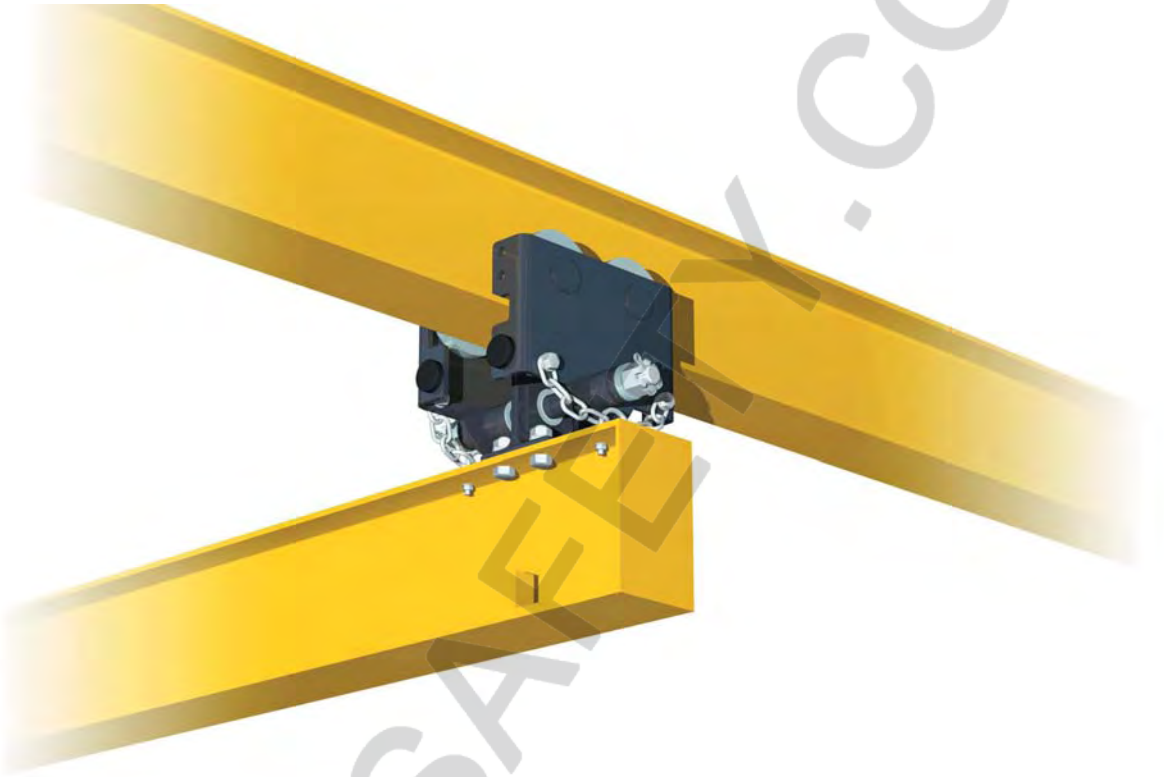
Trolley
for articulated rolling beam
for capacity from 250 up to 2.500 kg



OWNER'S MANUAL

For the manufacture
of small underslung rolling beam cranes

1 - EC declaration of conformity

As defined by the EC directive relating
to machinery 98/37/EEC.
Annex II B
Herewith, we declare that the product:

End carriadge	Manual trolley	Electyrical cubicle	Geared motor	**Light crane system ●**	Manual winch
●	●	●	●	●	●
●	●	●		●	
●	●	●		●	
●	●	●		●	
●	●	●		●	
●	●	●	●	●	●
●	●	●			
●	●	●	●	●	●
●	●	●	●	●	
●					
		●	●		
●	●	●		●	
●					
●	●	●			
●	●	●			

2007/04

❒ is to be used fro incorporation in an other machine
❒ being assembled with other machines to produce a single machine. It can not be put into use until the machine in which it is incorporated has been declared as conforming with the provisions of Directive 98/37 EEC

Complies with the following provisions applying to it:
- Machinery directive 98/37/EEC.
- Directive 2006/95/CEE.
- "EMC" Directive 89/336/EEC

Applied harmonized standards, in particular:
- EN 60204-1,
- EN ISO 12100-1 / 12100-2

National regulations, standards and specifications:
- order of March 1st, 2004
- DIN 15400; DIN 15401,

Quality system applied:
- EN29001/ISO9001

Technical standards and specifications complied with, in particular:
- FEM 9.511 "classification of the mechanisms".
- FEM 9.661 "dimensions and quality of the drive and cable lifting block elements for mass-produced lifting devices".
- EN 818 "chain quality, choice criteria and technical requirements".
- FEM 9.683 "choice of motors".
- FEM 9.755 "steps to be taken to determine the operating periods for mass-produced motorized lifting mechanisms (S.W.P.)".
- FEM 9.751 "Motorized lifting mechanism: safety"
- FEM 9.901 "bases of design for the mass-produced lifting devices for travelling cranes equipped with mass-produced lifting devices".

2 - What not to do

Never move or lift the machine by the electric cables.

Do not set down the machine without having an adapted support, to avoid damaging the sensitive sides.

Do not let the machine drop.

Never modify the machine unless the constructor has studied and authorized the modification.

Never modify the values and adjustments of the safety components, outside the limits provided for in the manual, or without the approval of the constructor.

Never try to repair or intervene on the machine *(welding...)* without the authorization of the constructor or a trained maintenance agent.

Never shunt the disconnect switches, electric switches, prevention or limitation equipment.

Do not let an unqualified person use the machine.

Do not let an unqualified person use the machine.

Never lift more than the maximum working load indicated on the machine. Shocks or accidental collision of the load with objects can cause excess loads.

Never remove the hook safety catches.

Never block, adjust or remove the limit switches or stops to go further to the left or right than these allow.

Never use the machine to extract, loosen, or pull sideways.

Never use the machine to transport people.

Do not touch the moving components.

Do not operate the machine if your physical condition does not allow it.

Never use the machine when in bad repair *(wear, deformation...).*

Never use suspect spare parts or parts whose origin is not known.

Never swing the load intentionally.

Do not subject the machine to brutal shocks.

Do not use the mechanical stops as a repetitive means of stopping.

Never distract the operator while the machine is being operated.

Never leave a suspended load hanging, if it is not necessary.

Never swing the load intentionally.

Never use the machine as an earth reference for welding.

Do not use the machine for a purpose or in an area for which it is not intended.

Do not expose the machine to an aggressive atmosphere *(temperature, acidity... Refer to 6.2: Environmental data).*

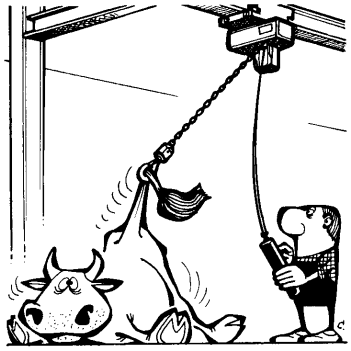
Do not use the safety components as operation components.

Do not use the controls needlessly (avoid inching - stop-start operation of the buttons). This can cause overheating and even damage to the machine.

Never pull the load slantwise. Make sure that the machine is vertical to the load before lifting it.

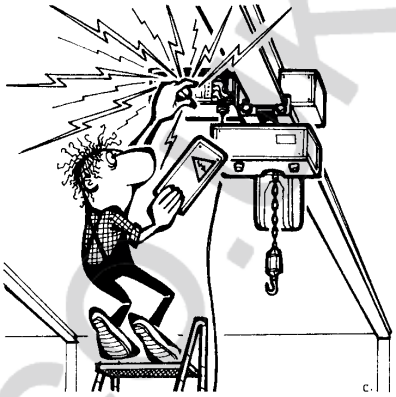
Do not use the machine with a power supply that is different to the one recommended *(undervoltage or overvoltage, absence of phase...).*

Never transport a load with people nearby. Do not pass the machine, with or without a load, above a person.



Never pull the load slantwise.

3 - What to do



Make sure that the machine is always clean.

Handle the machine by its structure, or by the devices provided for this purpose, or in its original packing.

Store the machine in its normal operating position (without load) away from aggressive atmospheres *(dust, humidity...).*

Make sure that the machine is always clean and protected from corrosion *(lubrication...).*

The machine should be installed by a technician with the necessary competence.

Make sure that the machine attaching structure is rigid.

Make sure that the safety rules are followed *(harness, clearance of work areas, posting up of instructions to be followed in the area...).*

Neutralize the power sources.

Comply with the distance between the trolley and the raceway.

Connect the feed cable directly to the supply terminal board in the electric box.

Set up an inspection program and record all of the maintenance operation for the machines, in particular: *the brake, limit switches, fastening beam...*

Replace any element that is worn or may be defective.

The machine should be maintained regularly, following the instructions in this manual.

Check the operation and adjustment of the safety components *(brake, travel limit...)* in conformity with the user manual.

Regularly check the machine.

If a deformation or unusual wear is noted, the parts must be changed.

Check that the assembly elements are correctly tightened.

Check that the strands of the steel cable supporting the control box fulfill their functions correctly. The electric cable of the box is not a handling cable.

The components should only be replaced by original parts that are compatible with the type of machine.

Before operation, check that the load is correctly fastened and installed. Make sure that the load is correctly balanced before moving it. Pay attention to the center of gravity of the load to be moved.

If manually moving the machine, push the load.

Material used outdoors should be protected as well as possible against bad weather conditions.

When moving the load, make sure that it is sufficiently raised and distant from the surrounding machines and other objects so as to avoid all obstacles during operation.

If manually moving the machine, push the load.

The prevention instructions to be carried out during the different operations should be well known.

Use the material under normal working conditions *(ambient temperature, atmosphere...).*

Material used outdoors should be protected as well as possible against bad weather conditions.

Notify the necessary people after a dangerous operation or if the machine seems problematic (*abnormal noise, abnormal behavior...).*

4 - Guarantee

Our electric trolleys are guaranteed **for one year** from the date of delivery.

If for a reason outside the control of the vendor, the delivery is delayed, the time lag cannot exceed three months.

If the use *(installation)* of the machine is delayed, the corresponding extension of the guarantee (a single extension limited to three months) must be requested, and written confirmation obtained.

The vendor undertakes to eliminate all operating errors originating from the concept, the execution, the components or the materials themselves.

The guarantee does not cover normal wear*, nor the failures resulting from lack of regular and periodic maintenance. It does not cover damage due to a lack of supervision, to false operation or to a bad utilization of the machines, particularly due to overload conditions, slantwise drawing, undervoltage or overvoltage or a connection error.

The guarantee does not apply when there is disassembly, modification or replacement of parts *(mechanical or electrical)* by an unauthorized party or without our prior agreement.

The guarantee only applies for original, factory-installed spare parts.

For the duration of the guarantee, the vendor undertakes to replace or repair, free of charge, the parts that are acknowledged to be damaged following examination by a qualified and authorized technical service.
The guarantee excludes any other services or indemnities.

The repairs covered by the guarantee are carried out, as a rule, in the workshops of the vendor or authorized agent. When servicing of the equipment is done outside these workshops, the labor costs for disassembly or assembly of these parts are borne by the vendor when these are done exclusively by his staff or by an authorized agent. The replaced parts become the property of the vendor and must be returned to the vendor at his expense.

For components of a relative particular importance that are not manufactured by the vendor and which carry the brand name of specialized manufacturers, the manufacturer's guarantee (which can vary according to the manufacturer) is applicable.

***** The guarantee does not apply for expendable parts defined by the manufacturer:

- Brushes
- Rubber buffer
- Rollers

5 - Description

• Constituents of an articulated beam kit :

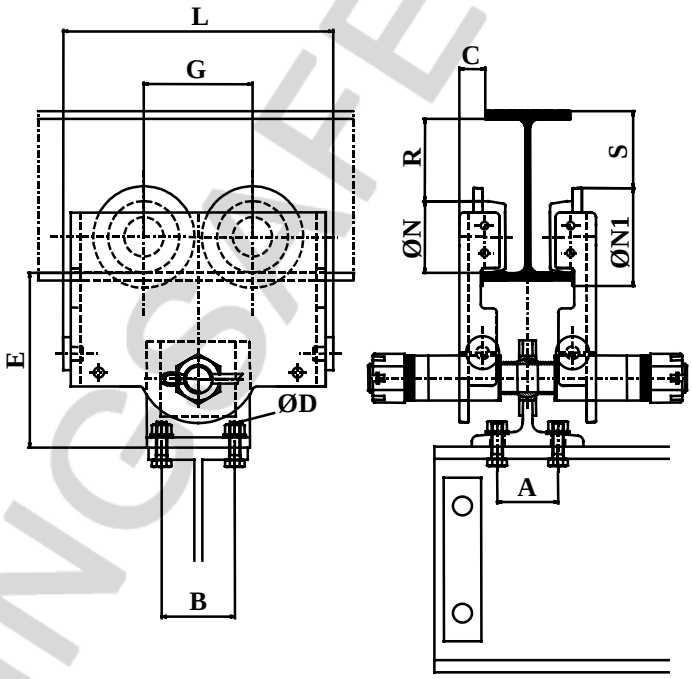
1) 2 end carriages ; 8 assembly bolt.
2) 1 beam (not supplied).

• Trolley references according to :

- the load capacity of the hoist.
- the span of the crane and the hand or electric hoist used.
- The minimum or maximum overhang of the beam section.

S.W.L. kg	LOAD OPERATING WITH NO OVERHANG														MAXIMUM LOAD OVERHANG						
	Manual hoist Span P in meters							Electric hoist Span P in meters							Manual or electric hoisting Span P in meters						
	2	3	4	5	6	7	8	2	3	4	5	6	7	8	2	3	4	5	6	7	8
250 kg	Type 5							Type 5							Type 5						
500 kg																					
1000 kg	Type 10							Type 10							Type 10						
1600 kg	Type 20							Type 20							Type 20						
2000 kg															Type 32						
2500 kg	Type 32							Type 32													

5.1 - Dimensions



Type of trolley	A	B	C	ØD	E	G	L	ØN	ØN1	R*	S*
Type 5	65	42 à 64	19	HM 10-30 class 8-8	145	84	202	55	79	109	106
Type 10	65	40 à 78	23.5	HM 12-35 class 8-8	167	101	241	60	92	66	57
Type 20	65	48 à 78	27	HM 14-40 class 8-8	185	116	288	76	104	88	82
Type 32	65	48 à 94	32	HM 16-45 class 8-8	232	144	358	96	131	68	61

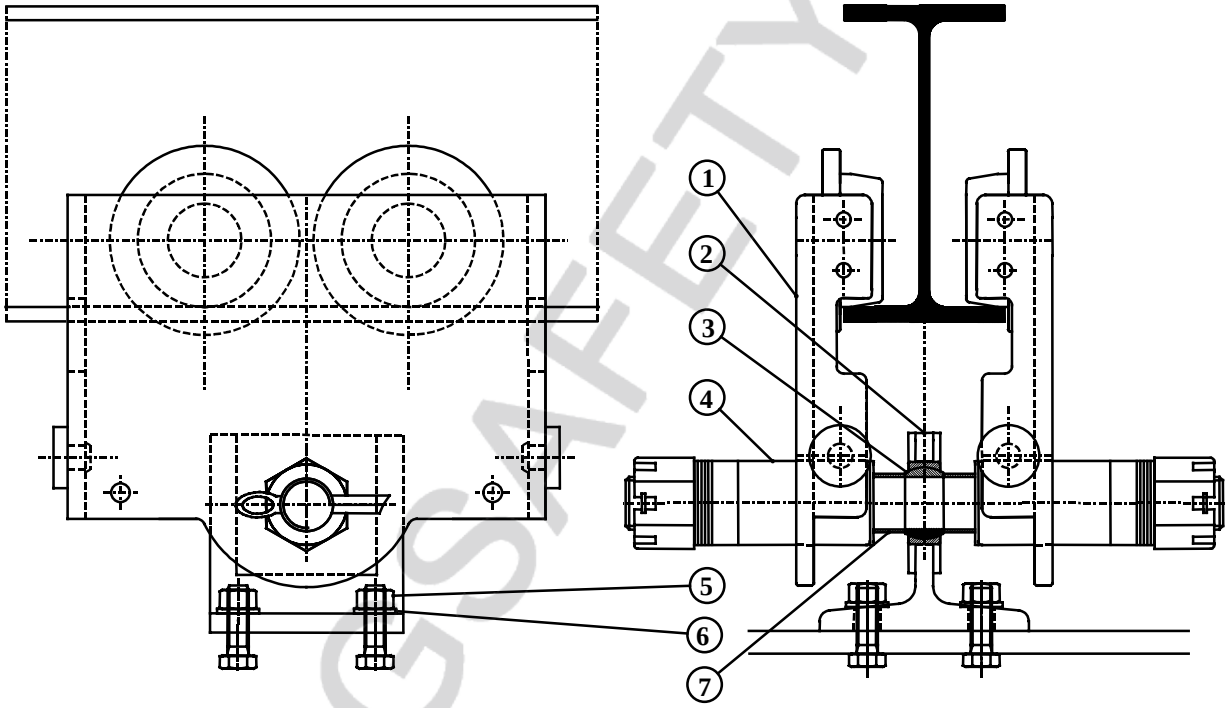
* The clearance dimensions are given according to the minimum profile usable by each of the trolley.

Range of track profiles usable according to trolley type.

Type of trolley	F mm			
	STANDARD TROLLEYS			
	I.P.N.		I.P.E.	
	Mini	Maxi	Mini	Maxi
Type 5	100 x 50 *	240 x 200	100 x 55 *	200 x 200
Type 10	140 x 66	360 x 200	120 x 64	270 x 200
Type 20	180 x 82	360 x 200	160 x 82	270 x 200
Type 32	200 x 90	500 x 200	180 x 91	450 x 200

* In the case of festoons electrical suplly, the bracket must be welded for minimum profiles of 100 IPN and 120 IPE.

5.2 - Trolley parts

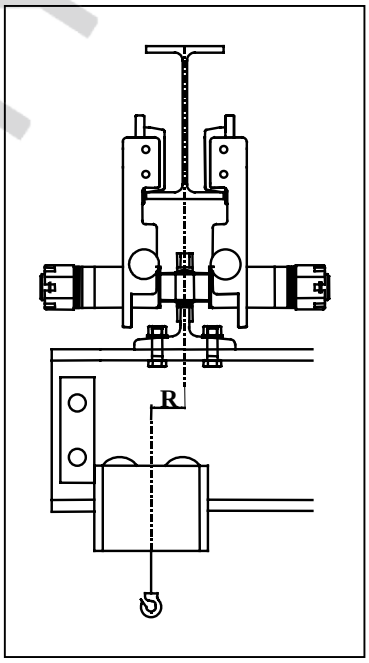


Ref.	No. of items	Description
1	2	Trolley
2	2	Swiveling support
3	2	Bearing
4	2	Crossbar
5	8	Fixing bolts
6	8	Flat washer
7	4	Sleeves

5.3 - Choice of I.P.E. section for the articulated beam

I	SPAN IN METERS													S.W.L. in Tonnes
P / E	2	2.001 / 20.5	2.501 / 3	3.001 / 3.5	3.501 / 4	4.001 / 4.5	4.501 / 5	5.001 / 5.5	5.501 / 6	6.001 / 6.5	6.501 / 7	7.001 / 7.5	7.501 / 8	
Q1	140						160			180		200		0.25
Q2	140					160		180		200			220	
Q1	140			160		180		200		220			240	0.5
Q2	140		160		180		200		220		240			
Q1	160			180		200		220		240		270		1
Q2	180		200			220		240		270		300		
Q1	180			200		220	240			270		300	330	1.6
Q2	220		240			270		300				330		
Q1	200			220		240		270		300		330		2
Q2	240			270			300			330		360		
Q1	200			220		240	270			300	330	360		2.5
Q2	270		300			330				360		400		

Q1 Beam profile for hand block
Q2 Beam profile for standard electric hoist



• Admissible overhang according to :

- The span
- The load capacity
- Manual or electric lifting

• Maximum overhang R (in mm)

NOTE : For span less than 2 m, R=0
IT IS STRICTLY FORBIDDEN TO EXCEED THIS LIMIT.

• Table VI : Maximum overhang R (in mm)

	With hand block													With electric hoist												
Load kg	P = 2000 à 2499 mm	P = 2500 à 2999 mm	P = 3000 à 3499 mm	P = 3500 à 3999 mm	P = 4000 à 4499 mm	P = 4500 à 4999 mm	P = 5000 à 5499 mm	P = 5500 à 5999 mm	P = 6000 à 6499 mm	P = 6500 à 6999 mm	P = 7000 à 7499 mm	P = 7500 à 7999 mm	P = 8000 mm mm	P = 2000 à 2499 mm	P = 2500 à 2999 mm	P = 3000 à 3499 mm	P = 3500 à 3999 mm	P = 4000 à 4499 mm	P = 4500 à 4999 mm	P = 5000 à 5499 mm	P = 5500 à 5999 mm	P = 6000 à 6499 mm	P = 6500 à 6999 mm	P = 7000 à 7499 mm	P = 7500 à 7999 mm	P = 8000 mm
250	100	150	205	275	360	450	500	550	600	650	700	750	800	80	115	160	210	265	390	455	550	600	650	700	750	800
500	50	75	100	175	230	340	420	550	600	650	700	750	800	30	50	110	145	220	260	375	445	600	650	700	750	800
1000	30	45	65	105	165	210	320	360	500	580	700	750	800	35	50	85	110	165	205	250	345	405	550	630	750	800
1600	20	35	50	80	120	145	220	310	370	500	580	660	800	60	80	110	140	170	220	275	375	440	505	585	750	800
2000	20	35	50	75	110	145	205	250	350	400	540	620	700	30	40	75	95	120	170	210	290	345	400	460	610	690
2500	20	25	45	60	90	135	160	235	280	380	440	490	650	25	45	65	85	130	160	195	270	315	370	425	560	635

5.4 – Positioning of trolleys

Table VII

	C	A	B	Ø1	Ø2	P Mini
Type 5	F + 60	48	65	11	9	110
Type 10	F + 70	48	65	13	9	135
Type 20	F + 80	60	65	15	11	135
Type 32	F+ 90	72	65	17	13	190

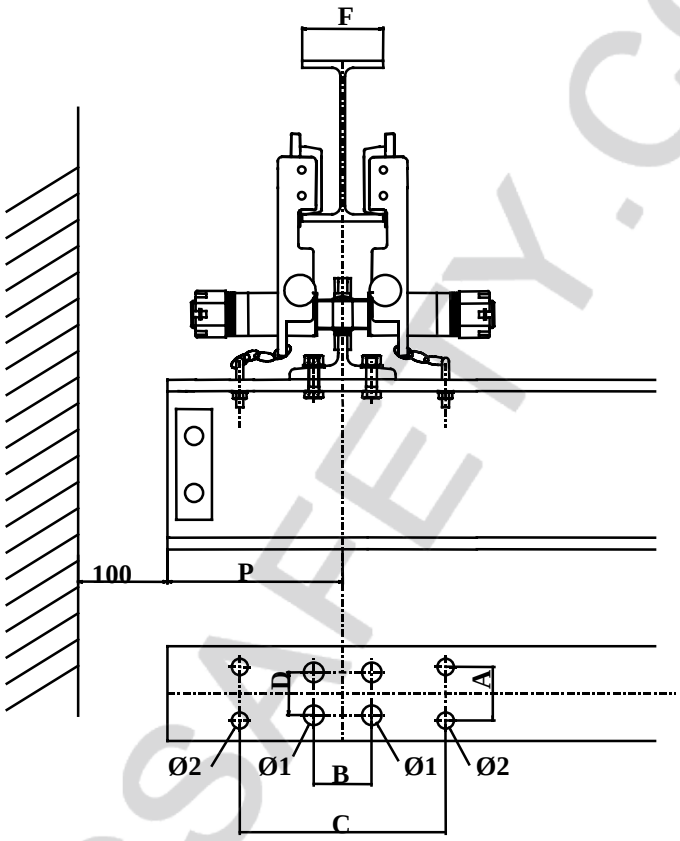
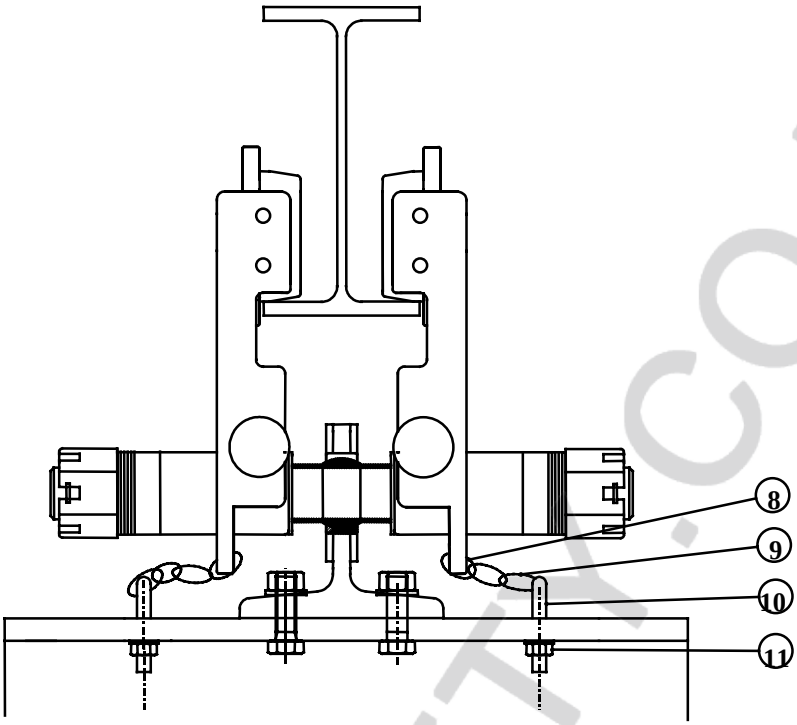


Table VIII

I.P.E. beam profil	Dimension D			
	Type 5	Type 10	Type 20	Type 32
140	42			
160	46	46		
180	48	48	48	
200	50	50	50	50
220	58	58	58	58
240	64	64	64	64
270		70	70	70
300		78	78	78
330			78	82
360				88
400				94

5.5 – Safety device



The aim of the device is to establish a link between the trolleys and the beam in case, for any reason, the system joining the trolley to the girder should fail.
This device is offered as an optional extra, as according to legislation it is not obligatory (the framework safety coefficient is higher than 6) but nevertheless, for safety reasons, we would advise use of this system wich is already being adopted by some organizations.

Ref.	No. of items	Description
8	4	Open link
9	4	Chain
10	4	U bar
11	8	Fixing bolts

ASSEMBLY :
The safety device is delivered separatly from the trolley and so the width adjustment must be made according to the track profile (See rolling beam assembly instructions). It is during this operation, wich necessitates the dismantling of the trolley that this safety device should be mounted.

6 – Mounting the kit on the tracks

1°) Adjustment of width and mounting of trolleys on track.
First of all, the width of your trolleys must be adjusted, according to the profile of your track.
This operation consists of :

- Dismantling the trolley side plates and the crossheads by removing the 8 assembly fixing bolts.
- Locating the packing plates according to the relevant dilensions.
- Re-assemble the trolley in 2 phases :
  - Position 1 side plate of the crossheads and position the bolts without tightening them and plce the trolley on its track.
  - Position the secondside plates and bolts still without tightening.
  Your two trlley are in place on the track.

2°) Assembly of the beam

- Bring the beam under the trolleys by the most convenient method (hoist, fork lift, crane, etc…)
- Establish the link between the trolleys by means of the bolts which are located in the connecting brackets.

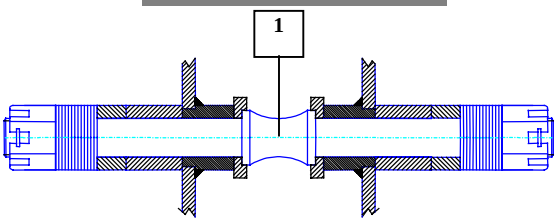
Important : These connecting brackets are designed to accept difference beam profiles, so they must be centred as accurately as possible in relation of the beam.
The fina stage is to fully tighten all the bolts, after checking the correct position of the locking washers of the nuts.

BEAMWIDTH SETTINGS

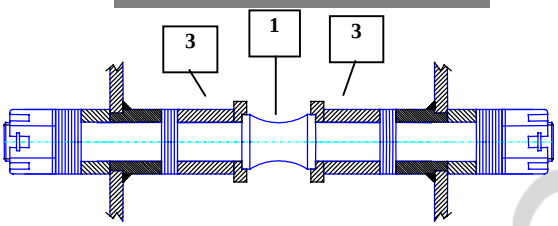
• **Type 5 :** Beamwidth settings - From 50 to 200 mm

WARNING !
In any case leave at least one washer out of the flange, under the nut

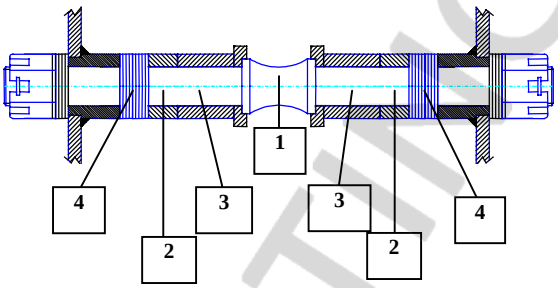
Minimum beamwidth

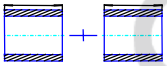


Intermediate beamwidth



Maximum beamwidth



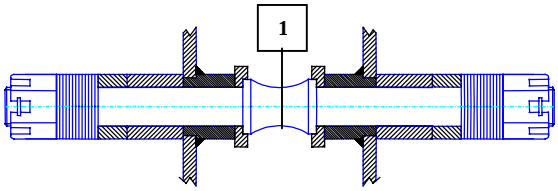
Beamwidth MM	1	2 	3 	4 WASHER EP. 2 MM
50	304			0 + 0
54				1 + 1
58				2 + 2
62				3 + 3
64				4 + 4
66				4 + 4
72				6 + 6
73				6 + 6
74				6 + 6
81				8 + 8
82				8 + 8
89				10 +10
90				10 +10
91				10 +10
98			1 + 1	2 + 2
100			1 + 1	3 + 3
106			1 + 1	4 + 4
108			1 + 1	5 + 5
110			1 + 1	5 + 5
113			1 + 1	6 + 6
118			1 + 1	7 + 7
119			1 + 1	7 + 7
120			1 + 1	8 + 8
125			1 + 1	9 + 9
126			1 + 1	9 + 9
131		1 + 1		1 + 1
133		1 + 1		1 + 1
135		1 + 1		2 + 2
137		1 + 1		2 + 2
140		1 + 1		3 + 3
143		1 + 1		3 + 3
146		1 + 1		4 + 4
147		1 + 1		4 + 4
149		1 + 1		5 + 5
150		1 + 1		5 + 5
155		1 + 1		6 + 6
158		1 + 1		7 + 7
160		1 + 1		8 + 8
166		1 + 1		9 + 9
168		1 + 1		10 + 10
170		1 + 1	1 + 1	0 + 0
178		1 + 1	1 + 1	2 + 2
180		1 + 1	1 + 1	3 + 3
185		1 + 1	1 + 1	4 + 4
186		1 + 1	1 + 1	4 + 4
188		1 + 1	1 + 1	5 + 5
190		1 + 1	1 + 1	5 + 5
198		1 + 1	1 + 1	7 + 7
200		1 + 1	1 + 1	8 + 8

WARNING !

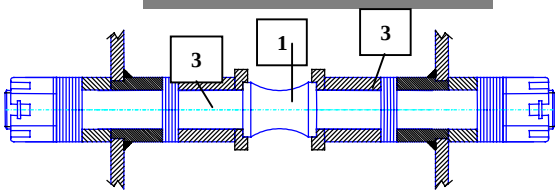
The above settings are given as information, still it should be checked that the gap between the beam and the wheel flange is less than 3 mm.

• **Type 10 : Beamwidth settings - From 64 to 200 mm**

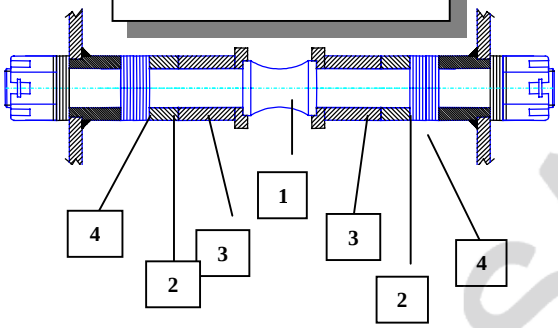
Minimum beamwidth



Intermediate beamwidth



Maximum beamwidth



WARNING !
In any case leave at least one washer out of the flange, under the nut

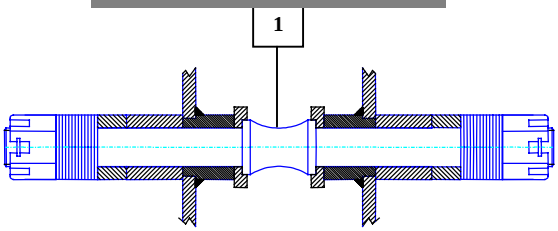
Beamwidth MM	1	2 (35.5 + 35.5)	3 (18 + 18)	4 WASHER EP. 2 MM
64				1 + 1
66				1 + 1
72				3 + 3
73				4 + 4
74				4 + 4
81				6 + 6
82				6 + 6
89				8 + 8
90				8 + 8
91				8 + 8
98				10 + 10
100			1 + 1	1 + 1
106			1 + 1	3 + 3
108			1 + 1	3 + 3
110			1 + 1	4 + 4
113			1 + 1	5 + 5
118			1 + 1	6 + 6
119	336		1 + 1	6 + 6
120			1 + 1	6 + 6
125			1 + 1	8 + 8
126			1 + 1	8 + 8
131			1 + 1	9 + 9
133			1 + 1	10 + 10
135		1 + 1		1 + 1
137		1 + 1		2 + 2
140		1 + 1		3 + 3
143		1 + 1		3 + 3
146		1 + 1		4 + 4
147		1 + 1		4 + 4
149		1 + 1		5 + 5
150		1 + 1		5 + 5
155		1 + 1		6 + 6
158		1 + 1		7 + 7
160		1 + 1		8 + 8
166		1 + 1	1 + 1	0 + 0
168		1 + 1	1 + 1	0 + 0
170		1 + 1	1 + 1	1 + 1
178		1 + 1	1 + 1	2 + 2
180		1 + 1	1 + 1	3 + 3
185		1 + 1	1 + 1	5 + 5
186		1 + 1	1 + 1	5 + 5
188		1 + 1	1 + 1	6 + 6
190		1 + 1	1 + 1	6 + 6
198		1 + 1	1 + 1	8 + 8
200		1 + 1	1 + 1	9 + 9

WARNING !

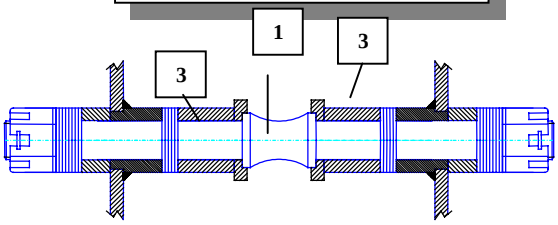
The above settings are given as information, still it should be checked that the gap between the beam and the wheel flange is less than 3 mm.

• **Type 20 : Beamwidth settings - From 89 to 200 mm**

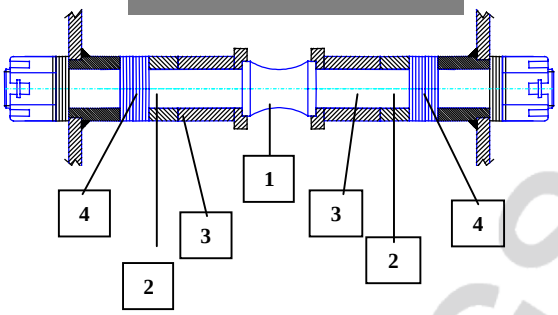
Minimum beamwidth



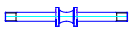
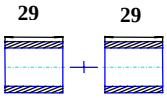
Intermediate beamwidth



Maximum beamwidth



WARNING !
In any case leave at least one washer out of the flange, under the nut

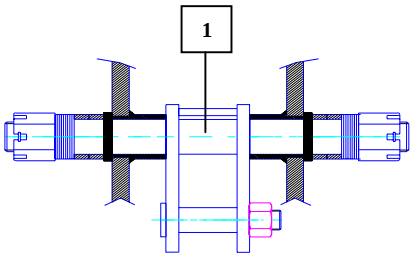
	1	2	3	4
Beamwidth MM				**WASHER EP. 2 MM**
89				0 + 0
90				0 + 0
91				1 + 1
98				2 + 2
100				3 + 3
106				4 + 4
108				5 + 5
110				5 + 5
113				6 + 6
118				7 + 7
119				8 + 8
120			1 + 1	0 + 0
125			1 + 1	2 + 2
126			1 + 1	2 + 2
131			1 + 1	3 + 3
133			1 + 1	3 + 3
135			1 + 1	4 + 4
137			1 + 1	5 + 5
140	340		1 + 1	6 + 6
143			1 + 1	6 + 6
146			1 + 1	7 + 7
147			1 + 1	7 + 7
149		1 + 1		1 + 1
150		1 + 1		1 + 1
155		1 + 1		2 + 2
158		1 + 1		3 + 3
160		1 + 1		3 + 3
166		1 + 1		5 + 5
168		1 + 1		5 + 5
170		1 + 1		6 + 6
178		1 + 1	1 + 1	0 + 0
180		1 + 1	1 + 1	1 + 1
185		1 + 1	1 + 1	2 + 2
186		1 + 1	1 + 1	2 + 2
188		1 + 1	1 + 1	3 + 3
190		1 + 1	1 + 1	3 + 3
198		1 + 1	1 + 1	5 + 5
200		1 + 1	1 + 1	6 + 6

WARNING !

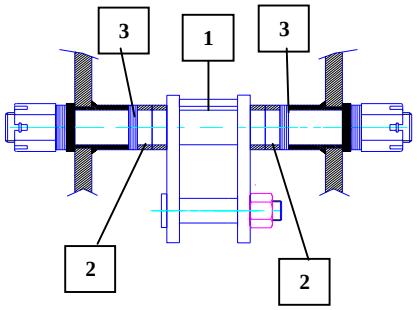
The above settings are given as information, still it should be checked that the gap between the beam and the wheel flange is less than 3 mm.

• **Type 32 : Beamwidth settings - From 100 to 200 mm**

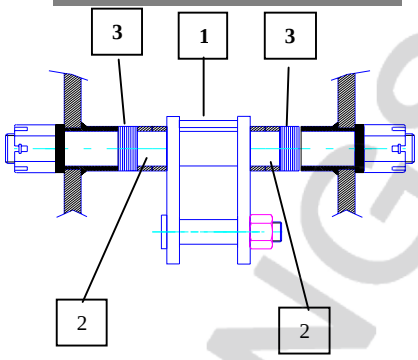
Minimum beamwidth

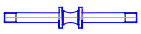
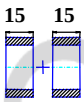


Intermediate beamwidth



Maximum beamwidth



Beamwidth MM	1 	2 	3 WASHER EP. 2 MM
100	362		0 + 0
106			1 + 1
108			2 + 2
110			2 + 2
113			3 + 3
118			4 + 4
119			4 + 4
120			5 + 5
125			6 + 6
126			6 + 6
131			7 + 7
133		1 + 1	0 + 0
135		1 + 1	1 + 1
137		1 + 1	2 + 2
140		1 + 1	2 + 2
143		1 + 1	3 + 3
146		1 + 1	4 + 4
147		1 + 1	4 + 4
149		1 + 1	4 + 4
150		1 + 1	5 + 5
155		1 + 1	6 + 6
158		1 + 1	7 + 7
160		2 + 2	0 + 0
166		2 + 2	1 + 1
168		2 + 2	2 + 2
170		2 + 2	2 + 2
178		2 + 2	4 + 4
180		2 + 2	5 + 5
185		2 + 2	6 + 6
186		2 + 2	6 + 6
188		2 + 2	7 + 7
190		2 + 2	7 + 7
198		2 + 2	9+ 9
200		2 + 2	10 + 10

WARNING !
In any case leave at least one washer out of the flange, under the nut

WARNING !

The above settings are given as information, still it should be checked that the gap between the beam and the wheel flange is less than 3 mm.