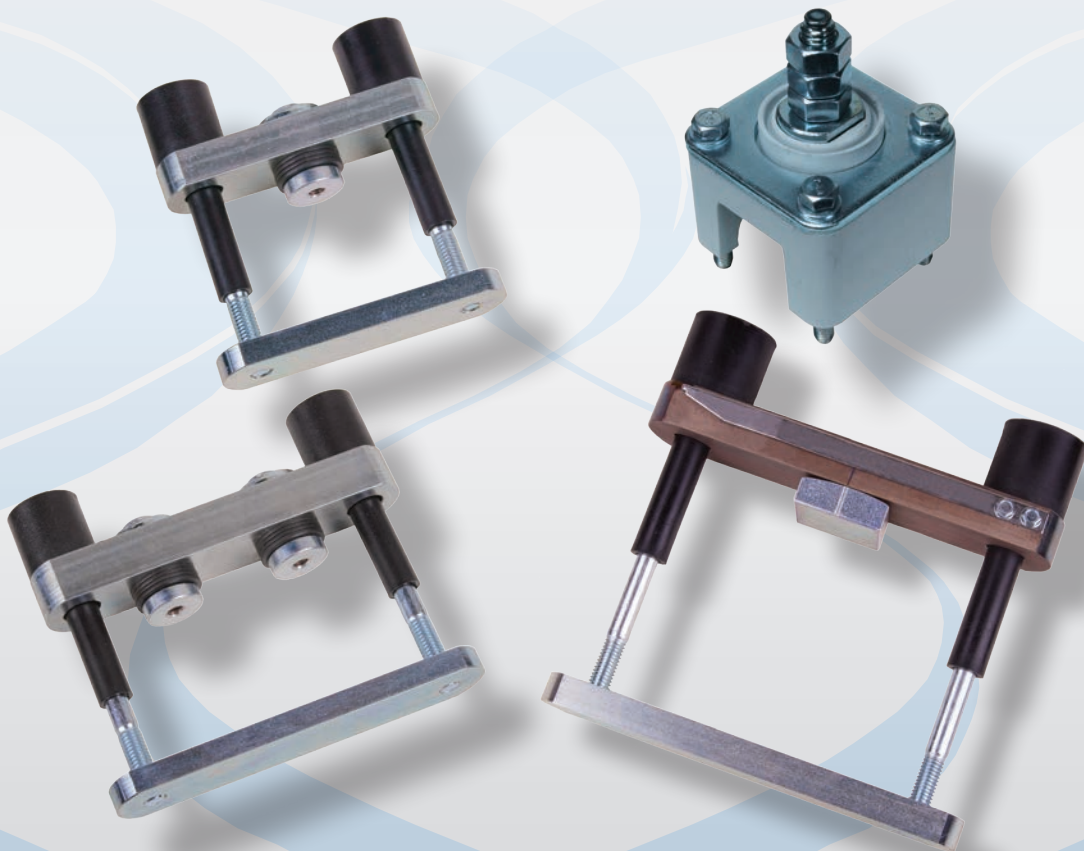


# Power Semiconductor Clamps



For Disc (Puk) Semiconductors  
19mm to 150mm Pole Diameter

[www.chtechnology.com](http://www.chtechnology.com)

800.274.4284

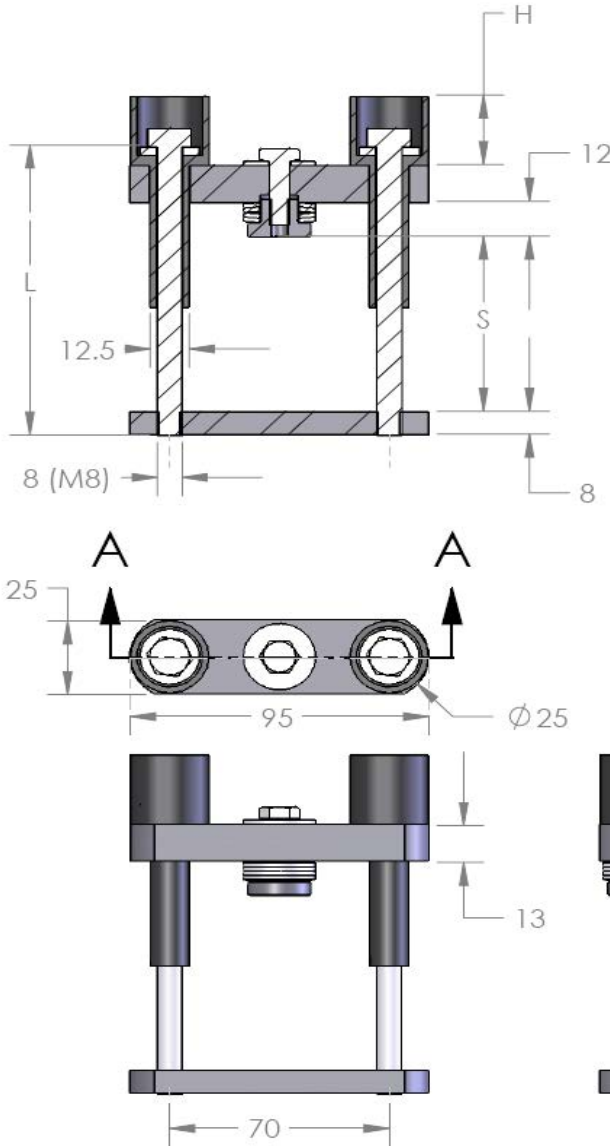


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C170A Bar Clamps .....	7
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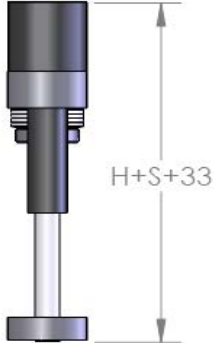
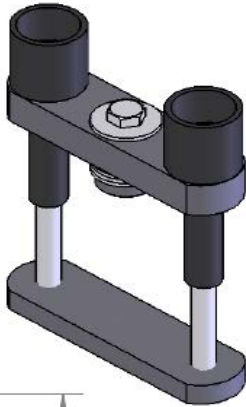
**Clamp Mounting Instructions:**

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**C070D KNS Bar Clamps**  
WITH PRECALIBRATED FORCE  
BOLT INTERAXIS – 70 MM  
PRESET PRESSURES 5, 9.8 KN  
MAXIMUM PUK DIAMETER – 56MM



<b>Bolt Length Calculator</b>		
NOTE: ALL DIMENSIONS ARE IN MM		
L	S MIN	S MAX
70	18	30
80	28	40
90	38	50
100	48	60
110	58	70
120	68	80



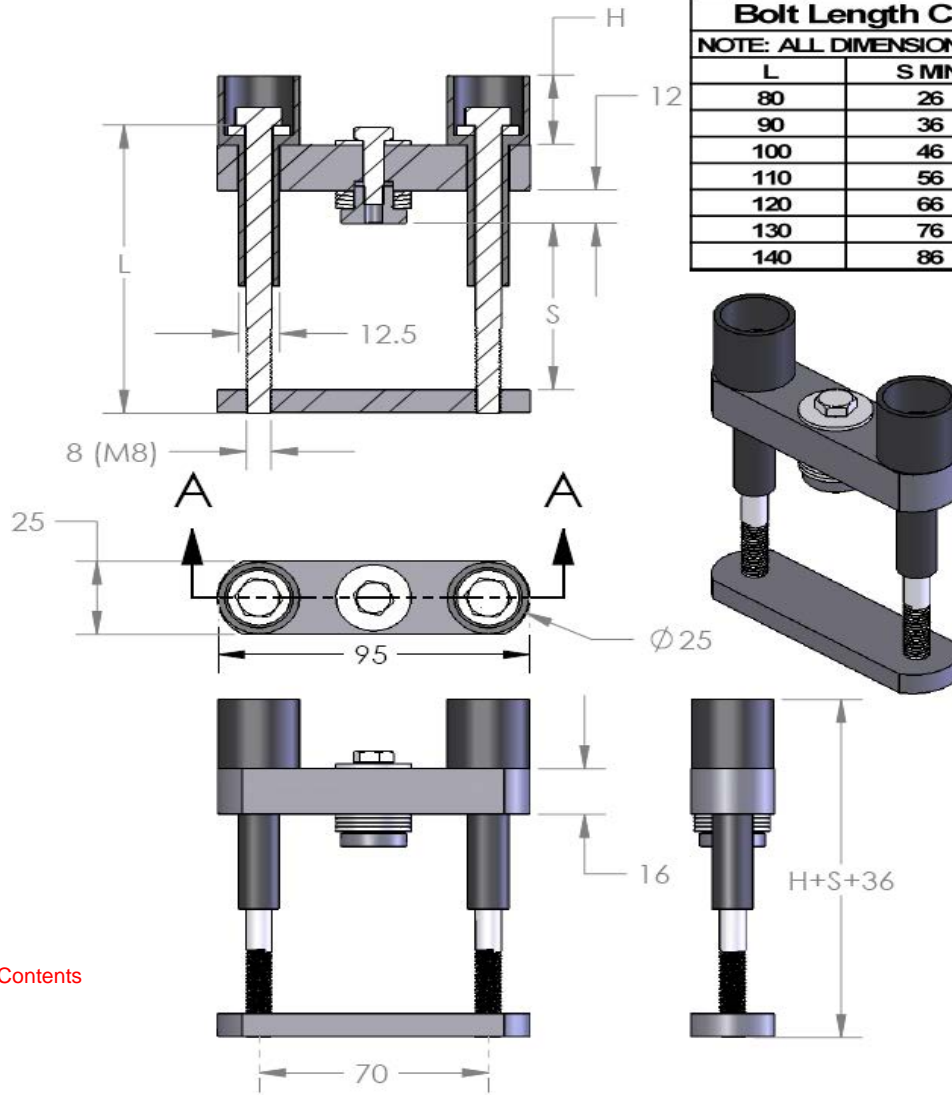
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ORDERING INFORMATION EXAMPLE C070D-5KNS(H) -90  
CLAMP MODEL  $\uparrow$   $\uparrow$   $\uparrow$  BOLT LENGTH  
PRECALIBRATED CLAMPING FORCE = 5KN  $\uparrow$  "H" DENOTES HIGH TEMP INSULATOR  
Note: Additional bolt lengths available

Note: Bolt insulator dimension "H" available in either 14mm or standard 24mm height.  
Standard insulator working temperature is 105 deg. C, insulation voltage 4 KV.  
For high temperature insulator specifications, see page 11.

**C070D-14KNS Bar Clamps**

WITH PRECALIBRATED FORCE  
BOLT INTERAXIS – 70 MM  
PRESET PRESSURE UP TO 14 KN  
MAXIMUM PUK DIAMETER – 56MM



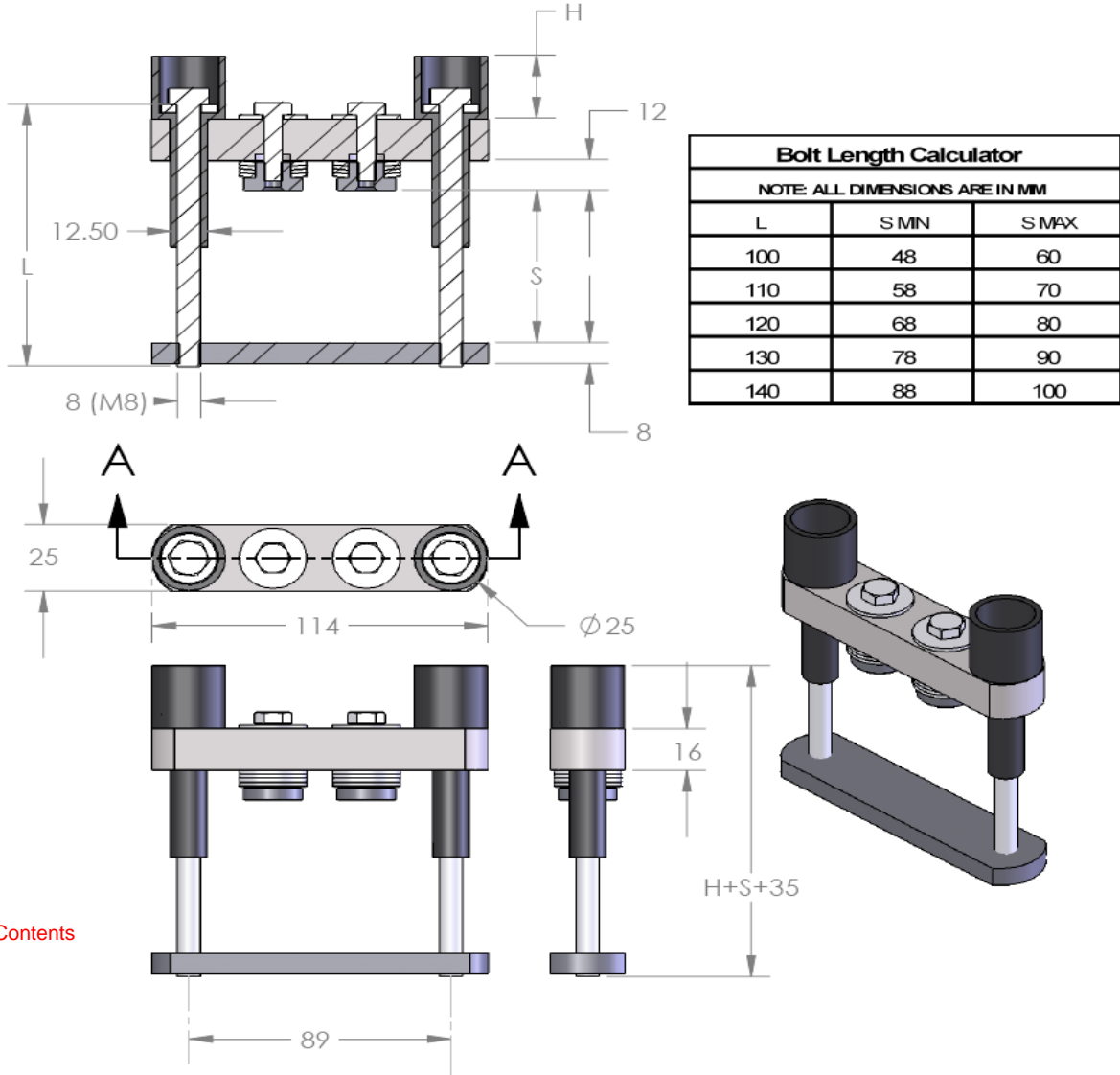
Bolt Length Calculator		
NOTE: ALL DIMENSIONS ARE IN MM		
L	S MIN	S MAX
80	26	38
90	36	48
100	46	58
110	56	68
120	66	78
130	76	88
140	86	98

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ORDERING INFORMATION EXAMPLE: C070D-14KNS(H)-90  
 CLAMP MODEL \_\_\_\_\_ ↑  
 PRECALIBRATED CLAMPING FORCE = 14KN \_\_\_\_\_ ↑  
 BOLT LENGTH \_\_\_\_\_ ↑  
 "H" DENOTES HIGH TEMP INSULATOR  
 Note: Additional bolt lengths available

Note: Bolt insulator dimension "H" available in either 14mm or standard 24mm height.  
 Standard insulator working temperature is 105 deg. C, insulation voltage 4 KV.  
 For high temperature insulator specifications, see page 11.

**C089D KNS Bar Clamps**  
WITH PRECALIBRATED FORCE  
BOLT INTERAXIS – 89 MM  
PRESET PRESSURES 14, 18, 21 KN  
MAXIMUM PUK DIAMETER – 76MM

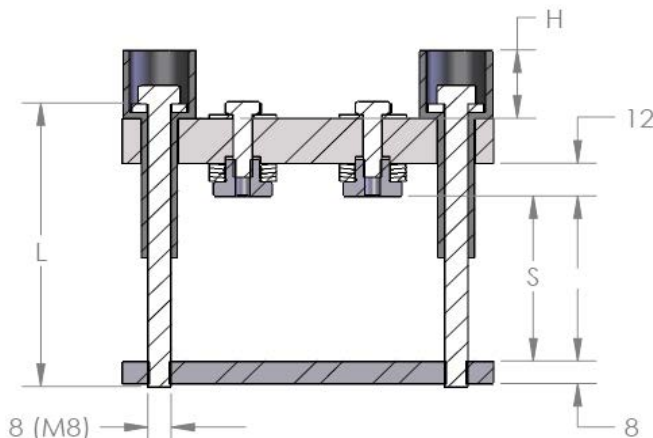


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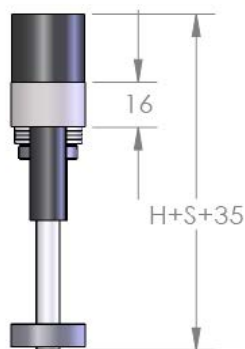
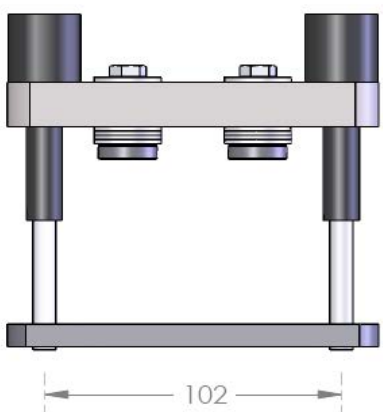
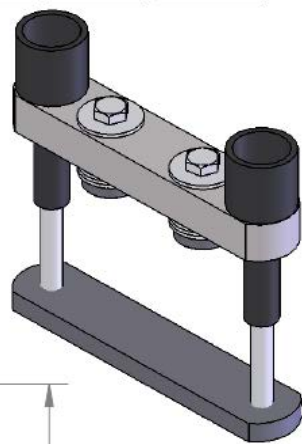
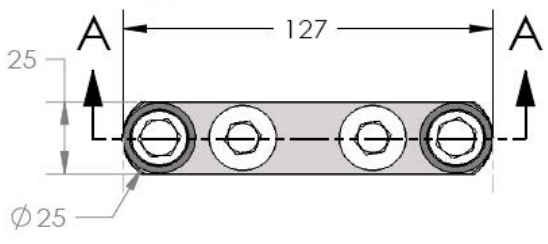
ORDERING INFORMATION EXAMPLE: C089D-18KNS(H)-110  
 CLAMP MODEL ———— ↑ ———— BOLT LENGTH  
 PRECALIBRATED CLAMPING FORCE = 18KN ———— ↑ ———— “H” DENOTES HIGH TEMP INSULATOR  
 Note: Additional bolt lengths available

Note: Bolt insulator dimension “H” available in either 14mm or standard 24mm height.  
 Standard insulator working temperature is 105 deg. C, insulation voltage 4KV.  
 For high temperature insulator specifications, see page 11.

**C102B KNS Bar Clamps**  
WITH PRECALIBRATED FORCE  
BOLT INTERAXIS – 102 MM  
PRESET PRESSURES 14, 18, 22, 24 KN  
MAXIMUM PUK DIAMETER – 88MM



<b>Bolt Length Calculator</b>		
NOTE: ALL DIMENSIONS ARE IN MM		
L	S MIN	S MAX
100	48	60
110	58	70
120	68	80
130	78	90
140	88	100
150	98	110
160	108	120
170	118	130

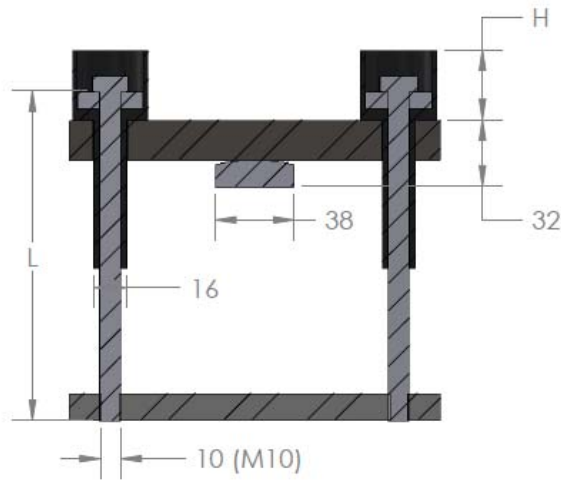


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ORDERING INFORMATION EXAMPLE: C102B-22KNS(H)-110		
CLAMP MODEL	↑	BOLT LENGTH 110MM
PRECALIBRATED CLAMPING FORCE = 22KN	↑	↑ "H" DENOTES HIGH TEMP INSULATOR
		Note: Additional bolt lengths available

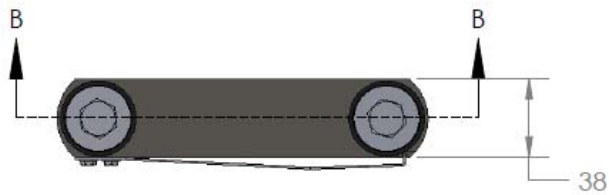
Note: Bolt insulator dimension "H" available in either 14mm or standard 24mm height.  
Standard insulator working temperature is 105 deg. C, insulation voltage 4KV.  
For high temperature insulator specifications, see page 11.

**C140-KNS Bar Clamps**  
WITH PRECALIBRATED FORCE  
BOLT INTERAXIS – 140 MM  
PRESET PRESSURES 45KN  
MAXIMUM PUK DIAMETER – 101MM

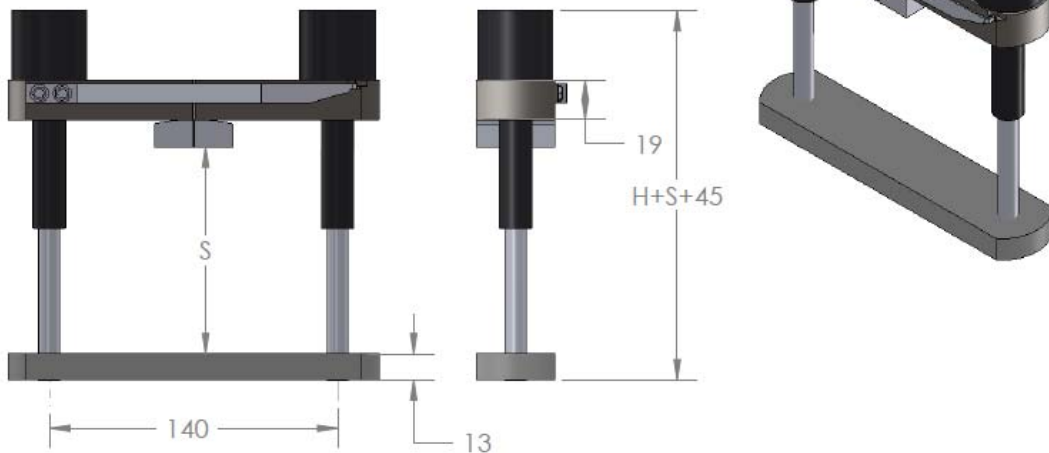


**BOLT LENGTH CALCULATOR**  
NOTE: ALL DIMENSIONS ARE IN MM

L	S MIN	S MAX
100	28	41
110	38	51
120	48	61
130	58	71
140	68	81
150	78	91
160	88	101
170	98	111



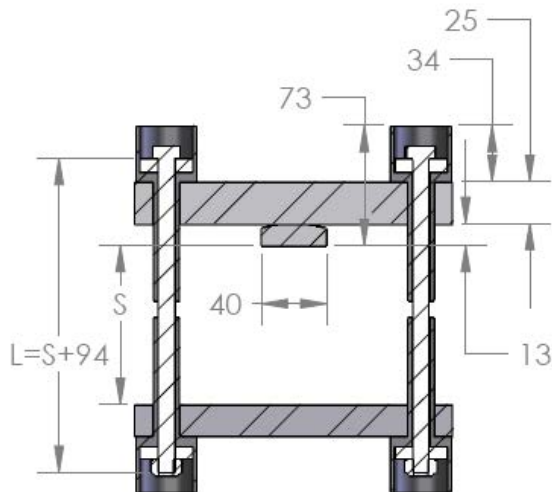
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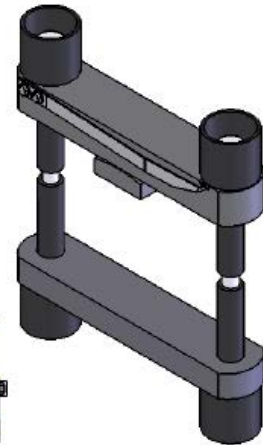
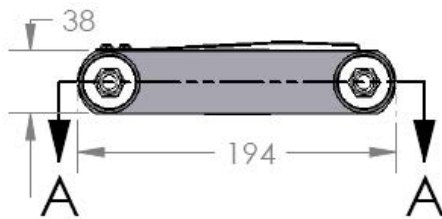
ORDERING INFORMATION EXAMPLE: C140-45KNS-200  
 CLAMP MODEL ———— ↑  
 PRECALIBRATED CLAMPING FORCE = 45KN ———— ↑  
 BOLT LENGTH= 200MM ———— ↑  
 Note: Additional bolt lengths available

Note: Insulator working temperature is 105 degree C, insulation voltage is 7 KV.

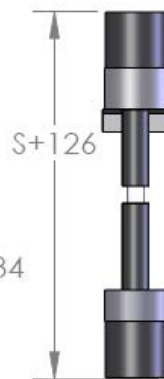
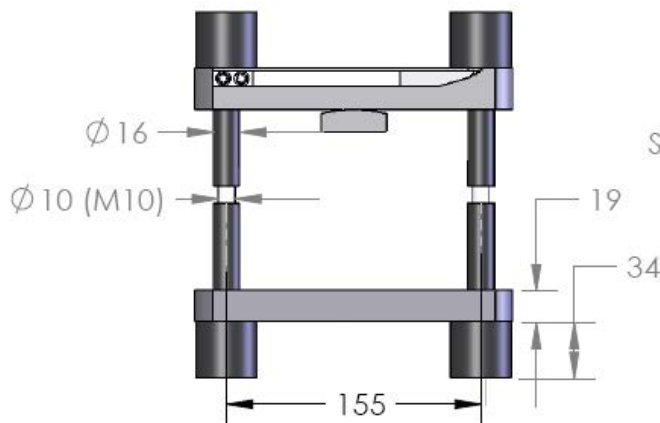
**C155A-KNS Bar Clamps**  
WITH PRECALIBRATED FORCE  
BOLT INTERAXIS – 155 MM  
PRESET PRESSURES 45, 55 KN  
MAXIMUM PUK DIAMETER – 138MM



Bolt Length Calculator		
NOTE: ALL DIMENSIONS ARE IN MM		
L	S MIN	S MAX
160	52	66
170	62	76
180	72	86
190	82	96
200	92	106
210	102	116
220	112	126



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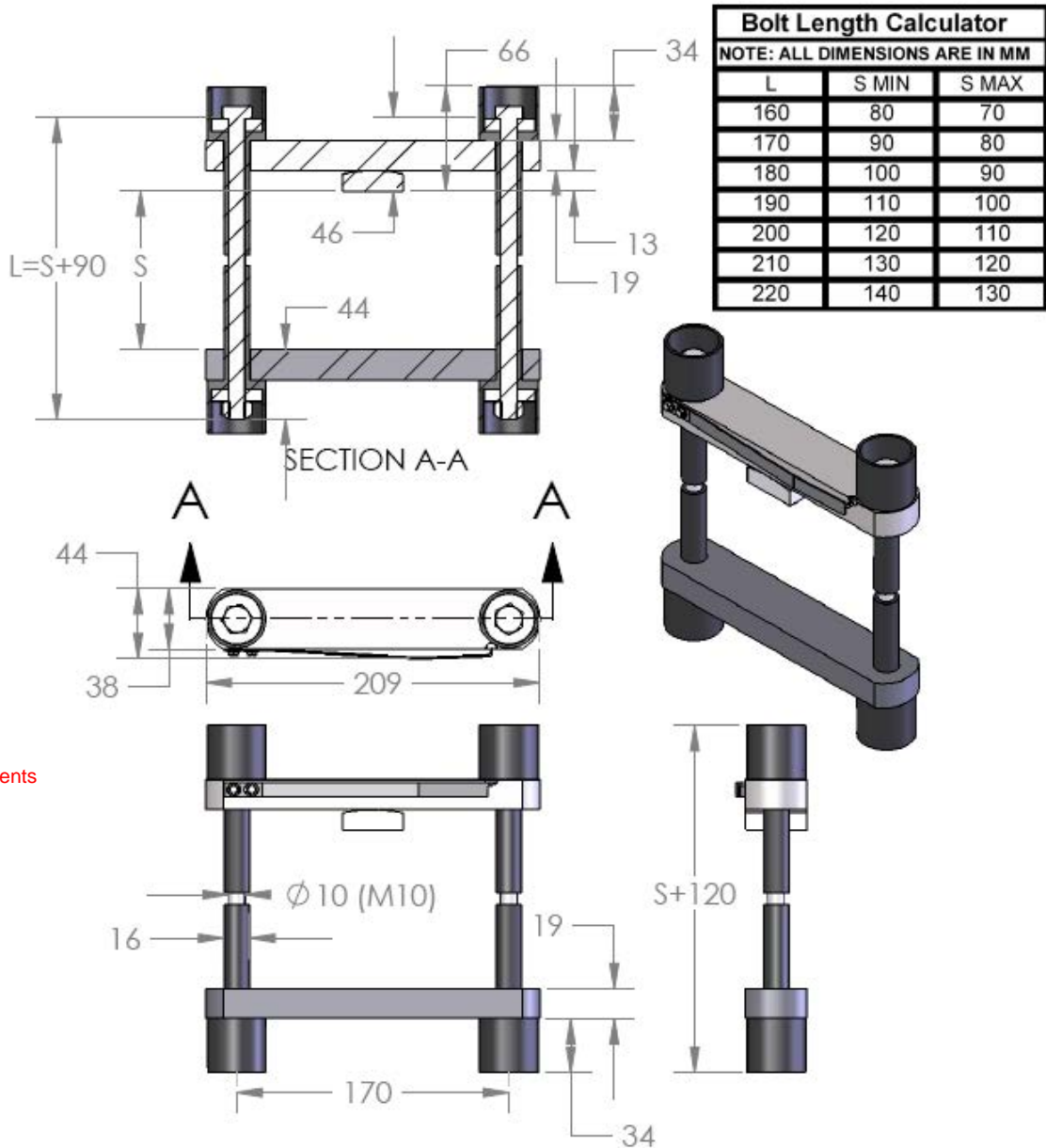


ORDERING INFORMATION EXAMPLE: C155A-45KNS-200  
 CLAMP MODEL \_\_\_\_\_ ↑ ↑  
 PRECALIBRATED CLAMPING FORCE = 45KN \_\_\_\_\_ Note: Additional bolt lengths available

Note: Insulator working temperature is 105 degree C, insulation voltage is 7 KV.



**C170A-KNS Bar Clamps**  
WITH PRECALIBRATED FORCE  
BOLT INTERAXIS – 170 MM  
PRESET PRESSURES 45, 55 KN  
MAXIMUM PUK DIAMETER – 150MM

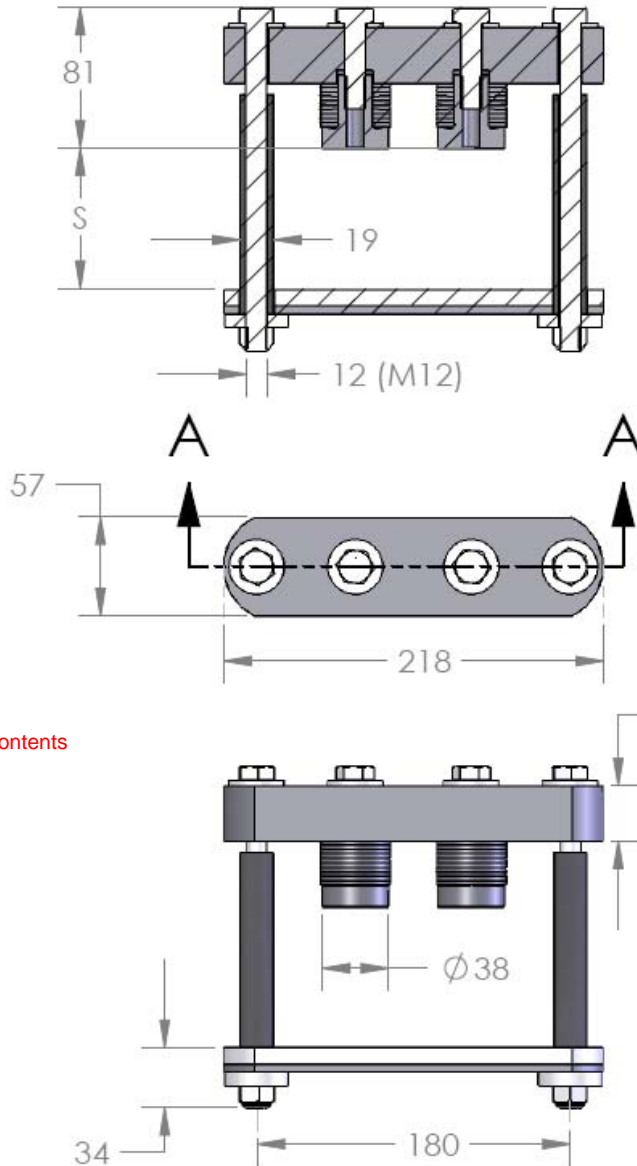


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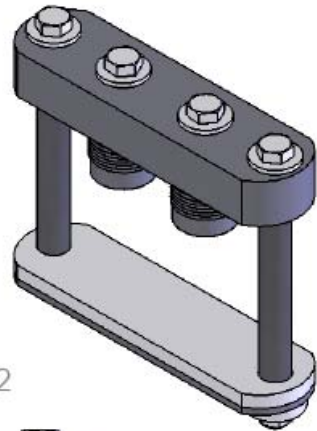
ORDERING INFORMATION EXAMPLE: C170A-45KNS-200  
 CLAMP MODEL \_\_\_\_\_ ↑ ↑ ↑ BOLT LENGTH= 200MM  
 PRECALIBRATED CLAMPING FORCE = 45KN \_\_\_\_\_ Note: Additional bolt lengths available

Note: Insulator working temperature is 105 degree C, insulation voltage is 7 KV.

**C180-80KNS Bar Clamps**  
WITH PRECALIBRATED FORCE  
BOLT INTERAXIS – 180 MM  
PRESET PRESSURES 80KN AND 95KN  
MAXIMUM PUK DIAMETER – 150MM



Bolt Length Calculator		
NOTE: ALL DIMENSIONS ARE IN MM		
L	S MIN	S MAX
180	46	70
190	56	80
200	66	90
210	76	100
220	86	110
230	96	120



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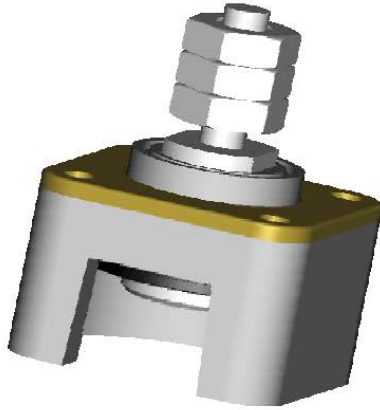
ORDERING INFORMATION EXAMPLE: C180-95KNS-210

CLAMP MODEL ———— ↑

PRECALIBRATED CLAMPING FORCE = 95KN ———— ↑

BOLT LENGTH= 210MM ———— ↑

Note: Additional bolt lengths available



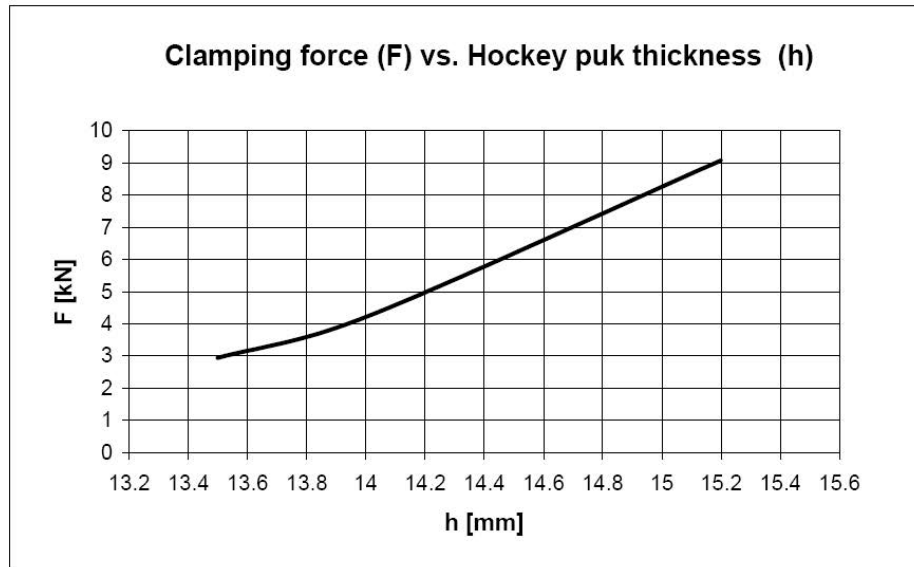
## BOX CLAMPS

**BOX CLAMP FOR HOCKEY PUKS**  
DO-200 AA, B-3, TO-200AB (A AND E TYPE)

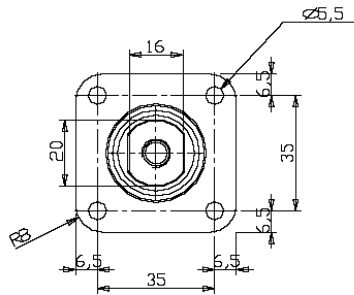
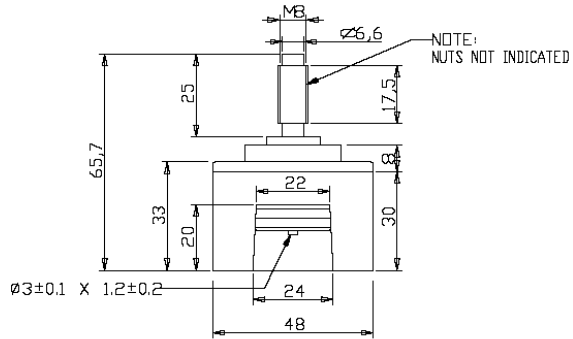
User friendly assembly  
UL 94V0 Plastic material  
M8 or M10 upper threads or threaded holes  
Rugged construction  
Self adapting to the above industry standard puks.

	SBVR-M8	SBVR-M10	SBMR-M8	SBMR-M10
<b>Characteristic</b>	<b>Value</b>	<b>Value</b>	<b>Value</b>	<b>Value</b>
Upper threaded connection	M8	M10		
Threaded hole x depth [mm]			M8 x 10	M10 x 12
Plastic body colour	Grey	Grey	Grey	Grey
Max Operating temperature	90 °C	90 °C	90 °C	90 °C
Allowed semiconductor diameter - max	42 mm	42 mm	42 mm	42 mm
Mass - without nuts and bolts	200 g	220 g	190 g	210 g

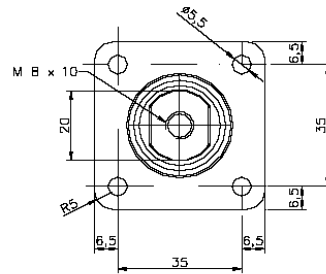
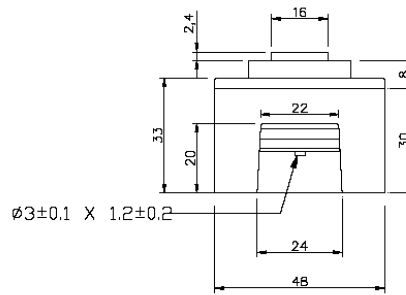
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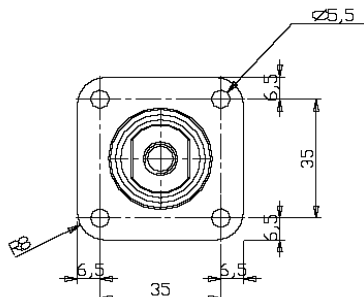
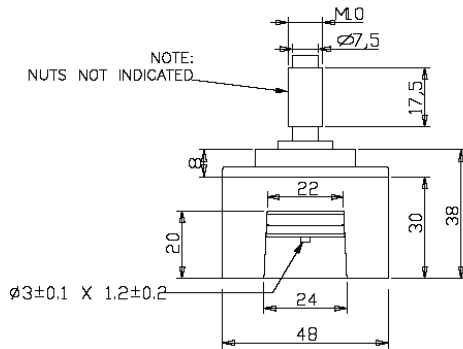
### SBVR-M8



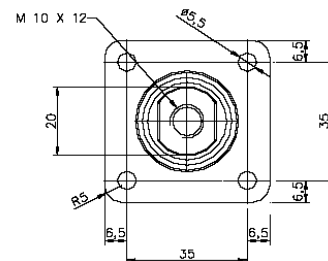
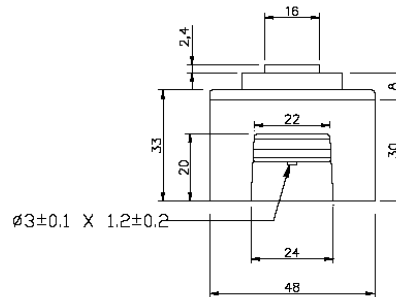
### SBMR-M8



### SBVR-M10



### SBMR-M10



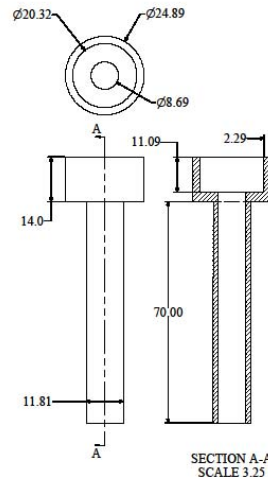
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Dimensions in mm - Tolerances according to ISO 2768MK

## High Temperature Clamp Insulator

### IB8-70S-H

For use with C & H C070, C089, C102 Bar Clamps



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**Designed for High Temperature Natural Convection Assemblies**

**Working Temperature - 170 deg. C**

**Insulation Voltage - 6 KV**

**Max Bar Clamp Compression Load - 25 KN**

#### Physical Properties of Ryton R-7-120 Polyphenylene Sulfide Resin

Nominal Engineering Properties	Ryton R-7-120BL	Test Method
Tensile Strength	135	ISO 527
Compressive Strength, MPa	265	ASTM D695
Compressive Strength, kpsa	4.0	ASTM D4812
Flammability Rating at 1.5 mm	V-0/5VA	UL 94
Dielectric Strength, V/mil	400	ASTM D149
Dielectric Strength, KV/mml	16	ASTM D149
Arc Resistance, sec	185	ASTM D495
Insulation Resistance, ohm (90° C, 95% RH, 48 hr)	$1 \times 10^{11}$	

Note : Use M8H Flat Washer with these insulators.



## MOUNTING INSTRUCTIONS FOR C070D-KNS CLAMPS

This type of clamp has preloaded cup shaped springs (Bellville Washers), which guarantee the exact clamping force and perpendicularity of the clamping force. When the washer spins free under the stack of springs it indicates the right clamping force. In order to have a correct mounting, the following is recommended:

1. The two contact surfaces of semiconductor should be covered with a thin coating of an approved electrical joint compound.
2. Locate the semiconductor on one of the two heat sinks centrally by using a locating pin. Be sure to check the polarity of the device. The semiconductor should be rotated to spread the compound.
3. Position the second heat sink on the semiconductor and locate it centrally by using a second pin and rotate the heat sink to spread the compound.
4. Mount the clamp on the heat sinks and hand tighten each bolt, checking the alignment of heat sinks and semiconductor to make sure the heat sinks are parallel.
5. Tighten alternately both bolts each time about 1/6 turn until the indicating washer spin freely without resistance. Tighten each bolt 1/10 turn more. Do not tighten beyond this point.

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[Return to C070D Clamps](#)



## MOUNTING INSTRUCTIONS C089D-KNS and C102B-KNS CLAMPS

This type of clamp has preloaded cup shaped springs (Bellville Washers), which guarantee the exact clamping force and perpendicularity of the clamping force. When the washers under the stack of bellvilles spin free it indicates the achievement of the right clamping force. In order to have a correct mounting, the following is recommended:

1. The two contact surfaces of semiconductor should be covered with a thin coating of an approved electrical joint compound.
2. Locate the semiconductor on one of the two heat sinks centrally by using a locating pin. Be sure to check the polarity of the device. The semiconductor should be rotated to spread the compound.
3. Position the second heat sink on the semiconductor and locate it centrally by using a second pin. Then slightly rotate the heat sink to spread the compound.
4. Mount the clamp on the heat sinks and hand tighten each bolt, checking the alignment of heat sinks and semiconductor to make sure the heat sinks are parallel before starting to tighten the bolts with a wrench.

### **21-24KN Clamps**

Tighten alternately both bolts each time about 1/6 turn until both indicating washers spin freely without resistance. Tighten each bolt 1/8 turn more. After 3 hours tighten each bolt an additional 1/8 of a turn.

### **14-18KN Clamps**

Tighten alternately both bolts each time about 1/6 turn until both indicating washers spin freely without resistance. Tighten each bolt 1/8 turn more. Do not tighten any more beyond this point.

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[Return to C102B Clamps](#)



## MOUNTING INSTRUCTIONS FOR C140 KNS, C155A KNS, C170A KNS CLAMPS

This type of clamp uses the elasticity of the bar material. The indicator of the load force is a tang which is fixed on one side and free on the other. The perpendicularity of the load force is guaranteed by a proper floating joint. In order to have a correct mounting, the following is recommended:

1. The two contact surfaces of semiconductor should be covered with a thin coating of an approved joint compound and then any surplus should be removed.
2. Locate the semiconductor on one of the two heat sinks centrally by using provided pin after having checked the polarity. The semiconductor should be rotated to spread the compound.
3. Position the second heat sink on the semiconductor and locate it centrally by using a second pin and rotate the heat sink to spread the compound.
4. Mount the clamp on heat sinks and hand tighten each bolt, checking the alignment of the heat sinks and semiconductor to make sure the heat sinks are parallel before starting to tighten the nuts with a wrench.
5. Tighten alternately the nuts about 1/6 turn each until the clamping force indicator arm snaps into the indent on the top bar. Tighten an additional 1/12 of a turn.

In case of disassembly of the clamp for a possible replacement of the semiconductor, before loosening the nuts, flex the force indicator arm slightly outward to the point that it gets free from the bar.

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[Return to C155A Clamps](#)

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## MOUNTING INSTRUCTIONS C180-80KN & C180-95KN CLAMPS

This type of clamp has preloaded cup shaped springs (Bellville Washers), which guarantee the exact clamping force and perpendicularity of the clamping force. When the washers under the stack of bellvilles spin free it indicates the achievement of the right clamping force. In order to have a correct mounting, the following is recommended:

1. The two contact surfaces of semiconductor should be covered with a thin coating of an approved electrical joint compound.
2. Locate the semiconductor on one of the two heat sinks centrally by using a locating pin. Be sure to check the polarity of the device. The semiconductor should be rotated to spread the compound.
3. Position the second heat sink on the semiconductor and locate it centrally by using a second pin. Then slightly rotate the heat sink to spread the compound.
4. Mount the clamp on the heat sinks and hand tighten each bolt, checking the alignment of heat sinks and semiconductor to make sure the heat sinks are parallel before starting to tighten the bolts with a wrench.
5. Alternately tighten each bolt about 1/6 of a turn until each of the indicating washers spins freely indicating proper clamp force has been achieved. Do not tighten any further than this.

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