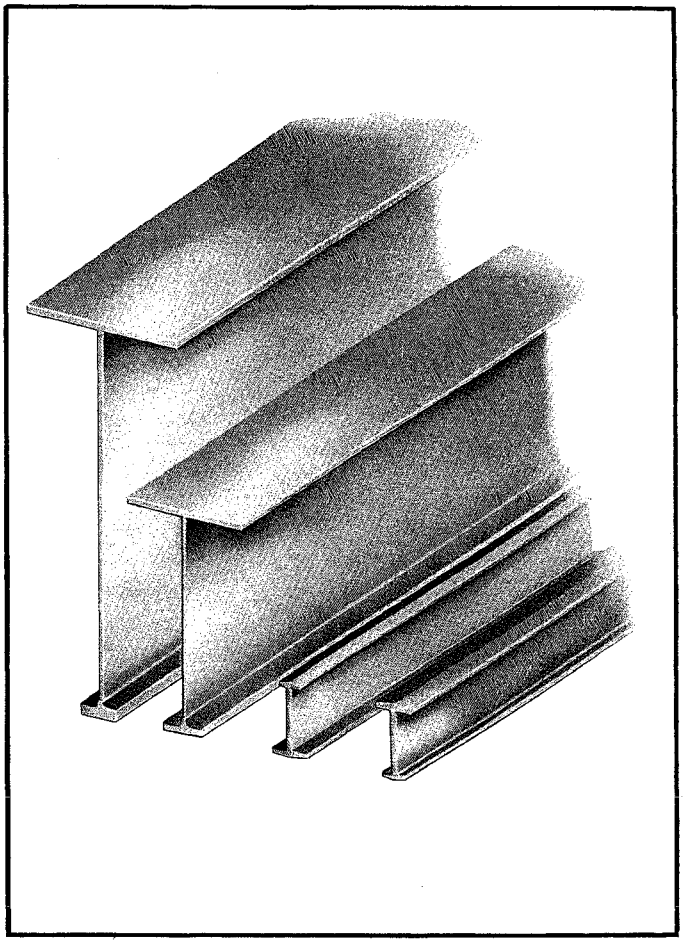
Acco Material Handling Solutions

Issued 9-07-01 600-1

LOUDEN®

MONORAIL AND CRANE SYSTEM TRACK



Louden® Track

Engineered for maximum strength, long wear and ease of installation, *Louden*® runway tracks and track fittings are designed to meet span, load and duty requirements for a wide range of applications. Composed of special analysis high carbon, high manganese steel, *Louden*® *SuperTrack*™ Patented Track, *SuperTrack*™ Girder Track Girder, and *TrojanTrack*™ Girder track sections are rolled to maintain close tolerances on all dimensions. These close tolerances make it possible to construct interlocking material handling systems and to standardize suspension systems and monorail switches. Rail peening and wear are reduced to a minimum by the flat track tread and the minimum Brinnell Hardness of 225.

Louden® runway track is available in a variety of sizes matched to service requirements. *SuperTrack*™ Patented Track is the standard track used for many heavy duty applications. *SuperTrack*™ Girder Track is used to reduce installation costs where building bay spans would otherwise require the installation of extra superstructure and intermediate hangers. *TrojanTrack*™ Girder Track is designed for use in extreme heavy service and in situations exceeding normal heavy duty service.

Louden® runway track is tailor-made for your job requirements. Each section of straight track is cut to exact length, all holes are formed and each curve is machine bent at the factory to layout drawings and specifications. Every piece of track is shipped from the factory ready for installation.

Louden® *SuperTrack*™ Patented Track

Louden® *SuperTrack*™ Patented Track is the pioneer heavy duty monorail track section. Available with 2" or 3.33" wide operating flange, *SuperTrack*™ Patented Track provides a beam of exceptional strength and durability for monorail and crane applications.

Louden® *SuperTrack*™ Girder Track

Louden® *SuperTrack*™ Girder Track has an operating flange made with special analysis steel continuously welded to the supporting web and top flange to give a load carrying member with a free span strength greater than *SuperTrack*™ Patented Track. The flat operating flange of *SuperTrack*™ Girder Track is 3.33" wide and 7/16" thick.

Louden® *TrojanTrack*™ Girder Track

Louden® *TrojanTrack*™ Girder Track has the strongest operating flange of any especially rolled monorail track section offered by the Material Handling Group. The 13/16" thick operating flange, 3.33" wide, is capable of sustaining large wheel loads under rugged heavy duty service and remain free from excessive peening and wear. *TrojanTrack*™ Girder Track is of three piece construction. The girder web and top flange are cut from steel plate and are continuously welded to the high carbon, high manganese operating flange.

TRACK SPECIFICATIONS	MINIMUM CARBON CONTENT	MINIMUM MANGANESE CONTENT	MINIMUM ULTIMATE TENSILE	MINIMUM YIELD POINT	MINIMUM BRINELL HARDNESS	TOP FLANGE WIDTH	BOTTOM FLANGE WIDTH	TREAD THICKNESS
602 *SUPERTRACK*™ PATENTED TRACK	.60%	.75%	113,000 psi	63,000 psi	225	3.33"	2"	3/8"
603 *SUPERTRACK*™ PATENTED TRACK	.60%	.75%	113,000 psi	63,000 psi	225	2"	3.33"	7/16"
604 *SUPERTRACK*™ GIRDER TRACK	.50%	1.00%	115,000 psi	78,500 psi	225	*	3.33"	7/16"
605 *TROJANTRACK*™ GIRDER TRACK	.50%	1.00%	115,000 psi	78,500 psi	225	*	3.33"	13/16"

*See Track Tables in Specific Sections

Louden® Gimbal Suspension System

The *Louden*® Gimbal Suspension System is one of the most important component improvements in the history of the monorail industry. This method of suspension protects against the extreme bending stresses that often cause fatigue failure of rigidly connected hanger rods. Multiplane washers at each end of the rod give a gimbal effect that permits free movement of + 6° in any direction without bending the rod.

Figure 1 shows typical hanger rod arrangements. Note in assembly "A" how the gimbal washers permit free movement in any direction within the 6° limits.

Assembly "B" shows a ball and socket type hanger rod assembly. It would appear that such an arrangement would allow full freedom of rod movement in any direction. Tests show, however, there is visible bending of the rod and high bending stress before bearing friction is overcome, permitting pivot movement in the ball joint.

In assembly "C" the bending stresses caused by movement of the runway are obvious and expected. It has been found in practice that it is not possible to apply enough sway bracing to prevent dangerous bending stress in this type of hanger rod.

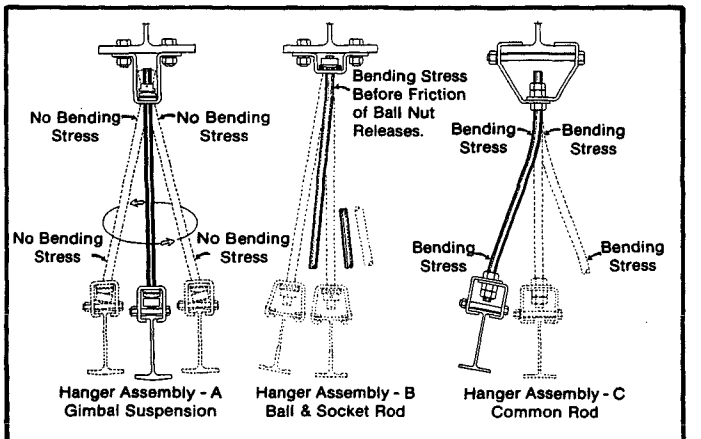


FIGURE 1

Lower Flange Loading		
602.6 SuperTrack Patented Track	750# per Wheel	1,500# per 2-Wheel Trolley
603.6 SuperTrack Patented Track	2,500# per Wheel	5,000# per 2-Wheel Trolley
604 Series SuperTrack Girder Track	2,500# per Wheel	5,000# per 2-Wheel Trolley
605 Series TrojanTrack Girder Track	3,750# per Wheel	7,500# per 2-Wheel Trolley
605 Series SuperTrojanTrack Girder Track	5,000# per Wheel	10,000# per 2-Wheel Trolley
*SuperTrojanTrack requires 3/4" minimum top flange, 7/16" thick web plate, splices must be welded		

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Figure 2 illustrates the conditions under which a hanger rod may be subject to bending. The amount of hanger rod bend is exaggerated in the diagram so these conditions may be more clearly seen.

Observe how the free movement of the Gimbal Suspension System permits the rod to align to suit conditions. Note in both hanger assemblies "B" and "C" (ball and socket and common rod), the bending stress build-up that occurs.

Figure 3 shows the dynamic test apparatus used to compare the various types of track hanger rods. BLH Strain Gauges cemented to the rod were connected to a BLH Model 120 Strain Indicator, a Model 9803 Strain Gauge Coupler and an Offner RS Dynagraph to record the tests. The three-ton mass was moved through an increasing arc and the strain within the rod was recorded on graph tape. The indicator at the bottom of the mass measured the sway in inches.

The Dynagraph tapes in Figure 4 show one series of tests comparing the bending stress in the three types of hanger rods. At 4" of sway, the strain on the Gimbal Rod was only 600 micro-inches per inch, while the strain on the ball nut rod was 2200 micro-inches per inch before overcoming friction in the ball and socket joint.

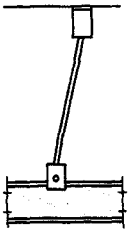
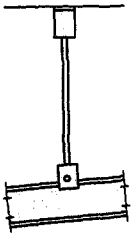
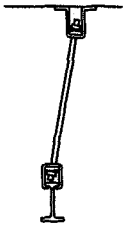
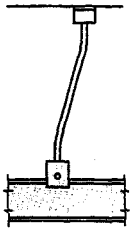
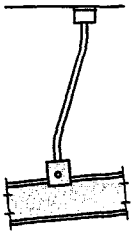
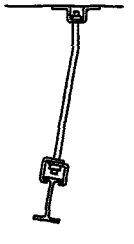
TYPE OF SUSPENSION	MISALIGNED HANGER	TRACK DEFLECTION	TRACK SWAY
GIMBAL SUSPENSION SYSTEM			
HANGER ASSEMBLY B and C			

FIGURE 2

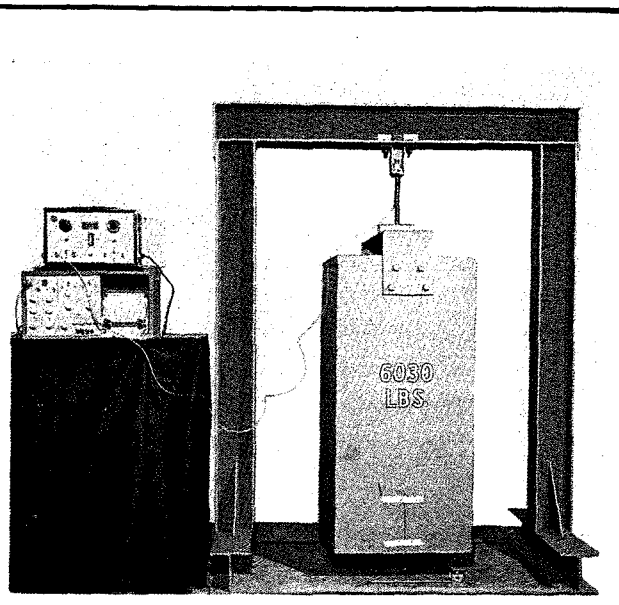


FIGURE 3

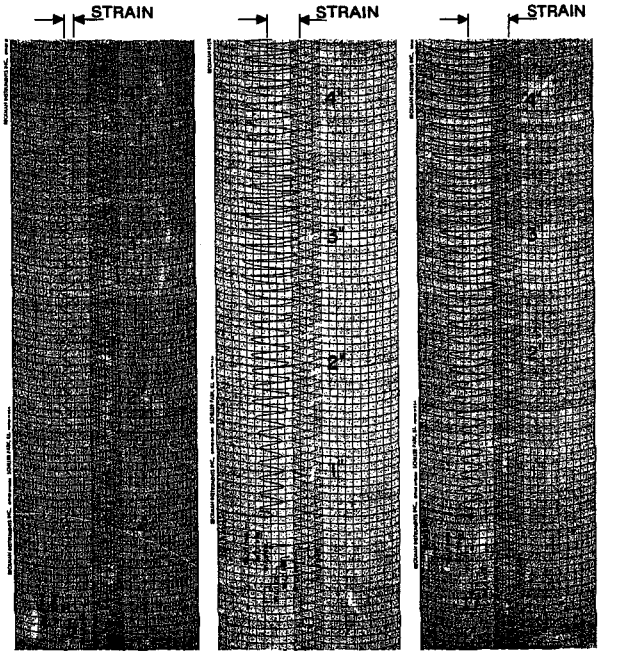


FIGURE 4

High Tensile Steel Gimbal Rods

The rod used in the Louden Gimbal Suspension System is made of AISI 4140 heat treated steel with a minimum ultimate tensile rating of 125,000 psi. The 3/4" and 1-1/8" rods are provided with 6" of Unified National Fine Thread for vertical adjustment. The 1-1/2" rods have continuously rolled threads. Gimbal Rods must only be used with Louden Adjusting Nuts. Capacities were determined by the minor diameter area method allowing a safety factor of 5. A fixed nut, at one end of the rod, is factory assembled and secured by a roll pin. The threads at the other end are protected for shipment.

607.8500G

3/4" diameter Gimbal Rod. Capacity 8,500 lbs. single rod. Capacity 12,750 lbs. when two rods are used in a single hanger assembly.

607.2000G

1-1/8" diameter Gimbal Rod. Capacity 20,000 lbs. single rod. Capacity 30,000 lbs. when two rods are used in a single hanger assembly.

607.34000G

1-1/2" diameter Gimbal Rod. Capacity 34,000 lbs. single rod. Capacity 50,000 lbs. per two rod assembly.

LOUDEN GIMBAL HANGER ROD

Adjusting Nuts

Special Adjusting Nuts are made of hardened steel and are cadmium plated. The nut is secured after adjustment by a socket set screw with a knurled point.

607.260 (28-1050)

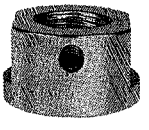
Adjusting Nut for use with 3/4" dia. Gimbal Rod.

607.262 (28-0288)

Adjusting Nut for use with 1-1/8" dia. Gimbal Rod.

607.263 (28-0290)

Adjusting Nut for use with 1-1/2" dia. Gimbal Rod.



LOUDEN GIMBAL ADJUSTING NUT

Gimbal Washers

The tapered planes on the top surface of the washer are positioned at right angles to the tapered planes on the bottom surface to permit the rod to sway up to 6 in any direction. Protruding guides center the washer in the hole of the hanger fitting. The washer is made of drop forged steel, hardened and then zinc plated.

607.D33 (28-0284)

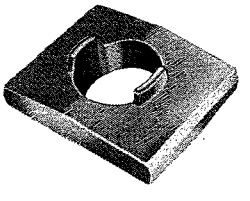
Gimbal Washer for use with 3/4" dia. Gimbal Rod.

607.D34(28-0285)

Gimbal Washer for use with 1-1/8" dia. Gimbal Rod,

607.D35(28-0289)

Gimbal Washer for use with 1-1/2" dia. Gimbal Rod.



LOUDEN GIMBAL WASHER

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Issued 9-7-01 602-1

LOUDEN®

MONORAIL AND CRANE SYSTEM PATENTED TRACK

***SUPERTRACK*™ PATENTED TRACK WITH 2" OPERATING FLANGE**

LOUDEN® 602.6 *SUPERTRACK*™ PATENTED TRACK

LOUDEN® 2" flange *SUPERTRACK*™ patented track is the pioneer heavy-duty monorail track section. This track is rolled from special analysis billets to exacting tolerances as specified by Acco Babcock Inc., Material Handling Group. Two inch flange *SUPERTRACK*™ patented track is ideal for non-electrified monorail and crane systems with loads up to two ton.

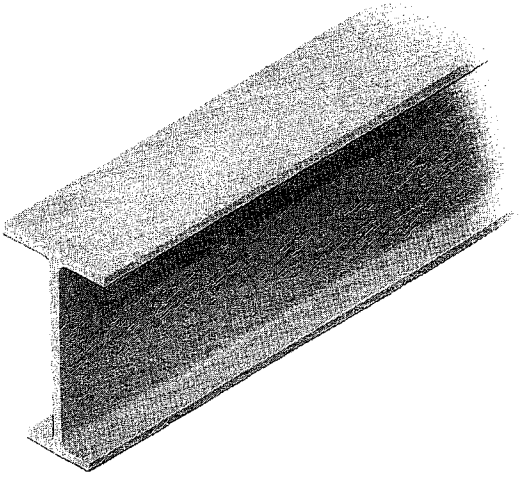
Trolleys for this track are illustrated in Section 402 and switches are illustrated in Section 702. A complete stock of hangers and other fittings is available to make this track easily adapted to even the most complicated systems requiring heavy-duty hand propelled equipment.

LOUDEN® *SUPERTRACK*™ patented track is tailor-made for your requirements. Every section of straight track is cut to exact length, and all curves are bent at the factory in accordance with layout drawings and specifications. Every piece of track is shipped from the factory ready for installation.

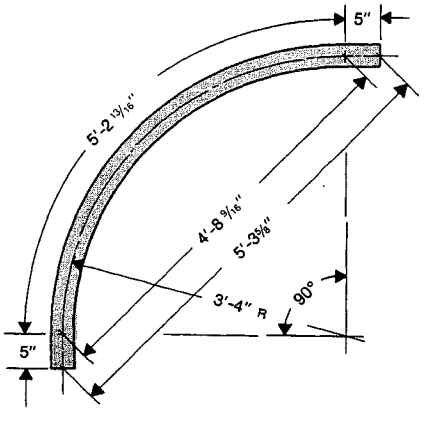
2" FLANGE *SUPERTRACK*™ PATENTED TRACK CURVES

To do away with costly hand bending on the job and to furnish the customer with a smooth precise curve for best trolley operation, all *LOUDEN*® *SUPERTRACK*™ patented track curves are furnished complete and ready for installation.

The standard *LOUDEN*® *SUPERTRACK*™ patented track curve has a 3'-4" radius with a 5" straight at each end as shown at the right. Special curves may be ordered. All special *SUPERTRACK*™ patented track curves require a minimum 12" of straight track at each end for the bending operation, although it is not required on the finished curve. When special curves are desired, contact your nearest Material Handling Group Representative. See Section 700 for standard switch curves.



***LOUDEN*® 602.6 *SUPERTRACK*™ PATENTED TRACK**

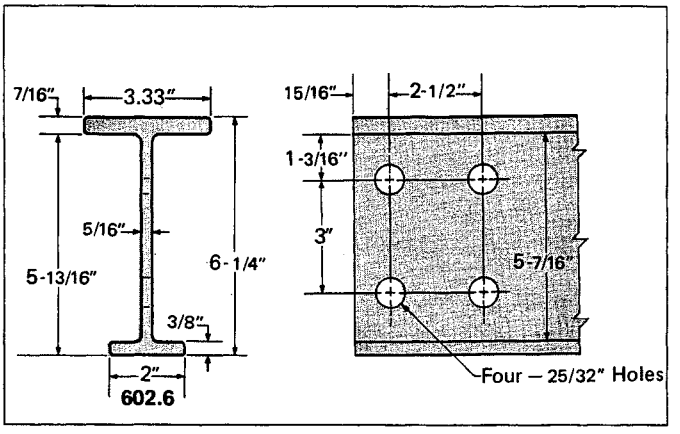


602.5281 (28-0502)
***SUPERTRACK*™ PATENTED TRACK CURVE**
WT. 73 LBS.

LOUDEN® 602.6 SUPERTRACK™ PATENTED TRACK

Specifications:

Min. Carbon Content	.55
Min.Manganese Content	.60
Min. Ult. Tensile	115,000 psi
Min. Yield Point	63,000 psi
Min. Brinnell Hardness	225
Top Flange Width	3.33"
Bottom Flange Width	2.00"
Depth	6.25"
Weight per Foot	14 lbs
Web Thickness	5/16"
Tread Thickness	3/8"
Max. Lower Flange Loading	750# per wheel
	1,500# per 2-wheel trolley



MAXIMUM CENTER LOADS - UNBRACED

Limited By Span/450 Deflection
1.25" Maximum Deflection

	SPAN IN FEET												
	4	5	6	7	8	9	10	11	12	13	14	15	16
LOAD IN LBS.	11673s	9466t	7876t	6738t	5883t	5216t	4681t	3970d	3312d	2798d	2389d	2057d	1783d

Limited By Span/600 Deflection
1.25" Maximum Deflection

	SPAN IN FEET												
	4	5	6	7	8	9	10	11	12	13	14	15	16
LOAD IN LBS.	11673s	9466t	7876t	6738t	5694d	4476d	3602d	2953d	2458d	2070d	1761d	1510d	1303d

NOTES:

1. Figures shown are allowable Equivalent Center Loads (ECL's) at the span as if developed by a single two-wheel trolley. Refer to ECL calculations for loads on four, eight and 16 wheel units, in section 1100 (Engineering).
2. The ECL's shown are limited by tension of the bottom flange, compression of the top flange, deflection of the beam and shear. These are indicated by the letters t, c, d & s, respectively, in accordance with ANSI MH 27.1 1981.
3. The weight of the girder has been considered and need not be deducted in load calculations.
4. Maximum permissible Wheel Load on 603 Type *SUPERTRACK* is 1,500 Lbs. (3,000 Lbs. per 2 Wheel Trolley).

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602.6 *SUPERTRACK*™ PATENTED TRACK CURVE

SPECIAL CURVE INFORMATION

Standard tangent length for square cut end is 12". For tangent lengths shorter than 12" see Cutting Charge on price page. 5" minimum tangent length.

Minimum tangent length for an angle cut is 14".

Minimum **Standard** center straight for "S" curves is 12".

Maximum overall length is 20'-0".

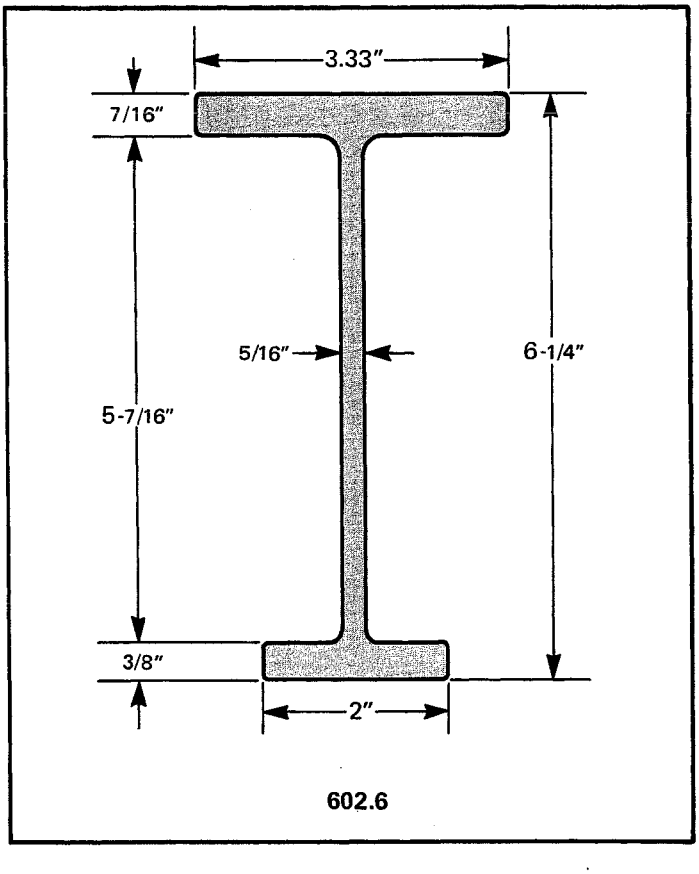
Minimum radius is 1'-6".

Hangers are required within 12" of the tangent points and at the center of the arc for up to 45 degrees and up to a maximum of 10' radius. Add hangers if 10' radius is exceeded. See Fig. 1.

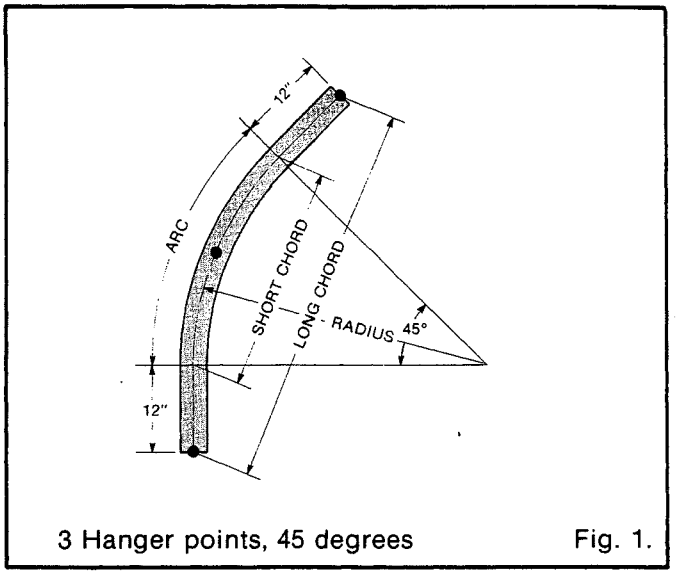
Hangers are required within 12" of the tangent points and at the center of the arc for up to 90 degrees and up to a maximum of 6' radius. Add hangers if 6' radius is exceeded. See Fig. 2.

Hangers are required within 12" of the tangent points and at the 3rd points in the arc for up to 90 degrees and from 6' to 10' radius. Add hangers if 10' radius is exceeded. See Fig. 3.

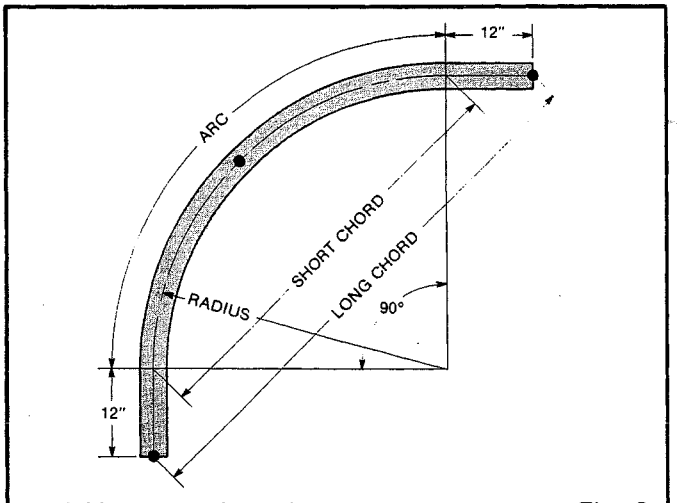
2" operating flange *SuperTrack*™ Patented Track is to be used for non-electrified systems **only.**



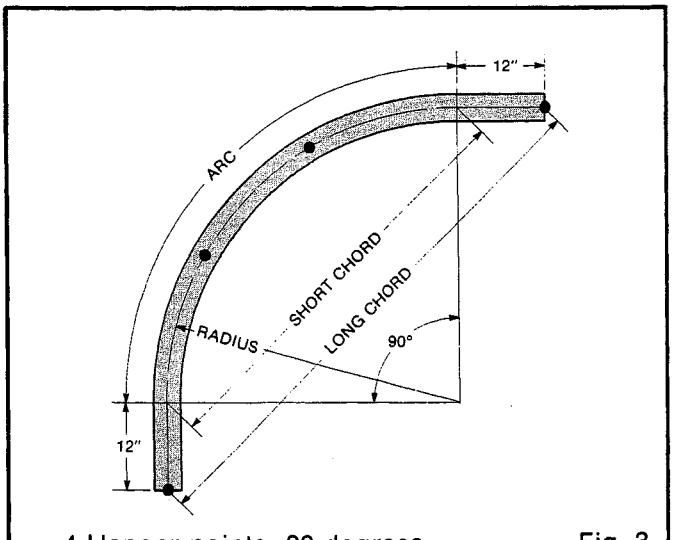
602.6



3 Hanger points, 45 degrees Fig. 1.



3 Hanger points, 90 degrees Fig. 2.



4 Hanger points, 90 degrees Fig. 3.

Acco Material Handling Solutions

Issued 9-7-01 603-1

LOUDEN®

MONORAIL AND CRANE SYSTEM PATENTED TRACK

***SUPERTRACK*™ PATENTED TRACK WITH 3.33" OPERATING FLANGE**

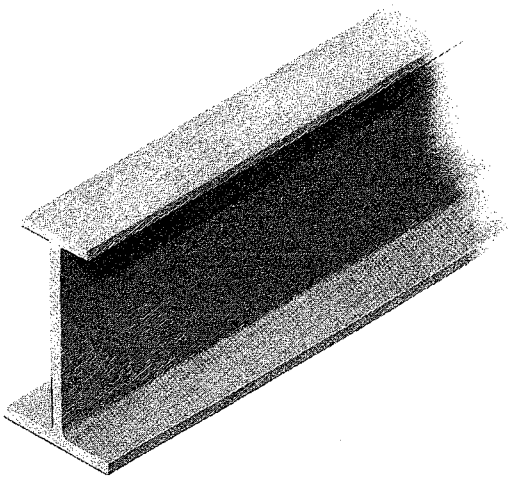
LOUDEN® 603.6 *SUPERTRACK*™ PATENTED TRACK

LOUDEN® 3.33" flange *SUPERTRACK*™ patented track is the pioneer heavy-duty monorail section. This track is rolled from special analysis billets to exacting tolerances as specified by Acco Babcock, Inc., Material Handling Group. It permits the use of wheels having a wide tread and extra large bearings.

This track provides a beam of exceptional strength for all types of motorized carriers. As the area of the track receiving the trolley is flat and the tread of the wheel is also flat, increased wheel and track life is attained. The design of the flange makes it rigid with minimum deflection.

Trolleys for this track are illustrated in Section 403 and switches are illustrated in Section 703. A complete stock of hangers and other fittings is available to make this track easily adapted to the most complicated system.

LOUDEN® *SUPERTRACK*™ patented track is tailor-made for your requirements. Every section of straight track is cut to exact length, and all curves are bent at the factory in accordance with layout drawings and specifications. Every piece of track is shipped from the factory ready for installation.

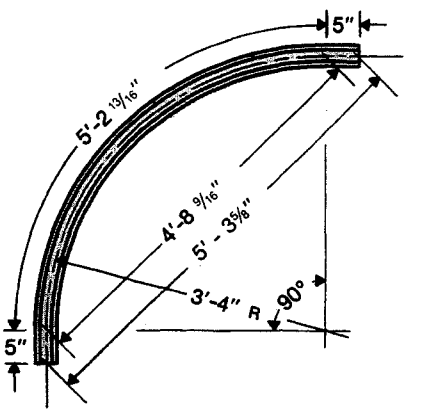


***LOUDEN*® 603.6 *SUPERTRACK*™ PATENTED TRACK**

3.33" FLANGE *SUPERTRACK*™ PATENTED TRACK CURVES

To do away with costly hand bending on the job and to furnish the customer with a smooth precise curve for best trolley operation, all *LOUDEN*® *SUPERTRACK*™ patented track curves are furnished complete and ready for installation.

The standard *LOUDEN*® *SUPERTRACK*™ patented track curve has a 3'-4" radius with a 5" straight at each end as shown at right. Special curves may be ordered. All special *SUPERTRACK*™ patented track curves require a minimum 12" of straight track at each end for the bending operation, although it is not required on the finished curve. When special curves are desired, contact your nearest Material Handling Group Representative. See Section 700 for standard switch curves.



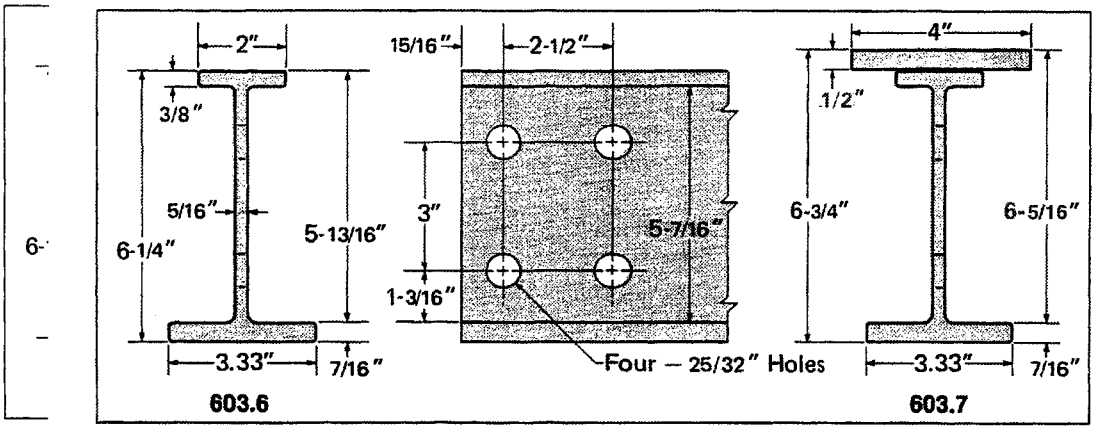
603.6081 (28-0305)
***SUPERTRACK*™ PATENTED TRACK CURVE**
WT. 73 LBS.

LOUDEN® MONORAIL AND CRANE SYSTEM PATENTED TRACK
***SUPERTRACK™* PATENTED TRACK WITH 3.33" OPERATING FLANGE**

603-2
Issued 9-7-01

Specifications:

Min. Carbon Content	.55
Min.Manganese Content	.60
Min. Ult. Tensile	115,000 psi
Min. Yield Point	63,000 psi
Min. Brinnell Hardness	225
Top Flange Width	2.00"
Bottom Flange Width	3.33"
Depth	6.25"
Weight per Foot	14 lbs
Web Thickness	5/16"
Tread Thickness	7/16"
Max. Lower Flange Loading	2,500# per wheel 5,000# per 2-wheel trolley



MAXIMUM CENTER LOADS - UNBRACED

Limited By Span/450 Deflection
1.25" Maximum Deflection

	SPAN IN FEET																
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
603.6	11399s	9466c	6843c	5010c	3817c	2998c	2409c	1972c	1638c	1377c	1168c	998c	858c				
603.7		12448s	12438s	12174t	10634t	9434t	8471t	7291d	6093d	5157d	4412d	3809d	3313d	2899d	2551d	2254d	1999d

Limited By Span/600 Deflection
1.25" Maximum Deflection

	SPAN IN FEET																
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
603.6	11399s	9466c	6843c	5010c	3817c	2998c	2409c	1972c	1638c	1377c	1168c	998c	858c				
603.7		12448s	12438s	12174t	10433d	8210d	6617d	5434d	4532d	3827d	3266d	2810d	2435d	2122d	1857d	1632d	1437d

NOTES:

1. Figures shown are allowable Equivalent Center Loads (ECL's) at the span as if developed by a single two-wheel trolley. Refer to ECL calculations for loads on four, eight and 16 wheel units, in section 1100 (Engineering).
2. The ECL's shown are limited by tension of the bottom flange, compression of the top flange, deflection of the beam and shear. These are indicated by the letters t, c, d & s, respectively, in accordance with ANSI MH 27.1 1981.
3. The weight of the girder has been considered and need not be deducted in load calculations.
4. Maximum permissible Wheel Load on 603 Type *SUPERTRACK* is 2,500 Lbs. (5,000 Lbs. per 2 Wheel Trolley).

ACCO Material Handling Solutions
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603.6 *SUPERTRACK*™ PATENTED TRACK CURVE

SPECIAL CURVE INFORMATION

Standard tangent length for square cut end is 12". For tangent lengths shorter than 12" see Cutting Charge on price page. 5" minimum tangent length.

Minimum tangent length for an angle cut is 14".

Minimum **Standard** center straight for "S" curves is 12".

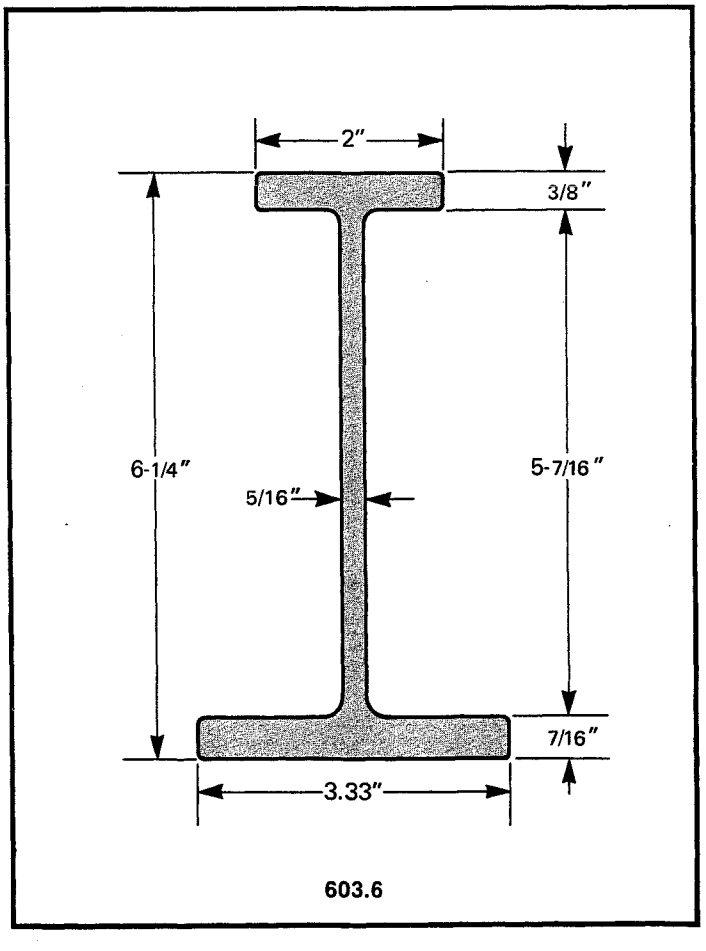
Maximum overall length is 20'-0".

Minimum radius is 1'-6".

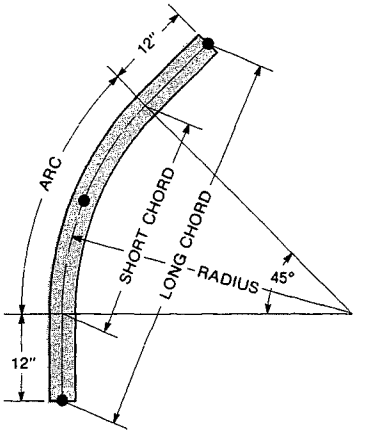
Hangers are required within 12" of the tangent points and at the center of the arc for up to 45 degrees and up to a maximum of 10' radius. Add hangers if 10' radius is exceeded. See Fig. 1.

Hangers are required within 12" of the tangent points and at the center of the arc for up to 90 degrees and up to a maximum of 6' radius. Add hangers if 6' radius is exceeded. See Fig. 2.

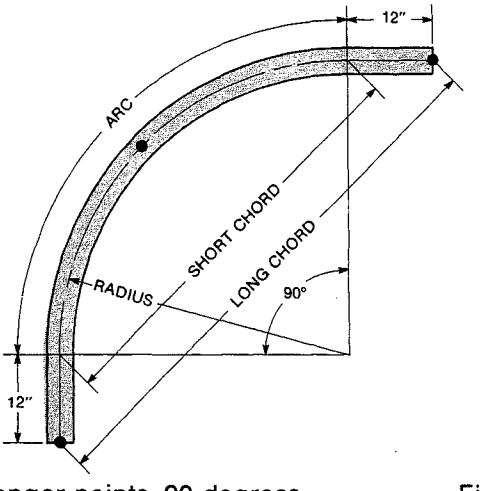
Hangers are required within 12" of the tangent points and at the 3rd points in the arc for up to 90 degrees and from 6' to 10' radius. Add hangers if 10' radius is exceeded. See Fig. 3.



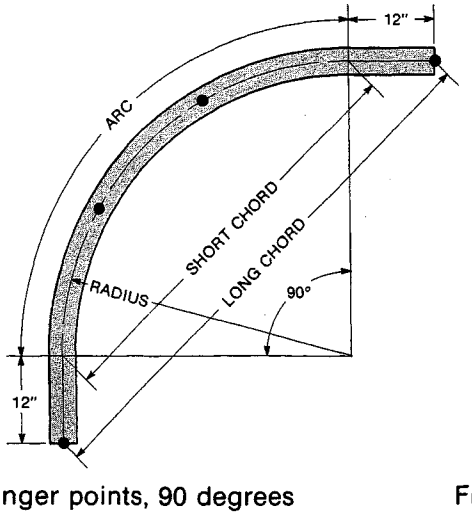
603.6



3 Hanger points, 45 degrees Fig. 1.



3 Hanger points, 90 degrees Fig. 2.



4 Hanger points, 90 degrees Fig. 3.

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LOUDEN®

MONORAIL AND CRANE SYSTEM TRACK

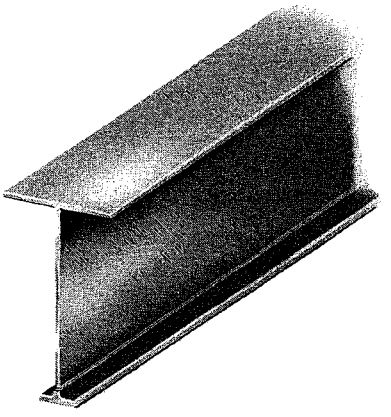
SUPERTRACK™ GIRDER WITH 3.33" OPERATING FLANGE

LOUDEN SUPERTRACK™ GIRDER

Louden 3.33" flange *SuperTrack* is designed to meet most requirements of heavy-duty service at moderate expense. *SuperTrack* Girder is constructed of an operating flange continuously welded to a supporting web and top flange. The operating flange is rolled from special analysis billets to exacting specifications and tolerances.

LOUDEN SuperTrack is used where loads and building bay spans are too great to use standard *SuperTrack*. *SuperTrack* Girder provides a beam of exceptional strength and maximum economy of weight. The beam strength reduces or eliminates the need for intermediate hangers.

Each piece of *LOUDEN SuperTrack* Girder is engineered expecially for your requirements, fabricated, and cut to exact length. All holes are in place, all curves are prepared to layout specifications, and all equipment is shipped from the factory ready for erection.



Trolleys for this track are illustrated in Catalog Section 403 and switches are illustrated in Catalog Section 703. A complete line of hangers and other fittings are shown in Catalog Section 607.

FEATURES	BENEFITS
Uniform thickness of running tread with published dimensions.	Full metal thickness from fillet to edge of flange provides maximum load carrying capacity. Dimensions are known, with no reduction of metal from fillet to flange.
Published chemical content and physical properties of running tread.	Assures that long wearing and peen-resistant metalurgy is used which meets or exceeds monorail manufacturer's specifications.
Full 7/16" tread thickness.	Able to withstand heavy wheel loads providing long wearing track for most crane or monorail systems, yet offering economy of price.
Flat running tread.	Allows the use of flat tread wheels on which the radius of the wheel is uniform across the width of the running surface or "Footprint". Prevents wheel tread slip, minimizing tread wear and peening.
Efficient girder design.	Web and top flange are computer matched with the high carbon flange, for maximum load carrying capacity with minimum weight.
Web and top flange offset.	Allows easy alignment of the running flange of adjacent girders at splices. Provides extra clearance for ease of installation.
Fully manufactured at factory.	All girders are welded, straightened, and all splice holes, hanger holes, as well as electrification holes are in place before painting and shipment, for easier and faster installation.
The *LOUDEN*® Trademark.	Being the originators of the underhung monorail and crane industry, the user is assured of the ultimate in design, manufacturing and application expertise when purchasing a system which will most completely satisfy his particular requirements.

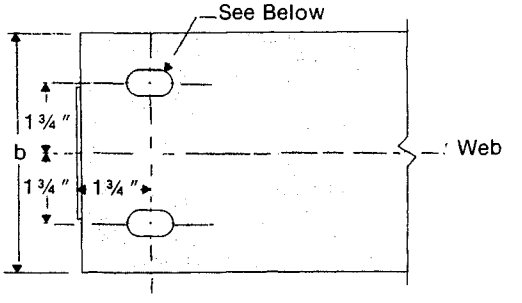
LOUDEN® MONORAIL AND CRANE SYSTEM TRACK
SUPERTRACK™ GIRDER WITH 3.33" OPERATING FLANGE

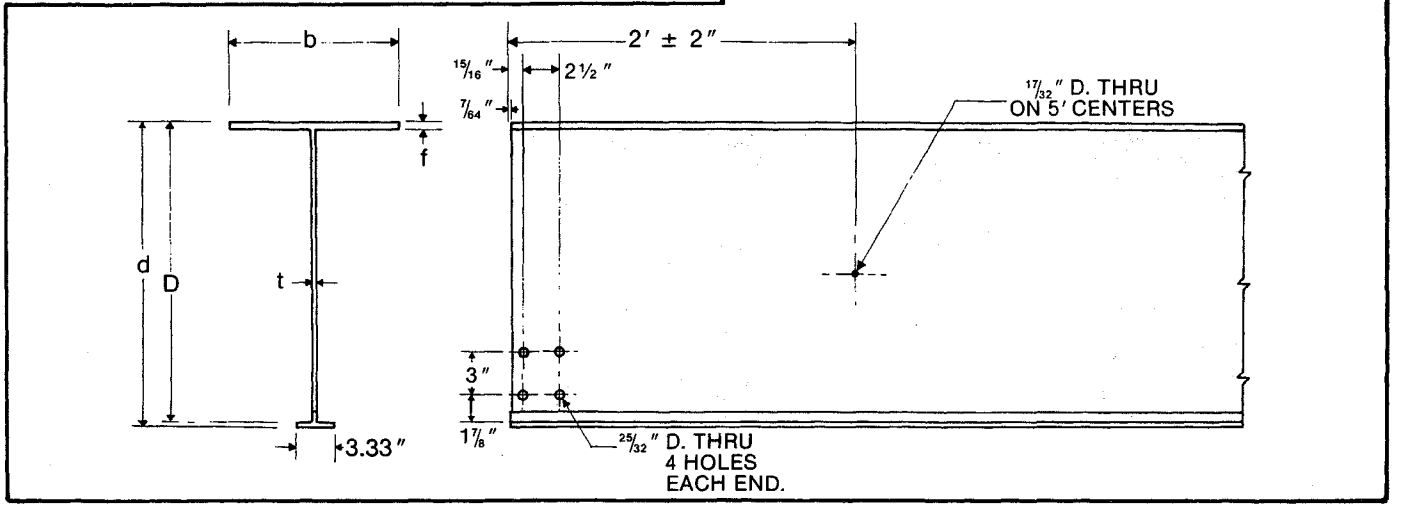
604-2
Issued 9-7-01

LOUDEN SUPERTRACK™ GIRDER

Operating Flange Specifications:

Min. Carbon Content	.50
Min.Manganese Content	1.00
Min. Ult. Tensile	115,000 psi
Min. Yield Point	78,500 psi
Min. Brinnell Hardness	225
Bottom Flange Width	3.33"
Tread Thickness	7/16"
Max. Lower Flange Loading	2500# per wheel





Cat. No	604.820	604.924	604.1231	604.1435	604.1538	604.1846	604.2153
Wt./Ft.	20	24	31	35	38	46	53
D	7 9/16	9	12	14	15	18	21
d	8	9 7/16	12 7/16	14 7/16	15 7/16	18 7/16	21 7/16
b	6	6	6	7	8	10	12
f	5/16	7/16	5/8	5/8	5/8	5/8	5/8
t	5/16	5/16	5/16	5/16	5/16	5/16	5/16

Each piece of girder track is furnished with standard splice punching at each end and two slotted holes at each end of the top flange as shown above. Nominal slot length is twice the hole size but does not exceed 2" Hole size must be specified as shown at right.

Maximum permissible Wheel Load on 604 Type SUPERTRACK Girder is 2,500 Lbs. (5,000 Lbs. per 2 Wheel Trolley).

N. A. - Not Available

Top Flange Hole Sizes			
Flange Thickness	Bolt Size		
	5/8	3/4	7/8
5/16	11/16	N.A.	N.A.
7/16	11/16	13/16	N.A.
5/8	11/16	13/16	15/16

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LOUDEN® *SUPERTRACK*™ GIRDER TRACK EQUIVALENT CENTER LOADS SPAN/450 - DEFLECTION LIMITED TO 1.25"

SPAN	604.820	604.924	604.1231	604.1435	604.1538	604.1846	604.2153	SPAN
5	15,663 s	18,424 s	23,992 s	27,721 s	29,544 s	34,968 s	36,118 s	5
6	15,653 s	18,412 s	23,977 s	27,703 s	29,525 s	34,945 s	36,092 s	6
7	15,643 s	18,400 s	23,961 s	27,686 s	29,506 s	34,922 s	36,065 s	7
8	13,888 t	17,924 t	23,946 s	27,669 s	29,487 s	34,899 s	36,039 s	8
9	12,326 t	15,910 t	24,039 t	27,651 s	29,468 s	34,877 s	36,012 s	9
10	11,075 t	14,296 t	21,606 t	27,197 t	29,449 s	34,854 s	35,986 s	10
11	10,049 t	12,974 t	19,613 t	24,692 t	27,612 t	34,831 s	35,959 s	11
12	8,538 c	11,870 t	17,949 t	22,601 t	25,274 t	33,623 t	35,933 s	12
13	7,247 c	10,934 t	16,539 t	20,829 t	23,294 t	30,993 t	35,907 s	13
14	6,221 c	10,130 t	15,328 t	19,307 t	21,593 t	28,736 t	35,880 s	14
15	5,391 c	9,356 d	14,277 t	17,986 t	20,117 t	26,776 t	34,258 t	15
16	4,711 c	8,181 d	13,355 t	16,829 t	18,823 t	25,058 t	32,066 t	16
17	4,145 c	7,205 d	12,539 t	15,805 t	17,679 t	23,540 t	30,128 t	17
18	3,669 c	6,385 d	11,813 t	14,893 t	16,659 t	22,188 t	28,403 t	18
19	3,265 c	5,688 d	11,161 t	14,075 t	15,746 t	20,976 t	26,857 t	19
20	2,918 c	5,091 d	10,624 c	13,337 t	14,921 t	19,883 t	25,462 t	20
21	2,618 c	4,575 d	9,593 c	12,668 t	14,174 t	18,892 t	24,198 t	21
22		4,126 d	8,697 c	11,891 c	13,492 t	17,989 t	23,047 t	22
23		3,732 d	7,913 c	10,829 c	12,868 t	17,162 t	21,993 t	23
24		3,385 d	7,223 c	9,895 c	12,295 t	16,403 t	21,025 t	24
25		3,077 d	6,613 c	9,069 c	11,739 c	15,702 t	20,132 t	25
26			6,070 c	8,335 c	10,798 c	15,054 t	19,306 t	26
27			5,585 c	7,679 c	9,958 c	14,452 t	18,539 t	27
28			5,149 c	7,090 c	9,205 c	13,891 t	17,825 t	28
29			4,755 c	6,559 c	8,526 c	13,327 c	17,158 t	29
30			4,399 c	6,078 c	7,912 c	12,387 c	16,534 t	30
31				5,642 c	7,354 c	11,535 c	15,949 t	31
32				5,244 c	6,847 c	10,759 c	15,399 t	32
33				4,880 c	6,383 c	10,051 c	14,505 c	33
34				4,547 c	5,957 c	9,402 c	13,587 c	34
35				4,240 c	5,566 c	8,806 c	12,745 c	35
36					5,206 c	8,258 c	11,970 c	36
37					4,873 c	7,751 c	11,254 c	37
38					4,564 c	7,282 c	10,592 c	38
39					4,278 c	6,847 c	9,979 c	39
40					4,011 c	6,443 c	9,409 c	40
41						6,066 c	8,878 c	41
42						5,714 c	8,383 c	42
43						5,384 c	7,920 c	43
44						5,076 c	7,487 c	44
45						4,786 c	7,080 c	45
46						4,514 c	6,698 c	46
47						4,257 c	6,339 c	47
48						4,015 c	6,000 c	48
49						3,786 c	5,679 c	49
50							5,377 c	50
51							5,090 c	51
52							4,819 c	52
53							4,561 c	53
54							4,316 c	54
55							4,082 c	55
56							3,812 d	56
57							3,486 d	57

NOTES:

1. Figures shown are allowable Equivalent Center Loads (ECL's) at the span as if developed by a single two-wheel trolley. Refer to ECL calculations for loads on four, eight and 16 wheel units, in section 1100 (Engineering).
2. The ECL's shown are limited by tension of the bottom flange, compression of the top flange, deflection of the beam and shear. These are indicated by the letters t, c, d & s, respectively, in accordance with ANSI MH 27.1 1981.
3. The weight of the girder has been considered and need not be deducted in load calculations.
4. These figures are for crane runways and monorail track where deflection is limited to 1/450 of the span, with a maximum deflection of 1.25".
5. The maximum ratio of span to depth of the girder has been limited to 32 to avoid a spring-like condition not desirable in most installations.
6. The maximum ratio of span to top flange width is limited to 60.
7. **Special girders may be constructed to meet load/depth/span conditions not shown here. Consult the factory for special girders.**

LOUDEN® *SUPERTRACK*™ GIRDER TRACK EQUIVALENT CENTER LOADS SPAN/600 - DEFLECTION LIMITED TO 1.25"

SPAN	604.820	604.924	604.1231	604.1435	604.1538	604.1846	604.2153	SPAN
5	15,663 s	18,424 s	23,992 s	27,721 s	29,544 s	34,968 s	36,118 s	5
6	15,653 s	18,412 s	23,977 s	27,703 s	29,525 s	34,945 s	36,092 s	6
7	15,643 s	18,400 s	23,961 s	27,686 s	29,506 s	34,922 s	36,065 s	7
8	13,888 t	17,924 t	23,946 s	27,669 s	29,487 s	34,899 s	36,039 s	8
9	12,015 d	15,910 t	24,039 t	27,651 s	29,468 s	34,877 s	36,012 s	9
10	8,698 d	14,296 t	21,606 t	27,197 t	29,449 s	34,854 s	35,986 s	10
11	7,981 d	12,974 t	19,613 t	24,692 t	27,612 t	34,831 s	35,959 s	11
12	6,672 d	11,047 d	17,949 t	22,601 t	25,274 t	33,623 t	35,933 s	12
13	5,651 d	9,372 d	16,539 t	20,829 t	23,294 t	30,993 t	35,907 s	13
14	4,838 d	8,039 d	15,328 t	19,307 t	21,593 t	28,736 t	35,880 s	14
15	4,179 d	6,961 d	14,277 t	17,986 t	20,117 t	26,776 t	34,258 t	15
16	3,638 d	6,076 d	13,142 d	16,829 t	18,823 t	25,058 t	32,066 t	16
17	3,188 d	5,341 d	11,587 d	15,805 t	17,679 t	23,540 t	30,128 t	17
18	2,808 d	4,722 d	10,281 d	14,893 t	16,659 t	22,188 t	28,403 t	18
19	2,485 d	4,195 d	9,173 d	13,904 d	15,746 t	20,976 t	26,857 t	19
20	2,208 d	3,744 d	8,224 d	12,486 d	14,921 t	19,883 t	25,462 t	20
21	1,967 d	3,353 d	7,405 d	11,263 d	13,893 d	18,892 t	24,198 t	21
22		3,013 d	6,692 d	10,200 d	12,591 d	17,989 t	23,047 t	22
23		2,714 d	6,068 d	9,270 d	11,452 d	17,162 t	21,993 t	23
24		2,450 d	5,518 d	8,451 d	10,449 d	16,403 t	21,025 t	24
25		2,215 d	5,030 d	7,726 d	9,561 d	15,702 t	20,132 t	25
26			4,596 d	7,080 d	8,771 d	14,707 d	19,306 t	26
27			4,206 d	6,503 d	8,065 d	13,556 d	18,539 t	27
28			3,856 d	5,983 d	7,431 d	12,523 d	17,825 t	28
29			3,539 d	5,515 d	6,858 d	11,592 d	17,158 t	29
30			3,252 d	5,090 d	6,340 d	10,749 d	16,534 t	30
31				4,704 d	5,868 d	9,985 d	15,531 d	31
32				4,351 d	5,438 d	9,288 d	14,479 d	32
33				4,028 d	5,044 d	8,651 d	13,519 d	33
34				3,731 d	4,683 d	8,067 d	12,639 d	34
35				3,458 d	4,350 d	7,530 d	11,831 d	35
36					4,042 d	7,034 d	11,086 d	36
37					3,757 d	6,576 d	10,399 d	37
38					3,493 d	6,152 d	9,762 d	38
39					3,247 d	5,757 d	9,171 d	39
40					3,017 d	5,390 d	8,622 d	40
41						5,047 d	8,110 d	41
42						4,727 d	7,631 d	42
43						4,426 d	7,184 d	43
44						4,144 d	6,764 d	44
45						3,878 d	6,370 d	45
46						3,628 d	5,999 d	46
47						3,392 d	5,650 d	47
48						3,169 d	5,320 d	48
49						2,957 d	5,008 d	49
50							4,712 d	50
51							4,432 d	51
52							4,166 d	52
53							3,913 d	53
54							3,672 d	54
55							3,443 d	55
56							3,223 d	56
57							3,014 d	57

NOTES:

1. Figures shown are allowable Equivalent Center Loads (ECL's) at the span as if developed by a single two-wheel trolley. Refer to ECL calculations for loads on four, eight and 16 wheel units, in section 1100 (Engineering).
2. The ECL's shown are limited by tension of the bottom flange, compression of the top flange, deflection of the beam and shear. These are indicated by the letters t, c, d & s, respectively, in accordance with ANSI MH 27.1 1981.
3. The weight of the girder has been considered and need not be deducted in load calculations.
4. These figures are for crane runways and monorail track where deflection is limited to 1/600 of the span, with a maximum deflection of 1.25".
5. The maximum ratio of span to depth of the girder has been limited to 32 to avoid a spring-like condition not desirable in most installations.
6. The maximum ratio of span to top flange width is limited to 60.
7. **Special girders may be constructed to meet load / depth / span conditions not shown here. Consult the factory for special girders.**

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604.924, 604.1231, 604.14*, 604.15*
***SUPERTRACK* GIRDER TRACK CURVES FOR USE WITH TROLLEYS WITH UP TO 2,500 LB. WHEEL LOAD.**

SPECIAL CURVE INFORMATION

Standard tangent length for square cut end is 12". For tangent lengths shorter than 12" see Cutting Charge on price page. 5" minimum tangent length.

Minimum tangent length for an angle cut is 14".

Minimum center straight for "S" curve is 12".

Maximum overall length is 20'-0".

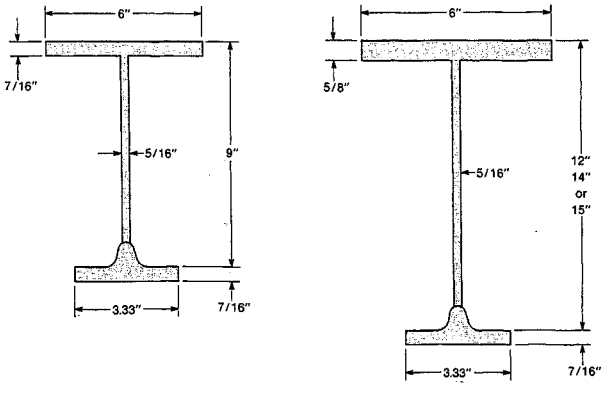
Minimum radius is 3'-0".

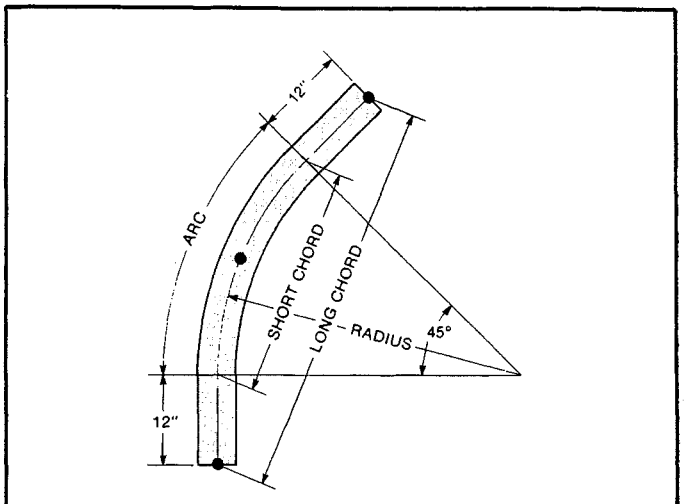
Hangers are required within 12" of the tangent points and at the center of the arc for up to 45 degrees and up to a maximum of 10' radius. Add hangers if 10' radius is exceeded. See Fig. 1.

Hangers are required within 12" of the tangent points and at the center of the arc for up to 90 degrees and up to a maximum of 6' radius. Add hangers if 6' radius is exceeded. See Fig. 2.

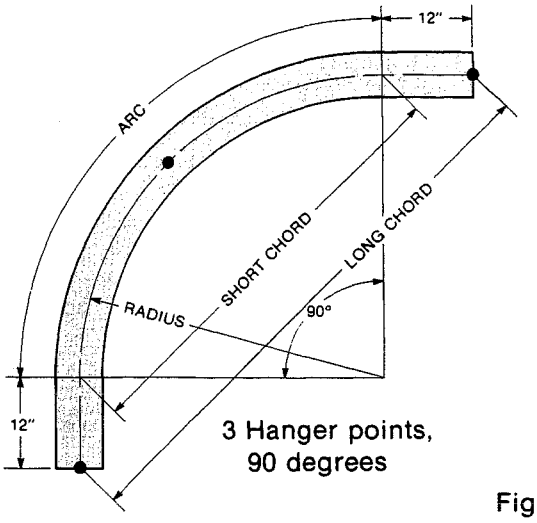
Hangers are required within 12" of the tangent points and at the 3rd points in the arc for up to 90 degrees and from 6' to 10' radius. Add hangers if 10' radius is exceeded. See Fig. 3.

*Note: 604 series Special Curves have a 6" top flange.



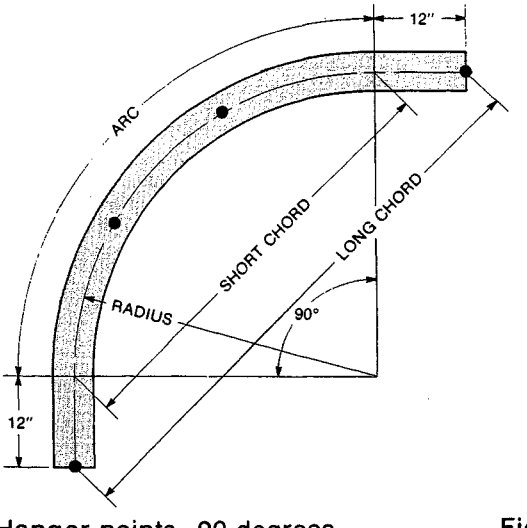


3 Hanger points, 45 degrees Fig. 1.



3 Hanger points, 90 degrees

Fig. 2.



4 Hanger points, 90 degrees Fig. 3.

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LOUDEN®

MONORAIL AND CRANE SYSTEM TRACK

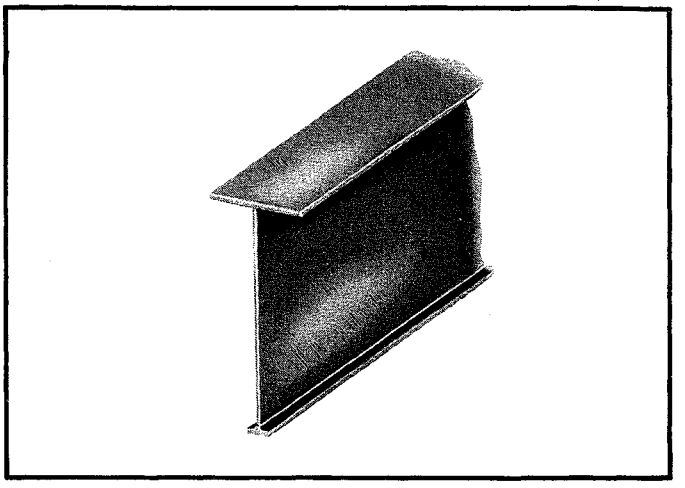
TROJANTRACK™ GIRDER WITH 3.33" OPERATING FLANGE

LOUDEN TROJANTRACK™ GIRDER

Louden 3.33" flange *TrojanTrack* has the strongest track flange of any of our specially rolled monorail track sections. The operating flange design and metalurgy offer a track capable of sustaining large wheel loads under rugged heavy-duty service, while minimizing peening and wear.

Never used by itself as a track, the *TrojanTrack* section is used as the operating flange of continuously welded girders. The girder web and top flange are fabricated from steel plate continuously welded to form the girder track section. These girders are of sufficient depth to permit the use of large diameter wheels to move extremely heavy loads under punishing requirements with dependable performance and durability.

Each piece of *Louden TrojanTrack* Girder is fabricated, and cut to exact length. All holes are in place, all curves are prepared to layout specifications, and all equipment is shipped from the factory ready for erection.



Louden TrojanTrack Girders are designed for maximum economy of weight with maximum structural value as a load carrying member.

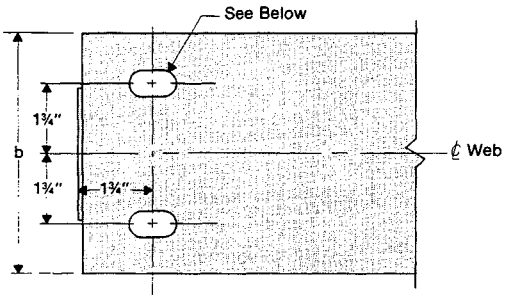
Trolleys for this track are illustrated in Catalog Section 403T and switches are illustrated in Catalog Section 703T. A complete line of hangers and other fittings is shown in Catalog Section 607.

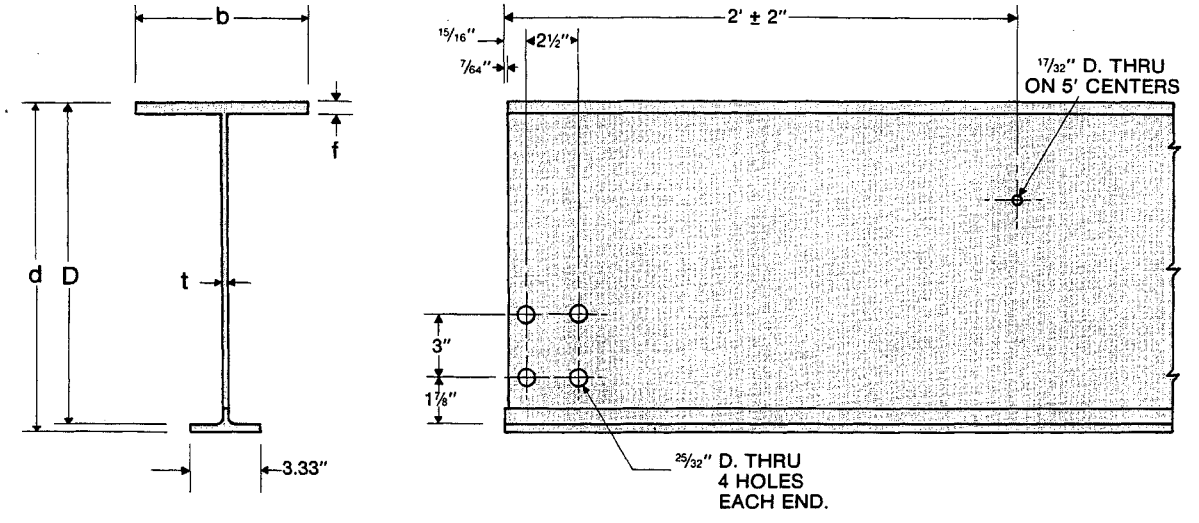
FEATURES	BENEFITS
Uniform thickness of running tread with published dimensions.	Full metal thickness from fillet to edge of flange provides maximum load carrying capacity. Dimensions are known, with no reduction of metal from fillet to flange.
Published chemical content and physical properties of running tread.	Assures that long wearing and peen-resistant metalurgy is used which meets or exceeds monorail manufacturer's specifications.
Full 13/16" tread thickness.	Able to withstand extremely heavy wheel loads and the punishment of the most severe duty systems.
Flat running tread.	Allows the use of flat tread wheels on which the radius of the wheel is uniform across the width of the running surface or "Footprint". Prevents wheel tread slip, minimizing tread wear and peening.
Efficient girder design.	Web and top flange are computer matched with the high carbon flange, for maximum load carrying capacity with minimum weight.
Web and top flange offset.	Allows easy alignment of the running flange of adjacent girders at splices. Provides extra clearance for ease of installation.
Fully manufactured at factory.	All girders are welded, straightened, and all splice holes, hanger holes, as well as electrification holes are in place before painting and shipment, for easier and faster installation.
The *LOUDEN*® Trademark.	Being the originators of the underhung monorail and crane industry, the user is assured of the ultimate in design, manufacturing and application expertise when purchasing a system which will most completely satisfy his particular requirements.

LOUDEN TROJANTRACK™ GIRDER

Operating Flange Specifications:

Min. Carbon Content	.50
Min. Manganese Content	1.00
Min. Ult. Tensile	115,000 psi
Min. Yield Point	78,500 psi
Min. Brinnell Hardness	225
Bottom Flange Width	3.33"
Tread Thickness	13/16"





Cat. No.	605.1235	605.1543	605.1850	605.2166	605.2474	605.2785	605.3089	605.3292
Wt./Ft.	35 lbs.	43 lbs.	50 lbs.	66 lbs.	74 lbs.	85 lbs.	89 lbs.	92 lbs.
D	12"	15"	18"	21"	24"	27"	30"	32"
d	12-13/16"	15-13/16"	18-13/16"	21-13/16"	24-13/16"	27-13/16"	30-13/16"	32-13/16"
b	6"	8"	10"	12"	14"	14"	14"	14"
f	5/8"	5/8"	5/8"	5/8"	5/8"	3/4"	3/4"	3/4"
t	5/16"	5/16"	5/16"	7/16"	7/16"	7/16"	7/16"	7/16"

Each piece of girder track is furnished with standard splice punching at each end and two slotted holes at each end of the top flange as shown above. Nominal slot length is twice the hole size but does not exceed 2". Hole size must be specified as shown at right.

Maximum permissible Wheel Load on 605 type TrojanTrack and 605 Type Super TrojanTrack

605 TrojanTrack - 3,750# per Wheel - 7,500# per 2-Wheel Trolley
605 Super TrojanTrack - 5,000# per Wheel - 10,000# per 2-Wheel Trolley

*Super TrojanTrack requires 3/4" minimum Top Flange, 7/16" web plate splices must be welded

N.A. - Not Available

Top Flange Hole Sizes

Flange Thickness	Bolt Size				
	5/8"	3/4"	7/8"	1"	1⅛"
5/8"	11/16"	13/16"	15/16"	N.A.	N.A.
3/4"	N.A.	13/16"	15/16"	1 1/16"	1 3/16"

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LOUDEN® *TROJANTRACK*™ GIRDER TRACK EQUIVALENT CENTER LOADS SPAN/450 - DEFLECTION LIMITED TO 1.25"

SPAN	605.1235	605.1543	605.1850	605.2166	605.2474	605.2785	605.3089	605.3292	SPAN
10	25057 s	30950 s	36686 s	57748 s	65304 s	72584 s	71773 s	76238 s	10
11	25040 s	30929 s	36661 s	57716 s	65267 s	72542 s	71728 s	76192 s	11
12	25023 s	30908 s	36636 s	57683 s	65230 s	72500 s	71684 s	76146 s	12
13	23305 t	30887 s	36611 s	57412 t	65193 s	72458 s	71639 s	76100 s	13
14	21607 t	29689 t	36586 s	53248 t	65156 s	72416 s	71595 s	76054 s	14
15	20133 t	27669 t	36009 t	49635 t	61365 t	72374 s	71551 s	76008 s	15
16	17877 c	25899 t	33710 t	46469 t	57457 t	69649 t	71506 s	75963 s	16
17	15786 c	24334 t	31679 t	43672 t	54006 t	65470 t	71462 s	75917 s	17
18	14032 c	22942 t	29871 t	41183 t	50933 t	61751 t	71418 s	75871 s	18
19	12544 c	21693 t	28250 t	38951 t	48181 t	58419 t	68428 t	75446 t	19
20	11271 c	19885 c	26789 t	36940 t	45699 t	55416 t	64920 t	71585 t	20
21	10174 c	17976 c	25465 t	35117 t	43451 t	52695 t	61742 t	68086 t	21
22	9220 c	16318 c	24259 t	33457 t	41403 t	50217 t	58849 t	64902 t	22
23	8386 c	14870 c	23084 c	31939 t	39531 t	47951 t	56203 t	61990 t	23
24	7652 c	13596 c	21129 c	30544 t	37811 t	45871 t	53775 t	59318 t	24
25	7002 c	12469 c	19401 c	28610 c	36226 t	43953 t	51537 t	56105 c	25
26	6423 c	11467 c	17866 c	26358 c	34760 t	42180 t	49468 t	51740 c	26
27	5906 c	10573 c	16495 c	24347 c	32947 c	40535 t	47176 c	47846 c	27
28	5441 c	9770 c	15266 c	22544 c	30528 c	39005 t	43738 c	44357 c	28
29	5022 c	9047 c	14159 c	20922 c	28352 c	37577 t	40645 c	41217 c	29
30	4643 c	8392 c	13159 c	19455 c	26386 c	36242 t	37852 c	38382 c	30
31		7799 c	12252 c	18125 c	24603 c	34567 c	35320 c	35813 c	31
32		7257 c	11426 c	16915 c	22982 c	32317 c	33018 c	33476 c	32
33		6763 c	10672 c	15810 c	21502 c	30266 c	30918 c	31345 c	33
34		6309 c	9981 c	14799 c	20148 c	28389 c	28997 c	29394 c	34
35		5893 c	9347 c	13870 c	18905 c	26667 c	27234 c	27605 c	35
36		5508 c	8762 c	13015 c	17762 c	25083 c	25613 c	25959 c	36
37		5153 c	8222 c	12225 c	16706 c	23623 c	24118 c	24441 c	37
38		4824 c	7723 c	11495 c	15730 c	22273 c	22735 c	23037 c	38
39		4518 c	7259 c	10817 c	14826 c	21022 c	21455 c	21737 c	39
40		4233 c	6828 c	10188 c	13985 c	19861 c	20265 c	20530 c	40
41			6427 c	9601 c	13203 c	18780 c	19159 c	19406 c	41
42			6052 c	9054 c	12473 c	17773 c	18128 c	18359 c	42
43			5701 c	8542 c	11791 c	16833 c	17164 c	17380 c	43
44			5372 c	8062 c	11153 c	15953 c	16263 c	16465 c	44
45			5063 c	7612 c	10554 c	15128 c	15418 c	15607 c	45
46			4773 c	7189 c	9992 c	14354 c	14625 c	14801 c	46
47			4499 c	6790 c	9462 c	13625 c	13879 c	14043 c	47
48			4240 c	6414 c	8963 c	12940 c	13176 c	13329 c	48
49			3996 c	6059 c	8492 c	12293 c	12513 c	12656 c	49
50			3765 c	5723 c	8047 c	11683 c	11887 c	12020 c	50
51				5404 c	7626 c	11105 c	11295 c	11418 c	51
52				5102 c	7226 c	10558 c	10734 c	10849 c	52
53				4815 c	6847 c	10039 c	10203 c	10308 c	53
54				4542 c	6487 c	9547 c	9698 c	9795 c	54
55				4283 c	6144 c	9079 c	9217 c	9307 c	55
56				4035 c	5817 c	8633 c	8760 c	8842 c	56
57				3798 c	5506 c	8209 c	8325 c	8400 c	57
58				3572 c	5208 c	7804 c	7910 c	7977 c	58
59					4924 c	7417 c	7513 c	7574 c	59
60					4652 c	7048 c	7134 c	7188 c	60
61					4392 c	6694 c	6771 c	6819 c	61
62					4142 c	6356 c	6423 c	6466 c	62
63					3902 c	6031 c	6090 c	6127 c	63
64					3672 c	5720 c	5770 c	5801 c	64
65					3450 c	5420 c	5463 c	5489 c	65
66					3237 c	5133 c	5167 c	5188 c	66
67						4856 c	4883 c	4899 c	67
68						4590 c	4609 c	4620 c	68
69						4333 c	4346 c	4352 c	69
70						4086 c	4091 c	4093 c	70

NOTES:

1. Figures shown are allowable Equivalent Center Loads (ECL's) at the span as if developed by a single two-wheel trolley. Refer to ECL calculations for loads on four, eight and 16 wheel units, in section 1100 (Engineering).
2. The ECL's shown are limited by tension of the bottom flange, compression of the top flange, deflection of the beam and shear. These are indicated by the letters t, c, d & s, respectively, in accordance with ANSI MH 27.1 1981.
3. The weight of the girder has been considered and need not be deducted in load calculations.
4. These figures are for crane runways and monorail track where deflection is limited to 1/450 of the span, with a maximum deflection of 1.25".
5. The maximum ratio of span to depth of the girder has been limited to 32 to avoid a spring-like condition not desirable in most installations.
6. The maximum ratio of span to top flange width is limited to 60.
7. **Special girders may be constructed to meet load/depth/span conditions not shown here. Consult the factory for special girders.**

LOUDEN® *TROJANTRACK*™ GIRDER TRACK EQUIVALENT CENTER LOADS SPAN/600 - DEFLECTION LIMITED TO 1.25"

SPAN	605.1235	605.1543	605.1850	605.2166	605.2474	605.2785	605.3089	605.3292	SPAN
10	25057 s	30950 s	36686 s	57748 s	65304 s	72584 s	71773 s	76238 s	10
11	25040 s	30929 s	36661 s	57716 s	65267 s	72542 s	71728 s	76192 s	11
12	25023 s	30908 s	36636 s	57683 s	65230 s	72500 s	71684 s	76146 s	12
13	23305 t	30887 s	36611 s	57412 t	65193 s	72458 s	71639 s	76100 s	13
14	21607 t	29689 t	36586 s	53248 t	65156 s	72416 s	71595 s	76054 s	14
15	19589 d	27669 t	36009 t	49635 t	61365 t	72374 s	71551 s	76008 s	15
16	17156 d	25899 t	33710 t	46469 t	57457 t	69649 t	71506 s	75963 s	16
17	15136 d	24334 t	31679 t	43672 t	54006 t	65470 t	71462 s	75917 s	17
18	13439 d	22942 t	29871 t	41183 t	50933 t	61751 t	71418 s	75871 s	18
19	12000 d	21693 t	28250 t	38951 t	48181 t	58419 t	68428 t	75446 t	19
20	10768 d	19856 d	26789 t	36940 t	45699 t	55416 t	64920 t	71585 t	20
21	9705 d	17934 d	25465 t	35117 t	43451 t	52695 t	61742 t	68086 t	21
22	8780 d	16265 d	24259 t	33457 t	41403 t	50217 t	58849 t	64902 t	22
23	7971 d	14806 d	23084 c	31939 t	39531 t	47951 t	56203 t	61990 t	23
24	7258 d	13522 d	21129 c	30544 t	37811 t	45871 t	53775 t	59318 t	24
25	6626 d	12386 d	19401 c	28610 c	36226 t	43953 t	51537 t	56105 c	25
26	6064 d	11375 d	17866 c	26358 c	34760 t	42180 t	49468 t	51740 c	26
27	5560 d	10472 d	16495 c	24347 c	32947 c	40535 t	47176 c	47846 c	27
28	5107 d	9661 d	15266 c	22544 c	30528 c	39005 t	43738 c	44357 c	28
29	4698 d	8930 d	14159 c	20922 c	28352 c	37577 t	40645 c	41217 c	29
30	4327 d	8268 d	13159 c	19455 c	26386 c	36242 t	37852 c	38382 c	30
31		7667 d	12252 c	18125 c	24603 c	34567 c	35320 c	35813 c	31
32		7118 d	11426 c	16915 c	22982 c	32317 c	33018 c	33476 c	32
33		6617 d	10672 c	15810 c	21502 c	30266 c	30918 c	31345 c	33
34		6157 d	9981 c	14799 c	20148 c	28389 c	28997 c	29394 c	34
35		5733 d	9347 c	13870 c	18905 c	26667 c	27234 c	27605 c	35
36		5342 d	8762 c	13015 c	17762 c	25083 c	25613 c	25959 c	36
37		4980 d	8222 c	12225 c	16706 c	23623 c	24118 c	24441 c	37
38		4644 d	7723 c	11495 c	15730 c	22273 c	22735 c	23037 c	38
39		4332 d	7259 c	10817 c	14826 c	21022 c	21455 c	21737 c	39
40		4041 d	6828 c	10188 c	13985 c	19861 c	20265 c	20530 c	40
41			6427 c	9601 c	13203 c	18780 c	19159 c	19406 c	41
42			6052 c	9054 c	12473 c	17773 c	18128 c	18359 c	42
43			5701 c	8542 c	11791 c	16833 c	17164 c	17380 c	43
44			5372 c	8062 c	11153 c	15953 c	16263 c	16465 c	44
45			5063 c	7612 c	10554 c	15128 c	15418 c	15607 c	45
46			4773 c	7189 c	9992 c	14354 c	14625 c	14801 c	46
47			4499 c	6790 c	9462 c	13625 c	13879 c	14043 c	47
48			4240 c	6414 c	8963 c	12940 c	13176 c	13329 c	48
49			3993 d	6059 c	8492 c	12293 c	12513 c	12656 c	49
50			3743 d	5723 c	8047 c	11683 c	11887 c	12020 c	50
51				5404 c	7626 c	11105 c	11295 c	11418 c	51
52				5102 c	7226 c	10558 c	10734 c	10849 c	52
53				4815 c	6847 c	10039 c	10203 c	10308 c	53
54				4542 c	6487 c	9547 c	9698 c	9795 c	54
55				4283 c	6144 c	9079 c	9217 c	9307 c	55
56				4035 c	5817 c	8633 c	8760 c	8842 c	56
57				3798 c	5506 c	8209 c	8325 c	8400 c	57
58				3572 c	5208 c	7804 c	7910 c	7977 c	58
59					4924 c	7417 c	7513 c	7574 c	59
60					4652 c	7048 c	7134 c	7188 c	60
61					4392 c	6694 c	6771 c	6819 c	61
62					4142 c	6356 c	6423 c	6466 c	62
63					3902 c	6031 c	6090 c	6127 c	63
64					3672 c	5720 c	5770 c	5801 c	64
65					3450 c	5420 c	5463 c	5489 c	65
66					3237 c	5133 c	5167 c	5188 c	66
67						4856 c	4883 c	4899 c	67
68						4590 c	4609 c	4620 c	68
69						4333 c	4346 c	4352 c	69
70						4086 c	4091 c	4093 c	70

NOTES:

1. Figures shown are allowable Equivalent Center Loads (ECL's) at the span as if developed by a single two-wheel trolley. Refer to ECL calculations for loads on four, eight and 16 wheel units, in section 1100 (Engineering).
2. The ECL's shown are limited by tension of the bottom flange, compression of the top flange, deflection of the beam and shear. These are indicated by the letters t, c, d & s, respectively, in accordance with ANSI MH 27.1 1981.
3. The weight of the girder has been considered and need not be deducted in load calculations.
4. These figures are for crane runways and monorail track where deflection is limited to 1/600 of the span, with a maximum deflection of 1.25".
5. The maximum ratio of span to depth of the girder has been limited to 32 to avoid a spring-like condition not desirable in most installations.
6. The maximum ratio of span to top flange width is limited to 60.
7. **Special girders may be constructed to meet load/depth/span conditions not shown here. Consult the factory for special girders.**

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605.1235, 605.15* *TROJANTRACK*™ GIRDER TRACK CURVES FOR USE WITH UP TO 15,000 LB. CAP. 4-WHEEL TROLLEY

SPECIAL CURVE INFORMATION

Standard tangent length for square cut end is 12". For tangent lengths shorter than 12" see Cutting Charge on price page. 5" minimum tangent length.

Minimum tangent length for an angle cut is 14".

Minimum center straight for "S" curve is 12".

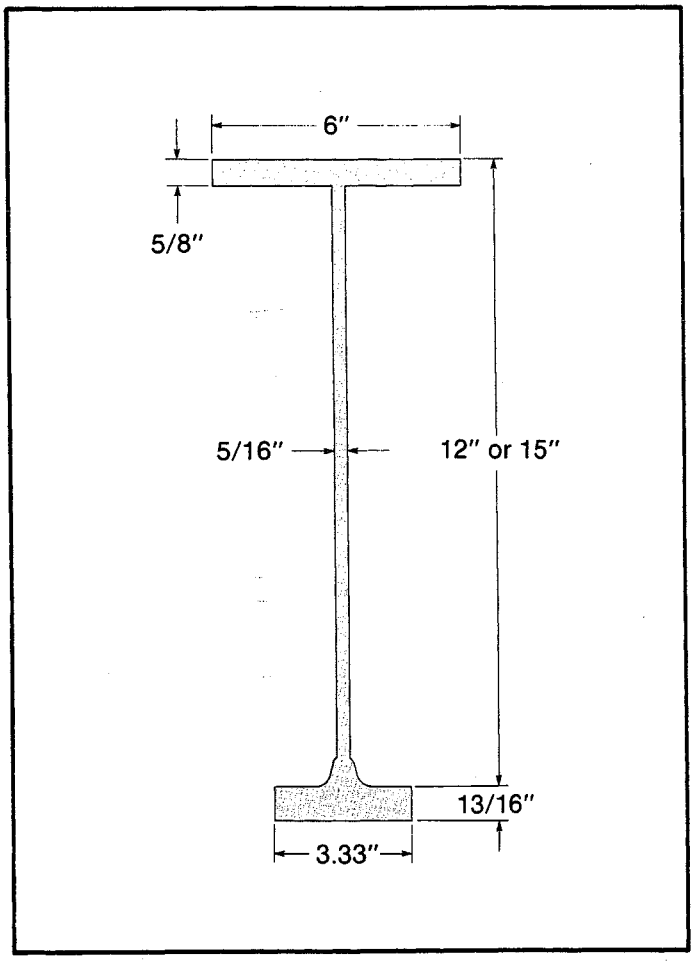
Maximum overall length is 20'-0".

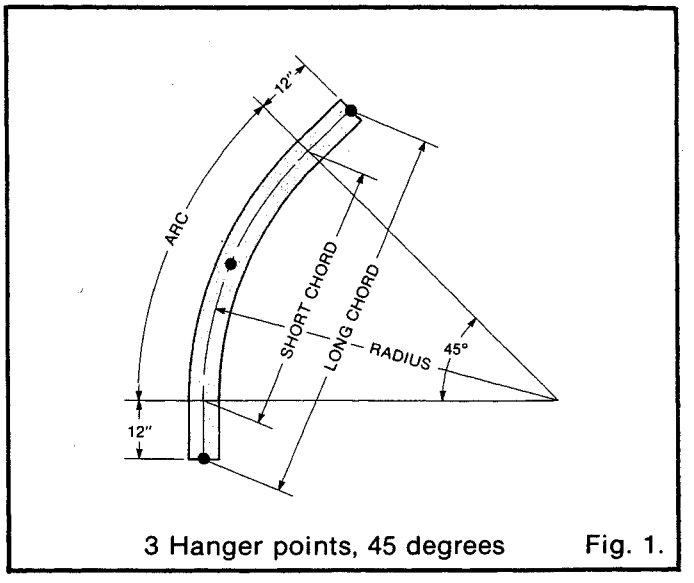
Minimum radius is 5'-0".

Hangers are required within 12", of the tangent points and at the center of the arc for up to 45 degrees and up to a maximum of 10' radius. Add hangers if 10' radius is exceeded. See Fig. 1.

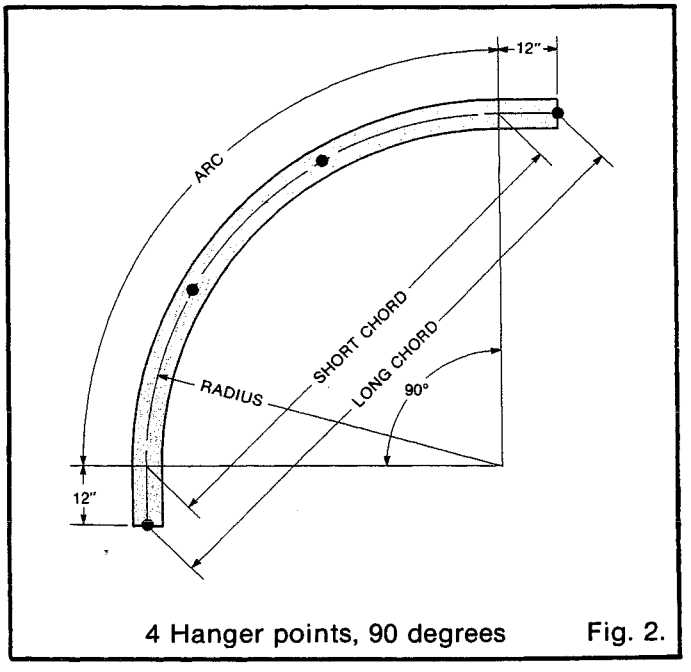
Hangers are required within 12" of the tangent points and at the 3rd points in the arc for up to 90 degrees and from 6' to 10' radius. Add hangers if 10' radius is exceeded. See Fig. 2.

*Note: All 605 series Special Curves have a 6" top flange.





3 Hanger points, 45 degrees Fig. 1.



4 Hanger points, 90 degrees Fig. 2.

Acco Material Handling Solutions

Issued 9-07-01 607-1

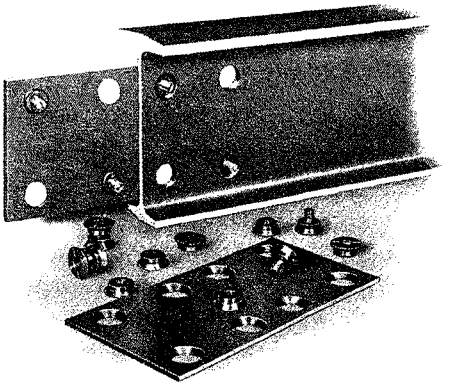
LOUDEN®

MONORAIL AND CRANE SYSTEM TRACK

TRACK SUSPENSION ASSEMBLIES

Splice Assemblies

Designed to hold two lengths of *Louden* track in alignment by clamping to the track web, all *Louden* track splice assemblies are furnished complete with two splice plates, eight 3/4" dia. shoulder machine screws and shoulder nuts, and the required number of shims, as needed. Although the track splice assemblies are not load bearing members, they help assure proper alignment of the operating tread of two adjoining lengths of *Louden* track.



607.5011 (40-1051)
Wt. 5 lbs.

Used to connect tracks with like web thickness up to 5/16".

607.5012 (40-1052)
Wt. 5 lbs.

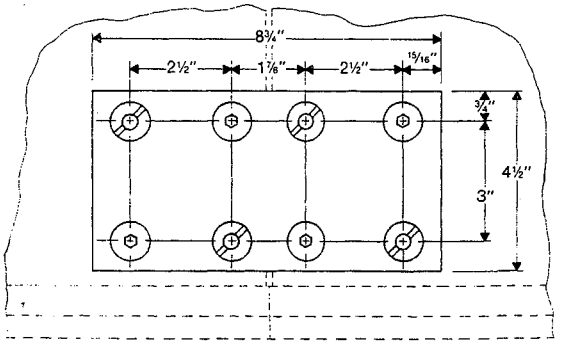
Used to connect 7/16" web track to 7/16" web track.

607.5016 (40-1060)
Wt. 5 lbs.

Used to connect 1/4" web track to 5/16" web track.

607.5013 (40-1063)
Wt. 5 lbs.

Used to connect 5/16" web track to 7/16" web track.



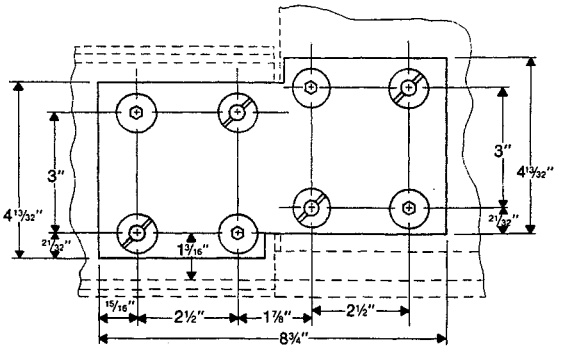
607.5011, 607.5012, 607.5013, 607.5016

607.5014 (40-1061)
Wt. 5 lbs.

Used to connect 1/4" web 604 Series SuperTrack Girder to SuperTrack Girder furnished prior to March 1, 1978 and to SuperTrack.

607.5015 (40-1062)
Wt. 5 lbs.

Used to connect 5/16" web 604 Series SuperTrack Girder to SuperTrack Girder furnished prior to March 1, 1978 and to SuperTrack.

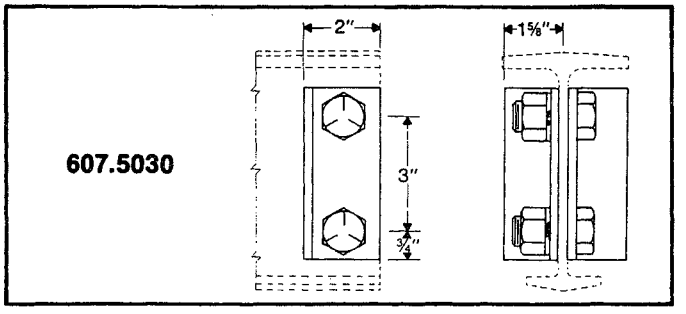


607.5014, 607.5015

End Stops

607.5030 (28-0236)
Wt. 3-1/2 lbs.

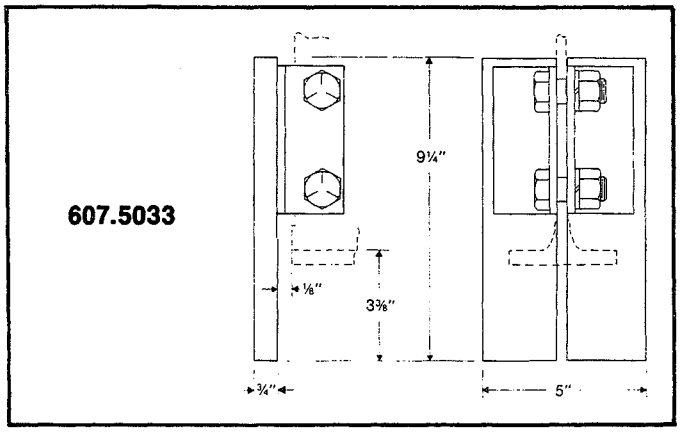
This wheel stop, made of two heavy steel angles, is clamped through standard splice holes in the track web by two 3/4" x 2" Grade 5 hex head cap screws, nuts, and lock washers. It may be located either mid-span or at the rail end. Wheel stops are not recommended where loadbar stops can be used.



Close Approach End Stop

607.5033 (28-0689)
Wt. 8-5/8 lbs.

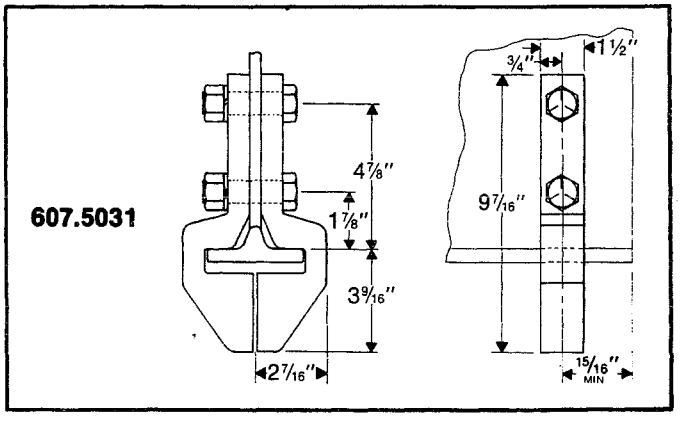
This loadbar stop is designed to help provide stop protection at the track ends of all *Louden* systems by clamping to the web of the track through standard splice holes. It is not to be used as a wheel stop. Fabricated from heavy steel angles and 3/4" steel bar stock, the two halves of the stop are furnished with two 3/4" x 2" Grade 5 hex head cap screws, nuts, and lock washers. Use only when bumper protrudes past wheel tread by at least 1-3/4".



Universal Stop

607.5031 (28-0691)
Wt. 12-1/2 lbs.

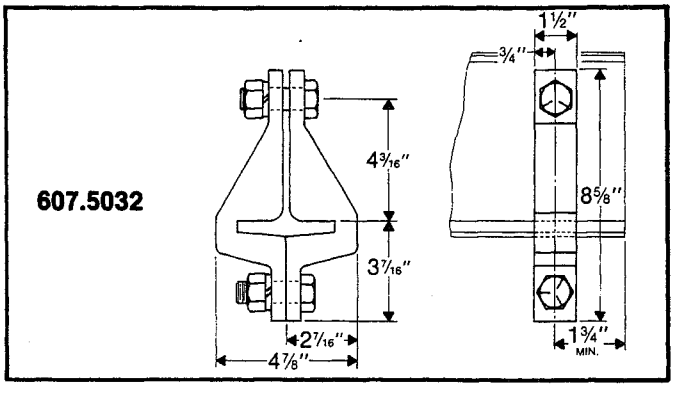
The heavy-duty universal loadbar stop clamps to 604 and 605 Girder track with two 3/4" x 2-3/4" Grade 5 hex head cap screws, nuts, and lock washers. It may be located in standard splice holes or can be located in mid-span during system erection.



Intermediate Stop

607.5032 (28-0659)
Wt. 8-1/2 lbs.

This loadbar/wheel stop clamps to 603.6 SuperTrack with 7/8" x 2-1/2" and 3/4" x 2-1/4" Grade 5 hex head cap screws, nuts, and lock washers. It is normally used in mid-span but may be used as an end stop if the stop centerline is a minimum 1-3/4" from the end of the rail. Located during system erection, this stop requires one 15/16" diameter hole in the web of the track. Layouts **must show exact location.**



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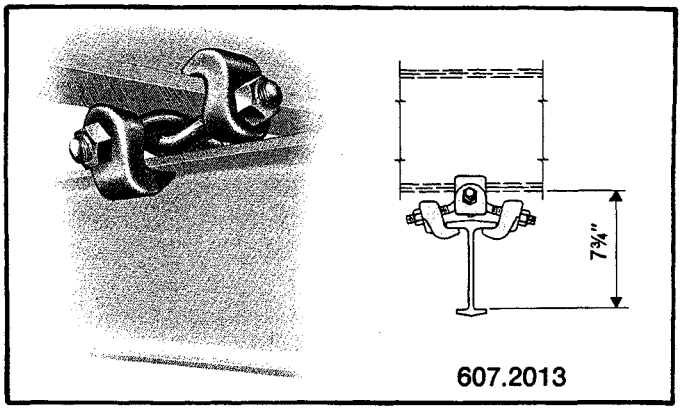
Right Angle Hangers

607.2013 (30-1073)
Wt. 8 lbs. 4000 lb. cap.

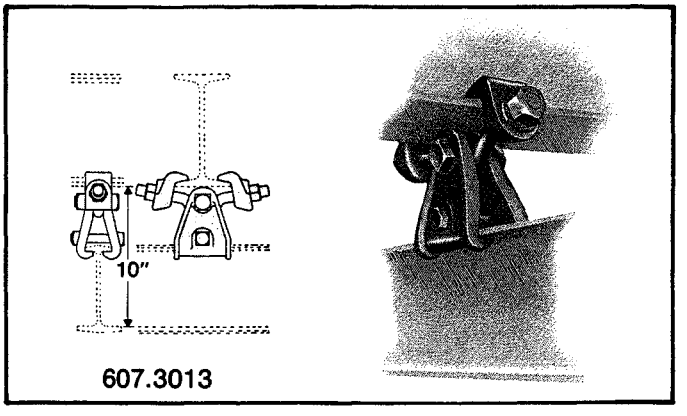
Intended to suspend non-electrified 602.6 *SuperTrack*™ patented track at right angles to superstructure beams having flanges 2" to 4-5/8" wide, the four certified malleable iron clamping lugs are held in place by two specially shaped 3/4" bolts.



607.2013

607.3013 *(30-1075)*
Wt. 9 lbs. 4000 lb. cap.

Intended to suspend 603.6 *SuperTrack*™ patented track at right angles to superstructure beams having flanges 2" to 6-1/4" wide, the four certified malleable iron clamping lugs are held in place by a specifically shaped 3/4" bolt, a 3/4" Grade 5 hex head cap screw, a 5/8" Grade 5 hex head cap screw, and the required nuts and lock washers.

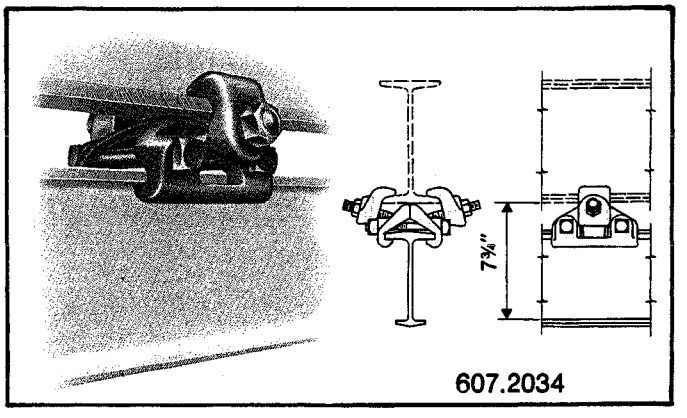


607.3013

Parallel Hangers

607.2034 (30-1072)
Wt. 9.5 lbs. 4000 lb. cap.

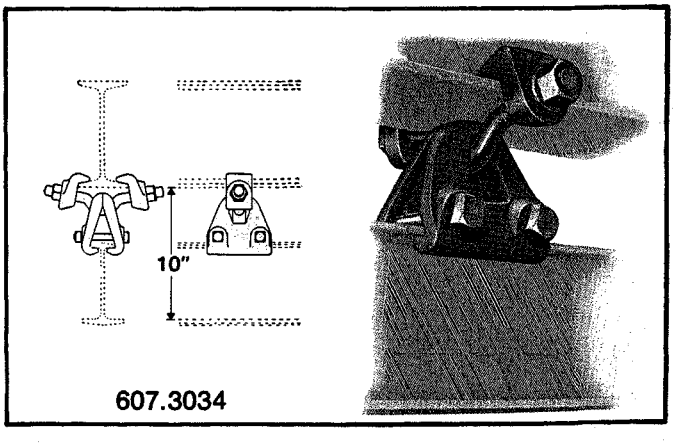
This close headroom type hanger is designed to suspend 602.6 *SuperTrack*™ patented track parallel to superstructure beams having flanges 3" to 4-5/8" wide. The four certified malleable iron clamping lugs are held in place by a specially shaped 3/4" bolt and two 5/8" Grade 5 hex head cap screws, nuts and lock washers. This hanger is to be used on non-electrified track systems only.



607.2034

607.3034 (30-1074)
Wt. 10 lbs. 4000 lb. cap.

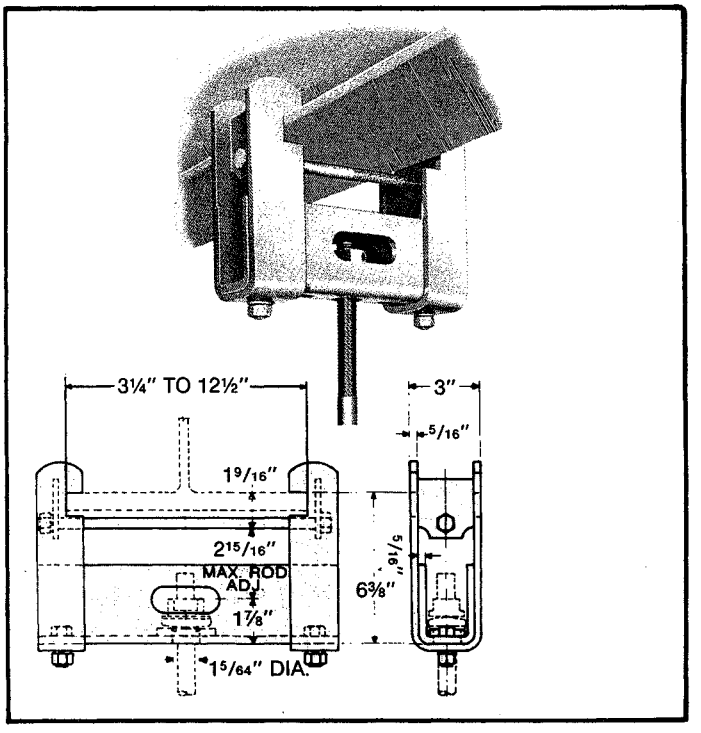
This close headroom type hanger is designed to suspend 603.6 *SuperTrack*™ patented track parallel to superstructure beams having flanges 3" to 6-1/4" wide. The four certified malleable iron clamping lugs are held in place by a specially shaped 3/4" bolt and two 5/8" Grade 5 hex head cap screws, nuts and lock washers.



607.3034

Adjustable Beam Clamps

Adjustable beam clamps eliminate the need to drill holes in the building steel by rigidly clamping to the superstructure beam flange. The clamping and holding action of the clamps is achieved with 1/2" dia. hex head cap screws. Slotted sides permit easy access to the Gimbal Rod Adjusting Nut. The fitting is equipped with a built-in hardened bearing washer.



607.254 (28-0145)
Wt. 14 lbs. 8500 lb. cap.

For use with 3/4" dia. Gimbal Rods. Fits beams with flange width 3-1/4" to 7". (Not for use as lower fitting)

607.255 (28-0146)
Wt. 17 lbs. 8500 lb. cap.

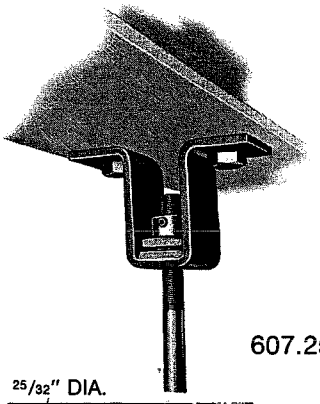
For 3/4" dia. Gimbal Rods. Fits beams with flange width 7" to 10". (Not for use as lower fitting)

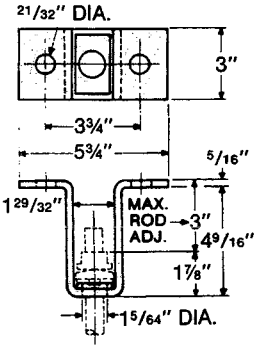
607.257 (28-0147)
Wt. 18 lbs. 8500 lb. cap.

For 3/4" dia. Gimbal Rods. Fits beams with flange width 10" to 12-1/2". (Not for use as lower fitting)

Beam Cleats

Used to connect Gimbal Rod assemblies to the bottom flange of superstructure beams, these fittings are made from special bar quality steel. They are furnished complete with built-in hardened bearing washer, and mounting bolts. (Not for use as lower fitting)

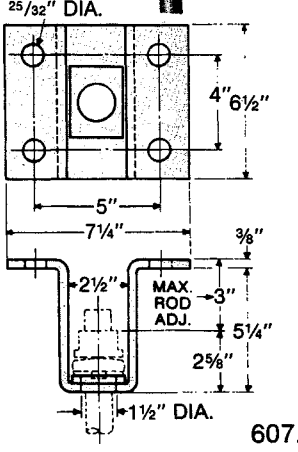


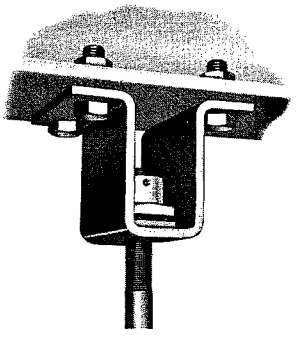


607.258

607.258 (40-1057)
Wt. 3 lbs. 8500 lb. cap.

For use with 3/4" dia. Gimbal Rods. Includes two 5/8" x 2-1/2" Grade 5 hex cap screws, nuts and lock washers. (Not for use as lower fitting)





607.259

607.259 (40-0158)
Wt. 4 lbs. 20000 lb. cap.

For use with 1-1/8" dia. Gimbal Rods. Includes four 3/4" x 2-1/2" Grade 5 hex head cap screws, nuts and lock washers. (Not for use as lower fitting)

607.264 (40-0158)
Wt. 28 lbs. 34000 lb. cap.

For use with 1-1/2" diameter Gimbal Rods. Includes four 7/8" x 9" A325 hex head bolts, nuts, and lock washers.

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Louden Gimbal Rod Assemblies

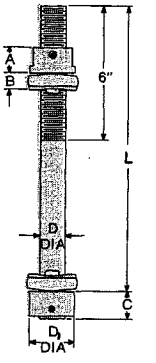
Louden Gimbal Rod hanger assemblies are available in 3/4" dia., 1-1/8" dia., and 1-1/2" dia. Each Gimbal Rod assembly includes:

One hanger rod with fixed nut
Two Gimbal Washers
One Adjustable Nut with Set Screw

Louden 3/4" Gimbal Rod assemblies are available in 4" to 60" lengths, in two inch increments. Rods from 61" to 239" long may special ordered.

Louden 1-1/8" Gimbal Rod assemblies are available in 6" to 60", in two inch increments. Rods for 61" to 239" long may be special ordered.

Louden 1-1/2" Gimbal Rod assemblies are available in lengths ranging from 12" to 72", in six inch increments.



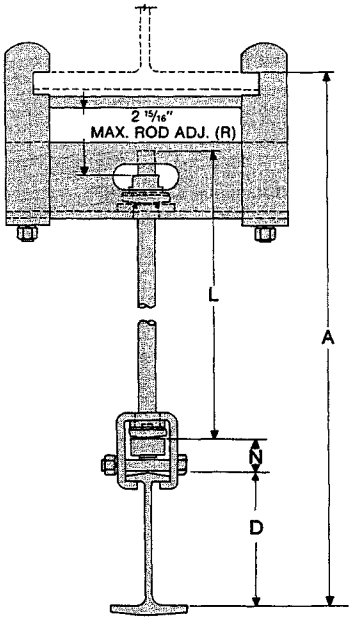
HANGER ROD DIMENSIONS

ROD DIA. D	A	B	C	D1
¾"	¾"	⅝"	13/16"	1½"
1⅛"	1⅛"	⅞"	1⅛"	2"

Gimbal Rod Lengths

Gimbal Rod lengths are measured from the top of the lower fixed nut to the end of the rod (dimension "L" in the drawing). The length of the rod "L" is normally determined as "A" (operating tread to top of bottom flange of supporting steel minus "D" (depth of track) minus "N" (height from the top of the track to the top of the fixed nut) minus 2 ¾".

L = A - D - N - 2¾"



Hardened Bearing Washers

Hardened Bearing Washers must be used when *Louden* Gimbal Rods are suspended directly through holes in the building steel, superstructure, or special upper fittings. The washer is placed between the upper Gimbal Washer and the supporting steel. The hardened bearing washer must be tack welded in place to assure proper Gimbal action of the Gimbal Rod.

607.4452 (26-0503)
Wt. 1/4 lb.

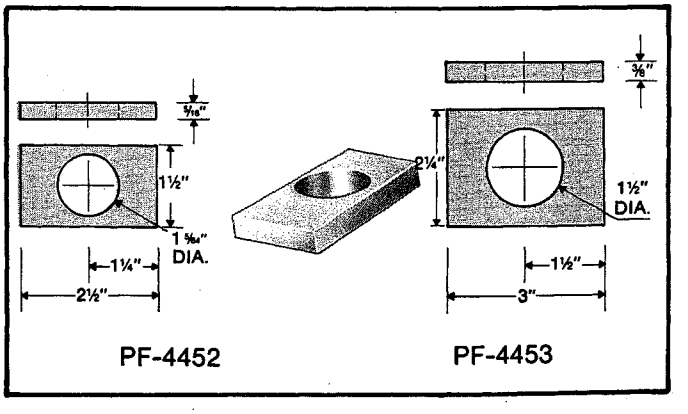
Bearing Washer for use with 3/4" dia. Gimbal Rods.

607.4453 (26-0504)
Wt. 1/2 lb.

Bearing Washer for use with 1-1/8" dia. Gimbal Rods.

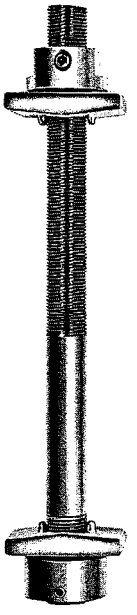
607.4454 (26-0502)
Wt. 1-3/4 lb.

Bearing Washer for use with 1-1/2" dia. Gimbal Rods.



3/4" Dia. Gimbal Rods
607.8500G 8500 lb. cap.

LENGTH	CAT. NO.	PART NO.	WT. LBS.
4"	607.8504G	40-1070	1.7
6"	607.8506G	40-1071	2.0
8"	607.8508G	40-1072	2.2
10"	607.8510G	40-1073	2.5
12"	607.8512G	40-1074	2.7
14"	607.8514G	40-1075	3.0
16"	607.8516G	40-1076	3.2
18"	607.8518G	40-1077	3.5
20"	607.8520G	40-1078	3.7
22"	607.8522G	40-1079	4.0
24"	607.8524G	40-1080	4.2
26"	607.8526G	40-1081	4.5
28"	607.8528G	40-1082	4.7
30"	607.8530G	40-1083	5.0
32"	607.8532G	40-1084	5.2
34"	607.8534G	40-1085	5.5
36"	607.8536G	40-1086	5.7
38"	607.8538G	40-1087	6.0
40"	607.8540G	40-1088	6.2
42"	607.8542G	40-1089	6.5
44"	607.8544G	40-1090	6.7
46"	607.8546G	40-1091	7.0
48"	607.8548G	40-1092	7.2
50"	607.8550G	40-1093	7.5
52"	607.8552G	40-1094	7.7
54"	607.8554G	40-1095	8.0
56"	607.8556G	40-1096	8.2
58"	607.8558G	40-1097	8.5
60"	607.8560G	40-1098	8.7



1-1/8" Dia. Gimbal Rods
607.20000G 20000 lb. cap.

LENGTH	CAT. NO.	PART NO.	WT. LBS.
6"	607.20006G	40-1099	4.8
8"	607.20008G	40-1100	5.3
10"	607.20010G	40-1101	5.9
12"	607.20012G	40-1102	6.4
14"	607.20014G	40-1103	7.0
16"	607.20016G	40-1104	7.6
18"	607.20018G	40-1105	8.1
20"	607.20020G	40-1106	8.7
22"	607.20022G	40-1107	9.2
24"	607.20024G	40-1108	9.8
26"	607.20026G	40-1109	10.4
28"	607.20028G	40-1110	10.9
30"	607.20030G	40-1111	11.5
32"	607.20032G	40-1112	12.0
34"	607.20034G	40-1113	12.6
36"	607.20036G	40-1114	13.1
38"	607.20038G	40-1115	13.7
40"	607.20040G	40-1116	14.3
42"	607.20042G	40-1117	14.8
44"	607.20044G	40-1118	15.4
46"	607.20046G	40-1119	16.0
48"	607.20048G	40-1120	16.5
50"	607.20050G	40-1121	17.1
52"	607.20052G	40-1122	17.6
54"	607.20054G	40-1123	18.2
56"	607.20056G	40-1124	18.8
58"	607.20058G	40-1125	19.3
60"	607.20060G	40-1126	19.9

Louden superstructure rods are made of special analysis high tensile steel and are furnished in 3/4" dia. (7500 lb. cap.) and 1-1/8" dia. (17000 lb. cap.). Each rod has 6" of U.N.C. thread at both ends and comes complete with four hex nuts. Standard lengths are available in 3" increments from 6" to 60". Longer rods up to 240" are available on special order. These rods are to be used for rigidly supporting superstructure and switches only and are not to be subject to bending.

3/4" Dia. Superstructure Rods
607.7500 7500 lb. cap.

LENGTH	CAT. NO.	PART NO.	WT. LBS.
6"	607.7506	28-0318	1.5
9"	607.7509	28-0319	1.9
12"	607.7512	28-0320	2.3
15"	607.7515	29-0321	2.6
18"	607.7518	28-0322	3.0
21"	607.7521	28-0323	3.4
24"	607.7524	28-0324	3.8
27"	607.7527	28-0326	4.1
30"	607.7530	28-0327	4.5
33"	607.7533	28-0328	4.9
36"	607.7536	28-0329	5.3
39"	607.7539	28-0330	5.6
42"	607.7542	28-0331	6.0
45"	607.7545	28-0332	6.4
48"	607.7548	28-0333	6.8
51"	607.7551	28-0334	7.1
54"	607.7554	28-0335	7.5
57"	607.7557	28-0336	7.9
60"	607.7560	28-0337	8.3

1-1/8" Dia. Superstructure Rods
607.17000 17000 lb. Cap.

LENGTH	CAT. NO.	PART NO.	WT. LBS.
6"	607.17006	30-0744	3.9
9"	607.17009	30-0745	4.2
12"	607.17012	30-0746	5.0
15"	607.17015	30-0747	5.9
18"	607.17018	30-0748	6.7
21"	607.17021	30-0749	7.6
24"	607.17024	30-0750	8.4
27"	607.17027	30-0751	9.3
30"	607.17030	30-0752	10.0
33"	607.17033	30-0753	10.9
36"	607.17036	30-0754	11.8
39"	607.17039	30-0755	12.6
42"	607.17042	30-0756	13.5
45"	607.17045	30-0757	14.3
48"	607.17048	30-0758	15.1
51"	607.17051	30-0759	16.0
54"	607.17054	30-0760	16.8
57"	607.17057	30-0761	17.7
60"	607.17060	30-0762	18.5

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1 1/2" Dia. Gimbal Rods
607.34000G, 34,000 lb. cap.

LENGTH	CAT. NO.	PART NO.	WT. LBS.
12	607.34012G	401010	17.9
18	607.34018G	401011	20.9
24	607.34024G	401012	23.9
30	607.34030G	401013	26.9
36	607.34036G	401014	29.9
42	607.34042G	401015	32.9
48	607.34048G	401016	35.9
54	607.34054G	401017	38.9
60	607.34060G	401018	42.9

1. Dual 1 1/2" dia. gimbal rod assemblies are rated at 50,000 lb capacity.
2. 1 1/2" dia. gimbal rods are threaded full length.
3. Special length 1 1/2" dia. gimbal rods are available up to 11'-10" long.

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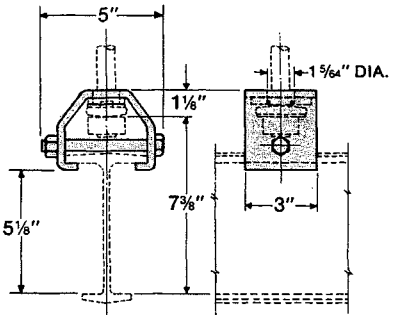
Track Clamps

These rugged track fittings are formed from special bar quality steel and have a built-in hardened bearing washer for *Louden*® Gimbal Rods. They clamp to the top flange of *SuperTrack*™ patented track at any point in the track system. The 1/2" clamping bolt is not subject to stress under live loads under normal operating condidtions.

607.250 (28-0141)
Wt. 3 lbs. 7500 lb. cap.

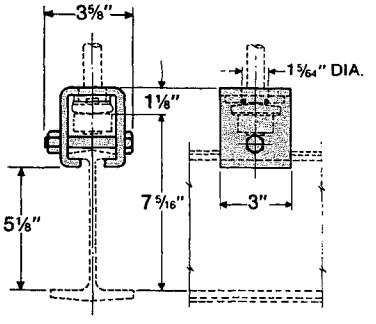
For 2" flange *SuperTrack*™ patented track supported by 3/4" dia. Gimbal Rods.



607.250

607.350 (28-0286)
Wt. 3 lbs. 8500 lb. cap.

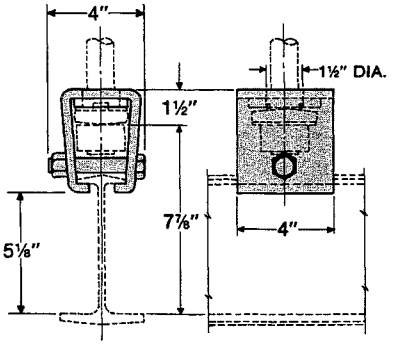
For 3.33" flange *SuperTrack*™ patented track supported by 3/4" dia. Gimbal Rods.



607.350

607.356 (28-0287)
Wt. 4 lbs. 12000 lb. cap.

For 3.33" flange *SuperTrack*™ patented track supported by 1-1/8" dia. Gimbal Rods.



607.356

Girder Track Hangers

Used to connect *Louden*® Gimbal Rod assemblies to Girder track, Girder Track Hangers are designed to allow full gimbal action. They are used in mid-span, at splice points and with Girder Connectors. They are furnished complete with bolts, nuts and lock washers, and have a built in hardened bearing washer.

607.351 (40-1053)
Wt. 4-⅛ lbs. 8500 lb. cap.

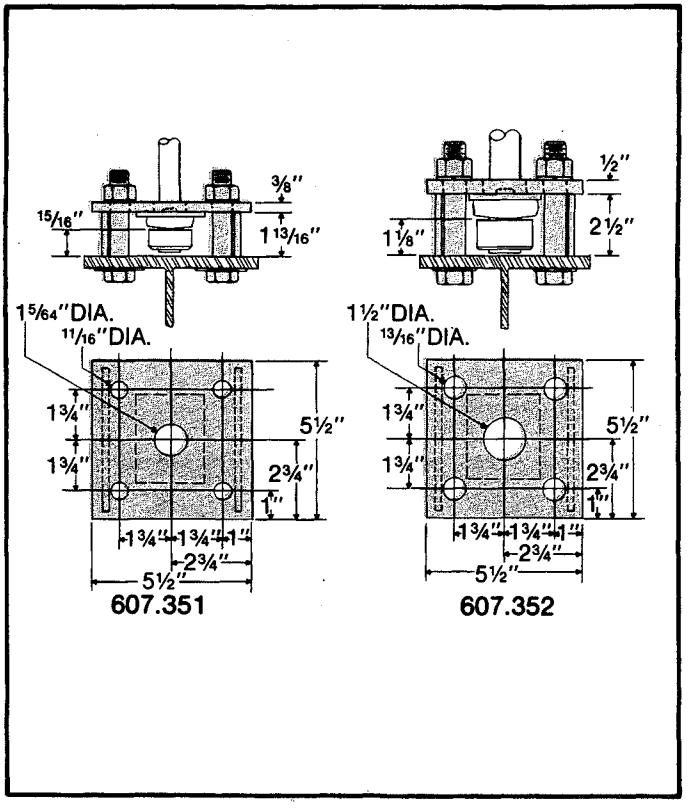
Used to connect *SuperTrack*™ Girder Track and *Trojan Track*™ Girder Track to ¾" Gimbal Rods. Includes 4⅝" x 4" Grade 5 hex head cap screws, nuts and lock washers.

607.352 (40-1054)
Wt. 5-⅜ lbs. 20000 lb. cap.

Used to connect *SuperTrack*™ Girder Track and *Trojan Track*™ Girder Track to 1-⅛" Gimbal Rods. Includes 4¾" x 5" Grade 5 hex head cap screws, nuts and lock washers.

607.353 (40-1056)
Wt. 14-3/8 lbs. 34,000 lb. cap.

Used to connect *SuperTrack* Girder Track and *Trojan Track* Girder Track to 1-1/2" Gimbal Rods. Includes (4) 7/8" x 7" A325 hex head bolts with nuts, washers, and lockwashers.



Girder Top Flange Splices

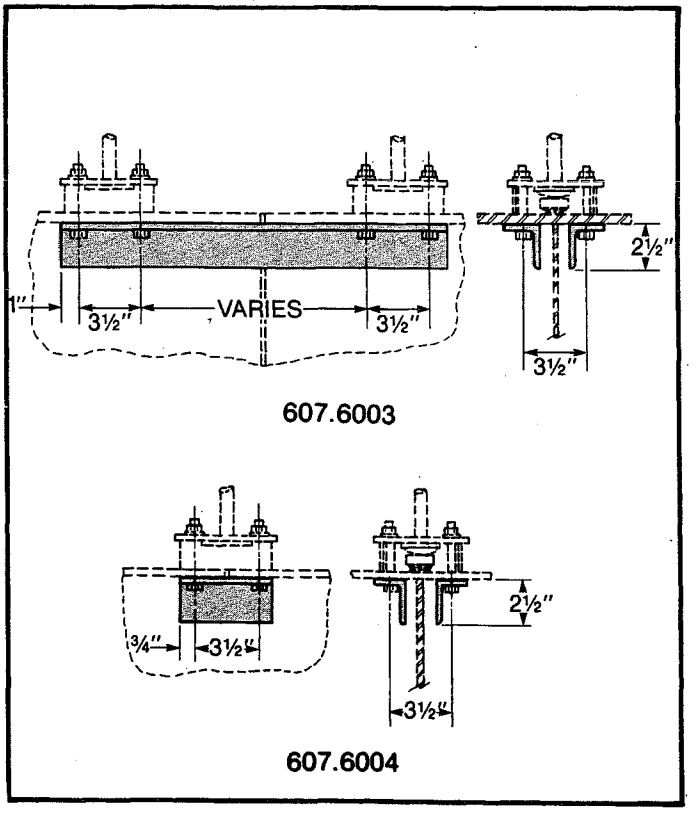
607.6003 (41-0007)
Wt. 12.7 lbs.

Must be used at splice points when two girder hangers are used at the splice. For 3/4" and 1-1/8" Gimbal Rods. Consult factory for 1-1/2" Gimbal Rods.

607.6004 (281096)
Wt. 3.2 lbs.

Must be used at splice points when rail end load exceeds maximum end load (in table below), and support is by two bolts at the end of each girder. Used in bolt direct or girder hanger applications.

Top Flange	Maximum End Load
5/16	4000
7/16	8000
5/8	16000
3/4	24000



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Girder Connectors

At times, it is advantageous to utilize varying girder sizes in a single continuous track line, using deep girder for long spans and stepping down to smaller girder for short spans. In this situation a Girder Connector is used to support the smaller girder from the larger one.

All *Louden* Girder Connectors are furnished complete with the required Grade 5 hex head cap screws, nuts, lock washers and shims but do require the addition of the proper Girder Track Hanger.

607.402 (41-0009)
Wt. 4½ lbs.

Used to connect girders with a 2" height difference.

607.403 (41-0010)
Wt. 5 lbs.

Used to connect girders with a 3" height difference.

607.405 (41-0001)
Wt. 9½ lbs.

Used to connect girders with a 5" height difference.

607.406 (41-0001)
Wt. 10¼ lbs.

Used to connect girders with a 6" height difference.

607.408 (41-0001)
Wt. 11½ lbs.

Used to connect girders with an 8" height difference.

607.409 (41-0001)
Wt. 12¼ lbs.

Used to connect girders with a 9" height difference.

607.410 (41-0001)
Wt. 13 lbs.

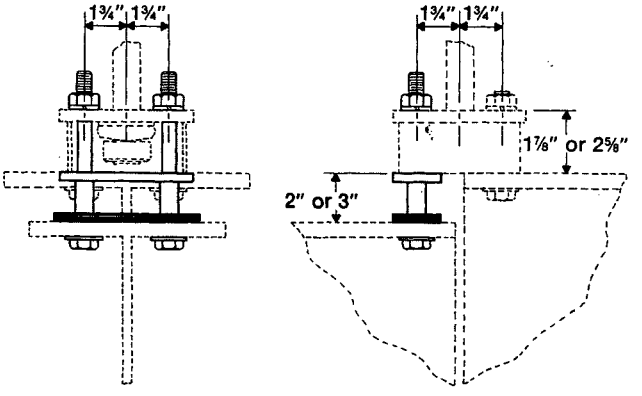
Used to connect girders with a 10" height difference.

607.411 (41-0001)
Wt. 13¾ lbs.

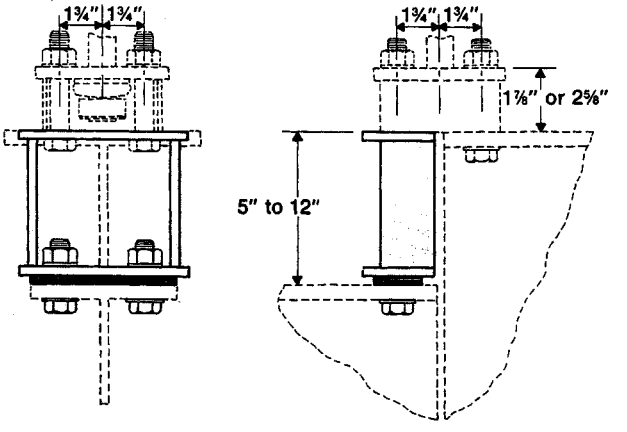
Used to connect girders with an 11" height difference.

607.412 (41-0001)
Wt. 14¼ lbs.

Used to connect girders with a 12" height difference.



607.402, 607.403

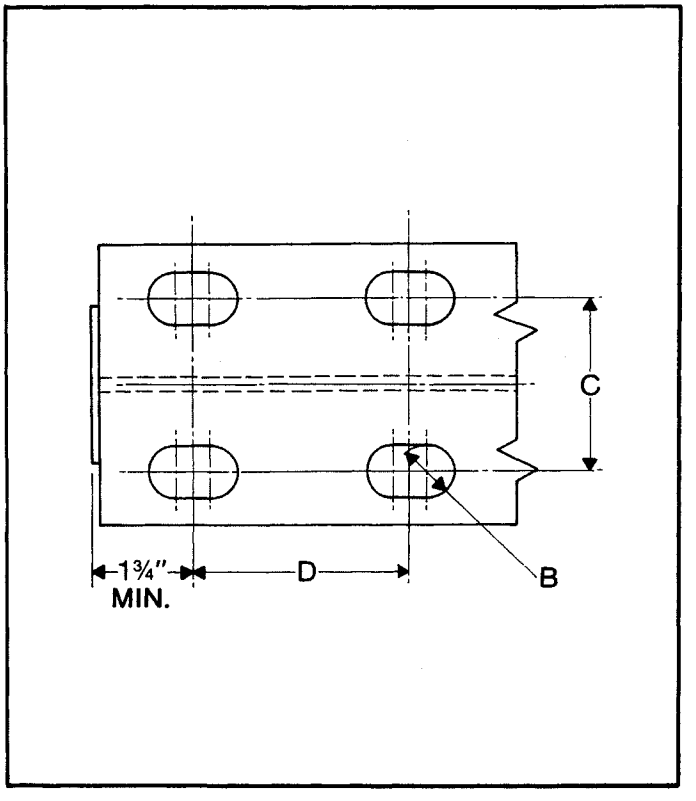


607.405, 607.406, 607.408,
607.409, 607.410, 607.411,
607.412

Girder Top Flange Hole Specifications

Each length of Louden girder track is furnished with one pair of slotted holes at each end spaced 3½″ center-to-center and 1¾″ to center from the end of the operating flange, as shown on pages 604-2 and 605-2. Any variations from this must be specified from the chart below. Nominal slot length is twice the hole size but does not exceed 2″. Refer to York, Pa. for bolt patterns other than those shown below.

A		B	C			D	
FLANGE THICKNESS	BOLT SIZE	NOM. HOLE SIZE	GAGE STANDARD	GAGE MINIMUM	GAGE MAXIMUM	SPREAD STANDARD	SPREAD MINIMUM
5/16	5/8	11/16	3½	3	3½	3½	3
7/16	5/8	11/16	3½	3	4	3½	3
	3/4	13/16	3½	3	4	3½	3
5/8	5/8	11/16	3½	3	4	3½	3
	3/4	13/16	3½	3	4	3½	3
	7/8	15/16	-	3	4	-	3
3/4	3/4	13/16	3½	3	4½	3½	3½
	7/8	15/16	-	3½	4½	-	3½
	1	1 1/16	-	4	4½	-	3½
	1 1/8	1 3/16	-	4	4½	-	3½



Girder Track Extensions

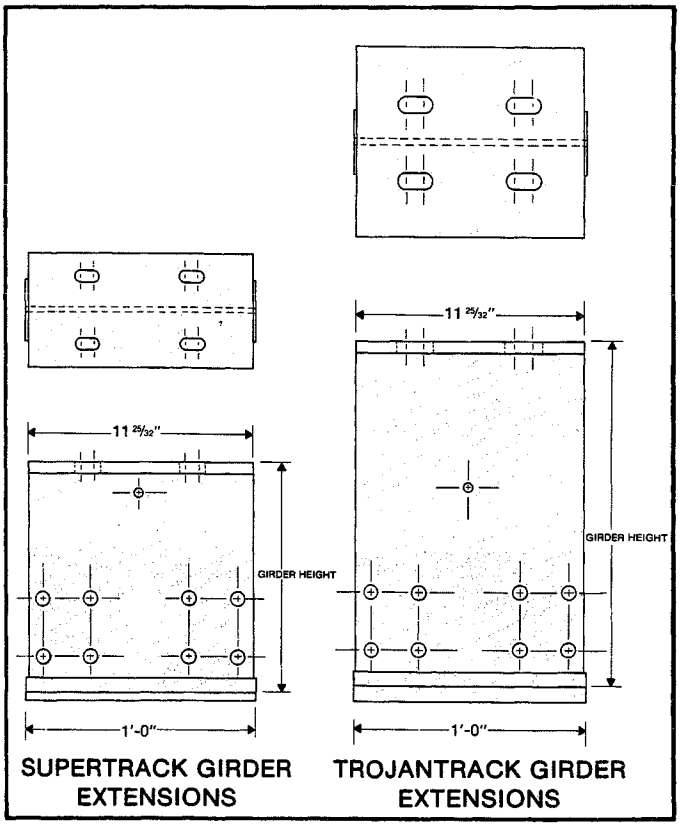
When a track system requiring future extension is installed, inclusion of these 12″ long sections of girder track allows proper placement of building superstructure and track hanger points. When the track line is continued, the Girder Track Extension is removed and replaced with the new track, minimizing installation costs and reducing alterations to the existing system.

Supertrack Girder Extensions

607.509, Wt. 24 lbs. 9" deep girder
607.512, Wt. 31 lbs. 12" deep girder
607.514, Wt. 35 lbs. 14"deep girder
607.515, Wt. 38 lbs. 15" deep girder
607.518, Wt. 46 lbs. 18" deep girder
607.521, Wt. 53 lbs. 21" deep girder

Trojantrack Girder Extensions

607.612, Wt. 35 lbs. 12″ deep girder
607.615, Wt. 43 lbs. 15″ deep girder
607.618, Wt. 50 lbs. 18″ deep girder
607.621, Wt. 66 lbs. 21″ deep girder
607.624, Wt. 74 lbs. 24″ deep girder
607.627, Wt. 85 lbs. 27″ deep girder
607.630, Wt. 89 lbs. 30″ deep girder
607.632, Wt. 92 lbs. 32″ deep girder



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Flush Clamps

Louden flush clamps are designed to eliminate the drilling of holes in building superstructure when suspending a crane or monorail system. Flush clamps support *Louden* tracks at right angles to superstructure steel by clamping the top flange of the track to the bottom of the supporting steel, but do allow some adjustability during installation. *Louden* flush clamps are available in up to 30,000 lb. capacity to fit a wide range of beam and truss sizes.

607.710 (41-0023)
Wt. 15 lbs. 5,000 lb. cap.

Used to support 602.6 SuperTrack from beam flanges 3" to 5⅜" wide. For non-electrified systems only.

607.711 (41-0025)
Wt. 15 lbs. 5,000 lb. cap.

Used to support 602.6 SuperTrack from beam flanges 5½" to 7¼" wide. For non-electrified systems only.

607.720 (41-0019)
Wt. 15 lbs. 5,000 lb. cap.

Used to support 603.6 SuperTrack from beam flanges 3" to 5⅜" wide. For non-electrified systems only.

607.721 (41-0021)
Wt. 15 lbs. 5,000 lb. cap.

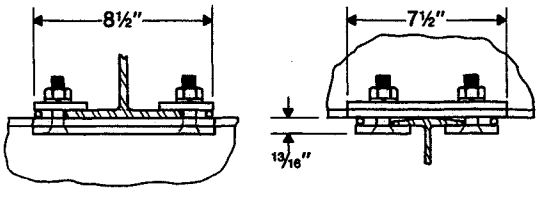
Used to support 603.6 SuperTrack from beam flanges 5½" to 7¼" wide. For non-electrified systems only.

607.730 (41-0031)
Wt. 35 lbs. 10,000 lb. cap.

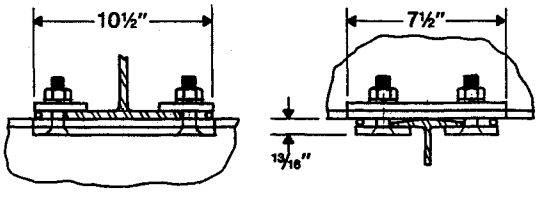
For use with 604 SuperTrack Girder and 605 TrojanTrack Girder. Not to be used with electrified 604.820 & 604.924 SuperTrack Girder.

607.731 (41-0033)
Wt. 35 lbs. 10,000 lb. cap.

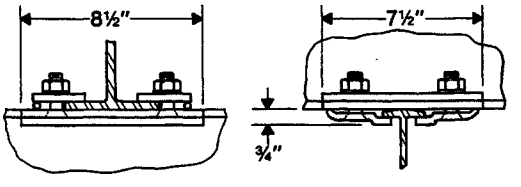
For use with 604 SuperTrack Girder and 605 TrojanTrack Girder. Requires 4 slotted holes in the top flange of the track.



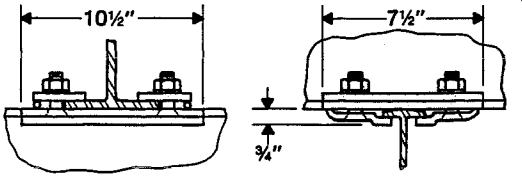
607.710



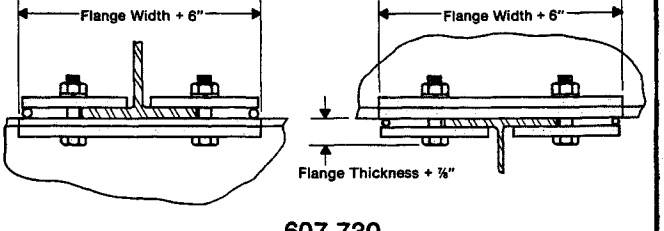
607.711



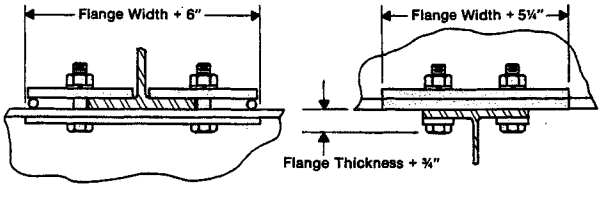
607.720



607.721



607.730



607.731

607.740 (41-0028)
Wt. 60 lbs. 15,000 lb. cap.

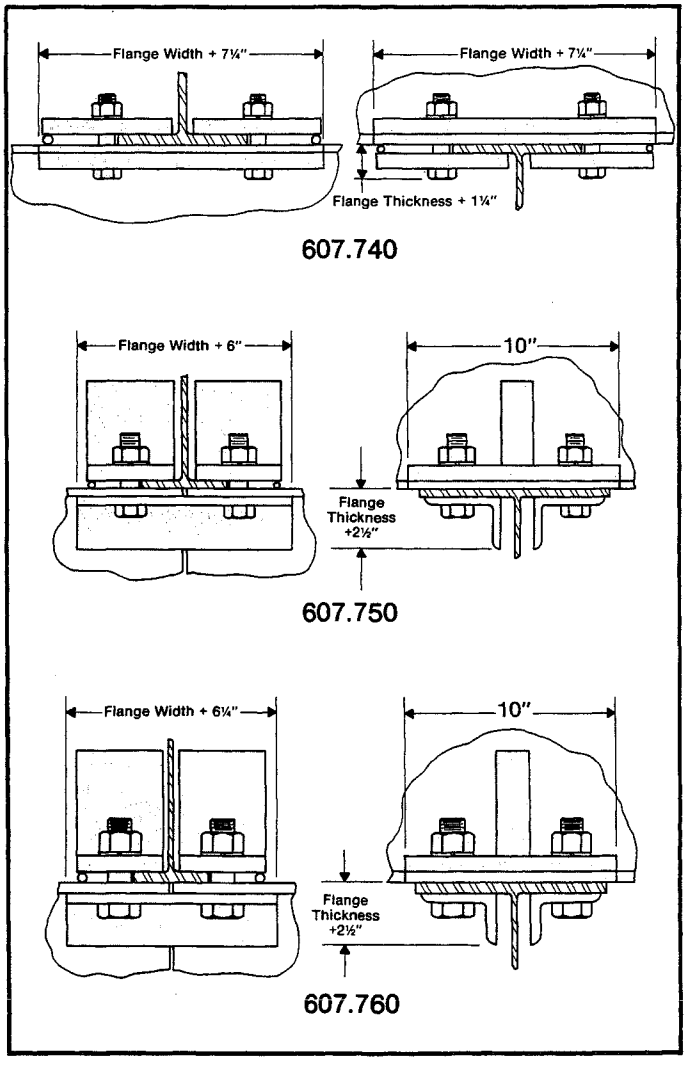
For use with 604 SuperTrack Girder and 605 TrojanTrack Girder. Not to be used with electrified 604.820 or 604.924 SuperTrack Girder.

607.750 (41-0039)
Wt. 80 lbs. 20,000 lb. cap.

For use with 604 SuperTrack Girder and 605 TrojanTrack Girder 18" deep or more. Requires 4 slotted holes in the top flange of the track.

607.760 (41-0036)
Wt. 90 lbs. 30,000 lb. cap.

For use with 604 SuperTrack Girder and 605 TrojanTrack Girder 18" deep or more. Requires 4 slotted holes in the top flange of the track.



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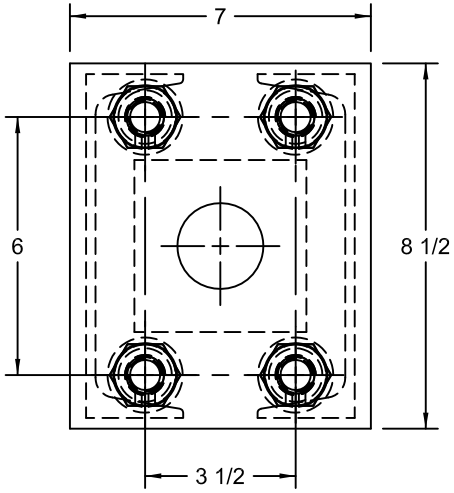
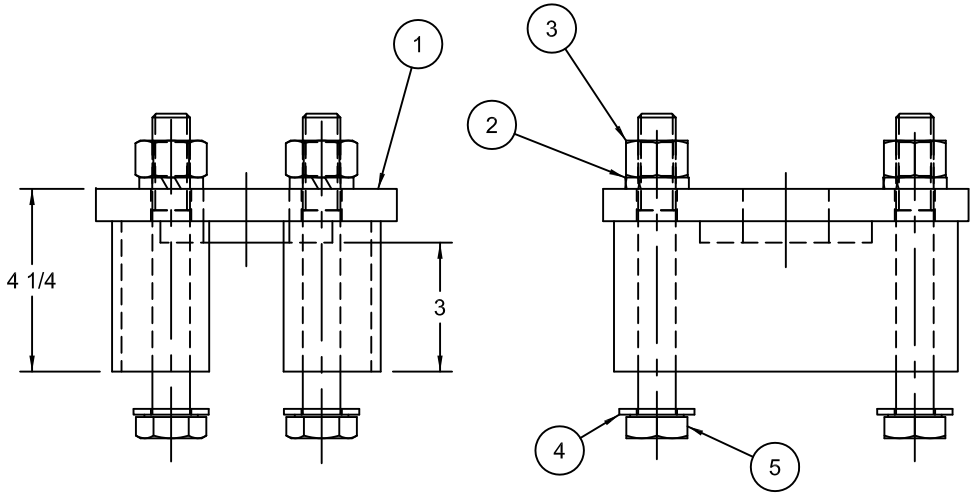
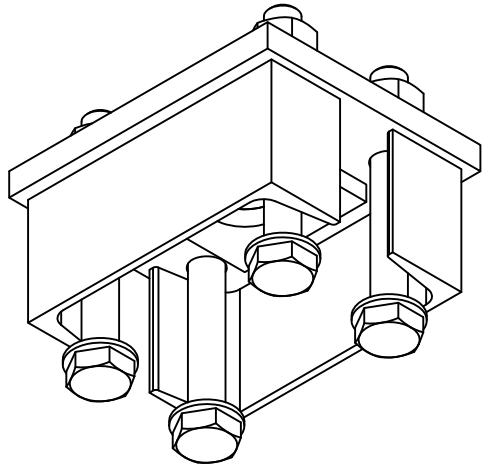
LET	CH NO.	BY	DATE	REVISIONS







WEIGHT: 27.5#

ITEM	REQD	DWG SZ	PART NO.	DESCRIPTION	LENGTH	WT
5	4	-	211157	SCR HxHC A325: 7/8-9NC	7.00	-
4	4	-	210225	PLAIN WASHER 7/8	-	-
3	4	-	211771	HEAVY HEX NUT 7/8-9NC	-	-
2	4	-	210412	LOCK WASHER 7/8	-	-
1	1	C	280144	GDR. TRK. HANGER WLDMT.	-	19.8

NOTES:

1. DIMENSIONS SHOWN FOR REFERENCE ONLY.
2. ASSEMBLY IS NOT STOCKED AS SHOWN.

NEXT ASS'Y NO. | REQD

UNLESS OTHERWISE SPECIFIED
BREAK ALL SHARP EDGES

TOLERANCES ON DIMENSIONS ARE:
THREE PLACE DECIMAL (.XXX) +/-.005
TWO PLACE DECIMAL (.XX) +/-.010
ONE PLACE DECIMAL (.X) +/- 1/64
FRACTIONS +/- 1/32 ANGLES +/- 1 DEG

METALLURGY APPROVED
BY: DATE:

CHECKED
BY: DATE:

APPROVED
BY: DATE:

REGISTER NO.
XXX

MATERIAL HANDLING SOLUTIONS
76 ACCO DR. YORK, PA 17402

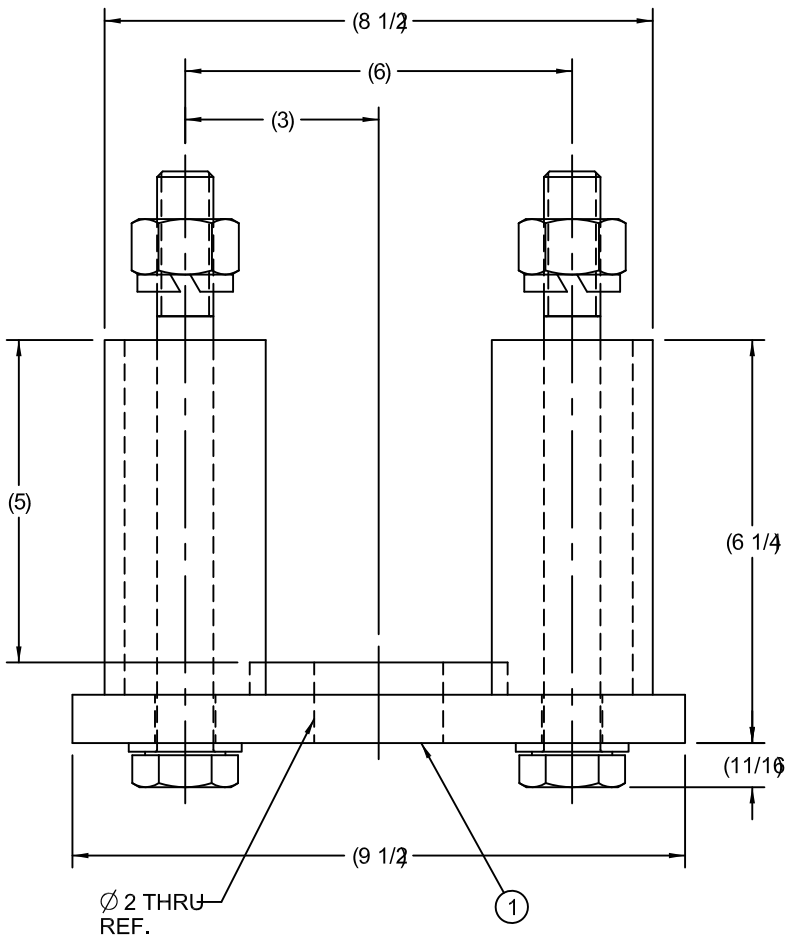
NAME:
GIRDER TRACK HANGER
1-1/2" GIMBAL ROD

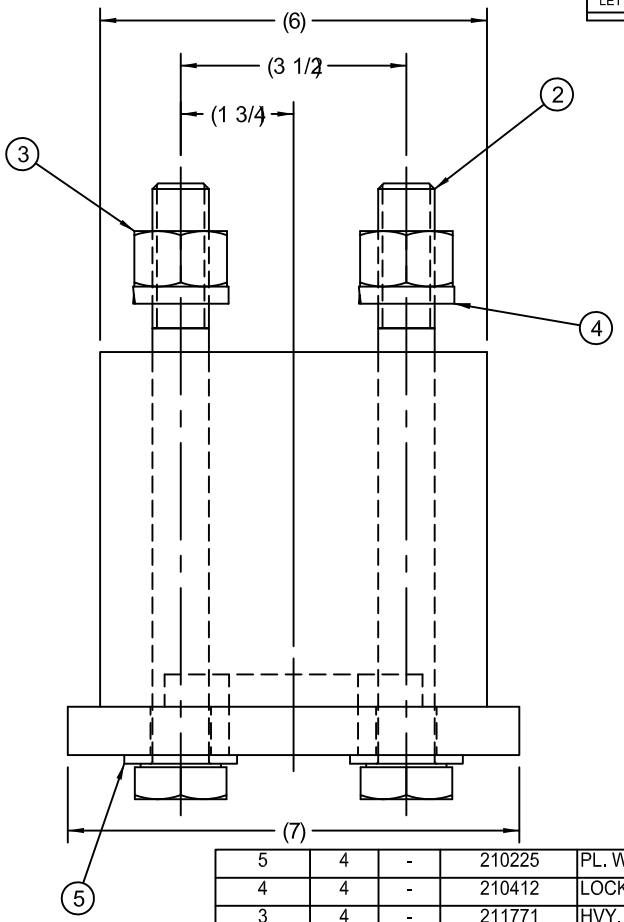
MATERIAL: | HEAT TREAT:

DR BY: JTP
DATE: 1/27/09
SCALE: 1/3

B | 401056 | SHEET - | REV A

LET	CH NO.	BY	DATE	REVISIONS





ITEM	REQD	DWG SZ	PART NO.	DESCRIPTION	LENGTH	WT
5	4	-	210225	PL. WASHER, 7/8"	-	-
4	4	-	210412	LOCKWASHER, 7/8"	-	-
3	4	-	211771	HVY. HEX NUT 7/8-9	-	-
2	4	-	211159	HEX HEAD CAP SCREW, 7/8-9	9.00	-
1	1	B	280197	CEILING HANGER WELDMENT	-	-

NOTES:

1. EST. WT.: 34.7 LBS.

NEXT ASS'Y NO. | REQD

UNLESS OTHERWISE SPECIFIED
BREAK ALL SHARP EDGES

TOLERANCES ON DIMENSIONS ARE:
THREE PLACE DECIMAL (.XXX) +/-.005
TWO PLACE DECIMAL (.XX) +/-.010
ONE PLACE DECIMAL (.X) +/- 1/64
FRACTIONS +/- 1/32 ANGLES +/- 1 DEG

METALLURGY APPROVED BY: DATE:
CHECKED BY: DATE:
APPROVED BY: DATE:
REGISTER NO.

MATERIAL HANDLING SOLUTIONS
76 ACCO DR. YORK, PA 17402

NAME:
CEILING HANGER ASSEMBLY
1-1/2" DIA. GIMBAL ROD

MATERIAL: | HEAT TREAT:

DR BY: EMW
DATE: 06/29/09
SCALE: 1:2

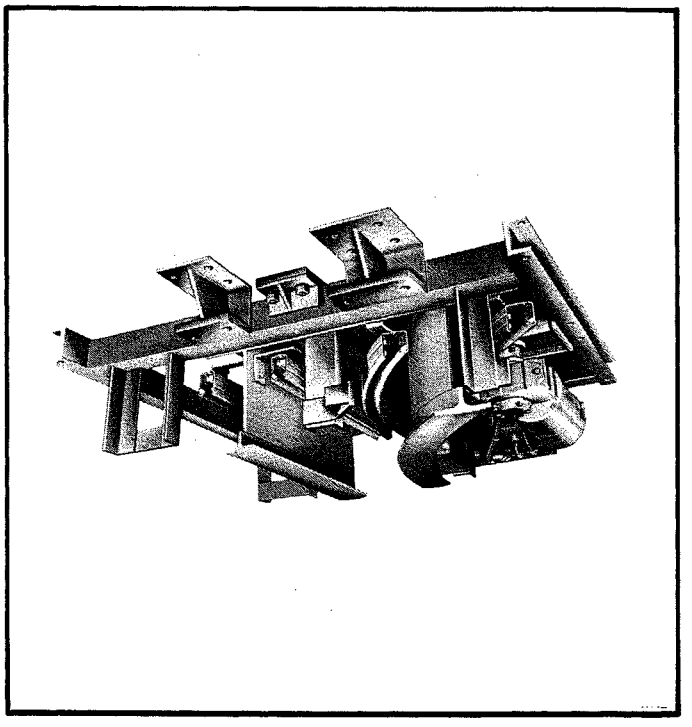
B | 401059 | SHEET - | REV -

Acco Material Handling Solutions

Issued - 9-07-01 700-1

LOUDEN®

MONORAIL TRACK SWITCHES



Louden offers a wide selection of monorail track switches to fit any monorail requirement. A product of continued refinement through many years of industrial usage, each *Louden* track switch has been carefully designed to withstand the punishment common to monorail systems.

The switches are constructed of heavy steel plate, angle and channel, carefully assembled to produce a smooth, easy operating track switch. All track used in *Louden* switches is either *Louden SuperTrack* or *Louden TrojanTrack*. The ends of the switch tracks are cut to provide the smoothest possible trolley operation into and out of the switch.

Louden monorail track switches are designed for use with *Louden* trolleys. The Material Handling Group will **not** accept responsibility for trouble-free operation when using trolleys other than of our manufacture.

SuperTrack trolleys (those with 4½" tread diameter wheels) may be operated through either *SuperTrack* or *TrojanTrack* switches. *TrojanTrack* trolleys (those with 9" tread diameter wheels) may be operated only through *TrojanTrack* switches.

Channel yoke trolleys, 375 lbs. and 750 lbs. capacity, should be operated only through tongue or cross track switches, non-electrified.

LARGE SELECTION

Louden offers a large selection of track switches which allows for the proper application for any monorail situation.

Louden switches include tongue switches with either 2" or 3.33" *SuperTrack* tongues...cross-track switches with either 2" or 3.33" *SuperTrack* tongues...Medium-duty sliding switches with either 2" or 3.33" *SuperTrack* tongues, and heavy-duty sliding switches with either 3.33" *SuperTrack* or *TrojanTrack* tongues.

Tongue and cross-track switches should be used for light-duty, hand operated monorail systems where the load on the switch will not exceed 3,000 lbs.

Medium-duty sliding switches have capacities of 3,000 lbs. (2" *SuperTrack* carriage) and 5,000 lbs. (3.33" *SuperTrack* carriage).

Heavy-duty sliding switches have capacities of 10,000 lbs.

Heavy-duty *TrojanTrack* sliding switches have capacities of 15,000 lbs. Larger capacity loads may be handled if provision is made to limit the load on the switch tongue to the rated capacities.

Sliding switches offer smoother trolley operation than do tongue switches, as the track sections of sliding switches are curved and form an integral part of the track curve. Sliding switches also offer closer switch grouping than do tongue switches.

Monorail track switches should not be operated while trolleys are on the switch tongue.

SWITCH CONTROL

LOUDEN monorail track switches are available with a wide range of operating mechanisms and controls. Depending upon the type, switches may be operated by hand, electric motor, or air cylinder. Throw of switch may be accomplished with rope pulls, pushbutton pendant, or remote electrical signal as with *Selectomatic* control.

Tongue Switch, Non-electrified

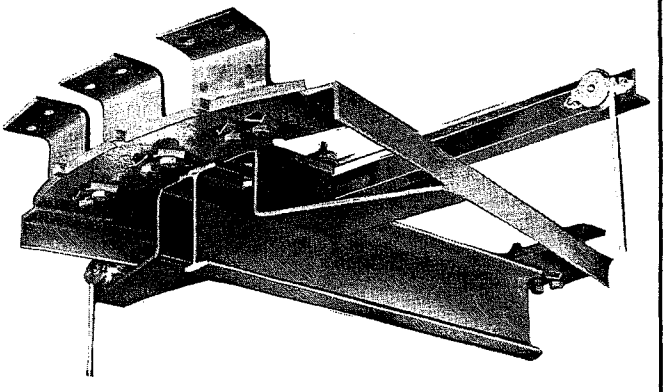
Louden SuperTrack tongue switches are designed to permit one switch to perform four different operations. With only a minimum modification to the operating mechanism, the basic switch may be used as a right-hand, left-hand, wye or three-way tongue switch on non-electrified *SuperTrack* monorail systems. Conversion to right-hand, left-hand, or three-way switches may be made with no additional parts. Conversion to wye type switches will require the addition of a lock-out and baffle weldment, part number 30-0029.

When used as either 702.6230 two-way switch or 702.6233 three-way switch, and exclusively with 402.375 or 402.750 series trolleys, Part No. 260003-B must be installed during erection of the switch. Otherwise Part No. 260003-B is not used.

This switch is a complete unit constructed of formed steel with a *Louden SuperTrack* tongue. For better alignment of the track flange, all tracks are fastened securely to the switch frame. This also prevents any creeping of the track. For a smoother, stronger switch connection, the lead-in track at the pivot end is machined concave, while the switch tongue is machined convex. Open tracks are guarded by a rugged mechanical baffle.

Fifteen foot pull ropes are supplied as standard for operation of the switch operating mechanism. The switch should be connected directly to the superstructure.

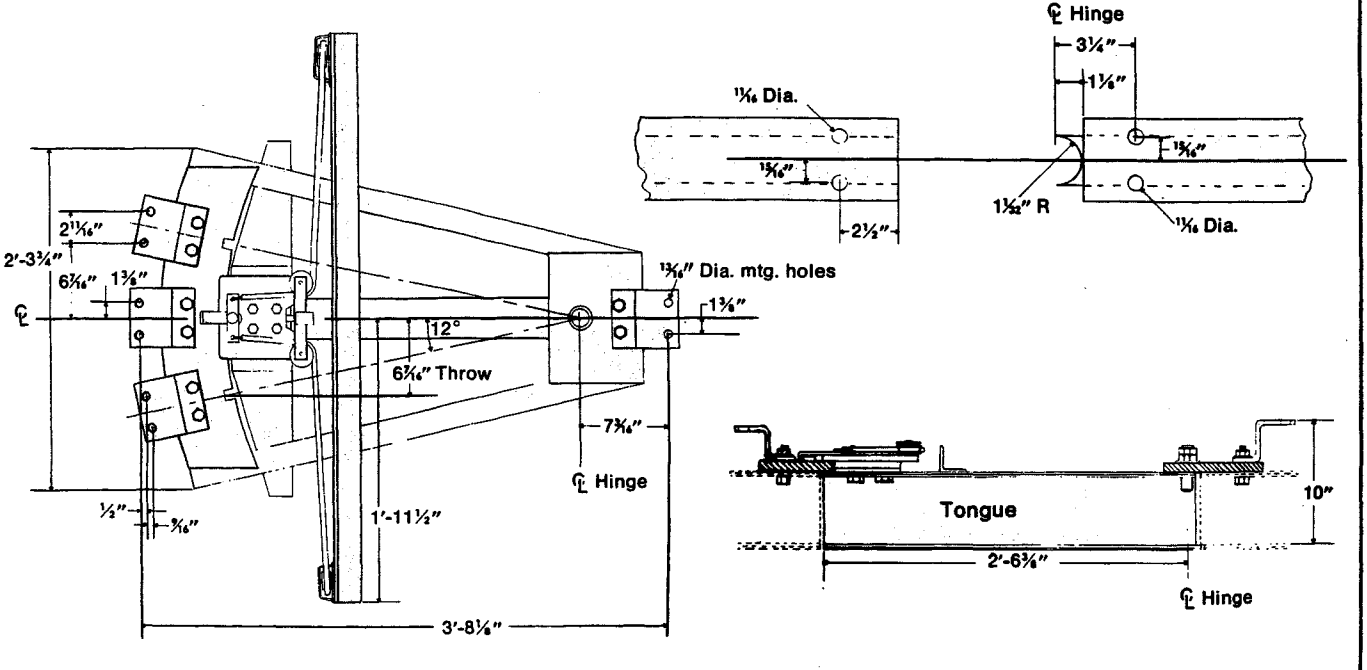
Monorail switches are not designed to operate under load, and must be latched into one of the operating positions when left unattended.



Two-Way, No. 702.6230 *(28-0367)* **____ Wt. 150 lbs.**
Three-Way, No. 702.6233 *(28-0367)* **____ Wt. 150 lbs.**
Wye, No. 702.6232 *(30-0194)* **____ Wt. 150 lbs.**

WARNING: Equipment described herein is not designed for and should not be used for lifting, supporting or transporting humans. Use of this equipment for this purpose can result in serious bodily injury and/or property damage. Modifications to upgrade, rerate or otherwise alter the equipment shall be authorized only by the original equipment manufacturer or qualified professional engineer.

Switch Capacity: 3,000 pounds.



Approximate dimensions are shown. Certified prints furnished on request.

LOUDEN® SWITCHES
FOR USE WITH 2" FLANGE *SUPERTRACK*™ MONORAIL SYSTEMS

Cross Switch, Non-electrified

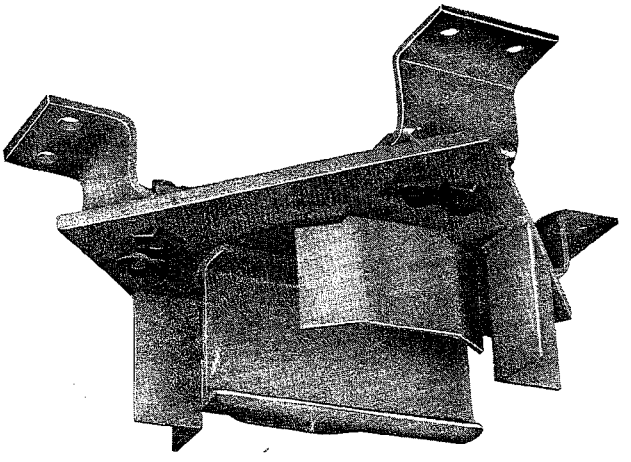
Louden cross-track switches allow two monorail tracks at the same elevation to cross at right angles. The switch is a complete unit constructed of formed steel, with a 12" *Louden SuperTrack* tongue. For better alignment of the track flanges, all tracks are fastened securely to the switch frame. This also prevents any creeping of the track. Open tracks are guarded by rugged mechanical baffles.

Pulleys are supplied with the switch to be attached to the superstructure at the point most convenient for operation. Fifteen foot pull ropes are supplied as standard for operating the switch.

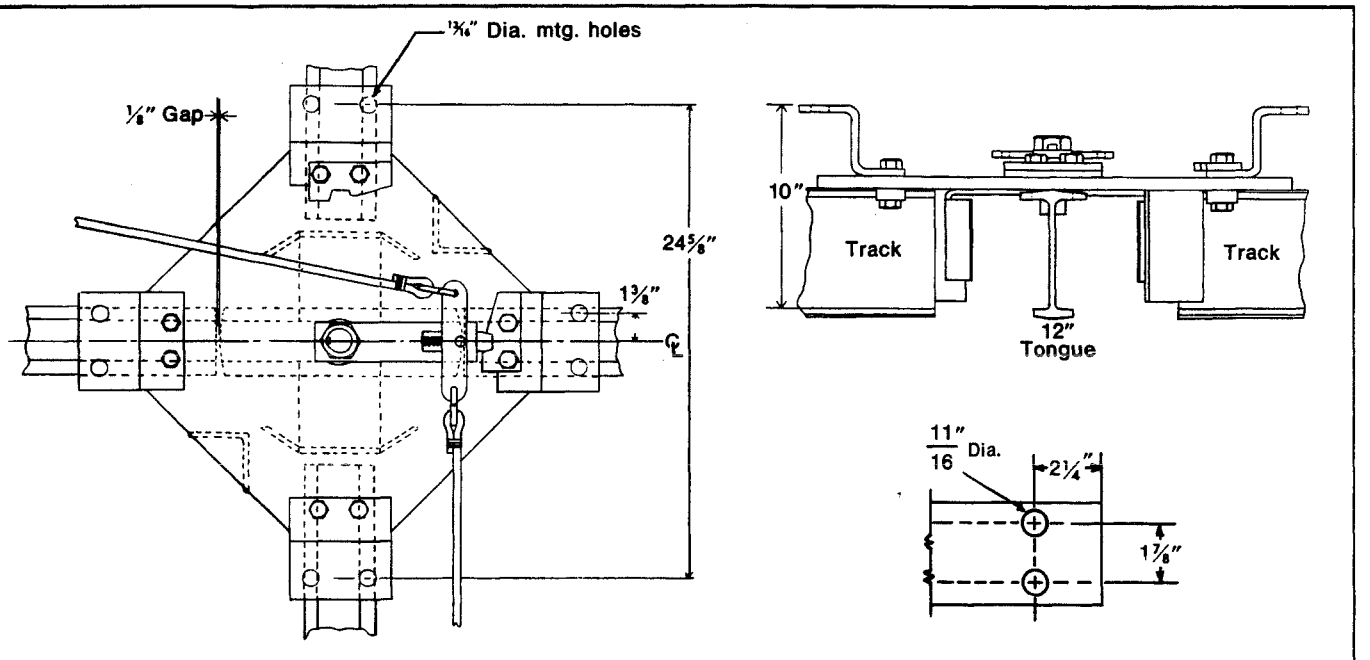
The switch should be connected directly to the superstructure.

The cross-track switch is not designed to support a load during rotation. Consult the Factory for information on turntables.

Switch Capacity: 3,000 pounds.



No. 702.6212 *(30-0005)*____ **Wt. 100 lbs.**



Approximate dimensions are shown. Certified prints furnished on request.

WARNING: Equipment described herein is not designed for and should not be used for lifting, supporting or transporting humans. Use of this equipment for this purpose can result in serious bodily injury and/or property damage. Modifications to upgrade, rerate or otherwise alter the equipment shall be authorized only by the original equipment manufacturer or qualified professional engineer.

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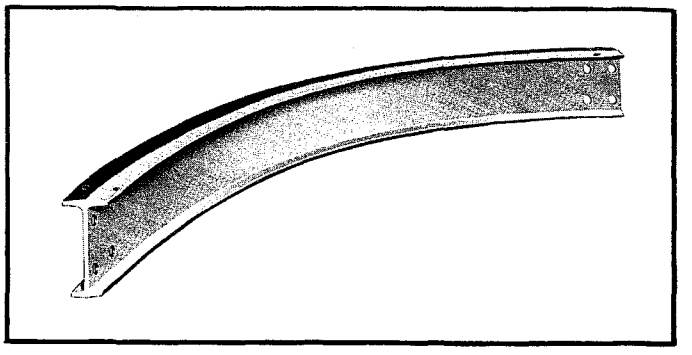
LOUDEN® SWITCHES
FOR USE WITH 2" FLANGE *SUPERTRACK*™ MONORAIL SYSTEMS

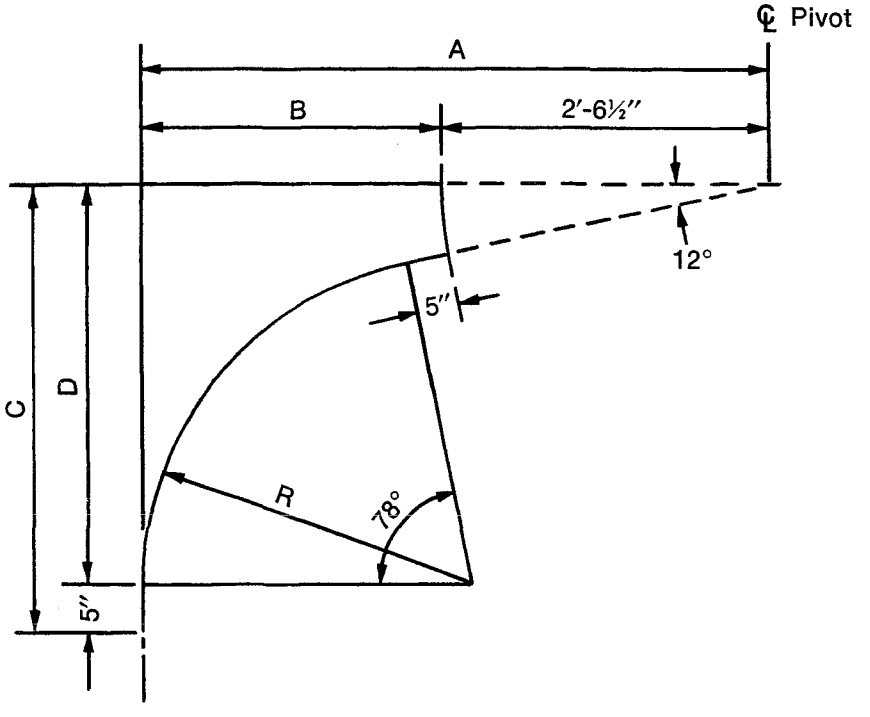
Curve and Dimensional Layout Data

All *Louden SuperTrack* curves are furnished complete, ready for installation into the monorail system. By machine bending at the factory, these curves are formed to close tolerances to fit into the track system and to hold their original shape.

For tongue switches, the top flange of each curve section is punched for a switch adapter. This allows for the best possible alignment and proper clearance for easy switch operation.

Catalog number 602.5283 *SuperTrack* curve is standard. All other curved track is available on order.





Cat. No.	Part No.	R	A	B	C	D
602.5283	**28-0503**	3'-4"	5'-6⅜"	2'-11⅞"	4'-3½"	3'-10½"
Also available with the following radii						
602.5293	**30-0658**	3'-0"	5'-3⅜"	2'-8¹¹⁄₁₆"	3'-11⅝"	3'-6⅝"
602.5294	**30-0659**	3'-9"	5'-10⅝"	3'-3¹³⁄₁₆"	4'-8⅜"	4'-3⅜"
602.5295	**30-0660**	4'-0"	6'-0¹¹⁄₁₆"	3'-6¾"	4'-11⅝"	4'-6⅝"
602.5296	**30-0661**	4'-6"	6'-5⅞"	3'-10¹⁵⁄₁₆"	5'-5¾"	5'-0⅛"
602.5297	**30-0662**	5'-0"	6'-10⅜"	4'-3¹¹⁄₁₆"	5'-11⅛"	5'-6⅛"
602.5298	**30-0663**	5'-6"	7'-2¹⁵⁄₁₆"	4'-8⅞"	6'-4¹⁵⁄₁₆"	5'-11¹⁵⁄₁₆"
602.5299	**30-0664**	6'-0"	7'-7¹¹⁄₁₆"	5'-1⅜"	6'-10¹³⁄₁₆"	6'-5¹³⁄₁₆"

Approximate dimensions are shown. Certified prints furnished on request.

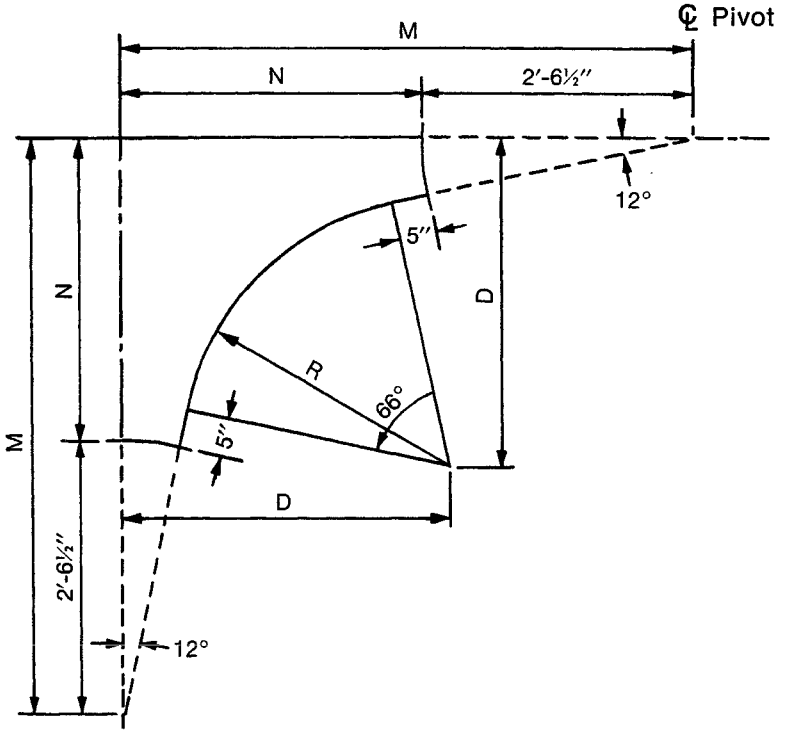
LOUDEN® SWITCHES
FOR USE WITH 2" FLANGE *SUPERTRACK*™ MONORAIL SYSTEMS

Curve and Dimensional Layout Data

All *Louden SuperTrack* curves are furnished complete, ready for installation into the monorail system. By machine bending at the factory, these curves are formed to close tolerances to fit into the track system and to hold their original shape.

For tongue switches, the top flange of each curve section is punched for a switch adapter. This allows for the best possible alignment and proper clearance for easy switch operation.

Catalog number 602.5285 *SuperTrack* curve is standard. All other curved track is available on order.



Cat. No.	Part No.	R	M	N	D
602.5285	**28-0504**	3'-4"	6'-0⅞"	3'-6⅜"	3'-10½"
Also available with the following radii					
602.5286	**30-0651**	3'-0"	5'-9¾"	3'-3¼"	3'-6⅝"
602.5287	**30-0652**	3'-9"	6'-4¹¹⁄₁₆"	3'-10⅜"	4'-3⅜"
602.5288	**30-0653**	4'-0"	6'-7"	4'-0½"	4'-6⅝"
602.5289	**30-0654**	4'-6"	6'-11⅝"	4'-5⅛"	5'-0⅜"
602.5290	**30-0655**	5'-0"	7'-4¼"	4'-9¾"	5'-6⅛"
602.5291	**30-0656**	5'-6"	7'-8¹³⁄₁₆"	5'-2⅝"	5'-11¹⁵⁄₁₆"
602.5292	**30-0657**	6'-0"	8'-1½"	5'-7"	6'-5¹³⁄₁₆"

Approximate dimensions are shown. Certified prints furnished on request.

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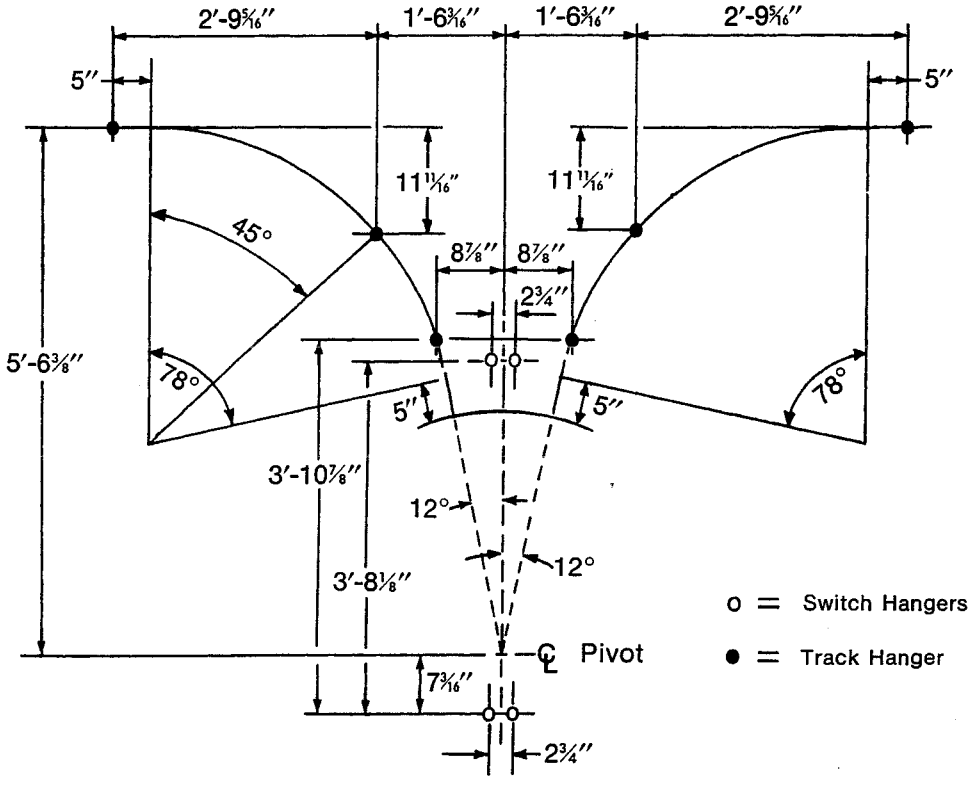
Hanger and Switch Locations for 2" Flange *SuperTrack* Tongue Switches

The following track plans should be used to determine track layouts and hanger locations when using *SuperTrack* tongue switches. Three way switches are shown; however, all dimensions will be the same when using two-way and wye tongue switches.

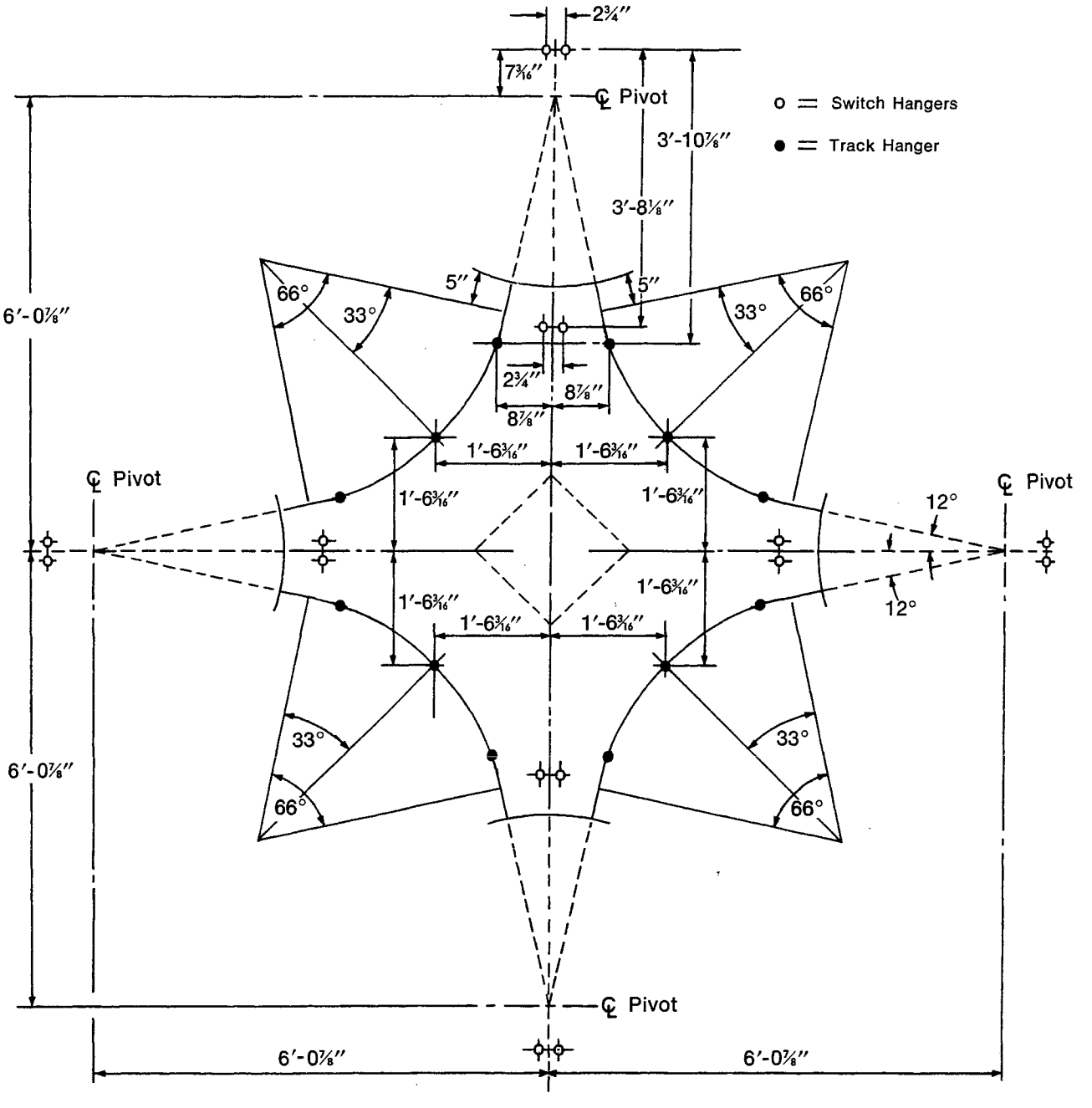
All switch hangers have 13/16" diameter mounting holes, and all curves shown have standard 3'-4" radii with 5" of straight track at both ends.



Track Plan for 78° Radius Curves

Approximate dimensions are shown. Certified prints furnished on request.

Hanger and Switch Locations for 2" Flange *SuperTrack* Tongue Switches



Track Plan for 66° Radius Curves

Approximate dimensions are shown. Certified prints furnished on request.

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LOUDEN® SWITCHES
FOR USE WITH 2" FLANGE *SUPERTRACK*™ MONORAIL SYSTEMS

Non-Electrified *SuperTrack* Sliding Switches

Louden non-electrified *SuperTrack* sliding switches are available in three configurations to adapt to most monorail layouts. These medium duty switches are available as two-way, three-way, and wye switches. Sliding switches are used in monorail systems where close switch grouping is required.

Two-way switches are used when a branch line monorail connects with the main line of track at an angle. The switch may be furnished for either right or left hand operation.

Wye switches are used where one main line monorail track branches off at angles on both sides of the switch.

Three-way switches are used where there are two spur lines branching off at angles on both sides of the main monorail track.

The frame for these switches consists of welded heavy structural steel members with the carriage mounted on rollers for smooth, easy operation. Heavy structural steel baffles are welded to the switch carriage to protect open tracks. Incoming tracks are bolted to the switch to insure perfect alignment.

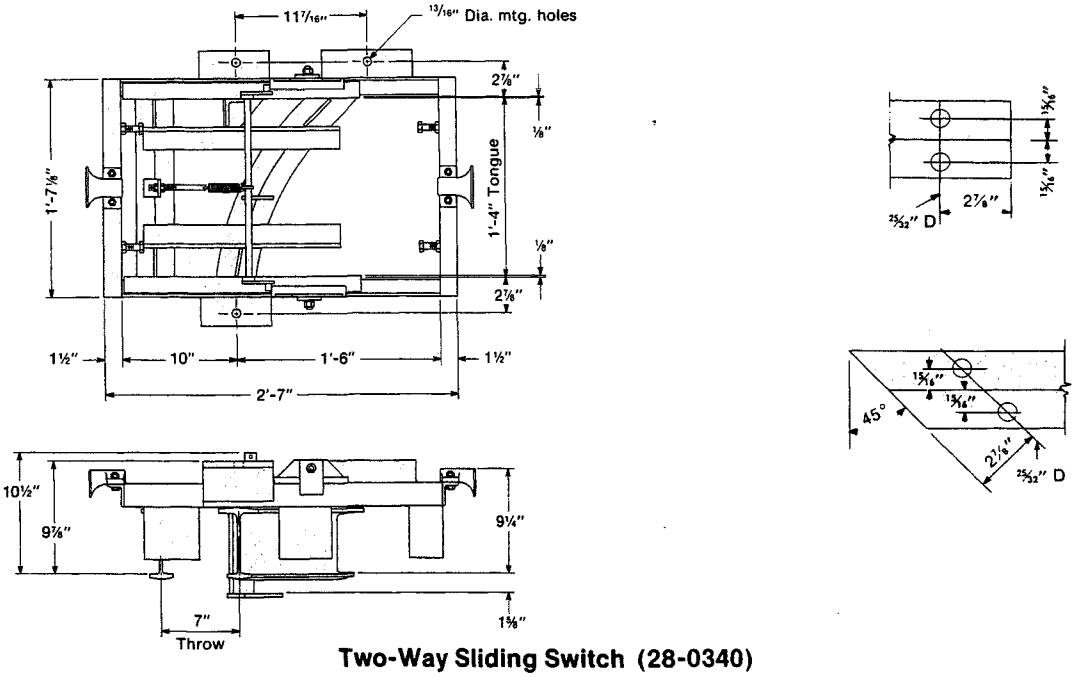
Fifteen foot pull ropes are furnished as standard for switch operation. The switch should be connected directly to the superstructure.

These switches are not to be used with *MotoVeyors*.

Switch Capacity: 3,000 pounds

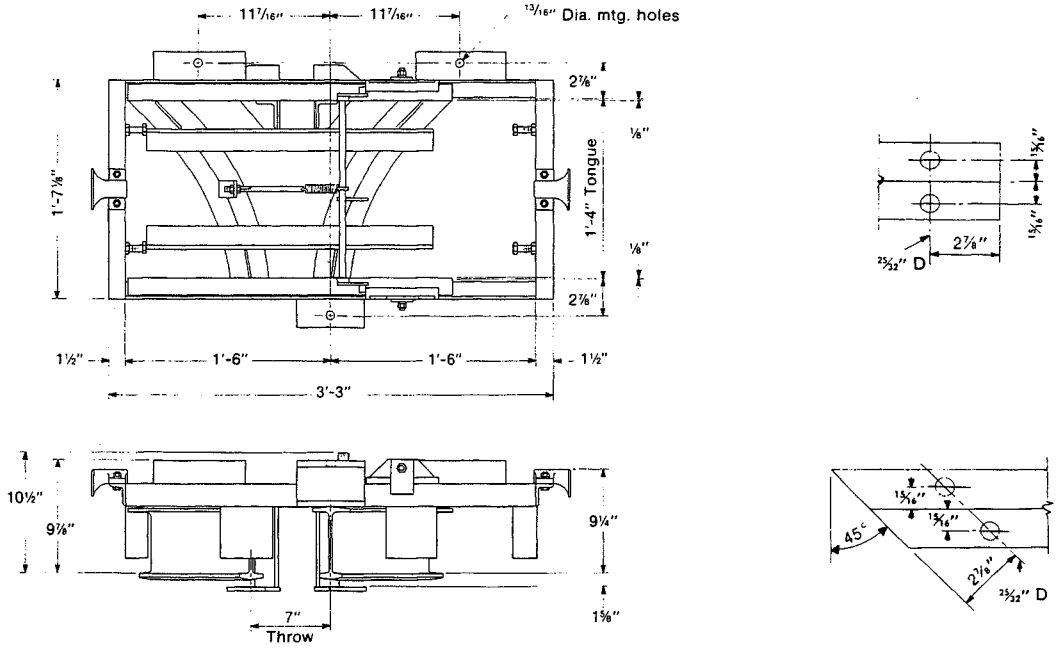
Manually Operated

Right Hand	**702.7011R** *(28-0340)* **135 lbs.**
Left Hand	**702.7011L** *(28-0364)* **135 lbs.**
Wye	**702.7012** *(28-0365)* **156 lbs.**
Three-Way	**702.7013** *(28-0366)* **210 lbs.**



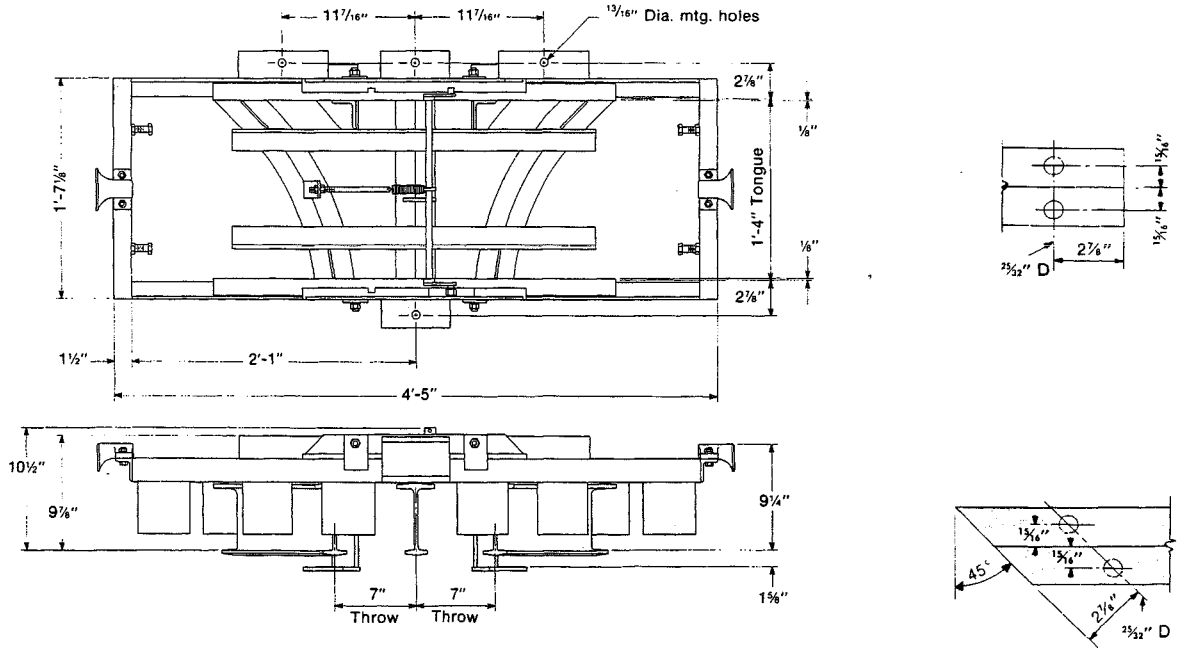
Two-Way Sliding Switch (28-0340)

Approximate dimensions are shown. Certified prints furnished on request.



Wye Sliding Switch (28-0365)

Approximate dimensions are shown. Certified prints furnished on request.



Three-Way Sliding Switch (28-0366)

Approximate dimensions are shown. Certified prints furnished on request.

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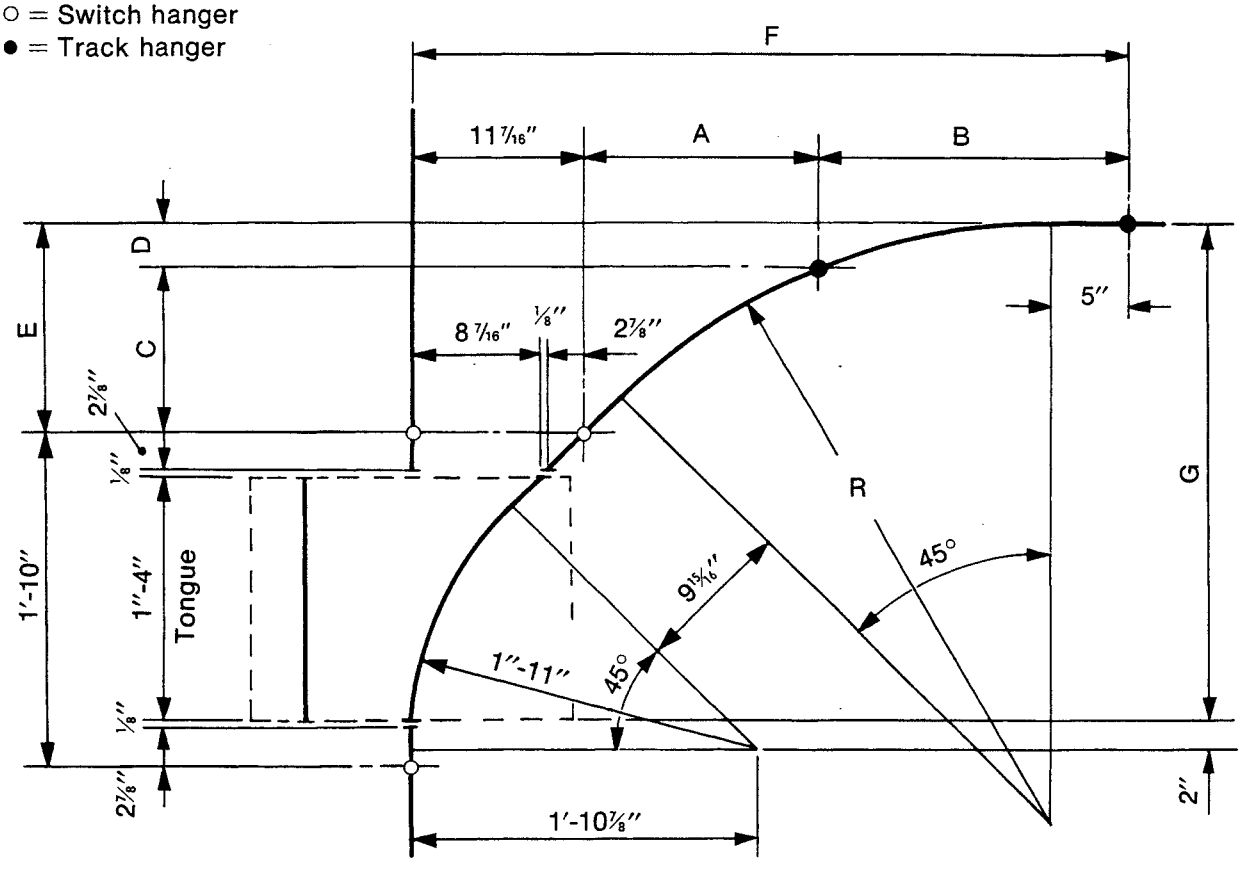
Curve and Dimensional Layout Data

○ = Switch hanger
● = Track hanger



Curve and Hanger Locations for Non-electrified *SUPERTRACK*™ Patented Track Sliding Switches.

Cat. No.	Part No.	R	A	B	C	D	E	F	G
602.5093R **602.5093L**	**28-0247** **28-0244**	3'-4"	1'-3¼"	1'-8 5/16"	0'-10 7/8"	3 1/16"	1'-1 15/16"	3'-11"	2'-8 15/16"
602.5094R **602.5094L**	**28-0245** **30-0665**	4'-0"	1'-5 13/16"	1'-11 3/8"	1'-0 11/16"	3 5/8"	1'-4 5/16"	4'-4 5/8"	2'-11 5/16"
602.5095R **602.5095L**	**30-0666** **30-0667**	5'-0"	1'-9¾"	2'-3 15/16"	1'-3¼"	4 5/16"	1'-7 13/16"	5'-1⅛"	3'-2 13/16"
602.5096R **602.5096L**	**30-0668** **30-0669**	6'-0"	2'-1⅝"	2'-8 5/16"	1'-5 13/16"	5½"	1'-11 5/16"	5'-9 5/8"	3'-6 5/16"
602.5097R **602.5097L**	**30-0670** **30-0671**	7'-0"	2'-5½"	3'-1⅛"	1'-8½"	6⅜"	2'-2⅞"	6'-6 1/16"	3'-9⅞"
602.5098R **602.5098L**	**30-0672** **30-0673**	8'-0"	2'-9⅜"	3'-5¾"	1'-11 1/16"	7 5/16"	2'-6⅜"	7'-2 9/16"	4'-1⅜"
602.5099R **602.5099L**	**30-0674** **30-0675**	10'-0"	3'-5 5/16"	4'-2 15/16"	2'-4¼"	9⅛"	3'-1⅜"	8'-7 9/16"	4'-8⅜"

Approximate dimensions are shown. Certified prints furnished on request.

Acco Material Handling Solutions

Issued 9-7-01 703-1

LOUDEN®

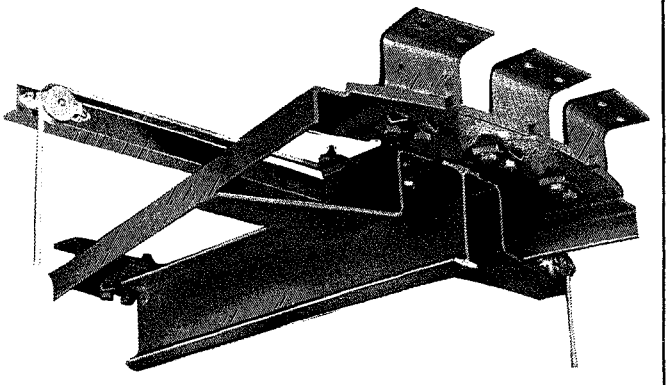
SWITCHES
FOR USE WITH 3.33" FLANGE
***SUPERTRACK*™ MONORAIL SYSTEMS**

Tongue Switch, Non-electrified

Louden SuperTrack tongue switches are designed to permit one switch to perform four different operations. With only a minimum modification to the operating mechanism, the basic switch may be used as a right-hand, left-hand, wye or three-way tongue switch on non-electrified *SuperTrack* monorail systems. Conversion to right-hand, left-hand, or three-way switches may be made with no additional parts. Conversion to wye type switches will require the addition of a lock-out and baffle weldment, part number 30-0029.

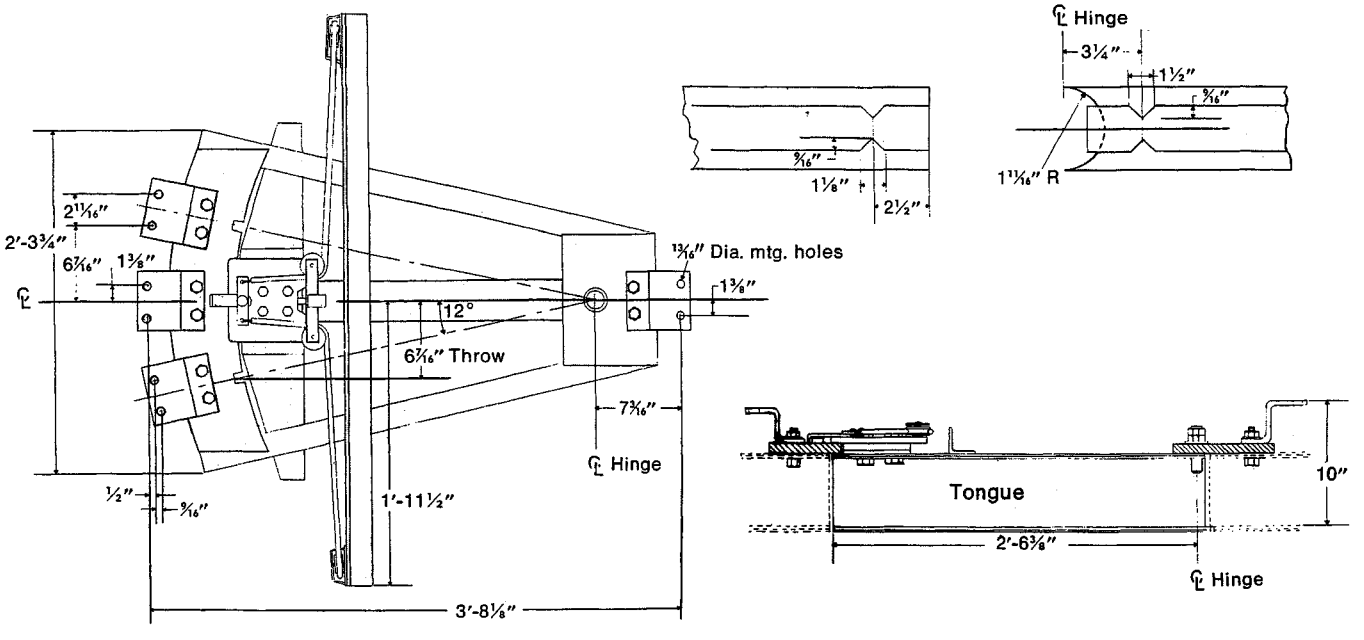
This switch is a complete unit constructed of formed steel with a *Louden SuperTrack* tongue. For better alignment of the track flange, all tracks are fastened securely to the switch frame. This also prevents any creeping of the track. For a smoother, stronger switch connection, the lead-in track at the pivot end is machined concave, while the switch tongue is machined convex. Open tracks are guarded by a rugged mechanical baffle.

Fifteen foot pull ropes are supplied as standard for operation of the switch operating mechanism. The switch should be connected directly to the superstructure.



Two-Way, No. 703.6330 *(28-0385)*____ **Wt. 150 lbs.**
Three-Way, No. 703.6333 *(28-0385)*____ **Wt. 150 lbs.**
Wye, No. 703.6332 *(30-0189)*____ **Wt. 150 lbs.**

Switch Capacity: 3,000 pounds.



Approximate dimensions are shown. Certified prints furnished on request.

LOUDEN® SWITCHES
FOR USE WITH 3.33" FLANGE *SUPERTRACK*™ MONORAIL SYSTEMS

Cross Switch, Non-electrified

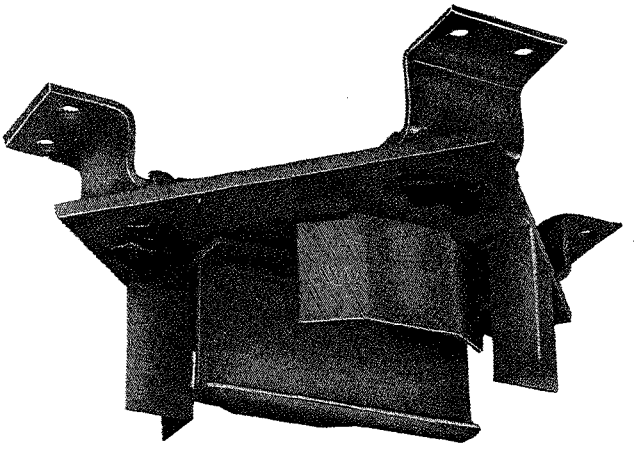
Louden cross-track switches allow two monorail tracks at the same elevation to cross at right angles. The switch is a complete unit constructed of formed steel, with a 12" *Louden SuperTrack* tongue. For better alignment of the track flanges, all tracks are fastened securely to the switch frame. This also prevents any creeping of the track. Open tracks are guarded by rugged mechanical baffles.

Pulleys are supplied with the switch to be attached to the superstructure at the point most convenient for operation. Fifteen foot pull ropes are supplied as standard for operating the switch.

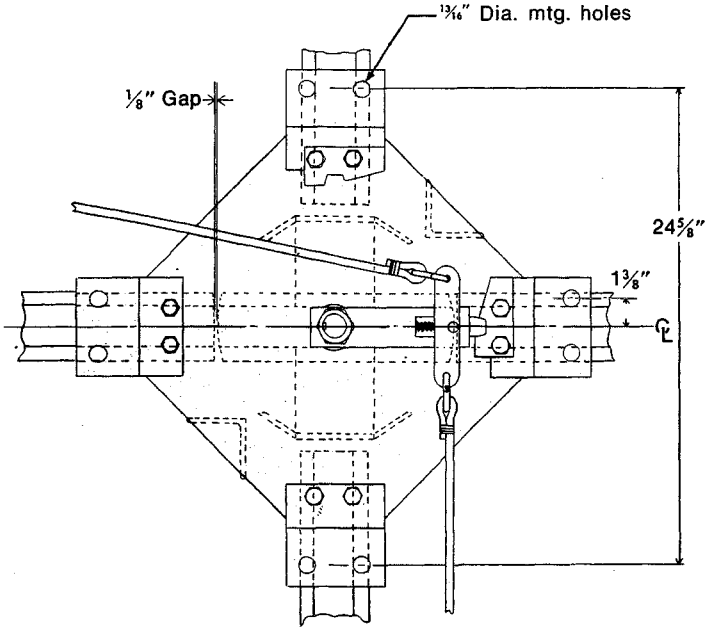
The switch should be connected directly to the superstructure.

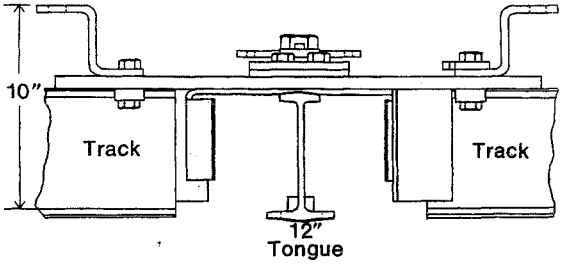
The cross-track switch is not designed to support a load during rotation. Consult the Factory for information on turntables.

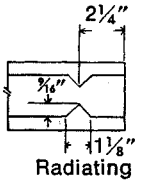
Switch Capacity: 3,000 pounds.



No. 703.6312 *(30-0004)*____ **Wt. 100 lbs.**







Approximate dimensions are shown. Certified prints furnished on request.

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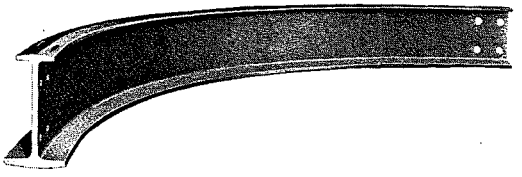
LOUDEN® SWITCHES FOR USE WITH 3.33" FLANGE *SUPERTRACK*™ PATENTED TRACK MONORAIL SYSTEMS

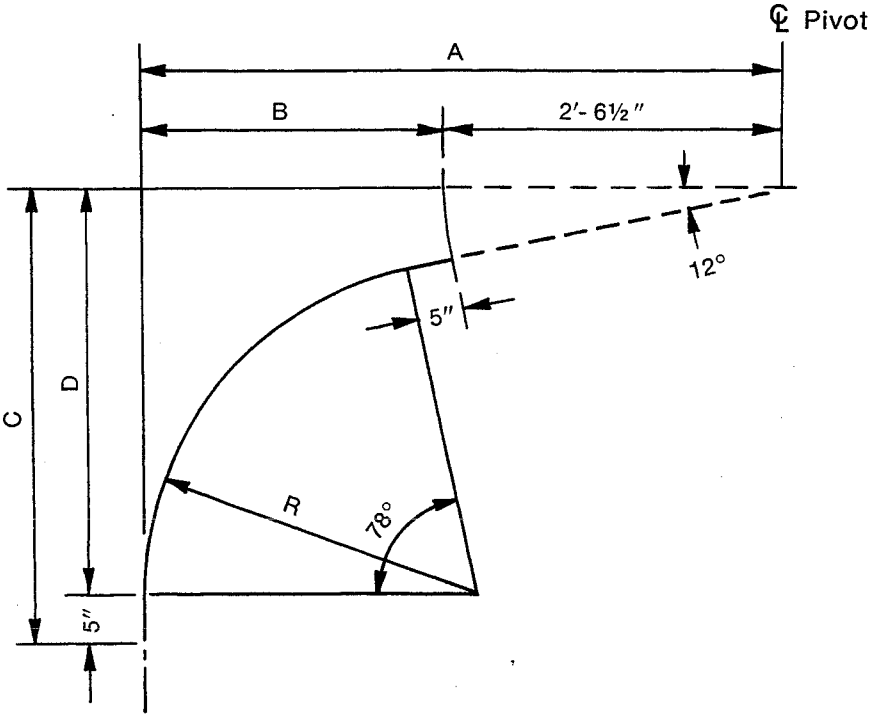
Curve and Dimensional Layout Data



All *Louden® SuperTrack*™ Patented Track curves are furnished complete, ready for installation into the monorail system. By machine bending at the factory, these curves are formed to close tolerances to fit into the track system and to hold their original shape.

For tongue switches, the top flange of each curve section is punched for a switch adapter. This allows for the best possible alignment and proper clearance for easy switch operaion.

Catalog number 603.6083 *SuperTrack*™ Patented Track curve is standard. All other curved track is available on order.



Cat. No.	Part No.	R	A	B	C	D
603.6083	**28-0307**	3'-4"	5'-6⅜"	2'-11⅞"	4'-3½"	3'-10½"
Also available with the following radii						
603.6047	**30-0683**	3'-0"	5'-3⅜"	2'-8¹¹⁄₁₆"	3'-11⅛"	3'-6⅜"
603.6048	**30-0684**	3'-9"	5'-10⅝"	3'-3¹³⁄₁₆"	4'-8⅜"	4'-3⅜"
603.6049	**30-0685**	4'-0"	6'-0¹¹⁄₁₆"	3'-6⅜"	4'-11⅝"	4'-6⅜"
603.6050	**30-0686**	4'-6"	6'-5⅞"	3'-10¹⁵⁄₁₆"	5'-5⅜"	5'-0⅜"
603.6051	**30-0687**	5'-0"	6'-10⅜"	4'-3¹¹⁄₁₆"	5'-11⅛"	5'-6⅛"
603.6052	**30-0688**	5'-6"	7'-2¹⁵⁄₁₆"	4'-8⅞"	6'-4¹⁵⁄₁₆"	5'-11¹⁵⁄₁₆"
603.6053	**30-0689**	6'-0"	7'-7¹¹⁄₁₆"	5'-1⅜"	6'-10¹³⁄₁₆"	6'-5¹³⁄₁₆"

Approximate dimensions are shown. Certified prints furnished on request.

LOUDEN® SWITCHES FOR USE WITH 3.33" FLANGE
***SUPERTRACK™* PATENTED TRACK MONORAIL SYSTEMS**

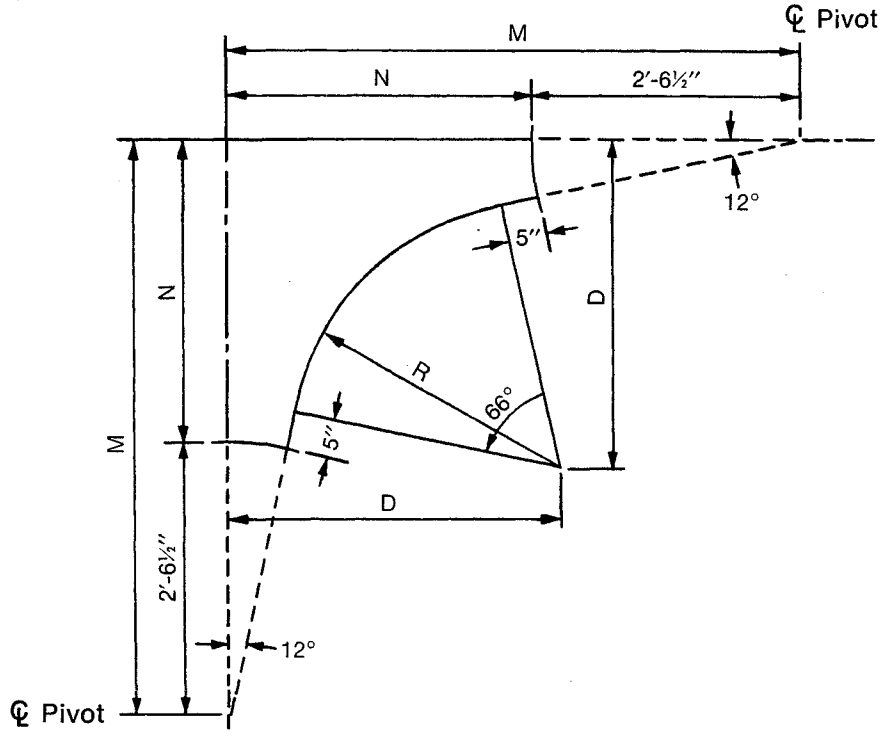
703-4
Issued 9-7-01

Curve and Dimensional Layout Data

All *Louden® SuperTrack™* Patented Track curves are furnished complete, ready for installation into the monorail system. By machine bending at the factory, these curves are formed to close tolerances to fit into the track system and to hold their original shape.

For tongue switches, the top flange of each curve section is punched for a switch adapter. This allows for the best possible alignment and proper clearance for easy switch operation.

Catalog number 603.6085 *SuperTrack™* Patented Track curve is standard. All other curved track is available on order.



Cat. No.	Part No.	R	M	N	D
603.6085	**28-0309**	3'-4"	6'-0⅞"	3'-6⅜"	3'-10½"
Also available with the following radii					
603.6040	**30-0676**	3'-0"	5'-9¾"	3'-3¼"	3'-6⅝"
603.6041	**30-0677**	3'-9"	6'-4¹¹⁄₁₆"	3'-10⅜"	4'-3⅜"
603.6042	**30-0678**	4'-0"	6'-7"	4'-0½"	4'-6⅝"
603.6043	**30-0679**	4'-6"	6'-11⅝"	4'-5⅛"	5'-0⅜"
603.6044	**30-0680**	5'-0"	7'-4¼"	4'-9¾"	5'-6⅛"
603.6045	**30-0681**	5'-6"	7'-8¹³⁄₁₆"	5'-2⅝"	5'-11¹⁵⁄₁₆"
603.6046	**30-0682**	6'-0"	8'-1½"	5'-7"	6'-5¹³⁄₁₆"

Approximate dimensions are shown. Certified prints furnished on request.

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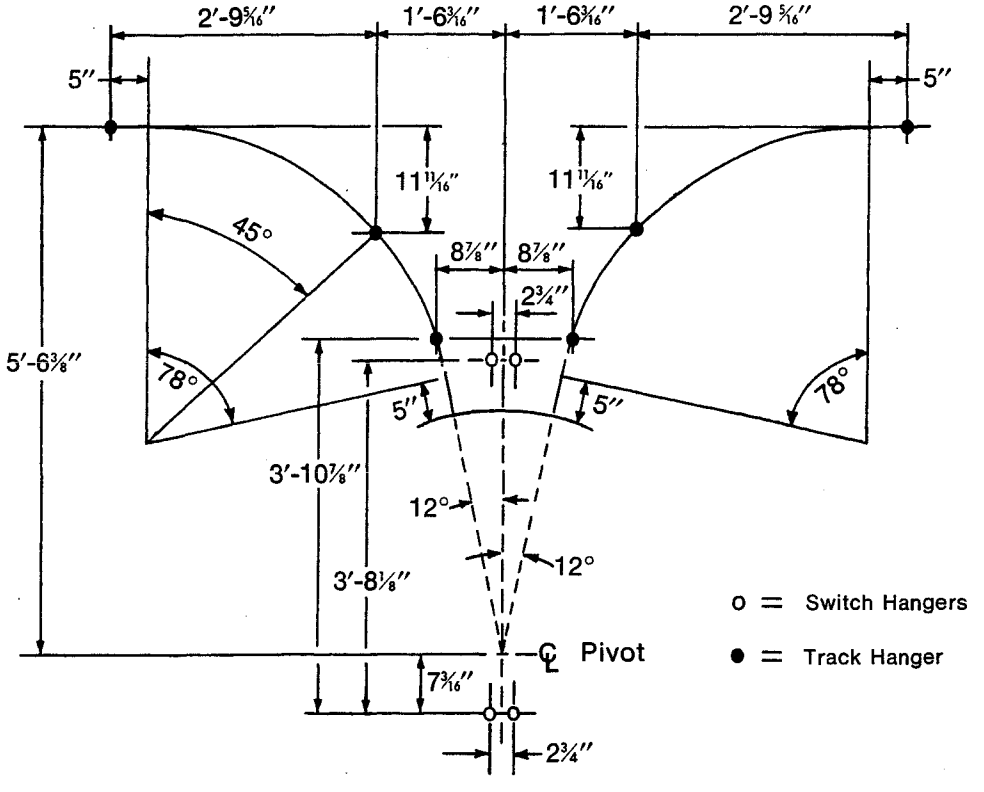
Hanger and Switch Locations for 3.33" Flange *SuperTrack*™ Patented Track Tongue Switches

The following track plans should be used to determine track layouts and hanger locations when using *SuperTrack*™ Patented Track tongue switches. Three way switches are shown; however, all dimensions will be the same when using two-way and wye tongue switches.

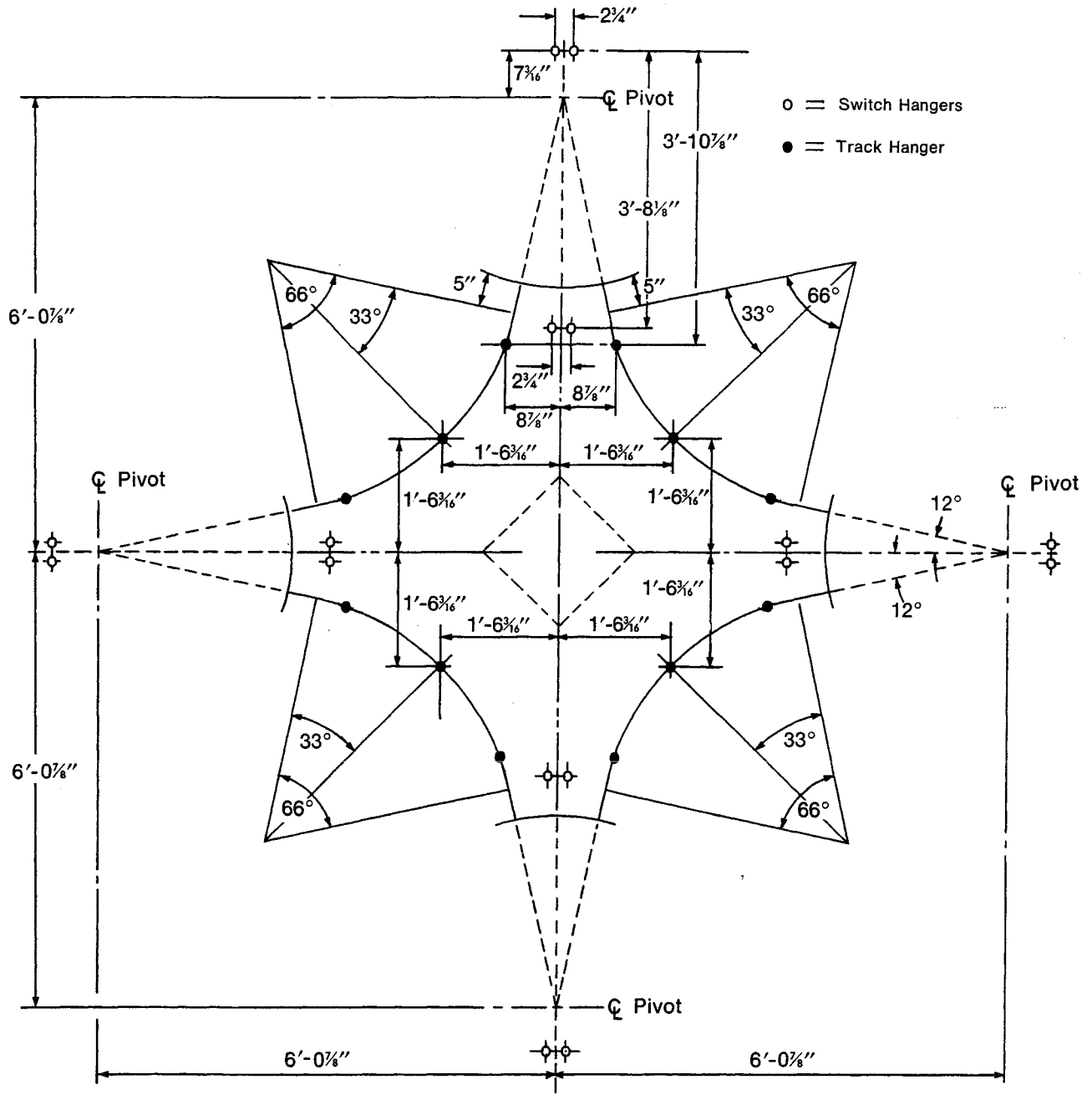
All switch hangers have 13/16" diameter mounting holes, and all curves shown have standard 3'-4" radii with 5" of straight track at both ends.



Track Plan for 78° Radius Curves

Approximate dimensions are shown. Certified prints furnished on request.

Hanger and Switch Locations for 3.33" Flange *SuperTrack*™ Patented Track Tongue Switches



Track Plan for 66° Radius Curves

Approximate dimensions are shown. Certified prints furnished on request.

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LOUDEN® SWITCHES
FOR USE WITH 3.33" FLANGE *SUPERTRACK*™ MONORAIL SYSTEMS

703-7
Issued 9-7-01

Non-Electrified *SuperTrack* Sliding Switches

Louden non-electrified *SuperTrack* sliding switches are available in three configurations to adapt to most monorail layouts. These medium duty switches are available as two-way, three-way, and wye switches. Sliding switches are used in monorail systems where close switch grouping is required.

Two-way switches are used when a branch line monorail connects with the main line of track at an angle. The switch may be furnished for either right or left hand operation.

Wye switches are used where one main line monorail track branches off at angles on both sides of the switch.

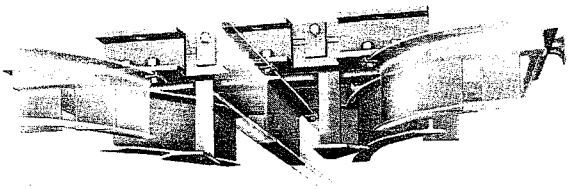
Three-way switches are used where there are two spur lines branching off at angles on both sides of the main monorail track.

The frame for these switches consists of welded heavy structural steel members with the carriage mounted on rollers for smooth, easy operation. Heavy structural steel baffles are welded to the switch carriage to protect open tracks. Incoming tracks are bolted to the switch to insure perfect alignment.

Fifteen foot pull ropes are furnished as standard for switch operation. The switch should be connected directly to the superstructure.

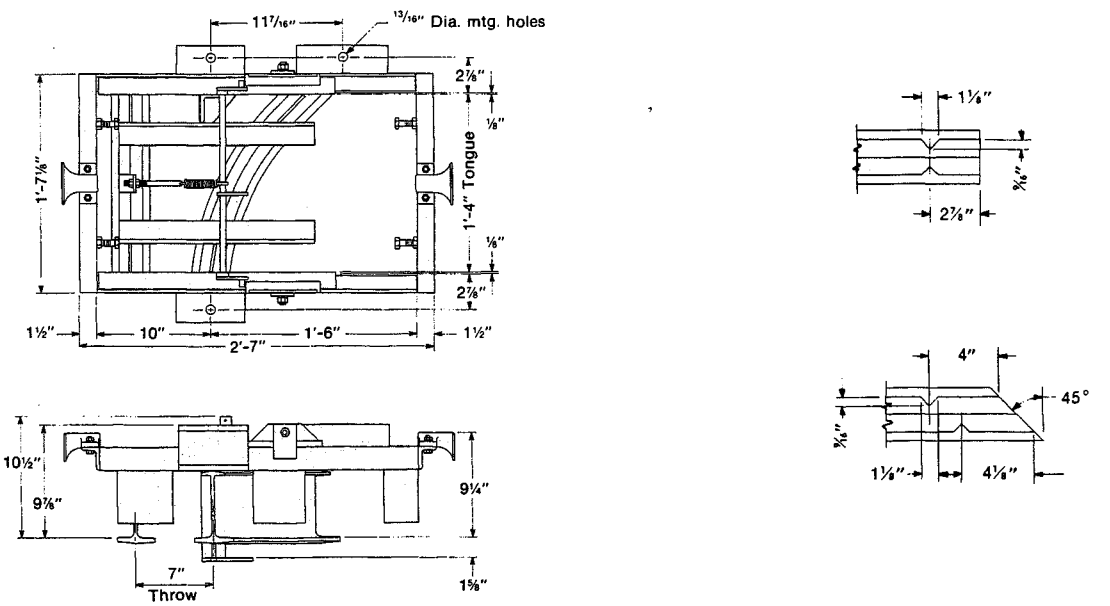
These switches are not to be used with *MotoVeyors*.

Switch Capacity: 5,000 pounds



Manually Operated

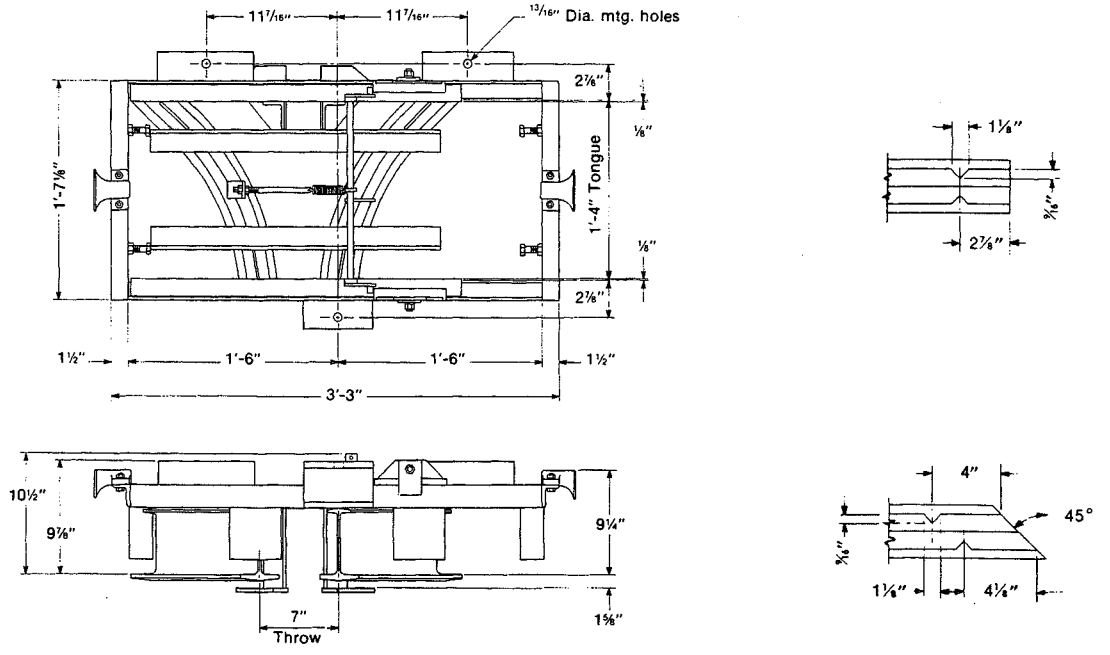
Right Hand	**703.7011R** *(28-0377)* **135 lbs.**
Left Hand	**703.7011L** *(28-0378)* **135 lbs.**
Wye	**703.7012** *(28-0379)* **156 lbs.**
Three-Way	**703.7013** *(28-0380)* **210 lbs.**



Two-Way Sliding Switch (28-0377)
Approximate dimensions are shown. Certified prints furnished on request.

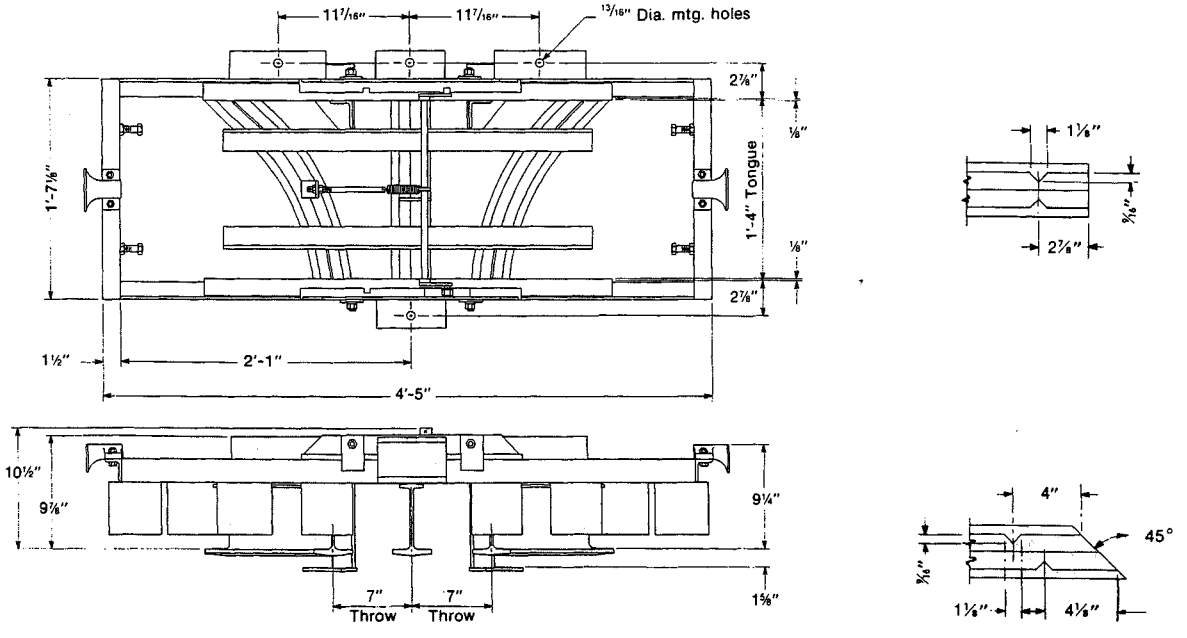
LOUDEN® SWITCHES
FOR USE WITH 3.33" FLANGE *SUPERTRACK*™ MONORAIL SYSTEMS

703-8
Issued 9-7-01



Wye Sliding Switch (28-0379)

Approximate dimensions are shown. Certified prints furnished on request.



Three-Way Sliding Switch (28-0380)

Approximate dimensions are shown. Certified prints furnished on request.

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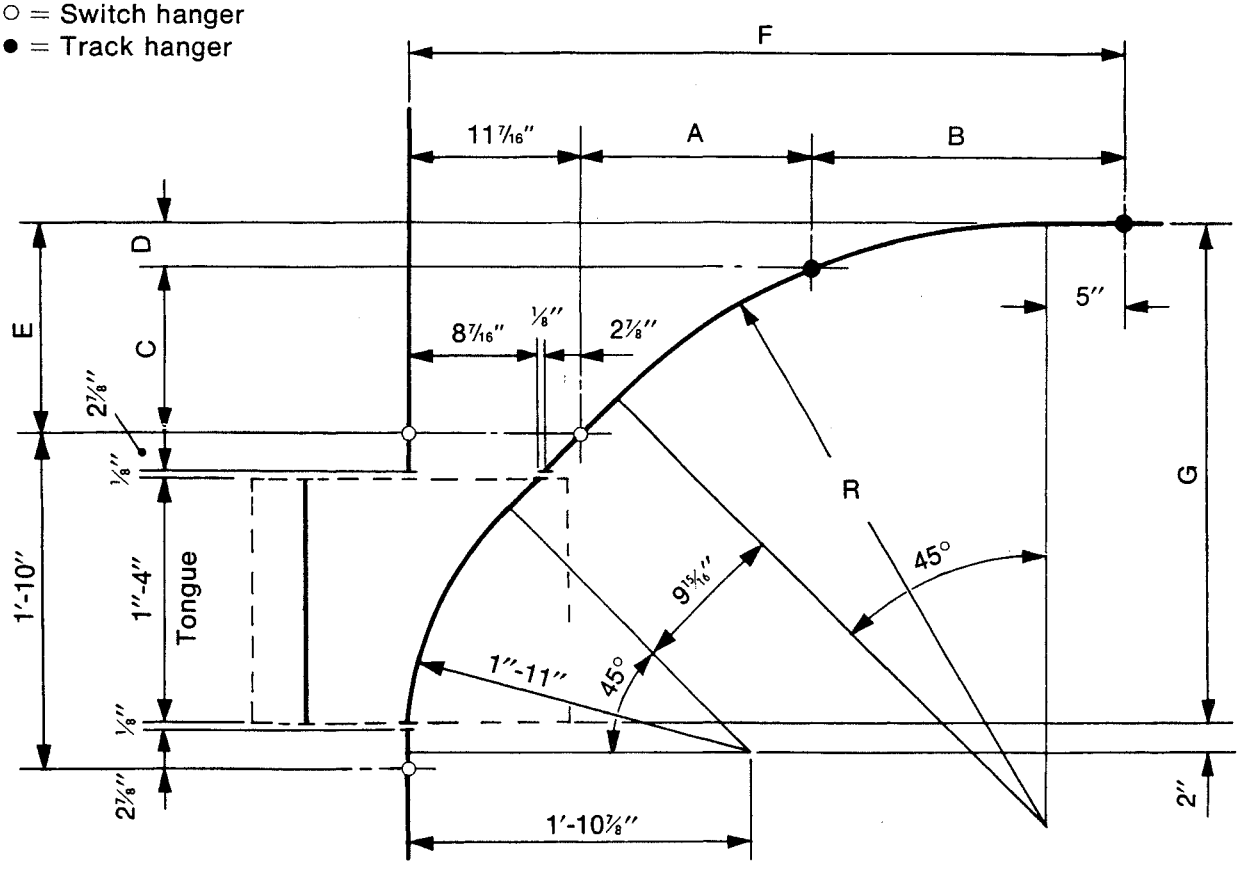
Curve and Dimensional Layout Data

○ = Switch hanger
● = Track hanger



Curve and Hanger Locations for Non-Electrified *SUPERTRACK*™ Sliding Switches

Cat. No.	Part No.	R	A	B	C	D	E	F	G
603.5093R 603.5093L	28-0279 28-0300	3'-4"	1'-3 1/4"	1'-8 5/16"	0'-10 7/8"	3 1/16"	1'-1 15/16"	3'-11"	2'-8 15/16"
603.5094R 603.5094L	28-0280 28-0301	4'-0"	1'-5 13/16"	1'-11 3/8"	1'-0 11/16"	3 5/8"	1'-4 5/16"	4'-4 5/8"	2'-11 5/16"
603.5095R 603.5095L	30-0690 30-0691	5'-0"	1'-9 3/4"	2'-3 15/16"	1'-3 1/4"	4 9/16"	1'-7 13/16"	5'-1 1/8"	3'-2 13/16"
603.5096R 603.5096L	28-0303 28-0302	6'-0"	2'-1 5/8"	2'-8 3/16"	1'-5 13/16"	5 1/2"	1'-11 5/16"	5'-9 5/8"	3'-6 5/16"
603.5097R 603.5097L	30-0692 30-0693	7'-0"	2'-5 1/2"	3'-1 1/8"	1'-8 1/2"	6 3/8"	2'-2 7/8"	6'-6 1/16"	3'-9 7/8"
603.5098R 603.5098L	30-0694 30-0695	8'-0"	2'-9 3/8"	3'-5 1/4"	1'-11 1/16"	7 5/16"	2'-6 3/8"	7'-2 5/16"	4'-1 3/8"
603.5099R 603.5099L	30-0696 30-0697	10'-0"	3'-5 3/16"	4'-2 15/16"	2'-4 1/4"	9 1/8"	3'-1 3/8"	8'-7 5/16"	4'-8 3/8"

Approximate dimensions are shown. Certified prints furnished on request.

LOUDEN® SWITCHES FOR USE WITH 3.33" FLANGE *SUPERTRACK*™ PATENTED TRACK MONORAIL SYSTEMS

703-10
Issued 9-7-01

Electrified *SuperTrack*™ Patented Track Sliding Switches

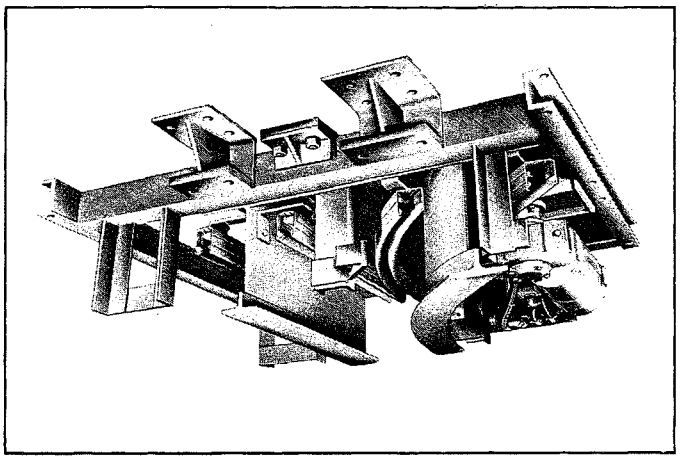
Louden® electrified *SuperTrack*™ Patented Track sliding switches are available in three configurations to adapt to most monorail layouts, and may be operated manually, by electric motor, or by air cylinders. These switches are available as two-way, three-way and wye. Sliding switches are desinged to be used with *Louden*® motorized carriers equipped with *SuperTrack*™ Patented Track trolleys.

Two-way switches are used when a branch line monorail line connects with the main line of track at an angle. The switch may be furnished for either right or left hand operation. Wye switches are used where one main line monorail track branches off at angles on both sides of the switch.

Three-way switches are used where there are two spur lines branching off at angles on both sides of the main monorail track.

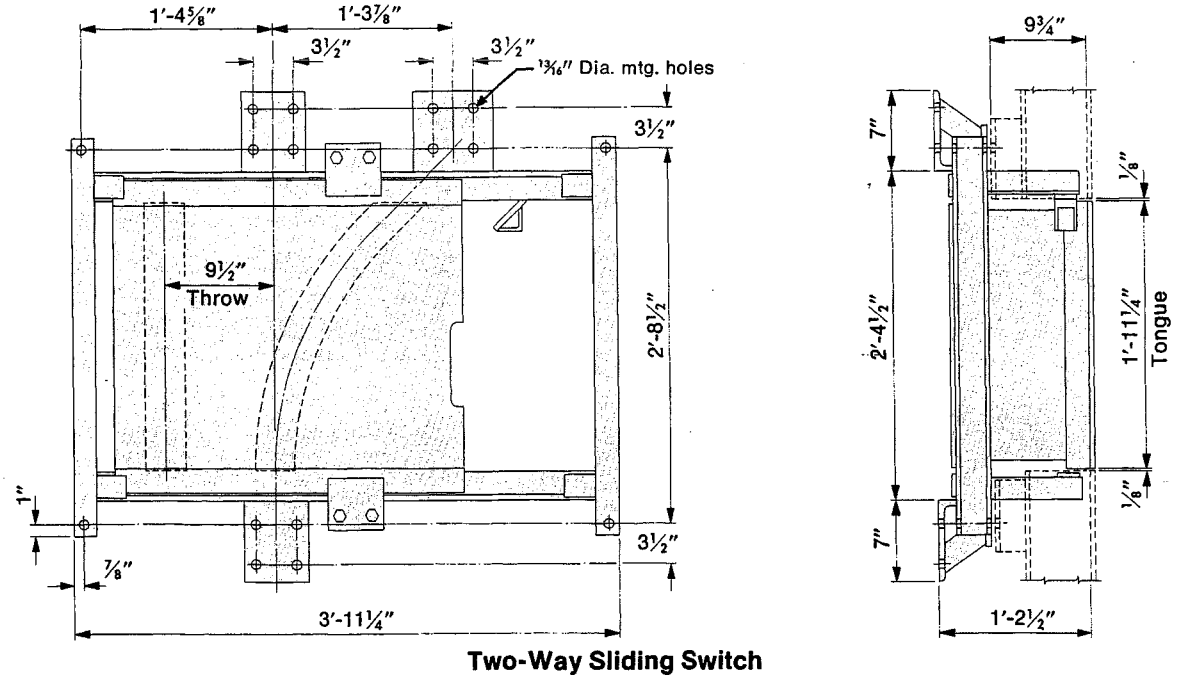
The switch frame is constructed of heavy structural steel members welded together to form a solid, one-piece unit that cannot rack or warp. The carriage is mounted on rollers to provide quick, smooth operation. Positive latches hold the switch carriage securely in place during operation. Accurate alignment of conductors and track is permitted by securely clamping both to the switch frame. Open tracks are guarded by heavy structural steel baffles welded to the switch carriage.

The switch should be connected directly to the superstructure.



Switch Capacity: 10,000 pounds.

Type	Manual	Motor	Air
Right Hand	703.7221R *(28-0462)* 504 lbs.	703.7225R *(30-0699)* 590 lbs.	703.7227R *(30-0702)* 554 lbs.
Left Hand	703.7221L *(28-0467)* 504 lbs.	703.7225L *(30-0700)* 590 lbs.	703.7227L *(30-0703)* 554 lbs.
Wye	703.7222 *(28-0468)* 616 lbs.	703.7226 *(30-0701)* 706 lbs.	703.7228 *(30-0704)* 675 lbs.
Three-Way	703.7223 *(30-0698)* 825 lbs.		703.7229 *(30-0705)* 905 lbs.



Two-Way Sliding Switch

Approximate dimensions are shown. Certified prints furnished on request.

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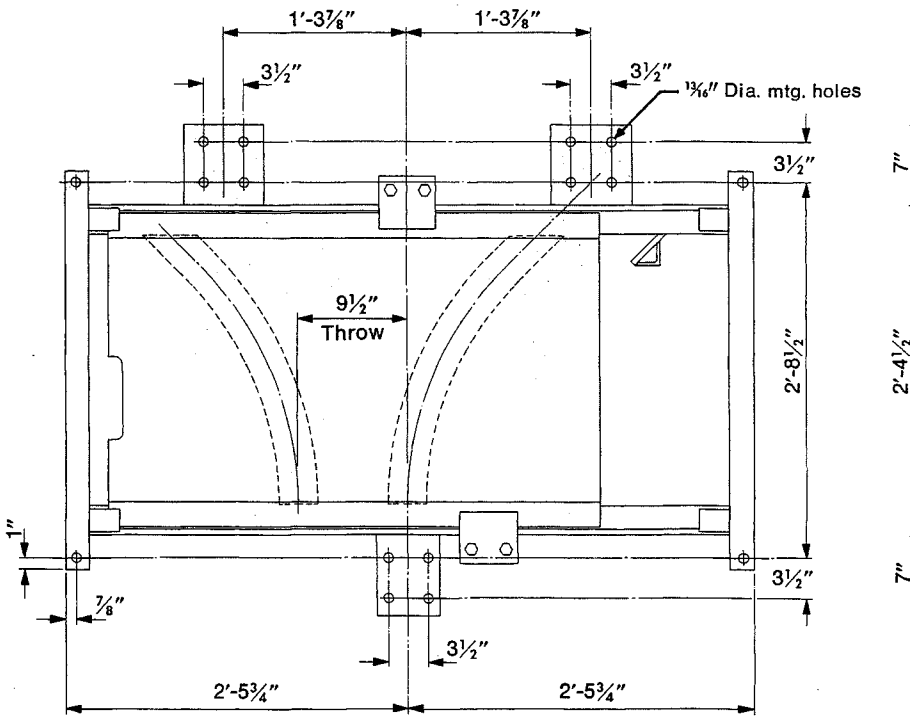
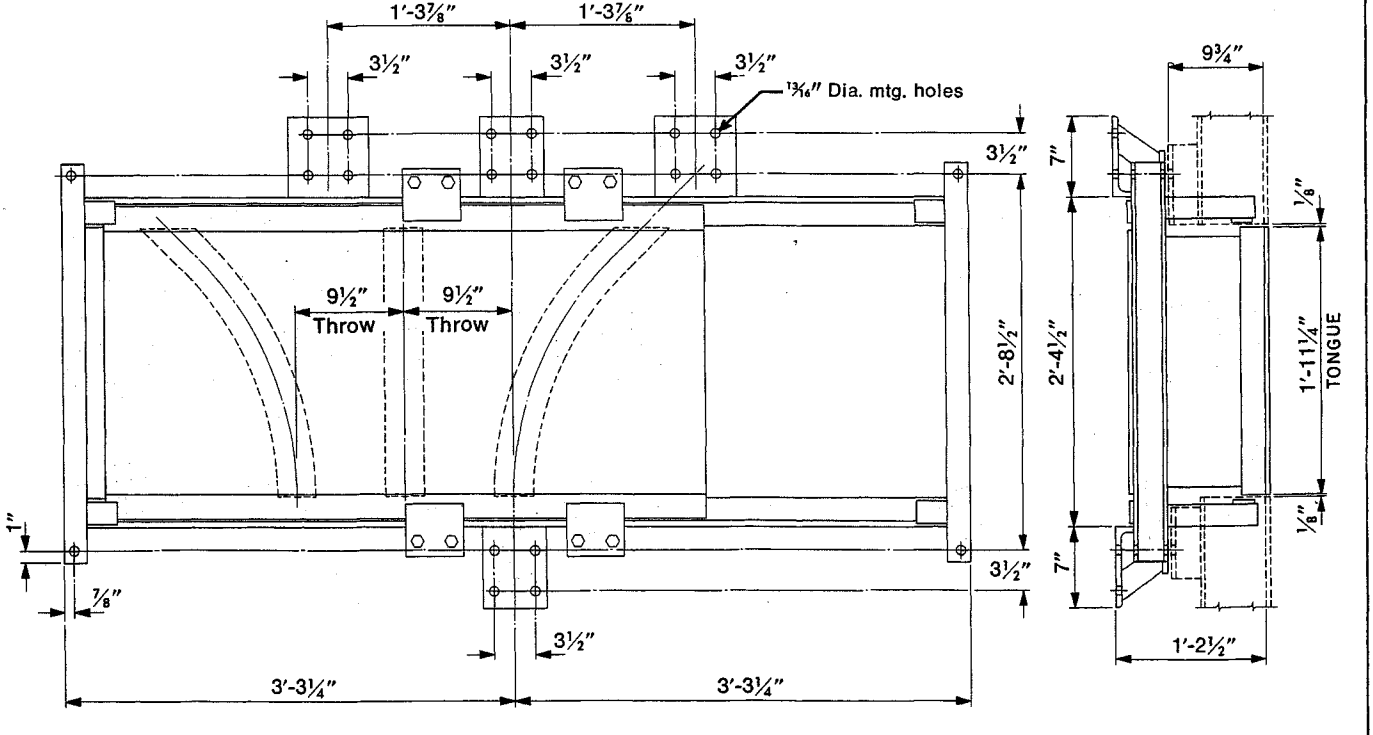
LOUDEN® SWITCHES
FOR USE WITH 3.33" FLANGE *SUPERTRACK*™ PATENTED TRACK MONORAIL SYSTEMS

703-11
Issued 9-7-01



Wye Sliding Switch
Approximate dimensions are shown. Certified prints furnished on request.



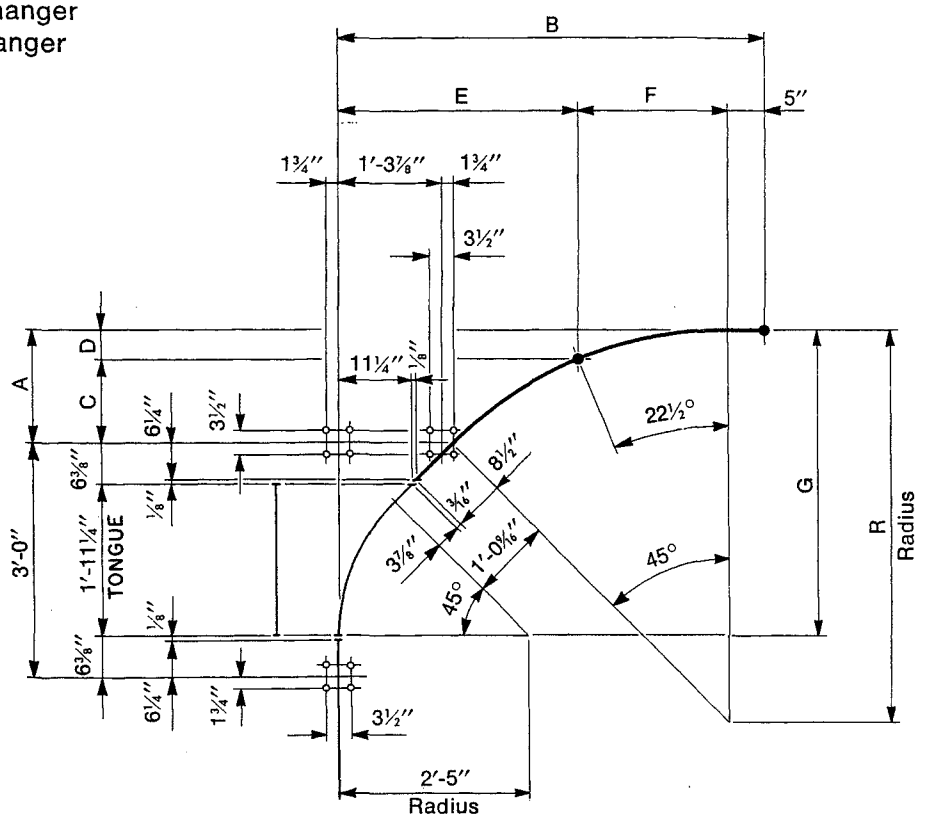
Three-Way Sliding Switch
Approximate dimensions are shown. Certified prints furnished on request.

LOUDEN® SWITCHES
FOR USE WITH 3.33" FLANGE *SUPERTRACK*™ PATENTED TRACK MONORAIL SYSTEMS

703-12
Issued 9-7-01

Curve and Dimensional Layout Data

○ = Switch hanger
● = Track hanger



Curve and Hanger Locations for Heavy Duty, Electrified *SuperTrack* Sliding Switches

Cat. No.	Part No.	R	A	B	C	D	E	F	G
603.6286R 603.6286L	28-0460 28-0459	3'-4"	11½"	4'-2⅝"	8⅞16"	3⅛16"	2'-6⅝16"	1'-3⅝16"	3'-5⅛"
603.6287R 603.6287L	28-0461 28-0463	4'-0"	1'-1⅜16"	4'-8⅝16"	10⅜16"	3⅝"	2'-8⅜16"	1'-6⅜"	3'-7⅞16"
603.6288R 603.6288L	28-0464 28-0465	5'-0"	1'-5⅜"	5'-4⅜16"	1'-0⅜16"	4⅜16"	3'-0⅞"	1'-10⅜16"	3'-11"
603.6289R 603.6289L	28-0466 28-0458	6'-0"	1'-8⅞"	6'-1¼"	1'-3⅜"	5½"	3'-4⅛16"	2'-3⅜16"	4'-2½"
603.6290R 603.6290L	28-0469 28-0470	7'-0"	2'-0⅜"	6'-9¾"	1'-6"	6⅜"	3'-8⅝"	2'-8⅛"	4'-6"
603.6291R 603.6291L	28-0515 28-0516	8'-0"	2'-3⅞'	7'-6¼"	1'-8⅝16"	7⅝16"	4'-0½"	3'-0¾"	4'-9½"
603.6292R 603.6292L	28-0317 28-0316	10'-0"	2'-10⅝16"	8'-11¼"	2'-1⅜16"	9⅛"	4'-8⅝16"	3'-9⅝16"	5'-4⅜16"

Approximate dimensions are shown. Certified prints furnished on request.

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LOUDEN® SWITCHES
FOR USE WITH 3.33" FLANGE *TROJANTRACK*™ MONORAIL SYSTEMS

703T-13
Issued 9-7-01

Electrified TrojanTrack Sliding Switches

Louden electrified *TrojanTrack* sliding switches are available in three configurations to adapt to most monorail layouts, and may be operated manually, by electric motor, or by air cylinders. These switches are available as two-way, wye, and three-way (air operated only). *TrojanTrack* sliding switches are designed to be used with *Louden* motorized carriers operating on *TrojanTrack* monorail systems.

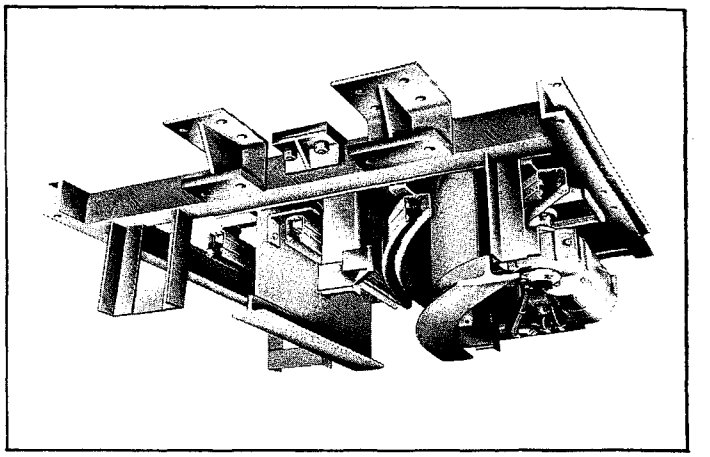
Two-way switches are used when a branch line monorail line connects with the main line of track at an angle. The switch may be furnished for either right or left hand operation.

Wye switches are used where one main line monorail track branches off at angles on both sides of the switch.

Three-way switches are used where there are two spur lines branching off at angles on both sides of the main monorail track.

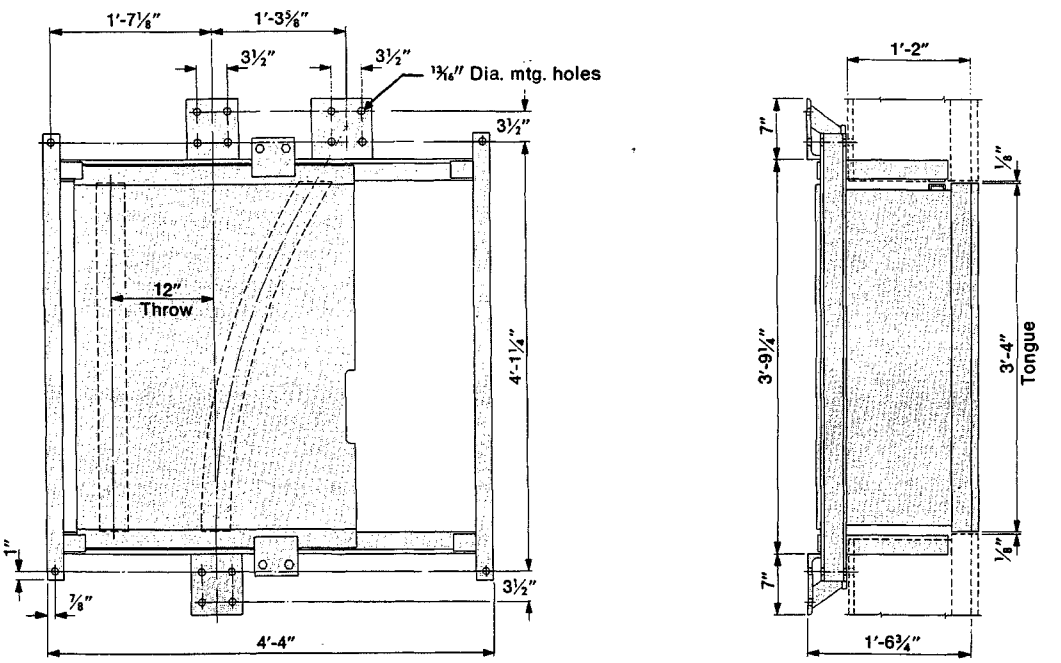
The switch frame is constructed of heavy structural steel members, welded together to form a solid, one-piece unit that cannot rack or warp. The carriage is mounted on rollers to provide quick, smooth operation. Positive latches hold the switch carriage securely in place during operation. Accurate alignment of conductors and track is insured by securely clamping both to the switch frame. Open tracks are guarded by heavy structural steel baffles welded to the switch frame.

The switch should be connected directly to the superstructure.



Type	Manual	Motor	Air
Right Hand	**703.7131R** *(30-0706)* **785 lbs.**	**703.7135R** *(30-0710)* **905 lbs.**	**703.7137R** *(30-0713)* **855 lbs.**
Left Hand	**703.7131L** *(30-0707)* **785 lbs.**	**703.7135L** *(30-0711)* **905 lbs.**	**703.7137L** *(30-0714)* **855 lbs.**
Wye	**703.7132** *(30-0708)* **1050 lbs.**	**703.7136** *(30-0712)* **1170 lbs.**	**703.7138** *(30-0715)* **1120 lbs.**
Three-Way			**703.7139** *(30-0716)* **1385 lbs.**

Switch Capacity: 15,000 pounds.

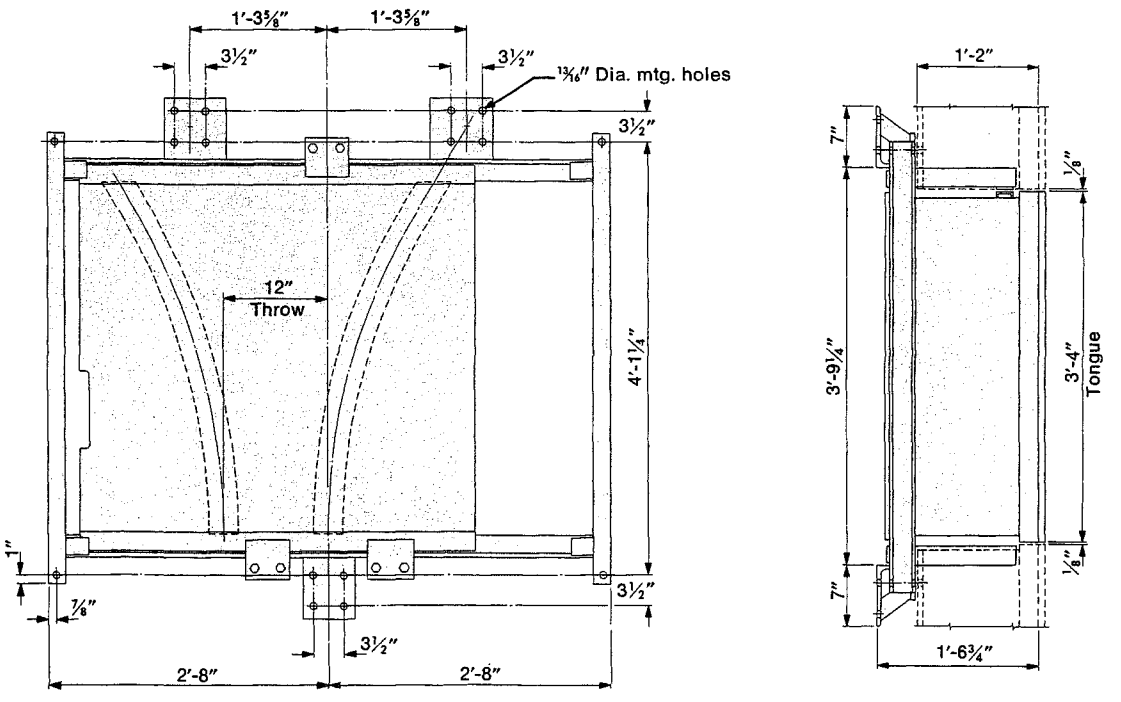


Two-Way Sliding Switch

Approximate dimensions are shown. Certified prints furnished on request.

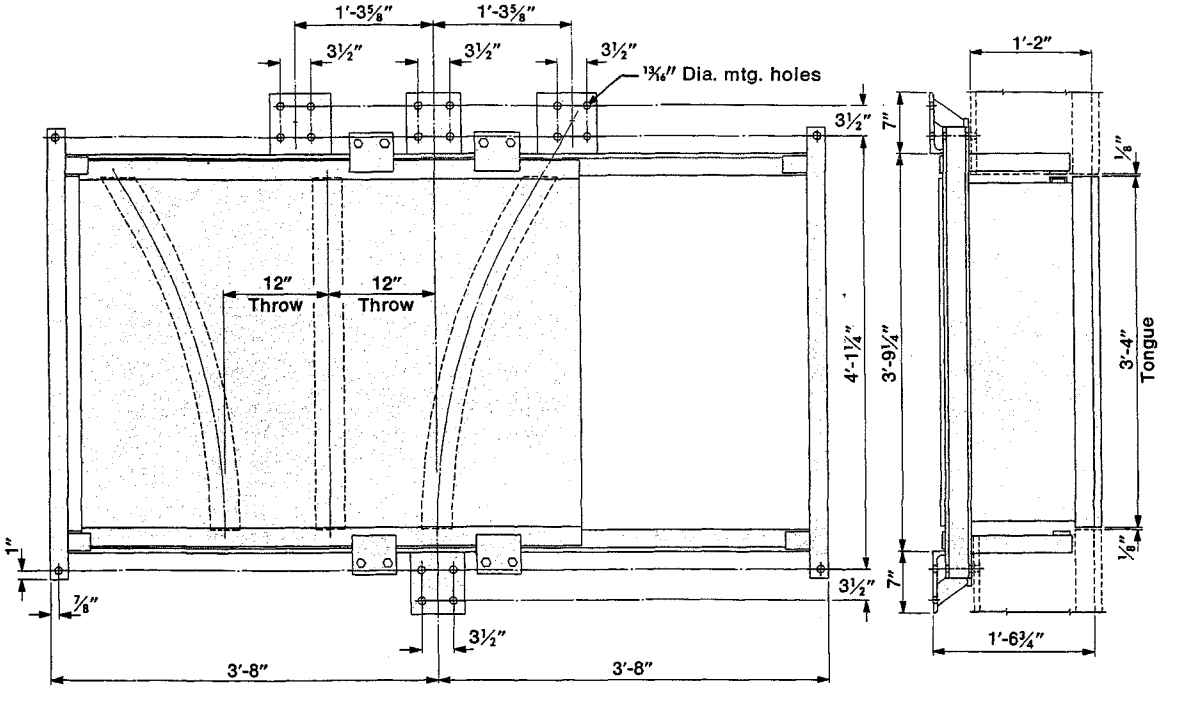
LOUDEN® SWITCHES
FOR USE WITH 3.33" FLANGE *TROJANTRACK*™ MONORAIL SYSTEMS

703T-14
Issued 9-7-01



Wye Sliding Switch

Approximate dimensions are shown. Certified prints furnished on request.



Three-Way Sliding Switch (air operated only)

Approximate dimensions are shown. Certified prints furnished on request.

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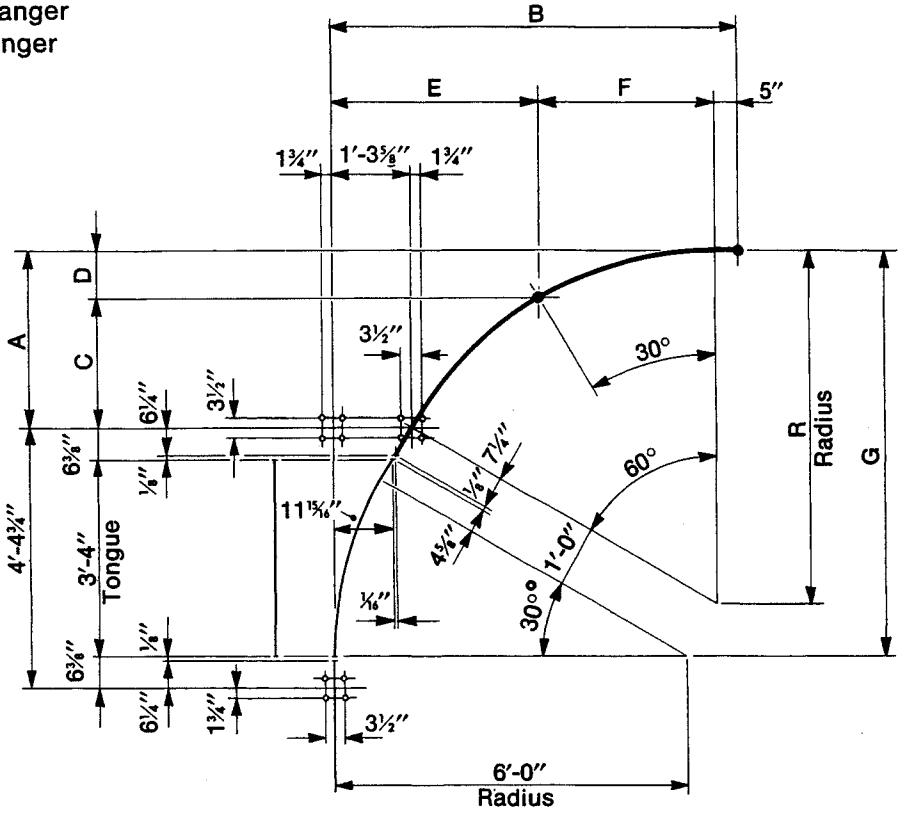
PART OF THE FKI GROUP

LOUDEN® SWITCHES
FOR USE WITH 3.33" FLANGE *TROJANTRACK*™ GIRDER TRACK
MONORAIL SYSTEMS

703T-15
Issued 9-7-01

Curve and Dimensional Layout Data

○ = Switch hanger
● = Track hanger



Curve and Hanger Locations for Heavy Duty, Electrified *TrojanTrack* Sliding Switches

Cat. No.	Part No.	R	A	B	C	D	E	F	G
605.7150-R 605.7150-L	30-0717 30-0724	6'-0"	3'-0"	6'-11"	2'-2⅜"	9⅝"	3'-6"	3'-0"	6'-10⅜"
605.7151-R 605.7151-L	30-0718 30-0725	7'-0"	3'-6"	7'-9⅜"	2'-6¾"	11¼"	3'-10⅜"	3'-6"	7'-4⅜"
605.7152-R 605.7152-L	30-0719 30-0726	8'-0"	4'-0"	8'-7¾"	2'-11⅛"	1'-0⅞"	4'-2¾"	4'-0"	7'-10⅜"
605.7153-R 605.7153-L	30-0720 30-0727	9'-0"	4'-6"	9'-6⅛"	3'-3½"	1'-2½"	4'-7⅛"	4'-6"	8'-4⅜"
605.7154-R 605.7154-L	30-0721 30-0728	10'-0"	5'-0"	10'-4⅝"	3'-7¹⁵⁄₁₆"	1'-4¼"	4'-11¹⁵⁄₁₆"	5'-0"	8'-10⅜"
605.7155-R 605.7155-L	30-0722 30-0729	11'-0"	5'-6"	11'-2¹⁵⁄₁₆"	4'-0⅝"	1'-5¹¹⁄₁₆"	5'-3¹⁵⁄₁₆"	5'-6"	9'-4⅜"
605.7156-R 605.7156-L	30-0723 30-0730	12'-0"	6'-0"	12'-1⅝"	4'-4¹¹⁄₁₆"	1'-7⅝"	5'-8⅝"	6'-0"	9'-10⅜"

All *Trojan Track* curves will be constructed from 605.1235 rail with a five foot minimum radius and a 90° maximum bend. No compound curves (reverse bends) will be furnished.

Approximate dimensions are shown. Certified prints furnished on request.

Acco Material Handling Solutions

Issued 9-07-01 809-1

LOUDEN®
ELECTRIFICATION SYSTEMS
CONDUCTOR BAR
SUPPORT BRACKETS

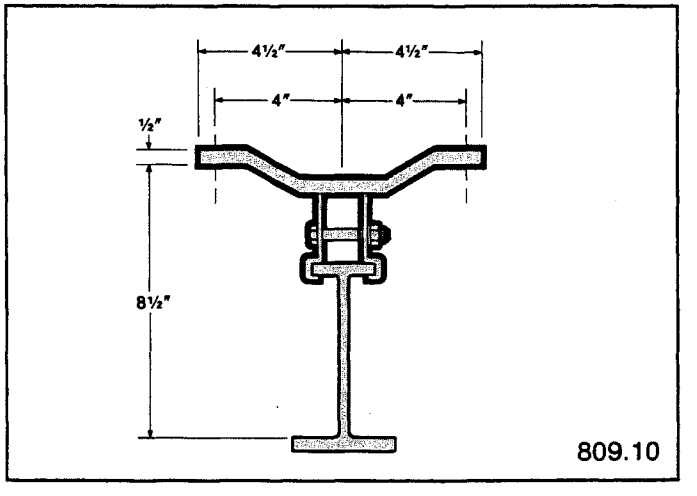
WARNING Disconnect Power Before Working on or Near Any Electrical Components.

Louden® Conductor Bar Support Brackets are designed to mount all electrification systems offered by the Material Handling Group to *Louden®* monorail and crane tracks at the proper location for optimum performance of the system. Bottom entry electrification types are supported at 8½" above the track tread in systems with *Louden®* trolley wheel tread diameters up to and including 4½", and at 12" above the track tread with 9" diameter *Louden®* trolley wheels. Electrification system types cannot be intermixed.

All bottom entry electrification systems offered by the Material Handling Group require that Conductor Bar Support Brackets be provided on maximum 5' centers for straight runs. Monorail curves require at least one additional bracket for each 45° of bend, but electrification support centers are not to exceed 4' on curves. *Louden®* conductor Bar Support Brackets do not include Support Insulators nor Hanger Clamp Assemblies. These are shown with the individual electrification systems.

809.10 (28-0400), **Wt. 1.25 lbs.**

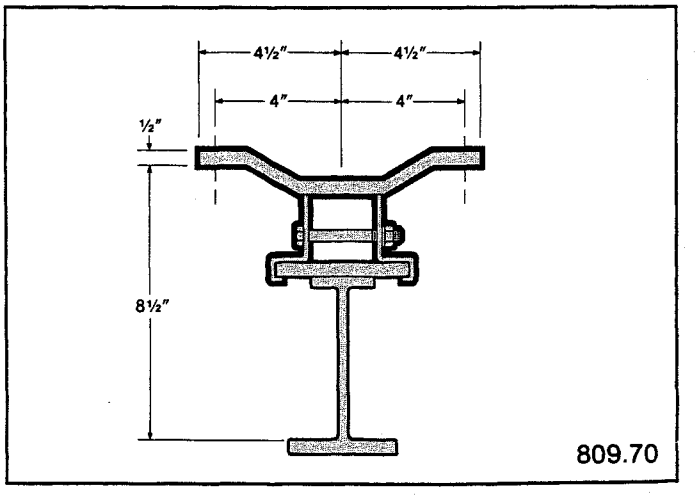
For 4-wire (2-run) dual conductor bottom entry electrification at 8½" above the track tread of 603.6 *SuperTrack™* Patented Track.



809.10

809.70 (28-0404), **Wt. 1.4 lbs.**

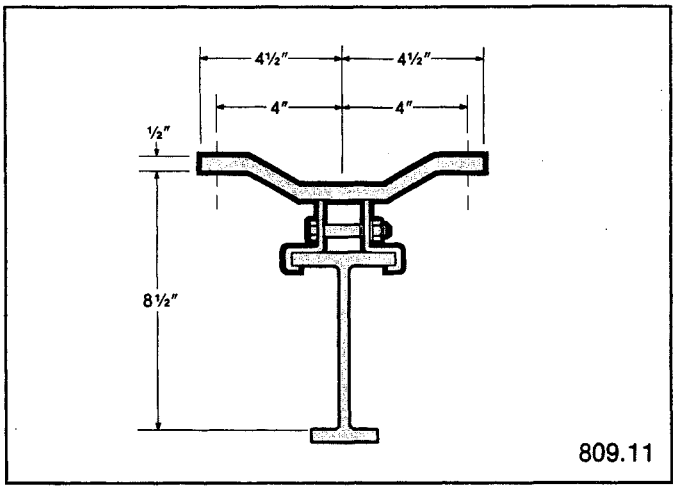
For 4-wire (2-run) dual conductor electrification or 2-wire single conductor bottom entry electrification on 603.7 capped *SuperTrack.*



809.70

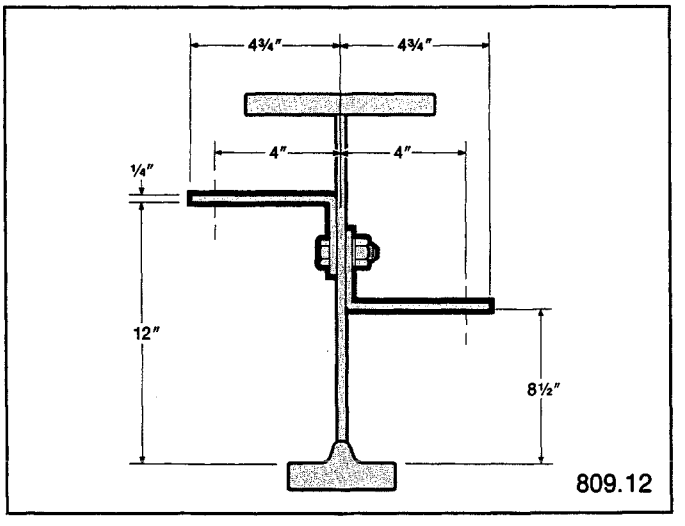
809.11 (28-0402), **Wt. 1.35 lbs.**

For 4-wire (2-run) dual conductor bottom entry electrification at 8½" above the track tread of 602.6 *SuperTrack*™ Patented Track.



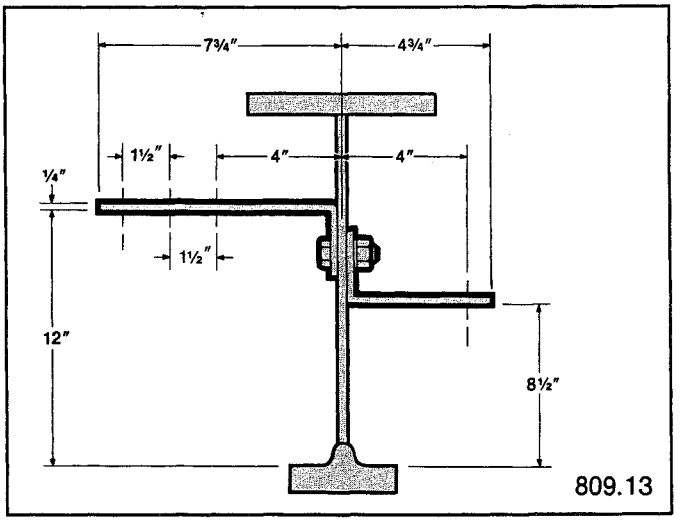
809.12 (28-0428), **Wt. 1.5 lbs.**

For 4-wire (2-run) dual conductor bottom entry electrification at 8½" above the track tread on 12" *Louden*® girder track. On *Louden*® girder track 15" deep or over either 12" or 8½" above the track tread may be used.



809.13 (28-0429), **Wt. 1.25 lbs.**

For up to 6-wire (3-run) dual conductor, or 4-wire single conductor bottom entry electrification at 8½" above the track tread on 12" *Louden*® girder track. On *Louden*® girder track 15" deep or over either 12" or 8½" above the track tread may be used.



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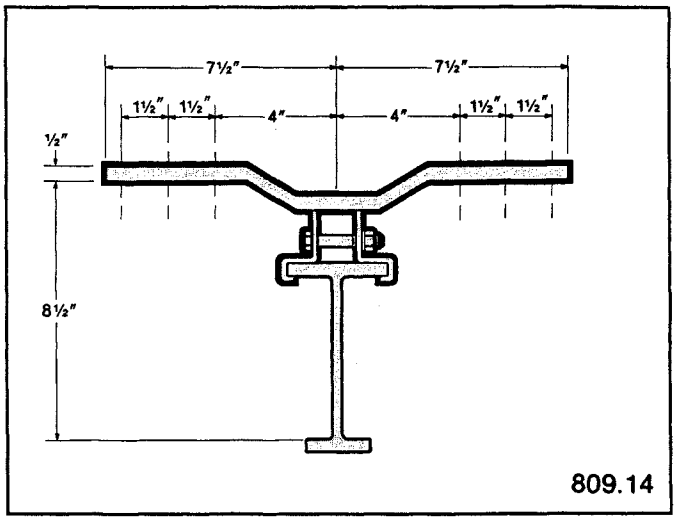
809.14 (28-0423), **Wt. 2 lbs.**

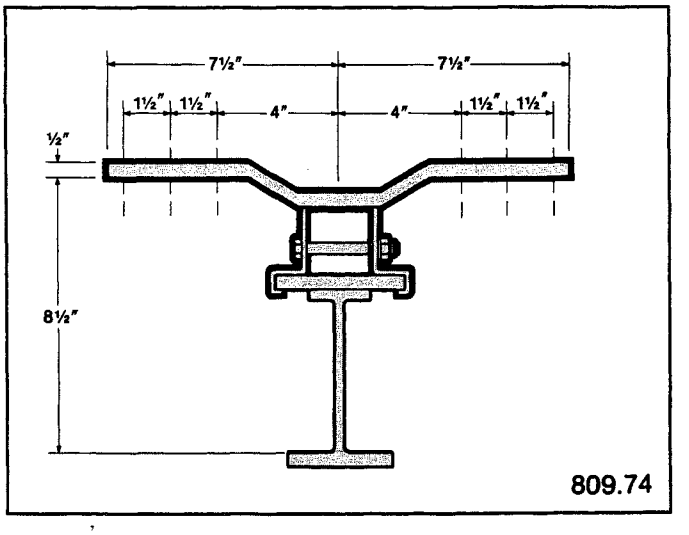
For up to 8-wire (4-run) dual conductor or 6-wire single conductor bottom entry electrification at 8½" above the track tread on 602.6 *SuperTrack*™ Patented Track.



809.14

809.74 (28-0405), **Wt. 1.8 lbs.**

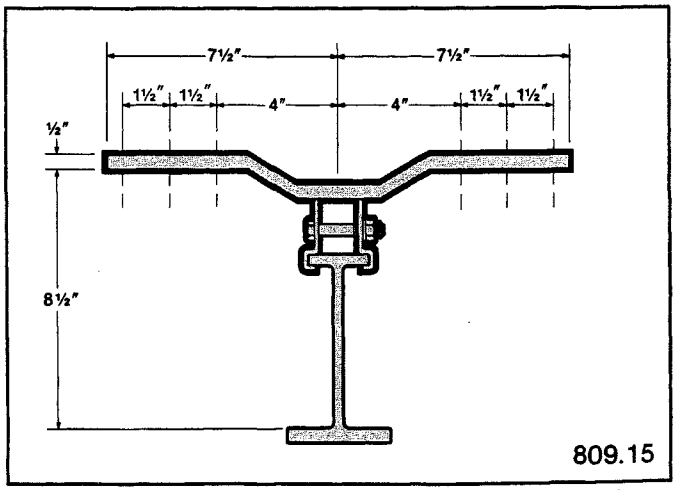
For up to 8-wire (4-run) Dual Conductor Electrification or 6-wire single conductor bottom entry electrification on 603.7 capped *SuperTrack.*



809.74

809.15 (28-0431), **Wt. 2 lbs.**

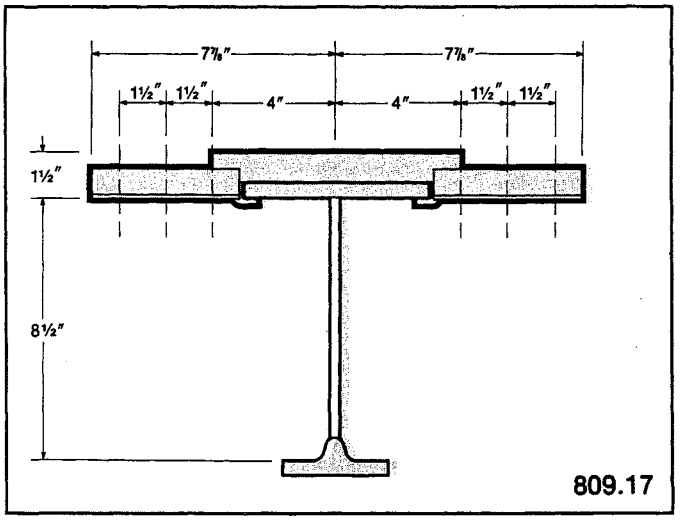
For up to 8-wire (4-run) dual conductor or 6-wire single conductor bottom entry electrification at 8½" above the track tread on 603.6 *SuperTrack*™ Patented Track.



809.15

809.17 (28-0693), **Wt. 1.3 lbs.**

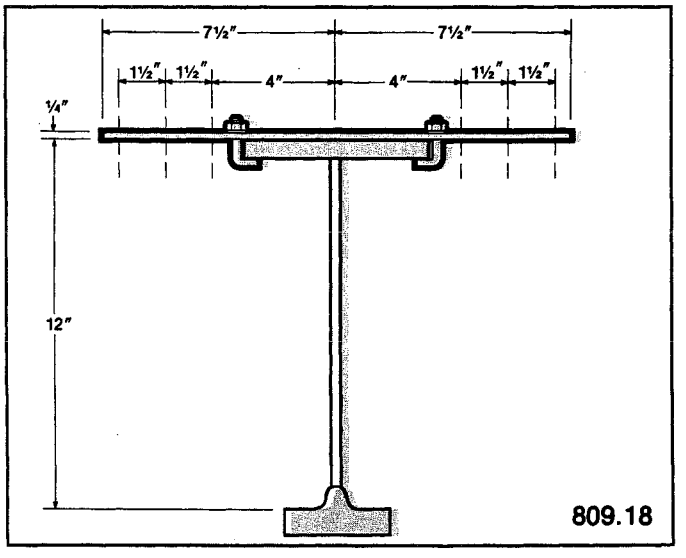
For up to 8-wire (4-run) dual conductor, or 6-wire single conductor bottom entry electrification at 8½" above the track tread of 604.924 *SuperTrack* Girder.



809.17

809.18 (28-0694), **Wt. 2.2 lbs.**

For up to 8-wire (4-run) dual conductor, or 6-wire single conductor bottom entry electrification at 12" above the track tread of 605.1235 *TrojanTrack* Girder or 604.1231 *SuperTrack* Girder.



809.18

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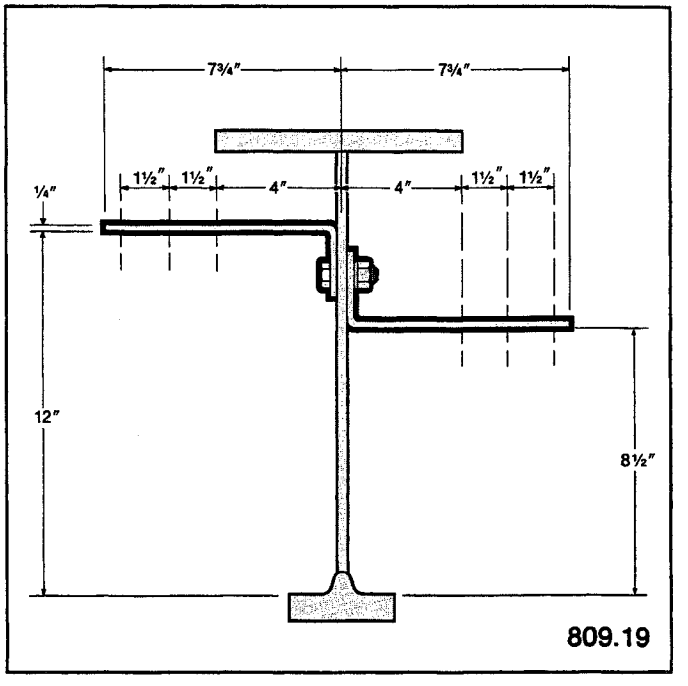
809.19 (28-0420), **Wt. 2 lbs.**

For up to 8-wire (4-run) dual conductor, or 6-wire single conductor bottom entry electrification at 8½" above the track tread on 12" *Louden* girder track. On *Louden* girder track 15" deep or over either 12" or 8½" above the track tread may be used.



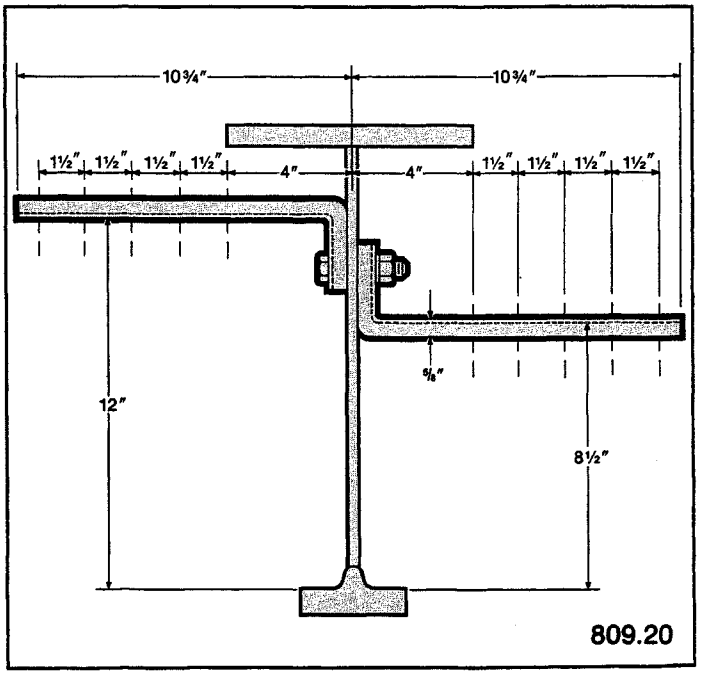
809.19

809.20 (30-1137), **Wt. 4.5 lbs.**

For up to 12-wire (6-run) dual conductor, or 10-wire single conductor bottom entry electrification at 12" above the track tread of *Louden* girder tracks 15" deep or over.

NOTES:

1. For dual conductor bottom entry *Louden* electrification bracket may be turned up or down on *Louden* girder track 15" deep or over.
2. For dual conductor and single conductor bottom entry electrification bracket. **Must Be Turned Up on 12"** *Louden* girder track only.



809.20

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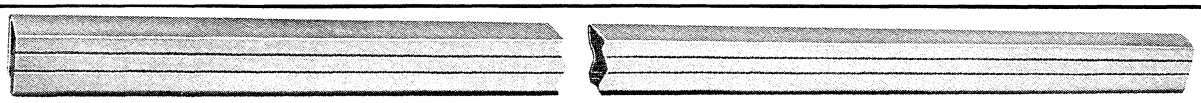
Acco Material Handling Solutions

Issued 2-24-16 810-1

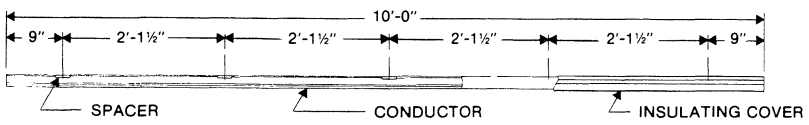
LOUDEN®

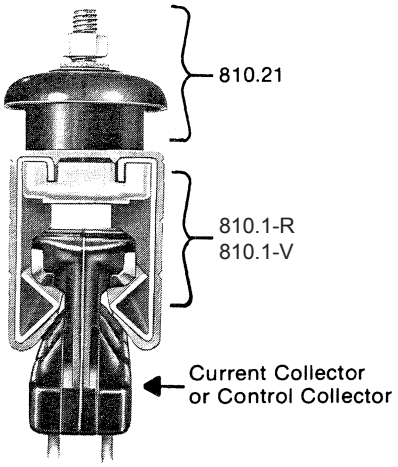
DUAL CONDUCTOR BOTTOM ENTRY ELECTRIFICATION

WARNING Disconnect Power Before Working on or Near Any Electrical Components.



No. 810.1-R - No. 810.1-V
CONDUCTOR SECTION
Wt. 16 lbs. Per 10' Length



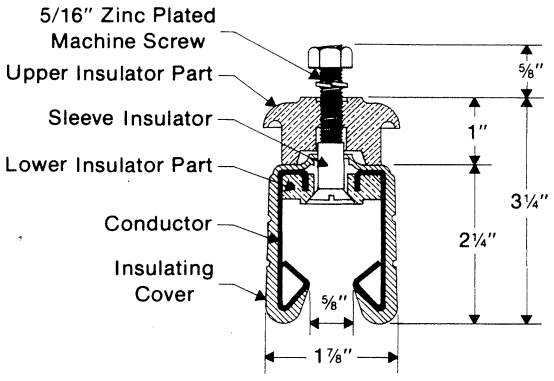


Louden® Dual Conductor Bottom Entry Electrification is designed and built to meet the requirements of *Louden*® monorail and crane service. The 10' long conductor sections are made of two roll-formed, zinc coated steel bars held in position by five spacer insulators to form an inverted U shape with a 5/8" slot opening at the bottom to accommodate the sliding shoe current collectors. This assembly is housed in a heavy EPDM rubber or vinyl insulating jacket that covers all external surfaces. Both EPDM and vinyl are tough and durable, with excellent insulating properties and have good flame resistance.

The cover of 810.1-R is EPDM rubber and will withstand temperatures up to 200° F. However, maximum temperatures are generally limited to 125° F, due to the normal limits imposed by the use of motors, controls, wiring, and drive tires. **Vinyl should not be used where temperatures rise above 140° F.**

Louden® Dual Conductor Bottom Entry Electrification is available, on special-order, with stainless steel conductors for use in highly corrosive or caustic areas. Each of the two bars in *Louden*® Dual Conductor Bottom Entry Electrification is a separate conductor with a capacity of 100 amperes at 600 volts. This capacity can be doubled by electrically tying the two bars together.

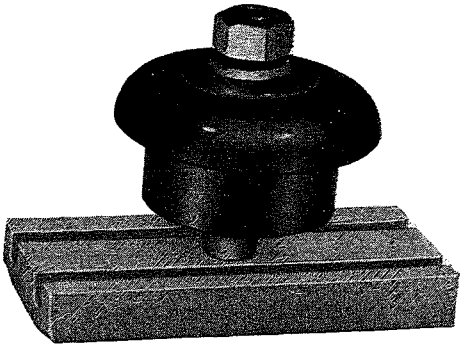
Installation of straight sections of *Louden*® Dual Conductor Bottom Entry Electrification is simple and curves can be normally accomplished with the bending tools available from the factory. Straight runs require support on maximum 5' centers. Curves require a minimum of one center support but support centers should not exceed 4'.



Louden® Dual Conductor Bottom Entry Electrification is stocked and shipped in standard 10' lengths; assembled complete with the specified insulating cover and five spacer insulators. When odd lengths are required as at the end of a run, the section is easily cut to length during installation.

SUPPORT INSULATOR ASSEMBLY
810.21 (28-0432) Wt. .5 lbs. (.23 kg.)

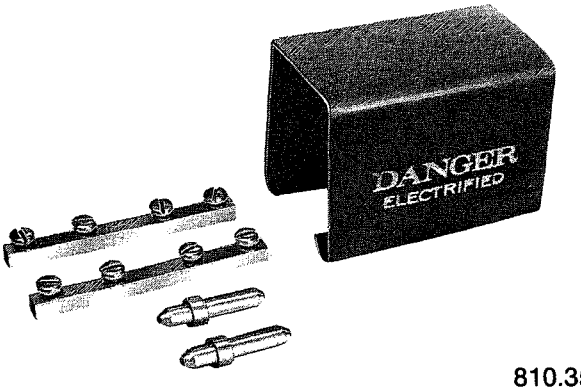
The Support Insulator Assembly consists of three molded parts assembled with a 5/16" diameter machine screw. The lower insulator is grooved to fit snugly against the lips of the two conductors inside the electrification section. The upper insulator is cored and tapped to facilitate a tight fit with the bolt and conductor cover. The sleeve insulator is designed to push the conductor cover up into the recess of the upper insulator to retard seepage of moisture into the conductor from above.



810.21

SPLICE ASSEMBLY
810.35 (28-0443) Wt. .75 lbs. (.34 kg.)

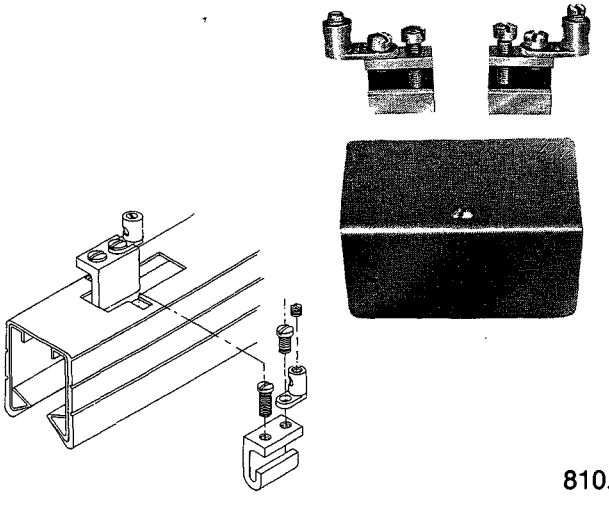
Designed to join conductor sections, the dowels provide a smooth, but rigid, mechanical joint while the splice bars maintain electrical continuity across the joint. The joint is covered by an extruded Hi-Impact P.V.C. splice cover.



810.35

POWERFEED ASSEMBLY
810.37 (28-0444) Wt. .75 lbs. (.34 kg.)

Louden® Powerfeeds provide terminal connection for both conductors in *Louden*® Dual Conductor Bottom Entry Electrification. Rated 100 Amp. at 600 volts the assembly includes extruded brass terminal lugs, connectors to accommodate No. 14 to No. 4 leads and a three piece molded phenolic housing.



810.37

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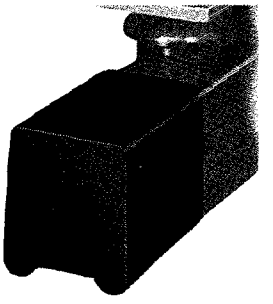
END CLOSURE
810.26 (28-0436) Wt. .5 lbs. (.23 kg.)

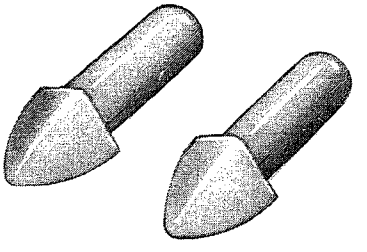
The End Closure is made of molded phenolic and incorporating an end plate to cover exposed conductor bars at the end of an electrification run. One is required at each dead end conductor section.



810.26

TRANSFER INSULATOR
810.22 (28-0433) Wt. .06 lbs. (.03 kg.)

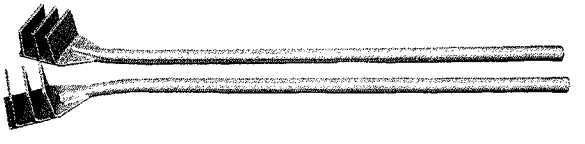
Transfer Insulators are used at transfer points and with monorail switches to guide the collectors through the gaps, they also serve to insulate the end of the conductors when passing conductors of opposite polarity such as when a crane passes a transfer section or a sliding switch is moved.



810.22

BENDING HICKEY
810.5 (28-0426) Wt. 13 lbs. (5.9 kg.)

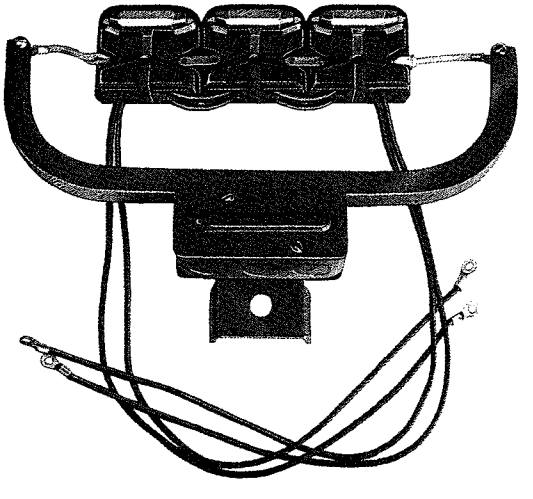
Used on the job for bending curves in *Louden* Dual Conductor Bottom Entry Electrification. The operation is similar to using a "hickey" in forming conduit. One set required for installation of electrified monorails with curves.



810.5

CURRENT COLLECTOR
810.30 (28-0437) Wt. 5 lbs. (2.27 kg.)

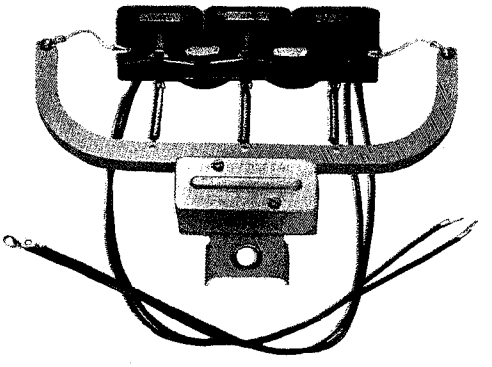
The 810.30 Current Collector is composed of three identical sections joined by a linkage which permits free articulation of the individual sections. This assures smooth operation on curves or through gaps at transfer points. This design reduces the possibility of single phasing since one or more of the sliding shoes will remain in contact with the conductors. Each section of the collector is made up of a molded phenolic main body, two cast metal sliding shoes, and two terminal covers. Power is transmitted to the equipment by a wire harness that connects the sliding shoes on each side. The appropriate mounting bracket is included with the Current Collector when furnished with new equipment. This current collector is rated 30 Amp./600 volt.



SHOWN WITH BRACKET 810.30

CURRENT COLLECTOR, Spring Loaded
810.101 (28-0438) Wt. 5.5 lbs. (2.5 kg.)

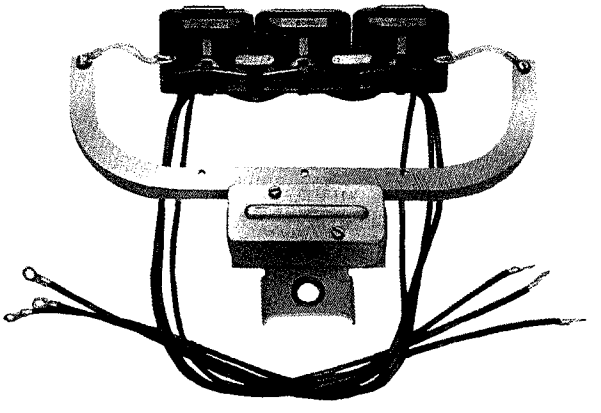
This Current Collector is identical to the 810.30 Current Collector but includes a spring from each of the three sections to the mounting bracket to provide increased sliding shoe contact with the conductor bar. This provides enhanced reliability of the conductor in dirty or caustic atmospheres. Rated at 30 Amp./600 volt. Mounting bracket provided for new equipment.



SHOWN WITH BRACKET 810.101

CONTROL COLLECTOR
810.32 (28-0439) Wt. 5.5 lbs. (2.5 kg.)

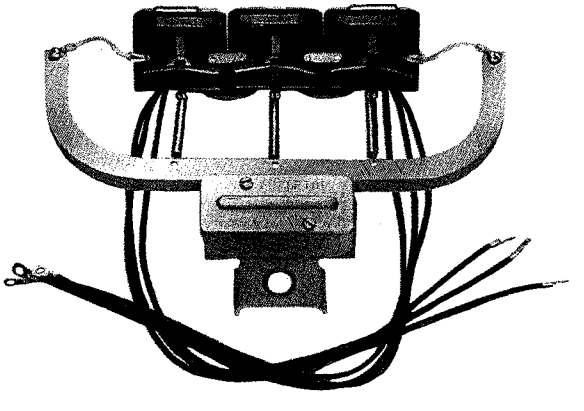
This Current Collector is used in conjunction with Control Collector in *Louden Selectomatic* dispatch systems as a power source and for control circuits. The design and construction is similar to the 810.30 collector with the addition of an additional contact shoe built into the top of the two end sections and two additional terminal wires. Rated at 30 Amp./600 volt. Mounting bracket provided with new equipment.



SHOWN WITH BRACKET 810.32

CONTROL COLLECTOR, Spring Loaded
810.102 (28-0440) Wt. 6.0 lbs. (2.75 kg.)

This Spring Loaded Control Collector is identical to the 810.32 Control Collector but includes a spring from each of the three sections to the mounting bracket to provide increased sliding shoe contact with the conductor bar. This provides enhanced reliability of the collector in dirty or caustic atmospheres. Mounting bracket provided for new equipment. Rated at 30 Amp./600 volt.



SHOWN WITH BRACKET 810.102

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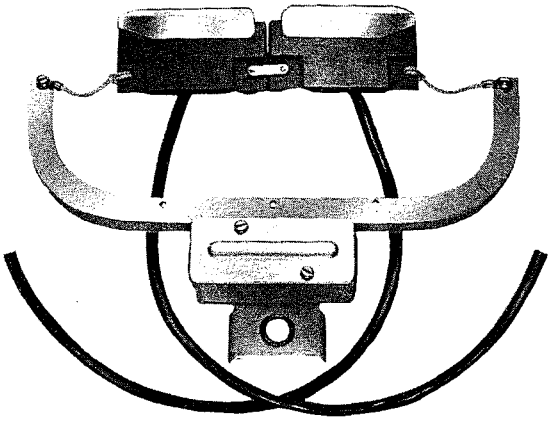
CURRENT COLLECTOR, Single Pole
810.100 (28-0627) Wt. 1.33 lbs. (.62 kg.)

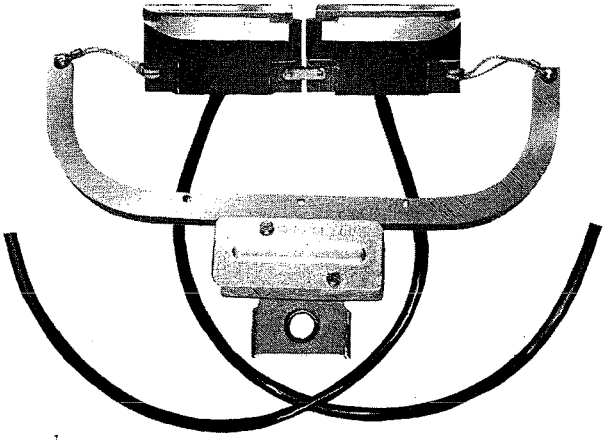
This two section, single pole, sliding shoe collector is used when 90 Amp. capacity is required and both sides of the conductor bar carry a single phase of a 3-phase power supply and the system does not have control sections. Rated at 90 Amp./600 volt. Mounting bracket provided for new equipment.



SHOWN WITH BRACKET 810.100

CONTROL COLLECTOR, Single Pole
810.103 (28-0657) Wt. 1.11 lbs. (.57 kg.)

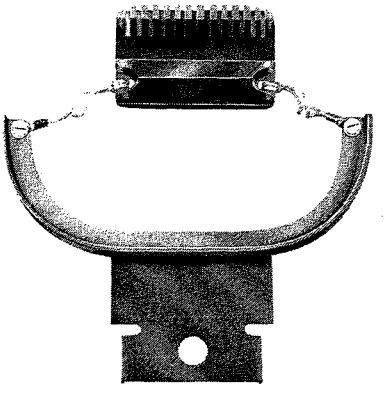
This collector is identical to the 810.100 collector except that it has contact insulating covers mounted on top of each section to help prevent shorting of the conductor bars to the control section through the sliding shoes. Rated at 90 Amp./600 volt. Mounting bracket provided for new equipment.



SHOWN WITH BRACKET 810.103

CLEANING SHOE
810.40 (28-0446) Wt. 1.5 lbs. (.68 kg.)

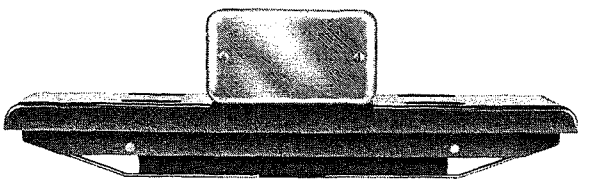
The Cleaning Shoe is used when manufacturing processes may cause dust, moisture and foreign matter to accumulate on the metal conductors in *Louden* Dual Conductor Bottom Entry Electrification. The Cleaning Shoe is moulded polyurethane with multiple blades that are long wearing and provide cleaning action. Mounting bracket provided for new equipment.



SHOWN WITH BRACKET 810.40

CONTROL SECTION, Double Contact
810.33 (28-0441) Wt. 2.0 lbs. (.9 kg.)

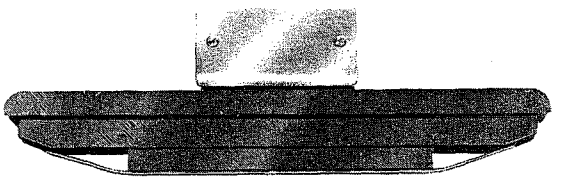
Inserted into the top of *Louden* Dual Conductor Bottom Entry Electrification, the 810.33 Control Section can be used in conjunction with Control Collectors (810.32) to provide two control signals to monorail carriers or cranes in *Louden Selectomatic* Systems.



810.33

CONTROL SECTION, Single Contact
810.38 (28-0445) Wt. 2.0 lbs. (.9 kg.)

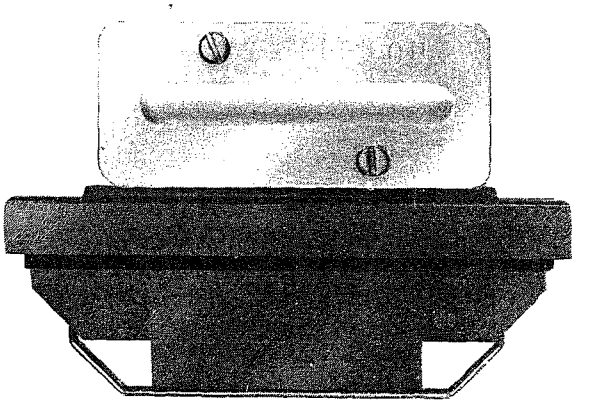
Inserted into the top of the conductor, this Control Section can be used in conjunction with Control Collectors to pass a single control signal to monorail carriers or cranes in *Louden Selectomatic* Systems or to bridge two contacts on Control Collector 810.32.



810.38

CONTROL SECTION, Short
810.41 (28-0612) Wt. 2.0 lbs. (.9 kg.)

This short Control Section is used in conjunction with a Control Collector (810.32) to pass a single control signal to or from a monorail carrier, and is usually required when control Section must be located in a curve section of conductor.



810.41

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Acco® Material Handling Solutions

Issued 9-7-01 811-1

LOUDEN®

SINGLE CONDUCTOR BOTTOM ENTRY ELECTRIFICATION

WARNING Disconnect Power Before Working on or Near Any Electrical Components.

A covered Single Conductor Bottom Entry Electrification system with strong, high visibility covers of noncombustible insulating material to enclose the conductors. Ruggedly designed for long term, low maintenance service in most traveling power applications. Single Conductor Bottom Entry Electrification systems are ideal for new installations or the modernization and expansion of existing systems for low cost, high-performance operations. The pin-connected conductor bar is quickly installed by regular maintenance personnel; installation and maintenance instructions are simple and easy to follow.

Single Conductor Bottom Entry Electrification may be readily curved to a minimum of 3'-6" without damage to the vinyl cover of the conductor. Bending is done in the field.

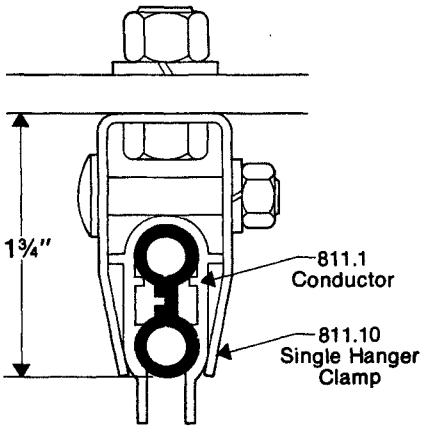
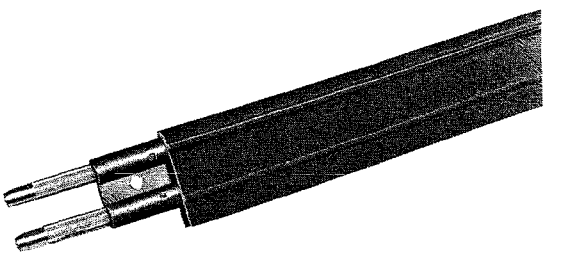


FIGURE 8 CONDUCTOR
811.1 FE-908-2 (281053) Wt. 6.1 lbs.

Figure 8 Conductor Section, 110 amp. rating, consists of a 10 ft. long conductor bar piece, insulating cover, joint cover, and connector pins or joint clamps where applicable.

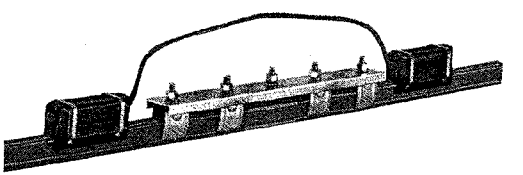


811.1

EXPANSION ASSEMBLY
811.2 FE-908-2H10 (281116) Wt. 8.5 lbs.

Expansion Joint Assemblies are 10' long and consist of conductor bar sections, insulation covers, conductor pins, (one end), and two power feeds with jumper cables.

Expansion gaps should be placed at intervals determined by the conductor temperature rise. If the estimated temperature rise for steel conductor systems is 150° F a 1" expansion gap should be provided every 100' for average installations. Expansion gap assemblies should be located every 150' of straight run and at building expansion joints.



NOT TO SCALE 811.2

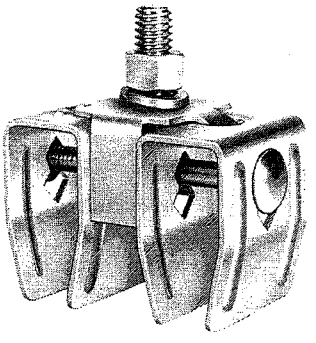
SINGLE HANGER CLAMP ASSEMBLY
811.10 B-100-2FF (281058) Wt. .21 lbs.

Single hanger clamp assembly is a zinc plated steel hanger clamp complete with bolts, lock washers, and nuts.

811.10

TWIN HANGER CLAMP ASSEMBLY
811.11 B-100-2F2 (281112) Wt. .36 lbs.

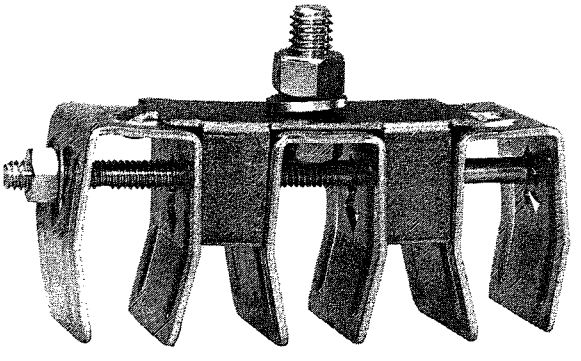
Twin hanger clamp assembly is a two-in-one hanger assembly with conductors on 1-1/2 inch centers. For use only in dry, indoor applications.



811.11

TRIPLE HANGER CLAMP ASSEMBLY
811.12 B-100-2F3 (281113) Wt. .55 lbs.

Triple hanger clamp assembly is a three-in-one hanger assembly with conductors on 1-1/2 inch centers. For use only in dry, indoor applications.



NOT TO SCALE

811.12

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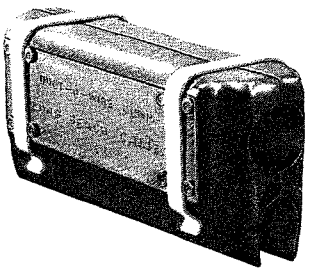
CENTER POWERFEED
811.20 FE-1158-2CP (281115) Wt. .25 lbs.

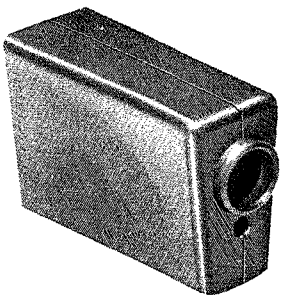
Center power feed is rated 110 amp./600 volts. Includes insulating cover.



811.20

VINYL END CAP
811.21 B-100-1GC (281055) Wt. .03 lbs.

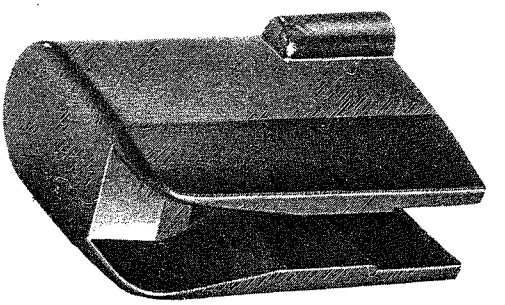
Vinyl end cap is for rolled conductors and is installed over the exposed ends of all conductor runs.



811.21

TRANSFER CAP
811.22 FE-908-GCT (281054) Wt. .03 lbs.

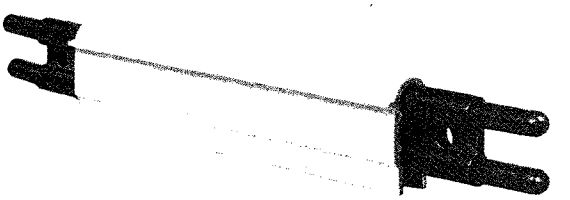
Transfer cap is to be used at each conductor end where there is a gap in the system. It is installed in lieu of end cap at all switches, and interlocks.



811.22

ISOLATION SECTION
811.23 FE-908-1S 8" (281114) Wt. .16 lbs.

8" Isolation section (1 per conductor). It is installed in conductor section to provide isolation between two parts of the same conductor section.

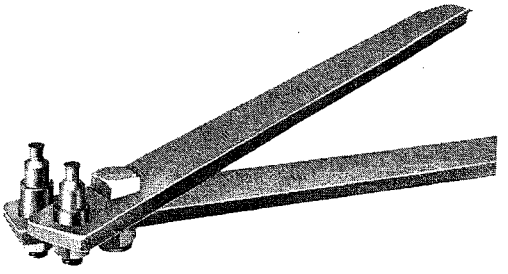


NOT TO SCALE

811.23

CONNECTOR TOOL
811.24 FE-908-1M (281057) Wt. 2.91 lbs.

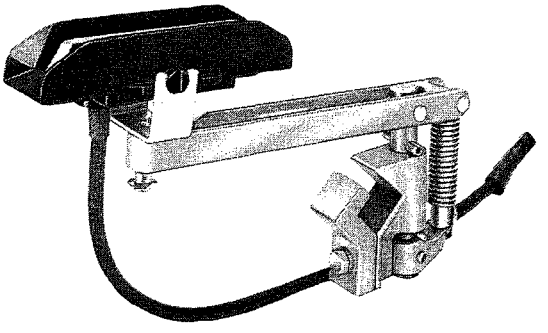
Connector tool is required for conductor assembly.



811.24

CURRENT COLLECTOR
811.30 C-40V3 (281063) Wt. 1.75 lbs.

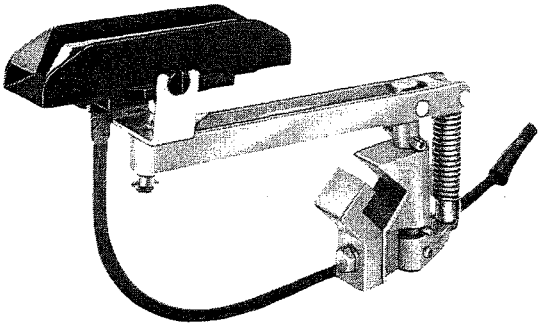
Current Collector, 40 amp./600 volt rating, single 3" collector shoe, vertical mount. This collector will negotiate a 3'-6" radius or greater curve. (price includes standard bracket.)



811.30

CURRENT COLLECTOR
811.31 C-100V5 (281104) Wt. 2.01 lbs.

Current Collector, 100 amp./600 volt rating, single 5" collector shoe, vertical mount. This collector will negotiate a 6'-0" radius or greater curve. (price includes standard bracket.)



811.31

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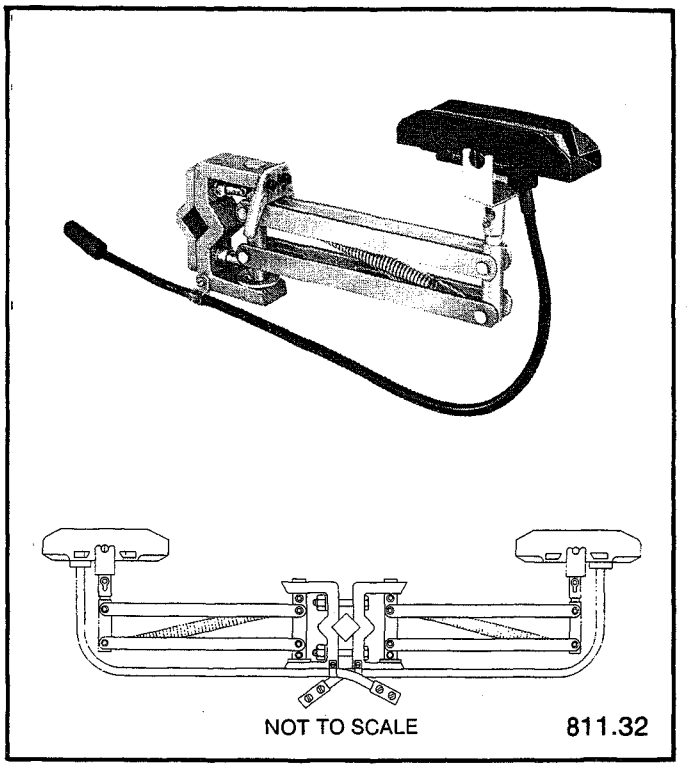
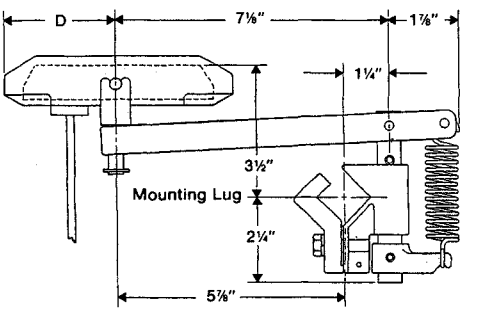
CURRENT COLLECTOR
811.32 P-80VT3 (281105) Wt. 4.66 lbs.

Current Collector, 80 amp./600 volt rating, double (two) 3" collector shoe, vertical mount. This collector will negotiate a 3'-6" radius or greater curve. (price includes standard bracket.)

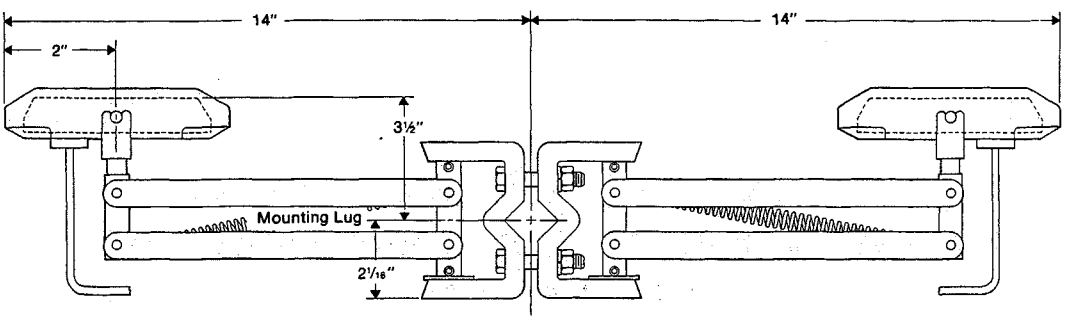


NOTES:
1. Contact Customer Engineering Department concerning outdoor applications, and high temperature applications.
2. Select conductor bar support brackets from section 809.
3. Monorail curves require an additional conductor bar support bracket for each 45° of bend.



Dimension D
2" - 811.30 Collector
3" - 811.31 Collector

811.30 and 811.31 Collector



811.32 Collector

Acco Material Handling Solutions

Issued 9-7-01 820-1

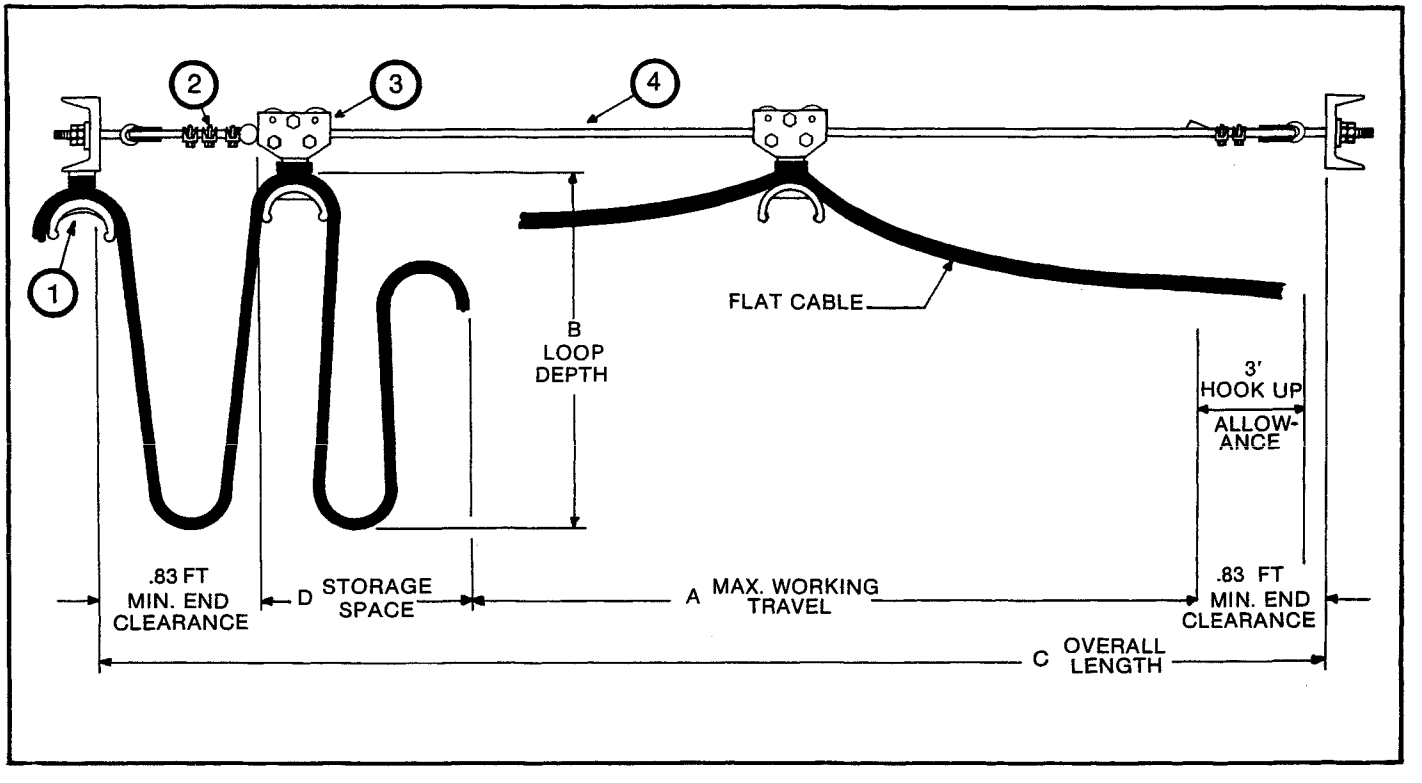
LOUDEN®

LIGHT-DUTY WIRE SUPPORTED TAGLINE SYSTEM

WARNING Disconnect Power Before Working on or Near Any Electrical Components.

LOUDEN Light Duty, Wire Supported Tagline Systems are designed to furnish electrical power and control circuits on all electrified *LOUDEN* cranes, crane runways, and straight monorails up to 42'-2" overall length. Operating on a nylon-covered wire rope, the nylon electrical cable carrier trolleys can be loaded to a maximum of 9 pounds per trolley and can accommodate flat electrical cable up to 2⅜" wide or round electrical cable up to .91" in diameter, depending on the system chosen. These systems are designed so they may be used in spark resistant and outdoor applications.

Each system is furnished as a total package, ready for installation, and requires no additional components, other than electrical cable and electrical connectors. Electrical cable and connector charts are provided on page 826-1 to allow selection of proper size and number of conductors.

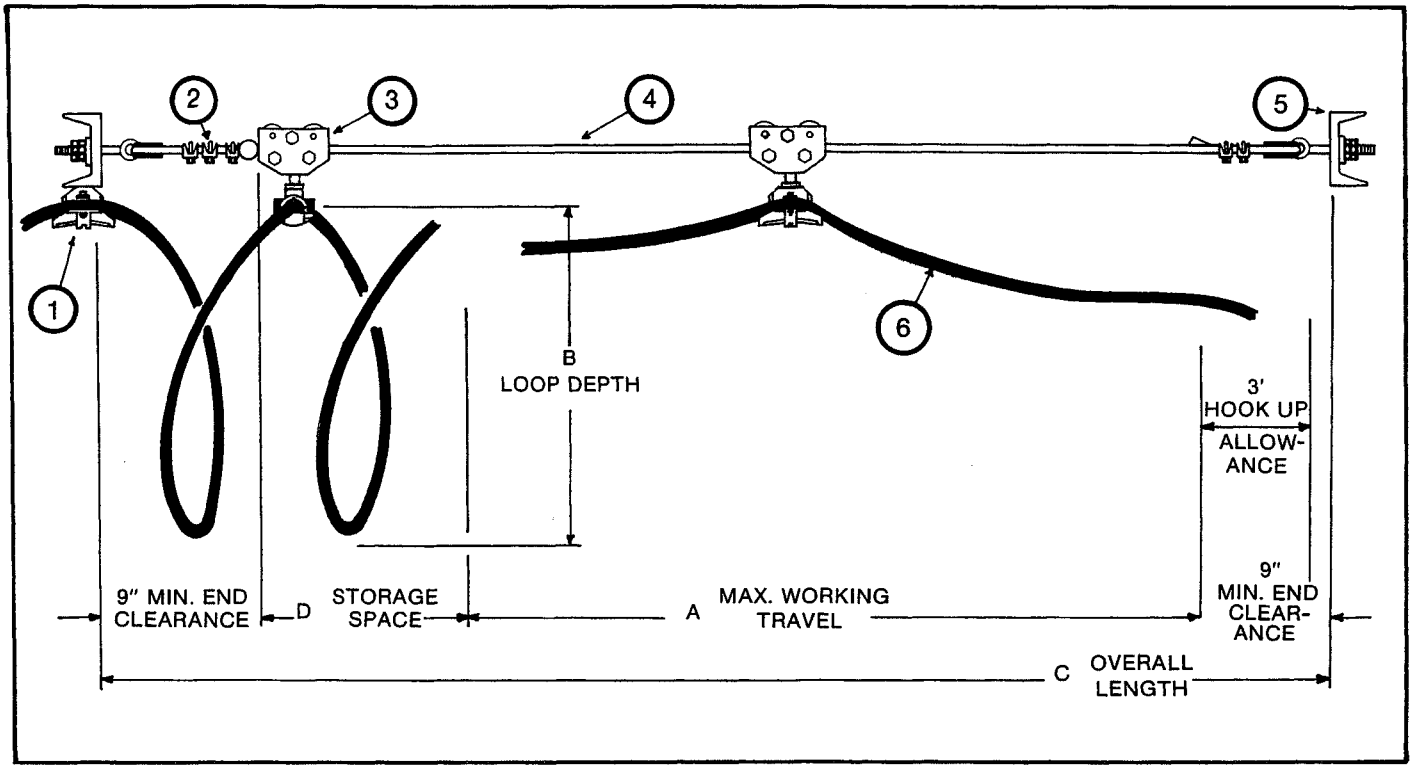


LOUDEN Light-Duty, Wire Supported Tagline Systems for Flat Cable Up To 2⅜" Wide.

Cat. No.	Part No.	A Max. Working Travel (feet)	B Loop Depth (inches)	Maximum Cable Weight (lbs./ft.)	C Over-all Length (feet)	D Storage Space (feet)	Quantity Carriers	Total Hook Up Allowance
820.11	28-1078	16	36	1.44	18.7	1.05	2	6'
820.12	28-1079	27	36	1.44	30.5	1.75	4	6'
820.13	28-1080	38	36	1.44	42.2	2.45	6	6'

See Back for Notes

LOUDEN® LIGHT-DUTY WIRE SUPPORTED TAGLINE SYSTEM



LOUDEN Light-Duty, Wire Supported Tagline Systems For Round Cable Up To .91" in Diameter

Cat. No.	Part No.	A Max. Working Travel (feet)	B Loop Depth (inches)	Maximum Cable Weight (lbs./ft.)	C Over-all Length (feet)	D Storage Space (feet)	Quantity Carriers	Total Hook Up Allowance
820.21	28-1075	15	36	1.38	17.5	0.84	2	6'
820.22	28-1076	26	36	1.38	29.1	1.40	4	6'
820.23	28-1077	37	36	1.38	40.7	1.97	6	6'

NOTES:

1. Systems include End Clamp assembly (1); Hardware Kit consisting of eyebolts, clamps and ball stops (2); Intermediate Carriers (3); Nylon Covered Wire Rope of the required length (4); and Cable End Supports (5).
2. Electrical cable (6) and connectors are not included above. See page 826-1.
3. Trolleys are spaced at a maximum 9' interval along the electrical cable.
4. To determine electrical cable length add 6' to the overall length of the crane bridge or runway.
5. Maximum Trolley Load equals 9 Pounds. WARNING: These systems are designed to support electrical cable only.

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Acco Material Handling Solutions

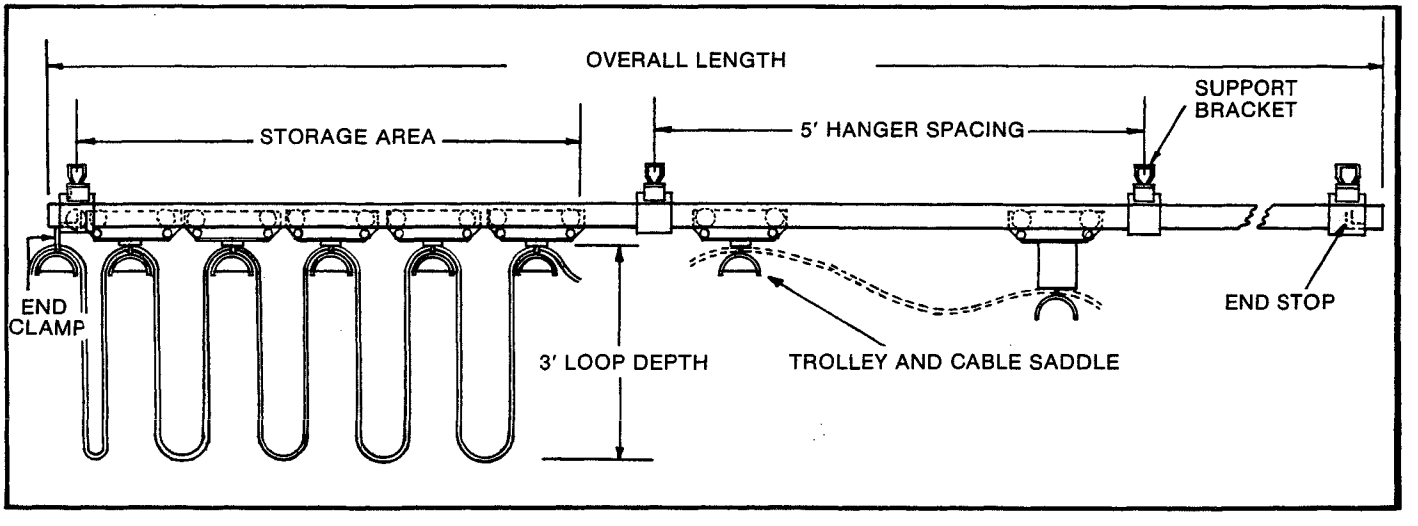
Issued 9-7-01 821-1

LOUDEN®

HEAVY DUTY TRACK SUPPORTED FESTOONING SYSTEM

LOUDEN® Heavy-Duty, Track Supported Festooning Systems are deisnged to furnish electrical power and control voltages, as well as carry pendant control units, on all electrified *LOUDEN®* cranes, crane runways, and straight monorails. Operating on ball bearing steel wheels inside a formed steel track, the plated steel trolleys can be loaded to a maximum of 45 pounds per trolley, and can accommodate up to 5 flat electrical cables up to 2-3/16" wide.

Each *LOUDEN®* Heavy-Duty, Track Supported Festooning System is custom assembled from quality components. A standard system to furnish control voltages to the bridge of a 20' span electrified crane would consist of one 821.101 Basic Track Unit; one 821.102 Track Extension Unit; and three 821.201 Intermediate Trolleys (assuming a 3½' electrical cable loop depth). Component descriptions are given below. An electrical cable and connector chart is provided on page 826-1 to allow selection of proper size and number of conductors.



821.101 BASIC TRACK UNIT (40-0071)

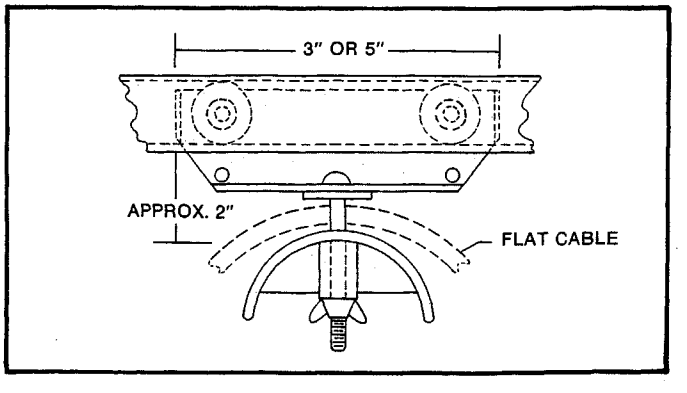
Includes one 10' length of track, three track support assemblies, two end stop assemblies, and one cable end clamp.

821.102 TRACK EXTENSION UNIT (40-0072)

Includes one 10' length of track, two track support assemblies, and a track splice assembly.

821.201 STANDARD TROLLEY (28-1088)

This 5" long standard trolley consists of a trolley frame with integral bumpers, 4 steel ball bearing wheels, cable pad, nylon cable saddle, and all required hardware. Select the required number of trolleys from the chart.

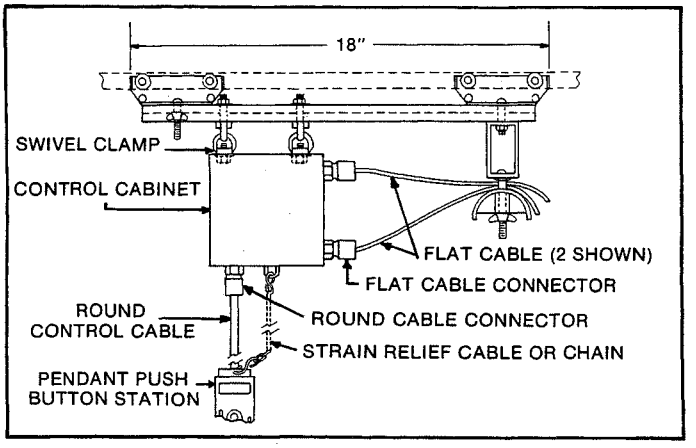


821.202 SHORT TROLLEY (28-1089)

This 3" long trolley is used where minimum storage space is critical, particularly in long span applications. It has the same construction as the Standard Trolley, but with a shorter trolley frame.

821.203 PENDANT SUPPORT TROLLEY (40-0085)

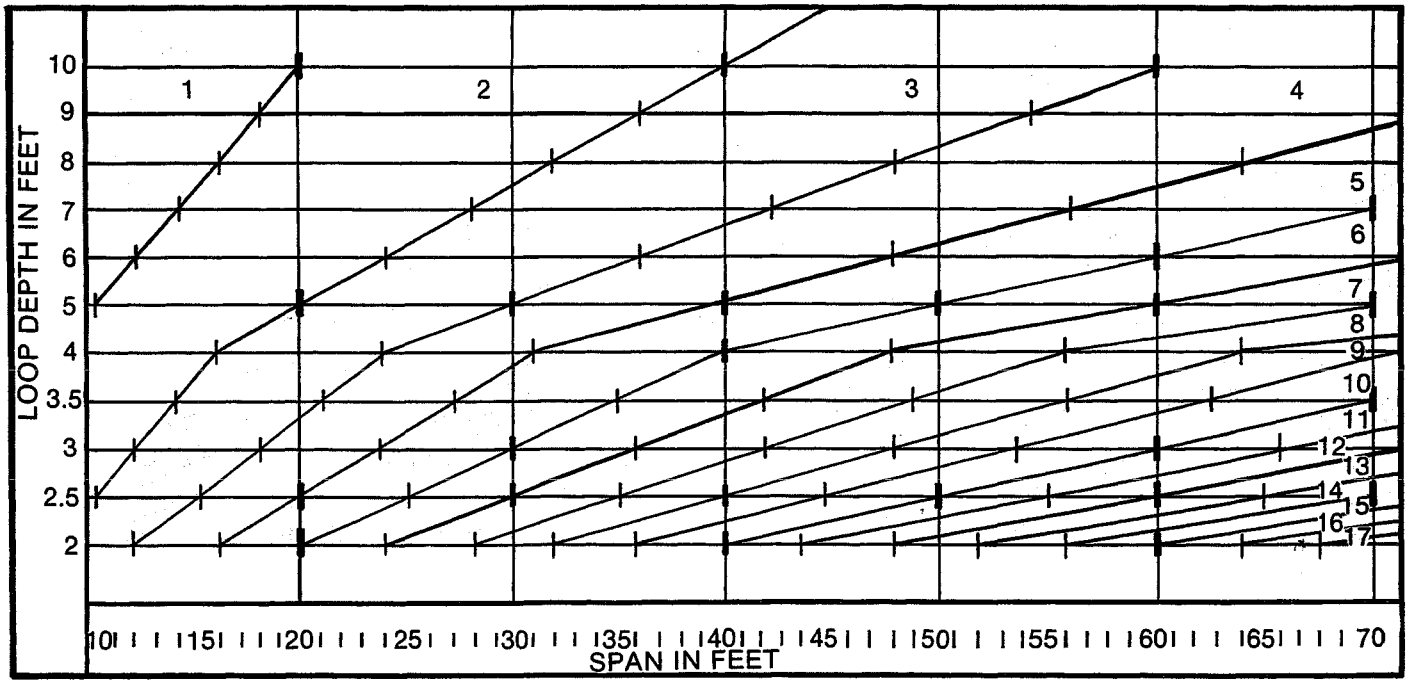
Consists of two 4-wheel trolleys, loadbar, cable saddle assembly, and a junction box from which the pendant is suspended. The junction box is designed to pivot at right angles to the track to provide free movement of the pendant and help prevent kickup of the trolleys in the track. Electrical cable and connectors may be selected on page 826-1 and pushbutton stations may be selected on page 830-3. The Pendant Support Trolley is used in addition to the quantity of trolleys shown in the chart below.



TROLLEY SELECTION

The number of trolleys required for a given span of a festooning system is dependent upon the depth of the loops of electrical cable in the storage position. Loop depth is dictated by overhead clearance requirements. A normal loop depth is 3½'. Once the loop depth is determined, the proper number of trolleys may be selected from the chart.

NUMBER OF TROLLEYS



NOTES:
1. Pendant Support Trolleys are in addition to trolley quantity selected above.
2. Storage space is 5" per 821.201 trolley and 3" per 821.202 trolley.
3. Contact Fairfield office for speeds over 250 fpm.
4. 821 Festooning Systems are not designed for use in spark resistant applications. Contact Fairfield office for spark resistant festooning systems.
5. Festooning track splices should be spot welded to both track sections to help prevent movement.
6. To determine electrical cable length add 6' to the overall length of the crane bridge or runway.

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826-1

LOUDEN®

ELECTRICAL CABLE AND CONNECTORS

WARNING Disconnect Power Before Working on or Near Any Electrical Components.

The following chart is provided for the proper selection of electrical cable and cable connectors for each application. Related control components may be found in Section 830.

Catalog Number	Cable Part Number	Type	AWG	No. Cond	Dia. or Width (")	Weight (lb/ft)	Max Current (Amps)	Connector Part No.	Req'd Hole Dia. (")
826.101	22-0116	RN	16	4	.485	.15	12	22-0378	½"
826.102	22-0117	RN	16	8	.645	.25	9.6	22-0381	¾
826.103	22-0118	RN	16	12	.740	.34	9.6	22-0381	¾
826.104	22-0119	RN	16	16	.825	.43	9.6	22-0384	1
826.105	22-0120	RN	16	20	.900	.52	9.6	22-0384	1
826.106	22-0132	RN	16	24	1.015	.64	9.6	22-0384	1
826.107	22-0109	RN	14	4	.605	.23	26	22-0381	¾
826.108	22-0110	RN	14	6	.740	.34	20.8	22-0381	¾
826.109	22-0111	RN	14	9	.905	.46	20.8	22-0384	1
826.110	22-0140	RN	14	10	.905	.48	20.8	22-0384	1
826.111	22-0112	RN	14	12	.930	.53	20.8	22-0384	1
826.112	22-0101	RN	12	3	.640	.26	33	22-0381	¾
826.113	22-0090	RN	10	3	.695	.32	43	22-0381	¾
826.201	22-0145	FP	16	8	1.06	.20	9.6	22-0370	1¼
826.202	22-0146	FP	16	12	1.50	.30	9.6	22-0372	1½
826.203	22-0147	FP	14	4	.88	.20	26	22-0369	1
826.204	22-0148	FP	14	8	1.06	.30	20.8	22-0370	1¼
826.205	22-0149	FP	14	12	1.50	.35	20.8	22-0372	1½
826.206	22-0150	FP	12	4	.88	.23	33	22-0369	1
826.207	22-0151	FP	10	4	.88	.25	43	22-0374	1
826.208	22-0152	FP	6	4	1.50	1.00	86	22-0373	1½

R Round
F Flat
N Neoprene
P PVC

Maximum Current

To determine conductor size use 100% of the current requirements of largest motor or motors required for any single motion plus 50% of the current requirement for the next larger motor or group of motors for a single motion.

NOTE: For power use minimum 14 Ga. wire.

Full Load Current for Three-Phase Induction Type Squirrel-Cage and Wound-Rotor Motors

HP	230V	460V	575V
½	2	1	.8
¾	2.8	1.4	1.1
1	3.6	1.8	1.4
1½	5.2	2.6	2.1
2	6.8	3.4	2.7
3	9.6	4.8	3.9
5	15.2	7.6	6.1
7½	22	11	9
10	28	14	11
15	42	21	17
20	54	27	22
25	68	34	27

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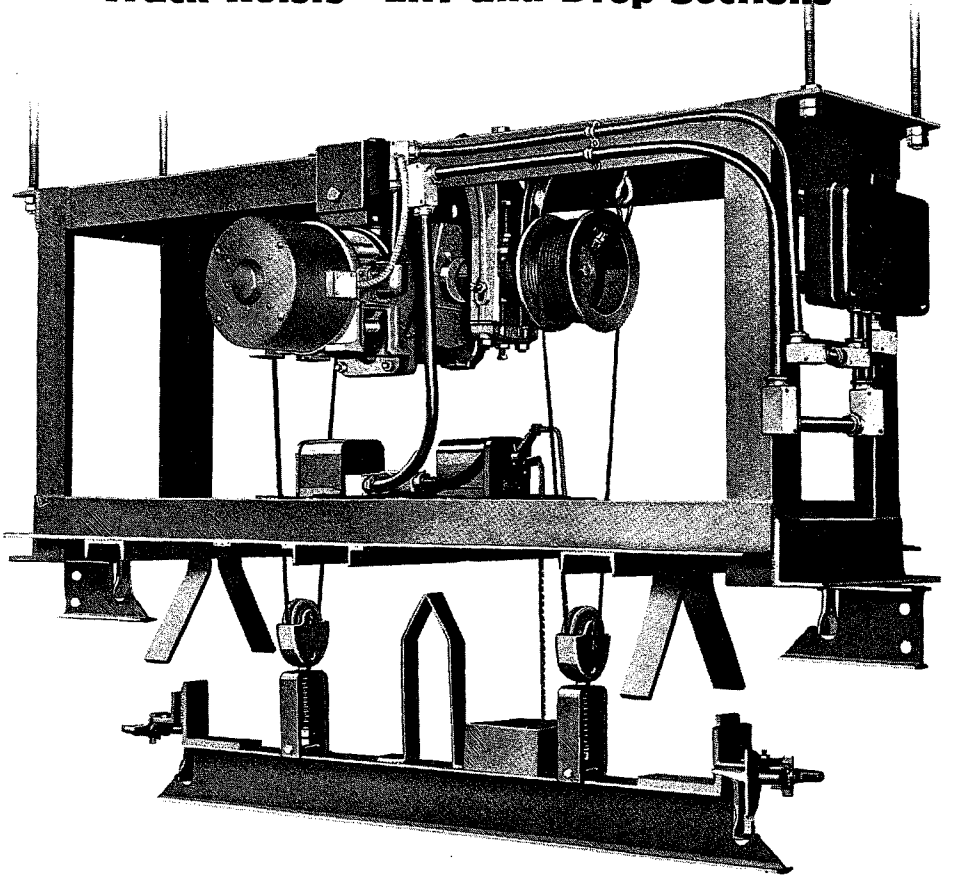
PART OF THE FKI GROUP

Track Hoists • Lift and Drop Sections



Many monorail systems requiring multiple carriers, and where hoisting occurs only at one or few fixed locations, can be installed with great economy by the use of Track Hoists, Lift or Drop Sections at the hoisting positions. Thus, the requirement for hoist equipment on each and every carrier is eliminated and the overall cost reduced accordingly.

Also, some monorail layouts, because of necessary arrangement of existing or planned building facilities, require an abrupt change in elevation of the monorail. The installation of a Track Hoist or Lift Section meets this requirement effectively.

All of these devices are designed to raise and lower a section of the monorail track long enough to accommodate the overall length of the carrier trolley. The ends of both the live and aligning tracks are equipped with positive mechanical baffles to prevent a carrier from running off the open end of any track. The space between baffles on the live track should be not less than one foot greater than the overall wheelbase of the carrier.

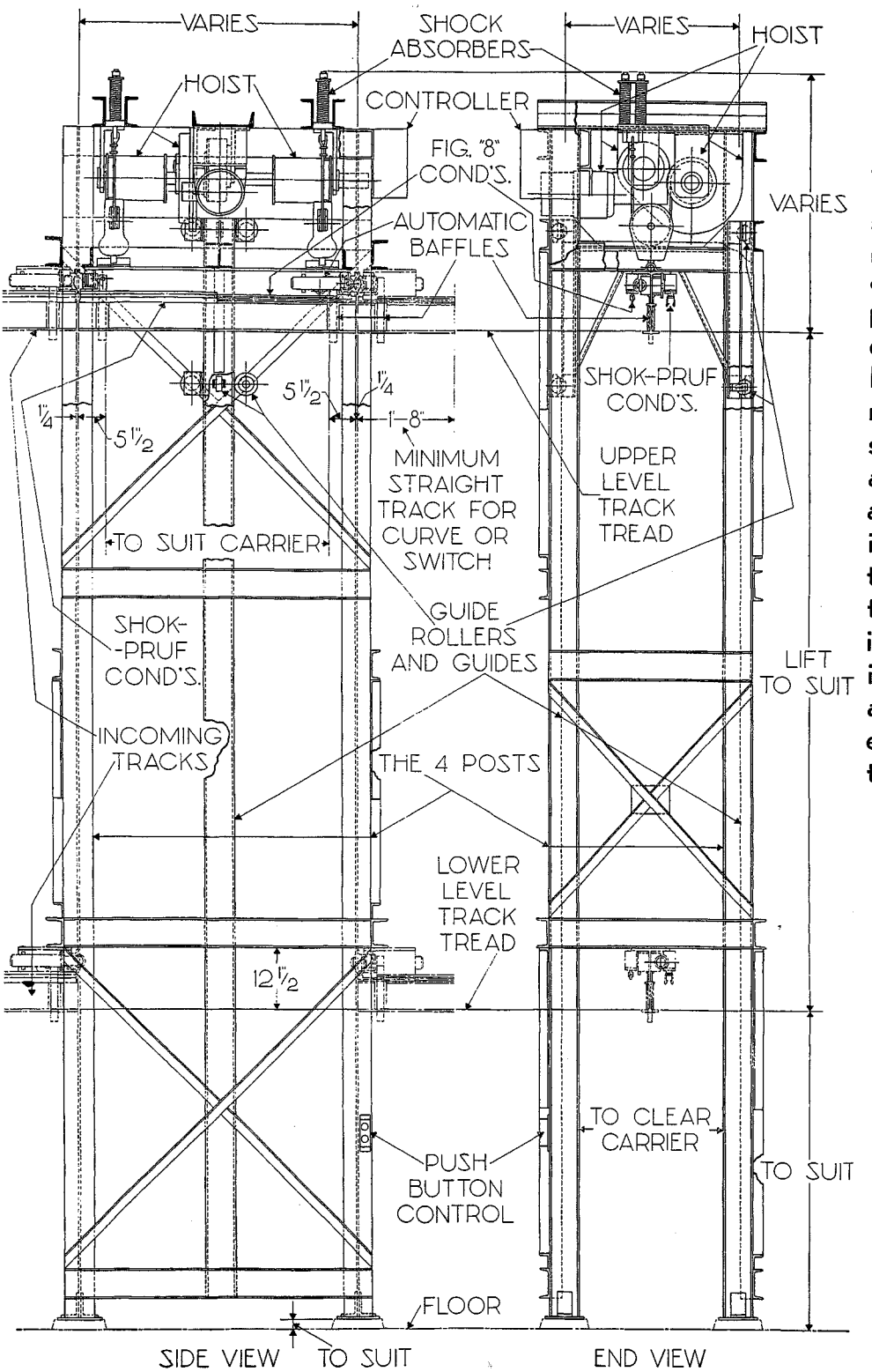
Track Hoists, floor supported, in four post and two post construction, are illustrated on pages 2 and 3 of this bulletin. Lift Sections, ceiling supported, end guided and for two level operation, are shown and discussed on page 4. Two types of Drop Sections, not guided and with two hoist arrangements, will be found on pages 5 and 6.

Track Hoists, Lift or Drop Sections can be designed to any working load contemplated by the monorail system of which it is a part. Structural, mechanical, pneumatic and hydraulic design is in keeping with the best standard practice within these fields as is all shop fabrication with all welding performed by certified welders.

Electric hoists are commonly employed to provide the lifting power for these devices, however both pneumatic and hydraulic cylinders with cable or chain reeving are used. Air cylinders may provide some economy in cost where the loads are relatively light, the vertical travel is a fixed and constant dimension, and speed control is not of great importance. Hydraulic cylinders are best adapted to the hoisting of heavier loads and where precise control is a prerequisite. They also work well with automatic, unattended operation as required with Louden Selectomatic Systems.

Track Hoists • Floor Supported

Four Post Type • Single or Multi-Level



The four post, floor supported Track Hoist is used properly where there is no adequate overhead supporting structure, where the entire vertical travel must be guided, and where it is necessary for the live track section to align with tracks at two or more levels and at considerable difference in elevation. The four structural columns together with the hoist supports, aligning track supports and bracing, can be designed to be a completely self contained, self supporting structure.

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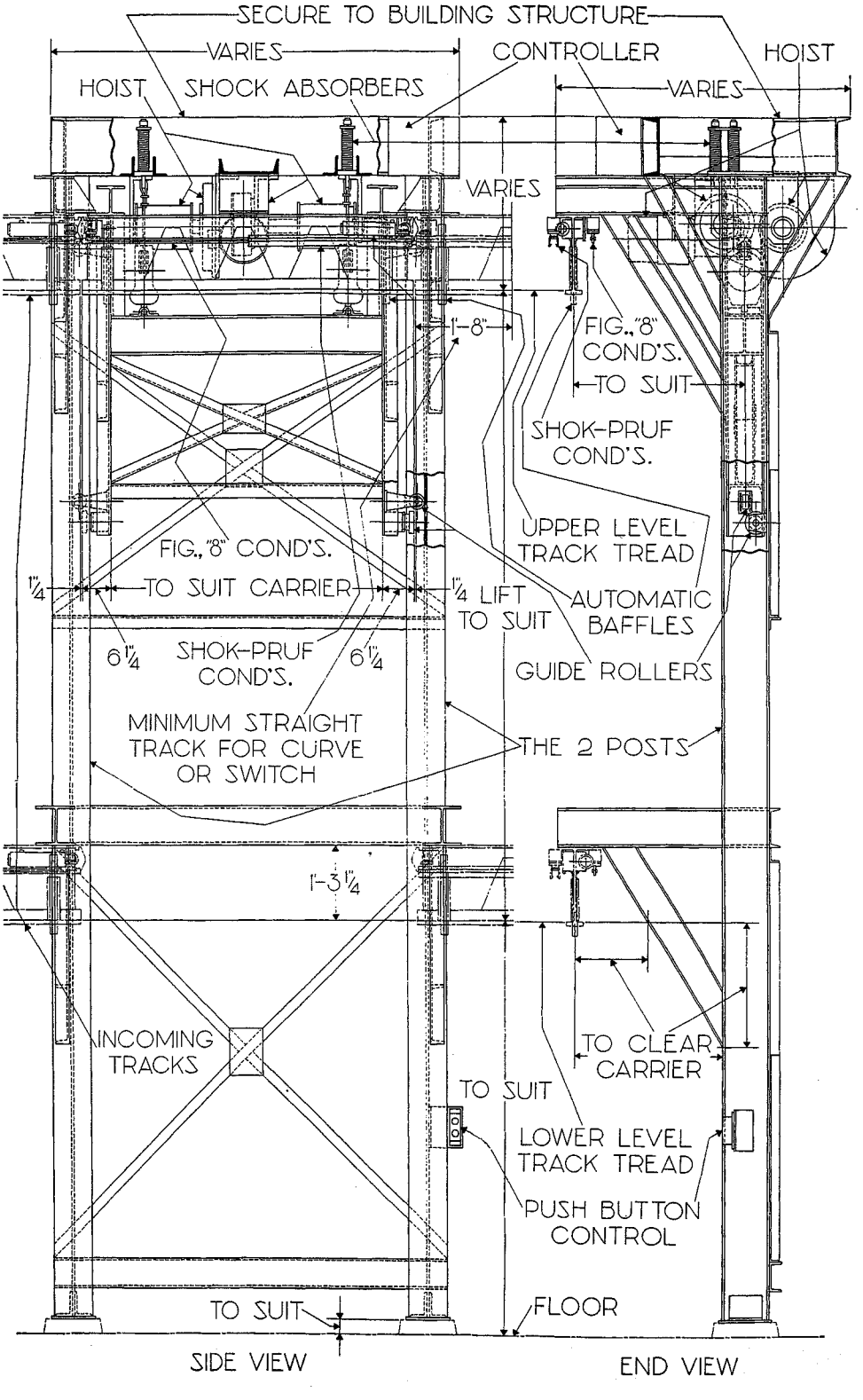
Track Hoists • Floor Supported

Two Post Type • Side Guided • Single or Multi-Level

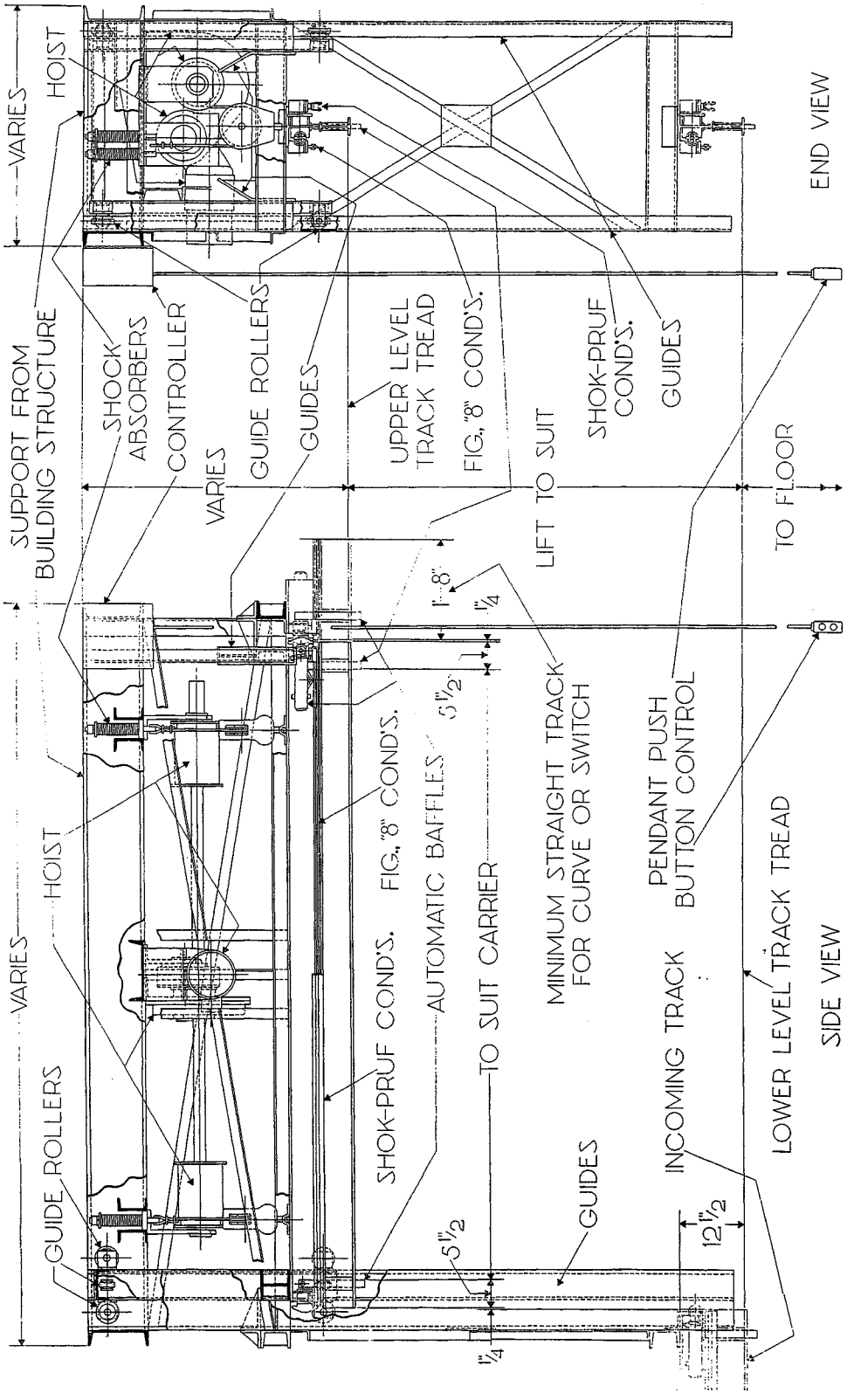
The two post, floor supported, side guided Track Hoist, like the four post design, is used where there is no adequate overhead supporting structure and where the entire vertical travel must be guided. It can be used to align with tracks at two or more levels, but usually not with extremely long lifts. While the two columns and their bracing carry the entire vertical loading, the top of the structure must be laterally braced against the overturning moment from the cantilevered load.

The principal advantage of this construction is that it leaves one side of the area adjacent to the Track Hoist entirely open as a work area free from interference from columns or other supporting structure.



Lift Sections • Ceiling Supported

End Guided • Two Level



When the monorail layout requires an abrupt change in track elevation, and there is adequate overhead supporting structure, the Ceiling Supported, End Guided Lift Section can be installed at the least original cost of any of the guided types of Track Hoists and Lift Sections. Its operating characteristics are excellent and, being guided at one end, accurate alignment with the connecting tracks is assured.

Because there are no obstructions below the track, this type of lift section can be used to advantage with abnormally wide loads.

The general arrangement and advantages make this one of the most frequently used of the track elevating devices described and illustrated in this section.

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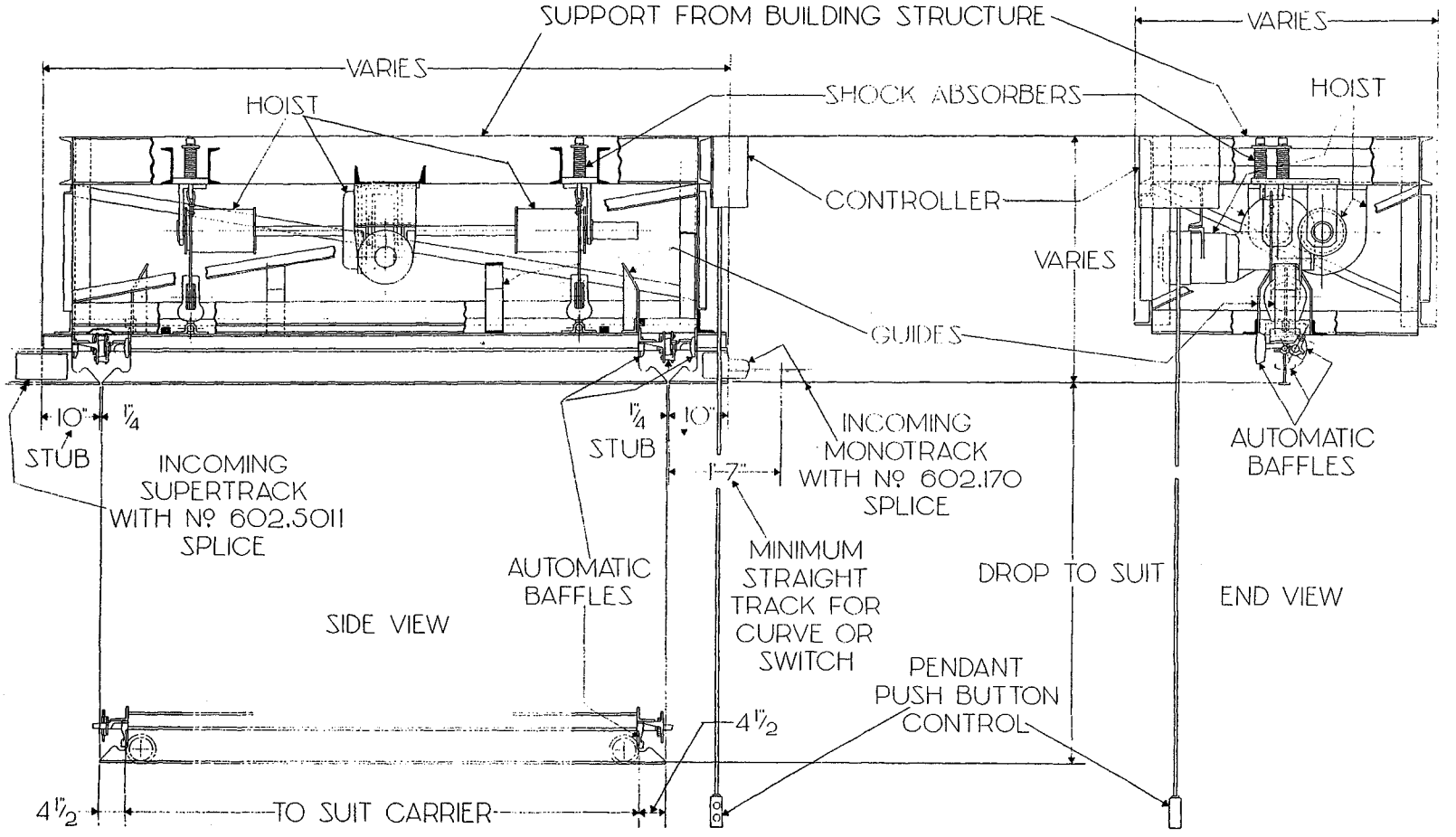
Drop Sections • Ceiling Supported

Not Guided • Electric Hoist Mounted Above

Where the space between the track and an adequate overhead supporting structure is not limited, a Ceiling Supported Drop Section, without guides and with hoist mounted above, will provide the most economical of all the track elevating devices in this section. Although at the lower limit the track section hangs freely on the hoist cables and can swing from side to side, guides are provided at the upper limit to align the track section accurately with the connecting track. The most frequent requirement for this type is where loading and unloading of carriers occurs only at one or two points on a monorail system and some tendency for the load to swing is not objectionable. Dipping operators for cleaning and painting are also frequently served by the Drop Section illustrated on this page.



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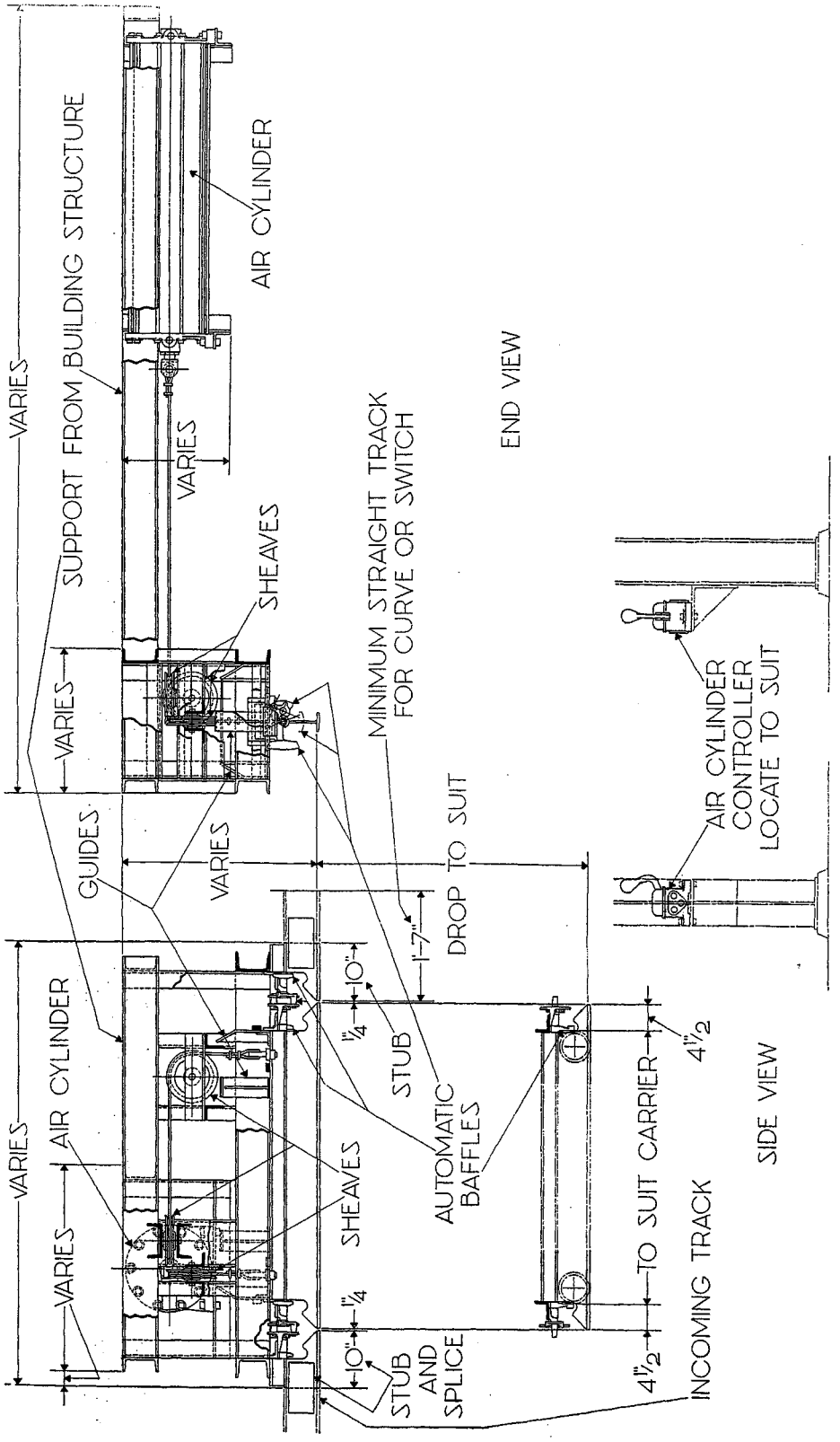
Drop Sections • Ceiling Supported

Not Guided • Air Cylinder Hoist Mounted at Side



This is basically the same machine as that described and illustrated on page 5, except limited headroom requires that the hoist be mounted at one side of the track. Its uses and advantages are the same as that with the hoist overhead, with the additional advantage that it can be installed where headroom is limited. Usually furnished with pneumatic or hydraulic cylinder hoists, the ceiling supported drop section can be equipped with an electric hoist which must be set to one side far enough to provide proper lead off drums and the directional sheaves in the Drop Section frame.

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