



R-Series 4-DoF SCARA Arm Kit

Assembly Instructions

General Warnings and Cautions

Danger (May cause serious injury or death)

- Keep water, flammables, solvents and other liquids clear from **unsealed** actuator.
- Keep fingers away from moving parts during operation.
- Cut power immediately if actuator emits strange odors or smoke.
- Keep actuator out of reach of children.

Warning (May cause injury or damage to actuator)

- Do not expose the actuator to permanent and strong magnetic fields.
- Do not force screws into the bottom of the actuator. R8 = 8mm Tap Depth
- Use provided hardware with accessories and hand tighten as needed.
- Attempts to disassemble actuator will void the warranty and may cause permanent damage.

Sealing (R-Series Actuators are IP67 when properly used)

- Please refer to all online documentation for proper sealing techniques of the actuator.

For more information please visit: [**docs.hebi.us**](https://docs.hebi.us)

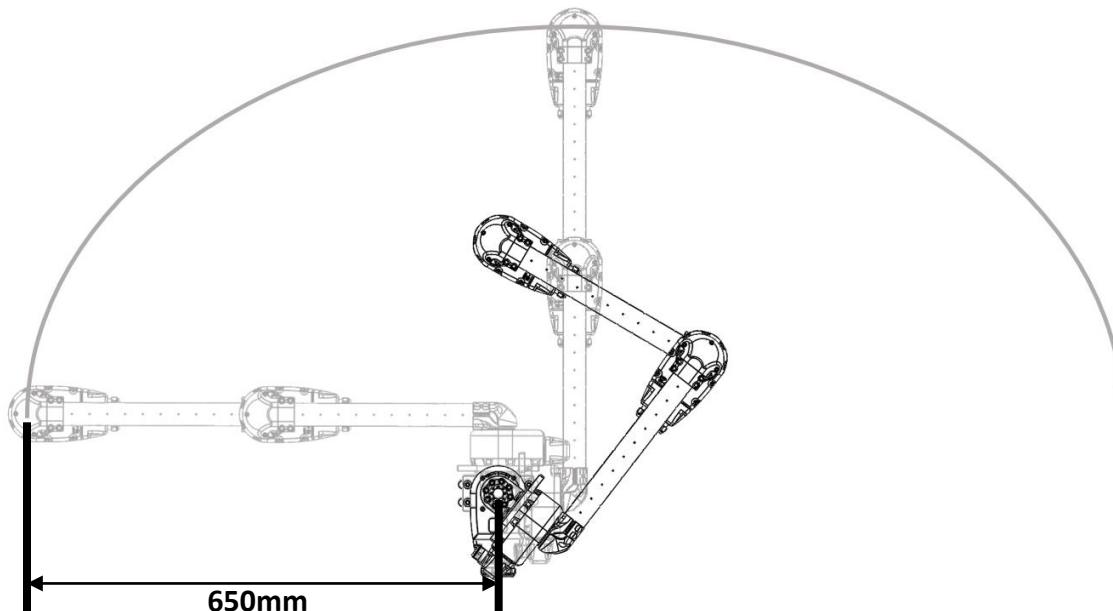
Technical Specifications

Specifications	Value
Weight (Excludes T-Slot Frame)	3.5 kg
Reach	650 mm
Max Continuous Payload*	1.00 kg
Max Peak Payload*	1.50 kg

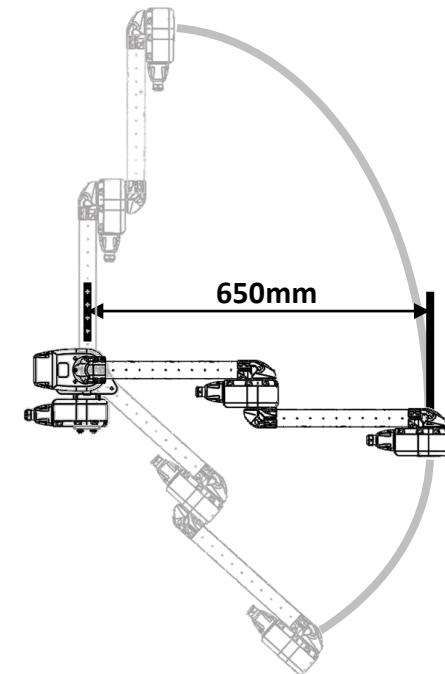
Calculated using Default Configuration.
Using a different configuration of R-Series Actuators will provide different payload capacities.

Movement	Working Range	Max Speed
Axis 1 – Base [Default: R8-9]	-50° to +80° (limited by wiring)	192°/s
Axis 2 – Shoulder [Default: R8-16]	-30° to +90°	84°/s
Axis 3 – Elbow [Default: R8-3]	-155° to +155° (avoid end effector collisions)	192°/s
Axis 4 – Wrist 1 [Default: R8-3]	Continuous (avoid end effector collisions)	540°/s

Top View



Side View



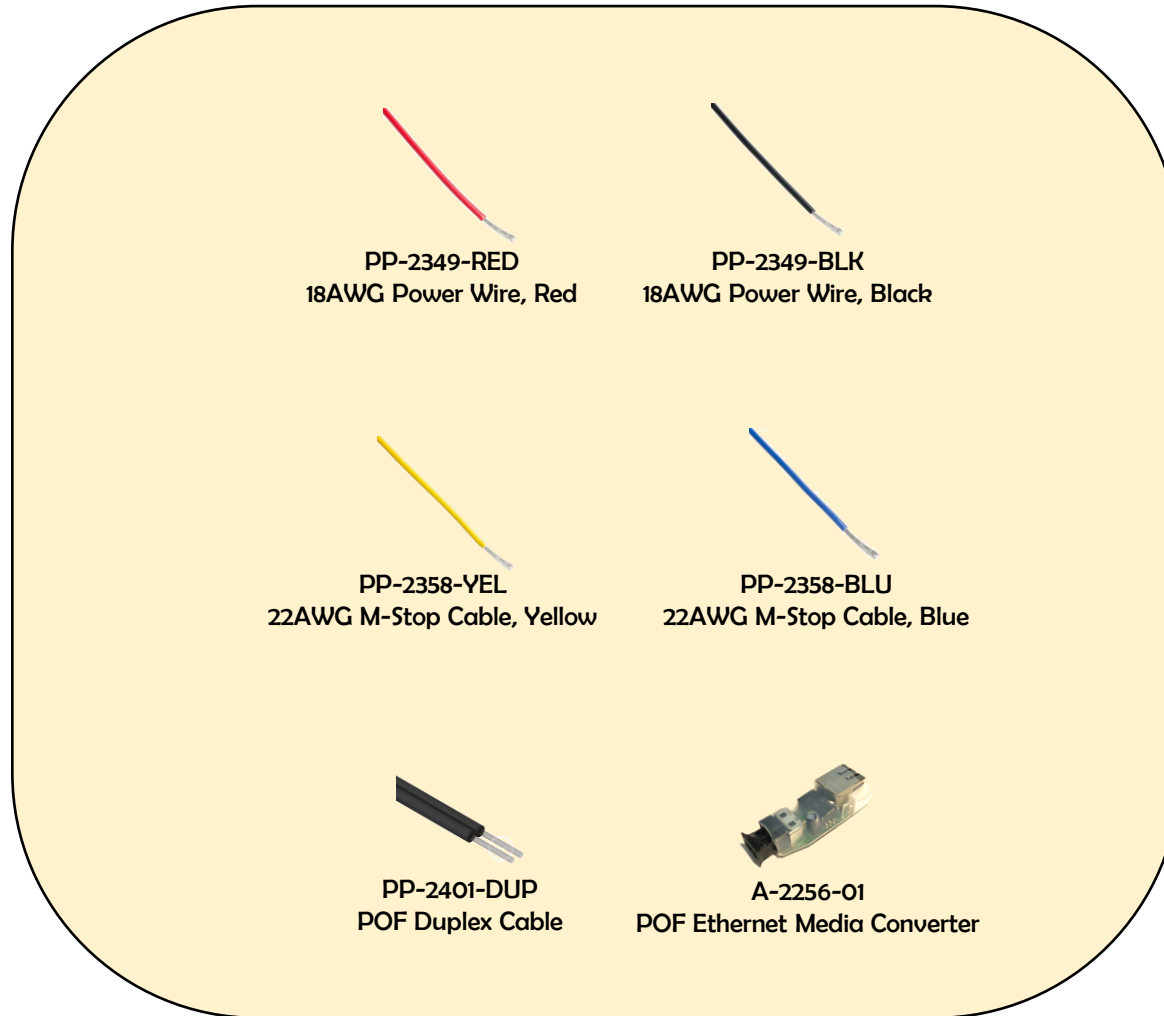
Bill of Materials – Mechanical*

Default Configuration

			
2 x	1 x	1 x	
R8-3	R8-9	R8-16	
Straight Connector	Straight Connector	Right Angle Connector	
			
2 x	2 x	2 x	2 x
A-2218-01	A-2090-02	A-2219-01	A-2231-01
			
2 x	1 x	1 x	1 x
PM-2200-02 [300mm]	A-2228-01	A-2221-01	A-2232-01
			
6 x	4 x	2 x	6 x
PP-2141-18 [2" x 1" T-Slot 18" Length]	PP-2155-01	PP-2146-01	PP-2145-01

fasteners included, not shown

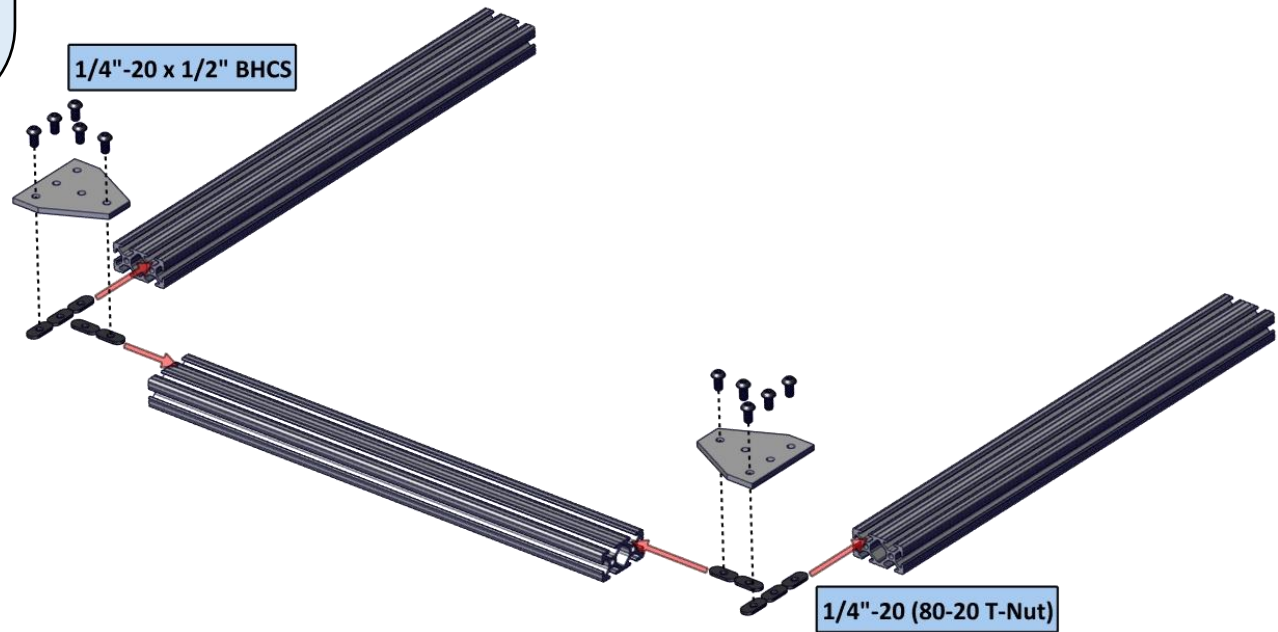
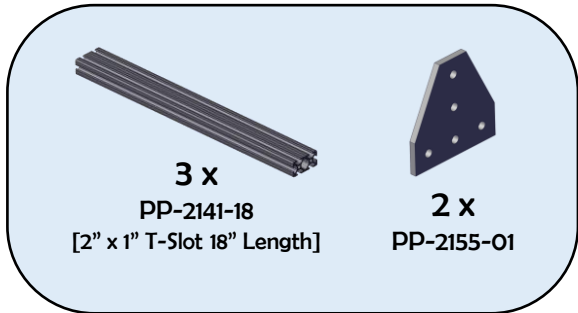
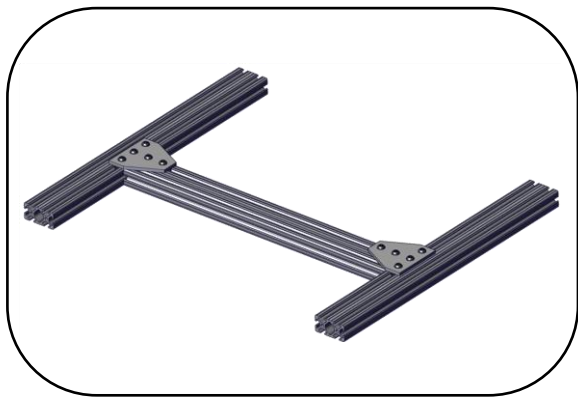
Bill of Materials - Electrical

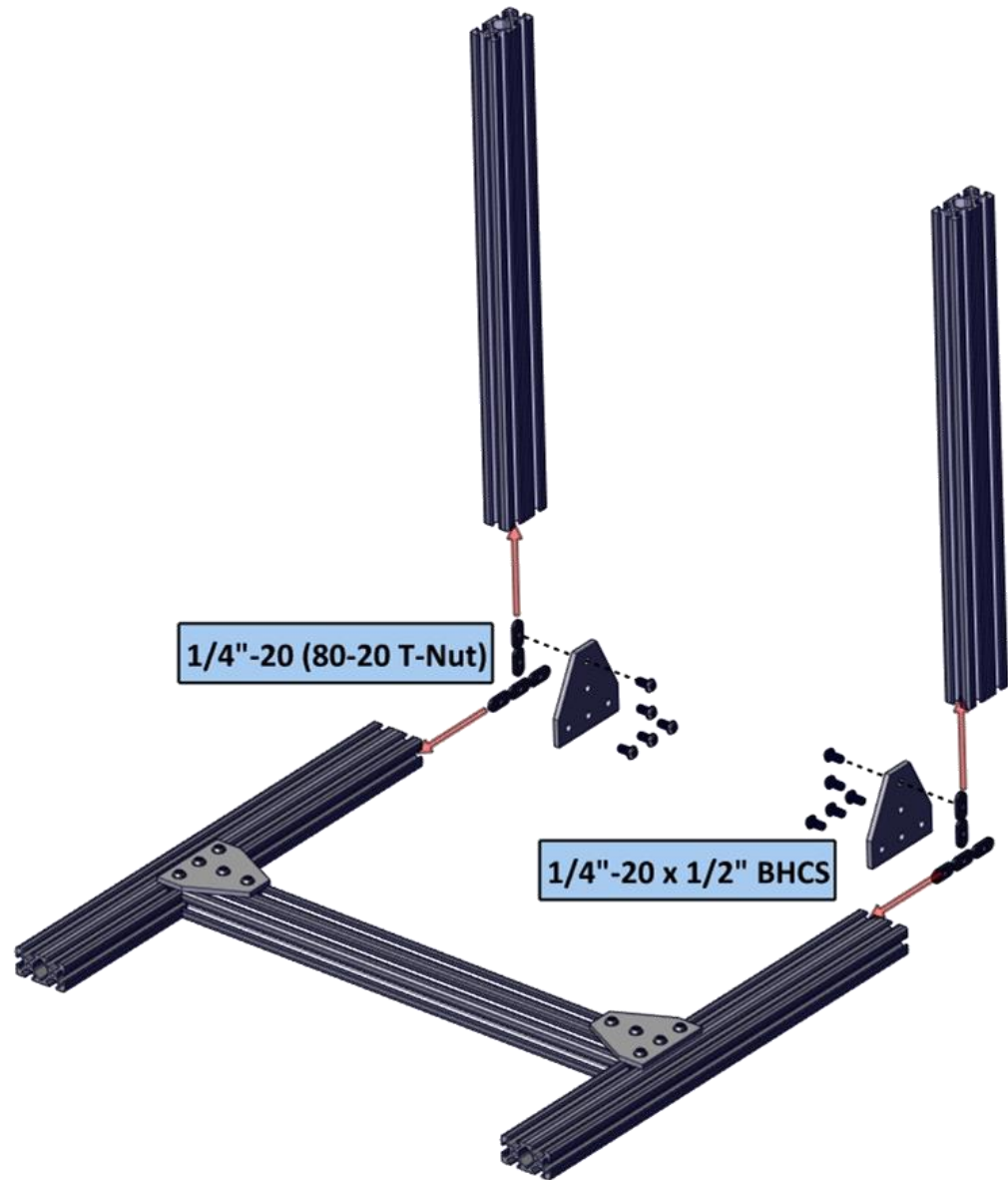
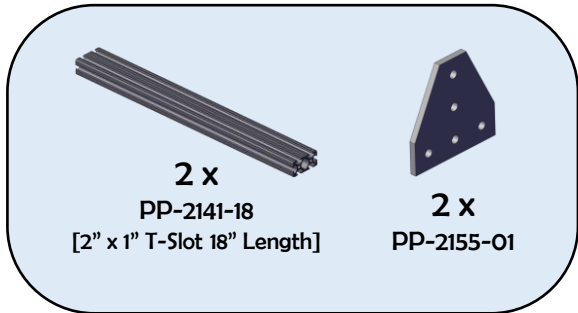


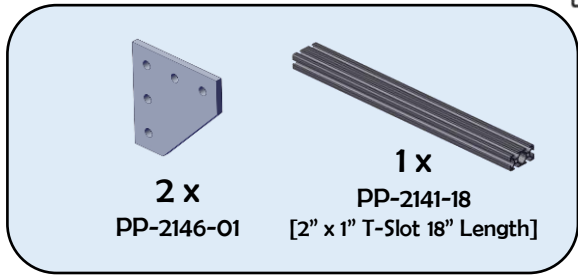
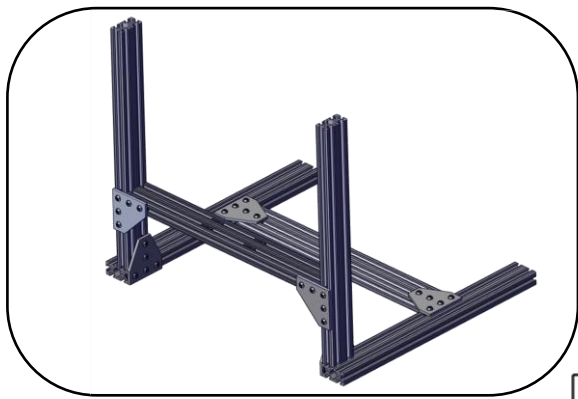
all items are included in R-Series Connection Toolbox

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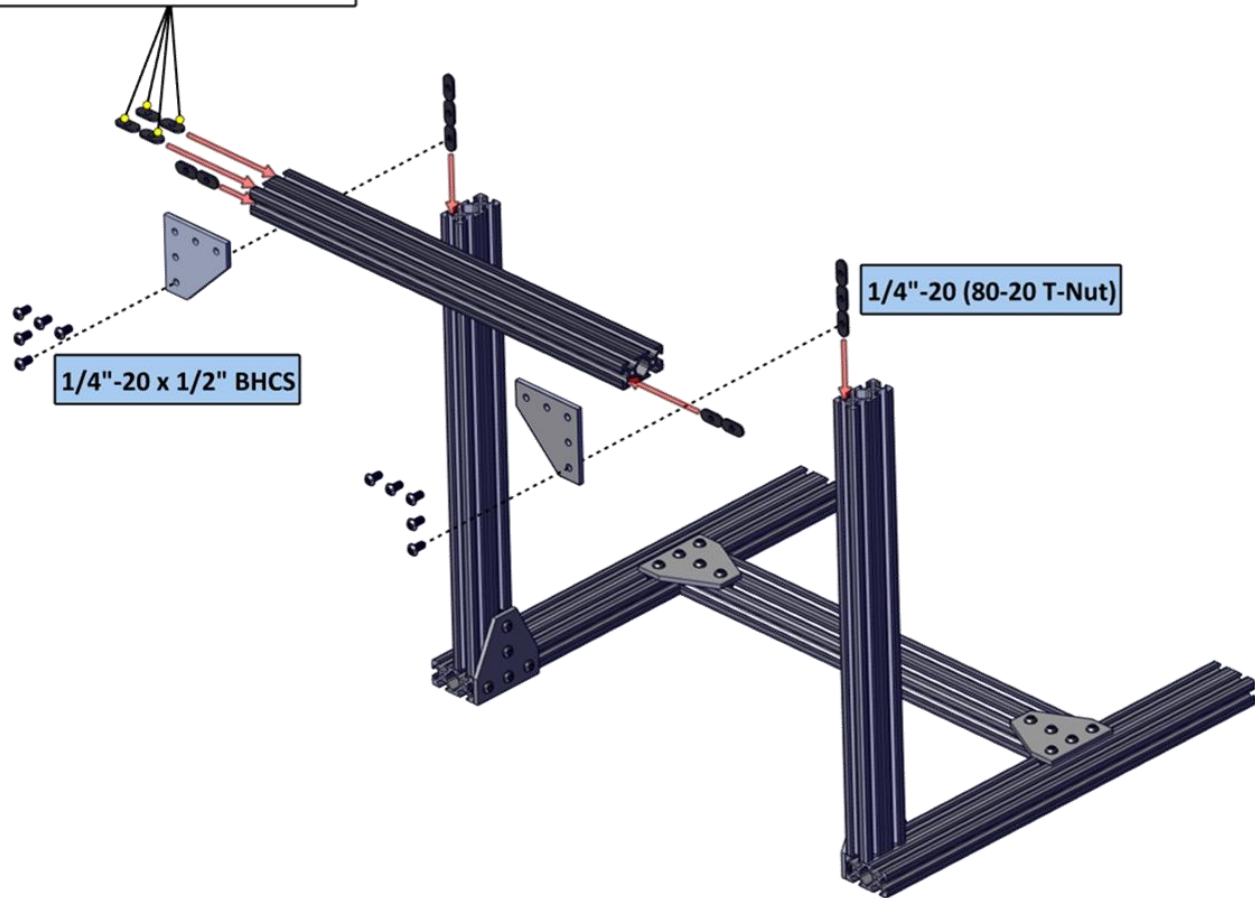
<u>Assembly</u>	<u>Image</u>	<u>Pages</u>
Frame		[6-8]
Tubes		[9-10]
Base		[11-12]
Final		[13-17]





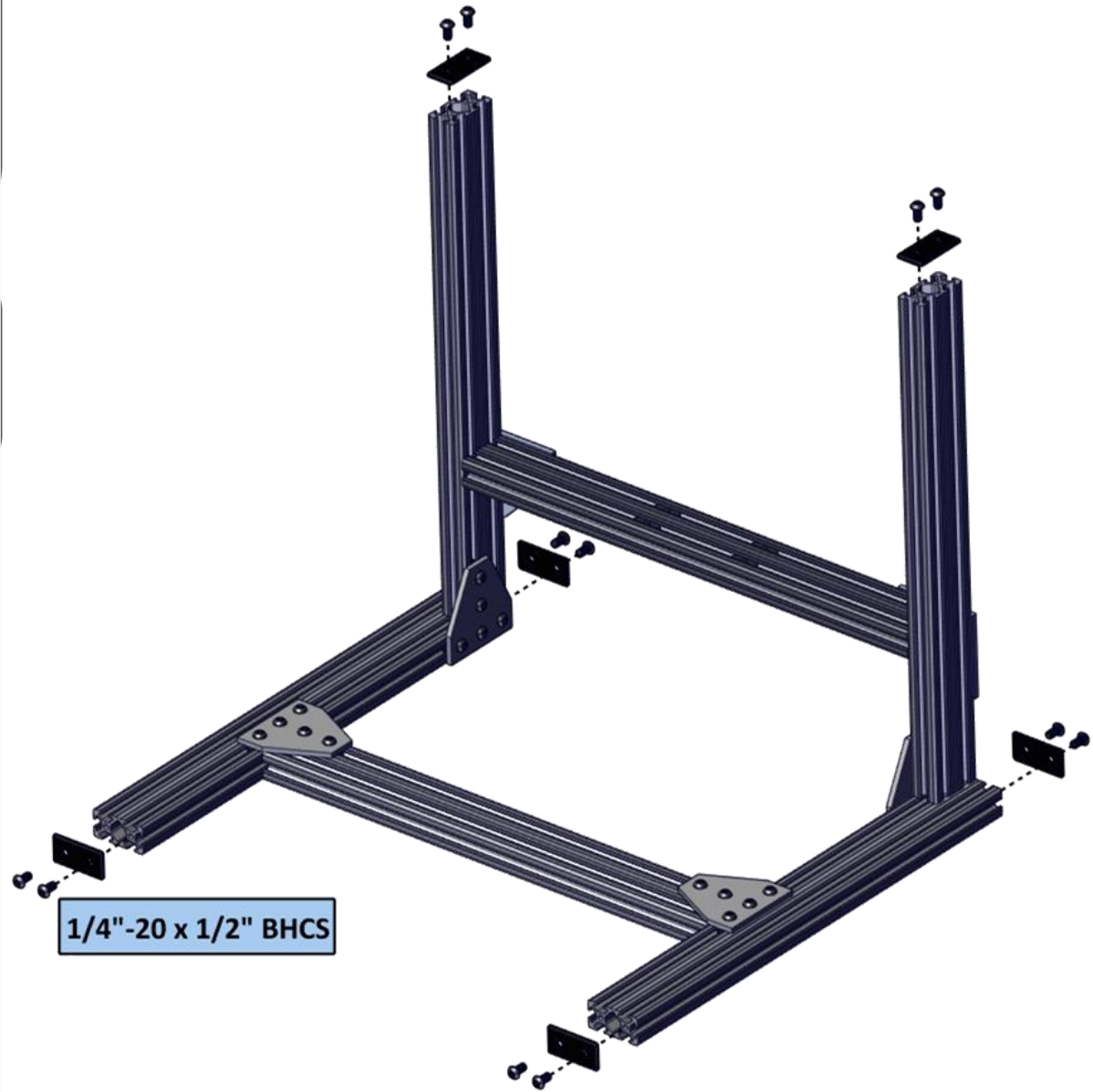


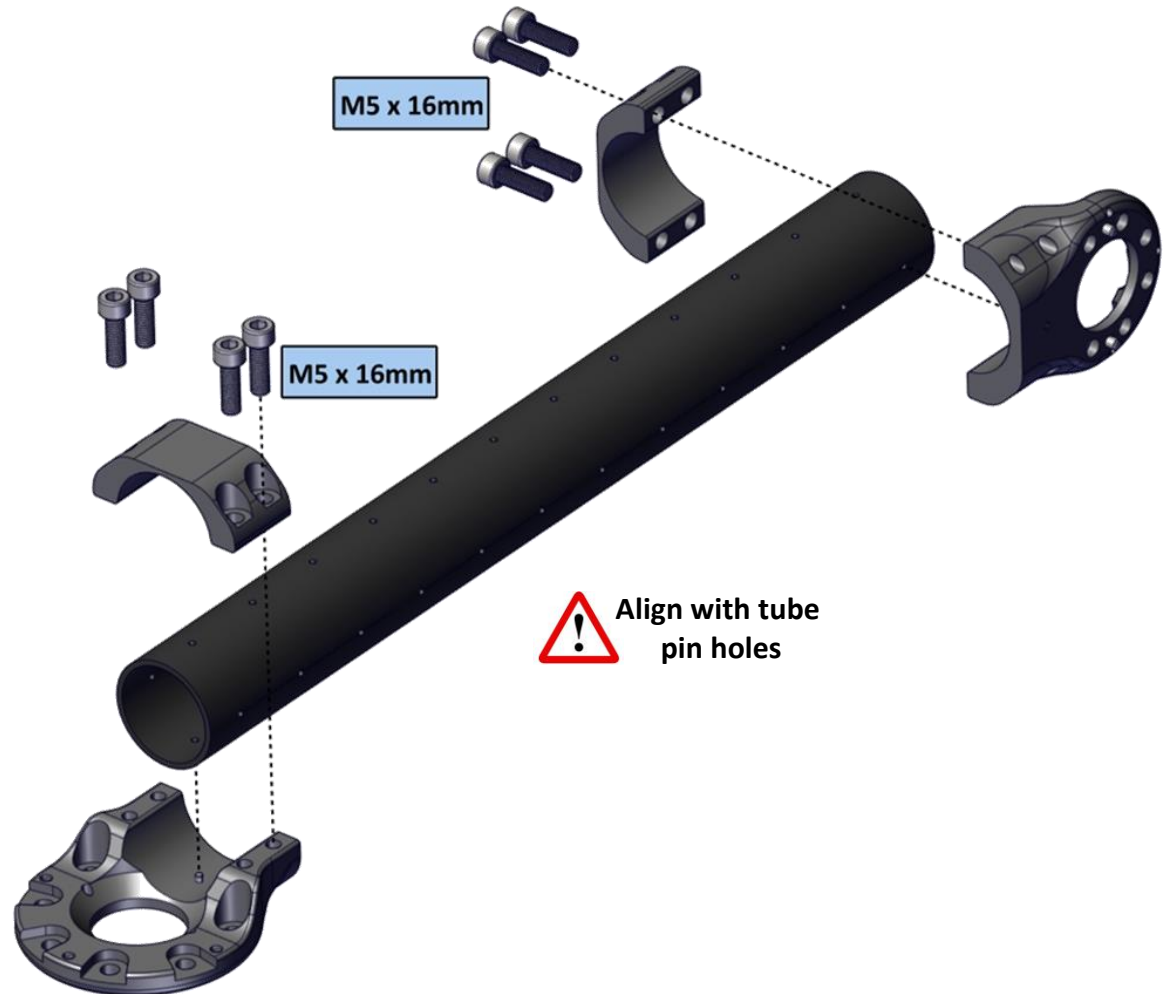
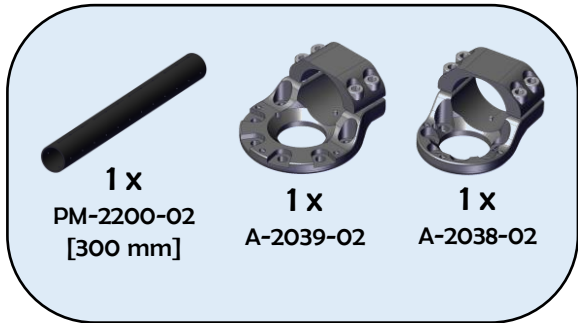
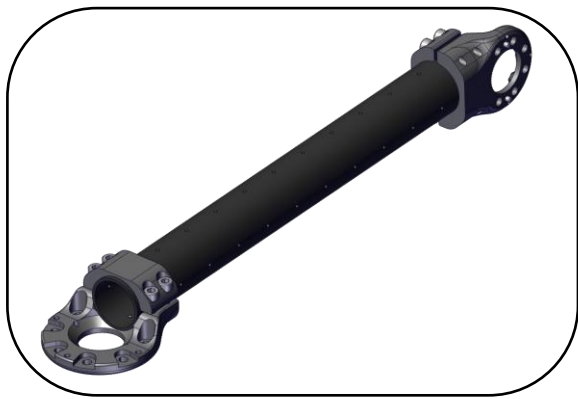
Insert 4 extra T-Nuts for Arm

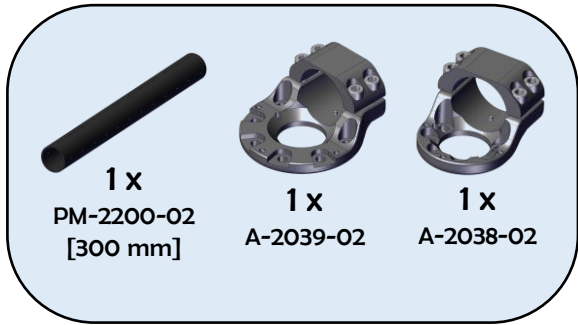


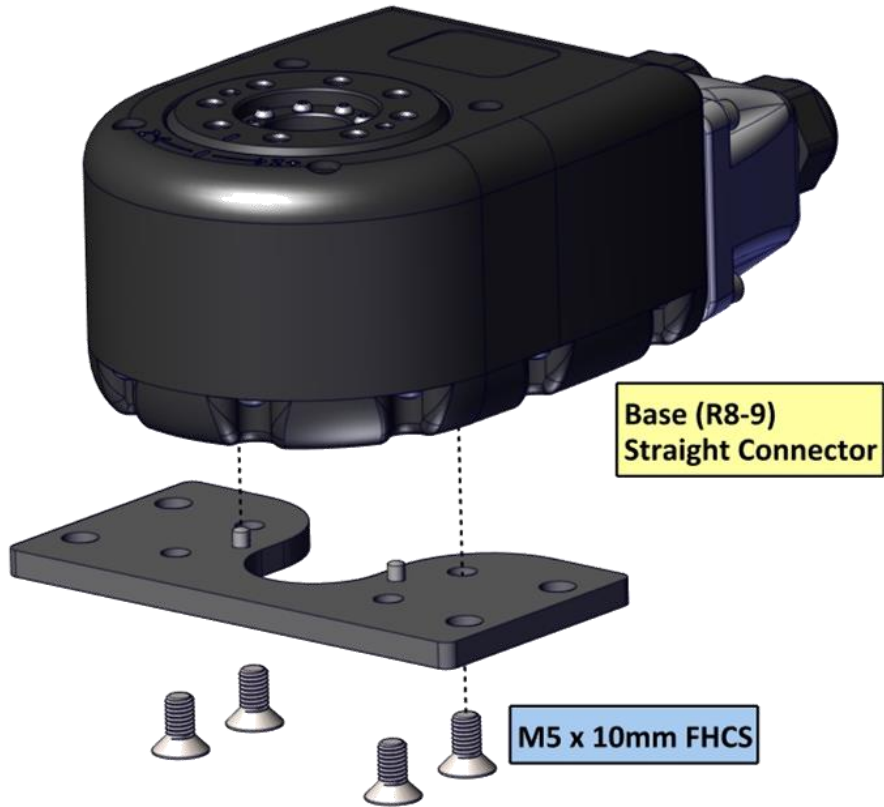
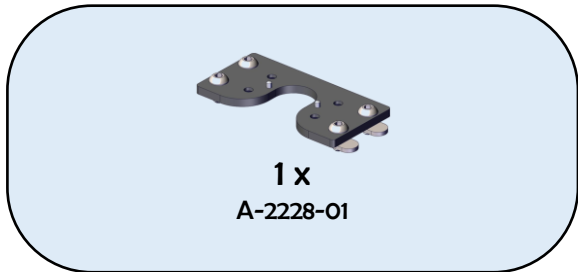
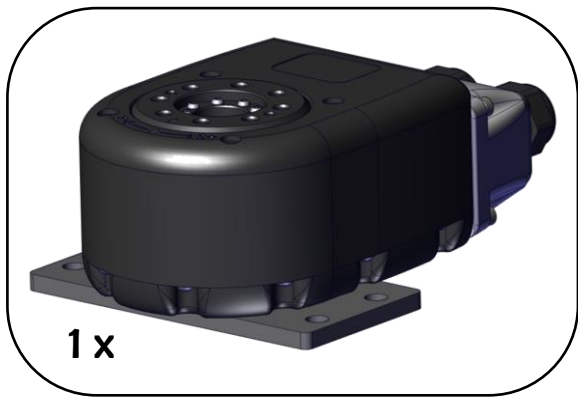


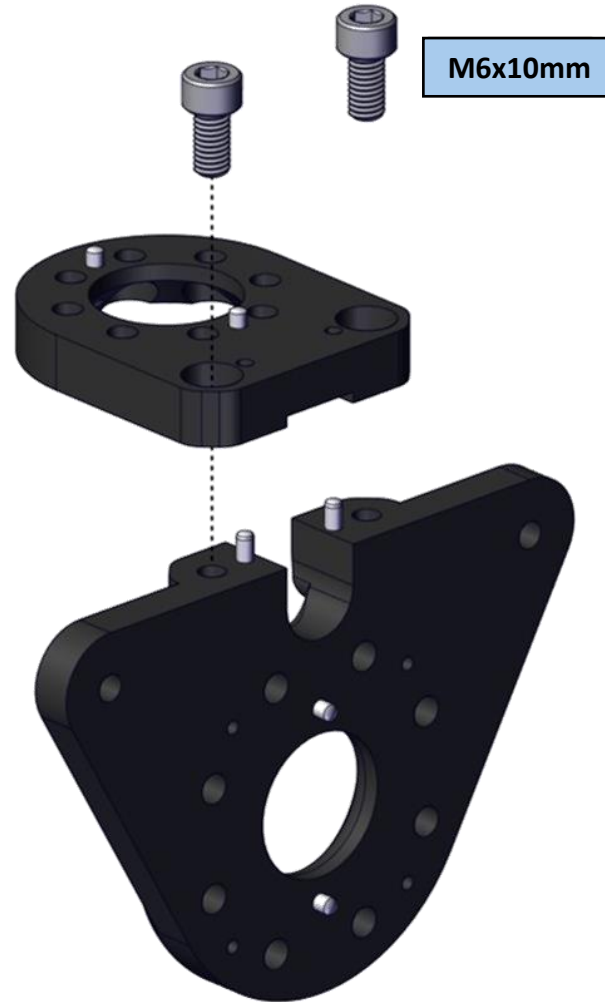
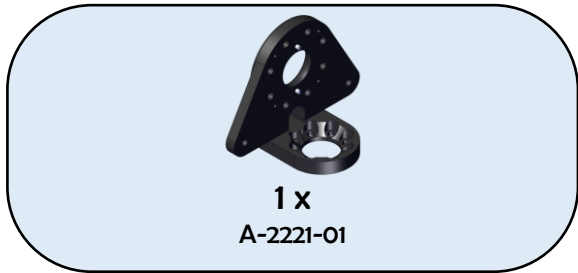
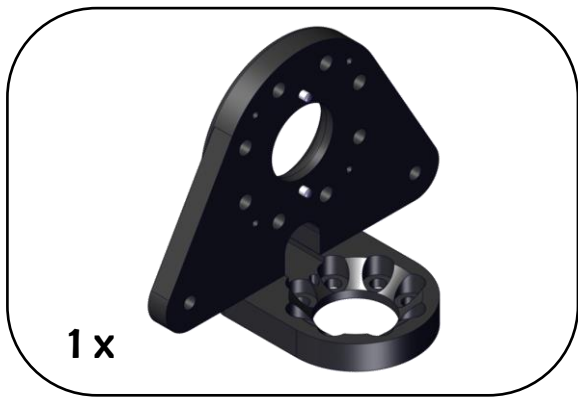
6 x
PP-2145-01



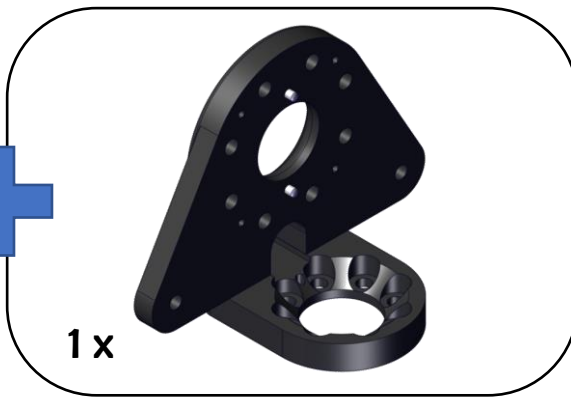
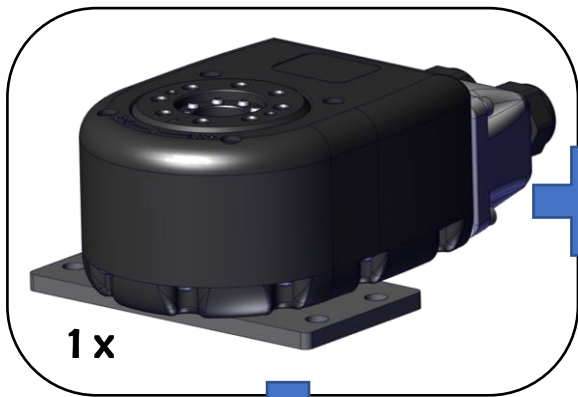




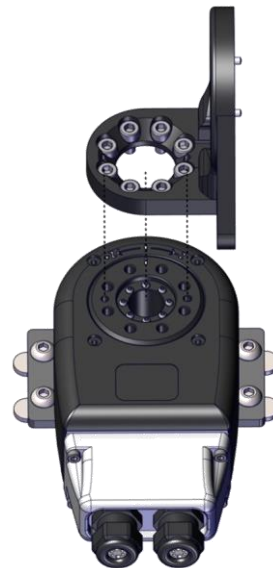
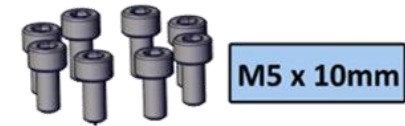





Flat face towards outside

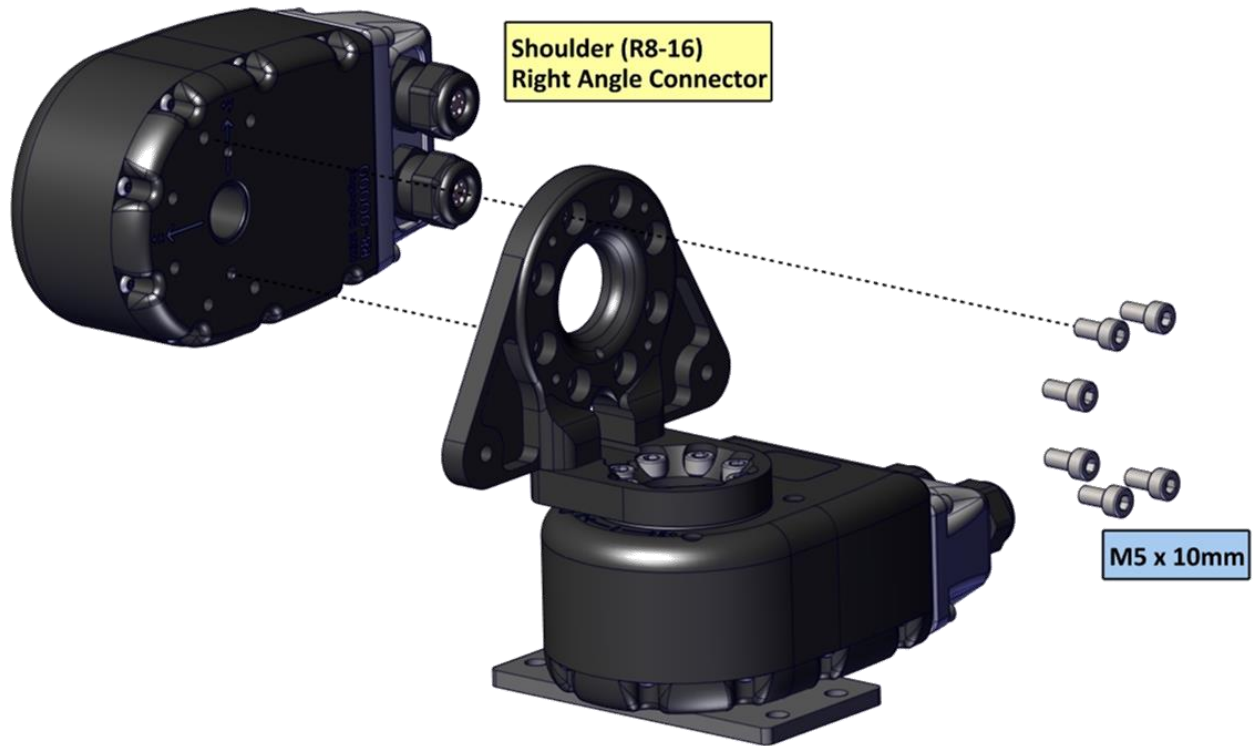
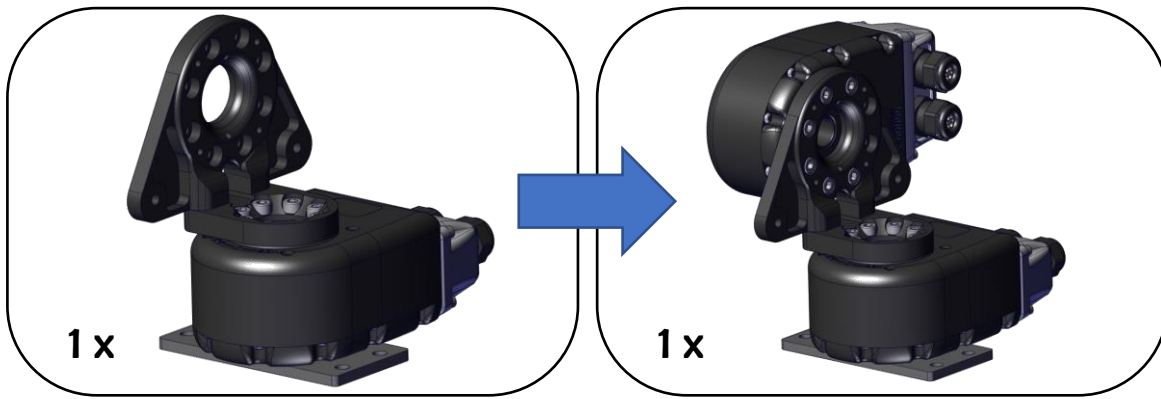


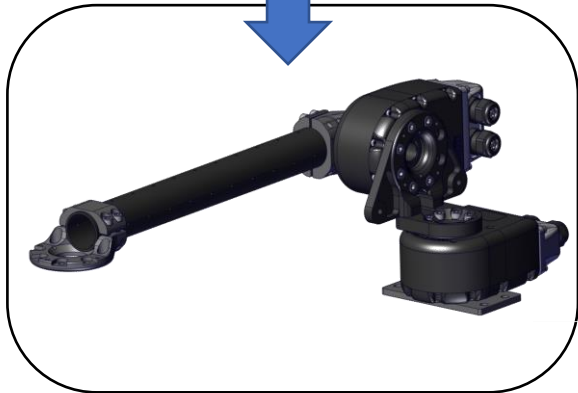
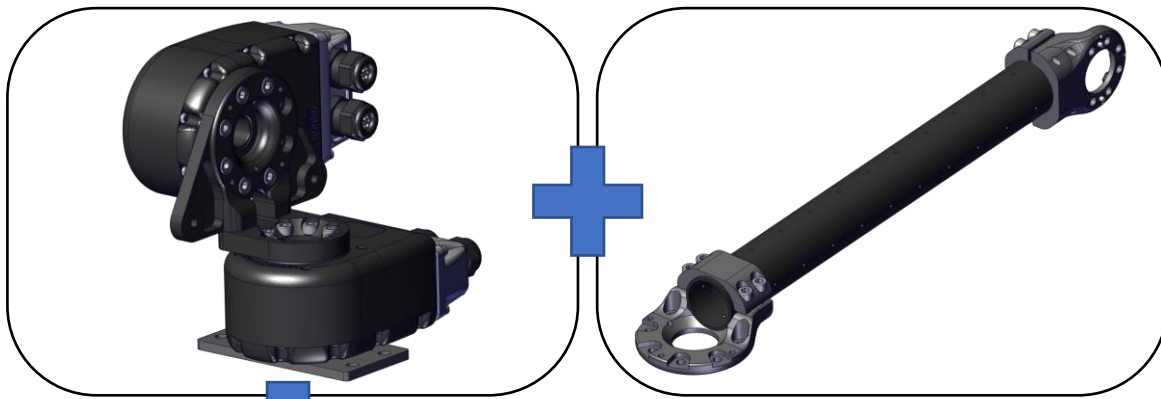
 Flat face towards outside




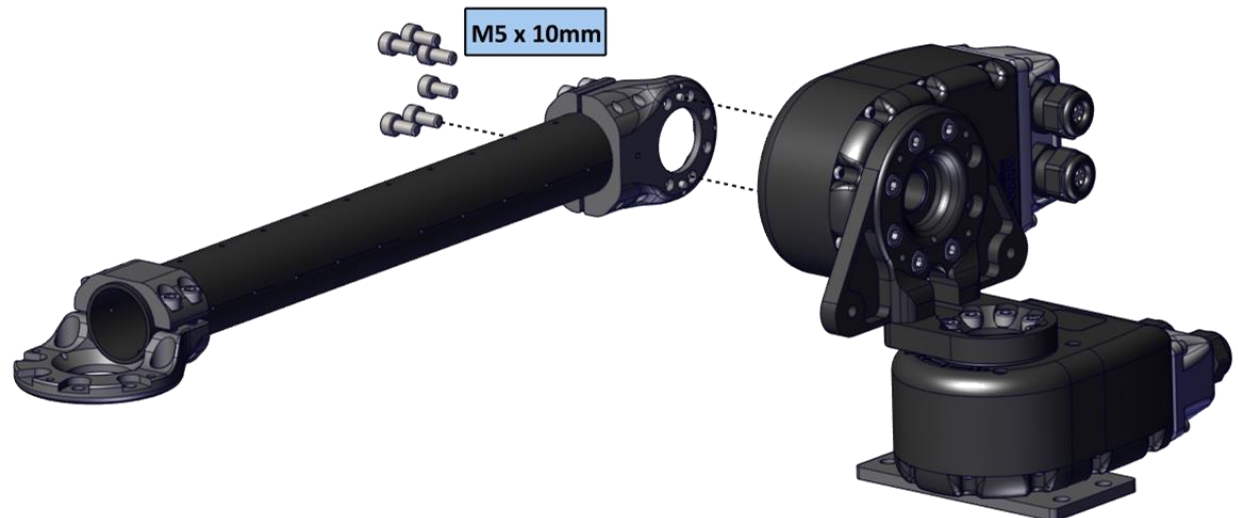
 Align with actuator output hub tick mark
(Flat face parallel with tick mark)

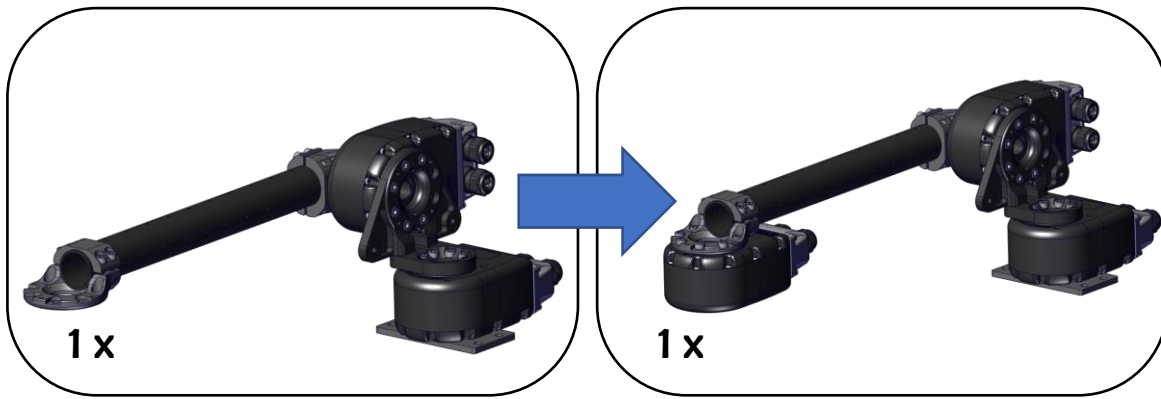


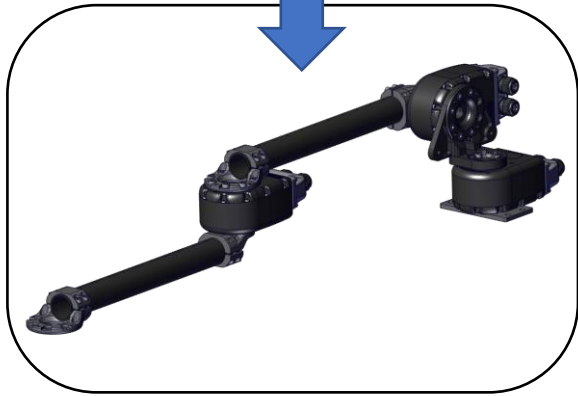
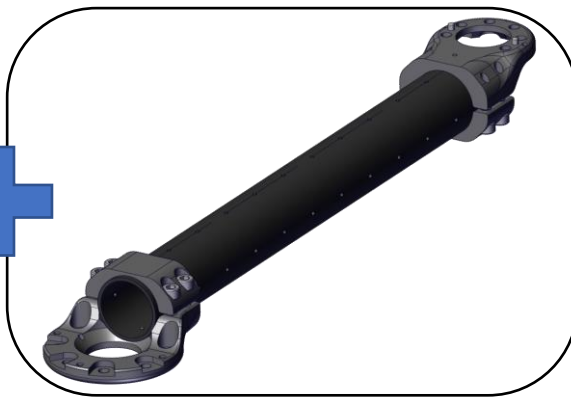
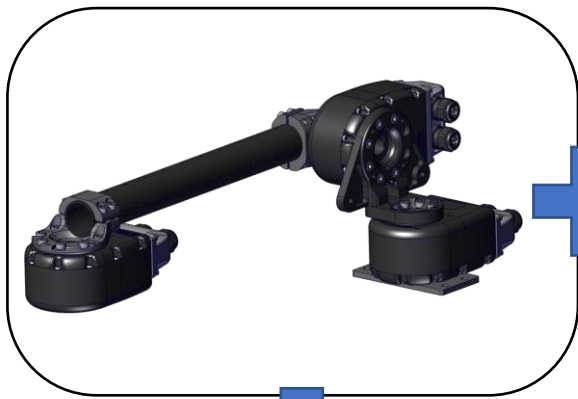




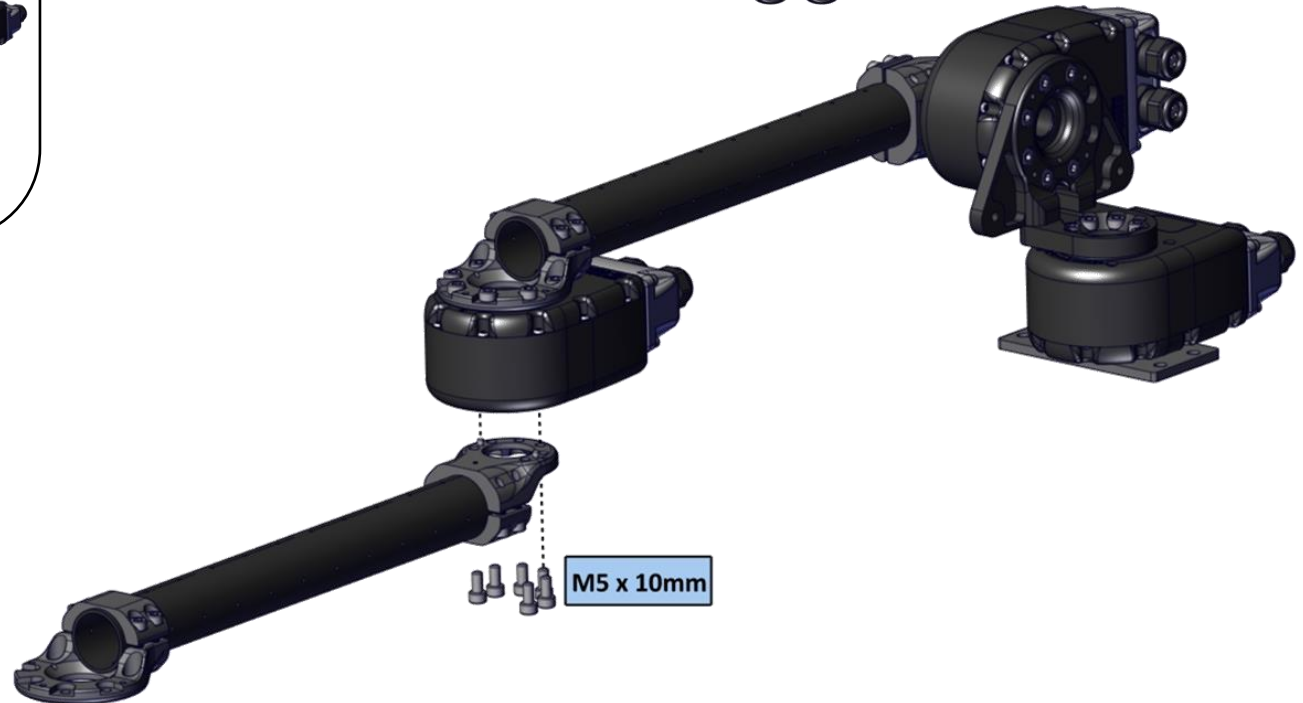
 **Align with actuator
output hub tick mark**
(Tube aligns with tick mark)

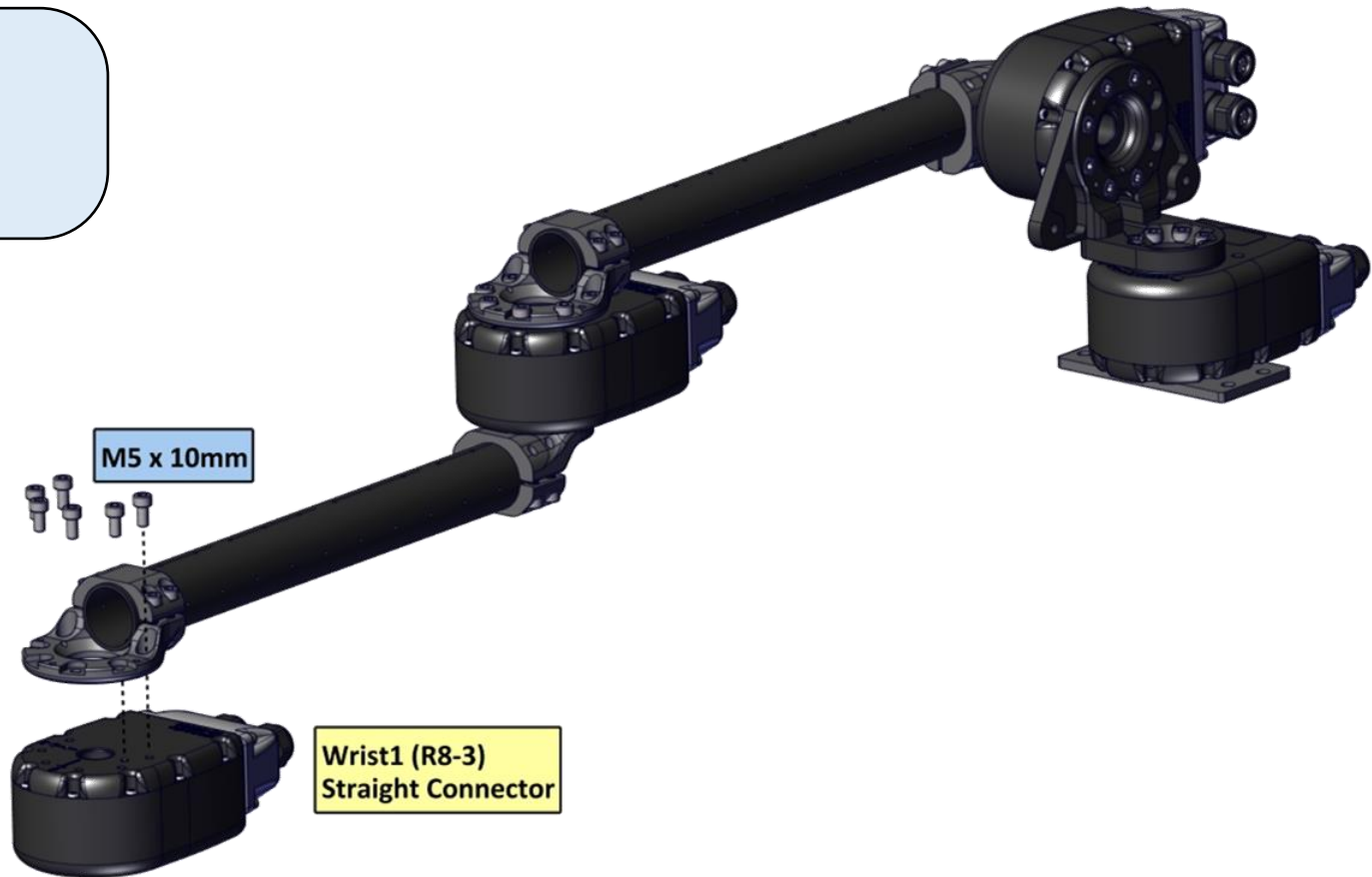
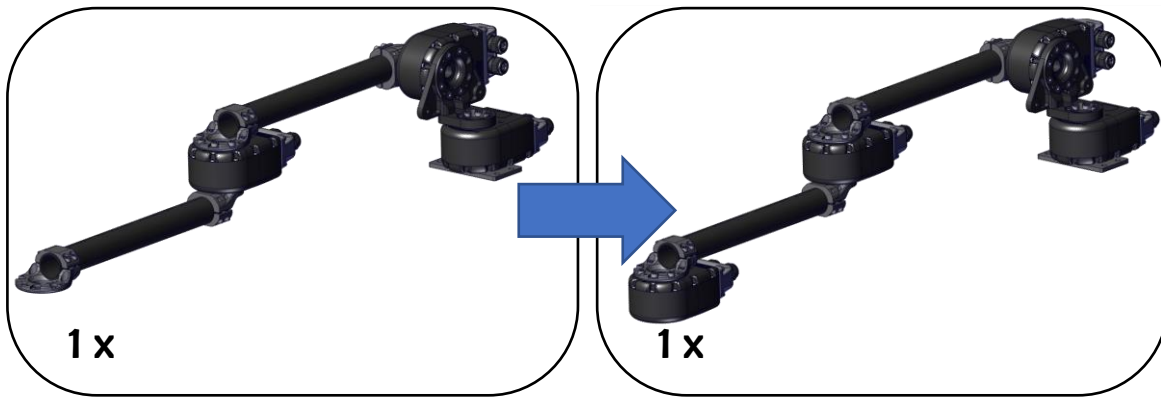






 Align with actuator output hub tick mark
(Tube aligns with tick mark)





Wiring Notes

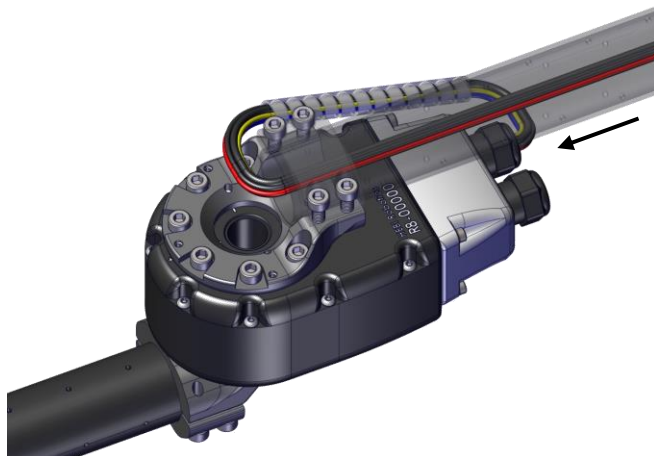
- Keeping wires organized will help prevent tangling and add a nice aesthetic.
 - Spiral sleeving is a good accessory for organizing loose wires
- Visit the following link to see detailed instruction on connecting wires to R-Series Modules.

<http://docs.hebi.us/#r-series-quickstart>

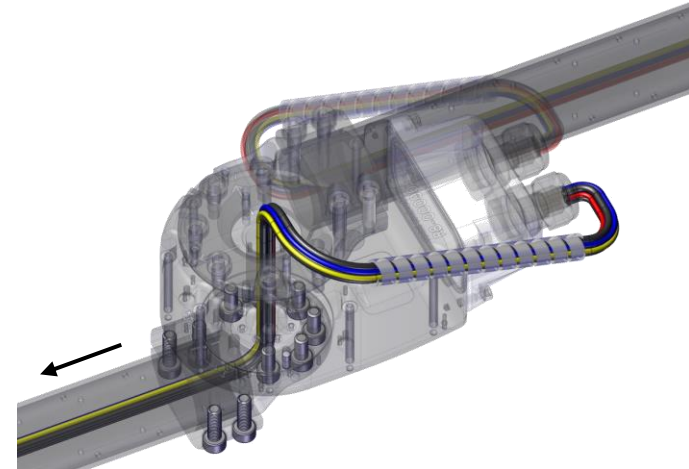
For more information visit: docs.hebi.us



[Spiral sleeving]

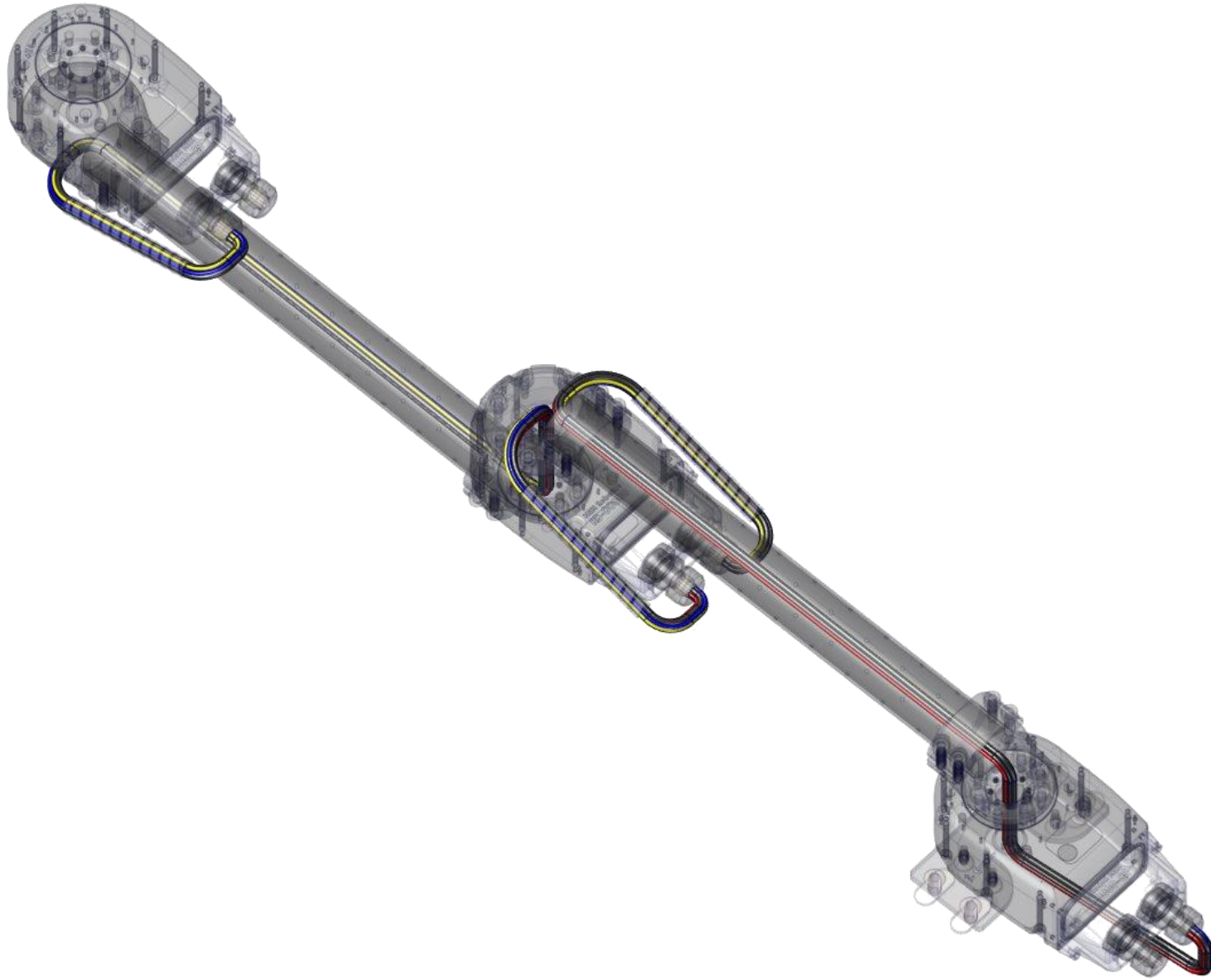


Wires that come from the previous joint should be inserted directly to actuator ports.

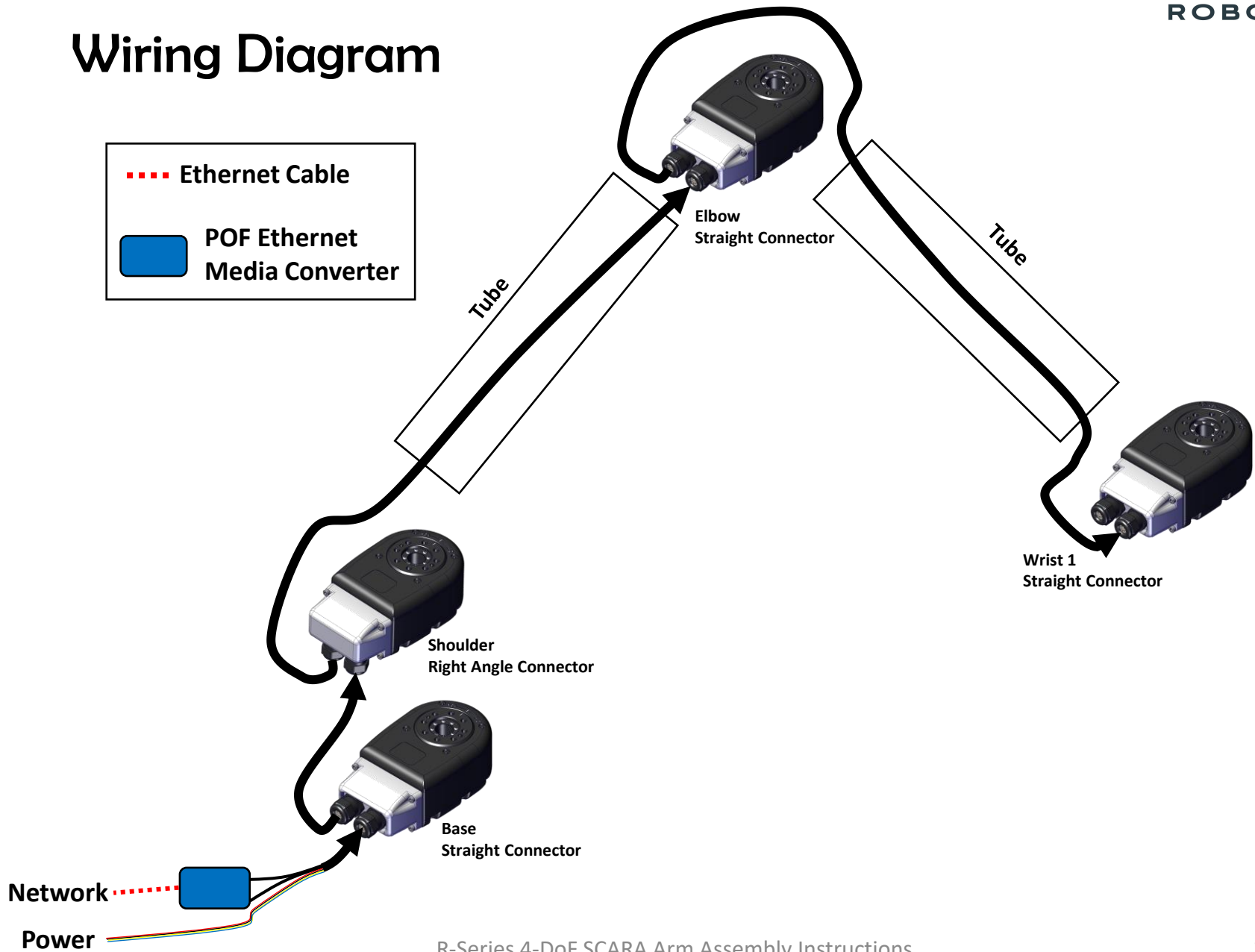


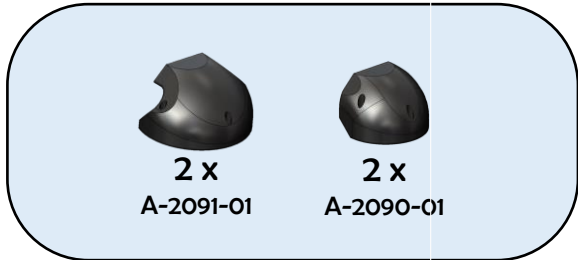
Wires that connect to the next joint should be threaded through the actuator's bore hole.

Wiring Example

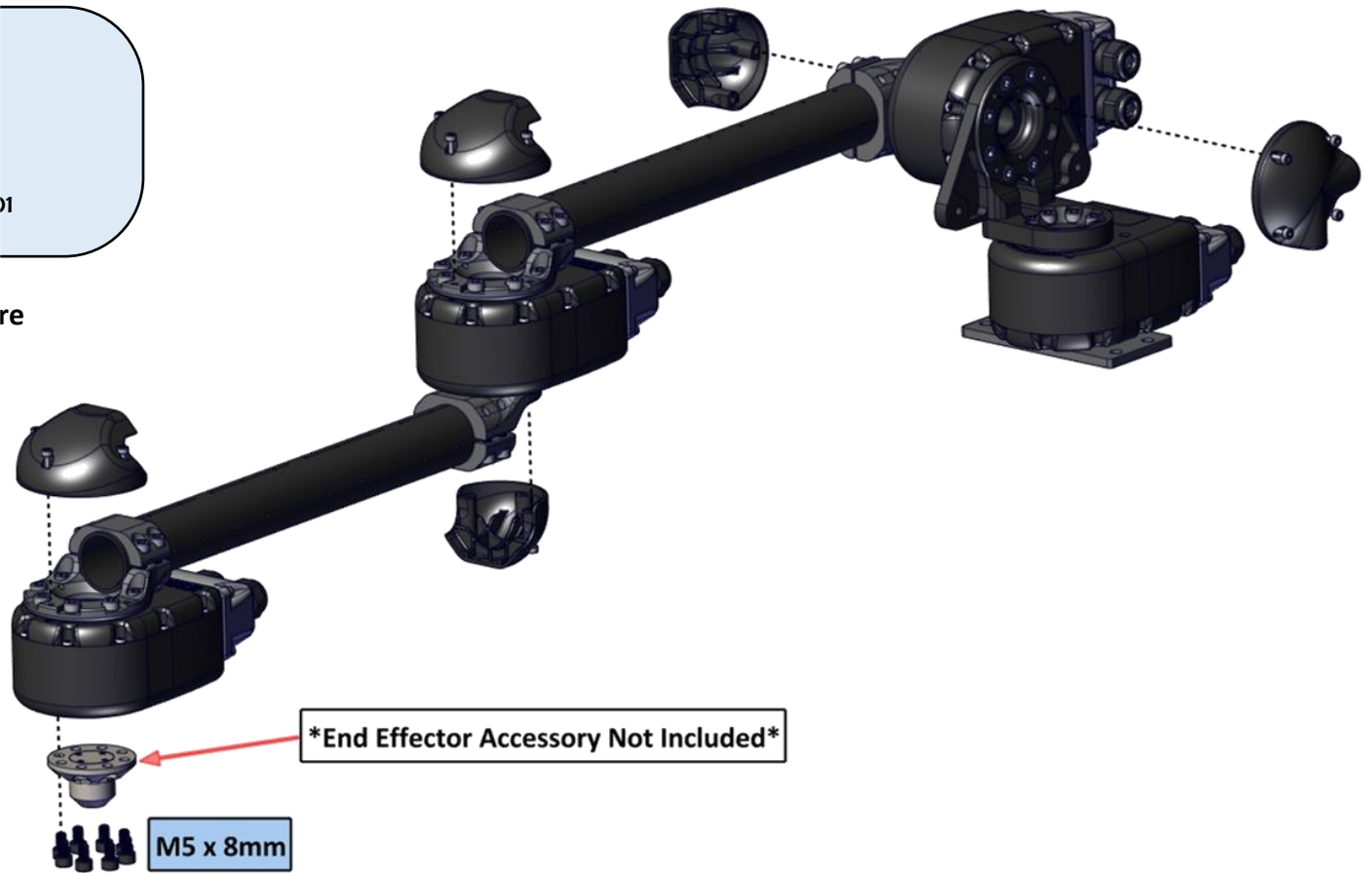


Wiring Diagram





Route wires before installing caps



End Effector Accessory Not Included

M5 x 8mm



All axes at zero degrees



Additional Accessories

- Power Supply, 24V 220W (A-2098-24)
 - Comes with correct Molex Minifit Jr 2 connector
- Magnet embedded end effector (A-2081-01)
 - Interfaces with hex shaft driver bits for screwing/bolting tasks
 - Screwdriver bits not included
- HEBI I/O Board (A-2116-01)
 - Integrate with 3rd party end effectors or tools using HEBI APIs
- HEBI Gripper
 - Cable driven gripper keeps weight away from end of arm
 - *Modules sold separately*



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ROBOTICS