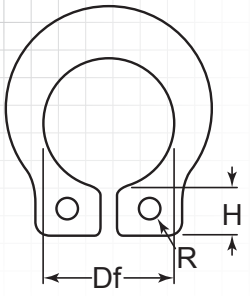
EXTERNAL – FRICTION SHAFT RING

DESCRIPTION

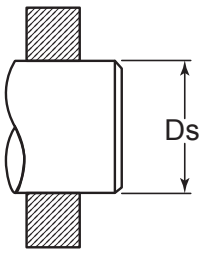
The SHF ring resembles a basic SH ring, except that it is designed to function on a shaft without a groove. The design of the ring causes it to exert significant gripping power uniformly on the shaft, except where the gap occurs.

HOW TO IDENTIFY

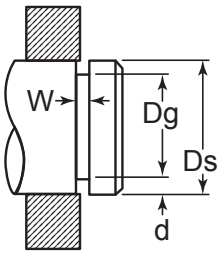
1. Verify external design and appearance.
2. Measure the shaft diameter (Ds).
3. Measure the ring thickness (T).
4. Find the part in the chart.



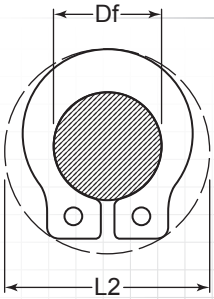
Ring Dimensions



Without Groove



Optional Use in Groove
SHF-023 – SHF-075



Clearance Diameter
Expanded Over Shaft

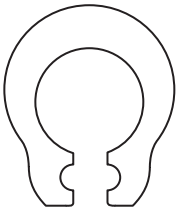
Item #	Shaft Diameter			Groove Size					Ring Size & Weight					Clearance
				Diameter		Width		Depth	Free Diameter		Thickness[2]		Weight Per 1,000 pcs.	Released over shaft
	Ds		Ds	Dg	Tol.	W	Tol.	d	Df	Tol.	T	Tol.	lbs.	L2
	from	to												
SHF-006	.058"	.060"	–	Not recommended for use with grooves					.055"	+.002/-.003"	.015"	±.002"	.030	.21"
SHF-007	.078"	.080"	0.078" (5/64)						.074"	+.002/-.003"	.025"	±.002"	.08	.24"
SHF-009	.092"	.096"	0.093" (3/32)						.089"	+.002/-.003"	.025"	±.002"	.10	.26"
SHF-012	.123"	.127"	0.125" (1/8)						.120"	+.002/-.003"	.025"	±.002"	.24	.33"
SHF-015	.154"	.158"	0.156" (5/32)						.150"	+.002/-.004"	.025"	±.002"	.30	.36"
SHF-018	.185"	.189"	0.187" (3/16)						.181"	+.002/-.004"	.035"	±.003"	.55	.44"
SHF-019	.195"	.199"	–						.187"	+.003/-.003"	.032"	±.003"	.45	.43"
SHF-023	.234"	.238"	0.234" (15/64)	.228"	+.0005/-.0015"	.041"	+.003/ -.000"	.004"	.224"	+.003/-.003"	.035"	±.003"	.76	.48"
SHF-025	.248"	.252"	0.250" (1/4)	.240"	+.0005/-.0015"	.041"		.005"	.238"	+.002/-.004"	.035"	±.003"	.74	.49"
SHF-031	.310"	.316"	0.312" (5/16)	.303"	+.0005/-.0015"	.048"		.005"	.298"	+.003/-.005"	.042"	±.003"	1.39	.68"
SHF-037	.373"	.379"	0.375" (3/8)	.361"	+.001/-.002"	.048"	+.004/ -.000"	.007"	.354"	+.003/-.005"	.042"	±.003"	1.72	.74"
SHF-043	.434"	.440"	0.437" (7/16)	.419"	+.001/-.002"	.056"		.009"	.412"	+.003/-.005"	.050"	±.003"	2.61	.81"
SHF-050	.497"	.503"	0.500" (1/2)	.478"	+.001/-.002"	.056"		.011"	.470"	+.004/-.006"	.050"	±.003"	2.91	.90"
SHF-062	.622"	.628"	0.625" (5/8)	.599"	+.001/-.002"	.069"		.013"	.593"	+.004/-.006"	.062"	±.004"	5.70	1.06"
SHF-075	.745"	.755"	0.750" (3/4)	.718"	+.002/-.003"	.069"		.016"	.706"	+.004/-.006"	.062"	±.004"	6.88	1.32"

TO ORDER DIFFERENT MATERIAL/FINISHES, APPEND SUFFIX WITH YOUR CHOICE:
"NONE" • -BC • -SS • -ZD • -Z3

Additional attribute data on adjacent page. ▶

ALTERNATE DESIGN

Optional Lug Design

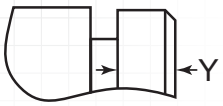


INSTALLATION TOOLS AVAILABLE, SEE PAGE 248

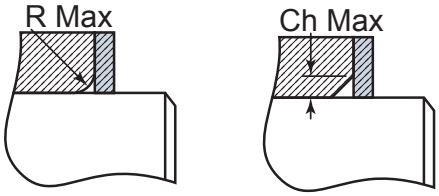
EXTERNAL – FRICTION SHAFT RING

SUFFIX	MATERIAL/FINISH
###	= CARBON SPRING STEEL, PHOSPHATE
###-BC	= BERYLLIUM COPPER, PLAIN
###-SS	= PH 15-7 MO STAINLESS STEEL, PLAIN
###-ZD	= CARBON SPRING STEEL, ZINC YELLOW
###-Z3	= CARBON SPRING STEEL, ZINC TRIVALENT

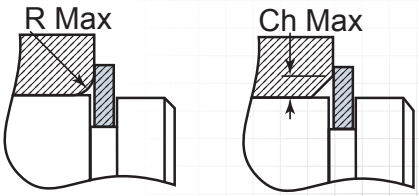
Material/finish combinations may not be available in all sizes.
More finishes available, see page 22 for a complete listing.



Edge Margin (Y)



Maximum Corner Radius (R Max) & Chamfer (Ch Max) for Retained Part (without Grooves)



Maximum Corner Radius (R Max) & Chamfer (Ch Max) for Retained Part (with Grooves)

Item #	Thrust Load[1] Square Corner Abutment		Allowable Corner Radii & Chamfers		Max. Load w/R Max or Ch Max	Lug Height		Hole Diameter		Ring Height	RPM Limits Standard Material	Tools
	Allowable Load	Groove Safety Factor of 2										
	Pr lbs.	Pg lbs.	R Max.	Ch Max.	P'r lbs.	H	Tol.	R	Tol.	B		
SHF-006	5	Not recommended for use with grooves	.025"	.015"	Not recommended for use with grooves	.066"	±.005"	.035"	+.004/-.004"	.145"	>80,000	–
SHF-007	8		.036"	.022"		.071"	±.003"	.034"	+.004/-.004"	.184"	>80,000	–
SHF-009	8		.042"	.025"		.074"	±.003"	.034"	+.004/-.004"	.207"	>80,000	–
SHF-012	10		.054"	.032"		.078"	±.003"	.042"	+.010/-.002"	.268"	>80,000	PRC-038
SHF-015	12		.059"	.035"		.078"	±.003"	.042"	+.010/-.002"	.307"	>80,000	PRC-038
SHF-018	20		.063"	.038"		.097"	±.003"	.051"	+.010/-.002"	.364"	>80,000	PRC-038
SHF-019	30		.064"	.039"		.104"	±.008"	.051"	+.004/-.004"	.375"	>80,000	PRC-038
SHF-023	22	70	.070"	.042"	.030	.098"	±.003"	.051"	+.010/-.002"	.422"	>80,000	PRC-038
SHF-025	23	90	.072"	.043"	.030	.097"	±.003"	.051"	+.010/-.002"	.437"	77,000	PRC-038
SHF-031	25	110	.080"	.048"	.030	.141"	±.004"	.078"	+.015/-.002"	.553"	58,000	PRC-047
SHF-037	31	180	.086"	.051"	.030	.141"	±.004"	.078"	+.015/-.002"	.620"	51,000	PRC-047
SHF-043	41	290	.093"	.056"	.030	.151"	±.004"	.078"	+.015/-.002"	.701"	44,000	PRC-070
SHF-050	46	390	.100"	.060"	.040	.158"	±.004"	.078"	+.015/-.002"	.768"	40,000	PRC-070
SHF-062	61	570	.120"	.072"	.045	.180"	±.004"	.078"	+.015/-.002"	.948"	32,000	PRC-070
SHF-075	66	850	.125"	.075"	.050	.233"	±.004"	.120"	+.015/-.002"	1.115"	25,000	PRC-070

◀ *Additional attribute data on adjacent page.*

Larger sizes may be available upon request.

1 Values shown apply to rings installed on a shaft made of low carbon steel. For more information on thrust load and safety factor see pages 14 & 15.

2 For plated rings add .002" to the listed maximum thickness. Maximum ring thickness (when used in groove) will be a minimum of .0002" less than the listed groove width (W) minimum.

HARDNESS RANGES: SHF RINGS

Material		*Size Range*	*Scale*	*Rockwell Hardness*
(blank)	Carbon Steel, (SAE 1060-1090)	6 – 9 12 – 23 25+	15N 30N C	83.5 – 86 65 – 69.5 46 – 51
-SS	Stainless Steel, (PH 15-7 Mo)	9 12 – 23 25+	15N 30N C	82.5 – 86 63 – 69.5 44 – 51
-BC	Beryllium Copper	9 12 – 23 25+	15N 30N C	77 – 82 54 – 62 34 – 43