

**TRIPL-I-TRAC Model 422 Curtain Tracks (Walk along track system)** - Curtain tracks (Model 4200) shall be of 7 gauge extruded aluminum I-Beam construction consisting of a center rib and top, intermediate and bottom flanges. Each curtain carrier (Model 4201) shall be spaced on 12" centers and shall be of steel construction to include two nylon-tired ball-bearing wheels rolling on two separate parallel treads. Each curtain carrier shall consist of a free-moving plated swivel to accommodate curtain snap hook. Two rubber bumpers shall be attached to each carrier to function as noise reducers, a bumper to be placed on each of the two flanges at one side. Nylon snap-on spacers shall be attached to wheel supports of curtain carriers. Track shall be rigidly supported from ceiling clamps (Model 4223) or hanging clamps (Model 4208). 1-1/2" I.D. stiffening pipe or the equivalent shall be used to support both straight and curved areas of all suspended curved tracks. The manufacturer shall furnish four end stops (Model 4209) for placement at track ends.

Model 422 as manufactured by Automatic Devices Company of Allentown, PA.

**TRIPL-I-TRAC Model 420 Curtain Tracks** - Curtain tracks (Model 4200) shall be of 7 gauge extruded aluminum I-Beam construction consisting of a center rib and top, intermediate and bottom flanges. Each curtain carrier (Model 4201) shall be spaced on 12" centers and shall be of steel construction to include two nylon-tired ball-bearing wheels rolling on two separate parallel treads. Each curtain carrier shall consist of a free-moving plated swivel to accommodate curtain snap hook. Live-end (Model 4203) and Dead-end (Model 4204) pulley blocks shall be equipped with sleeve-bearing wheels adequately guarded. Two rubber bumpers shall be attached to each carrier to function as noise reducers, a bumper to be placed on each of the two flanges at one side. Nylon snap-on spacers shall be attached to wheel supports of curtain carriers. The manufacturer shall furnish two end stops (Model 4209) for placement at track ends and a tension floor pulley (Model 2865) for increasing cord tension. Track shall be rigidly supported from ceiling clamps (Model 4223) or hanging clamps (Model 4208). Stretch-resistant operating cord (Model 1728 for hand operating tracks and Model 3529 for machine operated tracks) shall have synthetic or wire center and shall be of 1/4" or 3/16" diameter. Curves require ball-bearing spindles (Models 4258 & 4259) and ball-bearing idlers (Model 4260). 1-1/4" I.D. stiffening pipe or the equivalent shall be used to support both straight and curved areas of all suspended curved tracks.

Model 420 as manufactured by Automatic Devices Company of Allentown, PA.

**TRIPL-I-TRAC Model 420--R Curtain Tracks** - Curtain tracks (Model 4200) shall be of 7 gauge extruded aluminum I-Beam construction consisting of a center rib and top, intermediate and bottom flanges. Each curtain carrier (Model 4237) shall be spaced on 12" centers and shall be of steel construction to include two solid nylon wheels rolling on two separate parallel treads. Each curtain carrier shall consist of a free-moving plated swivel to accommodate curtain snap hook. Live-

end (Model 4203) and Dead-end (Model 4204) pulley blocks shall be equipped with sleeve-bearing wheels adequately guarded. Two rubber bumpers shall be attached to each carrier to function as noise reducers, a bumper to be placed on each of the two flanges at one side. Nylon snap-on spacers shall be attached to wheel supports of curtain carriers. The manufacturer shall furnish two end stops (Model 4209) for placement at track ends and a tension floor pulley (Model 2865) for increasing cord tension. Track shall be rigidly supported from ceiling clamps (Model 4223) or hanging clamps (Model 4208). Stretch-resistant operating cord (Model 1728 for hand operating tracks and Model 3529 for machine operated tracks) shall have synthetic or wire center and shall be of 1/4" or 3/16" diameter. Curves require ball-bearing spindles (Models 4258 & 4259) and ball-bearing idlers (Model 4260). 1-1/4" I.D. stiffening pipe or the equivalent shall be used to support both straight and curved areas of all suspended curved tracks. Model 420-R as manufactured by Automatic Devices Company of Allentown, PA.

**TRIPL-I-TRAC Model 421 Curtain Tracks (Straight track system)** - Curtain tracks (Model 4200) shall be of 11 gauge extruded aluminum I-Beam construction consisting of a center rib and top, intermediate and bottom flanges. Each curtain carrier (Model 4201) shall be spaced on 12" centers and shall be of steel construction to include two nylon-tired ball-bearing wheels rolling on two separate parallel treads. Each curtain carrier shall consist of a free-moving plated swivel to accommodate curtain snap hook. Live-end (Model 4203-B) and Dead-end (Model 4204) pulley blocks shall be equipped with sleeve-bearing wheels adequately guarded. Two rubber bumpers shall be attached to each carrier to function as noise reducers, a bumper to be placed on each of the two flanges at one side. Nylon snap-on spacers shall be attached to wheel supports of curtain carriers. The manufacturer shall furnish two end stops (Model 4209) for placement at track ends and a tension floor pulley (Model 2865) for increasing cord tension. Track shall be rigidly supported from ceiling clamps (Model 4223) or hanging clamps (Model 4208). Stretch-resistant operating cord (Model 1728 for hand operating tracks and Model 3529 for machine operated tracks) shall have synthetic or wire center and shall be of 1/4" or 3/16" diameter. 1-1/4" I.D. stiffening pipe or the equivalent shall be used to support both straight and curved areas of all suspended curved tracks.

Model 421 as manufactured by Automatic Devices Company of Allentown, PA.

**TRIPL-I-TRAC Model 421-R Curtain Tracks (Straight track system)** - Curtain tracks (Model 4200) shall be of 11 gauge extruded aluminum I-Beam construction consisting of a center rib and top, intermediate and bottom flanges. Each curtain carrier (Model 4237) shall be spaced on 12" centers and shall be of steel construction to include two solid nylon wheels rolling on two separate parallel treads. Each curtain carrier shall consist of a free-moving plated swivel to accommodate curtain snap hook. Live-end (Model 4203-B) and Dead-end (Model 4204) pulley blocks shall be equipped with sleeve-bearing wheels adequately guarded. Two rubber bumpers shall be attached to each carrier to function as noise reducers, a bumper to be placed on each of the two flanges at one side.

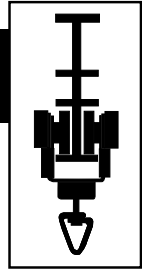
Nylon snap-on spacers shall be attached to wheel supports of curtain carriers. The manufacturer shall furnish two end stops (Model 4209) for placement at track ends and a tension floor pulley (Model 2865) for increasing cord tension. Track shall be rigidly supported from ceiling clamps (Model 4223) or hanging clamps (Model 4208). Stretch-resistant operating cord (Model 1728 for hand operating tracks and Model 3529 for machine operated tracks) shall have synthetic or wire center and shall be of 1/4" or 3/16" diameter. Curves require ball-bearing spindles (Models 4258 & 4259) and ball-bearing idlers (Model 4260) r. 1-1/4" I.D. stiffening pipe or the equivalent shall be used to support both straight and curved areas of all suspended curved tracks.

Model 421-R as manufactured by Automatic Devices Company of Allentown, PA.

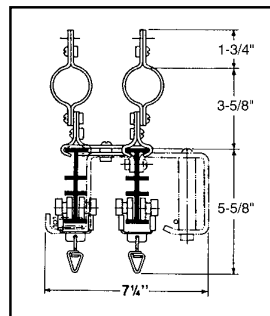
**TRIPL-I-TRAC Model 422-R Curtain Tracks (Walk-along track system) -**

Curtain tracks (Model 4200) shall be of 11 gauge extruded aluminum I-Beam construction consisting of a center rib and top, intermediate and bottom flanges. Each curtain carrier (Model 4237) shall be spaced on 12" centers and shall be of steel construction to include two nylon wheels rolling on two separate parallel treads. Each curtain carrier shall consist of a free-moving plated swivel to accommodate curtain snap hook. Two rubber bumpers shall be attached to each carrier to function as noise reducers, a bumper to be placed on each of the two flanges at one side. Nylon snap-on spacers shall be attached to wheel supports of curtain carriers. Track shall be rigidly supported from ceiling clamps (Model 4223) or hanging clamps (Model 4208). Curves shall be formed on-the-job or at the factory. This model track system is for walk-along operation only and does not include pulleys or other operating hardware. 1-1/4" I.D. stiffening pipe or the equivalent shall be used to support both straight and curved areas of all suspended curved tracks.

Model 422-R as manufactured by Automatic Devices Company of Allentown, PA.

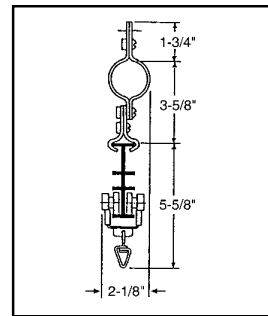


Model 422 Assembly



Cross Section  
of 420 Track at  
Center Overlap

Min. pocket width: 8 in.



Cross Section  
of 422 Track

Min. pocket width: 4 in.

**TRIPL-I-TRAC® MODEL 420**

TRIPL-I-TRAC is a heavy-duty I-beam track consisting of four flanges designed to support heavier-than-usual curtains. It is recommended for very heavy curtains on stages and TV studios as well as gym divider installations.

Model 420 is used in corded curved applications and utilizes spindles and idler brackets (charged as extras) for guiding the operating cord along curved areas. The track channel can be curved in the field with the use of a Bending Tool, or at the factory, to a minimum 2' radius.

**NOTE: Model 420 cannot be used for reverse curving or serpentine layouts.**

Model 422 is used for walk-along applications where the operator walks the curtain open and closed. No cables, cords, or pulleys are used with this type of system. The track channel can be curved in the field with the use of a Bending Tool, or at the factory, to a minimum 2' radius.

When ordering, advise whether the track is to be ceiling-mounted or suspended.

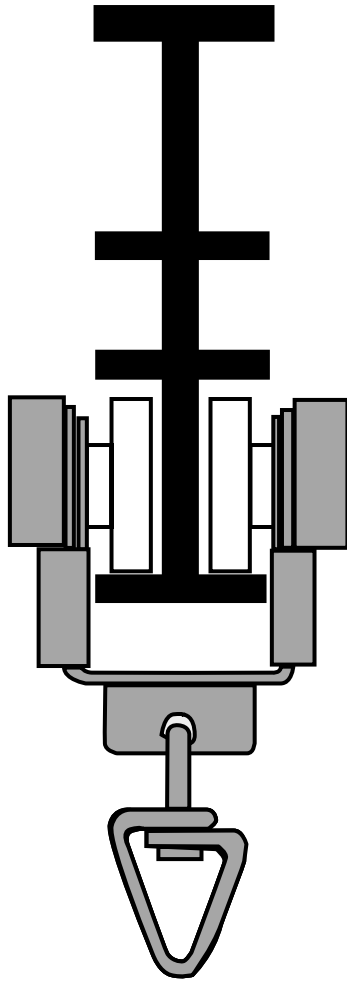
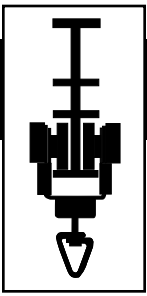
Manually-operated cord-drawn curved tracks require more effort in pulling power than straight tracks. Therefore, motorized track systems should be used especially where sharp curves or long runs are involved.

**MODELS 420, 420-R, 421-R, 422 AND 422-R**

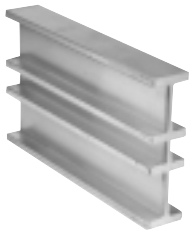
The above models are essentially identical to their counterpart models for the 140 Series described on page 50.

**IMPORTANT NOTE: A SCALED DRAWING OR TEMPLATE IS REQUIRED FOR THE QUOTATION AND FABRICATION OF ALL CURVED TRACK SYSTEMS IN ORDER TO DETERMINE THE LOCATION AND QUANTITY OF SPLICES, SPINDLES AND IDLERS.**





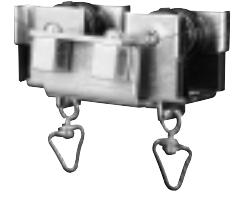
Full Size End View

**No. 4200 Channel**

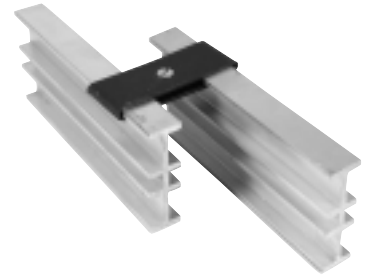
1' - 1 lb. 8 oz.  
7 gauge extruded aluminum, mill-finish. Obtainable in unspliced lengths up to 20'. Curved on-the-job or at the factory (optional) to a 2' minimum radius. Flange above carrier prevents tilting or climbing of carrier.  
Approximately: 1" wide x 3-3/8" high.

**No. 4201 Single Carrier [4201-BL]**

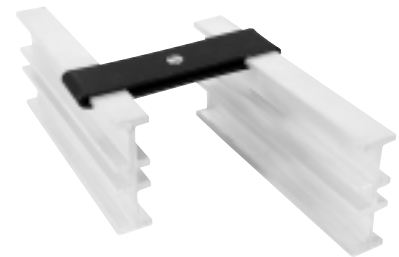
1 - 4 oz.  
Carrier spacing: 12". Plated steel block supported from 2 nylon-tired ball-bearing wheels. Snap-on nylon spacers reduce noise and friction.  
Width: Approximately 1-3/8".

**No. 1402 Master Carrier [1402-BL]**

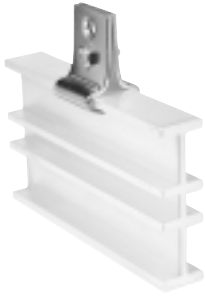
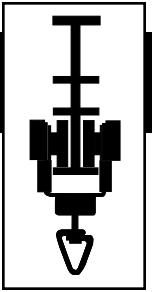
1 - 12 oz.  
Used with Model 420 track systems. Plated steel pivoting block assembly constructed supported from 4 nylon tired ball-bearing wheels. Snap-on nylon spacers reduce noise and friction. 2 cord connectors provided for clamping cord to carrier assembly.  
Width: Approximately 4".

**No. 4207 Lap Clamp**

1 - 6 oz.  
For securing double-sectioned track at center overlap.

**No. 4207-A Lap Clamp**

1 - 8 oz  
For securing double-sectioned track at center overlap of continuously curved track systems.



**No. 4208 Hanging Clamp [4208-BL]**

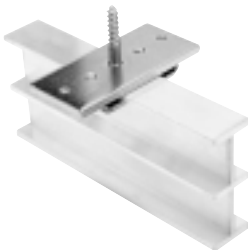
1 pr. - 2-1/2 oz.  
Recommended spacing: 4' with additional units in curves and stack areas. Pipe batten recommended for suspended curved tracks.  
Sold in pairs.



**No. 4209 End Stop [4209-BL]**

1 pr. - 2-1/2 oz.  
Identical to No. 4208 except installed in inverted position at bottom of channel. Prevents carriers from moving beyond selected position in track.

Should not be used with Rotodrapers. Use bolt and nut through web of track for Rotodrapers.



**No. 1423 Ceiling Clamp [1423-BL]**

1 - 6 oz.  
Used to attach track directly to overhead structure. Recommended spacing 5' with additional units in curves and stack areas. Approximately: 3-1/4" wide x 1-1/2" long x 3/16" high



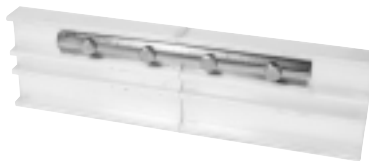
**No. 4223 Ceiling Clamp [4223-BL]**

1 - 6 oz.  
Recommended spacing: 5' with additional units in curves and stack areas. For use in ceiling mounted installations. Adjustable to any location. One piece construction must be slid onto track prior to lifting track into place. Approximately: 3-3/4" wide x 1-1/2" long.



**No. 4224 Splicing Clamp [4224-BL]**

1 pr. - 11 oz.  
Lock plate for joining track sections assuring proper vertical and horizontal track alignment. Approximately: 8-1/4" long x 1" wide.  
**NOTE: Channel must be straight at splices.**



**No. 4224-B Splicing Clamp [4224-BBL]**

1 pr. - 11 oz.  
Lock plate for joining and extending track sections assuring proper vertical and horizontal track alignment. Used for continuously curved tracks only. Radius at splice must be specified. Approximately: 8-1/4" long x 1" wide.



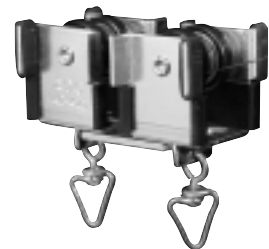
**No. 4225-A Rubber Bumper**

Used on single carriers, mounted to pulley side of carrier body to provide bumper action.



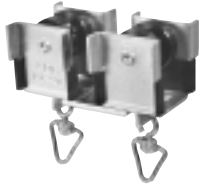
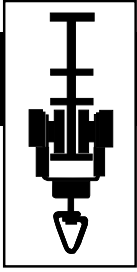
**No. 4237 Single Carrier**

1 - 4 oz.  
Carrier spacing: 12". Plated steel block supported from 2 solid nylon wheels. Snap-on nylon spacers reduce noise and friction. Width: Approximately 1-3/8".



**No. 4252 Walk-Along Master Carrier [4252-BL]**

1 - 8 oz.  
Used with Models 422 and 142 tracks. Plated steel pivoting block assembly supported from 4 nylon-tired ball-bearing wheels. Snap-on nylon spacers reduce noise and friction. Width: Approximately 3".



### No. 4253 Walk-Along Master Carrier [4253-BL]

1 – 8 oz.

Used with Models 422-R and 142-R tracks. Plated steel pivoting block assembly supported from 4 solid nylon wheels. Snap-on nylon spacers reduce noise and friction. Width: Approximately 3".



### No. BT-1 Bending Tool

1 - 19 lbs. 4 oz.

48" long x 15" wide x 9" high.  
See page 82 for description of use.



### No. BT-2 Bending Tool

1 – 4 lbs. 14 oz.

Fixed to floor or workbench, track is formed by moving and curving it around Bending Tool. Approximately: 7-1/2" long x 9-1/2" wide x 3-1/2" high.



### No. 4258 Spindle A [4258-BL]

1 – 1 lb.

Used to help guide the operating lines around the track curve. Used on inside of radius on live end half of track system. Spacing and quantity dependent on degree and radius of curve.

**Not included with CWANA systems. Must be ordered separately.**



### No. 4259 Spindle B [4259-BL]

1 – 13 oz.

Used to help guide the operating lines around the track curve. Used on inside of radius on dead end half of track system. Spacing and quantity dependent on degree and radius of curve.

**Not included with CWANA systems. Must be ordered separately.**



### No. 4260 Idler [4260-BL]

1 – 10 oz.

Used to help guide the operating lines around the track curve. Used on outside of radius on dead end half of track system. Spacing and quantity dependent on degree and radius of curve.

**Not included with CWANA systems. Must be ordered separately.**



### No. 4260-A Idler [4260-ABL]

1 – 10 oz.

Used to help guide the operating lines around the track curve on track systems with continuous curves. Used at the overlap.



### No. 4203 Live End Pulley

1 – 2 lbs.

Equipped with 2 oil-impregnated sleeve-bearing nylon wheels. Attaches to the end of the 4200 track.

Pulley width: Approximately 7".

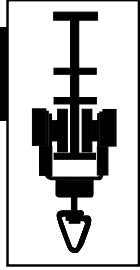


### No. 4203-B Live End Pulley

1 – 2 lbs. 4 oz.

Used with straight track systems (Models 421 and 421-R). Same wheels as Model 1403.

Pulley width: Approximately 3-1/4".



**No. 4204 Dead End Pulley**

1 – 20 oz.  
Equipped with 1 oil-impregnated sleeve-bearing nylon wheel. Attaches to the end of the 4200 track.  
Pulley width: Approximately 5-1/4".



**No. 1728 Cord**

100' - 2 lbs. 4 oz.  
Synthetic center and stretch-resistant. For manually-operated tracks.  
1/4" (No. 8)



**No. 3529 Cable**

100' - 2 lbs. 7 oz.  
Wire center with woven polyester cover. Used with drum-drive machines.  
3/16" (No. 6)



**No. 1713 Pipe Clamp**

for 1" I.D. Schedule 40 pipe  
(1 pr. - 5 oz.)



**No. 1714 Pipe Clamp**

for 1-1/4" I.D. Schedule 40 pipe  
(1 pr. - 7 oz.)



**No. 1715 Pipe Clamp**

for 1-1/2" I.D. Schedule 40 pipe  
(1 pr. - 8 oz.)

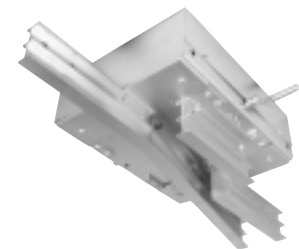
**Need a Rotodrapeer® for a 420 track system?**

The Model 14 Rotodrapeer® is designed to work on 4200 track as well as 1400 track.



**Need a switching device for a 420 Track System?**

We offer both motorized and manual 2-way track switches and fan switches with up to a 5 to 1 configuration for the Model 4200 track.



Please see page 77 for more information on these track switches.

# INSTALLATION INSTRUCTIONS FOR TRIPL-I-TRAC ADC MODELS 422 & 422-R WALK-DRAW SYSTEMS

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**NOTE: IF THE TRACK IS TO BE CURVED OR CUT, DO SO FIRST. BE SURE TO FILE ALL CUT ENDS AND REMOVE ALL BURS AND FILINGS FROM TRACK, AS THEY CAN CAUSE BINDING AND PREMATURE WEAR ON THE CARRIERS. IF CUTTING IS REQUIRED, THEN IT WILL BE NECESSARY TO RE-DRILL THE HOLES FOR THE SPLICE CLAMPS. IF RE-DRILLING OF THE SPLICE HOLES IS REQUIRED, MAKE SURE THAT THE TRACK SECTIONS ARE PROPERLY ALIGNED BEFORE DRILLING.**

## **I. SUSPENDED INSTALLATIONS:**

Hanging clamps are used for this type of installation, they can be mounted to the track at this time. The maximum recommended space between hanging clamps is 4 feet. Additional clamps are required at curves and splices.

1. Place the track and curves (if used) on the floor or a stable support for assembly.
2. If a center overlap is desired, overlap the tracks by the amount desired and attach the lap clamps to the track. Note that a minimum of 2 lap clamps should be used.
3. Check all cut track ends for burrs and file if needed. Make all splices at this time. See splicing instructions and drawings for track being used. Splice bars for the model 4200 track fit in the area between the upper middle and top flange of the track., One bar on each side. Be sure to check alignment of track vertical and horizontal components at the splice.
4. Insert the single and master carrier into the track sections. The master carriers need to be between the center overlap end of the section and the single carriers.
5. Install end stops to all open ends of the track system with the hardware provided.
6. Locate the positions for the hanging clamps and secure them to the track with the hardware provided. Note: that hanging clamps should be placed on either side of, and as close to, splices as possible. Also, hanging clamps should be located before and after curves if the radii are small, and along the curve if the radii are large.
7. It may be desirable to attach chains between carriers, especially on long tracks, or on tracks with heavy curtains where curtains will be pulled from either end. The chains will relieve the strain on the top of the curtain. It is often easier to push the folded curtain around curves rather than pull it around the curve from one end.

## **II. CEILING MOUNT INSTALLATIONS:**

This type of mounting can be installed one of two ways.

**Type 1.** Loosely attach the ceiling clamp's base plate to the track with the side pressure plates provided. The clamps can be installed on the track on the ground and slid to the proper mounting position when the track is lifted into place. Once in position the base plate is fixed to the ceiling using the two outside mounting holes. Once the base plate is bolted to the ceiling, the side pressure plate bolts are tightened.

**Type 2.** Scribe a line on the ceiling that follows the track centerline. Mount the base plates to the ceiling, centering them on the line. Use the center, countersunk hole to mount the base plate. Lift track into position and secure it to the ceiling clamp using the side pressure plates provided.

1. Place the track and curves (if used) on the floor or a stable support for assembly.
2. If a center overlap is desired, overlap the tracks by the amount desired and mark tracks on bottom flange with end location of opposite track.
3. Check all cut track ends for burrs and file if needed. Make all splices at this time. See splicing instructions and drawings for track being used. Splice bars for the model 4200 track fit in the area between the upper middle and top flange of the track., One bar on each side. Be sure to check alignment of track vertical and horizontal components at the splice.
4. Insert the single and master carrier into the track sections. The master carriers need to be between the center overlap end of the section and the single carriers.
5. Install end stops to all open ends of the track system with the hardware provided.
6. Locate the positions for the ceiling clamps according to the information provided above and secure them to the track with the hardware provided. **Note:** The ceiling clamps should be placed on either side of, and as close to, the splices as possible. Also, ceiling clamps should be located before and after curves if the radii are small, and along the curve if the radii are large.
7. It may be desirable to attach chains between carriers, especially on long tracks, or on tracks with heavy curtains where curtains will be pulled from either end. The chains will relieve the strain on the top of the curtain. It is often easier to push the folded curtain around curves rather than pull it around the curve from one end.

**Important notes:**

- It is essential that the track be properly aligned when mounted and spliced. If the track is not aligned, the carriers will not travel properly, especially at the splice joints.
- If the track is not a closed loop, the carriers may be added after the track is installed. If it is a closed loop, the carriers must be added before the final section of track is spliced.
- Four wheeled master carriers should be used on all leading edges of the curtain. Using master carriers on the leading edges of the curtain will help eliminate the tipping tendency of the carriers and make for a smoother operation.
- End stops must be added at all track ends to ensure safe operation. A baton or tow line should be attached to all leading edge master carriers.
- A 1 1/4" pipe batten back-bone or equivalent is recommended for all suspended tracks to reduce SWAY AND PROVIDE ADDITIONAL SUPPORT FOR THE TRACK.

# INSTALLATION INSTRUCTIONS FOR TRIPL-I-TRAC MANUALLY OPERATED MODELS 420 AND 420-R BI-PART OPERATION

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## **I. SUSPENDED TRACK** (bi-part operation)

1. If the track is to be curved in the field, curve it now. Please refer to ADC Form 404 for the curving procedure for this track, using the BT-2 bending tool. If track must be spliced, this should also be done at this time. Please refer to splicing instructions for suspended track systems (DWG A-4224). Make sure that the track sections will not be too large to handle.
2. Attach the live-end and dead-end pulleys to the appropriate ends of the track with the hardware provided. To properly align the live-end pulley make sure that it is on the inside of the curve and that the top wheel of the pulley is closest to the end of the track.

**NOTE: The live-end pulley mounting plate is supplied with two (2) sets of mounting holes to allow the pulley wheels to be reversed allowing the assembly to be mounted at either end of the track system.**

Attach a 4209 end stop through the track in front of the live-end pulley to prevent the curtain from interfering with the pulley's operation.

3. Clamp the two sections of track together at the center lap with the lap clamps and hardware provided. The track section with the live-end pulley should be the "front" (audience side) track at the center over-lap.
4. Insert an equal amount of single carriers into the two (2) track sections. The carrier can be inserted at the open ends of the track at the center overlap. Insert a master carrier into each side of the track system, making sure that the cord connectors on each master face the inside of the track curves.
5. Install the combination end-stop/cord hook assembly at the center overlap. This device will be used to guide the cord through the overlap. Hanging clamps can also be attached at this time. Spacing for the hanging clamps is 4 feet or less, with additional supports used at curves and the ends of the track.
6. The location of the spindles and idlers varies according to the amount of curve and the curve's radius. The spindles and idlers always mount to the track between the top and middle flange. Refer to ADC form 442 for further information.

**Track layouts featuring a continuous curve require 4258 Spindle B's and 4260-A idlers at the overlap for cord alignment. The large 4207-A lap clamps is also used to provide 4" spacing between the track sections at the overlap.**

HARDWARE

4258 SPINDLE A

4259 SPINDLE B

4260 IDLER

TRACK LOCATION

INSIDE CURVE, LIVE-END HALF

INSIDE CURVE, DEAD-END HALF

OUTSIDE CURVE, DEAD-END HALF

7. The assembled track can now be raised and mounted in its permanent position.

**CORDING THE 420 CURVED TRACK SYSTEM**

1. Position the cord coil under the live-end pulley. Take one end of the coil and thread it up over the top wheel of the live-end pulley, and continue around the inside of the curved track threading the cord through the TOP of the 4258 spindle A's.
2. When the overlap is reached, thread the cord through the combination end stop/cord hook and continue along the inside of the curve. On continuous curve track lay-outs, the cord would pass through the 4260-A idler and 4259 Spindle B's at the overlap.
3. The cord should now be ready to be threaded through the cord connectors of the master carrier on the dead-end half of the track. Do not tighten these connectors at this time.
4. Continue along the inside of the curve of the dead-end half of the track system, threading the cord around the 4259 spindle B's to the dead-end pulley.
5. When the dead-end pulley is reached, run the cord around the pulley wheel and to the outside of the curve. The cord should now line up with the idler wheels on the outside of the dead-end section of the track. Thread the cord around the OUTSIDE of these wheels, to the master carrier of the opposite, (live-end) half of the track system. When the master carrier is reached, attach the cord to the NEAREST cord connector on the master carrier and tighten this connection.
6. Thread the other end of the cable coil through the floor pulley, align the floor pulley with the live-end pulley, and secure the floor pulley to the floor. Continue threading the operating cord up and over the lower wheel of the live-end pulley, then along the inside of the curve of the live-end half of the track system, threading the cord around the ROLLER TUBE of the 4258 spindle A's to the master carrier located on the live-end half of the track system.
7. Insert the end of the cord through the second cord connector of the master carrier and remove the slack from the system. Tighten the cord connector.
8. Slide each master carrier toward the center overlap, as far as they will travel. Tighten the remaining cord connectors. The track is now ready for the curtain installation.

**II. CEILING MOUNTED TRACK SYSTEMS** (bi-part operation)

1. If the track is to be curved in the field, curve it now. Please refer to ADC Form 404 for the curving procedure for this track, using the BT-2 bending tool. If track must be spliced, this should also be done at this time. Please refer to splicing instructions for suspended track systems (DWG A-4224). Make sure that the track sections will not be too large to handle.
2. Attach the live-end and dead-end pulleys to the appropriate ends of the track with the hardware provided. To properly align the live-end pulley make sure that it is on the inside of the curve and that the top wheel of the pulley is closest to the end of the track.

**NOTE: The live-end pulley mounting plate is supplied with two (2) sets of mounting holes to allow the pulley wheels to be reversed allowing the assembly to be mounted at either end of the track system.**

Attach a 4209 end stop through the track in front of the live-end pulley to prevent the curtain from interfering with the pulley's operation.

3. Ceiling mounted track systems can be attached to the overhead structure one of two ways:
  - TYPE 1.** Loosely attach the ceiling clamp's base plate to the track with the side pressure plates provided. The clamps can be attached to the track on the ground and slid to the proper mounting position when the track is lifted into place. Once in position the base plate is fixed to the ceiling using the two outside mounting holes. Once the base plate is bolted to the ceiling, the side pressure plate bolts are tightened.
  - TYPE 2.** Scribe a line on the ceiling that follows the track centerline. Mount the base plates to the ceiling, centering them on the line. Use the center, counter sunk hole to mount the base plate. Lift track into position and secure it to the ceiling clamp using the side pressure plates provided.
4. With the track secured to the overhead structure, insert an equal amount of single carriers into the two (2) track sections. The carrier can be inserted at the open ends of the track at the center overlap. Insert a master carrier into each side of the track system, making sure that the cord connectors on each master face the inside of the track curves.
5. Install the combination end-stop/cord hook assembly at the center overlap. This device will be used to guide the cord through the overlap.
6. The location of the spindles and idlers varies according to the amount of curve and the curve's radius. The spindles and idlers always mount to the track between the top and middle flange. Refer to ADC form 442 for further information.

**Track lay-outs featuring a continuous curve require 4258 Spindle B's and 4260-A idlers at the overlap for cord alignment. Note that a wider overlap is required for these devices.**

HARDWARE

4258 SPINDLE A  
4259 SPINDLE B  
4260 IDLER

TRACK LOCATION

INSIDE CURVE, LIVE-END HALF  
INSIDE CURVE, DEAD-END HALF  
OUTSIDE CURVE, DEAD-END HALF

**CORDING THE 420 CURVED TRACK SYSTEM**

1. Position the cord coil under the live-end pulley. Take one end of the coil and thread it up over the top wheel of the live-end pulley, and continue around the inside of the curved track threading the cord through the TOP of the 4258 spindle A's.
2. When the overlap is reached, thread the cord through the combination end stop/cord hook and continue along the inside of the curve. On continuous curve track lay-outs, the cord would pass through the 4260-A idler and 4259 Spindle B's at the overlap.
3. The cord should now be ready to be threaded through the cord connectors of the master carrier on the dead-end half of the track. Do not tighten these connectors at this time.
4. Continue along the inside of the curve of the dead-end half of the track system, threading the cord around the 4259 spindle B's to the dead-end pulley.
5. When the dead-end pulley is reached, run the cord around the pulley wheel and to the outside of the curve. The cord should now line up with the idler wheels on the outside of the dead-end section of the track. Thread the cord around the OUTSIDE of these wheels, to the master carrier of the opposite, (live-end) half of the track system. When the master carrier is reached, attach the cord to the NEAREST cord connector on the master carrier and tighten this connection.
6. Thread the other end of the cable coil through the floor pulley, align the floor pulley with the live-end pulley, and secure the floor pulley to the floor. Continue threading the operating cord up and over the lower wheel of the live-end pulley, then along the inside of the curve of the live-end half of the track system, threading the cord around the ROLLER TUBE of the 4258 spindle A's to the master carrier located on the live-end half of the track system.
7. Insert the end of the cord through the second cord connector of the master carrier and remove the slack from the system. Tighten the cord connector.
8. Slide each master carrier toward the center overlap, as far as they will travel. Tighten the remaining cord connectors. The track is now ready for the curtain installation.

**NOTES**

- The maximum distance between track supports should not exceed 4'. Additional supports should be added at curves, splices and stack areas.
- Live-end and dead-end pulleys must be anchored firmly to the track.
- Suspended systems should have support lines attached at both ends of the track.
- The distance between carriers should not exceed 1 foot.
- Suspended, curved track should be supported by a 1 1/4" pipe backbone.
- Properly installed track should allow the curtain to traverse without causing any noticeable channel deflection.

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## INSTRUCTIONS FOR USING THE BT-2 BENDING TOOL

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**IMPORTANT NOTE: DO NOT BEND THE TRACK COMPLETELY AROUND THE BENDING TOOL SHOE. THE RADIUS OF THE SHOE IS 7" AND THE MINIMUM RADIUS FOR THE TRACK IS 24". THE TRACK MUST BE ADVANCED AS IT IS BENT ON THE TOOL.**

(READ ALL OF THE FOLLOWING INSTRUCTIONS PRIOR TO CURVING THE TRACK)

1. A full scale chalk drawing of the curved portion of the track must be drawn on the floor, or work bench in order to check curving progress. The radius of this full scale drawing can be drawn using chalk attached to a wooden plank, or string, with a length equal to the radius of the required curve. Be sure to allow at least 1' of straight track at each end of the curve to assure alignment of the track.
2. Use a marker or wax pencil to mark the location of the center of the curve on the top flange of the track.
3. Place marks on the top of the track in both directions out from the center line mark in 3" increments, or a distance of 1.5 times the radius of the curve.
4. Secure the BT-2 tool to the floor, or work bench making sure that ample room exists to walk the track around the tool.
5. Slide the track into the bender and line up the FIRST mark of either end of the marked section with the apex of the tool's shoe.
6. Pull SLIGHTLY on the longest section of track coming out of the shoe. This should put a SLIGHT bend in the track, usually around 5 degrees.
7. Move the track forward or backward in the bender and align the second mark on the track with the apex of the tool's shoe. Pull SLIGHTLY on the longest section of track coming out of the shoe
8. Continue this process, repeating steps 6 and 7 until a slight bend exists at each mark unless the track is beginning to curve more that the drawn template. If this occurs the individual bends are too severe for the overall bend required and must be straightened.
9. Check the track radius against the chalk drawing by laying it on top of the chalk line.
10. In most cases the formed radius will be too large, which is desirable. Repeat steps 5 through 9 until the required curve is formed.
11. If the radius becomes too tight during this process you can remove some of the curve. **The key to bending the track correctly is to bend in small multiple steps**, checking the radius against the chalk line while you do it, avoiding curving the track too tightly.

## INSTRUCTIONS FOR USING THE BT-1 BENDING TOOL

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**IMPORTANT: DO NOT BEND THE TRACK COMPLETELY AROUND THE BENDING TOOL SHOE. THE RADIUS OF THE SHOE IS 7" AND THE MINIMUM RADIUS FOR THE TRACK IS 24". THE TRACK MUST BE ADVANCED AS IT IS BENT ON THE TOOL.**

(READ ALL OF THE FOLLOWING INSTRUCTIONS PRIOR TO CURVING THE TRACK)

1. A full scale chalk drawing of the curved portion of the track must be drawn on the floor or work bench in order to check the curving operation's progress. The radius of this full scale drawing can be drawn using a wooden plank or string with a length equal to the radius of the required curve. Be sure to allow at least 1' of straight track at each end of the curve to assure correct alignment.
2. Use a marker, or wax pencil to mark the location of the center of the curve on the top flange of the track.
3. Place marks on the top of the track in both directions out from the center line mark in 3" increments or a distance of 1.5 times the radius of the curve.
4. Slide the track into the bender and line up the FIRST mark of either end of the marked section with the apex of the bender's shoe.
5. Pull back SLIGHTLY on the bending tool's lever pipe. This should put a SLIGHT bend in the track, usually around 5 degrees.
6. Move the track forward or backward in the bender and align the second mark on the track with the apex of the bender's shoe. Pull back SLIGHTLY on the bending tool's lever pipe.
7. Continue this process until all the marks have a slight bend.
8. Check the track radius against the chalk drawing by laying it on top of the chalk line.
9. In most cases the formed radius will be too large, which is desirable. Repeat steps 4 through 8 until the required curve is formed.
11. If the radius becomes too tight during this process you can remove some of the curve by placing the apex of the curve against a wall, securing one end of the track, and pushing the other end toward the wall. Keep in mind that this is for SLIGHT adjustments only. **The key to bending the track correctly is to bend in small multiple steps**, checking the radius against the chalk line while you do it, avoiding curving the track too tightly.

# SUGGESTED IDLER AND SPINDLE SPACING ON CURVED MODELS 140 AND 420 CURTAIN TRACKS

(BASED ON 90 DEGREE CURVES)

<u>CURVE RADIUS</u>	<u>SPINDLE SPACING</u>	<u>NUMBER REQUIRED</u>	<u>CURVE RADIUS</u>	<u>SPINDLE SPACING</u>	<u>NUMBER REQUIRED</u>
2'	12"	4	24'	72"	8
3'	12"	5	26'	72"	8
4'	18"	5	28'	84"	8
5'	18"	6	30'	84"	9
6'	24"	6	32'	84"	9
7'	24"	6	36'	84"	10
8'	36"	6	40'	84"	11
10'	42"	7	44'	84"	11
12'	42"	7	48'	84"	12
14'	48"	7	52'	84"	13
16'	48"	7	56'	84"	14
18'	60"	7	60'	84"	15
20'	60"	7	64'	84"	16
22'	72"	7			

**NOTES:**

1. On curved, bi-parting tracks where the track is straight at the overlap, an equal amount of spindle A located on the inside of the live-end curve, spindle B located on the inside of the dead-end curve, and idler brackets which are located on the outside of the dead-end curve are required for proper operation.
2. If the track is curved through the overlap, a special 1460A idler bracket is used at the overlap to prevent the operating cord from rubbing against the cut end of the track. Two additional spindles B are also needed inside the overlap.
3. One-way draw tracks require only spindles type A mounted on the inside of the curve, as the cord is always on the inside of the curve.
4. Due to the potential for cord sag, spacing greater than 84" between spindles or idlers is not recommended.



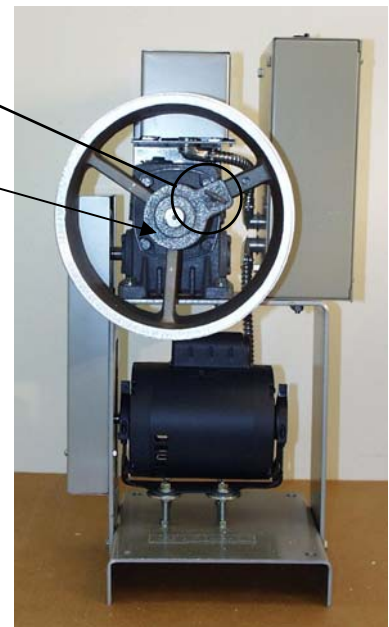
## **CORD ATTACHMENT TO GROOVED CABLE DRUM ADC SILENT STEEL AND BESTEEL MODEL TRACKS**

1. After the cable has been threaded through the pulleys, carriers and track, place the excess cable on the floor beneath the live-end pulley. Make sure to pull at least an extra 5 feet of cord all the way through. At this time the machine should be mounted beneath the live-end pulley. A plumb line may be used to ensure proper alignment between the machine and the live-end pulley.

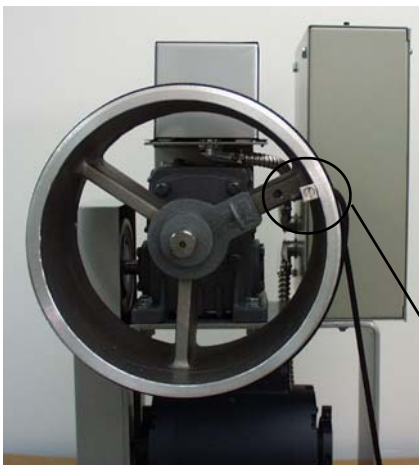
**Thumb Screw**

**Driving Dog**

2. Disengage the drum from the drive shaft by loosening the thumb screw on the driving dog (see [Photo 1](#)). Thread the end of the cable through the hole in one end of the drum.



**Photo 1**



**Photo 2**

3. Fasten the end of cable to the inside of the drum with cord the cable connector provided. The cord clamps will be in a cloth bag, tied to the machine (see [Photo 2](#)).

**Cable Clamp (CF-1)**



4. Following the grooves carefully, wrap the cable the drum to within 4 grooves of the far end of the drum, or with an amount of cable equal to the amount of cable travel required **plus 5 feet**. Remove all slack in the system by pulling the other end of the cable. **Be careful not to make the cord too taut!** Damage to track components and curtain machine may occur **if cable is too taut**.

Note at least 4 empty grooves

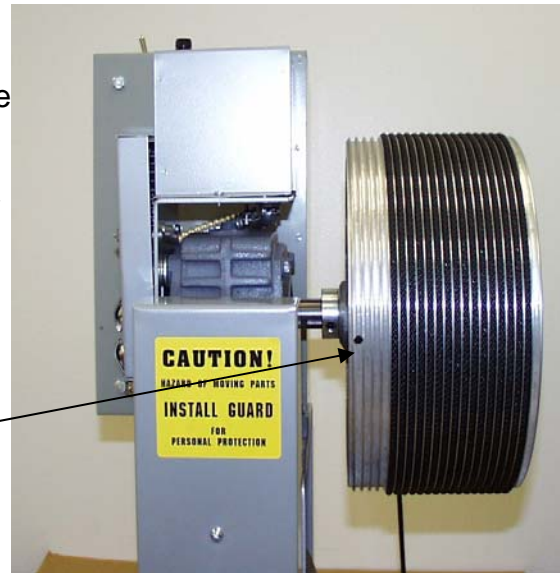


Photo 3

5. **Leaving at least 1 empty groove**, wind 3 wraps of the cord around the drum in the opposite direction of the first cable. Feed the end of the cable through the hole in the drum and **secure** it with a cord connector (see Photo 1). Cut off any excess cable. **Your drum should now look the drum in Photo 4 below.**
6. **Turn the drum until the hole of the driving dog lines up with the hole in the drum spoke.** Engage the drum by tightening the thumb screw. (See photo 1)
7. **The machine is now ready for limit switch adjustment. DO NOT OPERATE THE MACHINE UNTIL THE LIMIT SWITCHES HAVE BEEN SET.** Directions for limit switch adjustment are located **in the machine manual that accompanied the machine.**



Photo 4

Limit switch cover. Limit switches located under cover. **DO NOT REMOVE COVER BEFORE READING MACHINE INSTALLATION MANUAL.**

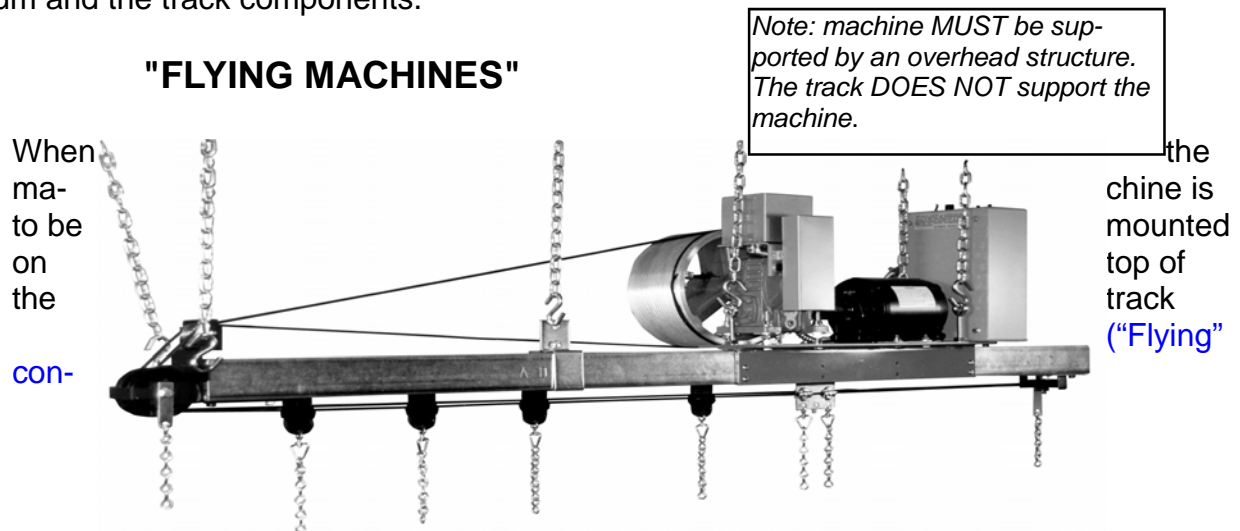
Cable properly loaded on drum.

At least 1 empty groove between cables.



## IMPORTANT NOTES

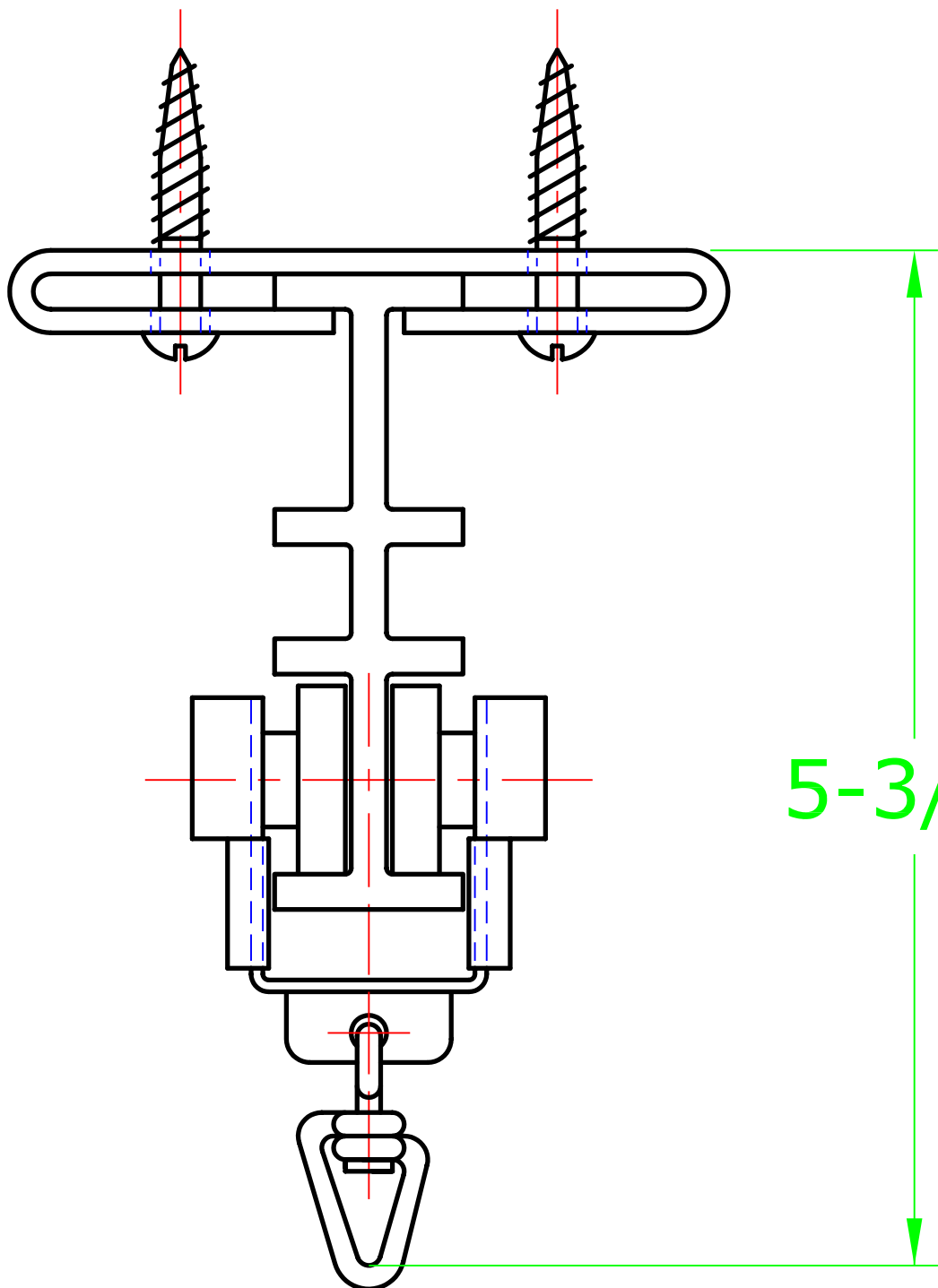
- All wire-centered cable stretches during its first few weeks of use. It is strongly recommended that periodic checks be made, and excess slack be taken **out**, especially during the first few weeks of operation.
- Do not use cable that is larger than what will nest properly in the grooves of the cable drum (**3/16" in most cases**).
- In order to maintain a proper fleet angle, the machine's drum should never be less than 10 feet from the live-end pulley. A plumb line should be run from the center of the live-end pulley to the floor to ensure that the drum is vertically in line with the live-end pulley.
- Always use a covered wire center cable. Uncoated steel cable **will** damage the aluminum drum and the track components.



(**figuration**), follow the previous instructions for threading the cable. Mount the machine to the top of the track with the angle bracket supplied with the machine. Steel track must be drilled and tapped to fasten the angle bracket. Eye bolts for securing the machine to the overhead structure are also furnished on the base. A special live-end pulley must be used to guide the cable up and over the top of the track to the machine. The machine must be mounted to the track at least 10 feet from the flying live-end pulley.

**NOTE: THE MACHINE MUST BE SECURED TO AN OVERHEAD STRUCTURE FROM THE EYEBOLTS OF THE MACHINE BASE. THE TRACK ALONE CANNOT SUPPORT THE WEIGHT AND TORQUE OF THE MACHINE.**

*End of Instructions*



5-3/8"

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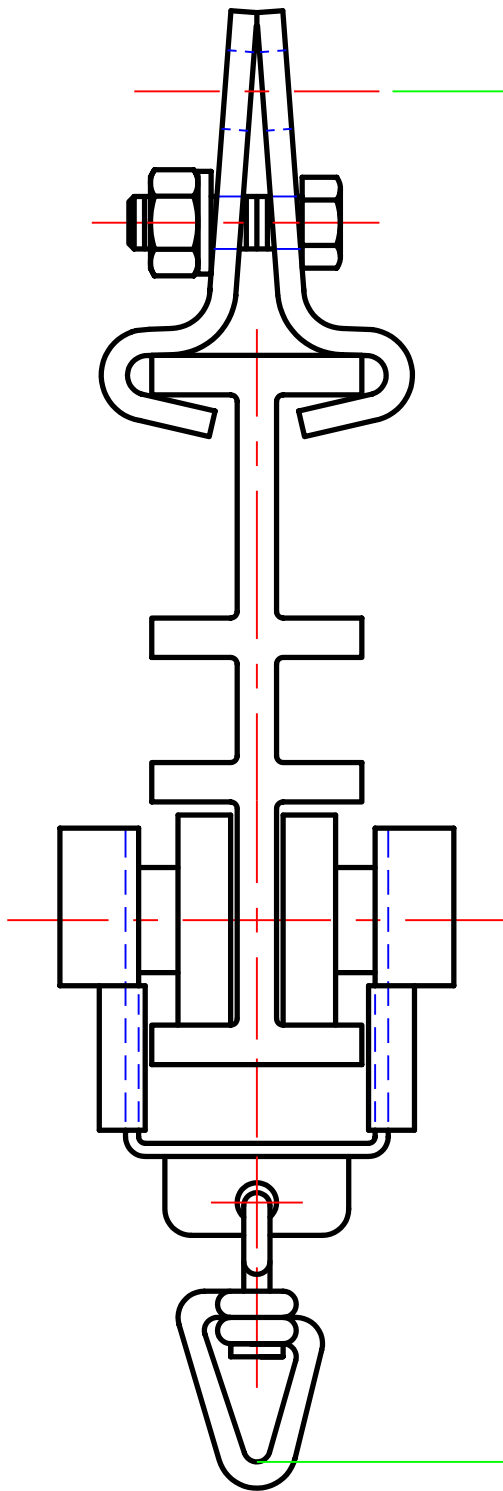
SIZE <b>A</b>	DATE <b>8/23/02</b>	SERIES <b>420</b>
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DRAWN BY <b>JEK</b>	APPROVED BY	DESCRIPTION <b>420 CEILING MOUNT</b>
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SCALE <b>NONE</b>	SHEET <b>1 OF 1</b>	DWG. NO. <b>CAT-420CEIL-02</b>
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REV

DATE:



6-1/2"

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SIZE	DATE	SERIES	
<b>A</b>	<b>8/23/02</b>	<b>420</b>	
DRAWN BY	APPROVED BY	DESCRIPTION	
<b>JEK</b>		<b>420 SUSPENDED</b>	
SCALE	<b>NONE</b>	SHEET	<b>1 OF 1</b>
		DWG. NO.	<b>CAT-420SUS-02</b>