






## **Safety**

Please read this manual carefully and follow its instructions. Improper use or failure to follow these instructions could result in serious injury, death or property damage. Operators should be instructed in the safe and proper use and maintenance of this product. Keep this manual for future reference.

### **The following safety precautions call attention to potentially dangerous conditions.**


-  **WARNING:** Warnings are used when hazards exist which could result in serious injury, death or property damage if proper precautions are not taken.
-  **CAUTION:** Cautions are used as reminders of safety hazards which could result in personal injury or property damage if proper precautions are not taken.

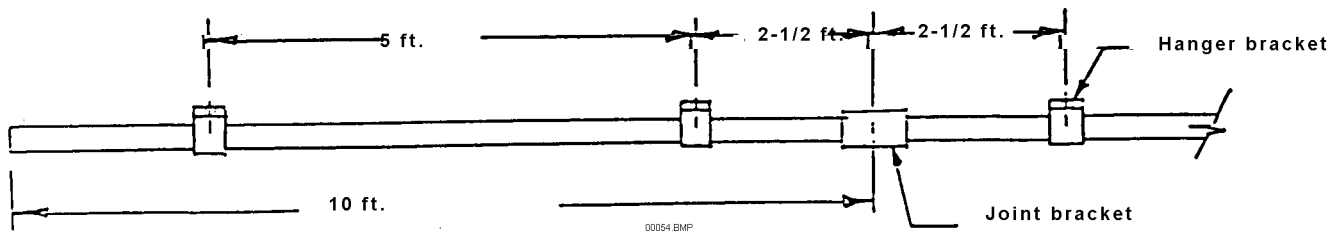
## **Installation**

-  **CAUTION:** Instruct operators in the safe, proper use and maintenance. Keep this manual for future reference.

-  **WARNING** Failure to read, understand, and follow these instructions may result in personal injury or death.

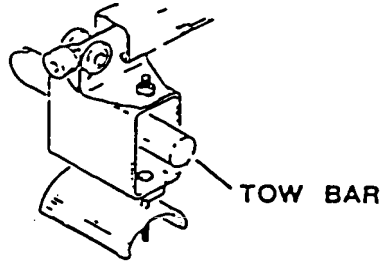
1. Mounting surface--provided by customer. The system hanger brackets must be mounted in line on a continuous surface or series of supports that are on the same horizontal plane. The mounting surface must be structurally sound and designed in accordance with good engineering practices for the intended use.
2. Hanger brackets. Two or more hanger brackets should be used per 10 feet track section. The hanger brackets should be approximately 5 feet apart and located approximately 2-1/2 feet from the end of the track section. If more than two hanger brackets are used per track section, they may be spaced as desired but do not exceed a 5 foot span between them. Do not tighten hanger brackets on the track until all track and joint brackets are in place. When the track sections and joint brackets are in place, tighten the compression screws on the hanger brackets. The screws should be tightened firmly against the track.

-  **CAUTION:** Do not over tighten the compression screws. Make sure the track is not distorted.



3. Track and joint brackets. Assemble all track sections into hanger brackets. Make sure that track ends are firmly together and joint brackets are centered over joints before tightening. Do not over tighten. Pass a trolley back and forth through the joint to insure that the track ends have not been distorted and the trolley passes through smoothly. Tighten hanger brackets as described in item 2.
4. Trolleys and end clamps. Tow--lead--trolley, intermediate trolleys and end clamp can now be assembled into the track. Secure the end clamp to the track by tightening the two bolts provided. The clamp must be assembled with the trolley stop pointed toward the intermediate trolleys. An end stop should be located at the other end of the track to prevent any trolleys from falling out of the system.

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5. Tow bar--provided by customer. The festoon system is moved along the track by means of a connection between the tow trolley and the moving hoist or crane. This connection is made by extending a tow bar made of round bar or tube--not to exceed 1-1/8 inch diameter--from the moving equipment through the opening provided in the tow trolley. The tow bar should be positioned in the center of the opening and must be long enough to fully engage the trolley under all conditions. Excessive up and down movement--3/4 inch--of the tow bar should be avoided to prevent possible damage to the system. NOTE: The tow bar should not be fastened in any way to the tow trolley.

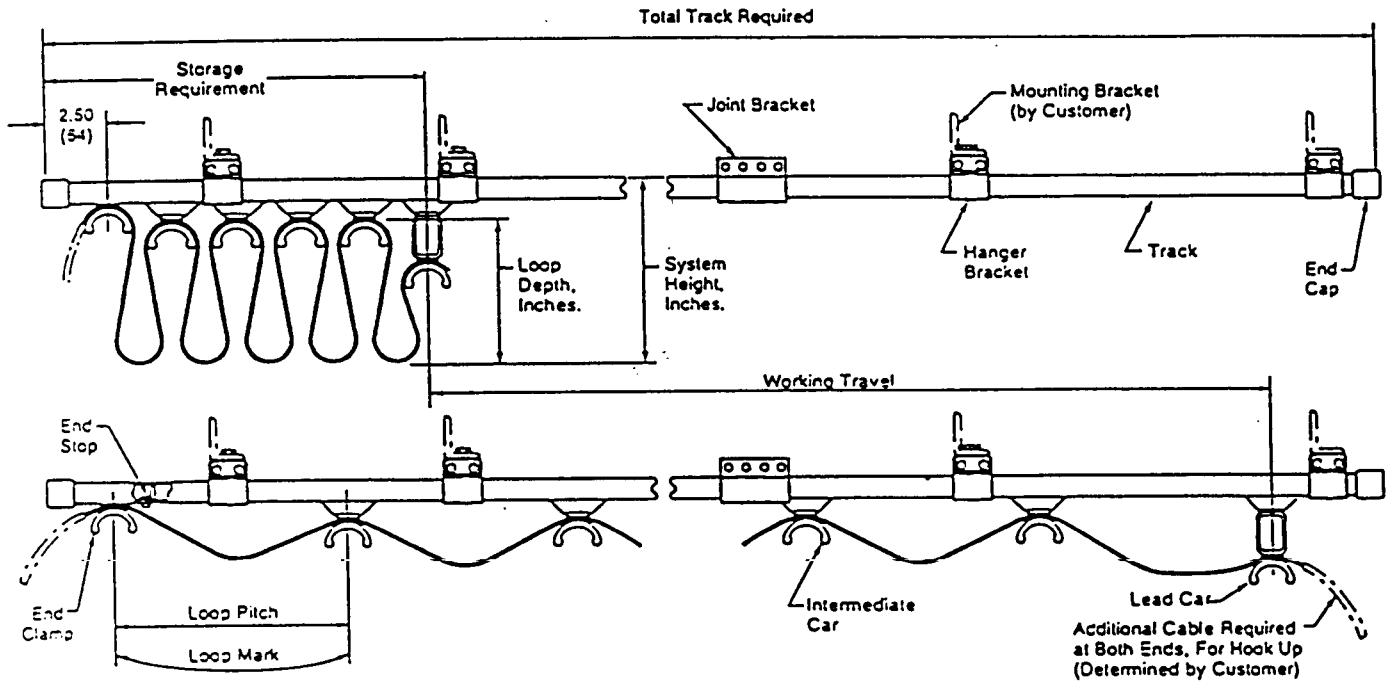


6. Cable installation

- a. The cable length provided consists of the working cable and that which is required for hook up--specified by customer--at each end.
- b. Measure the length required for hook up at the fixed end of the system and mark the cable using chalk or some other suitable method. From this mark, measure the total working cable and make another mark. Divide the working distance into equal spaces numbering the same as the total number of trolleys, including the lead trolley, and make a mark at each space.
- c. Feed the cable through the clamps and secure it at the first mark to the fixed clamp, then at each consecutive clamp until it is clamped in the tow trolley at the last mark, with the remaining cable extending beyond for hook up. When clamping the cables at the trolleys, the cable marks should be located in the center of the cable saddle. The cable should be square with the saddle and the nuts tightened just enough to hold the cable firmly.
- d. When clamping multiple cables of different sizes, the wider cables should be placed on the bottom next to the saddle with the smaller cables on top.
- e. With multiple cables, it is desirable to use loop clamps (LO-58 or LO-90) to retain the cables in a neat, controlled package. For loops up to four feet, one clamp can be used at the bottom of the loop. For longer loops, use two clamps with one placed approximately half way down each side of the loop.
- f. Stagger the position of these clamps slightly so they do not bump each other when the loops come together.

# Operation

## Festoon System



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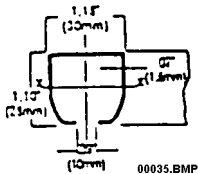
### Dimensions

Dimensions are in inches (millimeters). NOTE: If dimensions are critical, always request a certified print.

### 4200 Series Components

#### Track model 420010

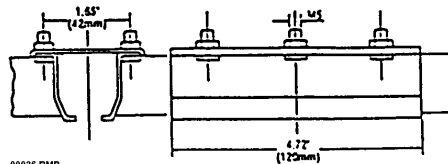
- Constructed of galvanized steel
- Special contour provides maximum section stiffness and gravity centering of wheels in raceway
- Length 10 feet, 3.05mm



00035.BMP

#### Joint bracket model 4200JB

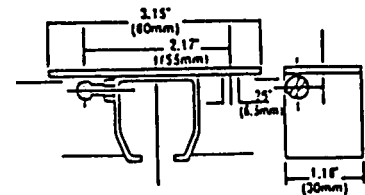
- Constructed of galvanized steel
- Hardware of zinc plated steel



00036.BMP

#### Hanger bracket model 4200HB

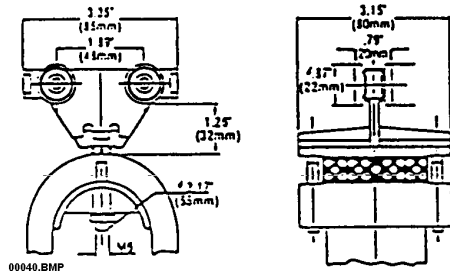
- Constructed of galvanized steel
- Hardware of zinc plated steel



00037.BMP

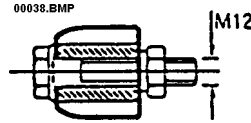
Trolley model 42451

- Load limit 26 lb. (12 kg)
- Body, saddle and wheels constructed of nylon



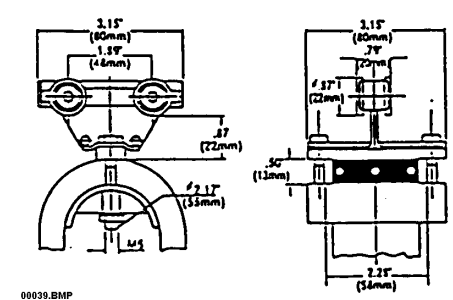
End stop model 4200ES

- Designed to limit travel of cars.
- Always located between track clamp and last system car.
- Constructed of zinc plated steel.



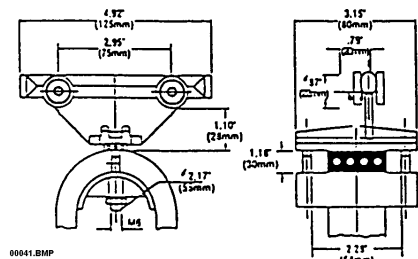
Trolley model 42461

- Load limit 44 lb. (20 kg)
- Body constructed of galvanized steel.
- Saddle constructed of nylon.
- Wheels: steel ball bearing style.



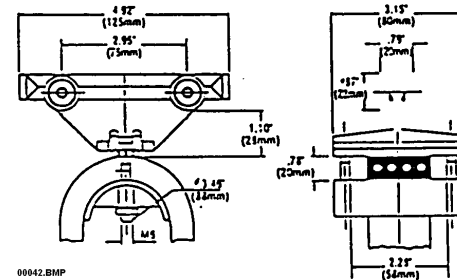
Trolley model 42421

- Load limit 44 lb. (20 kg)
- Body constructed of aluminum.
- Saddle constructed of nylon.
- Wheels: steel ball bearing style.



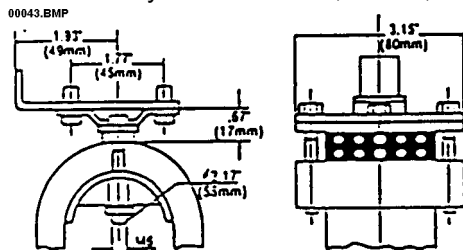
Trolley model 42431

- Load limit 44 lb. (20 kg)
- Body constructed of aluminum.
- Saddle galvanized steel.
- Wheels: steel ball bearing style.



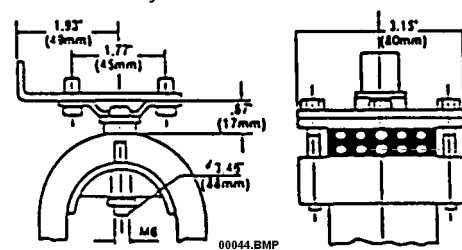
End clamp model 42422

- For use with trolley models 42451, 42461, 42421



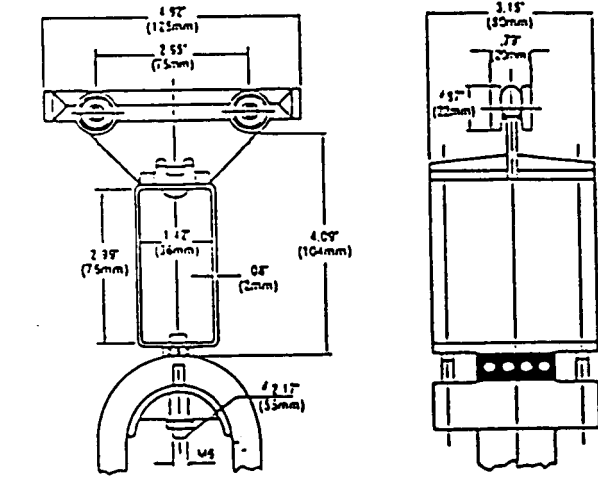
End clamp model 42432

- For use with trolley model 42431



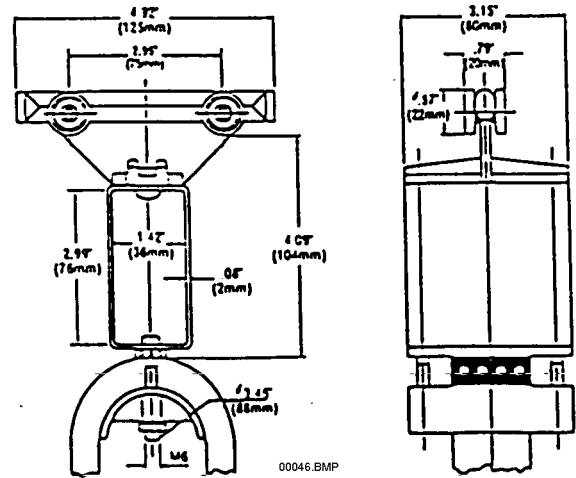
Tow trolley model 42423

- For use with trolley models 42451, 42461, 42421



Tow trolley model 42433

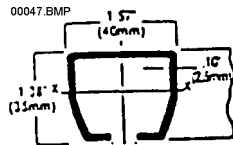
- For use with trolley model 42431



4400 Series Components

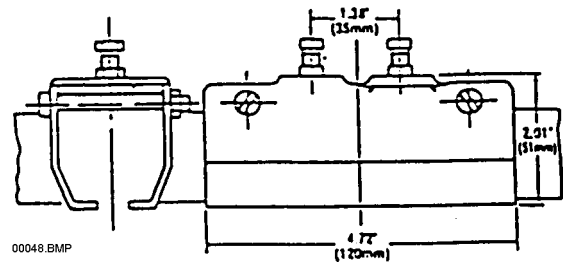
Track model 440010

- Constructed of galvanized steel
- Special contour provides maximum section stiffness and gravity centering of wheels in raceway
- Length 10 feet 3.05m



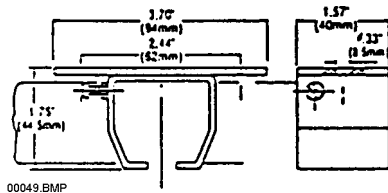
Joint bracket model 4400JB

- Constructed of galvanized steel
- Hardware of zinc plated steel



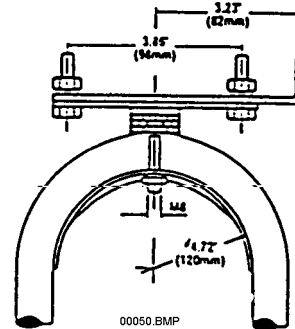
Hanger bracket model 4400HB

- Constructed of galvanized steel
- Hardware of zinc plated steel



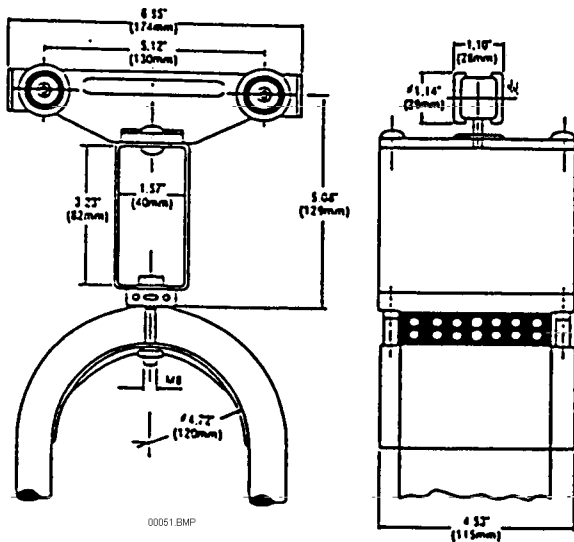
End clamp model 44122

- For use with trolley models 44101, 44121



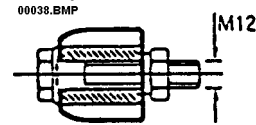
Tow trolley model 44123

- For use with trolley models 44101, 44121



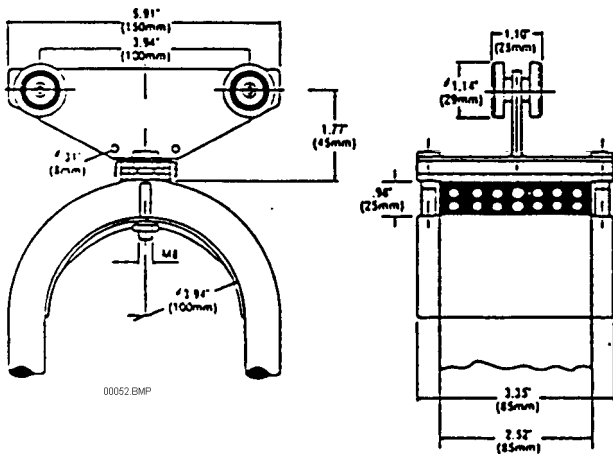
End stop model 4400ES

- Designed to limit travel of cars. Always located between track clamp and last car.
- Constructed of zinc plated steel



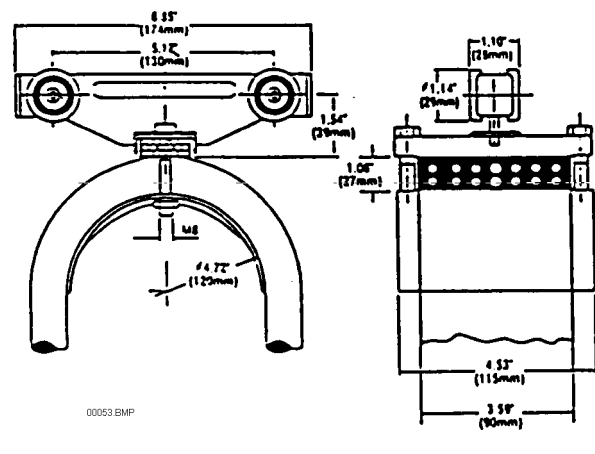
Trolley model 44101

- Load limit 88 lb. (40 kg)
- Body constructed of galvanized steel
- Saddle constructed of galvanized steel
- Wheels: steel ball bearing style



Trolley model 44121

- Load limit 88 lb. (40 kg)
- Body constructed of galvanized steel
- Saddle constructed of galvanized steel
- Wheels: steel ball bearing style



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