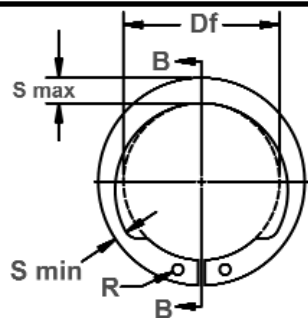




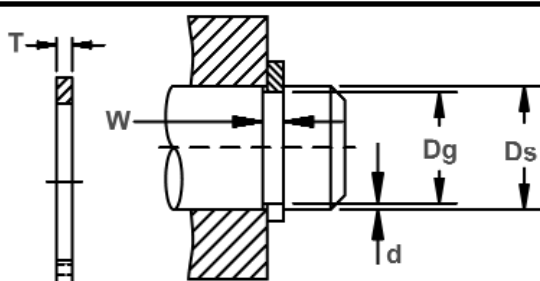
# SHI Shaft Rings

## Axially Assembled, External Inverted

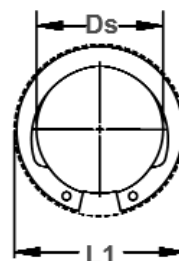
Functions like an SH ring on a shaft, only the lugs are "reversed." This version reduces the distance the lugs of the standard SH extend beyond the circumference of the shaft. The shaft can then be used in an application where clearance is minimal.



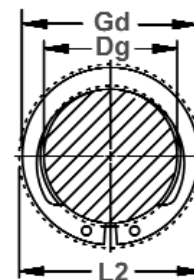
Free Diameter & Ring Measurements with Section B-B



Shaft Diameter & Groove Dimensions



Clearance Diameter Expanded Over Shaft



Clearance Diameter & Gaging Diameter Released in Groove

RING NO.	SHAFT DIAMETER			GROOVE SIZE			RING SIZE & WEIGHT				CLEAR. DIA.			THRUST LD. (lbs.)			
				DIAMETER		WIDTH	DEPTH	FREE DIAMETER		THICKNESS***		Weight Per 1000 Pcs.	Expanded over shaft	Re-leased in groove	Sqr. corner abutment		
	Ds DEC	Ds FRACT	Ds mm	Dg	Tol.	W	Tol.	d	Df	Tol.	T				Tol.	Lbs.	L1
SHI-50	.500	1/2	12.7	.468	±.002	.039		.016	.461		.035		1.0	.67	.645	1117	280
SHI-56	.562	9/16	14.3	.530	.004*	.039		.016	.521		.035		1.4	.75	.72	1269	320
SHI-59	.594	19/32	15.1	.559		.039		.017	.550		.035		1.6	.79	.76	1320	370
SHI-62	.625	5/8	15.9	.588		.039		.018	.579		.035		1.6	.83	.80	1421	400
SHI-68	.688	11/16	17.5	.646		.046		.021	.635		.042		2.5	.91	.87	2335	500
SHI-75	.750	3/4	19.0	.704	±.003	.046	+ .003	.023	.693	+ .005	.042		2.8	.99	.95	2538	600
SHI-78	.781	25/32	19.8	.733	.004*	.046	- .000	.024	.722	- .010	.042		3.1	1.04	1.00	2639	650
SHI-81	.812	13/16	20.6	.762		.046		.025	.751		.042		3.3	1.08	1.03	2690	700
SHI-87	.875	7/8	22.2	.821		.046		.027	.810		.042		3.8	1.15	1.10	2893	850
SHI-93	.938	15/16	23.8	.882		.046		.028	.867		.042		4.5	1.23	1.18	3147	900
SHI-100	.984	63/64	25.0	.926		.046		.029	.925		.042	±.002	4.8	1.30	1.25	3350	1000
SHI-100	1.000	1	25.4	.940		.046		.030	.925		.042		4.8	1.31	1.26	3350	1050
SHI-106	1.062	1-1/16	27.0	.998		.056		.032	.982		.050		6.2	1.38	1.32	4212	1200
SHI-112	1.125	1-1/8	28.6	1.059		.056		.033	1.041		.050		6.7	1.45	1.39	4466	1300
SHI-118	1.188	1-3/16	30.2	1.118		.056		.035	1.098	+ .010	.050		7.2	1.52	1.46	4720	1450
SHI-125	1.250	1-1/4	31.7	1.176	±.004	.056	+ .004	.037	1.156	- .015	.050		7.6	1.59	1.52	4974	1600
SHI-131	1.312	1-5/16	33.3	1.232	.005*	.056	- .000	.040	1.214		.050		8.2	1.66	1.58	5227	1850
SHI-137	1.375	1-3/8	34.9	1.291		.056		.042	1.272		.050		8.4	1.73	1.65	5481	2050
SHI-143	1.438	1-7/16	36.5	1.350		.056		.044	1.333		.050		9.1	1.80	1.72	5735	2200
SHI-150	1.500	1-1/2	38.1	1.406		.056		.047	1.387		.050		9.8	1.87	1.78	5938	2500
SHI-156	1.562	1-9/16	39.7	1.468		.068		.047	1.446		.062		12.9	1.95	1.86	7714	2600
SHI-162	1.625	1-5/8	41.3	1.529		.068		.048	1.503		.062		13.4	2.02	1.93	8019	2750
SHI-177	1.750	1-3/4	44.4	1.650		.068		.050	1.637		.062		16.1	2.18	2.08	8628	3100
SHI-177	1.772	-	45.0	1.669	±.005	.068		.051	1.637	+ .013	.062		16.1	2.20	2.10	8628	3200
SHI-181	1.812	1-13/16	46.0	1.708	.005*	.068		.052	1.675	- .020	.062		17.3	2.24	2.14	8983	3300
SHI-196	1.969	1-31/32	50.0	1.857		.068		.056	1.819		.062		20.5	2.43	2.32	9693	3900
SHI-200	2.000	2	50.8	1.886		.068		.057	1.850		.062		20.7	2.47	2.36	9896	4000
SHI-215	2.125	2-1/8	54.0	2.003		.086		.061	1.993		.078	±.003	30.0	2.62	2.50	13195	4550
SHI-215	2.156	2-5/32	54.8	2.032		.086		.062	1.993	+ .015	.078		30.0	2.65	2.53	13195	4700
SHI-250	2.500	2-1/2	63.5	2.360		.086		.070	2.313	- .025	.078		43.5	3.05	2.92	15530	6200
SHI-275	2.750	2-3/4	69.8	2.602	±.006	.103	+ .005	.074	2.543		.093		57.9	3.34	3.20	20402	7200
SHI-287	2.875	2-7/8	73.0	2.721	.006*	.103	- .000	.077	2.659		.093		64.5	3.49	3.34	21315	7800
SHI-315	3.156	3-5/32	80.2	2.986		.103		.085	2.920	+ .020	.093		77.0	3.82	3.66	23447	9400
SHI-325	3.250	3-1/4	82.5	3.076		.103		.087	3.006	- .030	.093		77.5	3.93	3.76	24056	10000
SHI-350	3.500	3-1/2	88.9	3.316		.120		.092	3.237		.109		107.0	4.22	4.04	30349	11500
SHI-393	3.938	3-15/16	100.0	3.734		.120		.102	3.642		.109		123.0	4.71	4.51	34206	14000

\* F.I.M. (FULL INDICATOR MOVEMENT)-MAXIMUM ALLOWABLE DEVIATION OF CONCENTRICITY BETWEEN GROOVE AND SHAFT.

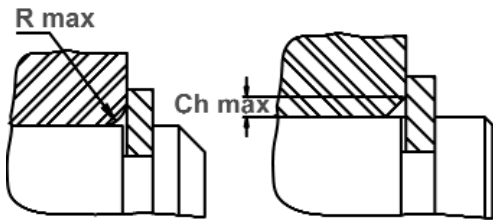
† BASED ON HOUSINGS/SHAFTS MADE OF COLD ROLLED STEEL. FOR AN EXPLANATION OF FORMULAS USED TO DERIVE THRUST LOAD AND OTHER PERFORMANCE DATA, CONTACT THE ROTOR CLIP ENGINEERING DEPARTMENT.

\*\*\*FOR PLATED RINGS, ADD .002" TO THE LISTED MAXIMUM RING THICKNESS. MAXIMUM RING THICKNESS WILL BE A MINIMUM OF .0002" LESS THAN THE LISTED GROOVE WIDTH (W) MINIMUM.

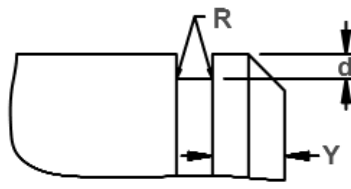
HARDNESS RANGES: STAINLESS STEEL RINGS (PH 15-7MO)

RING TYPE	SIZE RANGE	SCALE	ROCKWELL HARDNESS
SHI	50-81	30N	63-69.5
	87+	C	44-51

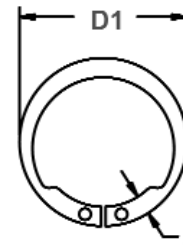




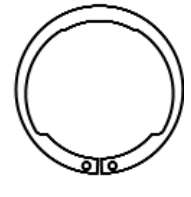
Maximum Corner Radius & Chamfer



Exploded Groove Profile & Edge Margin (Y)  
Maximum bottom radii (R), .005 for ring sizes -50 thru -100; .010 for ring sizes -106 thru -393



Measuring Free Diameter (Df) SHI Series  
Df = D1 - 2(S max)



Alternate Design  
Manufacturer's Option

RING NO.	MAXIMUM SECTION (Including Lug)		MINIMUM SECTION		HOLE DIAMETER		GAGING DIAMETER	ALLOWABLE CORNER RADII & CHAMFERS		MAX. LOAD w/R max or Ch max (in lbs.)	EDGE MARGIN	R.P.M. LIMITS Standard material
	S max	Tol.	S min	Tol.	R	Tol.		Gd Max	R max			
SHI-50	.080	± .004	.041	± .004	.042	+ .010 - .002	.64	.051	.032	680	.048	40000
SHI-56	.088		.043		.042		.715	.057	.036	680	.048	35000
SHI-59	.092		.046		.042		.75	.059	.037	680	.052	32000
SHI-62	.096	.048	.042	.79	.062		.039	680	.055	30000		
SHI-68	.104	.052	.042	.87	.066		.042	1000	.063	28000		
SHI-75	.112	.056	.042	.945	.071		.045	1000	.069	26500		
SHI-78	.116	.057	.042	.98	.073		.046	1000	.072	25500		
SHI-81	.120	.060	.050	1.02	.076		.048	1000	.075	24500		
SHI-87	.128	.064	.050	1.095	.080		.051	1000	.081	23000		
SHI-93	.136	.068	.050	1.17	.086		.054	1000	.084	21500		
SHI-100	.144	.072	.050	1.24	.091	.057	1000	.087	20000			
SHI-100	.144	.072	.050	1.25	.091	.057	1000	.090	20000			
SHI-106	.147	.073	.078	1.31	.092	.058	1460	.096	19000			
SHI-112	.150	.075	.078	1.38	.093	.059	1460	.099	18800			
SHI-118	.153	.076	.078	1.45	.094	.059	1460	.105	18000			
SHI-125	.157	.079	.078	1.52	.096	.060	1460	.111	17000			
SHI-131	.161	.080	.078	1.58	.097	.061	1460	.120	16500			
SHI-137	.165	.082	.078	1.65	.098	.061	1460	.126	16000			
SHI-143	.169	.085	.078	1.715	.100	.063	1460	.132	15000			
SHI-150	.173	.086	.078	1.775	.100	.063	1460	.141	14800			
SHI-156	.178	.089	.078	1.85	.104	.066	2250	.141	14000			
SHI-162	.183	.092	.078	1.92	.108	.067	2250	.144	13200			
SHI-177	.196	.098	.078	2.07	.116	.073	2250	.150	11700			
SHI-177	.196	.098	.078	2.09	.116	.073	2250	.153	11700			
SHI-181	.199	.100	.078	2.13	.117	.074	2250	.156	11500			
SHI-196	.212	.106	.078	2.31	.124	.078	2250	.168	10500			
SHI-200	.216	.108	.078	2.35	.127	.080	2250	.171	10000			
SHI-215	.229	.117	.120	2.49	.133	.084	3750	.183	9400			
SHI-215	.229	.117	.120	2.52	.133	.084	3750	.186	9400			
SHI-250	.250	.130	.120	2.91	.151	.095	3750	.210	8400			
SHI-275	.280	.140	.120	3.19	.165	.103	5500	.222	7600			
SHI-287	.290	.145	.120	3.33	.170	.107	5500	.231	7300			
SHI-315	.316	.159	.120	3.65	.185	.116	5500	.255	6500			
SHI-325	.324	.162	.120	3.75	.190	.118	5500	.261	6400			
SHI-350	.345	.173	.125	4.03	.202	.127	7850	.276	5900			
SHI-393	.368	.183	.125	4.50	.212	.133	7850	.306	5200			

LARGER SIZES MAY BE AVAILABLE UPON REQUEST.

HARDNESS RANGES: CARBON STEEL RINGS (SAE 1060-1090)

RING TYPE	SIZE RANGE	SCALE	ROCKWELL HARDNESS
SHI	50-81	30N	66-71
	87-102	C	47-53
	106-343	C	47-52
	350+	C	45-50

HARDNESS RANGES: BERYLLIUM COPPER RINGS

RING TYPE	SIZE RANGE	SCALE	ROCKWELL HARDNESS
SHI	50-81	30N	56.5-62
	87+	C	37-43

