

GISKB Technical Documentation

GISKB I
GISKB II

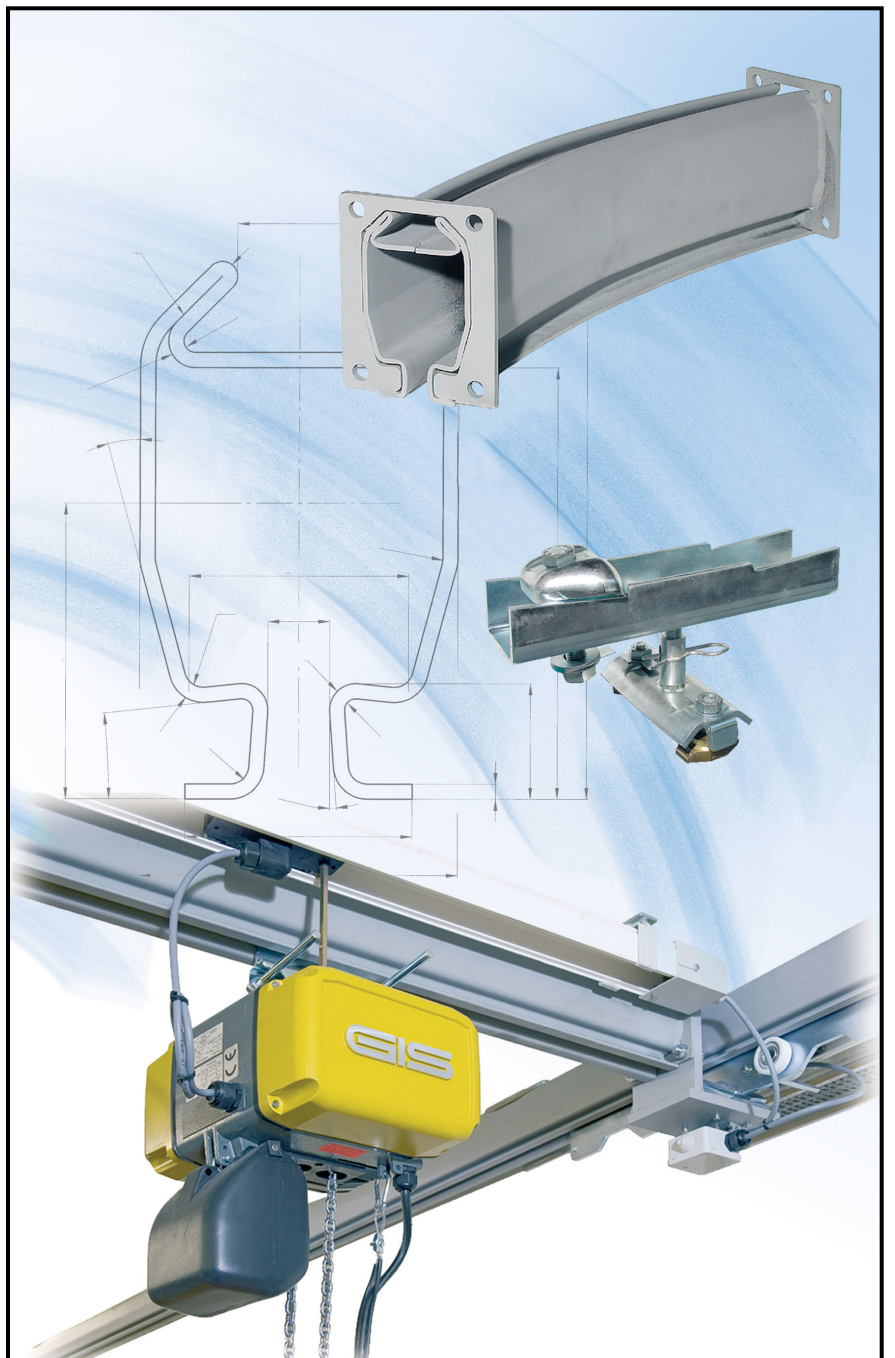
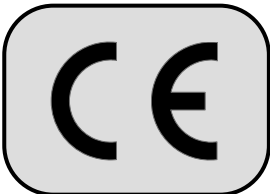


Table of contents

	Page		Page
Table of contents	2	Bend	35
General notes	3	Conductor line bend	36
Summary	4	Track switch	37
Summary of suspensions	5	Operation track switch	38
Guide notes for the suspension points	6	Conductor line track switch	39
Dimensioning suspended crane	7-8		
Dimensioning monorail	9		
Hook path measures and assembled dim	10		
Example of a project	11-12		
Track section	13		
Cover	14		
Profile connection	14		
Profile reinforcement	15		
Clamping holder complete	16		
Crane bridge suspension	16		
Trolley	17		
Traverse	17		
Saddle	18		
Rolling apparatus	19		
Suspension pendulating short	20		
Suspension pendulating from rod	21		
Bracing pendulating from rod	22		
Suspension rigid	23		
Ceiling clip	24		
Binding clip complete	24		
Support to ceiling clip	25		
Lateral suspension	25		
Load plate	26		
Electric tug	27		
Connector clamp trolley	28		
Connector clamp rolling apparatus	28		
Summary power supply	29-34		

General notes

This GIS documentation contains information about the lay-out and planning of suspended cranes and monorails up to 1600 kg.

1. The documents allow you a fast and efficient dimensioning of the crane equipments.

Technical notes:

- The documents for planning are based on the rules of the actual technique.
- Only GIS originally manufactured parts shall be used.
- The customer is responsible for the stability of the supporting structure.
- Painting: The crane equipment is delivered with a grey primer (RAL 7004).
Upon request: A last coating of paint to your choice or a galvanisation is possible.

2. The components are specified with their appropriate technical datas, dimensions and order numbers.

3. An example of a project shows how to get straight to the solution and where the individual elements of the documentation can be traced.

4. The last sheet "Planning a GIS crane system" makes it easier for you to collect the information for the monorail or the suspended crane.


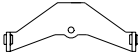






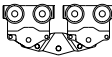


Modifications

Modifications of the documentation will be advised. The relevant sheet will be exchanged and the number with the 9 figures completed by a letter.

Completions

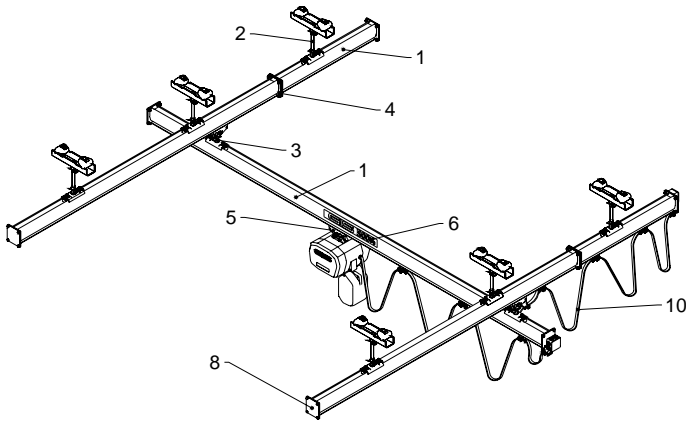
These are made by a complementary sheet, the page number of which will be completed by a letter.

Signs and symbols

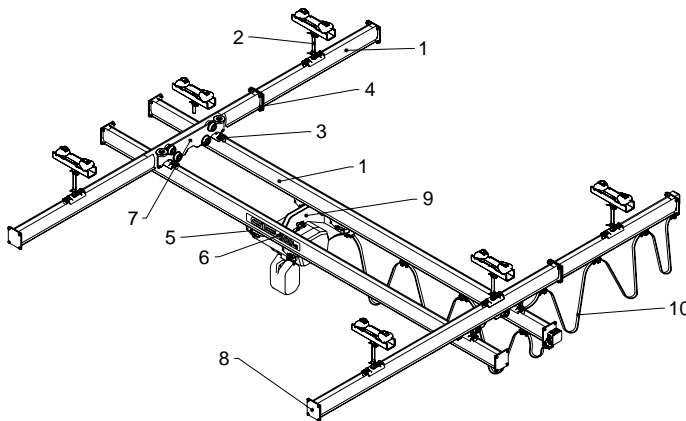
	Crane bridge		Saddle
	Crane bridge reinforced		Flange width [mm]
	Profile		Load capacity [kg]
	Trolley		Dead weight [kg]
	Traverse		Electric mains for current supply
	Rolling apparatus	N°	Ordering number

Summary

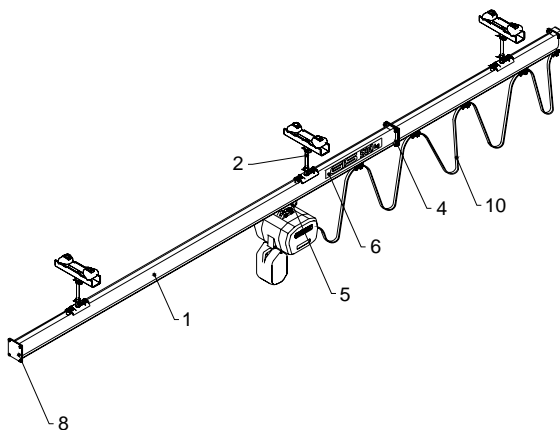
Single bridge suspended crane



Double bridge suspended crane



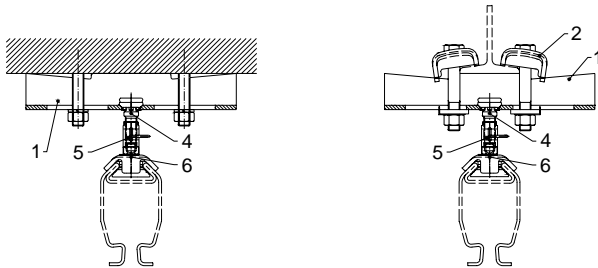
Monorail



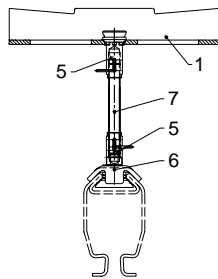
	Page
1 Track section	13
2 Suspension.....	5
3 Crane bridge suspension	16
4 Profile junction	14
5 Trolley	17
6 Load plate.....	26
7 Rolling apparatus.....	19
8 Cover	14
9 Saddle.....	18
10 Power supply	29

Summary of suspensions

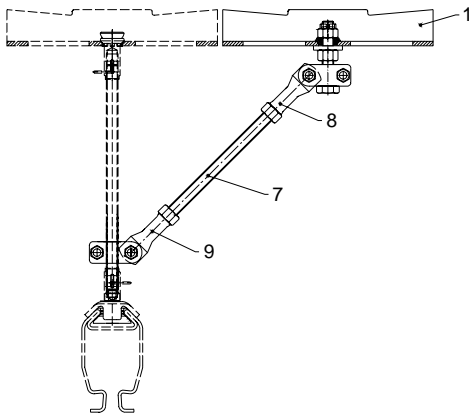
Pendulating short, adjustable



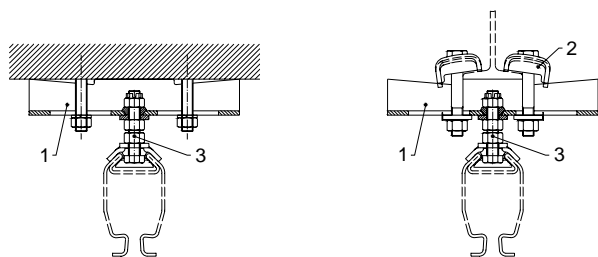
Pendulating from rod, adjustable



Pendulating from rod, braced, adjustable



Rigid, direct



	Page
1 Ceiling clip	24
2 Binding clip complete.....	24
3 Suspension rigid	23
4 Ball pin complete	20
5 Ball nut complete	20
6 Profile retainer complete	20
7 Screwed rod	21
8 Upper node.....	22
9 Lower node.....	22

Guide notes for the suspension points of GISKB crane systems

The distances between the suspension points depend on the profile size and the strain. This dimensioning is made according to the dia-grams or the calculation programme.

The type of suspension depends on the constructional situation. The short suspension can be of rigid or pendulating type. The suspensions from rod are available pendulating only. The pendulating suspensions allow a more simplified assembly, in so far as any alignment mistakes, as a result of inexact ceilings, can be avoided. Care is to be taken that the angle of the suspension does not differ more than 5° from the vertical position.

1. Monorails suspended from rods

Monorails suspended from rods must not be braced imperatively provided that no side dragging of hoist is made. Practice, however, shows that a side dragging cannot be excluded, wherefore a bracing is recommended. For rod suspensions of less than 0.5 m no bracing is required. If the monorail is suspended from rods by 0.5 m or more it is to be braced longitudinally and laterally. Longitudinal bracing is to be provided for both track ends and lateral bracing for every second suspension.

Monorails with bends and switches: We refer to the special guide notes for "Bends and switches".

2. Suspended cranes suspended from rods

If the suspended crane is suspended from rods by 0.5 m or more the two crane tracks must be braced longitudinally and one crane track must be braced laterally. Longitudinal bracing is to be provided for both track ends and lateral bracing for every second suspension.

3. Dimensioning suspended crane

3.1 Crane bridge

The selection of the profile size depends on the strength (P) and the span (W) of the profile. In tables 3-1 (single crane bridge) and 3-2 (double crane bridge) can be read off the adequate profile size.

Strength ...: The strength (P) does include the dead weight of the electric chain hoist and the trolley.

The max. admissible load is as follows: for GISKB I = 800 kg / GISKB II = 1600 kg.

Span: The admissible span is shown in the table, depending on the type of profile.

Its maximum is 7800 mm.

The calculations in tables 3-1 and 3-2 are based on an admissible deflexion of $W / 400$ and a max. stress of 180 N/mm^2 . The load factor ψ and dead weight factor ϕ according to DIN 15018 have been included. For other deflexion factors there is a calculation programme at your disposal.

Admissible load overhang (y): A load overhang for crane bridges is admissible only by considering the calculation program.

 without reinforcement

 with reinforcement

Table 3-1 Single crane bridge span W [m]

















Load capacity	GISKB I				GISKB II			
								
100 kg	4.7	7.8	7.8	7.8	7.2	7.8	7.8	7.8
125 kg	4.4	7.8	7.8	7.8	6.9	7.8	7.8	7.8
160 kg	4.0	7.8	7.8	7.8	6.4	7.8	7.8	7.8
200 kg	3.7	7.8	7.8	7.8	6.0	7.8	7.8	7.8
250 kg	3.4	7.4	7.8	7.8	5.6	7.8	7.8	7.8
320 kg	3.1	6.8	7.8	7.8	5.1	7.8	7.8	7.8
400 kg	2.8	6.3	7.8	7.8	4.7	7.6	7.8	7.8
500 kg	2.5	5.5	7.5	7.8	4.3	7.1	7.8	7.8
630 kg	2.0	4.5	6.3	7.3	3.8	6.4	7.8	7.8
800 kg	-	-	-	-	3.2	5.2	7.0	7.8
1000 kg	-	-	-	-	2.7	4.3	5.8	6.6
1250 kg	-	-	-	-	2.2	3.5	4.7	5.4

Table 3-2 Double crane bridge span W [m]

Load capacity	GISKB I				GISKB II			
								
100 kg	5.9	7.8	7.8	7.8	7.8	7.8	7.8	7.8
125 kg	5.6	7.8	7.8	7.8	7.8	7.8	7.8	7.8
160 kg	5.3	7.8	7.8	7.8	7.8	7.8	7.8	7.8
200 kg	4.9	7.8	7.8	7.8	7.5	7.8	7.8	7.8
250 kg	4.6	7.8	7.8	7.8	7.1	7.8	7.8	7.8
320 kg	4.2	7.8	7.8	7.8	6.6	7.8	7.8	7.8
400 kg	3.8	7.8	7.8	7.8	6.2	7.8	7.8	7.8
500 kg	3.5	7.5	7.8	7.8	5.7	7.8	7.8	7.8
630 kg	3.2	7.0	7.8	7.8	5.2	7.8	7.8	7.8
800 kg	2.8	6.4	7.8	7.8	4.8	7.7	7.8	7.8
1000 kg	2.5	5.6	7.5	7.8	4.3	7.1	7.8	7.8
1250 kg	2.1	4.6	6.4	7.4	3.9	6.5	7.8	7.8

3.2 Crane track

The support center A is calculated according to the selection diagrams 3-3 (end field) and 3-4 (middle field). In the middle field is resulting a bigger support center than in the end field for one and the same load. The strain P_{KB} on the crane track is composed of the lifting load, the dead weight of the electric chain hoist and half of the crane bridge.

$$P_{KB} = P_H + P_1 + 0.5 \times P_{KT}$$

P_{KB} = Strain crane track [kg]

P_H = Admissible lifting capacity [kg]

P_1 = Dead weight trolley and electric chain hoist [kg]

P_{KT} = Dead weight crane bridge [kg]

Admissible distance of joints (x): The junction of two section tracks shall be at a distance of max. 0.2 x A and a minimum of 100 mm from the nearest suspension point.

Admissible load overhang (y) ... : No load overhang is generally provided for crane tracks.

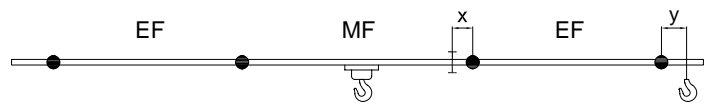
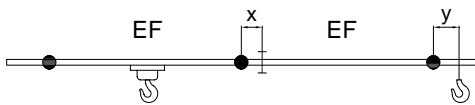
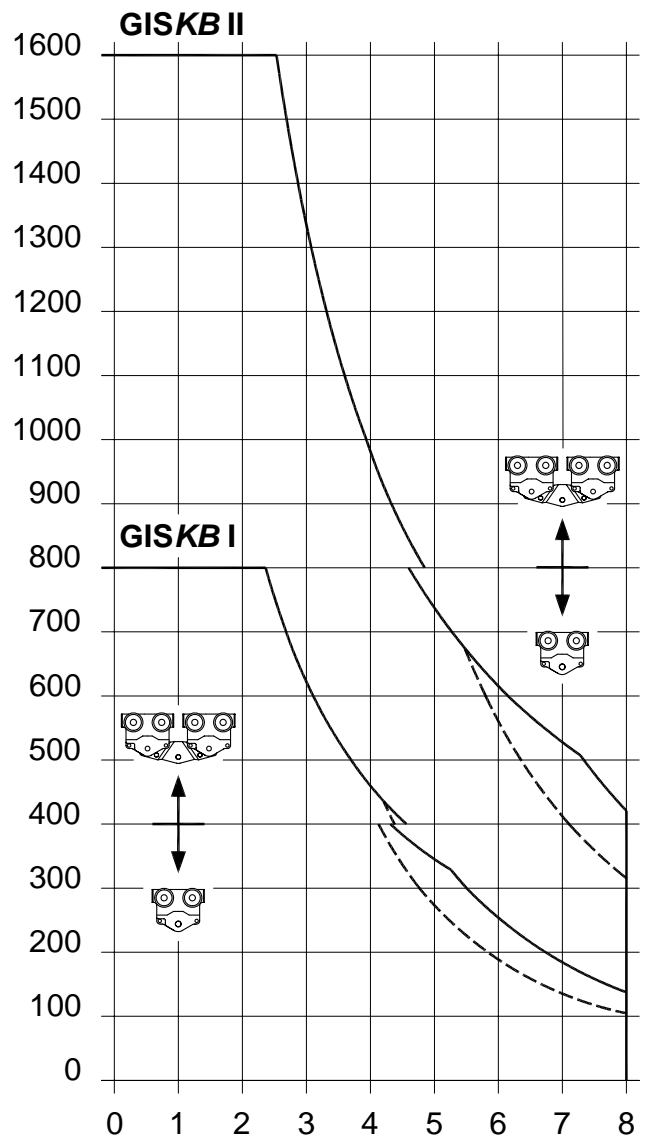
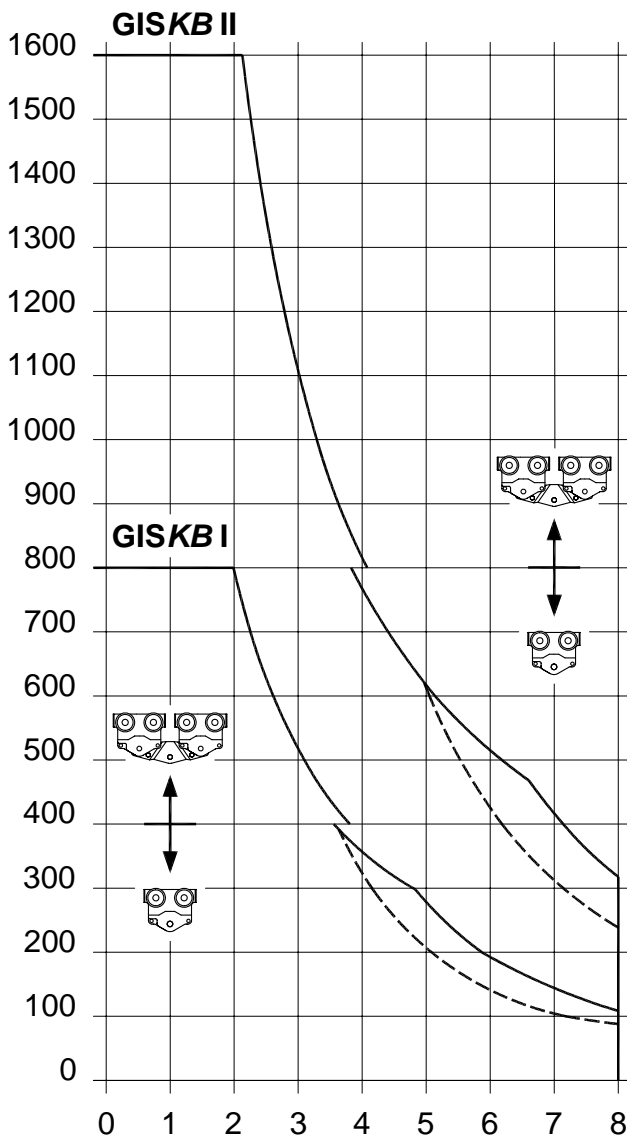


Diagram 3-3 End field (EF)

Diagram 3-4 Middle field (MF)



4. Dimensioning monorail

The support center A is calculated according to the selection diagrams 4-1 (end field) and 4-2 (middle field). In the middle field is resulting a bigger support center than in the end field for one and the same load. The strain P_{HB} on the monorail is composed of the lifting load and the dead weight of the electric chain hoist.

$$P_{HB} = P_H + P_1$$

P_{HB} = Strain monorail [kg]

P_H = Admissible lifting capacity [kg]

P_1 = Dead weight trolley and electric chain hoist [kg]

Admissible distance of joints (x) : The junction of two section tracks shall be at a distance of max. 0.2 x A and a minimum of 100 mm from the nearest suspension point.

Admissible load overhang (y) ... : No load overhang is generally provided for monorails.

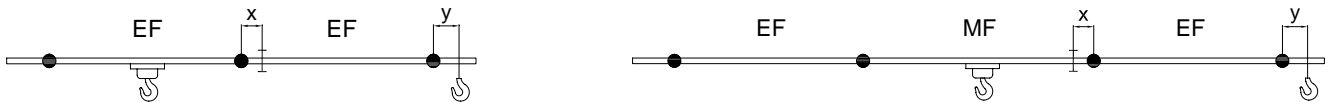


Diagram 4-1 End field (EF)

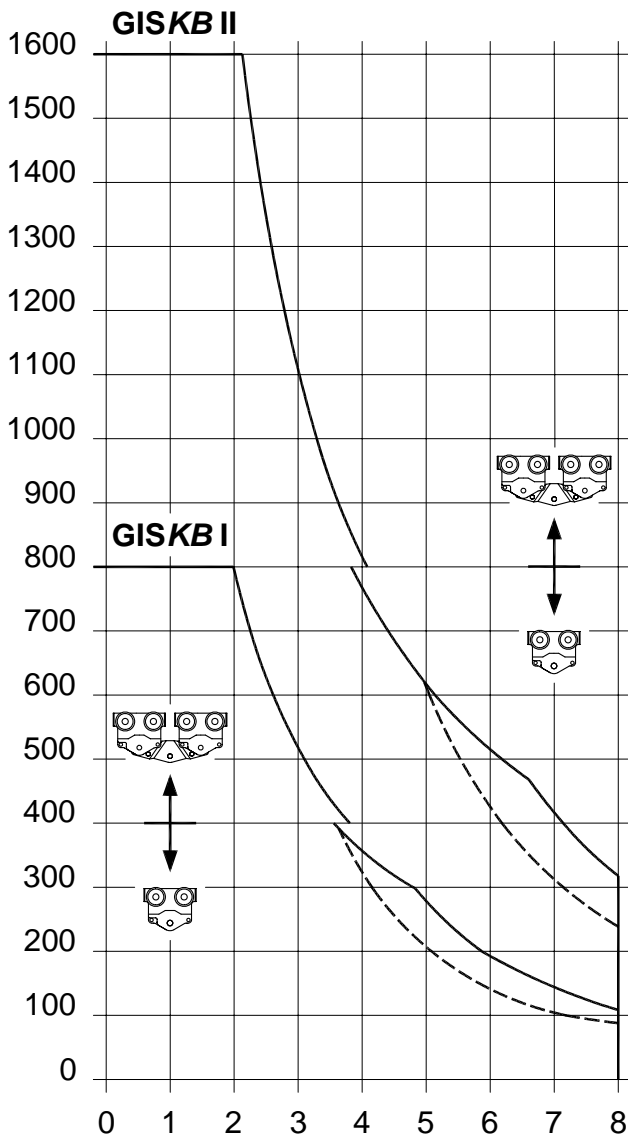
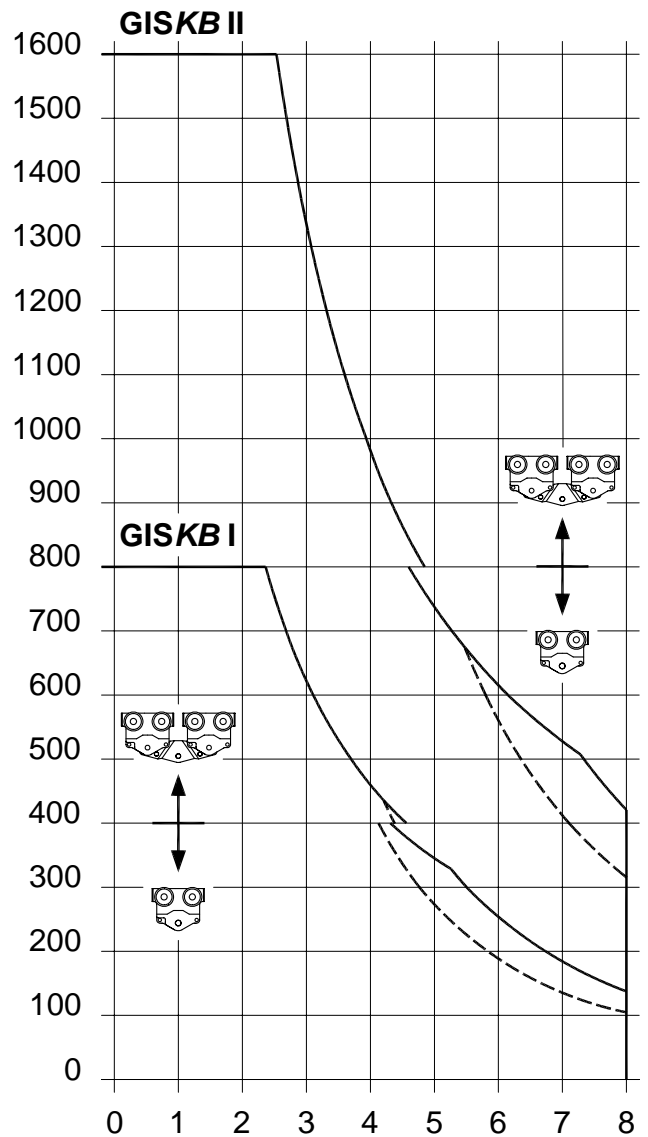
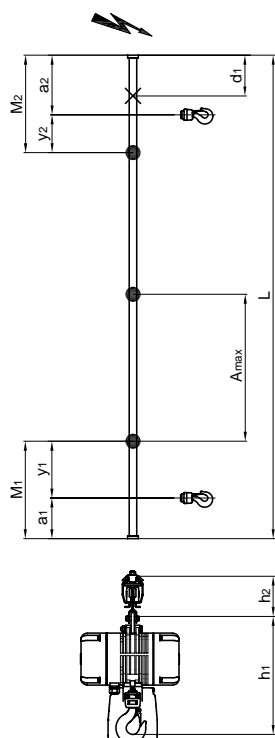
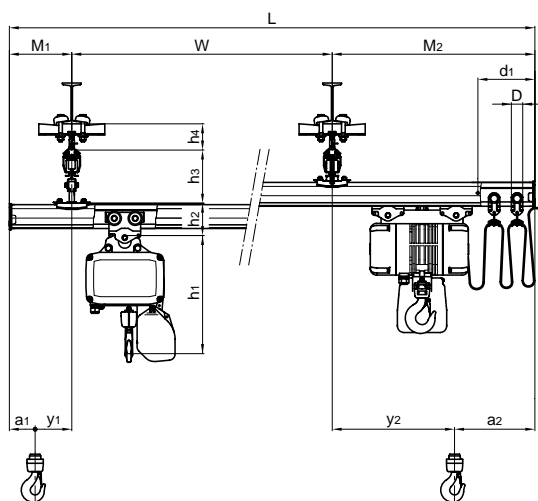
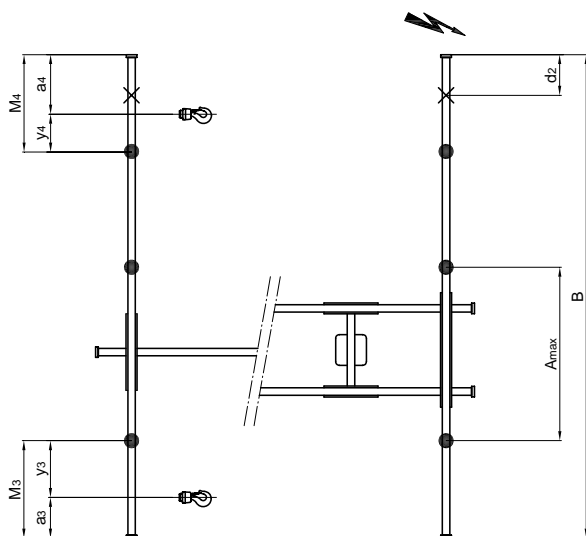


Diagram 4-2 Middle field (MF)



Hook path measures and assembled dimensions



		GISKB I	GISKB II
a ₁ a ₃		110 mm	125 mm
a ₁ a ₃		230 mm	245 mm
a ₁		260 mm	275 mm
a ₃		330 mm	330 mm
h ₁	[mm]	see dimensions of electric chain hoist	
h ₂		143 mm	181 mm
h ₂		175 mm	214 mm
h ₂		112 mm	151 mm
h ₃ pendulating		228 mm	266 mm
h ₃ pendulating		260 mm	299 mm
h ₃ rigid		147 mm	186 mm
h ₄ pendulating, short		120 ^{±7.5} mm	120 ^{±7.5} mm
h ₄ rigid, direct		95 mm	95 mm
a ₂	[mm]	a ₁ + 25 + (x ₁ · D)	
a ₄	[mm]	a ₃ + 25 + (x ₂ · D)	
M ₁	[mm]	a ₁ + y ₁	
M ₂	[mm]	a ₂ + y ₂	
M ₃	[mm]	a ₃ + y ₃	
M ₄	[mm]	a ₄ + y ₄	
d ₁ / d ₂	[mm]	40 + (x ₁₍₂₎ · D)	
y _{max}	[mm]	see page 8	
A _{max}	[mm]	see page 8	
W	[mm]	see table 3-1 and table 3-2 page 7	
x ₁	[Piece]	Cable carriages crane bridge (L:1250)-1	
x ₂	[Piece]	Cable carriages crane track (B:1250)-1	
D	[mm]	Cable carriage = 50	

Example of a project

Single bridge suspended crane: Load capacity: 500 kg
 Load overhang y_1 and y_2 as big as possible
 Crane bridge length L: 6000 mm
 Longitudinal run: approx. 15000 mm
 Crane track length B: according to outcome
 Free choice for suspension points, direct on to steel structure, pendulating
 Crane drive (longitudinal) and trolley drive (cross) manual
 Power supply: Trailing cable

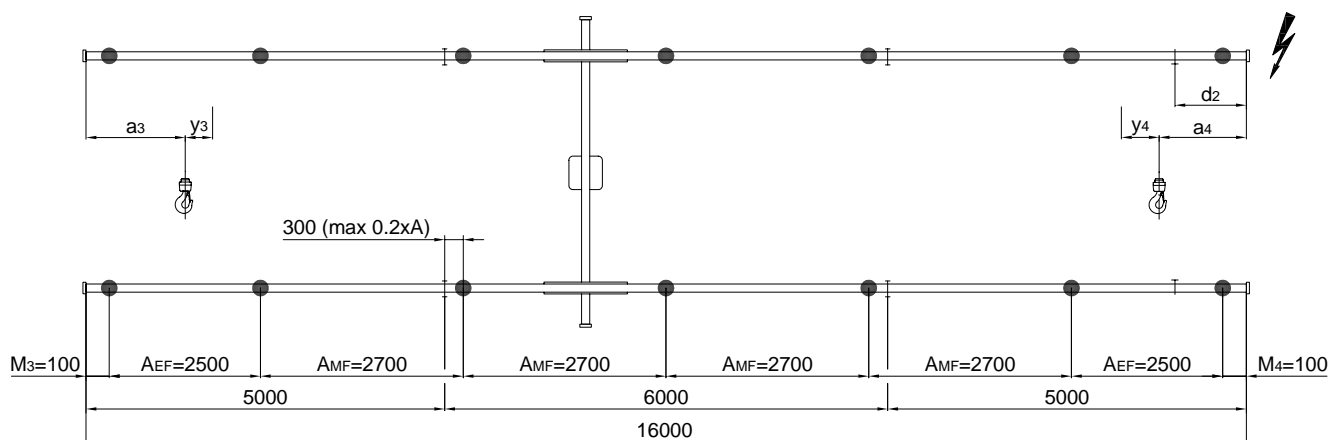
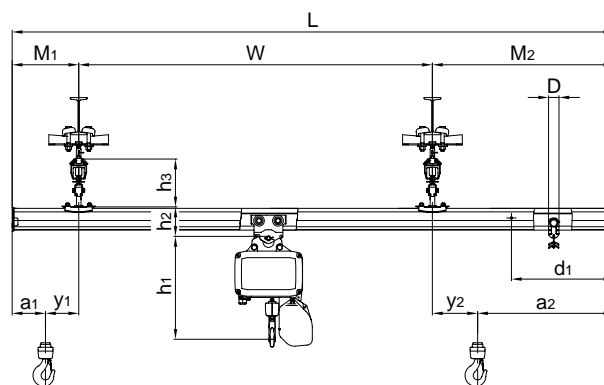
Dimensions

Single crane bridge	Load capacity 500 kg, $W = 5125$ mm; see table 3-1, page 7	selected GISKB II, profile reinforcement IPE 120
Load overhang	see page 7; GISKB II with reinforcement; $y_1 = y_2 =$	selected 100 mm
Crane bridge length	$L = W + M_1 + M_2 = 5125$ mm + 225 mm + 650 mm =	6000 mm
Crane track	see page 8	selected GISKB I
Strain	$P_{KB} = P_H + P_1 + 0.5 \cdot P_{KT} = 500$ kg + 28 kg + 0.5 · 162 kg = 609 kg $P_H =$ admissible lifting capacity = 500 kg $P_1 =$ Dead weight trolley + electric chain hoist = 3 kg + 25 kg = 28 kg $P_{KT} =$ Dead weight crane bridge + reinforcement + trolley longit. = 6 · 15 kg + 4.725 · 11.1 kg + 2 · 9.4 kg = 162 kg	
Support centres A_{EF}	end field; see diagram 3-3, page 8; GISKB I	2600 mm
Support centres A_{MF}	middle field; see diagram 3-4, page 8; GISKB I	3100 mm
Load overhang	see page 8; GISKB I; $y_3 = y_4 =$	selected 0 mm
Crane track length	$B = 2 \cdot A_{EF} + 4 \cdot A_{MF} + M_3 + M_4 = 2 \cdot 2500$ mm + 4 · 2700 mm + 100 mm + 100 mm =	16000 mm
Number of cable carriages		
x_1 Crane bridge	$(6000 \text{ mm} : 1250 \text{ mm}) - 1 = 3.8$	selected 4 pieces
x_2 Crane track	$(16000 \text{ mm} : 1250 \text{ mm}) - 1 = 11.8$	selected 12 pieces
Dimension $a_1 - a_4$		
a_1 acc. to table page 10	GISKB II	125 mm
a_2 acc. to table page 10	$a_1 + 25 + (x_1 \cdot D) = 125$ mm + 25 mm + (4 · 50 mm) =	350 mm
a_3 acc. to table page 10	GISKB I	230 mm
a_4 acc. to table page 10	$a_3 + 25 + (x_2 \cdot D) = 230$ mm + 25 mm + (12 · 50 mm) =	855 mm
Load overhang $y_1 - y_4$		
$y_1 = y_2$	GISKB II with reinforcement	selected 100 mm
$y_3 = y_4$	GISKB I	selected 0 mm
Profile overhang $M_1 - M_4$		
M_1 acc. to table page 10	$a_1 + y_1 = 125$ mm + 100 mm	225 mm
M_2 acc. to table page 10	$a_2 + y_2 = 550$ mm + 100 mm	650 mm
M_3 acc. to table page 10	$a_3 + y_3 = 230$ mm + 0 mm	selected 100 mm
M_4 acc. to table page 10	$a_4 + y_4 = 1455$ mm + 0 mm	selected 100 mm
Position of traction limit		
d_1 acc. to table page 10	$40 + (x_1 \cdot D) = 40$ mm + (4 · 50 mm) =	240 mm
d_2 acc. to table page 10	$40 + (x_2 \cdot D) = 40$ mm + (12 · 50 mm) =	640 mm
Height measures		
h_1 acc. to data sheet	electric chain hoist GCH 500/2 NF	417 mm
h_2 acc. to table page 10	GISKB II	181 mm
h_3 acc. to table page 10	GISKB I	260 mm

Technical datas

Single crane bridge : Profile GISKB II with
 profile reinforcement IPE 120
 Load capacity: 500 kg
 Span: 5125 mm
 Crane bridge length: 6000 mm
 Power supply: Trailing cable

Crane track: Profile GISKB I
 Crane track length: 16000 mm
 Distance end field: 2500 mm
 Distance middle field: 2700 mm
 Power supply: Trailing cable



List of material

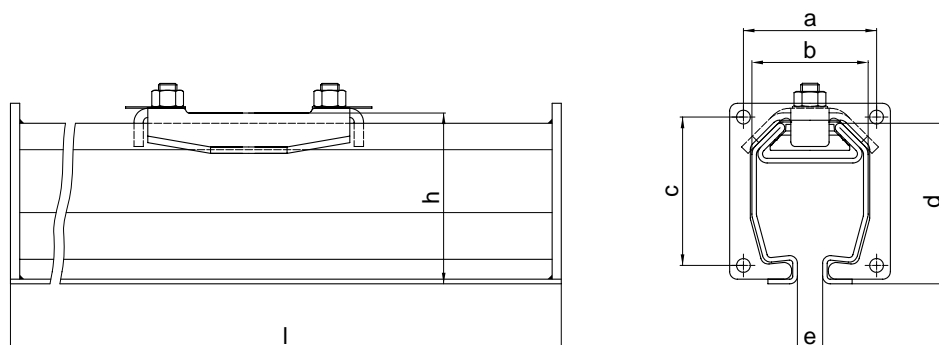
Single crane bridge:

- 01 Piece 9306.1010.4 Track section 6m GISKB II L = 6000 mm
- 01 Piece 9309.3075.4 Profile reinforcem. IPE 120 L = 4725 mm
- 05 Piece 9309.3031.4 Clamping holder complete GISKB I + II
- 02 Piece 9306.1002.4 Cover GISKB II
- 01 Piece 9306.1020.3 Trolley GISKB II
- 01 Piece 9309.3036.4 Traction limit GISKB I + II
- 01 Piece 9309.3037.4 Terminal box complete GISKB I + II
- 04 Piece 9309.3040.4 Cable carriage GISKB I + II
- 01 Piece 9309.3069.4 Cable fixing part GISKB I + II
- 09 Metre 9055.0300 Cable, 4 x 1.5 mm², FK
- 01 Piece 9055.3014 Cable gland PG21 MS, FK
- 01 Piece 9309.1053.3 Load plate, 500 kg

Crane track:

- 04 Piece 9305.1009.4 Track section 5m GISKB I L = 5000 mm
- 02 Piece 9305.1010.4 Track section 6m GISKB I L = 6000 mm
- 04 Piece 9305.1002.4 Cover GISKB I
- 04 Piece 9305.1003.4 Profile junction GISKB I
- 04 Piece 9305.1020.3 Trolley GISKB I
- 02 Piece 9309.3020.3 Traverse GISKB I + II
- 02 Piece 9309.3036.4 Traction limit GISKB I + II
- 02 Piece 9309.3068.4 Crane bridge suspension GISKB I + II
- 14 Piece 9309.3032.4 Profile retainer complete GISKB I + II
- 14 Piece 9309.3010.4 Ball pin complete GISKB I + II
- 14 Piece 9309.3011.4 Ball nut complete GISKB I + II
- 14 Piece 9309.3003.3 Ceiling clip GISKB I + II
- 28 Piece 9309.3005.4 Binding clip complete GISKB I + II
- 01 Piece 9309.3037.4 Terminal box complete GISKB I + II
- 12 Piece 9309.3040.4 Cable carriage GISKB I + II
- 01 Piece 9309.3069.4 Cable fixing part GISKB I + II
- 21 Metre 9055.0300 Cable, 4 x 1.5 mm², FK
- 01 Piece 9055.3024 Cable gland PG16 MS, FK
- 01 Piece 9055.4004 Counternut PG16


Track section



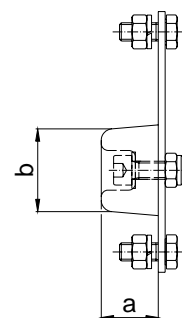
Execution.....: GISKB I + II are profiles of special design, cold rolled and with a grey primer. At their ends is welded one each of an end plate which serves as a connection plate for two profile sections or for the assembly of the cover.

Paint.....: RAL 7004 grey.

Note: The dimensioning is made according to the appropriate documents (pages 7 - 9).


		GISKB I	GISKB II
	[kg/m]	10.000	16.000
a	[mm]	87	91
b	[mm]	76	84
c	[mm]	97	125
d	[mm]	105	142
e	[mm]	18	18
h	[mm]	112	150
W_x	[mm ³ x 10 ³]	23.99	52.57
I_x	[mm ⁴ x 10 ⁶]	1.385	4.105
l = 1 m		9305.1005.4	9306.1005.4
l = 2 m		9305.1006.4	9306.1006.4
l = 3 m		9305.1007.4	9306.1007.4
l = 4 m		9305.1008.4	9306.1008.4
l = 5 m		9305.1009.4	9306.1009.4
l = 6 m		9305.1010.4	9306.1010.4
l = 7 m		9305.1011.4	9306.1011.4
l = 8 m		9305.1012.4	9306.1012.4
l = 0.001 - 0.999 m		9305.1030.4	9306.1030.4
l = 1.001 - 1.999 m		9305.1031.4	9306.1031.4
l = 2.001 - 2.999 m		9305.1032.4	9306.1032.4
l = 3.001 - 3.999 m		9305.1033.4	9306.1033.4
l = 4.001 - 4.999 m		9305.1034.4	9306.1034.4
l = 5.001 - 5.999 m		9305.1035.4	9306.1035.4
l = 6.001 - 6.999 m		9305.1036.4	9306.1036.4
l = 7.001 - 7.999 m		9305.1037.4	9306.1037.4

Cover

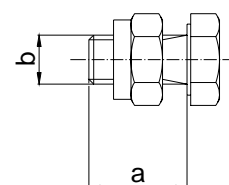


Execution: Steel, galvanised.

The cover is used for the covering end of the track section and includes also a buffer.


	 [kg]	a [mm]	b [mm]		N°
GISKB I	0.400	25	40		9305.1002.4
GISKB II	0.700	25	40		9306.1002.4

Profile junction

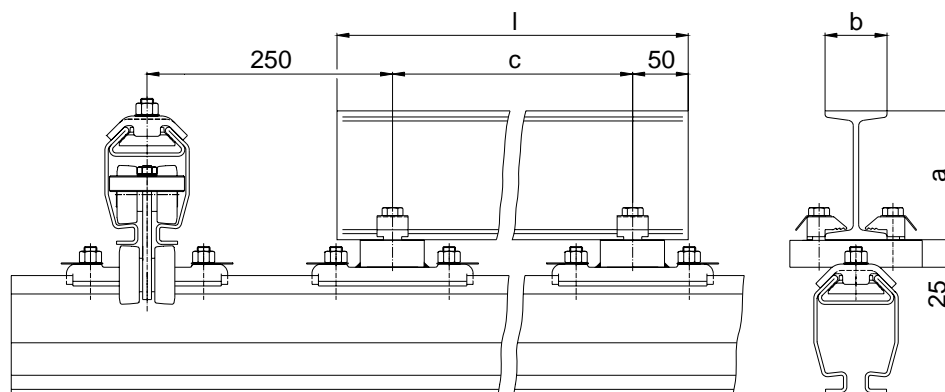


Execution: Steel, galvanised.

The junction of two section tracks is made by four high-tensile hexagon screws.

	 [kg]	a [mm]	b		N°
GISKB I	0.100	25	M8		9305.1003.4
GISKB II	0.200	35	M12		9306.1003.4

Profile reinforcement




Execution.....: The three varying profile reinforcements can be used for GISKB I + II. The reinforcement is of grey

primer and is clamped on the track section. No need of any welding.

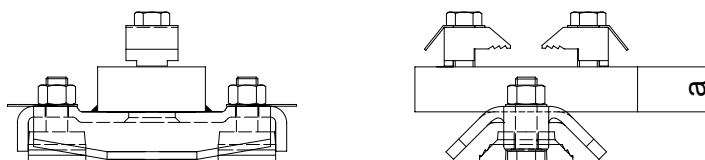
Paint.....: RAL 7004 grey.

Note: Use the clamping holder complete (see page 16) for the necessary clamping. The length of the crane bridge reinforcement is span W - 400 mm.

		IPe 120	IPe 160	IPe 180
	[kg/m]	10.400	15.800	18.800
a	[mm]	120	160	180
b	[mm]	64	82	91
c	[mm]	max. 1250	max. 1250	max. 1250
GISKB I	W_x	78.75	141.05	185.05
	I_x	4.66	10.73	15.88
GISKB II	W_x	108.86	171.16	215.16
	I_x	7.50	13.57	18.72
l = 0 - 2 m		9309.3072.4	9309.3079.4	9309.3086.4
l = 2 - 3 m		9309.3073.4	9309.3080.4	9309.3087.4
l = 3 - 4 m		9309.3074.4	9309.3081.4	9309.3088.4
l = 4 - 5 m		9309.3075.4	9309.3082.4	9309.3089.4
l = 5 - 6 m		9309.3076.4	9309.3083.4	9309.3090.4
l = 6 - 7 m		9309.3077.4	9309.3084.4	9309.3091.4
l = 7 - 8 m		9309.3078.4	9309.3085.4	9309.3092.4


Reinforcements not available from stock.

Clamping holder complete

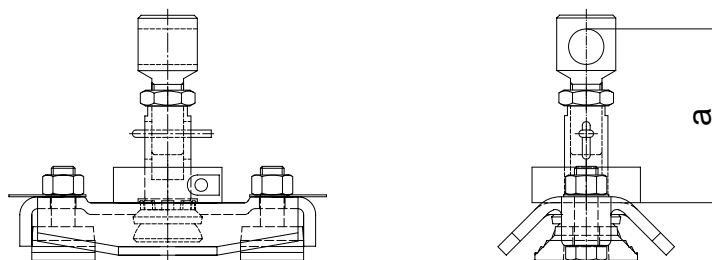


Execution: Steel, galvanised.

Use: Junction of profile and reinforcement.

	 [kg]	a [mm]		N°
GISKB I + II	2.000	25		9309.3031.4



Crane bridge suspension



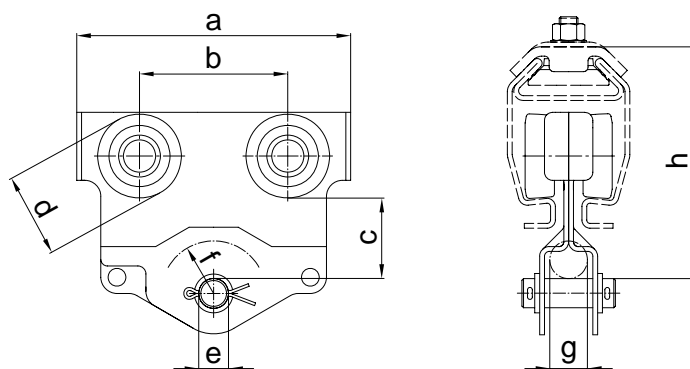
Execution: Steel, galvanised.

Use: For pendulating suspension of the crane bridge.

Note: The pendulating suspension of the crane bridge is possible only in connection with a crane track of pendulating type.

	 [kg]	 [kg]	a [mm]		N°
GISKB I + II	1.150	1600	85		9309.3068.4



Trolley



Execution ..::: Steel, galvanised.

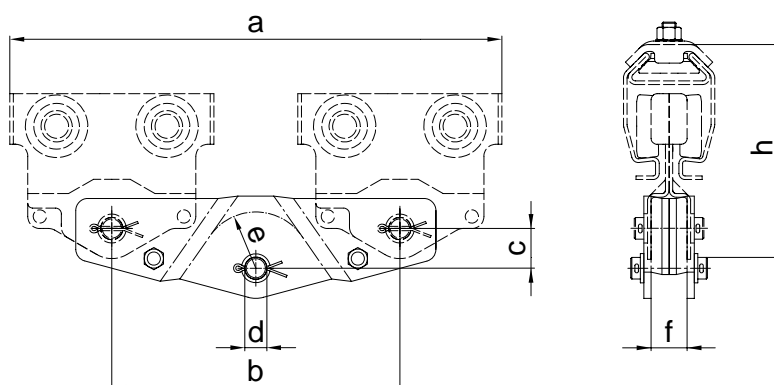
The trolley is made of steel and equipped with plastic guide rollers.

Use ..::: The trolley moves the electric chain hoist. For the pendulating construction it can also be used as a longitudinal trolley for the crane bridge.

	 [kg]	 [kg]	a [mm]	b [mm]	c [mm]	d [mm]	e [mm]	f [mm]	g [mm]	h [mm]	N°
GISKB I	1.500	400	170	92	50	52	18	-	30	143	9305.1020.3
GISKB II	2.000	800	192	92	62	74	18	-	30	181	9306.1020.3



A traverse is coupled with two trolleys so as to favour the load partition. The saddle of the double crane bridge (see page 18) requires four trolleys.

Traverse

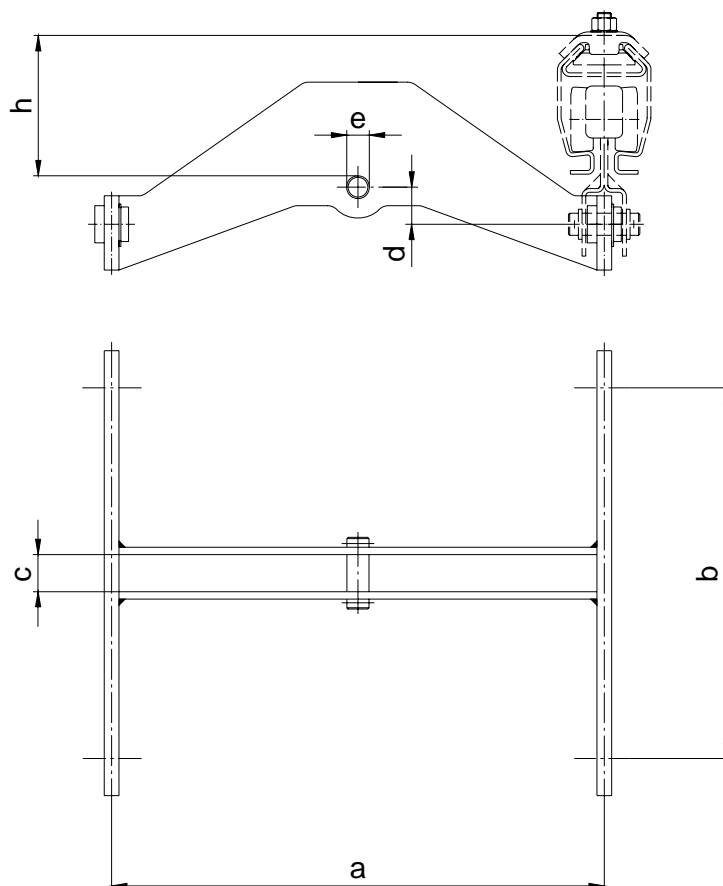


Execution ..::: Steel, galvanised.

Use ..::: The traverse allows a coupling of two trolleys.



	 [kg]	 [kg]	a [mm]	b [mm]	c [mm]	d [mm]	e [mm]	f [mm]	h [mm]	N°
GISKB I	2.000	800	410	240	33	18	-	30	175	9309.3020.3
GISKB II	2.000	1600	432	240	33	18	-	30	214	9309.3020.3

Saddle



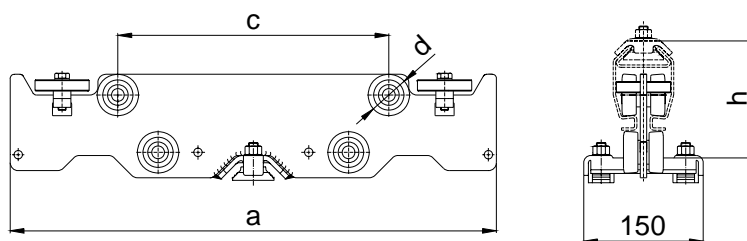
Execution: Steel, galvanised.

Use: The saddle allows the junction of four trolleys for the double crane bridge version.

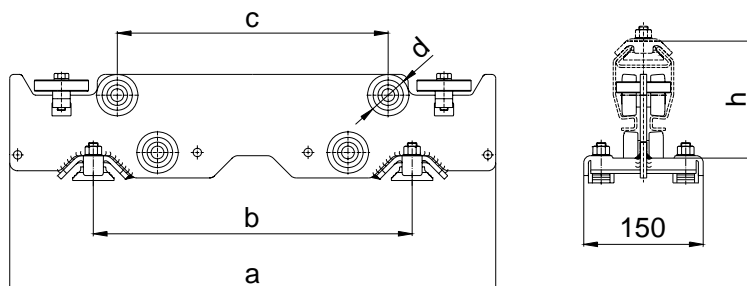
	 [kg]	 [kg]	a [mm]	b [mm]	c [mm]	d [mm]	e [mm]	h [mm]	N°
GISKB I	7.100	800	400	300	30	30	18	112	9309.3021.3
GISKB II	7.100	1600	400	300	30	30	18	151	9309.3021.3

Rolling apparatus

EQB





DQB



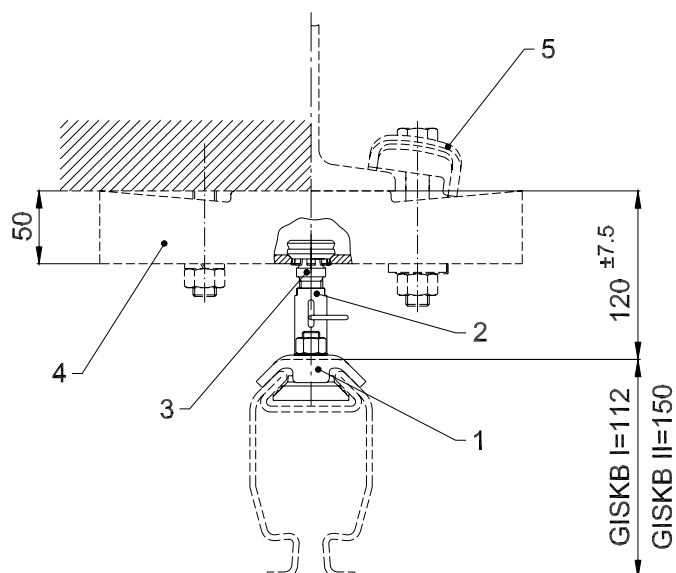
Execution ..::: Steel, galvanised.

The rolling apparatus is equipped with plastic rollers. Lateral guide rollers and back pressure rollers prevent from tilting up or over within the profile.

Use ..::: The EQB version is used for single crane bridges and the DQB version for double crane bridges; in each case the crane bridge is mounted fix. The assembly of the crane track can be of pendulating or rigid type.

	 [kg]	 [kg]	a [mm]	b [mm]	c [mm]	d [mm]	h [mm]	N°
GISKB I EQB	5.500	800	610	-	340	52	147	9305.1022.3
GISKB I DQB	6.000	800	610	400	340	52	147	9305.1023.3
GISKB II EQB	6.500	1600	610	-	312	74	186	9306.1022.3
GISKB II DQB	7.000	1600	610	400	312	74	186	9306.1023.3



Suspension pendulating short adjustable



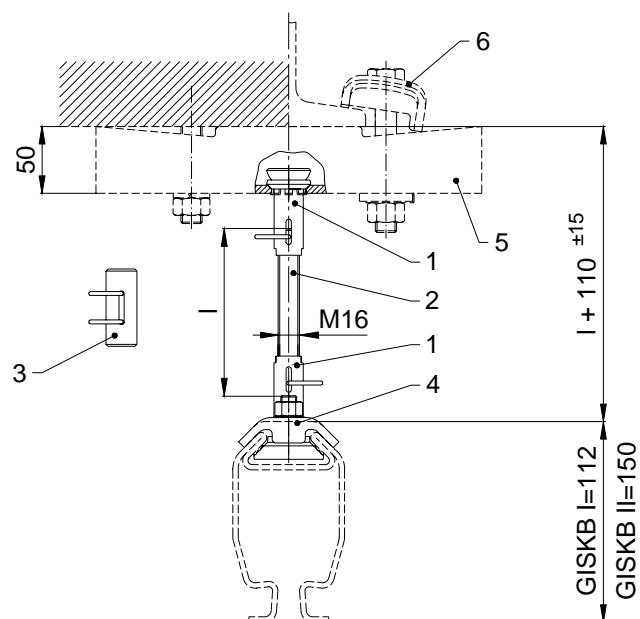
Execution: Steel, galvanised.

The shortest possible pendulating suspension is given by the ball pin and ball nut directly screwed-on. Pendulating movements of max. 10° are permissible. The suspension can be adjusted by ± 7.5 mm.

Note: Please consider the guide notes for suspensions (see page 6).

	 [kg]	 [kg]		N°
1	0.800	1600	Profile retainer complete	9309.3032.4
2	0.160	1600	Ball nut complete	9309.3011.4
3	0.120	1600	Ball pin complete	9309.3010.4
4	2.000	1600	Ceiling clip	9309.3003.3
5	0.600	1600	Binding clip complete	9309.3005.4



Suspension pendulating from rod adjustable



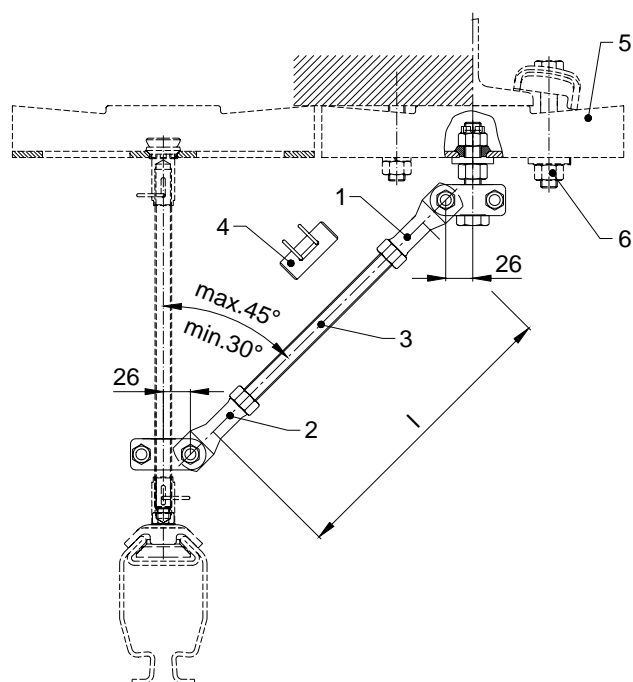
Execution ..::: Steel, galvanised.

The screwed rod (2) with its varying length and the two ball nuts (1), duly screwed-on, form the suspension from rod. The suspension allows height level adjustments of ± 15 mm. The coupling (3) serves for the junction of two screwed rods.

Note ..::: Please consider the guide notes for suspensions (see page 6).

	 [kg]	 [kg]		N°
1	0.160	1600	Ball nut complete	9309.3011.4
2	l = 100 mm l = 200 mm l = 300 mm l = 500 mm l = 1000 mm	0.100 0.200 0.400 0.650 1.200	1600 1600 1600 1600 1600	Screwed rod 9309.3024.4 9309.3025.4 9309.3026.4 9309.3027.4 9309.3028.4
3	0.150	1600	Coupling complete	9309.3033.4
4	0.800	1600	Profile retainer complete	9309.3032.4
5	2.000	1600	Ceiling clip	9309.3003.3
6	0.600	1600	Binding clip complete	9309.3005.4



Bracing pendulating from rod adjustable



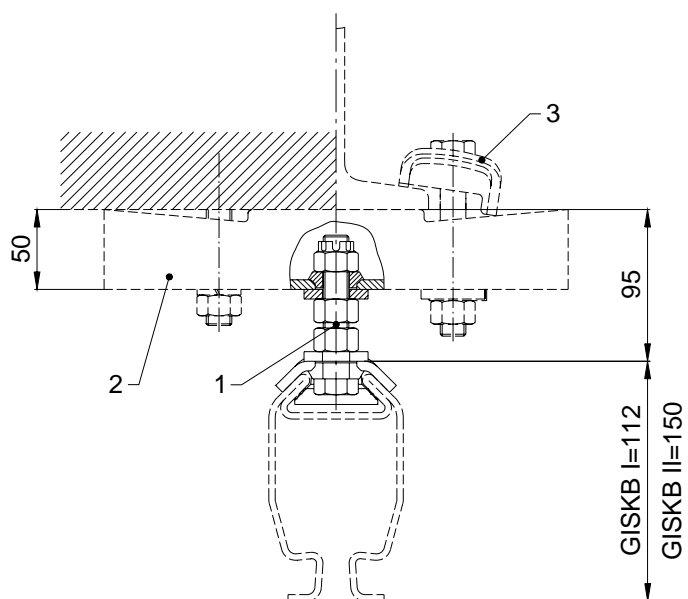
Execution: Steel, galvanised.

The bracing is composed of the lower node (2) and the upper node (1), connected with a screwed rod (3). The length of the screwed rod is same as for the suspension.

Note: Please consider the guide notes for suspensions (see page 6).



	 [kg]	 [kg]		N°	
1	0.600	1600	Upper node	9309.3016.4	
2	0.300	1600	Lower node	9309.3015.4	
3	l = 100 mm l = 200 mm l = 300 mm l = 500 mm l = 1000 mm	0.100 0.200 0.400 0.650 1.200	1600 1600 1600 1600 1600	Screwed rod	9309.3024.4 9309.3025.4 9309.3026.4 9309.3027.4 9309.3028.4
4	0.150	1600	Coupling complete	9309.3033.4	
5	2.000	1600	Ceiling clip	9309.3003.3	
6	0.600	1600	Binding clip complete	9309.3005.4	

Suspension rigid direct

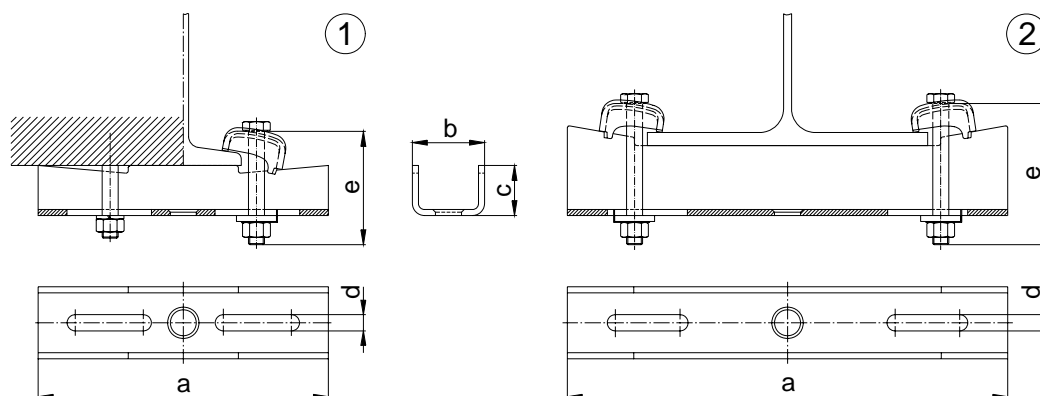


Execution.....: Steel, galvanised.

Note: The rigid suspension is available only as a short version. Please consider the guide notes for suspensions (see page 6).

	 [kg]	 [kg]		N°
1	1.250	1600	Suspension rigid	9309.3013.4
2	2.000	1600	Ceiling clip	9309.3003.3
3	0.600	1600	Binding clip complete	9309.3005.4

Ceiling clip






Execution.....: Steel, galvanised.

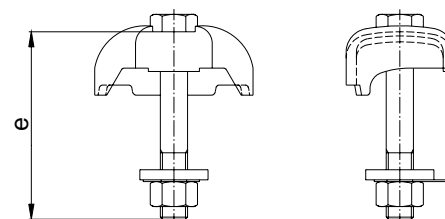
Use: Suspension on steel structure ① + ② and flat concrete ceiling ①.

Note: Masonry bolts for flat concrete ceilings: Please contact specialised dealer. The ceiling clip ② is not

suitable for assembly on to flat concrete ceilings.



	 [kg]	 [kg]	 [mm]	a [mm]	b [mm]	c [mm]	d [mm]	e [mm]	N°
GISKB I + II ①	2.000	1600	65 - 200	290	72	50	16.2	110	9309.3003.3
GISKB I + II ②	4.000	1600	200 - 300	440	72	70	16.2	150	9309.3112.3

Binding clip complete

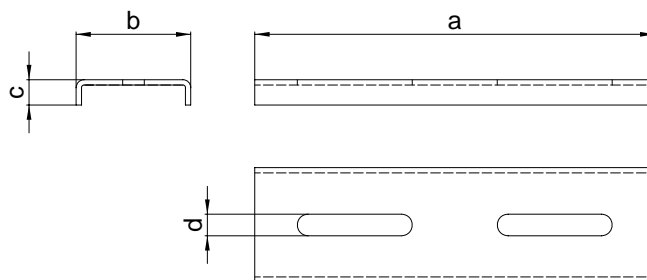


Execution.....: Steel, galvanised.

Use: Suspension on steel structure.


	 [kg]	 [kg]	e [mm]	N°
GISKB I + II	0.600	800	110	9309.3005.4
GISKB I + II	0.650	800	150	9309.3113.4

Support to ceiling clip

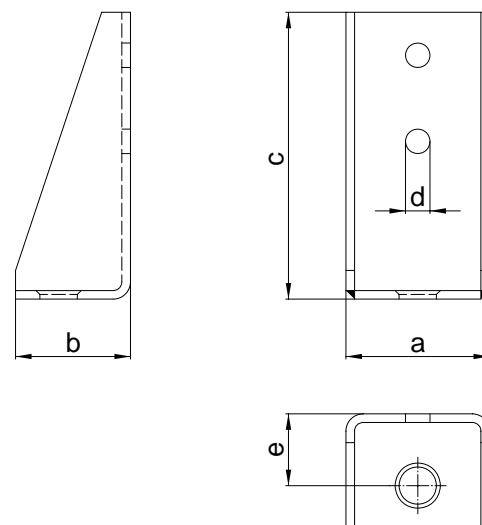


Execution ..::: Steel, galvanised.

Use ..::: Suspension for flat ceiling or for concrete ceiling with cast-in steel rails.

	 [kg]	a [mm]	b [mm]	c [mm]	d [mm]		N°
GISKB I + II	1.000	300	86	19	16.2		9309.3115.3


Lateral suspension



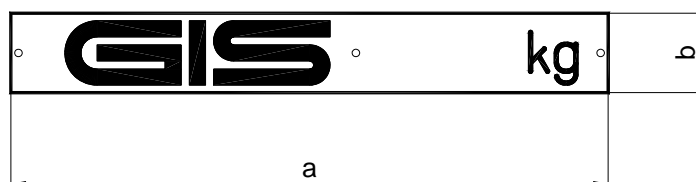
Execution ..::: Steel, galvanised.

Use ..::: Lateral suspension to wooden truss or steel beam. This suspension is useful for rigid or pendulous execution.

Note ..::: On concrete applications it is recommendable to use an intermediate plate.


	 [kg]	a [mm]	b [mm]	c [mm]	d [mm]	e [mm]		N°
GISKB I + II	2.000	100	80	200	17	50		9309.3111.3

Load plate

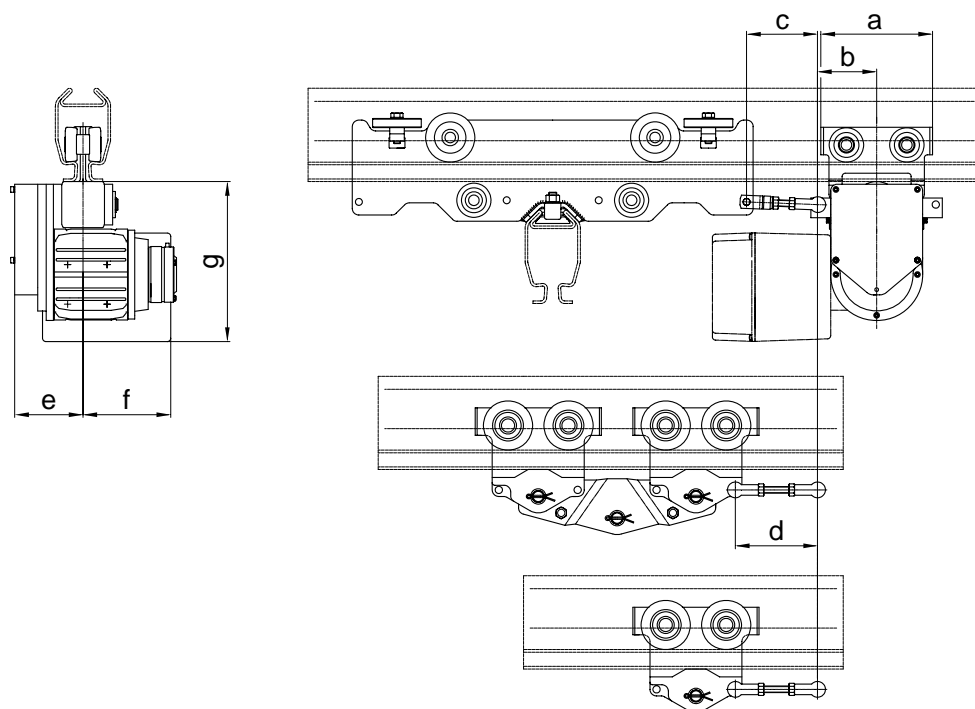


Execution: Aluminium anodized.

Use: Crane bridge, monorail.

 [kg]	a [mm]	b [mm]		N°
.....	297	37		9309.1049.3
80	297	37		9309.1050.3
125	297	37		9309.1051.3
160	297	37		9309.1066.3
200	297	37		9309.1067.3
250	297	37		9309.1052.3
320	297	37		9309.1068.3
400	297	37		9309.1069.3
500	297	37		9309.1053.3
630	297	37		9309.1070.3
800	297	37		9309.1071.3
1000	297	37		9309.1055.3
1250	297	37		9309.1072.3
1600	297	37		9309.1073.3

Electric tug



Execution: Friction wheel drive.


Trolley galvanised and equipped with plastic rollers, change gear box and motor in black finish.
Controlled in series with frequency changer (FU) and equipped with brake.

Use: Electric drive for cross and long travel in GISKB I + II profiles.



Note: Suspension distance of the profile has to be determined according to load diagramme with electric

tug (dotted line).

Connector clamp to trolley and rolling apparatus have to be ordered separately.

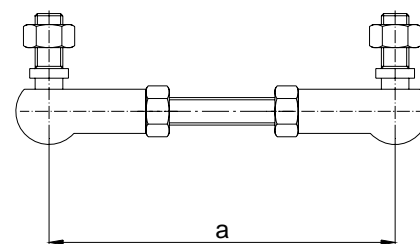
	 [kg]	a [mm]	b [mm]	c [mm]	d [mm]	e [mm]	f [mm]	g [mm]	N°
GISKB I	15.100	170	90	100	125	104	134	244	SAKB1.BR/FU
GISKB I	14.600	170	90	100	125	104	134	244	SAKB1.BR
GISKB II	15.100	170	90	100	125	104	134	244	SAKB2.BR/FU
GISKB II	14.600	170	90	100	125	104	134	244	SAKB2.BR

Type specification and technical datas:

Type		 [kg]	Speed [m/min]	Power [kW]	3x400V, 50Hz [A]	%duty / S/h	Execution
SAKB.BR/FU	GISKB I + II	800	0-12 / 0-40	0.25	0.8	60 / 360	with control
SAKB.BR	GISKB I + II	800	0-12 / 0-40	0.25	0.8	60 / 360	without control


The speeds can also be regulated according to customer's specification.

Connector clamp trolley

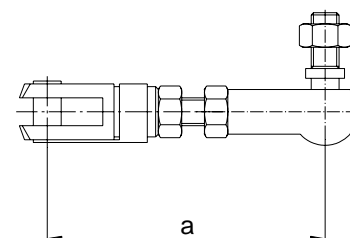


Execution ..::: Steel, galvanised.

Use ..::: Connection electric tug – trolley.


	 [kg]	a [mm]		N°
GISKB I + II	0.200	125		9310.5011.4

Connector clamp rolling apparatus



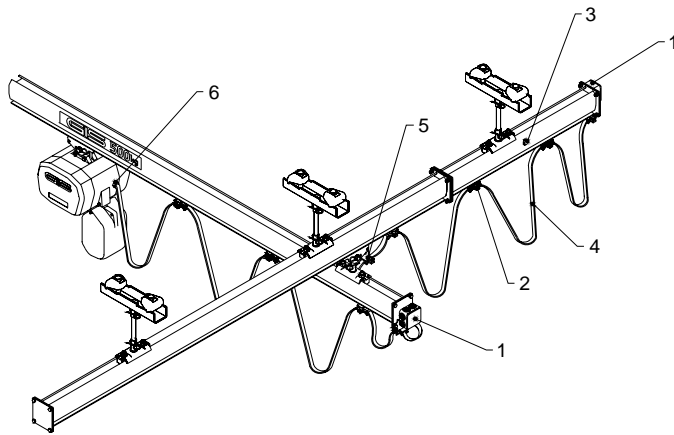
Execution ..::: Steel, galvanised.

Use ..::: Connection electric tug – rolling apparatus.

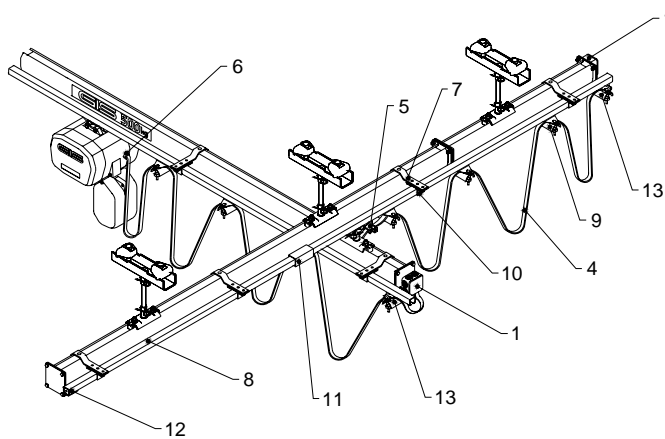
	 [kg]	a [mm]		N°
GISKB I + II	0.200	100		9310.5012.4

Summary power supply

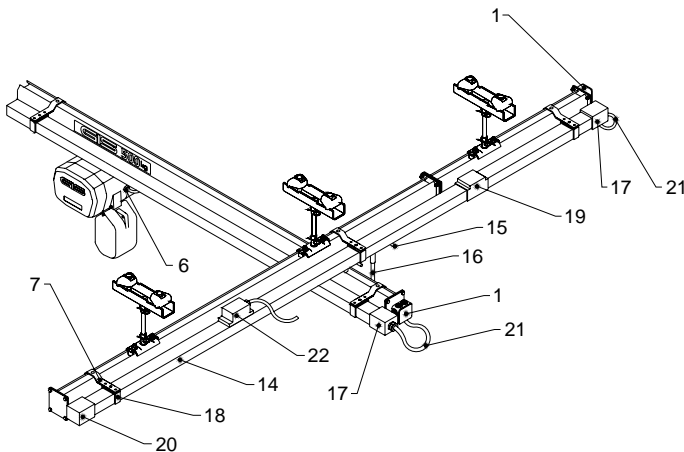
Trailing cable



C-rail




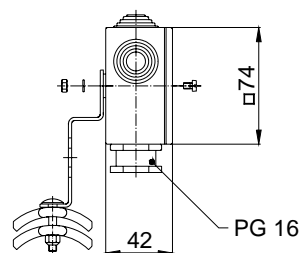
Conductor line




	Page
1 Terminal box complete	30
2 Cable carriage	30
3 Traction limit	30
4 Cable, FK.....	30
5 Cable fixing part.....	31
6 Cable gland	31
7 Clamping device	31
8 C-rail	31
9 Cable carriage	32
10 Suspension.....	32
11 Connector	32
12 C-rail stop	32
13 Cable end clamp.....	32
14 Conductor line	33
15 Driving pin.....	33
16 Current collecting trolley.....	33
17 Power feed	33
18 Suspension.....	33
19 Connection cap.....	34
20 End cap	34
21 Connection cable.....	34
22 Electrical supply at centre	34

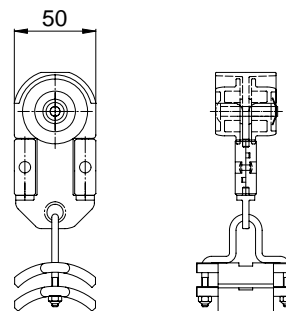
Terminal box complete

	 [kg]	N°
1 GISKB I + II	0.300	9309.3037.4




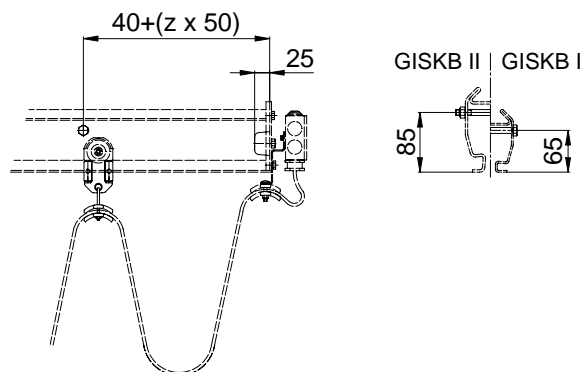
Cable carriage with 2 wheels
curve-going

	 [kg]	N°
2 GISKB I + II	0.095	9309.3040.4




Traction limit

	 [kg]	N°
3 GISKB I + II	0.080	9309.3036.4




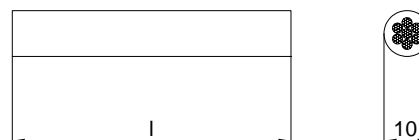
Cable, FK

	 [kg/m]	N°
4 4 x 1.5 mm ²	0.130	9055.0300




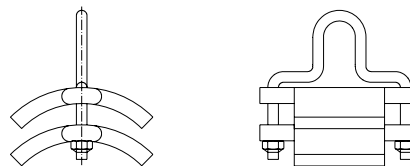
Cable, RK

	 [kg/m]	N°
7 x 1.0 mm ²	0.200	9055.0028




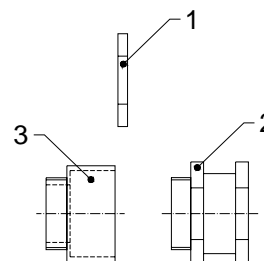
Cable fixing part

	 [kg]	N°
5 GISKB I + II	0.040	9309.3069.4




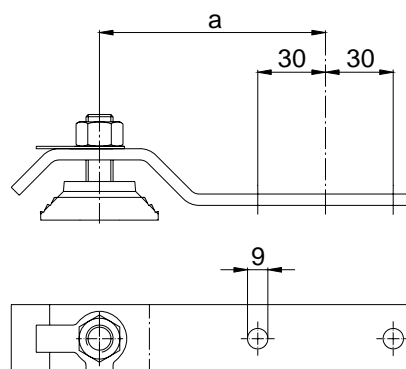
Cable gland
Enlargement
Counternut

	 [kg]	N°
6 - 1 PG16	0.005	9055.4004
- 2 PG16 MS	0.050	9055.3024
- 3 PG16/21	0.050	9055.2753




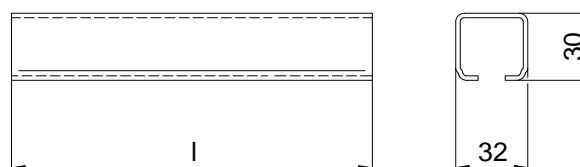
Clamping device

	 [kg]	a [mm]	N°
7 GISKB I + II	0.400	100	9309.3045.4
GISKB I + II	0.700	9309.3123.4	




C-rail

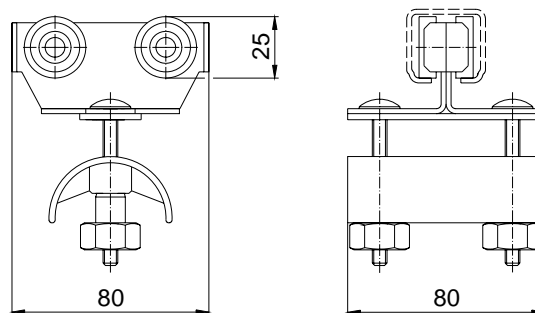
	 [kg]	N°
8 l = 1 m	1.500	9309.3046.4
l = 2 m	3.000	9309.3047.4
l = 3 m	4.500	9309.3048.4
l = 4 m	6.000	9309.3049.4
l = 5 m	7.500	9309.3050.4
l = 6 m	9.000	9309.3051.4




Intermediate lengths upon request.

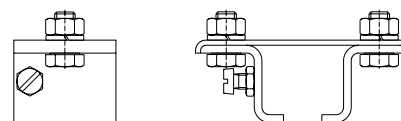
Cable carriage

	 [kg]	N°
9	0.300	9057.4250




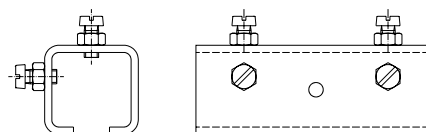
Suspension

	 [kg]	N°
10	0.250	9057.4200




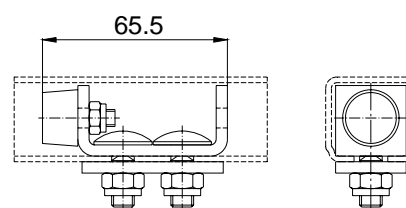
Connector

	 [kg]	N°
11	0.300	9057.4150




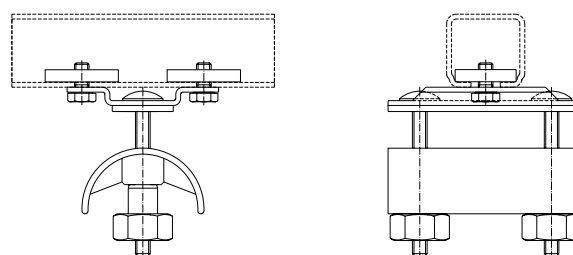
C-rail stop

	 [kg]	N°
12	0.150	9057.4300




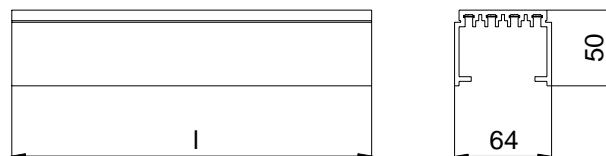
Cable end clamp

	 [kg]	N°
13	0.200	9057.4100




Conductor line VA34, 4-poles

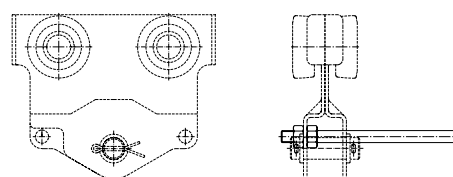
	 [kg]	N°
14 l = 1 m	1.100	9309.3058.4
l = 2 m	2.200	9309.3059.4
l = 3 m	3.300	9309.3060.4
l = 4 m	4.400	9309.3061.4
l = 5 m	5.500	9309.3062.4




Intermediate lengths upon request

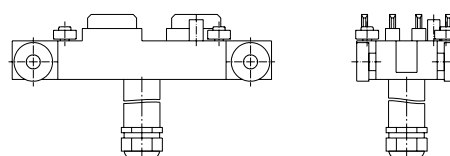
Driving pin

	 [kg]	N°
15 GISKB I + II	0.110	9309.3070.4




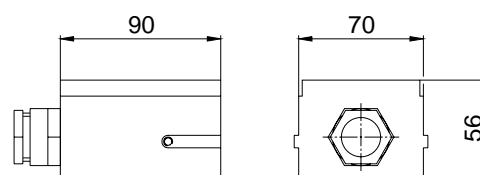
Current collecting trolley, PM425C

	 [kg]	N°
16	0.600	9057.0400




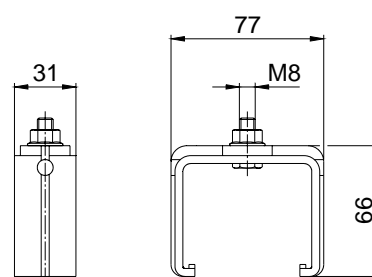
Power feed, EVD4

	 [kg]	N°
17	0.100	9057.0254




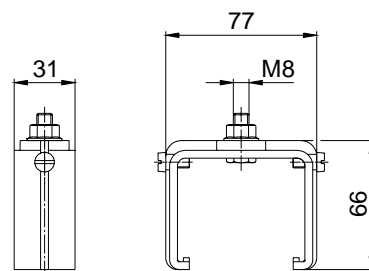
Suspension, VA806

	 [kg]	N°
18	0.050	9057.0103




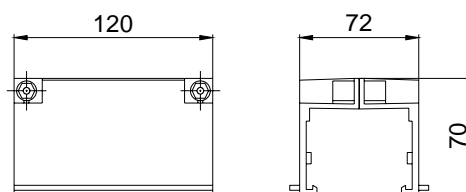
Fixed suspension, VA850

	 [kg]	N°
18	0.050	9057.0104




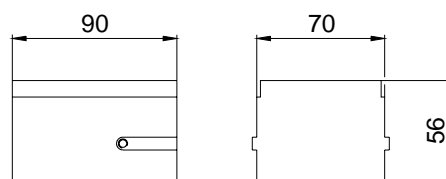
Connection cap, VA804

	 [kg]	N°
19	0.100	9057.0552




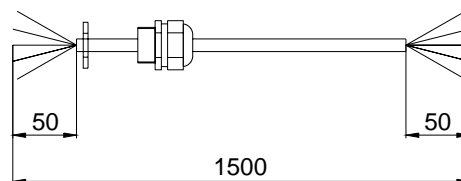
End cap, VA802

	 [kg]	N°
20	0.100	9057.0151




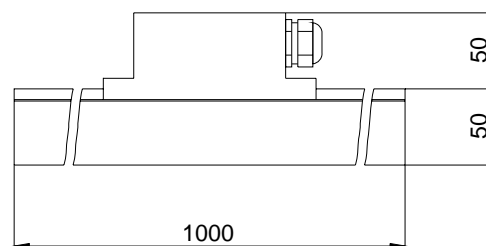
Connection cable

	 [kg]	N°
21 GISKB I + II	0.200	9309.3071.4

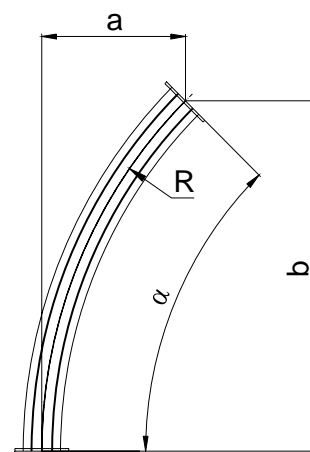


Electrical supply at centre

	 [kg]	N°
22	0.100	9309.3124.4



Bend



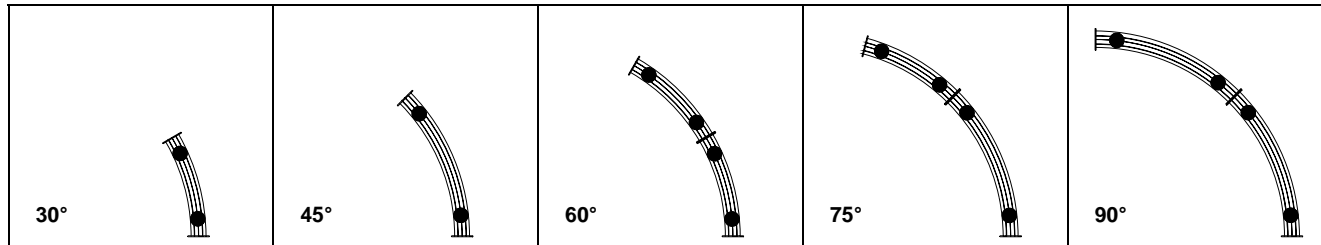
Execution.....: The bends are available with 30° and 45° angles. The radius is generally 1000 mm. At their ends is welded one each of an end plate.


Paint.....: RAL 7004 grey.

Note: By putting together several segments of bend one can obtain various angles (see sketch).

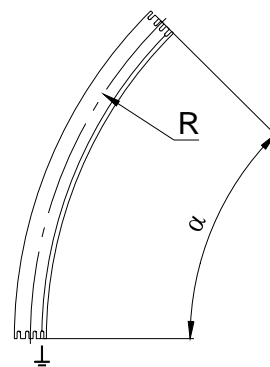
Guide notes for the suspension points

The suspension of the bends can be of pendulating short type, pendulating rod and rigid type. Bends of pendulating rod suspension type must be braced longitudinally and laterally, whilst the lateral bracing must show towards the interior side of the bend. The segment of the bend must be suspended twice (see sketch).



	 [kg]	α	R [mm]	a [mm]	b [mm]		N°
GISKB I	5.240	30°	1000	134	500		9305.1024.4
GISKB I	7.860	45°	1000	293	707		9305.1025.4
GISKB II	8.380	30°	1000	134	500		9306.1026.4
GISKB II	12.570	45°	1000	293	707		9306.1027.4



Conductor line VA34, 4-poles, bend



Execution: The bends of the conductor lines are available with the same angles as the bends of the GISKB profile. The possible executions are: radius 900 mm (inside mounting) and radius 1100 mm (outside mounting). In addition the position of the earth wire must be defined.

Guide notes for the suspension points

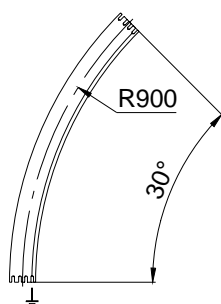
Each bend must be suspended twice as a minimum.

	 [kg]	α	R [mm]			N°
30° / 900 / PE r	0.520	30°	900	right		9309.3096.4
30° / 900 / PE l	0.520	30°	900	left		9309.3097.4
30° / 1100 / PE r	0.640	30°	1100	right		9309.3098.4
30° / 1100 / PE l	0.640	30°	1100	left		9309.3099.4
45° / 900 / PE r	0.780	45°	900	right		9309.3100.4
45° / 900 / PE l	0.780	45°	900	left		9309.3101.4
45° / 1100 / PE r	0.950	45°	1100	right		9309.3102.4
45° / 1100 / PE l	0.950	45°	1100	left		9309.3103.4

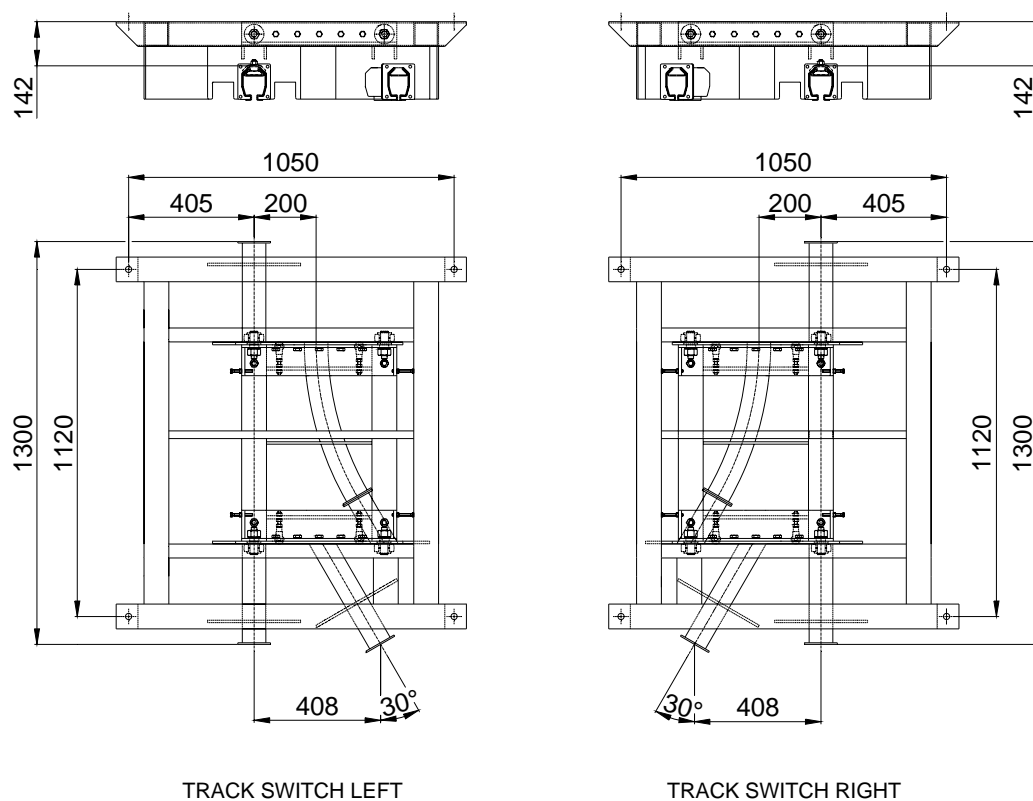
Example of order:

30° / 900 / PE r

9309.3096.4



Track switch




Execution: The track switch is of sliding type. The movement of the profiles is made manually or by an electric drive (operation see page 38).

Paint.....: RAL 7004 grey.

Note: For the provision of a conductor line your order must contain further details (see page 39).

Guide notes for the suspension points

The four suspension points (1100 x 1050 mm) are mounted on to the ceiling which is duly levelled. Please do pay attention to the joining profiles distance of which must be 150 mm as a minimum.

	 [kg]	Type	N°
GISKB I	128.000	Track switch right	9309.3501.3
GISKB I	128.000	Track switch left	9309.3502.3
GISKB II	142.000	Track switch right	9309.3503.3
GISKB II	142.000	Track switch left	9309.3504.3

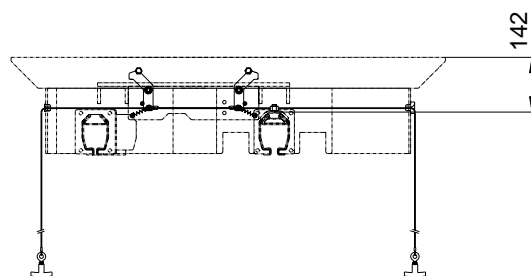
Example of order:

Track switch right 9309.3501.3, operation electrically 9309.3551.2, 3 x 400 V, 50 Hz, control cable length 2 metres

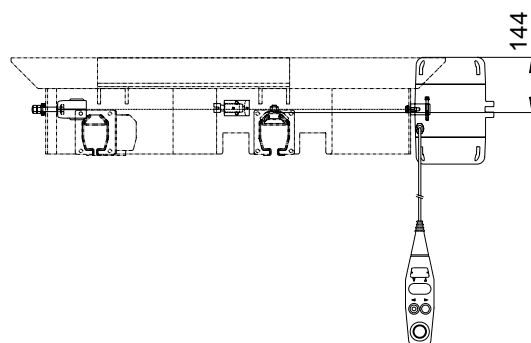
Conductor line R = 900, PE right 9309.3542.2

Operation track switch


manually



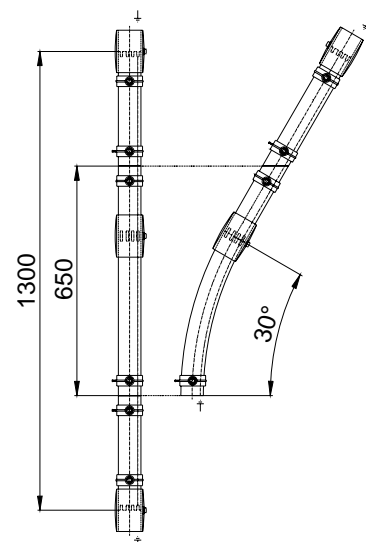
electrically



Execution ..::: In case of the manual operation a traction rope (standard length 2 m) is used for the movement of the profiles. For the electric drive it is a two-buttons pendant switch (standard control cable length 2 m).

	 [kg]	Type		N°
GISKB I + II	6.000	manually		9309.3550.2
GISKB I + II	27.000	electrically		9309.3551.2

Conductor line VA34, 4-poles, track switch



Execution: The track switches can optionally be delivered with 4-poles conductor lines. Your order must specify the position of the conductor line as against the profile and the position of the earth wire.

Note: The conductor line is assembled at the works and duly adapted. The power supply of the connection parts is made at their respective profile ends.

kg [kg] 3.900	Track switch left		Track switch right	
	⊥ right	⊥ left	⊥ right	⊥ left
Conductor line left	 9309.3536.2	 9309.3537.2	 9309.3540.2	 9309.3541.2
Conductor line right	 9309.3538.2	 9309.3539.2	 9309.3542.2	 9309.3543.2