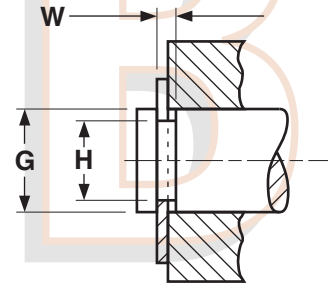
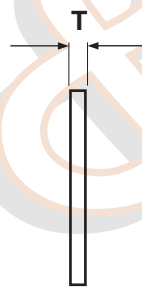
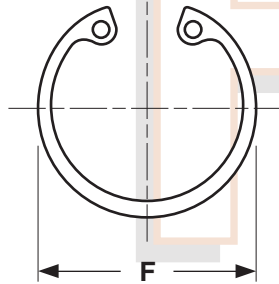


Retaining Rings

Internal Type

Carbon Spring Steel
& Stainless Steel



INTERNAL TYPE RETAINING RINGS

Carbon Spring Steel	Stainless Steel	H	G	W	F	T
Waldes Part Number	Waldes Part Number	Housing Diameter	Groove Diameter	Groove Width	Free Diameter	Thickness
N5000-25STPP	N5000-25H	0.250	0.268	0.020	0.280	0.015
N5000-31STPP	N5000-31H	0.312	0.330	0.020	0.346	0.015
N5000-37STPP	N5000-37H	0.375	0.397	0.029	0.415	0.025
N5000-43STPP	N5000-43H	0.438	0.461	0.029	0.482	0.025
N5000-50STPP	N5000-50H	0.500	0.530	0.039	0.548	0.035
N5000-56STPP	N5000-56H	0.562	0.596	0.039	0.620	0.035
N5000-62STPP	N5000-62H	0.625	0.665	0.039	0.694	0.035
N5000-68STPP	N5000-68H	0.688	0.732	0.039	0.763	0.035
N5000-75STPP	N5000-75H	0.750	0.796	0.039	0.831	0.035
N5000-81STPP	N5000-81H	0.812	0.862	0.046	0.901	0.042
N5000-87STPP	N5000-87H	0.875	0.931	0.046	0.971	0.042
N5000-93STPP	N5000-93H	0.938	1.000	0.046	1.041	0.042
N5000-100STPP	N5000-100H	1.000	1.066	0.046	1.111	0.042
N5000-287STPP	N5000-106H	1.062	1.130	0.056	1.180	0.050
N5000-112STPP	N5000-112H	1.125	1.197	0.056	1.249	0.050
N5000-118STPP	N5000-118H	1.181	1.255	0.056	1.319	0.050
N5000-125STPP	N5000-125H	1.250	1.330	0.056	1.388	0.050
N5000-131STPP	N5000-131H	1.312	1.461	0.056	1.456	0.050
N5000-137STPP	N5000-137H	1.375	1.461	0.056	1.526	0.050
N5000-143STPP	N5000-143H	1.438	1.528	0.056	1.596	0.050
N5000-150STPP	N5000-150H	1.500	1.594	0.056	1.660	0.050
N5000-156STPP	N5000-156H	1.562	1.658	0.068	1.734	0.062
N5000-162STPP	N5000-162H	1.625	1.725	0.068	1.804	0.062
N5000-168STPP	N5000-168H	1.688	1.792	0.068	1.874	0.062
N5000-175STPP	N5000-175H	1.750	1.858	0.068	1.942	0.062
N5000-181STPP	N5000-181H	1.812	1.922	0.068	2.012	0.062
N5000-187STPP	N5000-187H	1.875	1.989	0.068	2.072	0.062
N5000-193STPP	N5000-193H	1.938	2.056	0.068	2.141	0.062
N5000-200STPP	N5000-200H	2.000	2.122	0.068	2.210	0.062

INTERNAL TYPE RETAINING RINGS (CONTINUED)						
Carbon Spring Steel	Stainless Steel	H	G	W	F	T
Waldes Part Number	Waldes Part Number	Housing Diameter	Groove Diameter	Groove Width	Free Diameter	Thickness
N5000-206STPP	N5000-206H	2.062	2.186	0.086	2.280	0.078
N5000-212STPP	N5000-212H	2.125	2.251	0.086	2.350	0.078
N5000-218STPP	N5000-218H	2.188	2.318	0.086	2.415	0.078
N5000-225STPP	N5000-225H	2.250	2.382	0.086	2.490	0.078
N5000-231STPP	N5000-231H	2.312	2.450	0.086	2.560	0.078
N5000-237STPP	N5000-237H	2.375	2.517	0.086	2.630	0.078
N5000-244STPP	N5000-244H	2.440	2.584	0.086	2.702	0.078
N5000-250STPP	N5000-250H	2.500	2.648	0.086	2.775	0.078
N5000-256STPP	N5000-256H	2.562	2.714	0.103	2.844	0.093
N5000-262STPP	N5000-262H	2.625	2.781	0.103	2.910	0.093
N5000-268STPP	N5000-268H	2.688	2.848	0.103	2.980	0.093
N5000-275STPP	N5000-275H	2.750	2.914	0.103	3.050	0.093
N5000-281STPP	N5000-281H	2.812	2.980	0.103	3.121	0.093
N5000-287STPP	N5000-287H	2.875	3.051	0.103	3.191	0.093
N5000-300STPP	N5000-300H	3.000	3.182	0.103	3.325	0.093

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	The internal retaining ring design is 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. Stainless steel rings are corrosion resistant & can be used in higher heat applications from -100°F to 900°F.	
Material	<i>Steel</i>	<i>Stainless</i>
	Carbon spring steel SAE 1060 - 1090	Precipitation Hardened Alloy 15% Chromium, 7% Nickel, 2% Molybdenum
Heat Treatment	Retaining rings are heat treated using the austempering method. Rings are uniformly heated to temperatures over 1500° F. They are then isothermally quenched in a molten salt bath at 600° F for 35 minutes. This results in parts with a bainite structure characterized by good mechanical properties.	
Hardness	<i>Sizes 25 & 31:</i> Rockwell 15N 86 - 88 <i>Sizes 37 - 51:</i> Rockwell 30N 69.5 - 73 <i>Sizes 56 - 77:</i> Rockwell 30N 67.5 - 72 <i>Sizes 81 - 102:</i> Rockwell 30N 66 - 71 <i>Sizes 106 - 347:</i> Rockwell C 47 - 52	<i>Sizes 25 & 31:</i> Rockwell 15N 82.5 - 86 <i>Sizes 37 - 102:</i> Rockwell 30N 63 - 69.5 <i>Sizes 106 & over:</i> Rockwell C 44 - 51
Tensile Strength	225,000 psi. minimum	
Finish	See Appendix-A for information on the coating of retaining rings.	