Multi-CF™ UHV Vacuum Spherical Hexagon: Vacuum Chambers with 2.75" and 1.33" CF Ports

FOR USE IN:

- Compact UHV Vacuum Chambers
- Portable Low-cost UHV Systems
- High-Complexity UHV Subsystems
- UHV Vacuum manipulator systems
- UHV Specimen Transfer Systems
- General UHV Vacuum Plumbing

FEATURES / OPTIONS:

- Compact, Easy Access UHV Chambers
- Improved UHV Performance: No inside corners, no welds, greater inside port dimension, mirror finish
- Multiple sealing surfaces cut on a hollow sphere
- Unitary stainless steel 316L construction. Titanium custom also available
- ConFlat® CF port diameters: 8.0", 4.5" 2.75", 1.33" inches
- Convenient Grabber Grooves (annular port grooves) for internal mounting
- Double Density bolt holes 8.0", 4.5" 1.33" ports
- Precise Port Alignment (<0.1 degrees)

Spherical Hexagon Multi-CF™ UHV Vacuum Chamber MCF275-SphHex-C2A6 with 2.75" and 1.33" CF Ports

Multi-CF™ Spherical Hexagons

The Spherical Hexagon Multi-CF™ UHV vacuum chambers are based on a design of two main or primary CF sealing surface ports that are parallel and offset sections cut through a global hollow spherical form. A secondary series of six CF sealing surface ports are equally spaced in a plane perpendicular to the main surfaces and generally provides a polygon array of ports in the form of a *hexagon*. These designs are precision CNC fabricated from a single piece of 316L Stainless Steel. The option of using various Titanium alloys is also available custom.

2.75" Multi-CF™ Spherical Hexagons

The Kimball Physics *MCF275-SphHex-C2A6* and *MCF275-SphHex-Cc2A6* 2.75" Spherical Hexagons are eight- port Multi-CF™ miniature UHV vacuum chambers that have two (2) 2.75" (C) primary or main ports and six (6) 1.33" (A) secondary ports equally spaced in an hexagonal array. Internal annular Grabber Grooves are present in the 2.75" ports (no grooves are available in the 1.33" ports) for stable internal mounting of fixtures, devices and apparatus. Groove Grabber clamps are available from Kimball Physics (Multi-CF Hardware). The "C2" 2.75" sealing surface has tapped holes, whereas the "Cc2" 2.75" sealing surface has clear holes to provide various options to secure the flange.

Please reach out to Kimball Physics to engage our specialists if you need a custom system for your specific application.

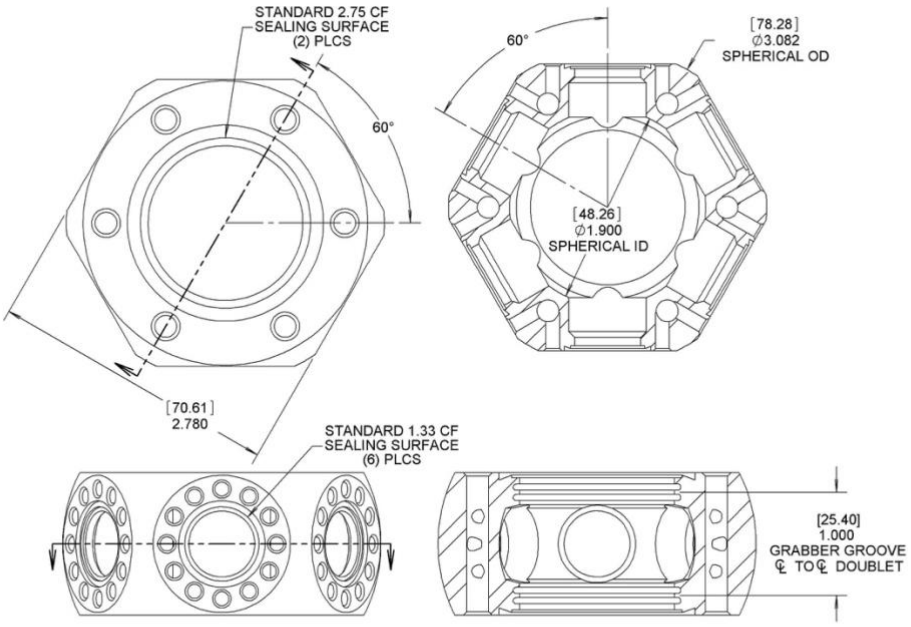
	MCF275-SphHex-C2A6	MCF275-SphHex-Cc2A6
Multi-CF™ Fitting	Spherical Hexagon	
COMMON APPLICATION	Miniature UHV Vacuum Chamber	
CONSTRUCTION / MATERIAL	Unitary Stainless Steel 316L (Titanium available as option)	
1.33"CF SEALING SURFACES	Six (6) CF (A) Sealing Surfaces with (12) #8-32 tapped bolt holes per sealing surface. No Grabber Grooves available.	Six (6) CF (A) Sealing Surfaces with (12) #8-32 tapped bolt holes per sealing surface. No Grabber Grooves available
2.75" CF SEALING SURFACES	Two (2) CF (C) Sealing Surfaces with (6) 1/4-28 tapped bolt holes, plus one pair of Grabber Grooves (internal annular grooves) per sealing surface	Two (2) CF (C) Sealing Surfaces with (6) CLEAR bolt holes (use 1/4-28 bolts), plus one pair of Grabber Grooves (internal annular grooves) per sealing surface
EXTERNAL MOUNTING	External Mounting options are available utilizing port flanges. Please see Flange Adapters on Kimball Physics website.	External Mounting options are available utilizing port flanges. Please see Flange Adapters on Kimball Physics website.
INTERNAL WORKSPACE	Internal Volume: 4.5 in3 (74 cc) Spherical ID: 1.900 in (48.26 mm)	Internal Volume: 4.5 in^3 (74 cc) Spherical ID: 1.900 in (48.26 mm)
WEIGHT	1.09 lbs (0.50 kg)	1.05 lbs (0.48 kg)

8.0" Multi-CF™ Spherical Hexagon

The Kimball Physics MCF800-SphHex-G2E6 Spherical Hexagons are eight- port Multi-CF™ miniature UHV vacuum chambers that have two (2) 8.0" (G) primary or main ports and six (6) 4.5 " secondary ports equally spaced in an hexagonal array. Internal annular Grabber Grooves are present on all ports for stable internal mounting of fixtures, devices and apparatus. Groove Grabber clamps are available from Kimball Physics (Multi-CF Hardware).

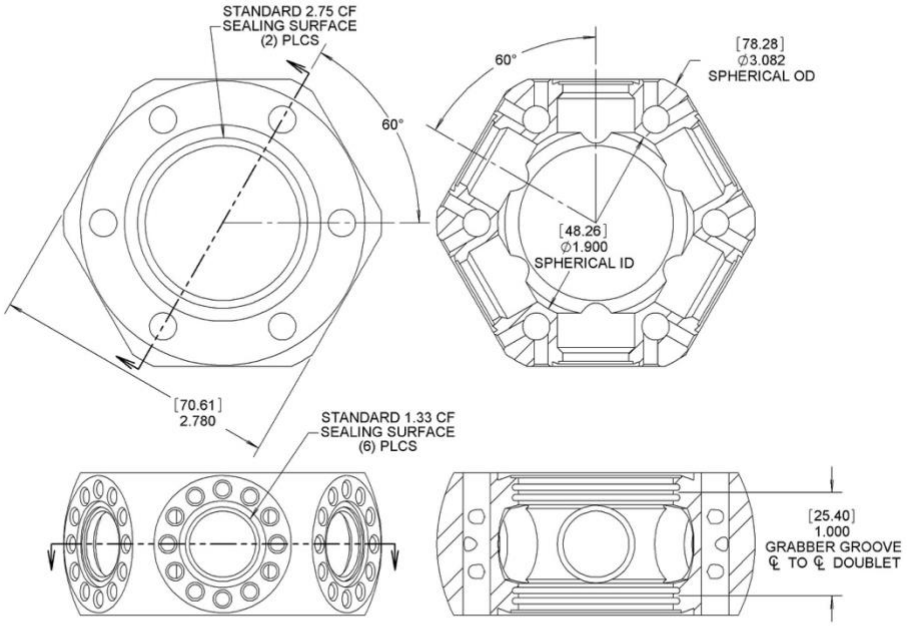
	MCF800-SphHex-G2E6
Multi-CF™ Fitting	Spherical Hexagon
COMMON APPLICATION	UHV Vacuum Chamber
CONSTRUCTION / MATERIAL	Unitary Stainless Steel 316L (Titanium available as option)
4.5" CF SEALING SURFACES	Six (6) CF (E) Sealing Surfaces with (16) 5/16-24 tapped bolt holes, plus one pair of Grabber Grooves per sealing surface
8.0" CF SEALING SURFACES	Two (2) CF (G) Sealing Surfaces with (40) 5/16-24 tapped bolt holes, plus one quadruplet of Grabber Grooves (internal annular grooves) per sealing surface
EXTERNAL MOUNTING	External Mounting options are available utilizing port flanges. Please see Flange Adapters on Kimball Physics website.
INTERNAL WORKSPACE	Internal Volume: 229.7 in^3 (3764 cc) Spherical ID: 8.000 in (203.20 mm)
WEIGHT	21.86 lbs (9.92 kg)

MCF800-SphSq-G2E6 Spherical Hexagon Multi-CF™ UHV Vacuum Chamber



MCF275-SphHex-C2A6

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



MCF275-SphHex-Cc2A6

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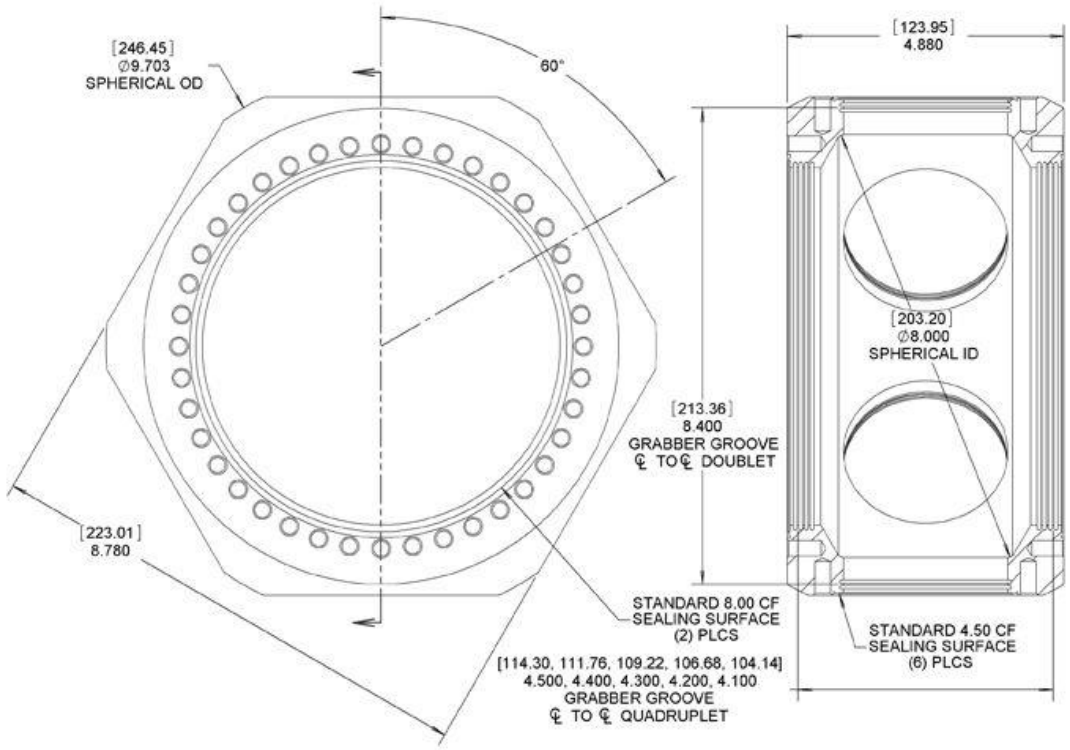

All Dimensions are in inches.
(Millimeters are in parentheses)

MCF800-SphHex-G2E6

References

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

Other References:
MCF Vacuum Chambers Overview (Vacuum Chambers and Accessories)
Spherical Octagon- Multi-CF Hardware
Spherical Cube- Multi-CF Hardware
Spherical Cube Expanded- Multi-CF Hardware
Spherical Hexagon- Multi-CF Hardware
Thin Flange- Multi-CF Hardware
Close Coupler (non-rotatable)- Multi-CF Hardware

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 2/22/2023

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