



# SPHERICAL OCTAGON Multi-CF™ VACUUM CHAMBERS

**UHV Vacuum Chambers with 10, 8, 6, 4½, 2¾ OR 1⅓ CF ports  
Internal 8.90", 6.65", 6.15", 3.20", or 2.90" diameter spherical workspace**

### APPLICATIONS:

- ▶ Compact miniature UHV vacuum chamber
- ▶ Cold physics experiments
- ▶ Portable low-cost UHV systems
- ▶ High-complexity UHV subsystems
- ▶ UHV vacuum manipulator systems
- ▶ UHV specimen transfer systems
- ▶ General UHV vacuum plumbing

### FEATURES / OPTIONS:

- ▶ Easy access / High port accessibility
- ▶ Grabber grooves on all sealing surfaces (except 1⅓ CF)
- ▶ Sealing surfaces cut on a hollow sphere
- ▶ Unitary stainless steel 316L construction
- ▶ No welds, no inside corners, highly polished
- ▶ Precise port alignment of <0.1 degree



Spherical Octagons

MCF275-SphOct-C2A8	
Multi-CF FITTING	Spherical Octagon
COMMON APPLICATION	Miniature UHV Vacuum Chamber
CONSTRUCTION / MATERIAL	Unitary Stainless Steel 316L
1⅓ CF SEALING SURFACES	Eight with (12) 8-32 tapped bolt holes per sealing surface
2¾ CF SEALING SURFACES	Two with (12) 1/4-28 tapped bolt holes, plus one pair of grabber grooves per sealing surface
INTERNAL WORK SPACE	2.900 inch Spherical I.D. Internal volume 9.3 in <sup>3</sup>
EXTERNAL MOUNTING	Two 2¾ ports have built in OD grooves which accept Kimball Physics external mounting brackets. See External Mounting in Multi CF hardware section elsewhere on the website

## 2¾ Multi-CF Spherical Octagon: MCF275-SphOct-C2A8

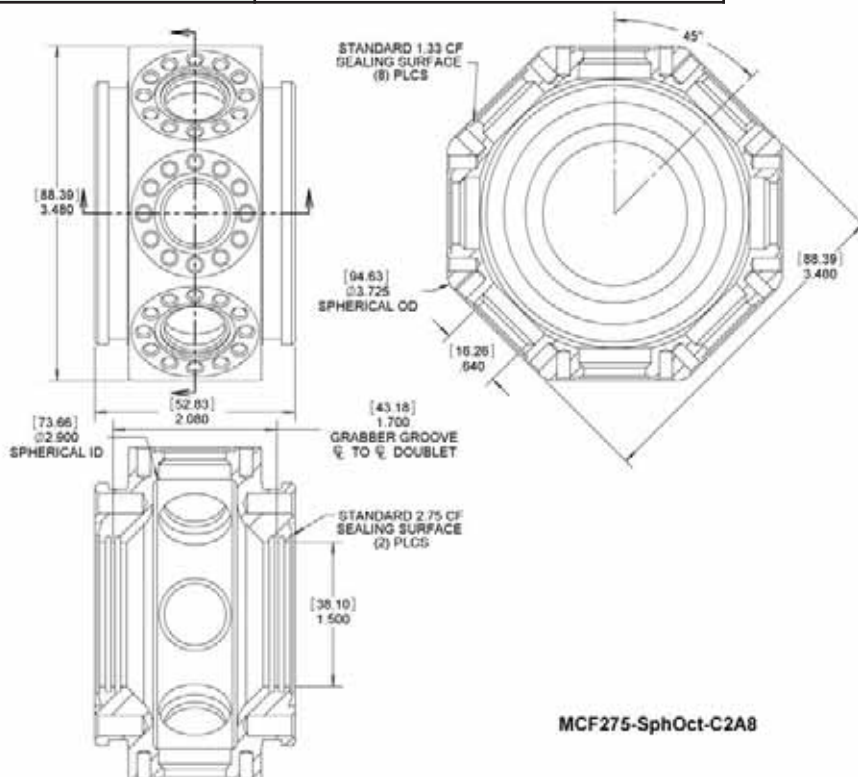
### THE SPHERICAL OCTAGON

#### 2¾ MULTI-CF SIZE

The 2¾ Multi-CF Spherical Octagon is a ten-port Multi-CF Vacuum Chamber, consisting of a hollow sphere intersected by two 2¾ CF sealing surfaces and eight 1⅓ CF sealing surfaces. The bolt holes on the 2¾ CF sealing surfaces are tapped. The 2¾ CF ports have OD grooves which accept Kimball Physics External Mounting Brackets.



Spherical Octagon MCF275-SphOct-C2A8



ALL DIMENSIONS ARE IN INCHES  
(MILLIMETERS IN PARENTHESES)

CAUTIONS:  
(1) SILVER PLATED BOLTS OR EQUIVALENT LUBRICATION MUST BE USED  
(2) USE CORRECT BOLT LENGTH

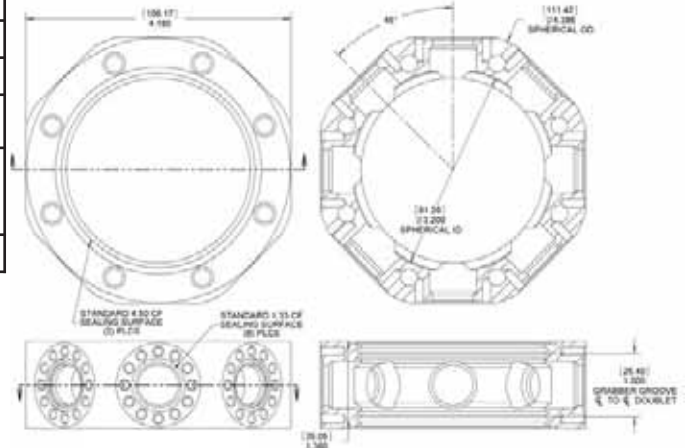
## 4½ Multi-CF Spherical Octagon: MCF450-SphOct-E2A8 / MCF450-SphOct-Ec2A8

THE SPHERICAL OCTAGON

### 4½ MULTI-CF SIZE

The 4½ Multi-CF Spherical Octagon is a ten-port Multi-CF Vacuum Chamber, consisting of a hollow sphere intersected by two 4½ CF sealing surfaces and eight 1⅓ CF sealing surfaces. The bolt holes on the 4½ CF sealing surfaces may be either tapped or clear.

MCF450-SphOct-E2A8 / MCF450-SphOct-Ec2A8	
Multi-CF FITTING	Spherical Octagon
COMMON APPLICATION	UHV Vacuum Chamber
CONSTRUCTION / MATERIAL	Unitary Stainless Steel 316L
1⅓ CF SEALING SURFACES	Eight with (12) 8-32 tapped bolt holes per sealing surface
4½ CF SEALING SURFACES	Two with (8) 5/16-24 tapped (or clear) bolt holes, plus one pair of Grabber Grooves per sealing surface.
INTERNAL WORK SPACE	3.200 inch Spherical I.D. Internal volume 12.0 in <sup>3</sup>



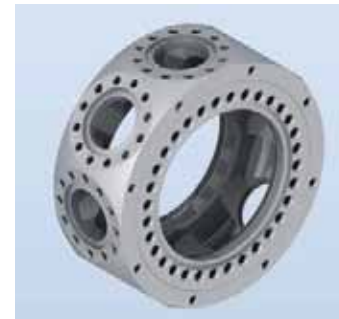
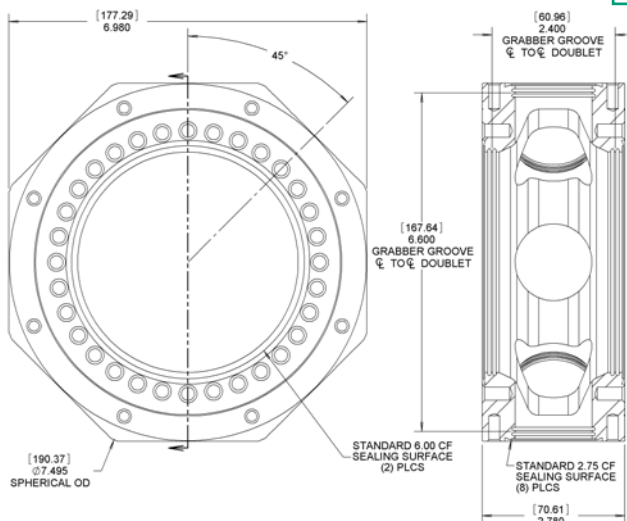
Spherical Octagon  
MCF450-SphOct-E2A8  
MCF450-SphOct-Ec2A8

## 6 Multi-CF Spherical Octagon: MCF600-SphOct-F2C8

### THE SPHERICAL OCTAGON 6 MULTI-CF SIZE

The 6 Multi-CF Spherical Octagon is a ten-port Multi-CF Vacuum Chamber, consisting of a hollow sphere intersected by two 6 CF sealing surfaces and eight 2¾ CF sealing surfaces. Each 2¾ CF and 6 CF sealing surface has one pair of Grabber Grooves.

MCF600-SphOct-F2C8	
Multi-CF FITTING	Spherical Octagon
COMMON APPLICATION	UHV Vacuum Chamber
CONSTRUCTION / MATERIAL	Unitary Stainless Steel 316L
2¾ CF SEALING SURFACES	Eight with (12) 1/4-28 tapped bolt holes, plus one pair of Grabber Grooves per sealing surface
6 CF SEALING SURFACES	Two with (32) 5/16-24 tapped bolt holes, plus one pair of Grabber Grooves per sealing surface
INTERNAL WORK SPACE	4.80 Spherical I.D. Internal volume 77.1 in <sup>3</sup>



Spherical Octagon:  
MCF600-SphOct-F2C8

ALL DIMENSIONS ARE IN INCHES  
(MILLIMETERS IN PARENTHESES)

CAUTIONS:  
(1) SILVER PLATED BOLTS OR  
EQUIVALENT LUBRICATION  
MUST BE USED  
(2) USE CORRECT BOLT LENGTH

## 6 Multi-CF Spherical Octagon: MCF600-SphOct-F2A8

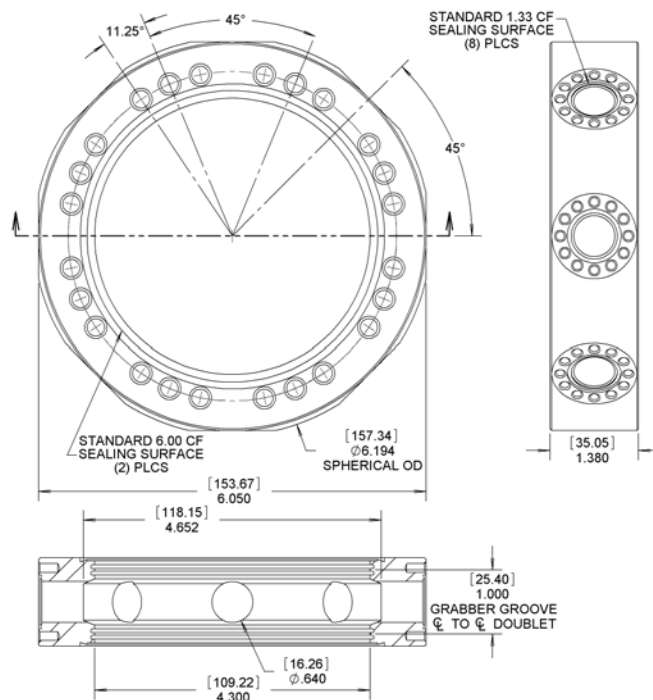
### THE SPHERICAL OCTAGON 6 MULTI-CF SIZE

The 6 Multi-CF Spherical Octagon has two 6 CF sealing surfaces and eight 1 1/3 CF sealing surfaces. Each 6 CF has one pair of Grabber Grooves.



MCF600-SphOct-F2A8

MCF600-SphOct-F2A8	
Multi-CF FITTING	Spherical Octagon
COMMON APPLICATION	UHV Vacuum Chamber
CONSTRUCTION / MATERIAL	Unitary Stainless Steel 316L
1 1/3 CF SEALING SURFACES	Eight with (12) 8-32 tapped bolt holes, per sealing surface
6 CF SEALING SURFACES	Two with (24) 5/16-24 tapped bolt holes plus one pair of Grabber Grooves per sealing surface.
INTERNAL WORK SPACE	4.695 inch Spherical I.D. Internal Volume 20.4 in <sup>3</sup>



MCF600-SphOct-F2A8

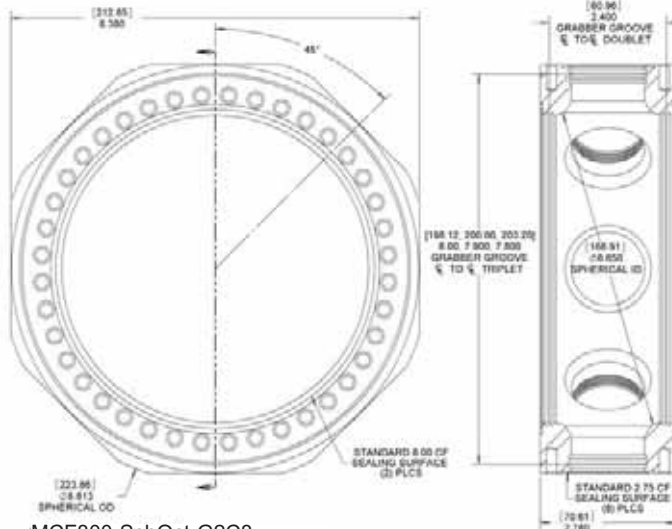
ALL DIMENSIONS ARE IN INCHES  
(MILLIMETERS IN PARENTHESES)

CAUTIONS:  
(1) SILVER PLATED BOLTS OR EQUIVALENT LUBRICATION MUST BE USED  
(2) USE CORRECT BOLT LENGTH

## 8 Multi-CF Spherical Octagon: MCF800-SphOct-G2C8

### THE SPHERICAL OCTAGON 8 MULTI-CF SIZE

The 8 Multi-CF Spherical Octagon has two 8 CF sealing surfaces and eight 2¼ CF sealing surfaces. Each 2¼ CF sealing surface has one triplet of Grabber Grooves, and each 8 CF has one pair of Grabber Grooves.



MCF800-SphOct-G2C8

MCF800-SphOct-G2C8	
Multi-CF FITTING	Spherical Octagon
COMMON APPLICATION	UHV Vacuum Chamber
CONSTRUCTION / MATERIAL	Unitary Stainless Steel 316L
2¼ CF SEALING SURFACES	Eight with (12) 1/4-28 tapped bolt holes, plus one triplet of Grabber Grooves per sealing surface
8 CF SEALING SURFACES	Two with (40) 5/16-24 tapped bolt holes plus one pair of Grabber Grooves per sealing surface
INTERNAL WORK SPACE	6.65 in Spherical I.D. Internal Volume 106.6 in <sup>3</sup>

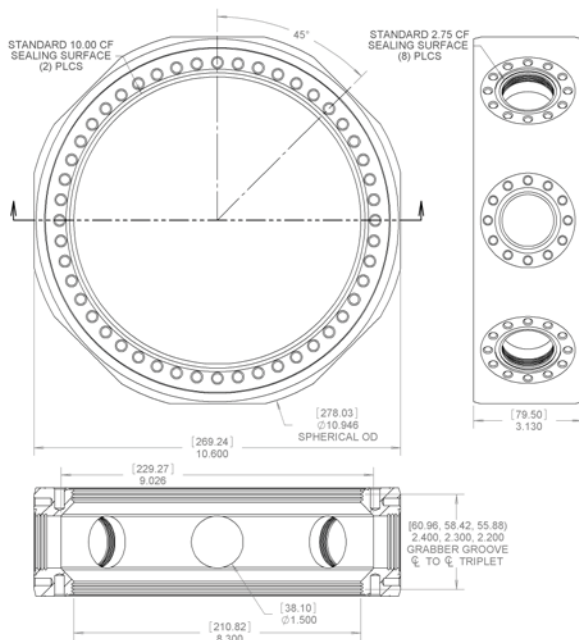


Spherical Octagon MCF800-SphOct-G2C8

## 10 Multi-CF Spherical Octagon: MCF1000-SphOct-H2C8

### THE SPHERICAL OCTAGON: 10 MULTI-CF SIZE

The 10 Multi-CF Spherical Octagon has two 10 CF sealing surfaces and eight 2¼ CF sealing surfaces. Each 2¼ CF sealing surface has one triplet of Grabber Grooves, and each 10 CF has one triplet of Grabber Grooves.



Spherical Octagon MCF1000-SphOct-H2C8

MCF1000-SphOct-H2C8	
Multi-CF FITTING	Spherical Octagon
COMMON APPLICATION	UHV Vacuum Chamber
CONSTRUCTION / MATERIAL	Unitary Stainless Steel 316L
2¼ CF SEALING SURFACES	Eight with (12) 1/4-28 tapped bolt holes, plus one triplet of Grabber Grooves per sealing surface
10 CF SEALING SURFACES	Two with (40) 5/16-24 tapped bolt holes plus one triplet of Grabber Grooves per sealing surface
INTERNAL WORK SPACE	8.90 inch Spherical I.D. Internal Volume 202.3 in <sup>3</sup>



Spherical Octagon MCF1000-SphOct-H2C8

ALL DIMENSIONS ARE IN INCHES  
(MILLIMETERS IN PARENTHESES)

CAUTIONS:  
(1) SILVER PLATED BOLTS OR  
EQUIVALENT LUBRICATION  
MUST BE USED  
(2) USE CORRECT BOLT LENGTH

## 6 Multi-CF Double Spherical Octagon: MCF600-DbISphOct-F2C16

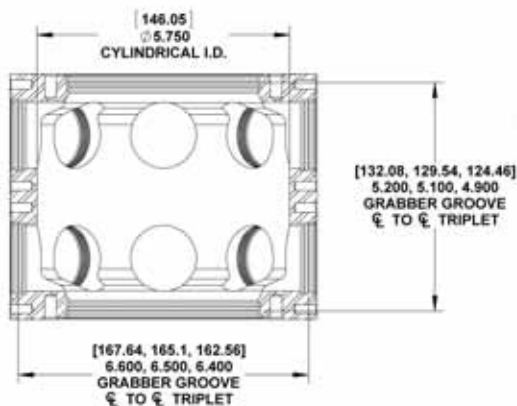
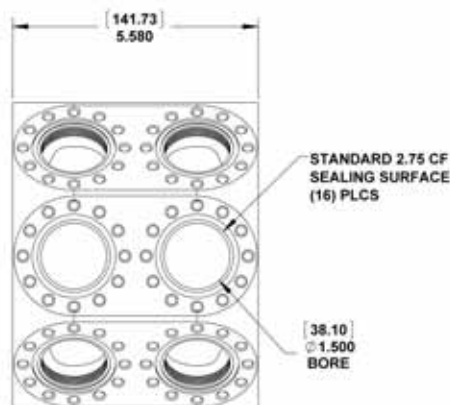
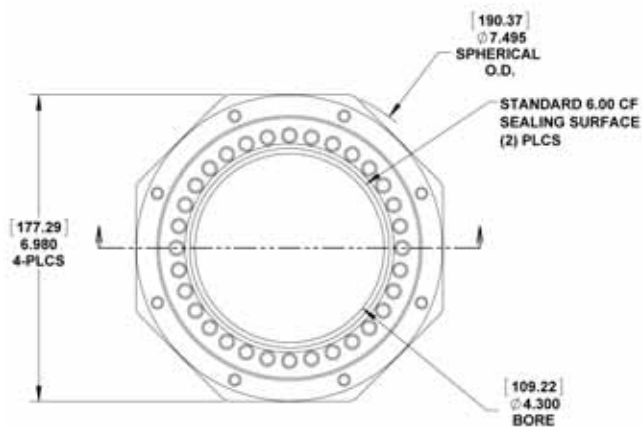
THE DOUBLE SPHERICAL OCTAGON  
6 MULTI-CF SIZE

The 6 Multi-CF Double Spherical Octagon has two 6 CF sealing surfaces and sixteen  $2\frac{3}{4}$  CF sealing surfaces. Each 6 CF and  $2\frac{3}{4}$  CF has one triplet of Grabber Grooves.



MCF600-DbISphOct-F2C16

MCF600-DbISphOct-F2C16	
Multi-CF FITTING	Double Spherical Octagon
COMMON APPLICATION	UHV Vacuum Chamber
CONSTRUCTION / MATERIAL	Unitary Stainless Steel 316L
$2\frac{3}{4}$ CF SEALING SURFACES	Sixteen with (12) $\frac{1}{4}$ -28 tapped bolt holes, plus one triplet of grabber grooves per sealing surface.
6 CF SEALING SURFACES	Two with (32) $\frac{5}{16}$ -24 tapped bolt holes plus one triplet of Grabber Grooves per sealing surface.
INTERNAL WORK SPACE	5.75 inch Cylindrical I.D. Internal Volume 144 in <sup>3</sup>



MCF600-DbISphOct-F2C16

ALL DIMENSIONS ARE IN INCHES

(MILLIMETERS IN PARENTHESES)

CAUTIONS:  
(1) SILVER PLATED BOLTS OR EQUIVALENT LUBRICATION MUST BE USED  
(2) USE CORRECT BOLT LENGTH