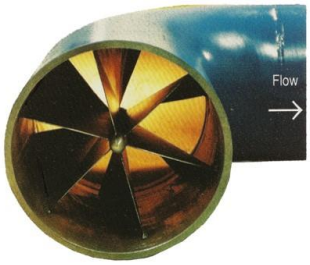
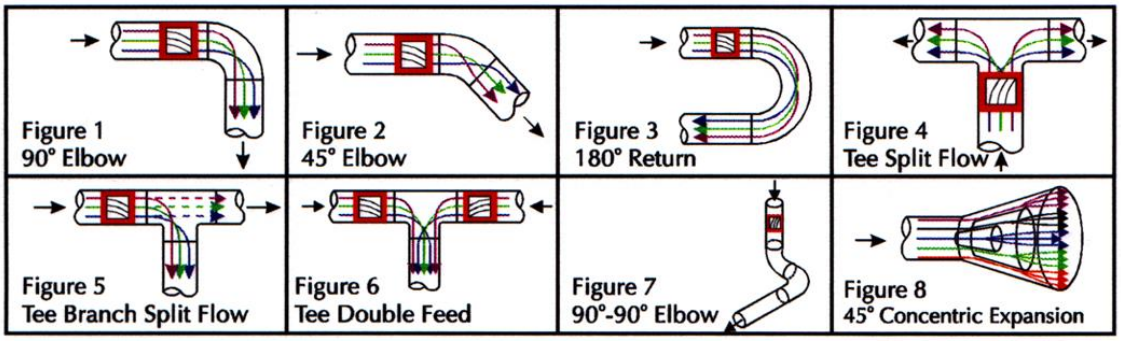
# Cheng Fluid Systems, Inc.




## CRV® Cheng Rotation Vane: Design & Installation Guide

**Material of Construction**: The highly adaptable CRV® and LAD® are manufactured in most commercially available materials of construction, pipe diameters, housing schedules and end connections. Special coatings and finishes may also be specified i.e. Boron coating for strengthening.

**Specifying a Flow Conditioner**: For the convenience of engineers, architects and contractors in writing CRV® and LAD® specifications, please reference the diagrams provided below.




**Dimensions:**

LAD®- Fits into any size concentric expansion or reduction.

CRV®- Standard unit dimensions in 2-12" sizes are shown in Table 1 below. If a shorter CRV® is required, it can be custom manufactured upon request.

**Pipe Fitting Geometry:** When specifying a CRV®, it is critical that the CRV® matches the geometry of the fitting to which it will be attached. The fitting schedule (wall thickness) and type of fitting must be specified. For example, fitting types are shown in figure 11-15 and are available in both short and long radius. In order to assist you in proper specification of your fitting, the following nomenclature and dimensions are noted for common fittings in Table 2.

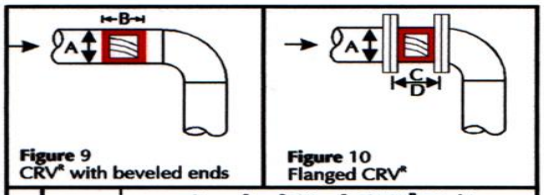



Figure 9
CRV® with beveled ends

Figure 10
Flanged CRV®

TABLE 1

| Pipe Dia. (Nom.) | Standard Stock CRV® Units | | |
|---|---|---|---|
| | Beveled Ends (Fig. 9) | 150# RFSO Flanges (Fig. 10) | 150# RFWN Flanges (Fig. 10) |
| A | B | C | D |
| 2" | 2.00" | 2.50" | 7.00" |
| 3" | 3.00" | 3.75" | 8.50" |
| 4" | 4.00" | 4.75" | 10.00" |
| 6" | 6.00" | 6.75" | 13.00" |
| 8" | 8.00" | 8.75" | 16.00" |
| 10" | 10.00" | 10.75" | 18.00" |
| 12" | 12.00" | 12.75" | 21.00" |
| ≥14" | Consult Factory | | |

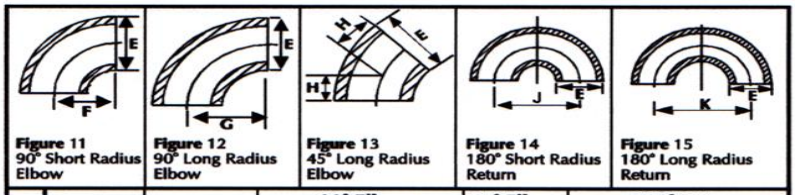



Figure 11
90° Short Radius Elbow

Figure 12
90° Long Radius Elbow

Figure 13
45° Long Radius Elbow

Figure 14
180° Short Radius Return

Figure 15
180° Long Radius Return

TABLE 2

| Pipe Dia. (Nom.) | Outside Pipe Diameter | 90° Elbow | | 45° Elbow | 180° Return | |
|---|---|---|---|---|---|---|
| | | Short Radius (Fig. 11) | Long Radius (Fig. 12) | Long Radius (Fig. 13) | Short Radius (Fig. 14) | Long Radius (Fig. 15) |
| | E | F | G | H | J | K |
| 2" | 2.375" | 2" | 3.0" | 1.375" | 4" | 6" |
| 3" | 3.500" | 3" | 4.5" | 2.000" | 6" | 9" |
| 4" | 4.500" | 4" | 6.0" | 2.500" | 8" | 12" |
| 6" | 6.625" | 6" | 9.0" | 3.750" | 12" | 18" |
| 8" | 8.625" | 8" | 12.0" | 5.000" | 16" | 24" |
| 10" | 10.750" | 10" | 15.0" | 6.250" | 20" | 30" |
| 12" | 12.750" | 12" | 18.0" | 7.500" | 24" | 36" |
| ≥14" | Consult Factory | | | | | |

**Installation:** The CRV® is supplied as a pipe stub with internal welded vanes. The pipe stub is prepared with beveled ends for butt welding; Flanges are optional. The CRV® should be flanged or welded into the piping system, at (and no more than one pipe diameter away from) the inlet side of the last elbow before the pumps suction nozzle. The CRV® should be positioned in the piping system so that the flow arrow on the CRV®s name tag, points in the same direction as the flow in the piping system. Standard welding practices can be used in welding the CRV® into the piping system. There are no moving parts in a CRV®, therefore no spare parts are required, and no maintenance of the CRV® is needed.

*Cheng Fluid Systems, Inc. Reserves the right to modify dimensions, materials, or design to ensure ideal performance of CRV®.

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