

# DUBO Retaining Ring - for Hex Head Screws

## Multiple locking and sealing because DUBO Retaining Rings:

- flow into the threads of the bolt and the nut;
- create a particularly effective frictional resistance with the bolt and thereby;
- prevent rotation of the retaining ring around the bolt;
- wrap round the flats on the nut and thereby effectively prevent the nut from loosening;
- by filling all free spaces, seal against leakage

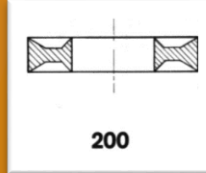
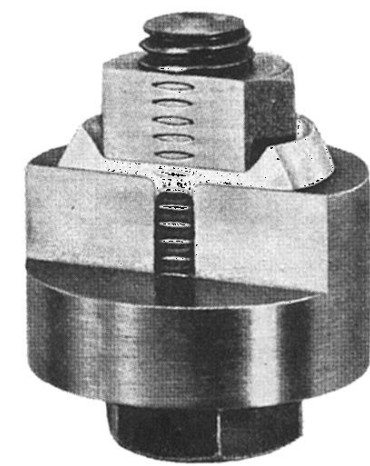
## Sound-deadening properties and durability because DUBO Retaining Rings:

- absorb vibrations arising in any bolt assembly;
- have plastic-flexible characteristics;
- neither deteriorate nor wear, and therefore can always be re-used again and again without loss of the above-mentioned advantages.

## Insulation and protection of the surface of the material because DUBO Retaining Rings:

- are chemically resistant to Alkalis, to solutions of neutral inorganic salts, to oils, fats, petrol, benzene, alcohol, acetone, diluted acids, and sea water;
- prevent electrolytic corrosion between two different metal surfaces;
- prevent fatigue in the bolt material.

Physical Properties:	
Tensile strength up to the elastic limit	650 kg/cm <sup>2</sup>
Ultimate tensile strength	2600 kg/cm <sup>2</sup>
Modulus of elasticity	6600 kg/cm <sup>2</sup>
Breakdown voltage	18 kV/mm
Rockwell hardness	115
Specific gravity	1.14



**DUBO Retaining Rings can be used in conjunction with:**

- DUBO toothed collar rings
- KORREX insulating bushes
- KORREX protective caps

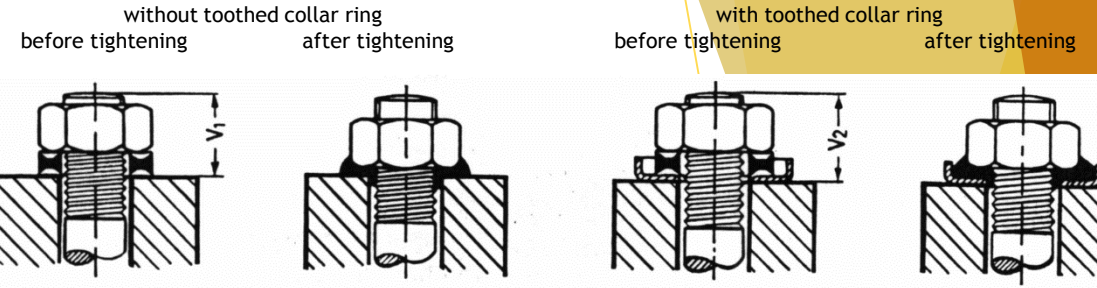
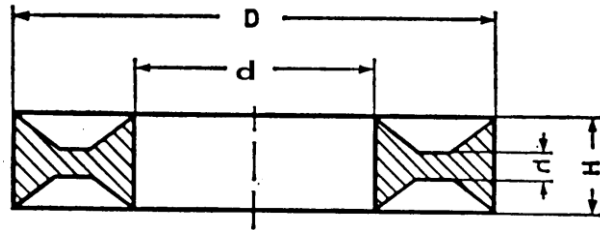
***Patented throughout the world.  
For hexagon-headed and round headed screws.***



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# DUBO Retaining Rings for Hexagon Head Screws:



(Dimensions in mm)

Part No.	Dimensions for Hexagon head screws						Minimum dimensions		Weight in kg/1000
	metric threads	Inch Threads	D	d	H	H	without toothed collar ring V <sub>1</sub>	with toothed collar ring V <sub>2</sub>	
	197	M 2		5.3	2.1	1.5	0.5	3.5	
198	M 3	1/8"	8	3.2	2.2	0.8	5		0.08
198a	M 3.5		9	3.8	2.4	0.9	5.5		0.11
199	M 4	5/32"	9.5	4.15	2.6	1	6		0.12
200	M 5	3/16"	10.6	5.15	3	1.2	7		0.17
201	M 6	1/4"	12.7	6.5	3.5	1.4	8.5	9.25	0.26
202	M 7		14.5	7.1	3.8	1.5	9	9.75	0.36
203	M 8	5/16"	16.2	8.1	4	1.6	10.5	11.5	0.45
204		3/8"	19.6	9.7	4.5	1.8	12.5	13.5	0.75
205	M 10		19.6	10.2	4.5	1.8	12.5	13.5	0.75
206		7/16"	21.9	11.3	4.7	1.9	13.5	15	1.1
207	M 12		23.6	12.2	5	2	14.5	16	1.18
208		1/2"	25.4	12.8	5	2	16	17.5	1.3
209	M 14		25.4	14.2	5.5	2.1	16.5	18	1.4
210		9/16"	28.6	14.4	5.5	2.1	18		1.9
211	M 16		29.4	16.2	6	2.2	19	20.75	2.0

Part No.	Dimensions for Hexagon head screws						Minimum dimensions		Weight in kg/1000
	metric threads	Inch Threads	D	d	H	H	without toothed collar ring V <sub>1</sub>	with toothed collar ring V <sub>2</sub>	
	212		5/8"	31.2	16	6	2.2	19	
213	M 18		35.1	18.2	6.5	2.3	21.5	23.25	3.05
215	M 20		35.7	20.3	7	2.4	23	24.75	3.3
216		3/4"	36.9	19.2	7	2.4	23	24.75	3.05
217	M 22	7/8"	41.6	22.5	7.5	2.5	24.5	26.5	4.95
219	M 24		41.6	24.3	8	2.6	26	28	5.0
220		1"	47.3	25.6	8	2.6	28	30	6.55
222	M 27		47.3	27.3	8.5	2.7	28.5	30.5	7.15
225	M 30	1.1/8"	53.1	30.2	8.5	2.8	30.5		7.4
228	M 33	1.1/4"	57.7	33.2	9	3	34		9.1
231	M 36	1.3/8"	63.5	36.2	10	3.2	38		12.6
234	M 39	1.1/2"	69.3	39.2	11	3.4	41		16.9
237	M 42	1.5/8"	74	42.2	13	3.8	45		21.0
240	M 45	1.3/4"	80.8	45.2	16	4.2	51		35.0
243	M 48	1.7/8"	86.5	48.2	17	4.5	55		44.0
247	M 52	2"	92.4	52.3	17	4.6	57		50.0

**TEMPERATURE RANGE:-** For static loads: -60° to +120°C  
For dynamic loads: -60° to +80°C

**MATERIAL:** Nylon 6



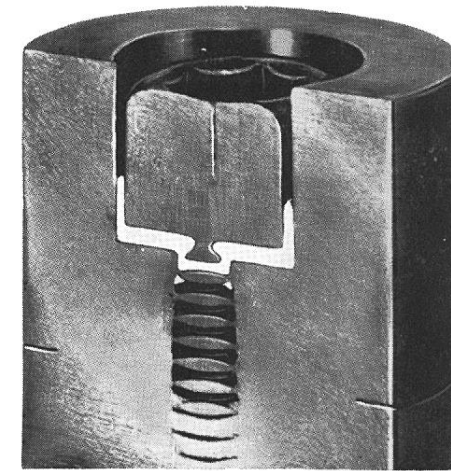
# DUBO Retaining Ring - for Socket Head Screws

The specifications of DUBO Retaining Rings used in conjunction with steel collar rings also apply in principle for DUBO Retaining Rings for socket head screws. It is the same ring design, but with special dimensions to suit socket head screws.

## Instructions for fitting DUBO Retaining Rings

To Ensure reliable locking and sealing of the screw it is important to observe the following points on assembly:-

- The screw should be tightened until the outer reinforcing rim of the ring is distorted and has engaged around the head of the screw. The screw generally then has the right initial stress. Because the material of the ring slides over the surface of the surrounding component, it feels as if the screw still needs further tightening, but this is not so. The required initial stress is obtained immediately on distortion of the ring and the screw is then completely locked. Further tightening of the screw is harmful.
- As smooth a finish as possible on the bearing surface of the component improves the locking and sealing.
- The correct diameter of ring should be used for each thread diameter.
- To obtain complete sealing the female threads should be of correct size or below, in accordance with DIN standard no.69
- Where the DUBO Retaining Ring is used with a steel collar ring the screw can be tightened up to any permitted torque value.



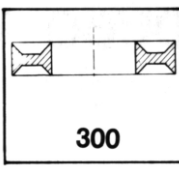
**Lock and seal**

***Patented throughout the world***



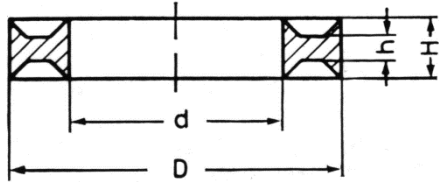
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# DUBO Retaining Rings - for Socket Head Screws

for socket head screws:



(Dimensions in mm)

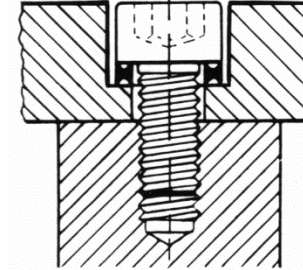
Part No.	metric threads	inch threads	D	d	H	h	Weight
							kg/1000
299	M 4	5/32"	7.7	4.1	2	0.8	0.055
300	M 5	3/16"	9.8	5.15	3	1.2	0.13
301	M 6	1/4"	10.5	6.5	2.5	1	0.14
303	M 8	5/16"	14	8.1	3.3	1.5	0.3
305	M 10	3/8"	17	10.2	3.8	1.5	0.44
307	M 12		19	12.2	4.4	2	0.59
308		1/2"	20	12.8	4.4	2	
309	M 14		23	14.2	5.2	2	0.9
311	M 16	5/8"	25	16.2	5.6	2	1.3
313	M 18		28	18.2	6.1	2.3	1.8
315	M 20		31.5	20.2	6.5	2.5	2.3
317	M 22	7/8"	34.5	22.2	6.8	2.8	2.7
319	M 24		37.5	24.3	7	3	3.2

**TEMPERATURE RANGE:-** For static loads: -60° to +120°C

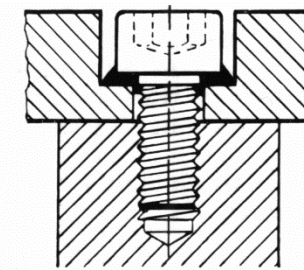
For dynamic loads: -60° to +80°C

**MATERIAL:** Nylon 6

before tightening



after tightening



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