



# PVC Cut-in Kit



## ENGINEERING GUIDE

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Schedule 80 PVC Technical  
**Flange Cut-In Repair Kit Installation Instructions**



**Spears® Flange Cut-In Kit Installation**

When planned system changes are needed, system downtime can be a major concern. Spears® Flange Cut-In Kit minimizes downtime for actual cut-in to allow new connection in just minutes. Kit provides all necessary components to create a flanged joint for connection to system alterations in just minutes. Special Flange Hub can be cemented to piping and allowed to cure before shutting down and cutting into system. This allows immediate joining to mating flange (included) that can also be pre-assembled to desired alteration piping.

Kit includes special Split Flange Socket Hub, O-ring Sealed Hub Body, Stainless Steel Clamp, Split Ring, Full-Faced EPDM or FKM Gasket, Mating Flange Hub & Ring, and complete set of Stainless Steel Bolts, Flat Washers and anti-seize Brass Nuts to make the final joint. Available for IPS Pipe Sizes 1-1/2" - 12".



**Dimensions**

Size (in.)	H	L	M
1-1/2	3-1/4	4-11/16	5
2	2-3/8	4-7/8	6
2-1/2	3-3/4	5-1/2	7
3	4	5-7/8	7-1/2
4	4-7/8	7-1/8	9
6	5-7/8	9	11
8	6-3/4	10-7/8	13-1/2
10	8-3/8	13-1/2	16
12	10	16-3/4	19

Pressure Rated to 150 psi @ 73°F (22°C)

Maximum Service Temperature

PVC = 140°F (60°C)

Temperature/Pressure De-ratings Apply



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## Spears® Flange Cut-In Kit Installation

**Pipe Preparation:** Determine location of Cut-In Flange Assembly making sure that there is adequate existing piping support. If necessary, add additional pipe support to prevent lateral movement where Cut-In is made. Follow all applicable safety instructions.

### Step ONE: Join Split Flange Hubs to Pipe

- a. Locate and mark split flange hub location (Photo 1). Be sure to mark the width of the hubs by drawing a line around the circumference of each split hub as a guide for subsequent steps.
- b. Remove exterior surface gloss from pipe within the marked area (Photo 2) using 180-grit or finer sand cloth. If necessary re-mark hub position after sanding.
- c. Mask off the pipe outside the sanded area using painters tape to protect the rest of the pipe (Photo 3).
- d. Prime and cement the split flange hubs following standard recommended solvent cementing procedures per ASTM D2855 (Photos 4,5 & 6).
- e. Working quickly, position both split flange hubs around pipe evenly and hold in place for one minute (Photo 7).
- f. Place the SS Clamp around the split flange hubs making sure to align the SS clamp edge with the split flange hub edge opposite the mating face (Photo 8) and tighten the bolt to snug (Photo 9). Allow adequate cure time before proceeding - Recommended overnight.
- g. Spool Piece - Determine the laying length of the replacement spool piece and make sure to allow for the O-Ring Hub Assembly and gasket thicknesses.

### Step TWO: Making the Cut-In

- a. Using the Cut-In Dimension Table, choose the appropriate dimension and mark this length on the pipe from the sealing side of the split flange hub (Photo 10).
- b. Cut and bevel pipe (ASTM D2855).
- c. Clean all residue from pipe surface. Spray O-rings in O-ring hub assembly with tap water for lubrication.
- d. Install O-Ring Hub Assembly onto pipe pushing evenly toward the split flange hub making sure to locate O-rings to the inside. Use a rubber mallet to evenly push O-ring Hub Assembly into place. When in place, pipe end should come within 1/4" of the seated O-ring Hub Assembly (Photo 11). Do not allow pipe to protrude past the Hub Assembly face.
- e. Install split flange ring. Install bolts, nuts and washers (1 washer per side). Be sure to align the SS Clamp bolt open end with a split flange ring bolt hole to assist in bolt installation. (Photo 12).
- f. Install Full Face Gasket (Photo 13) making sure to fully seat the gasket against the O-Ring Hub Assembly face (Photo 14).
- g. Install the pre-measured cemented and cured spool piece and tighten bolt hardware hand tight. Follow standard flange makeup procedures (Photo 15). Use a calibrated torque wrench and backup wrench to tighten bolts in 5 ft-lbs increments using a 180-degree opposing pattern until specified torque is obtained (Photo 16).

### Step THREE: Pressurize the System

- a. Follow appropriate steps to pressurize a thermoplastic piping system making sure to fill system slowly with water while eliminating entrapped air at high points, etc.

## Split Flange Assembly

**Locate and Mark Split Flange position**



Photo 1

**Sand pipe to remove gloss**



Photo 2

**Mask Pipe**



Photo 3

**Apply Primer**



Photo 4

**Apply Cement**



Photo 5

**Primer & Cement Split Flange**



Photo 6





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**Position, Press & Hold Split Flange Hubs**



Photo 7

**Install Clamp**

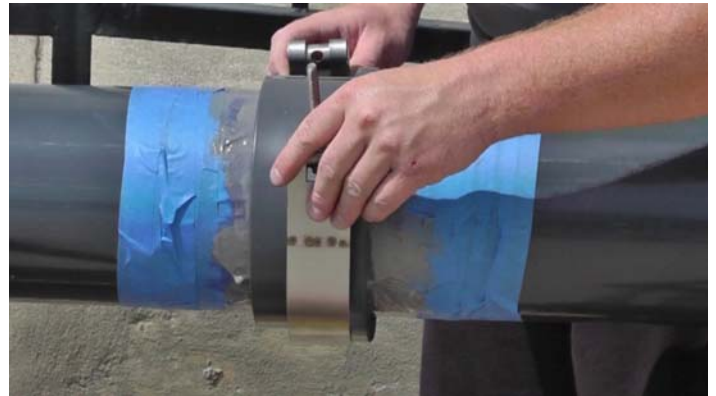


Photo 8

**Torque Clamp to 15 ft-lbs**



Photo 9

**Let assembly cure  
(recommend over-night)  
prior to cutting into piping  
system.**

**Shut down and drain  
system; cut in as  
described below.**

**Making the Cut-In**

**Cut-In & Bevel Pipe at Distance Specified  
in the Cut-in Dimension Table**

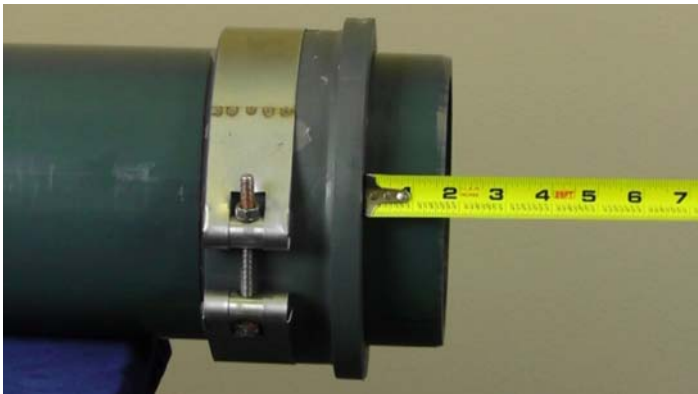


Photo 10

**Cut-In Dimension**

Cut-In Flange Size	Pipe Cut From Flange Face
1-1/2 through 3	1-3/16
4 through 12	1-11/16

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**Install O-ring Hub; Should Be 1/4" Recess to Pipe**

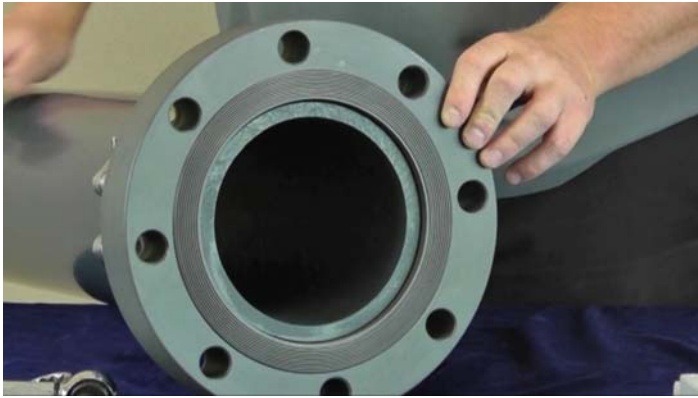


Photo 11

**Insert Remaining Lubricated Bolts & Washers**



Photo 12

**Install Full Face Flange Gasket**

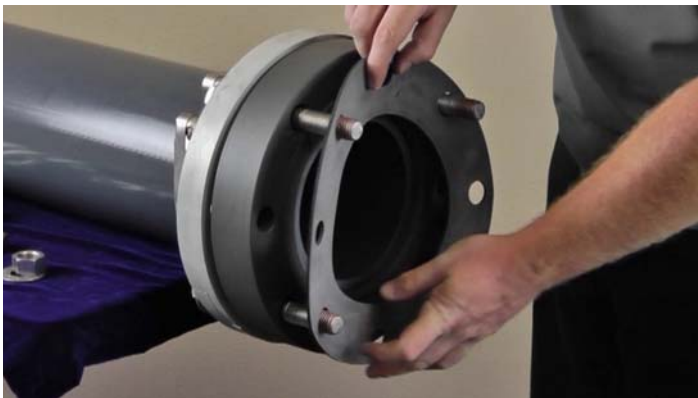


Photo 13

**Seat Gasket On O-ring Hub Face**

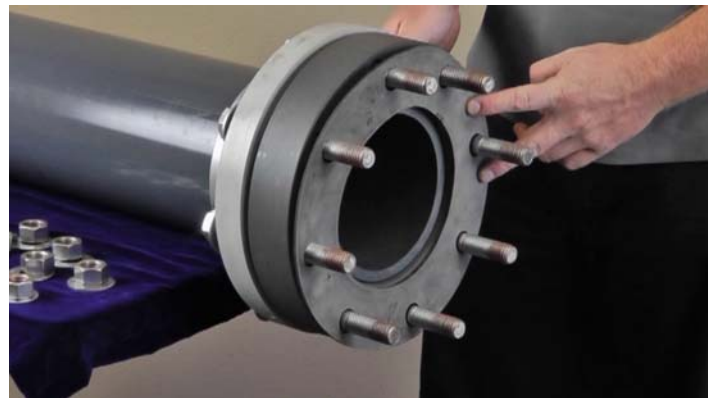


Photo 14

**Install Mating Spool Piece Flange with Washer & Nuts**

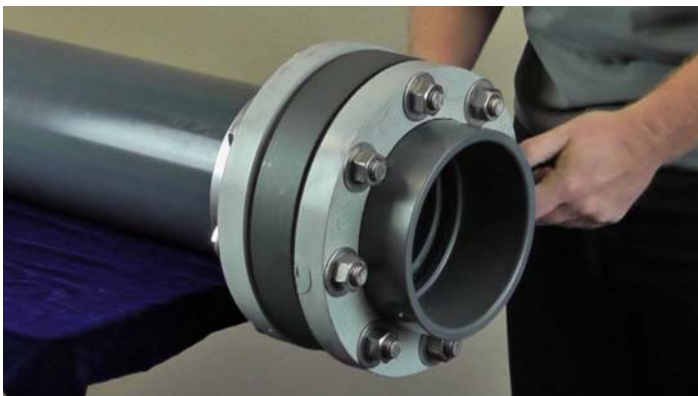


Photo 15

**Evenly Torque to Specification on Flange Ring using 180° Opposing Pattern**



Photo 16

Mating Flange may be pre assembled with Elbow, Tee or other configuration as desired to allow immediate system pressurization after final assembly to Flanged Cut-in.