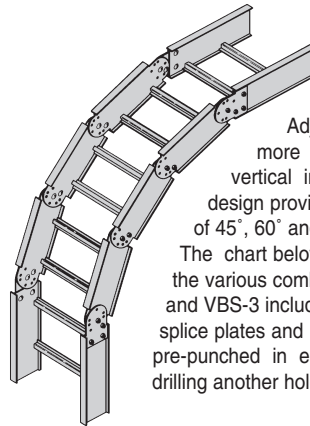


Series 1 Steel - Fittings

Vertical Bend Segments (VBS)



Adjustable Vertical Bends are made up of one or more vertical bend segments and can be used as a vertical inside (VI) or vertical outside (VO) bend. This design provides for vertical changes in direction with angles of 45°, 60° and 90° for 12" (305 mm) or 24" (609 mm) radius. The chart below shows the number of segments required for the various combinations of angles and radii. The VBS-1, VBS-2 and VBS-3 include one, two or three segments respectively with splice plates and hardware. Holes for setting standard angles are pre-punched in each segment. Other angles can be set by field drilling another hole for the locking bolt.

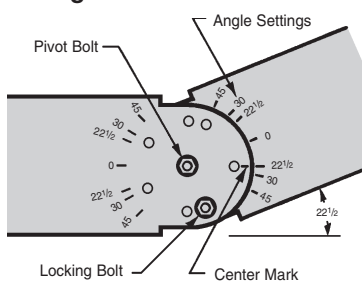
Available for **148P** and **148G** only.

Nominal Bend Radius		Catalog No.	Dimensions											
			VO						VI					
			A		B		R		A		B		R	
in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	
90° Vertical Inside or Outside														
12	305	14(*)†(‡)-VBS-1	8¼	210	8¼	210	6½	165	12½	303	12½	303	10½	267
24	609	14(*)†(‡)-VBS-3	24	610	24	610	22¼	565	27⅞	708	27⅞	708	26¼	667
60° Vertical Inside or Outside														
12	305	14(*)†(‡)-VBS-1	11¾	298	6½	165	12	305	14¾	375	8½	216	16	406
24	609	14(*)†(‡)-VBS-2	11¾	298	6½	165	12	305	14¾	375	8½	216	16	406
45° Vertical Inside or Outside														
12	305	14(*)†(‡)-VBS-1	12¾	324	5¼	133	17⅞	435	15½	394	6⅞	175	21	540
24	609	14(*)†(‡)-VBS-1	12¾	324	5¼	133	17⅞	435	15½	394	6⅞	175	21	540

Notes:

- (*) Insert material type: P=Pre Galvanized, G=HDGAF
- (†) Contact home office for information on Ventilated Trough and Solid Trough availability
- (‡) Insert width 6, 9, 12, 18, 24, 30, 36

Fitting Hole Pattern



Setting the Angle

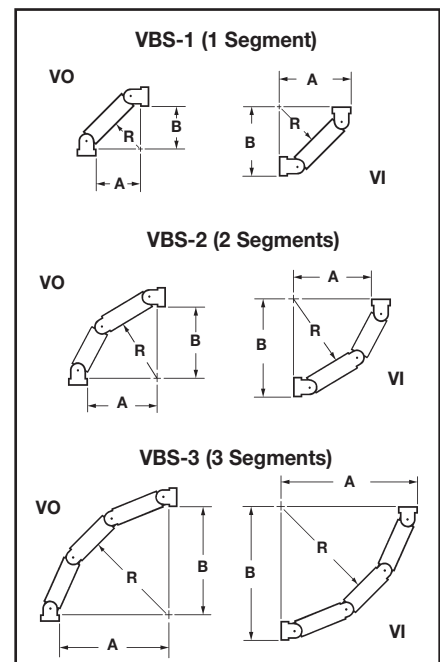
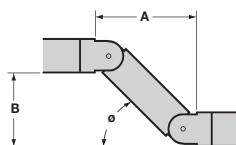
To find correct angle setting, divide angle of offset by the number of segments plus one. The result is equal to the angle setting stamped on the vertical bend segment and the splice plate. After inserting center pivot bolt, align the mark at the end of the segment or splice plate with the angle and insert locking bolt in the pre-punched hole.

Example: 90° bend, 24" radius requires 3 segments
 3 segments + 1 = 4
 90° divided by 4 = 22½°
 Set all vertical segments at 22½°

Offset Dimensions

One vertical bend segment can be used to complete a vertical offset. Offset dimensions are shown.

Angle θ	A		B	
	in.	(mm)	in.	(mm)
45°	12	305	8½	216
30°	14	355	5¾	146
22½°	14¼	362	5	127



All dimensions in parentheses are millimeters unless otherwise specified.

● Green = Fastest shipped items ● Black = Normal lead-time items ● Red = Normally long lead-time items