



# TUBECLO RUBBER INSERT CLAMPS

## Literature



### Introduction:



**Figure 1 Rubber Insert Clamps**

These are one of the most well-known clamp types on the market. They ensure that fragile objects are handled properly and the installation process is often extra-gentle. As other DIN 3015 products, Rubber Insert Clamps are classified into two series which are standard series and heavy series. Likewise, the installation of these clamps is quick and easy. Rubber insert clamps play a critical role in maintaining occupational health, safety and environmental protection.

A rubber insert clamp assembly encompasses one rubber insert and one clamp body. One clamp body consists of two clamp parts which are top and bottom. This clamp's shell body is shaped and smooth. The relationship between the outer diameter of the tube and the size of the rubber insert clamp does not correspond to that of the standard series.

### Materials:

Rubber insert clamps are made up of three standard materials such as Polypropylene, Polyamide, and Elastomer Insert. The Polypropylene material, PP (Green) can withstand temperature pressures ranging from -30°C to +90°C. Meanwhile, Polyamide material, PA (Black) has a working temperature pressure range of -30°C to +90°C.

Material Code	Material	Colour	Special Material
PPR	Polypropylene	Green	-
PA	Polyamide	Black	-
RI	Elastomer Insert	Black	Thermoplastic Elastomer (73 Shore-A)

Here's a brief summary of rubber insert clamps:

- **Excellent weather resistance:** Having exceptional weather resistance, including the capacity to tolerate harsh weather conditions and high system vibration.
- **Verified, tested, and proven materials** used that are adaptable and can be used in a variety of sectors and industries.
- Variety of outer diameter diameters available, ranging from **6mm to 32mm**.
- **Extra vibration and noise reduction** during the installation process.

### Applications:

Rubber insert clamp series can be applied in numerous industries and projects for a variety of applications. For instance, rubber insert clamps are used in construction, commercial, oil and gas, paper production, metal workshops, construction of ships, pharmaceutical companies.

In addition, they are also utilized for machinery employed throughout the manufacturing process in the food and chemical sectors. They may also indeed be used in constructing rail lines, automobiles and hydraulic equipment, energy and technology, and the maritime sector.

### Thermoplastic Elastomer (TPE):

Thermoplastic Elastomer (TPE) refers to thermoplastic rubbers. It is a type of copolymer or a physical mixture of polymers that has both elastic and thermoplastic characteristics. By doing so, thermoplastics are reasonably easy to employ in manufacturing and injection moulding applications. Thermoplastic elastomers possess features that are typical to both plastic and rubbery materials. When compared to other materials, it has the capability to stretch to moderate elongations and then return to its near original shape, resulting in a longer lifespan and greater physical range.

TPE (thermoplastic elastomers) are applied in a variety of manufacturing equipment. For instance, they are widely used in automobile production, roofing materials, shoe soles, adhesives, heating, ventilation, and industries, medical equipment and so forth.

Before being utilized to produce Thermoplastic Elastomer, a material must consists of these three characteristics (TPE) as following:

- The material must be processable in a melted condition at high temperatures.
- There is no creep or cold flow. Creep refers to a solid material's capacity to deform fully when subjected to mechanical pressures gradually.
- Be elastic to a modest size and back to its original form after stretching.

<b>Elastomer Insert</b>	<b>Material Properties</b>
Shore Hardness	73A
Modulus of Elasticity	16 N/mm <sup>2</sup> at 23°C (acc. to ASTM D 412)
Tensile Strength	8,3 N/mm <sup>2</sup> (acc. to ASTM D 412)
Temperature Resistance	-40°C to +125°C
Chemical Properties: Weak acids, solvents Benzene, mineral oils Alcohol, other oils, seawater	Consistent Conditionally consistent Consistent

**Sizes Available:**

For rubber insert clamps, the outer diameter diameters range from 6mm to 172mm. A standard series clamp shell body group 4 elastomer inserts are also appropriate for heavy series clamp shell body group 4S. Likewise, elastomer inserts for standard series clamp shell body group 6 are likewise appropriate for heavy series clamp body group 6S. The following dimension table shows the size available for rubber insert clamps:

Standard Series Rubber Insert Clamp Size:

<b>Group</b>	<b>Outer Diameter Pipes/Tubes/Hoses (mm)</b>	<b>Clamp body Order codes</b>	<b>Rubber Insert Order codes</b>
4	6	406-R	RI-06-4/4S
4	8	408-R	RI-08-4/4S
4	10	410-R	RI-10-4/4S
4	12	412-R	RI-12-4/4S
4	12.7	412.7-R	RI-12.7-4/4S
4	14	414-R	RI-14-4/4S
4	15	415-R	RI-15-4/4S
4	16	416-R	RI-16-4/4S
4	17.2	417.2-R	RI-17.2-4/4S
4	18	418-R	RI-18-4/4S
4	19	419-R	RI-19-4/4S

<b>Group</b>	<b>Outer Diameter Pipes/Tubes/Hoses (mm)</b>	<b>Clamp body Order codes</b>	<b>Rubber Insert Order codes</b>
6	20	620-R	RI-20-6/5S
6	21.3	621.3-R	RI-21.3-6/5S

6	22	622-R	RI-22/5S
6	25	625-R	RI-25/5S
6	26.9	626.9-R	RI-26.9/5S
6	28	628-R	RI-28/5S
6	30	630-R	RI-30/5S
6	32	632-R	RI-32/5S

Heavy Series RI Clamp Size:

<b>Group</b>	<b>Outer Diameter Pipes/Tubes/Hoses (mm)</b>	<b>Clamp body Order codes</b>	<b>Rubber Insert Order codes</b>
4S	6	4006-R	RI-06-4/4S
4S	8	4008-R	RI-08-4/4S
4S	10	4010-R	RI-10-4/4S
4S	12	4012-R	RI-12-4/4S
4S	12.7	4012.7-R	RI-12.7-4/4S
4S	14	4014-R	RI-14-4/4S
4S	15	4015-R	RI-15-4/4S
4S	16	4016-R	RI-16-4/4S
4S	17.2	4017.2-R	RI-17-4/4S
4S	18	4018-R	RI-18-4/4S
4S	19	4019-R	RI-19-4/4S

<b>Group</b>	<b>Outer Diameter Pipes/Tubes/Hoses (mm)</b>	<b>Clamp body Order codes</b>	<b>Rubber Insert Order codes</b>
5S	20	5020-R	RI-20-6/5S
5S	21.3	5021.3-R	RI-21.3-6/5S

5S	22	5022-R	RI-22-6/5S
5S	25	5025-R	RI-25-6/5S
5S	26.9	5026.9-R	RI-26.9-6/5S
5S	28	5028-R	RI-28-6/5S
5S	30	5030-R	RI-30-6/5S
5S	32	5032-R	RI-32-6/5S

<b>Group</b>	<b>Outer Diameter Pipes/Tubes/Hoses (mm)</b>	<b>Clamp body Order codes</b>	<b>Rubber Insert Order codes</b>
6S	32	6032-R	RI-32-6S
6S	33.7	6033.7-R	RI-33.7-6S
6S	35	6035-R	RI-35-6S
6S	38.7	6038.7-R	RI-38.7-6S
6S	40	6040-R	RI-40-6S
6S	42	6042-R	RI-42-6S
6S	45.5	6045.5-R	RI-45.5-6S
6S	48	6048-R	RI-48-6S
6S	51	6051-R	RI-51-6S
6S	53.4	6053.4-R	RI-53.4-6S
6S	56.4	6056.4-R	RI-56.4-6S

<b>Group</b>	<b>Outer Diameter Pipes/Tubes/Hoses (mm)</b>	<b>Clamp body Order codes</b>	<b>Rubber Insert Order codes</b>
7S	55	7055-R	RI-55-7S
7S	57	7057-R	RI-57-7S
7S	60	7060-R	RI-60-7S

7S	63.5	7063.5-R	RI-63.5-7S
7S	65	7065-R	RI-65-7S
7S	70	7070-R	RI-70-7S
7S	72	7072-R	RI-72-7S
7S	76	7076-R	RI-76-7S

<b>Group</b>	<b>Outer Diameter Pipes/Tubes/Hoses (mm)</b>	<b>Clamp body Order codes</b>	<b>Rubber Insert Order codes</b>
8S	80	8080-R	RI-80-8S
8S	88.9	8088.9-R	RI-88.9-8S
8S	102	8102-R	RI-102-8S

<b>Group</b>	<b>Outer Diameter Pipes/Tubes/Hoses (mm)</b>	<b>Clamp body Order codes</b>	<b>Rubber Insert Order codes</b>
9S	114	9114-R	RI-114-9S
9S	133	9133-R	RI-133-9S
9S	140	9140-R	RI-140-9S

<b>Group</b>	<b>Outer Diameter Pipes/Tubes/Hoses (mm)</b>	<b>Clamp body Order codes</b>	<b>Rubber Insert Order codes</b>
10S	150	10150-R	RI-150-10S
10S	165	10165-R	RI-165-10S
10S	168	10168-R	RI-168-10S
10S	172	10172-R	RI-172-10S

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**Recommended Distance Between Clamps:**

For rubber insert clamps installations, below table was a recommended distance between clamps.

<b>PIPE O.D. - MM</b>	<b>DISTANCE (M)</b>
6.0 - 12.7	1.0
12.7 - 22.0	1.2
22.0 - 32.0	1.5
32.0 - 38.0	2.0
38.0 - 57.0	2.7
57.0 - 75.0	3.0
75.0 - 76.1	3.5
76.1 - 88.9	3.7
88.9 - 102.0	4.0
102.0 - 114.0	4.5
114.0 - 168.0	5.0
168.0 - 219.0	6.0
219.0 - 324.0	6.7
324.0 - 356.0	7.0
356.0 - 406.0	7.5



## **Chuan Kok Hardware & Machinery Pte Ltd**

Address : 1783 Geylang Bahru, #01-02, Singapore 339708  
Telephone Number : +65 6294 2566  
Email Address : [info@chuankok.com](mailto:info@chuankok.com)  
Website : [www.chuankok.com](http://www.chuankok.com)  
Business Registration Number : 198201577Z  
Country of Registration : Singapore

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