

# Inserta Products, Inc.

## 90° FLANGE 4-BOLT ROTATIONAL RETAINING ADAPTERS

INSERTA® Valves and Modular Connectors are effectively assembled by bolting these components together on the Code U461, Code 61 and Code 62 4-Bolt patterns. The assembly of these components saves space, time and money, eliminates piping leaks, and adds value and integrity to a system. Connecting a series of INSERTA® Code U461, Code 61 or Code 62 4-Bolt Modular Valves & Connectors together puts the interconnecting flow paths all in one plane, i.e. normally in the horizontal or vertical plane with flow passing between the large bolt spacings in the Code 61 and Code 62 bolt patterns.

The INSERTA® 90° Flange Rotational Retaining Adapters provide the means to rotate the flow plane 90° and thereby permit flow paths in both the horizontal and vertical planes. Design-A provides a clamp flange face seal on Face Ø and counterbored thru holes from Face 1 to Face Ø for use with socket head clamping bolts. The Flange port is rotated 90° on Face 1. The Design-A INSERTA® 90° Flange Rotational Retaining Adapter is also used with longer bolts to fasten together and terminate a series of stacked Code U461, Code 61 or Code 62 INSERTA® Modules. The Design-B adapter has a plain clamp face for those special applications that require this unique geometry. Together, these INSERTA® 90° Flange Rotational Retaining Adapters offer great flexibility in the design and assembly of multiplanar Code U461, Code 61 and Code 62 fluid flow systems.

The INSERTA® 90° Flange Rotational Retaining Adapters are available with the same Code and size ports, or with one reducing port size. They are also available with Code U461, Code 61, or Code 62 ports of the same size. The models with different Codes or port sizes on the adapters are pressure rated based on the lower of the two flange connections. INSERTA® Code U461 Flange Rotational Retainers should be specified to connect two Code U461 4-Bolt flanges when their higher-pressure rating is required. Likewise, specify the Code 62 with the Code U461 4-Bolt ports when it's higher-pressure rating is required. These connector options further enhance the use and flexibility in assembling INSERTA® Modular Valves.

All INSERTA® 90° Flange Rotational Retaining Adapters are made of steel as standard. Custom adapters and adapters made from other materials can be provided whenever a customer's design dictates a specialized requirement.



### ORDERING INFORMATION

**IFRA** — **A** — **6116** — **6116** — **N**

INSERTA® 90° FLANGE ROTATIONAL RETAINING ADAPTER

MOUNTING DESIGN CODE  
**A = 4-BOLT SEAL CLAMP**  
 FACE Ø x PORT FACE 1  
**B = 4-BOLT PLAIN CLAMP**  
 FACE Ø x PORT FACE 1

CLAMP FACE Ø

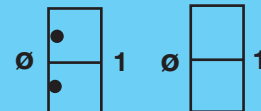
PORT FACE 1

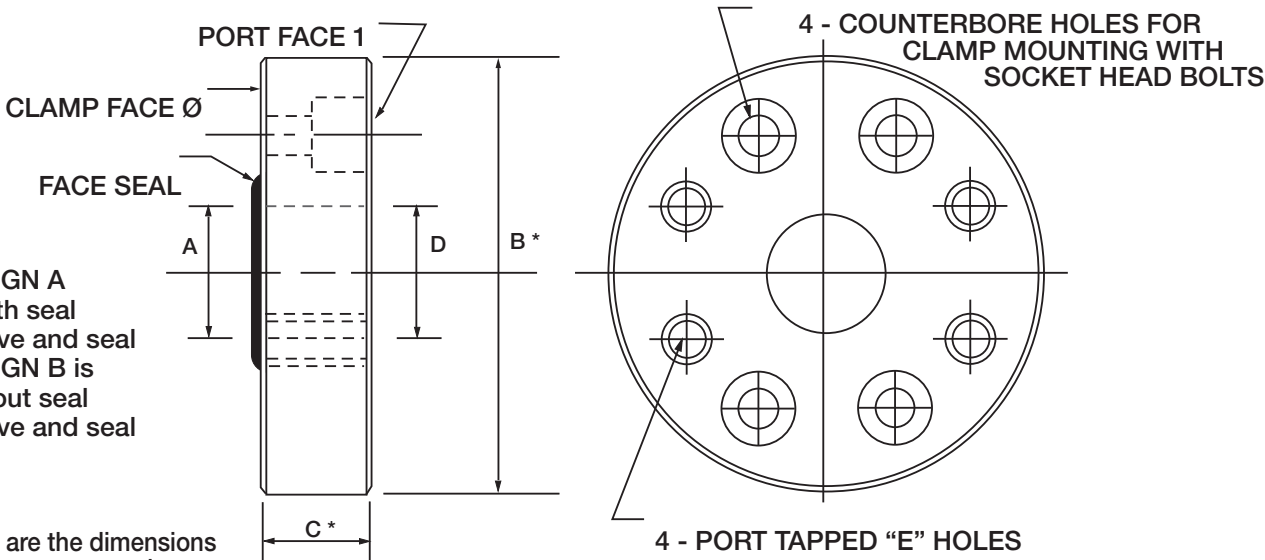
SEAL COMPOUND  
 (OMIT FOR DESIGN B)  
**N = BUNA N (STANDARD)**  
**V = VITON**

SIZE	CODE U461	CODE 61	CODE 62
02	U46102		
04	U46104		
06	U46106		
08	U46108	6108	6208
12	U46112	6112	6212
16	U46116	6116	6216
20	U46120	6120	6220
24	U46124	6124	6224
32	U46132	6132	6232
40		6140	6240
48		6148	6248

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\* B and C are the dimensions of the larger pattern size

**UNIFIED CODE U461 & CODE 61**

CODE U461 PATTERN SIZE	NOMINAL SIZE	C	CODE 61 PATTERN SIZE	C	ALL FLANGE SIZES				CLAMP FACE BOLT KIT (4-BOLTS)	O-RING SIZE NO.
					A	B	D	E UNC-2B		
U46102	1/8	.50	---	---	.13	1.12	.13	8-32	IBK-SH4008-32x0.62	010
U46104	1/4	.50	---	---	.25	1.38	.25	10-24	IBK-SH4010-24x0.62	011
U46106	3/8	.50	---	---	.38	1.62	.38	1/4-20	IBK-SH4025-20x0.62	014
U46108	1/2	1.00	6108	1.00	.50	2.38	.50	5/16-18	IBK-SH4031-18x1.00	210
U46112	3/4	1.12	6112	1.00	.75	3.00	.75	3/8-16	IBK-SH4038-16x1.00	214
U46116	1	1.12	6116	1.12	1.00	3.00	1.00	3/8-16	IBK-SH4038-16x1.00	219
U46120	1 1/4	1.25	6120	1.12	1.25	3.50	1.25	7/16-14	IBK-SH4044-14x1.25	222
U46124	1 1/2	1.38	6124	1.12	1.50	4.00	1.50	1/2-13	IBK-SH4050-13x1.25	225
U46132	2	1.50	6132	1.12	2.00	4.50	2.00	1/2-13	IBK-SH4050-13x1.25	228
---	2 1/2	---	6140	1.12	2.50	5.00	2.50	1/2-13	IBK0SH4050-13x1.25	232
---	3	---	6148	1.12	3.00	6.00	3.00	5/8-11	IBK-SH4063-11x1.50	237

**SAE CODE 62**

PATTERN SIZE	NOMINAL SIZE	A	B	C	D	E	CLAMP FACE BOLT KIT (4 BOLTS)	O-RING SIZE NO.
6208	1/2	.50	2.38	1.00	.50	5/16-18	IBK-SH4031-18x1.00	210
6212	3/4	.75	3.00	1.12	.75	3/8-16	IBK-SH4038-16x1.00	214
6216	1	1.00	3.50	1.12	1.00	7/16-14	IBK-SH4044-14x1.25	219
6220	1 1/4	1.25	4.00	1.25	1.25	1/2-13	IBK-SH4050-13x1.25	222
6224	1 1/2	1.50	4.50	1.38	1.50	5/8-11	IBK-SH4063-11x1.50	225
6232	2	2.00	5.50	1.50	2.00	3/4-10	IBK-SH4075-10x1.75	228
6240	2 1/2	2.50	7.00	1.50	2.50	7/8-9	IBK-SH4088-9x2.25	232
6248	3	3.00	8.50	1.62	3.00	1 1/8-7	IBK-SH4112-7x2.50	237

The INSERTA® 90° Flange Rotational Retaining Adapters are available in the following combinations:

- Code 61 to Code 61 in the same size or with Port Face 1 reduced one size.
- Code 62 to Code 62 in the same size or with Port Face 1 reduced one size.
- Code 62 clamp Face Ø to the same size Code 61 Port Face 1.
- Code 62 to Code U461 in the same size or with Port Face 1 reduced one size.
- Code U461 to Code U461 in the same size or with Port Face 1 reduced one size.

The bolt kits listed are for mounting the adapters directly to the corresponding Port Face. The length of the bolts in the kit is indicated after the x; i.e. 1.00 is 1.00 inches long. The length in these bolt kits are the minimum length to connect to an Inserta™ steel module having an SAE Code 61 or 62 port pattern and provides 1 1/2 times the nominal bolt diameter for thread engagement. Longer lengths need to be considered when other conditions exist such as connecting to lower strength materials. When one wants to use INSERTA® components between the Port Face and these adapters, longer bolts will also be required. Changing the last digits to reflect the length required in inches specify these longer bolt kits. The bolt kits that are available are listed on page 75.

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**ADAPTORS & CONNECTORS**