



Model 2171C Series Antenna Positioning Tower User Manual



1797136 Rev A
September, 2026

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NOTES, CAUTIONS, AND WARNINGS

	Note: Denotes helpful information intended to provide tips for better use of the product.
	CAUTION: Denotes a hazard. Failure to follow instructions could result in minor personal injury and/or property damage. Included text gives proper procedures.
	WARNING: Denotes a hazard. Failure to follow instructions could result in SEVERE personal injury and/or property damage. Included text gives proper procedures.

SAFETY INFORMATION



See the ETS-Lindgren *Product Information Bulletin* for safety, regulatory, and other product marking information.



Refer to Manual: When product is marked with this symbol, see the instruction manual for additional information. Manuals are available for download at ets-lindgren.com, or contact ETS-Lindgren Technical Support.



High Voltage: Indicates presence of hazardous voltage. Unsafe practice could result in severe personal injury or death.



Only qualified personnel should operate (or service) this equipment. The electrical installation of this product should be accomplished by an individual who is authorized to so do by the appropriate local authority. The installation should be in compliance with local electrical safety codes.



Heavy Object: Unassisted lifting can cause injury. Mechanical assistance is required.



Never rock or tilt. Rocking or tilting equipment can cause injury and damage equipment.



Stay clear of moving components during operation of equipment.



Moving and/or falling equipment can cause serious injury.



Keep hands clear: Moving parts can crush and cut.



Pinch Points: Keep hands clear during operation.



Moving Gears: Do not stick hand in or near machine during operation.



Do not make any modifications to this unit without consulting the factory directly.

Before servicing: Contact ETS-Lindgren. Servicing (or modifying) the unit by yourself may void your warranty. If you attempt to service the unit by yourself, disconnect all electrical power before starting. There are voltages at many points in the instrument which could, if contacted, cause personal injury. Only trained service personnel should perform adjustments and/or service procedures upon this instrument. Capacitors inside this instrument may still be charged even when instrument is disconnected from its power source.



Protective Earth Ground (Safety Ground): Indicates protective earth terminal. You should provide uninterruptible safety earth ground from the main power source to the product input wiring terminals, power cord, or supplied power cord set.

Before power is applied to this instrument, ground it properly through the protective conductor of the AC power cable to a power source provided with the protective earth contact. Any interruption of the protective (grounding) conductor, inside or outside the instrument, or disconnection of the protective earth terminal could result in personal injury.



LASER WARNING: Denotes a laser (Class 1) is part of the operating system of the device. Use caution.



FALL HAZARD: Do not climb on equipment.

INTRODUCTION

The ETS-Lindgren Model 2171C Antenna Positioning Tower meets ANSI C63.10 requirements for measurements above 1 GHz.

The boresight measurement is required for wireless device testing based on ANSI C63.10 for above 1 GHz measurements.

The 2171C can also be used as a traditional non-boresighting tower that maintains a level boom.

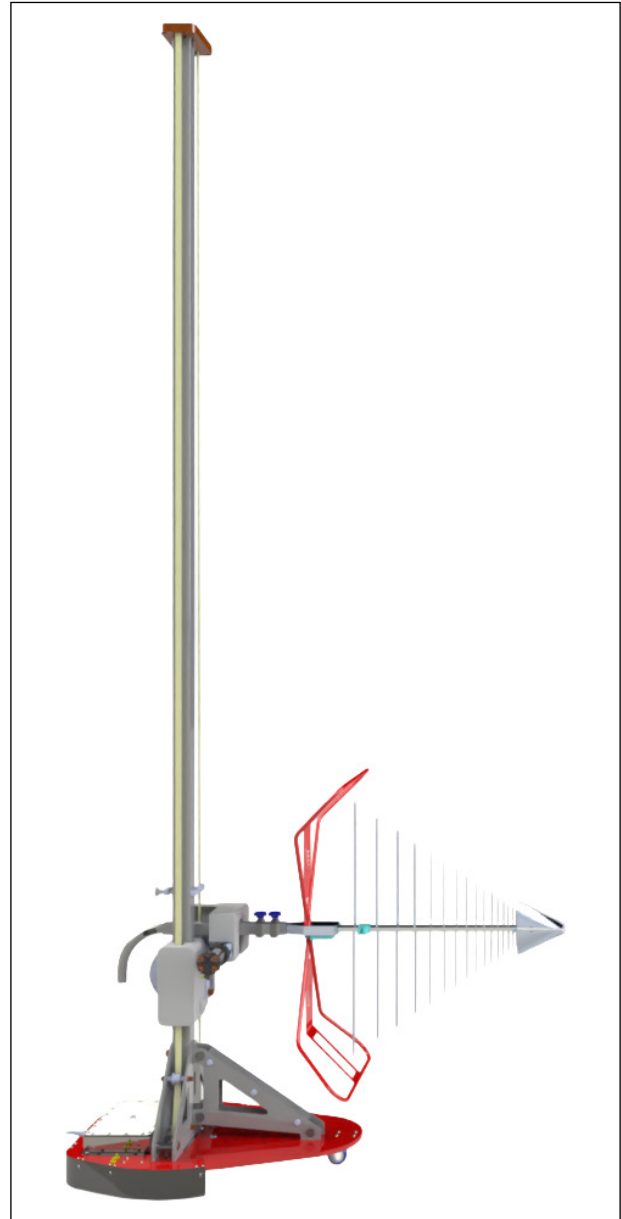
The EUT is nominally situated at 1 m high (above an 0.8 m table), and in some cases the height of the EUT could be at 1.5 m. It is possible that some customers may choose to point to a height of 1.5 m for larger EUTs.

The distance between the antenna and the EUT is typically set to be 3 m, 5 m, or 10 m, depending on the EUT and the facility. In some situations, a test engineer may elect to use a test distance less than 3 m (but no less than 1 m) to improve measurement sensitivity.

ETS-Lindgren Boresight System

The Model 2171C enables the ETS-Lindgren patented boresight system to provide direct antenna aim on EUT during scanning. This boresight meets the requirements of ANSI C63.10 for compliance with FCC measurements above 1 GHz.

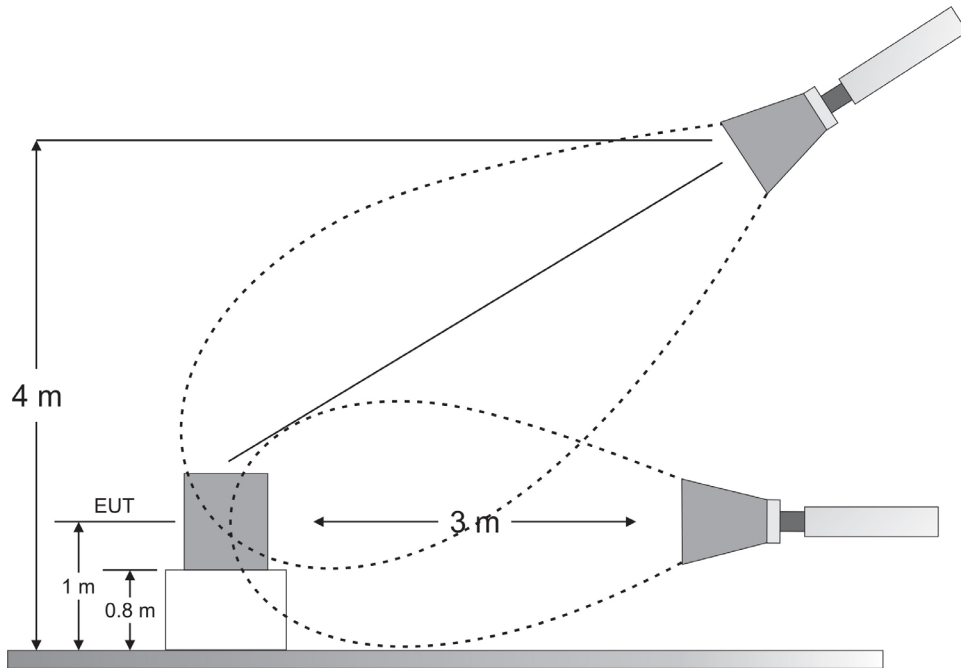
During scans, the boresight system maintains constant directional antenna positioning while varying the angle between the antenna and the mast. This is particularly important when using higher gain antennas of more than 3 dBi. As the antenna is raised above the ground, the tilt of the antenna will maintain the EUT within the half power (-3 dB) beamwidth.



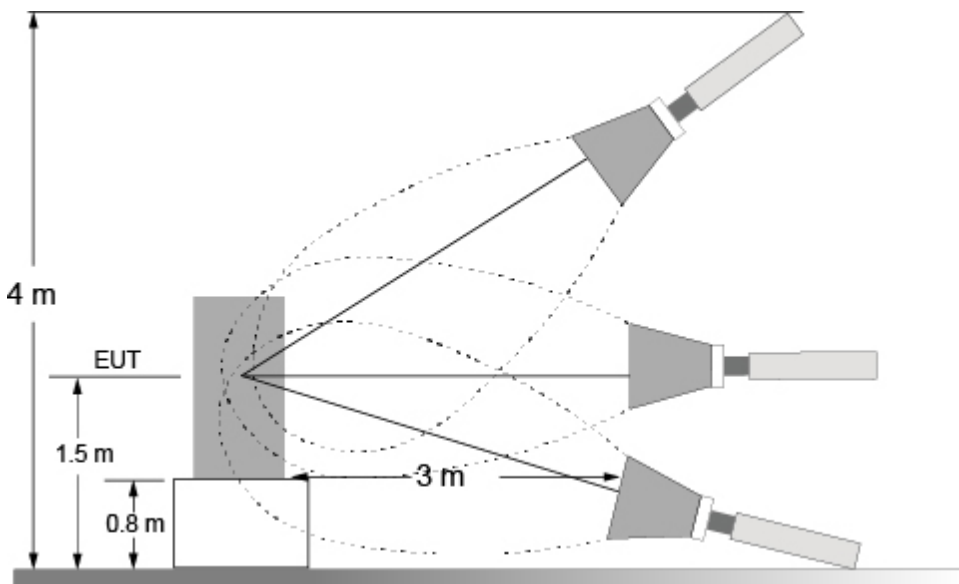


Note: The following drawings use a generic positioning tower to illustrate boresight and non-boresight function.

Boresight Function

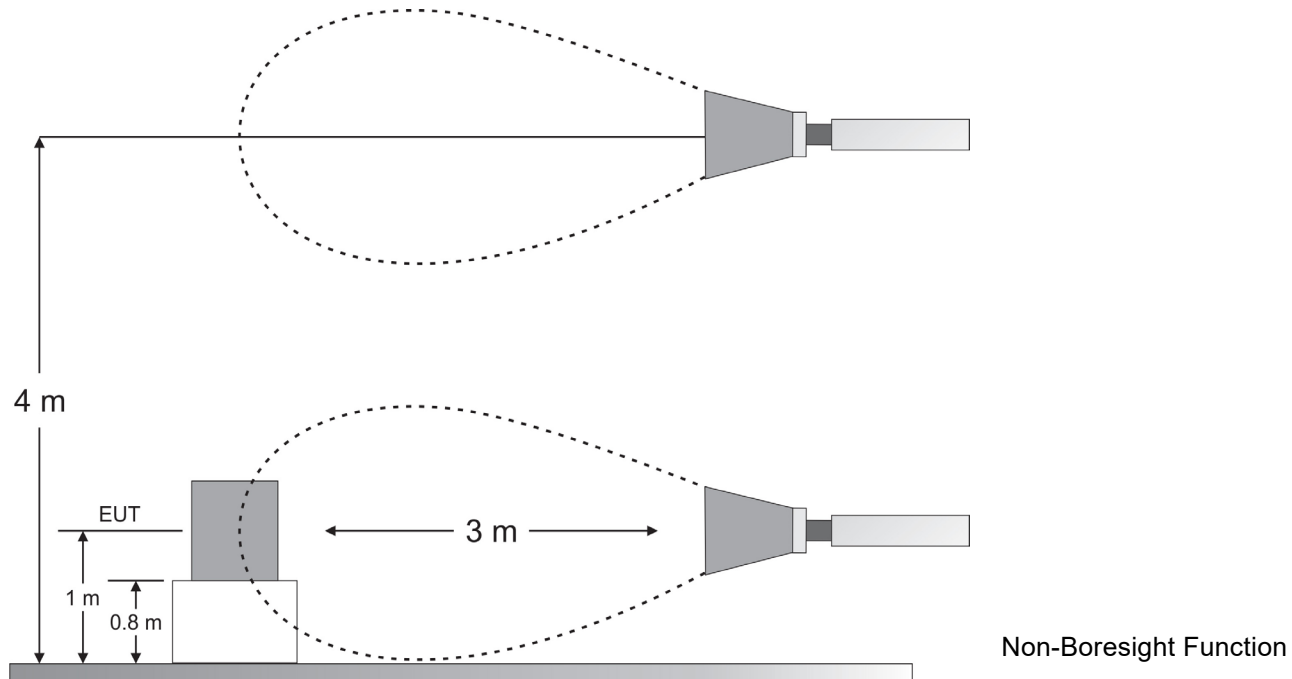


3 m Boresight Function



1.5 m Boresight Function

Non-Boresight Function



Standard Configuration

- **Tower Assembly** - Single piece mast, casted base, carrier assembly
- **Stepper Motor (2)**
- **Boresight with Centerline Pneumatic Polarization** (with adjustable rotational velocity)
- **Fiber Optic Control Cables** 10- meter
- **Fiber to Ethernet Converter**
- **1/4" Nylon Tubing** for pneumatic polarization

Optional Items (Sold separately. Not included with purchase of 2171C.)

- **Additional Fiber Optic Cable** - Various lengths of fiber optic cable are available by custom order. The standard length provided is 10 m (32.8 ft).
- **Emergency Stop** - Available in a rack mounted or tabletop configuration

ETS-Lindgren Product Information Bulletin

See the ETS-Lindgren *Product Information Bulletin* included with your shipment for the following:

- Safety, regulatory, and other product marking information
- Steps to receive your shipment
- Steps to return a component for service
- ETS Lindgren calibration service
- ETS Lindgren contact information

MAINTENANCE

	Before performing any maintenance, follow the safety information in the ETS-Lindgren Product Information Bulletin included with your shipment. Follow all safety precautions in order to prevent injury and equipment damage.
	Service equipment in accordance with the maintenance schedule provided Maintenance of Model 2171C is limited to the instructions provided here. If you have any questions concerning maintenance, contact ETS-Lindgren Technical Support.
  	Only qualified personnel should operate (or service) this equipment. If you have any questions concerning maintenance, contact ETS-Lindgren Technical Support. Warranty may be voided if housing is opened. If you have any questions concerning maintenance, contact ETS-Lindgren Technical Support. Do not make any modifications to this unit without consulting the factory directly. Only use replacement parts and fasteners ordered directly from the factory. Disconnect all air supply lines when servicing pneumatic components. Inspect tower during operation to ensure the carrier travel does not impact the upper sheave block. Striking the upper sheave block with the carrier can degrade the belt and result in premature failure. Frequently check belt for wear. If any belt wear is indicated, replace the belt (33 feet of p/n 880393) as soon as possible. In cases of excessive belt wear, halt tower operation until the belt is replaced
 	Disconnect the power before proceeding with recommended maintenance. Do not perform maintenance while the positioner is operating. The electrical installation of this product should be accomplished by an individual who is authorized to so do by the appropriate local authority. The installation should be in compliance with local electrical safety codes.

Air Cylinder Maintenance

The air cylinder uses a special O-ring lubricant: silicon grease designed specifically for O-rings. During maintenance apply this type of silicon grease to prevent excessive wear of the O-rings.

Weekly (Minimum)

- Inspect belt for wear, tension, and cracking.
- Replace belt as soon as it belt wear is indicated. In cases of excessive wear, halt tower operation until the belt is replaced.
- Inspect tower during operation to ensure the carrier travel does not impact the upper sheave block. Striking the upper sheave block with the carrier can degrade the belt and result in premature failure.
- An indicator of the carrier running into the upper sheave block is excessive slack in the belt on one side of the mast when stopped with the carrier at its highest point.
- Should a strike occur on a repeated basis, routinely inspect the belt for wear.

Quarterly

- Check all screws and bolts to confirm that are tight per assembly instructions.
- Inspect bolts and hardware for breakage.

Every Six Months

- Check connecting control and all cables for degradation from environment and use. If necessary, replace per safety per local electrical codes.

Replacement and Optional Parts

Replacement Parts



Note: ETS-Lindgren may substitute a similar part or new part number with the same functionality for another part/part number. Contact ETS-Lindgren for questions about part numbers and ordering parts.

Following are the part numbers for ordering replacement parts for the Model 2171C.

Part Description	Part Number
Timing Belt (33 ft required)	880393
Timing Belt (for tilt 1-4 m scan range)	1793972
Fuse, 5 x 20mm 3A Slow	480053
Remote Control	1795251
Level	1793768
Tilt Arm Cover	1795751

Optional Parts



Note: Optional parts are sold separately.

Following are the part numbers for ordering optional parts for the Model 2171C.

Part Description	Part Number
E-Stop for Rack	1798811
E-Stop Desktop	1798503

Service Procedures

Contacting ETS-Lindgren

Please see ets-lindgren.com for a list of ETS-Lindgren offices, including phone and email contact information.

Sending a Component for Service

For the steps to return a system or system component to ETS-Lindgren for service, see the *Product Information Bulletin* included with your shipment.

Calibration Services and Annual Calibration

See the *Product Information Bulletin* included with your shipment for information on ETS-Lindgren calibration services.

SPECIFICATIONS

2171C

Electrical Specifications

Voltage:	230 VAC
Amp:	10.00
Line Frequency:	50/60 Hz
Phase:	Single

Physical Specifications

Polarization:	30° per second
Scan Range:	1.00 m—4.00 m (39.37 in—157.48 in)
Speed Range:	1 cm/sec to 6.2 cm/sec
Weight (approximate):	88.50 kg (195.0 lb) (approx.)
Cross Boom Loading	8.16 kg (18.00 lbs)
Maximum Overall Height:	4.90 m (192.93 in)
Base Dimensions (LxW):	1.20 m (47.50 in) x 0.8 m (34.00 in)

2171C-001

Electrical Specifications

Voltage:	230 VAC
Amp:	10.00
Line Frequency:	50/60 Hz
Phase:	Single

Physical Specifications

Polarization:	30° per second
Scan Range:	1.00 m—4.00 m (39.37 in—157.48 in)
Speed Range:	1 cm/sec to 6.2 cm/sec
Weight (approximate):	76.20 kg (168.0 lb) (approx.)
Cross Boom Loading	8.16 kg (18.00 lbs)
Maximum Overall Height:	2.60 m (102.38 in)
Base Dimensions (LxW):	1.20 m (47.50 in) x 0.8 m (34.00 in)

ELECTRICAL INSTALLATION

	Before connecting any components, follow the safety information in the ETS-Lindgren Product Information Bulletin included with your shipment. Follow all safety precautions in order to prevent injury and equipment damage.
	Electrical installation must be performed by a qualified electrician, and in accordance with local and national electrical standards.
	Make sure the power is off and secured before proceeding..

Power Cord

The motor base is provided with:

- **NEMA 6-15P to C13 AC power cord** (approximately 3 m (9.8 ft) long)
- **European Schuko to C13 power cord**

ASSEMBLY INSTRUCTIONS

WARNING	Before connecting any components, follow the safety information in the ETS-Lindgren Product Information Bulletin included with your shipment. Follow all safety precautions in order to prevent injury and equipment damage.
	Stay clear of all moving components on this equipment. Never stand beneath the carrier, whether moving or stationary.
	Only qualified personnel should operate (or service) this equipment. If you have any questions concerning assembly, contact ETS-Lindgren Technical Support.
	Note: You will require assistance from two or more team members to assemble the Model 2171C.
	Note: See the ETS-Lindgren Product Information Bulletin included with your shipment for information on unpacking and acceptance procedures.

The Model 2171C Antenna Positioning Tower should be assembled in the location where it will be used. If movement to another location is required after assembly, partial disassembly will be required for it to fit through most doorways.

Included and Recommended Tools

Included Tools

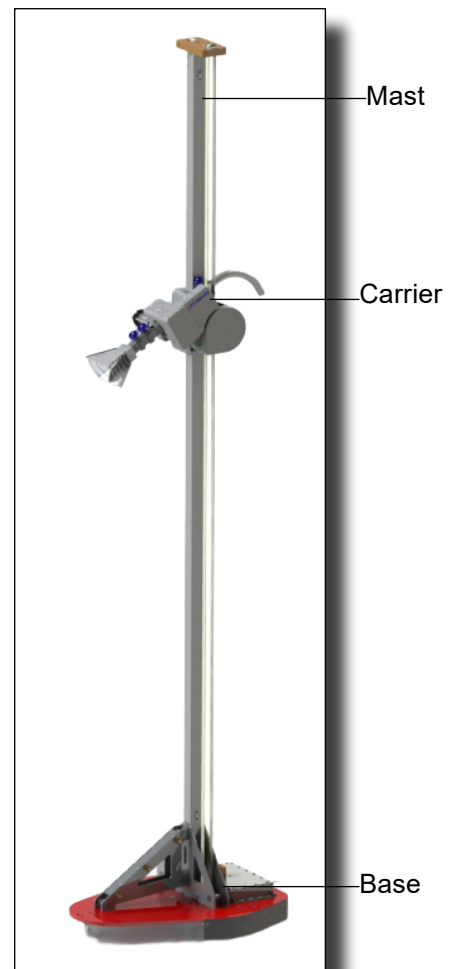
- **Part# 891780:** Adjustable Wrench, 11/8" Jaw (quantity: 2). For all hex nuts.
- **Part# 891781:** Hex Key, 3/16" Hex (quantity: 1). For cam rollers on motor base.
- **Part# 1795012:** Calibration Clamp
- **Part# 1793768:** Digital Level
- **Part# 1740043:** Hex Key, 6 mm

Recommended Tools

- Work bench or two sawhorses

Parts to Assemble

- Mast
- Carrier
- Belt (2)
- Base



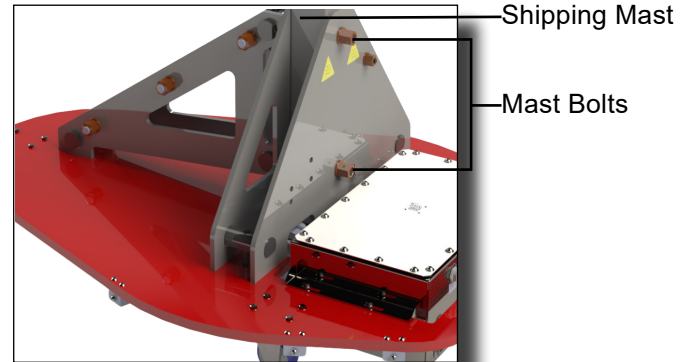
Boresight shown; antenna not included

Overview of Assembly Steps

1. Remove temporary shipping mast from base.
2. Insert mast assembly into base.
3. Install drive belt and pulleys.
4. Install tilt belt.
5. Connect fiber optic cables.
6. Adjust tension belts.
7. Install covers and accessories.

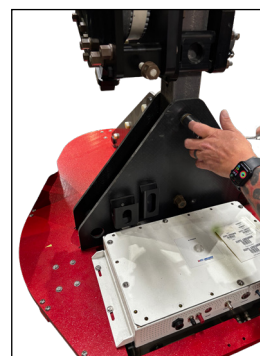
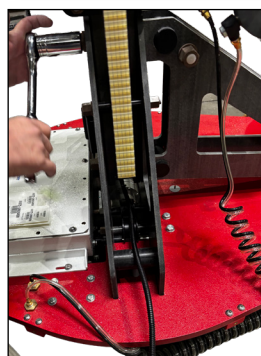
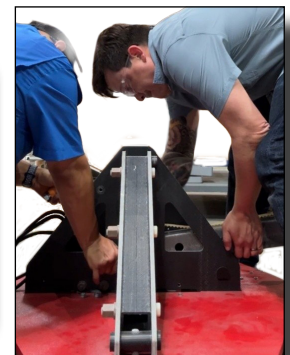
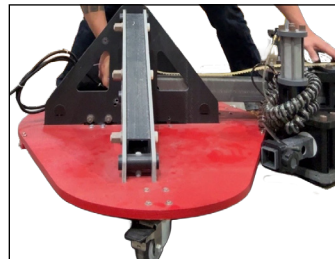
Remove Temporary Shipping Mast From Base

1. Remove both mast bolts to remove shipping mast.
2. Lift the temporary mast out and set it aside.

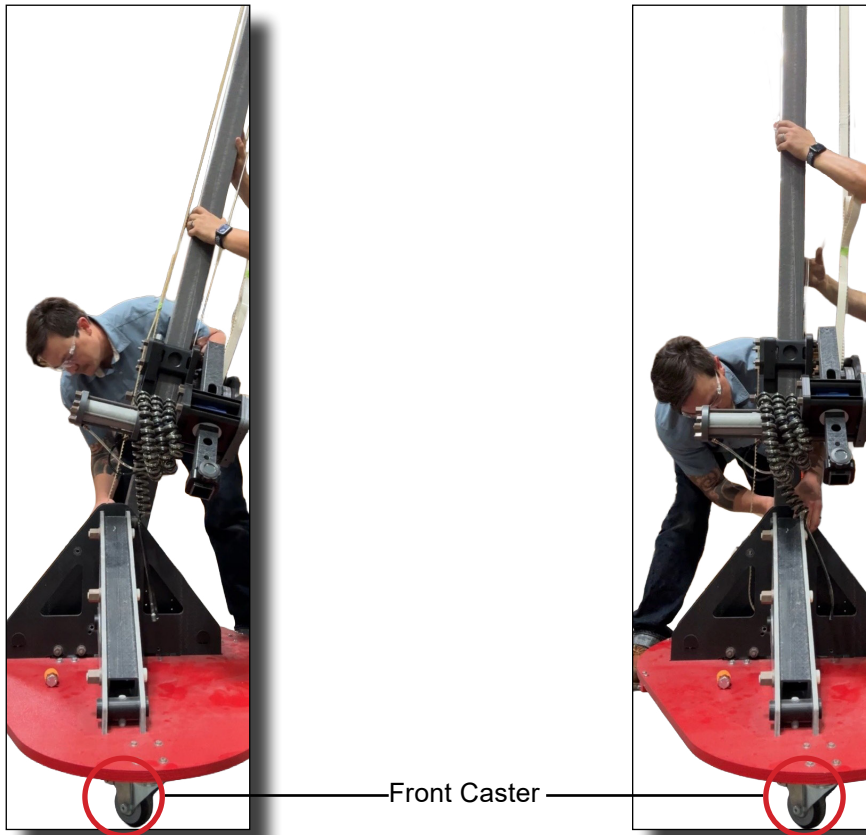


Insert Mast Assembly Into Base

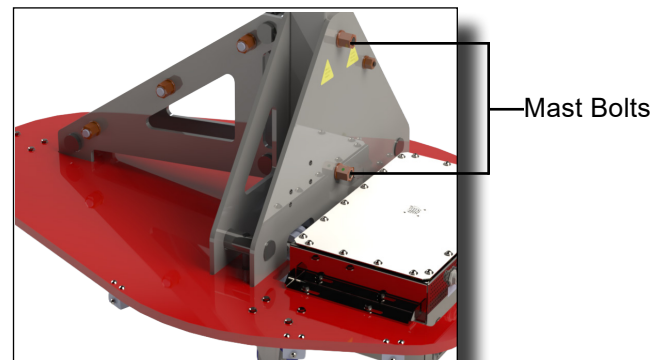
1. Carefully lay the mast assembly on its side with the tilt belt towards the ground.
2. Position the base at the bottom end of the mast assembly.
3. Ensure correct orientation with the tilt boom towards the front caster of the base.
4. Carefully lift and slide the bottom end of the mast assembly into the base (2 people recommended).



5. Align the bottom hole of mast to bottom hole on base support plate and install mast bolt. Do not tighten mast bolt completely.
6. Lock front caster wheel on base to avoid movement while lifting mast assembly.
7. Lift the top end of the mast assembly until the mast is completely vertical and the top mast bolt hole is aligned.

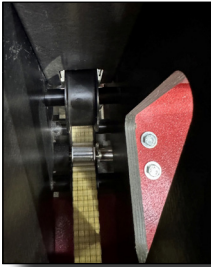


8. Install mast bolts.
9. Hand tighten both mast bolts completely. **Do not over tighten.**



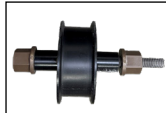
Install Drive Belt and Pulleys

1. Route fiber optic cables through the bottom.
2. Route drive belt.

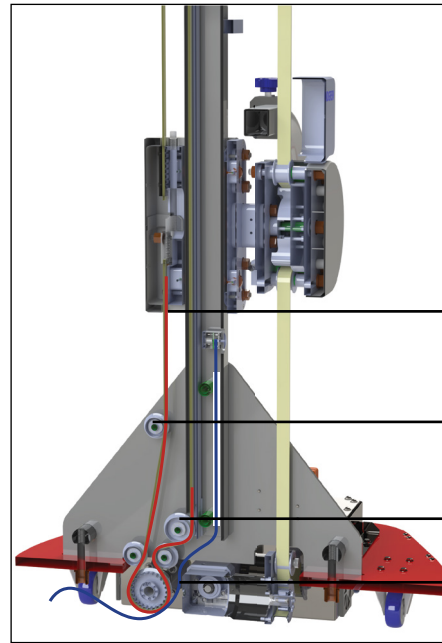


Routed Belt

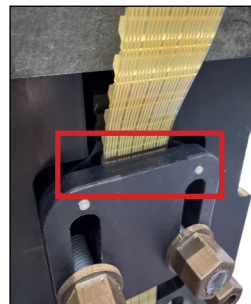
3. Install the large pulley in location shown in section view drawing, with the larger pulley at lower location and the small pulley at top location.



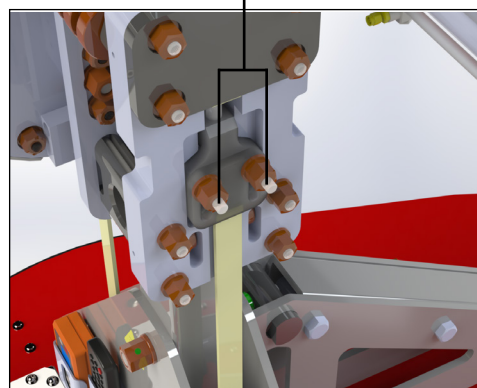
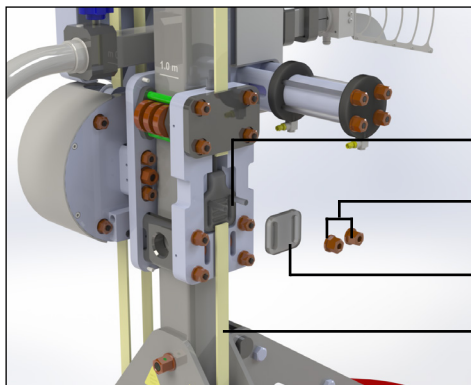
Pulley



4. Remove two fiberglass hex nuts on belt clamp to remove belt clamp plate.
5. Pull all slack out of drive belt and position belt teeth into the slots in the belt clamp.
6. Belt should be installed with mark (line) aligned to top edge of belt clamp plate.
7. Install the belt clamp plate with the fiberglass hex nuts.

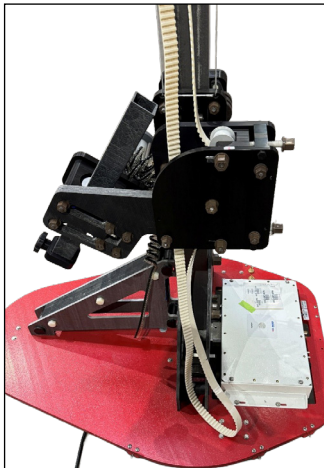


Belt mark aligned with top edge of belt clamp plate

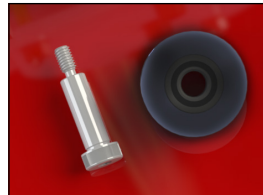


Install Tilt Belt

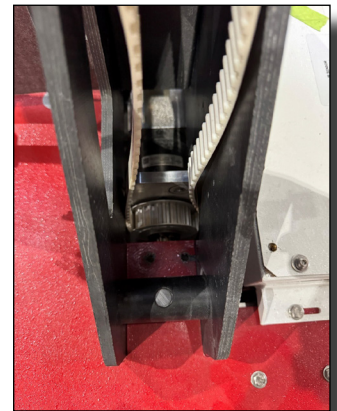
1. Remove tape from tilt belt.
2. Route belt through base opening and onto tilt motor pulley.



Tape on belt

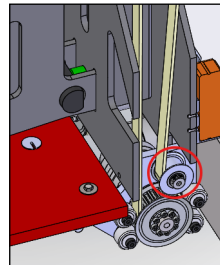


Pulley and Bolt

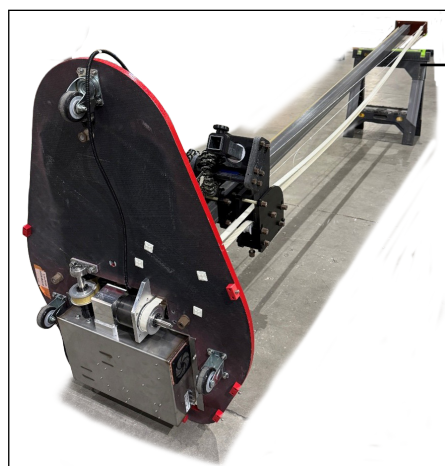


Belt routed onto tilt motor

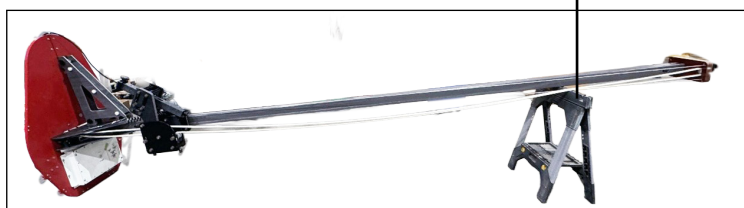
3. Install tilt belt idler pulley using a 6 mm hex key.



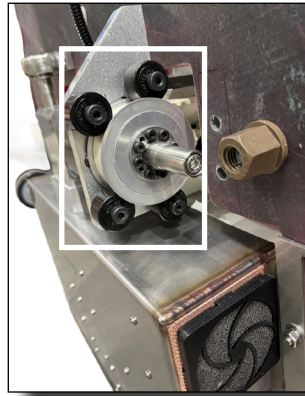
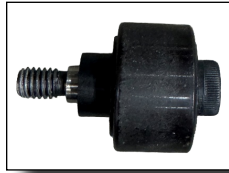
4. Carefully tilt tower assembly as shown (sawhorse or bench recommended).



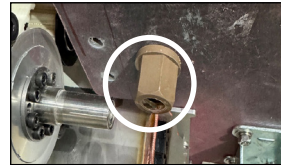
Sawhorse



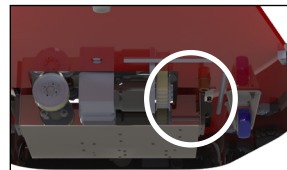
5. Install idler belt rollers as shown (x4 shoulder bolt, x4 plastic spacer, x4 metal roller, 3/16" hex key).



6. Remove fiberglass hex nut at bottom of base.



7. Remove fiberglass stud from base.



Components removed from base



Bearing Support Block and Hardware

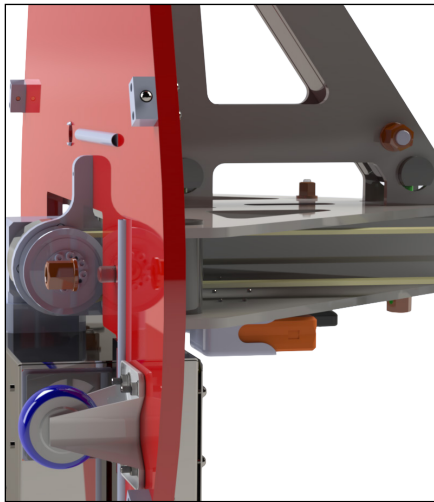
8. Slide bearing support block onto tilt motor shaft.



9. Install hex bolts and washers from opposite side.

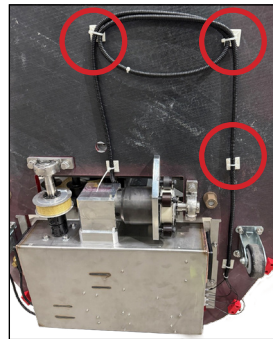


10. Reinstall the base bolt components in reverse order.
11. Ensure the stud engages with most of the hex nut.



Connect Fiber Optic Cables

1. Secure fiber optic cables with provided cable ties as shown.
2. Connect fiber optic cables to corresponding connectors on motor box.



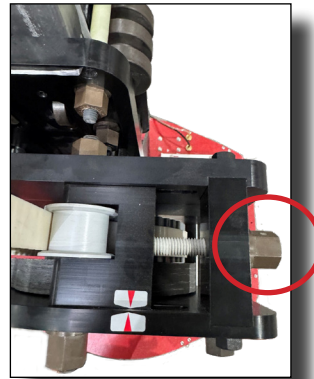
Install Tension Belts

1. Lift tower to vertical position.

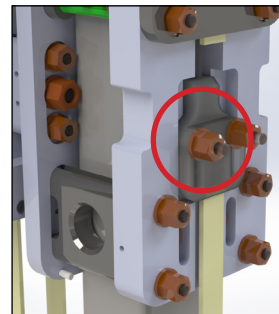
2. Loosen top and bottom tensioning pulley hex nuts.
Do not remove them.



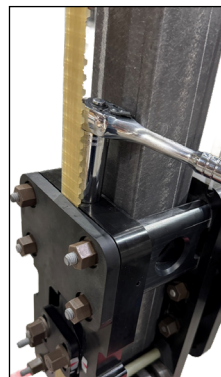
3. Tighten tensioning pulley jack screw to drive the pulley forward until the marks line up.
4. Tighten tensioning pulley hex nut to lock in place.
5. Repeat for bottom tensioning pulley.



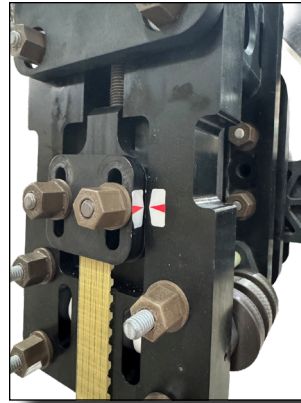
6. Loosen drive belt clamp hex nuts enough to allow the clamp assembly to slide freely but not disengage belt teeth. (Do not remove.).



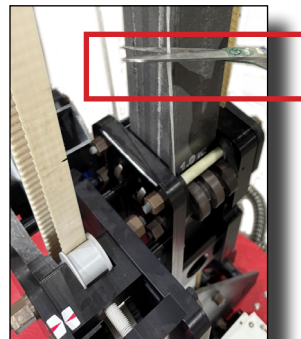
7. Tighten hex located on top of the carrier assembly to pull the drive belt clamp assembly until the marks align.



8. Tighten drive belt clamp hex nuts to lock position.

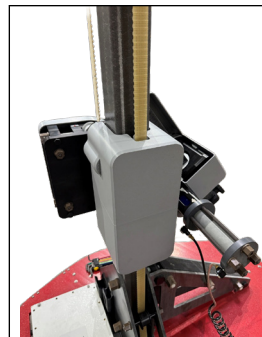


9. Remove shipping safety rope.

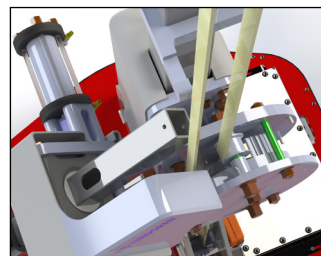


Install Covers and Accessories

1. Slide carrier cover over carrier.



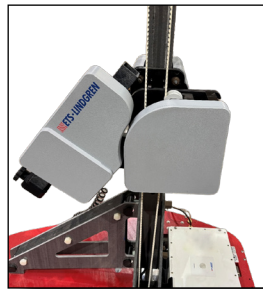
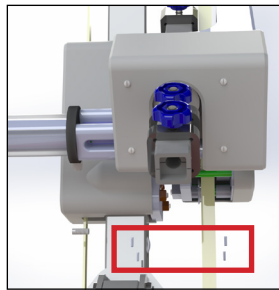
2. Fasten cover from opposite side using four plastic screws provided.



3. Slide tilt plate cover and fasten from opposite side using the provided plastic screws (3x).



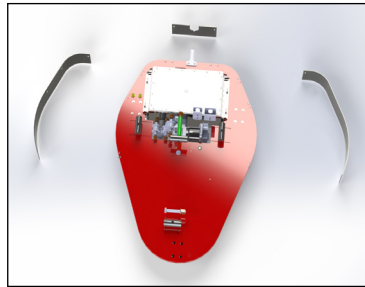
4. Slide the tilt boom covers together and onto the tilt boom.
5. Fasten using the provided plastic screws 4x.



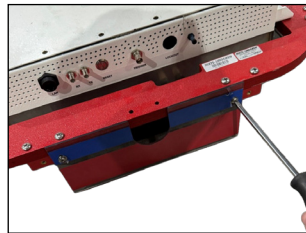
6. Slide the boom tail into the boom and align the threaded hole on the tail to the through hole on the boom.
7. Fasten using the provided plastic screw.



8. Install the skirt using the provided metal screws and washers (10x).



9. Adjust height as needed to allow for about 2mm clearance from the test floor.



10. Install digital level and remote holders using the provided metal Phillips drive screws (4x).



11. Push pneumatic hoses onto corresponding brass hose barbs in base with the black hose going to the input with the black sticker.



OPERATION

	Before placing into operation, follow the safety information in the ETS-Lindgren Product Information Bulletin included with your shipment. Follow all safety precautions in order to prevent injury and equipment damage.
	This equipment should be installed, operated, and maintained by qualified personnel..
	Stay clear of all moving components on this equipment. Never stand beneath the carrier, whether moving or stationary.
	Note: The stationary cam link assembly should never be attached to the carrier when using the boresight.

Pre-Operational Checklist

- ☐ Verify that the power lines are connected for the tower, controller, and any other equipment to be used for testing.
- ☐ Verify the fiber optic cables are connected.
- ☐ Verify the pneumatic tubing is connected to the tower.
- ☐ Verify the antenna connected to the boom is securely mounted.
- ☐ Connect the feed cable to the antenna.
- ☐ Before moving the carrier on the mast up or down, verify there are no people standing near the boom.

Air Polarization Operation

	Prior to using air polarization, make sure that when the antenna polarizes that it turns freely, avoiding contact with anything (the base, the floor, and so on). The flow limit controls located on the air cylinder are set at the factory. Use the flow limit controls to change the speed. If polarization is operating at an excessive speed, the antenna mounted to the boom could incur damage.
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The automated air polarization assembly includes variable speed polarization cycling using flow limit controls. The air cylinder is made of non-conductive material and will polarize the largest antenna recommended for the tower. The polarization speed range is 3 degrees to 30 degrees per second.

A regulated air supply of 4.0 bar to 5.5 bar (60 psi to 80 psi) is needed for this feature. It is important to have clean and dry air; so we recommend the use of a 40 micron filter in close proximity to the motor base.

Ten meters of UV stabilized air hose is included as well as a 1/8 inch NPT fitting. A metric fitting for a 4 mm tube may be supplied by the customer.

Connecting Air Lines

1. **Upper air line**—Attach an air hose from the upper flow limit control on the air cylinder to the right air line connector on the base.
2. Attach one end of another air hose to the upper air hose connector on the underside of the base. Attach the other end to the upper air hose barb on the motor base.
3. **Lower air line**—Attach an air hose from the lower flow limit control on the air cylinder to the left air line connector on the base.
4. Attach one end of another air hose to the lower air hose connector on the underside of the base. Attach the other end to the lower air hose barb on the motor base.

Homing Procedure

Use the GUI interface or remote control for the homing procedure. For instructions on using these, see *Using the Interface and Remote Control*.

1. Power on.
2. Put tower into Tower (non-boresight) mode (default for first time setup).
3. Manually tilt the carriage (using remote control or GUI) horizontally.
4. Manually lower carriage height (using remote control or GUI) down to 1-2m.
5. Place digital level on designated spot on the boom.
6. Manually tilt the carriage (using remote control or GUI) until digital level reads zero.
7. Zero the tilting axis using GUI.
8. Manually lower carriage height (using remote control or GUI) down to 1m or 1.5m marks.
9. Zero the height axis using GUI.

Every time the positioner is turned on, a home procedure must be performed on each axis so their real positions are known by the firmware.

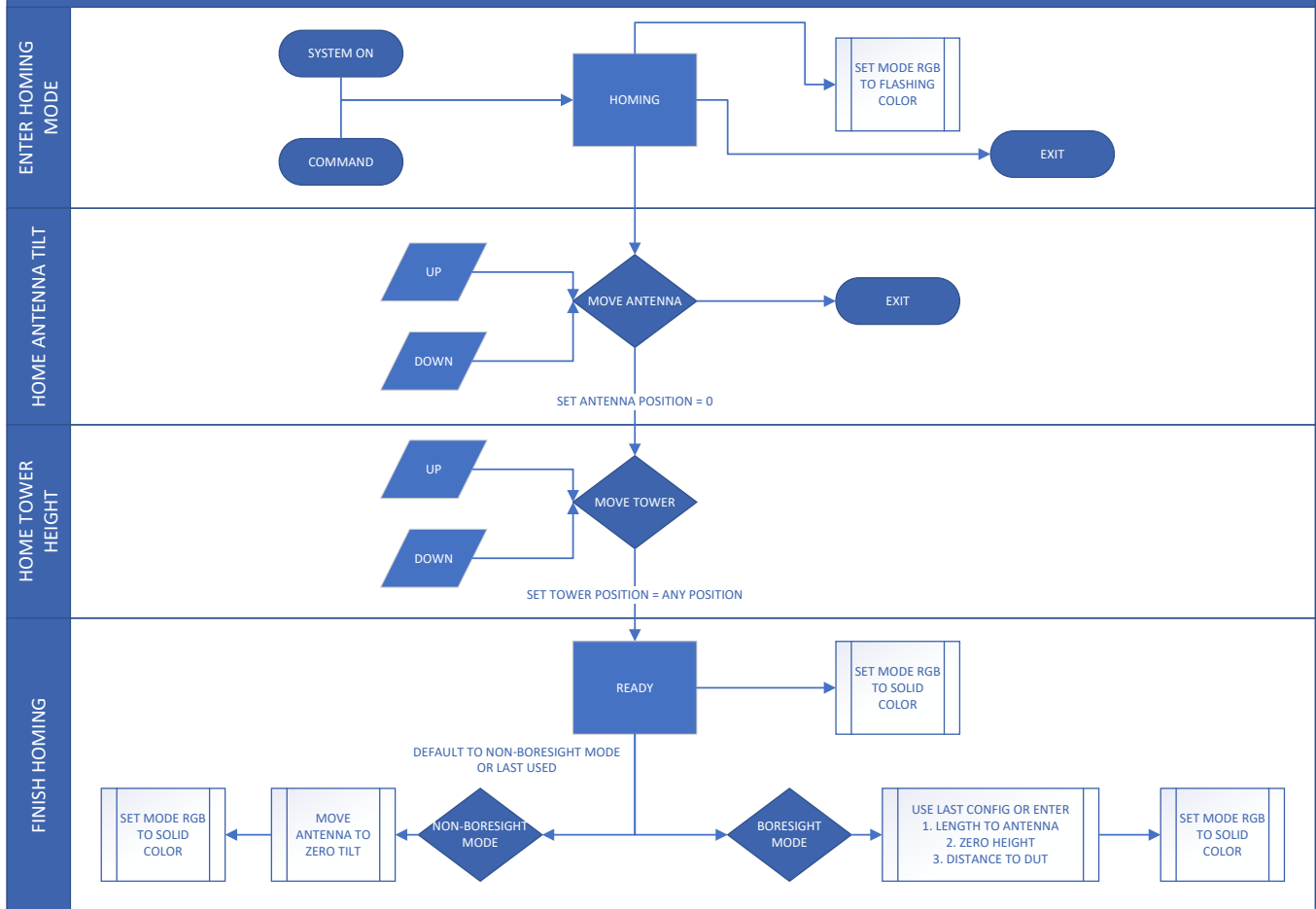
Home is the only way the firmware can know the axis position after the device is powered up.

The homing procedure must be performed one axis at a time.

See also the ETS-Lindgren document 1708812, *Standard Positioner Operations User Guide*.

2171C HOMING PROCEDURE

Phase



Using the Remote Control

Operate the 2171C using a remote control to level it, GUI commands to set the height and distances for the tower and antenna, and an interface for moving and jogging. The remote control can also be used for homing, tilting, and moving in steps. The VISA setting is 192.168.0.100::1206::SOCKET

0.0cm 0.0°

2171-C Mode
Tower

Configuration
Center Point (m)
DUT Height (m)
DUT Distance (m)

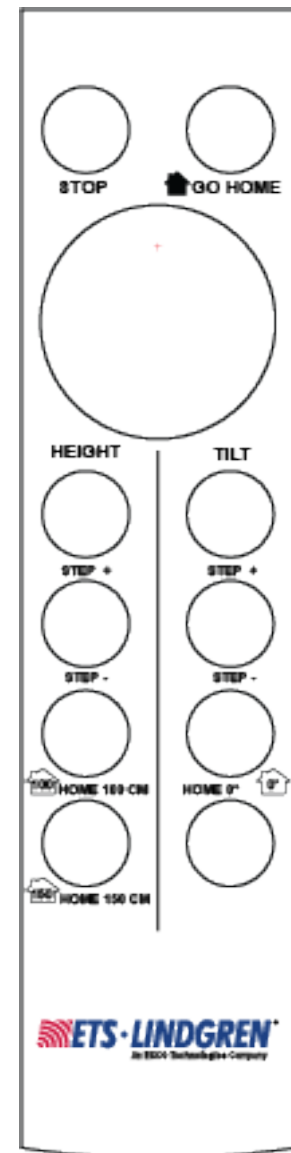
Tower
Jog (cm)
Set Home Position
Position (cm)
Move
Speed Preset

Antenna
Jog (deg)
Set Home Position
Position (deg)
Move
Speed Preset
Polarization

Trigger

State	Step (Deg)	Pre Delay (ms)	Pulse Width (ms)	Post Delay (ms)	Polarity
ON	15.0	50.0	1.0	50.0	HIGH
				GET	SET

System
Device
IP Address
Firmware



Remote Control

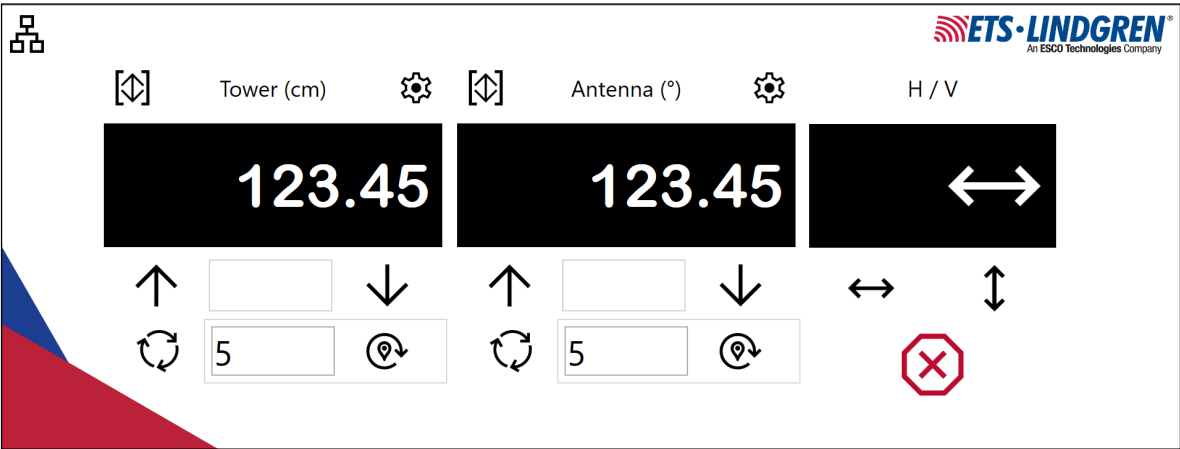
[Command List](#)

Home Page for 2171C

RGB BUTTON STATES					
					Phase
HOMING	 RX	 TX	 RESET	 TRIGGER	 MODE
BORESIGHT	 RX	 TX	 RESET	 TRIGGER	 MODE
NON-BORESIGHT	 RX	 TX	 RESET	 TRIGGER	 MODE
LOCKOUT	 RX	 TX	 RESET	 TRIGGER	 MODE
DISCONNECTED	 RX	 TX	 RESET	 TRIGGER	 MODE
ERROR	 RX	 TX	 RESET	 TRIGGER	 MODE

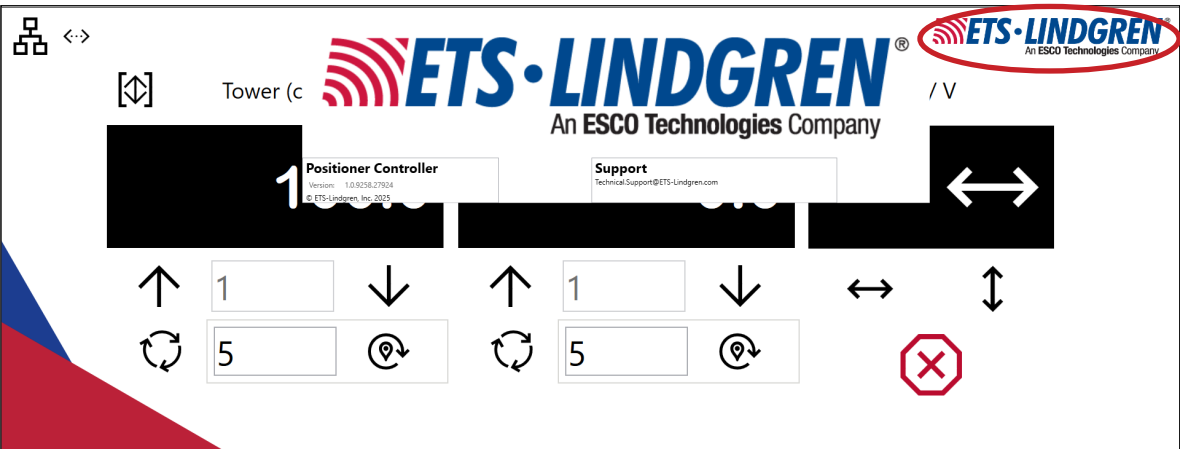
Positioner Controller Interface System

The first screen of the interface system should look like the following:



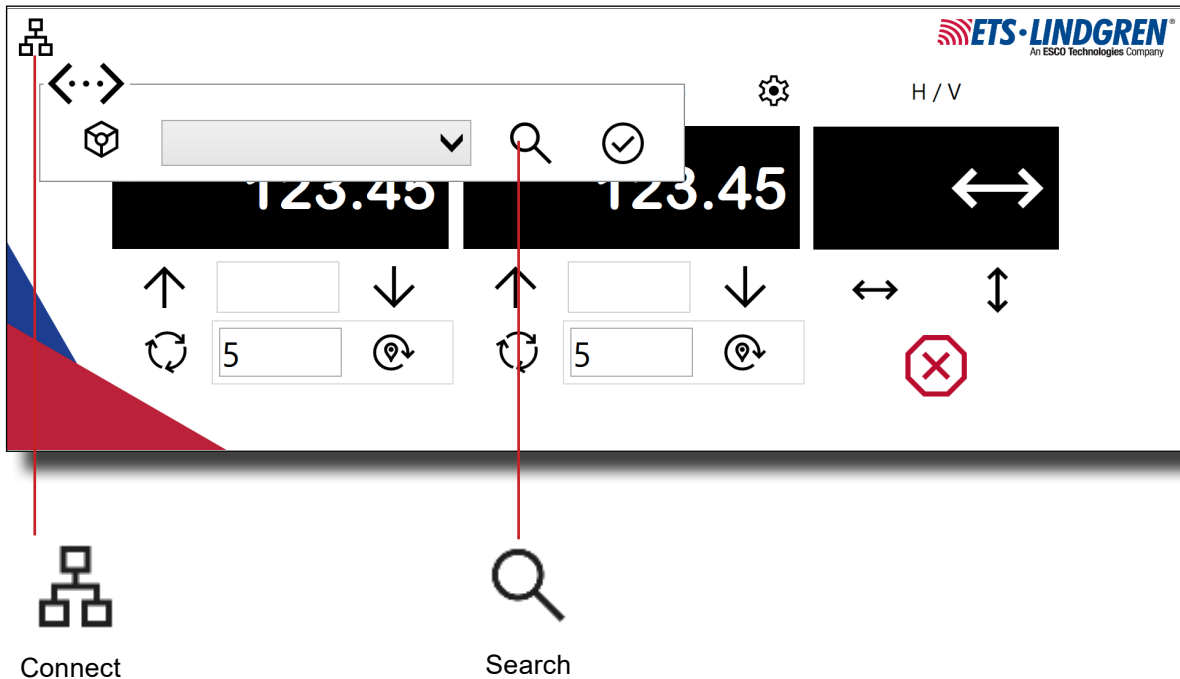
About

Click the ETS-Lindgren logo in the top right corner for a popup with information about the program version number, copyright, and support contact email.



Connect Instrument

1. Click the Connect Button in the top left corner.
2. Select the Search button to populate the dropdown.



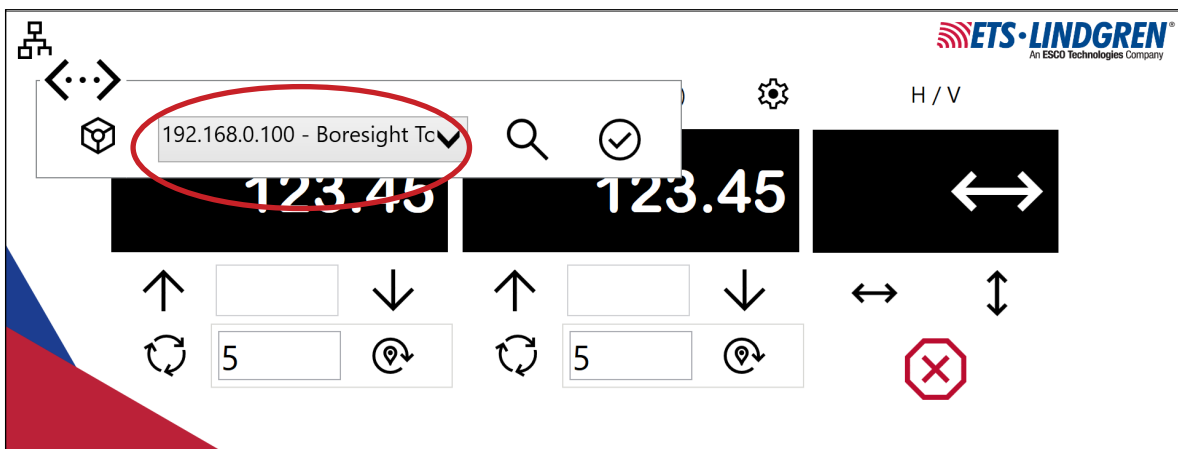
3. Select positioner in dropdown. The first positioner found is automatically selected.
4. Select the Apply button to connect the positioner.
5. The Connected icon shows that the positioner is connected in ready to use.



Apply

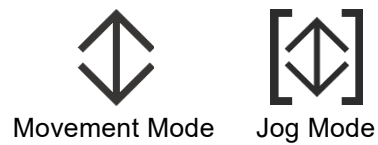


Connected



Movement Mode and Jog Mode

The tower step size moves in centimeters(cm), and the antenna moves via angle degrees(°).



Move Up and Move Down

Use arrows to move up or down by the steps input.



Jog Up and Jog Down

Use the **Jog Up** or **Jog Down** buttons to move by the steps input.



Scan Position

Use the **Scan** button to move the positioner between the set limits continuously until the **Stop** button is pressed.



Seek Position

Use the **Seek** button to move to the position indicated by the text box to the left of the button.



Settings

There are four setting options:

Limits



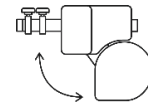
Current Position



Speed



Boresight Parameters



Click the **Apply** button to save changes or the **Cancel** button to exit without saving the changes.

Limits

Set the **Lower Limit** and **Upper Limit** in centimeters (cm).



Lower Limit



Upper Limit

Current Position

Set the **Current Position** in centimeters (cm).

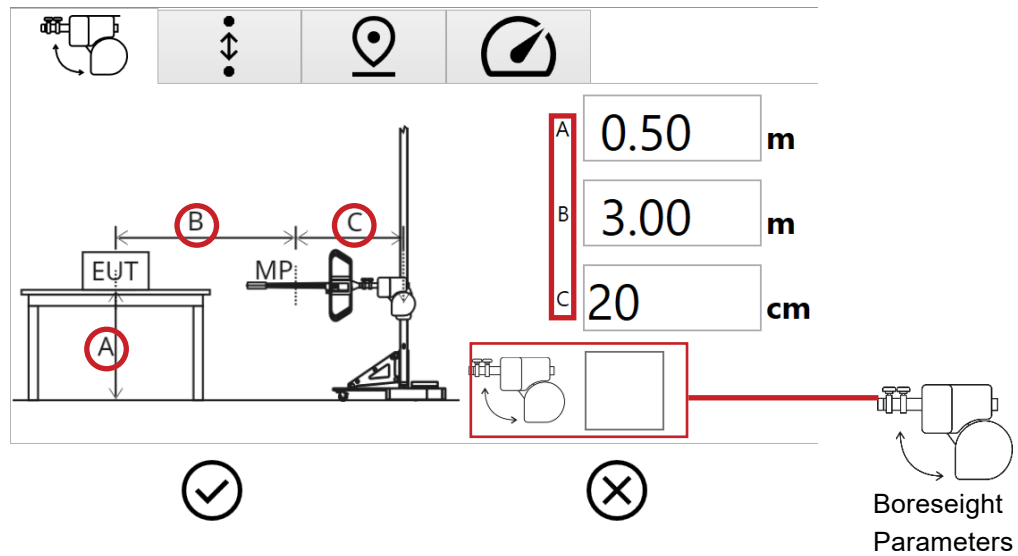


Speed

Set the **Speed** in centimeters per second (cm/s).



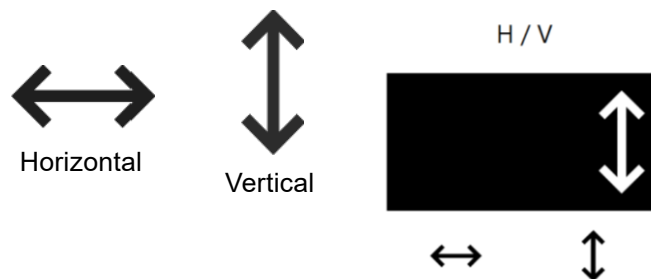
Boresight Parameters (Antenna Only)



- Setting **A** is the distance in meters(M) to the EUT from the floor.
- Setting **B** is the distance in meters(M) from the EUT to the measurement point of the antenna.
- Setting **C** is the straight-line distance in meters(M) between the measurement point of the antenna to the pivot point of the antenna arm.
- The **Boresight** checkbox enables the positioner to control the angle of the antenna arm and disables all manual controls for the antenna arm.

Polarization

The **H/V** black box shows the current polarization. Use **Horizontal** or **Vertical** buttons to change the polarization.



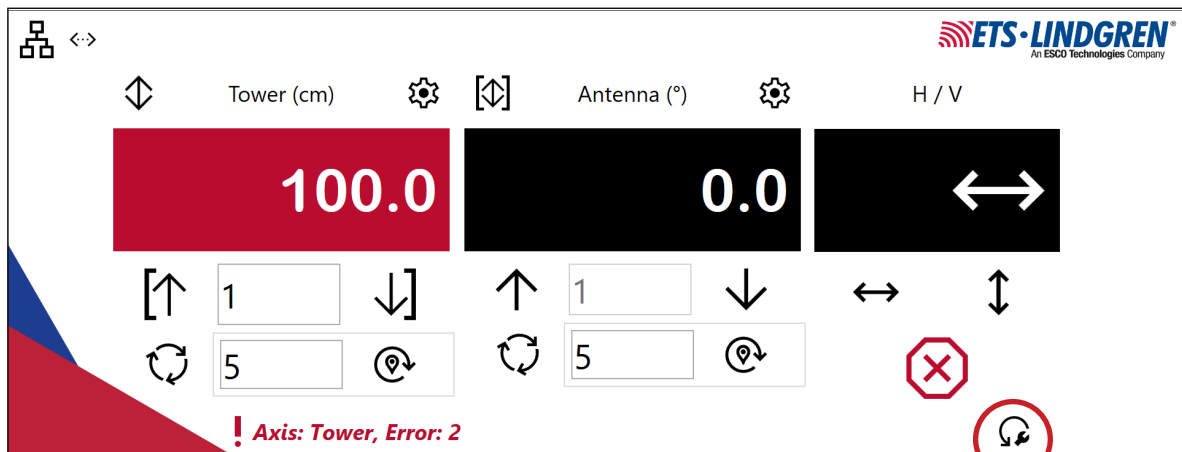
Stop

The **Stop** button halts the positioner movement.



Errors

The axis number box will light up red. The specific error will appear at the bottom in red text. To clear errors, use the **Reset Alarm** button on bottom right corner.



System Commands

Device Identification Query	
Command Format:	*IDN?
Response:	ETS-Lindgren Inc.,2303 Precision Positioner,<Module Name>,PCA120518 FW n.nn
Default IP Address:	192.168.0.100 Port 1206 (192.168.0.100::1206::SOCKET)

Module Name	
Command Format:	MODule:NAME <Module Name>
Query Format:	MODule:NAME?
Response:	Module Name

IP Address	
Command Format:	MODule:IPADdress <nnn.nnn.nnn.nnn>
Query Format:	MODule:IPADdress?
Response:	nnn.nnn.nnn.nnn
Default Value:	192.168.0.100 minutes

Network Mask	
Command Format:	MODule:NETMask <nnn.nnn.nnn.nnn>
Query Format:	MODule:NETMask?
Response:	nnn.nnn.nnn.nnn
Default Value:	255.255.255.0

Communication Idle Timeout	
Command Format:	MODule:IDLE <minutes>
Query Format:	MODule:IDLE?
Response:	nnn
Default Value:	360 minutes

Axis Commands

Configure Subset

Set/Query lower limit
[AXIS<n[-m]>:] CL imit <limit_n>[,...,<limit_m>]
[AXIS<n[-m]>:] LL imit <limit_n>[,...,<limit_m>]
Set/Query upper limit
[AXIS<n[-m]>:] UL imit <limit_n>[,...,<limit_m>]
[AXIS<n[-m]>:] WL imit <limit_n>[,...,<limit_m>]
Set/Query current position
[AXIS<n[-m]>:] CP osition <position_n>[,...,<position_m>]
Set/Query continuous rotation - Restrict motion between the upper and lower limits
[AXIS<n[-m]>:] CR otation
Set/Query non-continuous rotation (ignore soft limits)
[AXIS<n[-m]>:] NCR otation
Set/Query acceleration in seconds
[AXIS<n[-m]>:] ACC eleration <acceleration> [s]
Set/Query acceleration in milliseconds
[AXIS<n[-m]>:] A <acceleration> [ms]
Set/Query speed selection
[AXIS<n[-m]>:] S peed <speed>
Query if axis has been homed
[AXIS<n[-m]>:]ZERO?

Control Subset

Move Axis Counterclockwise
[AXIS<n>:] CCw
[AXIS<n>:] DN
Move Axis Clockwise
[AXIS<n>:] CW
[AXIS<n>:] UP
Stop Motion
[AXIS<n[-m]>:] STop
Seek Specified Target
[AXIS<n[-m]>:] SK <target_n>[,...,< target_m>]
Seek Specified Target in Negative Direction
[AXIS<n[-m]>:] SKNegative <target_n>[,...,< target_m>]
Seek Specified Target in Positive Direction
[AXIS<n[-m]>:] SKPositive <target_n>[,...,< target_m>]
Seek Relative to the Current Position
[AXIS<n[-m]>:] SKRelative <target_n>[,...,< target_m>]
Seek Home Sensor
[AXIS<n[-m]>:] HOME
Toggle Scan Mode - Move axis up and down between the soft limits
[AXIS<n[-m]>:] SCAN

Read Subset

Query Current Position
[AXIS<n[-m]>:] C Position?
Response angle
Query Current Motion Direction
[AXIS<n[-m]>:] D IRection?
Response 0 -> Not Moving
Response +1 -> Moving clockwise
Response -1 -> Moving counter clockwise
Query if axis has been homed
[AXIS<n[-m]>:] H OME?
Response [0 1]

Trigger

Trigger
[AXIS<n[-m]>:] T RIGger (<state>, <step-size>, <reference>, <pre-delay>, <pulse-width>, <post-delay>, <polarity>)[,...]
state - ON/OFF
step-size - angle (degrees)
reference - angle (degrees)
pre-delay, - milliseconds
pulse-width - milliseconds
post-delay - milliseconds
polarity - HI/LO
Query AXIS1-2:TRIGGER?
Response (OFF,0.00,0.00,0.00,0.00,0.00,LOW),(OFF,0.00,0.00,0.00,0.00,0.00,LOW)

E-Stop

The emergency stop can be mounted in a rack or placed on a desktop. It will cut the connection to the positioner when pressed and turned. It is a fiber to Ethernet converter.

