Bell & Gossett
a xylem brand

GUIDELINES
Z200A

Zoning Made Easy - Rules of Thumb

FLOW RATE

$$\frac{\text{Net Btuh Load}}{10{,}000} = \text{Flow Rate}$$

MAXIMUM FLOW RATE

Pipe Size (Copper)	Maximum Flow Rate
½"	1½ gpm
¾"	4 gpm
1"	8 gpm
1¼"	14 gpm

MAXIMUM FLOW RATE & HEAT CARRYING CAPACITY

Pipe Size (Copper)	Maximum Flow Rate	Heat Carrying Capacity
½"	1½ gpm	15,000 Btuh
¾"	4 gpm	40,000 Btuh
1"	8 gpm	80,000 Btuh
1¼"	14 gpm	140,000 Btuh

(Based on a 20°F temperature drop across the system)

MAXIMUM LENGTH OF FIN-TUBE BASEBOARD LOOP

Baseboard Size (Copper)	Typical Btuh Per Linear Foot	Maximum Length of Baseboard Loop
½"	600	25 feet
¾"	600	67 feet
1"	770	104 feet
1¼"	790	177 feet

(Based on 180°F average water temperature and a 20°F temperature drop across the system)

"PUMP HEAD"

1. Measure the longest run in feet.
2. Add 50% to this.
3. Multiply that by .04 and
4. That's the pump head!

TOTAL CONVECTORS A PIPE CAN SERVE

Pipe Size (Copper)	Maximum Btuh Capacity of Pipe	Total Convectors (6" x 36" x 24" 5,100 Btuh each)
½"	15,000	3
¾"	40,000	8
1"	80,000	16
1¼"	140,000	27

(Based on 180°F average water temperature and a 20°F temperature drop across the system)

SHARED PIPING SIZE

Pipe Size	Max. Flow Rate	Pipe Size	Max. Flow Rate
½" copper	1½ gpm	2" copper	45 gpm
¾" copper	4 gpm	1¼" iron pipe	17 gpm
1" copper	8 gpm	1½" iron pipe	25 gpm
1¼" copper	14 gpm	2" iron pipe	50 gpm
1½" copper	22 gpm		

ZONE-CIRCULATOR SIZING FOR HEATING ZONES

Zone Supply Pipe Size (Copper)	Bell & Gossett Circulator to Use
½"	NRF-22, NRF-33 or Series 100
¾"	NRF-22, NRF-33 or Series 100
1"	NRF-22, NRF-33 or Series 100
1¼"	Series HV or NRF-33

CIRCULATOR SIZING FOR SYSTEMS WITH ZONE VALVES

1. An NRF-22 or Series 100 can be used with:
   a. Up to three ¾" heating zones, or
   b. Two ¾" heating zones and one 1" zoned domestic water storage tank.
2. An NRF-33 or Series 100 can be used with:
   a. Up to five ¾" heating zones, or
   b. Three ¾" heating zones and one 1" zoned domestic water storage tank.

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Let's Solve Water

Xylem Inc.
8200 N. Austin Avenue
Morton Grove, Illinois 60053
Phone: (847) 966-3700
Fax: (847) 965-8379
www.bellgossett.com