# SPIDERGrip End Effector Tooling Systems

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Dimensions and technical information are subject to change without notice.
SPIDERGRIP GEOMETRIC END EF FECTOR SYSTEM

Geometric End Effector Tooling System with Steel Frame Backbone.

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

Spidergrip Tooling Components | Typical Application Build Examples

Geometric End Effector Tooling System with Steel Frame Backbone.

Weld Fixture Tooling System

SpiderGrip Application Guide

Dimensions and technical information are subject to change without notice
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.
# SPIDERGRIP GEOMETRIC END EFFECTOR SYSTEM

## Product Overview

### Most commonly used in:

<table>
<thead>
<tr>
<th>Applications</th>
<th>Markets</th>
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<tbody>
<tr>
<td>Fixture Welding</td>
<td>Industrial</td>
</tr>
<tr>
<td>Pick and Place</td>
<td>Automotive</td>
</tr>
<tr>
<td>Material Handling</td>
<td>Aerospace</td>
</tr>
<tr>
<td>Geometric Fixtures</td>
<td>Appliance</td>
</tr>
</tbody>
</table>

### Key Components:

- **Boom**
- **Corner Junction**
- **Base Anchor**
- **Engineered Breakaway**
- **Heavy Duty Mid Mount Assembly**
- **82M Series Power Clamp**

Dimensions and technical information are subject to change without notice.
Heavy-Duty Mid Mount Assembly

Dimensions and technical information are subject to change without notice.

Weight
10.4 kg [22.89 lb]

Model
RM4-STS

Robot Interface Pattern

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

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPI-BM2-EPM-xx</td>
<td>.63 kg [1.39 lb]</td>
</tr>
</tbody>
</table>
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
Add 1.5mm to Height (95.0 [3.74])

R12 (Ø160mm Bolt Circle) Includes Insulation
Add 1.5mm to Height (95.0 [3.74])
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]

Dimensions and technical information are subject to change without notice
SPIDERGRIP MID MOUNT ANCHOR
Spidergrip Tooling Components | Dimensions | Technical Specifications

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

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

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>STS0016-NA</td>
<td>.31 kg [.68 lb]</td>
</tr>
</tbody>
</table>

Dimensions and technical information are subject to change without notice
SPIDERGRIP MID MOUNT ANCHOR

Spidergrip Tooling Components | Dimensions | Technical Specifications

Ø60mm Base Anchor with 25mm Face Offset
(6) Hole Ø70mm Mount Pattern

Dimensions and technical information are subject to change without notice

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 EFECTOR 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

Dimensions and technical information are subject to change without notice
## Ø60mm Collar Components and Assembly

<table>
<thead>
<tr>
<th>Assembly Number</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>STCCLR2-NA</td>
<td>.16 kg [.35 lb]</td>
</tr>
<tr>
<td>STCXKEY-NA</td>
<td>.03 kg [.07 lb]</td>
</tr>
</tbody>
</table>

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]

---

### Material: Steel

**Model Number** | **Weight**  
**STCCLR2-NA**   | **.16 kg [.35 lb]**  
**STCXKEY-NA**   | **.03 kg [.07 lb]**  

Dimensions and technical information are subject to change without notice.
FLAT WASHER IS REQUIRED FOR ALL M6 BOLTS
M6-30mm SHCS PATCHLOCK
(TO BE SUPPLIED BY END USER)

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

FLAT WASHER IS REQUIRED FOR ALL M6 BOLTS
M6-30mm SHCS PATCHLOCK
(TO BE SUPPLIED BY END USER)

Model Number  Weight
STS-TETHER-16  .09 kg [.19 lb]
Spidergrip Tooling Components | Dimensions | Technical Specifications

Ø60mm Boom

M6 tap holes along the boom are used to mount accessories

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Length &quot;L&quot;</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>STB0050-NA</td>
<td>50mm ±0.02</td>
<td>.20 kg [.43 lb]</td>
</tr>
<tr>
<td>STB0075-NA</td>
<td>75mm ±0.02</td>
<td>.32 kg [.71 lb]</td>
</tr>
<tr>
<td>STB0100-NA</td>
<td>100mm ±0.02</td>
<td>.45 kg [.99 lb]</td>
</tr>
<tr>
<td>STB0150-NA</td>
<td>150mm ±0.02</td>
<td>.70 kg [1.54 lb]</td>
</tr>
<tr>
<td>STB0200-NA</td>
<td>200mm ±0.02</td>
<td>.95 kg [2.09 lb]</td>
</tr>
<tr>
<td>STB0250-NA</td>
<td>250mm ±0.02</td>
<td>1.20 kg [2.64 lb]</td>
</tr>
<tr>
<td>STB0300-NA</td>
<td>300mm ±0.02</td>
<td>1.44 kg [3.18 lb]</td>
</tr>
<tr>
<td>STB0350-NA</td>
<td>350mm ±0.02</td>
<td>1.74 kg [3.78 lb]</td>
</tr>
</tbody>
</table>
SPIDERGRIP BOOMS, ADAPTOR AND SPACERS

Spidergrip Tooling Components | Dimensions | Technical Specifications

Ø60mm Breakaway and Non-Breakaway Boom Spacers

**Model Number** | **Weight**
--- | ---
STB0025-NA | 0.08 kg [0.18 lb]

Ø60mm 25mm Engineered Breakaway Boom Spacers

**Model Number** | **Weight**
--- | ---
STB0025-BA-800 | 0.08 kg [0.18 lb]

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

Dimensions and technical information are subject to change without notice
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 Tooling Components | Dimensions | Technical Specifications

Ø60mm 2-face 90° Junction

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>STN0C90-NA</td>
<td>.53 kg [1.16 lb]</td>
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</table>

Dimensions and technical information are subject to change without notice.
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 3-Face Junction

Dimensions and technical information are subject to change without notice

Model Number | Weight
--- | ---
STN0T3F-NA | .60 kg [1.31 lb]
SPIDERGRIP JUNCTION COMPONENTS

Spidergrip Tooling Components | Dimensions | Technical Specifications

Ø60mm 4-Face Junction

Dimensions and technical information are subject to change without notice

Model Number | Weight
STN0T4F-NA | .67 kg [1.47 lb]
SPIDERGRIP JUNCTION COMPONENTS

Spidergrip Tooling Components | Dimensions | Technical Specifications

Ø60mm 5-Face Junction

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Weight</th>
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</thead>
<tbody>
<tr>
<td>STN0T5F-NA</td>
<td>0.71 kg [1.56 lb]</td>
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</table>

Dimensions and technical information are subject to change without notice.
### Spidergrip Tooling Components | Dimensions | Technical Specifications

#### Ø60mm to Ø25mm Single End Extension

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Weight</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STV0100-NA</td>
<td>.26 kg [.58 lb]</td>
<td>Ø46.0 FLATS Ø25.0 Ø59.6</td>
</tr>
<tr>
<td>STV0200-NA</td>
<td>.40 kg [.87 lb]</td>
<td>Ø46.0 FLATS Ø25.0 Ø59.6</td>
</tr>
</tbody>
</table>

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 15mm Center to Face Offset
40mm x 40mm Mounting Pattern

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Weight</th>
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<tbody>
<tr>
<td>STS0010-NA</td>
<td>.31 kg (.69 lb)</td>
</tr>
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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]

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 50mm Center to Face Offset
40mm x 40mm Mounting Pattern

Model Number Weight
STS0012-NA .47 kg [1.04 lb]
### Model Number | Weight
---|---
STS0014-NA | .39 kg [.85 lb]

Spidergrip Tooling Components | Dimensions | Technical Specifications

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

![Image](image_url)

**Dimensions**

- Ø60.0mm
- 30.0mm
- 40.0mm ± .02mm
- 60.0mm
- 40.0mm ± .02mm
- 30.0mm
- 140.0mm
- Ø10mm CMM CALIBRATION
- 5x45° TYP.
- 6MM KEY SLOT

**Technical Specifications**

- 4X Ø8 H7
- Ø 59.6mm

Dimensions and technical information are subject to change without notice.
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)