

**Multi-CF™ UHV Rotatable Close Couplers:
 8.0", 6.0" 4.5" and 2.75" CF Ports**

APPLICATIONS:

Rotatable Close Couplers are two-port Multi-CF™ Fittings, consisting of machined thick-wall cylinders, with axially opposing CF sealing surfaces (2.75", 4.5", 6.0" or 8.0").

The Close Coupler *minimizes overall length* in joining two tapped-hole components, resulting in the shortest possible distance between them. The ability to *rotate one of the two sealing surfaces* allows for increased flexibility in assembling fittings and in adjusting system orientations.

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 for low pumping conductance.

Care is needed to use both lubricated (silver bolts) with confirmed correct bolt lengths. All 8.0", 6.0", 4.5" and 2.75" CF sealing surfaces have a pair of internal annular grooves (Grabber Grooves) to allow internal mounting of instruments, apparatus and prototype assemblies.



Various Rotatable Close Couplers with 8.0", 6.0", 4.5" and 2.75" CF sealing surface ports.

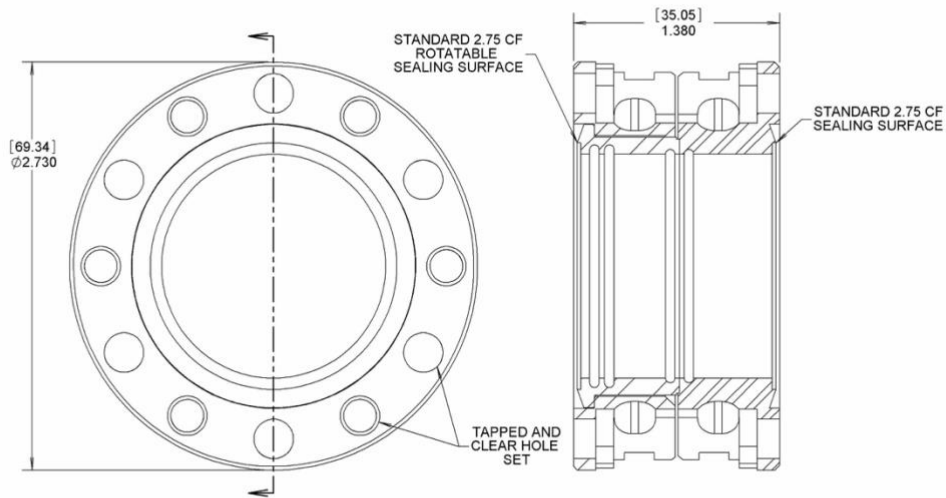
The **MCF275-ClsCplr-C1r1** is a rotatable Close Coupler with two (2) 2.75" (C) CF sealing surfaces that joins two 2.75" tapped hole components with a minimal inter-positional length (1.4" inch).

One flange is fixed and the other is rotatable. Internal mounting annular grooves (Grabber Grooves) are present on both ports.



Rotatable Close Coupler MCF275-ClsCplr-C1r1 with (1) fixed 2.75" CF (C) and one rotatable 2.75" CF (C) sealing surface ports

	MCF275-ClsCplr-C1r1
Multi-CF™ Fitting	Rotatable Close Coupler
COMMON APPLICATION	Bolt Reversing Coupler
CONSTRUCTION / MATERIAL	Unitary Stainless Steel 316L with one weld at rotatable flange
2.75" CF SEALING SURFACES	One fixed and one Rotatable Flange with both flanges having (6) 1/4-28 <i>tapped</i> bolt holes and six (6) 1/4-28 <i>clear</i> holes. Grabber Grooves (internal annular mounting grooves) are present each port.
BOLT TYPE	12-Point Head 1/4-28 x 1/2" length silver plated
DIMENSIONS	Gasket Plane to Gasket Plane Length 1.380" inch (35.05 mm)
WEIGHT	Weight 1.03 lbs (0.47 kg)



MCF275-ClsCplr-C1r1

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

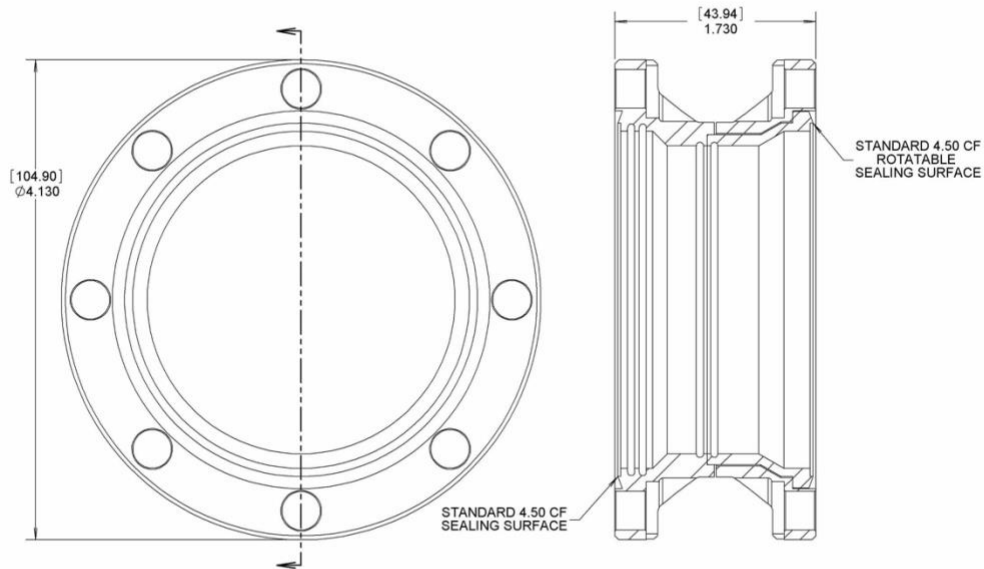
The **MCF450-ClsCplr-E1r1** is a Rotatable Close Coupler with two (2) 4.5" (E) CF sealing surfaces and joins two 4.5" tapped hole components with a minimal inter-positional length (1.4" inch).

One flange is fixed, and the other is rotatable. Internal mounting annular grooves (Grabber Grooves) are present on both ports.



Rotatable Close Coupler MCF450-ClsCplr-E1r1 with (2) 4.5" CF (E) with one fixed and one rotatable sealing surface ports.

	MCF450-ClsCplr-E1r1
Multi-CF™ Fitting	Rotatable Close Coupler
COMMON APPLICATION	Bolt Reversing Coupler
CONSTRUCTION / MATERIAL	Unitary Stainless Steel 316L with one weld at rotatable flange
4.5" CF SEALING SURFACES	One fixed and one Rotatable CF Flange with both flanges having (8) 5/16-24 clear holes. Grabber Grooves (internal annular mounting grooves) are present each port.
BOLT TYPE	12-Point Head 5/16-24 x 3/4" length silver plated
DIMENSIONS	Gasket Plane to Gasket Plane Length 1.730" inch (43.94 mm)
WEIGHT	Weight 1.03 lbs (0.47 kg)



MCF450-CIsCplr-E1r1

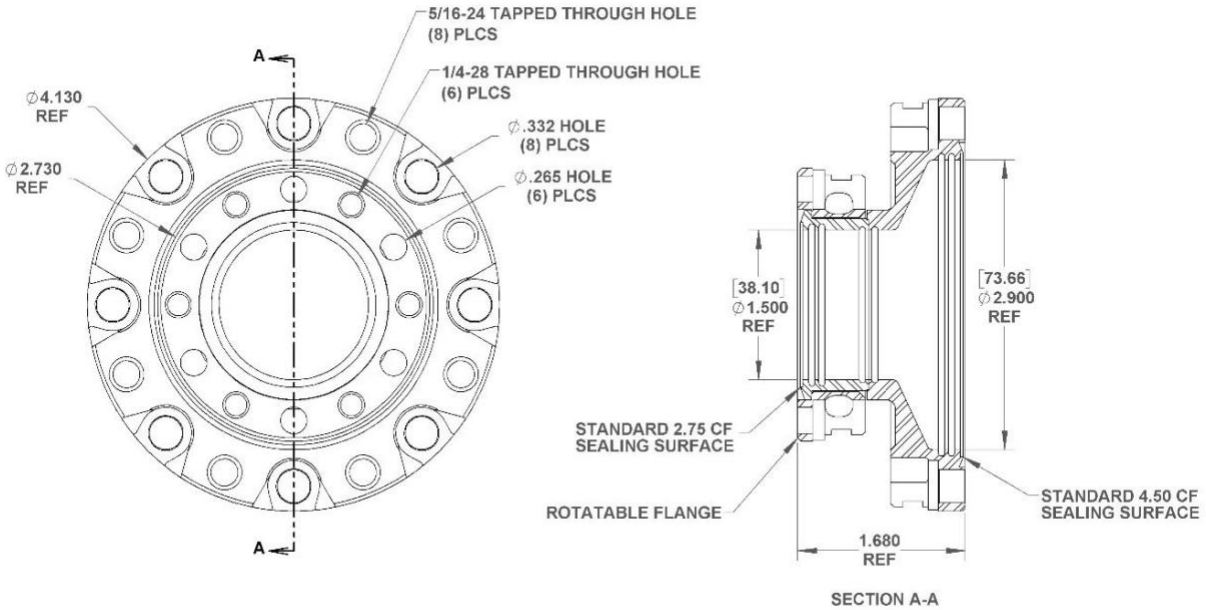
All Dimensions are in inches.
(Millimeters are in parentheses)

The **MCF450-CIsCplr-E1Cr1** is a Rotatable Close Coupler with one (1) 4.5" (E) CF fixed and (1) rotatable 2.75" (C) sealing surfaces that joins 4.5" and 2.75" tapped hole components with a minimal interpositional length (1.68" inch). Internal mounting annular grooves (Grabber Grooves) are present on both ports.

	MCF450-CIsCplr-E1Cr1
Multi-CF™ Fitting	Rotatable Close Coupler
COMMON APPLICATION	Bolt Reversing Coupler
CONSTRUCTION / MATERIAL	Unitary Stainless Steel 316L with one weld at rotatable flange
2.75" CF SEALING SURFACE	One Rotatable CF Flange with (12) alternating tapped and clear holes 1/4-28 Grabber Grooves are present
4.5" CF SEALING SURFACES	One fixed CF Flange with (16) alternating tapped and clear holes 5/16-24. Grabber Grooves (internal annular mounting grooves) are present
BOLT TYPE	4.5" Flange- 12-Point Head 5/16-28 x 3/4" length silver plated 2.75" Flange- 12-Point Head 1/4-28 x 1/2" silver plated
DIMENSIONS	Gasket Plane to Gasket Plane Length 1.680" inch (42.67 mm)
WEIGHT	Weight 1.80 lbs (0.82kg)



Rotatable Close Coupler MCF450-CIsCplr-E1Cr1 with (1) 4.5" CF (E) fixed flange and one rotatable 2.75" (C) CF sealing surface.



MCF450-CIsCplr-E1Cr1

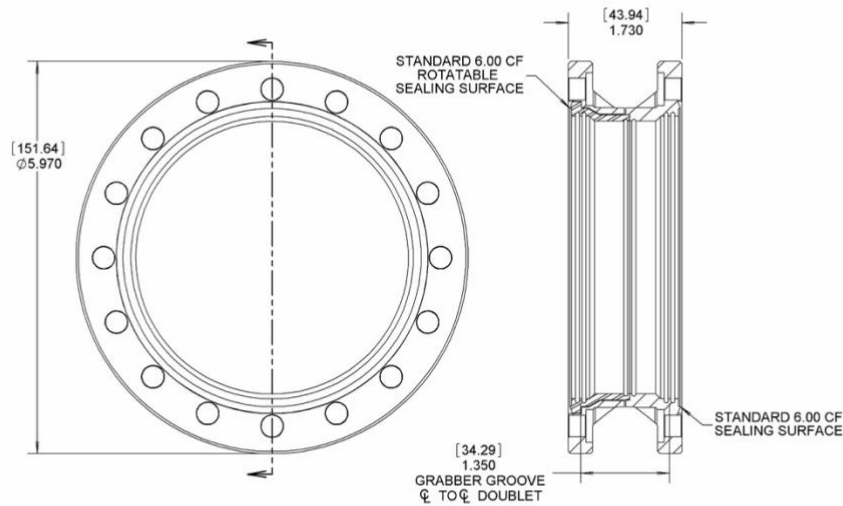
All Dimensions are in inches.
(Millimeters are in parentheses)

The **MCF600-CIsCplr-F1r1** is a Rotatable Close Coupler with one fixed and one rotatable 6.0" (F) CF sealing surfaces that joins two 6.0" threaded CF surfaces together within a minimal length (1.40"). Internal mounting annular grooves (Grabber Grooves) are present on both ports.

	MCF600-CIsCplr-F1r1
Multi-CF™ Fitting	Rotatable Close Coupler
COMMON APPLICATION	Bolt Reversing Coupler
CONSTRUCTION / MATERIAL	Unitary Stainless Steel 316L with one weld at rotatable flange
6.0" CF SEALING SURFACES	One fixed and one Rotatable CF Flange with both flanges having (16) 5/16-24 clear holes. Grabber Grooves (internal annular mounting grooves) are present each port.
BOLT TYPE	12-Point Head 5/16-24 x 3/4" length silver plated
DIMENSIONS	Gasket Plane to Gasket Plane Length 1.730" inch (43.94 mm)
WEIGHT	Weight 3.35 lbs (1.52 kg)



Rotatable Close Coupler MCF600-CIsCplr-F1r1 with (1) 6.0" CF (F) fixed flange and one rotatable 6.0" (F) CF sealing surface.



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

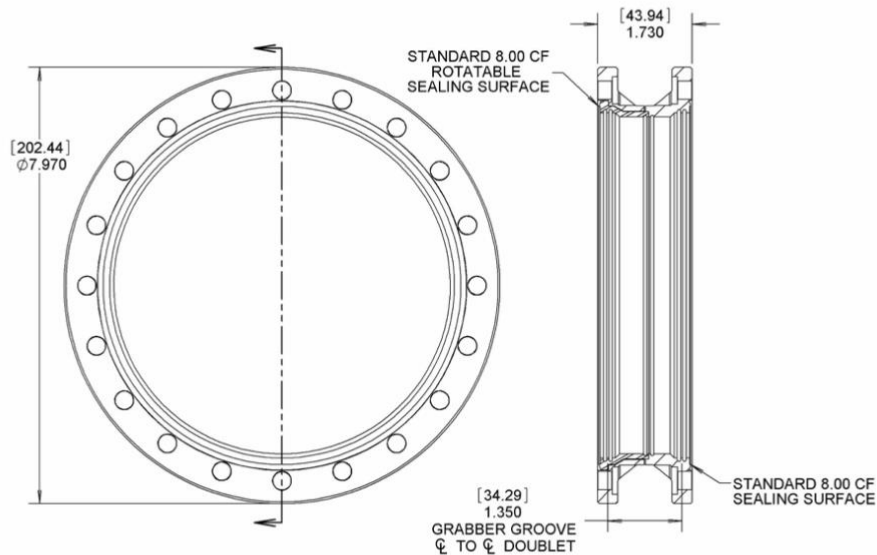
MCF600-CIsCplr-F1r1

The **MCF800-CIsCplr-G1r1** is a Rotatable Close Coupler with one fixed and one rotatable 8.0" (F) CF sealing surfaces that joins two 8.0" threaded CF surfaces together within a minimal length (1.40"). Internal mounting annular grooves (Grabber Grooves) are present on both ports.



Rotatable Close Coupler MCF800-CIsCplr-G1r1 with (1) 8.0" CF (F) fixed flange and one rotatable 8.0" (F) CF sealing surface.

	MCF800-CIsCplr-G1r1
Multi-CF™ Fitting	Rotatable Close Coupler
COMMON APPLICATION	Bolt Reversing Coupler
CONSTRUCTION / MATERIAL	Unitary Stainless Steel 316L with one weld at rotatable flange
6.0" CF SEALING SURFACES	One Fixed and one Rotatable CF Flange with both flanges having (20) 5/16-24 <i>clear</i> holes. Grabber Grooves (internal annular mounting grooves) are present each port.
BOLT TYPE	12-Point Head 5/16-24 x 3/4" length silver plated
DIMENSIONS	Gasket Plane to Gasket Plane Length 1.730" inch 43.94 mm)
WEIGHT	Weight 4.78 lbs (2.17kg)



MCF800-CIsCplr-G1r1

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](#)

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, DT Taylor 8/03/2023

Document MCF_Close_Coupler_Rotatable_2023_0803
COPYRIGHT KIMBALL PHYSICS 2023, ALL RIGHTS RESERVED