Control Valve End Connection

The control valve end connection may have flange connection, threaded, or even welded end. Flange connection is the most common control valve end connection in the oil & gas application. Other connection such as threaded or welded end is only used in particular application.

The type of the control valve end connection shall refer to any project specification or a piping class data sheet. In general the valve size 2â€□ and above usually shall have a flange connection, threaded connection is acceptable for 2â€□ and below. Welded end control valve connection is rarely used except for an application that requires no leakage in the connection between valve and pipe line or any pipe stress consideration.

The connection between flange and valve body are preferably used an integral body flange casting. It means the valve body and a flange, casting together so that there is no welding requirement to joint the valve and the flange.

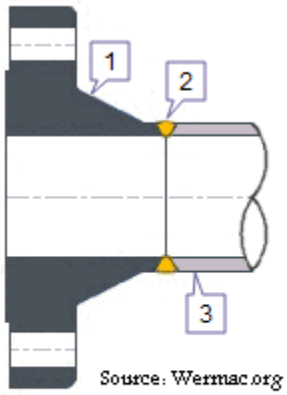
In case the vendor couldnâ€™t have an integral body flange casting, as a rule of thumb used a weld neck flange that require a butt weld or full penetration weld to connect flange and valve body. Later on, this weld will require a NDE (Non Destructive Examination) Radiographic Test.

Slip on flange that use a fillet weld shall not be used because fillet weld is weaker than butt welded. Socket weld flange that use fillet weld may be used for valve 1 Â½ inch and below. Even though socket weld flange also use fillet weld, but the internal weld of this flange increase the fatigue strength more than the slip on flange. This flange is allowable for small size of connection due to difficulties of but weld perform in such size. All fillet weld connection will require a Magnetic Particle Examination or Liquid Penetrant Test.

There are three types of flange facing that will be used in the valve end connection as follow:

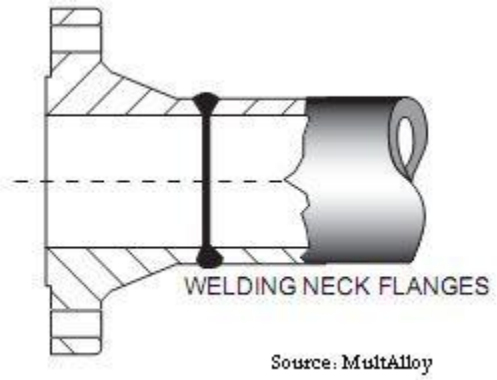
1. Flat Face Flange (FF Flange): used for low pressure or low valve class such as class 150.
2. Raised Face Flange (RF Flange): used for medium valve class such as class 300 and class 600.
3. Ring Type Join Flange (RTJ Flange): used for high valve class such as class 900 and above.

Even though the flange facing have their suitable class, instrument engineer shall check this classification with the piping class data sheet for a particular project.
All flange connection of valve shall be as per ASME B16.5 â€œPipe Flanges and Flanged Fittingsâ€□

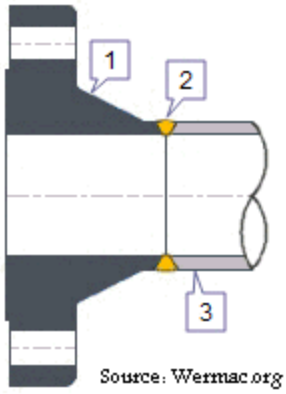


Source: Wermac.org

1. Welding Neck flange **2.** Buttweld
3. Pipe or Fitting



Source: MultAlloy



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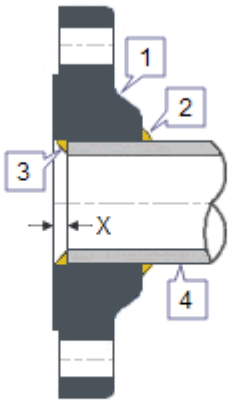
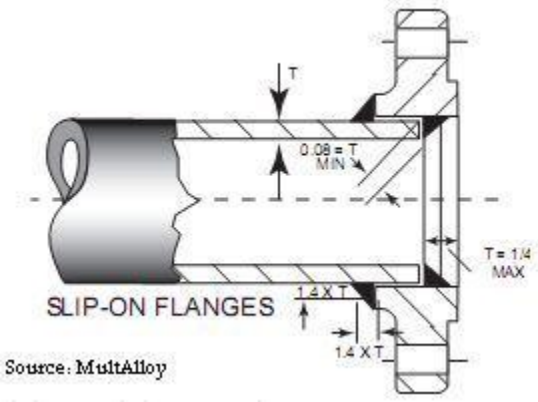


1. Slip On Flange **2.** Fillet Weld (outside)
3. Fillet Weld (inside) **4.** Pipe



Source: MultAlloy

source: http://www.instreng.com/content/142-control-valve-end-connection.html