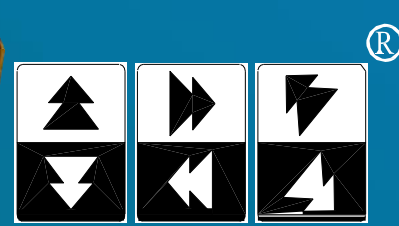




C-TRACK SYSTEMS

- *Universal components*
- *Festoon cable system accessory*
- *Electrical installation material*

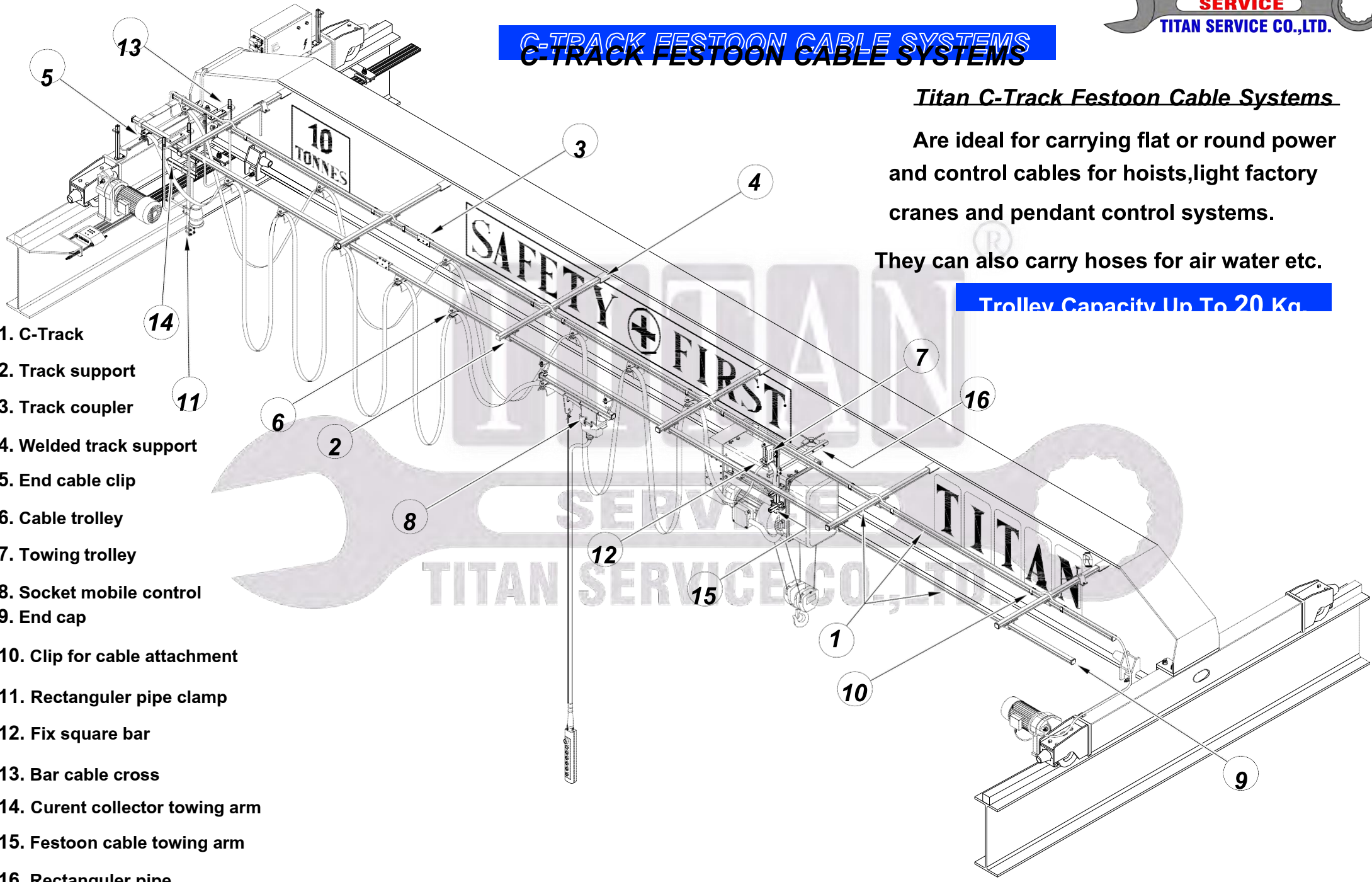


TITAN SERVICE ACCESSORIES



ISO 9001:2000

C-TRACK FESTOON CABLE SYSTEMS



- 1. C-Track
- 2. Track support
- 3. Track coupler
- 4. Welded track support
- 5. End cable clip
- 6. Cable trolley
- 7. Towing trolley
- 8. Socket mobile control
- 9. End cap
- 10. Clip for cable attachment
- 11. Rectangular pipe clamp
- 12. Fix square bar
- 13. Bar cable cross
- 14. Current collector towing arm
- 15. Festoon cable towing arm
- 16. Rectangular pipe

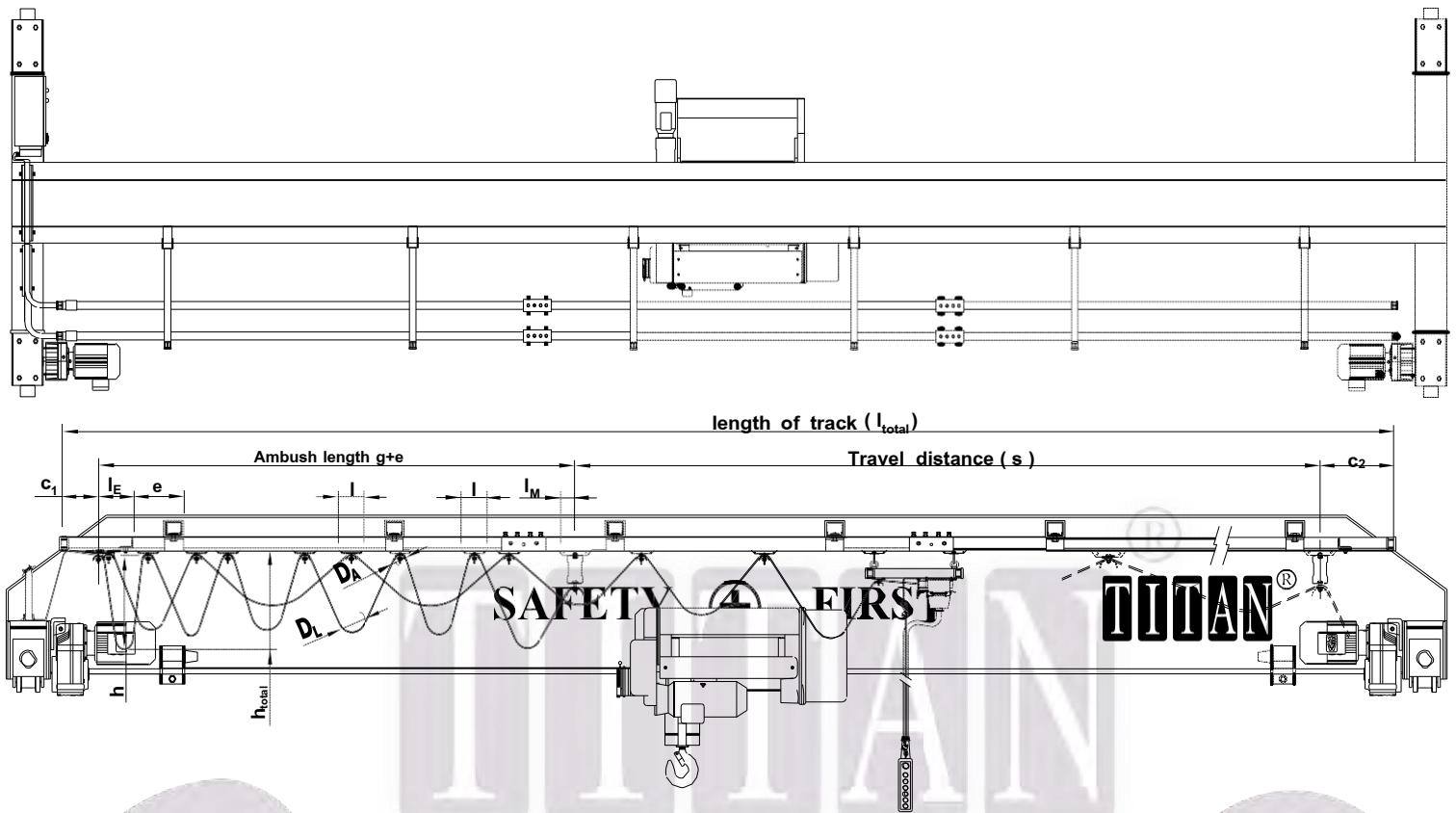
Titan C-Track Festoon Cable Systems

Are ideal for carrying flat or round power and control cables for hoists, light factory cranes and pendant control systems.

They can also carry hoses for air water etc.

Trolley Capacity Up To 20 Kg

Projection



Technical data

l_{total} [m]	= Length of track	l [m]	= Length of one cable trolley
s [m]	= Crap or crane travelling distance	e [m]	= Tolerance
h [m]	= Cable loop (measured from top face of cable carrier)	D_A [m]	= Cable support diameter
h_{total} [m]	= Cable loop (measured from lower face of C-track)	D_L [m]	= Bending diameter of cable loop
n [m]	= Numer of loops	d [m]	= min. cable diameter or min. cable thickness
g [m]	= Ambush length from centre of end clamp to middle of towing arm	f	= Factor for cable length addition
$g = l_E + (n + 1) l + l_M$		L_{total} [m]	= Total length of cable
		L_{loop} [m]	= Cable length of single loop from centre of support to centre of support

Formula, exact calculation

Number of loop

$$n = f \cdot \frac{s+g+e}{2h+1.25 D_A} \quad \text{or} \quad n = f \cdot \frac{s+e}{2h+1.25 D_A - f \cdot l}$$

Depth of cable loop

$$h = f \cdot \frac{s+g+e}{2n} - 0.63 D_A \quad \text{or} \quad h = \frac{f}{2} \left(\frac{s+e}{n} + l \right) - 0.63 D_A$$

Total length of cable

$$L_{total} = f(s+g+e) + J \quad [m]$$

Length of individual loop

$h = \text{constant}$

$$L_{loop} = f \cdot \frac{s+g+e}{n} \quad [m]$$

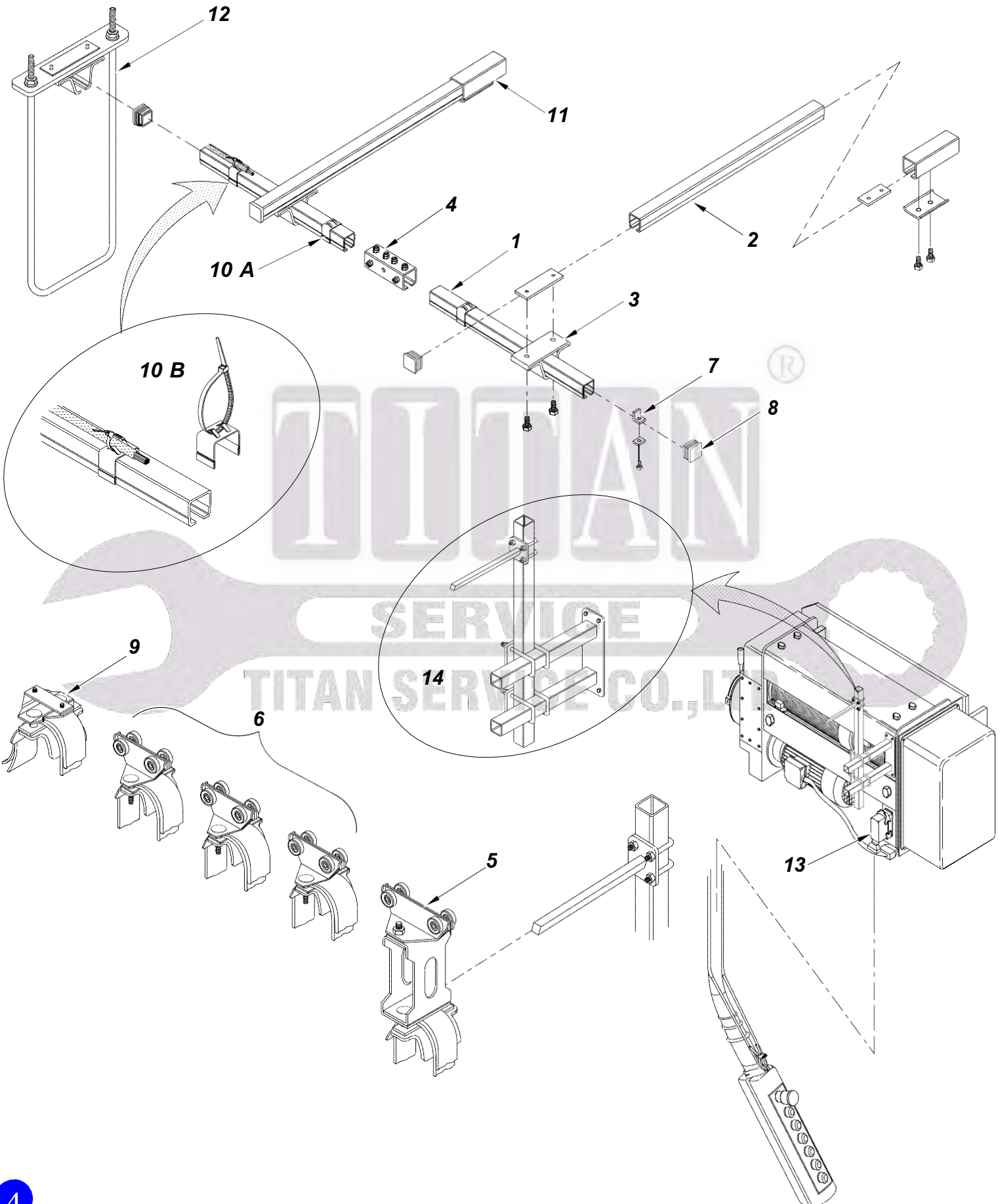
$h = \text{graduated}$

$$L_{loop} = 2h + 1.25 D_A \quad [m]$$

$\sum J$ = Length addition for installation on both sides

control : $\sum L_{loop} = L_{total} - \sum J$

For Single & Double Girder Festoon Track With Suspended Control



For Single Girder Festoon Track With Suspended Control

FESTOON KITS (4 m. C-track Lengths)

KIT PART NUMBER

Crane Span (m)				4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
				QUANTITY REQUIRED FOR KIT																																					
Item	Part Number	Description	Unit	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
1	2-220-0025	C-track	m.	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	40		
2	2-220-0022	C-track arm (700 mm.)	Pcs.	3	4	5	5	6	7	8	8	9	10	10	11	12	12	13	14	14	15	16	16	17	18	18	19	20	20	21	22	22	23	24	24	25	26	26	27	28	
3	2-220-0002	Track support	Pcs.	3	4	5	5	6	7	8	8	9	10	10	11	12	12	13	14	14	15	16	16	17	18	18	19	20	20	21	22	22	23	24	24	25	26	26	27	28	
4	2-220-0003	Track coupler	Pcs.	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8	8	8	9	9	9	9	
5	2-220-0004	Towing trolley	Pcs.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
6	2-220-0005	Cable trolley	Pcs.	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13	13	13	14	14	15	15	16	16	17	17	17	18	19	19	
7	2-220-0006	End stop-C	Pcs.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
8	2-220-0007	End cap-C	Pcs.	5	6	7	7	8	9	10	10	11	12	12	13	14	14	15	16	16	17	18	18	19	20	20	21	22	22	23	24	24	25	26	26	27	28	28	29	29	
9	2-220-0008	End cable clip	Pcs.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	2-220-0009	Clip for cable attachment	Pcs.	9	12	15	15	18	21	24	24	27	30	30	33	36	36	39	42	42	45	48	48	51	54	54	57	60	60	63	66	66	69	72	72	75	78	78	81	84	
11	2-220-0010	Welded rail support	Pcs.	3	4	5	5	6	7	8	8	9	10	10	11	12	12	13	14	14	15	16	16	17	18	18	19	20	20	21	22	22	23	24	24	25	26	26	27	27	
12	2-220-0011	Bar cable cross	Pcs.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13	2-220-0012	Socket mobile control 16 P.	Set	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	3-230-0007	Festoon cable towing arm (A)	Set	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Note :

- Span > 4 m < 20 m Cable trolley Between 1.5 m.
- Span > 21 m < 26 m Cable trolley Between 1.8 m.
- Span > 26 m < 40 m Cable trolley Between 2 m.

For Double Girder Festoon Track With Suspended Control

FESTOON KITS (4 m. C-track Lengths)

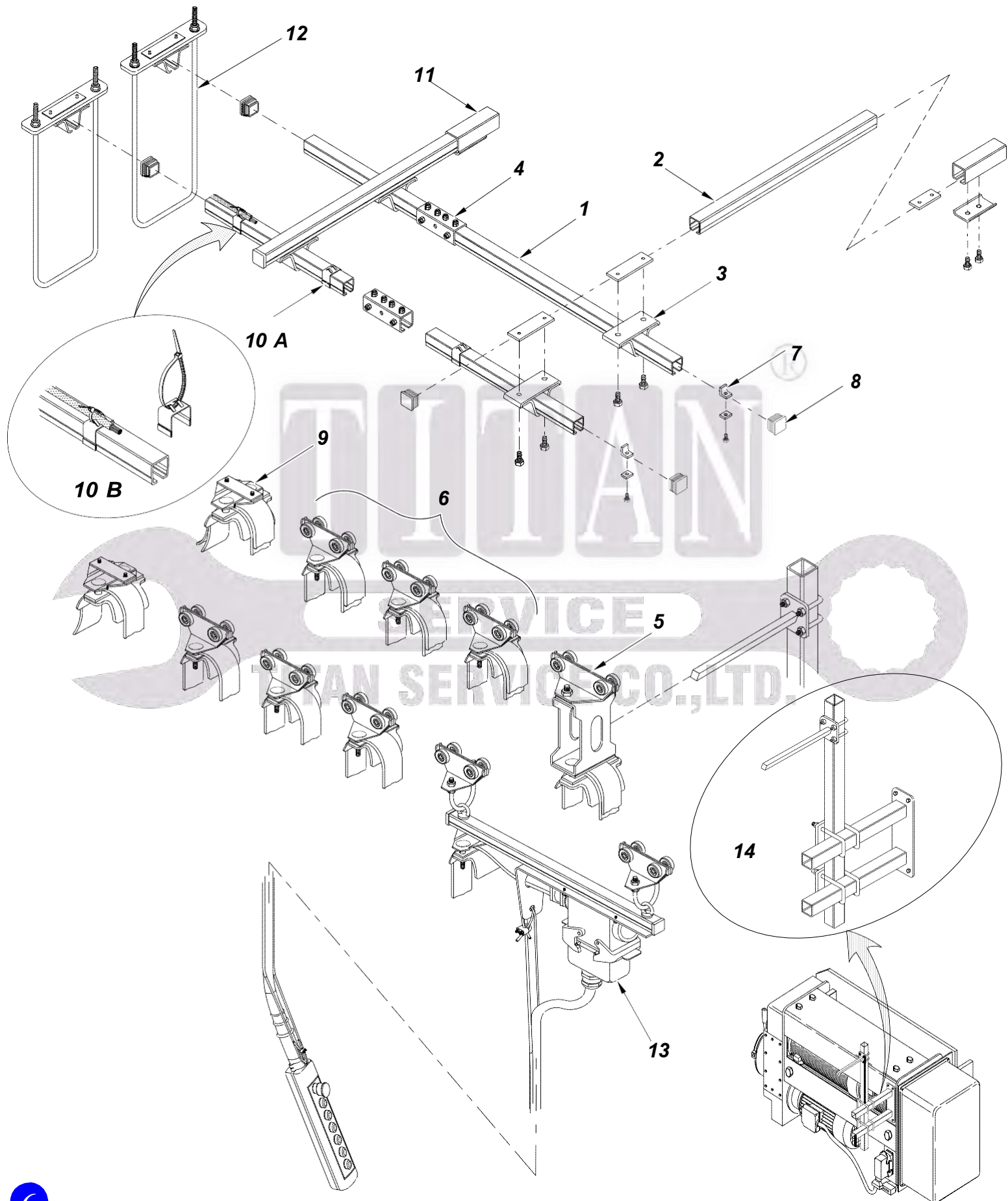
KIT PART NUMBER

Crane Span (m)				4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
				QUANTITY REQUIRED FOR KIT																																					
Item	Part Number	Description	Unit	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
1	2-220-0025	C-track	m.	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	40		
2	2-220-0022	C-track arm (300 mm.)	Pcs.	3	4	5	5	6	7	8	8	9	10	10	11	12	12	13	14	14	15	16	16	17	18	18	19	20	20	21	22	22	23	24	24	25	26	26	27	28	
3	2-220-0002	Track support	Pcs.	3	4	5	5	6	7	8	8	9	10	10	11	12	12	13	14	14	15	16	16	17	18	18	19	20	20	21	22	22	23	24	24	25	26	26	27	28	
4	2-220-0003	Track coupler	Pcs.	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8	8	8	9	9	9	9	
5	2-220-0004	Towing trolley	Pcs.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	2-220-0005	Cable trolley	Pcs.	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13	13	13	14	14	15	15	16	16	17	17	17	18	19	19	
7	2-220-0006	End stop-C	Pcs.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	2-220-0007	End cap-C	Pcs.	5	6	7	7	8	9	10	10	11	12	12	13	14	14	15	16	16	17	18	18	19	20	20	21	22	22	23	24	24	25	26	26	27	28	28	29	29	
9	2-220-0008	End cable clip	Pcs.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	2-220-0009	Clip for cable attachment	Pcs.	9	12	15	15	18	21	24	24	27	30	30	33	36	36	39	42	42	45	48	48	51	54	54	57	60	60	63	66	66	69	72	72	75	78	78	81	84	
11	2-220-0010	Welded rail support	Pcs.	3	4	5	5	6	7	8	8	9	10	10	11	12	12	13	14	14	15	16	16	17	18	18	19	20	20	21	22	22	23	24	24	25	26	26	27	27	
12	2-220-0011	Bar cable cross	Pcs.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13	2-220-0012	Socket mobile control 16 P.	Set	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	3-230-0007	Festoon cable towing arm (A)	Set	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

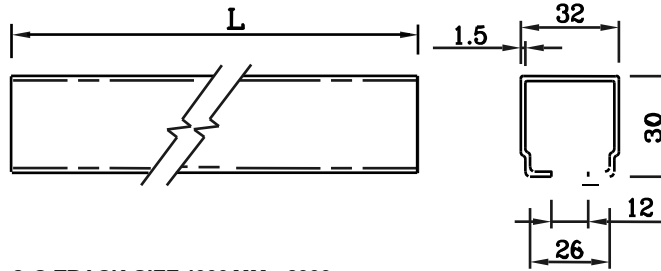
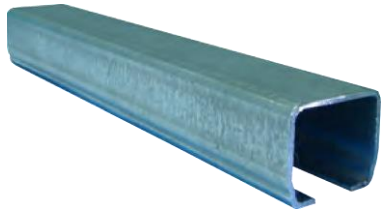
Note :

- Span > 4 m. < 20 m. Cable trolley Between 1.5 m.
- Span > 21 m. < 26 m. Cable trolley Between 1.8 m.
- Span > 26 m. < 40 m. Cable trolley Between 2 m.

For Single & Double Girder Festoon Track With Mobile Control



1. C-TRACK ARM SIZE 500 mm. , 650 mm. , 900 mm. , 1500 mm.

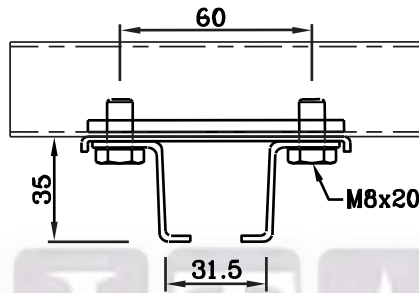


2. C-TRACK SIZE 4000 MM. , 6000 mm.

C-TRACK			
No.	Length (L)	Order No.	Weight (Kg.)
1.	500	2-220-0020	0.20 Kg.
	650	2-220-0021	0.25 Kg.
	900	2-220-0022	0.30 Kg.
	1500	2-220-0024	0.60 Kg.
2.	4000	2-220-0025	1.56 Kg.
	6000	2-220-0026	2.40 Kg.

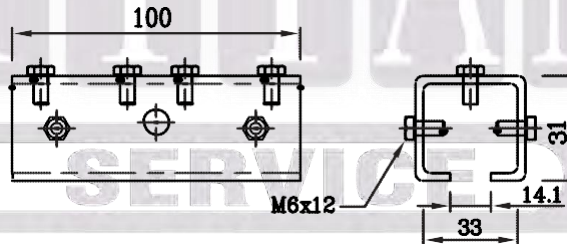
Material : galvanized steel

Dimension (s) : 1.5mm.



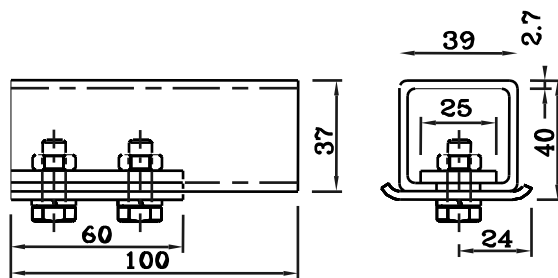
TRACK SUPPORT		
Max. load	Order No.	Weight (kg.)
16 Kg.	2-220-0002	0.2 Kg.

Material : galvanized steel



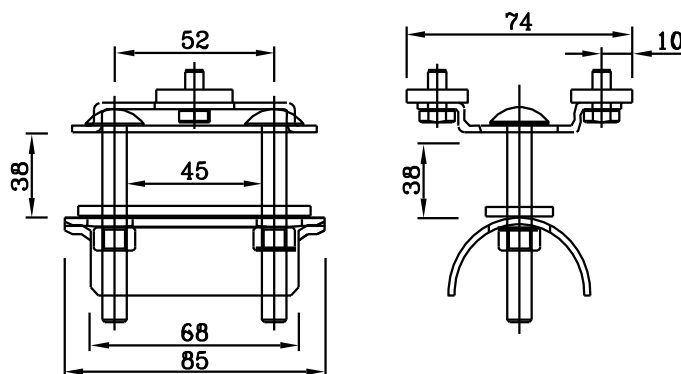
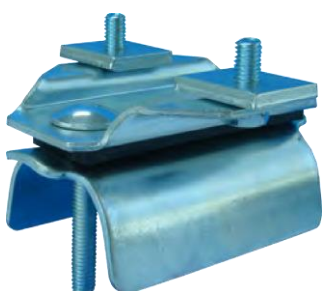
TRACK COUPLER		
Max.load	Order No.	Weight (Kg.)
16 Kg.	2-220-0003	0.4 Kg.

Material : galvanized steel



WELDED RAIL SUPPORT		
Max.Load	Order No.	Weight (Kg.)
16 Kg.	2-220-0010	0.6 Kg.

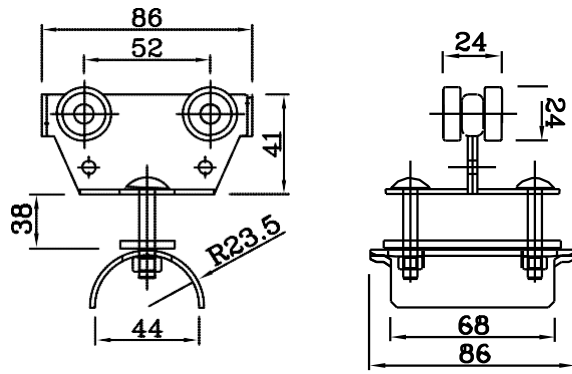
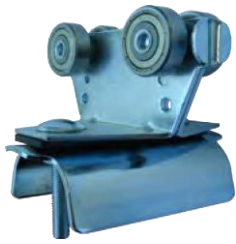
Material : galvanized steel



END CABLE CLIP		
Max.load	Order No.	Weight (Kg.)
16 Kg.	2-220-0008	0.2 Kg.

Material : galvanized steel

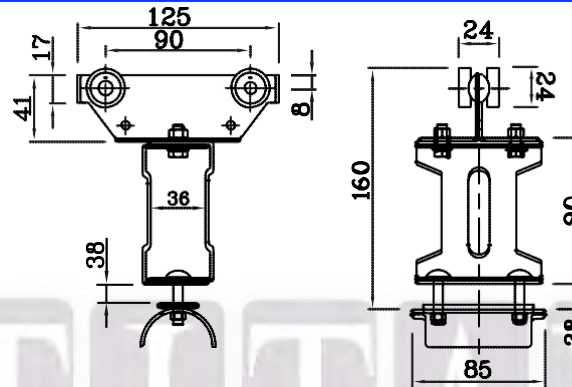
Temperature range : 30C up to 70C



CABLE TROLLEY

Max.load	Order No.	Weight (Kg.)
16 Kg.	2-220-0005	0.4 Kg.

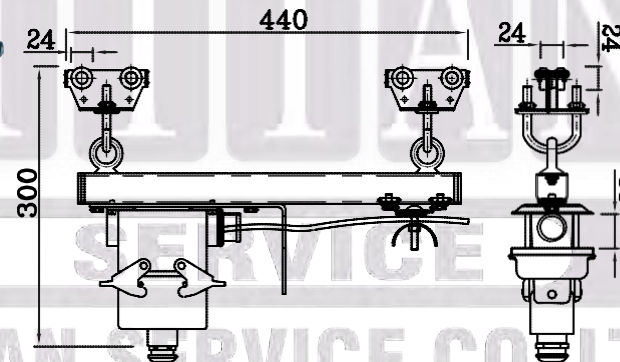
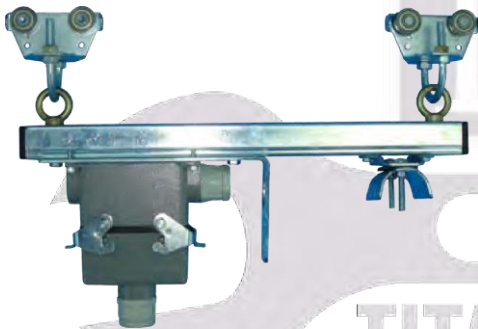
Material : galvanized steel
 Temperature range : 30C up to 70C



TOWING TROLLEY

Max.load	Order No.	Weight (Kg.)
16 Kg.	2-220-0004	0.8 Kg.

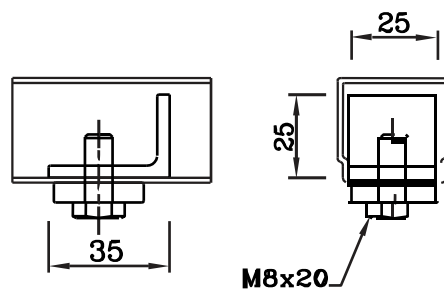
Material : galvanized steel
 Temperature range : 30C up to 70C



SOCKET MOBILE 16-24 P

Max.load	Order No.	Type
20 Kg.	2-220-0030	10 Pin
20 Kg.	2-220-0031	16 Pin
20 Kg.	2-220-0032	24 Pin

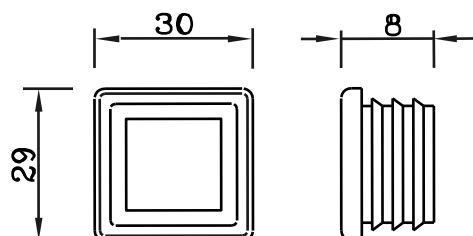
Material : galvanized steel
 cast aluminum
 Temperature range : 30 C up to
 Plug connector : 10,16,24 pin
 500V/16A



END STOP

Max.load	Order No.	Weight (Kg.)
20 Kg.	2-220-0006	0.2 Kg

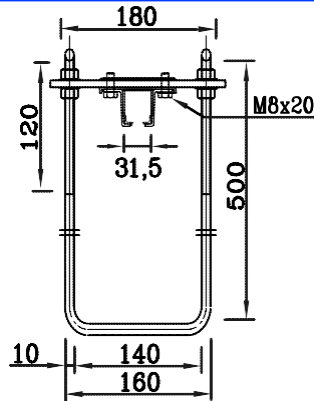
Material : galvanized steel
 Temperature range : 30C up to 70C



END CAP

Fixed length	Order No.	Weight (Kg.)
6000	1-100-0007	0.5 g.

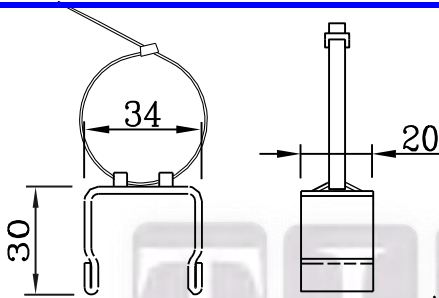
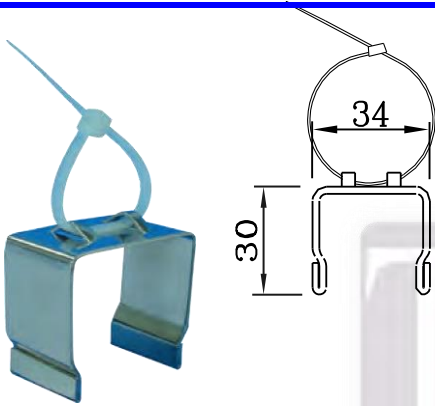
Material : Plastic



BAR CABLE CROSS

Max. load	Order No.	Weight (Kg.)
16 Kg.	2-220-0015	0.4 Kg.

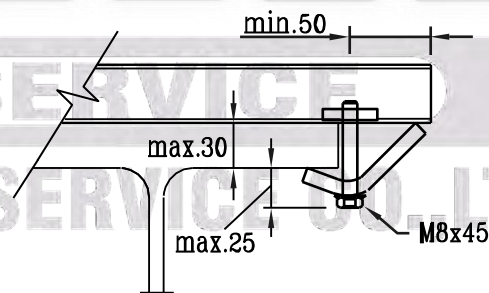
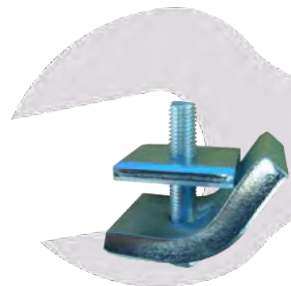
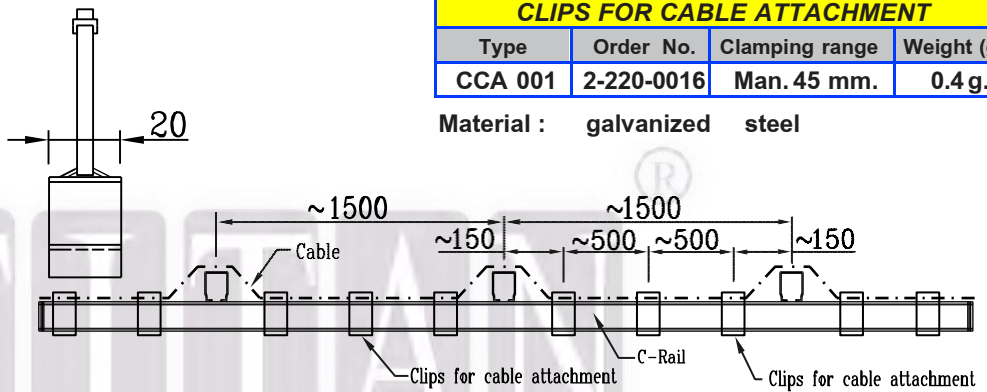
Material : galvanized steel



CLIPS FOR CABLE ATTACHMENT

Type	Order No.	Clamping range	Weight (g)
CCA 001	2-220-0016	Man. 45 mm.	0.4 g.

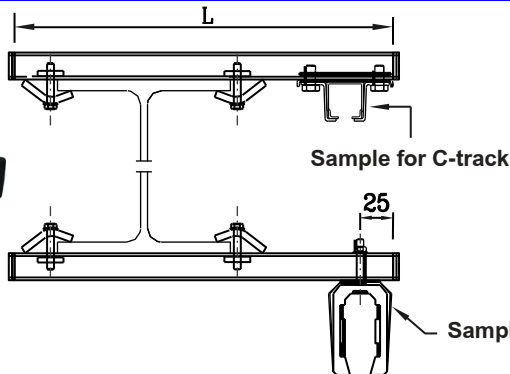
Material : galvanized steel



CLAMPING CLAW

Max. load	Order No.	Weight (Kg.)
16 Kg.	2-220-0011	0.2 Kg.

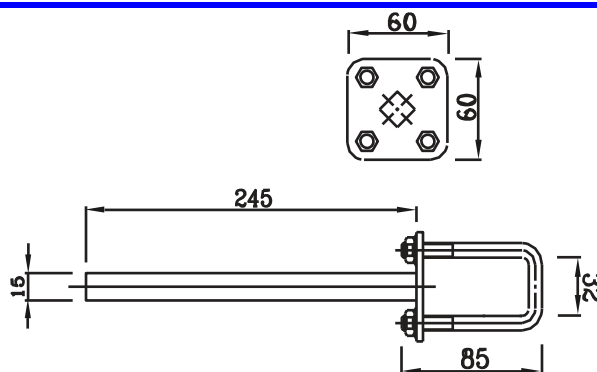
Material : galvanized steel



FASTENING BRACKET

Length (mm.)	Order No.	Weight (Kg.)
400	1-030-0043	1.7 Kg.
500	1-030-0044	1.9 Kg.
600	1-030-0045	2.3 Kg.

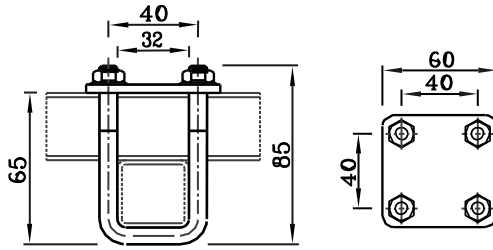
Material : galvanized steel



FIX SQUARE BAR

Max. load	Order No.	Weight (Kg.)
20 Kg.	2-220-0009	0.8 Kg.

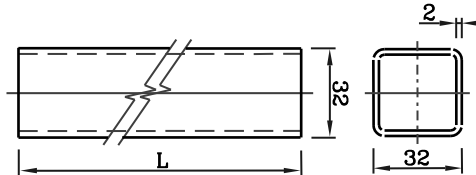
Material : galvanized steel



RECTANGULAR PIPE CLAMP

Max. load	Order No.	Weight (Kg.)
20 Kg	2-220-0014	0.2 Kg.

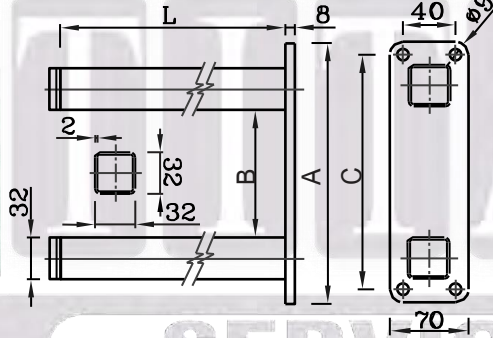
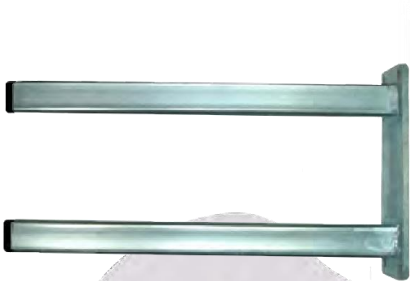
Material : galvanized steel



RECTANGULAR PIPE

Length (mm.)	Order No.	Weight (Kg.)
250	2-220-0013	0.4 Kg.
500	2-220-0013	0.72 Kg.
750	2-220-0013	1.2 Kg.
1000	2-220-0013	1.44 Kg.

Material : galvanized steel



CURRENT COLLECTOR TOWING ARM

End Carriage	Order No.	Dimension		Weight (Kg.)
		(A)	(B)	
250-500	3-230-0005	270 mm.	130 mm.	2.1 Kg.
130-200	3-230-0006	200 mm.	100 mm.	2.0 Kg.

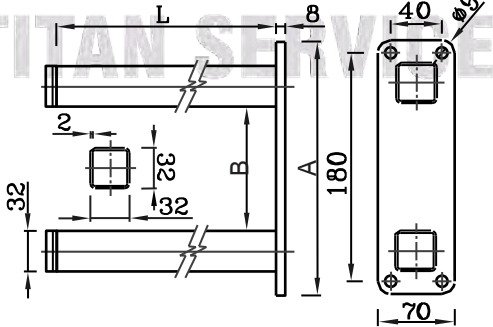
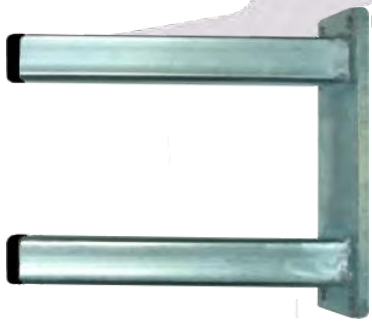
Material : galvanized steel

End Carriage Type : 130 - 200 L = 400 mm.

End Carriage Type : 250 - 320 L = 500 mm.

Dimension Type : 130 - 200 C = 180 mm.

Dimension Type : 250 - 500 C = 250 mm.



FESTOON CABLE TOWING ARM

Type Girder	Order No.	Dimension		Weight (Kg.)
		(A)	(B)	
SINGLE	3-230-0007	200 mm.	80 mm.	0.3 Kg.
DOUBLE	3-230-0008	200 mm.	110 mm.	0.4 Kg.

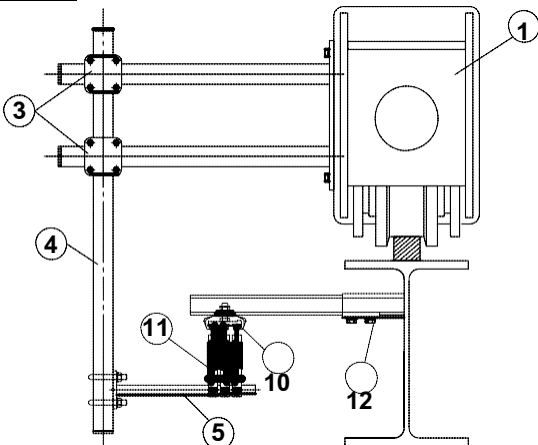
Material : galvanized steel

Type Girder : Single L = 150 mm.

Type Girder : Double L = 1250 mm.

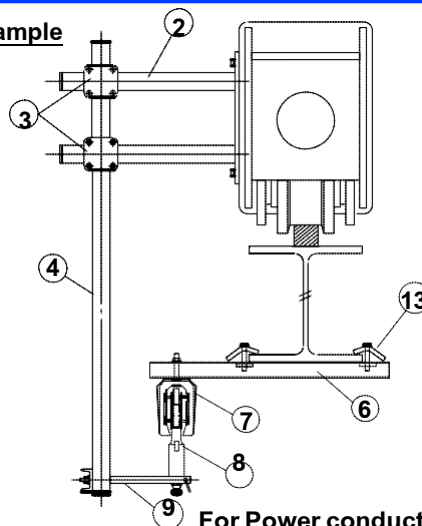
Detail Installation Collector Towing Arm

Sample



For Semi Conductor Bar

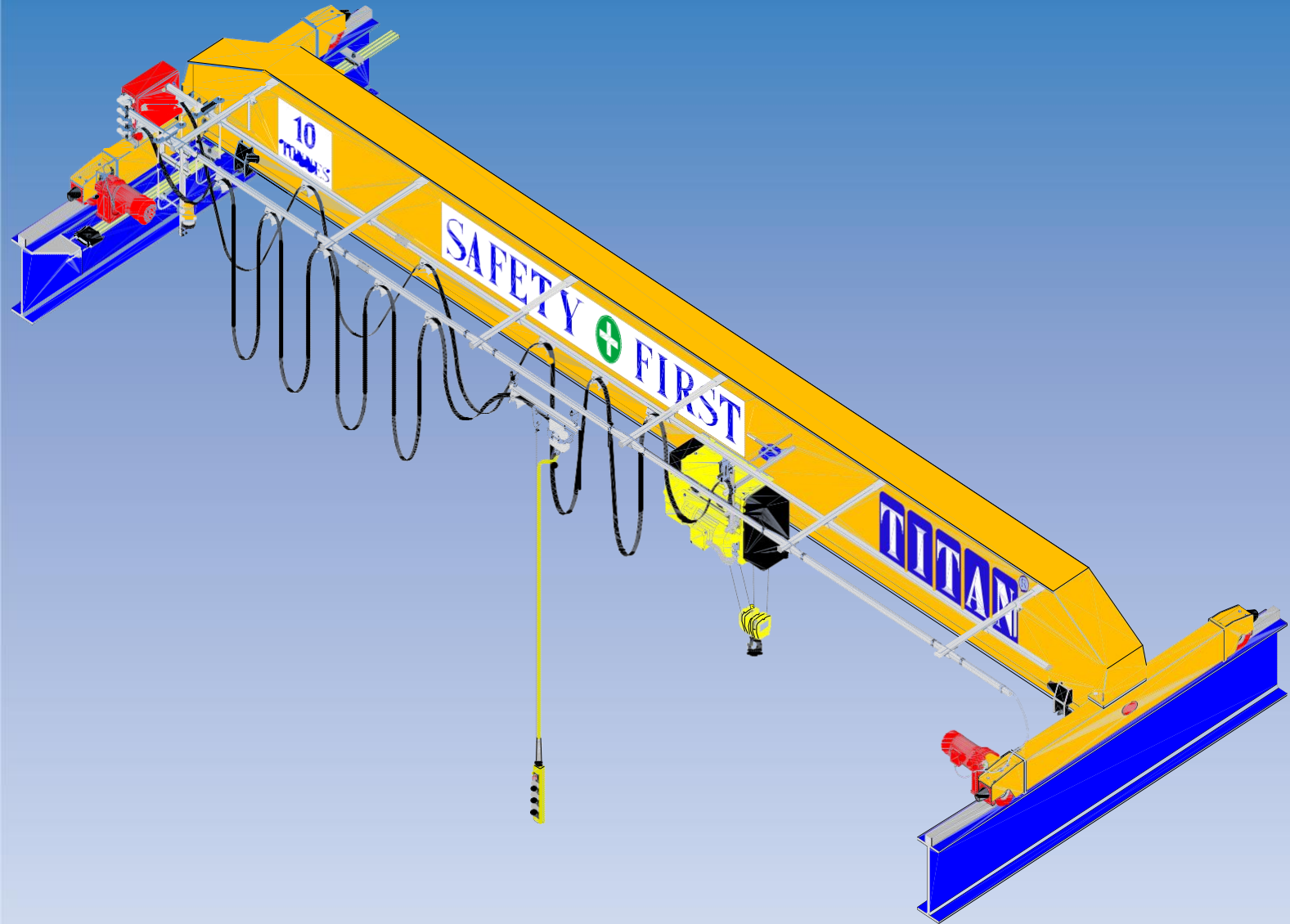
Sample



For Power conductor rail

1. End carriage
2. Current collector towing arm
3. Rectangular pipe clamp
4. Rectangular pipe
5. Fix square bar
6. Festening bracket
7. PVC.Enclosed
8. Simple of trolley with cable
9. Carrier (Mobilis)
10. Simple of High tro reel
11. Current Collector (High tro reel)
12. Welded rail support
13. Camping claw

HOIST & CRANE SYSTEMS



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