

**Multi-CF™ UHV Close Couplers:  
 4.5" and 2.75" CF Ports**

**APPLICATIONS:**

Close Couplers are two-port Multi-CF Fittings, consisting of machined thick-wall cylinders, with axially opposing CF sealing surfaces (4.5", 2.75")

The Close Coupler *minimizes overall length* in joining two tapped-hole components, resulting in the shortest possible distance between them.

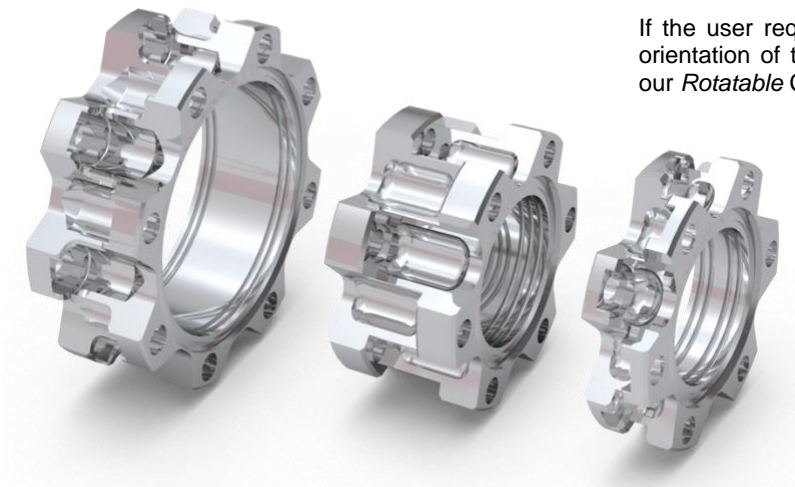
Under the bolt heads, the flange thickness has been slightly decreased to allow more space for bolt insertion while maintaining adequate rigidity through

use of an appropriately machined thick-wall cylinder. Inside bores (ID) are maximized to lower pumping conductance.

Care is needed to use both lubricated (silver bolts) with correct bolt lengths. All 4.5" and 2.75" CF sealing surfaces have internal annular grooves (Grabber Grooves) to allow internal mounting of instruments, apparatus and prototype assemblies.

Note that opposing bolt sets are offset one from the other by one half the angular bolt spacing.

If the user requires more flexibility in the relative orientation of the joined components, please see our *Rotatable* Close Coupler designs.



*Various Close Couplers with 4.5" and 2.75" CF sealing surface ports.*

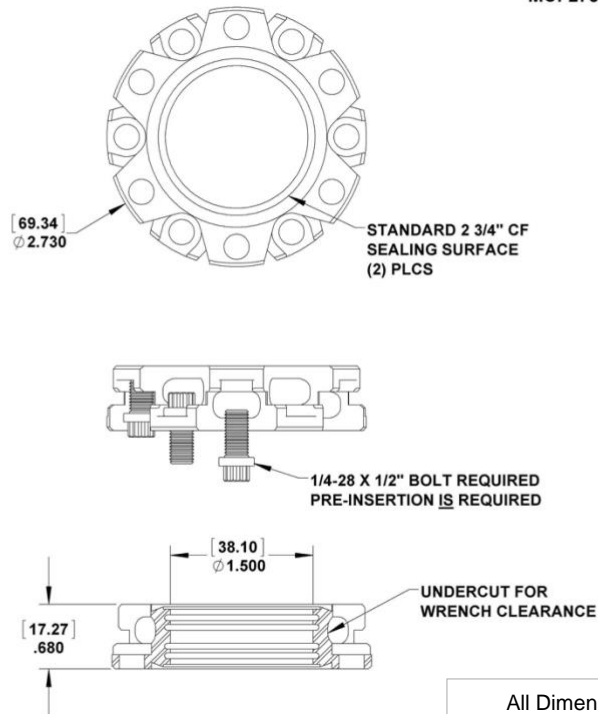
The **MCF275CIsCplr-C2-700** is a Close Coupler with two (2) 2.75" CF (C) sealing surfaces that join two 2.75" tapped hole components with a minimal inter-positional length (0.7" inch).

	<b>MCF275-CIsCplr-C2-700</b>
Multi-CF™ Fitting	Close Coupler
COMMON APPLICATION	Bolt Reversing Coupler
CONSTRUCTION / MATERIAL	Unitary Stainless Steel 316L
2.75" CF SEALING SURFACES	Two (2) 2.75" CF (C) sealing surfaces each having (6) 1/4-28 clear holes. Grabber Grooves (internal annular mounting grooves) are present each port.
BOLT TYPE	12-Point 1/4-28 x 1/2" silver plated The part ships with one set of bolts (12) per unit.
DIMENSIONS	Gasket Plane to Gasket Plane Length 0.7" inch (17.27 mm)
WEIGHT	0.35 lbs (0.16 kg)



*Close Coupler MCF275-CIsCplr-C2-700 with (2) fixed 2.75" CF (C) sealing surface ports*

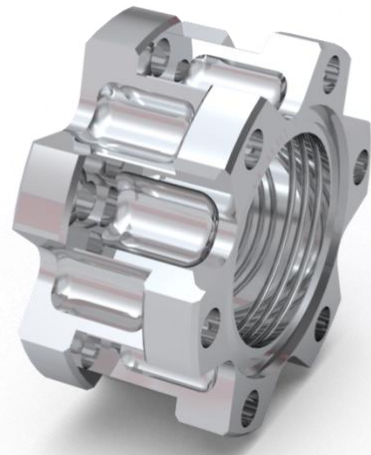
MCF275-ClsCplr-C2-700



All Dimensions are in inches.  
(Millimeters are in parentheses)

The **MCF275-ClsCplr-C2-1400** is a Close Coupler with two (2) 2.75" CF (C) sealing surfaces and joins two 2.75" tapped hole components with a minimal inter-positional length (1.4" inch).

Internal mounting annular grooves (Grabber Grooves) are present on both ports.

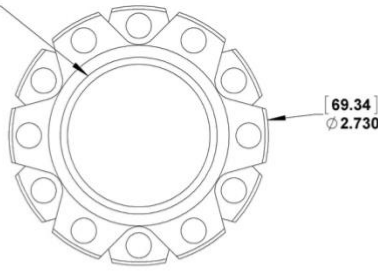


Rotatable Close Coupler MCF275-ClsCplr-C2-1400 with (2) 2.75" CF (C) sealing surface ports.

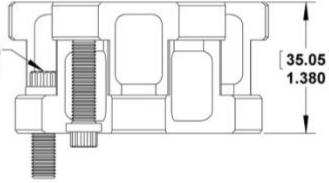
MCF450-ClsCplr-E1r1	
Multi-CF™ Fitting	Close Coupler
COMMON APPLICATION	Bolt Reversing Coupler
CONSTRUCTION / MATERIAL	Unitary Stainless Steel 316L
2.75" CF SEALING SURFACES	Two 2.75 CF (C) sealing surfaces with both flanges having (8) 1/4-28 clear holes. Grabber Grooves (internal annular mounting grooves) are present each port.
BOLT TYPE	12-Point Head 1/4-28x 7/8" length silver plated
DIMENSIONS	Gasket Plane to Gasket Plane Length 1.40" inch (36.57 mm)
WEIGHT	Weight 0.74 lbs (0.33 kg)

STANDARD 2 3/4" CF  
SEALING SURFACE  
(2) PLCS

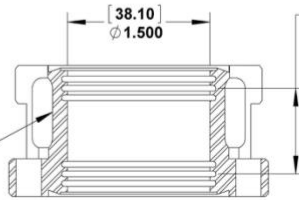
MCF275-ClsCplr-C2-1400



1/4-28 X 7/8" BOLT REQUIRED  
PRE-INSERTION IS NOT REQUIRED



UNDERCUT FOR  
WRENCH CLEARANCE

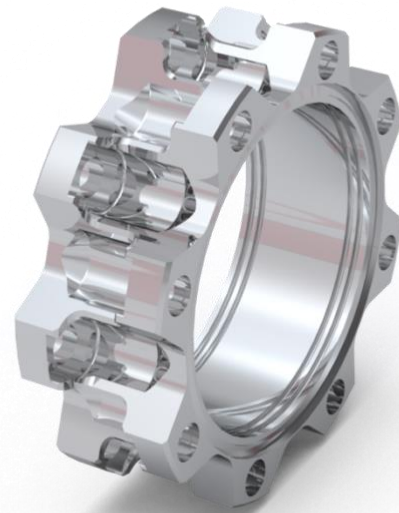


0.800, 0.900, 1.000 GRABBER GROOVE TRIPLET  
(20.32, 22.86, 25.40)  
CENTER TO CENTER COMBINATIONS

FILE: MCF275-ClsCplr-C2-1400\_(53-520200-E).jpg

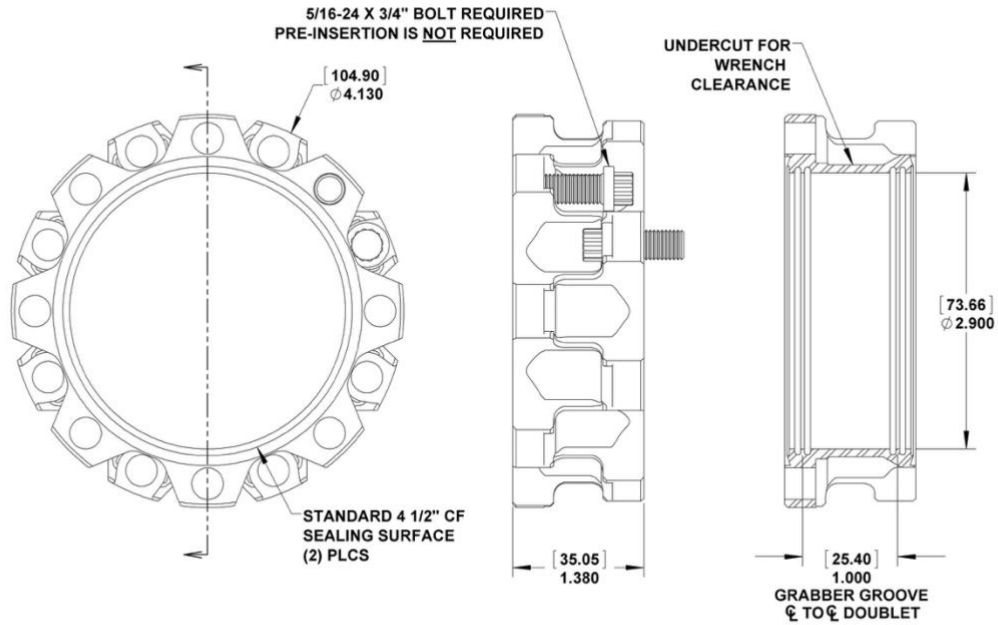
The **MCF450-ClsCplr-E2** is a Close Coupler with two (2) 4.5" CF (E) fixed sealing surfaces that join two 4.5" tapped hole components with a minimal inter-positional length (1.40 inch). Internal mounting annular grooves (Grabber Grooves) are present on both ports.

	MCF450-ClsCplr-E2
Multi-CF™ Fitting	Rotatable Close Coupler
COMMON APPLICATION	Bolt Reversing Coupler
CONSTRUCTION / MATERIAL	Unitary Stainless Steel 316L
4.5" CF SEALING SURFACES	Two fixed 4.5"CF (E) sealing surfaces each with (8) 5/16-24 clear holes. One Grabber Grooves (internal annular mounting grooves) triplet present each sealing surface.
BOLT TYPE	12-Point Head 5/16-24 x 3/4" length silver plated
DIMENSIONS	Gasket Plane to Gasket Plane Length 1.40" inch (35.56 mm)
WEIGHT	Weight 1.04lbs (0.47kg)



Rotatable Close Coupler MCF450-ClsCplr-E2 with (2) 4.5" CF (E) sealing surfaces.

MCF450-ClsCplr-E2



All Dimensions are in inches.  
(Millimeters are in parentheses)

## References

For more information about Multi-Port CF (MCF™) Vacuum Chambers and Accessories, visit our website at: [Multi-CF Hardware](http://Multi-CF Hardware)

### Other References:

- MCF Vacuum Chambers Overview (Vacuum Chambers and Accessories)
- MCF Close Coupler Rotatable
- MCF Close Coupler
- MCF Flange Adapter
- MCF Flange Thin

### Notes:

#### 1. Cautions:

- Silver Plated Bolts or Equivalent Lubrication must be used.
  - Please measure the hole depth and other flange / copper ring / part thicknesses
  - Choose a correct bolt length such that the bolt doesn't bottom in the tapped hole prior to tightening the structure.
2. 3D Solid Models of all parts shown are available as STEP files.  
They can be downloaded from Kimball Physics Website for interactive visualization and measurements in your CAD software environment.
3. Specifications Subject to Change Without Notice.
4. Images are not to scale
5. DE Altobelli 12/21/2021

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