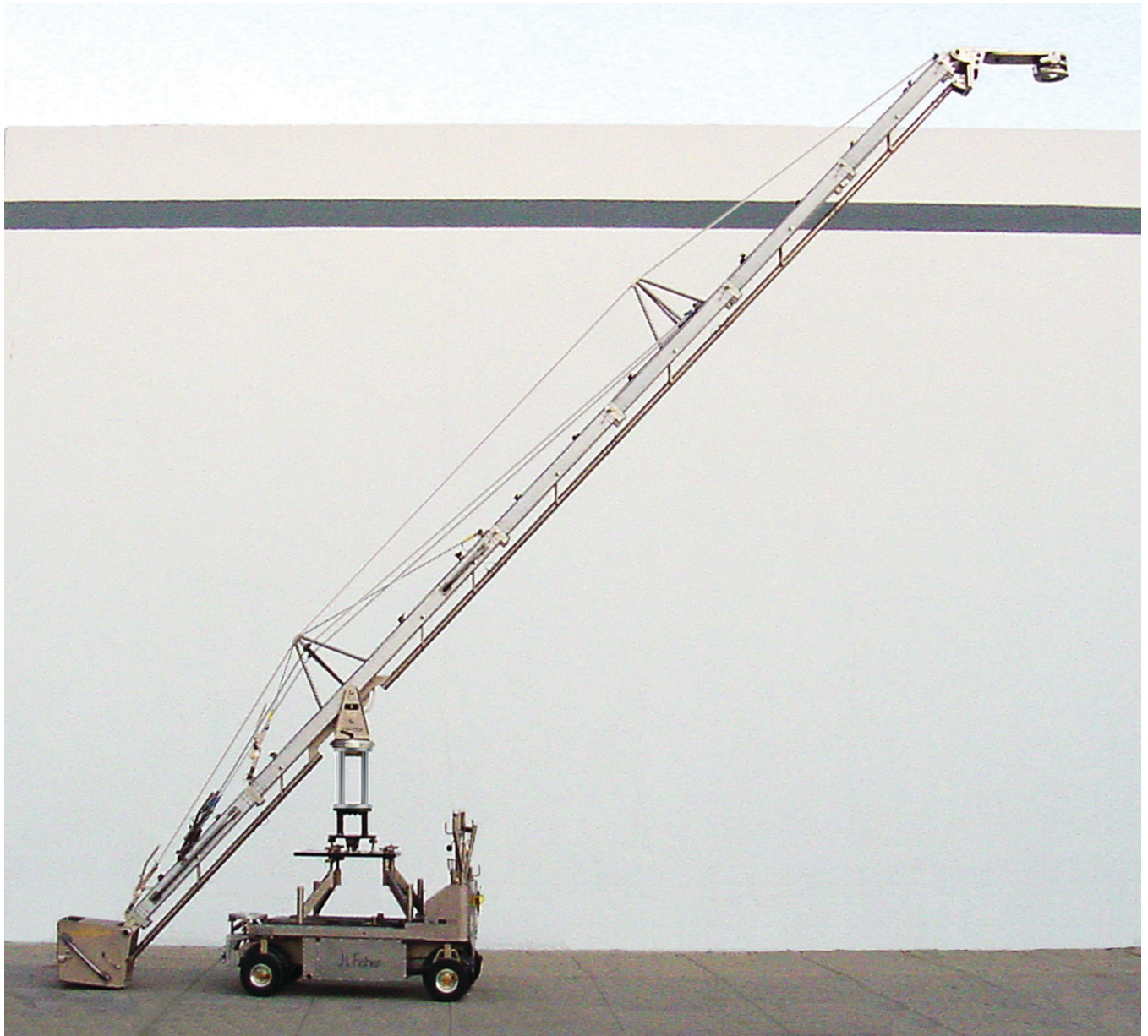


J. L. Fisher, Inc.

**Model 23 Jib
User Manual**



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Model 23 Jib
User Manual
Rev. 2.2 December 14, 2006

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Model 23 Jib

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J. L. Fisher, Inc.
Model 23 Jib

Introduction

Product Description / Information

The Model 23 Jib is a stable yet lightweight sectional arm used in motion picture and television production. The jib sections assemble quickly. Easy-to-use color-coded, pre-tensioned cables secure the assembled sections into an extremely rigid structure. The Model 23 Jib enables the operator to position the camera at various elevations and rotates 360°.

- 6 to 21 ft (1.8 to 6.4 m) reach
- Payload of 131 lbs (59 kg)
- Maximum weight on Model 10 Dolly with center mount
- Two experienced grips can assemble this jib to its full length in 10 minutes

NOTE: Not for use on the J. L. Fisher Model 11 Dolly.

Safety Considerations



A non-camera crane related mishap.

Disclaimer

The safety information in this book is a consensus of recognized professionals, both in the use and manufacture of camera cranes. They examined past accidents and difficulties associated with camera cranes and attempted to reasonably foresee hazards associated with this equipment. This information is part of an ongoing effort by members of PERA¹ to create an ANSI² standard for safety relating to camera cranes.

This is the best information on the safe use of camera cranes that we know of; but we do not claim to be complete.

The information and suggestions contained in this manual have been developed from sources believed to be reliable. However, J. L. Fisher, Inc., accepts no legal responsibility for the correctness or completeness of this material or its application to specific factual situations.

The Safety Bulletin in Appendix A is an additional safety document provided by AMPTP/CSATF³. The bulletin was current as of the date of publication. A current version may be found at www.cstaf.org.

- ¹ PERA: Production Equipment Rental Association
² ANSI: American National Standards Institute
³ AMPTP: Alliance of Motion Picture and Television Producers
CSATF: Contract Services Administration Trust Fund

GENERAL INFORMATION **FOR SAFER USE OF ALL** **CAMERA CRANES**

Introduction

A camera crane is safe if used properly. However, improper operation, assembly and disassembly can cause property damage, serious bodily injury and even death. This handbook of safe practices, procedures and conditions coupled with common sense, good judgment and proper evaluation of each situation, will greatly reduce the risk of accidents.

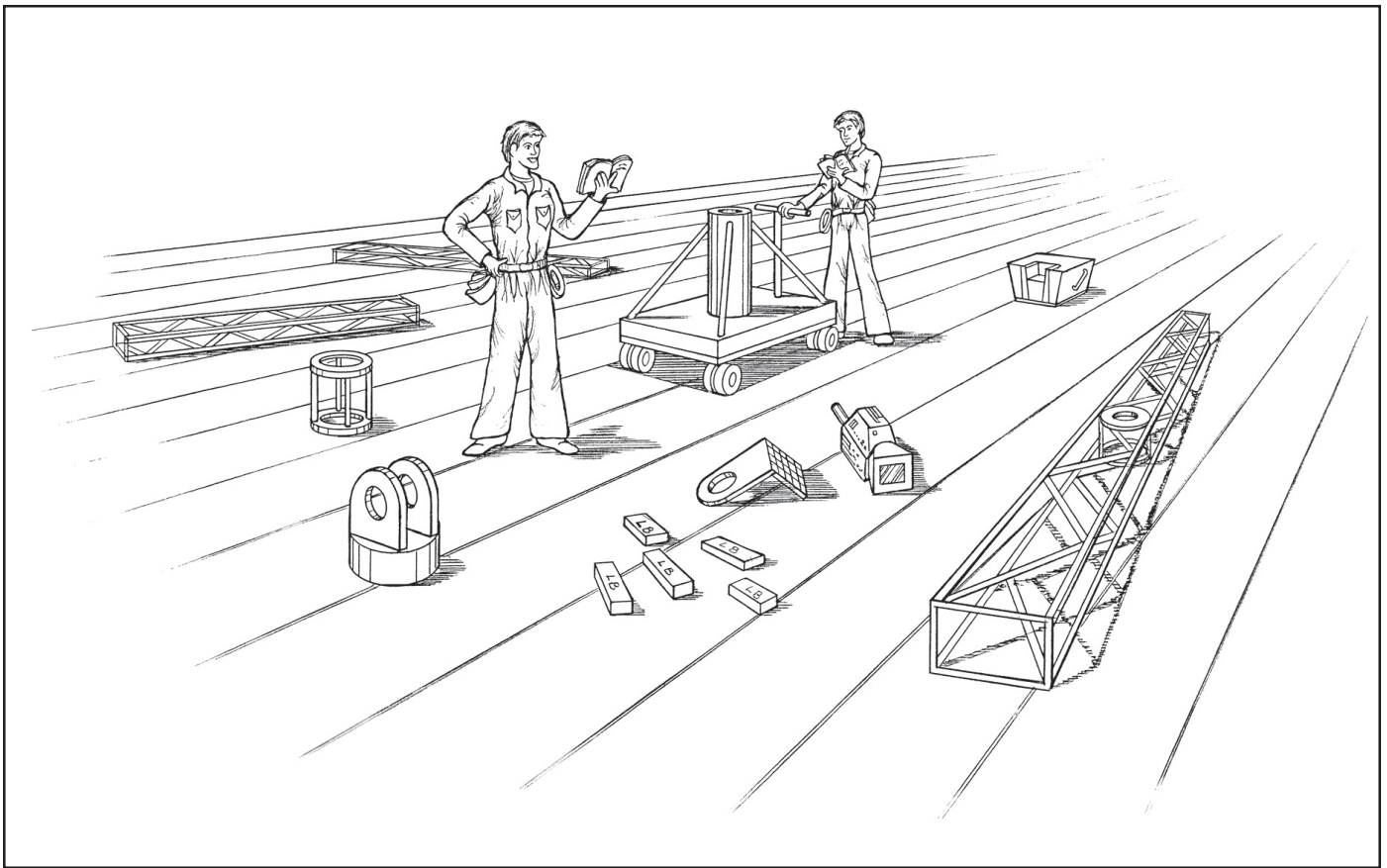
A safe attitude is the single most important element of preventing accidents. Decide that you will use a crane the correct way. Decide that you will not have an accident.

As the Camera Crane Grip, you are the camera crane expert. Take charge of the camera crane. Everyone should know who is in charge of and operating the camera crane.

Proposition 65
Warning

Jib/crane weights may contain lead and lead components, chemicals known to the State of California to cause cancer and reproductive harm.

**WEAR GLOVES - DISPOSE OF GLOVES
PROPERLY
WASH HANDS AFTER HANDLING!**



Training

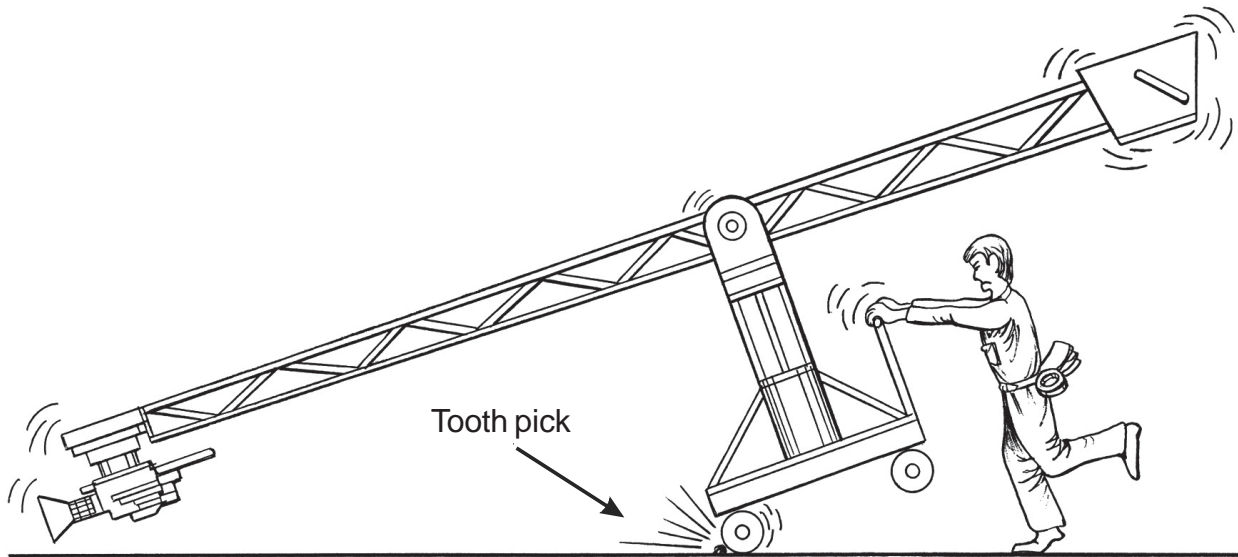
- Increase your experience and knowledge of operating camera cranes. Read camera crane manuals, attend training, watch videos, talk to co-workers and stay current on equipment and skills.
- Assembly and/or operation of camera cranes should only be done by trained and authorized personnel.
- Educate yourself
- Use trained personnel

Camera Crane Selection

- Evaluate the requirements of the shot(s) to make a decision on which crane to use. Take all criteria into consideration including the following:
 - ◆ Access to site
 - ◆ Environmental conditions
 - ◆ Exposure to hazards
 - ◆ Height
 - ◆ Load requirements
 - ◆ Prior experience
 - ◆ Reach
 - ◆ Remote or rideable operation
 - ◆ Space limitations
 - ◆ Speed
 - ◆ Weight limits

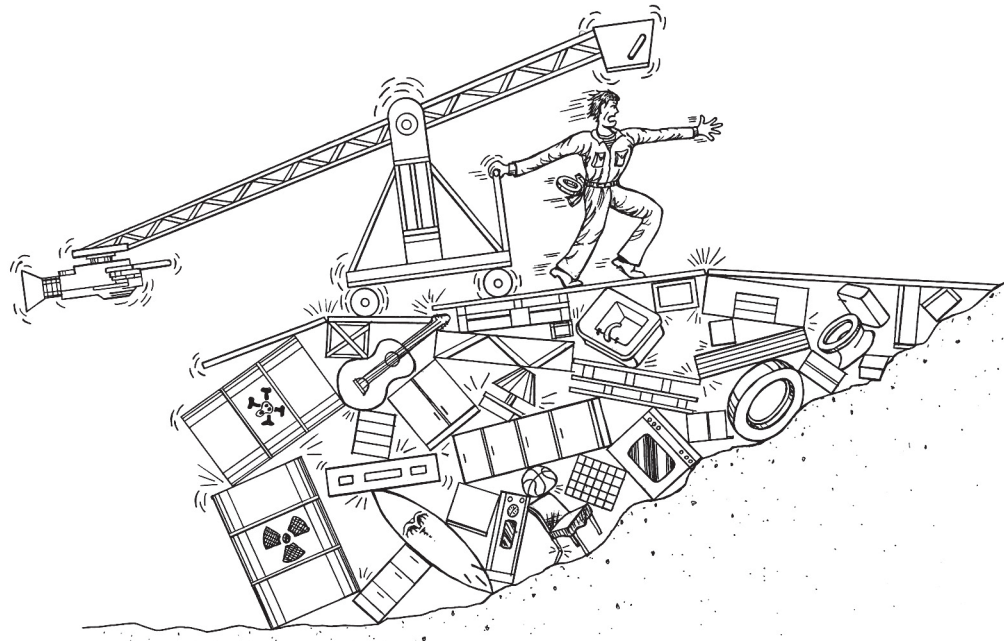
Inspection

- Inspect the crane prior to and during assembly. The camera crane should have been inspected prior to shipping. Because damage may occur during transportation, inspect the crane components again prior to and during assembly.
- Also inspect and test a camera crane prior to operation but after assembly and set up to ensure all aspects are operating properly.
- Inspect camera cranes before each day or at the beginning of each shift with qualified personnel (e.g., key grip, camera/dolly grip vendor's representative or other qualified personnel as determined by the Producer), following an inspection protocol supplied by the manufacturer/vendor.
- If components are missing, damaged or improperly fitted, remove the camera crane from service immediately. Replace or repair missing or damaged components in accordance with the manufacturer's procedures and specifications prior to the camera crane being returned to service.
- Include, but do not limit, the inspection to the following tests and visual inspection:
 - ◆ Structural components
 - ◆ Operating mechanisms for poor adjustment interfering with proper operation
 - ◆ Operating mechanisms for excessive wear
 - ◆ Emergency controls
 - ◆ Safety devices
 - ◆ Personal protective devices including seat belts and fall protection
 - ◆ Hydraulic system leaks
 - ◆ Cables and wiring harness
 - ◆ Loose or missing parts
 - ◆ Tires and wheels
 - ◆ Placards, warnings and control markings
 - ◆ Outriggers, stabilizers and other structures
 - ◆ Other items specified by the manufacturer
- Survey the entire working area including the path to and from the area in which the camera crane will be used. Look for the following hazards and any others:
 - ◆ Drop-offs, holes or uneven ground



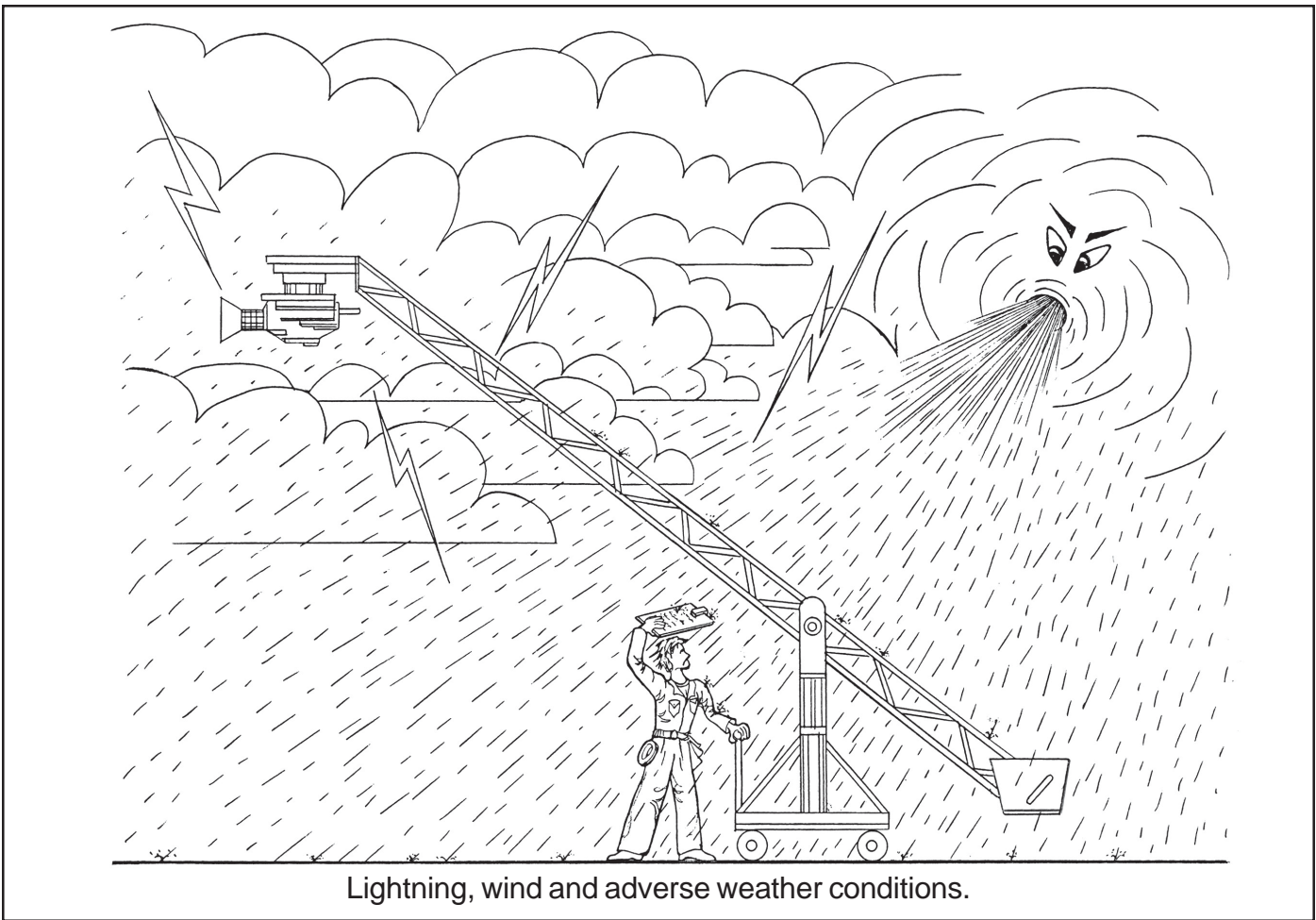
Even a small obstruction can stop the wheels and cause the jib to tip over.
Never take a running start at an obstruction.

- ◆ Bumps and ground obstructions
- ◆ Debris
- ◆ Overhead obstructions
- ◆ High voltage conductors
- ◆ Explosive and/or flammable atmosphere locations



A platform or ground unsuitable for supporting crane and personnel.

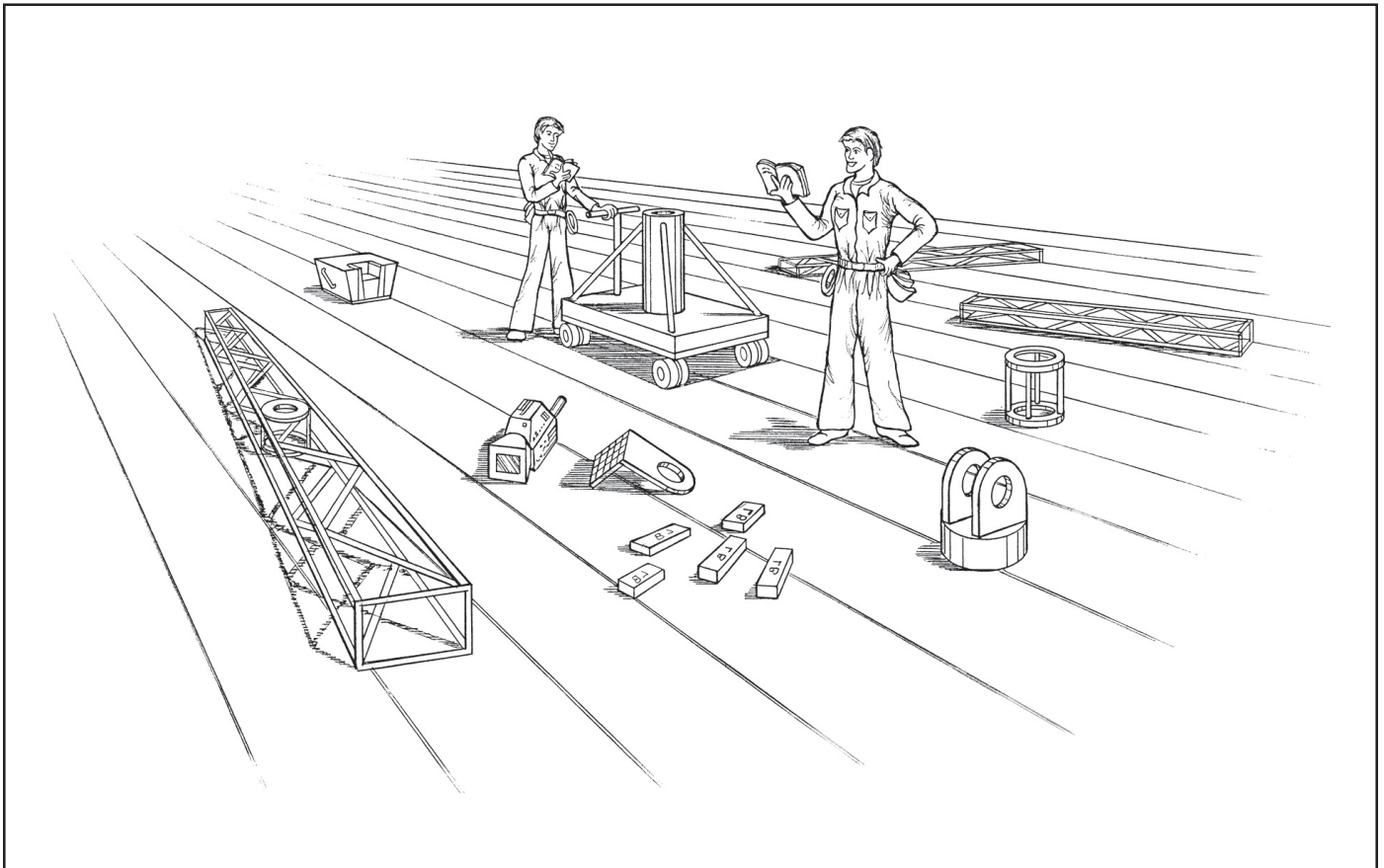
- ◆ Inadequate surface and support to withstand all load forces



Lightning, wind and adverse weather conditions.

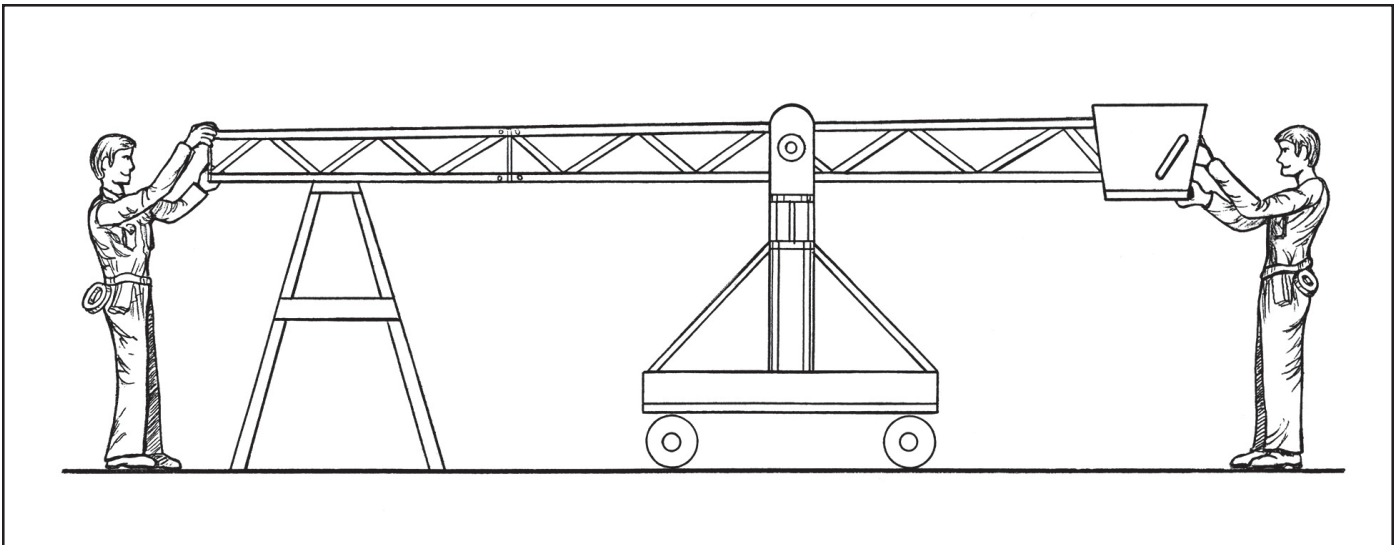
- ◆ Wind and weather conditions including man-made effects
- ◆ Special effects
- ◆ Other possible unsafe conditions
- Inspect the crane
- Before operation
- Before/during assembly
 - ◆ Cables/wiring
 - ◆ Each day/shift
 - ◆ Emergency controls
 - ◆ Excessive wear
 - ◆ Leaks
 - ◆ Manufacturer items
 - ◆ Missing parts
 - ◆ Outriggers/stabilizers
 - ◆ Placards/warnings
 - ◆ Poor adjustment
 - ◆ Replace or repair missing/damaged components
 - ◆ Safety devices
 - ◆ Seat belts
 - ◆ Structural components
 - ◆ Inspect the area

- ◆ Bumps/ground obstructions
- ◆ Debris
- ◆ Drop-offs/holes
- ◆ Explosive/flammable atmosphere
- ◆ High voltage conductors
- ◆ Overhead obstructions
- ◆ Special effects
- ◆ Surface/supports for load
- ◆ Unauthorized persons
- ◆ Wind/weather
- ◆ Other conditions

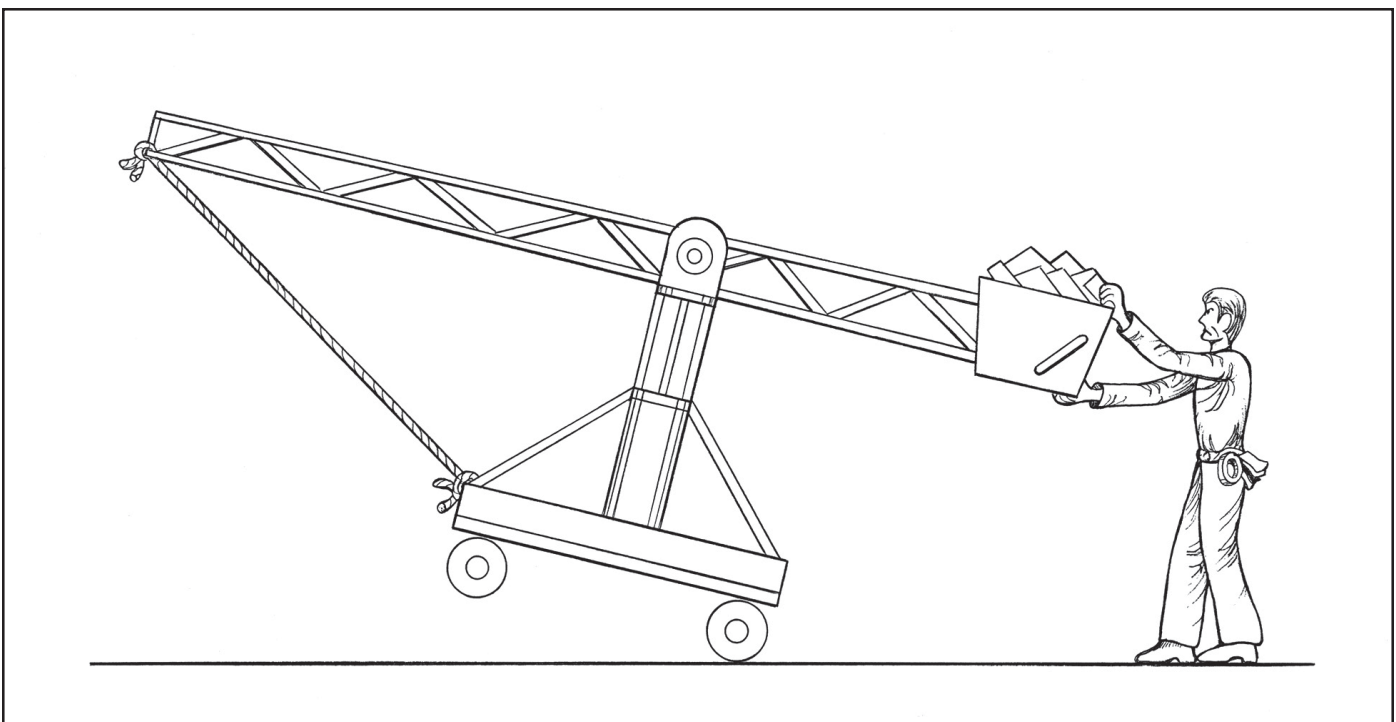


Assembly/Set Up

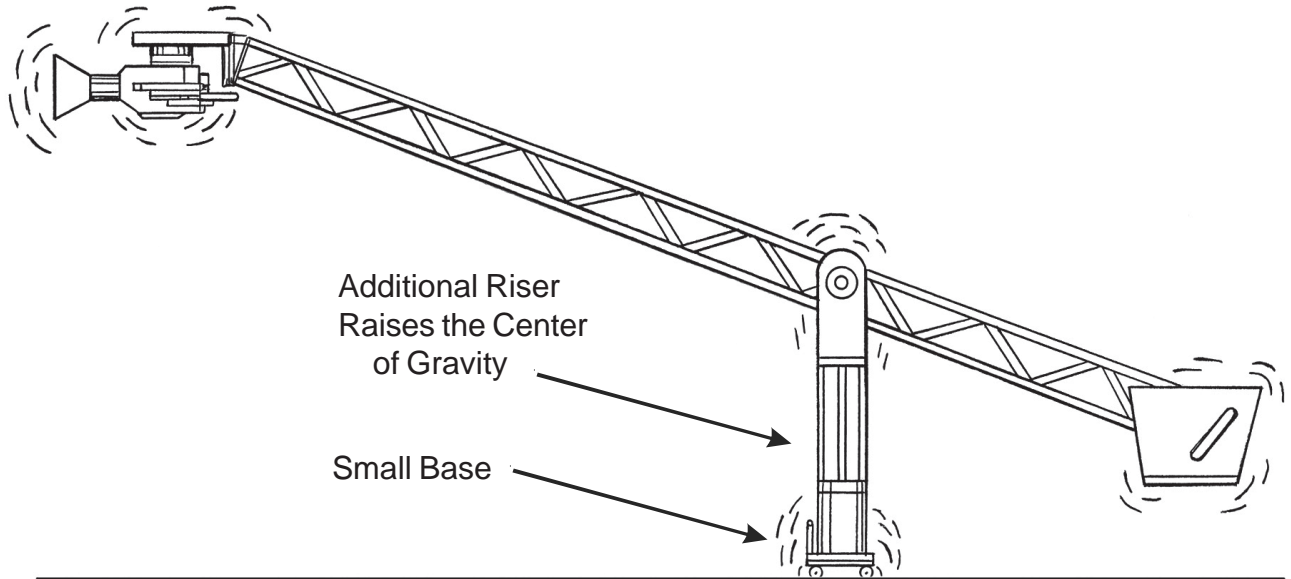
- Allow sufficient time to assemble, set up, inspect and test equipment prior to use.
- An assembly/usage manual supplied by the manufacturer/vendor should accompany each camera crane. The manual should clearly show assembly, set up, inspection, operation, maintenance and storage instructions and maximum payload and gross weight in all configurations. Read and follow the assembly/usage manual.
- Camera cranes can have heavy parts and may require considerable force and precision to assemble. **Have an adequate numbers of persons available to lift, lower or position parts.** Alternatively, use hoists, lifts, tailgates or other mechanical handling equipment to assemble or move the unassembled camera crane where feasible.



- Adequately brace or block camera crane parts against falling during assembly or disassembly.
- During assembly keep the arm in balance as much as possible. Build out the front and back of the arm, adding counterweights as necessary. Use a manufacturer-supplied support or a support adequately stable and rated for the capacity.

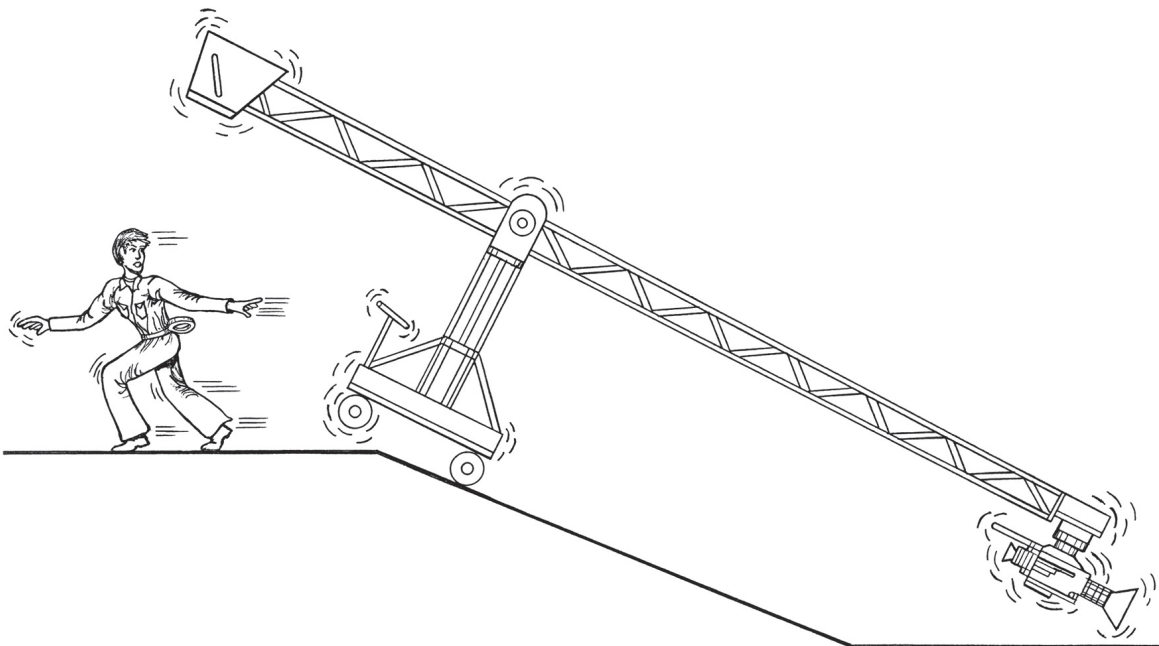


- Tying the arm to the base while loading or unloading weights may cause the crane to become unstable and/or tip over. Do not tie the arm to the base unless this procedure is specified by the manufacturer.



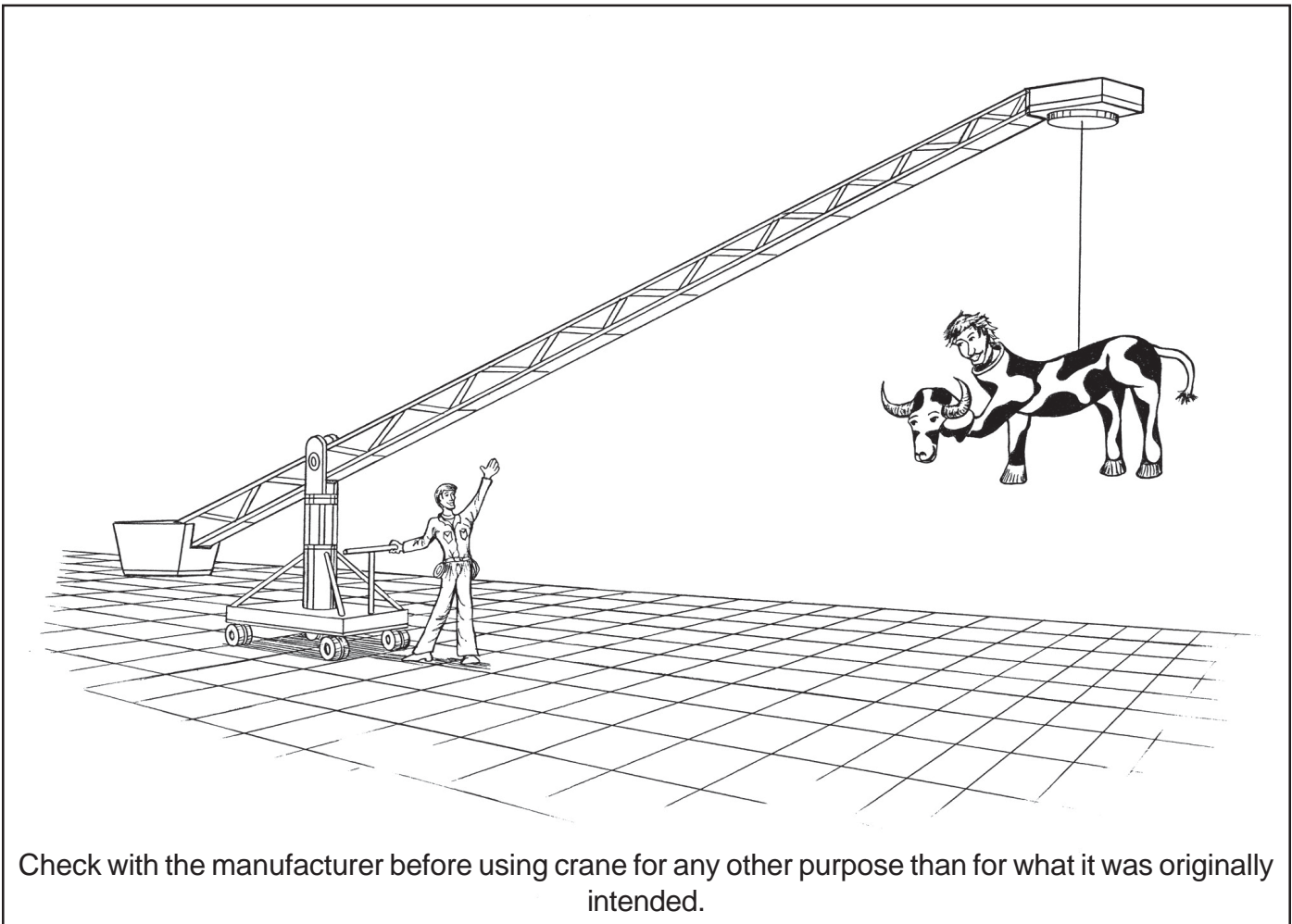
A small base and additional riser increases possibility of tip over.

- Use the largest base and lowest tilt point possible to maximize the stability of the camera crane. The height, length and total load of the crane determines the appropriate base. Refer to the manufacturer's assembly/usage manual or contact the manufacturer to determine the appropriate base.
- Make certain the camera crane base is positioned on a flat and level surface, platform or track system capable of supporting the load. Take the weight of all personnel, equipment and the camera crane into consideration.

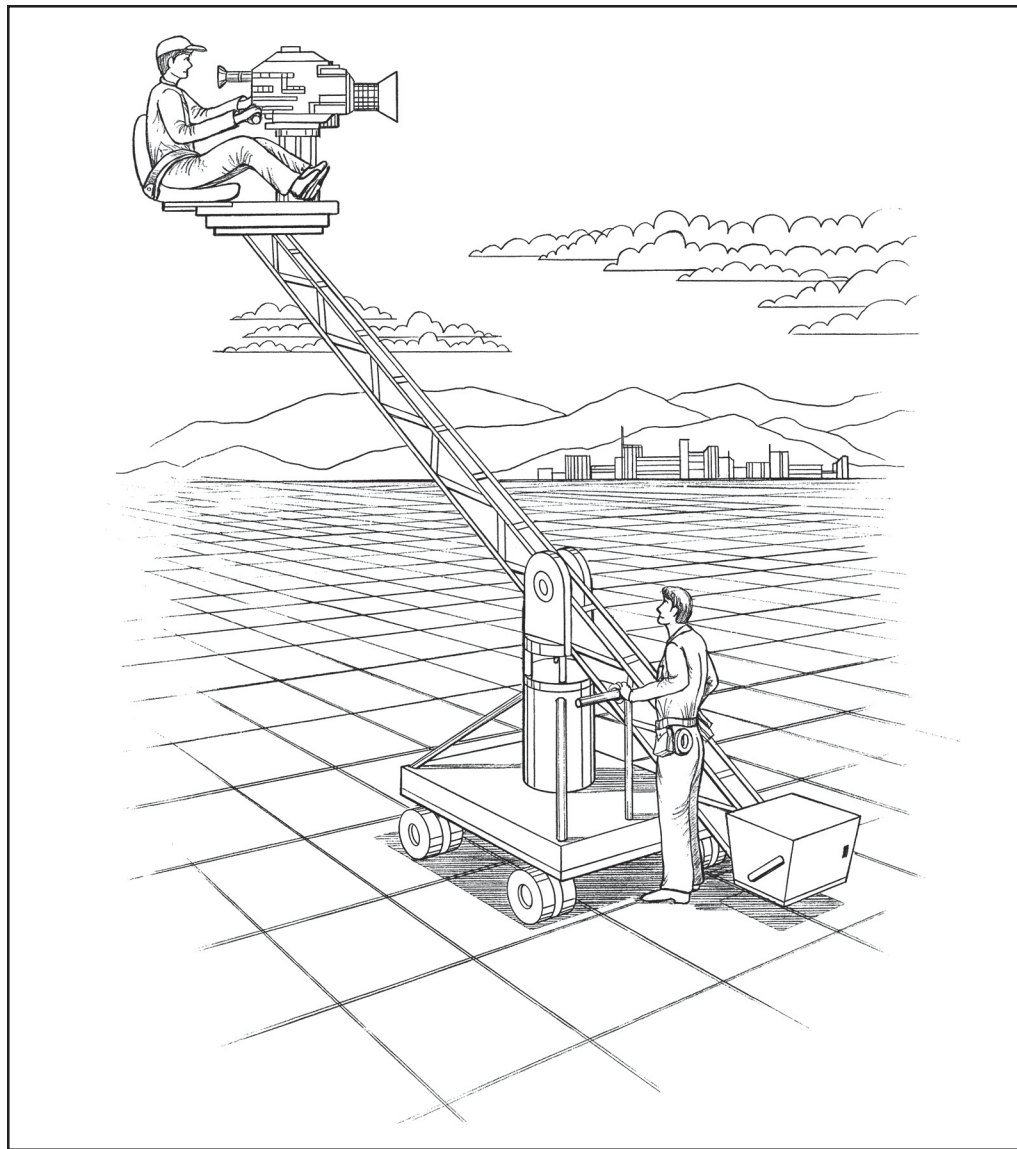


Inclines, slopes, and driveways may greatly increase the possibility of tip over.

- Brace camera crane dolly tracks built on a slope or incline to ensure they will not slip, slide or fall down the slope.
- When mounting a camera crane on a dolly and tracks, level the tracks in two planes so the camera crane will not tip sideways or forward/backwards.
- Install wedges or other track leveling materials so that they can't be accidentally kicked or knocked out of position.
- Place clamps or other safety stops at the ends of the dolly tracks to prevent the camera crane from falling off the ends of the tracks. Do not depend on these stops. Always bring the crane and its base to a gentle stop before coming to the end of the track.

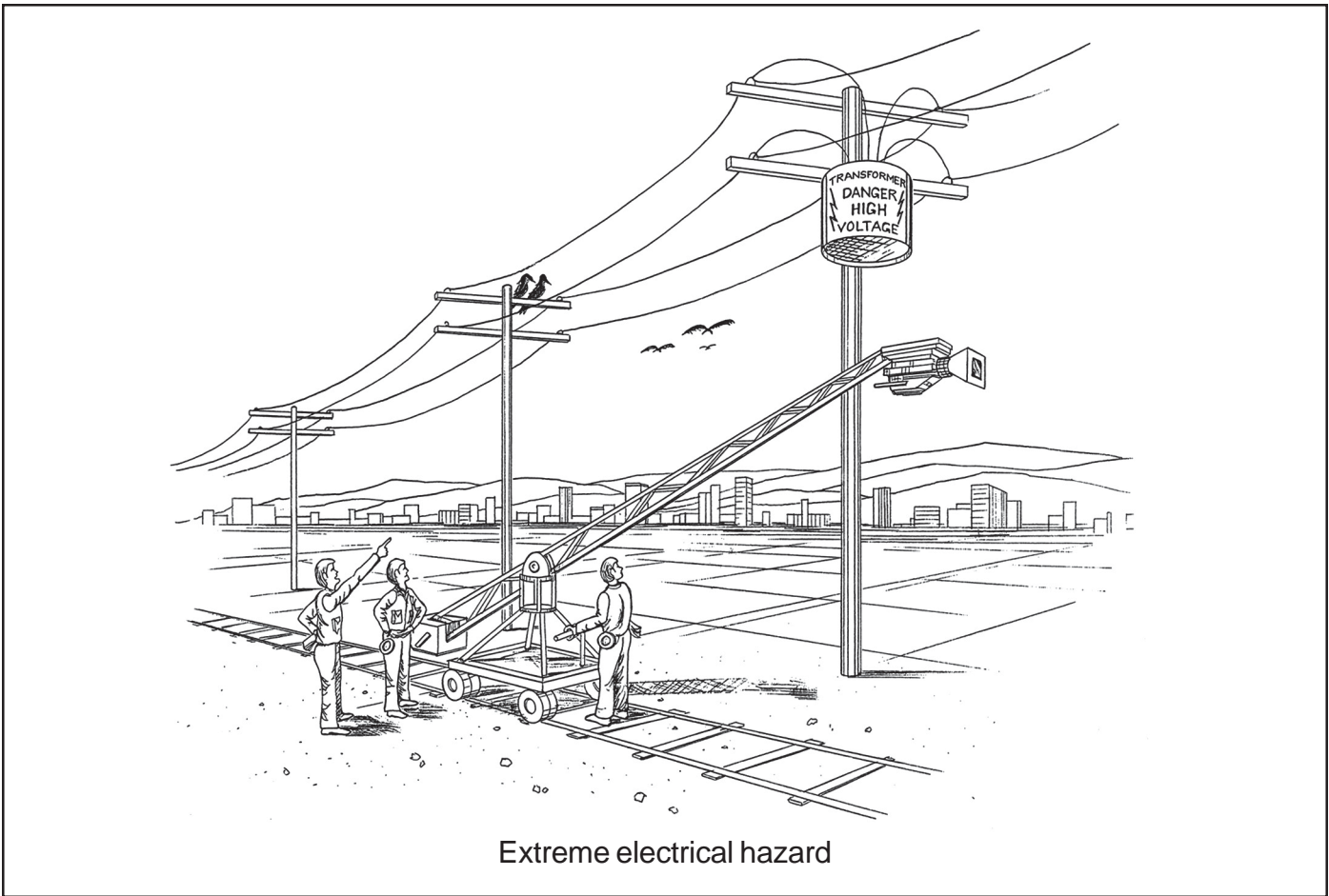


- Do not exceed the maximum payload on the boom arm that can be balanced by the counterweight system supplied with the equipment. Do not use additional counterbalance weights that are above and beyond that specified by the manufacturer/vendor. Consult the manufacturer/vendor regarding configurations that are not explicitly specified in the assembly/usage manual.
- Properly secure all equipment and items on a camera crane to protect against falling and striking personnel. There should be no loose items on the crane.
- If the camera crane is equipped with outriggers/stabilizers, follow the manufacturer's/vendor's instructions regarding their proper use. Take care that the feet of the outriggers/stabilizers will not sink into soft soil or asphalt, otherwise, the unit may become unstable and/or tip over. Use adequate means of distributing the outrigger/stabilizer load when appropriate.



Operation

- Become familiar with the camera crane you are going to use. Practice with it until you are comfortable with its feel, with its movement and with its operation.
- Conduct a “dry run,” “walk-through,” or communicate the intended camera crane action and possible deviations to all persons involved to ensure they are aware of its movement. Rehearse scenes so that everyone concerned can become familiar with the intended motion of the camera crane. If any substantive change becomes necessary, communicate it to all persons involved to confirm everyone understands and agrees to the change(s).
- All equipment should be supplied with conspicuously displayed placards concerning safe use of the equipment. Read and follow all manufacturer’s/vendor’s placards on the equipment.
- Seat belts should be provided on all camera cranes where passengers are required for operation. Make sure all passengers use them.
- When operating a camera crane, ensure that there is adequate clearance for operation. Consider potential obstructions or hazards, such as power lines, helicopter rotors, fire sprinkler heads, etc. Establish a safe operating zone with qualified personnel and the designated on-set safety coordinator. Have the coordinator maintain the safe operating zone.
- Persons may be struck by moving or operating camera cranes. Keep all personnel clear of operating areas.
- Mark the operating areas with flags, signs, traffic cones, or other means to alert personnel to the likelihood of being struck.

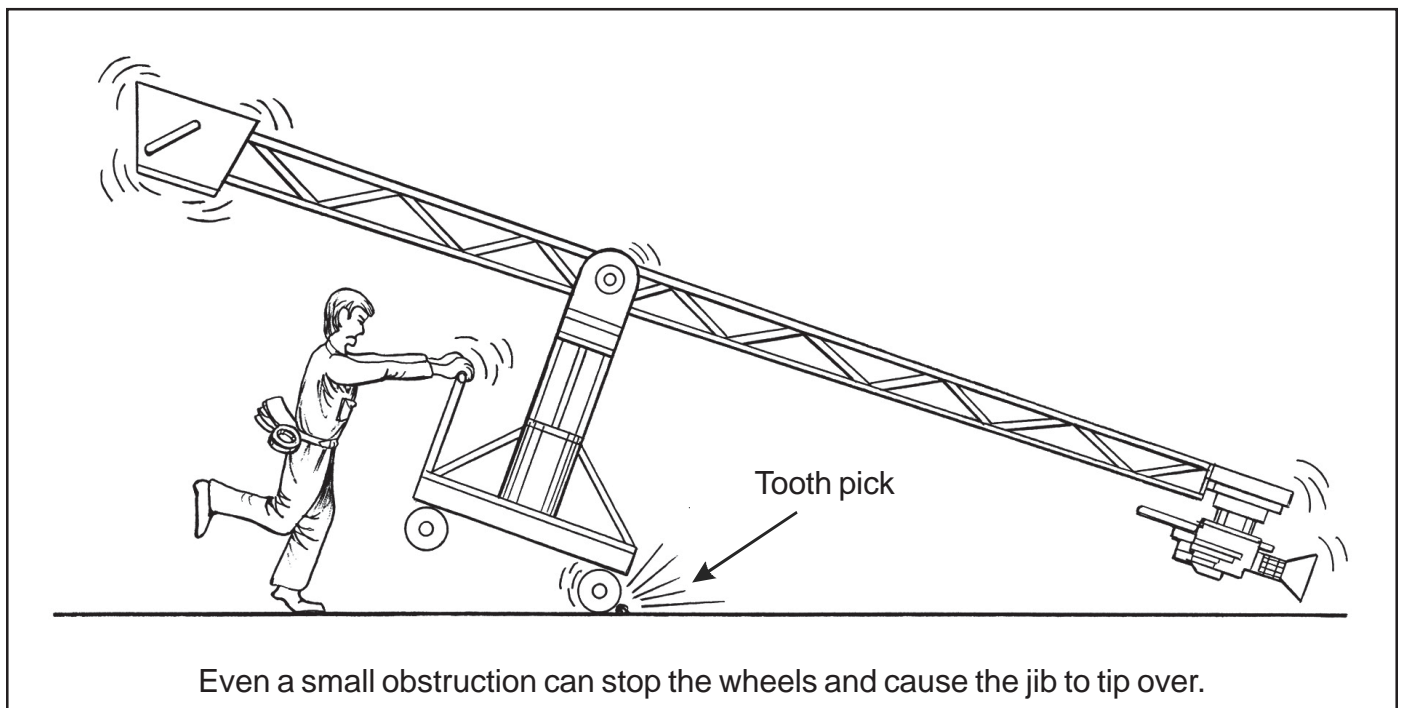


- Do not operate a camera crane within 10 feet of high-voltage power lines of 50,000 volts or less.
- Operate a camera crane outside the minimum required distances from power lines presented in the following table.

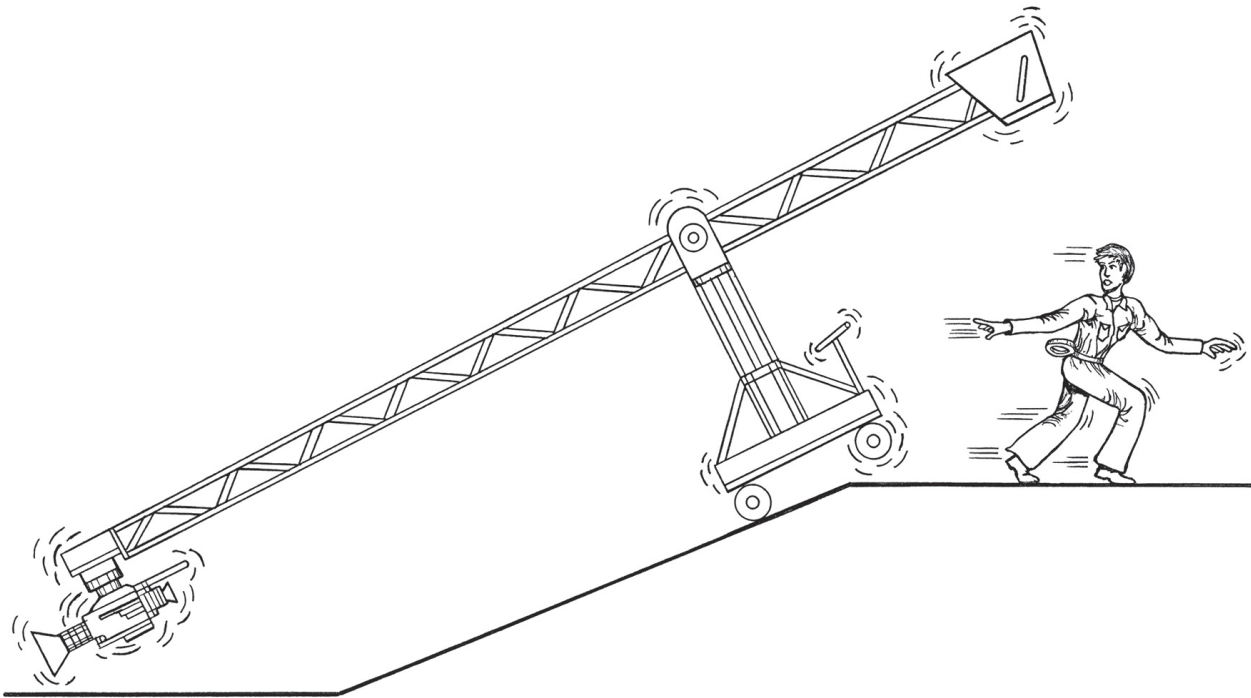
Nominal Voltage	Minimum Required Distance (Feet)
600 to 50,000	10
over 50,000 to 75,000	11
over 75,000 to 125,000	13
over 125,000 to 175,000	15
over 175,000 to 250,000	17
over 250,000 to 370,000	21
over 370,000 to 550,000	27
over 550,000 to 1,000,000	42

Source: Title 8 California Code of Regulations, Subchapter 5, Group 2, Article 37,
Section 294629 Code of Federal Regulations 1926.451(F)(6)

- Fresh water and especially salt water increases the possibility of electrical hazard.
- Check for adequate clearance between the jib arm and/or bucket and obstructions on the base. The jib arm and/or bucket may come in contact with obstructions on the base such as speed rail, handle or push bar and, with the momentum of the crane, cause the unit to become unstable and/or tip over.
- Maintain adequate visibility between the crane operator and the nose of the crane to ensure the crane does not strike any personnel or objects – especially when operating the crane over a wall, partition or obstruction. Alternately, ensure proper communication and rehearsal for the operator to know the limits of the crane movement.
- When stepping on or off of a camera crane, do so only after approval from the person operating the unit. Stepping off of a balanced camera crane without providing a counterbalance (i.e., another person to replace the weight) can cause the arm to elevate rapidly and possibly cause serious injury.
- Use a remote head where there is a risk of operator and jib arm or camera crane falling from an elevated surface in the event of mechanical failure of the jib arm (such as when extended from bridges, cliffs, buildings or other elevated surfaces).
- If a remote head will not be used, take other measures to reduce the risk of operator and jib arm or camera crane falling from an elevated surface.
- Wear appropriate protective gloves when handling uncoated lead counterweights and wash hands after use.
- Correct or report any crane-related unsafe practices, procedures or conditions to the appropriate person.

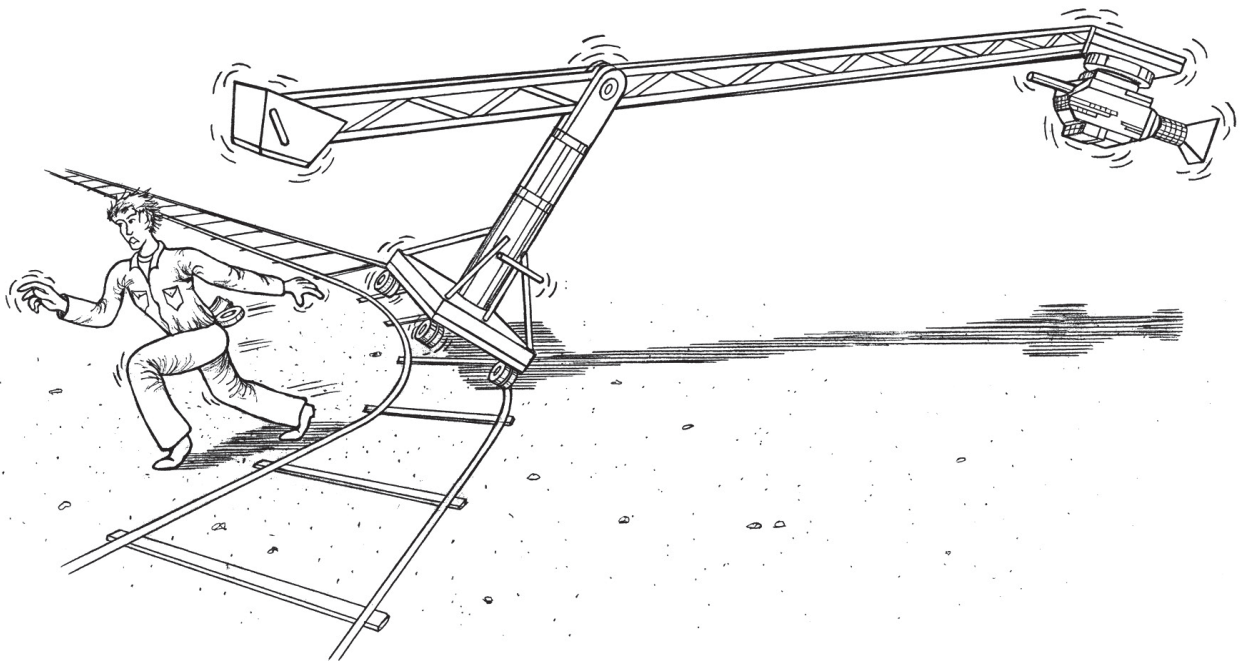


- Use caution pushing camera cranes over cables, speed bumps, curbs or other uneven surfaces. They can cause the unit to become unstable and/or tip over.
- Clear the dolly path of sharp or pointed objects that might puncture the tires such as nails, glass or sharp metal.



Inclines, slopes, and driveways may greatly increase the possibility of tip over.

- Use caution moving or operating a camera crane up or down an incline. The unit may become unstable and/or tip over.



- Use special care when operating a camera crane on curved track or curved path. Be aware that excess speed could cause the unit to tip over.

-
- When moving a camera crane on or off track, reduce the arm weight to allow for safe movement to reduce the chances of the unit tipping over.
 - Familiarize yourself with equipment
 - Practice movement and operation
 - Do a dry run/walk-through with those involved
 - Provide adequate clearance from: power lines and conductors, helicopter rotors and fire sprinkler heads
 - Use caution pushing over cables, speed bumps or curbs
 - Use caution up or down an incline
 - Clear the path of nails, glass or sharp metal
 - Provide clearance between jib arm or bucket and base obstructions
 - Communicate changes
 - Correct or report unsafe practices, procedures or conditions
 - Wear gloves for uncoated lead weights
 - Wash hands after handling lead
 - Be aware of the crane's maximum reach outside minimum distances when under power lines (or not under power lines)
 - Do not operate over power lines
 - Operate carefully on curved track/path
 - Mark operating area with flags, signs or cones
 - Ensure operator sees nose or is communicating with spotter
 - Maintain outside minimum distances from power lines
 - Keep personnel clear of operating areas
 - Notify personnel to step off the crane only after operator approval
 - Read and follow placards
 - Reduce jib arm weight when moving on/off track
 - Rehearse movement
 - Use remote head when crane is extended from bridge, cliff or building
 - Establish safe operating zone
 - Maintain safe operating zone
 - Use seat belts

Insert Camera Car

- All rigging of equipment is to be performed in a safe manner:
- By qualified, experienced personnel.
- In an area secured for the purpose of rigging and free of known hazards; this includes other vehicular traffic.
- Additionally, the driver will inspect the vehicle after rigging changes are made to ensure they won't adversely affect safe operation of the vehicle.
- All equipment, including but not limited to camera dollies or boom arms, shall be secured to the vehicle or have a safety strap.

Weather

- Do not work from a camera crane platform when you will be exposed to extreme weather conditions. Such conditions include but are not limited to thunderstorms, heavy rain, extreme heat or cold -- whether natural or man-made, unless appropriate provisions are taken to ensure worker protection and safety.
- All camera crane materials may become brittle in extreme cold temperatures or weather and break, or become soft in extreme hot temperatures or weather and fail. Camera cranes manufactured of epoxy and/or graphite may become more brittle or soft. Follow the manufacturer's recommendations for working in temperate zones.
- Do not work from a camera crane platform when wind speed exceeds 25 miles per hour.
- Do not operate a camera crane during a storm if there is a probability of being struck by lightning.

Storage

- Secure unattended camera crane. Remove manufacturer supplied weights from the weight bucket to prevent movement.
- Do not add weight to the nose of a camera crane to store as the weight could fall off and cause the arm to elevate rapidly.
- Do not tie down the crane's nose as it could elevate rapidly when untied.
- Store a camera crane on a flat and level surface, platform or track system capable of supporting the intended load. Do not store it on an incline.
- When storing a camera crane on plywood on snow or ice, secure the plywood so it will not slide on the snow or ice.

Maintenance

- Properly maintain a camera crane. Inspect and clean the crane prior to use after its used in dirty, dusty, sandy, salty or other adverse environments to ensure proper operation.
- Maintain a camera crane according to the manufacturers/vendor's instruction.
- Maintain the seat belts in good condition.

Definitions

- **Authorized personnel (or person):** Personnel or person approved or assigned to perform a specific type of duty(s) at a specific location(s) at a work site.
- **Camera Crane:** A manually propelled, counterbalanced, camera platform used for moving the camera and its associated crew in any direction required.
- **Camera Crane Grip:** A person qualified in the use and operation of a camera crane.
- **Camera Crane Manufacturer:** A person or entity who makes, builds or produces a camera crane.
- **Competent:** Characteristic of a person who can identify existing and predictable unsafe or unhealthy hazards and who has the authorization to take prompt corrective measures to eliminate them.
- **Dolly:** Manually or electrically powered cart used to provide movement for camera crane and motion picture camera.
- **Dolly Grip:** A person qualified in the use and operation of a dolly.
- **Insert Camera Car:** Any self propelled vehicle specifically engineered for mounting and manning cameras and other equipment for the primary purpose of filming from a stationary or moving vehicle.
- **Operator:** A qualified person who controls the movement of a camera crane.
- **Outriggers:** Devices that increase the stability of a camera crane, and are capable of lifting and leveling the camera crane.
- **On Set Safety Coordinator:** The First Assistant Director or his/her qualified designee.
- **Qualified Person:** A person who, by reason of knowledge, experience or training, is familiar with the operation to be performed and the hazards involved.
- **Qualified Designee:** A person designated by the Camera Crane/Dolly Grip who, by reason of knowledge, experience or training, is familiar with the operation to be performed and the hazards involved.
- **Safe Operating Zone:** An area where the movement of the crane shot has been evaluated for potential hazards.
- **Stabilizers:** Devices that increase the stability of a camera crane, but are not capable of lifting it.
- **Trained:** A person having received instruction on the use and operation of a camera crane and can demonstrate the ability to follow the instructions.
- **Vendor:** A person or entity who buys from a manufacturer or distributor and who generally sells, rents and services camera cranes.

Checklist

- **Competency**
 - ◆ Use good sense
 - ◆ Take charge
- **Training**
 - ◆ Educate yourself
 - ◆ Use trained personnel
- **Camera Crane Selection**
 - ◆ Choose the right crane
 - ◆ Height
 - ◆ Reach
 - ◆ Space limitations
 - ◆ Access to site
 - ◆ Exposure to hazards
 - ◆ Weight limits
 - ◆ Load requirements
 - ◆ Remote or rideable operation
 - ◆ Prior experience
- **Inspection**
 - ◆ Inspect the crane
 - ◆ Before assembly
 - ◆ Before operation
 - ◆ Each day/shift
 - ◆ Structural components
 - ◆ Poor adjustment
 - ◆ Excessive wear
 - ◆ Emergency controls
 - ◆ Safety devices
 - ◆ Seat belts
 - ◆ Leaks
 - ◆ Cables/wiring
 - ◆ Missing parts
 - ◆ Placards/warnings
 - ◆ Outriggers/stabilizers
 - ◆ Manufacturer items
 - ◆ Replace or repair missing/damaged components
 - ◆ Inspect the area
 - ◆ Drop-offs/holes
 - ◆ Bumps/ground obstructions
 - ◆ Debris
 - ◆ Overhead obstructions
 - ◆ High voltage conductors
 - ◆ Explosive/flammable atmosphere
 - ◆ Surface/supports for load
 - ◆ Wind/weather
 - ◆ Unauthorized persons
 - ◆ Special effects
 - ◆ Other conditions

■ Assembly/Set Up

- ◆ Read/follow the manual
- ◆ Allow enough time for setup, inspection and test
- ◆ Crew and/or handling equipment available
- ◆ Parts braced or blocked
- ◆ Arm not tied to base
- ◆ Manufacturer's height to base width ratio followed
- ◆ Largest base possible used
- ◆ Flat/level surface
- ◆ Two wheels chocked on incline
- ◆ Dolly tracks braced
- ◆ Dolly tracks leveled
- ◆ Wedges secured
- ◆ Safety stops on track ends
- ◆ Maximum payload not exceeded on boom arm
- ◆ All equipment/items secured against falling
- ◆ Outrigger feet supported

■ Operation

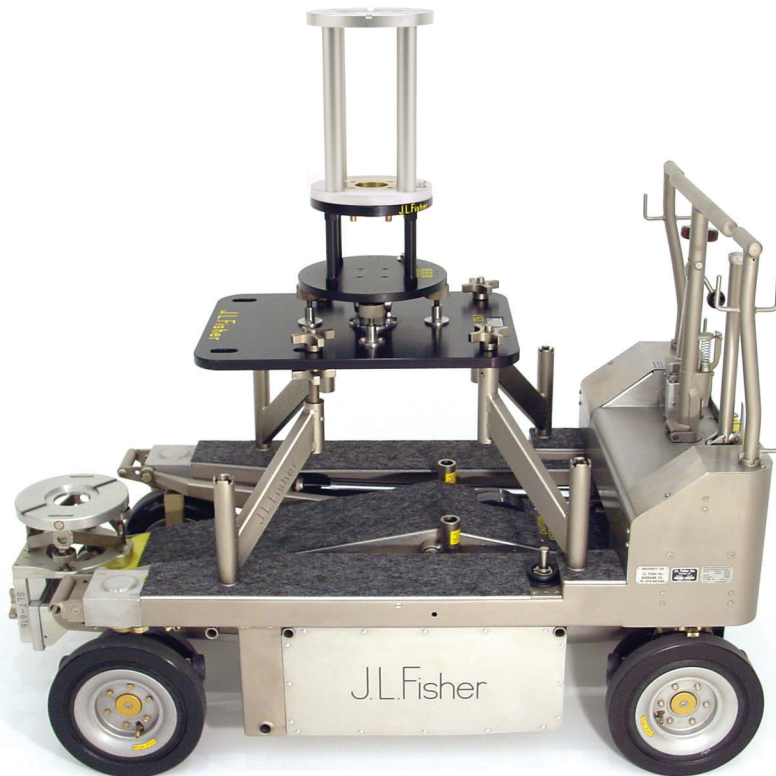
- ◆ Familiarize yourself with equipment
- ◆ Practice movement and operation
- ◆ Dry run/walk-through action with those involved
- ◆ Rehearse movement
- ◆ Communicate changes
- ◆ Read and follow placards
- ◆ Seat belts used
- ◆ Adequate clearance from: power lines and conductors, helicopter rotors and fire sprinkler heads
- ◆ Safe operating zone established
- ◆ Safe operating zone maintained
- ◆ Clearance between jib arm or bucket and base obstructions
- ◆ Personnel clear of operating areas
- ◆ Operating area marked with flags, signs or cones
- ◆ Operator sees nose or communicating with spotter
- ◆ Personnel notified to step off only after Operator approval
- ◆ Outside minimum distances from power lines
- ◆ Not over power lines
- ◆ Not under power lines
- ◆ Remote head used when extended from bridge, cliff or building
- ◆ Gloves worn for uncoated lead weights
- ◆ Hands washed from lead
- ◆ Correct or report unsafe practices, procedures or conditions
- ◆ When lightning is probable
- ◆ Do not run over cables, speed bumps or curbs
- ◆ Clear the path of nails, glass or sharp metal
- ◆ Operate carefully on curved track/path
- ◆ Reduce arm weight when moving on/off track

-
- **Insert Camera Car**
 - ◆ Rigging area free of traffic
 - ◆ Secured to the vehicle
 - ◆ Vehicle speed safe
 - ◆ Shot rehearsed with vehicle moving
 - ◆ Setup inspected before and after use
 - ◆ Remote head used on moving vehicle
 - ◆ Riser can withstand forces
 - **Weather**
 - ◆ Do not operate in adverse weather
 - ◆ In thunderstorms, heavy rain, extreme heat or cold
 - ◆ With epoxy/graphite in extreme cold or hot
 - ◆ In wind over 25 miles per hour
 - **Storage**
 - ◆ Unattended camera crane secured
 - ◆ Nose not weighted down
 - ◆ Nose not tied down
 - ◆ Stored on level surface
 - ◆ Base secured on ice or snow
 - **Maintenance**
 - ◆ Dirty, dusty, sandy, salty environments
 - ◆ Manufacturer's maintenance recommendations
 - ◆ Seat belts

Center Mount Installation Procedure

Maximum load on center mount is 1200 lbs. (544 kg). Do not exceed maximum load. Please read and follow the safety information.

CAUTION: Do not use the Model 11 Camera Dolly as a base, or other bases of similar size, because the base is too small. Do not attempt mounting this jib directly on the lift beam of the camera dolly.



Model 10 Dolly with Center Mount Installed

Figure 1

The installation of a J. L. Fisher, Inc., center mount is necessary when using any J. L. Fisher, Inc., camera dolly as a base. The lift beam must be discharged and deactivated to avoid injury to personnel or damage to the dolly if the lift beam were to rise under the center mount.

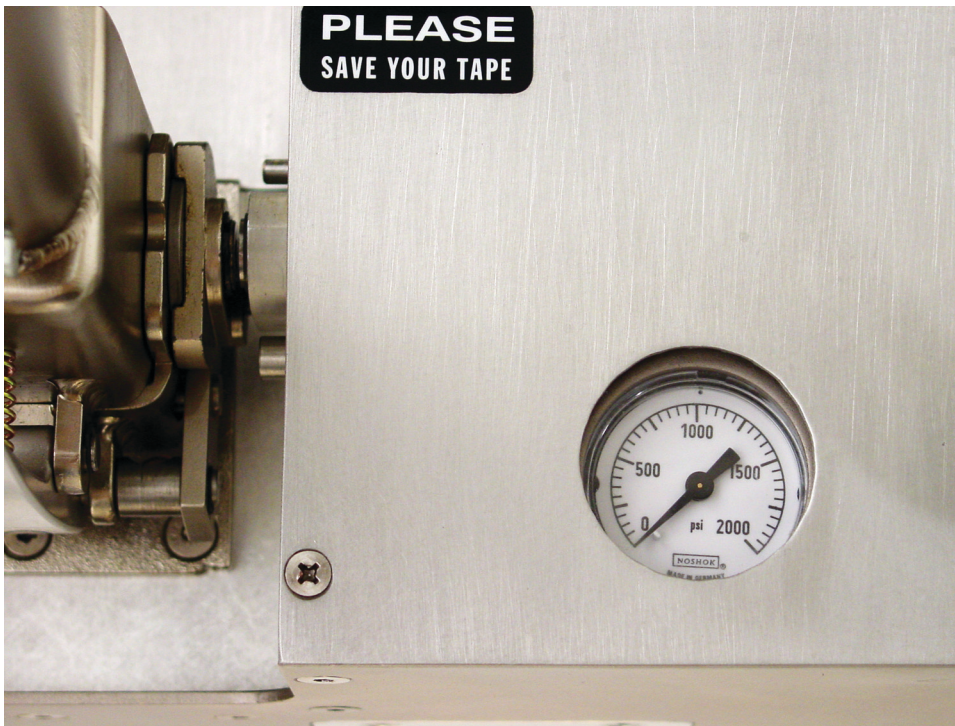


Figure 2

Raise and lower beam until gauge reads zero and the beam no longer goes up. Store the lift beam in its full-down position.



Figure 3

To prevent the rotation of the hydraulic control knob, unlock the lock pin. Check the rotation by attempting to turn the knob.

ADJUSTING SUPPORTS
WITH KNOBS DOWN

SOLID SUPPORTS

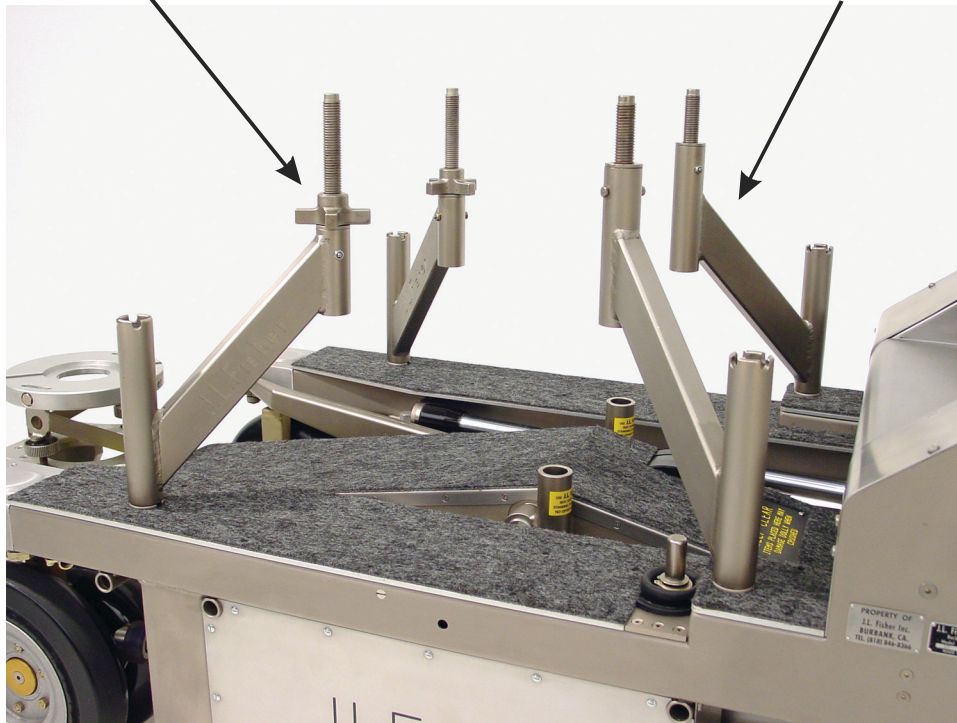


Figure 4

Insert the solid supports at the steering end of the dolly. Insert the adjusting supports at the camera end of the dolly. Ensure that the knobs on the adjustable supports are all the way down, as shown.

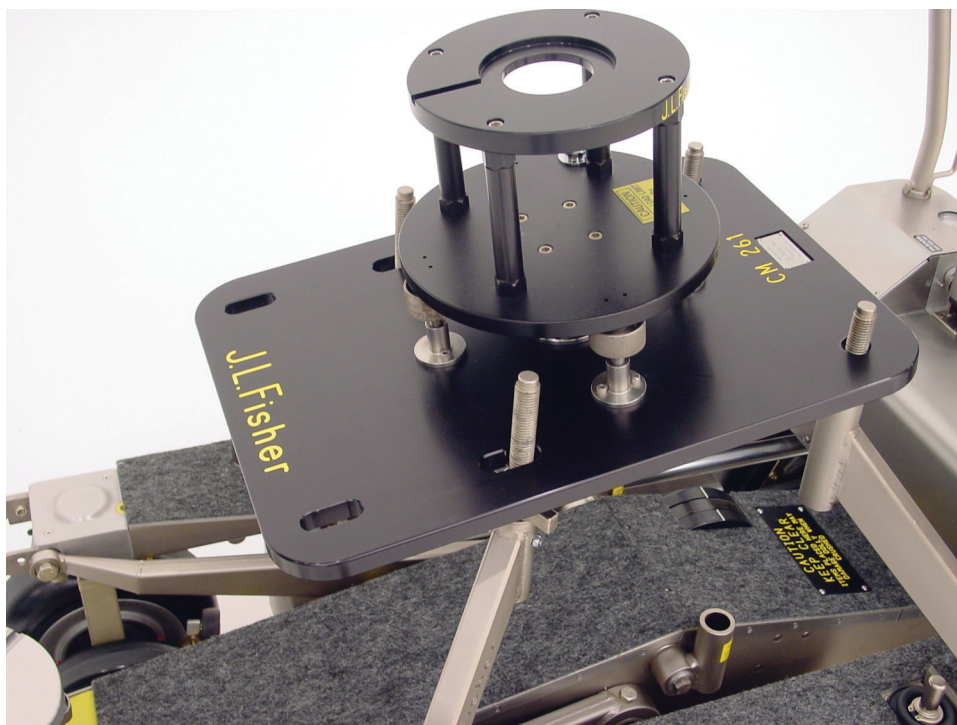


Figure 5

Place the center mount assembly on the four supports, with the slotted holes toward the camera end of the dolly.

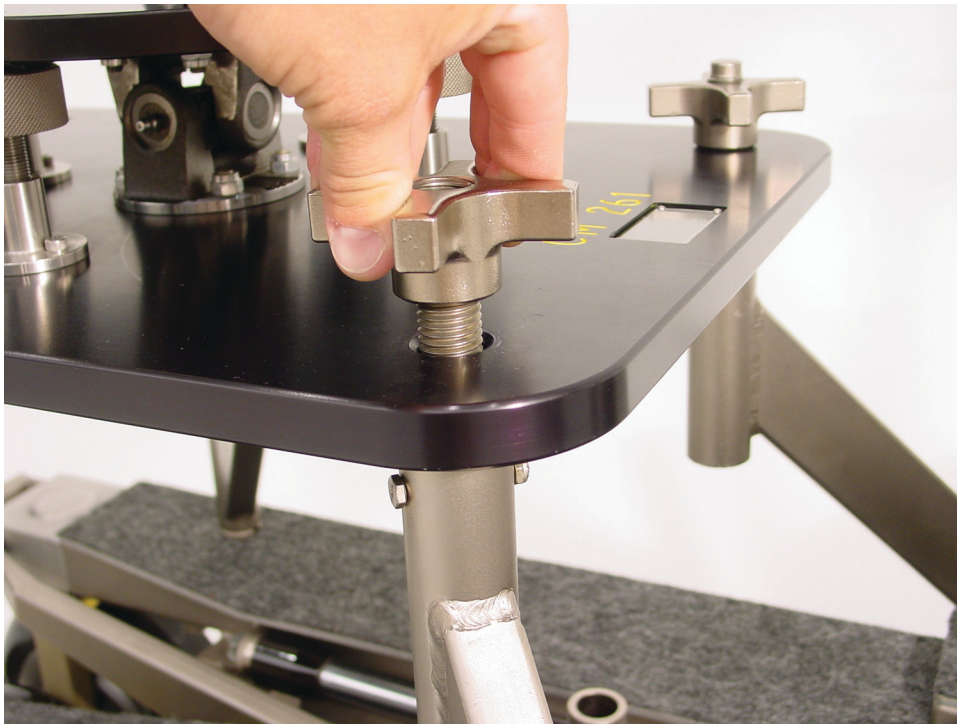


Figure 6

Fasten the center mount plate at the steering end of the dolly with two threaded knobs. Tighten knobs securely.

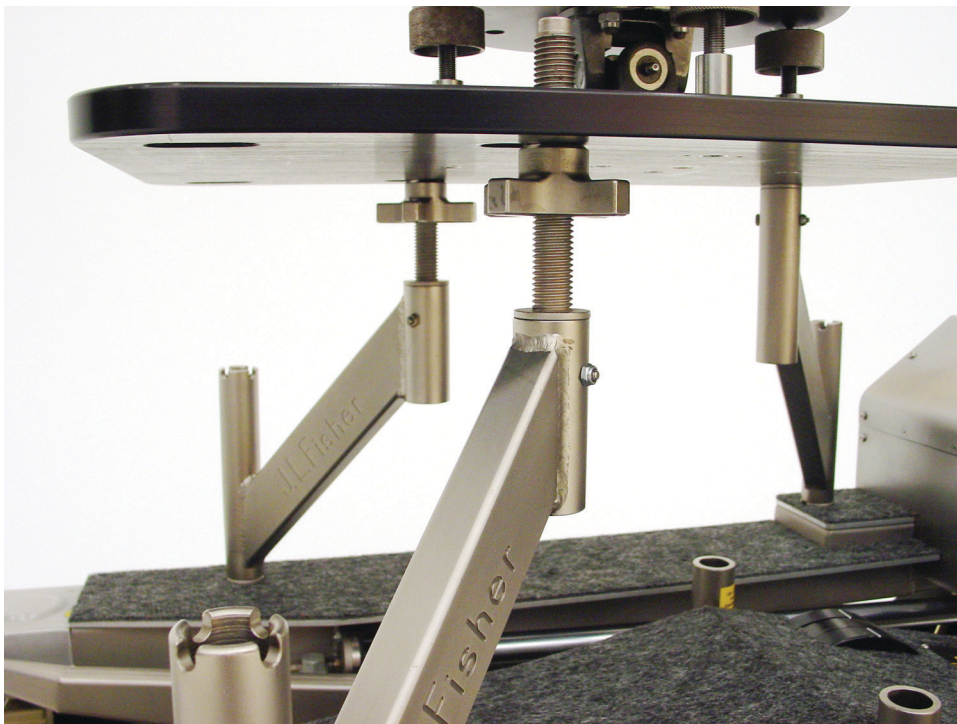


Figure 7

At the camera end of the dolly, thread the two adjusting knobs up until they touch the plate.

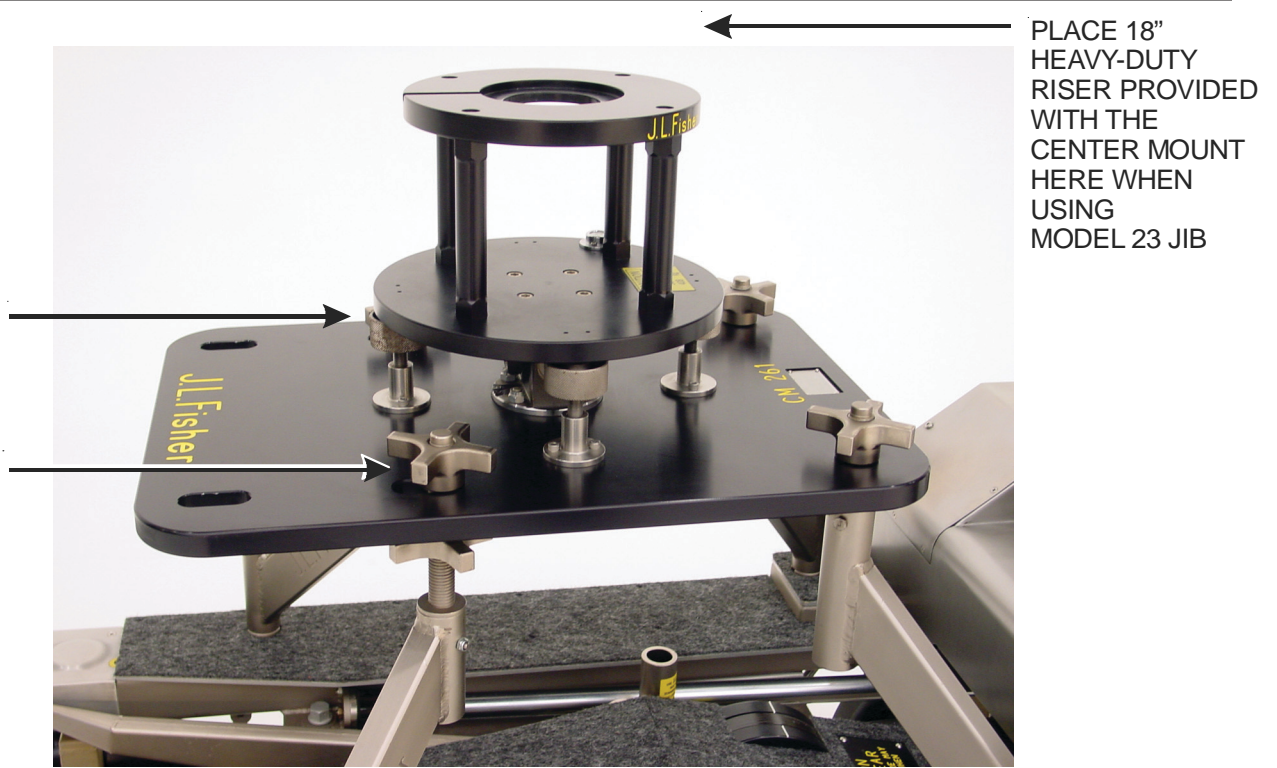


Figure 8

Install and tighten the two remaining knobs.

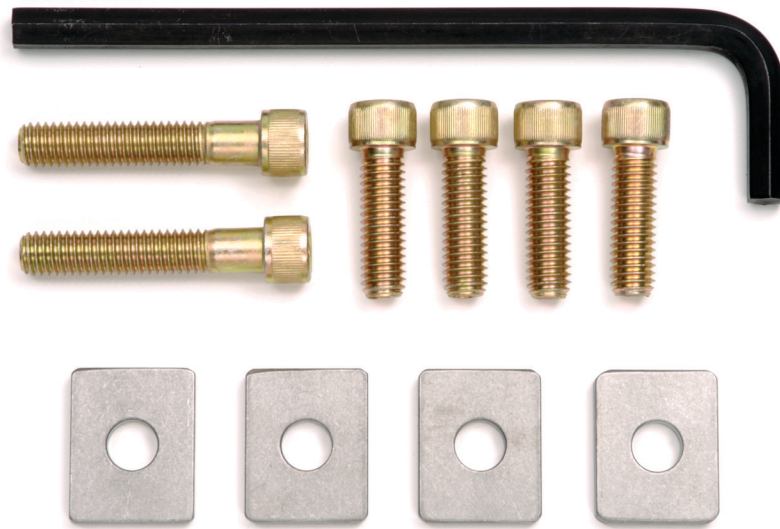


Figure 9

A complete kit of screws and washers for the center mount is provided.

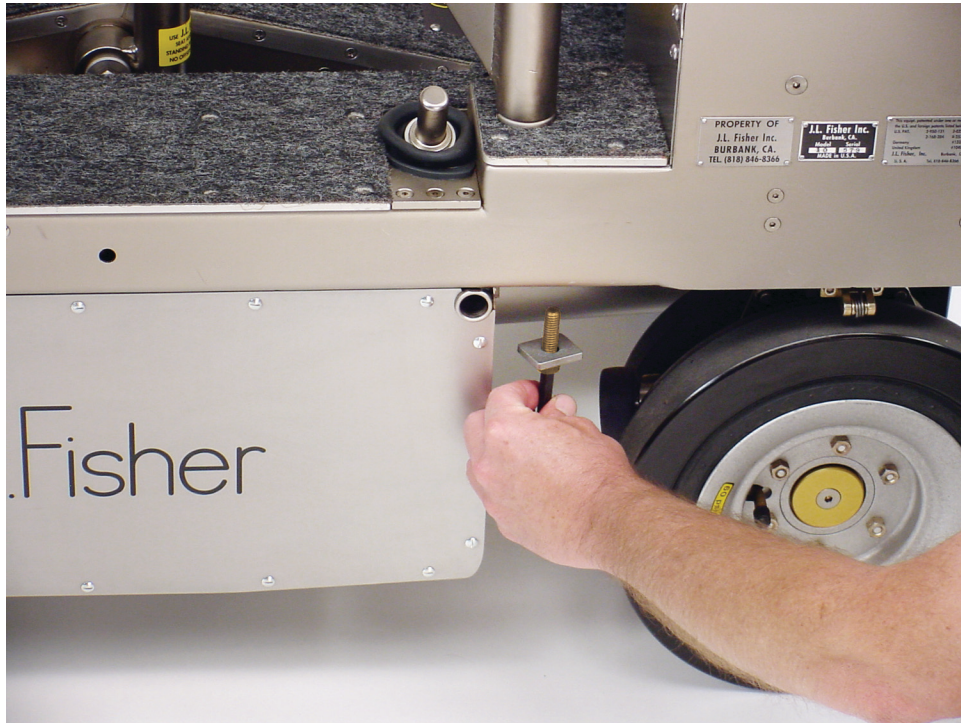


Figure 10

To secure the center mount to the dolly:

- *Model 10 Dolly* - Use two 2" screws and two square washers at the steering end and use two 1 1/4" screws and two square washers at the camera end. Tighten all screws.
- *Model 9 Dolly* - Use the four 1 1/4" screws and four square washers. Tighten all screws.

The screws go into the bottom of the arms under the dolly side rail.

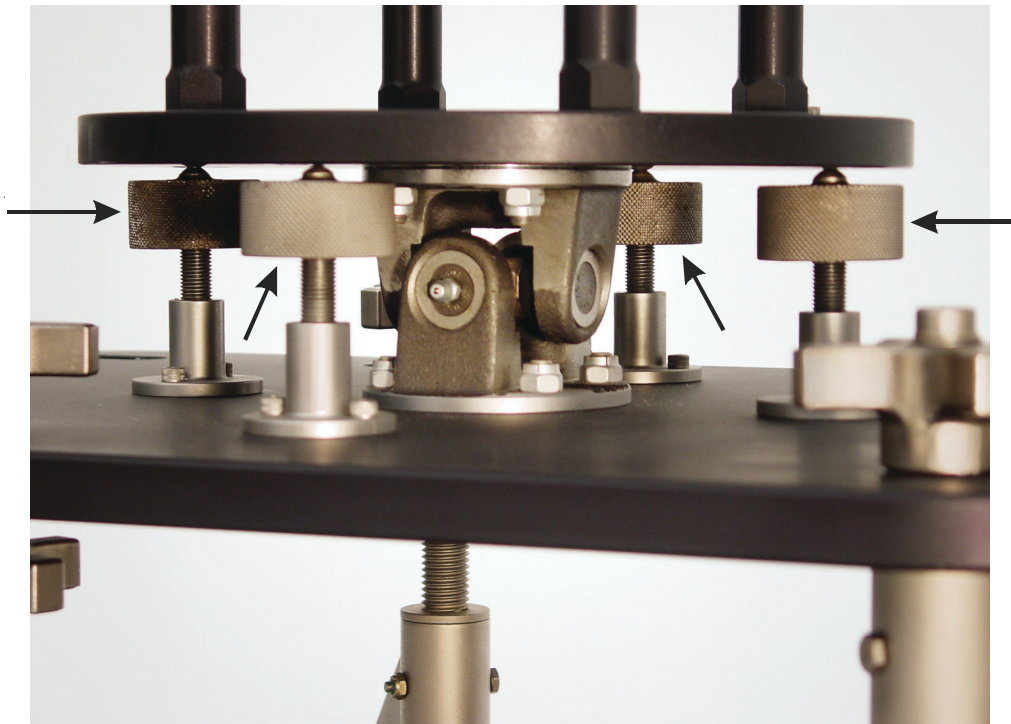


Figure 11

Level the riser by adjusting the four screws located on top of the center mount plate.

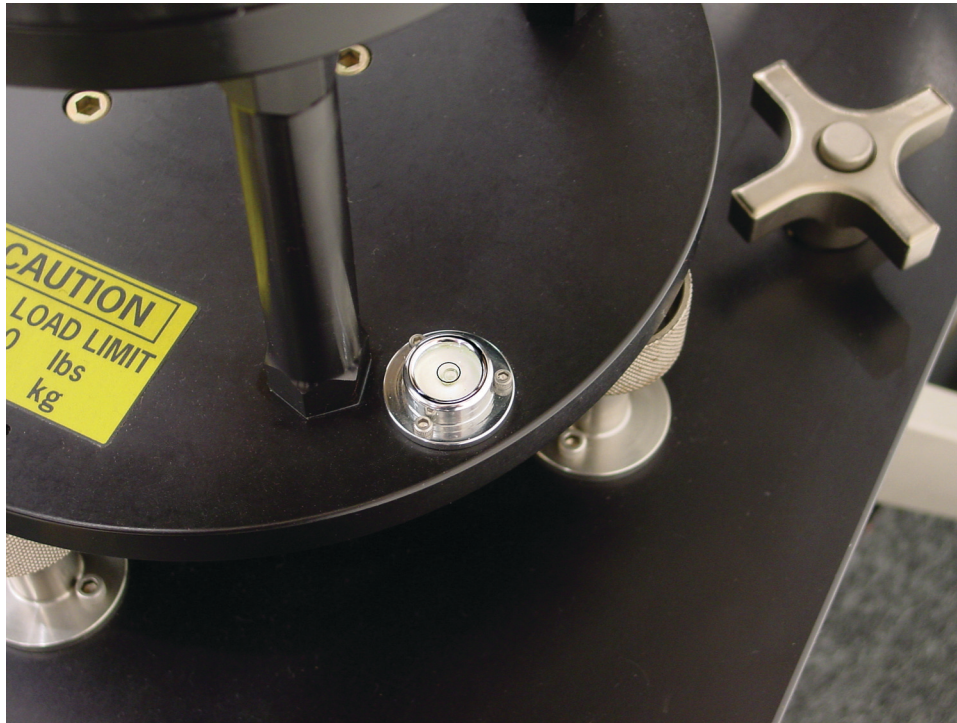


Figure 12

Center the bubble in the level indicator.

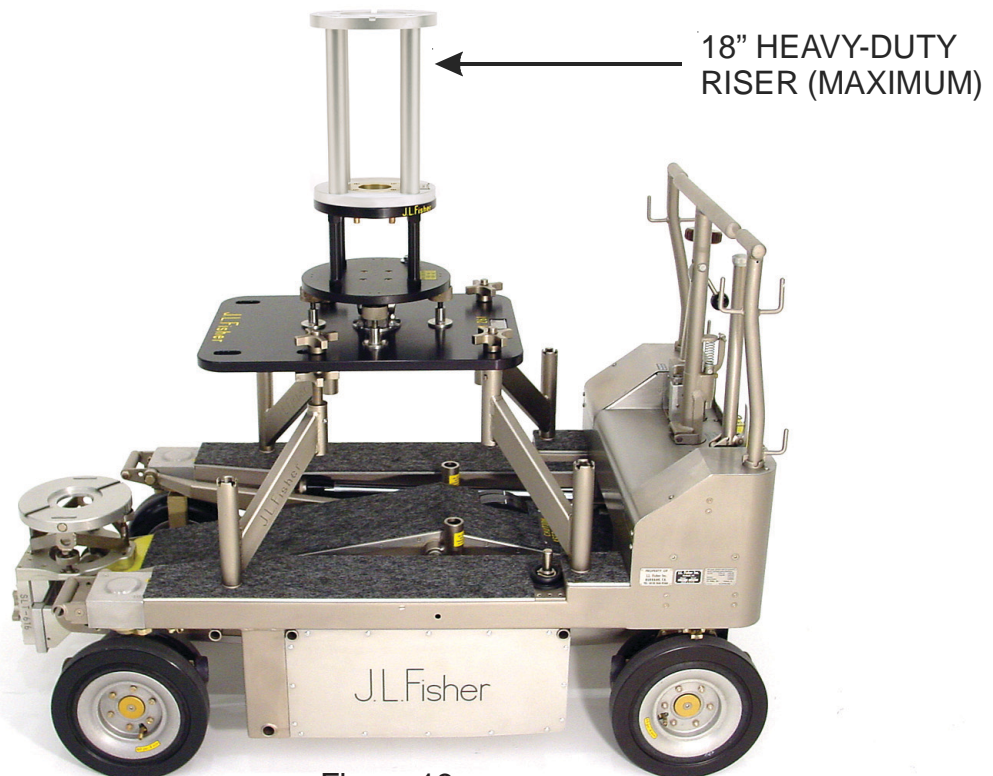


Figure 13

When using this setup with a Model 23 Jib, install the 18" heavy-duty riser and secure with the riser nut. The 18" heavy-duty riser must be used with the Model 23 Jib. Do not exceed the 18" heavy-duty riser length. By using the 18" heavy-duty riser you will ensure that the weight bucket always hits the ground, avoiding the possibility of the dolly base becoming unsteady or even tipping over. The dolly is now ready for the jib assembly.

Model 23 Jib Assembly

Necessary Tools for the Job

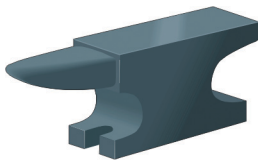


11/16"



1/2"

Tools Not Needed



Anvil



Circular Saw



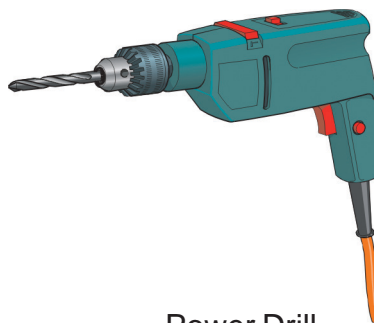
Axe



C-Clamp



Hammer



Power Drill



Torch



Paint Brush



Vise Grip



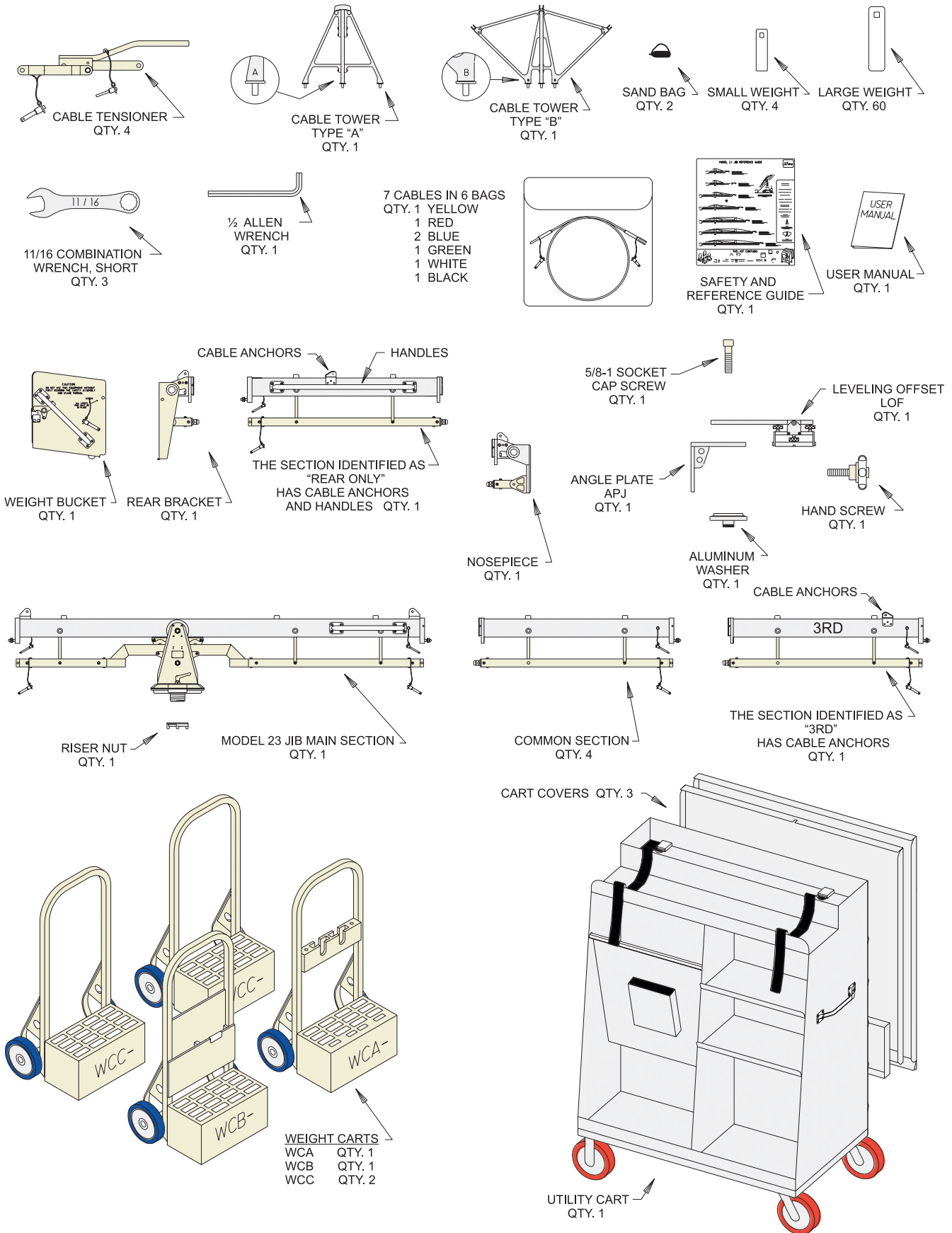
Saw



Chainsaw

In the past, our equipment has suffered a great deal of damage from using the wrong tool for the job or binding or fastening items to jibs or dollies with vise-grips, chain vise-grips, C-clamps, etc. If this becomes necessary, please think of a way to protect our equipment from damage.

THIS KIT CONTAINS



Model 23 Jib Reference Guide Centerfold
Page Place-holder

Jib Reference Guide Centerfold
Page Place-holder

Version 1

Version 1: 6 Foot Reach

Basic Assembly

Maximum load on center mount is 1200 lbs. (544 kg). Do not exceed maximum load. Please read and follow the safety information.

The Model 9 or 10 Camera Dolly, with the addition of a center mount and a 18” heavy-duty riser, makes a suitable base for the Model 23 Jib.

CAUTION: Do not use the Model 11 Camera Dolly as a base, or other dolly bases of similar size, because the base is too small. Do not attempt mounting this jib directly on the lift beam of the camera dolly.

Version 1

We will start with the assembly of Version 1 which has a reach of six feet, using the yellow cables. Inspect all pieces prior to assembly. If any pieces are broken, missing, poorly maintained, or substitutions have been made, do not use this equipment. Contact J. L. Fisher, Inc., in the United States at (818) 846-8366 for assistance.



Figure 1

Set up the dolly in the area where you need to use the jib. Soft soil, lawns, roof tops, etc., by themselves may be unacceptable working environments. The wheels may dig in and cause the jib/dolly assembly to tip over. Set up in a stable area; for example, on level ground or on a platform capable of supporting at least ten times the weight of the jib, dolly, and personnel combined. The bigger and heavier the jib base, the more stable and safe it will be. **Do not use this jib with the Model 11 Dolly.**

A minimum of two people are required for assembly of the jib. It is suggested that one person hold the crane while the other assembles the parts. Place the main section on a properly assembled center mount with the 18-inch heavy-duty riser attached (refer to the “Center Mount Installation Procedure” section in this manual for the proper center mount assembly), and secure with the riser nut.

Version 1

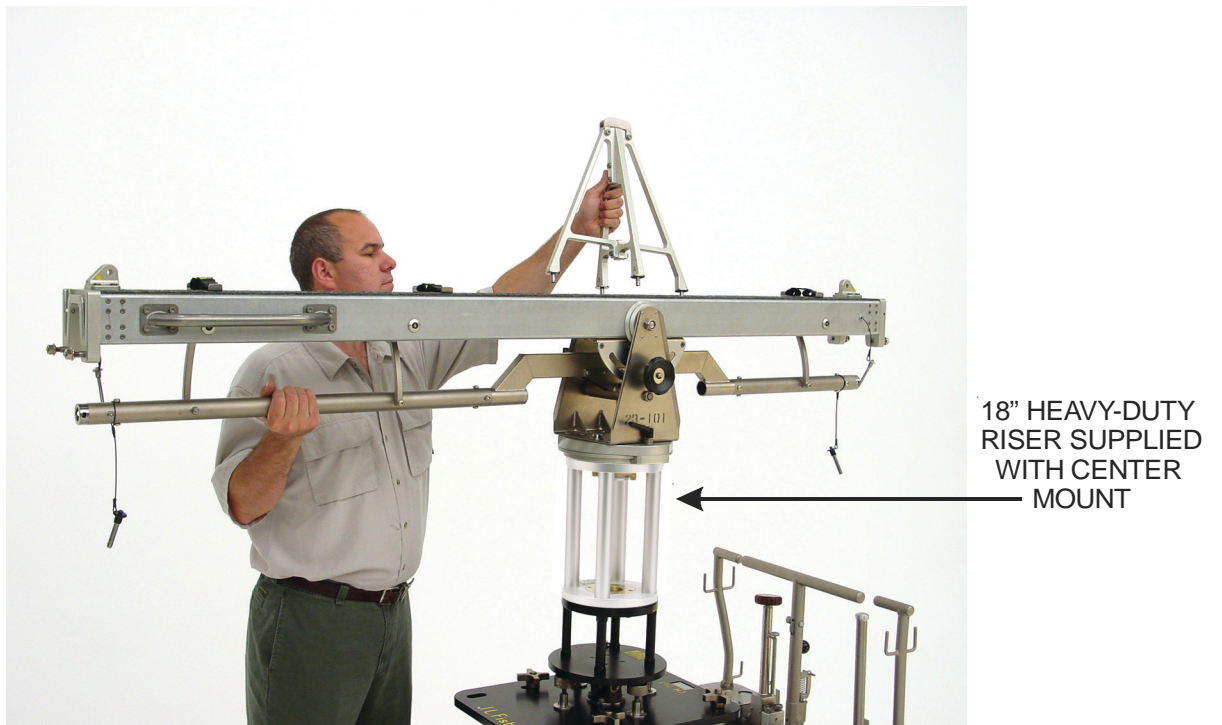


Figure 2

Versions 1, 2 and 3 Only. Place Tower A onto the main section of the jib.

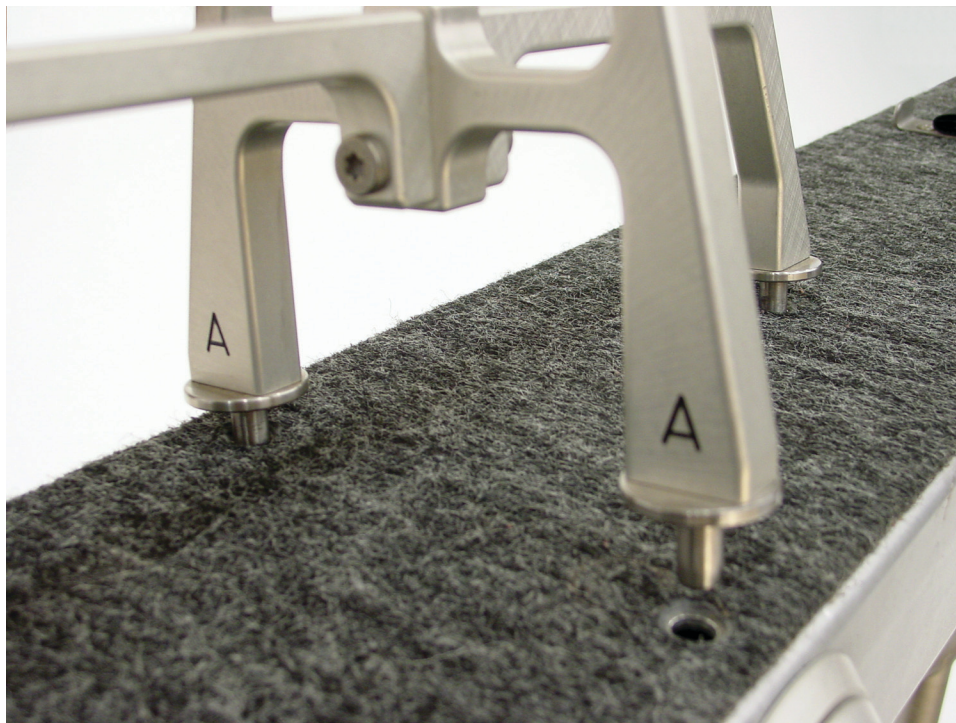


Figure 3

Versions 1, 2 and 3 Only. Position Tower A into the four holes on the main section, as shown in both Figure 2 and Figure 3. The tower is held in place by the cables.



Figure 4

The cables are stored in color-coded bags to match cable coloring.

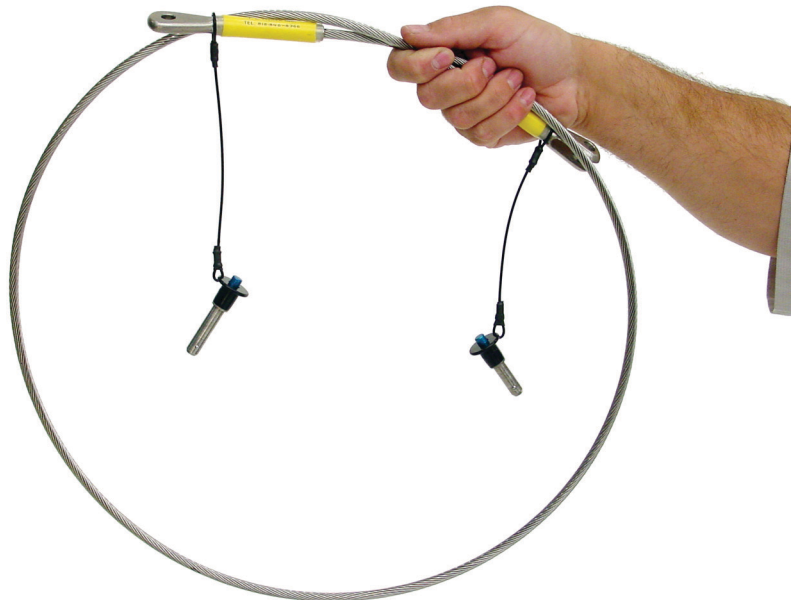


Figure 5

Next, take the yellow cable from its bag, located in the transportation cart. The yellow cable is used in all configurations.



Figure 6

Place one end of the yellow cable into the cable anchor on the end of the main section marked “Front” and secure it with the attached locking pin. The cable anchor is marked with a yellow dot.

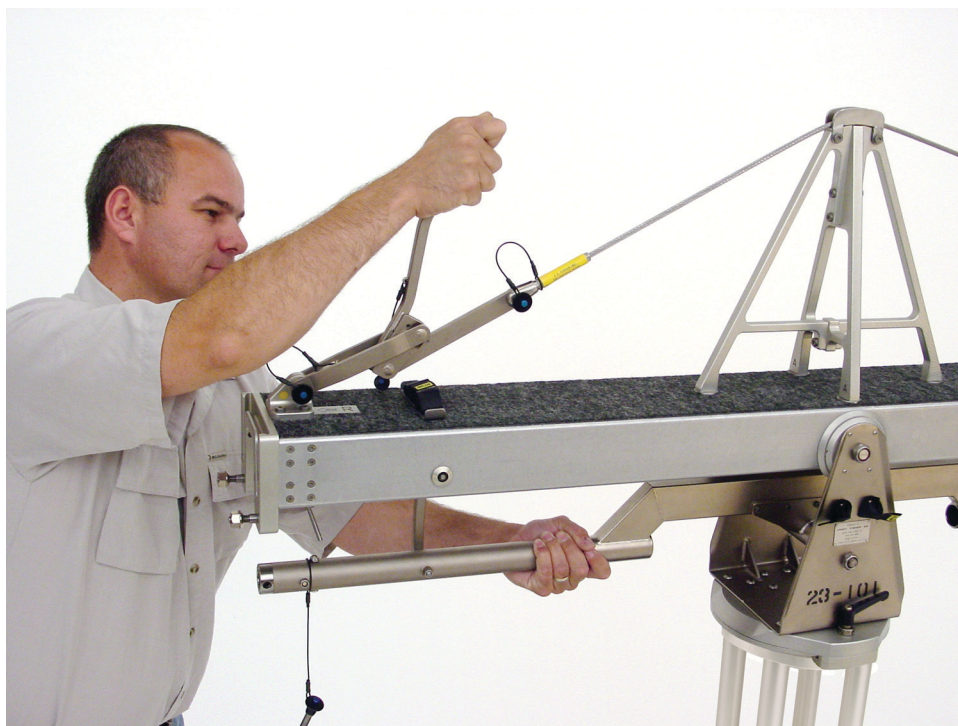


Figure 7

Rest the cable on the top cable support of Tower A, attach it to the long arm of the cable tensioner using the attached locking pin. Attach the other end of the cable tensioner to the cable anchor on the rear of the jib. Forcefully push the cable tensioner lever forward to tighten the cable. You will hear a loud clunk.

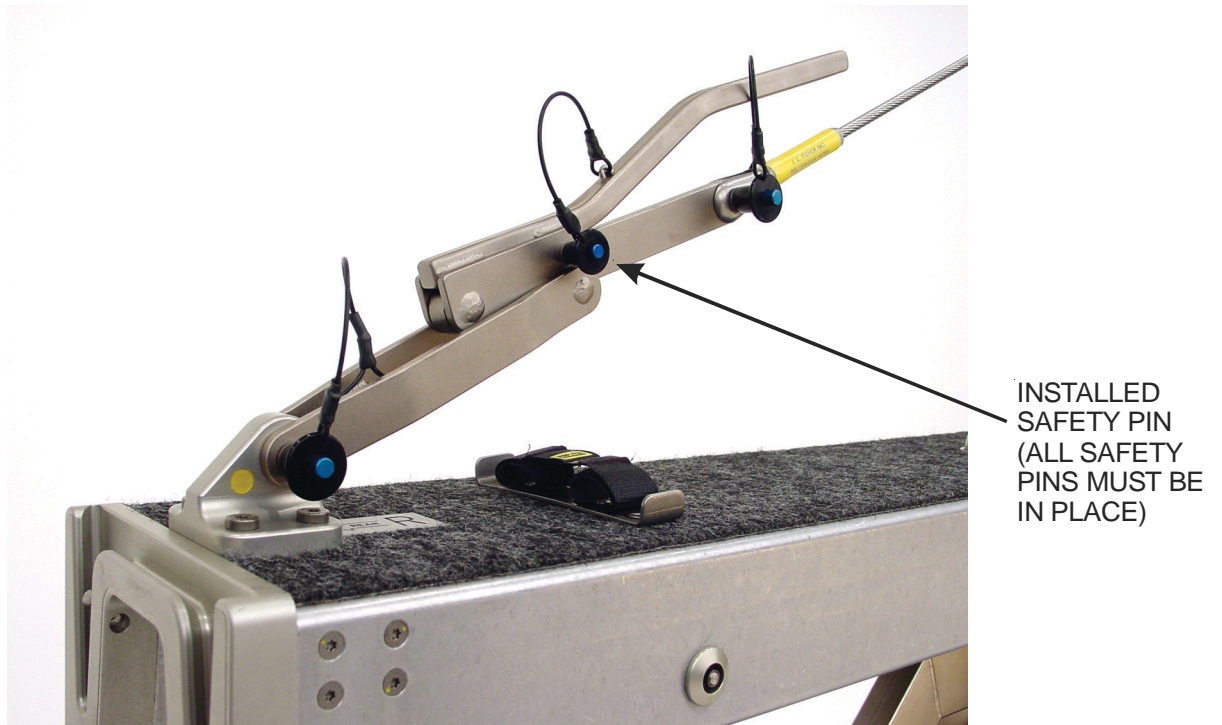


Figure 8

Insert the attached safety pin in cable tensioner.

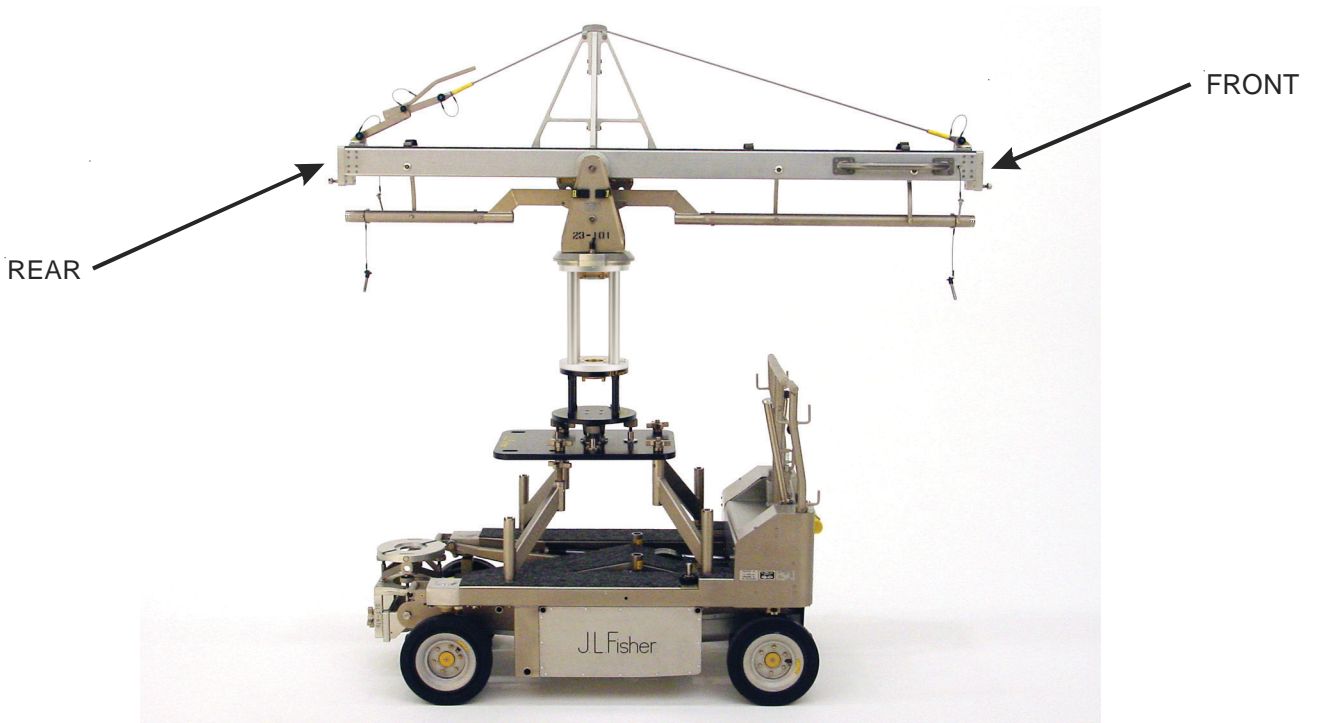


Figure 9

Completed main section. **NOTE:** The front end is longer than the rear end.

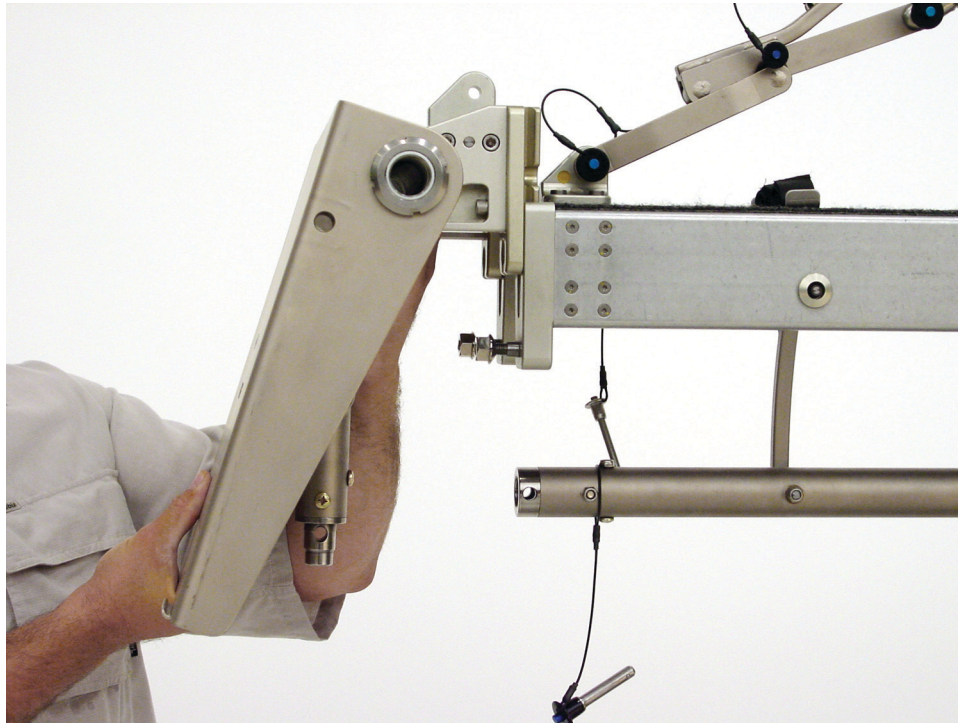


Figure 10

Position the Rear Bracket into the dovetail slots on the rear of the Main Section of the jib. Slide the Rear Bracket over the two bottom screws and align the lower link rod.

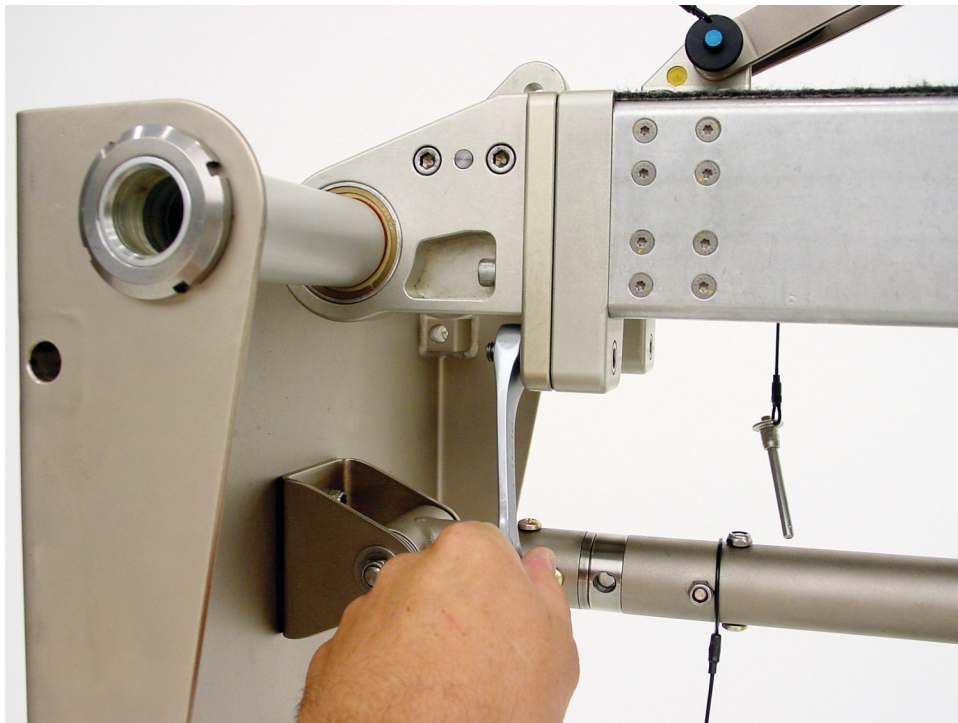


Figure 11

Tighten nuts with the wrench provided, as shown in this manual. Do not substitute wrenches. The wrench provided is short to avoid overtightening.

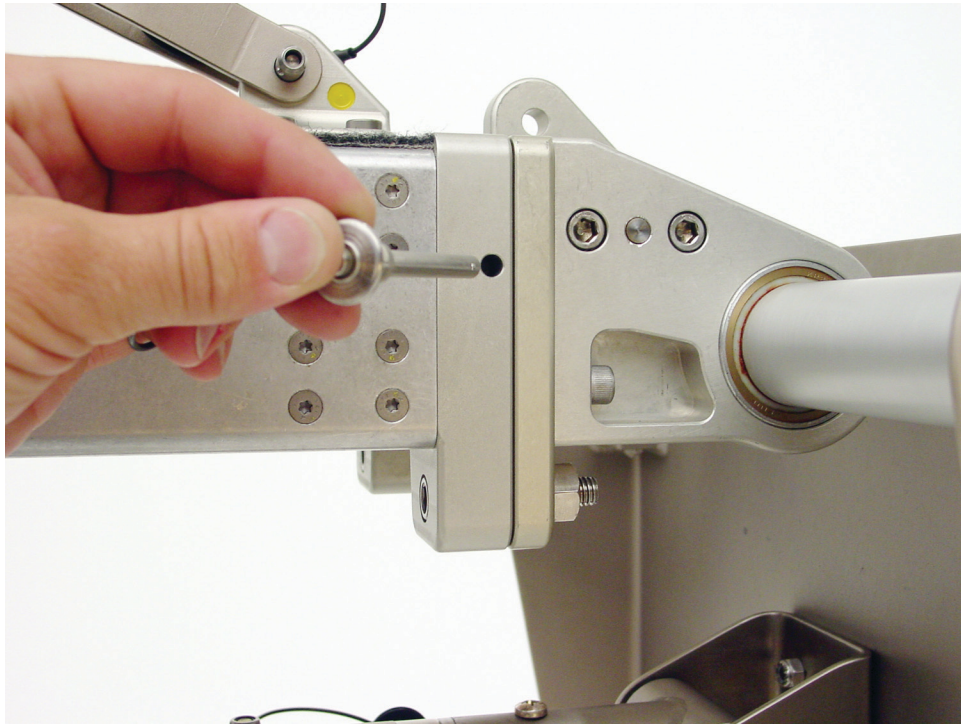
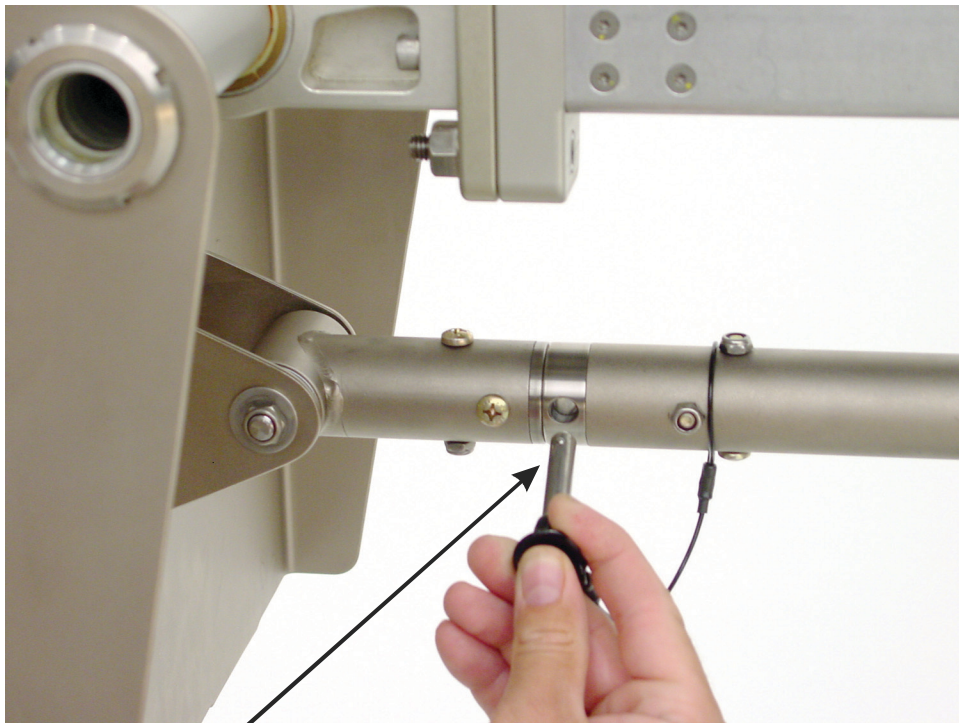


Figure 12

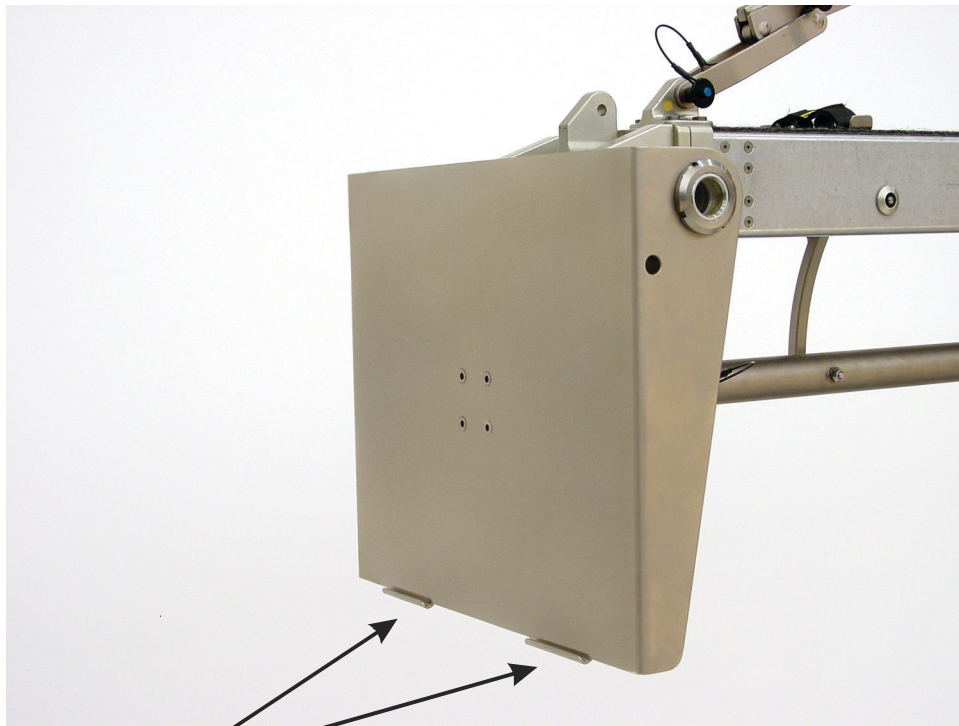
Insert the attached safety pin into hole.



LOCKING PIN

Figure 13

Insert the attached locking pin into lower link. All the couplings on this arm must be assembled in the same manner.



NOTE: Weight bucket guides.

Figure 14

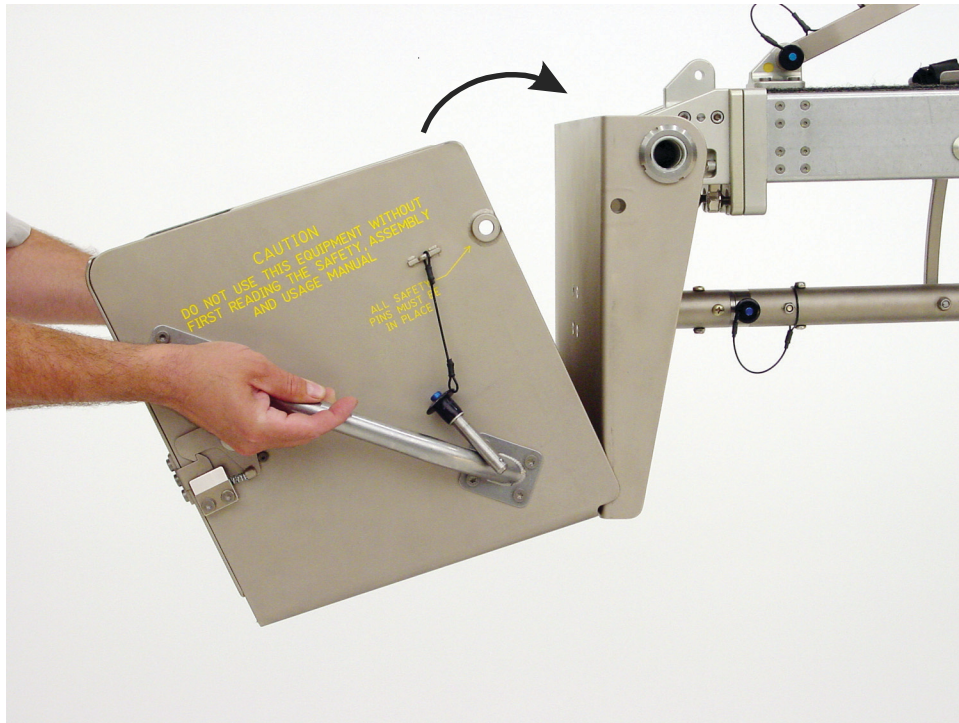


Figure 15

With the weight bucket resting on the weight bucket guides, swing the bucket into position.

Version 1

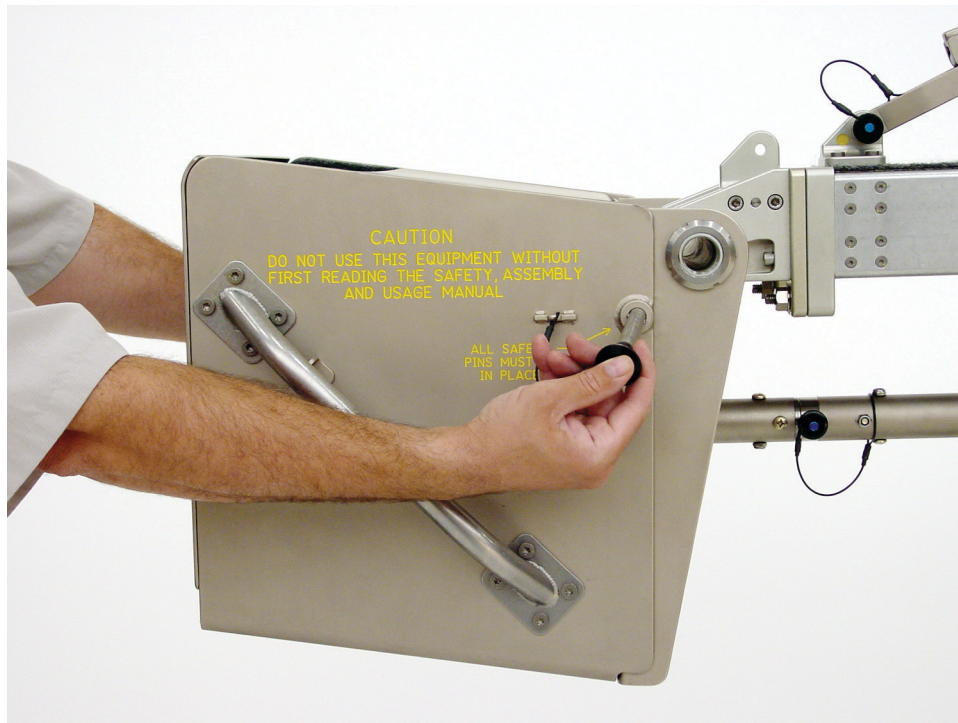


Figure 16

Insert both attached locking pins. Inspect to see that both pins are locked. Try to pull them out while supporting the bucket and without depressing the blue button. If, for some reason these pins seem damaged or do not work properly, do not use this equipment. Contact J. L. Fisher, Inc. in the United States at (818) 846-8366 for assistance. For **Version 2**, skip to page 51, then return here.

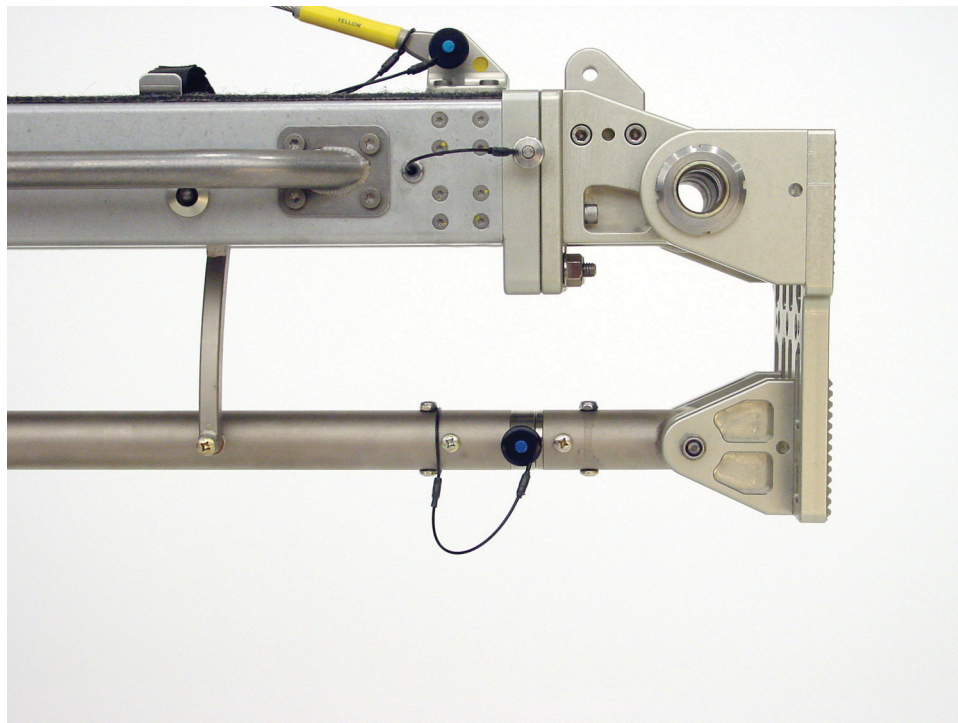


Figure 17

Position the nosepiece into the dovetail slots on the front of the jib. Slide the nosepiece over the two bottom screws and align the lower link rod. Tighten nuts and insert the attached locking pins.

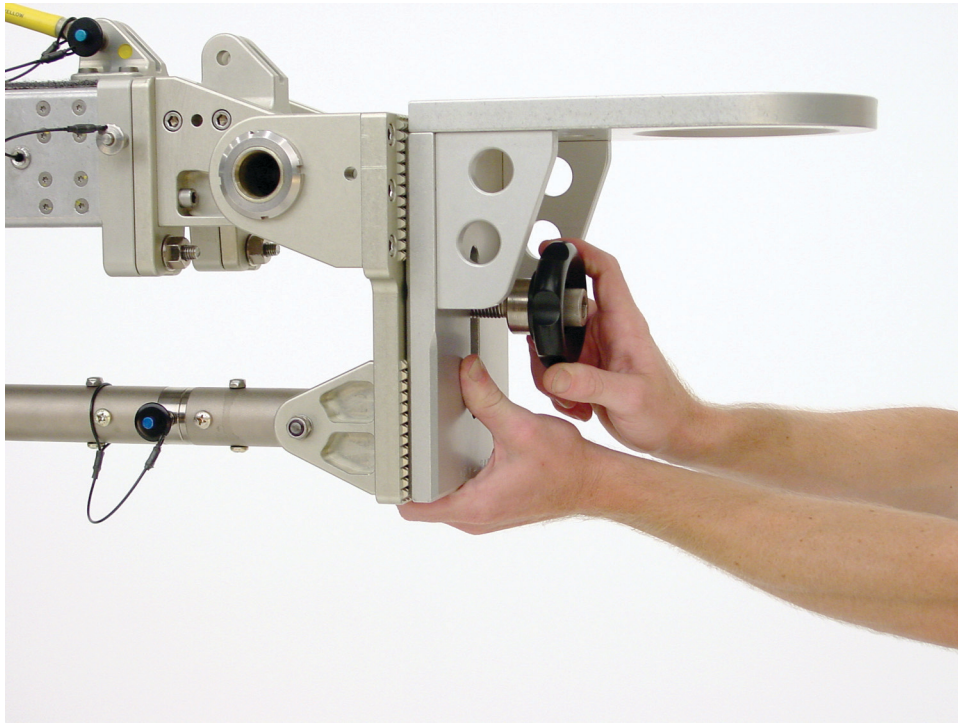


Figure 18

Attach angle plate to nosepiece. The angle plate may be indexed 90° to any of four positions.

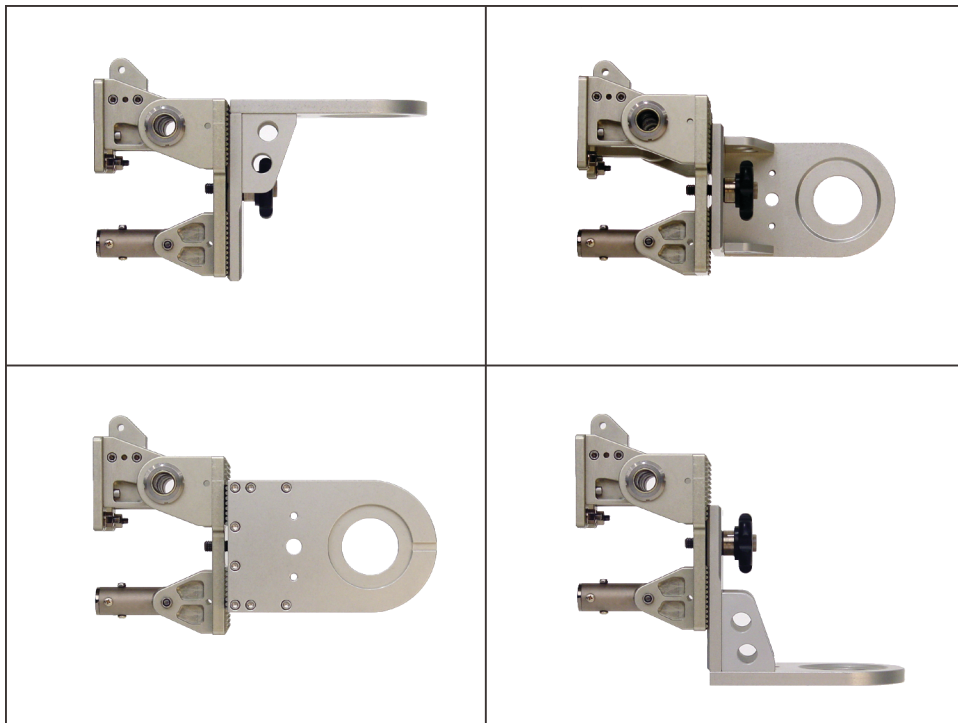


Figure 19

The four possible positions of the angle plate.

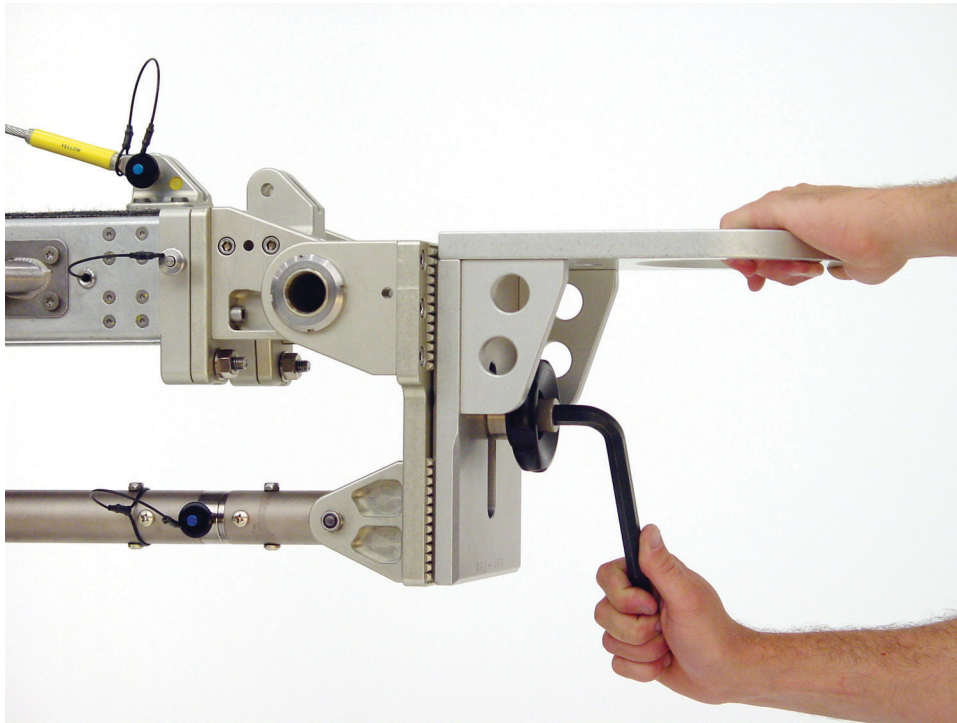


Figure 20

Tighten the hand screw.

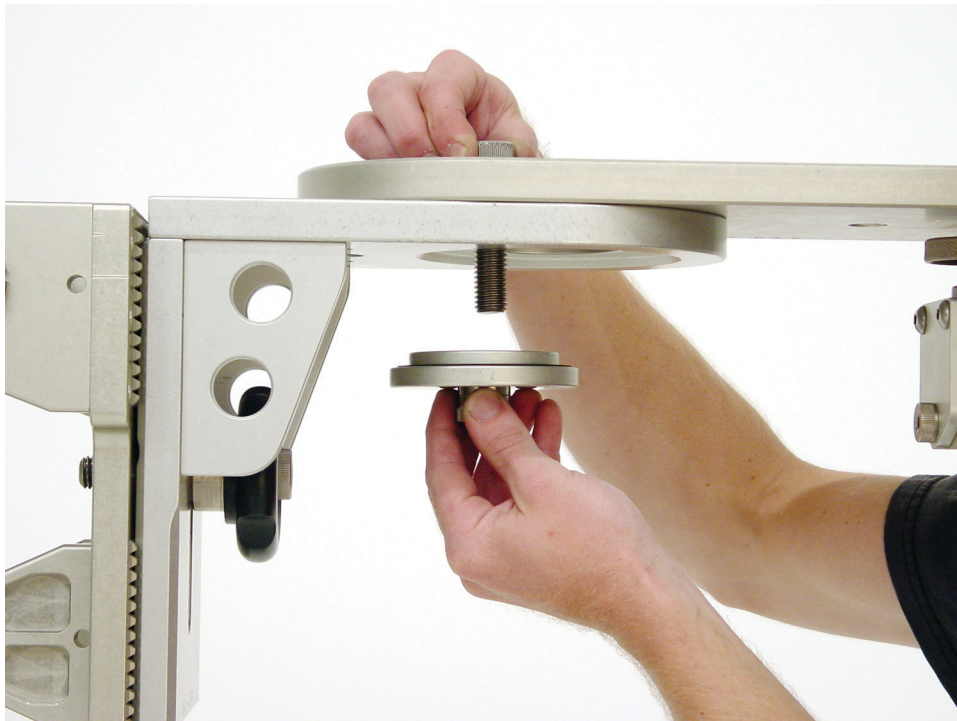


Figure 21

Use the washer and cap screw to attach the leveling offset to the angle plate.

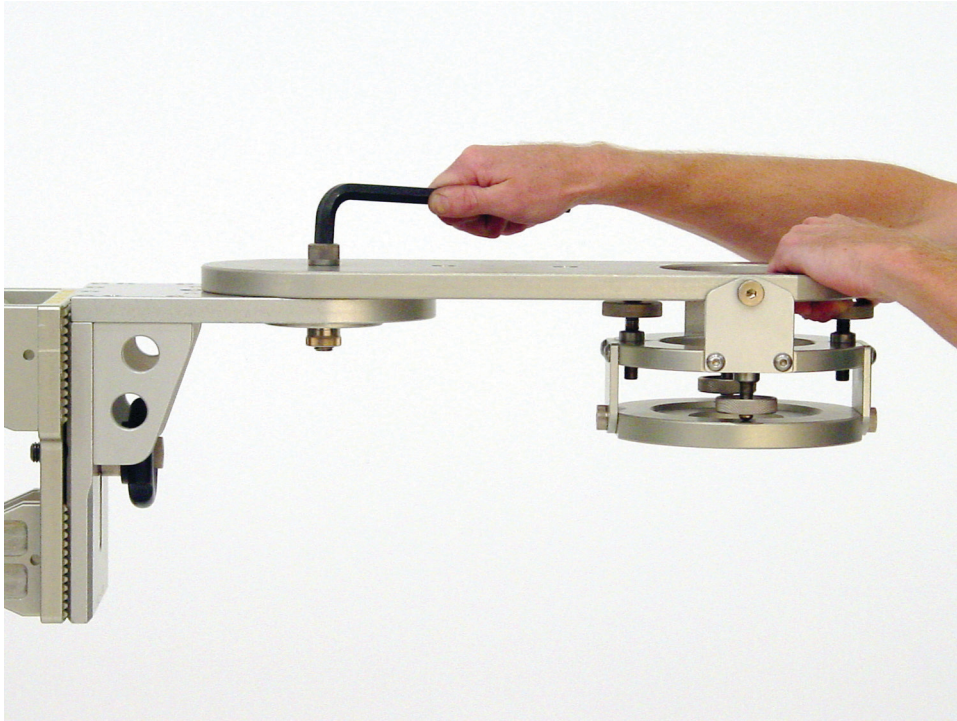


Figure 22

The leveling offset may be mounted facing down as shown, or facing up as well as rotated to either side.



Figure 23

Place trim weights on top of jib, as required.

Version 1

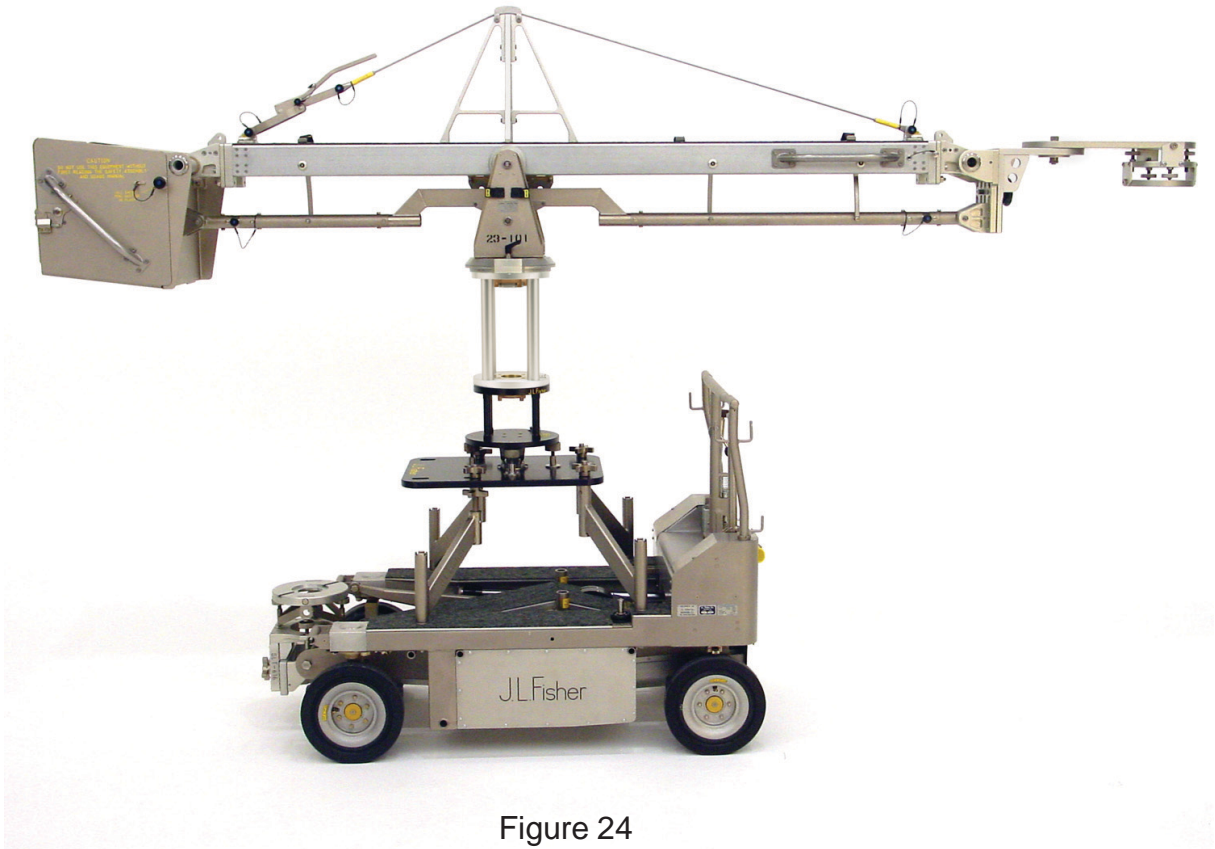


Figure 24

Completed **Version 1** with Tower A cabling, and attached weight bucket, nosepiece, angle plate and leveling offset.

NOTE: This version is equal in length to the Model 21 Jib. The yellow cable adds a substantial amount of rigidity and should always be used.

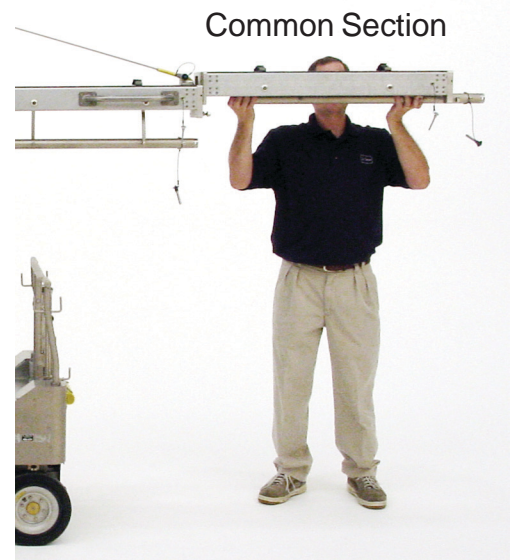
Version 2

Version 2 is assembled by installing a jib Common Section into the dovetail slots at the front of the Main Section prior to installing the Nose Piece.

Continuing from page 47, Figure 16:

Position the Common Section into dovetail slots at the front of the Main Section. Tighten nuts and insert the attached locking pins.

Then go back to page 47, and continue at figure 17 to install the Nose Piece, Angle Plate, and LOF.



Versions 3, 4, 5, 6, 7

Versions 3 through 7: 9 Foot Through 21 Foot Reach

Maximum load on center mount is 1200 lbs. (544 kg). Do not exceed maximum load. Please read and follow the safety information.

The Model 9 or Model 10 Camera Dolly, with the addition of a center mount and a 18" heavy-duty riser, makes a suitable base for the Model 23 Jib.

CAUTION: Do not use the Model 11 Camera Dolly as a base, or other dolly bases of similar size, because the base is too small. Do not attempt mounting this jib directly on the lift beam of the camera dolly.

Versions 3 Through 7

Starting from the base unit, we will begin the assembly of the Model 23 Jib, which can be built out to a reach of 21 feet. Inspect all pieces prior to assembly. If any pieces are broken, missing, poorly maintained, or substitutions have been made, do not use this equipment. Contact J. L. Fisher, Inc., in the United States at (818) 846-8366 for assistance.



Figure 25

Set up the dolly in the area where you will use the jib. Soft soil, lawns, roof tops, etc., are unacceptable working environments because the wheels may dig in and cause the jib/dolly assembly to tip over. Set up on a stable area; for example, on level ground or on a platform capable of supporting at least ten times the weight of the jib, dolly, and personnel combined. The bigger and heavier the jib base, the more stable and safe it will be. **Do not use this jib with the Model 11 Dolly because the base is too small.**

A minimum of two people are required for assembly of the jib. It is suggested that one person hold the jib while the other assembles the parts. Place the main section on a properly assembled center mount with the 18-inch heavy-duty riser attached (refer to the "Center Mount Installation Procedure" section in this manual for the proper center mount assembly), and secure with the riser nut.

Versions 3, 4, 5, 6, 7



Figure 26

First, take note of the difference between the two towers. Tower A has one center support; Tower B has side supports in addition to the center support.

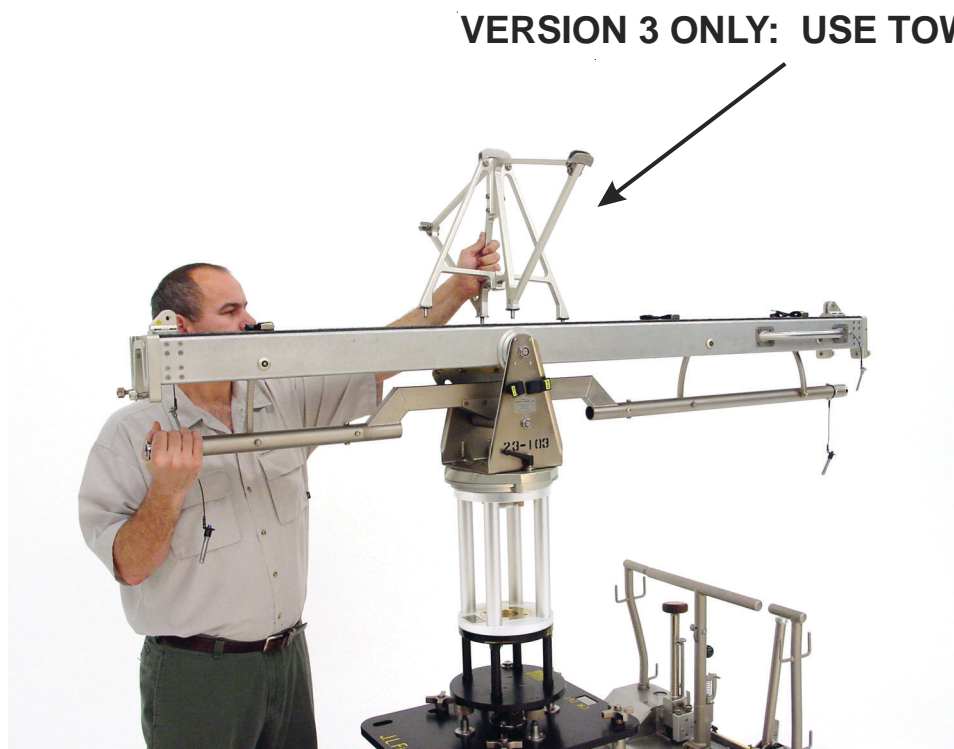


Figure 27

Place Tower B onto the main section of the jib. **Versions 4, 5, 6, 7**

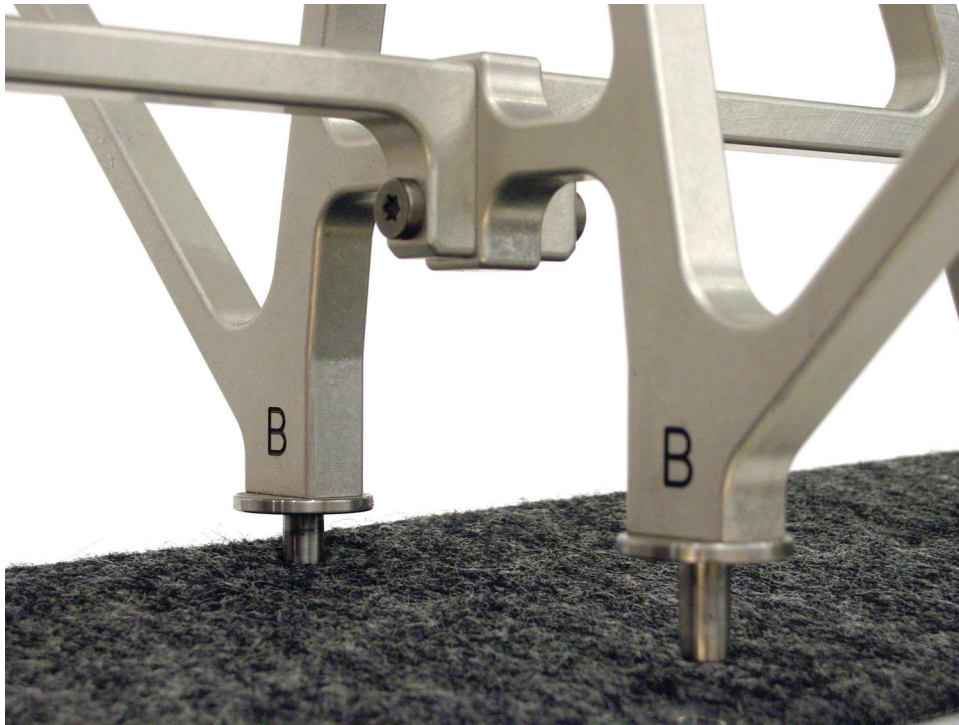


Figure 28

Tower B fits in four holes on the main section. The tower is held in place by the cables.



Figure 29

Cables are stored in color-coded bags to match cable coloring.

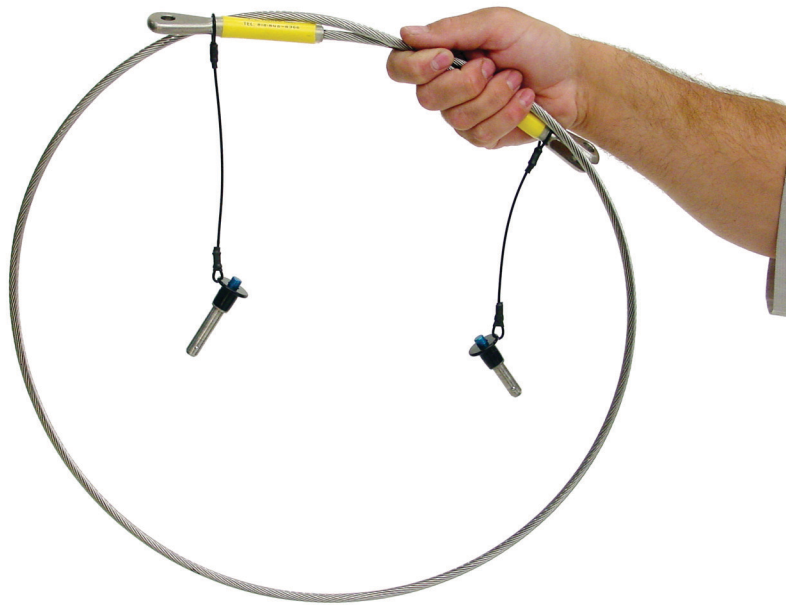


Figure 30

Next, take the yellow cable from its bag, located in the utility cart. The yellow cable is used in all configurations.



Figure 31

Place one end of the yellow cable into the cable anchor on the jib of the main section marked "Front" and insert the attached locking pin. The cable anchor is marked with a yellow dot.

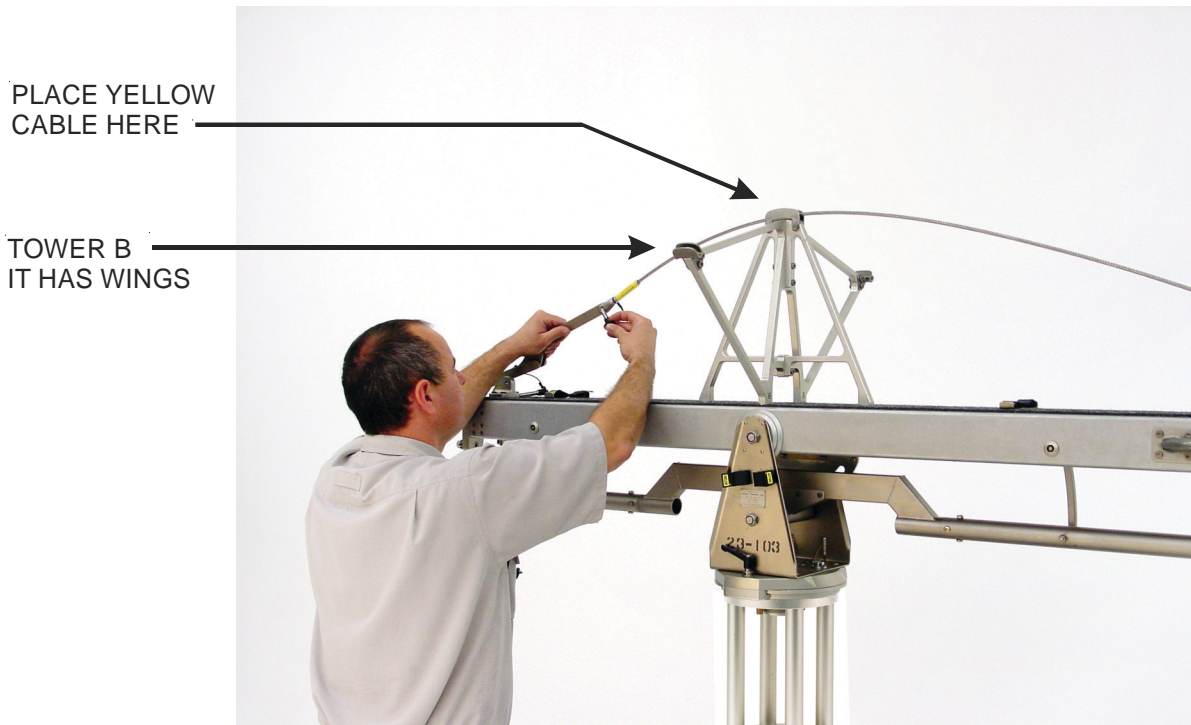


Figure 32

Rest the cable on the top cable support of Tower B and insert it into the long arm of the cable tensioner using the attached pin.

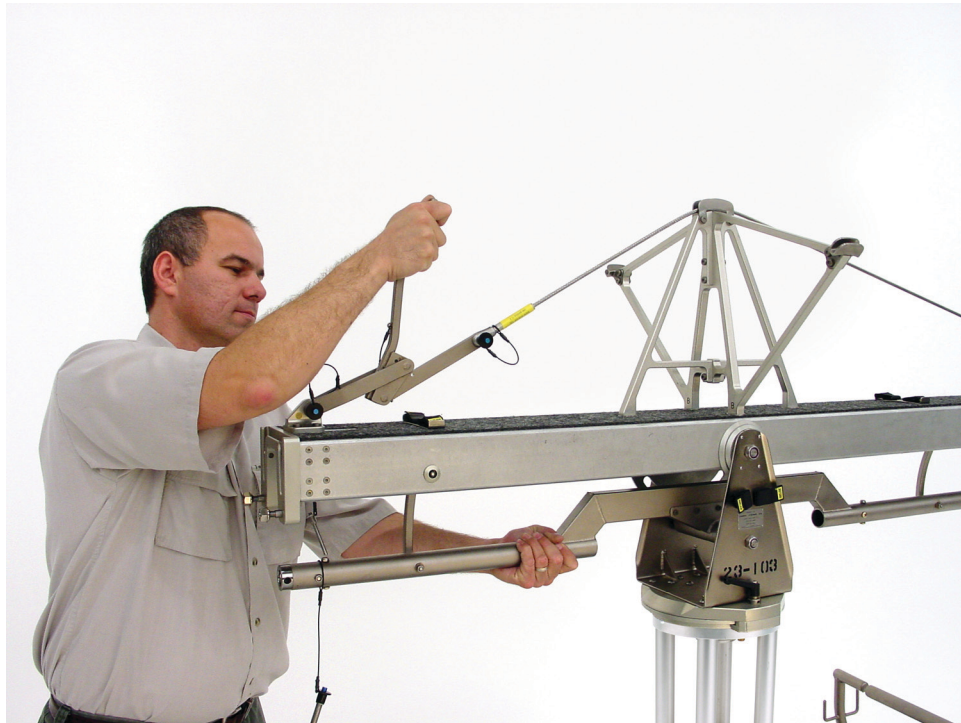
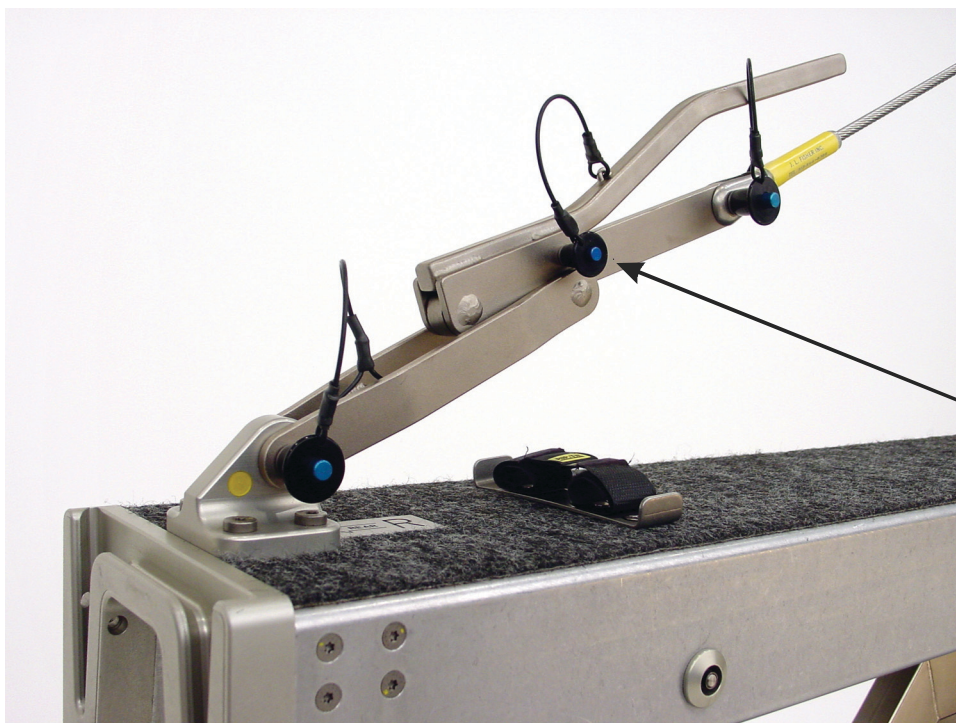


Figure 33

Attach the other end of the cable tensioner to the cable anchor on the rear of the jib. Forcefully push the cable tensioner lever forward to tighten the cable. You will hear a loud clunk.



INSTALLED
SAFETY PIN
(ALL SAFETY
PINS MUST BE
IN PLACE)

Figure 34

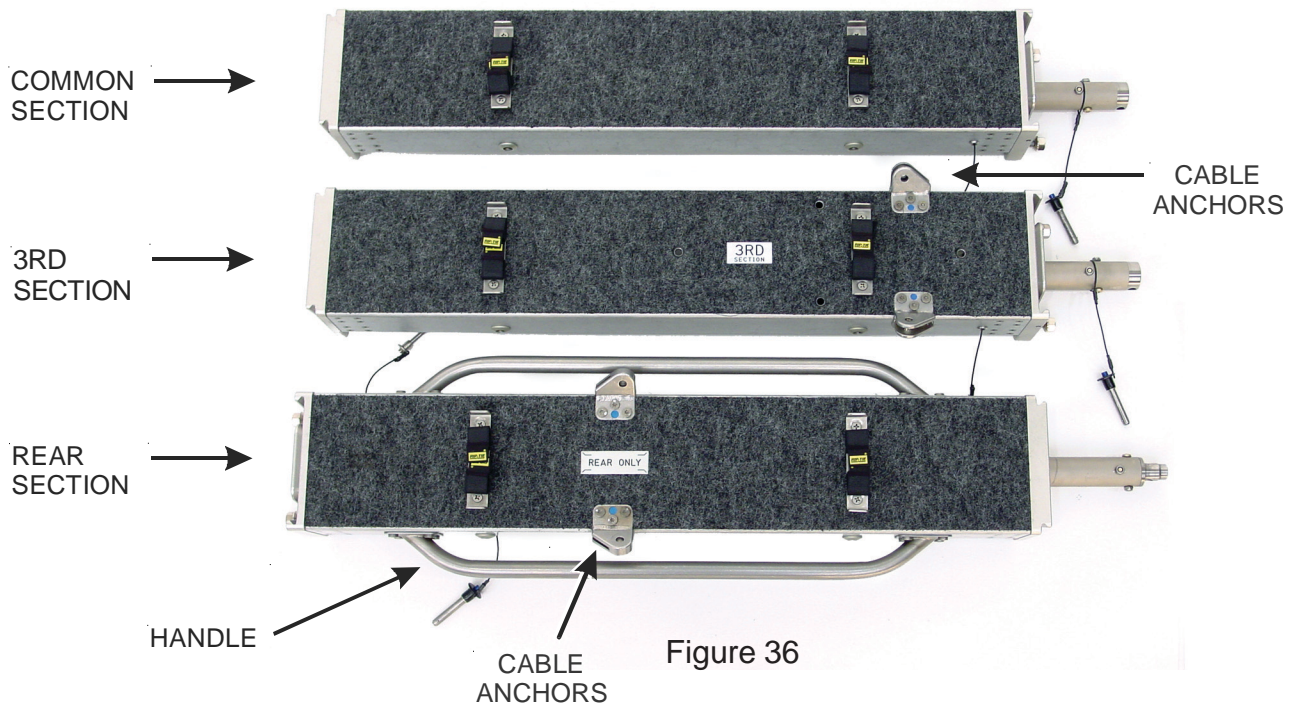
Insert the attached safety pin in cable tensioner.



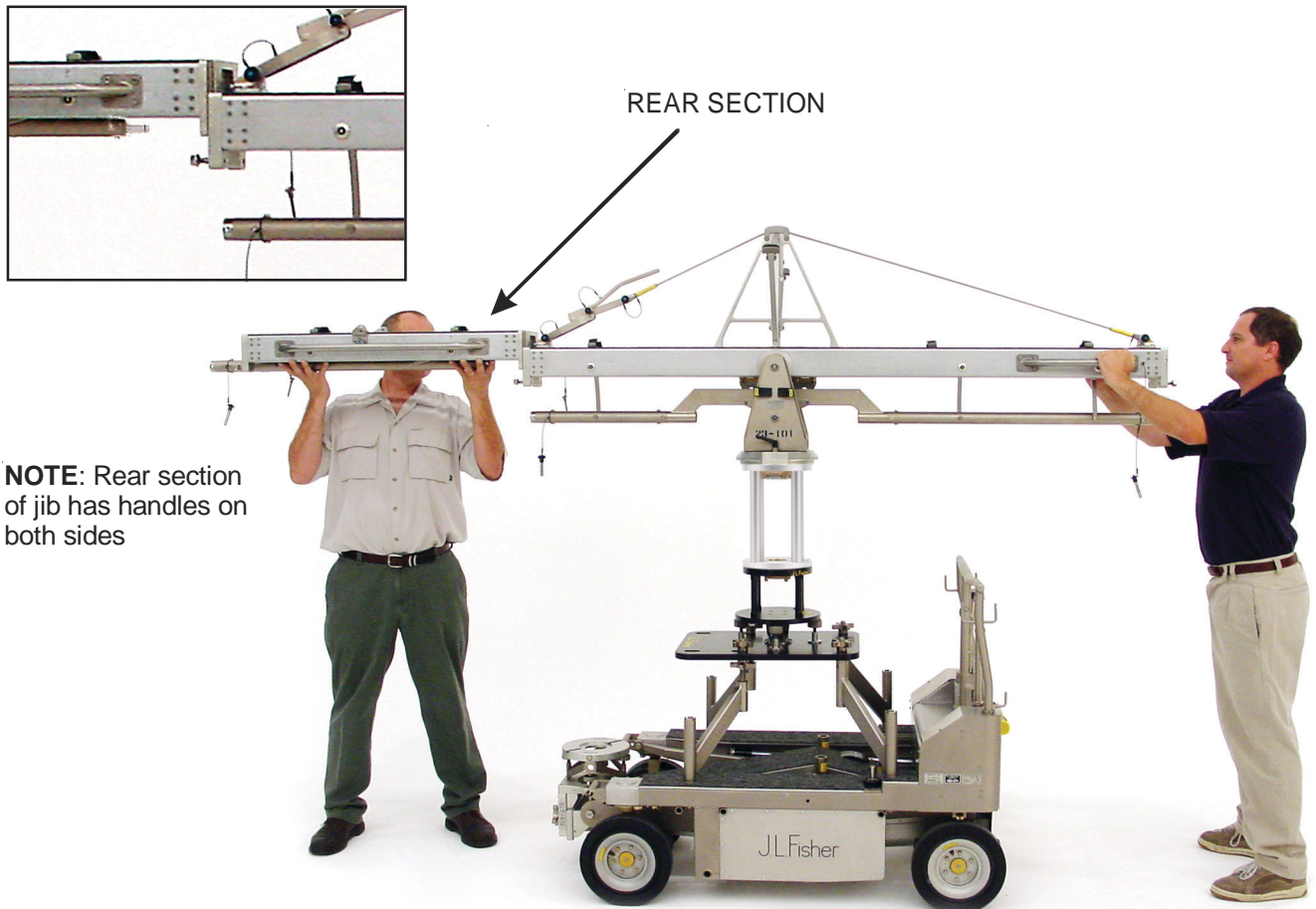
Figure 35

Completed main section. **NOTE:** The front end is longer than the rear end.

Versions 3, 4, 5, 6, 7



As shown above, the rear and 3rd sections are different from the common section and must be positioned correctly.



Next, install the jib rear section.

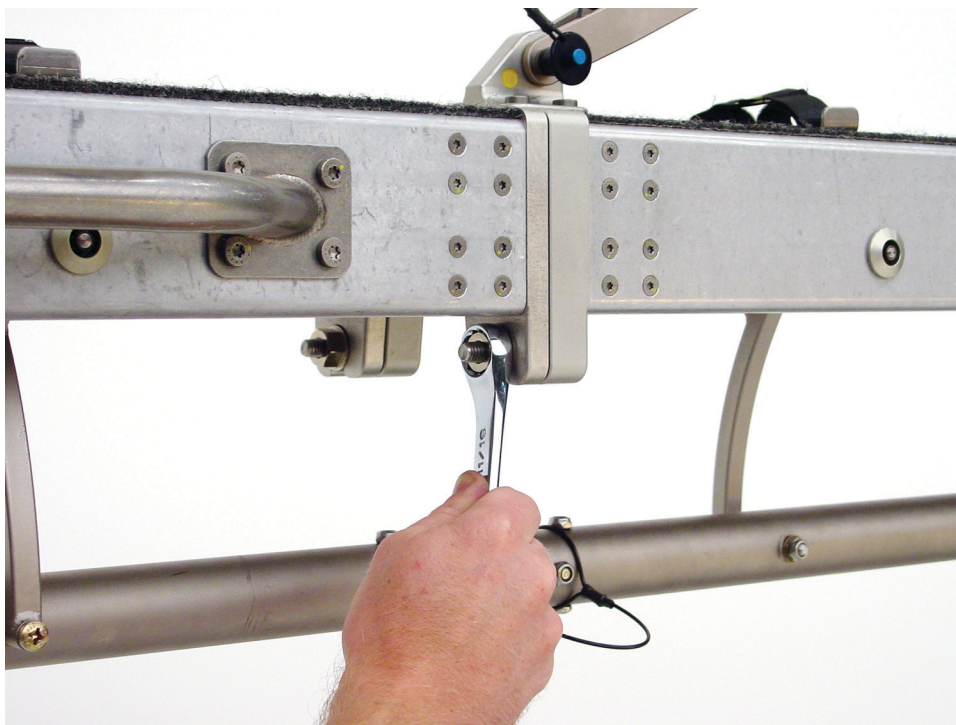


Figure 38

Tighten nuts on the rear section.

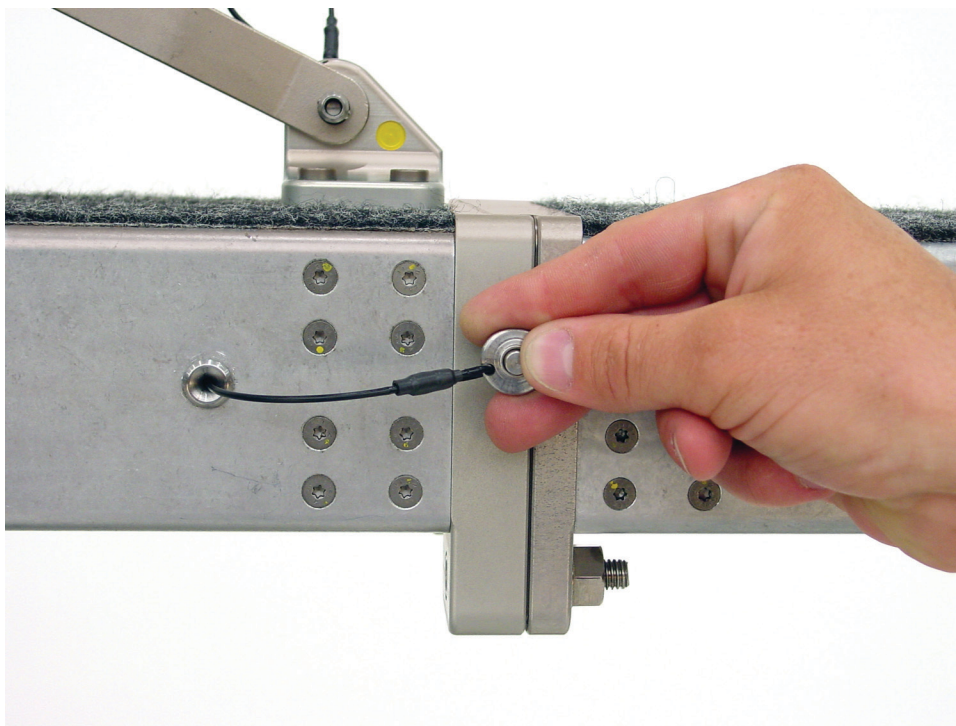


Figure 39

Insert the attached safety pin.

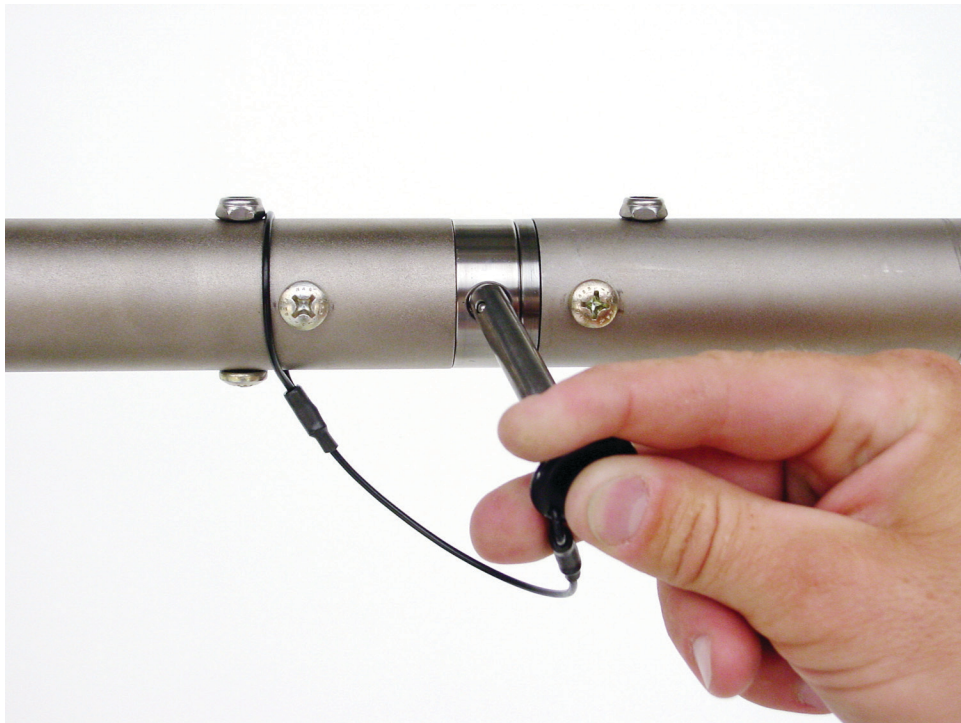


Figure 40

Insert the attached locking pin into the lower link rod.

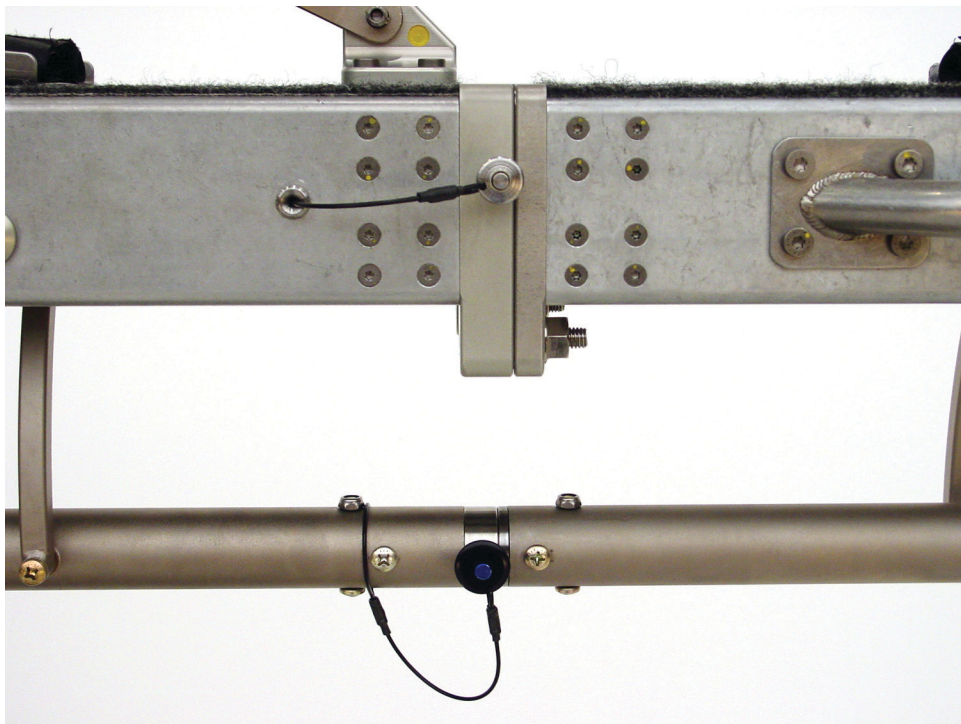


Figure 41

The coupling as shown is properly assembled. All coupling assemblies are done in the same manner.

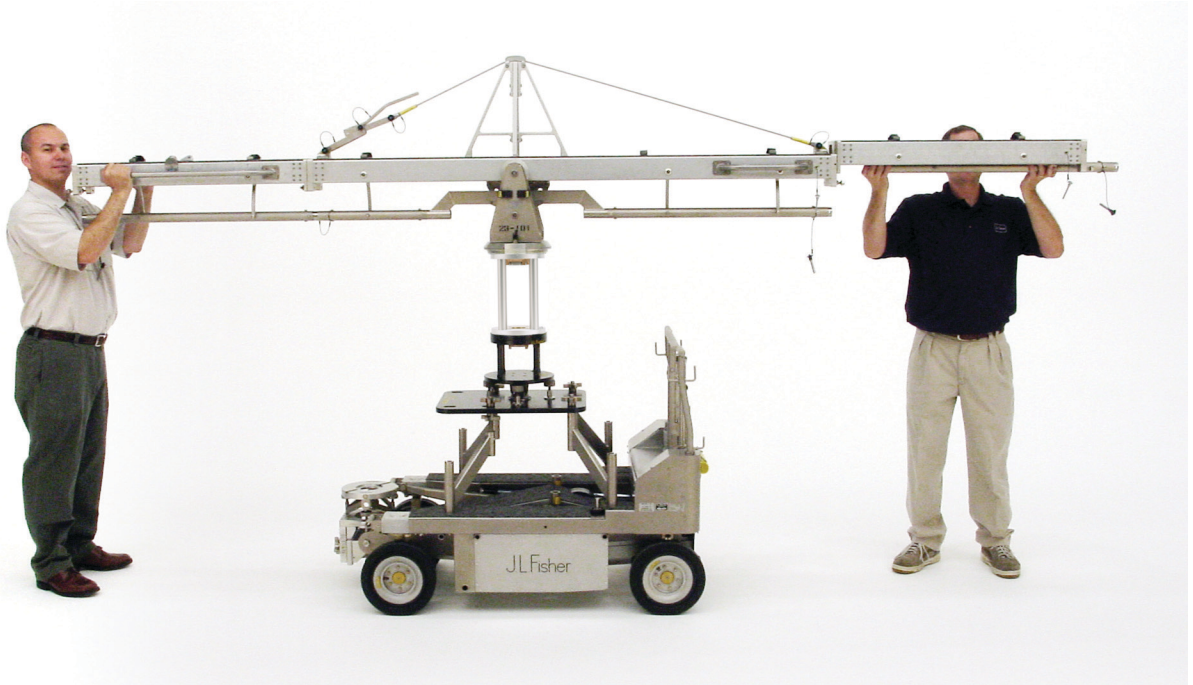


Figure 42

Install jib common section into the dovetail slots at the front. Tighten nuts and insert the attached locking pins.

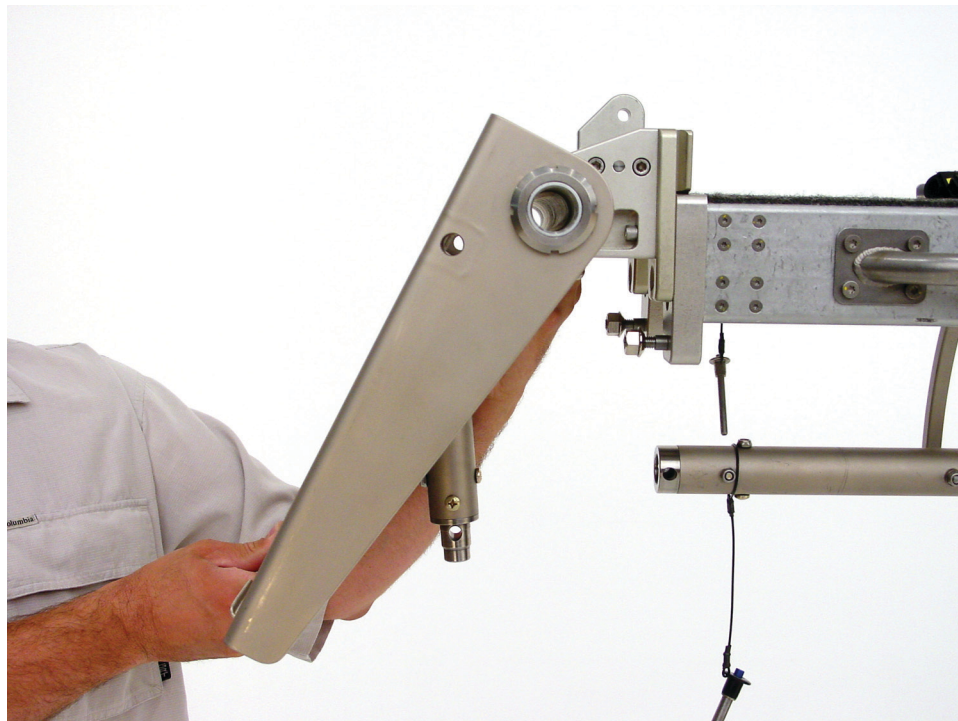
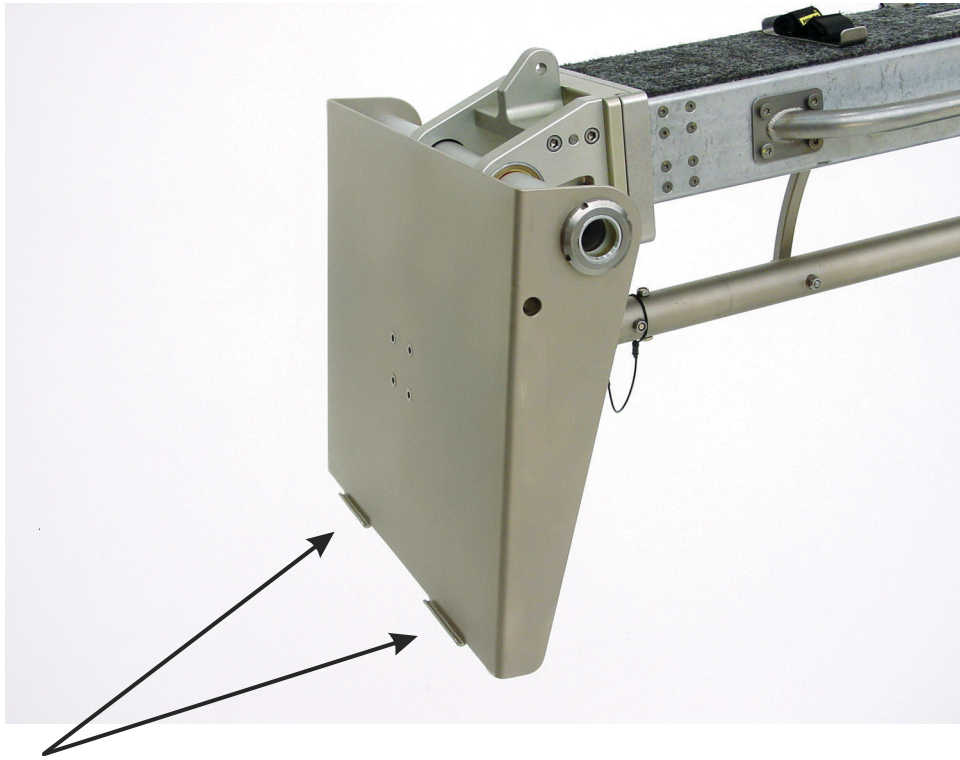


Figure 43

Position the Rear Bracket into the dovetail slots on the rear section of the jib. Slide the Rear Bracket over the two bottom screws and align the lower link rod. Tighten nuts and insert the attached locking pins.



NOTE: Weight bucket guides.

Figure 44



Figure 45

With the weight bucket resting on the weight bucket guides, swing the bucket into position.

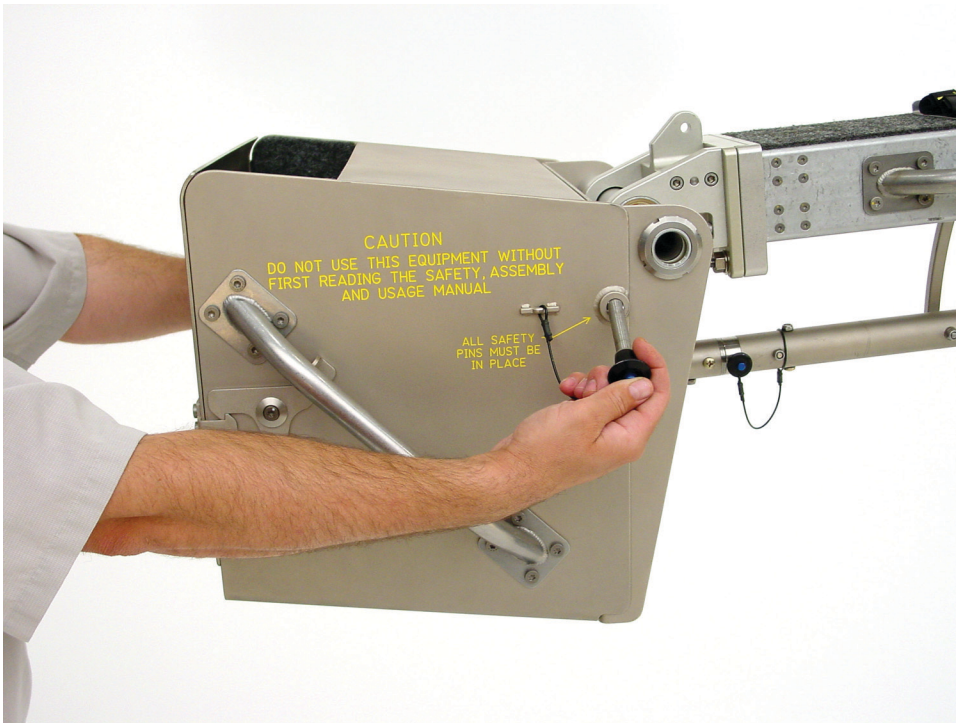


Figure 46

Insert both attached locking pins. Inspect to see that both pins are locked. Try to pull them out while supporting the bucket and without depressing the blue button. If, for some reason these pins seem damaged or do not work properly, do not use this equipment. Contact J. L. Fisher, Inc. in the United States at (818) 846-8366 for assistance.



Figure 47

Completed weight bucket installation.



Figure 48

During the assembly of the jib in different lengths, it will be necessary to add weights to balance the arm for ease of assembly.

Versions 4, 5, 6, 7 skip to page 67.

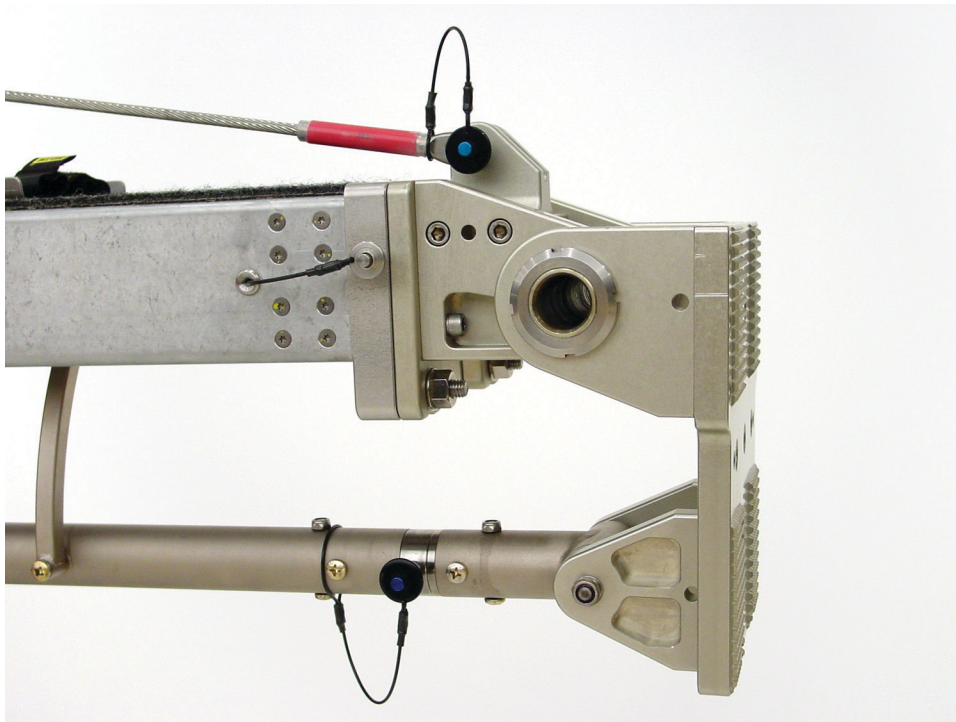


Figure 49

Version 3 Only. Position the nosepiece into the dovetail slots on the front of the jib. Slide the nosepiece over the two bottom screws and align the lower link rod. Tighten nuts and insert attached locking pins. Place one end of the red cable into the cable anchor on the nosepiece and insert the attached locking pin.

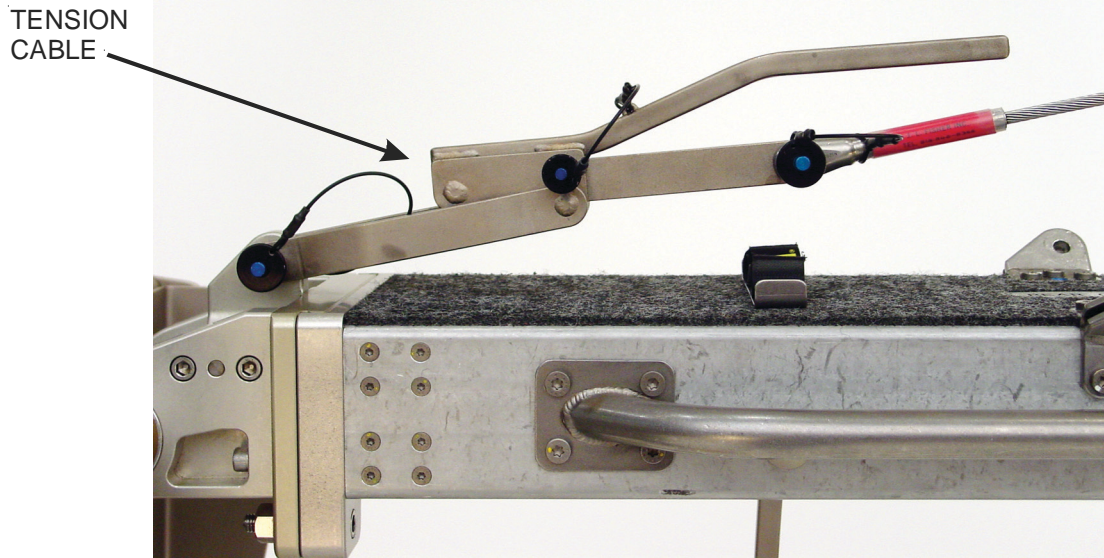


Figure 50

Version 3 Only. Place the red cable over the top cable support on Tower A and attach it to the long arm of the cable tensioner, using the attached locking pin. Attach the cable tensioner to the anchor on the rear bracket using the attached locking pin. Tension in the same manner as the yellow cable and insert the safety pin.

Versions 4, 5, 6, 7 skip to next page.

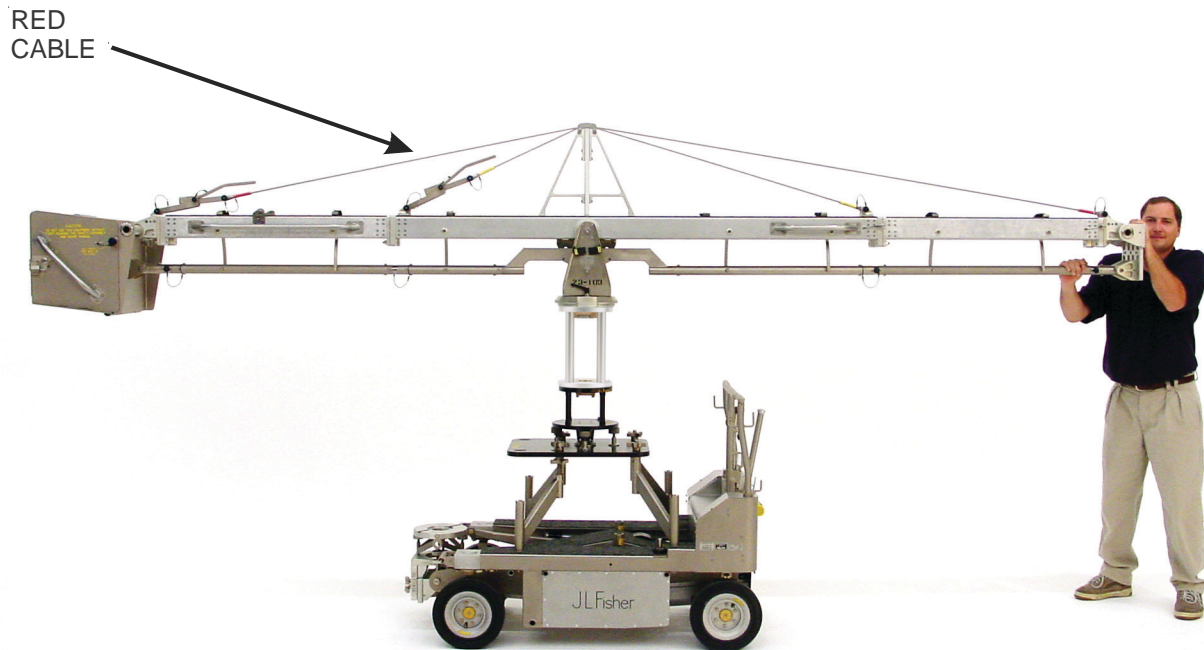


Figure 51

Version 3 Only. The completed Version 3 is shown above.

Version 3 STOP HERE. Skip to page 77.

Versions 4, 5, 6, 7

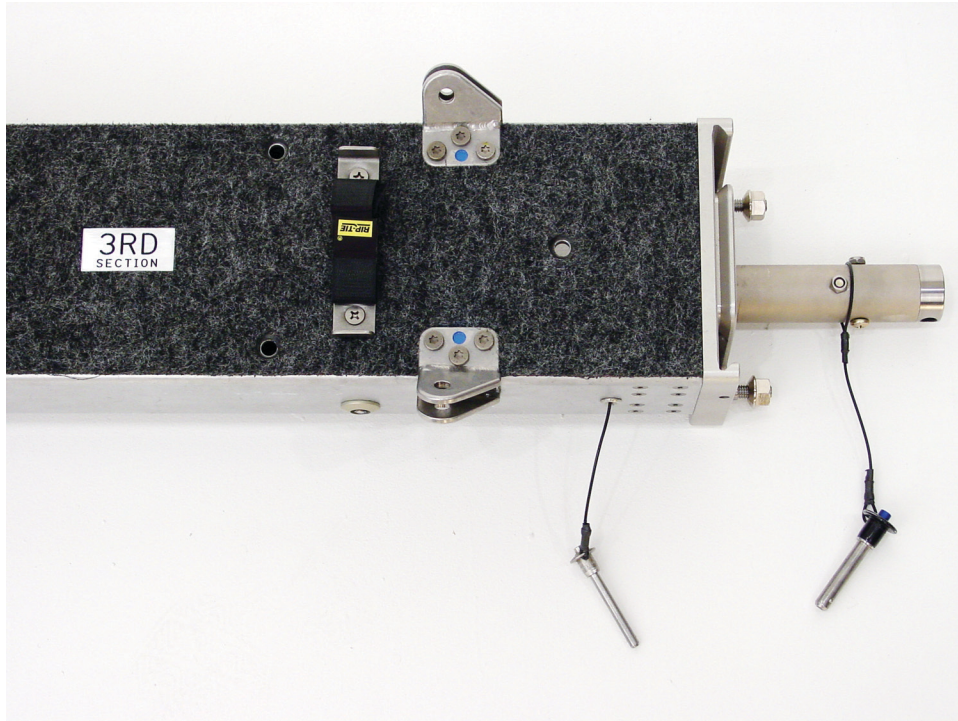


Figure 52

The 3rd section is marked “3rd” and has cable anchors marked with blue dots.

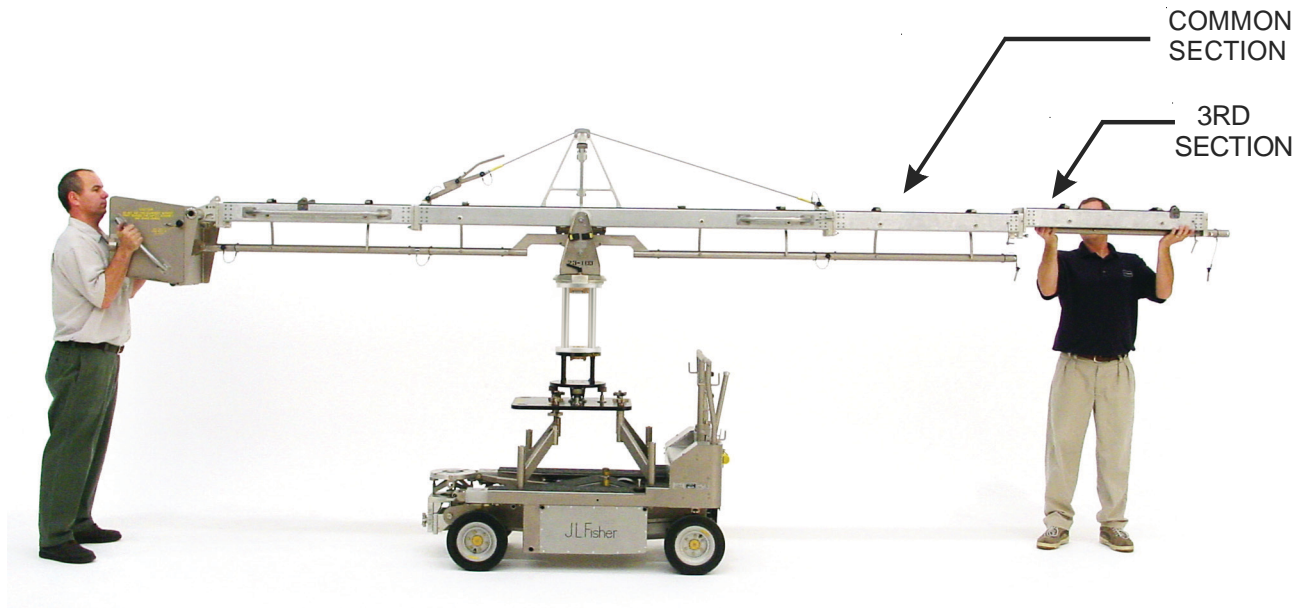


Figure 53

Install 3rd section onto the front of the jib. Tighten nuts and insert the attached locking pins.

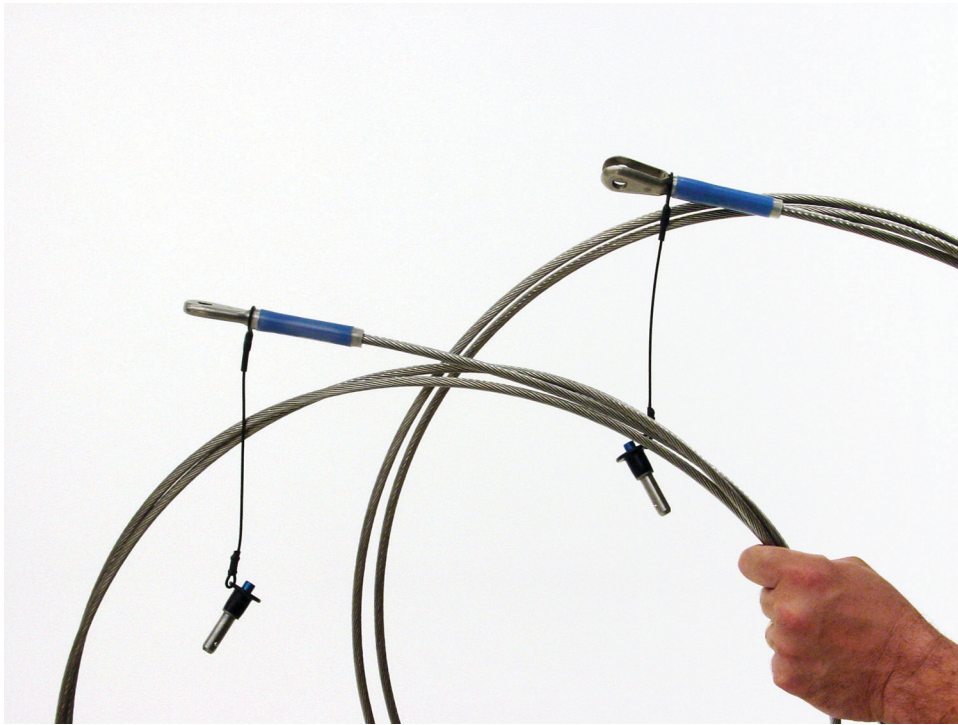


Figure 54

Use both blue cables for **Versions 4, 5, 6, and 7.**

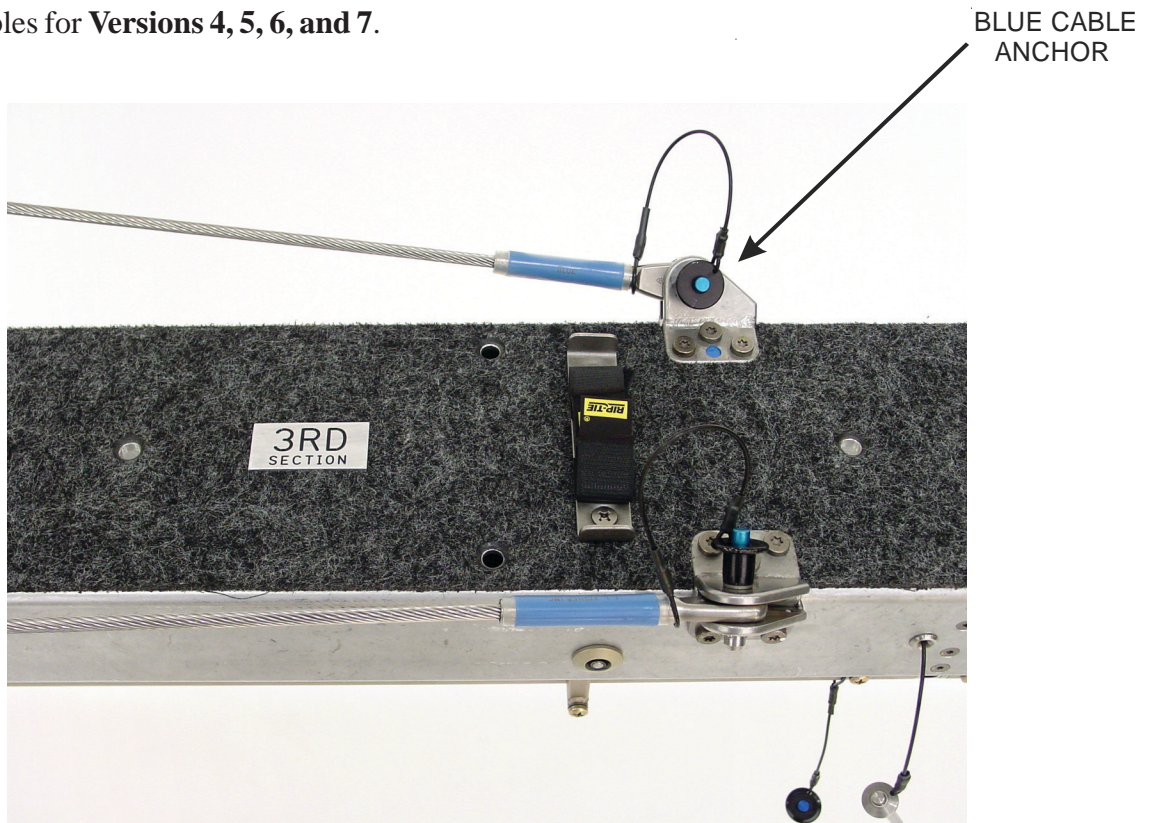


Figure 55

Attach the two blue cables to the blue cable anchors on the 3rd section.

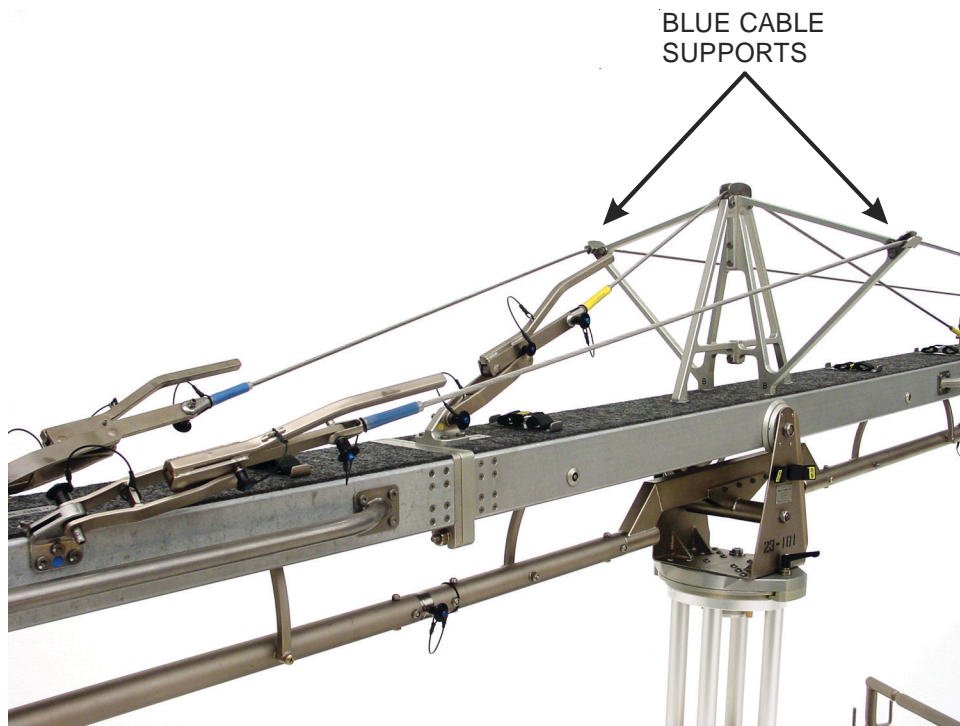


Figure 56

Place the blue cables over the blue cable supports on Tower B.

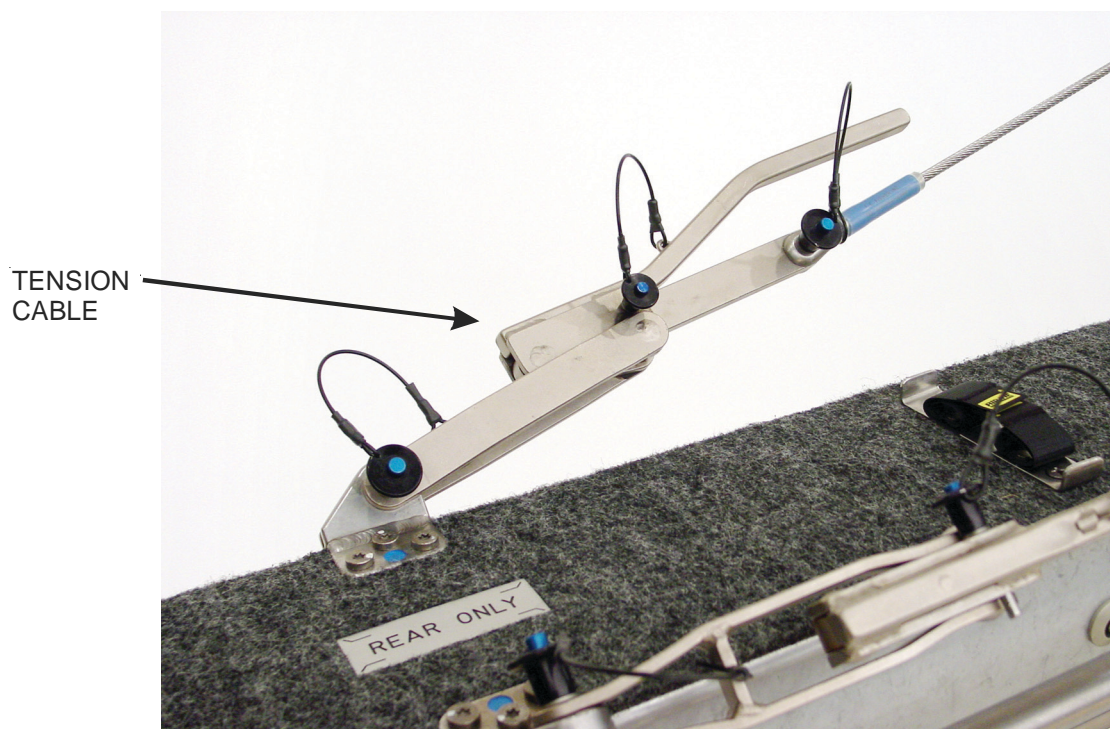


Figure 57

Connect the two blue cables to the cable tensioners and attach the cable tensioners to the two cable anchors at the rear-only section. Tension the blue cables and insert locking pins.

Versions 5, 6, 7 go to next page.

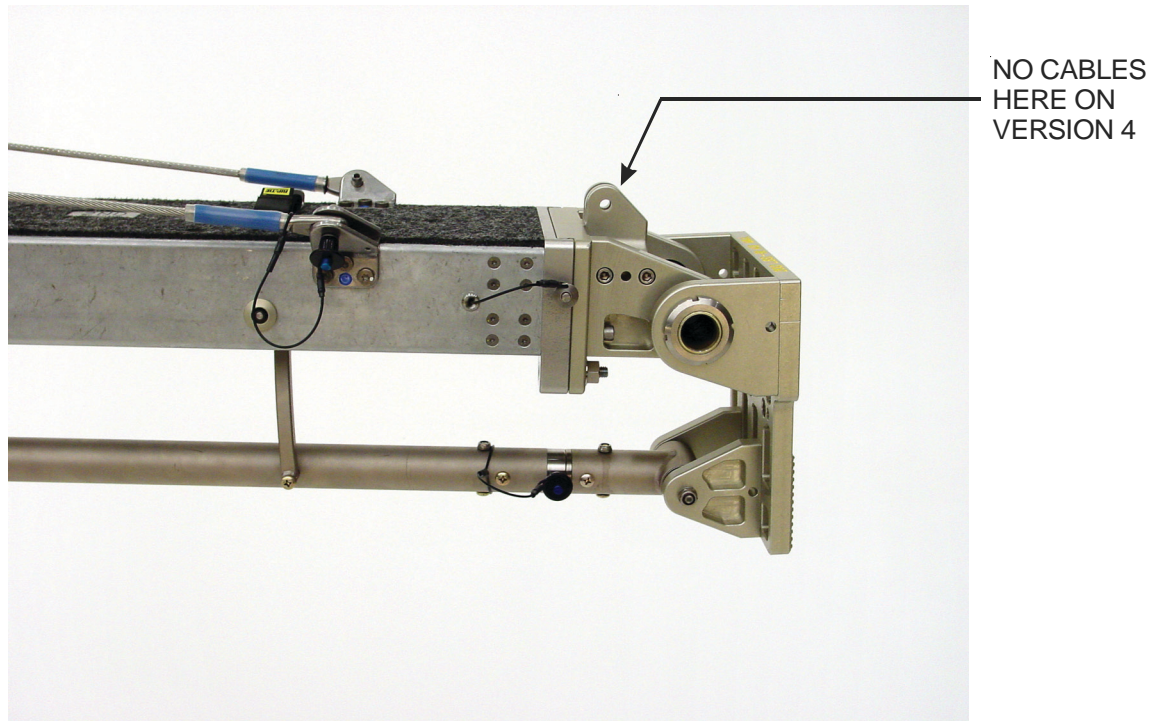


Figure 58

Version 4 Only. Attach the nosepiece. Tighten nuts and insert locking pins.

Version 4 STOP HERE. Skip to page 77.



Figure 59

Position the common section into dovetail slots at the front of the jib. Tighten nuts and insert the attached locking pins.

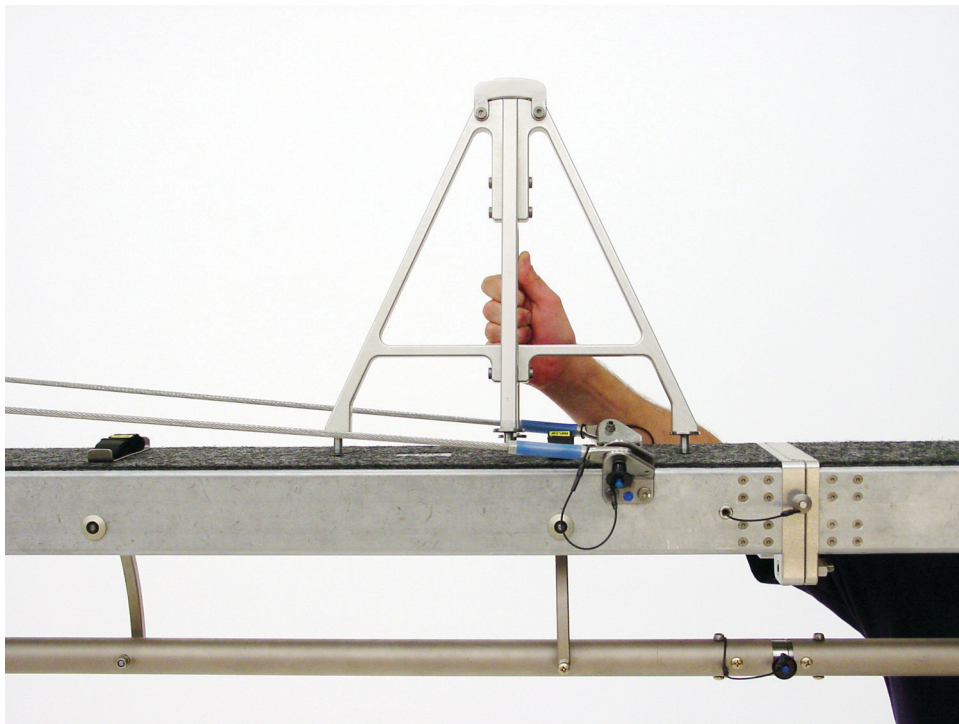


Figure 60

Place Tower A into the four holes on the 3rd section.

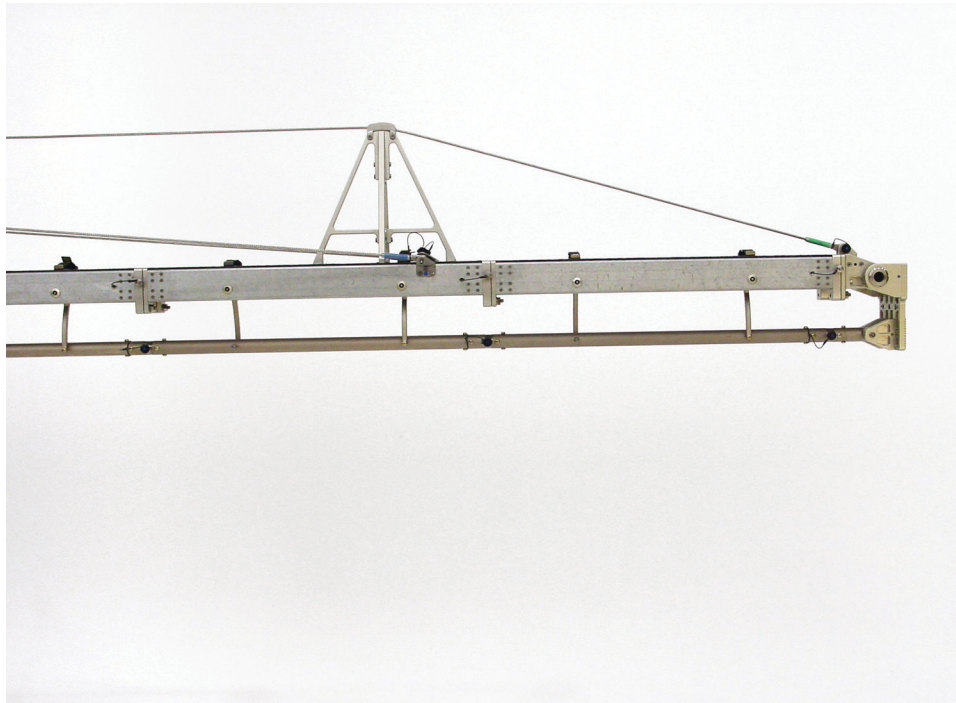


Figure 61

Version 5 Only. Position the nosepiece into the dovetail slots on the front of the jib. Slide the nosepiece over the two bottom screws and align the lower link rod. Tighten nuts and insert attached locking pins. Attach the green cable to the anchor on the nosepiece.

Versions 6, 7 skip to next page.

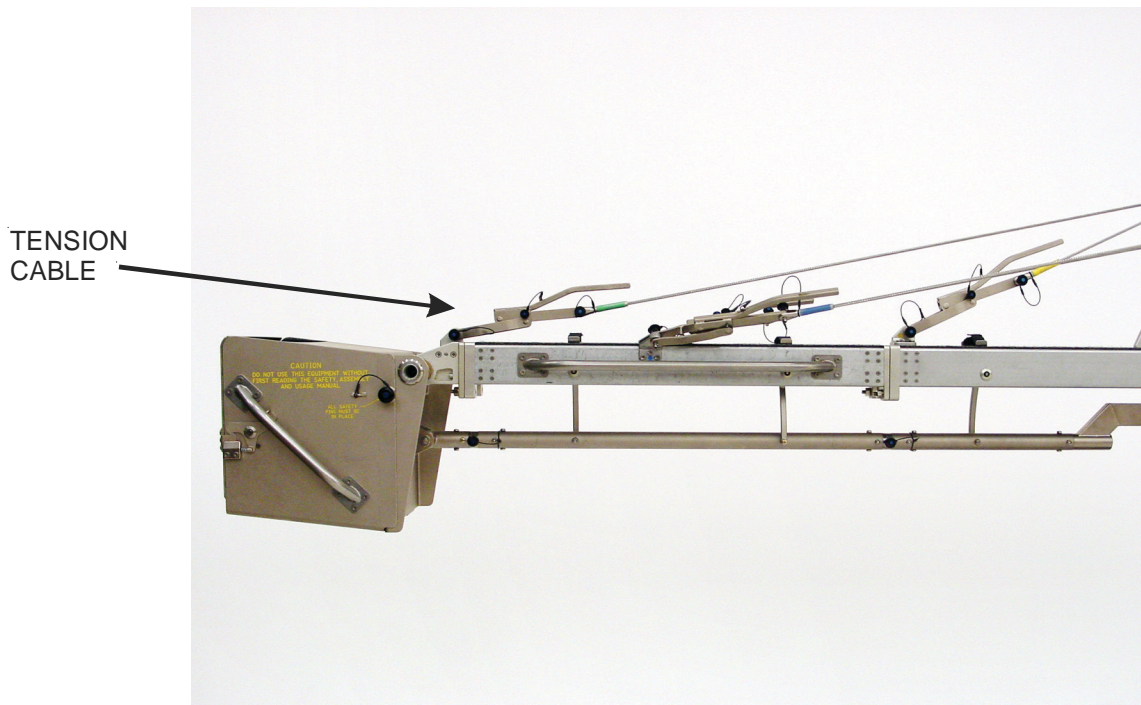


Figure 62

Version 5 Only. Tension the green cable and insert the attached safety pin.

Version 5 STOP HERE. Skip to page 77.

Version 6, 7

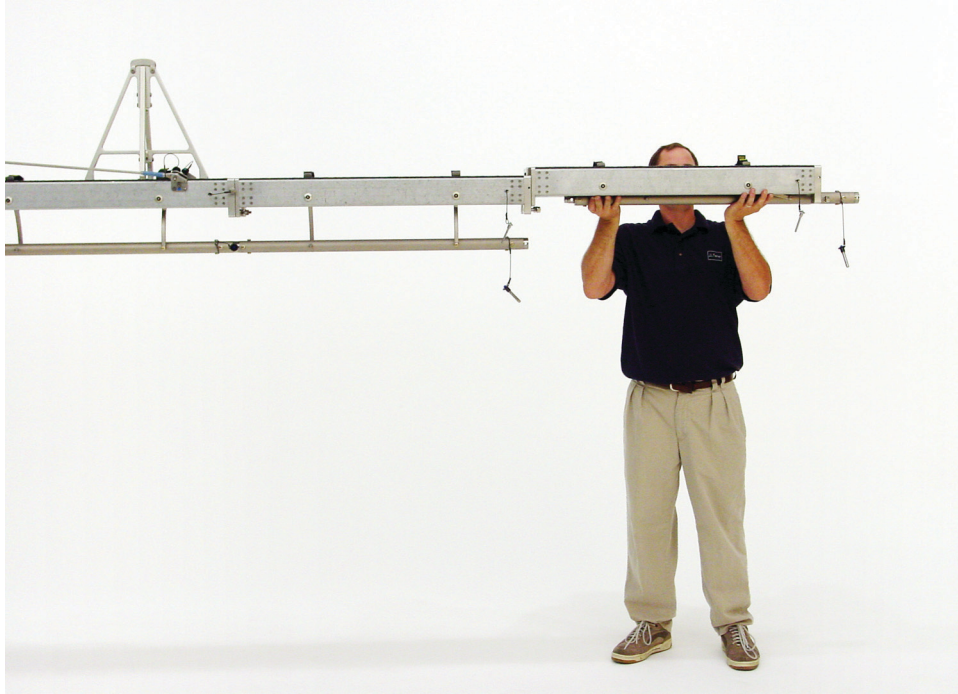


Figure 63

Install common section.

Version 7 skip to page 75.

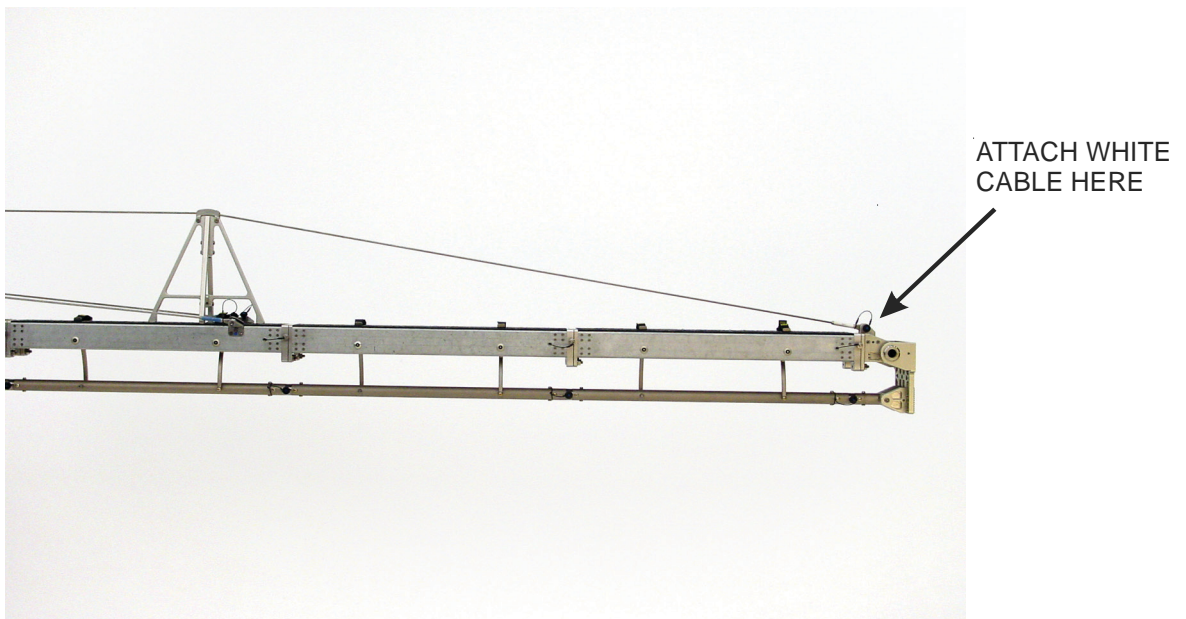


Figure 64

Version 6 Only. Position the nosepiece into the dovetail slots on the front of the jib. Slide the nosepiece over the two bottom screws and align the lower link rod. Tighten nuts and insert attached locking pins. Attach the white cable to anchor on the nosepiece.

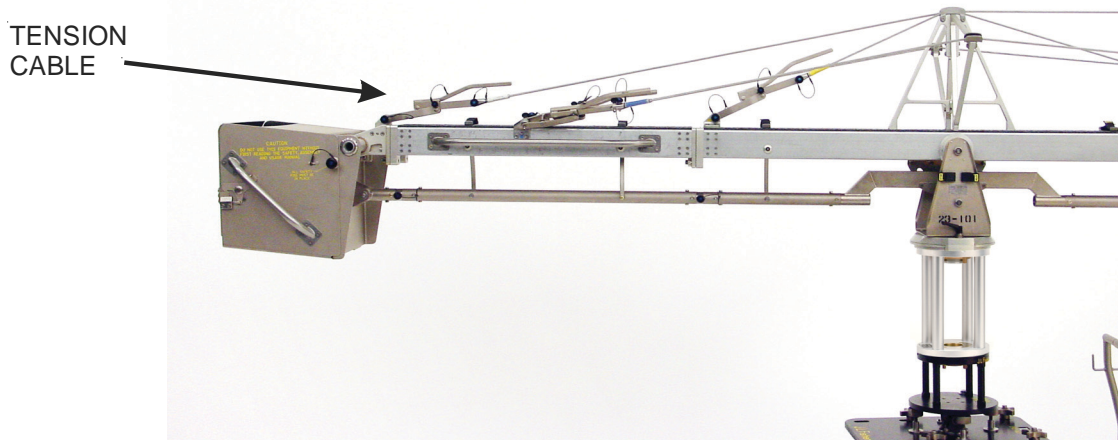


Figure 65

Tension white cable and insert the attached safety pin.

Version 6 STOP HERE. Skip to page 77.

Version 7 skip to next page.

Version 7

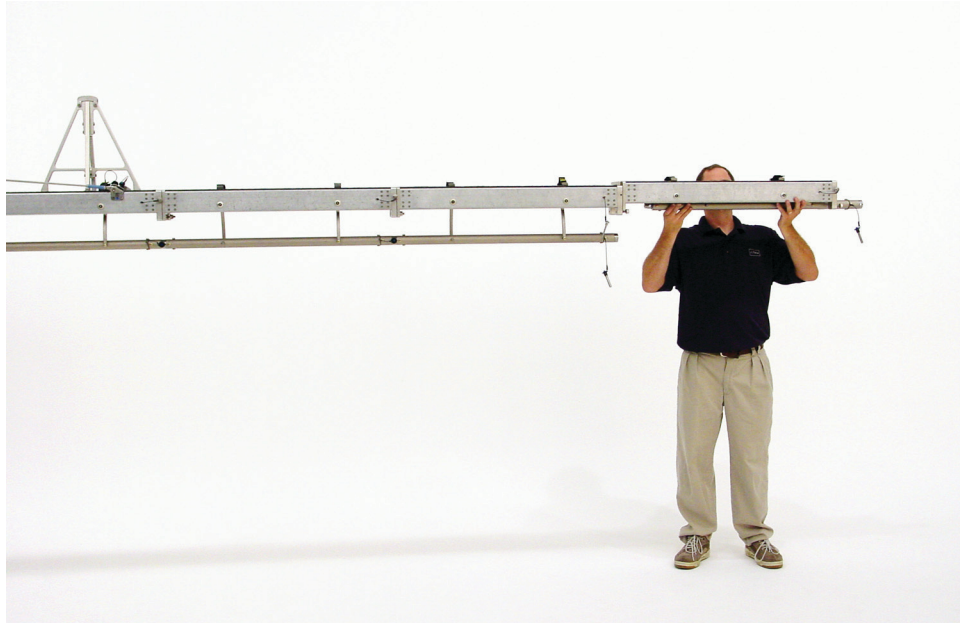


Figure 66

Install common section.

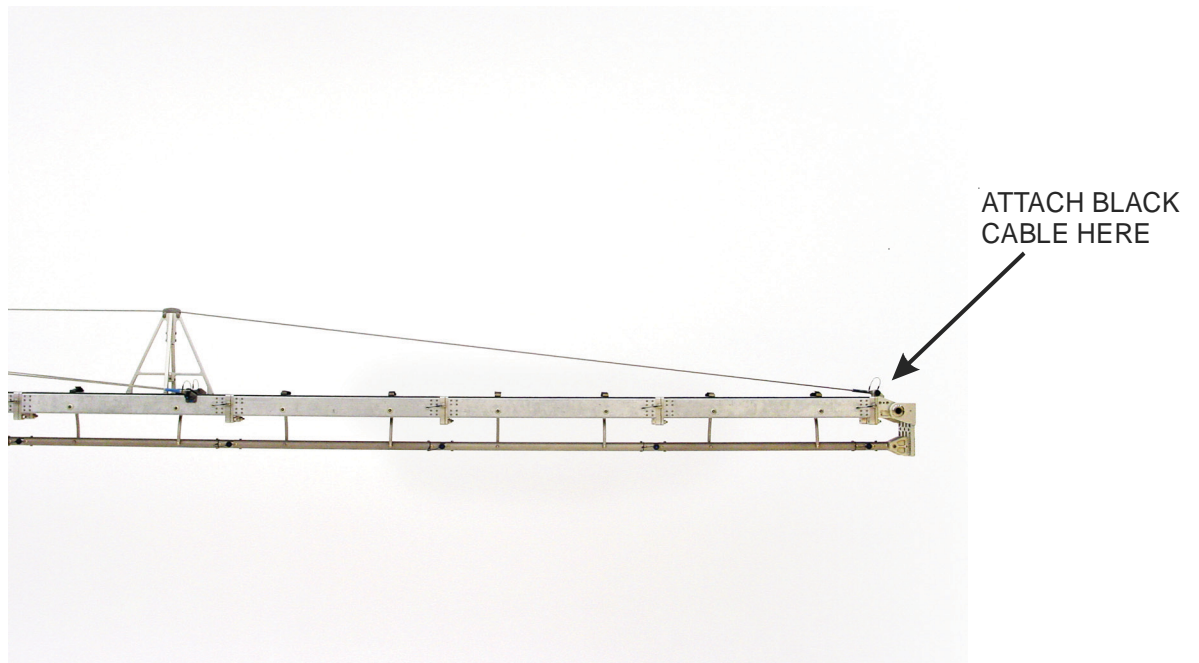


Figure 67

Position the nosepiece into the dovetail slots on the front of the jib. Slide the nosepiece over the two bottom screws and align the lower link rod. Tighten nuts and insert attached locking pins. Attach the black cable to anchor on the nosepiece.



Figure 68

Tension black cable and insert the attached safety pin.

Angle Plate and Leveling Offset Installation

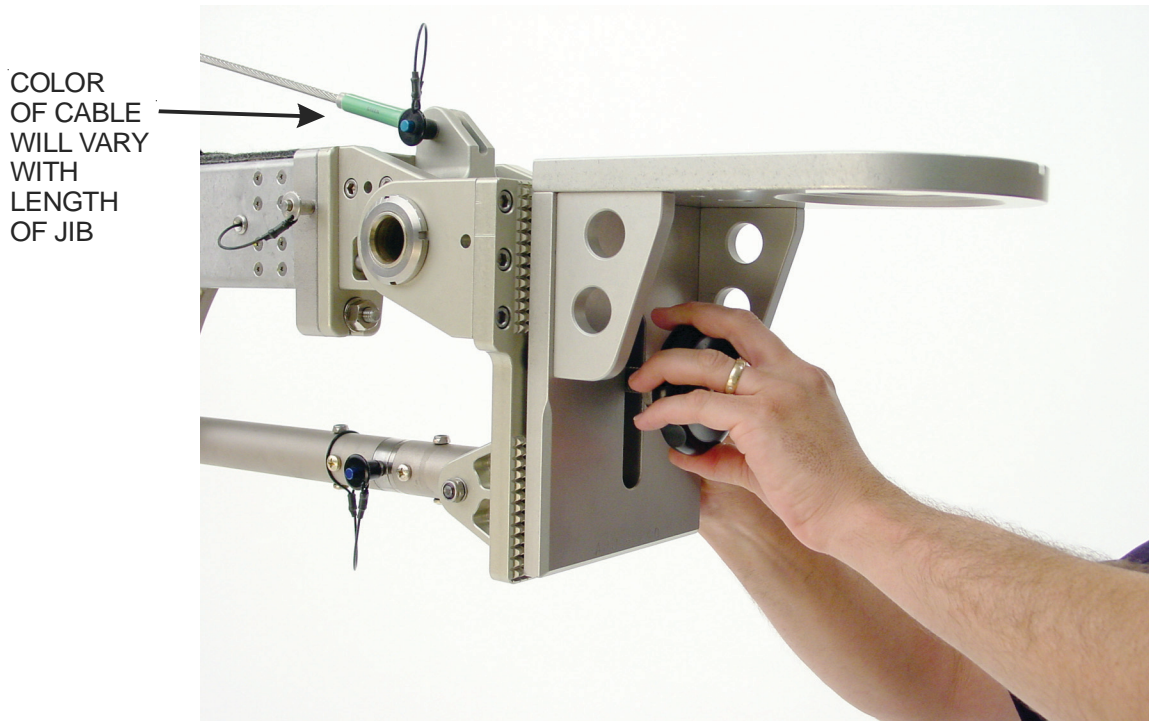


Figure 69

Attach angle plate to nosepiece. The angle plate may be indexed 90° to any of four positions.

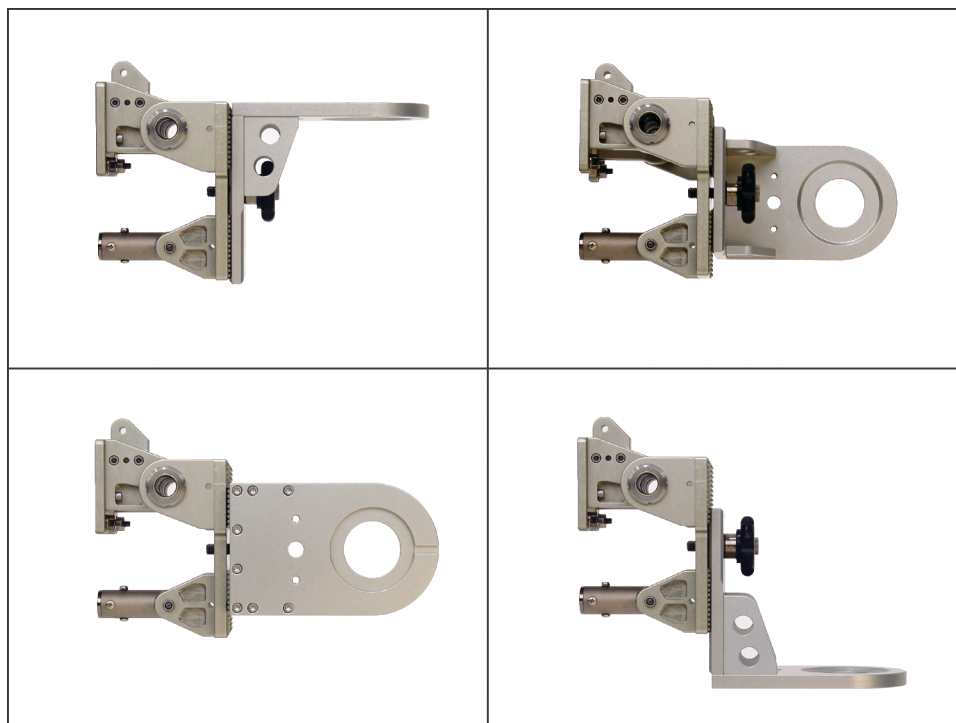


Figure 70

Four of the possible positions of the angle plate.

COLOR
OF CABLE
WILL VARY
WITH
LENGTH
OF JIB

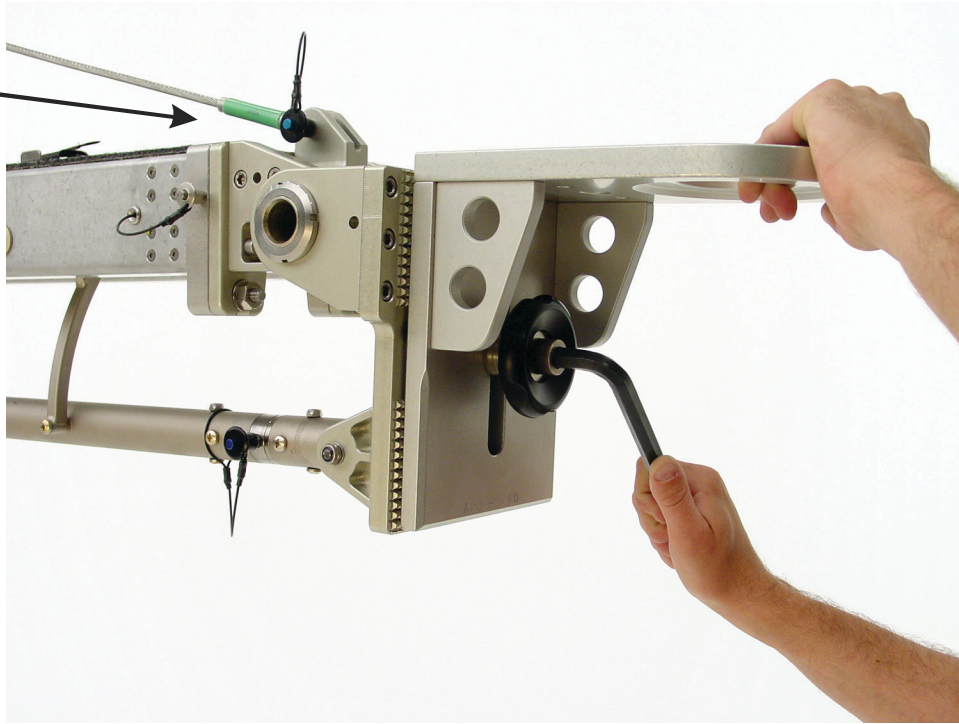


Figure 71

Tighten the hand screw.

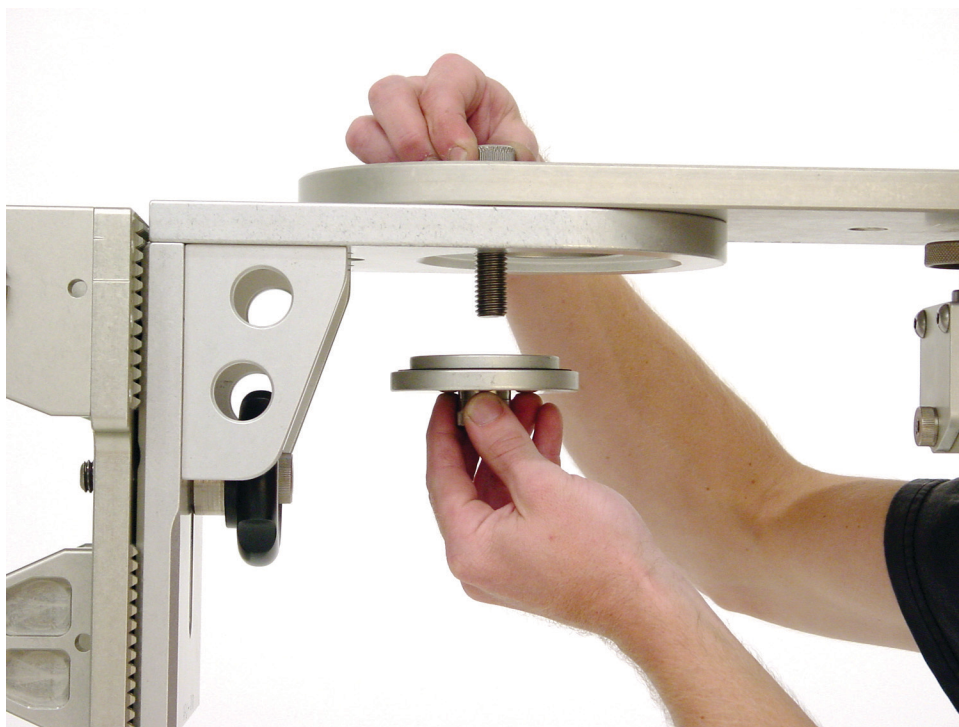


Figure 72

Use the washer and cap screw to attach the leveling offset to the angle plate.

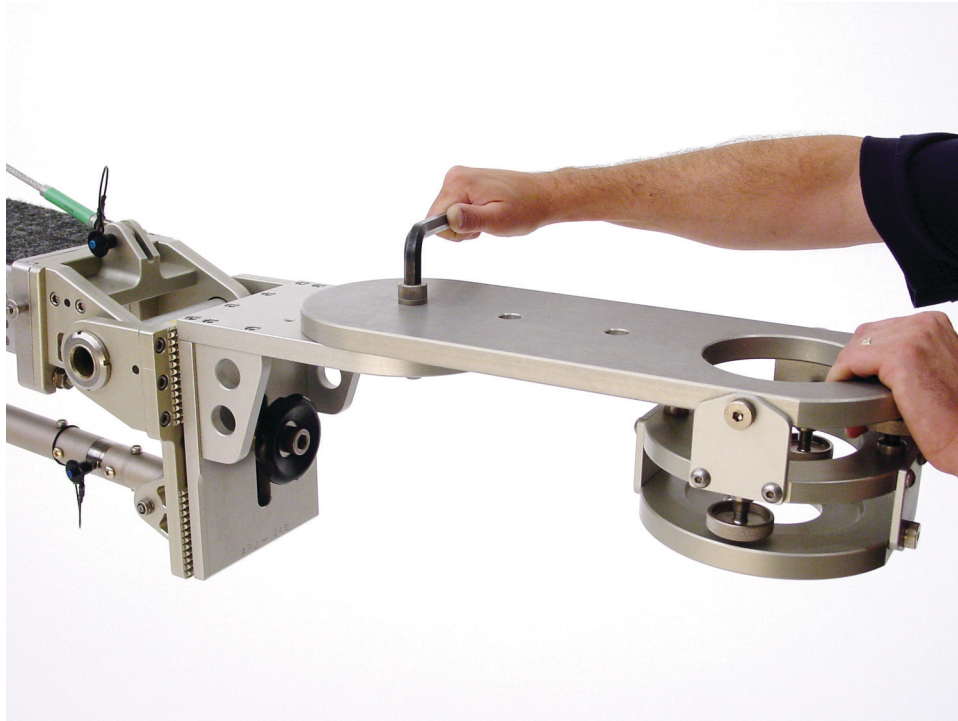


Figure 73

Tighten leveling offset to angle plate. The leveling offset may be mounted facing down as shown, or facing up and may be rotated off to the side.



Figure 74

Place trim weights on top of jib, as required.

All versions stop here because the assembly is finished.

We hope this equipment serves you well. Should you have any questions or comments, please contact J. L. Fisher, Inc., in the United States at (818) 846-8366.

Additional Model 23 Jib Information



Jib Arm ready for air or common carrier shipment.

Weights and Dimensions for Shipment (Long Term)

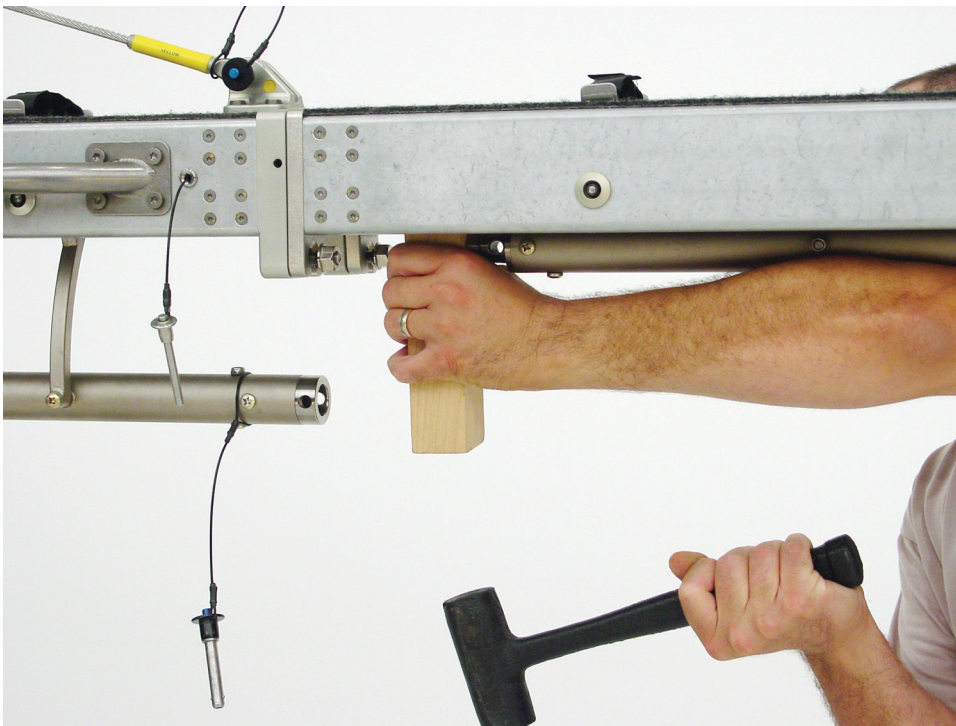
<u>Equipment</u>	<u>Weight</u>	<u>Dimensions</u>
Utility Cart Full without Main Section, In a Crate.	826 lbs. (374.5 kg)	60" L x 38" W x 70" H (152.5 cm L x 96.5 cm W x 177.8 cm H)
Shipping Case with Main Section, Angle Plate, LOF, Hardware & 4 Casters.	252 lbs. (114.3 kg)	82" L x 15" W x 27" H (208.3 cm L x 38.1 cm W x 68.6 cm H)
WCA & WCB Weight Carts in a Crate. 28 Large Weights and 4 Small Weights.	565 lbs. (256.3 kg)	37" L x 26" W x 49" H (94 cm L x 66 cm W x 124.5 cm H)
Two WCC Weight Carts in a Crate. 32 Large Weights.	589 lbs. (267 kg)	37" L x 26" W x 49" H (94 cm L x 66 cm W x 124.5 cm H)
Total Weight:	2232 lbs. (1012 kg)	



Jib Arm ready for local shipment.

Weights and Dimensions for Shipment (Local)

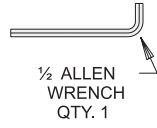
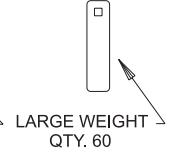
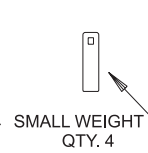
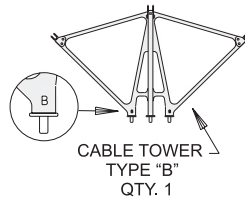
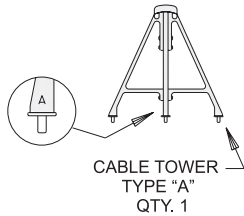
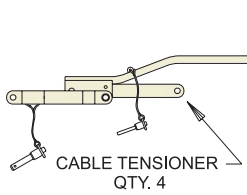
<u>Equipment</u>	<u>Weight</u>	<u>Dimensions</u>
Utility Cart Full and Main Section with Covers (Not Shown)	643 lbs. (292 kg)	79" L x 28" W x 72" H (200.7 cm L x 71.1 cm W x 182.9 cm H)
Weight Carts WCA	215 lbs. (97.6 kg)	23" L x 17" W x 43" H (58.4 cm L x 43.2 cm W x 109.2 cm H)
WCB	267 lbs. (121.2 kg)	
WCC	242 lbs. (109.9 kg)	
WCC	242 lbs. (109.9 kg)	
Total Weight:	1609 lbs. (730 kg)	



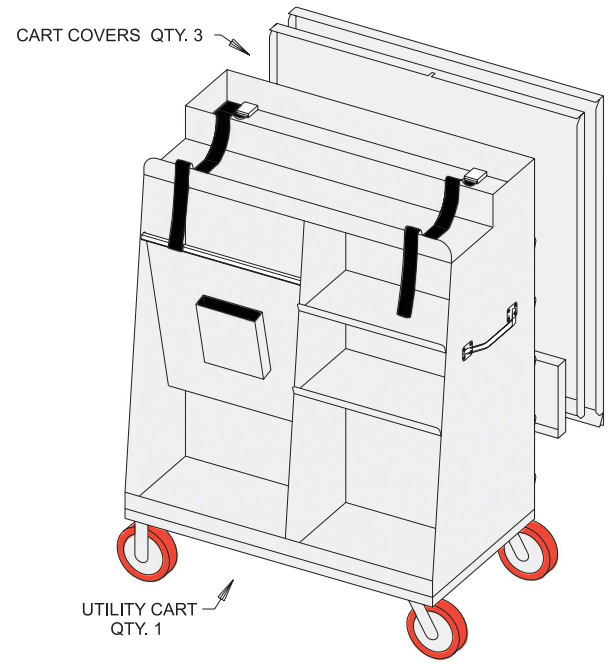
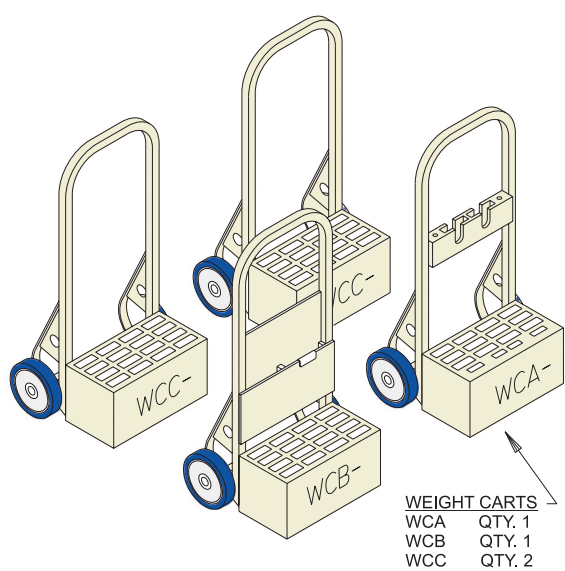
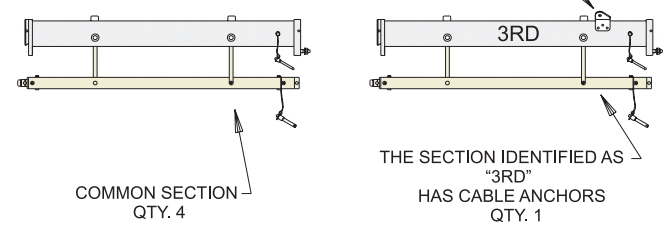
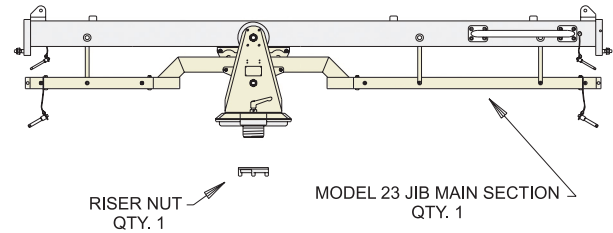
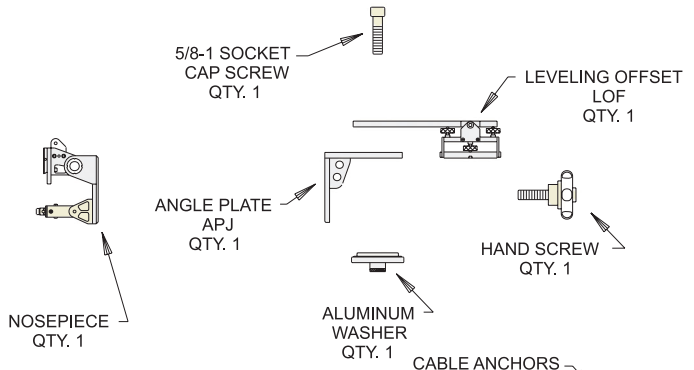
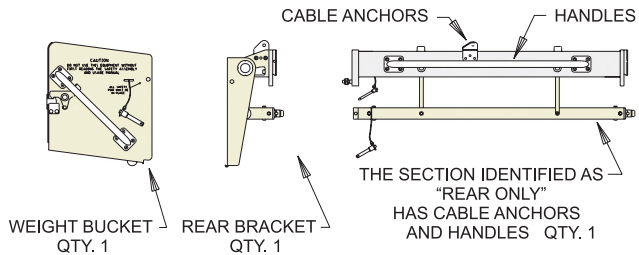
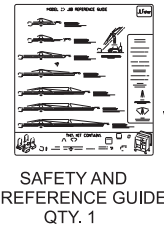
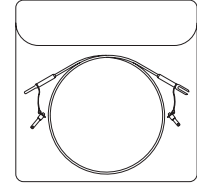
Should a coupling stick, place a wood block against the section to be removed and gently tap the block with a hammer. Never hammer directly on the jib.

Parts List

THIS KIT CONTAINS



7 CABLES IN 6 BAGS
QTY. 1 YELLOW
1 RED
2 BLUE
1 GREEN
1 WHITE
1 BLACK



J. L. Fisher, Inc.
Model 23 Jib

Appendix A

Courtesy of AMPTP/CSATF
(As of the print date shown, this is the most recent version of the document.
Please refer to their web site, www.csatf.org, for the latest version.)

INDUSTRY-WIDE LABOR-MANAGEMENT SAFETY COMMITTEE

SAFETY BULLETIN #25

CAMERA CRANES

This Safety Bulletin pertains to the safe assembly and usage of powered and manually operated, counterbalance camera cranes used for the purpose of television and film production. This Safety Bulletin may also be applicable to jib arms and similar types of units. Please consult Safety Bulletin #8 (*Guidelines for Insert Camera Cars*) when camera cranes are used in conjunction with insert cars, tow dollies or process trailers.

1. Each camera crane should be accompanied by an assembly/usage manual supplied by the manufacturer/vendor. The manual clearly shows assembly instructions, maximum payload and maximum gross weight in all configurations, safety precautions, and maintenance procedures. Where different, manufacturer's/vendor's instructions shall supersede this Safety Bulletin. Read and follow all manufacturer's placards on the equipment.
2. Only persons trained in the safe use of camera cranes should assemble and/or operate these cranes.
3. When used, camera cranes should be inspected daily by qualified personnel (e.g., key grip, camera crane/dolly grip, vendor's representative, or other qualified personnel as determined by the Producer), following an inspection protocol supplied by the manufacturer/vendor. If components are missing, damaged or improperly fitted, the equipment should be removed from service. Missing or damaged components are to be replaced or repaired in accordance with the manufacturer's/vendor's procedures prior to the equipment being returned to service.
4. Using the largest base that is practical increases the stability of the unit. The appropriate base for a crane is determined by the height, length and total load; refer to the operating manual.
5. The camera crane base should be on a flat and level surface, platform or track system capable of supporting the intended load. The weight of all personnel, equipment and the camera crane should be taken into consideration.
6. The payload on the boom arm should not exceed that which can be balanced by the counterweight system supplied with the equipment. Additional counterbalance weight that is above and beyond that specified by the manufacturer/vendor should not be used. The manufacturer/vendor should be consulted regarding all extension configurations that are not explicitly specified in the operating manual.
7. Seat belts are to be provided on all camera cranes where passengers are required for operation. Seat belts should be maintained in good condition and used by all passengers.
8. Pushing camera cranes across slopes or over uneven surfaces such as cables, speed bumps, or curbs can cause the unit to flip over.

Safety Bulletins Are Recommended Guidelines Only; Consult All Applicable Rules and Regulations

Issued: December 16, 1998

9. When operating a camera crane, qualified personnel should ensure that there is adequate clearance for operation. Potential obstructions or hazards, such as power lines, helicopter rotors, fire sprinkler heads, etc. should be considered. Qualified personnel and the designated on-set safety coordinator should establish a safe operating zone. The designated on-set safety coordinator should maintain the safe operating zone. Special attention should be given to working around high voltage power lines.

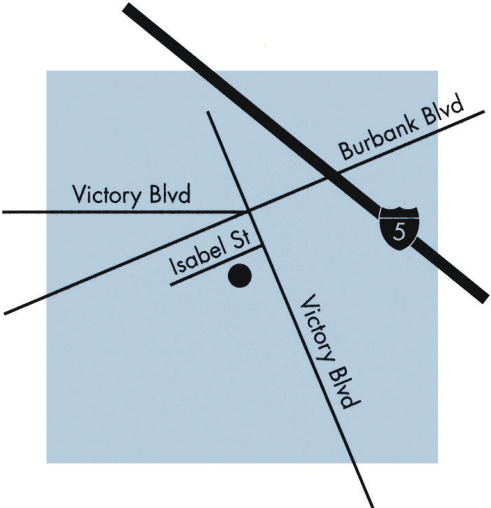
Nominal Voltage	Minimum Required Distance (Feet)
Up to 600 to 50,000	10
over 50,00 to 75,000	11
over 75,00 to 125,000	13
over 125,000 to 175,000	15
over 175,000 to 250,000	17
over 250,00 to 370,000	21
over 370,000 to 550,000	27
over 550,000 to 1,000,000	42
Source: Title 8 California Code of Regulations, Subchapter 5, Group 2, Article 37, Section 2946 29 Code of Federal Regulations 1926.451 (F)(6)	

10. If the camera crane is equipped with outriggers/stabilizers, follow the manufacturer's instructions regarding their proper use. Care should be taken to ensure that the feet of the outriggers/stabilizers will not sink into soft soil or asphalt; otherwise, the unit may flip over. Adequate means of distributing the outrigger/stabilizer load should be used, when appropriate.
11. It is recommended that special care be used when operating camera cranes on curved track. For example, excess speed could cause the unit to flip over.
12. When moving a camera crane on or off the track, the arm weight should be reduced to allow for safe movement so as to reduce the chances of the unit flipping over. Consult manufacturer's/vendor's instructions.
13. When stepping on or off of a camera crane, do so only after approval from the person operating the unit. Stepping off of a balanced camera crane without providing a counter balance (e.g., another person to replace the weight) can cause the arm to elevate rapidly and possibly cause serious injury.
14. Unattended camera cranes should be secured to prevent movement of the unit (e.g., adding or removing manufacturer supplied weights from the weight bucket).
15. When handling uncoated lead weights you should wear appropriate protective gloves and wash hands after use.
16. When operating camera cranes, consideration should be given to wind, rain, extreme heat and cold, and other atmospheric conditions, whether natural or man-made, which can affect the safe use of camera cranes.

Safety Bulletins Are Recommended Guidelines Only; Consult All Applicable Rules and Regulations

Issued: December 16, 1998

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