

1755 La Costa Meadows Drive San Marcos, California 92078 USA Phone: 760-736-6114 Toll Free (US): 800-854-9959 www.Vortab.com

Flow Conditioners



INSTRUCTIONS: To order **Vortab**, please fill in each numbered block above by selecting required codes from the corresponding categories below. Use of any "W" or "*" Codes requires prior approval from Vortab. Once you have made all selections, contact a Vortab representative for price and delivery information. Contact Vortab on the availability of other options and special applications. Final acceptance of the part number is subject to Vortab's approval.

Code	[BLOCKS 1 - 3] Model				
VIS	VIS Insertion Sleeve For use inside pipes or round ducts from 1 inches to 48 inches in diameter; standard length is 3 inside diameters.				
VMR	VMR Meter Run For connection to piping from 2 inches to 24 inches in diameter; standard length is 7 nominal diameters; 2 inch size with flow element connection and flanged process connections are 8 nominal pipe diameters				
VSR	VSR Short Run For connection to piping from 2 inches to 24 inches in diameter; standard length is 3 nominal diameters				
VEL	VEL 90° Long Radius Elbow For connection to piping from 1 inches to 36 inches in diameter				
VFK	Field Kit For assembly and installation inside round pipes or ducts from 36 inches to 96 inches in diameter or size				
Code BLOCK 4	Code Code Code BLOCK 5 BLOCK 6 BLOCK 7	[BLOCKS 4-7] Pipe or Duct Size			
		For VIS In Boxes 4 through 7, enter the inside diameter from 00.87 inch to 48.00 inches			
For VIS and in inches; down to the second	nd VFK only: Enter all dimensions dimensions must be rounded he nearest 0.01 inch	For VMR, VSR and VEL ² In Boxes 4 and 5, enter the nominal pipe size in inches			
Divide mil inches	limeters by 25.4 to convert to	<u>VMR and VSR</u> Carbon steel = 08 to 24 inches Stainless steel = 02 to 24 inches			
		<u>VEL</u> Carbon steel = 01 to 36 inches Stainless steel = 01 to 36 inches			
		In Boxes 6 and 7, enter the pipe schedule code: VMR, VSR, VEL			
		$\begin{array}{rcl} Schedule & Lode \\ STD &= 00 \\ 10 &= S1 \\ 80 &= S8 \end{array}$			
		For VFK In Boxes 4 through 7, enter the inside diameter in inches (XX.XX)			
Code	[BLOCK 8] All Welded Material	of Construction			
1	Carbon steel – For VIS Model with inside diameter greater than 4.51 inches – For VMR or VSR Model with nominal pipe size 8 inches or larger – For VEL and VFK Models, all pipe sizes				
2	316 stainless steel – For all Vortab models				
3	316 stainless steel body with carbon steel flanges For VMR and VSR models only Codes 5 or 6 must be selected in Box 9; Codes 6 or 8 must be selected in Box 10 when a flow element is required 				
4	Hastelloy C-276 — For VIS or VFK models only				
*	Other ¹				
	L				

0	None See Figure 1			
	- For VIS or VFK only			
1	Retaining wafer at inlet See Figure 2			
	- For VIS only			
2	Retaining wafer at oulet			
	- For VIS only			
3	Butt weld preparation See Figures 4, 7, 9, 10			
	 For VMR, VSR and VEL only 			
4	Male NPT See Figures 3 and 7			
	 For VMR, VSR and VEL only with 2 inch schedule STD or schedule 80 			
	pipe sizes			
	ANSI TIANGES" (See Figures 5, 6, 8) – For VMB, VSB and VEL only			
	Flange size is determined by the Codes selected in Boxes 4 and 5: materials of			
	construction are determined by the Codes selected in Box 8			
5	150 lb			
6	300 lb			
*	Other ¹			
Code	[BLOCK 10] Flow Element Connection			
0	For all Vortab models			
	None Standard			
	For VMR only			
1	3/4 inch female NPT			
	1 inch female NPT			
2	I Inch temale NPT			
2 3	1 1/4 inch female NPT			
2 3 4	1 1/4 inch female NPT 1 1/4 inch male NPT 1 1/4 inch male NPT <i>See Figure 5</i>			
2 3 4	1 1/4 inch female NPT 1 1/4 inch female NPT 1 1/4 inch male NPT <i>See Figure 5</i> 1 1/2 inch ANSI flange ³ <i>See Figure 4</i>			
2 3 4 5	1 1/4 inch female NPT 1 1/4 inch female NPT 1 1/4 inch male NPT <i>See Figure 5</i> 1 1/2 inch ANSI flange ³ <i>See Figure 4</i> 150 lb stainless steel			
2 3 4 5 6	1 1/4 inch female NPT 1 1/4 inch female NPT 1 1/4 inch male NPT See Figure 5 1 1/2 inch ANSI flange ³ See Figure 4 150 lb stainless steel 150 lb carbon steel			
2 3 4 5 6 7	1 1/4 inch female NPT 1 1/4 inch female NPT 1 1/4 inch male NPT See Figure 5 1 1/2 inch ANSI flange ³ See Figure 4 150 lb stainless steel 150 lb carbon steel 300 lb stainless steel			
2 3 4 5 6 7 8	1 1/4 inch female NPT 1 1/4 inch female NPT 1 1/4 inch male NPT <i>See Figure 5</i> 1 1/2 inch ANSI flange ³ <i>See Figure 4</i> 150 lb stainless steel 150 lb carbon steel 300 lb stainless steel 300 lb carbon steel 0 the al			
2 3 4 5 6 7 8 *	1 1/4 inch female NPT 1 1/4 inch female NPT 1 1/4 inch male NPT <i>See Figure 5</i> 1 1/2 inch ANSI flange ³ <i>See Figure 4</i> 150 lb stainless steel 150 lb carbon steel 300 lb stainless steel 300 lb carbon steel 0 ther ¹			
2 3 4 5 6 7 8 * Code	1 1/4 inch female NPT 1 1/4 inch female NPT 1 1/4 inch male NPT See Figure 5 1 1/2 inch ANSI flange ³ See Figure 4 150 lb stainless steel 150 lb carbon steel 300 lb stainless steel 300 lb carbon steel 0 ther ¹ [BLOCK 11] Identification Tag ⁴			
2 3 4 5 6 7 8 * Code 0	1 1/4 inch female NPT 1 1/4 inch female NPT 1 1/4 inch male NPT See Figure 5 1 1/2 inch ANSI flange ³ See Figure 4 150 lb stainless steel 150 lb carbon steel 300 lb stainless steel 300 lb carbon steel 0 ther ¹ [BLOCK 11] Identification Tag ⁴ None V/S only			
2 3 4 5 6 7 8 * Code 0	1 1/4 inch female NPT 1 1/4 inch female NPT 1 1/4 inch male NPT See Figure 5 1 1/2 inch ANSI flange ³ See Figure 4 150 lb stainless steel 150 lb carbon steel 300 lb stainless steel 300 lb carbon steel 0 ther 1 [BLOCK 11] Identification Tag ⁴ None V/S only For VMR, VSR and VEL only			
2 3 4 5 6 7 8 * Code 0 1				
2 3 4 5 6 7 8 * Code 0 1 2 *	Inch temate NPT 1 1/4 inch female NPT 1 1/4 inch female NPT 1 1/4 inch male NPT See Figure 5 1 1/2 inch ANSI flange ³ See Figure 4 150 lb stainless steel 150 lb carbon steel 300 lb stainless steel 300 lb carbon steel 300 lb carbon steel 00ther ¹ [BLOCK 11] Identification Tag ⁴ None V/S only For VMR, VSR and VEL only Adhesive label Adhesive label and stainless steel tag			
2 3 4 5 6 7 8 * Code 0 1 2 *	Inch temate NPT 1 1/4 inch female NPT 1 1/4 inch female NPT 1 1/4 inch male NPT See Figure 5 1 1/2 inch ANSI flange ³ See Figure 4 150 lb stainless steel 150 lb carbon steel 300 lb stainless steel 300 lb carbon steel 300 lb carbon steel 0ther ¹ [BLOCK 11] Identification Tag ⁴ None V/S only For VMR, VSR and VEL only Adhesive label Adhesive label and stainless steel tag Other ¹			

Notes

- Describe the desired pipe schedule, material of construction, process connection, flow element connection, or identification tag. Contact Vortab for availability, pricing, and delivery.
- VMR, VSR and VEL use standard wall thickness pipe (STD). For pipe sizes from 2 inches to 10 inches, STD pipe is equivalent to schedule 40 or 40 S pipe. For pipe sizes from 12 inches to 36 inches, STD pipe has a 0.375 inch [9.5 mm] wall thickness.
- 3. All flanges are raised face and phonographic serrated. VMR and VSR Models use slip-on flanges. VEL Model uses welding neck flanges.
- 4. Stainless steel tag must not exceed 5 lines with 18 characters per line.

Figure 1. VIS without retaining wafer



Figure 2. VIS with retaining wafer at inlet



Figure 3. VMR with male NPT process connections and no flow element connection



Table A	– Flow Element Con	nections		
VMR Size	For FCI ST Series Flow Meters (U-Length) ³		All Other Ins	truments (C) ²
	Threaded	Flanged	Threaded	Flanged
2″	1 "- 6 " [25 mm - 152 mm]	1 "- 6 " [25 mm - 152 mm]	4.69" [119 mm]	6.19" [157 mm]
3″			5.25″ [133 mm]	6.75″ [171 mm]
4″			5.75″ [146 mm]	7.25″ [184 mm]
6″	1 "- 12" [25 mm - 305 mm]	1 "- 12 " [25 mm - 305 mm]	6.81 " [173 mm]	8.31″ [211 mm]
8″			7.81″ [198 mm]	9.31 ″ [236 mm]
10″			8.87″ [225 mm]	10.37" [264 mm]
12″			9.87 ″ [251 mm]	11.37 " [289 mm]

Figure 4. VMR with butt weld preparation process connections and flanged flow element connection







Figure 6. VSR with flanged process connections



Notes

- 1. "D" equals the nominal pipe size or diameter and "xD" equals the pipe length in terms of the equivalent number of nominal pipe diameters.
- "C" is the distance from the flow element connection to the centerline of the VMR. Find the dimension of "C" in Table A and use to calculate the length of your insertion flow meter in accordance with the flow meter manufacturer's specified guidelines.
- 3. U-length calculations do not include the additional length required for special flow element connections such as ball valves, extended nozzles, etc.
- 4. 2 inch sizes with a flow element connection and flanged process connections require 8 nominal pipe diameters in length.

Figure 7. VEL with MNPT or weld preparation process connections



Figure 8. VEL with flanged process connections



Figure 9. Typical process application



Figure 10. Typical flow meter application





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Customer Information						
Company name:	Technical contact name:					
Address:	Phone: Fax:					
	Email:					
City:	Durch sing south the sure					
State: ZIP/Post code:	Purchasing contact name:					
Country:	Filone Fax					
	Linui					
Process Piping						
Pipe, tube or duct size:	Tag number:					
Pipe schedule:	Pipe orientation: 🗌 Horizontal 🗌 Vertical					
Wall thickness:	Process connection:					
Cross-section geometry: 🗌 Round 🗌 Square 🗌 Rectangle	Maximum pressure drop:					
Materials of construction:	Other information:					
Proces	s Media					
Media:	Operating Conditions					
Composition:	Minimum Nominal Maximum Units					
State or phase: 🗌 Liquid 🔲 Slurry 🗌 Gas 🗌 Foam	Flow Rate:					
Molecular weight:	Temperature:					
Specific gravity or density:	Pressure:					
Viscosity:	Other:					
Flow Meter S	Specifications					
Manufacturer:	- Model number:					
Principle of operation:	Process connection:					
Flow element configuration: 🗌 Insertion 🗌 In-line	Other information:					