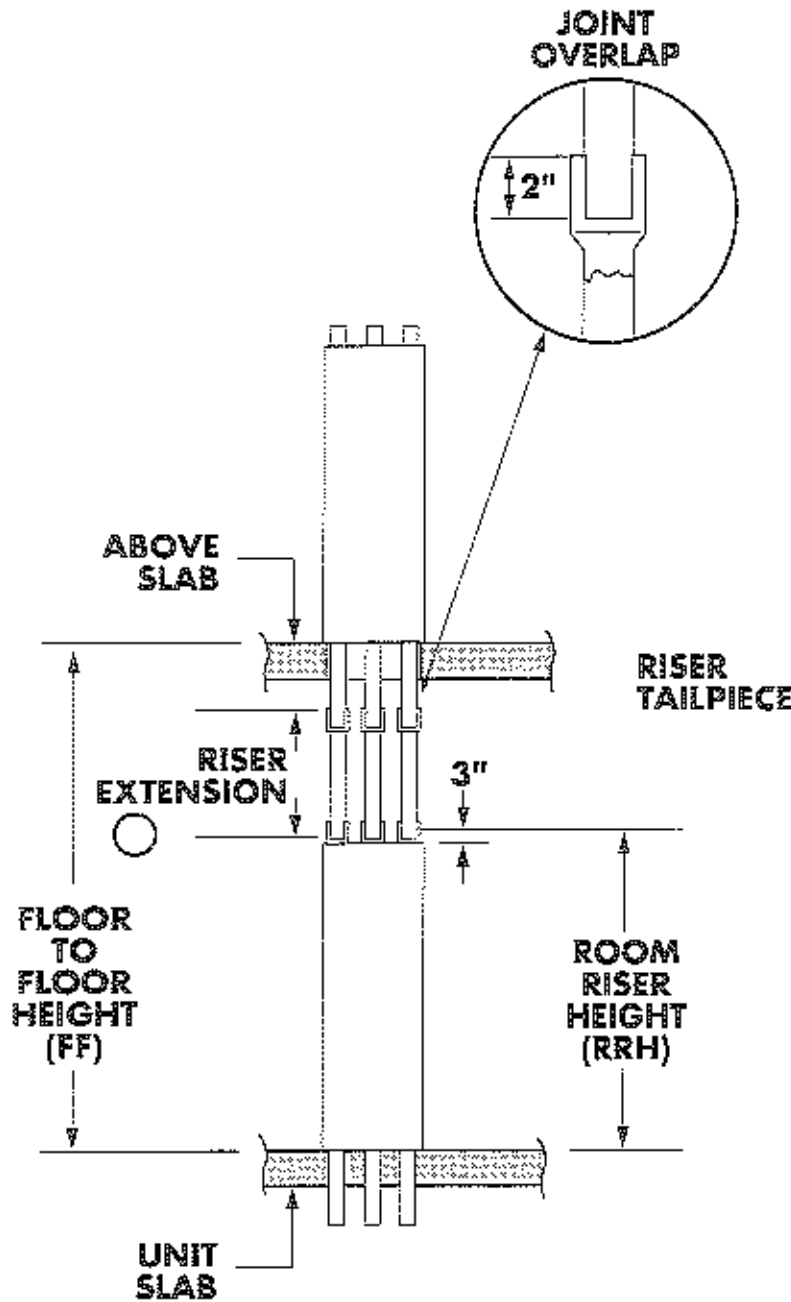
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CLIMATEMASTER®
RISER EXTENSION SIZING
 Model 816

Submittal Data

Contractor: _____	P.O.: _____
Engineer: _____	_____
Project Name: _____	Unit Tag: _____



Riser Tail Piece: Length of riser extending down from the cabinet. (Riser tail piece must extend a minimum of 5" below slab.)

Room Riser Height (RRH): Cabinet height + 3". Standard Cabinet is 88" + 3" = 91".

Floor To Floor Height (FF): Distance from top of unit slab to top of above slab.

Riser Extension Length: Start with the floor to floor Dim. (FF) From this subtract the room riser height and tail piece length. Then add 4" to the two joint overlaps.

$$\text{Riser Extension} = \text{FF} - (\text{tailpiece} + \text{RRH}) + 4"$$

Example: Floor to floor (FF) = 120"
 Room Riser Height (RRH) = 91"
 Tail Piece = 13"

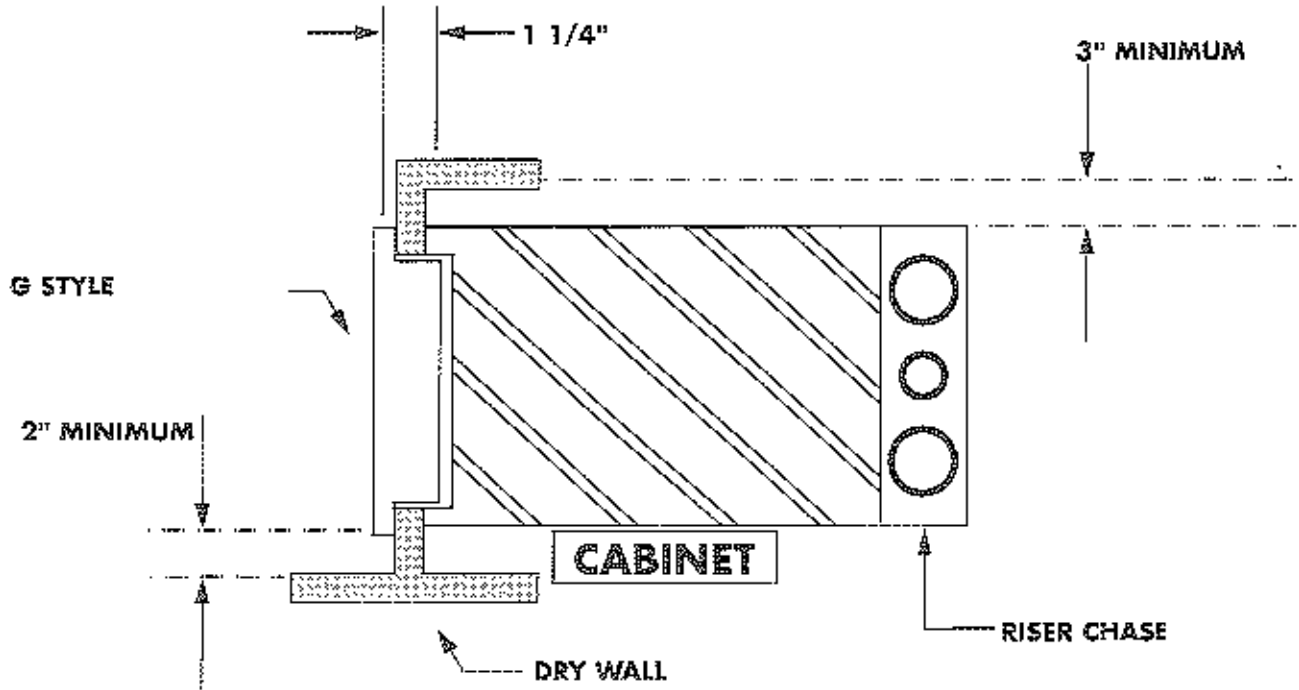
$$\text{Riser Extension} = 120" - (13" + 91") + 4" = 20"$$

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CLIMATEMASTER®
 816 RETURN AIR PANEL
 Model 816 G Return Air Panel
 Installation

Submittal Data

Contractor:	P.O.:
Engineer:
Project Name:	Unit Tag:



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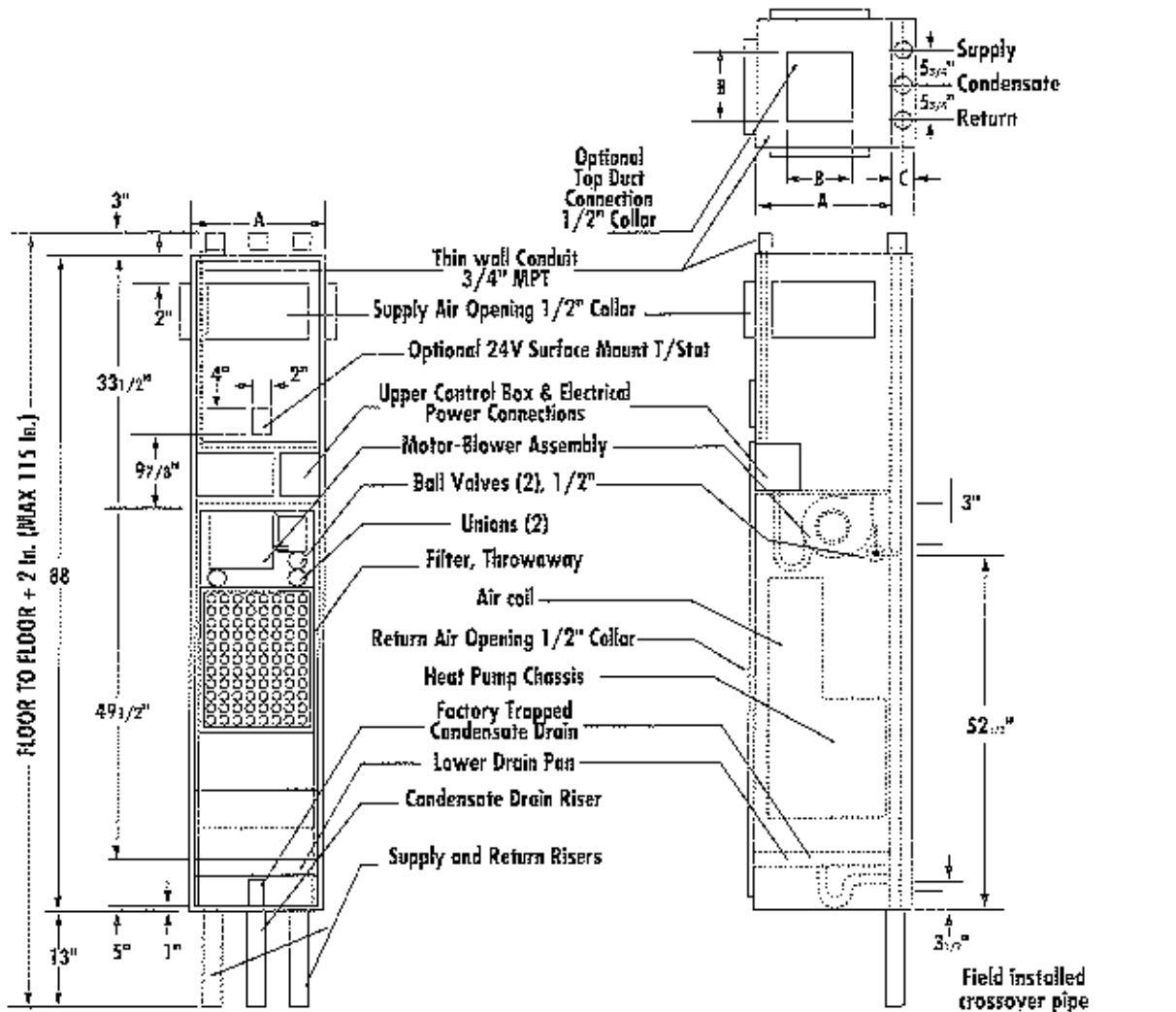


DIMENSIONS

Model 816 Master Unit
 Purred in Cabinet (88 in. Height)

Submittal Data

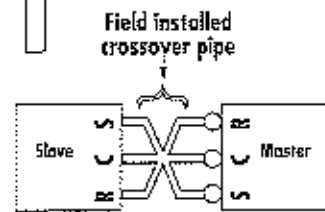
Contractor: _____ P.O.: _____
 Engineer: _____
 Project Name: _____ Unit Tag: _____



FLOOR TO FLOOR + 2 in. (MAX 115 in.)

	A	B	C
816-10	17	10	3.5/8
816-15	432	254	92
816-20	78	13	5.5/8
816-28	528	330	92
816-30	24	17	3.5/8
816-36	610	432	92
816-36	24	17	3.5/8
816-36	610	432	92

Note:
 The riser compartment is defined as being the rear of each unit. Supply air grilles and return air/water panel can be any side except rear.
 Must provide crossover water piping from Master to Slave units. Master unit has no main drain.
 ** C Dimension = 3.5/8" for risers up to 2 1/2" diameter.
 Consult factory for larger diameter risers.



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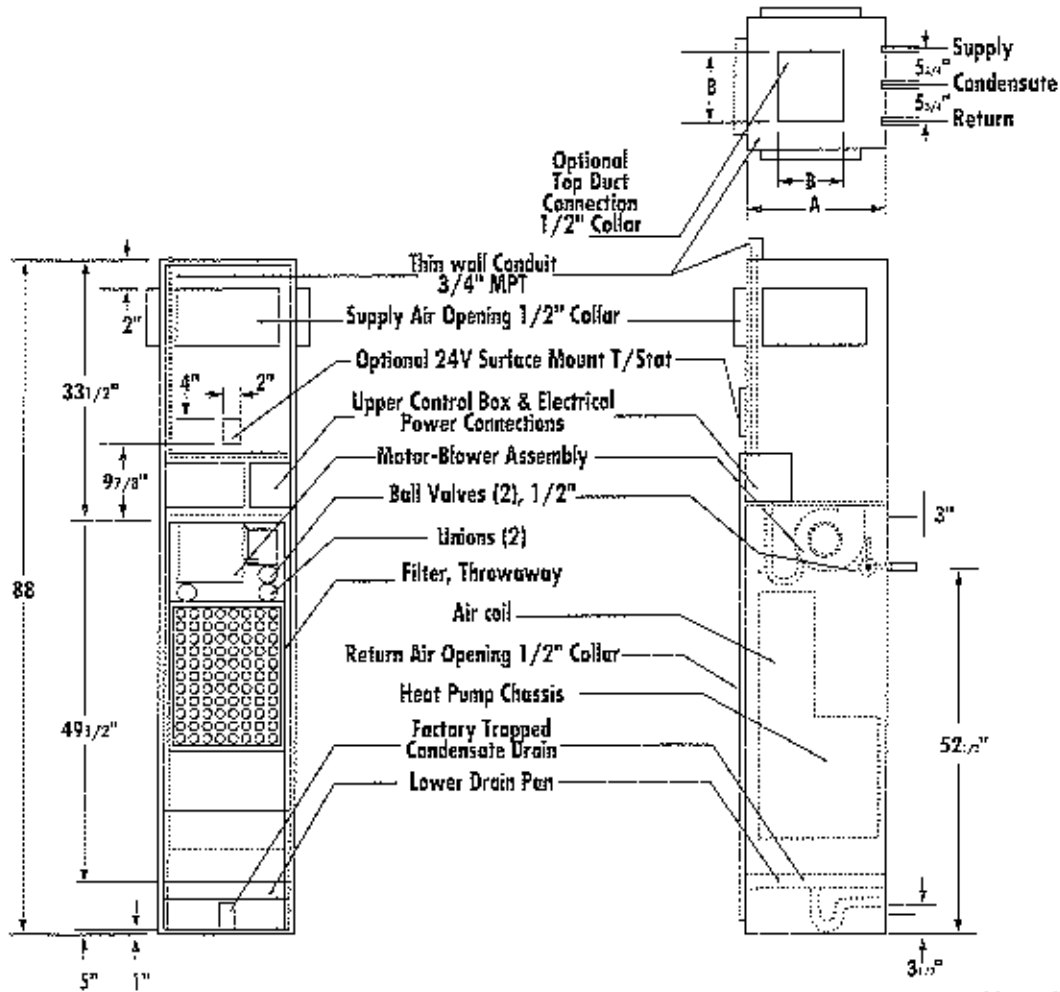


DIMENSIONS

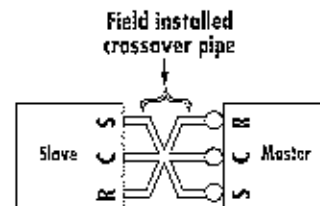
Model 816 Slave Unit
Furred in Cabinet (88 in. Height)

Submittal Data

Contractor: _____ P.O.: _____
 Engineer: _____
 Project Name: _____ Unit Tag: _____

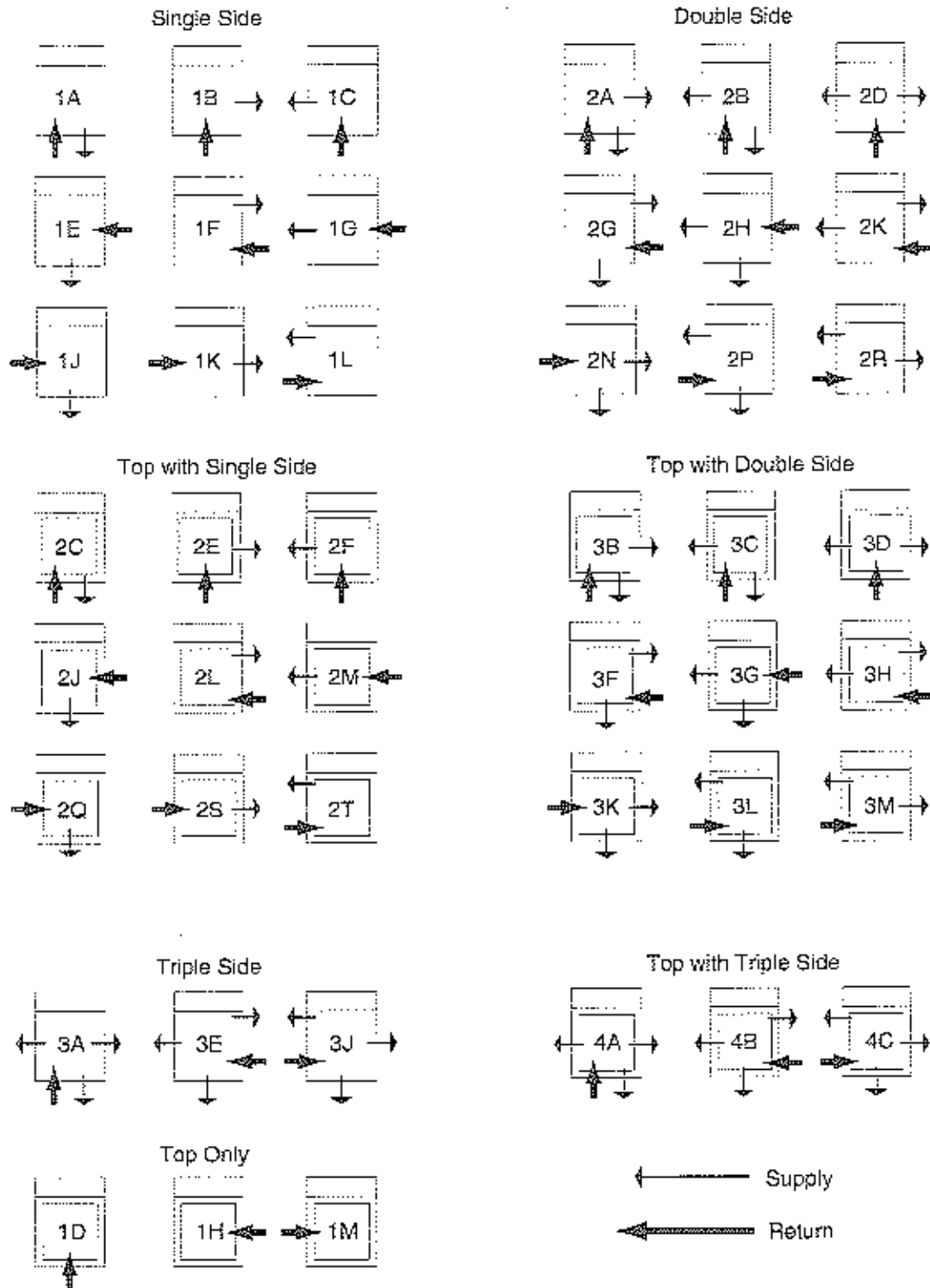


	A	B
816-10	17	30
	432	254
816-15	17	30
	432	254
816-20	20	33
	308	390
816-28	24	17
	610	432
816-30	24	17
	610	432
816-36	24	17
	610	432



Note:
 The riser compartment is defined as being the rear of each unit. Supply air grilles and return air intake panel can be any side except rear.
 Must provide crossover water piping from Master to Slave unit. Master unit has no riser chase (stub-outs only).

Contractor: _____	P.O.: _____
Engineer: _____	
Project Name: _____	Unit Tag: _____



Note 1: The riser compartment is defined as being the rear of each unit. Supply air grilles and return air/access panel can be any side except rear.

Note 2: Return air side also defines control location and service access.

Note 3: Triple discharge openings are not recommended for sizes 816-10 & 15.

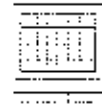
Single discharge openings are not recommended for sizes 816-28, 30 & 36

Contractor: _____	P.O.: _____
Engineer: _____	
Project Name: _____	Unit Tag: _____

Single Deflection- Adjustable vertical blades for controlling horizontal path of discharge air.



Double Deflection- Adjustable vertical and horizontal blades for controlling horizontal and vertical path of discharge air. (Recommended for all standard applications.)



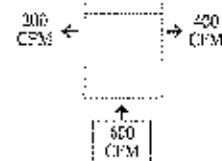
Double Deflection with Opposed Blade Damper- Addition of opposed blade damper to grille allows control of air volume (CFM) and path of discharge air. (Recommended for applications requiring unequal air flow or side discharge grille(s) with additional top discharge air opening.)



Unequal Air Flow- Air discharges requiring different air volumes (CFM). Use double deflection grilles with opposed blade damper.



Note: Units with adjacent grilles and opposed blade dampers may require special grilles. Consult factory with specific application.

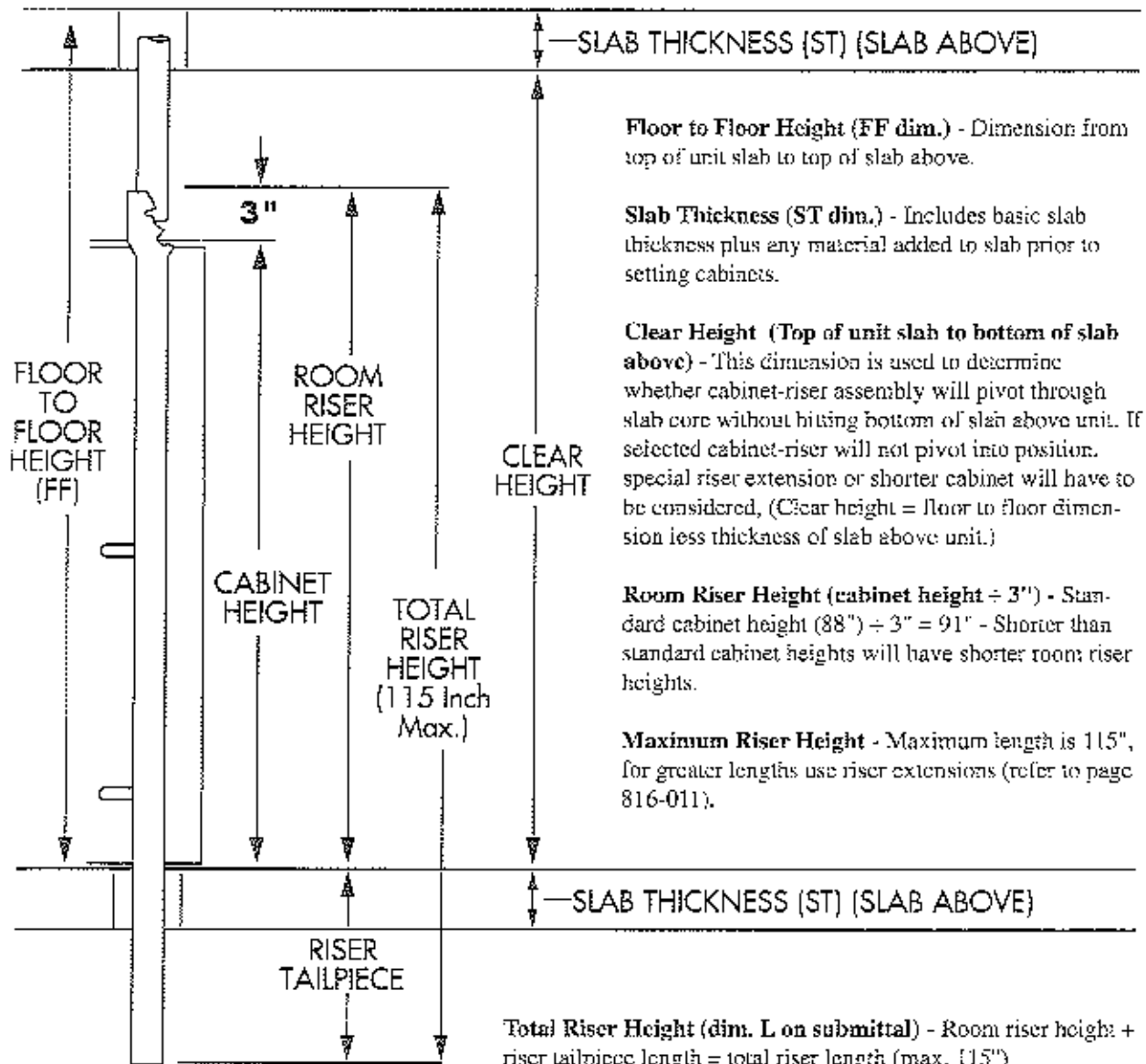


Top Discharge- Units are designed to operate against relatively low air resistance (external static). Use of liberal duct sizing is recommended to maximize total unit air flow (CFM). Top duct outlet will offer more resistance to air flow than side outlets on the same cabinet. Therefore side outlet grille(s) must have opposed blade dampers to field balance the air flow.

Contractor: _____	P.O.: _____
Engineer: _____	
Project Name: _____	Unit Tag: _____

Riser Tailpiece (length of riser that extends down from cabinet bottom) - Dimension F on submittal drawing. Riser tailpiece sized for 2" insertion into 3" expanded section at top of cabinet. Actual job fit may be 1" to 3" insertion (built-in +1" floor to floor tolerance). Riser tailpiece should extend beneath bottom of slab a minimum of 5" to facilitate brazing.

3" Expanded Section - Riser expanded at top of unit to accept a pipe diameter from unit above. (Top of riser always 3" above top of unit.)



Floor to Floor Height (FF dim.) - Dimension from top of unit slab to top of slab above.

Slab Thickness (ST dim.) - Includes basic slab thickness plus any material added to slab prior to setting cabinets.

Clear Height (Top of unit slab to bottom of slab above) - This dimension is used to determine whether cabinet-riser assembly will pivot through slab core without hitting bottom of slab above unit. If selected cabinet-riser will not pivot into position, special riser extension or shorter cabinet will have to be considered, (Clear height = floor to floor dimension less thickness of slab above unit.)

Room Riser Height (cabinet height ÷ 3") - Standard cabinet height (88") ÷ 3" = 91" - Shorter than standard cabinet heights will have shorter room riser heights.

Maximum Riser Height - Maximum length is 115", for greater lengths use riser extensions (refer to page 816-011).

Total Riser Height (dim. L on submittal) - Room riser height + riser tailpiece length = total riser length (max. 115")

Total Riser Height = Floor to Floor + 2" (115" max.)

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CLIMATEMASTER®
RISER ARRANGEMENTS
 Top Floor Units
 Model 816

Submittal Data

Contractor: _____	P.O.: _____
Engineer: _____	
Project Name: _____	Unit Tag: _____

- 1. All Risers Capped At Cabinet Run-Outs**
- System piping is bottom supply & return
 - Check system flushing & air venting specs

Standard-Bottom supply & return unless otherwise specified.



- 2. All Risers Open At Top**
- Bottom supply & return piping for supplying water to other units
 - Bottom supply & return piping for drain vent to roof, flushing crossover
 - Top supply & return piping

Standard-Top supply & return unless otherwise specified.



- 3. All Risers Capped At Top**
- Bottom supply & return piping
 - Provides cap at top for air vent add by contractor
 - Must be requested by customer



- 4. Supply & Return Open, Drain Capped At Cabinet Run-Out**
- Bottom supply & return piping with open top for venting or flushing crossover
 - Top supply & return



- 5. Capped Supply and Return, Drain Open At Top**
- Bottom supply & return piping with open drain riser for venting to roof or picking up drain from other equipment above



- 6. Supply Or Return Open At Top, Others Capped At Cabinet Run- Out**
- Bottom supply & top return piping
 - Top supply & bottom return piping





CLIMATEMASTER™
RISER ARRANGEMENTS
 Bottom Floor Units
 Model 816

Submittal Data

Contractor: _____	P.O.: _____
Engineer: _____	
Project Name: _____	Unit Tag: _____

1. All Riser Through Slab At Bottom

- Bottom supply & return
- Top supply & return feeding other equipment below

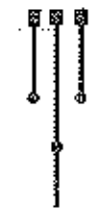
Standard for bottom supply & return unless otherwise specified.



2. Supply & Return Capped At Cabinet Run-Out, Drain Through Slab

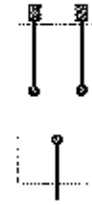
- Top supply & return
- Supply & return mains above these units on "Between-Floors" main piping

Standard for top supply & return unless otherwise specified.



3. All Risers Capped At Cabinet Run-Out, Drain Through Slab

- Isolated unit top supply & return from adjacent riser with separate drain
- Check riser venting

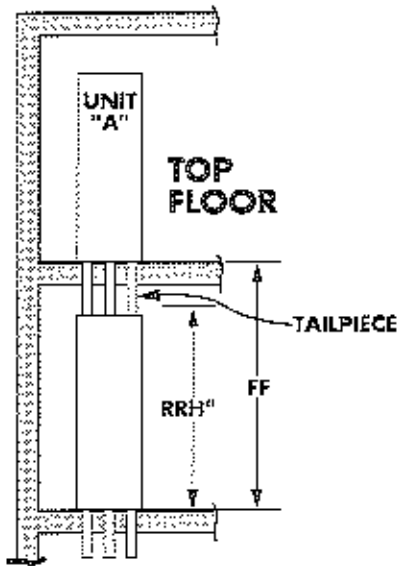


4. Supply Or Return Capped At Cabinet Run-Out, Other Risers Extend Through Slab

- Bottom supply, top return piping
- Bottom return, top supply piping



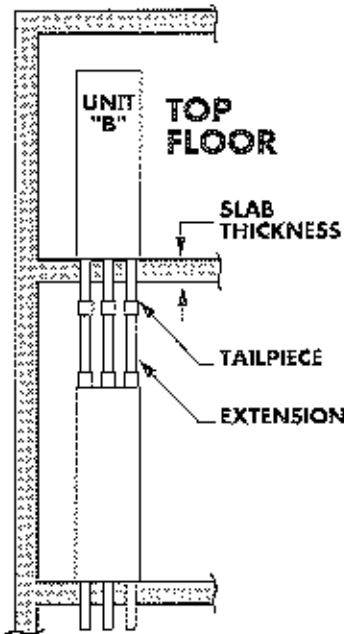
Contractor: _____	P.O.: _____
Engineer: _____	_____
Project Name: _____	Unit Tag: _____



To determine the riser tail piece length of a unit (unit "A")

Riser Tail Piece = FF DIM - RRH* + 2"
(of unit "A") (from floor below top floor) (of unit below)

RRH*: Room riser height is cabinet height + 3"
Standard cabinet height is 88" + 3" = 91" RRH



To determine the riser tail piece length of a unit (unit "B") that will require riser extensions to a unit below.

Minimum Tail Piece Length = slab thickness + 5" (of unit "B")

To determine riser extensions lengths see page Riser Extension Sizing

NOTE: If riser length exceeds 115" riser extensions must be used. See Riser Extension Sizing The riser tail piece must extend through the slab a minimum of 5" to facilitate brazing. Special care must be taken in sizing riser lengths and tail piece lengths when:

- A) Riser extensions are used.
- B) Floor to floor heights vary.
- C) Slab thickness varies from floor to floor.

See Riser Arrangement for selection of top floor riser applications.



CLIMATEMASTER*
CABINET HEIGHT AND SLAB
SLOT SIZE
Model 816

Submittal Data

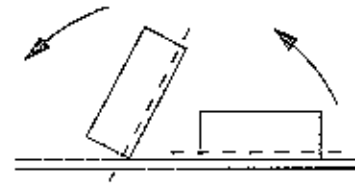
Contractor: _____	P.O.: _____
Engineer: _____	
Project Name: _____	Unit Tag: _____

To determine the slab slot size required for the risers and to determine if clear height is OK for unit installation, use the cabinet height and slab slot charts on the next page.

To use the charts you will need the clear height in the room the unit is in, size of unit, number of risers, riser dimensions and type of installation. (See below)

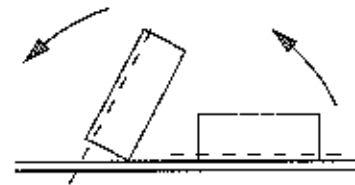
Type 1 Single Units

With a minimum clear height of 94". Start with the unit lying on the chase.



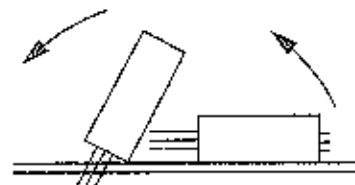
Type 2 Single Units

With a minimum clear height of 96". Start with the unit lying with the chase on top.



Type 3 Single or Ditto Units

With a minimum clear height of 94". Start with the unit lying on its side as shown.



If any clear height is less than 96" check the minimum cabinet height and slot size chart to determine if the size unit you need will fit. If the standard 88" cabinet does not fit check the short 80" cabinet height and slot size chart. Call the factory if the short 80" cabinet does not fit. (Check with the contractor for OK to use 80" or shorter cabinet.)

Clear Height (swing height) = Floor to Floor Dimensions - Slab Thickness of Slab above the unit.
 $CH = FF - ST$

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Contractor: _____	P.O.: _____
Engineer: _____	
Project Name: _____	Unit Tag: _____

3 Pipe Standard 88" Cabinet

MODEL	CLEAR HEIGHT	Slab Slot Size Type of Installation		
		Type 1	Type 2	Type 3
		W X L	W X L	W X L
10 / 15	96	5 7/8 X 15	5 7/8 X 15	5 X 15
	95	6 1/4 X 15	5 3/8 X 15	5 X 15
	94	6 5/8 X 15	5 3/8 X 15	5 X 15
	93	7 X 15	N.R.	5 X 15
	92	7 1/2 X 15	N.R.	N.R.
20	96	6 1/4 X 18	5 1/8 X 18	5 X 18
	95	6 3/4 X 18	5 3/8 X 18	5 X 18
	94	7 1/8 X 18	N.R.	5 X 18
	92	7 5/8 X 18	N.R.	5 X 18
28 / 36	96	7 X 22	5 1/8 X 22	5 X 22
	95	7 1/2 X 22	N.R.	5 X 22
	94	8 X 22	N.R.	5 X 22
10 / 15	93 & ABOVE	N.R.	N.R.	5 X 15
20	93 & ABOVE	N.R.	N.R.	5 X 18
28 / 36	92 & ABOVE	N.R.	N.R.	5 X 22

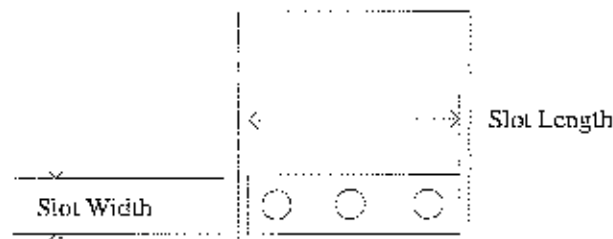
N.R. = Not Recommended

To use this chart look down the model column to find the model. Then look across to find the clear height. If your clear height exceeds 96" use the 96" slab slot size. Then under the type of installation read the slab slot size.

Above charts allow 1" tolerance in clear height to allow for variance in floor to floor dimensions.

Clear height is the floor to floor dimension of the floor the unit is on minus the slab thickness above.

Clear Height = FF - Slab Thickness





CLIMATEMASTER®
CUSTOMER REQUEST DATES
 Model 816

Submittal Data

Contractor: _____	P.O.: _____
Engineer: _____	_____
Project Name: _____	Unit Tag: _____

Project Name: _____

Purchase Order #: _____ Date: _____

Rep.: _____ Rep. #: _____

Ordered By: _____ Customer #: _____

Sold To: _____

Ship To: _____

Cabinet Request Date: _____

Chassis Request Date: _____

Accessory Request Date: _____

NOTE: Standard lead times, after release, for Cabinets is twelve (12) weeks, Chassis and Accessories usually follow due to job site conditions. A Purchase Order is necessary to release order for Production.

Any changes made will require additional charges and will effect production dates.

ClimateMaster will make every attempt to deliver on or about these dates. Specials require a minimum of one (1) additional week lead time. For specials, please consult the factory.

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CLIMATEMASTER®
RISER PIPING SCHEDULE
 Model 816

Submittal Data

Contractor: _____	P.O.: _____
Engineer: _____	
Project Name: _____	Unit Tag: _____

Job Name: _____ P.O. # _____ Date: _____
 Prepared By: _____ S.O. # _____ Page _____ of _____

TAG NO.	FL. NO.	RISER NO.	UNIT SIZE	SUPPLY AIR		RISER DIAMETERS			DRAIN		
				GRILLE ARGMT.	GRILLE SIZE	SUPPLY TOP/BOT	CAP	RETURN TOP/BOT	CAP	TOP/BOT	CAP
1.					X	/		/		/	
2.					X	/		/		/	
3.					X	/		/		/	
4.					X	/		/		/	
5.					X	/		/		/	
6.					X	/		/		/	
7.					X	/		/		/	
8.					X	/		/		/	
9.					X	/		/		/	
10.					X	/		/		/	
11.					X	/		/		/	
12.					X	/		/		/	
13.					X	/		/		/	
14.					X	/		/		/	
15.					X	/		/		/	
16.					X	/		/		/	
17.					X	/		/		/	
18.					X	/		/		/	
19.					X	/		/		/	
20.					X	/		/		/	
21.					X	/		/		/	
22.					X	/		/		/	
23.					X	/		/		/	
24.					X	/		/		/	
25.					X	/		/		/	

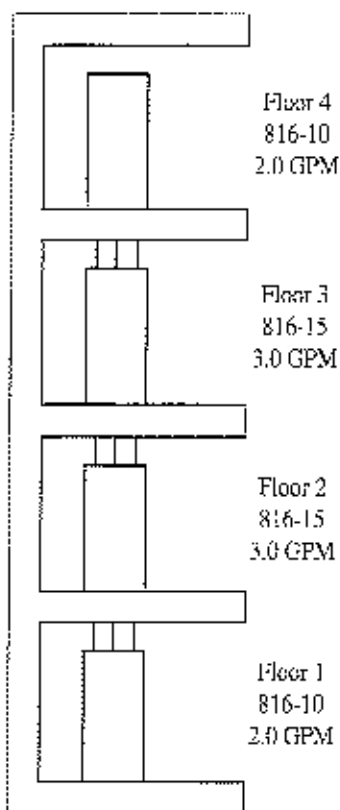
(Top riser diameter must match bottom diameter of floor slabs.)

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Contractor: _____	P.O.: _____
Engineer: _____	
Project Name: _____	Unit Tag: _____

Riser GPM requirements and individual Unit GPM requirements are necessary to select the proper Riser Piping diameters. Refer to this page to determine GPM requirement, then refer to page 816-019 to determine Riser Piping diameters.

Example is for bottom supply - bottom return system feed loop. GPM's are dependent upon unit load and system loop water temperatures. Please refer to Performance Charts for individual Unit GPM requirements.



Unit GPM (UGPM) = Required gallon per minute from "Performance Charts," in "Vertical Stacked Design Guide."

Total Riser GPM (TRGPM) = The sum of, all Units, GPM on each Riser.

Total GPM Per Floor (TGF) = Total GPM minus the sum of Unit GPM from all floors below. $TGF = TRGPM - (\text{sum UGPM from units below})$.

Example: Four floors, Consisting of units sizes 816-10 and 816-15, as shown in diagram. GPM's are 2.0 and 3.0 respectively.

$$TRGPM = 2.0 + 3.0 + 3.0 + 2.0 = 10 \text{ GPM}$$

Floor 4: $TGF = 10 - (3.0 + 3.0 + 2.0) = 2 \text{ GPM}$ needed at floor 4.

Floor 3: $TGF = 10 - (3.0 + 2.0) = 5 \text{ GPM}$ needed at floor 3.

Floor 2: $TGF = 10 - (2.0) = 8 \text{ GPM}$ needed at floor 2.

Floor 1: $TGF = 10 - (\text{no floors below}) = 10 \text{ GPM}$ needed at floor 1.

(Refer to page 816-019 for Riser Diameter Sizing.)



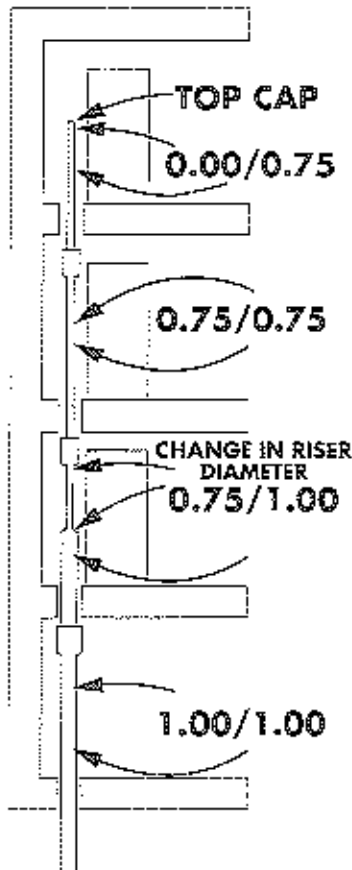
CLIMATEMASTER®
RISER DIAMETER SIZING
Model 816

Submittal Data

Contractor: _____	P.O.: _____
Engineer: _____	_____
Project Name: _____	Unit Tag: _____

Refer to Riser GPM Sizing for the prefix to this example.

Each 816 Vertical Stack unit has three riser pipes. The following example will be for one riser pipe (from the top floor to the bottom floor), and will be representative of the remaining two riser pipes.



From Table 1 (below) determine the proper riser diameter needed to satisfy the required GPM's at each unit. (Refer to Table 2, below, for a summary.)

The following nomenclature is used to designate the diameters at the top and bottom of each unit:

Top Cap - Top half of riser is eliminated and sealed.

Bottom Cap - Bottom half of riser is eliminated and sealed.

0.00/0.75 - Indicates top cap/0.75" bottom.

0.75/1.00 - Indicates 0.75" top/1.00" bottom.

1.00/0.00 - Indicates 1.00" top/bottom cap.

(from this we develop Table 3.)

Table 1.

MAX GPM	5	12	20	34	70	125	200
RISER DIA. (INCHES)	0.75	1.00	1.25	1.50	2.00	2.50	3.00

Table 2.

FLOOR	GPM	DIAMETER FROM TABLE 1
4	2	0.75"
3	5	0.75"
2	8	1.00"
1	10	1.00"

Table 3.

NOMENCLATURE PER UNIT	DESCRIPTION
0.00/0.75	Top Cap, with 0.75" Bot Feed
0.75/0.75	0.75" Full Length Riser
0.75/1.00	0.75" Top, 1.00" to 1st Floor
1.00/1.00	1.00" Full Length Riser

Values from Table 3 are to be entered on the Riser Piping Schedule. (Top diameter must match bottom diameter of floor above.)