



TechTip #2

Transition Spool Connection: Flanged versus Weld-in

The transition spool can be connected to coke drums utilizing either a flanged (bolt-on) or weld-in connection. Installation and maintenance procedures vary for each connection. Since installation, each connection method historically has had no leaks requiring maintenance thus DeltaValve does not recommend one installation method over the other.

Installation Considerations:

1. A possibility of flange leaks around the flange
2. A possibility of localized drum stress from the side feed entry causing cracks in the weld and forcing downtime for repair. (Experience has proven with proper design and installation, both connection types provide satisfactory performance levels).
3. Space or constricting dimensions on the cutting deck.

Pros and Cons to Flanged Spool Drum Connection

1. **Pro:** If needed, replacement is confined to a relatively inexpensive, disposable spool. The exchange of a spool is a minor maintenance exercise and can be done between cycles.
2. **Con:** Although there have been no leaks historically, the fear of leakage is still prominent in all flange connections. Life expectancy of the spool and gaskets have yet to be determined.

Pros and Cons to Weld-in Connection side feed entry

1. **Pro:** The weld-in design is a permanent transition to the unheading valve.
2. **Con:** If needed, there is no easy way to remove and replace the damaged transitioning spool.

Installation Methods

Salt Lake City, UT - 2 drums, operating since September 20, 2001.

- Original spool design with upturned connection.
- Non-balanced valve moments on flange connection (*spring-cans are not set to balance weight of valve about the flange centerline*).
- Gaskets require maintenance quarterly or semi-annually.

Pascagoula, MI - 6 drums, operating since February 2003.

- Original spool design with upturned connection.
- Non-balanced valve moments on flange connection (*spring-cans are not set to balance weight of valve about the flange centerline*).
- Gaskets do not require maintenance since Chevron have installed flange clamps to eliminate quarterly gasket maintenance.

El Segundo, CA - 6 drums, operating since 2010.

- Leak-less spool design
- Non-balanced valve moments on flange connection (*spring-cans are not set to balance weight of valve about the flange centerline*).
- Performing within specified standards.

Shell Willmington CA - 4 drums operating since February 2004.

- Bolt unheading valves direct to new drum bottom flanges. New cone sections contain inlet feed lines and mating flanges for the unheading valves.
- Non-balanced valve moments on flange connection (*spring-cans are not set to balance weight of valve about the flange centerline*).
- No weeps or leaks of any kind or size.

Texas City, TX - 2 drums operating since April 2004

- Unheading valve is bolted directly to a new drum bottom flange with horizontal feed-line.
- Non-balanced valve moments on flange connection (*spring-cans are not set to balance weight of valve about the flange centerline*).
- No weeps or leaks of any kind or size.

For more information or to schedule service, contact DeltaValve's Aftermarket and Service department at **281-247-8100**