

Manual Monorail Track System



Technical Data Sheet



Manual Monorail Track System

TDB0400-0041b-E





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1 General

For internal transport Wampfler offers handling systems, which are assemblies of prefabricated parts, individually adjusted conveyor systems, that ensure an optimum flow of material. Various additional components, such as switches, curves etc. allow the realization of complex tracks. The assembly of prefabricated parts and the simple construction make it possible to plan and install manual monorail track systems for many applications.

Some advantages of a Wampfler manual monorail track system are:

- Low investment costs
- Reduction of internal transport times
- Reduction of handling times
- Increased productivity
- Relief for the worker
- Selective flow of material
- Product based projecting
- Extension of the system is always possible
- Individual extension by special constructions
- Flexible adaptation to changed operating conditions
- Easy planning due to a clearly structured assembly of prefabricated parts

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1.1 Use of standard elements



Switch



Turning switch



Switch system

Easy planning and high reliability due to the use of standard elements

<p>Rail program 1450 (40x40 mm), 1460 (50x50 mm), 1470 (63x63 mm), 1480 (80x80 mm)</p> <p>Curves 90°, 45°</p> <p>Switches Manual or pneumatic</p> <p>Turning switches</p> <ul style="list-style-type: none"> • control the flow of material on intersections • manually or pneumatically 	<p>Underslung cranes To move goods all over a surface</p> <p>Suspension trolleys</p> <ul style="list-style-type: none"> • two or more axes • with or without crossbeam • with or without guide rollers • with or without anti-lift rollers <p>Transport suspensions Standard design and special constructions as required by the customer</p>	<p>Lifting/drop sections For level bridging by means of a synchronous chain hoist (e.g. paint finishing or suspension of parts)</p> <p>Motorized parts Partially to overcome inclinations, drying furnaces</p> <p>Accessories</p> <ul style="list-style-type: none"> • Suspensions for ceiling or steel construction supports • Blocking devices / interlocks to secure the transported goods • Swivel rail sections
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Underslung crane bridge



Lifting and drop section

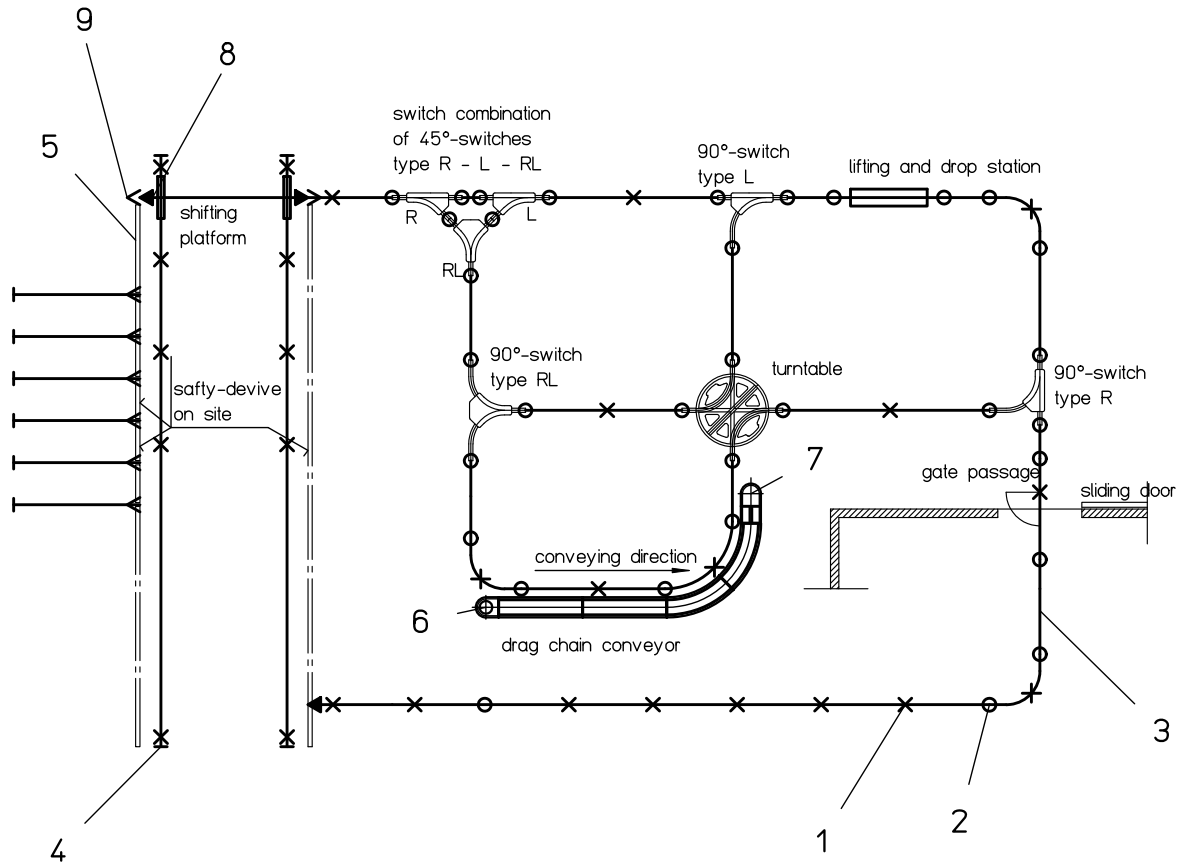


Swivel rail section

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Example: manual monorail track system:



Explanation:

Item 1	x	=	Track support bracket
Item 2	o	=	Track coupler
Item 3	—	=	Running track (fixed lengths of the C-rails 6 m) Calculate waste cuttings, round up to 6 m
Item 4	└─	=	End stop with safety bolt
Item 5	⋯	=	Safety catch device to prevent the goods from driving out during the movement Assembly to the steel construction on site, between the dead-end courses
Item 6	⊙	=	Drag chain conveyor – drive station
Item 7	⊞	=	Drag chain conveyor – tensioning station
Item 8	→	=	Interlock mounted on the crane bridge
Item 9	└┘	=	Safety catch device mounted to the dead-end courses

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1.2 Determination of the permissible support centers

(simplified method of calculation)

Calculation basis:

1. Carrier Beam on two supports, loaded symmetrically in the center of the carrier.
2. The permissible deflection from zone load and the inherent weight of the track

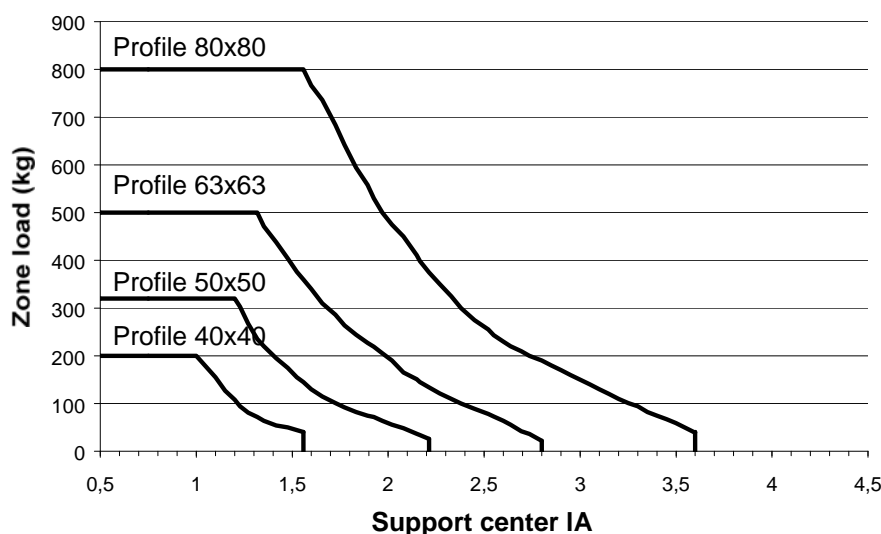
$$d_{\max} = \frac{l_A}{500}$$

3. The permissible tension, ignoring the flange stress

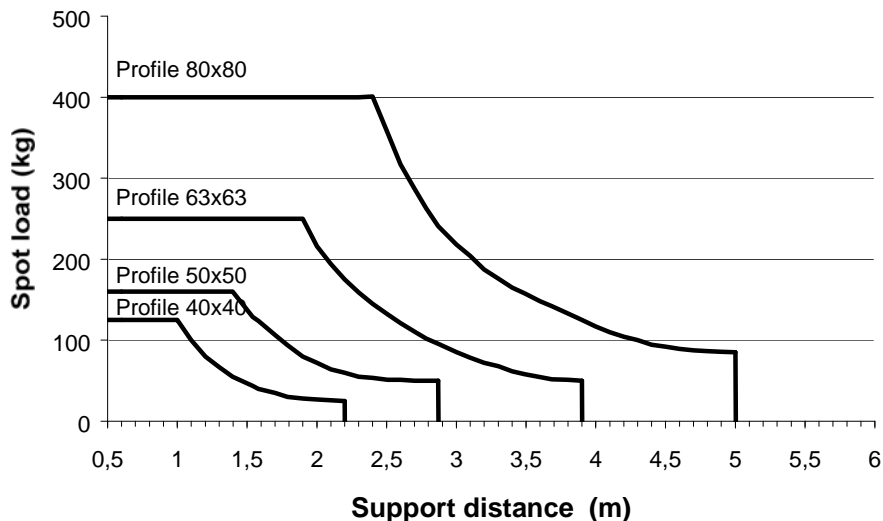
$$\sigma_{\max} = 100 \frac{N}{\text{mm}^2}$$

In a suspended track system several different loads occur. There is a difference between the load from a zone load and the load from a spot load. A zone load, for example, will occur when several suspension trolleys are traveling together in an ambush section. If however the loads are transported at longer distances on individual suspension trolleys this load is regarded as a spot load. For this reason very different suspension distances can be used within a system. Therefore, with the aid of the static values of the tracks, permissible support centers should be calculated for each application. For an optimum design we recommend you consult Wampfler. Please fill in enclosed questionnaire (see page 11).

Load diagram for a zone load



Load diagram for a spot load



Example

Weight of the transported goods = 50kg

Weight of the suspension trolley = 10kg

Total weight = 60kg

Suspension trolleys with a crossbeam of L=300 mm shall be used.

Zone load F is calculated as follows:

$$F = \frac{\text{Total load (kg)}}{\text{Length (m)}} = \frac{60\text{kg}}{0.3\text{m}} = 200 \frac{\text{kg}}{\text{m}}$$

According to the diagram the support centers are l_A : 1 m for C – rail 145005 or 1.45 m for C – rail 146005 or 2 m for C – rail 147005 and 2.6 m for C – rail 148005

If the rails are used with higher operating temperatures there will be a reduction of the loads:

- from 60°C to 100°C approx. 15%
- from 60°C to 200°C approx. 25%
- from 60°C to 250°C approx. 40%

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1.3 Questionnaire

Manual monorail track system

From:

Wampfler AG
BU Handling Systems
Rheinstraße 27 + 33
D – 79576 Weil am Rhein-Märkt
Tel: 07621 662 212
Fax: 07621 662 446
e-mail: handling@wampfler.com

Project/Reference:

Sketch of track:

Weight of transported goods	kg
Dimensions of the transported goods	Length mm
	Width mm
	Height mm

Suspension: Ceiling support Steel beam clamping Other fixation	Assembly and steel construction: Made by the customer To be listed in the offer
Max. temperature: max 60°C 60°C – 100°C 100°C – 200°C over 200°C	Connection suspension trolley/transported goods Only suspension trolley Suspension trolley with corresponding device Sketch of device enclosed

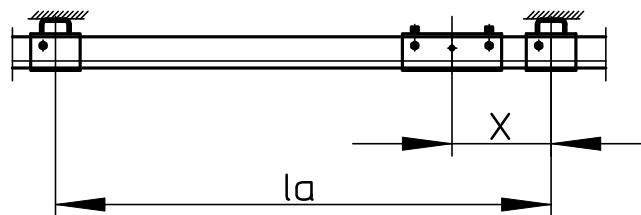
Comments

1.4 Project notes

The following points are to be noted when carrying out project work for a suspended track system:

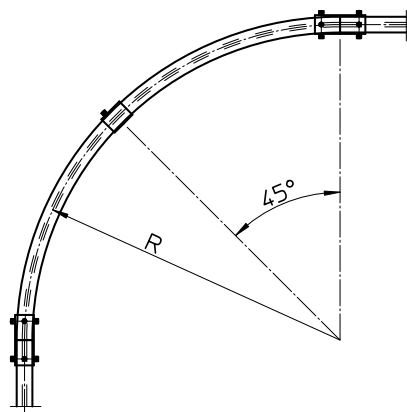
1.4.1 Position of the running track connection points

When the running track is under full load the distance „x“ may be max. 200 mm



1.4.2 Suspension of curved tracks

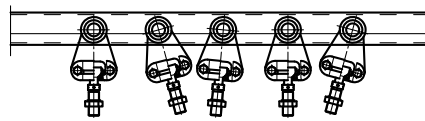
Curved tracks and curved segments have to be supported at the top of the curve. With large radii the support centers l_a are to be used.



1.5 Selecting the suspension trolleys:

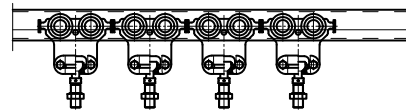
Single axle suspension trolleys:

Single axle suspension trolleys are to be used only if the loads are moved individually and the goods being transported may collide with each other.



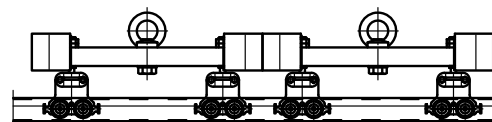
Twin axle suspension trolleys:

Twin axle suspension trolleys are preferred for small items which will not be damaged if they collide with each other.



Transport carriages with crossbeam:

Transport carriages with crossbeam are preferred. The goods being transported will not be damaged. These carriages operate ideally on systems with switches etc. Good utilization of the load per meter on the track. Optimum operation in the ambush position.



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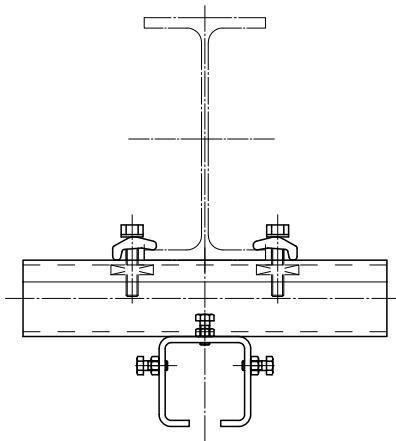
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1.6 Running track suspensions:

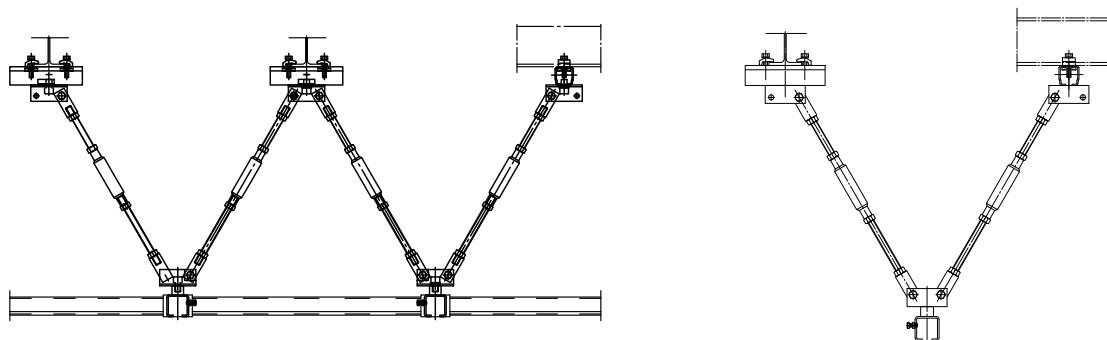
1.6.1 Steel constructions

Mounting the track below a steel frame offers many advantages, such as heavy load carrying capacity, wide spans etc.

Direct connection to the steel constructions by means of girder clips is to be preferred.



Another possibility is the fixation by V-suspensions.

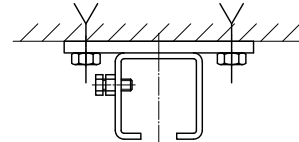


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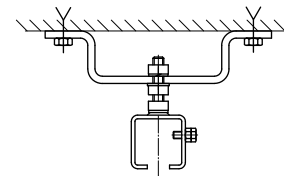
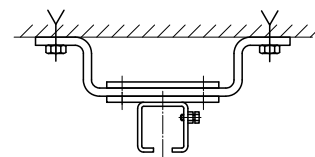
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1.6.2 Concrete ceilings

1.6.2.1 Direct connection to the ceiling
allows little level adjustment of the track (shim plates may be required). Only restricted use of track couplers.

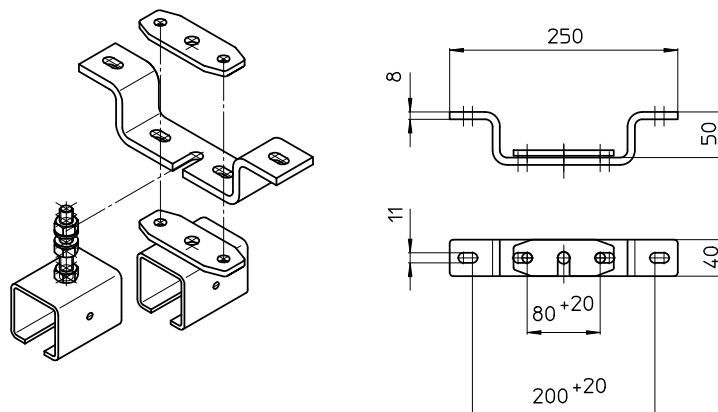


1.6.2.2 Fixation with mounting plates
provides for good installation and adjustment.



Note:

For C rail profiles 145005 and 146005 the ceiling brackets have to be fixed with a distance to the ceiling, to enable clamping the track couplers on the back of the rails. We therefore recommend to use our ceiling support (catalog No. 145241).



We recommend to have the load carrying capacity of the ceiling or steel constructions checked by a structural engineer.

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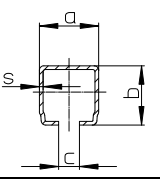


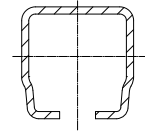


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2 C rail track

Material: galvanized or bare steel

					
Technical details	Catalog number				
Type of rail		40x40	50x50	63x63	80x80
Type	Galvanized	145005	146005	147005	148005
	Bare	145000	146000	147000	148000
Dimensions (mm)	a	40	50	63	80
	b	40	50	63	80
	c	14	16	16	18
	s	2,5	3,5	4	5
Static values	Jx (cm ⁴)	7	17,8	44,2	117,6
	Wx(cm ³)	3,16	6,4	12,9	27,4
	Weight (kg/m)	2,55	4,1	6,53	10,52
Max. load capacity (see page 9&10)	(kg/m)	200	320	500	800

3 Curves

3.1 Selecting the curves

For an optimum traveling behavior of the suspension trolleys on curved tracks the distance between the chassis axles L must not be larger than the curve radius R .

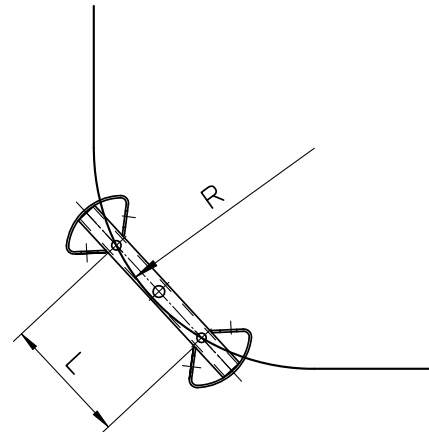


Illustration 1

If the suspension trolley distance of a crossbeam is much larger than the curve radius, the suspension trolley will be almost at a right angle to the traveling direction. The transport carriage with crossbeam may get blocked.

Rule of thumb:

The traveling direction of a chassis should never deviate from the crossbeam by more than 45° (shifting angle a)!

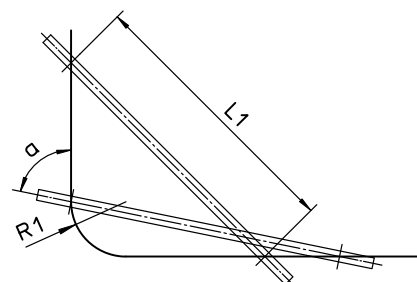


Illustration 2

Remedy:

Choose a larger curve as described in illustr. 1 or install 2 45° -curves instead of a 90° -curve.

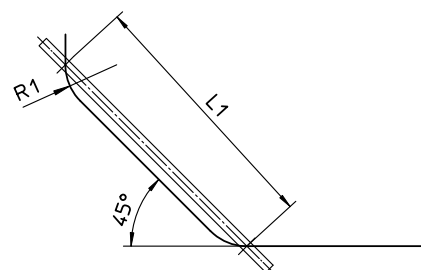


Illustration 3

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3.2 Curve - 90°

Material: galvanized or bare steel

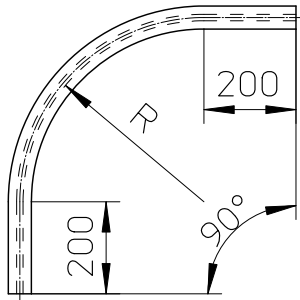


Illustration 1 (up to R=1000)

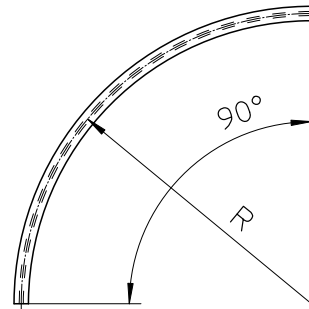


Illustration 2 (from R=1000)

Illustr.	Type	Radius (mm)	Catalog number			
			40x40	50x50	63x63	80x80
1	Galvanized	400	145405-00400	146405-00400	-	-
		600	145405-00600	146405-00600	147405-00600	148405-00600
		800	145405-00800	146405-00800	147405-00800	148405-00800
2	Galvanized	1000	145405-01000	146405-01000	147405-01000	148405-01000
		1200	145405-01200	146405-01200	147405-01200	148405-01200
		1400	145405-01400	146405-01400	147405-01400	148405-01400
		1600	145405-01600	146405-01600	147405-01600	148405-01600
		2000	145405-02000	146405-02000	147405-02000	148405-02000
1	Bare	400	145400-00400	146400-00400	-	-
		600	145400-00600	146400-00600	14740-00600	148400-00600
		800	145400-00800	146400-00800	14740-00800	148400-00800
2	Bare	1000	145400-01000	146400-01000	14740-01000	148400-01000
		1200	145400-01200	146400-01200	14740-01200	148400-01200
		1400	145400-01400	146400-01400	14740-01400	148400-01400
		1600	145400-00600	146400-01600	14740-01600	148400-01600
		2000	145400-02000	146400-02000	14740-02000	148400-02000

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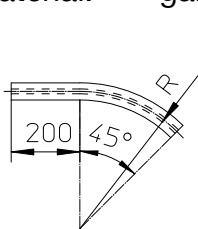


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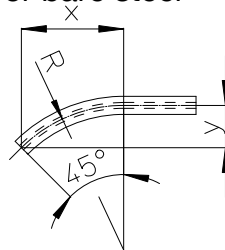
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3.3 Curve - 45°

Material: galvanized or bare steel

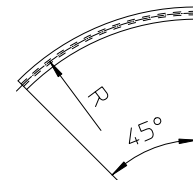


Type left
(straight part left)



Type right
(straight part right)

Illustration 1 (up to R=1000)



Curve without straight part

Illustration 2 (from R=1000)

Illustr.	Type	Catalog number					
		Radius	40x40	50x50	63x63	80x80	
1	Galvanized	R	400	145415-00400R	146415-00400R	147415-00400R	148415-00400R
			600	145415-00600R	146415-00600R	147415-00600R	148415-00600R
			800	145415-00800R	146415-00800R	147415-00800R	148415-00800R
		L	400	145415-00400L	146415-00400L	147415-00400L	148415-00400L
			600	145415-00600L	146415-00600L	147415-00600L	148415-00600L
			800	145415-00800L	146415-00800L	147415-00800L	148415-00800L
2	Galvanized	1000	145415-01000	146415-01000	147415-01000	148415-01000	
		1200	145415-01200	146415-01200	147415-01200	148415-01200	
		1400	145415-01400	146415-01400	147415-01400	148415-01400	
		1600	145415-01600	146415-01600	147415-01600	148415-01600	
		2000	145415-02000	146415-02000	147415-02000	148415-02000	
1	Bare	R	400	145410-00400R	146410-00400R	147410-00400R	148410-00400R
			600	145410-00600R	146410-00600R	147410-00600R	148410-00600R
			800	145410-00800R	146410-00800R	147410-00800R	148410-00800R
		L	400	145410-00400L	146410-00400L	147410-00400L	148410-00400L
			600	145410-00600L	146410-00600L	147410-00600L	148410-00600L
			800	145410-00800L	146410-00800L	147410-00800L	148410-00800L
2	Bare	1000	145410-01000	146410-01000	147410-01000	148410-01000	
		1200	145410-01200	146410-01200	147410-01200	148410-01200	
		1400	145410-01400	146410-01400	147410-01400	148410-01400	
		1600	145410-01600	146410-01600	147410-01600	148410-01600	
		2000	145410-02000	146410-02000	147410-02000	148410-02000	
			Projecting dimensions				
		x	$x = R \cdot 0,707$				
		y	$y = R \cdot 0,293$				

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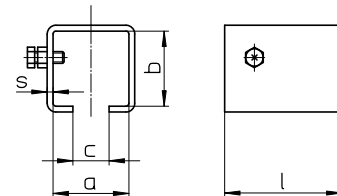
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4 Track support bracket and track coupler

4.1 Standard type

4.1.1 Track support bracket

Material: bare steel

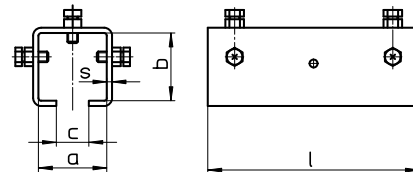


Technical details		Catalog number			
Type of rail		40x40	50x50	63x63	80x80
		024120	025120	025620	026120
Dimensions (mm)	A	41.3	51.7	65.5	83
	b	41	51.2	64.2	83
	c	18.4	24.6	26	34
	l	50	80	100	120
	s	4	4	5	6
Load capacity (kg)		250	400	630	820
Weight (kg)		0.22	0.50	0.94	1.75

4.1.2 Track coupler

Material: Steel

Type: galvanized or bare



Technical details		Catalog number			
Type of rail		40x40	50x50	63x63	80x80
Type	Galvanized	145605	146605	147605	148605
	Bare	024140	025140	025640	026140
Dimensions (mm)	a	41.3	51.7	65.5	83
	b	41	51.2	64.2	83
	c	18.4	24.6	26	34
	l	125	160	200	250
	s	4	4	5	6
Load capacity (kg)		250	400	630	820
Weight (kg)		0.6	1	1.9	3.6

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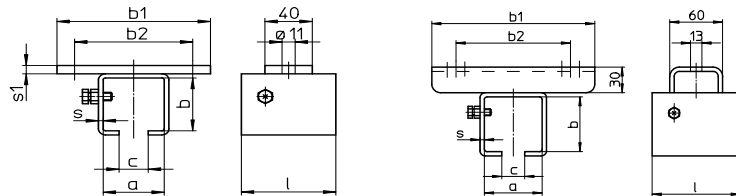
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4.2 With cross beam

4.2.1 Track support bracket

Material: Steel
galvanized



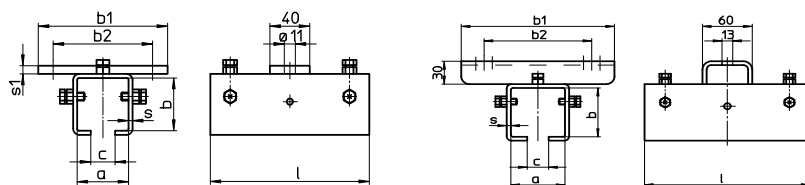
Type 40x40/50x50

Type 63x63/80x80

Technical details		Catalog number			
Type of rail		40x40	50x50	63x63	80x80
		145511	146511	147511	148511
Dimensions (mm)	a	41.3	51.7	65.5	83
	b	41	51.2	64.2	83
	b1	110	130	185	185
	b2	80	100	130	130
	c	18.4	24.6	26	34
	l	50	80	100	120
	s	4	4	5	6
	s1	6	8	-	-
Load capacity(kg)		250	400	630	820
Weight (kg)		0,36	0,80	1,65	2,40

4.2.2 Track coupler

Material: Steel,
galvanized



Type 40x40/50x50

Type 63x63/80x80

Technical details		Catalog number			
Type of rail		40x40	50x50	63x63	80x80
		145611	146611	147611	148611
Dimensions (mm)	a	41.3	51.7	65.5	83
	b	41	51.2	64.2	83
	b1	110	130	185	185
	b2	80	100	130±20	130±20
	c	18.4	24.6	26	34
	l	125	160	200	250
	s	4	4	5	6
	s1	6	8	-	-
Load capacity (kg)		250	400	630	820
Weight (kg)		0.66	1.30	2.65	4.15

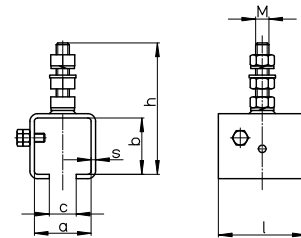
Manual Monorail Track System

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4.3 With screw

4.3.1 Track support bracket

Material: galvanized steel



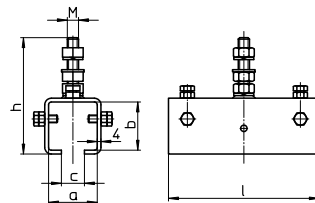
Technical details		Catalog number			
Type of rail		40x40	50x50	63x63	80x80
		145525- ...	146525	147525	148525
Dimensions (mm)	a	40.5	51.7	64.7	81.7
	b	40.5	51.7	64.7	81.7
	c	17	25	25	31
	H	110	125	140	170
	L	50	80	100	120
	M	M8 or M12	M12	M12	M16
	S	4	4	5	6
Load capacity (kg)		200	320	400	500
Weight (kg)		0.32	0.52	0.97	1.80

The track support brackets and track couplers for C-rail 40x40 can be supplied with thread M8 or M12.

Order example: requested M12 catalog No. 145525-12

4.3.2 Track coupler

Material: galvanized steel



Technical details		Catalog number			
Type of rail		40x40	50x50	63x63	80x80
		145625-...	146625	147625	148625
Dimensions (mm)	a	40.5	51.7	64.7	81.7
	b	40.5	51.7	64.7	81.7
	c	17	25	25	31
	h	110	125	140	170
	l	125	160	200	250
	M	M8 or M12	M12	M12	M16
	s	4	4	5	6
Load capacity (kg)		200	320	400	500
Weight (kg)		0.61	1.02	1.93	3.70

The track supports brackets and track couplers for the C rail 40x40 can be supplied with thread M8 or M12.

Order example: requested M12 catalog No. 145625-12

Technical Data Sheet



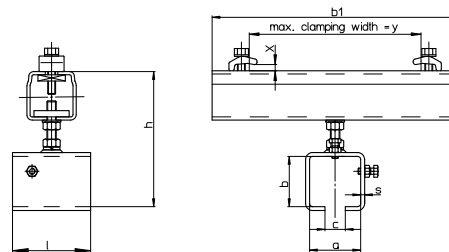
Manual Monorail Track System

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4.4 With support arm

4.4.1 Track support bracket

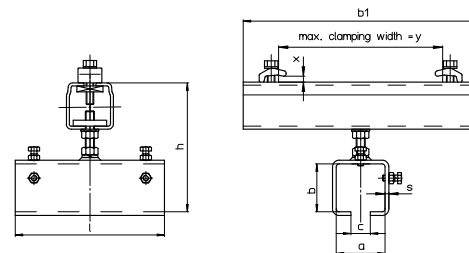
Material: galvanized steel



Technical details		Catalog number			
Type of rail		40x40	50x50	63x63	80x80
Type		145541	146541	147541	148541
Dimensions (mm)	a	41.3	51.7	65.5	86
	B	41	51.2	64.2	82
	B1	250	250	315	315
	C	17	25	25	31
	H	115-135	125-150	163-183	190-210
	L	50	80	100	120
	S	4	4	5	6
	X	Clamping height 6-20		Clamping height 6-11	Clamping height 6-14
	Y	Clamping width 42-130		Clamping width 42-220	
Load capacity (kg)		200	320	400	500
Weight (kg)					

4.4.2 Track coupler

Material : galvanized steel



Technical details		Catalog Number			
Type of rail		40x40	50x50	63x63	80x80
Type		145641	146641	147641	148641
Dimensions (mm)	a	41.3	51.7	65.5	86
	b	41	51.2	64.2	82
	b1	250	250	315	315
	c	17	25	25	31
	h	115-135	125-150	163-183	190-210
	l	125	160	200	250
	s	4	4	5	6
	x	Clamping height 6-20		Clamping height 6-11	Clamping height 6-14
	y	Clamping width 42-130		Clamping width 42-220	
Load capacity (kg)		200	320	400	500
Weight (kg)					

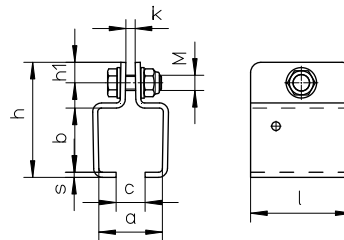
Manual Monorail Track System

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4.5 Two-part

4.5.1 Track support bracket

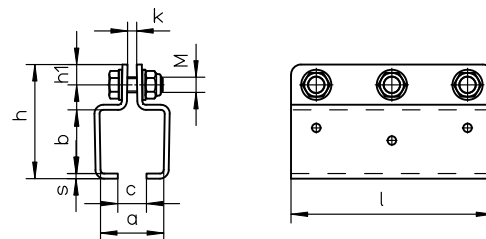
Material: galvanized steel



Technical details		Catalog number			
Type of rail		40x40	50x50	63x63	80x80
Type		024129	025129	026129	027129
Dimensions (mm)	a	40	50	63	80
	b	40	50	63	80
	c	17	25	25	31
	h	81	91	114	143
	h1	16	16	20	25
	k	6	8	10	12
	l	50	80	100	120
	M	M10	M12	M16	M20
Load capacity (kg)		250	400	630	820
Weight (kg)		0.7	1.3	2.6	4.1

4.5.2 Track coupler

Material: galvanized steel



Technical details		Catalog number			
Type of rail		40x40	50x50	63x63	80x80
Type		024149	025149	026149	027149
Dimensions (mm)	a	40	50	63	80
	b	40	50	63	80
	c	17	25	25	31
	h	81	91	114	143
	h1	16	16	20	25
	k	6	8	10	12
	l	120	160	200	250
	M	M10	M12	M16	M20
Load capacity (kg)		250	400	630	820
Weight (kg)		0.7	1.3	2.6	4.1

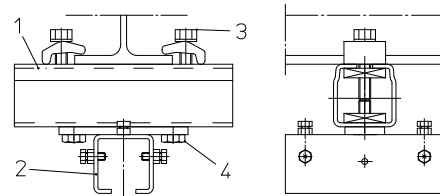
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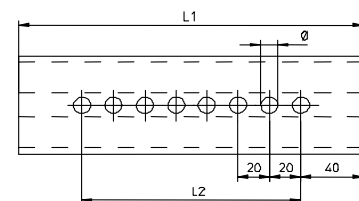
4.6 Combined track support brackets and track couplers

Mounted to the support arm

Material: galvanized steel



- 1 Support arm
Material: galvanized steel



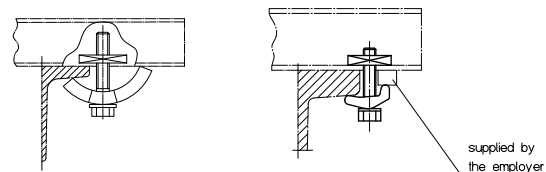
Dimensions (mm)		Catalog number			
L1	L2	40x40	50x50	63x63	80x80
250	200	020186-0250	020278-0250	020274-0250	020274-0250
315	260	020186-0315	020278-0315	020274-0315	020274-0315
400	340	020186-0400	020278-0400	020274-0400	020274-0400
500	340	020186-0500	020278-0500	020274-0500	020274-0500
Hole diameter Ø		9	11	11	11

- 2 Track support bracket and track coupler
Material: galvanized steel

Type	Catalog number			
Type of rail	40x40	50x50	63x63	80x80
Track support bracket	145511	146511	147511	148511
Track coupler	145611	146611	147611	148611

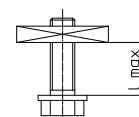
- 3 Girder clip; single
Material: galvanized steel

Dimensions see page 26



Type of rail	Catalog number			
Type of rail	40x40	50x50	63x63	80x80
Screw M	040127-08	040127-10	040127-10	040127-12
Screw M	M8 x50	M10 x 50	M10 x 50	M12 x 60

- 4 Screw with square nut for C-rail track
Material: galvanized steel



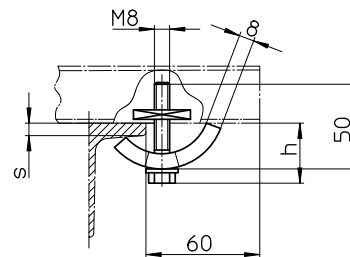
Type of rail	Catalog number			
Type of rail	40x40	50x50	63x63	80x80
Screw	040125-08x15	040125-10x12	040125-10x12	040125-10x12
Screw	M8 x 25	M10 x 25	M10 x 25	M10 x 25
Max. clamping length	14,5	12	12	12

If other Wampfler components to be applied you have to check the connecting dimensions!

5 Girder clips

5.1 Girder clip M8

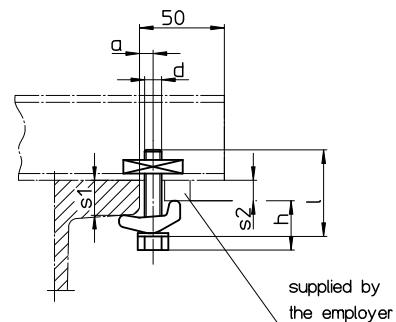
For rail type 40x40 and 50x50



		Catalog number						
		040127-08						
Beam thickness	s	4	6	8	10	12	46	20
Installation height	h	31	32	33	34	35	37	40

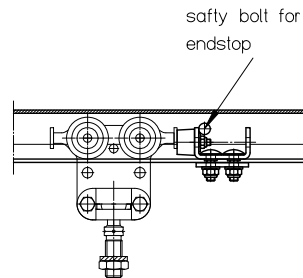
5.2 Girder clip M10 and M12

For rail type 63x63 and 80x80

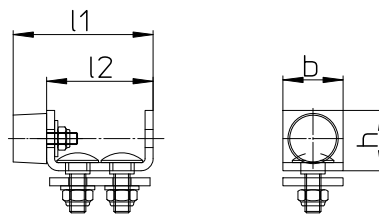


Technical details		Catalog number			
Thread diameter d		M10		M12	
		040127-10		040127-12	
Dimensions (mm)	l	50		60	
	b	32		38	
	a	8		10	
	S	S ₁	S ₂	S ₁	S ₂
		6-11	-	6-14	-
		11-16	5	14-22	8
		16-21	10	22-30	16
h	35-41		39-47		
	41-46		47-55		
	46-51		55-63		
Weight [kg]	0.170		0.240		

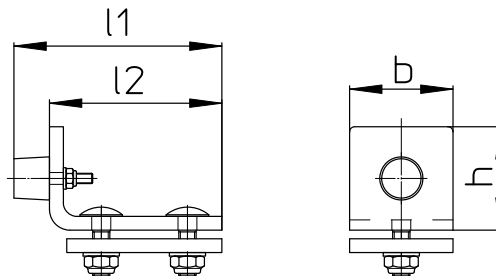
6 End stop



6.1 Type for C-rail 40x40 and 50x50



6.2 Type for C-rail 63x63 and 80x80



Mounting instructions:

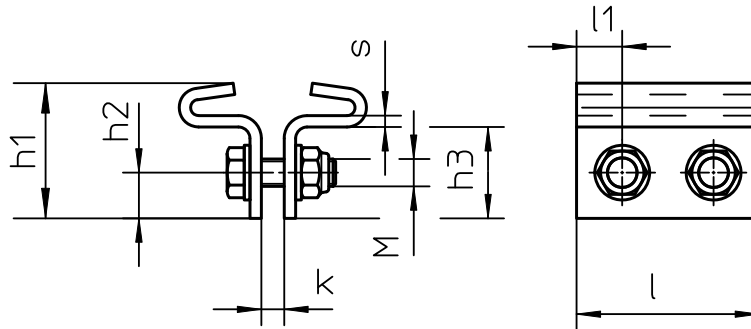
End stops have to be secured by a safety bolt, fitted at right angles to the track.

Technical data		Catalog number			
Type of rail		40x40	50x50	63x63	80x80
		024111	025115	025617	026117
Safety bolt		M8 x50	M10 x65	M12 x75	M12 x100
		040150-08x050	040150-10x065	040150-12x075	040150-12x100
Dimensions (mm)	b	30	30	45	60
	h	30	30	50	60
	l1	69	69	100	120
	l2	53	53	80	100
Weight (kg)		0:19	0:19	0:8	0:95

The safety bolt is not included in the delivery and has to be ordered separately.

7 Clamping piece

Material: galvanized steel



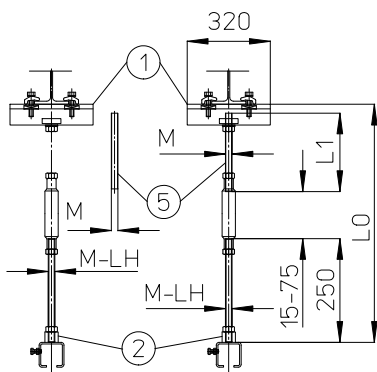
A track support bracket or track coupler can be mounted to an INP beam by means of a clamping piece. In connection with a flat-bar steel, the length of which is adjusted to the case of application, it is possible to attach a two-part bracket or coupler (see chapter 4.5) to the clamping piece.

Type		Catalog number			
		40x40	50x50	63x63	80x80
Beam	INP 100	145531-100	146531-100	-	-
	INP 120 / IPE 100	145531-120	146531-120	-	-
	INP 160	145531-160	146531-160	147531-160	148531-160
	INP 180	145531-180	146531-180	147531-180	148531-180
	INP 200	145531-200	146531-200	147531-200	148531-200
Projecting dimensions	h 1	48	48	58	71
	h 2	16	16	20	25
	h 3	36	36	40	51
	k	6	8	10	12
	l	50	80	100	120
	l 1	12	16	20	25
	M	M10	M12	M16	M20
	s	4	4	5	6
Load capacity (kg)		250	400	630	820
Weight (kg)					

8 Suspensions for rail tracks

Besides fixing with track support brackets directly onto the ceiling, it is often required to install suspensions, e.g. in shed halls or below steel construction ceilings.

8.1 Single suspension



Determining the length of threaded rods (mm)
According to illustr. 1
and 2:

(relative to vertical
suspension only)

$$L_1 = L_0 - 320$$

According to illustr.

2 and 3: (relative to
inclined suspension only)

$$L_2 = \frac{L_0}{\cos \alpha} - 450$$

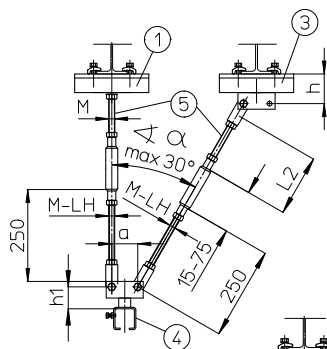
illustr. 1

M-LH = Left-hand thread

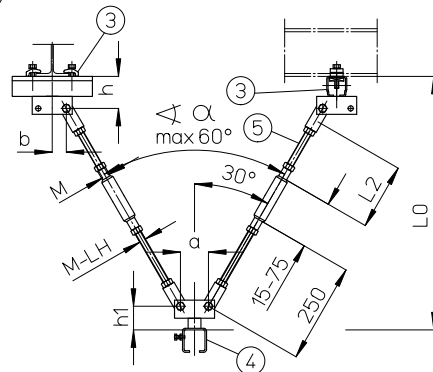
According to illustr. 4:

L3 and L4 can be determined by drawing or by
calculation according to the inclination of the roof

8.2 V-suspensions

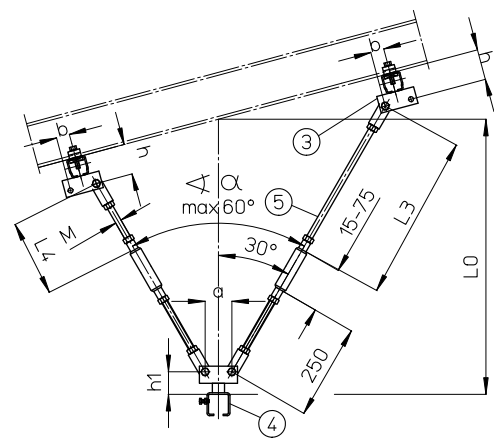


illustr. 2



illustr. 3

M-LH = Left-hand thread



illustr. 4

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To adjust the track traveling direction and to guarantee the suspension of curves, it is possible to turn the bottom parts (item 2 or 4).

Order example: Requested suspension acc. to illustr. 2. LO=1.5 m for C-rail 145005 , angle $\alpha = 20^\circ$, construction as track support bracket.

Cat. No.:	Item ①	Suspension – upper part 145211
	item ②	Suspension – bottom part 145221-A
	Item ③	Suspension – upper part 145212
	Item ④	Suspension –bottom part 145222-A
	Item ⑤	Threaded rod M12 / standard length 3 m (cut to length for assembly)

Technical details			Catalog number			
C-rail			40x40	50x50	63x63	80x80
	Design.	Item No.				
Single suspension (straight)	Upper part	1	145211	146211	147211	148211
	Bottom part	2	145221-....	146221-...	147221-...	148221-....
	Threaded rod 3 m	5	145210-3	146210-3	147210-3	148210-3
V – suspension (inclined)	Upper part	3	145212	146212	147212	148212
	Bottom part	4	145222-...	146222-...	147222-...	148222-....
	Threaded rod 3 m	5	145210-3	146210-3	147210-3	147210-3
Dimensions (mm)	h		90	80	110	110
	h1		60	60	85	85
	M		M12	M16	M20	M20
	a		60	70	100	100
	b		30	35	50	50

The bottom parts ② and ④ are available as the following types:

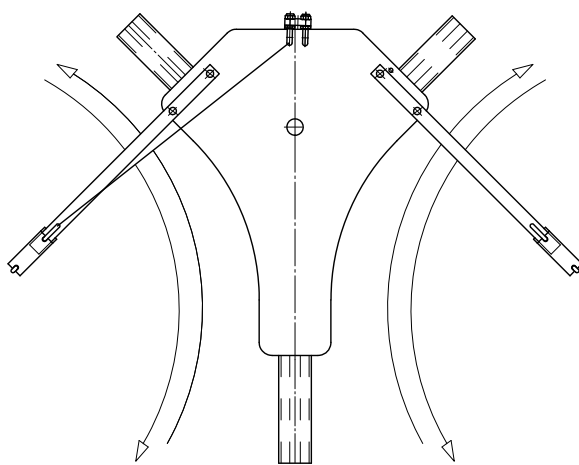
- a) Track support bracket = type A
- b) Track coupler = type B

Always state the type with your order.

The bottom parts are supplied including coupling nut.

9 Switches

Flap switch

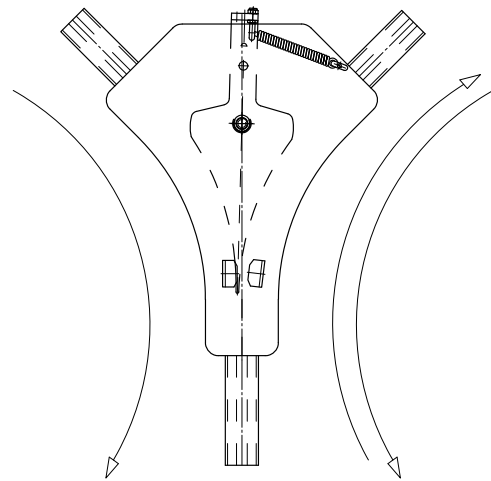


Travel direction

The switch is controlled manually over rods. It stays in its fixed position

Passage in both directions possible

Spring operated tongue switch



Travel direction

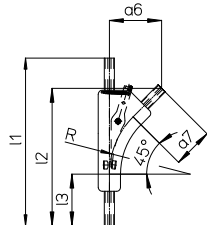
The switch is controlled by the chassis. After having been activated it is automatically reset to its basic position by a spring.

Passage only possible in one direction

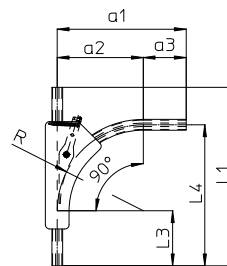
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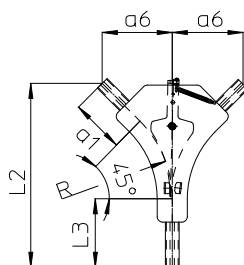
Type: galvanized finish



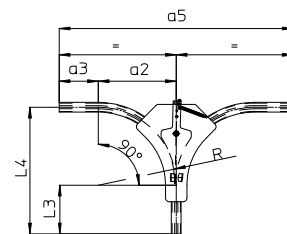
Spring operated tongue switch 45° type right



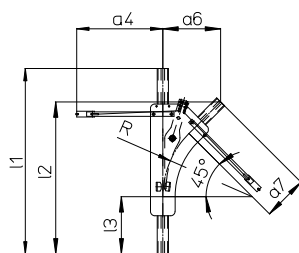
Spring operated tongue switch 90° type right



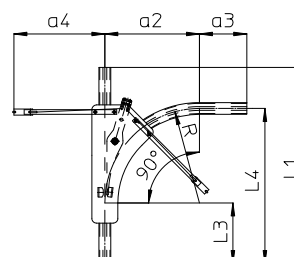
Spring operated tongue switch 45° type right-left



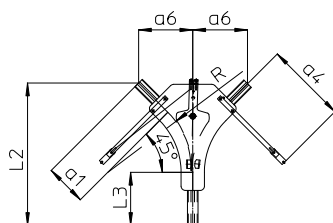
Spring operated tongue switch 90° type right-left



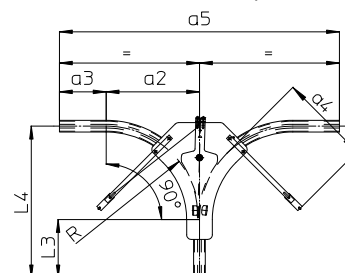
Flap switch 45° type right with control unit (tow chain)



Flap switch 90° type right with control unit (tow chain)



Flap switch 45° type right-left with control unit (tow chain)



Flap switch 90° type right-left with control unit (tow chain)

If the transported goods should project from the left or right part of the rail by more than the dimension a_4 , the control unit of the flap switches must be extended in order to prevent collisions with the goods.

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The switches are joined to the C-rails by three track couplers. The required track couplers have to be ordered separately.

Switch installation dimensions:

Type of rail		40x40	50x50	63x63	80x80
		Dimensions (mm)			
Projecting dimensions	a1	600	600	800	800
	a2	400	400	600	600
	a3	200	200	200	200
	a4	440	440	670	670
	a5	1200	1200	1600	1600
	a6	259	259	317	317
	a7	200	200	200	200
	L1	760	830	1060	1365
	L2	640	680	870	920
	L3	216	256	305	355
Installation dimension	L4	616	656	905	955
	R	400	400	600	600
	h	70	81	100	116

There is a possibility to transfer a 45°-switch to a 90°-switch with the help of a 45°-curve.

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For C-rail 40x40

Type of switch		Catalog number		
Spring operated tongue switch 45°	Right	145311- R		
	Left	145311- L		
	Right / Left	145311-RL		
Spring operated tongue switch 90°	Right	145313- R		
	Left	145313- L		
	Right / Left	145313- RL		
Control unit		Chain	Threaded rod	Pneumatic
Flap switch 45°	Right	145315- R03	145315- R02	145315- R05
	Left	145315- L03	145315- L02	145315- L05
	Right / Left	145315- RL03	145315- RL02	145315- RL05
Flap switch 90°	Right	145317- R03	145317- R02	145317- R05
	Left	145317- L03	145317- L02	145317- L05
	Right / Left	145317- RL03	145317- RL02	145317- RL05

For C-rail 50x50

Type of switch		Catalog number		
Spring operated tongue switch 45°	Right	146311- R		
	Left	146311- L		
	Right / Left	146311-RL		
Spring operated tongue switch 90°	Right	146313- R		
	Left	146313- L		
	Right / Left	146313- RL		
Control unit		Chain	Threaded rod	Pneumatic
Flap switch 45°	Right	146315- R03	146315- R02	146315- R05
	Left	146315- L03	146315- L02	146315- L05
	Right / Left	146315- RL03	146315- RL02	146315- RL05
Flap switch 90°	Right	146317- R03	146317- R02	146317- R05
	Left	146317- L03	146317- L02	146317- L05
	Right / Left	146317- RL03	146317- RL02	146317- RL05

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For C-rail 63x63

Type of switch		Catalog number		
Spring operated tongue switch 45°	Right	147311- R		
	Left	147311- L		
	Right / Left	147311-RL		
Spring operated tongue switch 90°	Right	147313- R		
	Left	147313- L		
	Right / Left	147313- RL		
Control unit		Chain	Threaded rod	Pneumatic
Flap switch 45°	Right	147315- R03	147315- R02	147315- R05
	Left	147315- L03	147315- L02	147315- L05
	Right / Left	147315- RL03	147315- RL02	147315- RL05
Flap switch 90°	Right	147317- R03	147317- R02	147317- R05
	Left	147317- L03	147317- L02	147317- L05
	Right / Left	147317- RL03	147317- RL02	147317- RL05

For C-rail 80x80

Type of switch		Catalog number		
Spring operated tongue switch 45°	Right	148311- R		
	Left	148311- L		
	Right / Left	148311-RL		
Spring operated tongue switch 90°	Right	148313- R		
	Left	148313- L		
	Right / Left	148313- RL		
Type		Chain	Threaded rods	Pneumatic
Flap switch 45°	Right	148315- R03	148315- R02	148315- R05
	Left	148315- L03	148315- L02	148315- L05
	Right / Left	148315- RL03	148315- RL02	148315- RL05
Flap switch 90°	Right	148317- R03	148317- R02	148317- R05
	Left	148317- L03	148317- L02	148317- L05
	Right / Left	148317- RL03	148317- RL02	148317- RL05

Manual Monorail Track System

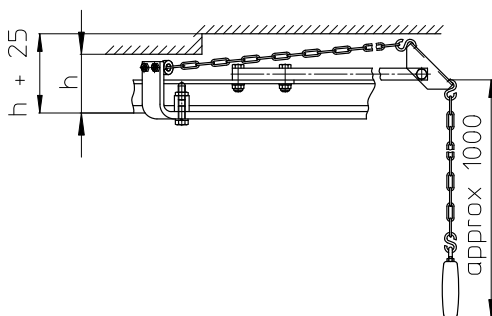
TDB0400-0041b-E

9.1 Control units

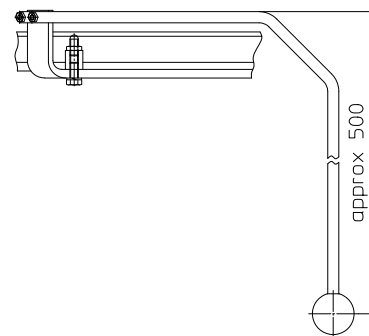
9.1.1 Flap switch

The switch is controlled manually over a control unit.
It stays in its fixed position.
Passage possible in both directions.

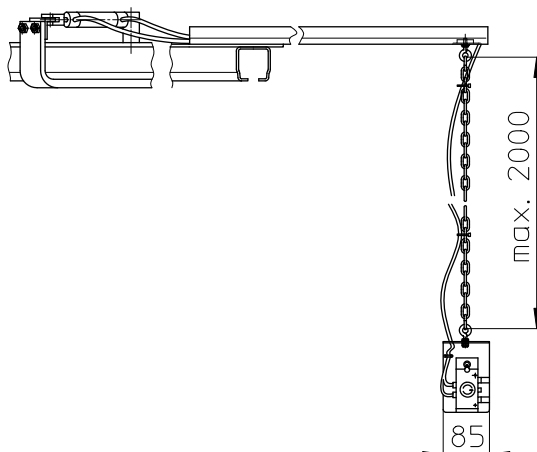
Control unit chain:



Control unit threaded rod:



Control part pneumatics:



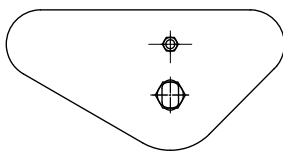
Manual Monorail Track System

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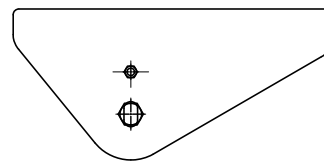
9.2 Accessories for spring operated tongue switch

9.2.1 Switching automatics

For C-rail 40 and 50



For C-rail 63 and 80



Type of rail	Catalog number			
	40x40	50x50	63x63	80x80
	140312-1		140312-2	

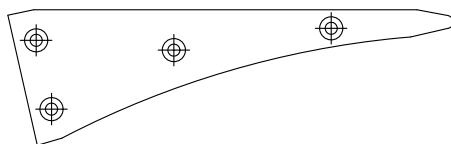
Delivery including screws

The switch is connected to the passing chassis, alternatively right and left in the direction of the deviating track.

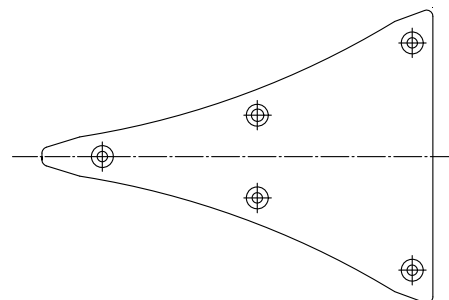
Attention: Not suitable for transport carriage with crossbeam (see chapter 10)

9.2.2 S-green-wear protection

In order to keep the wear of the tongue as low as possible we recommend to install a protection device against wear.



R or L switch

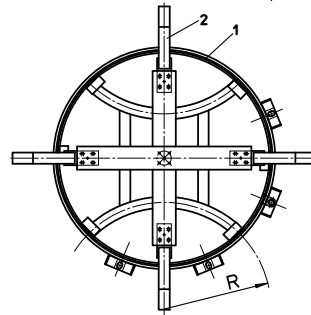
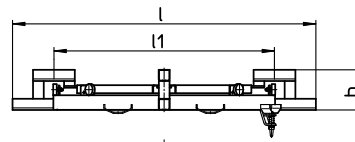
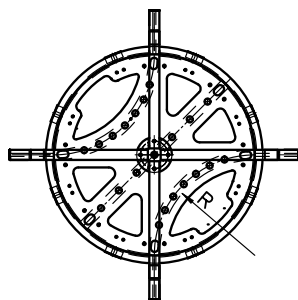
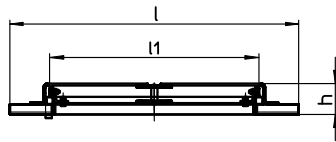


RL switch

Type of rail	Catalog number			
	40x40	50x50	63x63	80x80
R or L switch	140312-3		140312-5	
RL switch	140312-4		140312-6	

Delivery including screws



10 Turntable



Type for 40x40 and 50x50
Material: galvanized steel

Type for 63x63 and 80x80
Material: paint finish,
Standard silver

The switches are joined to the C-rail by four track couplers.
The required track couplers have to be order separately.

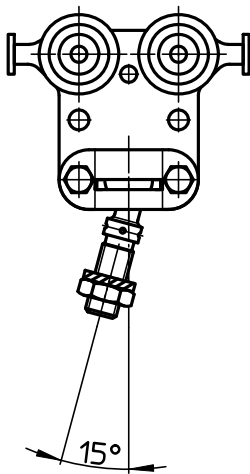
Type of rail		Catalog number			
		40x40	50x50	63x63	80x80
	With eye bolt	145361-01	146361-01	147361-01	148361-01
	With eye bolt	145362-01	146362-01	147362-01	148362-01
Dimensions (mm)	l	1150	1200	1700	2550
	l1	800	800	1230	2030
	R	400	400	600	1000
	h	123	133	226	243

 Unilateral construction

 Bilateral construction

11 Suspension trolleys

Standard suspension trolleys have rotating and oscillating ball pins (see illustration)



The suspension trolleys can also be supplied with “non-oscillating” ball pins.

Standard type:
Operating temperature -20° to $+60^{\circ}$ °C

High-temperature type:
Operating temperature 0° C to $+300^{\circ}$ C



The stated load capacities refer to a temperature of 20° C.

For temperatures above 60° C the load capacity is reduced due to the material.

- from 60° C to 100° C approx. 15%
- from 60° C to 200° C approx. 25%
- from 60° C to 250° C approx. 40%

For the suspension of electrical equipment – e.g. spotwelders – the trolleys can be supplied in an insulated design for the insulation of mass currents.

For low-noise travel we can supply various suspension trolleys with plastic rollers as well.

Technical Data Sheet



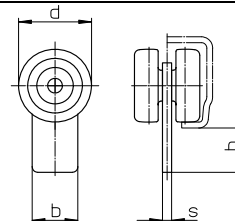
Manual Monorail Track System

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11.1 2 rollers

11.1.1 For welding

Material: Rollers: galvanized steel
Plate: bare steel



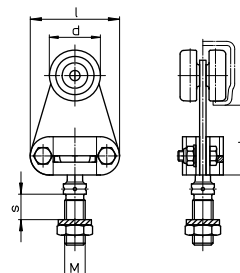
Technical details		Catalog number			
Type of rail		40x40	50x50	63x63	80x80
		145093	146093	147093	148093
Dimensions (mm)	b	25	25	40	40
	d	32	40	52	62
	h	29	24	32	26
	s	5	5	8	8
Load capacity (kg)		50	80	100	125
Weight (kg)		0.15	0.25	0.32	0.42

11.1.2 Standard

Standard, high-temperature, insulated, non-oscillating

Material: galvanized steel

The suspension trolleys for C-rail 40x40 are available with ball pin threads M12 or M16.



Order example: requested M12

Catalog number: 145010-12B

Technical details		Catalog number			
Type of rail		40x40	50x50	63x63	80x80
Type	Standard type with oscillating pin	145010-..B	146010-B	147010-B	148010-B
	Standard type with non-oscill. pin	145010-..BS	146010-BS	147010-BS	148010-BS
	High-temperature type with oscillating pin	145110-..B	146110-B	147110-B	148110-B
	High temperature type with non-oscill. pin	145110-..BS	146110-BS	147110-BS	148110-BS
	Insulated type with oscillating pin	-	-	147050-B	148050-B
	Insulated type with non-oscill. pin	-	-	147050-BS	148050-BS
Dimensions (mm)	d	32	40	52	62
	h	75	70	85	80
	l	70	70	70	70
	M	M12 or M16	M16	M16	M16
	s _{max}	26	26	26	26
Load capacity (kg)		50	80	100	125
Weight (kg)		0.5	0.60	0.75	0.85

Manual Monorail Track System

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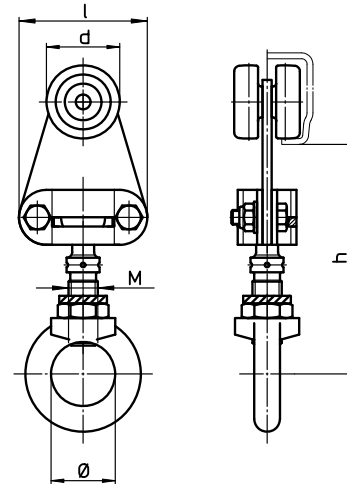
11.1.3 With rotating ring

Standard type, high-temperature type, insulated type

The suspension trolleys with rotating ring are only available with oscillating pin.

Material: galvanized steel

The suspension trolleys for C-rail 40x40 are available with ball pin thread M12 or M16



Order example: requested M12

catalog number: 145011-12B

Technical details		Catalog number			
Type of rail		40x40	50x50	63x63	80x80
Type (mm)	Standard type	145011-..B	146011-B	147011-B	148011-B
	High-temp. type	145111-..B	146111-B	147111-B	148111-B
	Insulated type	-	-	147051-B	148051-B
Dimensions (mm)	d	32	40	52	62
	h	130	125	140	135
	l	70	70	70	70
	M	M12 or M16	M16	M16	M16
	Ø	30 or 35	35	35	35
Load capacity (kg)		50	80	100	125
Weight (kg)		0.60	0.70	0.85	0.95

Technical Data Sheet



Manual Monorail Track System

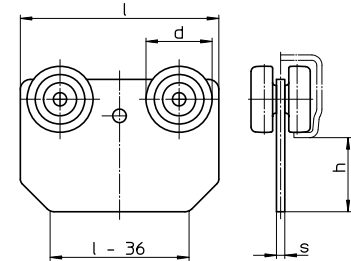
TDB0400-0041b-E

11.2 4 rollers

11.2.1 For welding

Not for curves below 800 mm radius

Material: Rollers: galvanized
Plate: bare steel



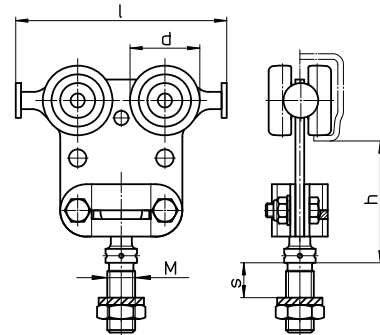
Technical details		Catalog number			
Type of rail		40x40	50x50	63x63	80x80
		145092	146092	147092	148092
Dimensions (mm)	d	32	40	52	62
	h	50	45	51	45
	l	120	120	160	160
	s	5	5	8	8
Load capacity (kg)		100	160	200	250
Weight (kg)		0.45	0.55	0.7	0.9

11.2.2 Standard

For curves from radius 400mm

Standard, high-temperature,
insulated, non-oscillating

Material: galvanized steel
The suspension trolleys for C-rail 40x40
are available with ball pin thread M12 or M16



Order example: requested M12 catalog number: 145020-12B

Technical details		Catalog number			
Type of rail		40x40	50x50	63x63	80x80
Type	Standard type with oscillating pin	145020-..B	146020-B	147020-B	148020-B
	Standard type with non-oscillating pin	145020-..BS	146020-BS	147020-BS	148020-BS
	High-temperature type with oscill. pin	145120-..B	146120-B	147120-B	148120-B
	High-temp. type with non-oscill. pin	145120-..BS	146120-BS	147120-BS	148120-BS
	Insulated type with oscillating pin	-	-	147060-B	148060-B
	Insulated type with non-oscillating pin	-	-	147060-BS	148060-BS
Dimensions (mm)	d	32	40	52	62
	h	75	70	85	80
	l	120	120	160	160
	M	M12 or M16	M16	M16	M16
	S _{max}	26	26	26	26
Load capacity (kg)		100	160	200	250
Weight (kg)		0.75	0.85	1.00	1.20

Technical Data Sheet



Manual Monorail Track System

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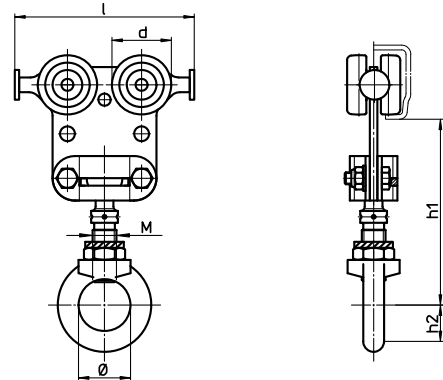
11.2.3 With rotating ring

Standard, high-temperature, insulated.

The suspension trolleys with rotating eye are only available as oscillating type.

Material: galvanized steel

The suspension trolleys for C-rail 40x40 are only available with ball pin thread M12 or M16



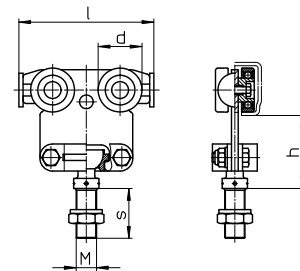
Order example: requested M12 catalog number: 145021-12B

Technical details		Catalog number			
Type of rail		40x40	50x50	63x63	80x80
Type	Standard type	145021-..B	146021-B	147021-B	148021-B
	High-temp. type	145121-..B	146121-B	147121-B	148121-B
	Insulated type	-	-	147061-B	148061-B
Dimensions (mm)	d	32	40	52	62
	h1	130	125	140	135
	h2	32	32	32	32
	l	120	120	160	160
	M	M12 M16	M16	M16	M16
	∅	30 35	35	35	35
Load capacity (kg)		100	160	200	250
Weight (kg)		0.85	0.95	1.10	1.30

11.2.4 For heavier loads

Standard, high-temperature, insulated, non-oscillating

Material: galvanized steel



Type		Catalog number	
Type of rail		63x63	80x80
Standard type with oscillating pin		147027	148027
Standard type with non-oscillating pin		147027S	148027S
High-temp. type with oscillating pin		147067	148067
High-temp. type with non-oscillating pin		147067S	148067S
Insulated type with oscillating pin		147127	148127
Insulated type with non-oscillating pin		147127S	148127S
Projecting dimensions (mm)	d	52	62
	h	86	80
	l	160	160
	M	M24	M24
	s	59	59
Load capacity (kg)		400	500
Weight (kg)			

Manual Monorail Track System

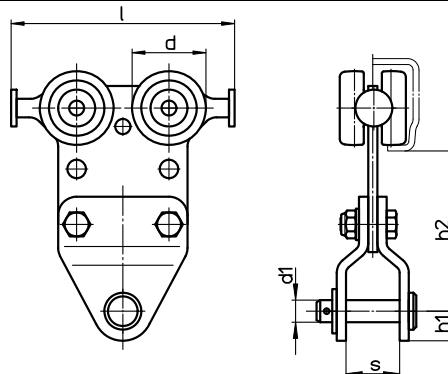
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11.2.5 For load hook

11.2.5.1 Type with pin

According to DIN 15401

Material: galvanized steel



Technical details		Catalog number			
Type of rail		40x40	50x50	63x63	80x80
		145024	146024	147024	148024
Dimensions (mm)	s	29	29	40	40
	h1	16	16	22	22
	h2	92	87	107	101
	d	32	40	52	62
	d1	12	12	20	20
	l	120	120	160	160
Load capacity (kg)		100	160	250	400
Weight (kg)		0.75	0.85	1.0	1.2

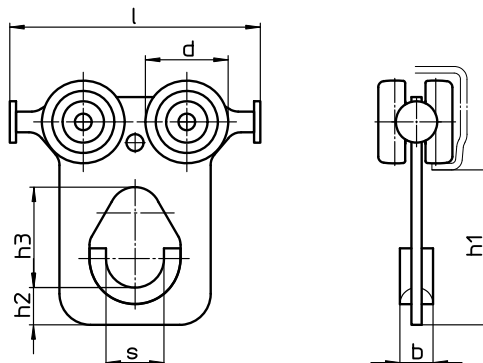
11.2.5.2 Type with integrated holding element

According to DIN 15401

Material: galvanized steel

Hook size:

- 1) 006, 010, 012 acc. to DIN 15401
- 2) 020, 025, 040 acc. to DIN 15401



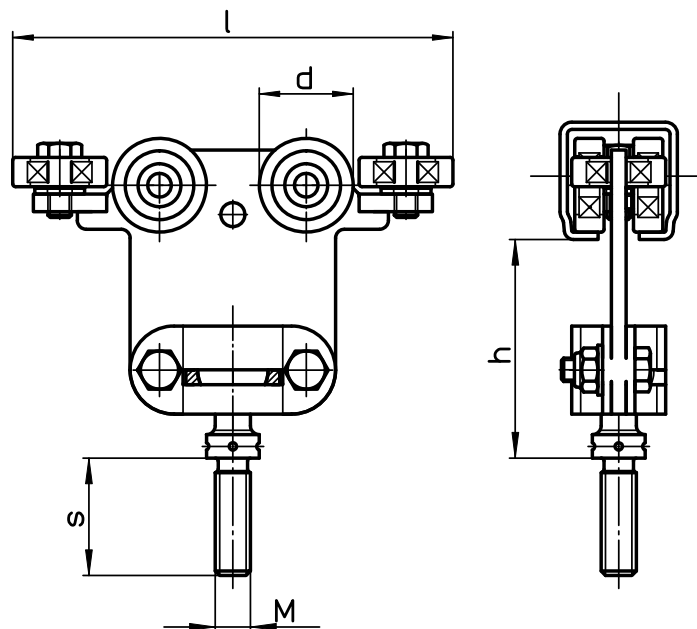
Technical details		Catalog number			
Type of rail		40x40	50x50	63x63	80x80
		145022¹⁾	146022¹⁾	147022²⁾	148022²⁾
Dimensions (mm)	s	28	28	28	28
	h1	80	75	91	85
	h2	16	16	22	22
	h3	48	48	48	48
	d	32	40	52	62
	l	120	120	160	160
	b	16	16	16	16
Load capacity (kg)		100	160	250	400
Weight (kg)		0.75	0.85	1.0	1.2

11.3 Special construction

11.3.1 Suspension trolley with horizontal guide rollers

Application:

Extremely smooth travel through curves. Grinding of the rollers at the rail sides is avoided by the guide rollers, which reduces the travel resistance.



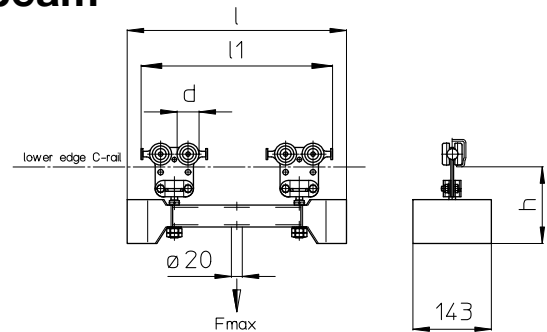
The dimensions of the suspension trolley have to be adjusted to the existing radii. When using this suspension trolley make sure that there is only one type of radius all over the complete system. If switches are used the radius is given by the switch.

12 Transport carriage with crossbeam

12.1 4 rollers without click stop device

Non-oscillating

Material: galvanized steel



Type		Catalog number				
Type of rail		40x40	50x50	63x63	80x80	
Standard Type	l = 400	With oscillating pin	145025-0400	146025-0400	147025-0400	148025-0400
		With non-oscill. pin	145025-0400S	146025-0400S	147025-0400S	148025-0400S
	l = 500	With oscillating pin	145025-0500	146025-0500	147025-0500	148025-0500
		With non-oscill. pin	145025-0500S	146025-0500S	147025-0500S	148025-0500S
	l = 630	With oscillating pin	145025-0630	146025-0630	147025-0630	148025-0630
		With non-oscill. pin	145025-0630S	146025-0630S	147025-0630S	148025-0630S
	l = 800	With oscillating pin	145025-0800	146025-0800	147025-0800	148025-0800
		With non-oscill. pin	145025-0800S	146025-0800S	147025-0800S	148025-0800S
	l = 1000	With oscillating pin	145025-1000	146025-1000	147025-1000	148025-1000
		With non-oscill. pin	145025-1000S	146025-1000S	147025-1000S	148025-1000S
High-temp. Type	l = 400	With oscillating pin	145125-0400	146125-0400	147125-0400	148125-0400
		With non-oscill. pin	145125-0400S	146125-0400S	147125-0400S	148125-0400S
	l = 500	With oscillating pin	145125-0500	146125-0500	147125-0500	148125-0500
		With non-oscill. pin	145125-0500S	146125-0500S	147125-0500S	148125-0500S
	l = 630	With oscillating pin	145125-0630	146125-0630	147125-0630	148125-0630
		With non-oscill. pin	145125-0630S	146125-0630S	147125-0630S	148125-0630S
	l = 800	With oscillating pin	145125-0800	146125-0800	147125-0800	148125-0800
		With non-oscill. pin	145125-0800S	146125-0800S	147125-0800S	148125-0800S
	l = 1000	With oscillating pin	145125-1000	146125-1000	147125-1000	148125-1000
		With non-oscill. pin	145125-1000S	146125-1000S	147125-1000S	148125-1000S
Projecting dimensions (mm)	l1	l-52	l-52	l-12	l-12	
	ød	32	40	52	62	
	h	145	140	155	149	
Maximum load of crossbeams Fmax (kg)						
Crossbeam length (mm)	l= 400	200	320	400	500	
	l= 500	200	320	400	500	
	l= 630	200	320	400	500	
	l= 800	200	320	400	400	
	l= 1000	200	300	300	300	

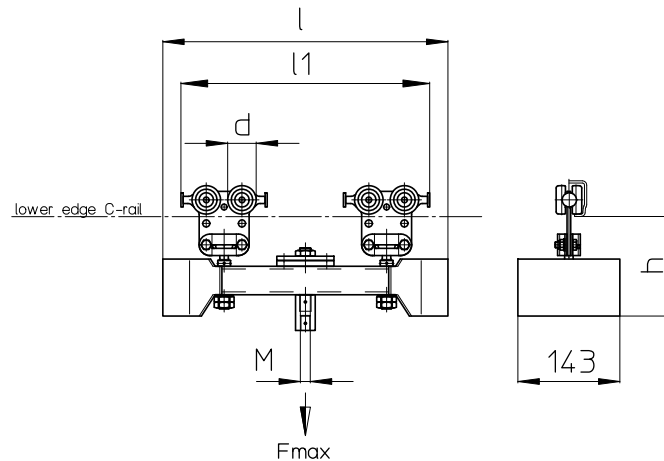
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12.2 4 rollers with click stop device

Non-oscillating type is possible

Material : galvanized steel



Type			Catalog number			
			40x40	50x50	63x63	80x80
Standard Type	l= 400	With oscillating pin	145028-0400	146028-0400	147028-0400	148028-0400
		With non-oscillating pin	145028-0400S	146028-0400S	147028-0400S	148028-0400S
	l= 500	With oscillating pin	145028-0500	146028-0500	147028-0500	148028-0500
		With non-oscillating pin	145028-0500S	146028-0500S	147028-0500S	148028-0500S
	l= 630	With oscillating pin	145028-0630	146028-0630	147028-0630	148028-0630
		With non-oscillating pin	145028-0630S	146028-0630S	147028-0630S	148028-0630S
	l= 800	With oscillating pin	145028-0800	146028-0800	147028-0800	148028-0800
		With non-oscillating pin	145028-0800S	146028-0800S	147028-0800S	148028-0800S
l= 1000	With oscillating pin	145028-1000	146028-1000	147028-1000	148028-1000	
	With non-oscillating pin	145028-1000S	146028-1000S	147028-1000S	148028-1000S	
High-temp. Type	l= 400	With oscillating pin	145128-0400	146128-0400	147128-0400	148128-0400
		With non-oscillating pin	145128-0400S	146128-0400S	147128-0400S	148128-0400S
	l= 500	With oscillating pin	145128-0500	146128-0500	147128-0500	148128-0500
		With non-oscillating pin	145128-0500S	146128-0500S	147128-0500S	148128-0500S
	l= 630	With oscillating pin	145128-0630	146128-0630	147128-0630	148128-0630
		With non-oscillating pin	145128-0630S	146128-0630S	147128-0630S	148128-0630S
	l= 800	With oscillating pin	145128-0800	146128-0800	147128-0800	148128-0800
		With non-oscillating pin	145128-0800S	146128-0800S	147128-0800S	148128-0800S
l= 1000	With oscillating pin	145128-1000	146128-1000	147128-1000	148128-1000	
	With non-oscillating pin	145128-1000S	146128-1000S	147128-1000S	148128-1000S	
Projecting dimension (mm)	l1		l - 52	l - 52	l - 12	l - 12
	∅d		32	40	52	62
	h		145	140	155	149
	M		M14	M14	M16	M16
Maximum load of crossbeams						
Crossbeam length (mm)	l= 400		200	320	400	500
	l= 500		200	320	400	500
	l= 630		200	320	400	500
	l= 800		200	320	400	400
	l= 1000		200	300	300	300

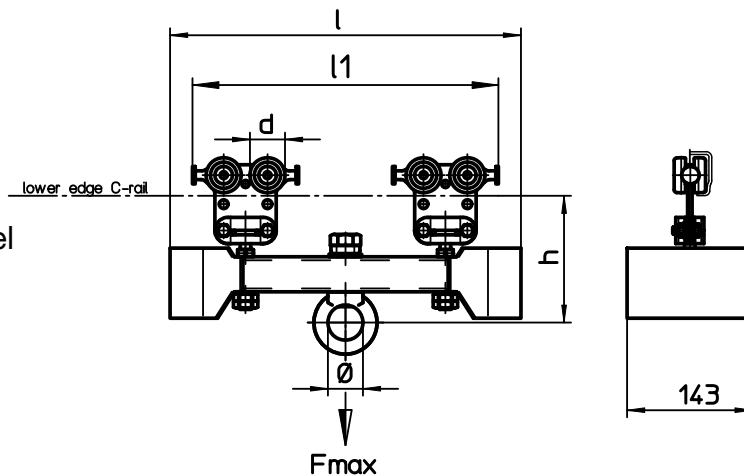
Manual Monorail Track System

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12.3 4 rollers with eye

Standard,
High-temperature,
non-oscillating

Material: galvanized steel



Type		Catalog number				
Type of rail		40x40	50x50	63x63	80x80	
Standard type	l= 400	With oscillating pin	145026-0400	146026-0400	147026-0400	148026-0400
		With non-oscillating pin	145026-0400S	146026-0400S	147026-0400S	148026-0400S
	l= 500	With oscillating pin	145026-0500	146026-0500	147026-0500	148026-0500
		With non-oscillating pin	145026-0500S	146026-0500S	147026-0500S	148026-0500S
	l= 630	With oscillating pin	145026-0630	146026-0630	147026-0630	148026-0630
		With non-oscillating pin	145026-0630S	146026-0630S	147026-0630S	148026-0630S
	l= 800	With oscillating pin	145026-0800	146026-0800	147026-0800	148026-0800
		With non-oscillating pin	145026-0800S	146026-0800S	147026-0800S	148026-0800S
	l= 1000	With oscillating pin	145026-1000	146026-1000	147026-1000	148026-1000
		With non-oscillating pin	145026-1000S	146026-1000S	147026-1000S	148026-1000S
High-temp. type	l= 400	With oscillating pin	145126-0400	146126-0400	147126-0400	148126-0400
		With non-oscillating pin	145126-0400S	146126-0400S	147126-0400S	148126-0400S
	l= 500	With oscillating pin	145126-0500	146126-0500	147126-0500	148126-0500
		With non-oscillating pin	145126-0500S	146126-0500S	147126-0500S	148126-0500S
	l= 630	With oscillating pin	145126-0630	146126-0630	147126-0630	148126-0630
		With non-oscillating pin	145126-0630S	146126-0630S	147126-0630S	148126-0630S
	l= 800	With oscillating pin	145126-0800	146126-0800	147126-0800	148126-0800
		With non-oscillating pin	145126-0800S	146126-0800S	147126-0800S	148126-0800S
	l= 1000	With oscillating pin	145126-1000	146126-1000	147126-1000	148126-1000
		With non-oscillating pin	145126-1000S	146126-1000S	147126-1000S	148126-1000S
Projecting dimensions (mm)	l1	l-52	l-52	l-12	l-12	
	∅d	32	40	52	62	
	h	150	145	160	154	
	∅	40	40	40	40	
Crossbeam length (mm)	Max. load of crossbeams F max. (kg)					
	l= 400	200	320	400	500	
	l= 500	200	320	400	500	
	l= 630	200	320	400	500	
	l= 800	200	320	400	400	
l= 1000	200	300	300	300		

Check permissible zone load of the C-rail tracks!!

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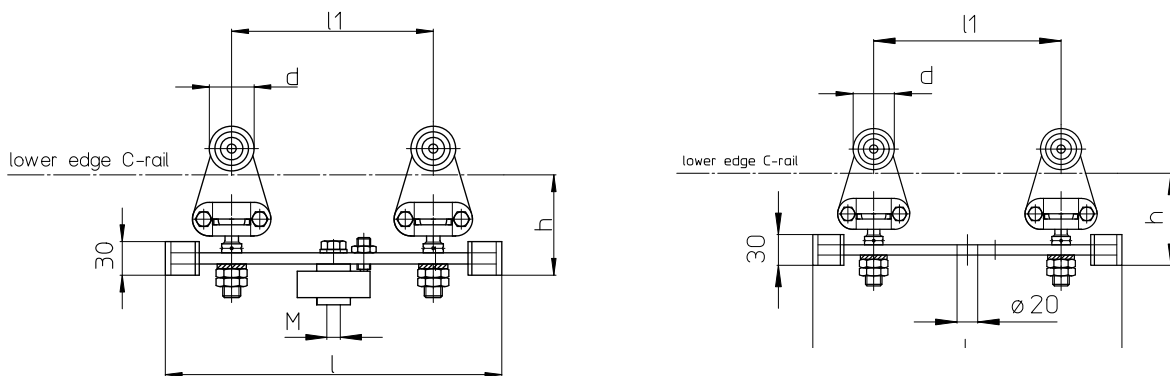
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12.4 2 rollers with crossbeam

Standard, high-temperature,
Non-oscillating
with and without click stop device 8x45°

Material: galvanized steel

Recommended for straight tracks without curves



Please state thread size M

Technical details		Catalog number			
Type of rail		40x40		50x50	
Standard type with click stop device	With oscillating pin	145018-..B		146018-..B	
	With non-oscillating pin	145018-..BS		146018-..BS	
Standard type without click stop device	With oscillating pin	145015-B		146015-B	
	With non-oscillating pin	145015-BS		146015-BS	
High-temperature type with click stop device	With oscillating pin	145118-..B		146118-..B	
	With non-oscillating pin	145118-..BS		146118-..BS	
High-temp. type without click stop device	With oscillating pin	145115-B		146115-B	
	With non-oscillating pin	145115-BS		146115-BS	
Dimensions (mm)	D	32		40	
	H	95		90	
	L	300		300	
	l1	180		180	
	M	M12	M14	M12	M14
Load capacity (kg)	100		125		
Weight (kg)	2.7		2.8		

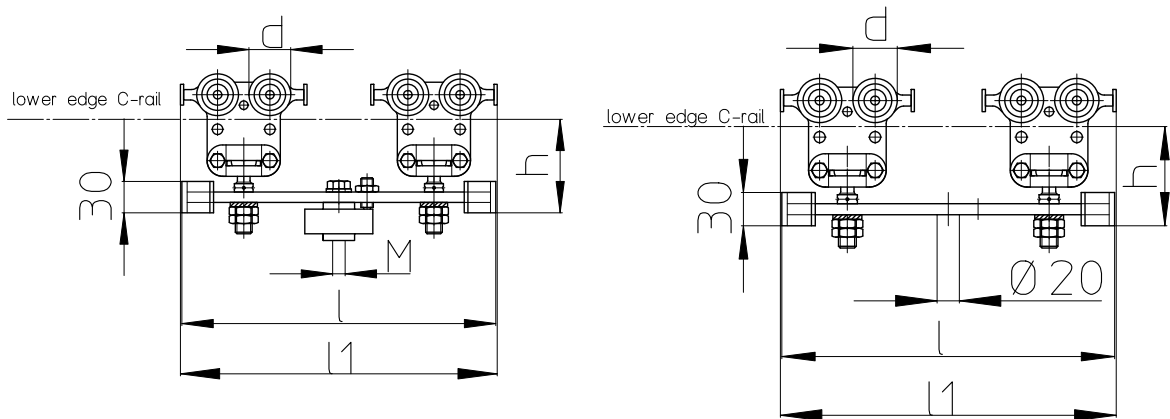
Manual Monorail Track System

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12.5 4 rollers with crossbeam

Standard,
high-temperature,
non-oscillating,
with and without
click stop device 8x45°

Material: galvanized steel



Please state thread size M

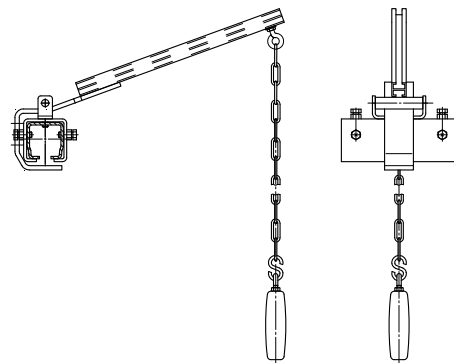
Technical details		Catalog number			
Type of rail		40x40		50x50	
Standard type with click stop device	With oscillating pin	145028-..B		146028-..B	
	With non-oscillating pin	145028-..BS		146028-..BS	
Standard type without click stop device	With oscillating pin	145025-B		146025-B	
	With non-oscillating pin	145025-BS		146025-BS	
High-temperature type with click stop device	With oscillating pin	145128-..B		146128-..B	
	With non-oscillating pin	145128-..BS		146128-..BS	
High-temp. type without click stop device	With oscillating pin	145125-B		146125-B	
	With non-oscillating pin	145125-BS		146125-BS	
Dimensions (mm)	d	32		40	
	h	95		90	
	l	300		300	
	l1	300		300	
	M	M12	M14	M12	M14
Load capacity (kg)		200		250	
Weight (kg)		3.2		3.3	

13 Blocking devices

Numerous blocking devices and interlocks may be required due to the configuration and layout of the track. These are operated mechanically.

Blocking devices are used if transport items have to be held at ambush, before running lines or positioning in production areas.

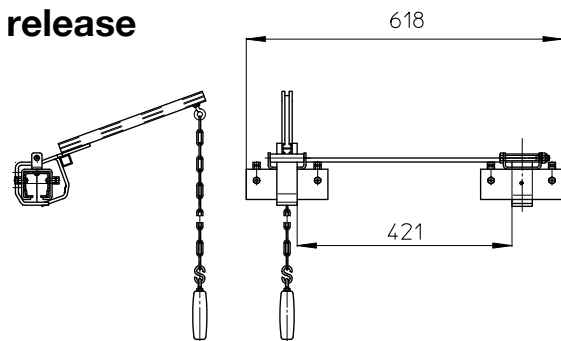
13.1 Simple blocking device



Type of rail	Catalog number			
		40x40	50x50	63x63
	145911	146911	147911	148911

13.2 Blocking device with individual release

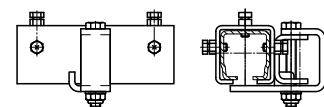
Only suitable for transport carriages with crossbeam of 400 mm and 500 mm.



Type of rail	Catalog number			
		40x40	50x50	63x63
	145921	146921	-	-

13.3 One-way blocking device

Prevent a backward moving of transport carriages



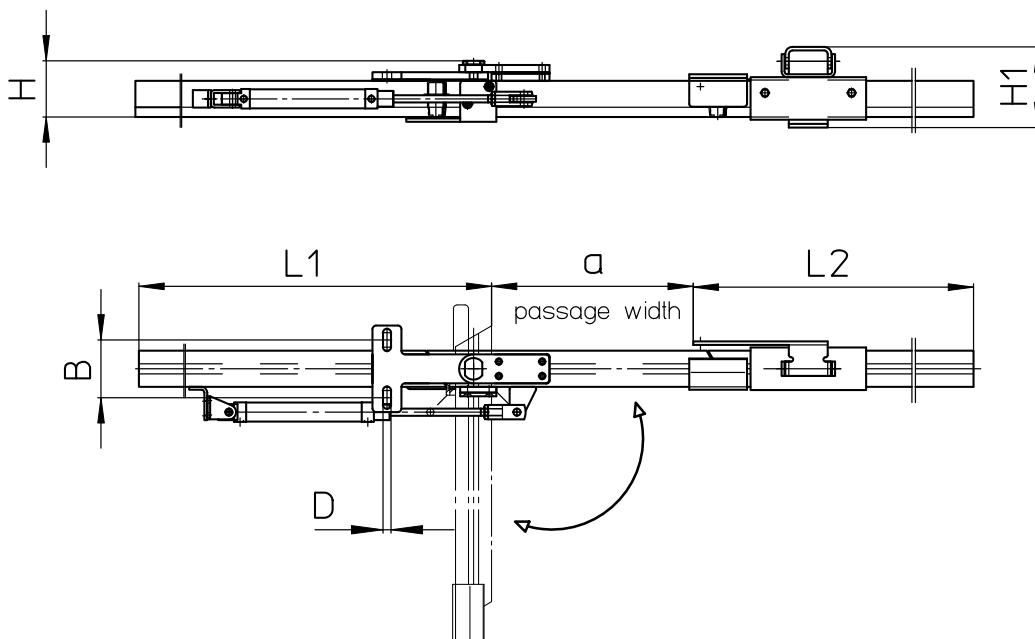
Type of rail	Catalog number			
		40x40	50x50	63x63
	145913	146913	147913	148913

14 Swivel rail piece

For passages on sliding doors, curtains etc.

Pneumatic operation,

The interface is the control valve at the pneumatic cylinder.



Type right

Type of rail		Catalog number			
		40x40	50x50	63x63	80x80
		145951	146951	147951	148951
Dimensions (mm)	L1	1056	1066	1078	1085
	L2	1021	1021	1021	1021
	A	275	275	275	275
	B	80 ± 20	80 ± 20	130 ± 20	130 ± 20
	H	68	78	95	112
	H1	87	97	126	145
	D	11	11	13	13

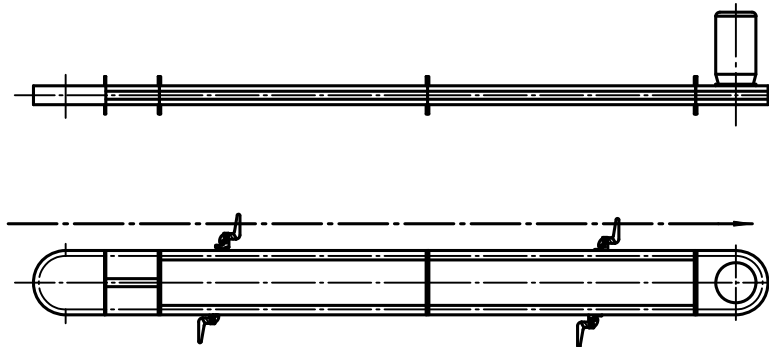
15 Drag chain conveyor

Conveyors are used when the goods have to be conveyed over a section (also through curves, inclinations). Standard suspension trolleys can be used for an inclination of max. 15°. For stronger inclinations the suspension trolley joint has to be adjusted to the conditions. Decisive factors are: angle of inclination, radius of inclination, crossbeam length and height etc.

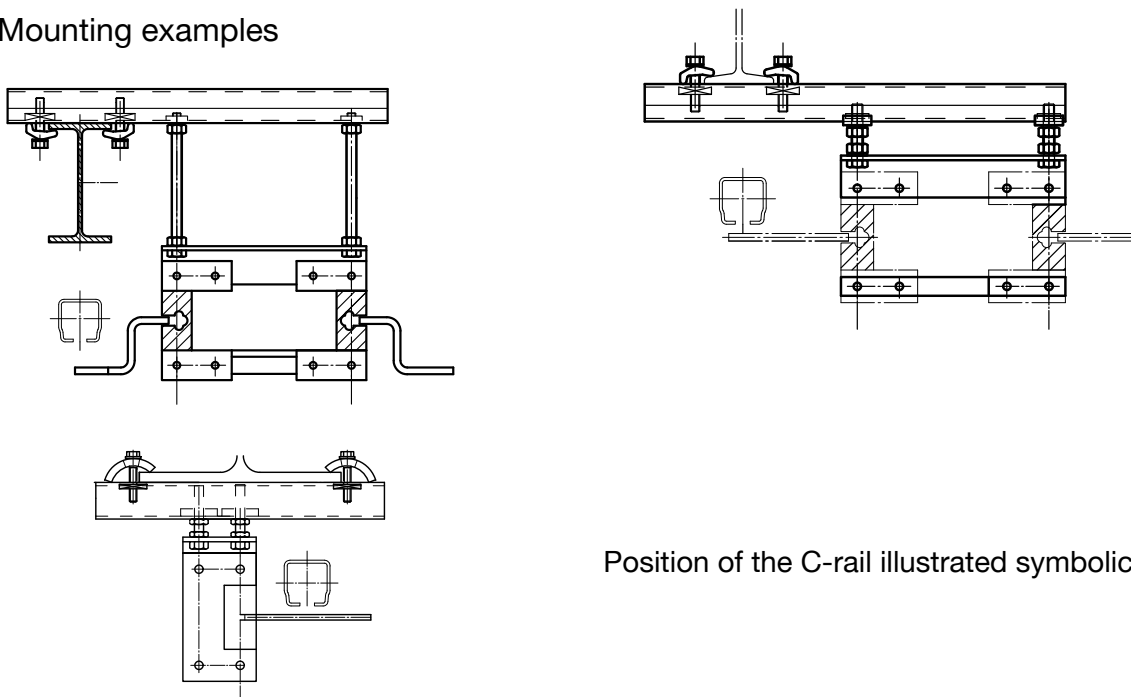
Inclination radii and curve radius depend on the conveyor system.

Conveying speed up to 20 m/min (frequency inverter regulated) available with or without control.

The conveyors are assembled individually for each application.



Mounting examples



Position of the C-rail illustrated symbolically

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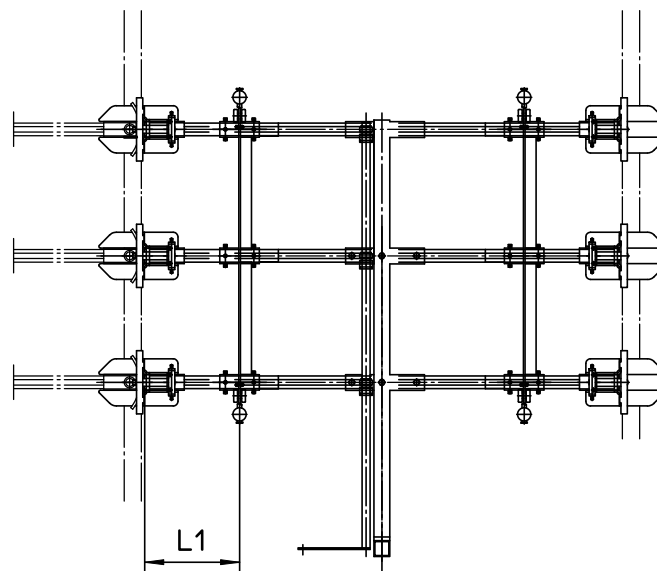
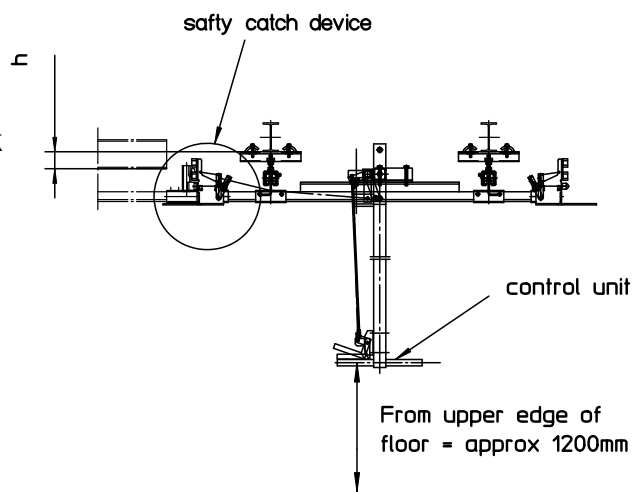
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16 Shifting bridge with interlock

Application:

For an optimum utilization of the room especially in lacquer finish plants as single, double or triple bridges.

- Manually shiftable
Control unit to release the interlock
- Including interlock
- Safety catch device see page 50
- Lockable on one or both sides
(illustration on both sides)



On the dead-end courses with safety device must be installed a safety catch device.

Safety devices have to be installed between the dead-end courses at the steel construction on site.

Dead-end course type of rail		40x40	50x50	63x63	-
Crane track type of rail		50x50	63x63	80x80	-
Dimensions (mm)	h	70	115	115	-
	L1	max 300	max 400	max 400	-

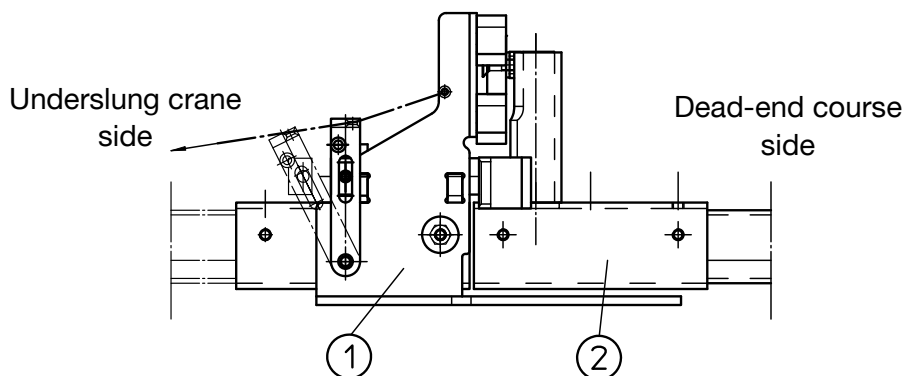
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16.1 Safety catch device

For the positioning of underslung crane bridges at the corresponding dead-end courses

(See also layout page 3)



Single order for item 2 in case of deviating installation conditions, e.g. if several dead-end courses shall be connected to one underslung crane.

Operation:

Illustration 1 shows how the underslung crane is shifted and moves on the dead-end course with the safety catch device.

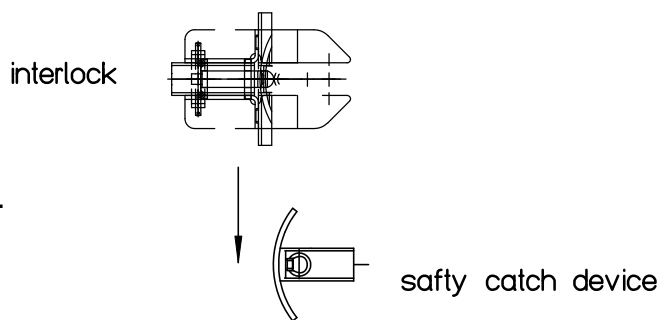


illustration 1

Illustration 2 shows the underslung crane and the dead-end course in the locked condition

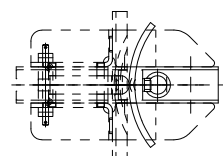
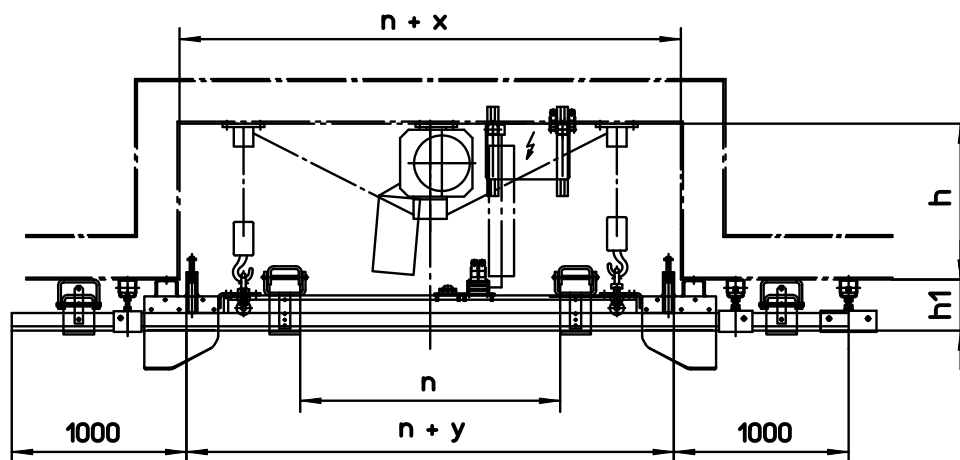


illustration 2

Item	Catalog number			
	40x40	50x50	63x63	80x80
1 Interlock	145963	146963	147963	148963
2 Catch-safety device	145964	146964	147964	148964

17 Lifting and drop station

Typical applications: Lifting and lowering of transport goods for degreasing, finishing in galvanization or painting works, at loading and unloading stations, for machine and work place loading.



- Blocking devices with pneumatic activation, operation by a control unit according to the machine guidelines
- Single control (up/down/emergency stop)
- Automatic opening and closing of the blocking devices
- Automatic receipt monitoring
- Planning and price on inquiry
- Steel construction optional
- Delivery prewired, mounted and tested

Lifting and drop station are assembled individual for each application. The maximum load capacity depends on the assembly.

Type of rail		40x40	50x50	63x63	80x80
Dimensions	x	810	870	870	
	y	750	820	820	
	h	min. 420	min. 560	min. 560	
	h1	150	183	200	
	n	min. 1000	min 1000	min. 1000	min 1000

Technical Data Sheet



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