

GC89...R

BAR CLAMP FOR HOCKEY PUK DEVICES

Clamping total thickness of assembly
 from 0mm to 129mm

Pre-loaded to the specific clamping
 force ($F = 12 \div 24$ kN)

Maximum device diameter: $L = 76$ mm

Surface passivation to provide extra protection

Various lengths of bolts and insulating cups

Round shaped clamping head for even clamping
 force application

Four styles available

User friendly clamping force indicator

UL94 certified insulation material

RoHS compliant



Characteristic		Unit	Types	Notes	Values		
					Min	Typ	Max
m	Mass	g	GC89S...R		730		860
			GC89B...R		1120		1290
F	Clamping Force*	kN	GC89...12R			12	
			GC89...14R			14	
			GC89...16R			16	
			GC89...18R			18	
			GC89...20R			20	
			GC89...22R			22	
			GC89...24R			24	
ΔF	Clamping Force tolerance						$\pm 10\%$
V_{INS}	Insulation Voltage	V		50 Hz, RMS, 60 s		3000	
	Insulating Material				PPO** or PPS***		
	UL Files		PPO		E121562		
		PPS		E95746			
T	Operating temperature range	$^{\circ}C$	PPO		-30		110
			PPS		-30		230
T_{stg}	Storage temperature range	$^{\circ}C$	PPO		-20		135
			PPS		-40		210
D_s	Surface creepage distance	mm				28	
D_a	Air strike distance	mm				20.3	
CTI	Comparative Tracking Index	V	PPO	According to UL746		225.0	
			PPS	According to IEC112/3rd		250.0	
	Flammability	mm	PPO	UL94 V-1 Flame class rating		1.5	
				UL94 V-0 Flame class rating		6.0	
			PPS	UL94 V-0 Flame class rating		1.6	

* Other clamping forces available upon request: contact factory

** Polyphenylene Oxide

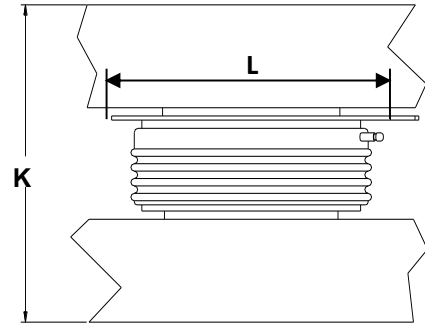
*** Polyphenylene Sulfide

ORDERING INFORMATION TABLE

Use this part numbering system to order

GC89	B	N	B	A	20	R	S	H	X	L
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	

(1) Construction type:	B = with reaction bar S = without reaction bar
(2) Insulator position:	N = on load bar R = on reaction bar
(3) Insulator code:	_ = no insulating cup other : see table below
(4) Bolt code:	_ = no bolt other : see table below
(5) Clamping force (in kN):	12÷24, with step of 1 kN
(6) Special accessories	blank = no accessories S = extra bar spacer (*) D = pressure disc in place of distribution bar
(7) Insulating cup material	0 = standart PPO insulating cup H high temperature PPS insulating cup
(8) Bolt steel type	0 = standard 8.8 steel bolts X = A2 stainless steel bolts (**)
(9) Bar thickness	0 = standart bar thickness (20mm) L = low profile bars (15mm)(***)



K: Total thickness of the assembly to be clamped
L: Max inner diameter allowable

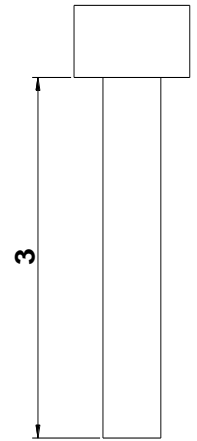
(*) Needed to reduce S_{Min} if a lower allowed clearance is required

(**) Suggested for high current applications, magnetic sensitive applications or any application working in very high E.M. fields

(***) Allowed clearance is increased by 5 mm, except for GC89SR

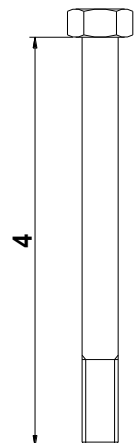
Type GC89BN...R: suggested insulator/bolt types

Allowed clearance S		Insulator choice		Bolt choice		Max height
S_{Min} [mm]	S_{Max} [mm]	(3)	Ins. Length [mm]	(4)	Bolt Length [mm]	T [mm]
0	10	A	50	W	80	102
6	20	A	50	Y	90	112
16	30	B	70	Z	100	122
26	40	B	70	A	110	132
36	50	B	70	B	120	142
40	60	C	95	C	130	158
50	70	C	95	D	140	168
60	80	C	95	E	150	178
70	90	D	120	F	160	188
80	100	D	120	G	170	198
90	110	D	120	H	180	208
100	120	E	150	I	190	218



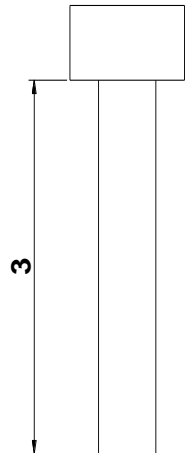
Type GC89BR...R: suggested insulator/bolt types

Allowed clearance S		Insulator choice		Bolt choice		Max height
S_{Min} [mm]	S_{Max} [mm]	(3)	Ins. Length [mm]	(4)	Bolt Length [mm]	T [mm]
0	10	A	50	W	80	102
6	20	A	50	Y	90	112
16	30	A	50	Z	100	122
26	40	B	70	A	110	132
36	50	B	70	B	120	142
40	60	C	95	C	130	158
50	70	C	95	D	140	168
60	80	C	95	E	150	178
70	90	D	120	F	160	188
80	100	D	120	G	170	198
90	110	D	120	H	180	208
100	120	E	150	I	190	218



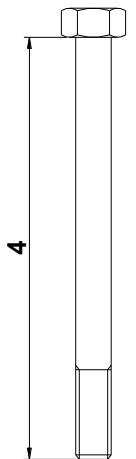
Type GC89SN...R: suggested insulator/bolt types

Allowed clearance S		Insulator choice		Bolt choice		Max height
S _{Min} [mm]	S _{Max} [mm]	(3)	Ins. Length [mm]	(4)	Bolt Length [mm]	T [mm]
0	14	Z	34	V	75	83
5	19	A	50	W	80	88
15	29	A	50	Y	90	98
25	39	B	70	Z	100	108
35	49	B	70	A	110	118
45	59	B	70	B	120	128
49	69	C	95	C	130	138
59	79	C	95	D	140	148
69	89	C	95	E	150	158
79	99	D	120	F	160	168
89	109	D	120	G	170	178
99	119	D	120	H	180	188

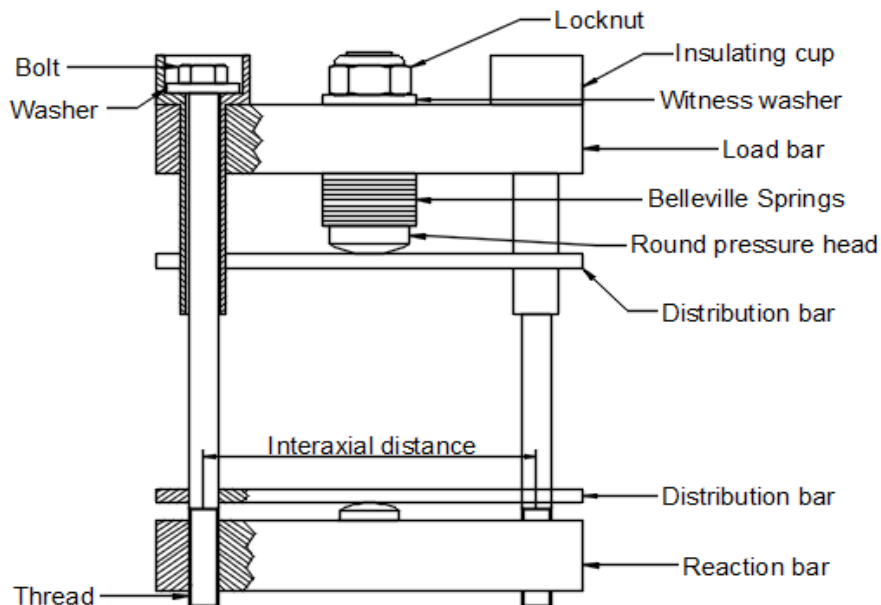


Type GC89SR...R: suggested insulator/bolt types

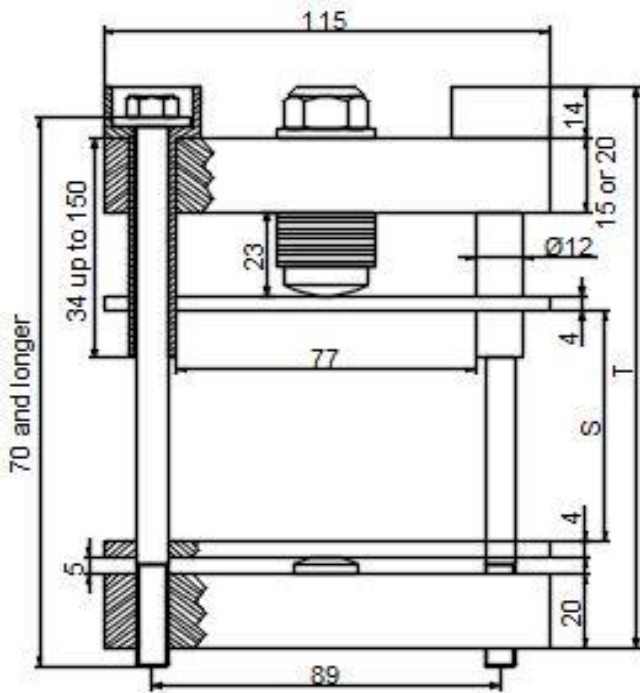
Allowed clearance S		Insulator choice		Bolt choice		Max height
S _{Min} [mm]	S _{Max} [mm]	(3)	Ins. Length [mm]	(4)	Bolt Length [mm]	T [mm]
15	29	Z	34	U	70	106
20	34	Z	34	V	75	111
25	39	A	50	W	80	116
35	49	A	50	Y	90	126
45	59	B	70	Z	100	136
55	69	B	70	A	110	146
65	79	B	70	B	120	156
69	89	C	95	C	130	172
79	99	C	95	D	140	182
89	109	C	95	E	150	192
99	119	D	120	F	160	202
109	129	D	120	G	170	212



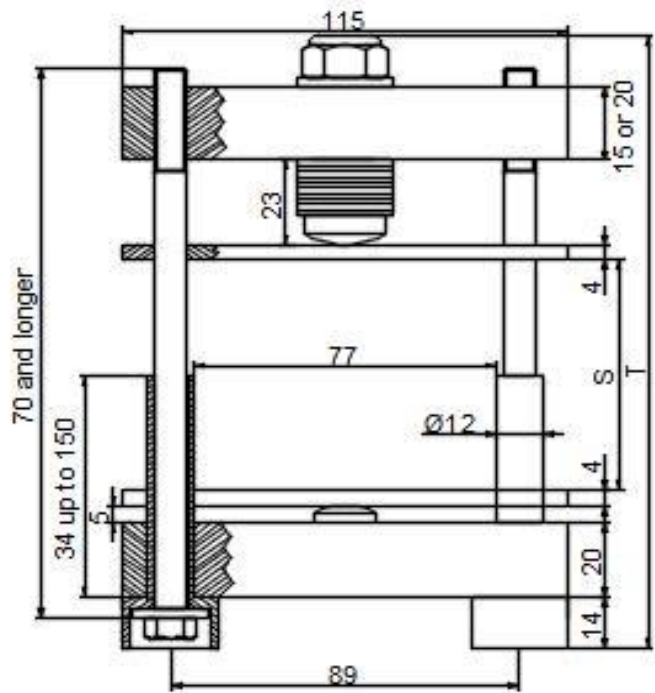
BAR CLAMP COMPONENTS LEGEND



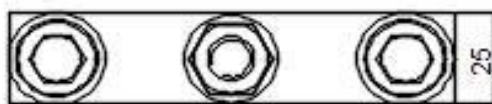
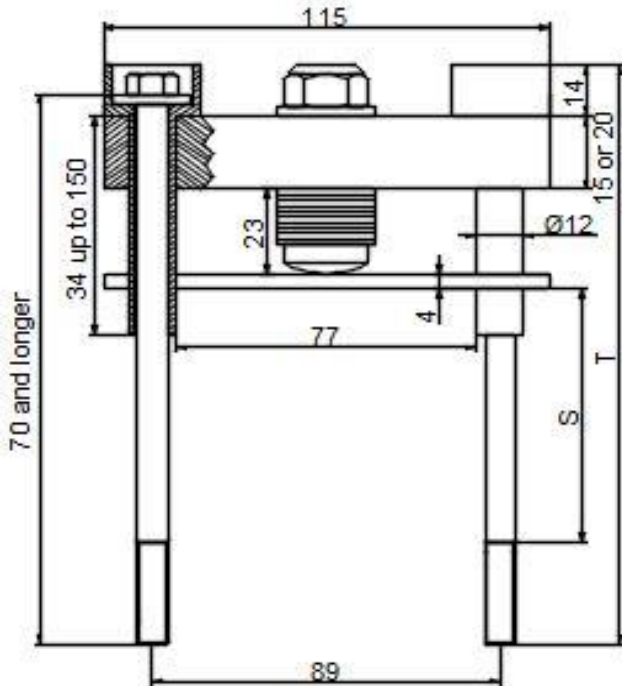
BAR CLAMP OUTLINES



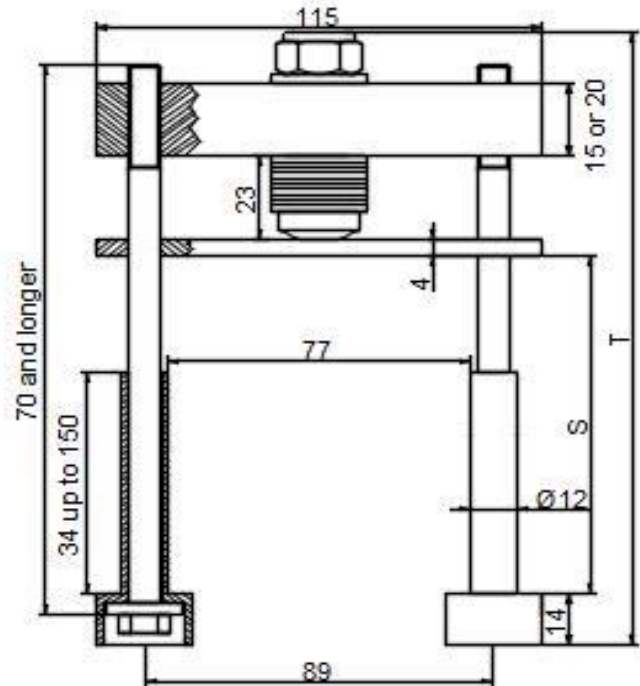
GC89BN...R



GC89BR...R

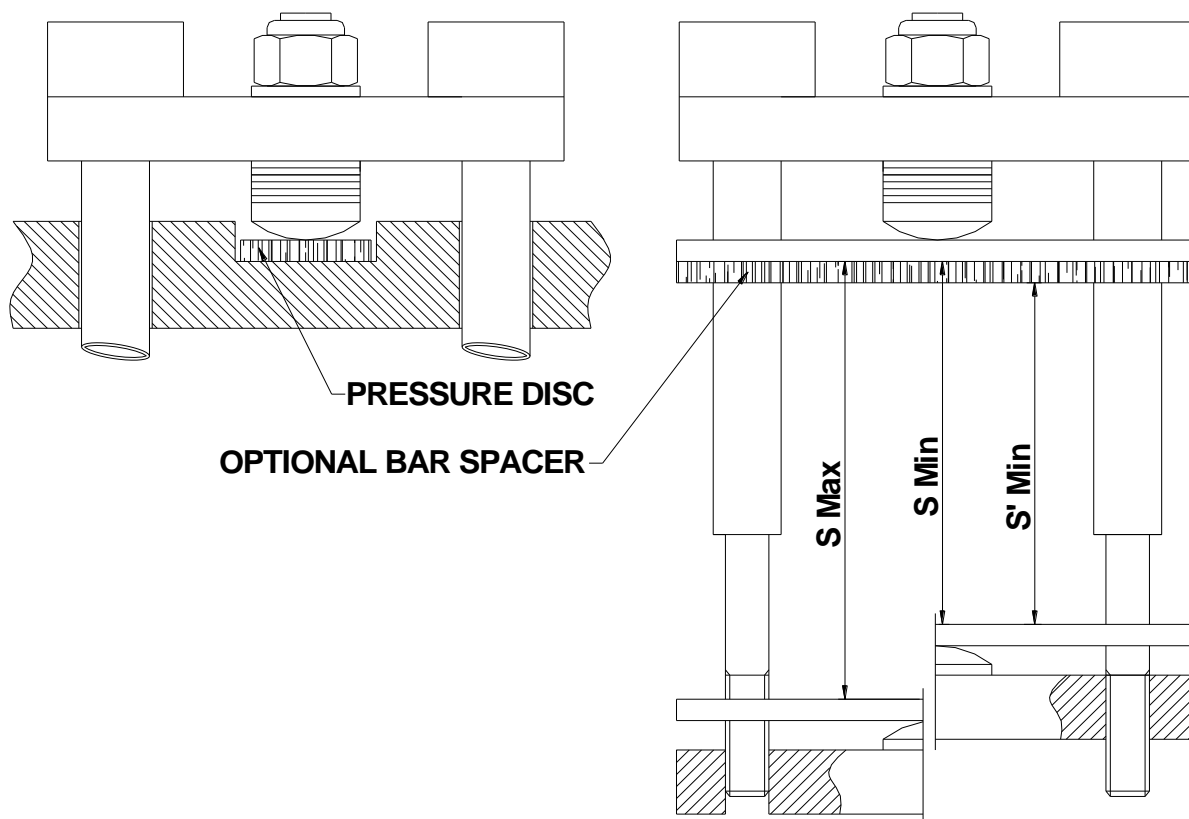


GC89SN...R



GC89SR...R

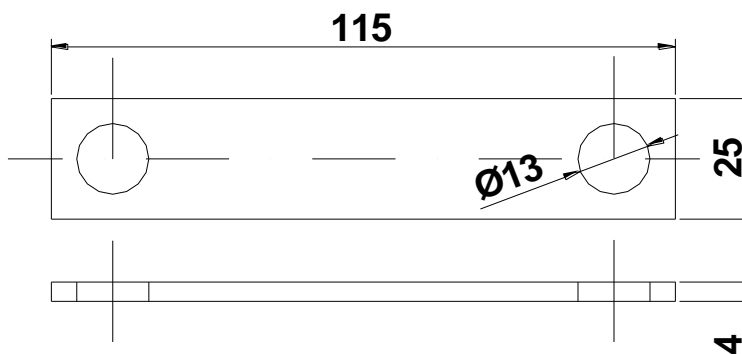
Dimensions in mm - Tolerances according to ISO 2768 MK



SPECIAL ACCESSORIES

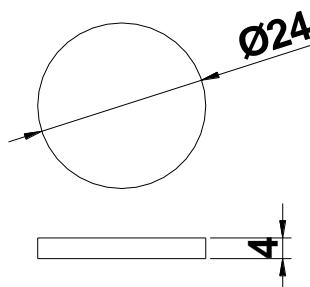
The following special accessories are available on request (see ordering information table)

Bar spacer



Pressure disc

Useful for grooved heatsink
Suggested groove diameter 27mm +/- 0.5



Dimensions in mm - Tolerances according to ISO 2768 MK

In the interest of product improvement Green Power Solutions reserves the right to change any specification given in this data sheet without notice.