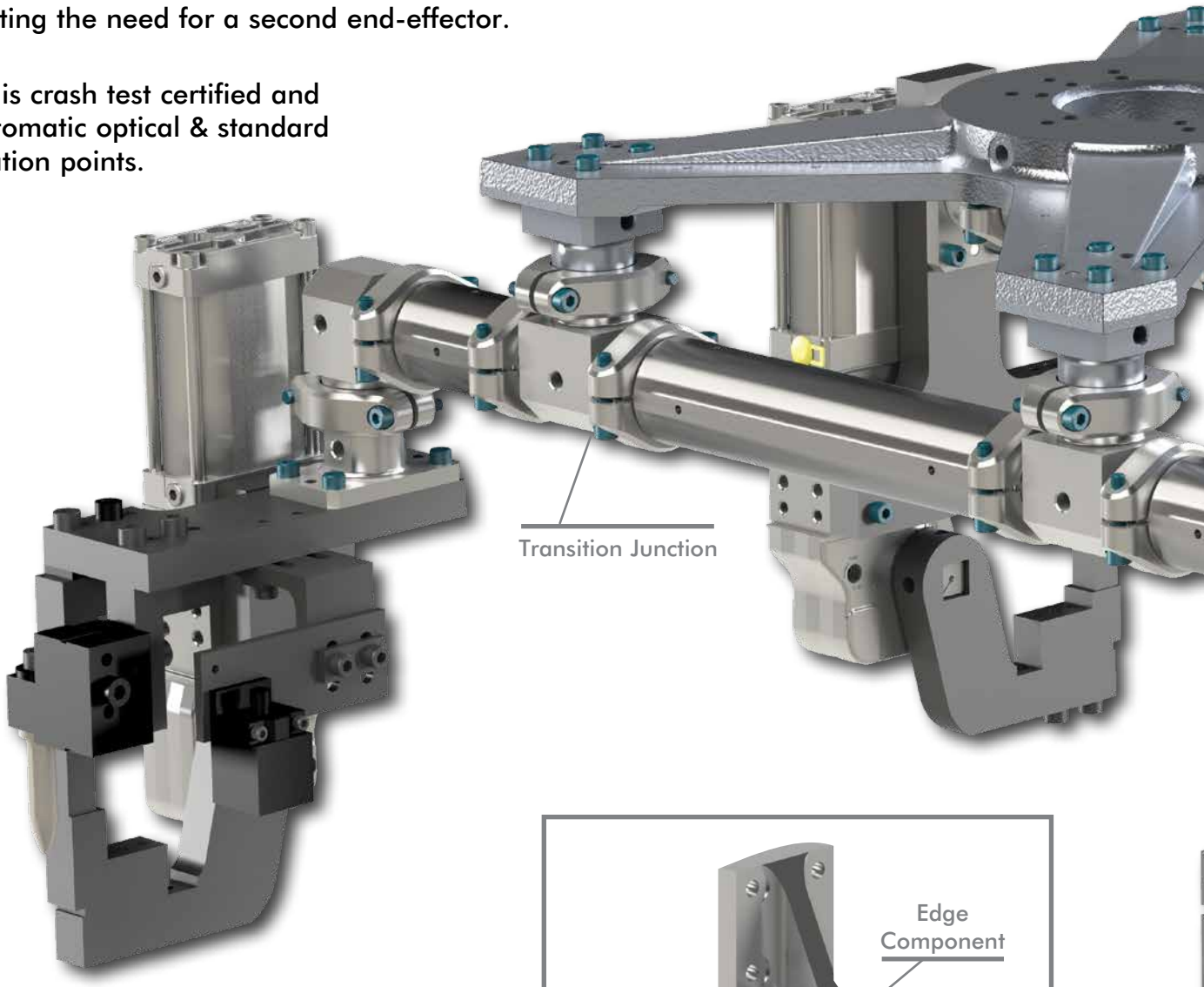
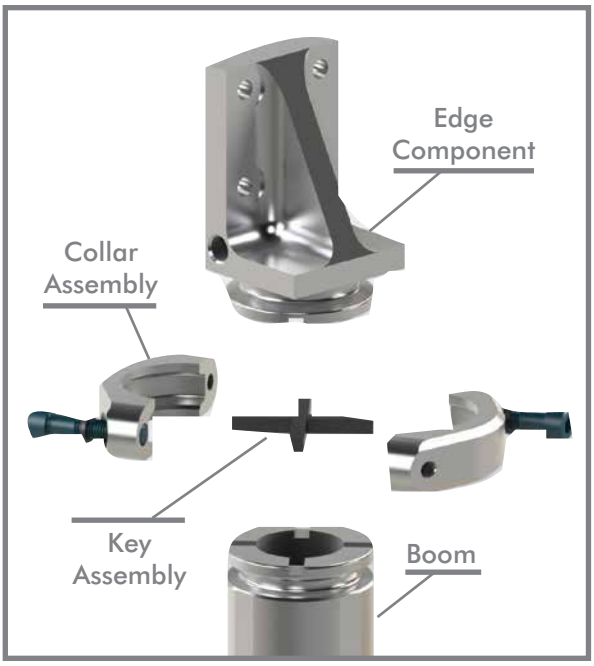
SPIDERGRIP GEOMETRIC END EFFECTOR SYSTEM

Product Overview

SpiderGrip Geometric End Effector Tooling System offers a standard cost effective solution by making it easy for each component to be replaced individually in the robotic cell, dramatically reducing production downtime and eliminating the need for a second end-effector.

This system is crash test certified and features automatic optical & standard CMM validation points.





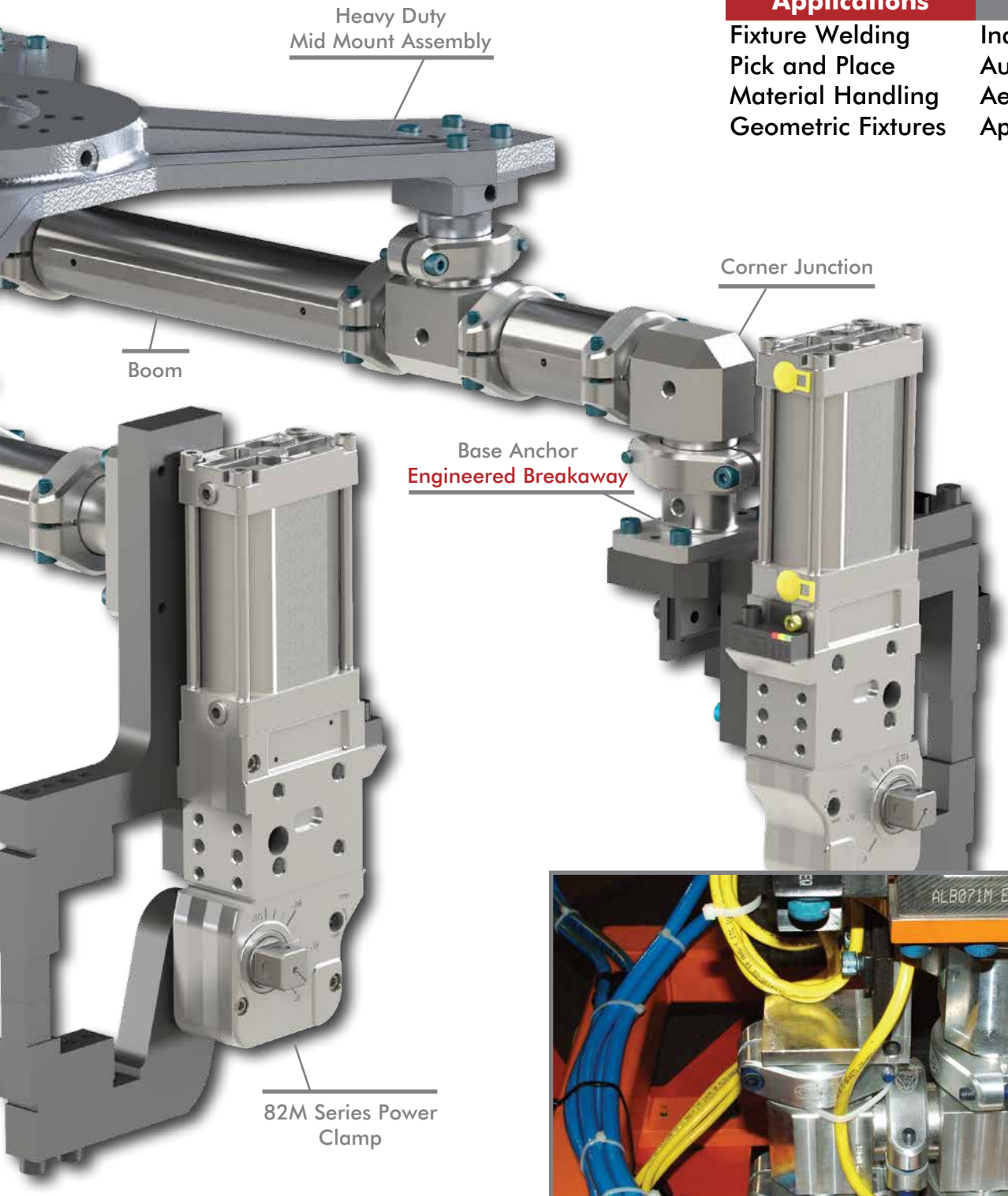
Spidergrip modular components are easily configurable and offer high strength to weight ratios while maintaining dimensional accuracy after continuous minor collisions. The patented collar/key design and engineered breakaway base anchor provides quick crash recovery.

Dimensions and technical information are subject to change without notice

SPIDERGRIP GEOMETRIC END EFFECTOR SYSTEM

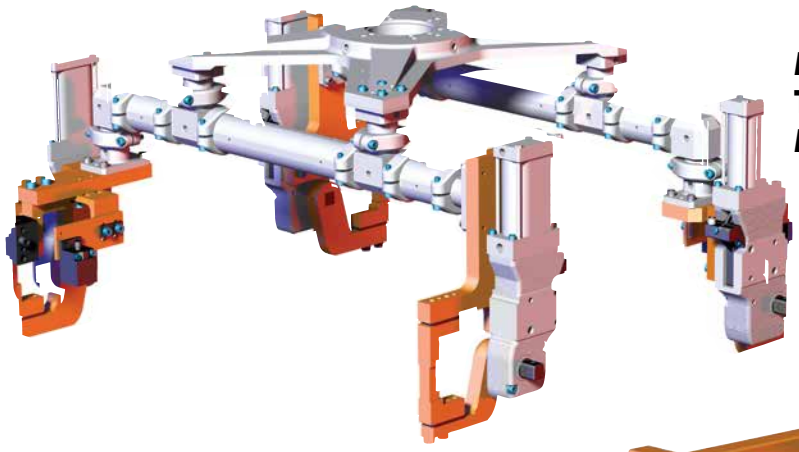
Product Overview

Most commonly used in:	
Applications	**Markets**
Fixture Welding	Industrial
Pick and Place	Automotive
Material Handling	Aerospace
Geometric Fixtures	Appliance



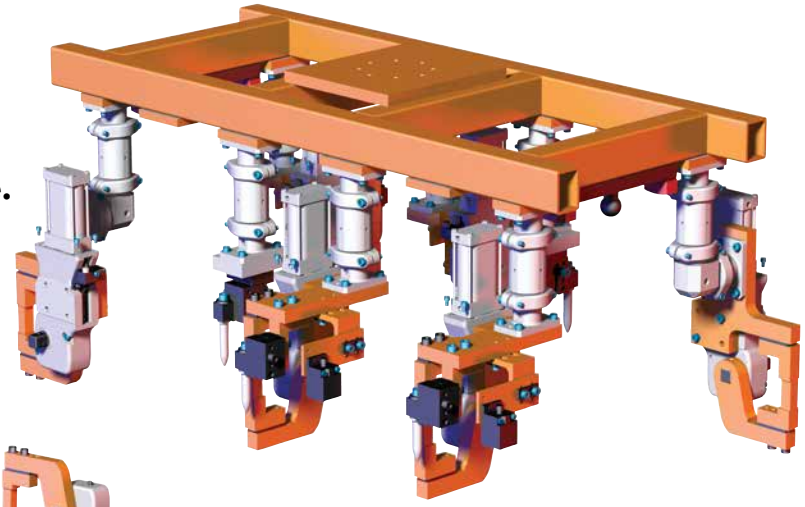
SPIDERGRIP END EFFECTOR TOOLING SYSTEMS

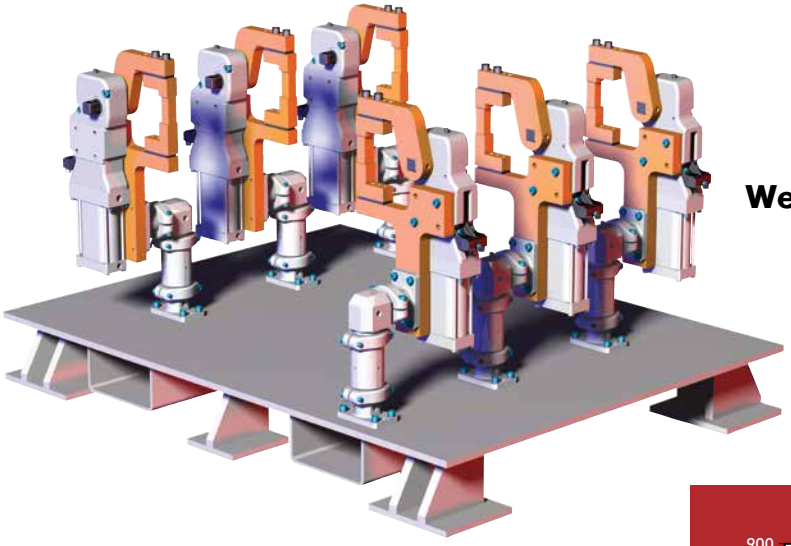
Spidergrip Tooling Components | Typical Application Build Examples



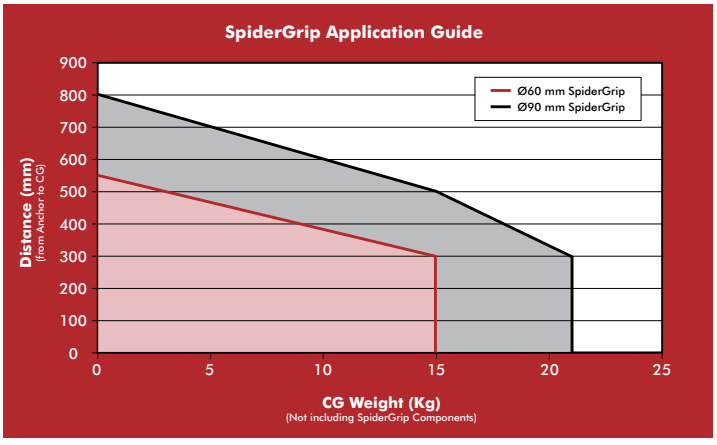
Materials Handling End Effector Tooling System with RM4 Heavy Duty Mid-Mount Assembly (RM4-STS).

Geometric End Effector Tooling System with Steel Frame Backbone.





Weld Fixture Tooling System



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SPIDERGRIP GEOMETRIC END EFFECTOR SYSTEM

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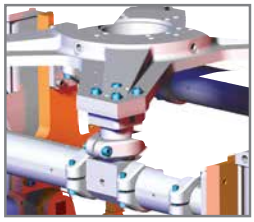
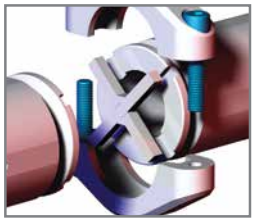


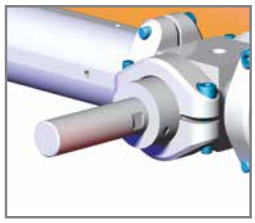
SpiderGrip Heavy Duty Mid Mount..... 5



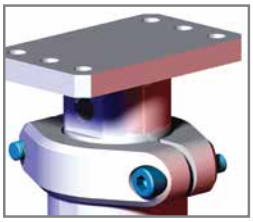
SpiderGrip Anchors and Collar Assemblies 10

SpiderGrip Booms, Adaptors, and Spacers..... 17

SpiderGrip Junction Components 21



SpiderGrip Single End Extension Mount 26

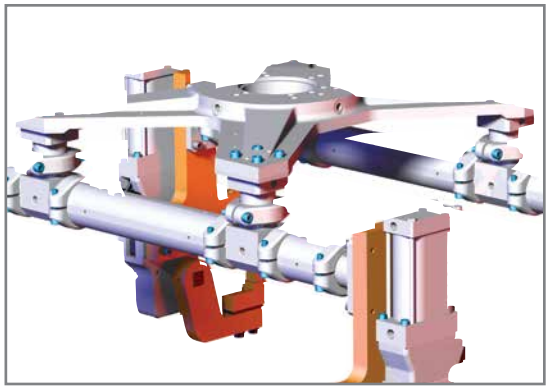


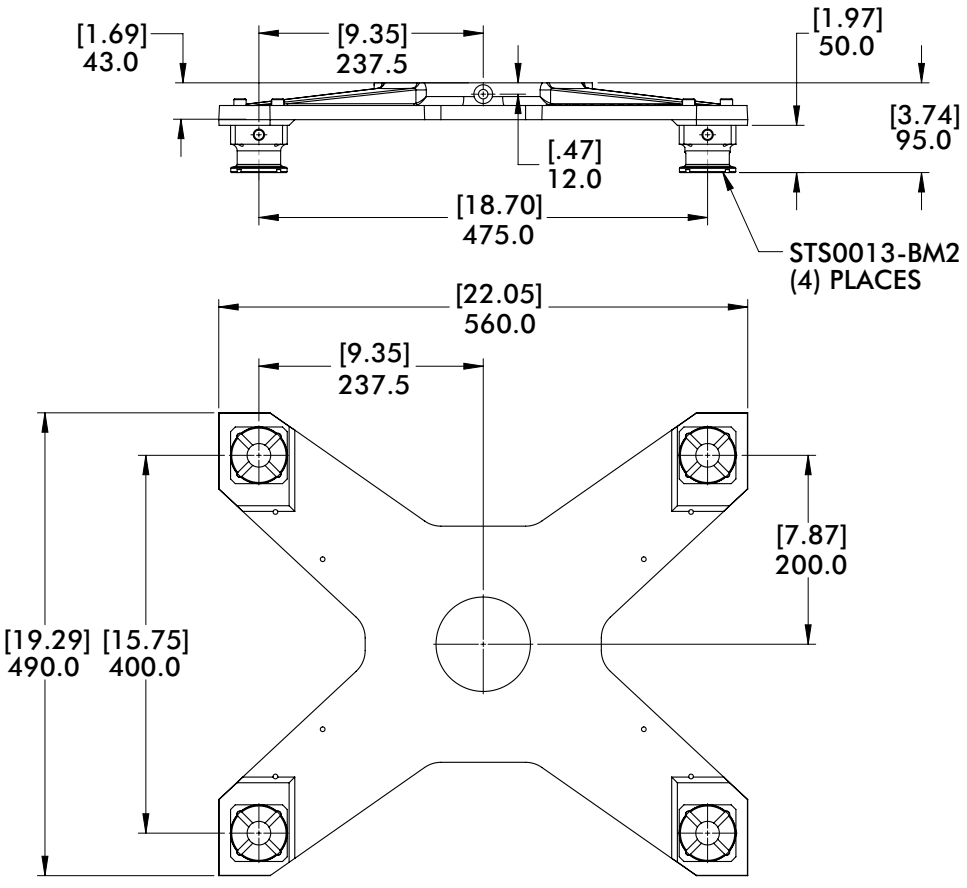
SpiderGrip Edge Mounting Components 27

SPIDERGRIP MID MOUNT ASSEMBLY

Spidergrip Tooling Components | Dimensions | How To Order

Heavy-Duty Mid Mount Assembly





RM4-STS — **RXX** — **XX**

Model

Robot Interface Pattern

Accessory (e.g. EPM-01) (Leave blank if NONE)

Weight

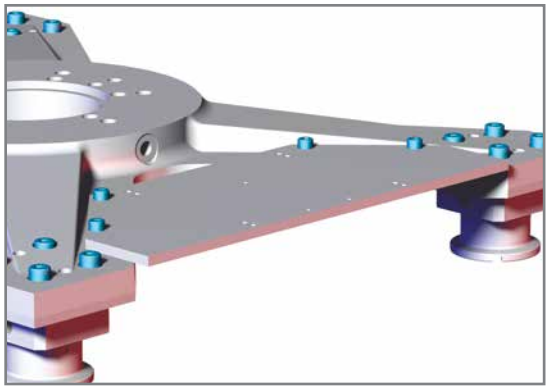
10.4 kg [22.89 lb]

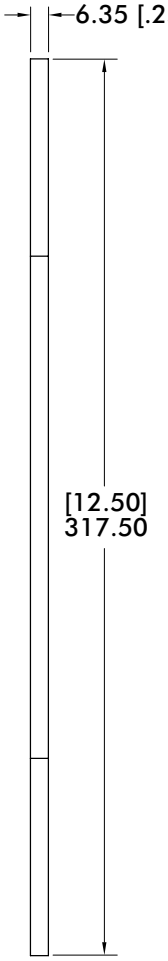
Dimensions and technical information are subject to change without notice

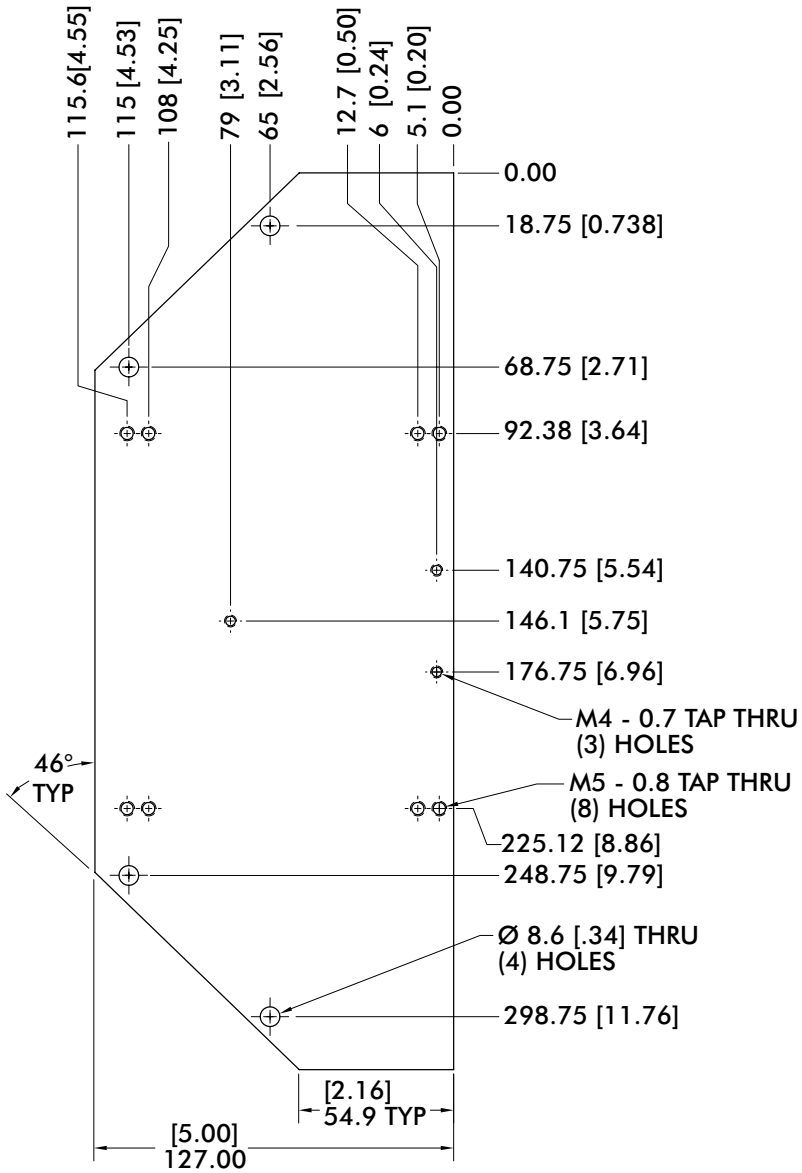
SPIDERGRIP MID MOUNT ACCESSORY PLATE

Spidergrip Tooling Components | Dimensions | How To Order

Accessory Mount Plate







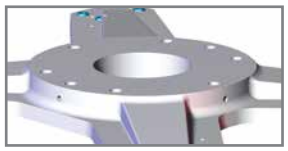
When ordering with Heavy Duty Mid Mount, please add designation "EPM-01" as shown
RM4-STS-RXX-EPM-01 or
add designation "EPM-BLK" to order blank
RM4-STS-RXX-EPM-BLK
To order separately use Model Number

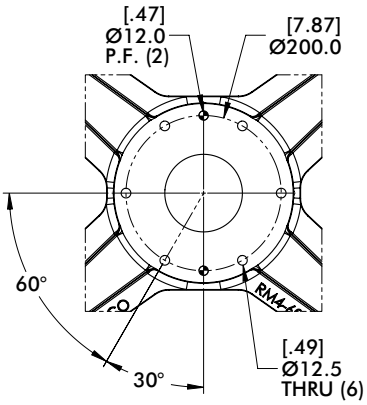
Model Number	Weight
CPI-BM2-EPM-xx	.63 kg [1.39 lb]

MID MOUNT BOLT PATTERN

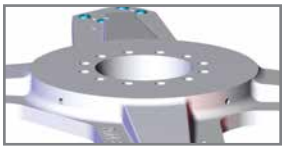
Robot Interface Bolt Patterns

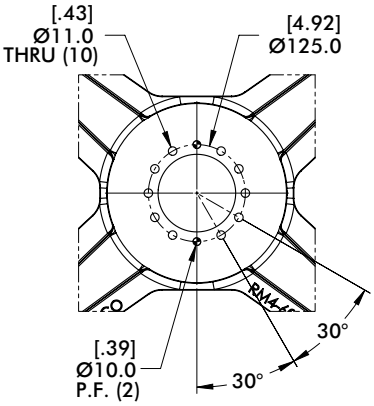
R01 (Ø200mm Bolt Circle)



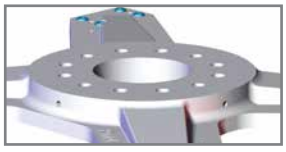


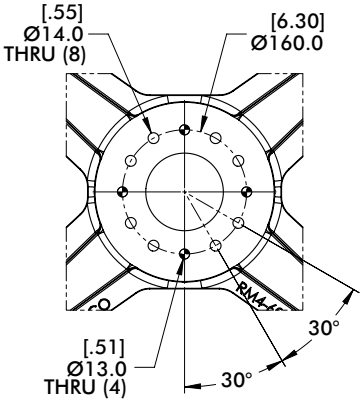
R02 (Ø125mm Bolt Circle)



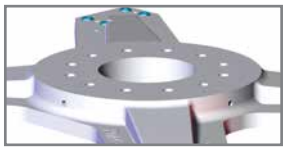


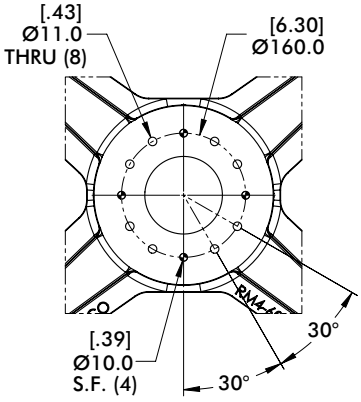
R03 (Ø160mm Bolt Circle)



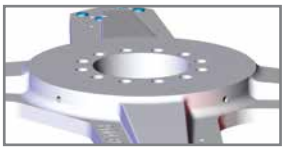


R04 (Ø160mm Bolt Circle)



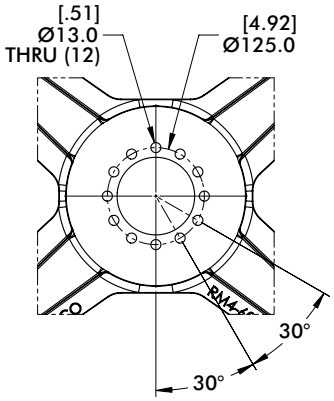


R05 (Ø125mm Bolt Circle)

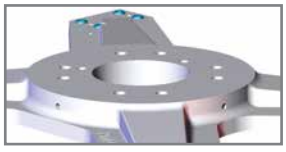


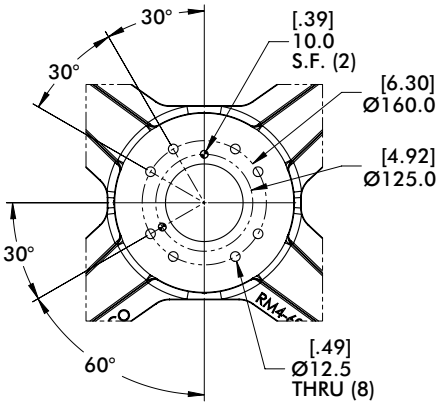
Includes Insulation

Add 1.5mm to Height (95.0 [3.74])



R06 (Ø125/160mm Bolt Circle)

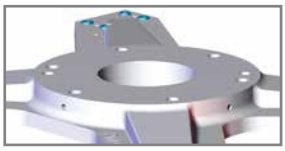


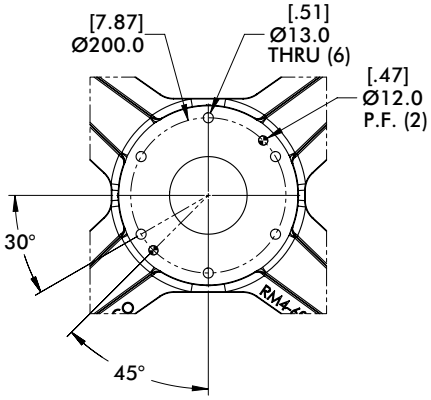


MID MOUNT BOLT PATTERN

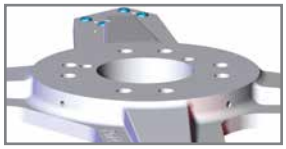
Robot Interface Bolt Patterns

R07 (Ø200mm Bolt Circle)



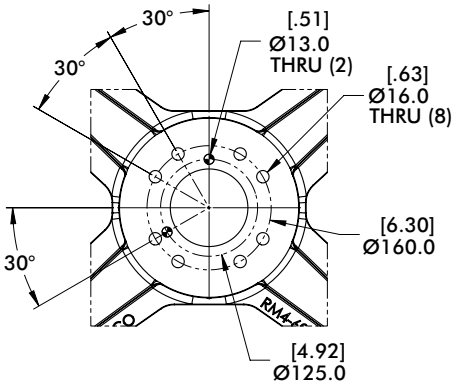


R08 (Ø125/160mm Bolt Circle)

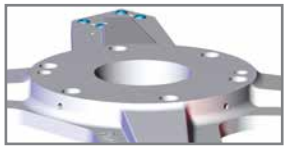


Includes Insulation

Add 1.5mm to Height (95.0 [3.74])

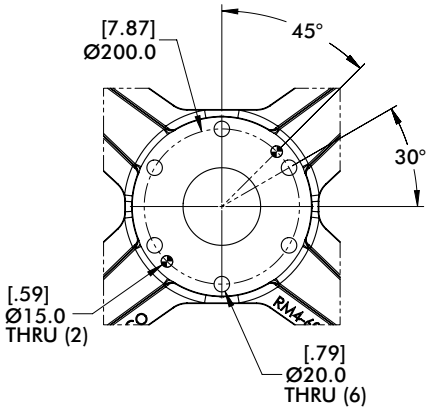


R09 (Ø200mm Bolt Circle)

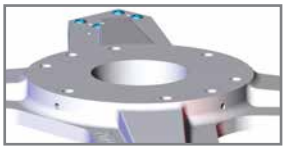


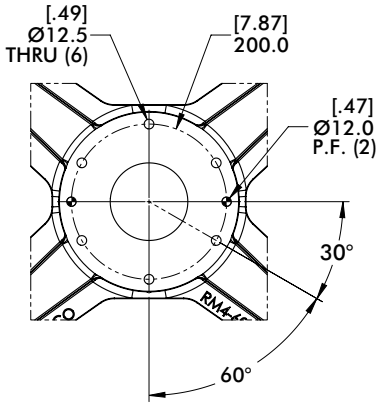
Includes Insulation

Add 1.5mm to Height (95.0 [3.74])

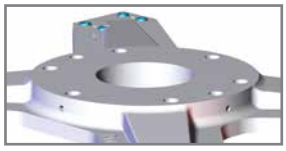


R10 (Ø200mm Bolt Circle)





R11 (Ø200mm Bolt Circle)



Includes Insulation

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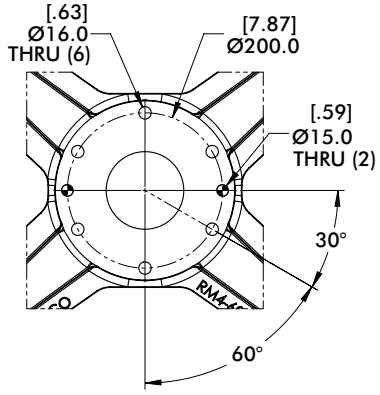
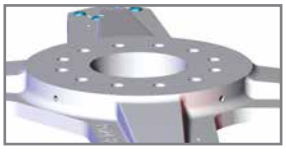


R12 (Ø160mm Bolt Circle)



Includes Insulation

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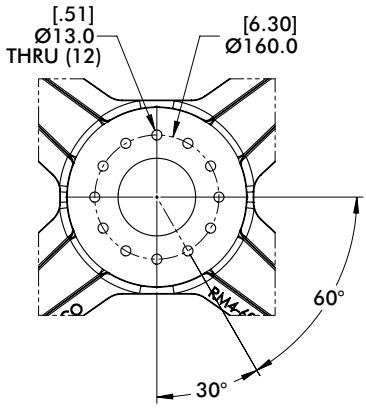
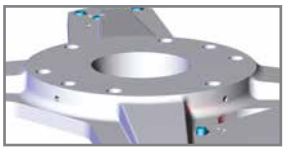
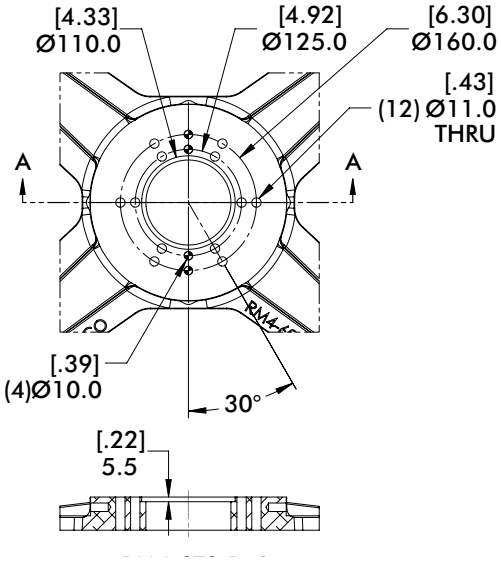


MID MOUNT BOLT PATTERN

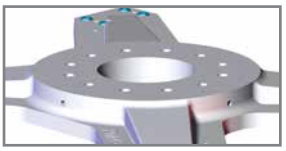
Spidergrip Tooling Components | Robot Interface Bolt Patterns

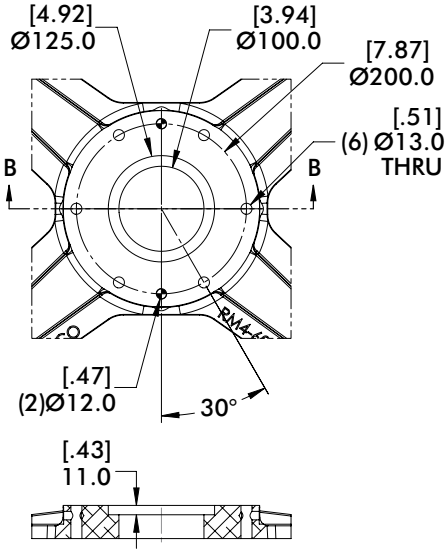
R13 (Ø125/160mm Bolt Circle) (Ø110mm Pilot, 5.5mm Deep)



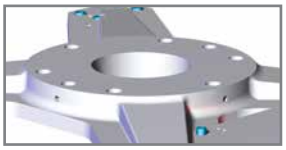


R14 (Ø200mm Bolt Circle) (Ø125mm Pilot, 11mm Deep)



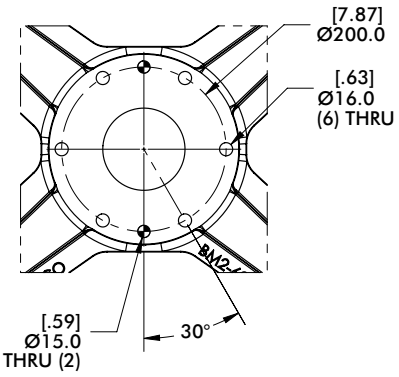


R16 (Ø200mm Bolt Circle)

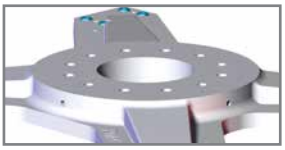


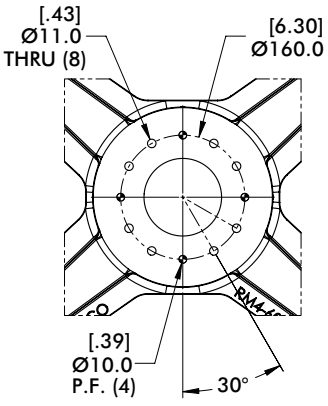
Includes Insulation

Add 1.5mm to Height (95.0 [3.74])



R17 (Ø160mm Bolt Circle)

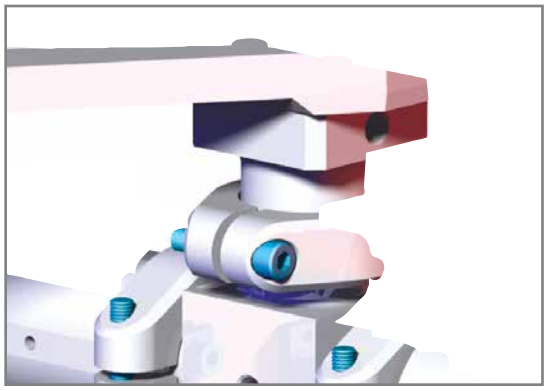




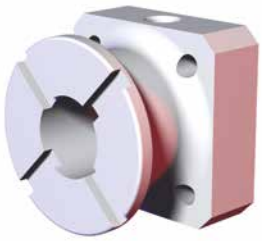
Dimensions and technical information are subject to change without notice

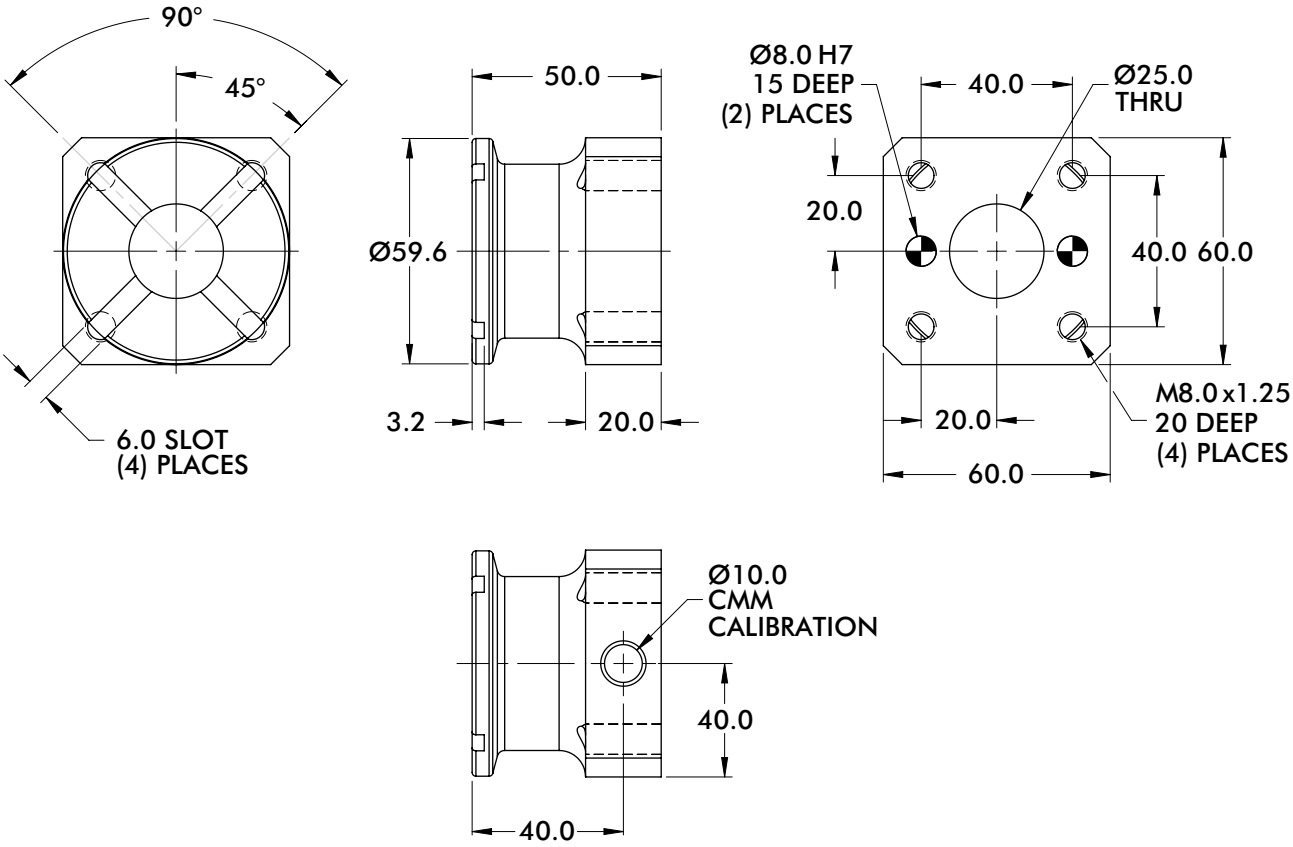
SPIDERGRIP MID MOUNT ANCHOR

Spidergrip Tooling Components | Dimensions | Technical Specifications



Ø60mm Mid Mount Anchor
40mm x 40mm Mounting Pattern - 50mm Face Offset





Model Number	Weight
STS0013-BM2	.25 kg [1.50 lb]

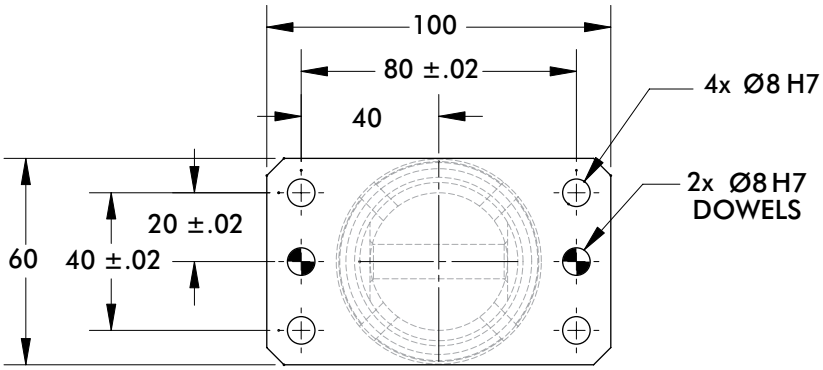
SPIDERGRIP MID MOUNT ANCHOR

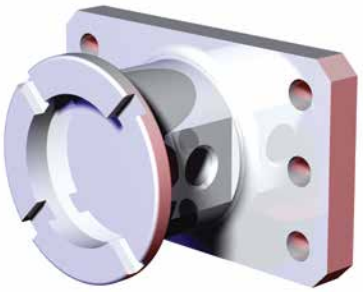
Spidergrip Tooling Components | Dimensions | Technical Specifications

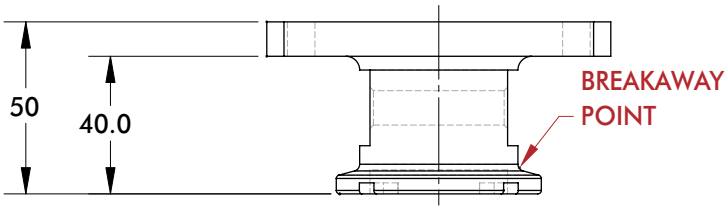
Ø60mm Base Anchor with 50mm Face Offset
80mm x 40mm Mounting Pattern

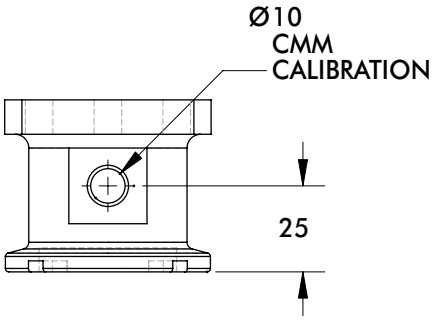
US PATENT# 7,331,104
ALL OTHER PATENTS PENDING

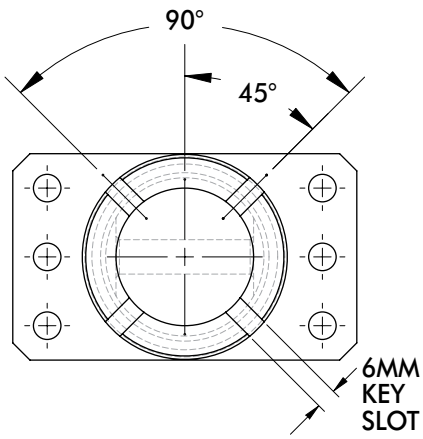
Engineered Breakaway Part











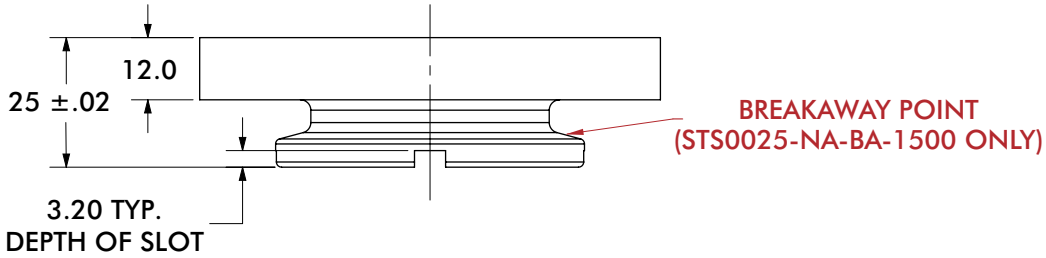
This Product is designed to breakaway at 1627 N*m [1200 ft-lb]

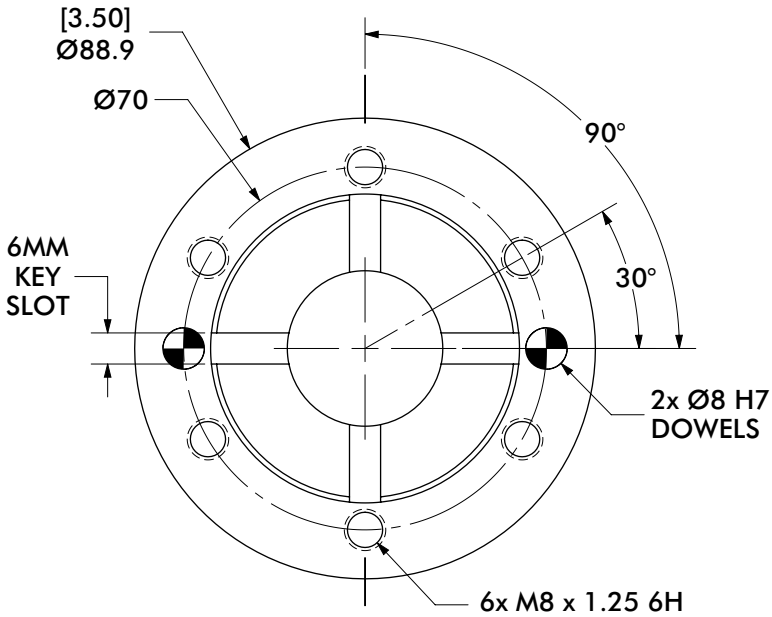
Model Number	Weight
STS0016-NA	.31 kg [.68 lb]

SPIDERGRIP MID MOUNT ANCHOR

Spidergrip Tooling Components | Dimensions | Technical Specifications

Ø70mm Base Anchor with 25mm Face Offset
(6) Hole Mounting Pattern





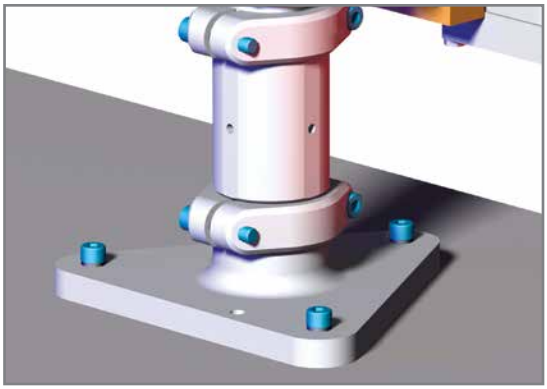
Model Number	Weight
STS0025-NA	252g [0.6 lb]
STS0025-NA-BA-1500*	242g [0.5 lb]

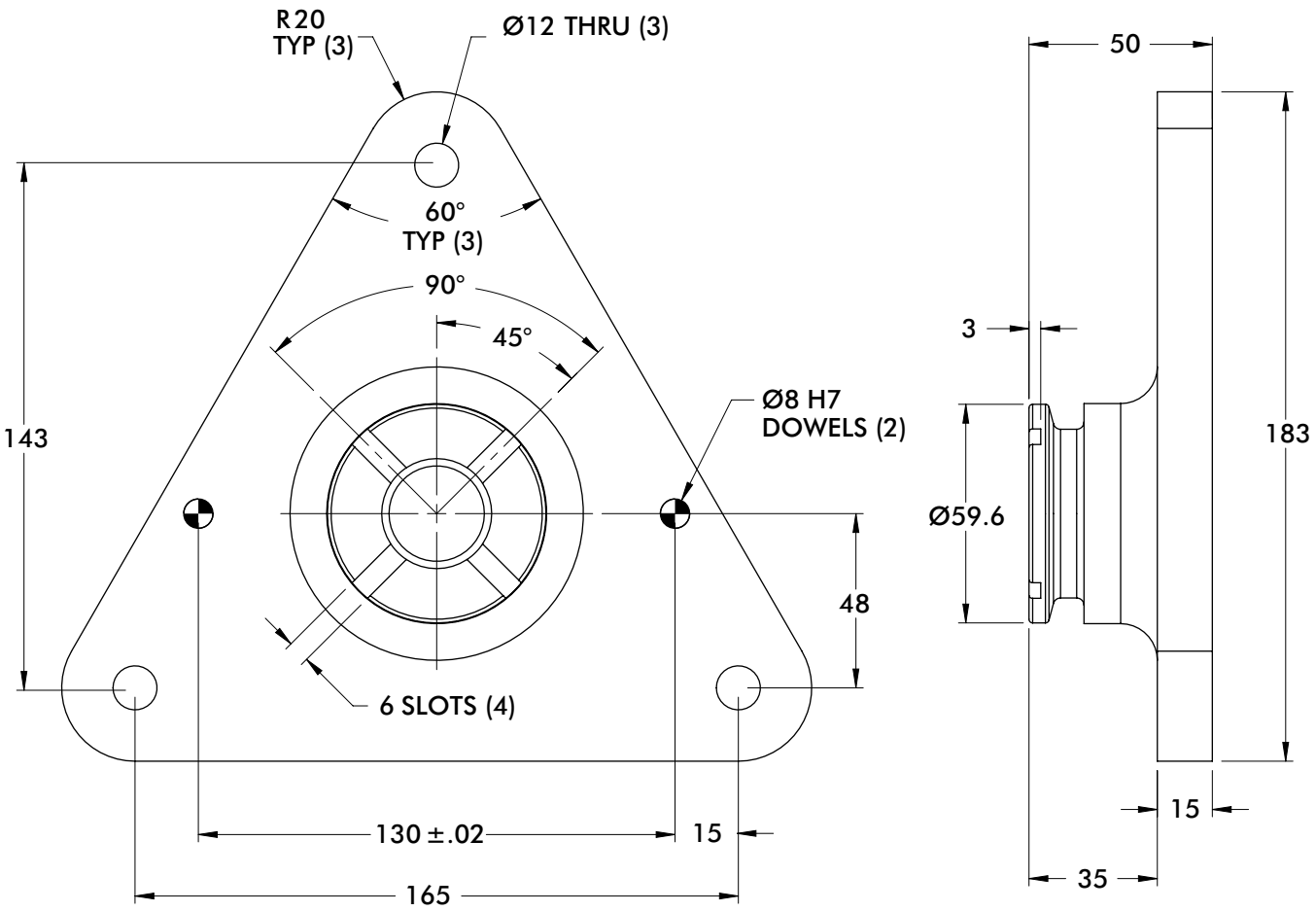
*This Product is designed to breakaway at 1500 N*m [1106 ft-lb]

SPIDERGRIP MID MOUNT ANCHOR

Spidergrip Tooling Components | Dimensions | Technical Specifications

Ø60mm HD Anchor Mount
(3) Hole Ø190mm Mount Pattern



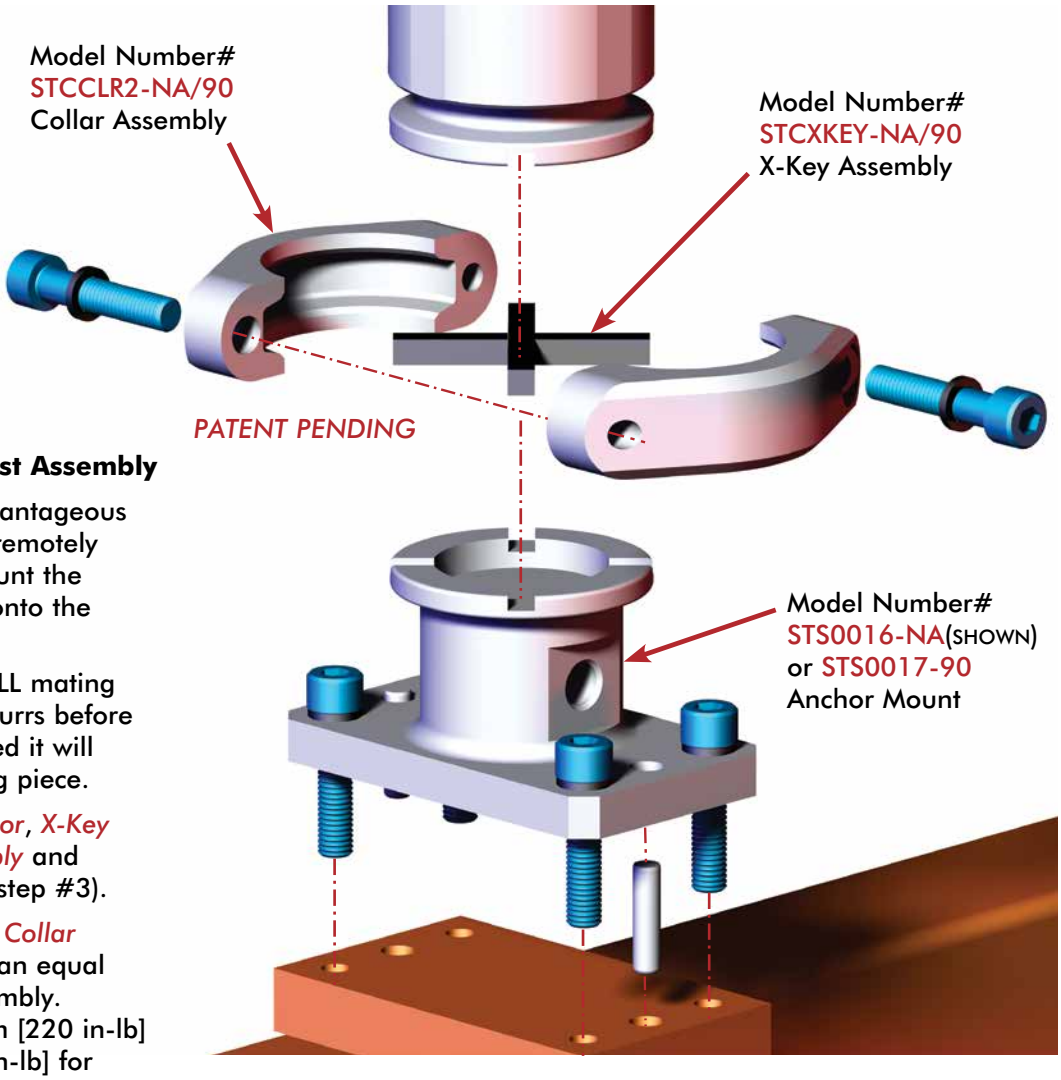


Model Number	Weight
STP0001-NA	1.09 kg [2.40 lb]

Dimensions and technical information are subject to change without notice

SPIDERGRIP END EFFECTOR TOOLING SYSTEMS

Spidergrip Tooling Components | Assembly Instructions



Assembly Instructions – First Assembly

In many cases, it may be advantageous to assemble the appendage remotely and then once complete, mount the entire appendage assembly onto the mounting structure.

1. Clean/Wipe and inspect ALL mating faces of all components for burrs before assembly; if a part is damaged it will not correctly couple to mating piece.

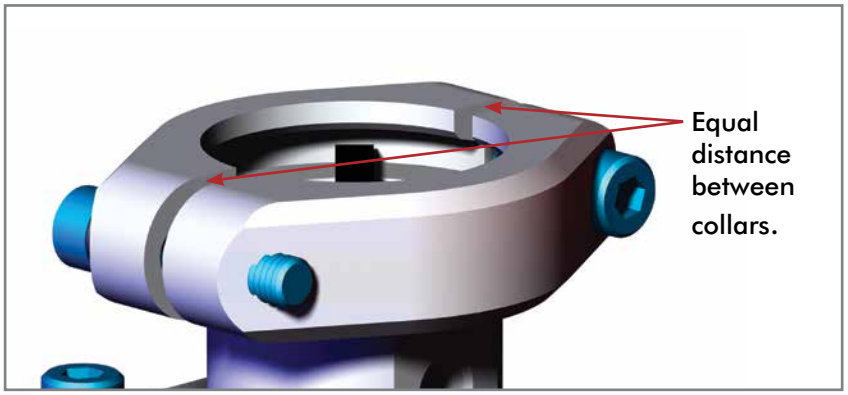
2. Assemble *Breakaway Anchor*, *X-Key Assembly*, New *Collar Assembly* and remaining appendage (from step #3).

3. Gradually tighten bolts on *Collar Assembly*, while maintaining an equal gap on each side of the assembly. Torque collar bolts to 25 N*m [220 in-lb] for 60mm, or 30 N*m 265 [in-lb] for 90mm. Do not re-torque once desired torque is reached.

4. Mount appendage as assembled to steel backbone and insert new 8mm dowels into the dowel holes on the *Breakaway Anchor*.

5. Insert new M8-1.25 patchlock bolts into *Breakaway Anchor*, torque in a cross pattern following NAAMS recommended torque.

6. Attach steel tether (*STS-TETHER-08 or STS-TETHER-16*) to appendage via one of the bolts located on the base of the *Breakaway Anchor*. The other loop will be attached to the first threaded M6 hole (located on the boom) or the M8 hole located on the edge part. The tether may also be wrapped around the appendage to reduce cable slack.



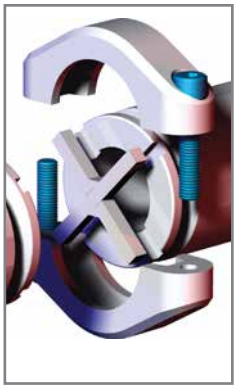
Note: Performance may vary if used with non-DESTACO components

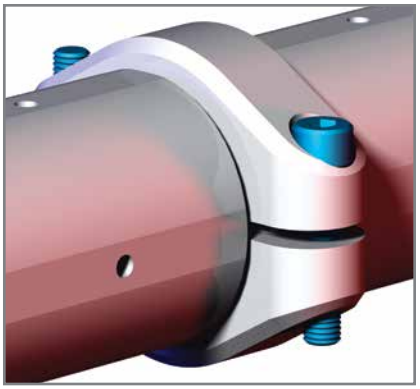
SPIDERGRIP ANCHORS AND COLLAR ASSEMBLIES

Spidergrip Tooling Components | Dimensions | Technical Specifications

Ø60mm Collar Components and Assembly

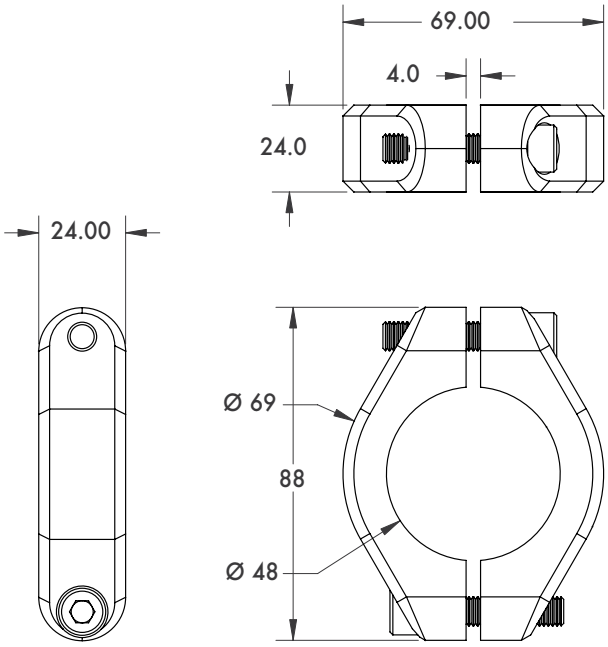
Assembly Number	Weight
STCCLRX-NA	.19 kg [.42 lb]

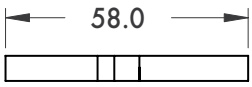


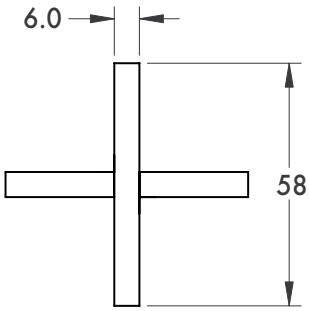


Includes (1) Collar Assembly (STCCLR2-NA) and (1) X-Key Assembly (STCXKEY-NA). Patch-lock fasteners included.

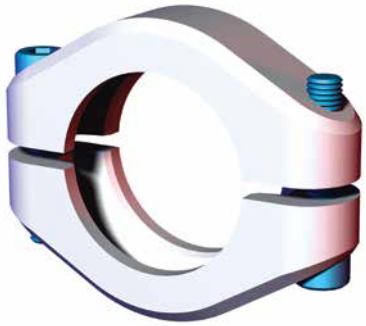
*Max bolt torque when clamping to: 25 N*m [220 in-lbs]*







US PATENT# 7,331,104
ALL OTHER PATENTS PENDING



Patch-lock fasteners included.

Model Number	Weight
STCCLR2-NA	.16 kg [.35 lb]

Material: Steel

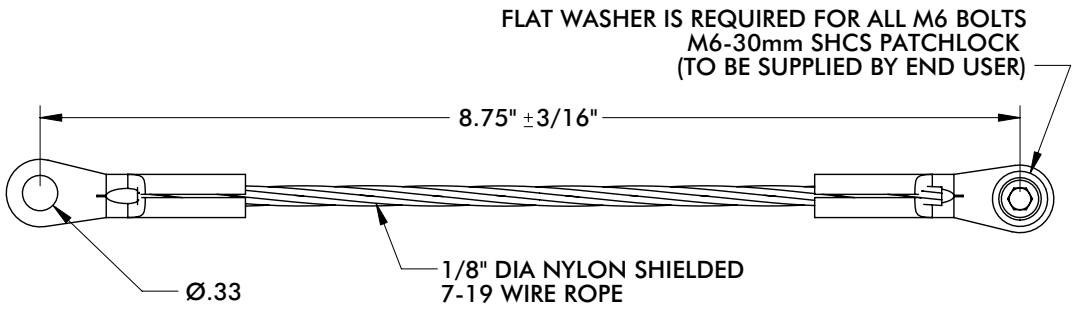
Model Number	Weight
STCXKEY-NA	.03 kg [.07 lb]

Dimensions and technical information are subject to change without notice

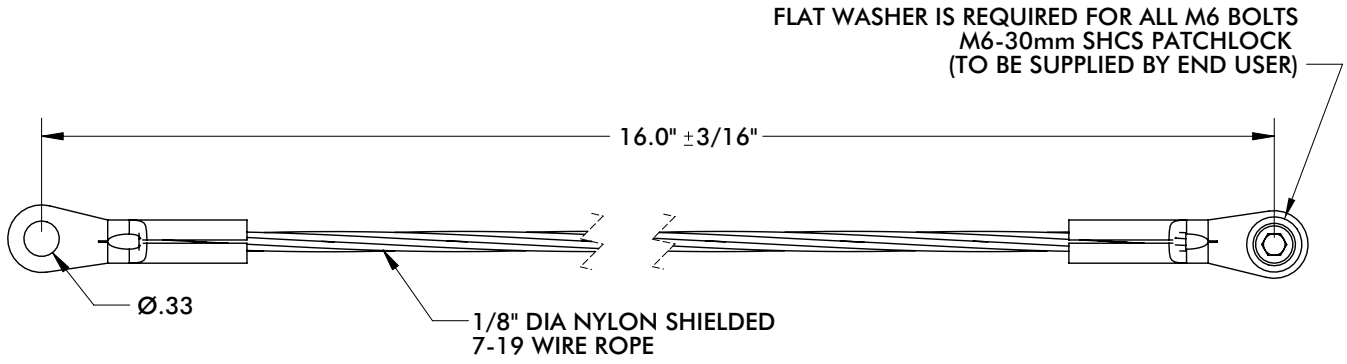
SPIDERGRIP TETHERS

Spidergrip Tooling Components | Dimensions | Technical Specifications

9 inch and 16 inch Tether Assemblies



Model Number	Weight
STS-TETHER-09	.07 kg [.15 lb]

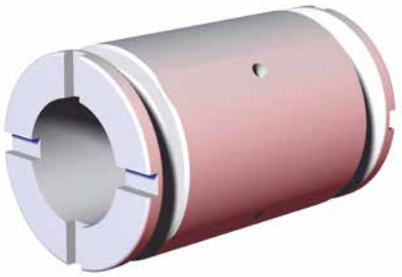


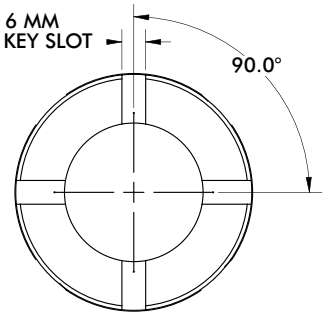
Model Number	Weight
STS-TETHER-16	.09 kg [.19 lb]

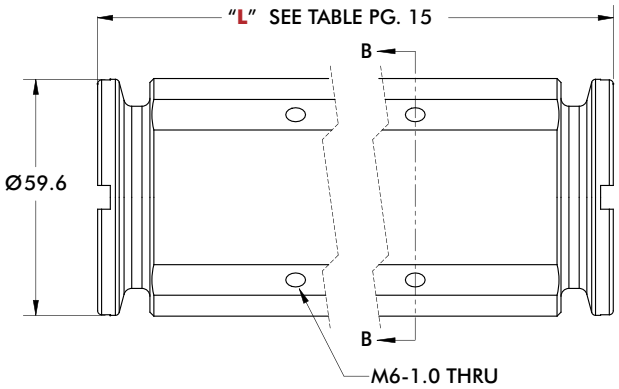
SPIDERGRIP BOOMS, ADAPTORS AND SPACERS

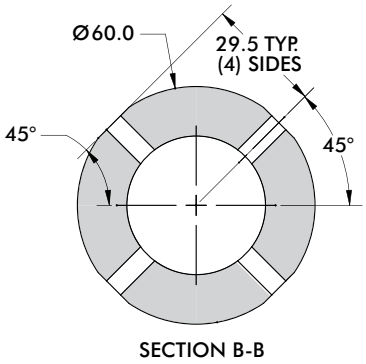
Spidergrip Tooling Components | Dimensions | Technical Specifications

Ø60mm Boom

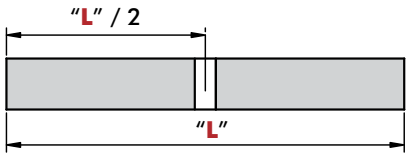








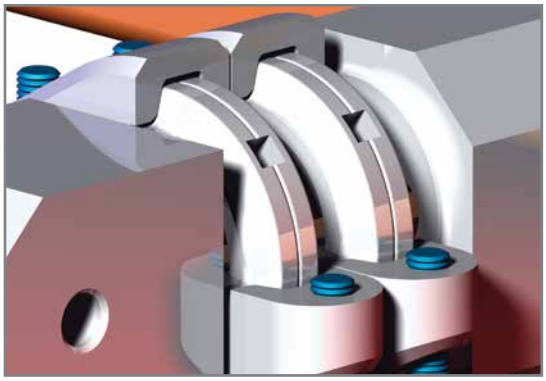
M6 tap holes along the boom are used to mount accessories

M6 Hole Spacing	Model Number	Length "L"	Weight
	**STB0050-NA**	50mm ±0.02	.20 kg [.43 lb]
	STB0075-NA	75mm ±0.02	.32 kg [.71 lb]
	STB0100-NA	100mm ±0.02	.45 kg [.99 lb]
	STB0150-NA	150mm ±0.02	.70 kg [1.54 lb]
	STB0200-NA	200mm ±0.02	.95 kg [2.09 lb]
	STB0250-NA	250mm ±0.02	1.20 kg [2.64 lb]
	STB0300-NA	300mm ±0.02	1.44 kg [3.18 lb]
	STB0350-NA	350mm ±0.02	1.74 kg [.19 lb]

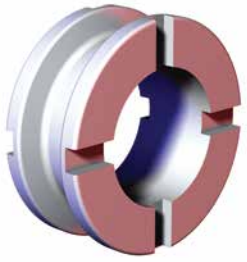
Dimensions and technical information are subject to change without notice

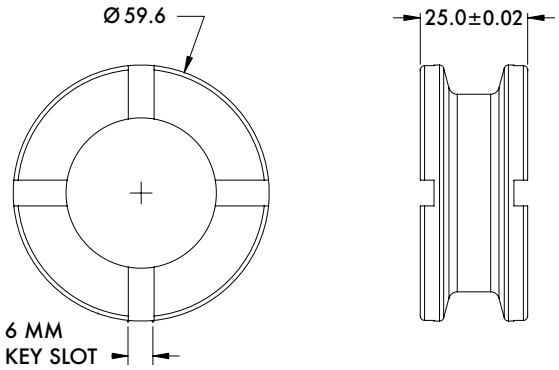
SPIDERGRIP BOOMS, ADAPTORS AND SPACERS

Spidergrip Tooling Components | Dimensions | Technical Specifications



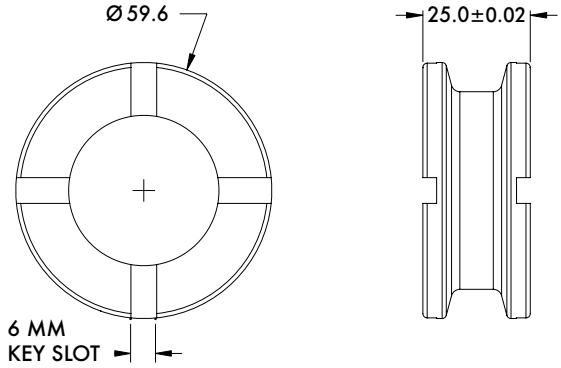
Ø60mm Breakaway and Non-Breakaway Boom Spacers

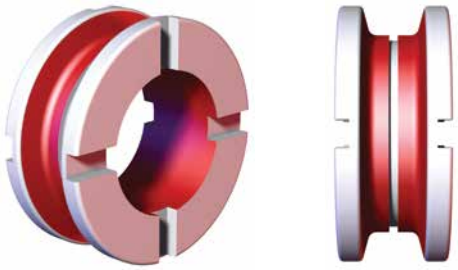




Model Number	Weight
STB0025-NA	.08 kg [.18 lb]

Ø60mm 25mm Engineered Breakaway Boom Spacers





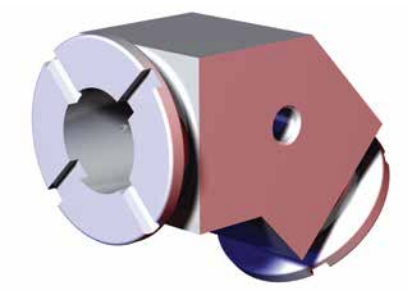
Model Number	Weight
STB0025-BA-800	.08 kg [.18 lb]

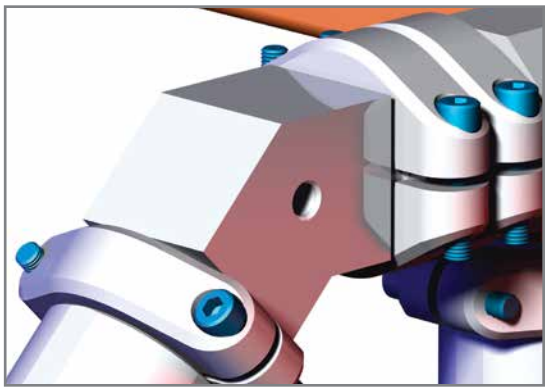
This Product is designed to breakaway at 800 N*m [590 ft-lb]

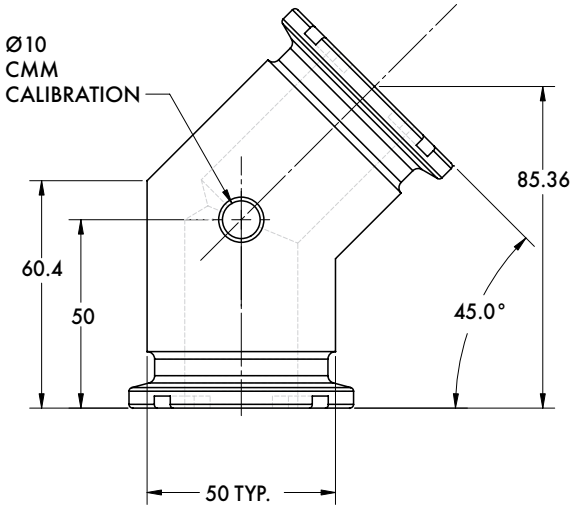
SPIDERGRIP BOOMS

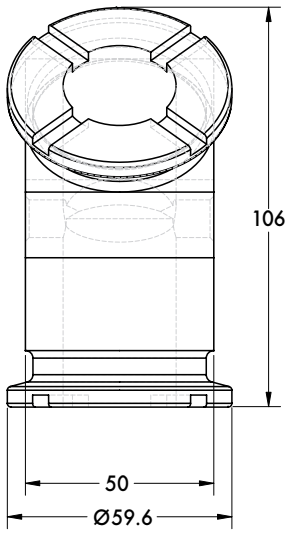
Spidergrip Tooling Components | Dimensions | Technical Specifications

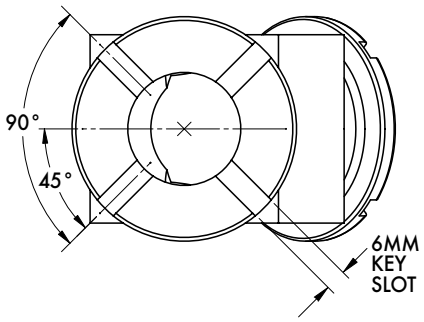
Ø60mm 2-Face 45° Junction











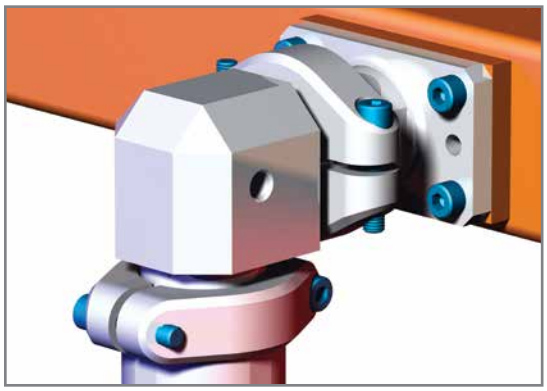
Model Number	Weight
STN0C45-NA	.42 kg [.93 lb]

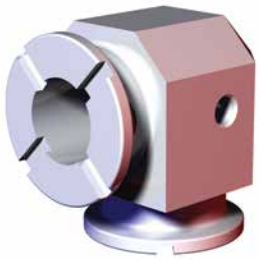
Dimensions and technical information are subject to change without notice

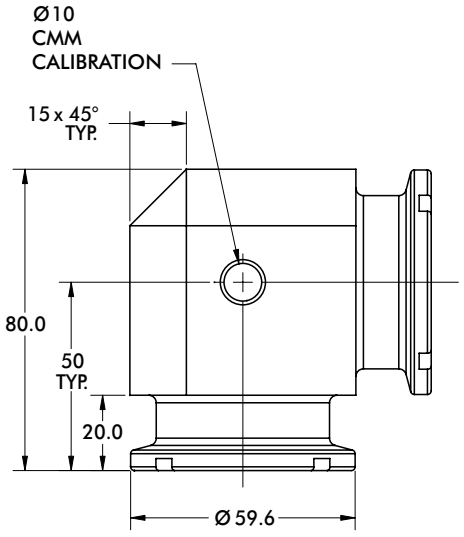
SPIDERGRIP SPACERS

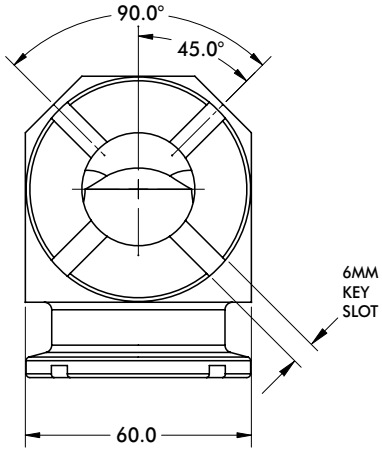
Spidergrip Tooling Components | Dimensions | Technical Specifications

Ø60mm 2-face 90° Junction







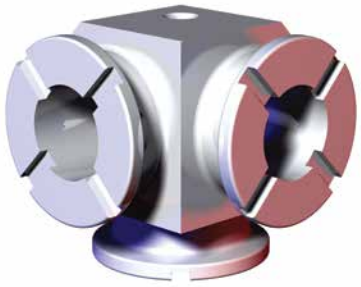


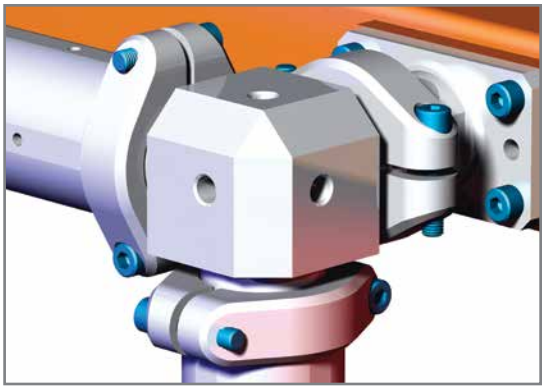
Model Number	Weight
STN0C90-NA	.53 kg [1.16 lb]

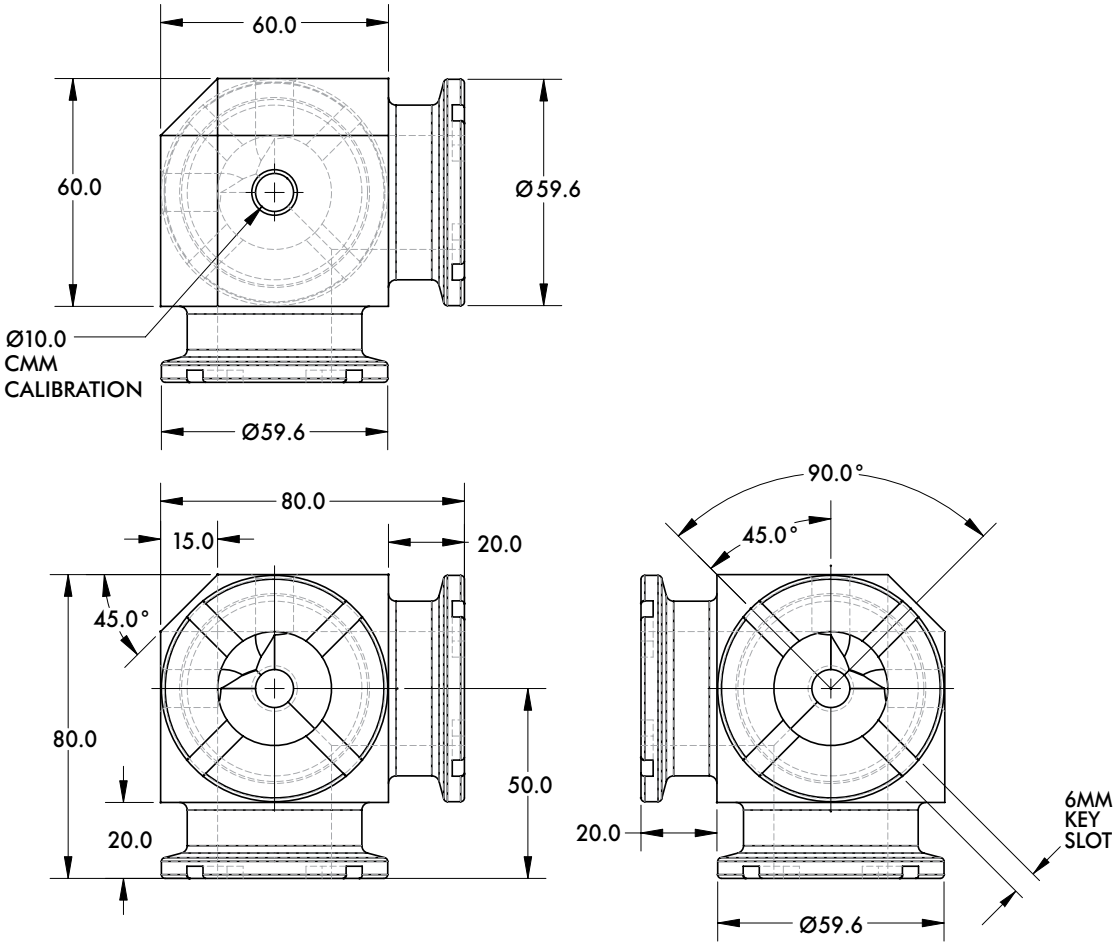
SPIDERGRIP JUNCTION COMPONENTS

Spidergrip Tooling Components | Dimensions | Technical Specifications

Ø60mm 3-Face Junction







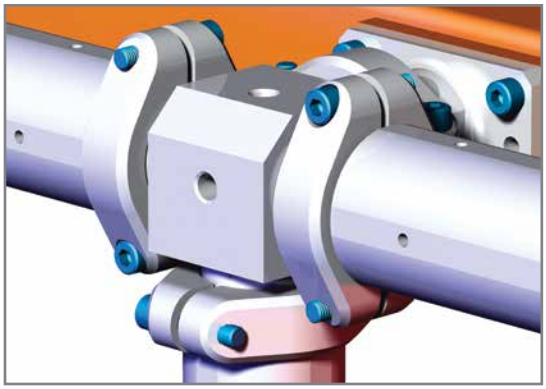
Model Number	Weight
STN0C3F-NA	.58 kg [1.29 lb]

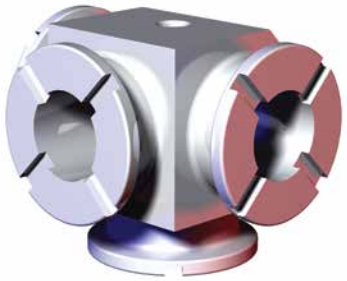
Dimensions and technical information are subject to change without notice

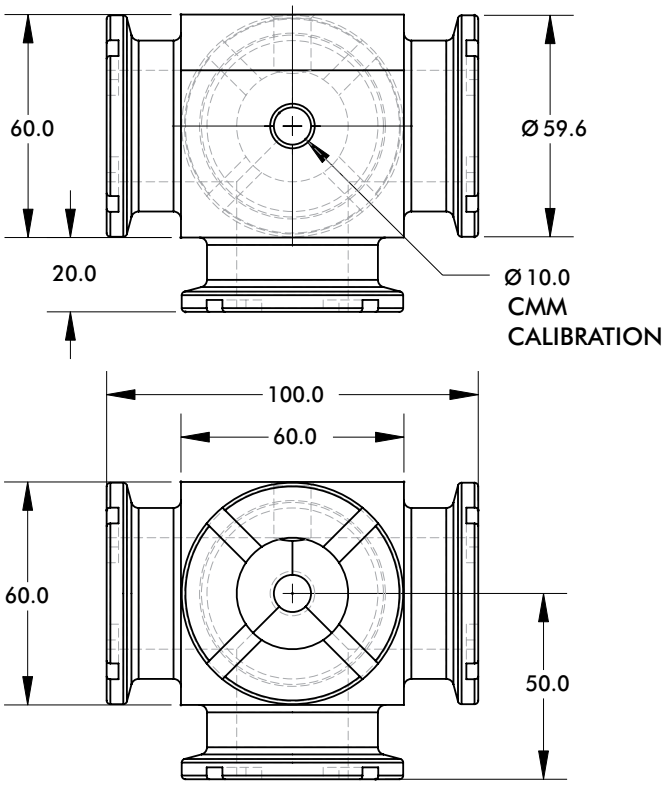
SPIDERGRIP JUNCTION COMPONENTS

Spidergrip Tooling Components | Dimensions | Technical Specifications

Ø60mm 4-Face Junction





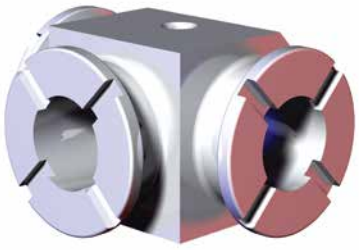


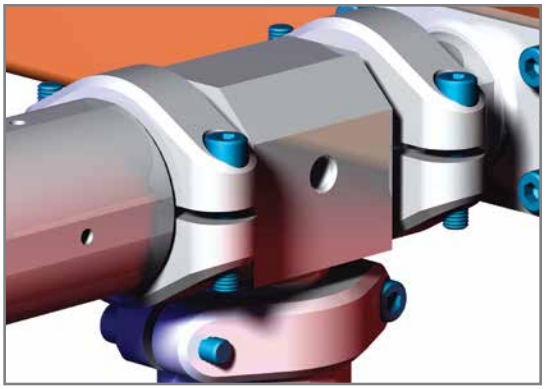
Model Number	Weight
STN0C4F-NA	.65 kg [1.43 lb]

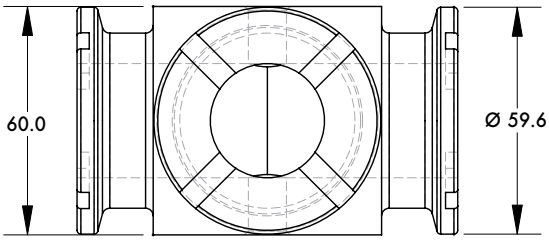
SPIDERGRIP JUNCTION COMPONENTS

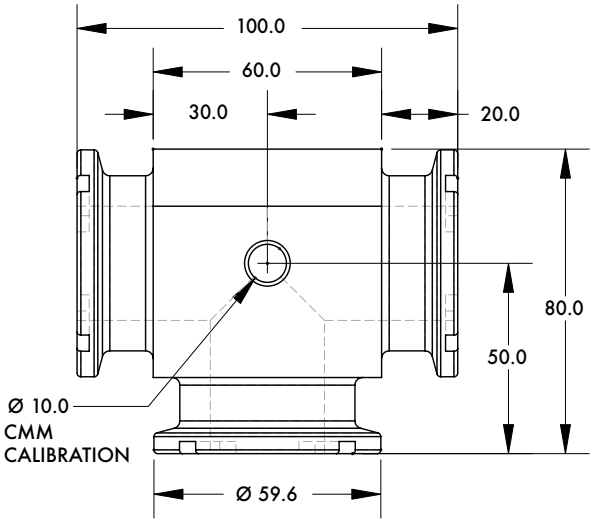
Spidergrip Tooling Components | Dimensions | Technical Specifications

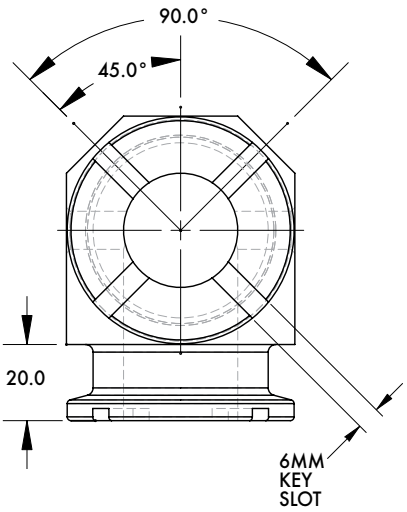
Ø60mm 3-Face Junction











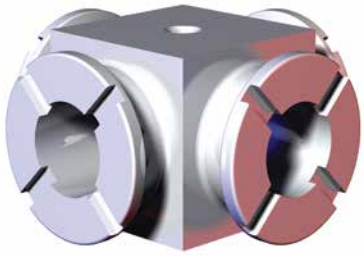
Model Number	Weight
STN0T3F-NA	.60 kg [1.31 lb]

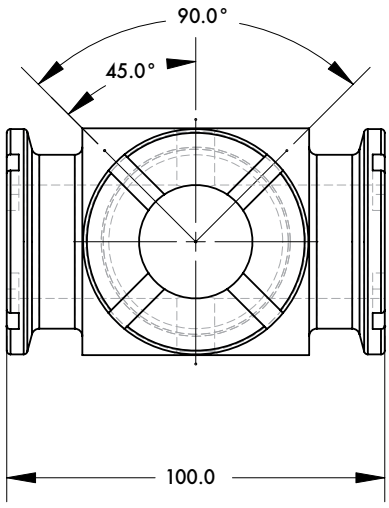
Dimensions and technical information are subject to change without notice

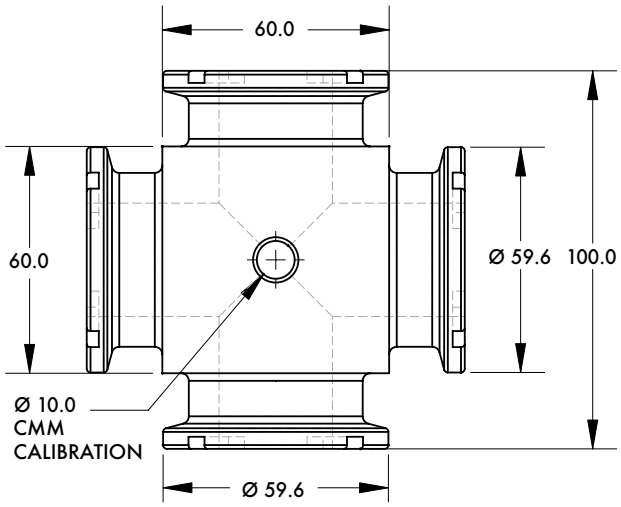
SPIDERGRIP JUNCTION COMPONENTS

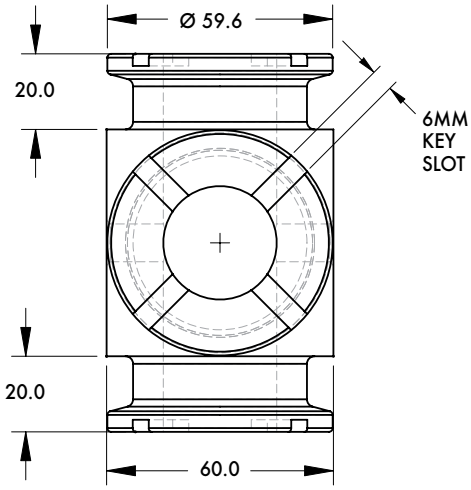
Spidergrip Tooling Components | Dimensions | Technical Specifications

Ø60mm 4-Face Junction







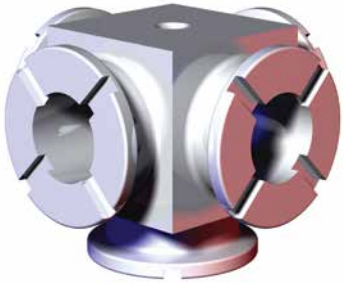


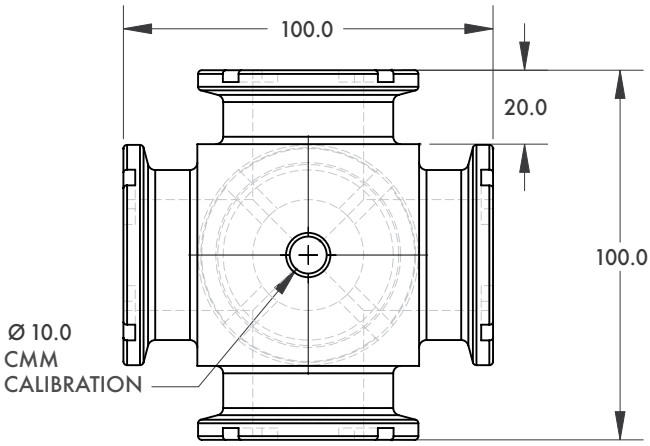
Model Number	Weight
STN0T4F-NA	.67 kg [1.47 lb]

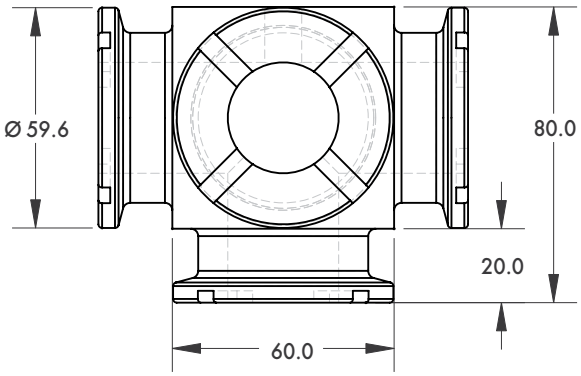
SPIDERGRIP JUNCTION COMPONENTS

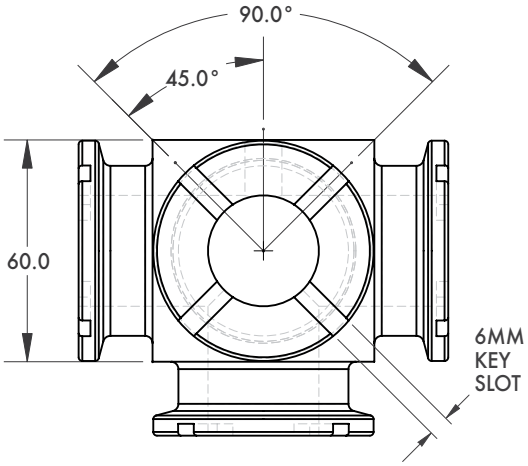
Spidergrip Tooling Components | Dimensions | Technical Specifications

Ø60mm 5-Face Junction







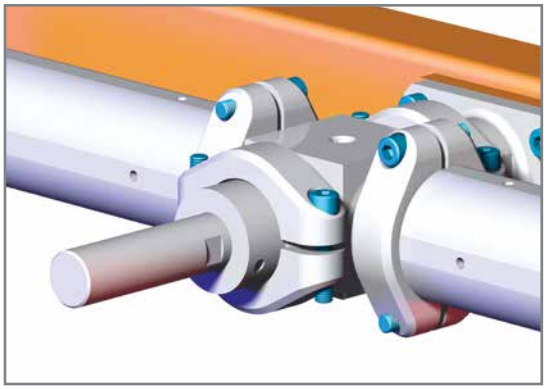


Model Number	Weight
STN0T5F-NA	.71 kg [1.56 lb]

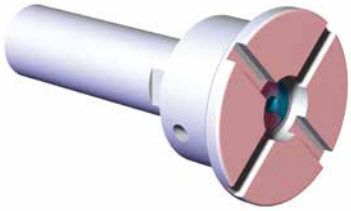
Dimensions and technical information are subject to change without notice

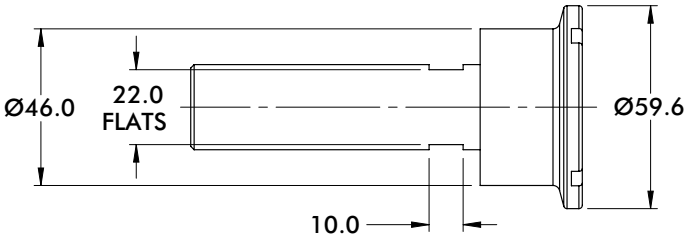
SPIDERGRIP SINGLE END EXTENSIONS

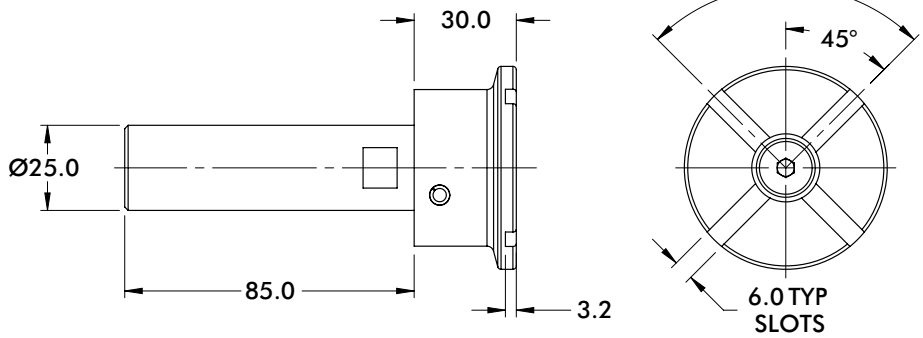
Spidergrip Tooling Components | Dimensions | Technical Specifications



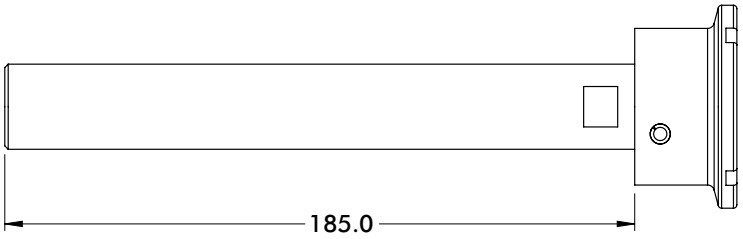
Ø60mm to Ø25mm Single End Extension







Model Number	Weight
STV0100-NA	.26 kg [.58 lb]

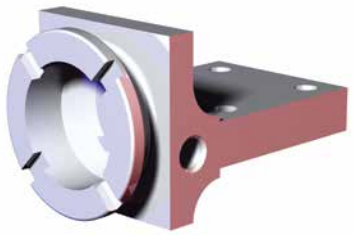


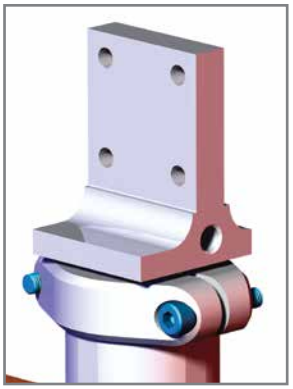
Model Number	Weight
STV0200-NA	.40 kg [.87 lb]

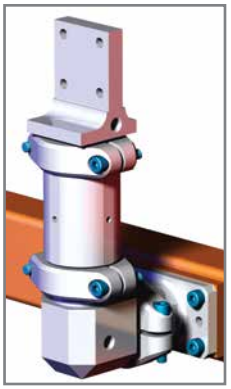
SPIDERGRIP EDGE MOUNTING COMPONENTS

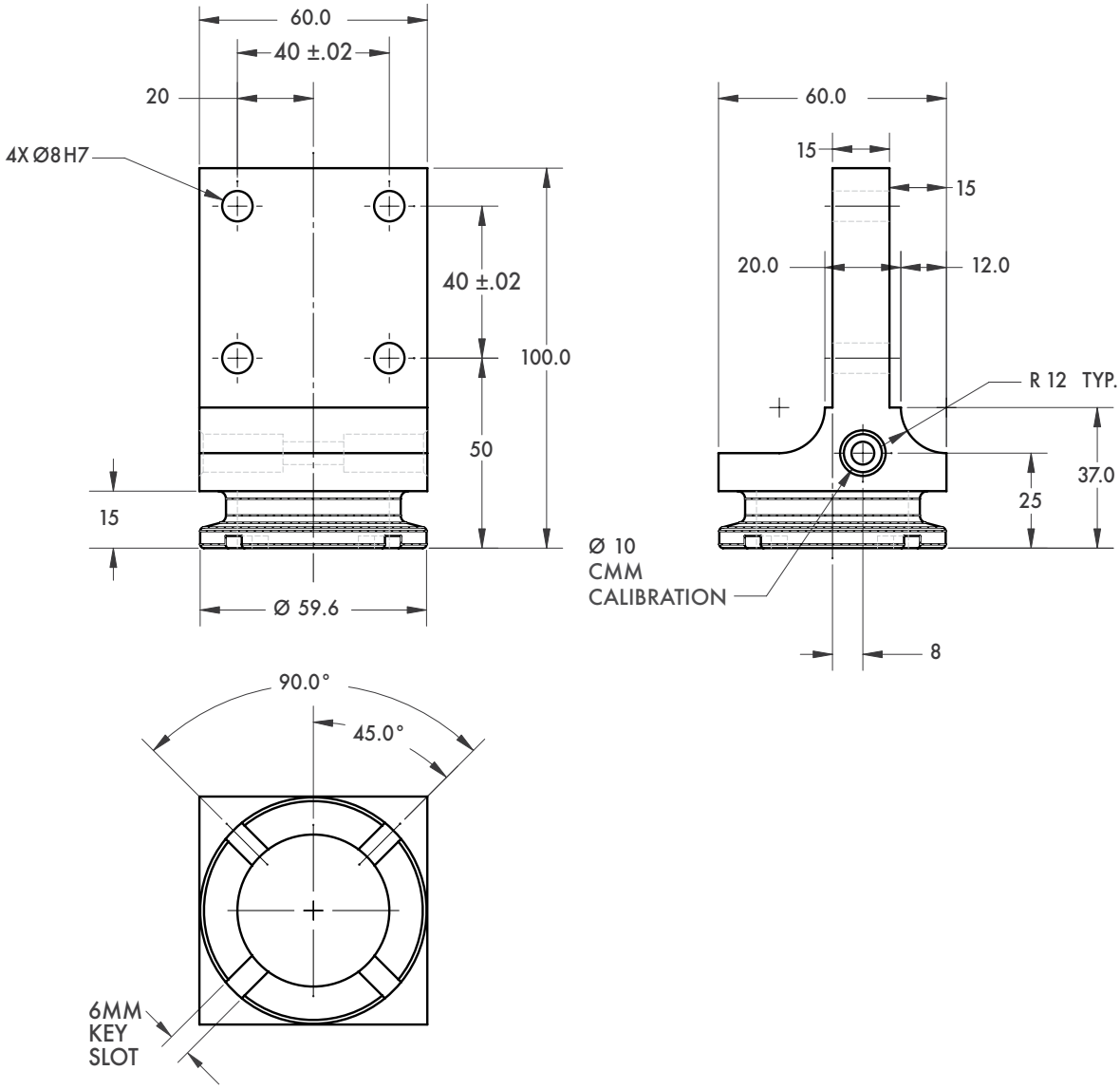
Spidergrip Tooling Components | Dimensions | Technical Specifications

Ø60mm 90° Edge Part with 15mm Center to Face Offset
40mm x 40mm Mounting Pattern







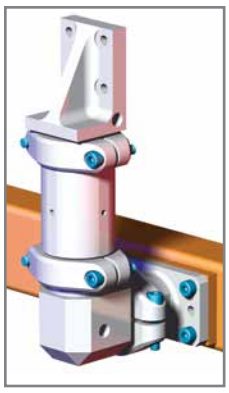


Model Number	Weight
STS0010-NA	.31 kg [.69 lb]

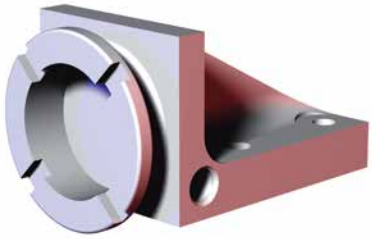
Dimensions and technical information are subject to change without notice

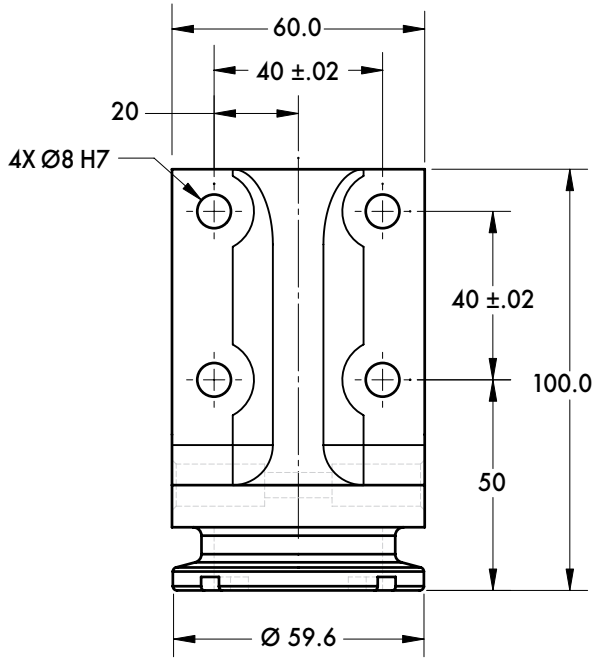
SPIDERGRIP EDGE MOUNTING COMPONENTS

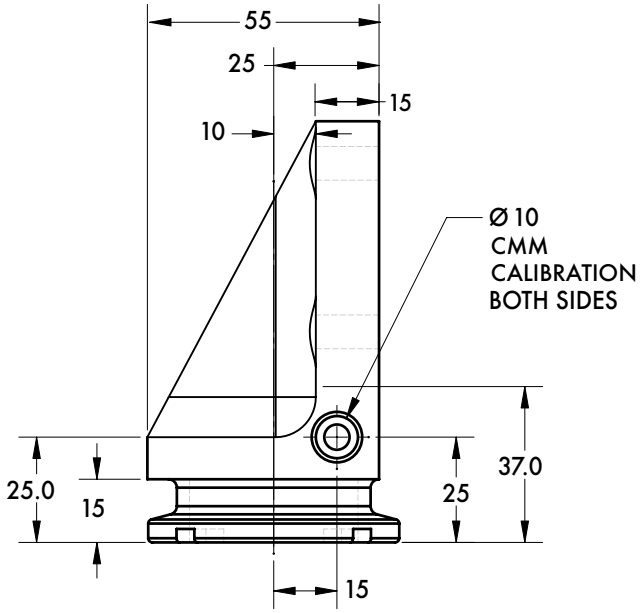
Spidergrip Tooling Components | Dimensions | Technical Specifications

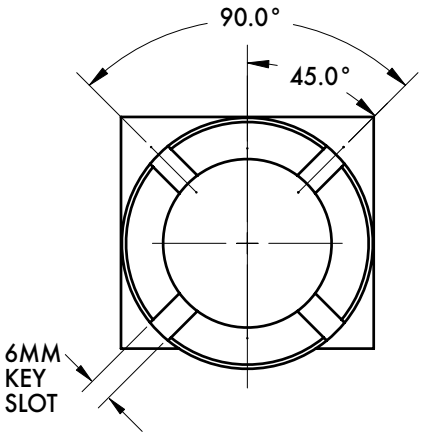


Ø60mm 90° Edge Part with 25mm Center to Face Offset
40mm x 40mm Mounting Pattern







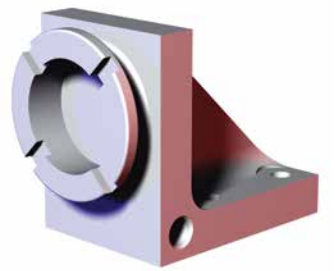


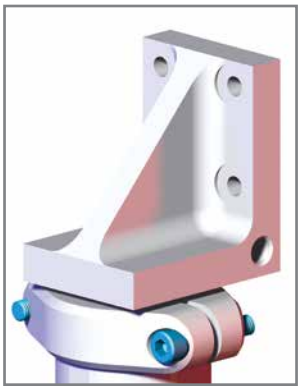
Model Number	Weight
STS0011-NA	.35 kg [.77 lb]

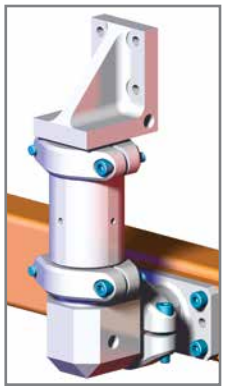
SPIDERGRIP EDGE MOUNTING COMPONENTS

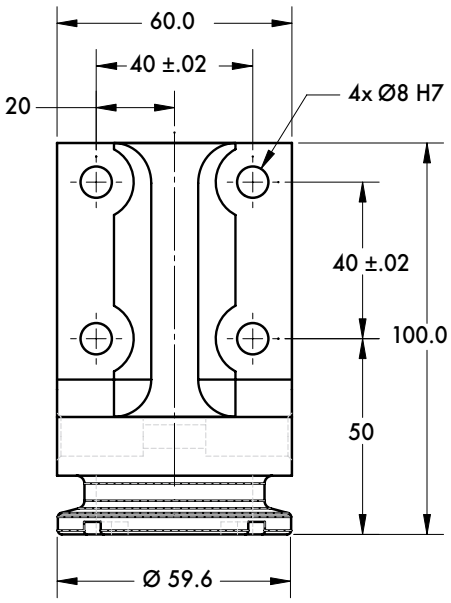
Spidergrip Tooling Components | Dimensions | Technical Specifications

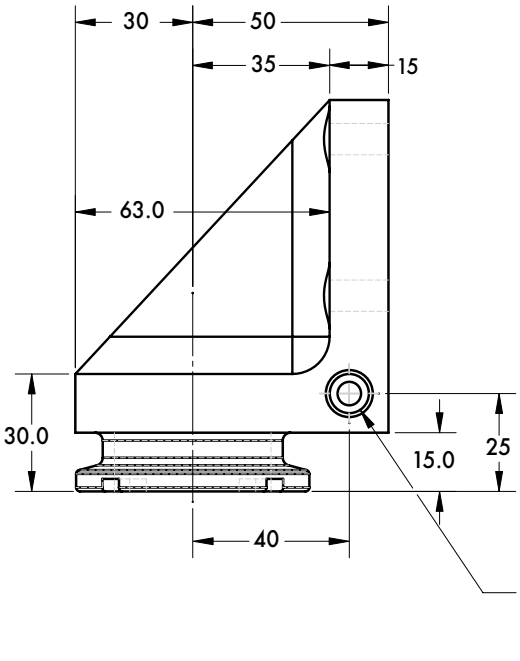
Ø60mm 90° Edge Part with 50mm Center to Face Offset
40mm x 40mm Mounting Pattern

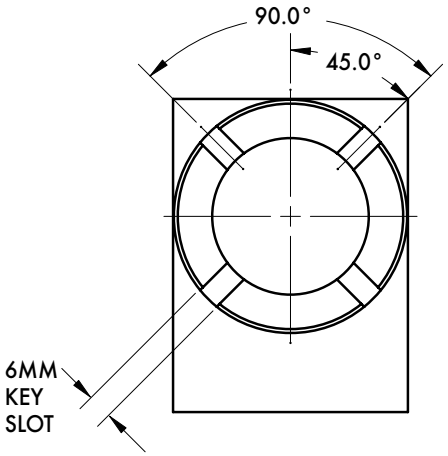










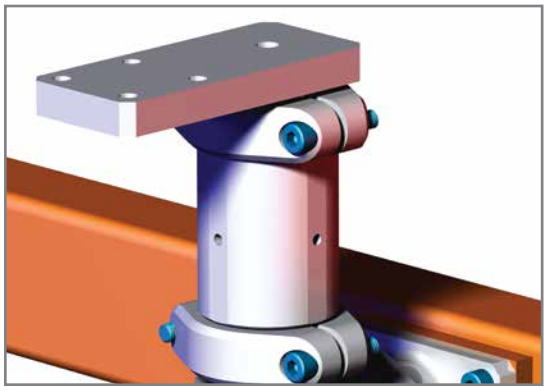


Model Number	Weight
STS0012-NA	.47 kg [1.04 lb]

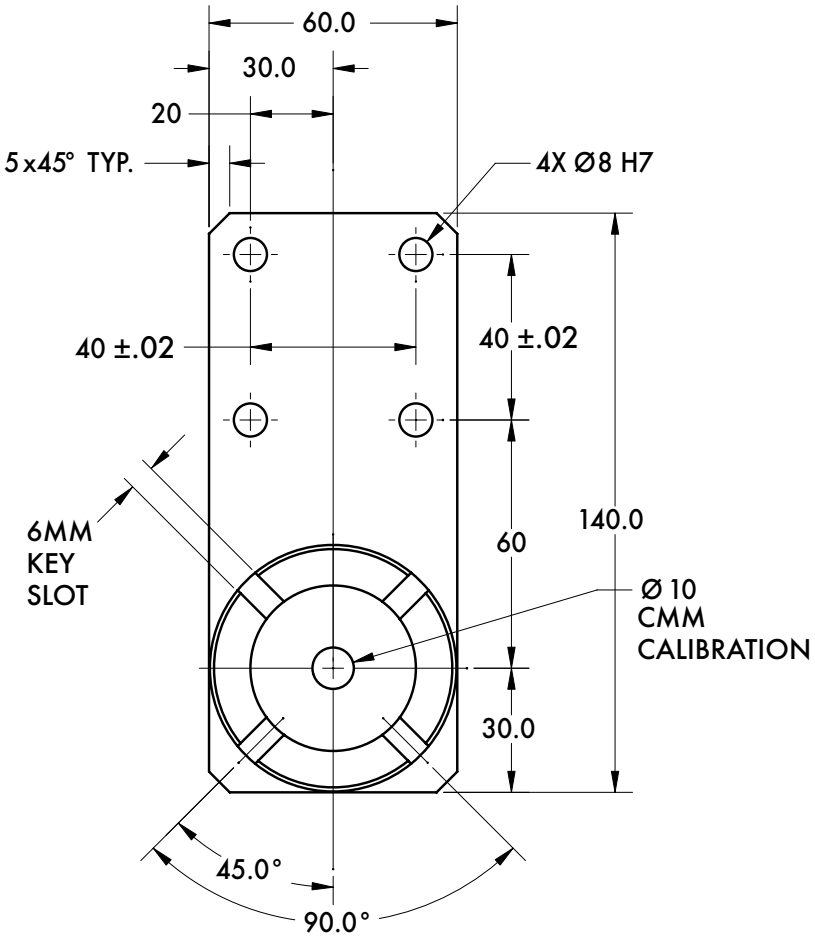
Dimensions and technical information are subject to change without notice

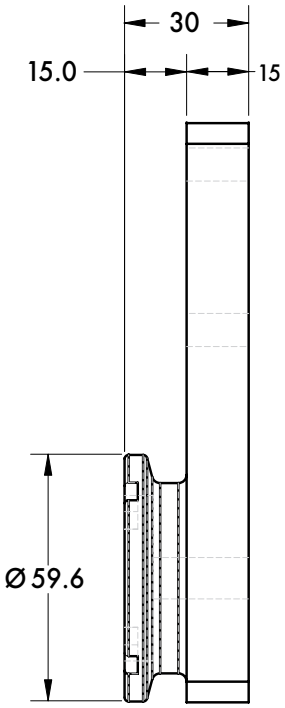
SPIDERGRIP EDGE MOUNTING COMPONENTS

Spidergrip Tooling Components | Dimensions | Technical Specifications



Ø60mm Offset Edge Part with 25mm Face Offset
40mm x 40mm Mounting Pattern



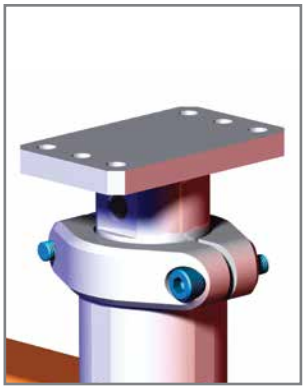


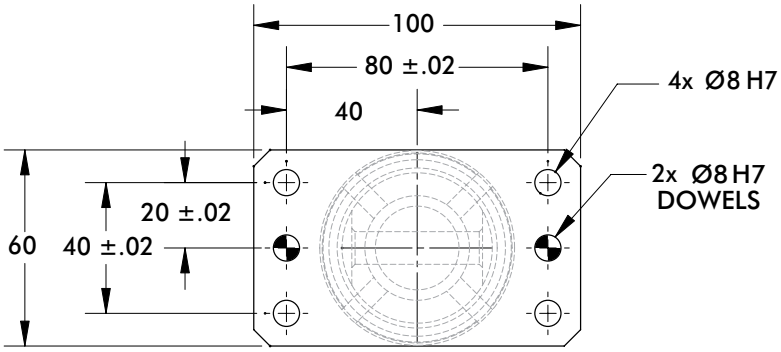
Model Number	Weight
STS0014-NA	.39 kg [.85 lb]

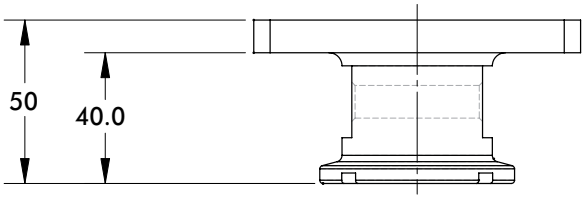
SPIDERGRIP EDGE MOUNTING COMPONENTS

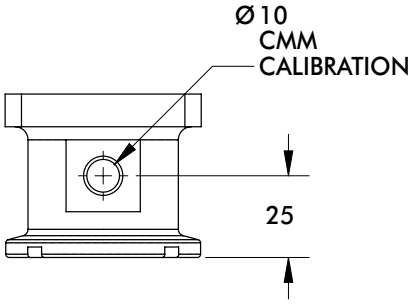
Spidergrip Tooling Components | Dimensions | Technical Specifications

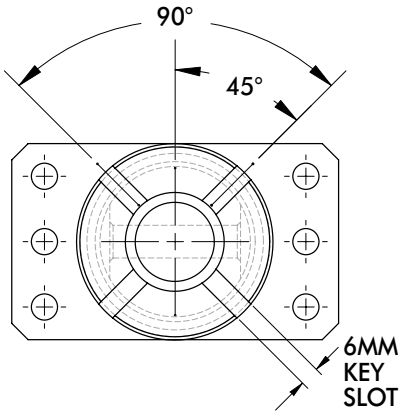
Ø60mm In-line Edge Part with 50mm Face Offset
80mm x 40mm Mounting Pattern











Model Number	Weight
STS0019-NA	.32 kg [.71 lb]

Dimensions and technical information are subject to change without notice

Notes