

**SPEED-O-CONTROLS
PVT. LTD.**



INSULATED CONDUCTOR BAR

SAFE-DUCT



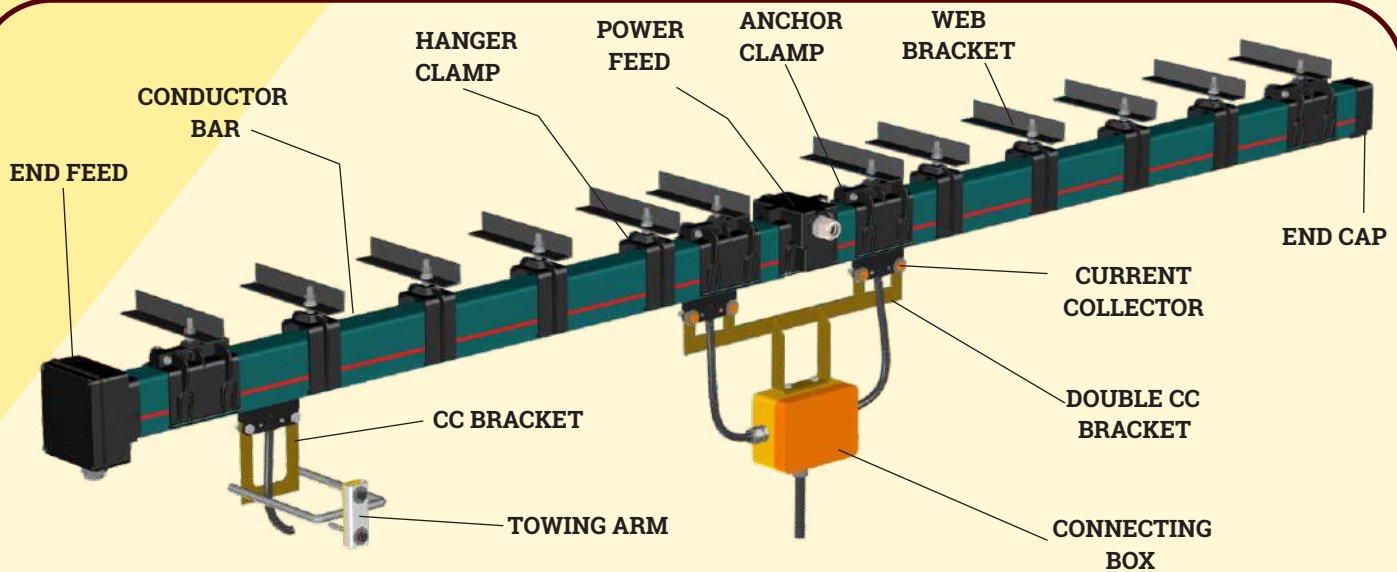
DISCOVER OUR RANGE OF SAFE DUCT FOR CRANES

V5

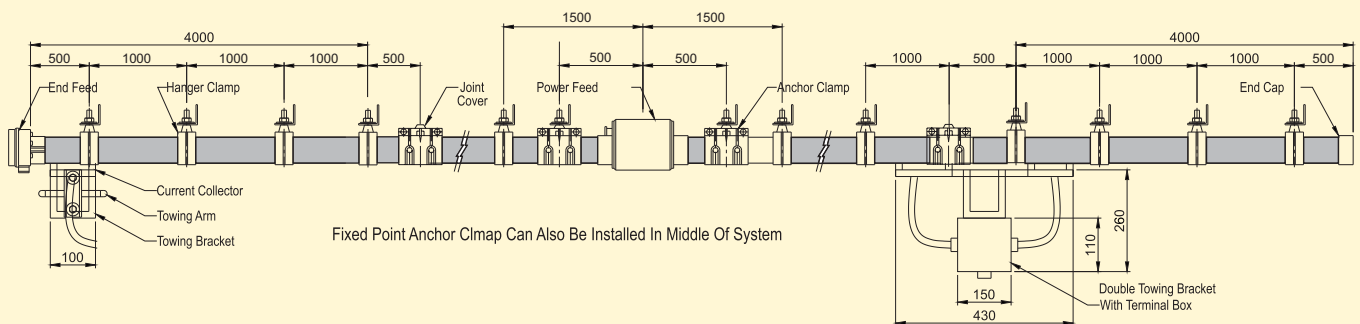
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SYSTEM ARRANGEMENT FOR SAFE-DUCT (40-200AMPS)



SYSTEM ARRANGEMENT FOR Safe-Duct (40-200Amps.)



Safe-Duct the enclosed conductor system is a Morden design, accident proof with moving current collector to feed mobile equipments such as cranes, hoists conveyors, textiles & computerized ware houses etc.

FEATURES :

- Safety : due to its isolation it is a protected line.
- Small dimensions.
- The difference due to expansion are absorbed in every joint of the line. It is not required to place special expansion joints.
- To extend an existing line is very easy, just adding new tracks.
- Quick mounting : in one passing the line is ready to work.
- The electric feed can be done at the beginning of the line or at every joint of the line.
- "CURVED RADIUS ALSO AVAILABLE."
- 40, 60, 80, 100, 140, 200 Amps Bolted type.
- Working Voltage : up to 600V
- Working temperature : from -30°C to +55°C
- Degree of protection : IP 20 (without rubber sealing). IP 23 (with rubber sealing)
- It is very easy to change a track already assembled without moving the rest of them
- Common housing.
- Multi conductor.
- 40, 60, 80, 100, 140 Amps Continuous strip.

The Intermittent rating for conductors

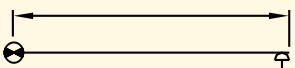
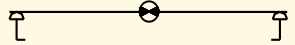
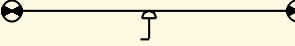
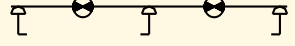
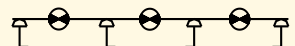
RATING				
ALLOWABLE CURRENT (AMPS)	100%	80%	60%	40%
	40	44	51	63
	60	66	77	94
	80	88	103	126
	100	111	129	158
	140	155	180	221
	200	222	258	316

Technical data Safe-Duct Multi Conductor Bar System

Conductor Bar System	Safe-Duct - C					Safe-Duct 5					
Type	Continuous strip					Bolted in Type					
Model No	SD40C	SD60C	SD80C	SD100C	SD140C	SD40	SD60	SD80	SD100	SD140	SD200
Nominal current(A) At 100% Duty and 35°C	40	60	80	100	140	40	60	80	100	140	200
DC Resistance (Ω/M) at +35°C	0.0019	0.0011	0.0009	0.0006	0.0004	0.0019	0.0011	0.0009	0.0006	0.0004	0.0003
Impedance (Ω/M) at +35°C	0.002	0.0017	0.00118	0.0011	0.0007	0.0020	0.0017	0.00118	0.0011	0.0007	0.0005
Voltage grade [V]	600										
Support Spacing [mm]	1000/1333/1500										
Bar Length [mm]	4000										
Outside dimensions [mm]	85 x 56										
Permissible ambient temperature	-30°C + 55°C (Standard Insulation)										

Effects of various power feed positions on Volt Drop Calculations.

Selection of feed-in points. The feed-in point for every application must be selected because the length L between power feed and conductor rail end is used for calculating the voltage drop. Following feed - in points can normally be used.

Powered Position	Schematic Diagram Collector symbol Indicates Positions of Maximum Volt Drop	Effective Length to be used in Volt Drop Calculations	Voltage Drop
Endfeed		$LVD = L$	The allowable volt drop determines, the maximum allowable resistance of conductor. The value of volt drop within a conductor system is effected by effective length of system and current drawn. Volt Drop Calculation For A. C. Machine 3 phase ΔU Volt drop = length (D) x Impedance (Z) x Current (I) x $3\sqrt{3}$ $U \% = \frac{\Delta U}{U_n} \times 100 [\%]$
Center-feed		$LVD = \frac{L}{2}$	
Two end feed		$LVD = \frac{L}{4}$	
Two feeds both in from end		$LVD = \frac{L}{6}$	
Three feeds at in from ends and centre		$LVD = \frac{L}{10}$	

DSL - LOAD CALCULATION

Sizing systems for multiple hoists, motors, and/or multiple cranes

For a single crane : Size the conductor bar to handle 100% of the current draw of the largest motor or group of motors, plus 50% of the combined current draw of the other motors on the vehicle.

For multiple cranes or vehicles : Determine the current draw for each crane/vehicle, using the method above. Sum all the current draws for each crane/vehicle, then multiply the sum by the appropriate demand factor :

# of Crane/vehicles	Demand Factor
2	.95
3	.91
4	.87
5	.84
6	.81
7	.78

The most effective way to demonstrate each factor is with examples based upon the following :

Example :

10 Tonne overhead crane conductor system length 100 meters.

Maximum Temperature Range 0 degrees C, to 35 degrees C.

Environmental Conditions - Good Indoors.

Supply - 415 volts, 3 phase, 50 Cycles, with Single End Powerfeed.

Allowable volt drop in downshop conductors - 3%

Crane Motor Details :

	KW	Normal Motor Running Currents	Motor Starting Currents
Hoist (H)	20	35A	70A
Cross Travel (CT)	3	5.25A	12A
Long Travel Twin Drive	2 x 2	7A	14A

INTENSITY DURING THE START-UP PHASE :

(2 seconds maximum)

Take into account the number of motors starting up simultaneously and those already in operation, then calculate the corresponding intensity. When the start-up intensity is not known, find the approximate value as follows :

Standard squirrel cage motor	—	5 x normal running current
Type rotor motors - as used on some hoists	—	7 x normal running current
Slip Ring motors	—	2 x normal running current

Thermal Electrical Loading :

The total electrical load is the sum of the simultaneous individual electrical loads produced by normal running. There are two types of load to be considered :

1 . Continuous load

2 . Intermittent load

On systems with more than one crane, determine the thermal electrical loading by considering the combination of the running currents of the motors marked.

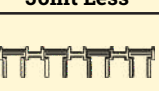
No of Cranes	Largest Motor of All Cranes	Second Largest Motor of All Cranes	Third Largest Motor of All Cranes	Fourth Largest Motor of All Cranes
1	*	*		
2	*	*	*	
3	*	*	*	
4	*	*	*	*

In the above example the total thermal load would be $35 + 7 = 42A$. Therefore Safe-Duct - SD60-60Amps would be satisfactory.

In the absence of information about running simultaneity of crane, please refer to the table hereunder :

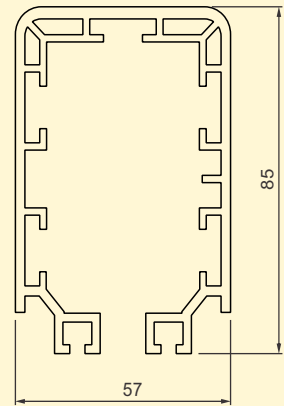
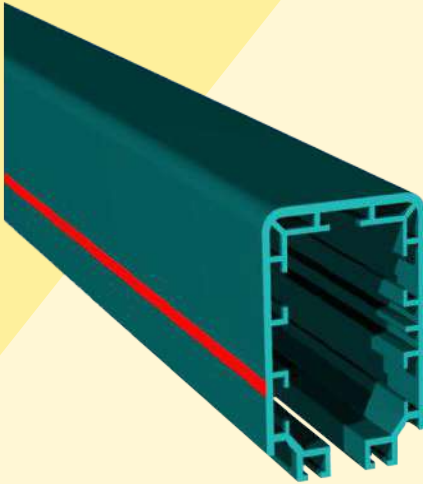
Number of crane on the line	For all the Cranes (IN)							
	1" motor		2" motor		3" motor		4" motor	
	I _d	I _n	I _d	I _n	I _d	I _n	I _d	I _n
1	X			X				
2	X			X		X		
3	X		X			X		
4	X		X			X		X

PRODUCT RANGE-INDIVIDUAL

System Design	Insulated Conductor Bar				Heavy Conductor Bar	
Conductor Bar System	Safeline-W	Safeline-M	Safeline-U	Safeline-C	Safeline-V	Safeline-V
Type of Joints	Bolted	Pin	Joint Less	Joint Less	Aluminium	Copper
						
Nominal Current (A)	60-400	60-315	70-100	40-140	500-800-1000-1250	500-800-1000-1250
Volts (V)	600	600	600	600	600	600
Support Spacing (m)	1.125	1.125	1.2	1.2	2.25	2.25
Bar Length	4500	4500	4500	4800	4500	4500
Outside Dimensions (mm)	23 x 27	20 x 22	74 x 14	34 x 19	42 x 32	42 x 32

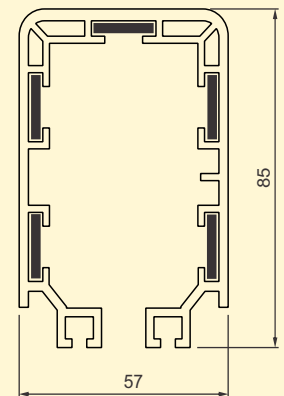
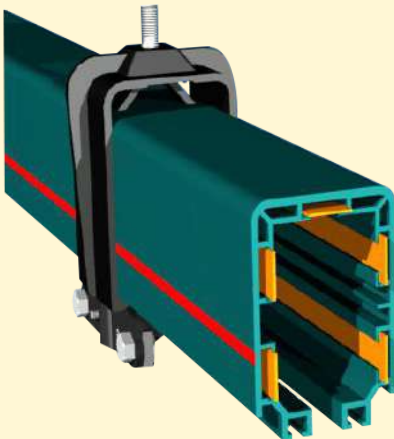
System Design	Enclosed Conductor Bar			
Conductor Bar System	Safe-Duct 5	Safe-Duct 7	Safe-Duct 4	Safe-Duct 5M
Type of Joints	Bolted/Joint Less	Bolted/Joint Less	Bolted/Joint Less	Bolted/Joint Less
				
Nominal Current (A)	40-60-80-100-140-200	40-60-80-100-140	40-60-80-100-140	40-60
Volts (V)	600	600	600	600
Support Spacing (m)	1.333	1000	1000	1000
Bar Length	4000	4000	4000	4000
Outside Dimensions (mm)	85 x 56	87 x 52	87 x 52	60 x 40

SAFE-DUCT HOUSING



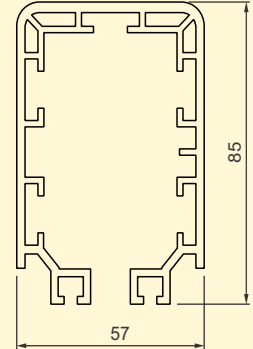
PART NO	DESCRIPTION	POLES	MAX LENGTH(M)	MATERIAL
SD-HS	BOX TYPE PVC HOUSING	5	4	PVC

SAFE-DUCT CONDUCTOR BAR



PART NO	RATING	POLES	MAX LENGTH(M)	MATERIAL
SD-CB-40	40A	4/5	4	COPPER
SD-CB-60	60A	4/5	4	COPPER
SD-CB-80	80A	4/5	4	COPPER
SD-CB-100	100A	4/5	4	COPPER
SD-CB-140	140A	4/5	4	COPPER
SD-CB-200	200A	4/5	4	COPPER

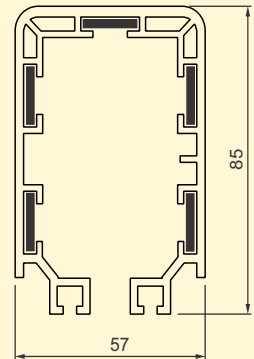
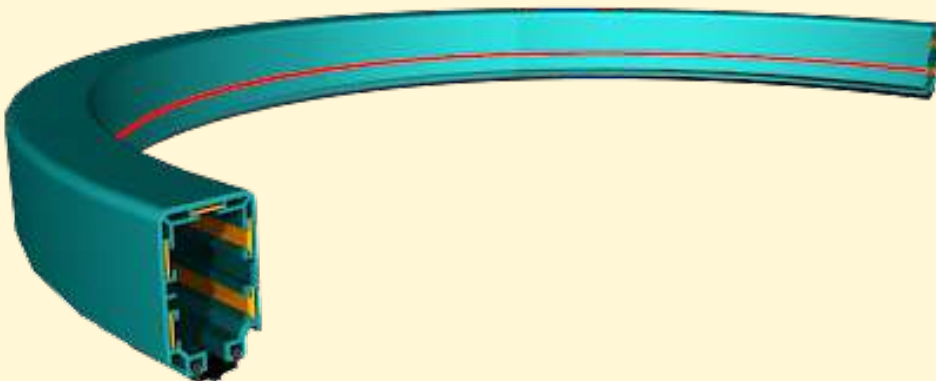
SAFE-DUCT HOUSING CURVED



PART NO	DESCRIPTION	POLES	MAX LENGTH(M)	MATERIAL
SD-HS-C	4 Mtr LONG BOX TYPE PVC HOUSING CURVED	5	4	PVC

Minimum Bending Radius: 1500mm

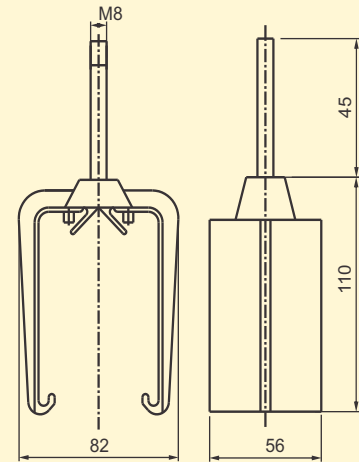
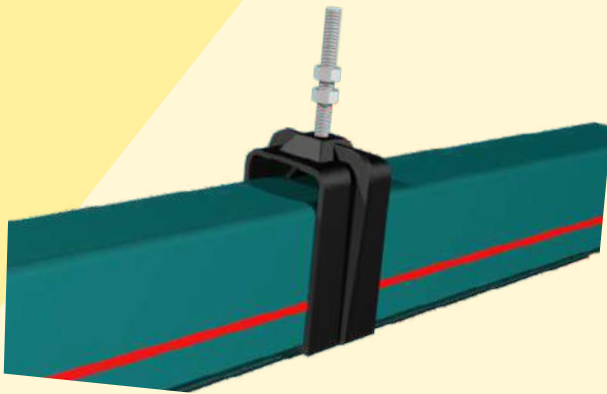
SAFE-DUCT CONDUCTOR BAR CURVED



PART NO	RATING	POLES	MAX LENGTH(M)	MATERIAL
SD-CB-40-C	40A	4/5	4	COPPER
SD-CB-60-C	60A	4/5	4	COPPER
SD-CB-80-C	80A	4/5	4	COPPER
SD-CB-100-C	100A	4/5	4	COPPER
SD-CB-140-C	140A	4/5	4	COPPER
SD-CB-200-C	200A	4/5	4	COPPER

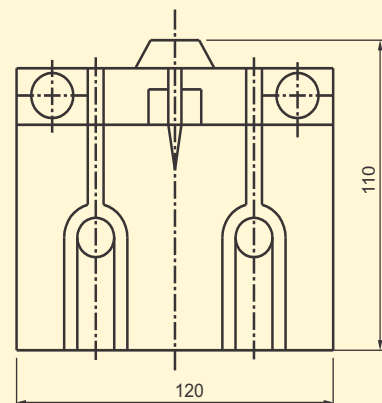
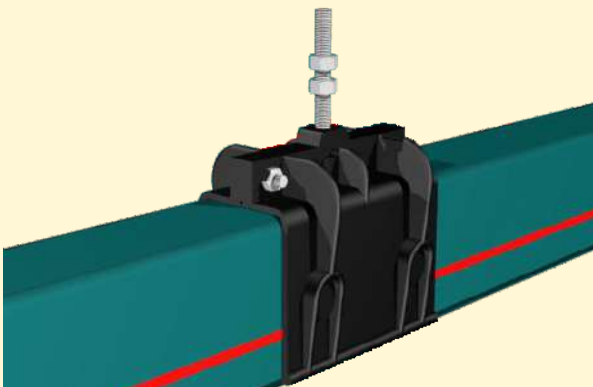
Minimum Bending Radius: 1500mm

HANGER CLAMP GFN



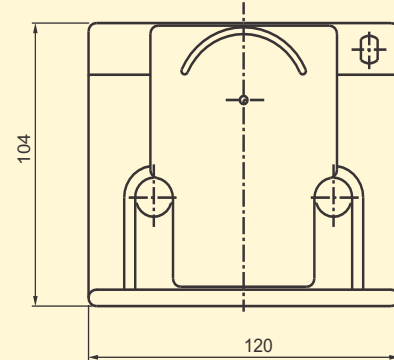
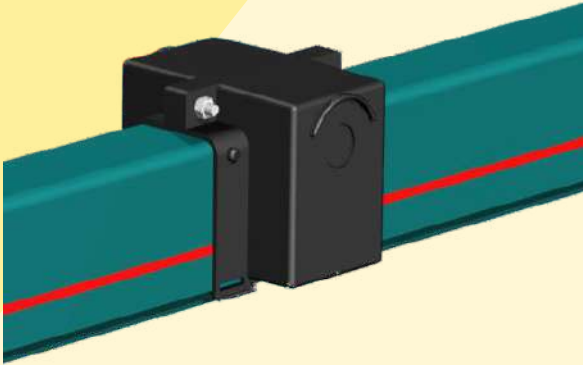
PART NO	DESCRIPTION	MATERIAL
SD-HC-E	HANGER CLAMP	GFN

ANCHOR CLAMP GFN



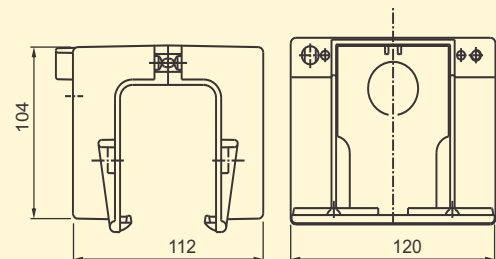
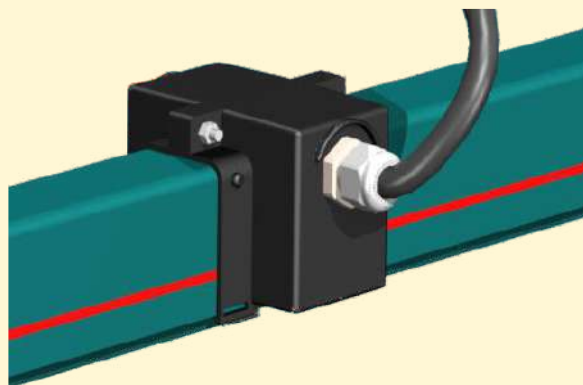
PART NO	DESCRIPTION	MATERIAL
SD-AC-E	ANCHOR CLAMP	GFN

JOINT COVER GFN



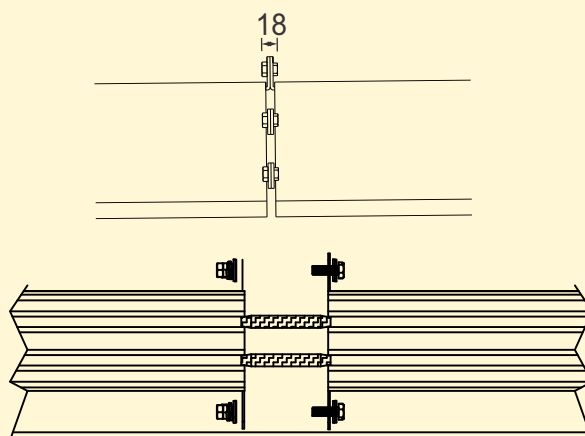
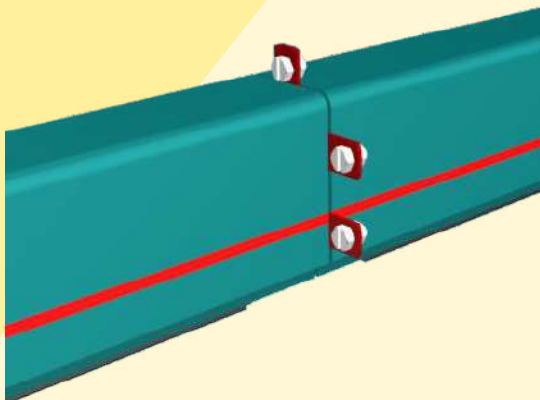
PART NO	DESCRIPTION	MATERIAL
SD-JC	JOINT COVER	GFN

CENTER POWER FEED GFN



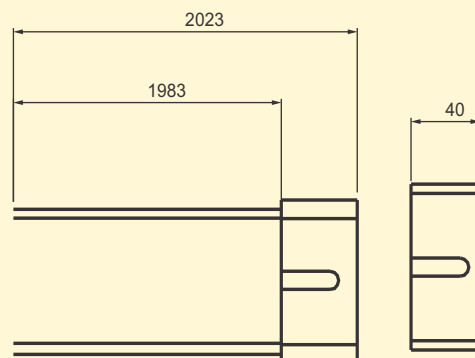
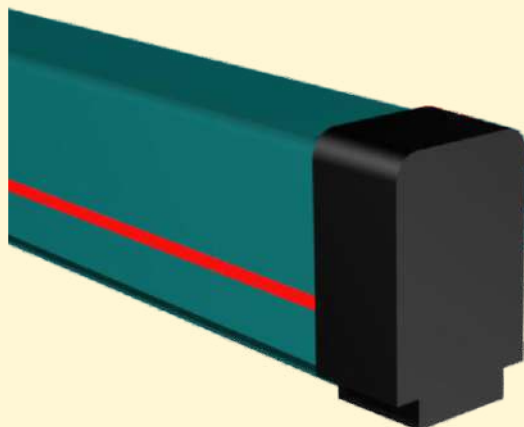
PART NO	DESCRIPTION
SD-LF1	LINE FEED (FOR 4 BAR 40-60A)
SD-LF2	LINE FEED (FOR 5 BAR 40-60A)
SD-LF3	LINE FEED (FOR 4 BAR 80-100A)
SD-LF4	LINE FEED (FOR 5 BAR 80-100A)
SD-LF5	LINE FEED (FOR 4 BAR 140-200A)
SD-LF6	LINE FEED (FOR 5 BAR 140-200A)

BOLTED JOINTS



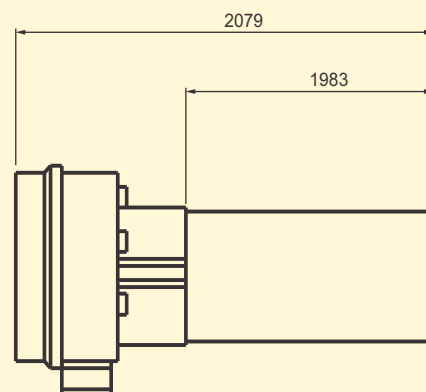
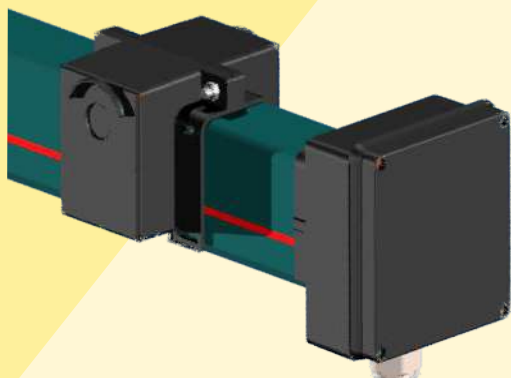
PART NO	DESCRIPTION
SD-BJ1	BOLTED JOINTS

END CAP



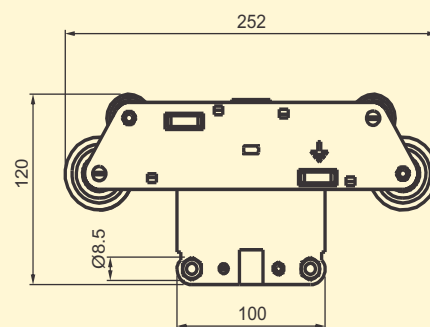
PART NO	DESCRIPTION	MATERIAL
SD-EC	END CAP	GFN

END POWER FEED



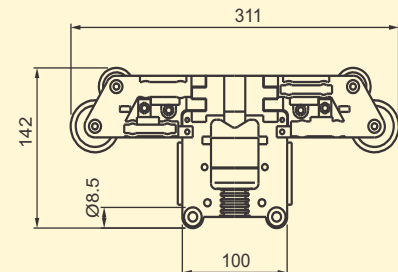
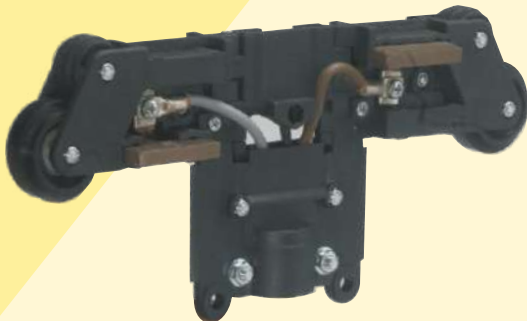
PART NO	DESCRIPTION
SD-EF1	END FEED (FOR 4 BAR 40-60A)
SD-EF2	END FEED (FOR 5 BAR 40-60A)
SD-EF3	END FEED (FOR 4 BAR 80-100A)
SD-EF4	END FEED (FOR 5 BAR 80-100A)
SD-EF5	END FEED (FOR 4 BAR 140-200A)
SD-EF6	END FEED (FOR 5 BAR 140-200A)

CURRENT COLLECTOR 40A



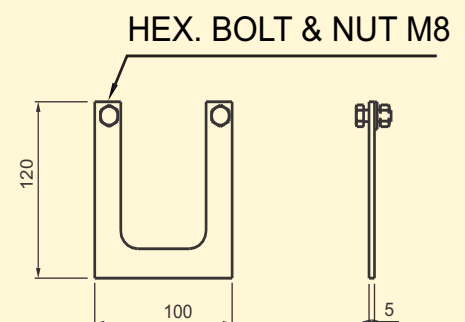
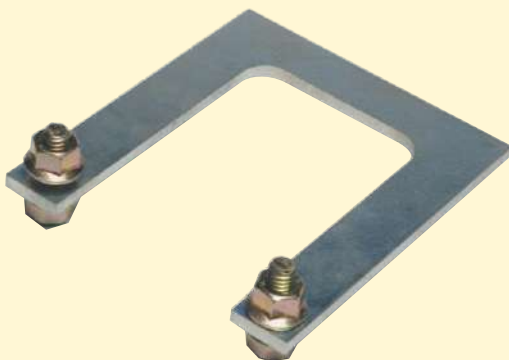
PART NO	DESCRIPTION	POLES	RATING
CC-4P-40	CURRENT COLLECTOR TROLLEY SUITABLE FOR 4 BAR	4	40A
CC-5P-40	CURRENT COLLECTOR TROLLEY SUITABLE FOR 5 BAR	5	40A

CURRENT COLLECTOR 70A



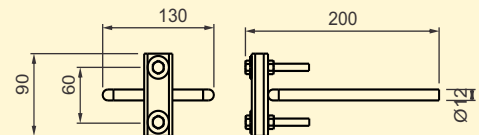
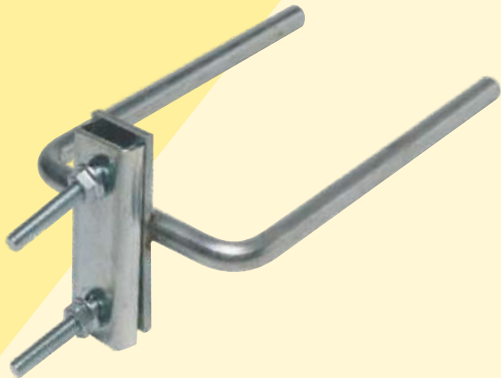
PART NO	DESCRIPTION	POLES	RATING
CC-4P-70	CURRENT COLLECTOR TROLLEY SUITABLE FOR 4 BAR	4	70 A
CC-5P-70	CURRENT COLLECTOR TROLLEY SUITABLE FOR 5 BAR	5	70 A

TOWING ARM BRACKET



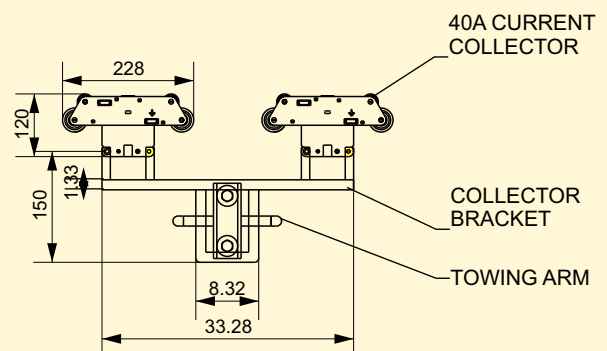
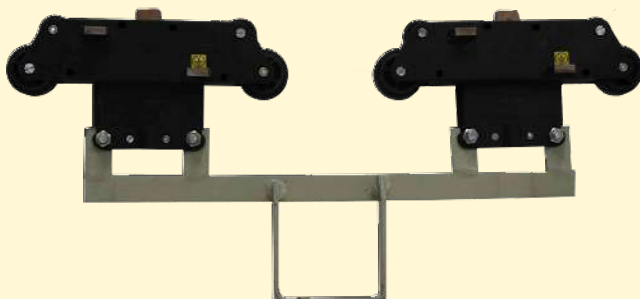
PART NO	DESCRIPTION	MATERIAL
SD-TAB	TOWING ARM BRACKET	M.S

TOWING ARM



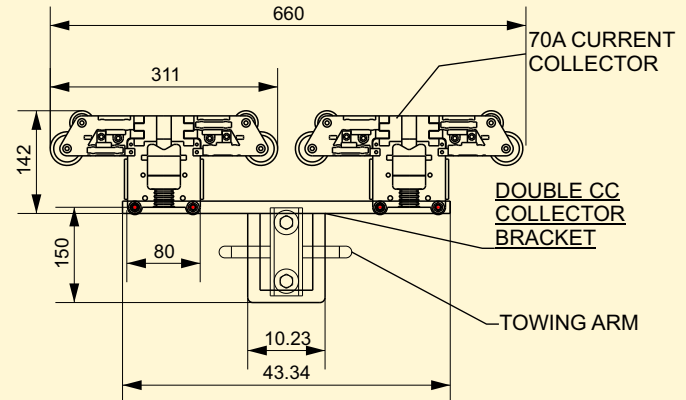
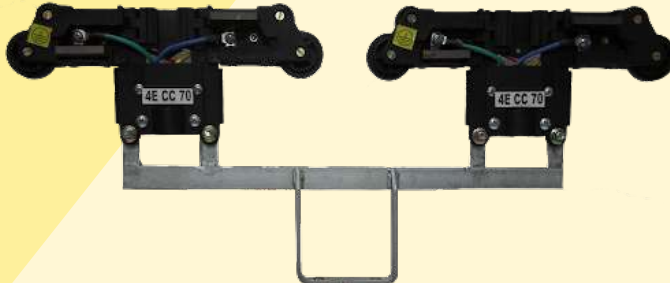
PART NO	DESCRIPTION	MATERIAL
SD-STA	TOWING ARM BRACKET	M.S

DOUBLE CURRENT COLLECTOR 40A



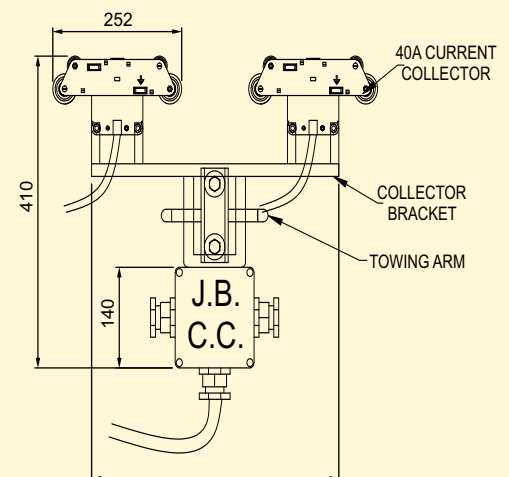
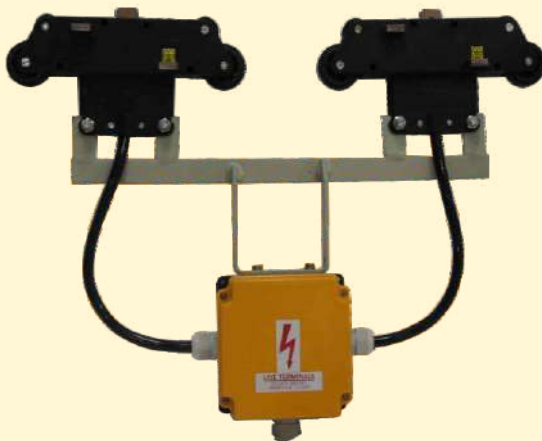
PART NO	DESCRIPTION	POLES	RATING
2SD-CCA4x40	DOUBLE CURRENT COLLECTOR TROLLEY WITH TOWING ARM & BRACKET	4	40A x 2
2SD-CCA5x40	DOUBLE CURRENT COLLECTOR TROLLEY WITH TOWING ARM & BRACKET	5	40A x 2

DOUBLE CURRENT COLLECTOR 70A



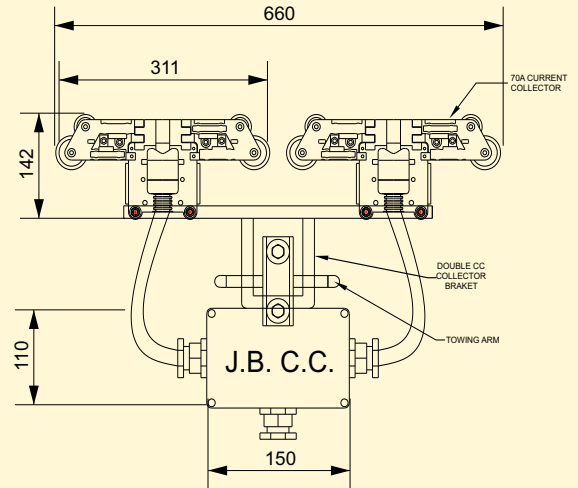
PART NO	DESCRIPTION	POLES	RATING
2SD-4CCA _x 70	DOUBLE CURRENT COLLECTOR TROLLEY WITH TOWING ARM & BRACKET	4	70A x 2
2SD-5CCA _x 70	DOUBLE CURRENT COLLECTOR TROLLEY WITH TOWING ARM & BRACKET	5	70A x 2

DOUBLE CURRENT COLLECTOR 40A WITH JUNCTION BOX



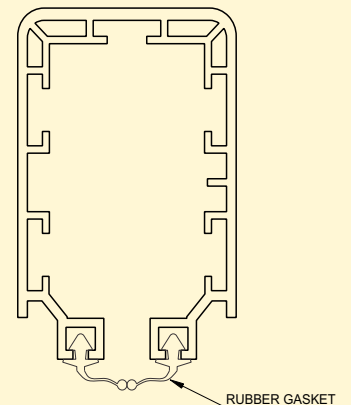
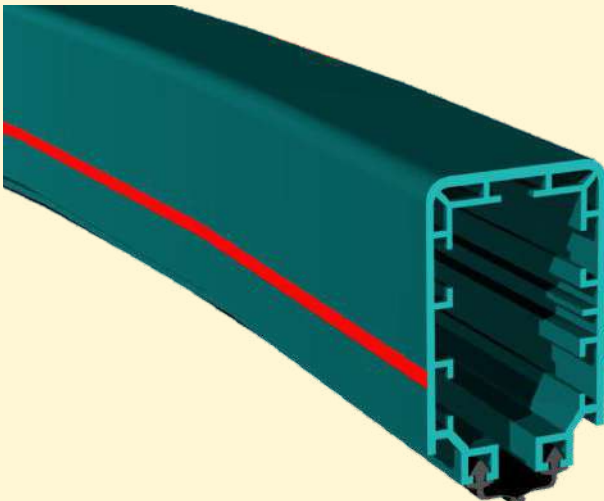
PART NO	DESCRIPTION	POLES	RATING
2SD-CCA4 _x 40-JB	DOUBLE CURRENT COLLECTOR TROLLEY WITH TOWING ARM AND JUNCTION BOX	4	40A x 2
2SD-CCA5 _x 40-JB	DOUBLE CURRENT COLLECTOR TROLLEY WITH TOWING ARM AND JUNCTION BOX	5	40A x 2

DOUBLE CURRENT COLLECTOR 70A WITH JUNCTION BOX



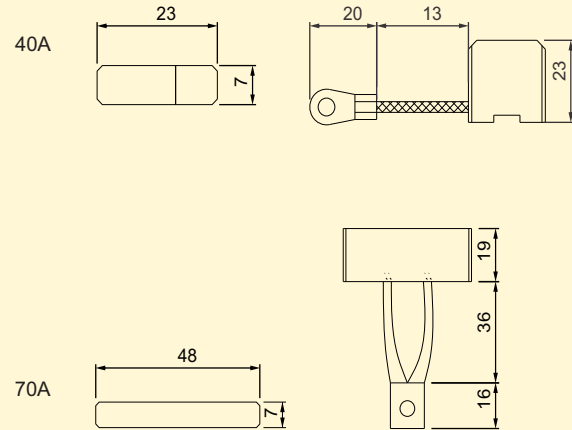
PART NO	DESCRIPTION	POLES	RATING
2SD-4CCA $\times$ 70-JB	DOUBLE CURRENT COLLECTOR TROLLEY WITH TOWING ARM AND JUNCTION BOX	4	70A $\times$ 2
2SD-5CCA $\times$ 70-JB	DOUBLE CURRENT COLLECTOR TROLLEY WITH TOWING ARM AND JUNCTION BOX	5	70A $\times$ 2

RUBBER SEAL



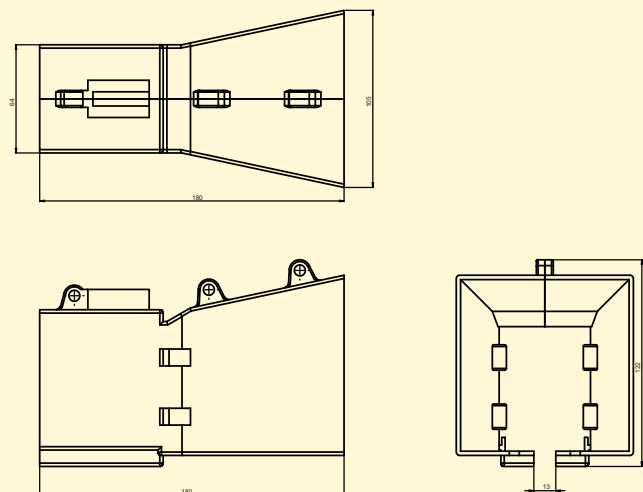
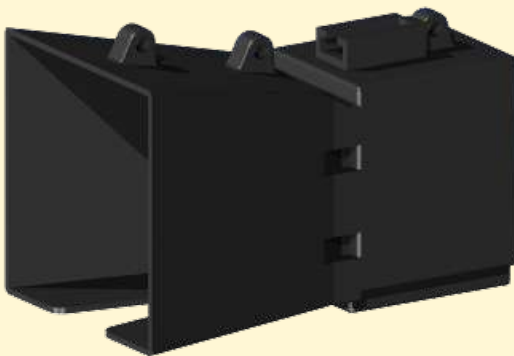
PART NO	DESCRIPTION
SD-RS	RUBBER SEAL (IP 23 PROTECTION)

CARBON SHOE



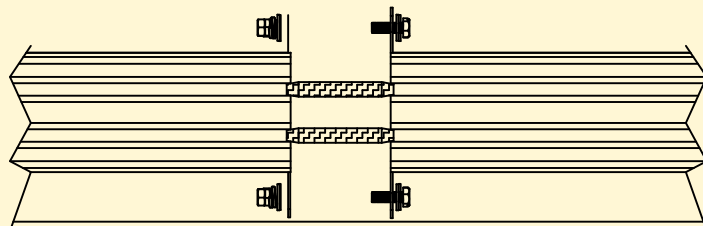
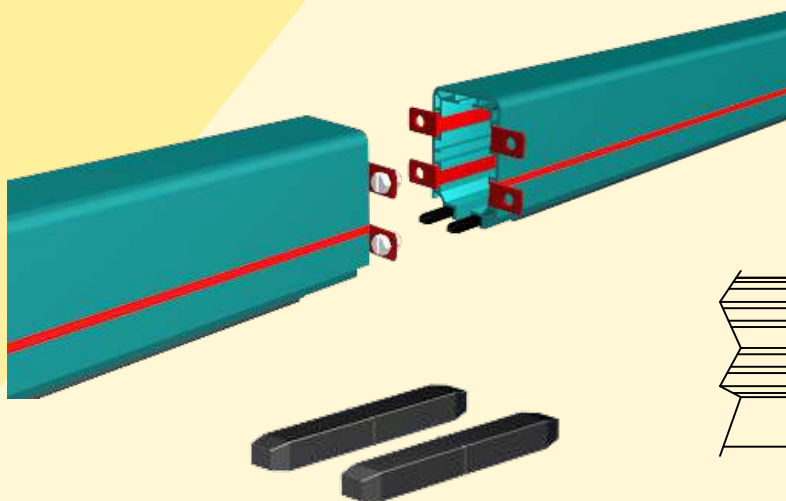
PART NO	DESCRIPTION
SD-CS1	CARBON SHOE FOR 40A
SD-CS2	CARBON SHOE FOR 70A

TRANSFER CAP



PART NO	DESCRIPTION
SD-TC	TRANSFER CAP

CONNECTING PIN



PART NO	DESCRIPTION
SD-CP	CONNECTING PIN



ENQUIRY FORM

[CLICK HERE FOR INDEX](#)



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1- Power Consumer Type :

(traveling crane, monorail, transtocker etc.)

2 -Length of the Installation : _____ m

3 - Type of Current : ☐ AC ☐ DC _____ V _____ Hz

4 - Number of Poles : _____ phase _____ earth _____ neutral

5 - Current (if know) : _____ A

6 - Features of Crans :

MOTOR (IN KW)	CRANE 1	CRANE 2	CRANE 3
HOST			
LONG TRAVEL			
CROSS TRAVEL			
OTHERS (PLEASE SPECIFY)			

7 - Type of Motor Start-Up (direct vanator, additional resistors)

8 - Stationary Use : ☐ yes ☐ no

9 - Duty Cycle Factor (maximum rate of use per 10 min period) : _____ %

10 - Operation : ☐ indoors ☐ outdoors

11 - Temperature : min _____ °C max _____ °C

12 - Permissible voltage Drop : in continuous: _____ (default value : 2%)

at start-up: _____ (default value : 5%)

13 - Installation Environment (dust, humidity, chemical agents) :

14 - Traveling Speed of Mobile : _____ m/mn

15 - Number and Position of Feeding Points along the line :

16 - Supply of Fixing Brackets (see page 15) : ☐ yes ☐ no

17 - Other Information about the Installation :

18 - For Installations with curves, Transfers or Other special Elements,

Please Include Drawing or a sketch

19 - Contact Data :

• Company :

• For the attention of :

• Department :

• Postal address :

• Telephone :

• Fax :

• E-mail :

H. O. Unit -I : C-15/16, Nand Jyot
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