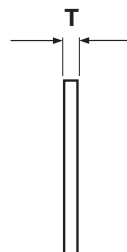
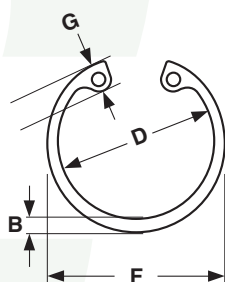


METRIC FASTENERS

DIN 472

RETAINING RINGS



DIN 472 INTERNAL TYPE RETAINING RINGS

Carbon Spring Steel		D	F	B	H	T
Kanebridge Part Number	Rotor Clip® Part Number	Clearance Diameter	Free Diameter	Base Width	Lug Height (Max)	Thickness
M12D472	DHO-12	13	12	1.7	3.4	1
M14D472	DHO-14	15.1	14	1.8	3.7	1
M15D472	DHO-15	16.2	15	2.0	3.7	1
M16D472	DHO-16	17.3	16	2.0	3.8	1
M17D472	DHO-17	18.3	17	2.1	3.9	1
M19D472	DHO-19	20.5	19	2.2	4.1	1
M21D472	DHO-21	22.5	21	2.4	4.2	1
M22D472	DHO-22	23.5	22	2.5	4.2	1
M24D472	DHO-24	25.6	24	2.6	4.4	1.2
M30D472	DHO-30	32.1	30	3.0	4.8	1.2
M32D472	DHO-32	34.4	32	3.2	5.4	1.2
M35D472	DHO-35	37.8	35	3.4	5.4	1.5
M40D472	DHO-40	43.5	40	3.9	5.8	1.75
M42D472	DHO-42	45.5	42	4.1	5.9	1.75
M47D472	DHO-47	50.5	47	4.4	6.4	1.75
M52D472	DHO-52	56.2	52	4.7	6.7	2
M58D472	DHO-58	62.2	58	5.2	6.9	2
M75D472	DHO-75	79.5	75	6.6	7.8	2.5
M80D472	DHO-80	85.5	80	7.0	8.5	2.5
M90D472	DHO-90	95.5	90	7.6	8.6	3
M100D472	DHO-100	105.5	100	8.4	9.2	3
M110D472	DHO-110	117	110	9.0	10.4	4
M120D472	DHO-120	127	120	9.7	11.0	4
M130D472	DHO-130	137	130	10.2	11.0	4
M140D472	DHO-140	147	140	10.7	11.2	4
M160D472	DHO-160	169	160	11.6	13.0	4

Description	A ring-shaped stamping with one opening on the circumference. The two ends at the opening are called lugs and flare slightly into the groove. When the lugs are released, contact is made with the grooved housing.
Applications/ Advantages	Internal retaining rings are for axial installation into machined grooves in housings and bores. The tapered section design assures uniform circular deformation, allowing for complete contact and tightness in groove. Steel rings can be safely used within a temperature range of -100°F to 500°F.
Material	Carbon spring steel SAE 1060 - 1074 hard drawn steel
Heat Treatment	Internal retaining rings from nominal sizes M3 thru M100 are heat treated using the austempering method. Rings are heated at an austenitizing temperature, then rapidly cooled in a salt bath to a certain temperature, which is maintained until their structure convert into lower bainite. The resulting structure features high tensile strength, hardness and excellent toughness. Parts are then cooled to room temperature. Rings M102 and larger are heated at an austenitizing temperature then cooled in oil to room temperature. This martensitic structure features high hardness and brittleness. Parts are then tempered by reheating until achieving ideal hardness and toughness. Parts are cooled to room temperature.
Hardness	<i>Sizes M3 thru M49:</i> Rockwell C 47 - 54 <i>Sizes M50 thru M200:</i> Rockwell C 44 - 51
Finish	See Appendix-A for information on the coating of retaining rings.