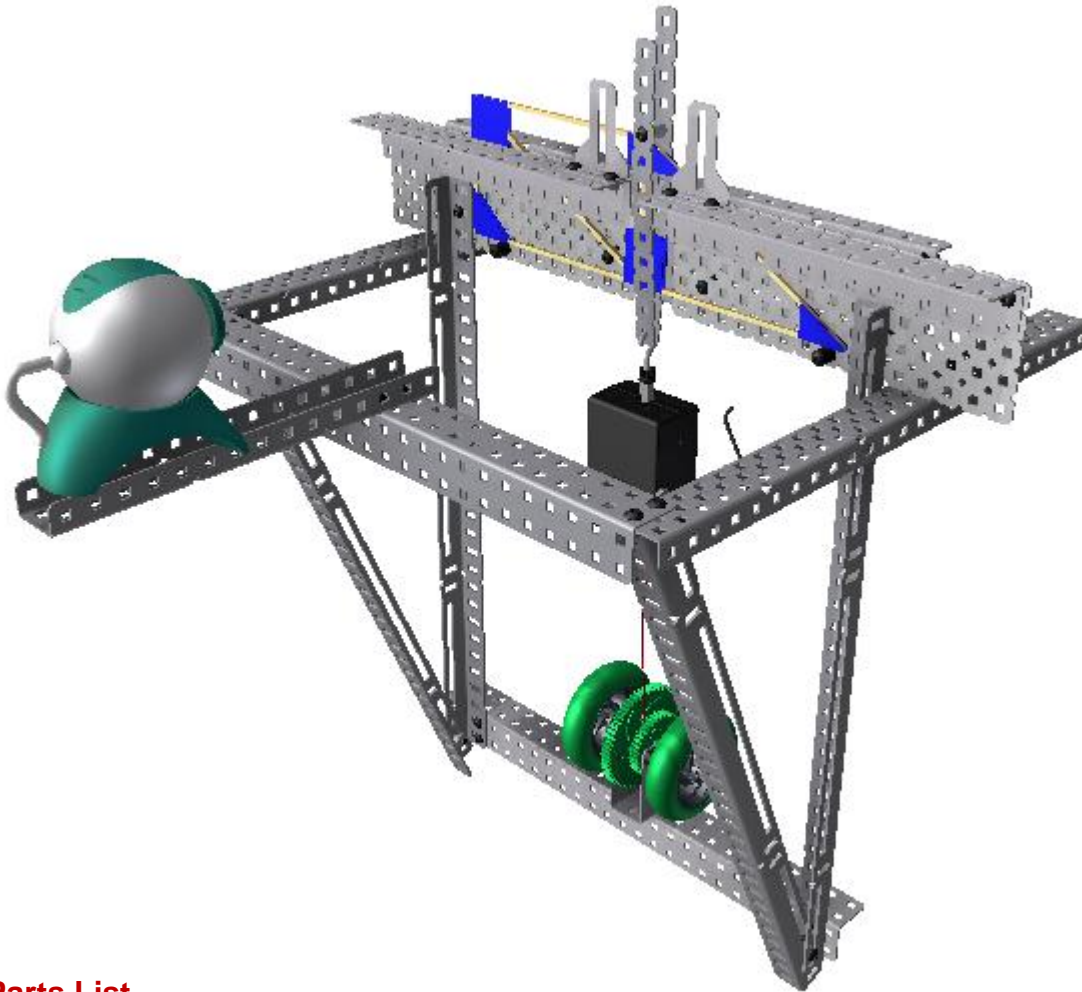


Activity 2.1 Material Tester Assembly

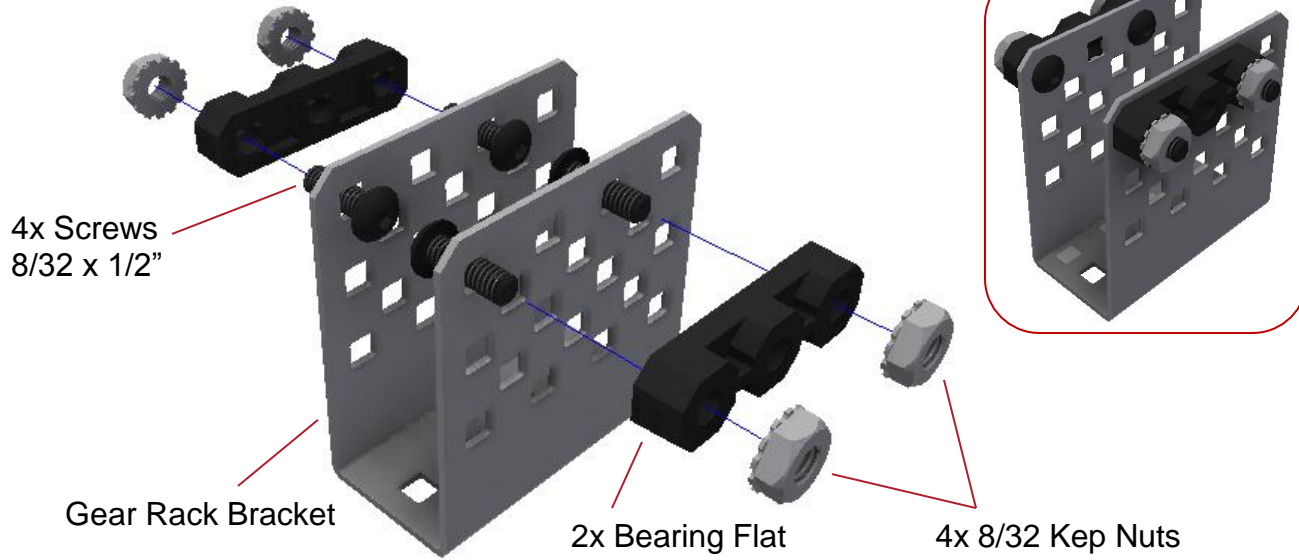


Parts List

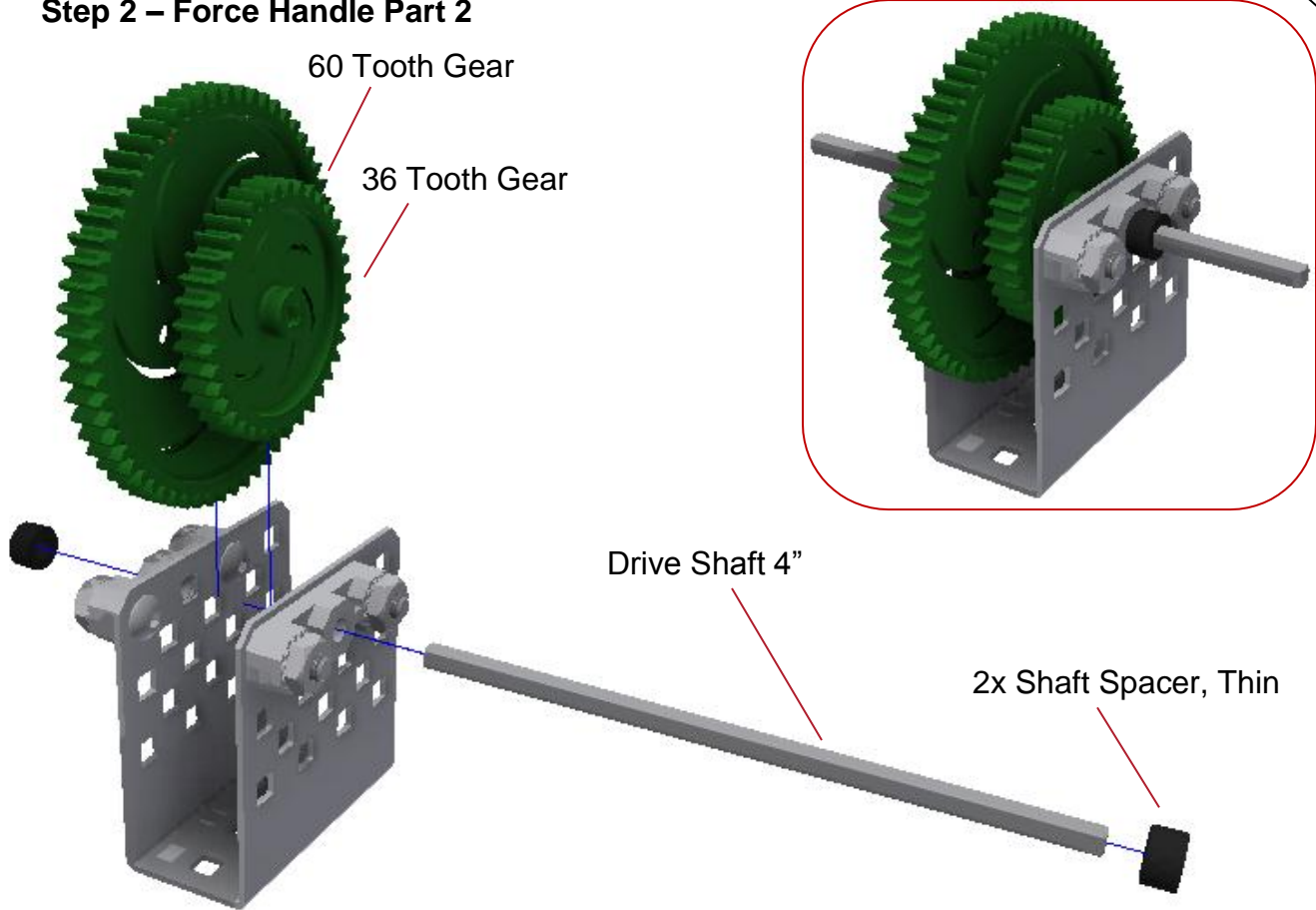
MATERIALS	QUANTITY	MATERIALS	QUANTITY
Screws 8/32 x 1/4"	24	Shaft Collar	2
Gear Rack Bracket	1	Slotted Angle, 30 Holes	4
Screws 8/32 x 1/2"	8	Chassis Bumper 2x2x15 Holes	1
Screws 8/32 x 3/4"	4	Chassis Bumper 2x2x25 Holes	2
Screws 8/32 x 1"	4	Angle Gusset	2
Nuts, Keps	38	Plate 5x15 Holes	2
Standoffs, 1/2" Long	1	C-Channel, 1x5x1x25 Holes	1
Bearing Flat	2	C-Channel, 1x2x1x25 Holes	2
60 Tooth Gear	1	C-Channel, 1x2x1x15 Holes	1
36 Tooth Gear	1	Bar 1x25 Holes	1
Shaft Spacer, Thin	8	Eye Bolt 1/4"-20 x 1" Length of Thread	1
Shaft Spacer, Thick	10	Dual Force Sensor	1
Drive Shaft 4"	1	Dual Force Sensor Hook	1
Small Wheel 2 3/4"	2	String	

Truss Tester Build Instructions

Step 1 – Force Handle Part 1

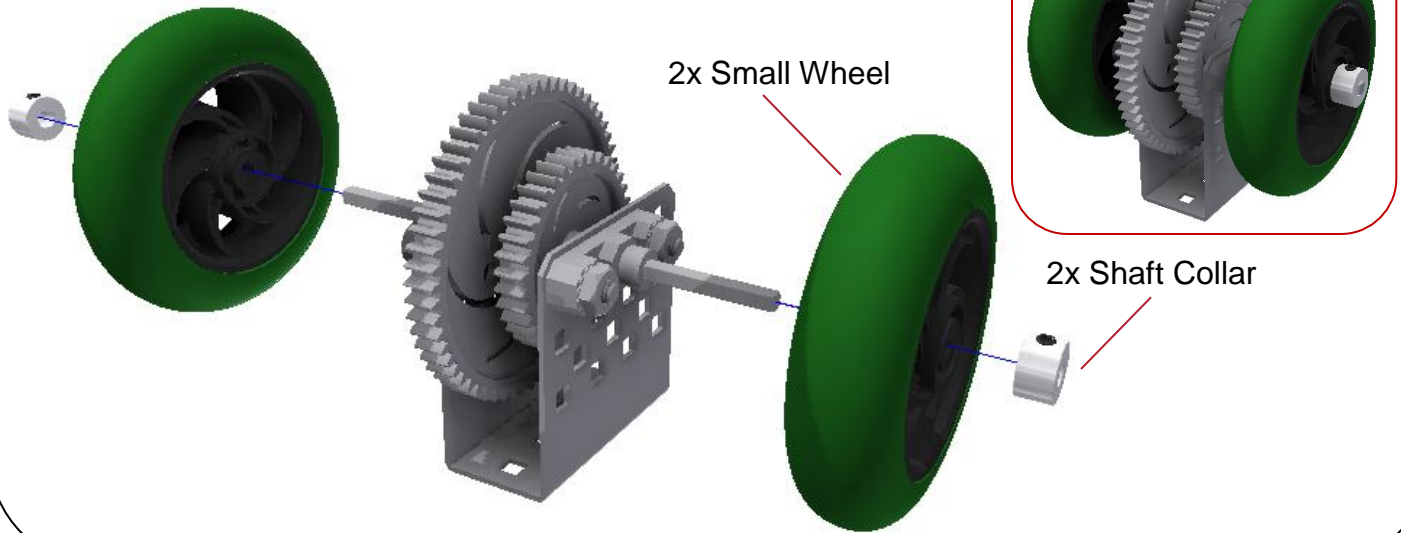


Step 2 – Force Handle Part 2

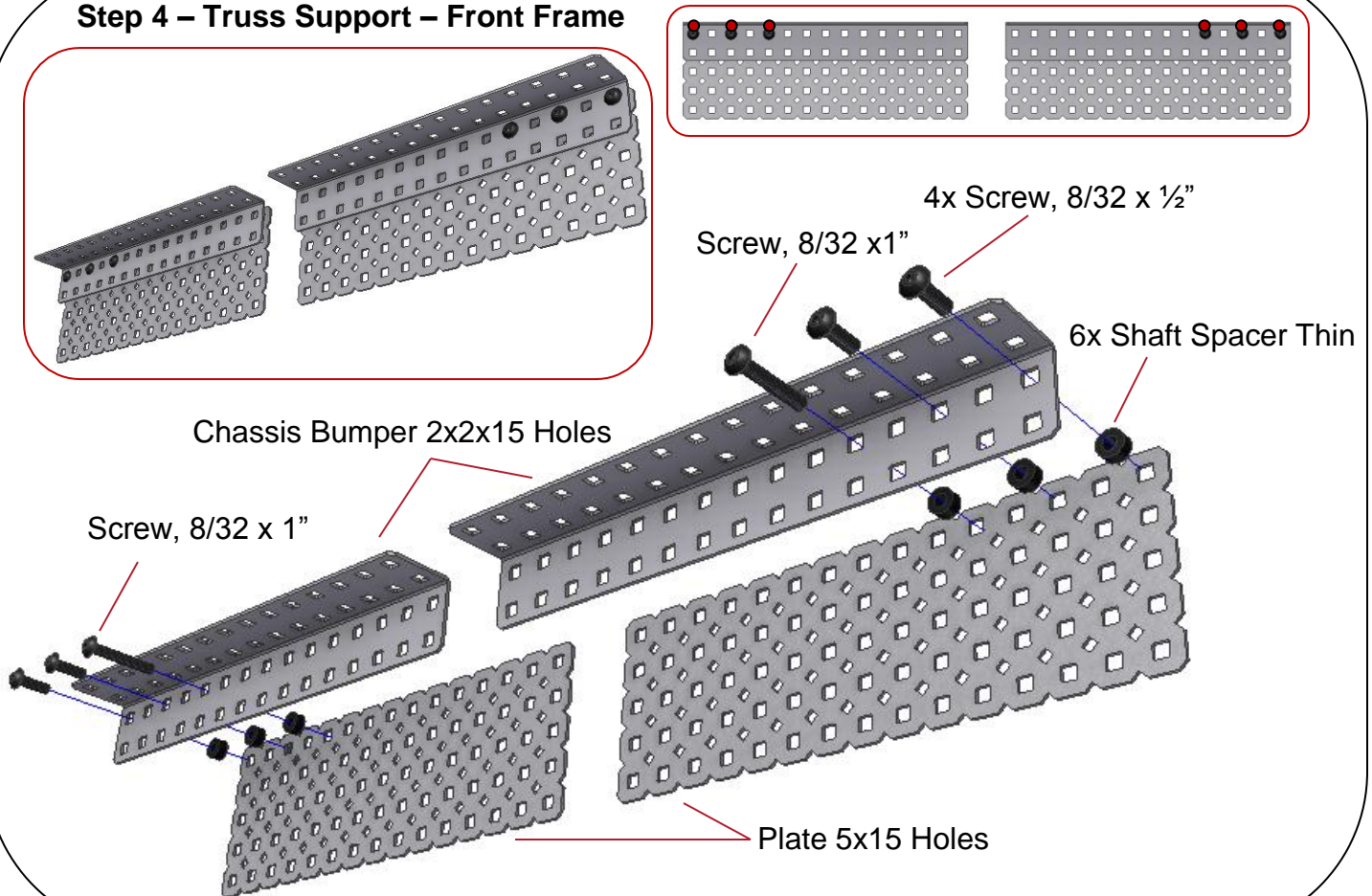


Truss Tester Build Instructions

Step 3 – Force Handle Part 3

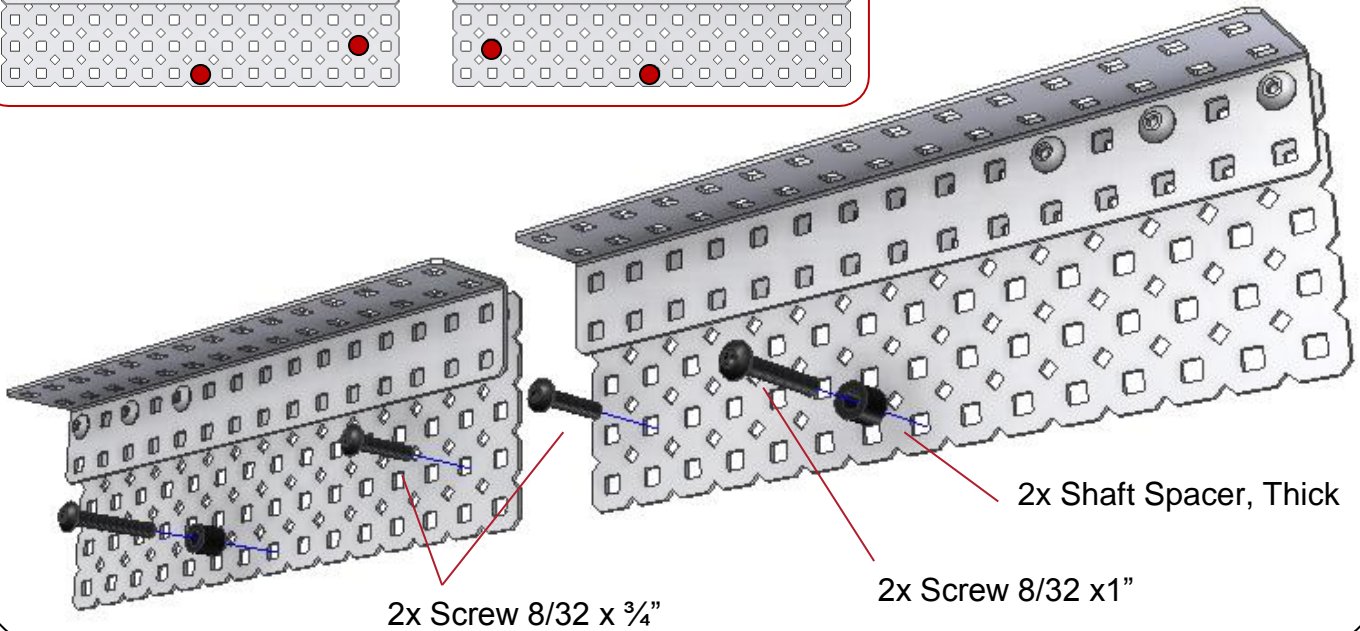
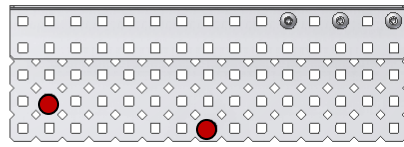
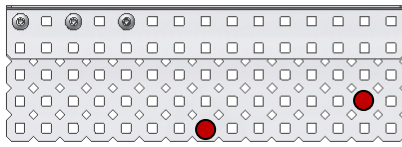


Step 4 – Truss Support – Front Frame

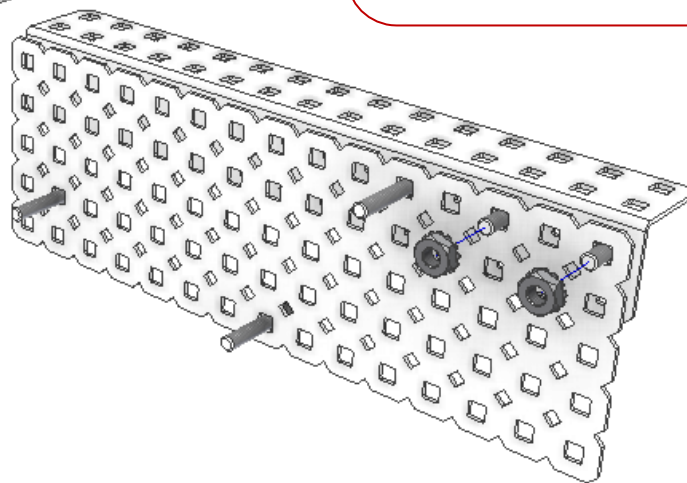
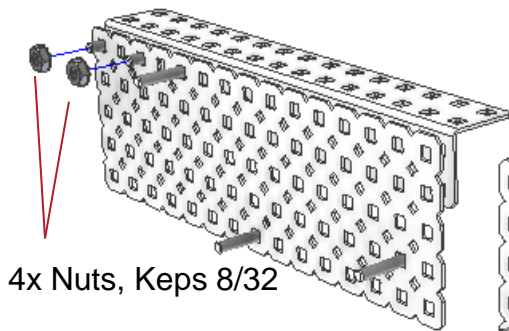
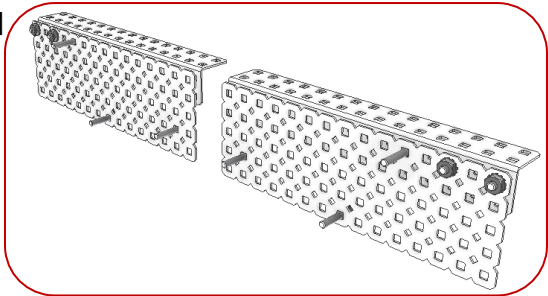


Truss Tester Build Instructions

Step 5 – Truss Support – Front Frame - Continued

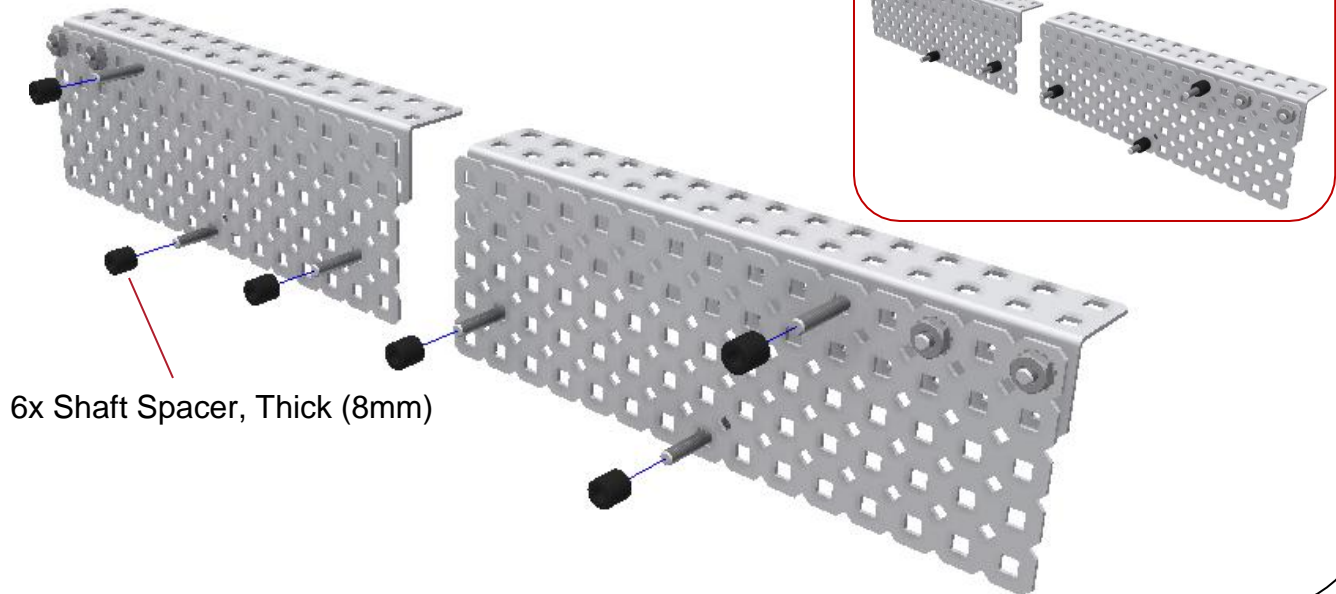


Step 6 – Truss Support – Front Frame – Continued (Back of Frame)

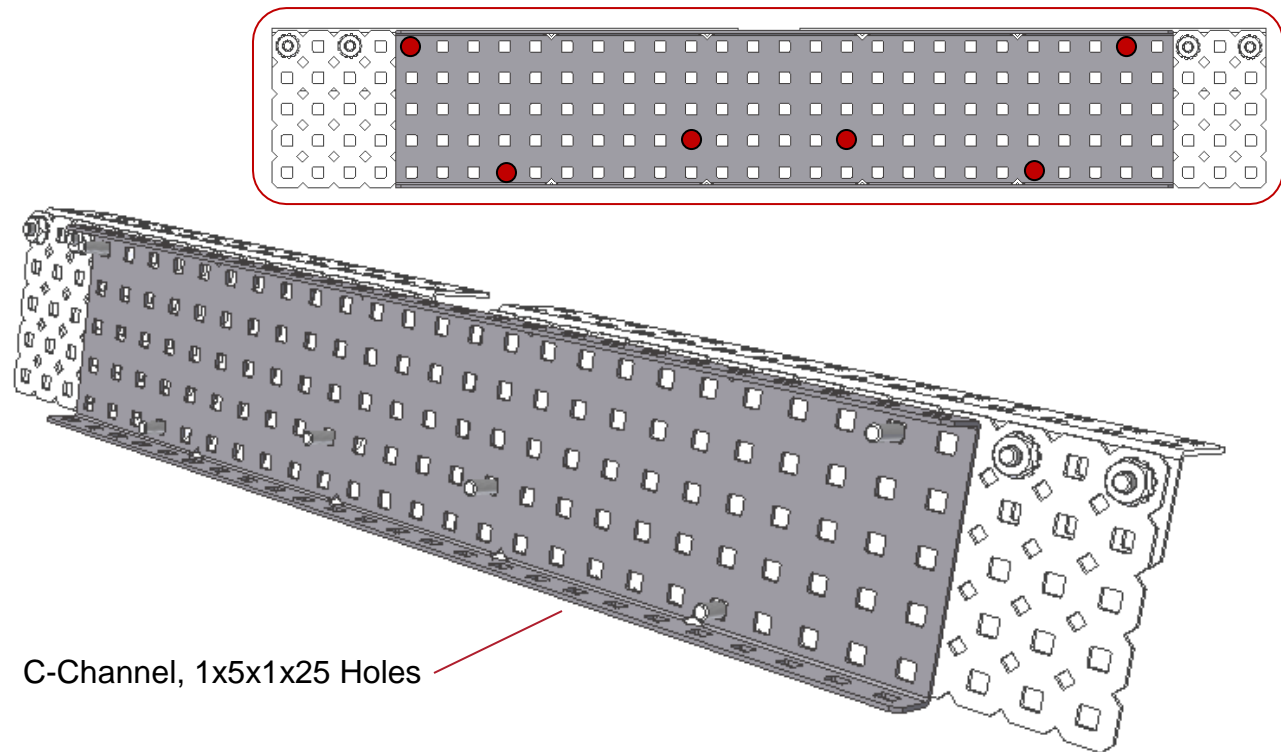


Truss Tester Build Instructions

Step 7 – Truss Support – Center Frame - Continued

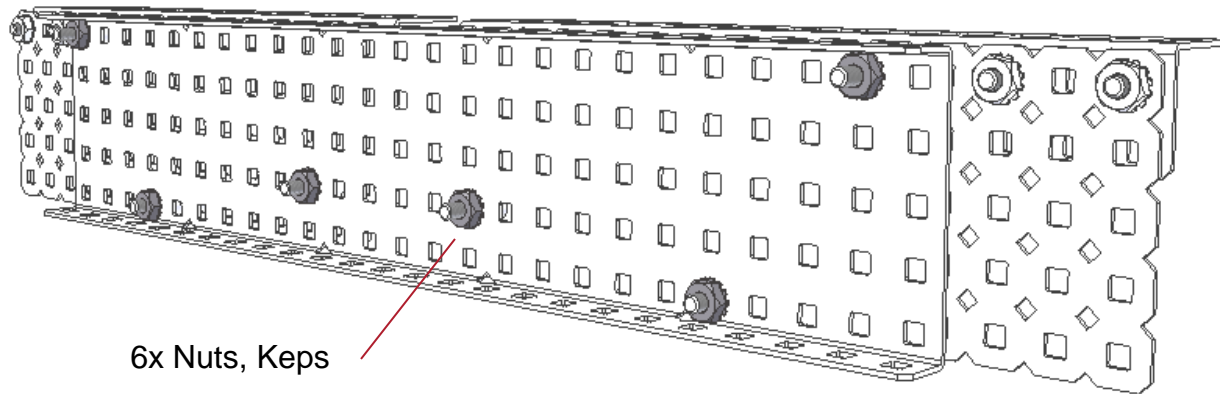


Step 8 – Truss Support – Back Frame

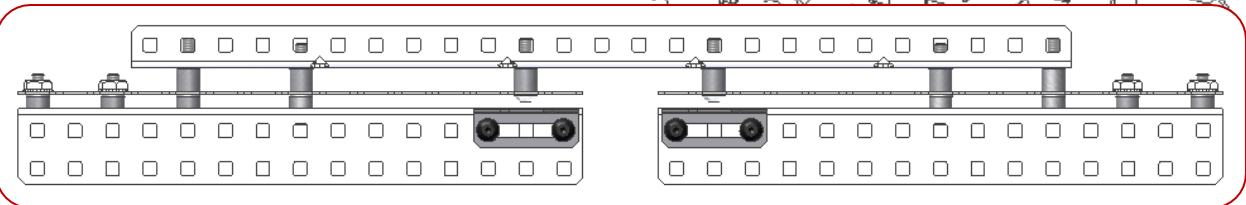
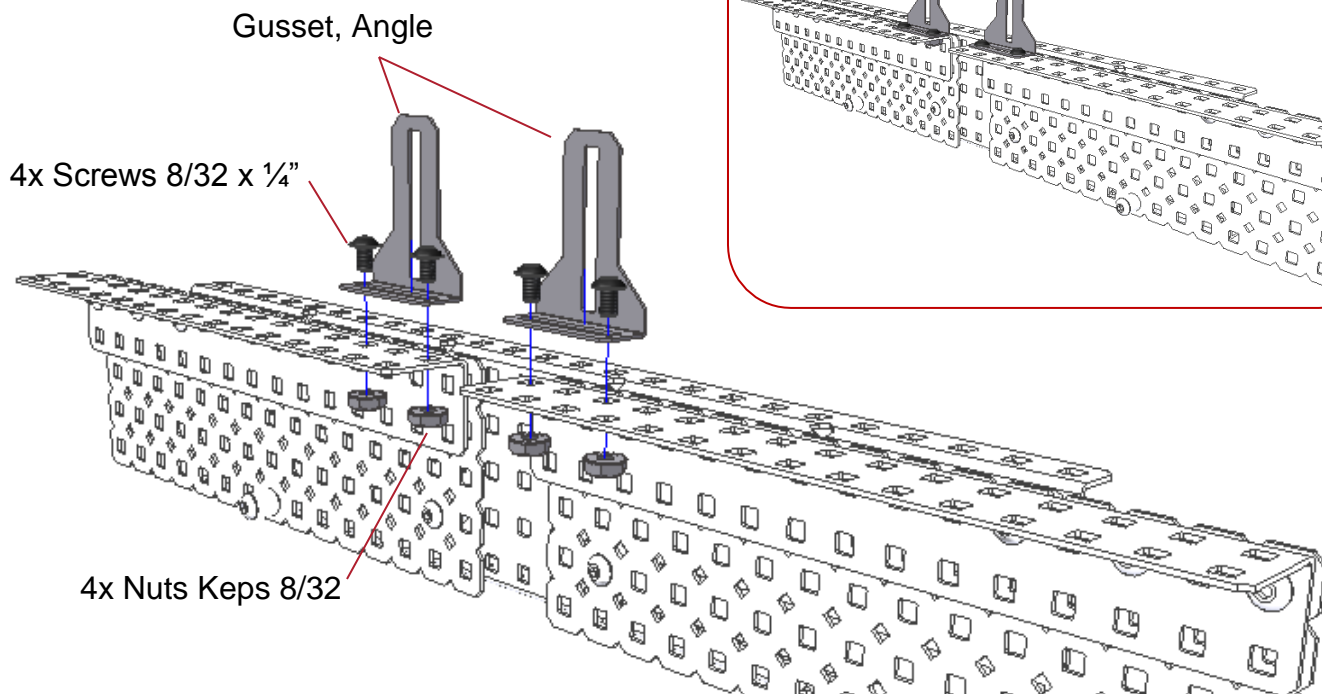


Truss Tester Build Instructions

Step 9 – Truss Support – Back Frame - Continued

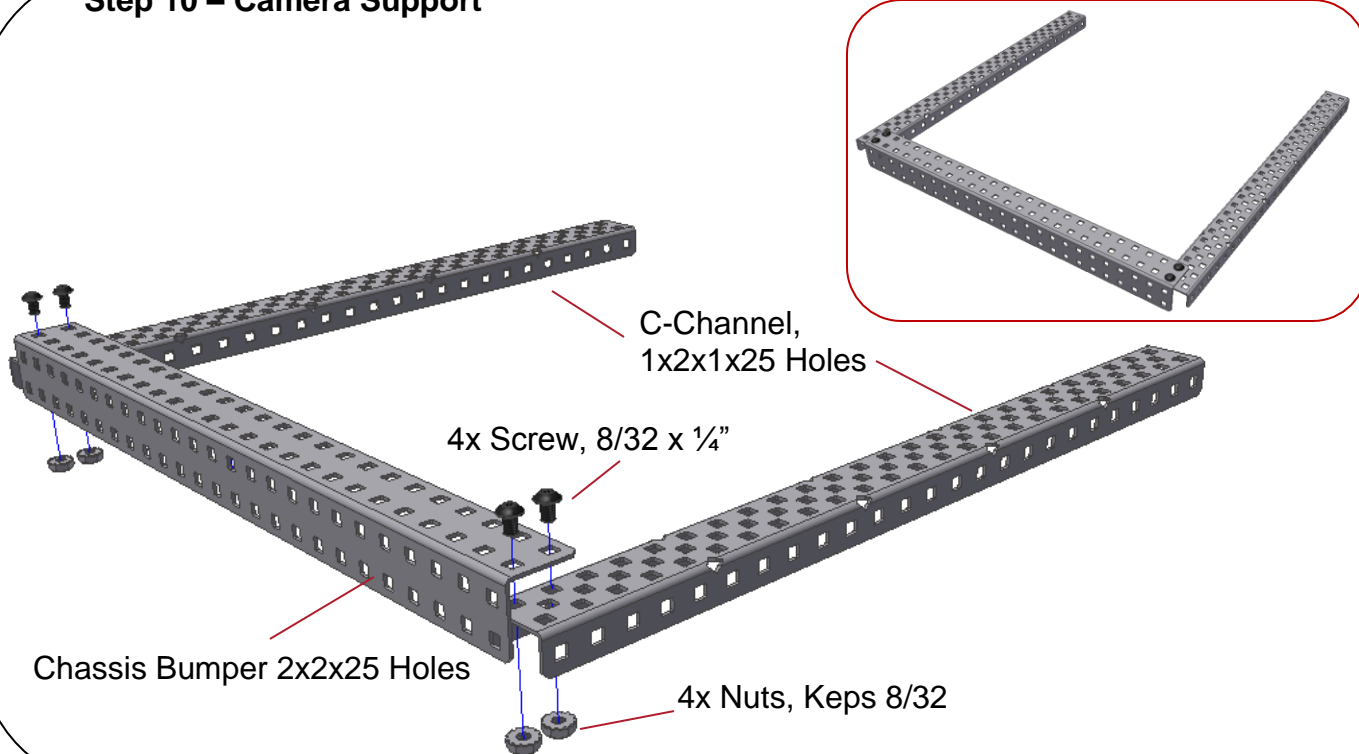


Step 10 – Truss Support – Top Supports

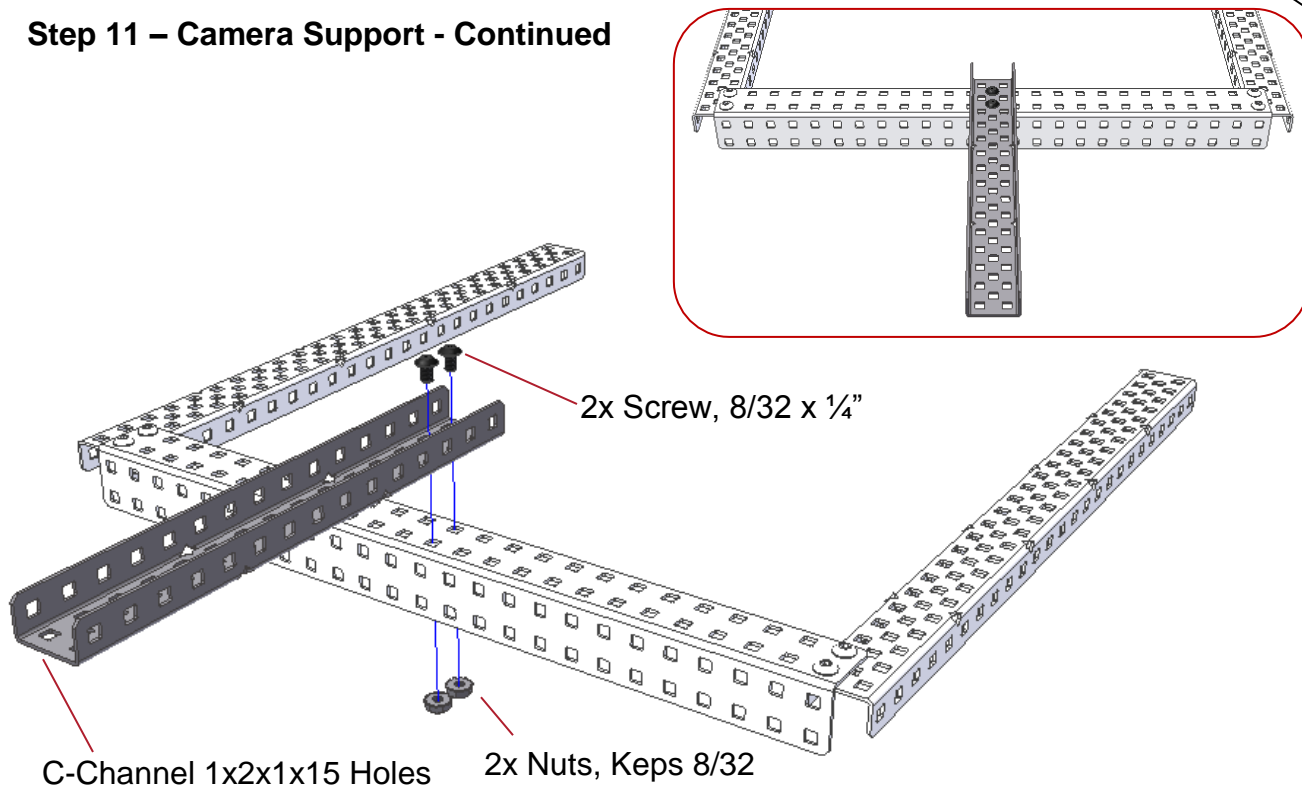


Truss Tester Build Instructions

Step 10 – Camera Support



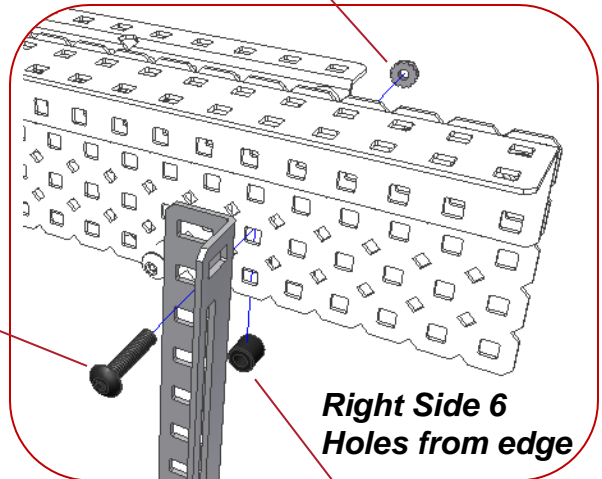
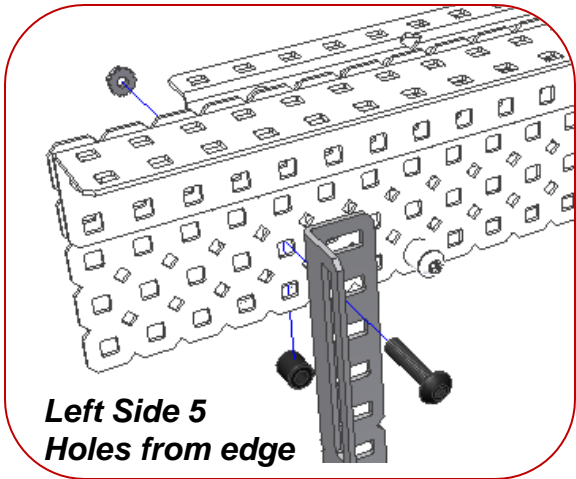
Step 11 – Camera Support - Continued



Truss Tester Build Instructions

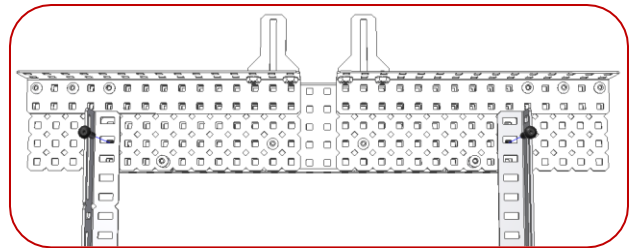
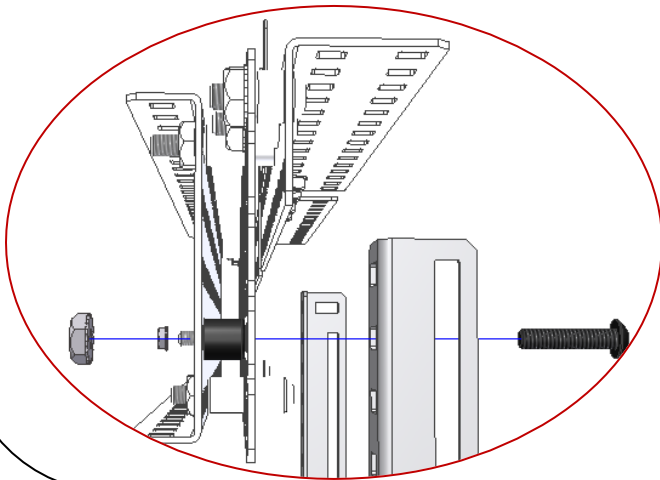
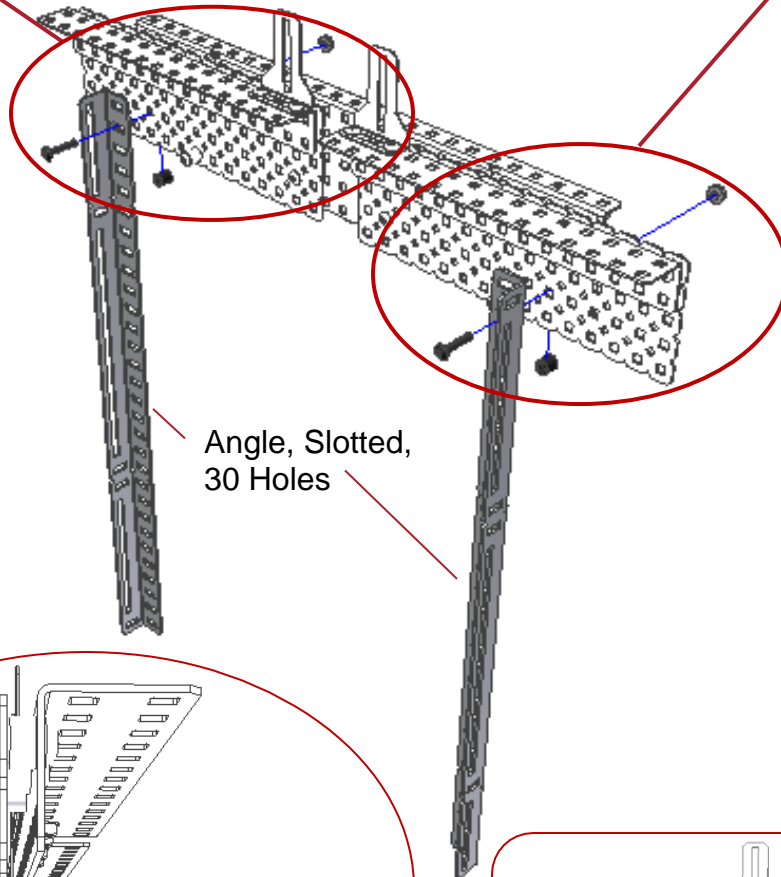
Step 12 – Vertical Tension Handle Supports

2x Nuts, Keps 8/32



2x Screw, 8/32 x 3/4"

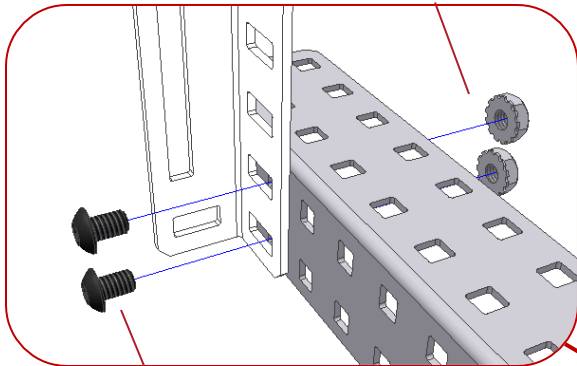
2x Shaft Spacer, Thick



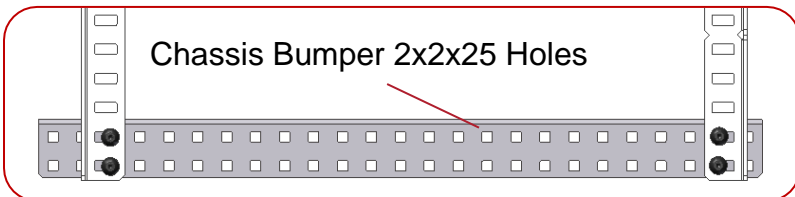
Truss Tester Build Instructions

Step 13 – Force Handle Bottom Support

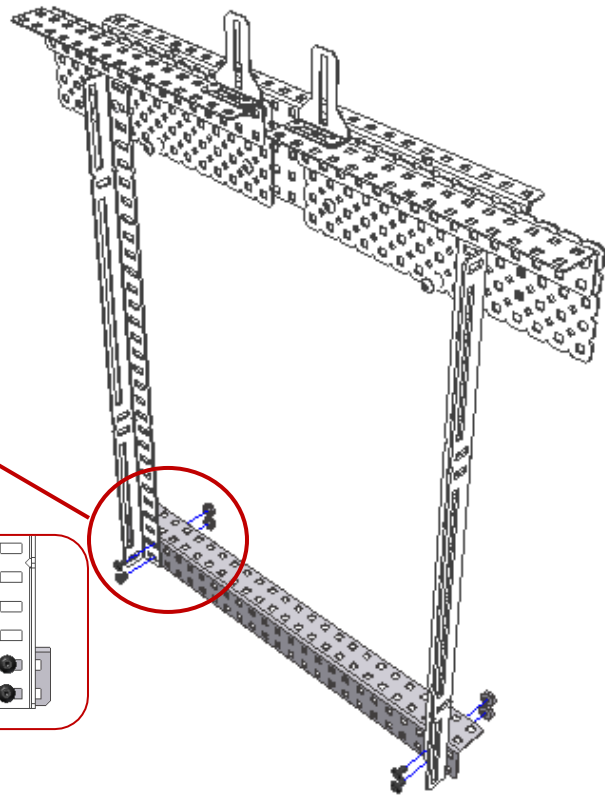
4x Nuts, Keps 8/32



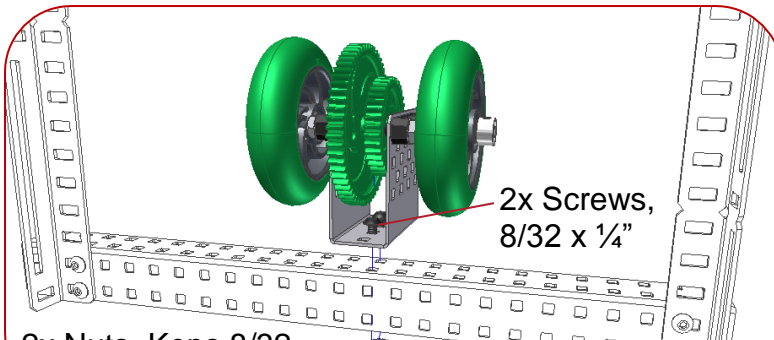
4x Screws, 8/32 x 1/4"



Chassis Bumper 2x2x25 Holes

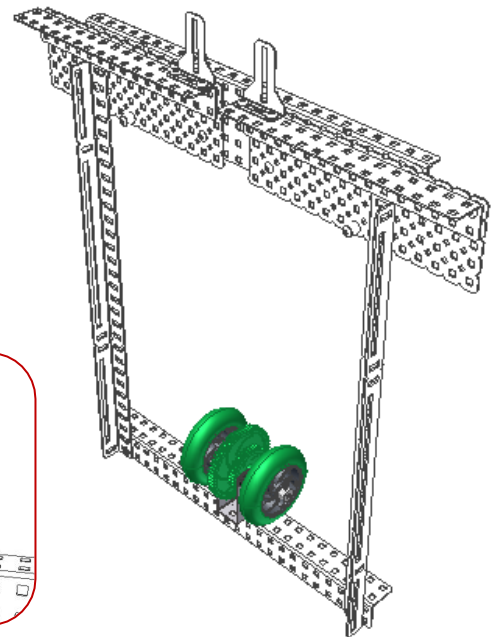
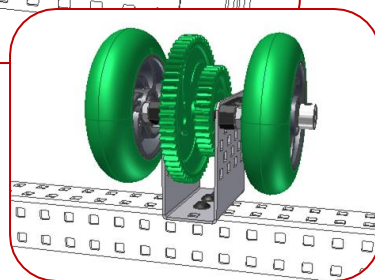


Step 14 – Force Handle Bottom Support - Continued



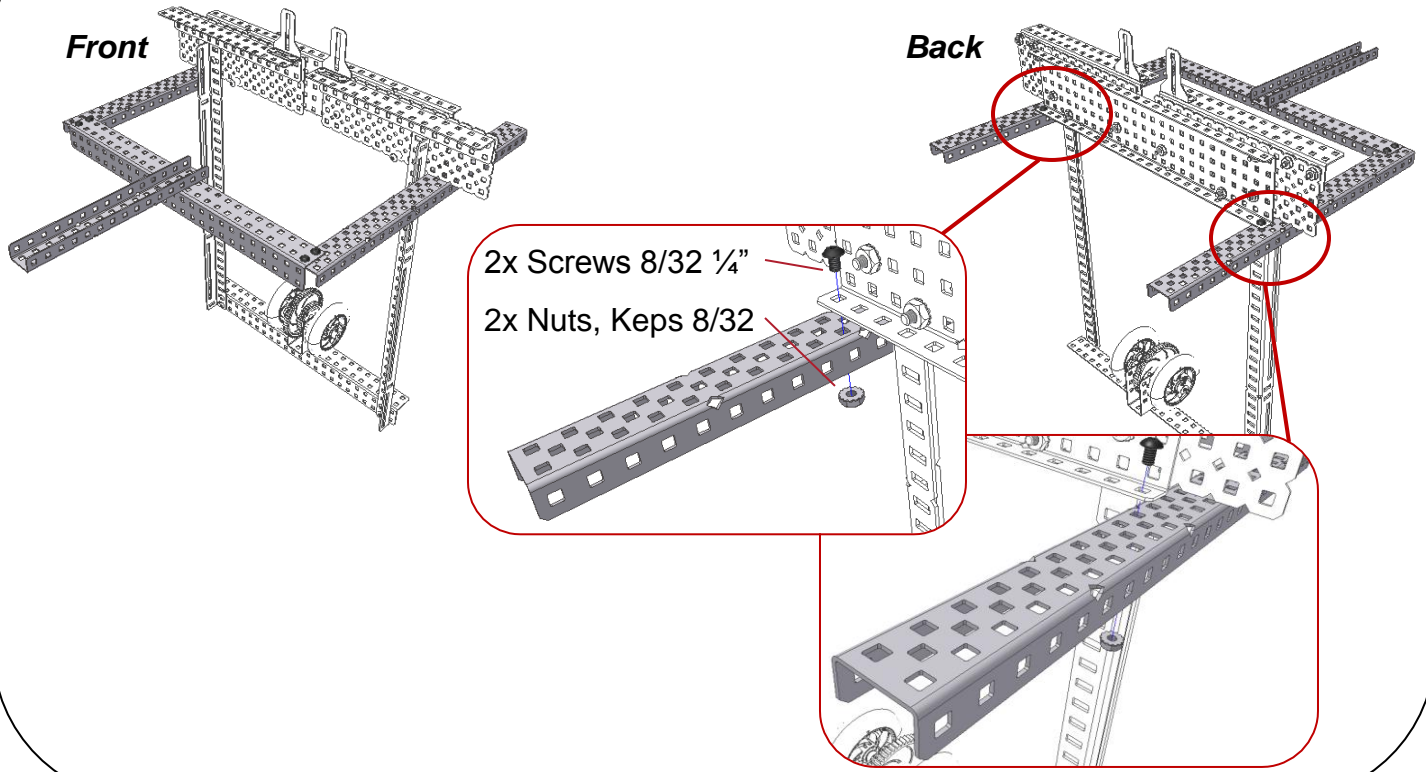
2x Screws,
8/32 x 1/4"

2x Nuts, Keps 8/32

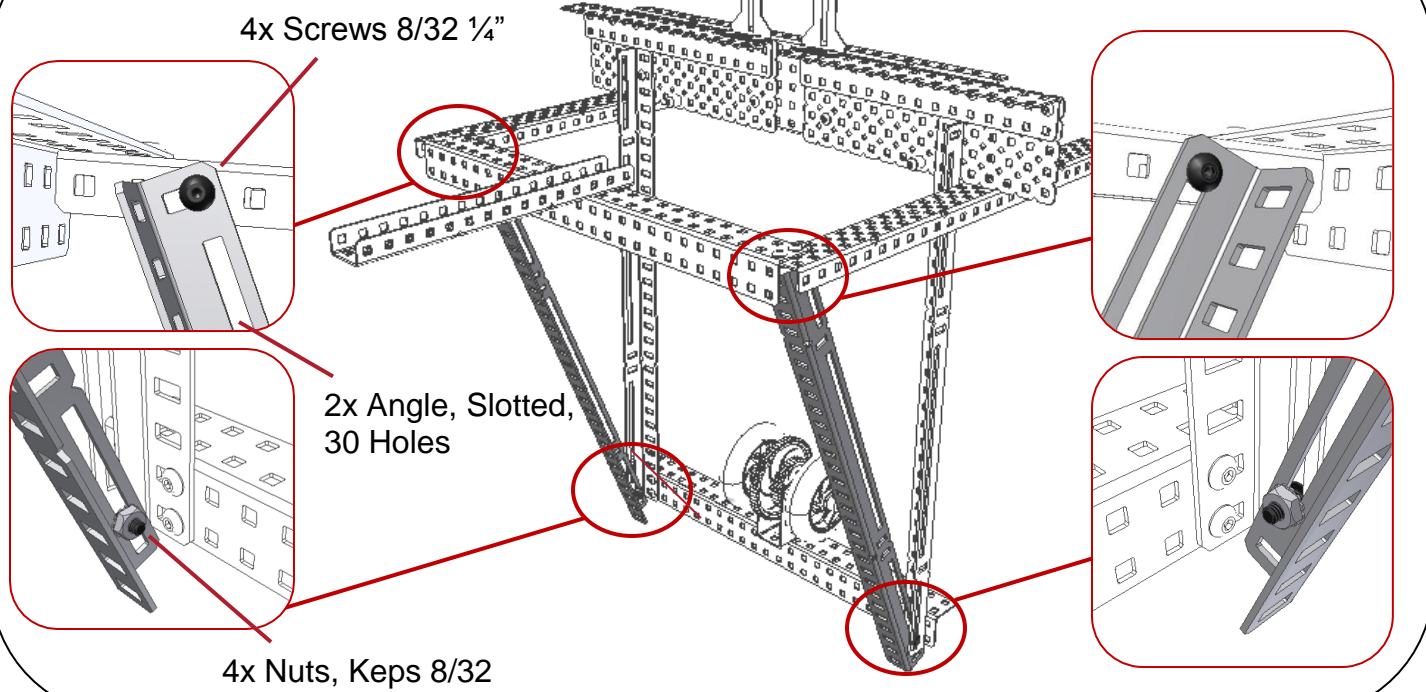


Truss Tester Build Instructions

Step 15 – Adding Camera Support to Final Assembly

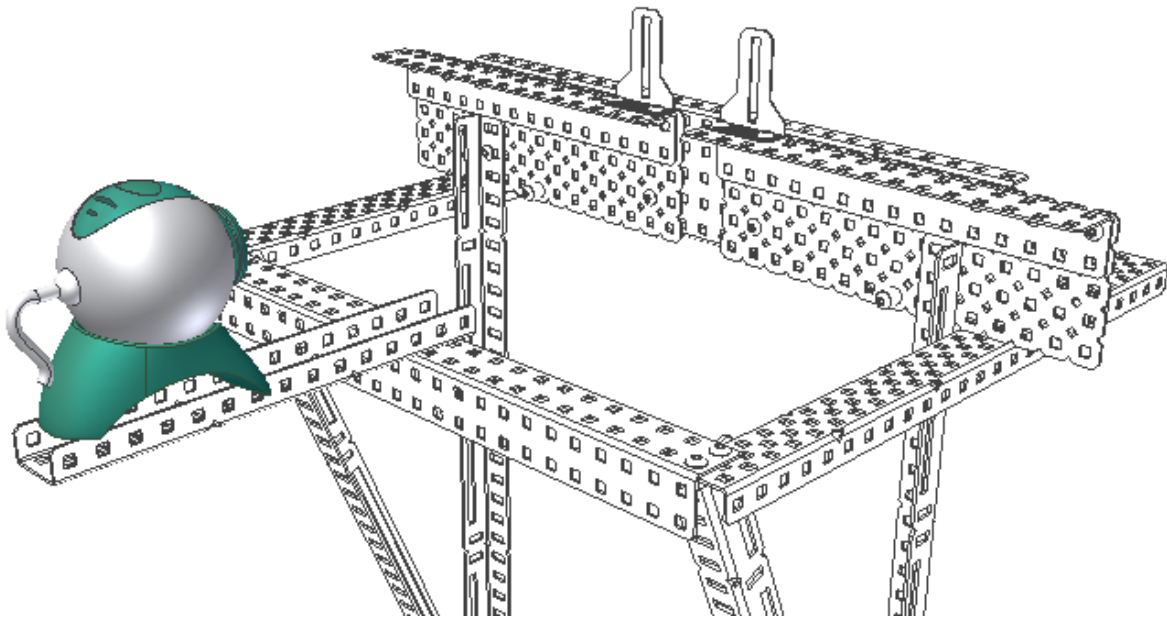


Step 16 – Front Diagonal Braces



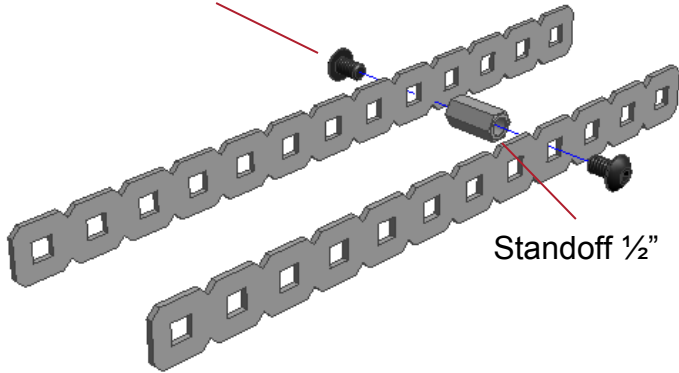
Truss Tester Build Instructions

Step 18 – Mount Web Cam (use zip ties to secure camera)

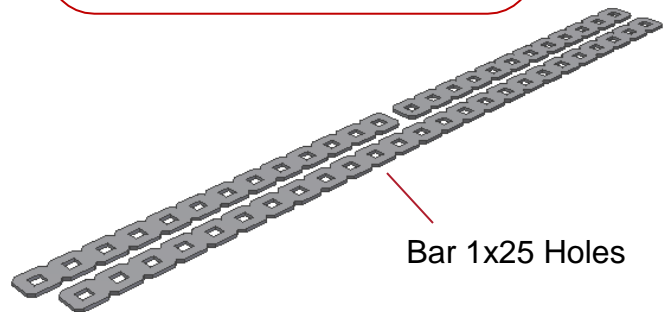
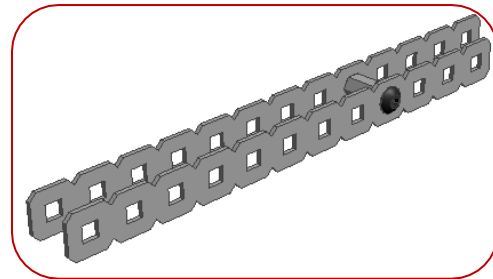


Step 19 – Tester Setup - Force Arm

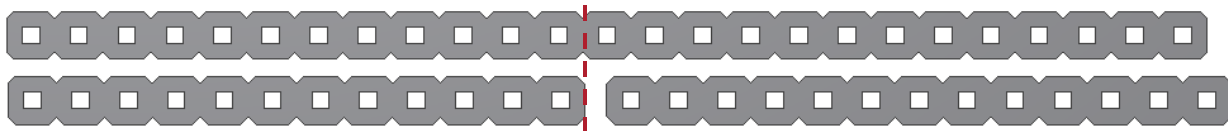
2x Screws 8/32 x 1/4"



Standoff 1/2"



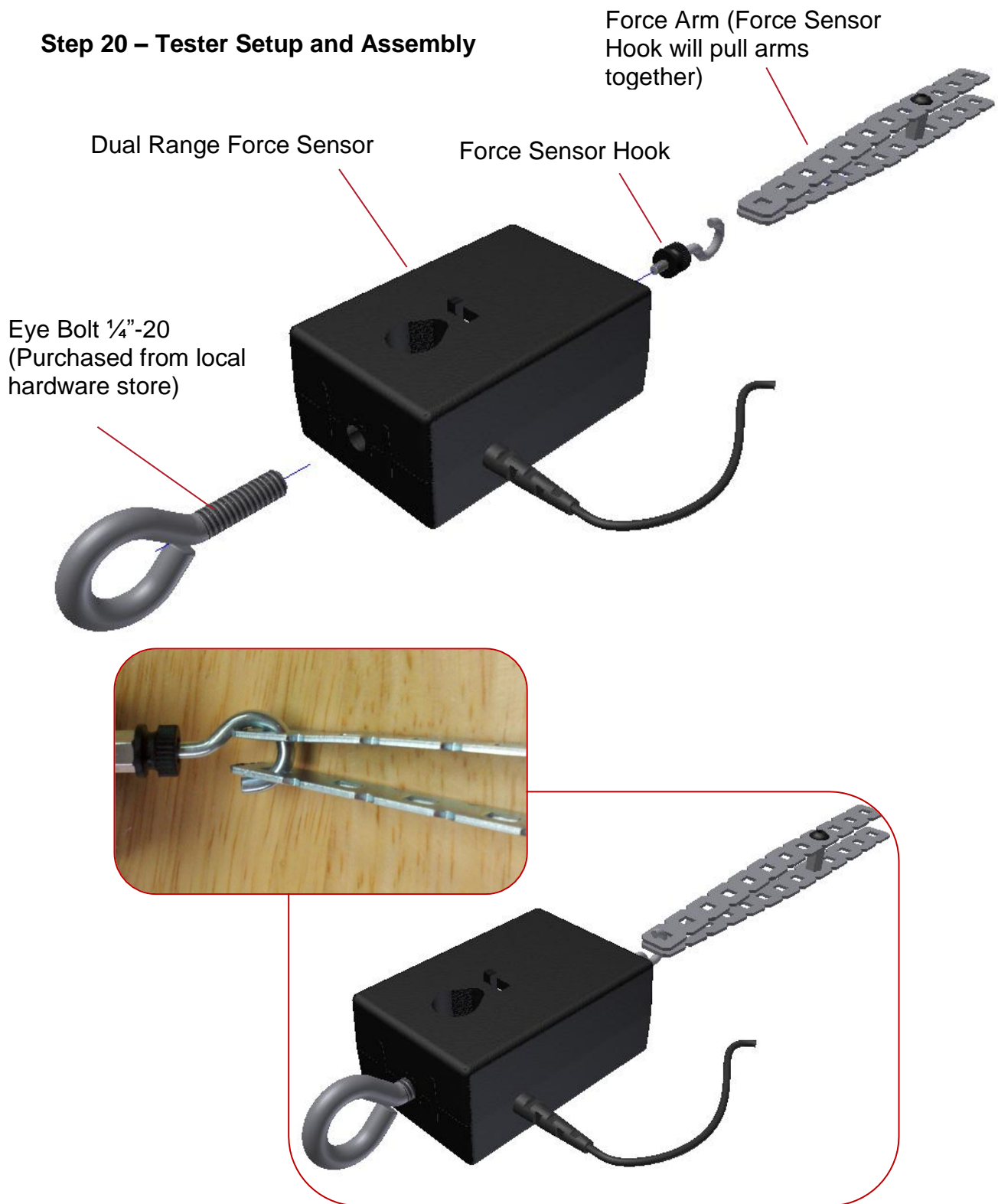
Bar 1x25 Holes



Cut into 2 pieces
12 Holes & 13 Holes

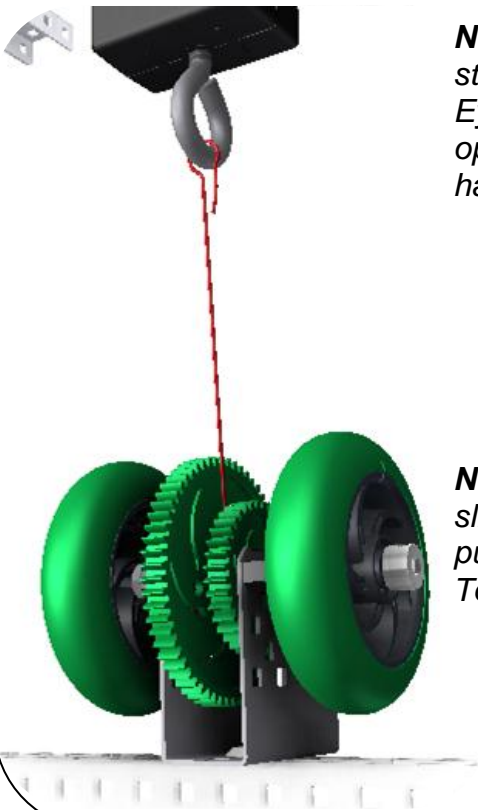
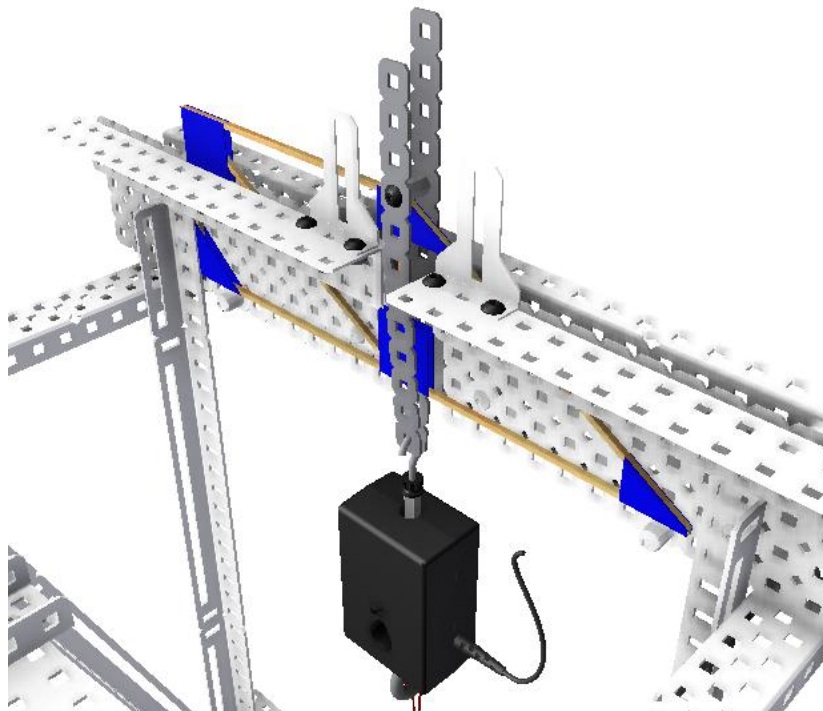
Truss Tester Build Instructions

Step 20 – Tester Setup and Assembly



Truss Tester Build Instructions

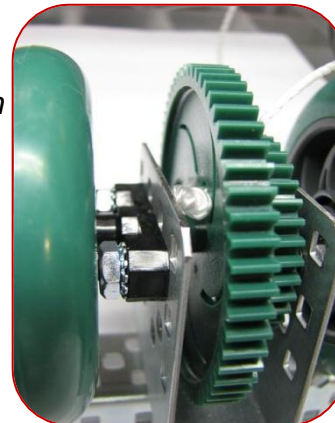
Step 21 – Tester Setup and Assembly - Continued



Note: Tie a loop in the string. Loop string around Eye Bolt and attach opposite end to force handle.



Note: To keep string from slipping around handle, pull string through the 60 Tooth Gear and attach



Truss Tester Build Instructions

Step 21 –Inserting a Truss

