VITZRO BUSWAY SYSTEM

Pioneering an affluent future society with dream,
advancement, and light of creativity

VITZRO

Human

The challenge and technological innovation of VITZRO actualize creation of value and affluent life of customers.

We take the initiative to create better future through repeated innovation of technology and quality in order to raise the power of high-tech and high-speed era and to focus our competence on maximizing technological development.

CONTENTS

Based on expectation and satisfaction of our customers,

We look forward to the VITZRO Group's history that lasts for 100 years.

By focusing our competence on fulfilling customer satisfaction through chalenge and technological innovation, VITZRO Group attempts to actualize value creation of customers and affluent life of mankind.

Started as Kwangmyung Electric Engineering plant in 1955, Today's VITZRO Group was born the firm belief in contributing to national competitiveness by localizing substandard electric power facilities of our country that only relied on overseas imports, as well as with the strong sense of obligation about business management contributing to human society through continuous profit making.

With our half-century history and determination to become the center of the world, we have arranged negotiating tables in global market, such as American, European, and Asian markets, and have solidified our position as a leading company.

In order to become the energy and light of hope that accompanies comfortable daily life of humankind, VITZRO, with the management philosophy of loyalty and creativity, emphasizes the win-win philosophy that goes beyond global competition.

The c ompetitiveness that contributes to the development of mankind and pursuing more than the profit of our enterprise, this macroscopic objective is the management ideology of VITZRO. We will perform the role of an earnest leader and a reputable manager who set the example by practicing management strategy and finding the essence of management.

VITZRO, the leading enterprise of the energy and light that moves the world, and of beautiful road, promises you to devote ourselves to value creation for customers and to contributing to the development of mankind along with our beloved customers and shareholders.

VITZRO GROUP CHAIRMAN *Jang. Tae-su*


VITZRO

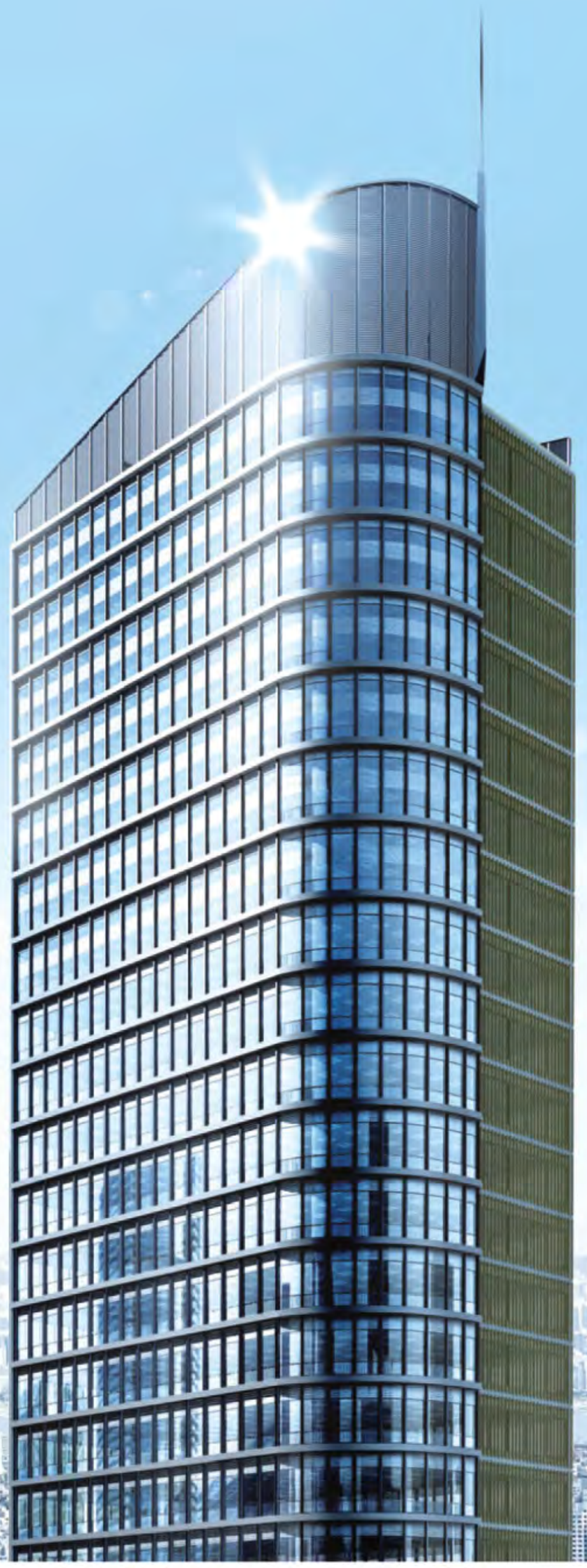
1 | ABOUT VITZRO

History of Technology, Opens a new horizon
Period of Foundation 1950~1970s.

1955	07	Establishment of Kwangmyung Electricity Engineering plant
1968	01	Buyout of Joongrip Electric Co.

Massive Innovation for Growth and Future
Period of Growth 1980 ~ 2000

1989	11	Establishment of Hanbul Automatization Ltd.
1991	01	Change the name of company to Kwangmyung Control Ltd./ Registration of plant and establishment of research institute
	07	Registration of trade agency(Class A)
1993	08	Selected as a promising advanced technology company(by Small & Medium Business Corporation)
1994	07	Selected as a technical support demonstration company(by KEPCO〈Korea Electric Power Corporation〉)
1995	09	Acquisition of ISO 9001 Quality Management Certification
	10	Technical partnership with Eurotherm, England(Distributed Control: electricity generation, plant)
1996	07	Selected as a Maintenance qualified company by KEPCO(Hydro and thermal power generation facilities)
1997	09	Prime Minister's Award(for national industrial development through railroad project promotion)
	10	Department of Trade and Industry Minister's Award(for heavy electric equipment technology development)
	12	Acquisition of Information and Communication Business License
1998	02	System Integration Business registration(Korea Software Industry Association) Korea Federation of Small and Medium Business President's Award
1998	05	Venture business certification(by Small and Medium Business Administration) /SCADA, DCS, selected as excellent product(by Public Procurement Service), Selected as a promising electric power venture(by KEPCO)
	08	Agent contract with Siemens, Germany(Digital relay)
	12	Passed the performance test of unmanned equipment for traffic enforcement (Road Traffic Safety Authority)



Moving on to the Bigger World
Period of Growth 2000-present

2000	07	Technical partnership between VITZRO SYS and Siemens, Germany(Digital relay)
	09	Prime Minister's Award(for national industrial development through the promotion of rail transport)
2001	01	Acquisition of Q-class certification of nuclear energy quality and selected as a qualified supplier of nuclear power generation facilities(by KEPCO)
	05	Acquisition of ISO 14001 Environmental management certification
	12	Registration to the KOSDAQ market
2003	04	Paid-in capital increase participation of Xenex, Canada(1,000,000 shares, 7.7%), Selected as an excellent company for new labor-management culture(Ministry of Labor)
	11	Enterprise of merit for new technology commercialization(Prime Minister)
2004	05	"1 company-1 village" affiliation(Korea Rural Community Corporation)
	12	Awarded for excellent company promoting public procurement of small and medium businesses' products
2005	07	Acquisition of Good Quality (GQ) mark for UV sterilizing device
	12	Acquisition of Korea Excellent Service Quality (SQ) certification
2006	03	Acquisition of Good Quality (GQ) mark for SCADA(Supervisory Control and Data Acquisition System).
	10	Awarded by the chairman of Presidential Commission on Small and Medium Business for Venture.
	12	Awarded by the Prime Minister(for the contribution to the national industry development through construction of railroad traffic control center)
2007	03	Awarded by the Minister of Construction and Transportation(for the contribution to the development of construction and transportation service through vitalizing intelligent transportation system industry)
	10	Awarded by the President(for the contribution to the national industrial development through international electric fair)
2008	05	Addition to VITZRO WETECH Ltd. as an affiliate
	09	[KADAC-21S, KAMAS]) PPS(Public Procurement Service) designated excellent product(SCADA [KADAC-21S, KAMAS])
2009	01	Additional contract of gas turbine project in Iraq(100 million dollars)
	07	Selected as an "Excellent Enterprise for Labor-Management Culture" (Ministry of Labor)
	10	KEPCO President's Award
	11	Selected as an INNO-BIZ enterprise(Small and Medium Business Administration)
2010	08	Energy saving enterprise registration
	10	Prime Minister Award for Venture
	11	Selected as an excellent company for creating jobs(Seoul)
	12	Export Tower Award(10 million dollars, Korea International Trade Association)
2011	04	Additional contract of gas turbine project in Iraq(80 million dollars)
2012	06	Selected as an excellent company for labor-management culture(4 consecutive times)
	10	Selected as an excellent subcontractor by KEPCO
2013	02	PPS designated excellent product(Integrated SCADA)
	03	Performance certification by Small and Medium Business Administration(Multi-function remote terminal unit)
	11	VITZROCNC (M) Sdn. Bhd. was incorporated

2 | STANDARD & SPECIFICATION

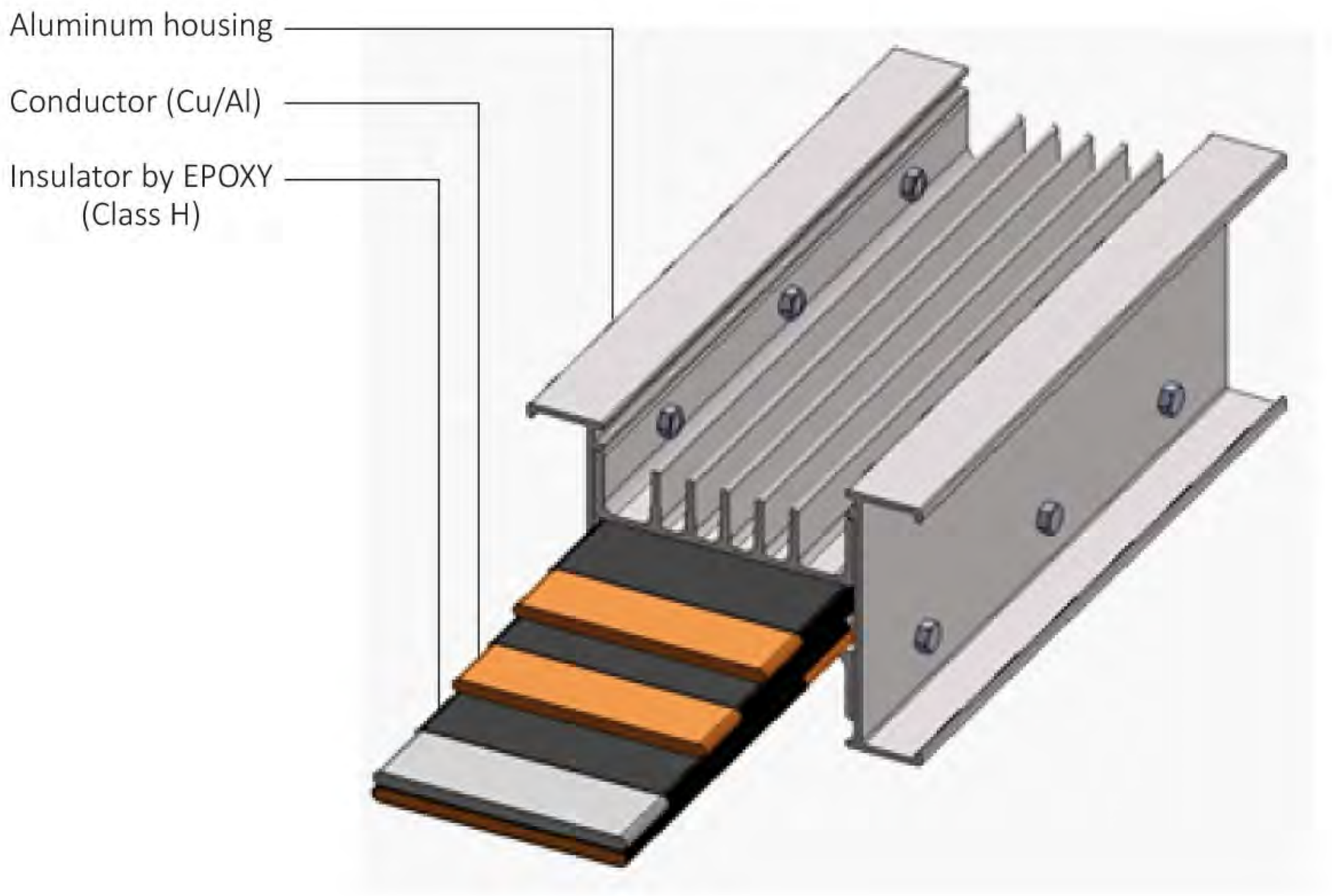
■ **COMPLIANCE OF STANDARDS**	IEC 60439/61439-1 Low Voltage Switchgear and control gear assemblies IEC 60439/61439-2 Particular requirement for busway IEC 60529 Degree of protection IEC 60947-2 Circuit breakers IEC 60331 Resistance to fire
■ **RATED CURRENT**	Aluminum conductor - 400A to 6000A Copper conductor - 400A to 7500A.
■ **RATED OPERATIONAL VOLTAGE**	AC 1000V and less DC 1500V and less
■ **RATED INSULATION VOLTAGE**	AC 1000V and less
■ **RATED FREQUENCY**	50Hz / 60Hz
■ **SYSTEM CONFIGURATION**	3P3W/3P3W+G 3P4W/3P4W+G 3P4W(200%N)/3P4W (200% +G)
■ **CONDUCTORS**	Busbars are fabricated from high strength, pure copper with a conductivity of a more than 99% or pure aluminium with a conductivity of more than 61%.
■ **ENCLOSURES**	Constructed with high strength extruded aluminum alloy profile and fully painted with epoxy compound power coating. Standard color code is RAL7032/7035 and special colors are available upon request.
■ **INSULATION**	Epoxy insulation (Class F) is applied to the conductors
■ **INGRESS OF PROTECTION (IP)**	The housing is totally enclosed with its fully insulated conductor to provide dust, water & insect protection, as according to IEC 60529 stand ards. Thus the degree of protection shall be min. IP54 up to max. 68

Reliable of Insulation

VITZRO BUSWAY uses very special high thermal conductivity epoxy insulation (Class F). The epoxy powder is applied by an automated fluidized bed process to ensure uniform thickness.
The uniform thickness and smooth surface provided by epoxy ensures that the insulation will have no cavities or voids and also provides excellent edge coverage to the bars.

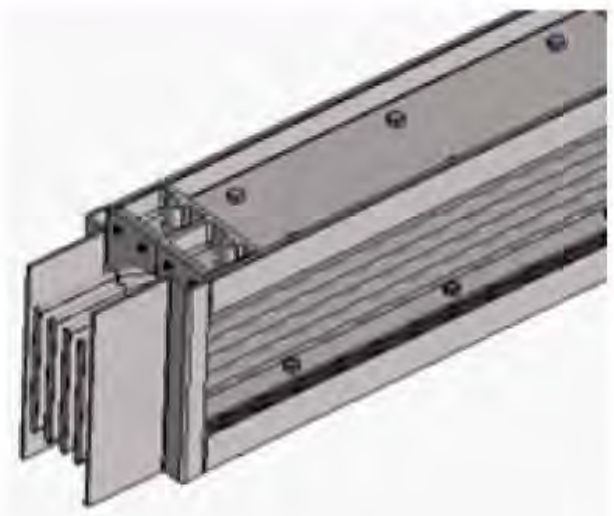
ADVANTAGES OF USING EPOXY INSULATION:

- Design to withstand glitch and spikes in electrical system
- Design to cater for expansion and contraction during peak and off-peak hour
- Good thermal & mechanical chock resistance
- Good moisture & chemical resistance
- Capable of withstanding heat shock
- High thermal conductivity
- High mechanical strength against impact
- High adhesion
- Long life compare to Mylar



3 | PRODUCT FEATURES

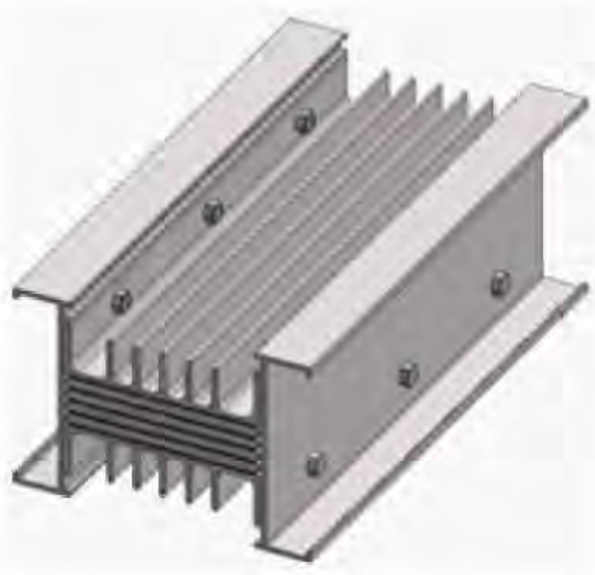
Aluminum Alloy Enclosure



VITZRO BUSWAY is constructed with high strength extruded aluminum profile and designed with additional cooling fins has resulted in the most compact busway system available.

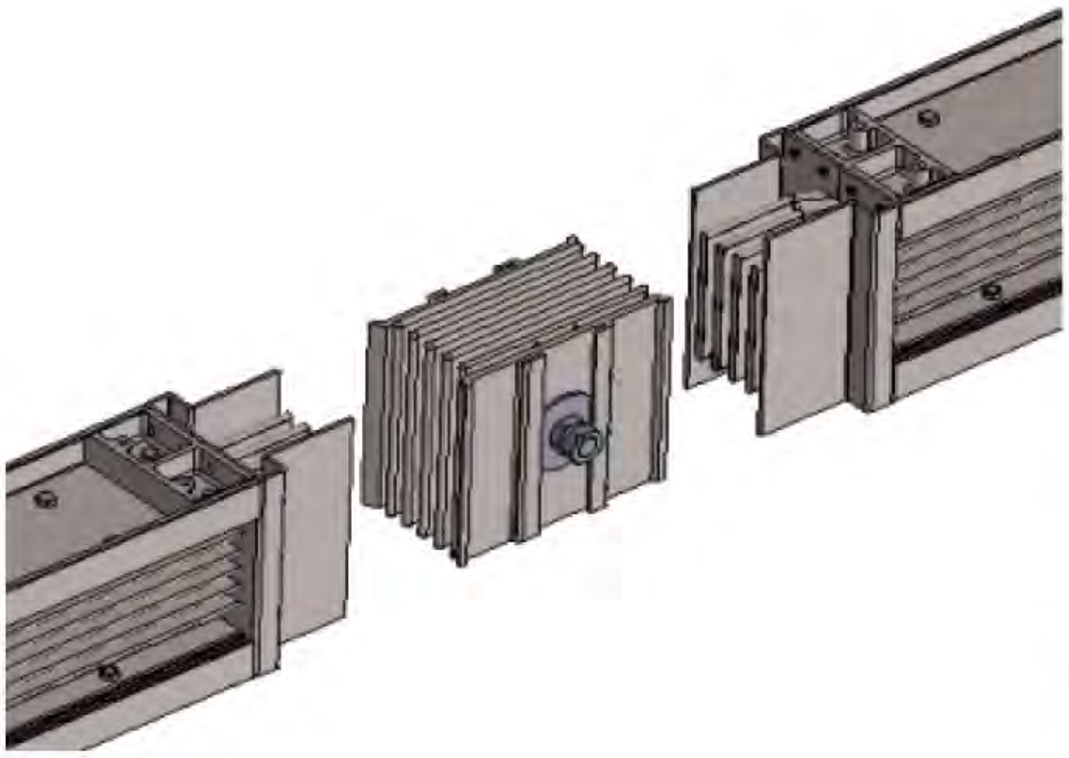
- Compact Size & Lightweight
- High Mechanical strength
- Corrosion Resistant
- Superior Heat Dissipation
- Extremely Low Impedance Ground Path
- Superior Ground Conductivity
- Easy installation & maintenance

Compact Size



The additional cooling fins design allows the use of smaller busbar and offer a low impedance, small line loss, quick heat dissipation. **VITZRO BUSWAY** makes the system lighter and smaller than other conventional duct.

Easy of Installation



VITZRO BUSWAY is using special joint kit which has two connecting plates and drastically decreased the contact resistance. Also, simple joint connection work can improve the installation process faster (Lower cost of installation)

Double headed bolts can be used for proper tightening fastening by fastening the outer head until break off by wench (When the indicating discfalls off, the joint is properly tightened automatically) Large sized Belleville spring washers assure even pressure on contact.

Each joint is designed to allow longitudinal busbar expansion or contraction by as much as 8mm.

Plug-in Operating Mechanism

VITZRO BUSWAY plug in box are designed with fully mechanical interlocks. If the assembly is not installed correctly, the box cannot be switched on, or electrically energized. This feature prevents any occurrence of misuse or harm to the operator

Superior Ground Conductivity

VITZRO BUSWAY is made from extruded aluminum which provides a very large grounding capacity because of the fins on the aluminum housing, the effective size of the grounding is typically 2~3 times the size of the active internal ground bar.
If increasing ground capacity is required, we can provide additional 50% or 100% internal bus bar within the same busway enclosure.

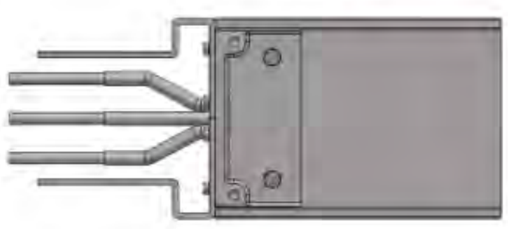
200% Neutral Construction

VITZRO BUSWAY offers a fully rated 200% neutral bus option for busduct systems with non-linear loads. The additional neutral capacity prevents the overheating caused by zero sequence harmonic currents.

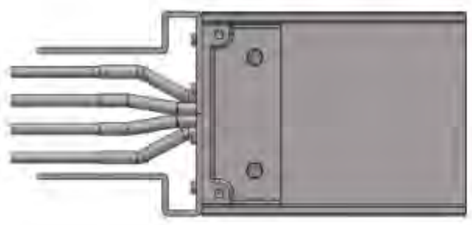
The 200% neutral is manufactured using two 100% neutral conductors fully epoxy coated and combined via the joint kit to achieve the 200% capacity.

■ TYPES OF BUSBAR CONFIGURATIONS

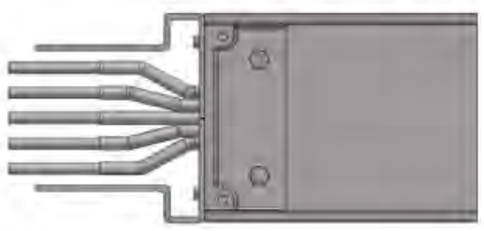
3P3W



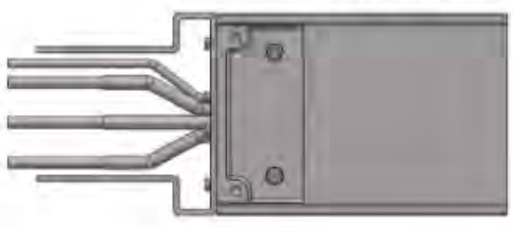
3P4W



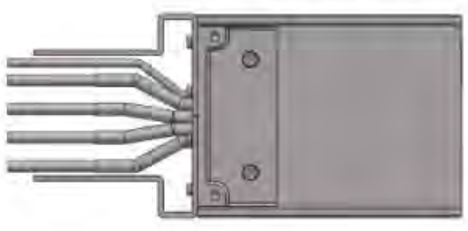
3P4W(200%N)



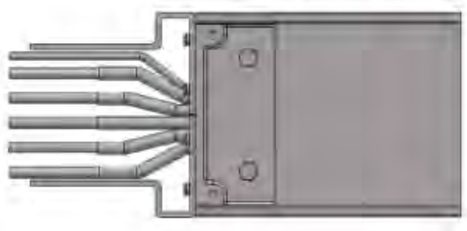
3P3W+G



3P4W+G

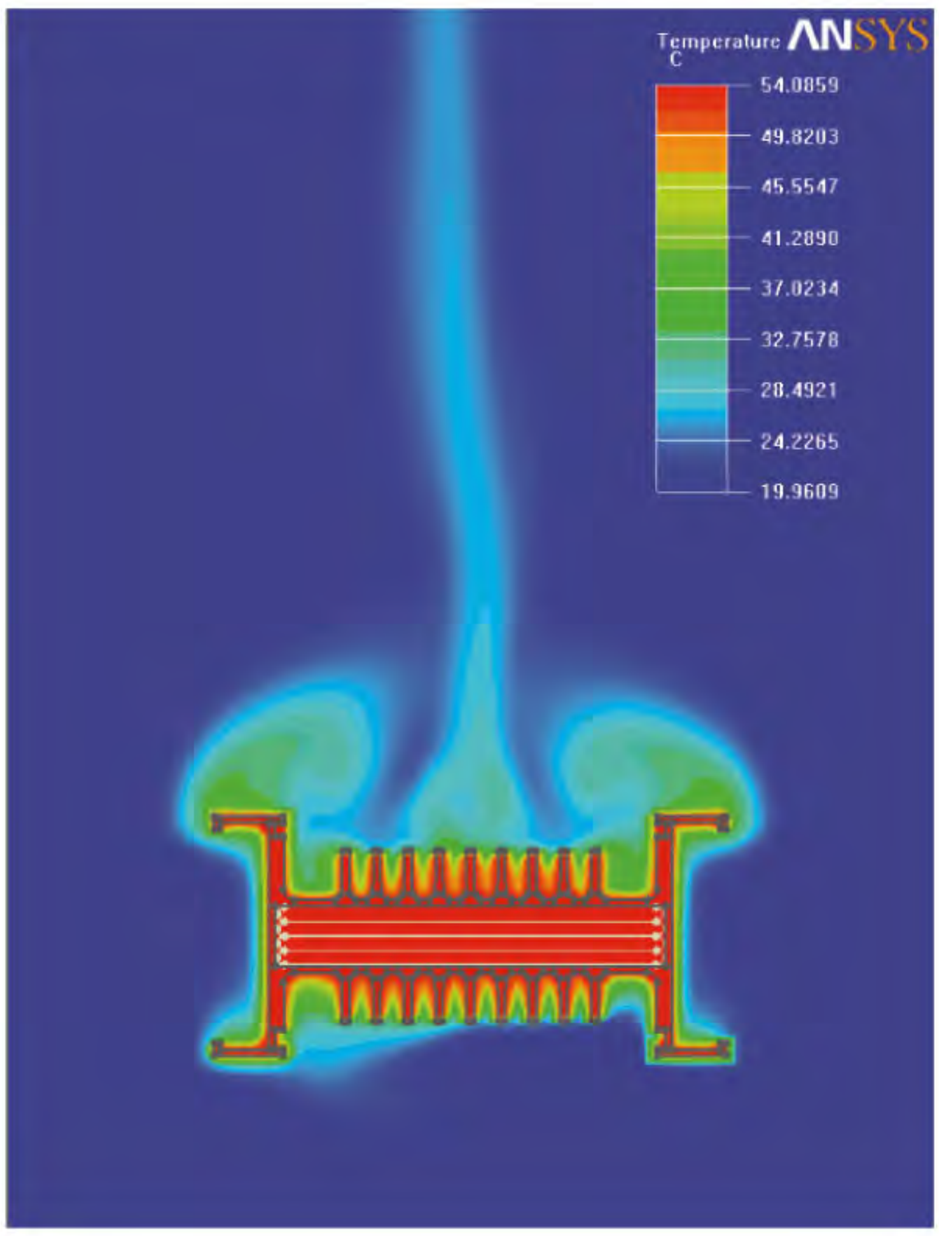


3P4W(200%+G)

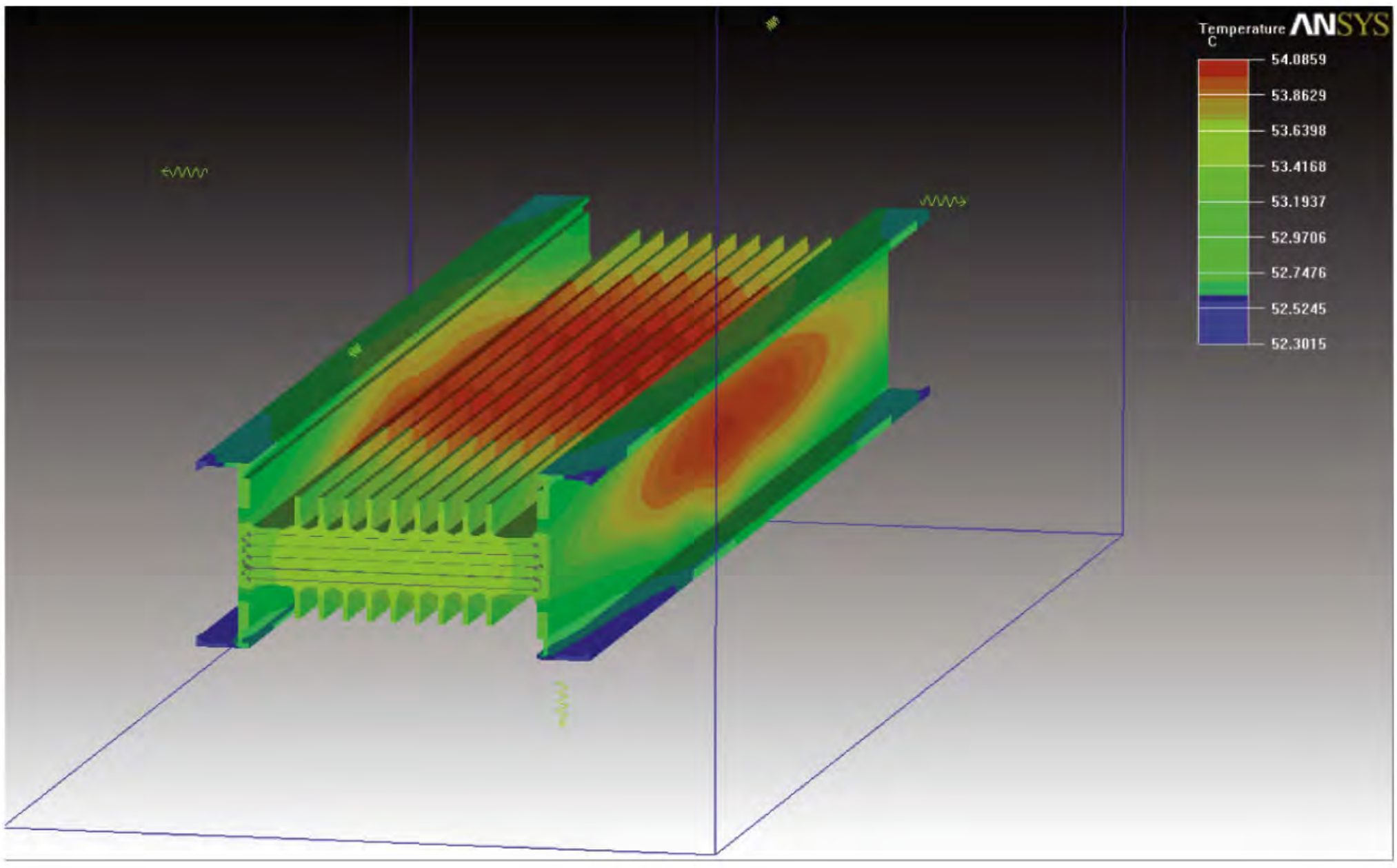


3 | PRODUCT FEATURES

Design Simulation

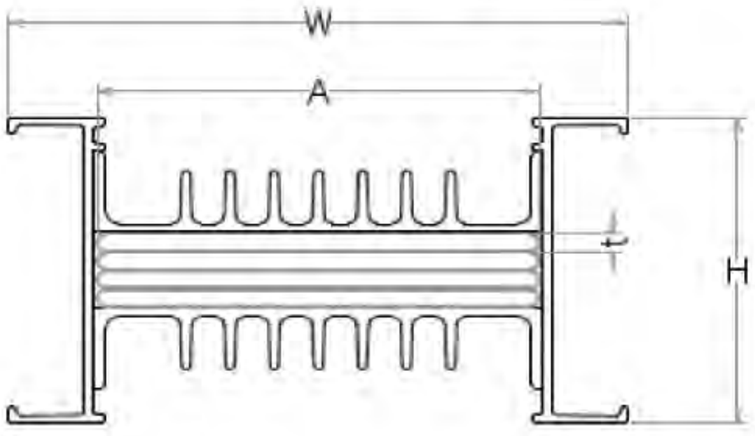


The design of VITZRO BUSWAY is carried out under detailed Computer Aided Engineering simulation processes. Dynamic analysis of mechanical, thermal and electrical simulations greatly increases the quality.

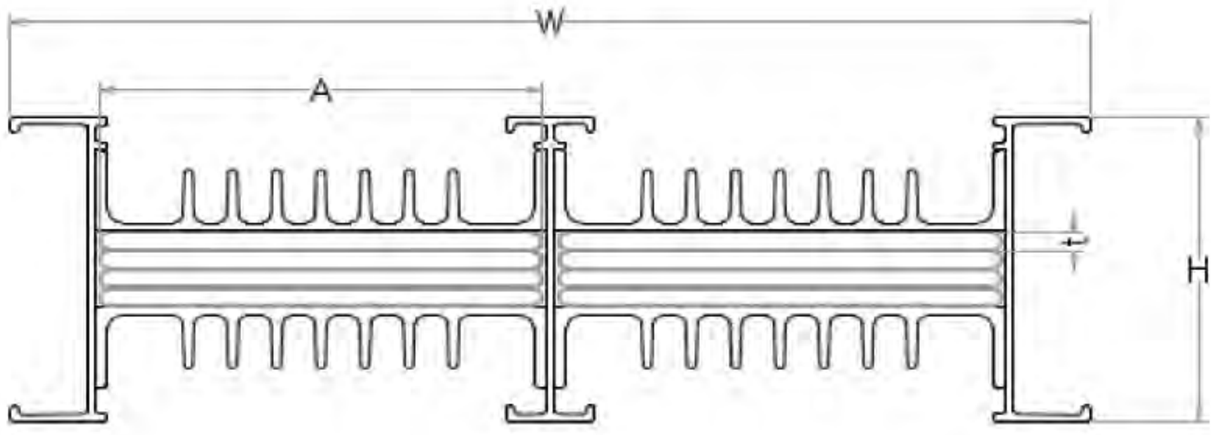


VITZRO BUSWAY SYSTEM

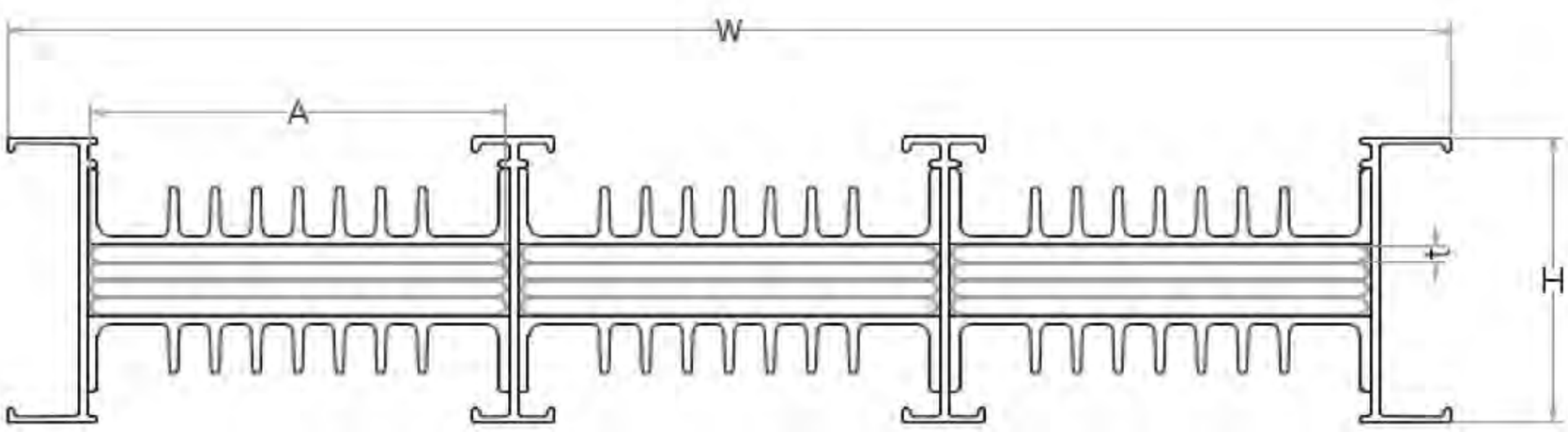
▪Dimension & Weight



Al :630~2000A
Cu :630~2500A



Al :2500~4000A
Cu :3200~5000A



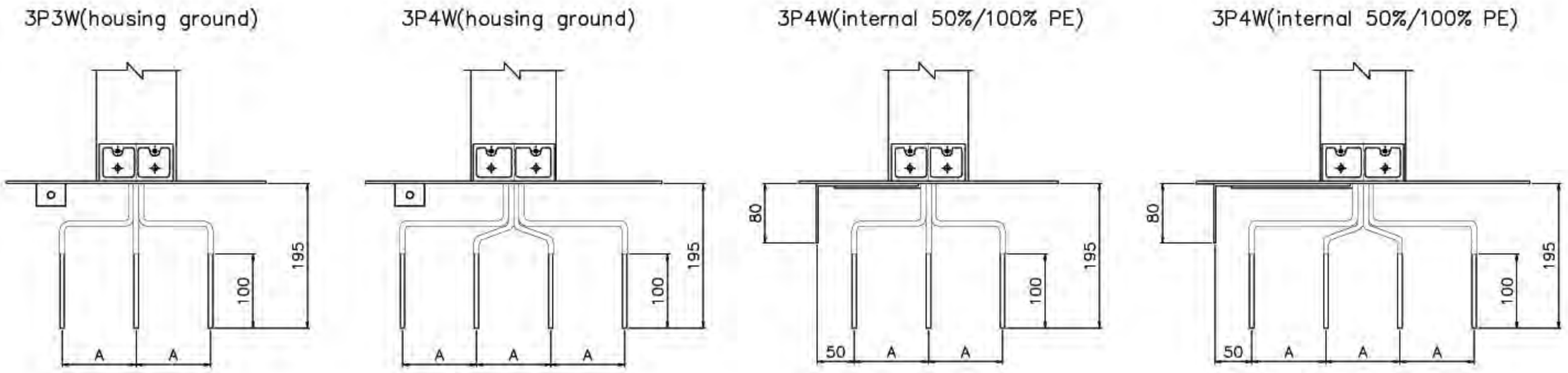
Al :5000~6000A
Cu :6000~7500A

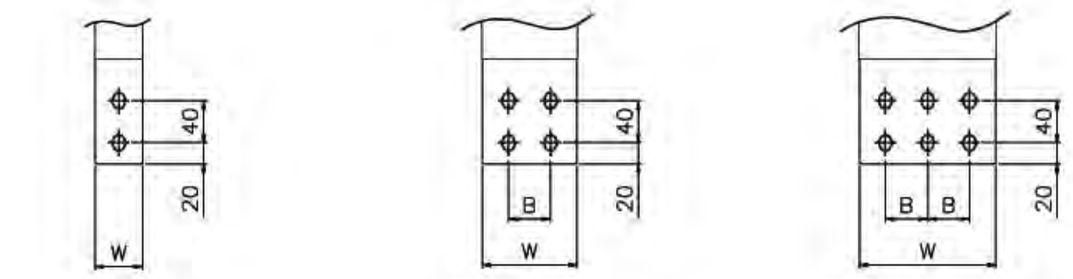
Unit: mm

Rated Current (A)		W	t	A	H			Weight (kg/m)		
					3W	4W	5W	3W	4W	5W
AL	400	96	6	35	105	115	125	6.2	7.0	7.6
	630	106		45				8.4	9.3	10.1
	800	121		60				8.8	10.0	11.0
	1000	136		75				10.3	11.7	13.0
	1250	171		110				13.5	15.5	17.4
	1600	211		150				17.1	19.7	22.2
	2000	261		200				21.0	24.4	27.8
	2500	327		130*2				27.6	32.0	36.5
	3200	367		150*2				31.2	36.2	41.2
	3600	437		185*2				36.2	42.3	48.6
	4000	467		200*2				40.8	47.4	54.2
	5000	628		185*3				53.7	62.8	72.2
	6000	673		200*3				60.5	70.3	80.5
CU	400	86	6	25	105	115	125	8.4	9.9	11.4
	630	96		35				10.2	12.2	14.2
	800	106		45				13.5	16.0	18.6
	1000	121		60				15.6	19.0	22.3
	1250	136		75				18.8	22.9	27.1
	1600	171		110				25.9	32.0	38.0
	2000	211		150				34.0	42.2	50.4
	2500	246		185				41.2	51.3	61.4
	3200	287		110*2				50.5	62.5	74.7
	3600	327		130*2				58.6	72.7	87.0
	4000	367		150*2				66.7	83.0	99.4
	5000	437		185*2				81.1	101.1	121.4
	6000	523		150*3				99.4	123.7	148.4
	7500	628		185*3				120.9	150.9	181.3

4 | PHYSICAL DATA

▪ Flange End

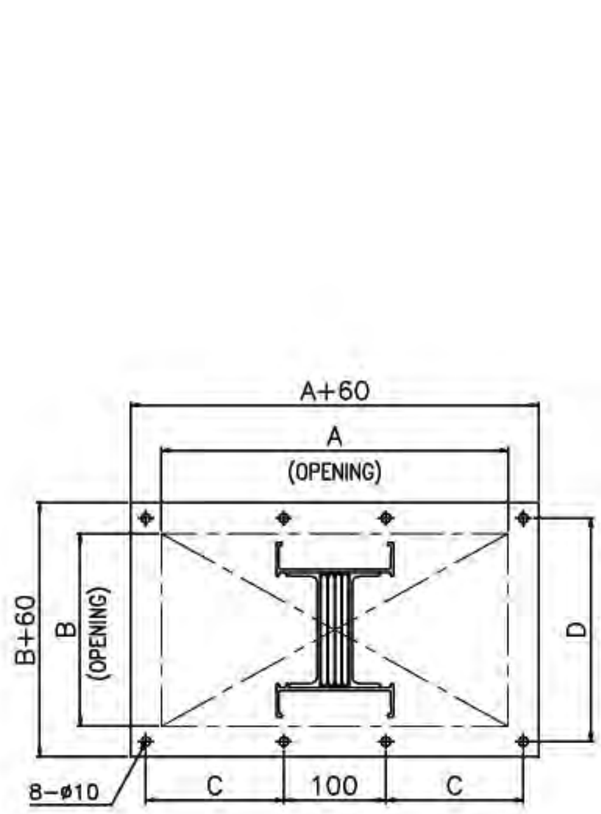




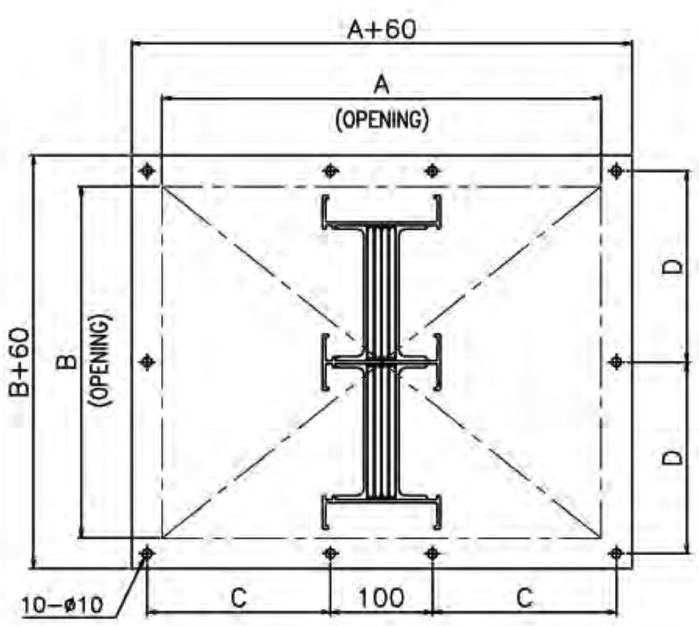
Unit: mm

Rated Current (A)		t	W	A	B	Hole
AL	400	6	35	100	-	Ø10X14
	630		45		-	Ø12X16
	800		60		-	Ø12X16
	1000		75		40	Ø12X16
	1250		110		50	Ø12X16
	1600		150		45	Ø12X16
	2000		200		65	Ø12X16
	2500		130*2	120	45	Ø12X16
	3200		150*2		45	Ø12X16
	3600		185*2		65	Ø12X16
	4000		200*2		65	Ø12X16
	5000		185*3		65	Ø12X16
	6000		200*3		65	Ø12X16
CU	400	6	25	100	-	Ø10X14
	630		35		-	Ø10X14
	800		45		-	Ø12X16
	1000		60		-	Ø12X16
	1250		75		40	Ø12X16
	1600		110		50	Ø12X16
	2000		150		50	Ø12X16
	2500		185	120	60	Ø12X16
	3200		110*2		50	Ø12X16
	3600		130*2		45	Ø12X16
	4000		150*2		45	Ø12X16
	5000		185*2		65	Ø12X16
	6000		150*3		65	Ø12X16
	7500		185*3		65	Ø12X16

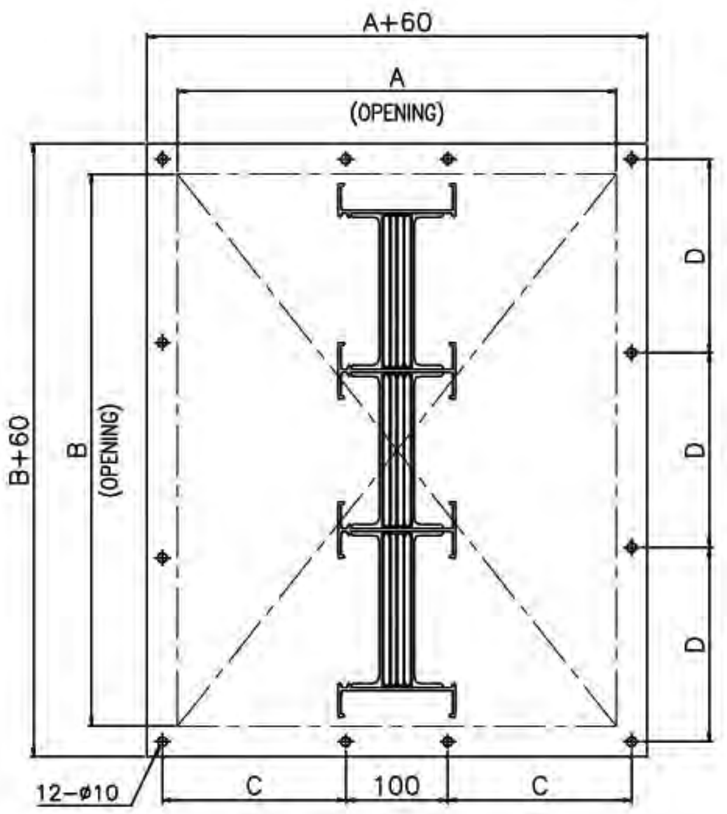
■ Mounting Cut-out for Flange End



Al : 400~2000
Cu : 400~2500



Al : 2500~4000
Cu : 3200~5000



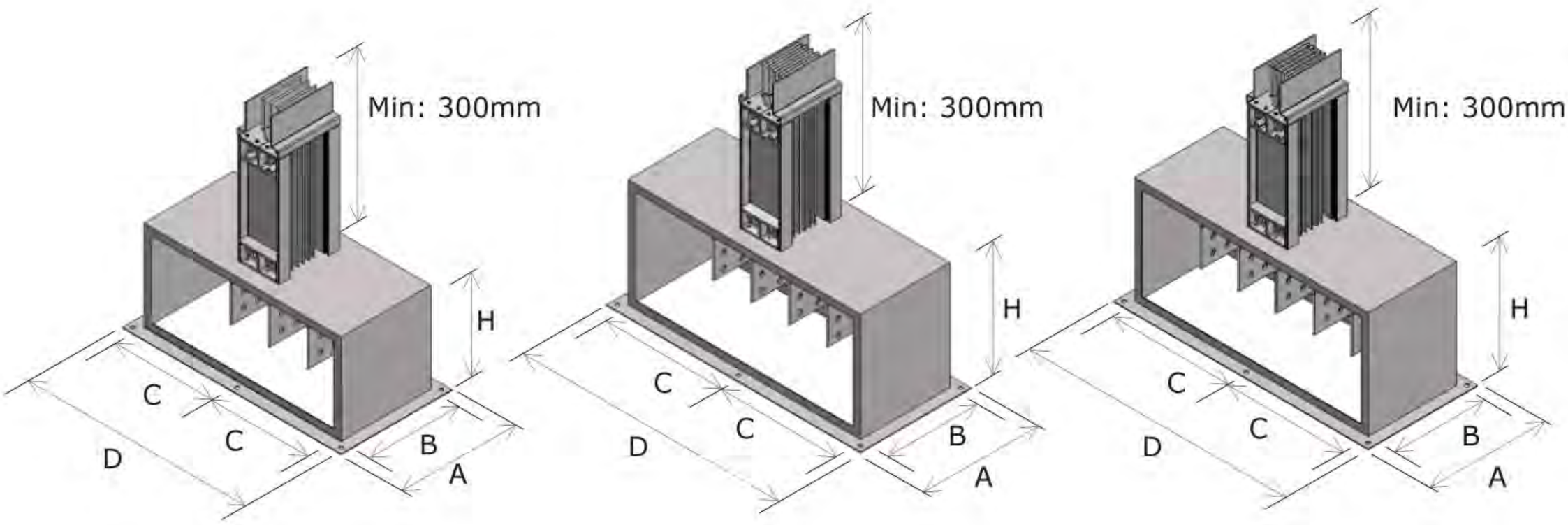
Al : 5000~6000
Cu : 6000~7500

Unit: mm

Rated Current (A)		3W				4W				5W			
		A	B	C	D	A	B	C	D	A	B	C	D
AL	400	240	115	85	145	360	115	145	145	480	115	205	145
	630		125		155		125		155		125		155
	800		140		170		140		170		140		170
	1000		155		185		155		185		155		185
	1250		190		220		190		220		190		220
	1600		230		260		230		260		230		260
	2000		280		310		280		310		280		310
	2500	280	346	105	188	400	346	165	188	520	346	225	188
	3200		386		208		386		208		386		208
	3600		456		243		456		243		456		243
	4000		486		258		486		258		486		258
	5000		648		226		648		226		648		226
	6000		693		241		693		241		693		241
CU	400	240	105	85	135	360	105	145	135	480	105	205	135
	800		125		155		125		155		125		155
	1000		140		170		140		170		140		170
	1250		155		185		155		185		155		185
	1600		190		220		190		220		190		220
	2000		230		260		230		260		230		260
	2500		265		295		265		295		265		295
	3200	280	306	105	168	400	306	165	168	520	306	225	168
	3600		346		188		346		188		346		188
	4000		386		208		386		208		386		208
	5000		456		243		456		243		456		243
	6000		543		191		543		191		543		191
	7500		648		226		648		226		648		226

4 | PHYSICAL DATA

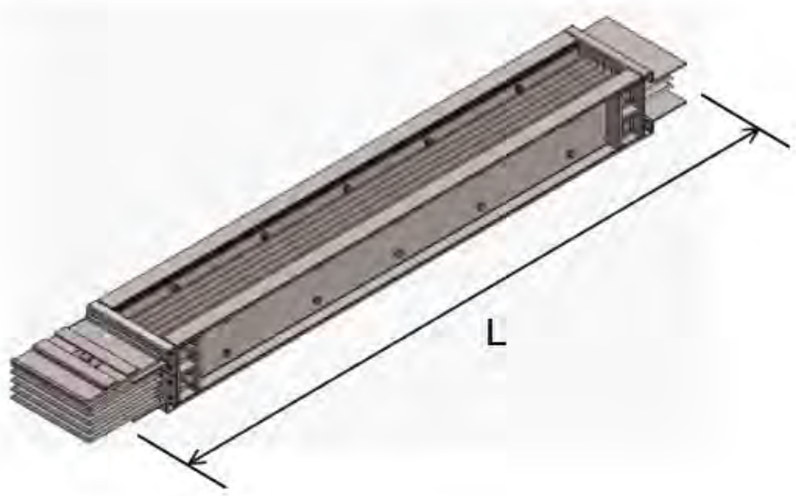
- **Flange End Box**



Unit: mm

Rated Current (A)		Stack	3W					4W					5W				
			A	B	C	D	H	A	B	C	D	H	A	B	C	D	H
AL	400	1	335	285	480	220	270	335	285	580	270	270	335	285	680	320	270
	630		345	295				345	295				345	295			
	800		360	310				360	310				360	310			
	1000		375	325				375	325				375	325			
	1250		410	360				410	360				410	360			
	1600		450	400				450	400				450	400			
	2000		500	450				500	450				500	450			
	2500	2	566	516	520	240	270	566	516	640	300	270	566	516	760	360	270
	3200		606	556				606	556				606	556			
	3600		676	626				676	626				676	626			
	4000		706	656				706	656				706	656			
	5000	3	867	817				867	817				867	817			
	6000		912	862				912	862				912	862			
CU	400	1	325	275	480	220	270	325	275	580	270	270	325	275	680	320	270
	630		335	285				335	285				335	285			
	800		340	295				340	295				340	295			
	1000		360	310				360	310				360	310			
	1250		375	325				375	325				375	325			
	1600		410	360				410	360				410	360			
	2000		450	400				450	400				450	400			
	2500		485	435				485	435				485	435			
	3200	2	526	476	520	240	270	526	476	640	300	270	526	476	760	360	270
	3600		566	516				566	516				566	516			
	4000		606	556				606	556				606	556			
	5000		676	626				676	626				676	626			
	6000	3	732	682				732	682				732	682			
	7500		867	817				867	817				867	817			

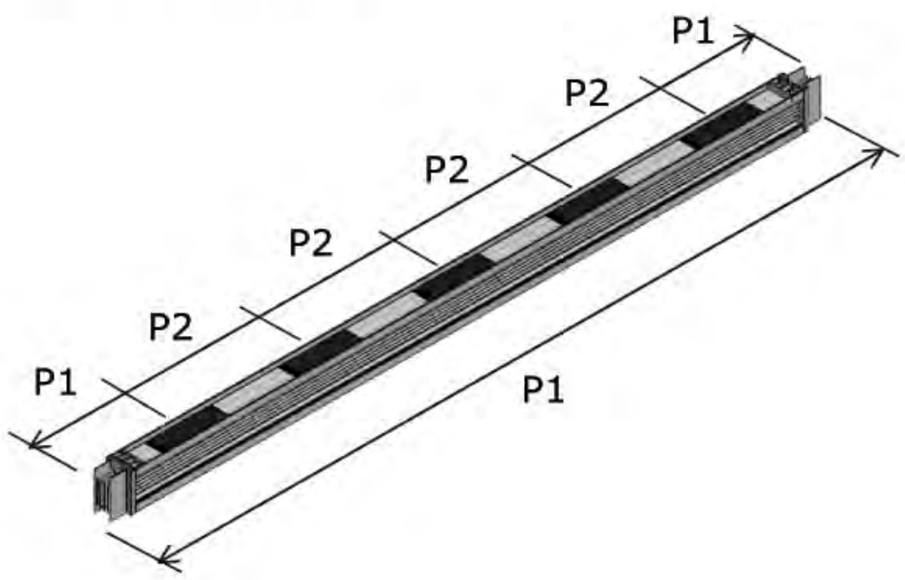
■ Feeder



Unit: mm

	Rated current (A)	L
Al	400 ~ 6300	3000
Cu	400 ~ 7500	3000

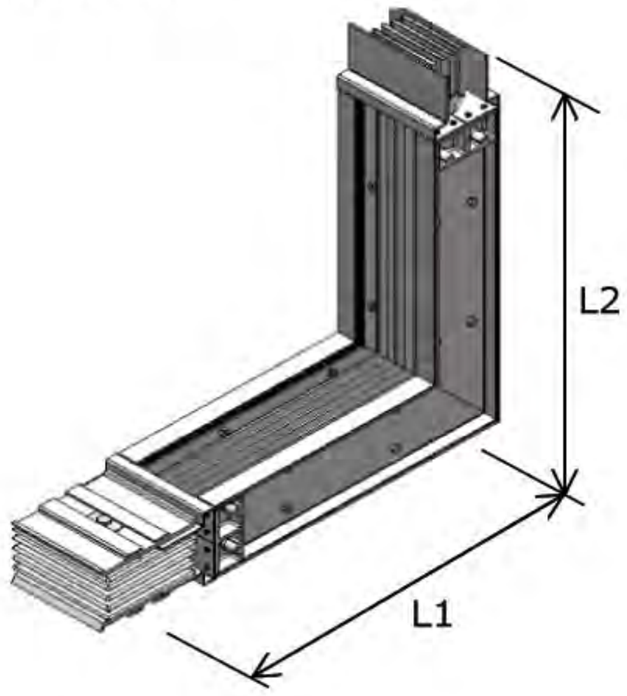
■ Feeder with Plug-in unit



Unit: mm

	Rated current (A)	P1	P2
Al	400 ~ 6000	500	Min.500
Cu	400 ~ 7500	500	Min.500

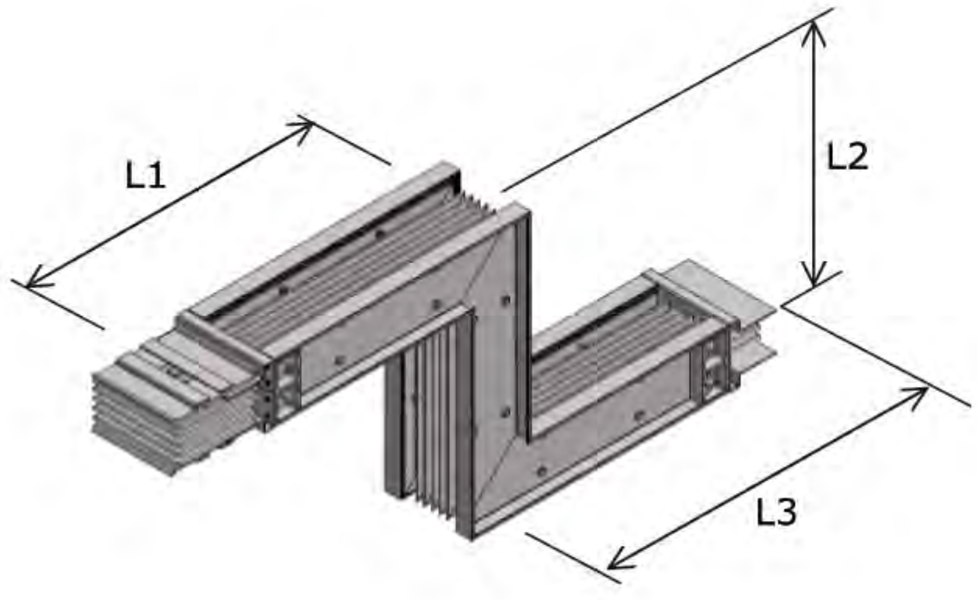
■ Horizontal Elbow



Unit: mm

	Rated current (A)	L1	L2	L3
Al	400 ~ 2000	500	500	500
	2500 ~ 4000	500	500	500
	5000 ~ 6000	500	500	500
Cu	400 ~ 2500	500	500	500
	3200 ~ 5000	500	500	500
	6000 ~ 7500	500	500	500

■ Horizontal Offset Elbow

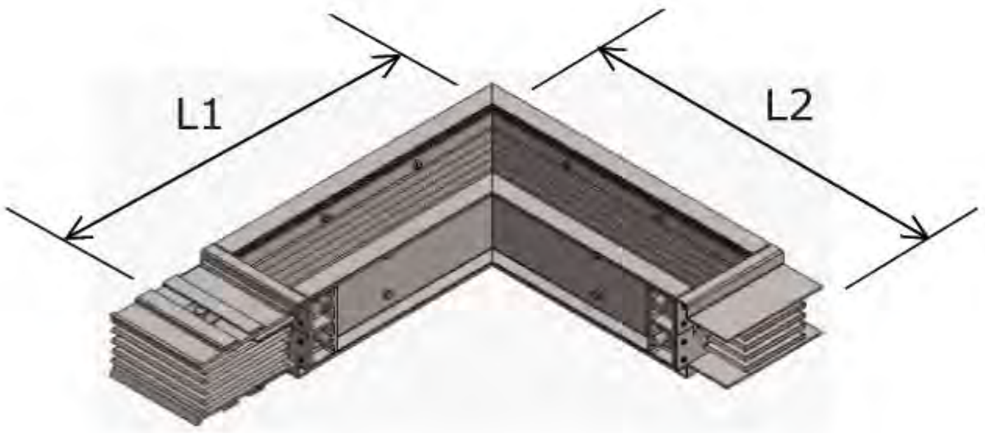


Unit: mm

	Rated current (A)	L1	L2	L3
Al	400 ~ 2000	500	500	200
	2500 ~ 4000	500	500	200
	5000 ~ 6000	500	500	200
Cu	400 ~ 2500	500	500	200
	3200 ~ 5000	500	500	200
	6000 ~ 7500	500	500	200

4 | PHYSICAL DATA

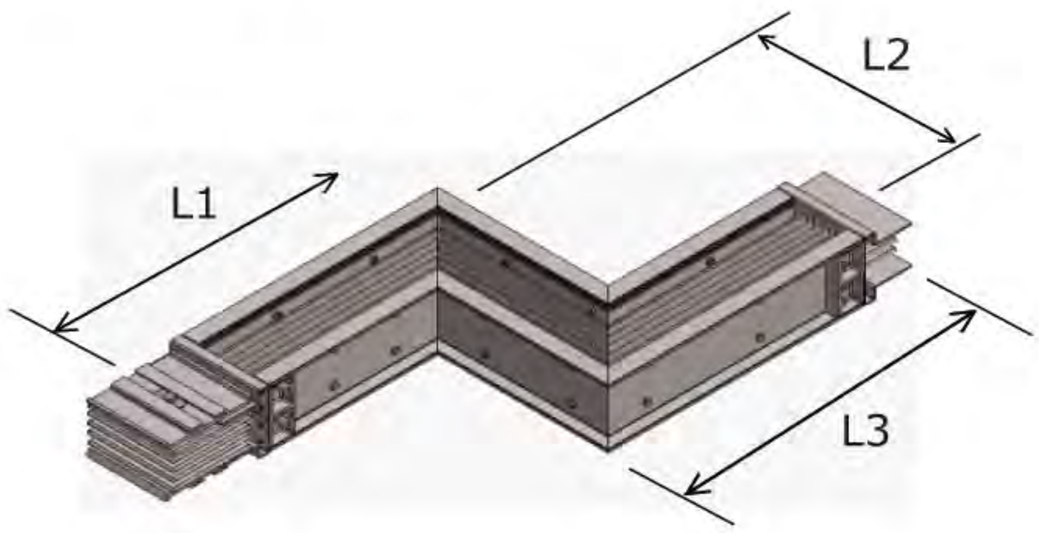
■ Vertical Elbow



Unit: mm

	Rated current (A)	L1	L2
Al	400 ~ 2000	500	500
	2500 ~ 4000	600	600
	5000 ~ 6000	700	700
Cu	400 ~ 2500	500	500
	3200 ~ 5000	600	600
	6000 ~ 7500	700	700

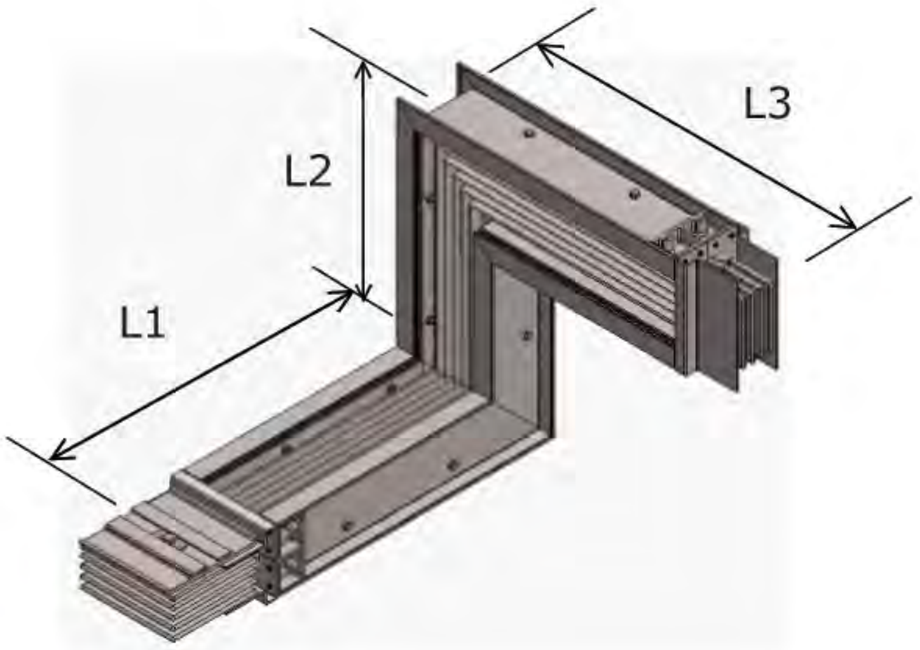
■ Vertical Offset Elbow



Unit: mm

	Rated current (A)	L1	L2	L3
Al	400 ~ 2000	500	300	500
	2500 ~ 4000	600	400	600
	5000 ~ 6000	700	500	700
Cu	400 ~ 2500	500	300	500
	3200 ~ 5000	600	400	600
	6000 ~ 7500	700	500	700

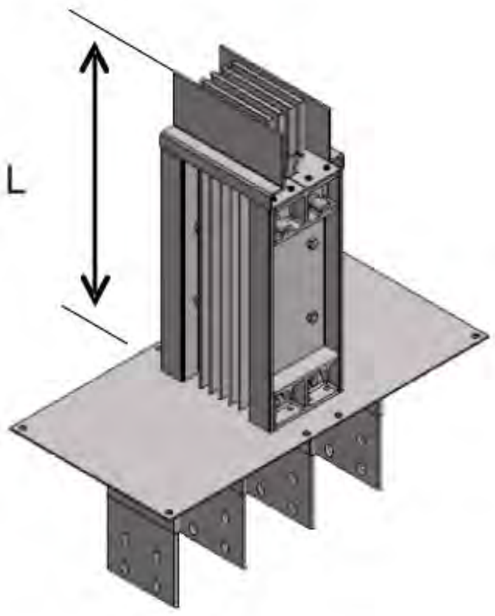
■ Combination Elbow



Unit: mm

	Rated current (A)	L1	L2	L3
Al	400 ~ 2000	500	500	500
	2500 ~ 4000	600	600	600
	5000 ~ 6000	700	700	700
Cu	400 ~ 2500	500	500	500
	3200 ~ 5000	600	600	600
	6000 ~ 7500	700	700	700

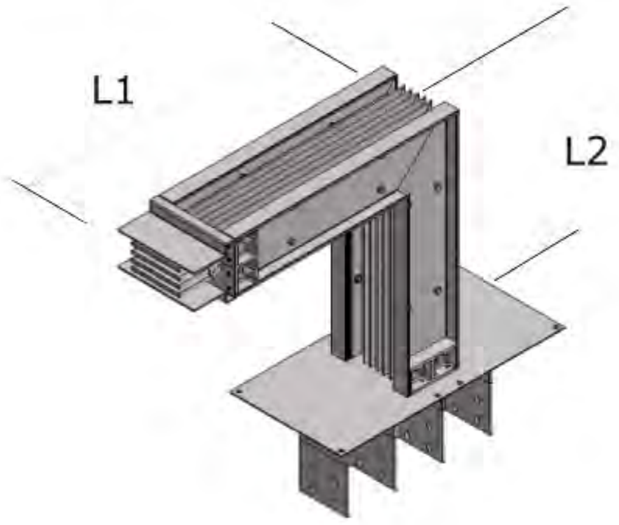
■ Flange End



Unit: mm

	Rated current (A)	L
Al	400 ~ 6000	500
Cu	400 ~ 7500	500

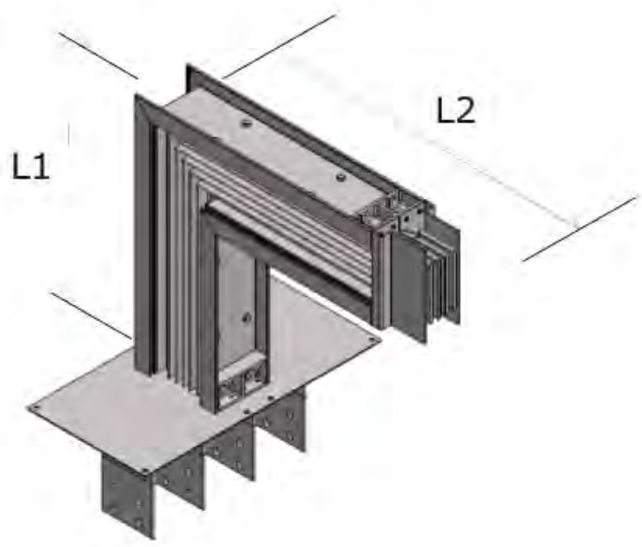
■ Horizontal Elbow with Flange End



Unit: mm

	Rated current (A)	L1	L2
Al	400 ~ 6000	500	500
Cu	400 ~ 7500	500	500

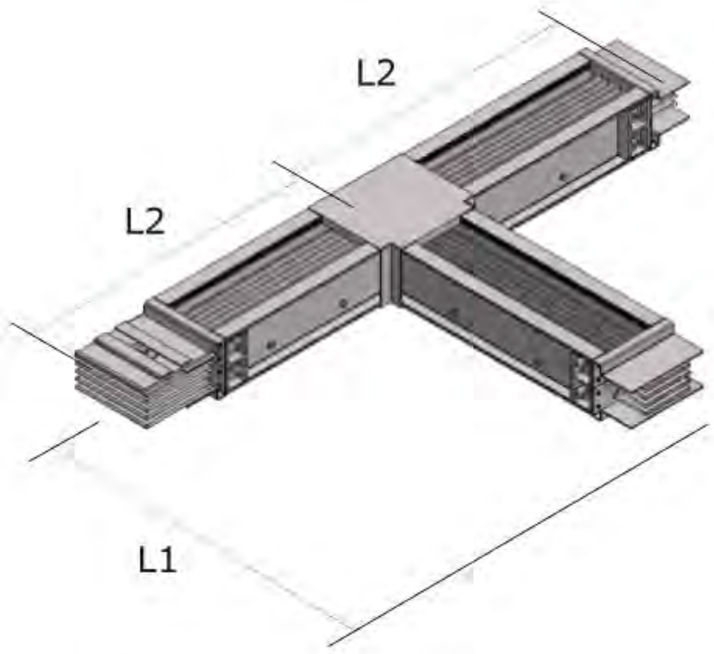
■ Vertical Elbow with Flange End



Unit: mm

	Rated current (A)	L1	L2
Al	400 ~ 2000	500	300
	2500 ~ 4000	600	400
	5000 ~ 6000	700	500
Cu	400 ~ 2500	500	300
	3200 ~ 5000	600	400
	6000 ~ 7500	700	500

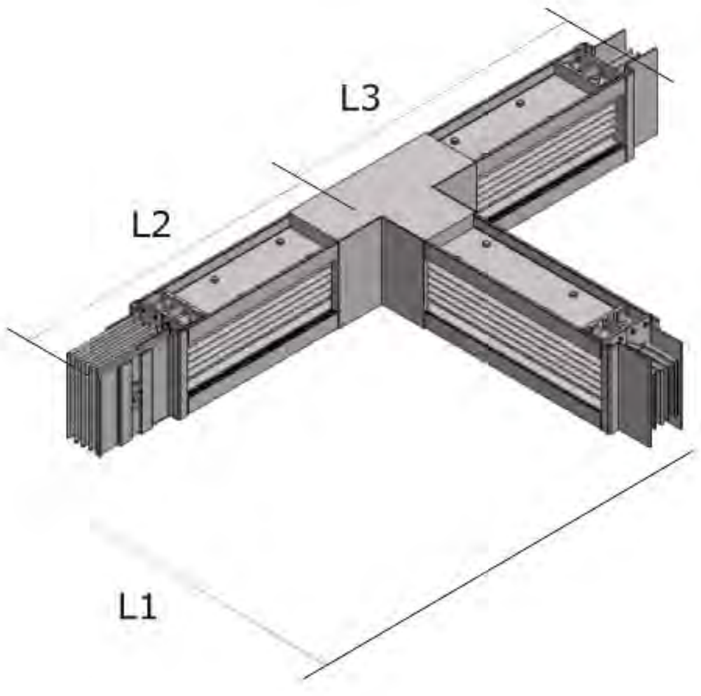
■ Vertical Tee Elbow



Unit: mm

	Rated current (A)	L1	L2	L3
Al	400 ~ 2000	500	500	500
	2500 ~ 4000	600	600	600
	5000 ~ 6000	700	700	700
Cu	400 ~ 2500	500	500	500
	3200 ~ 5000	600	600	600
	6000 ~ 7500	700	700	700

■ Horizontal Tee Elbow

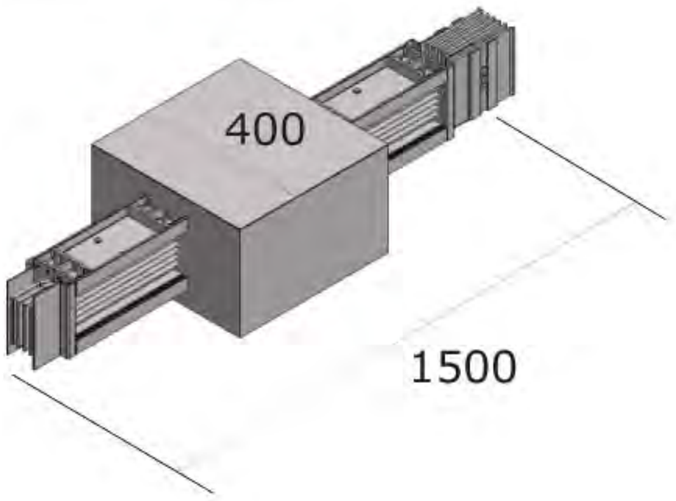


Unit: mm

	Rated current (A)	L1	L2	L3
Al	400 ~ 2000	500	500	500
	2500 ~ 4000	500	500	500
	5000 ~ 6000	500	500	500
Cu	400 ~ 2500	500	500	500
	3200 ~ 5000	500	500	500
	6000 ~ 7500	500	500	500

4 | PHYSICAL DATA

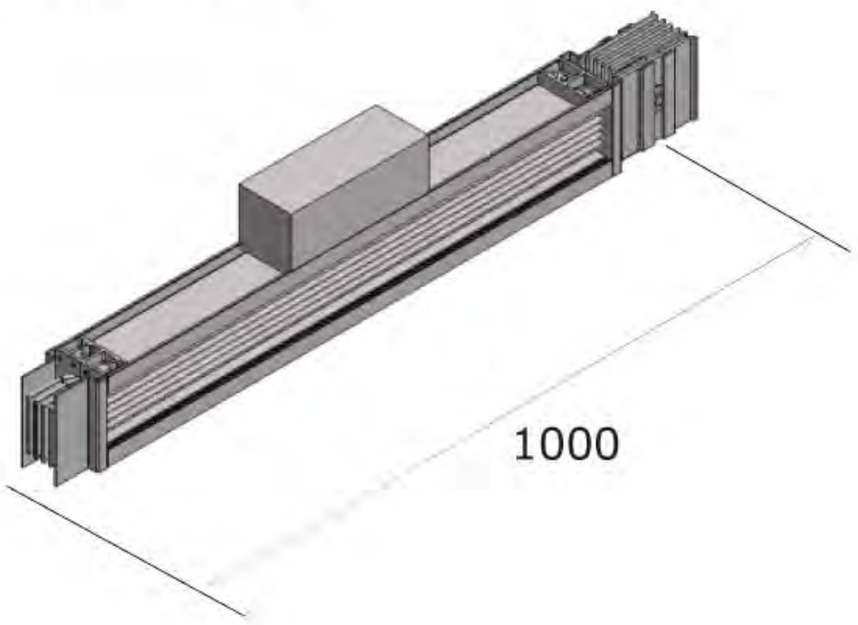
■ **Expansion Joint (if needed)**



Unit: mm

	Rated current (A)	L1	L2
Al	400 ~ 6000	1500	400
Cu	400 ~ 7500	1500	400

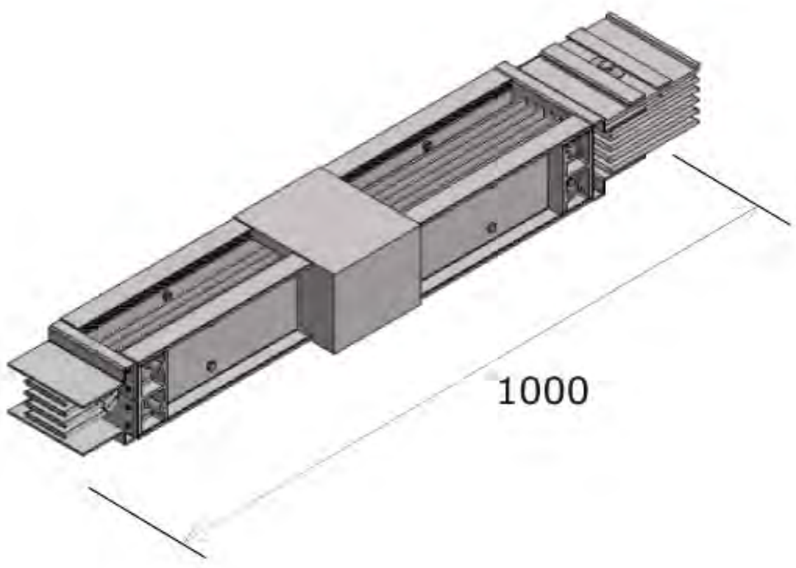
■ **Phase Transposotion**



Unit: mm

	Rated current (A)	L1
Al	400 ~ 6000	1000
Cu	400 ~ 7500	1000

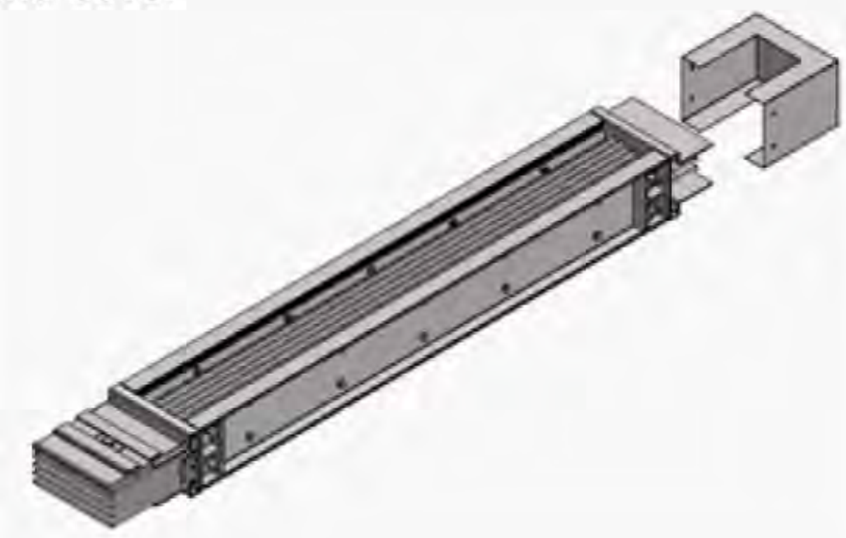
■ **Reducer**



Unit: mm

	Rated current (A)	L1
Al	400 ~ 6000	1000
Cu	400 ~ 7500	1000

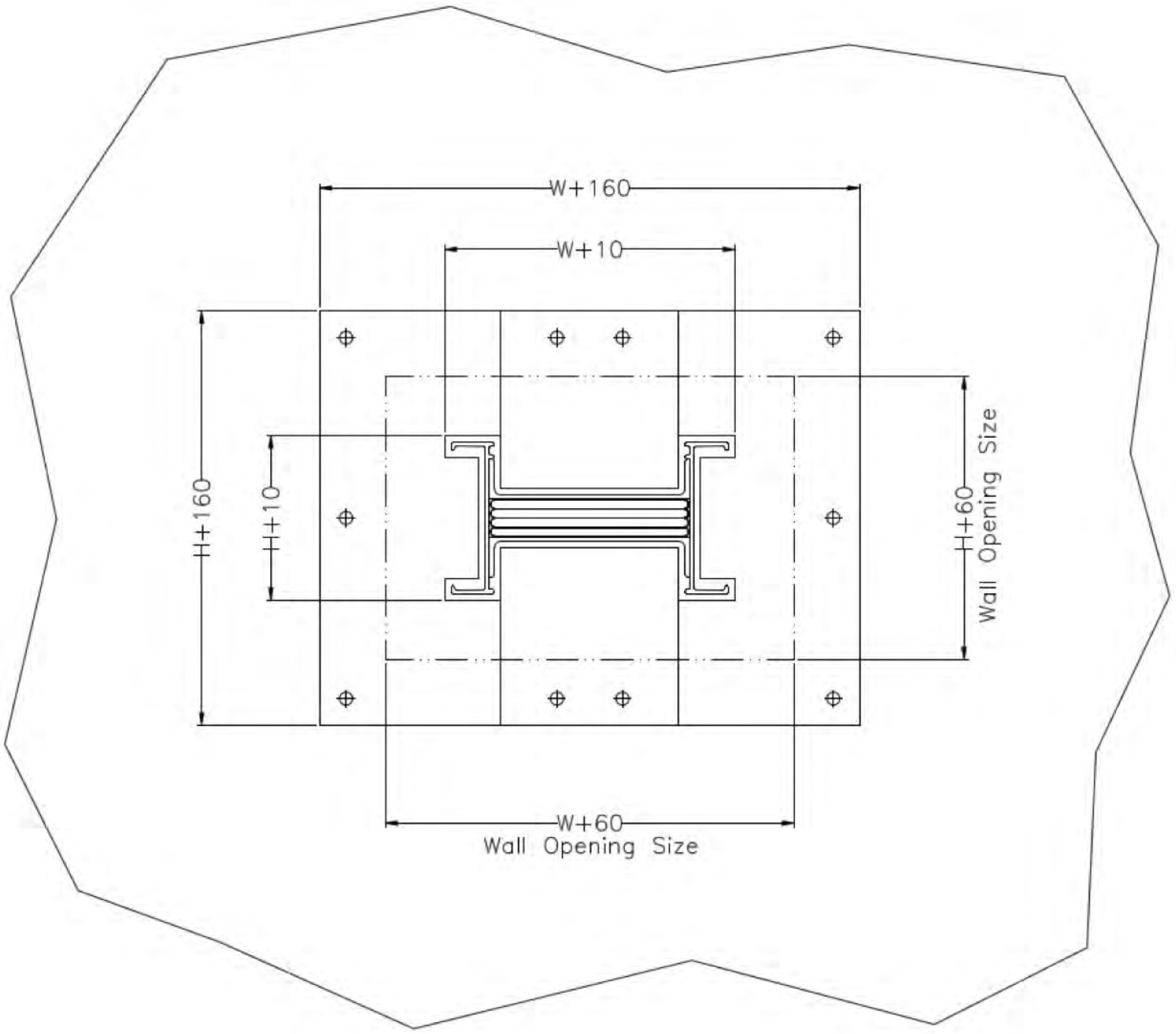
■ **End Cover**



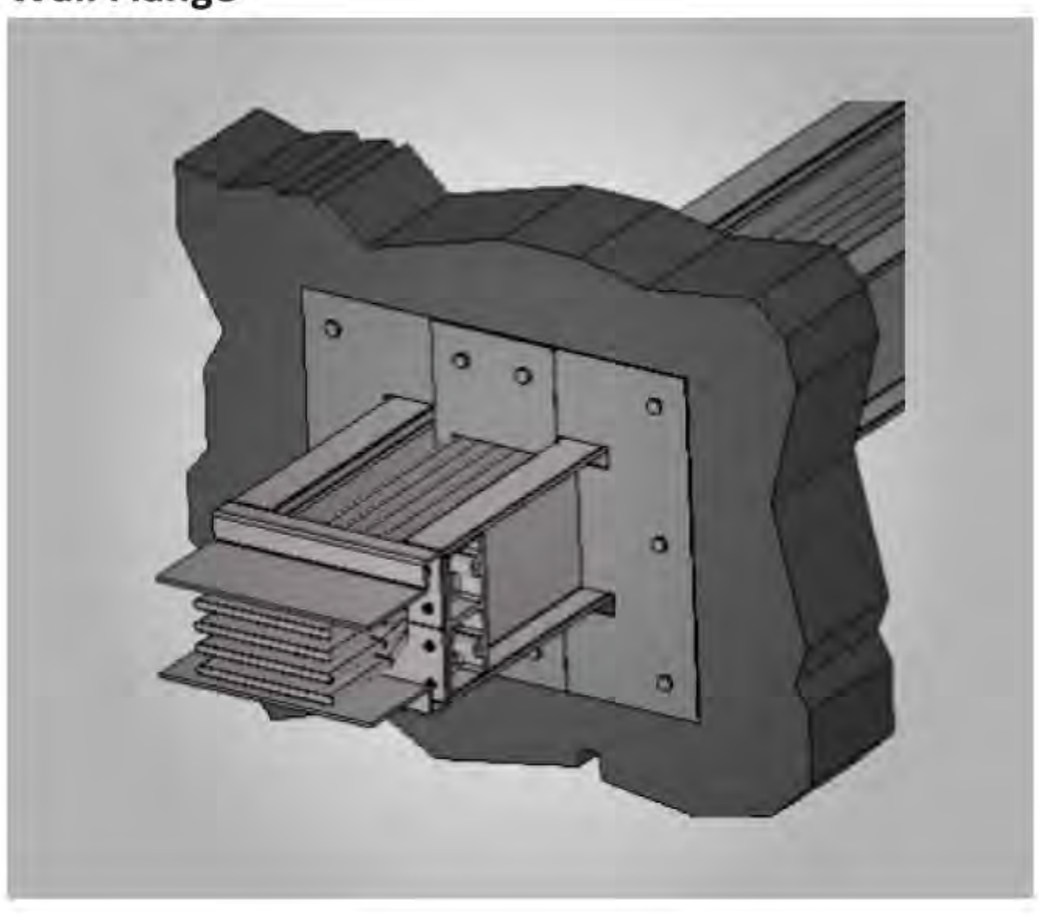
End Covers are used to safely cap off the end of a busway run, typically a rising busbar might be capped off at the top of the run a the end of the final section.

■ Wall Flange & Opening Detail

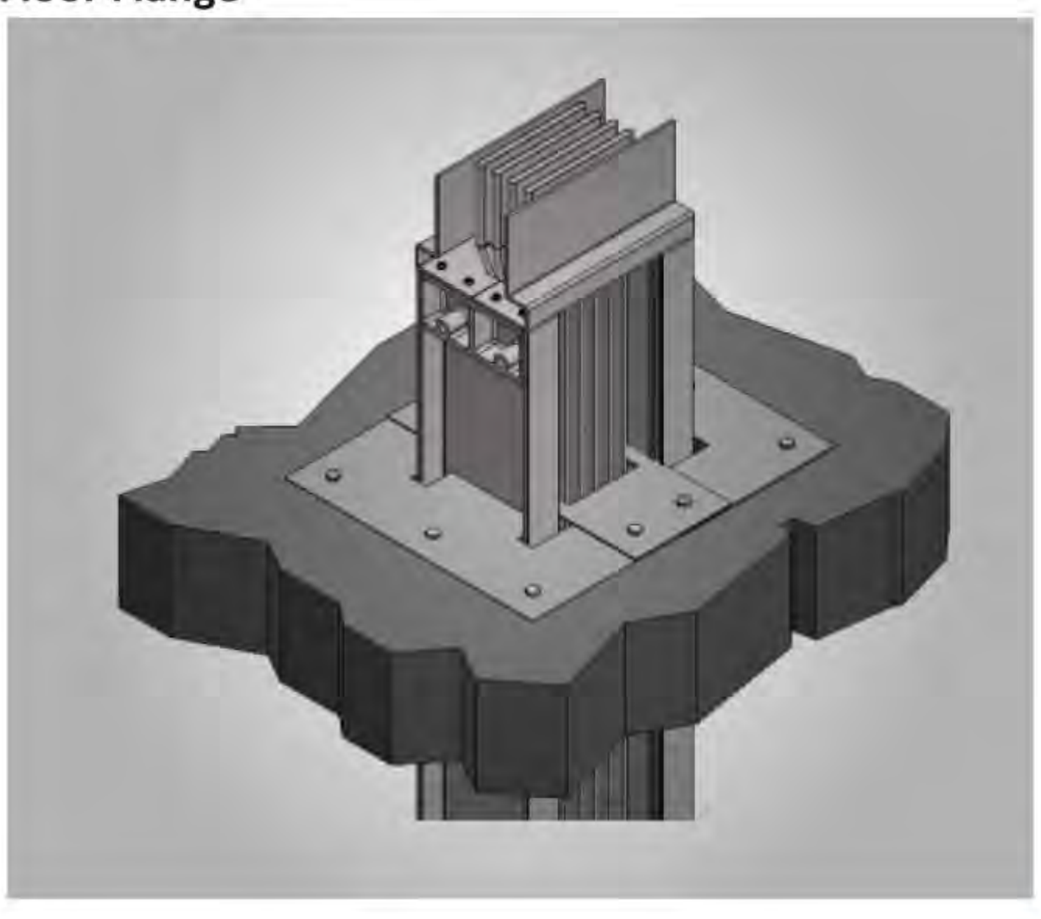
When busway passes through the wall or floor, the opening should be at least 30mm larger than the outside dimensions of busway enclosure.



Wall Flange



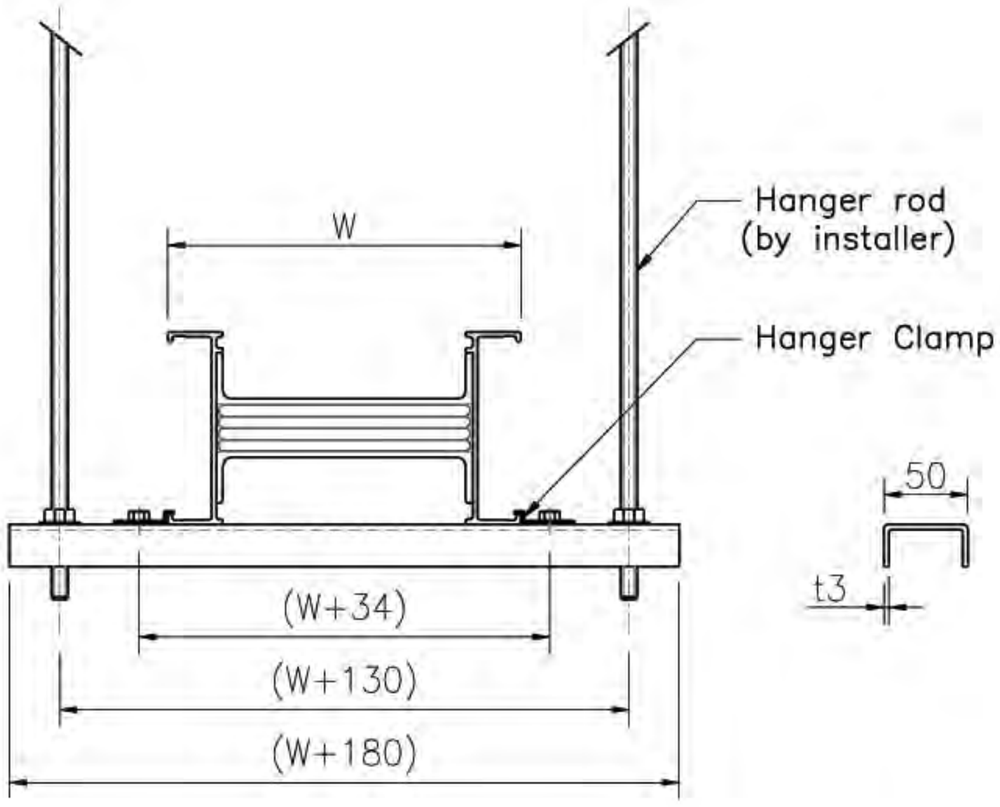
Floor Flange



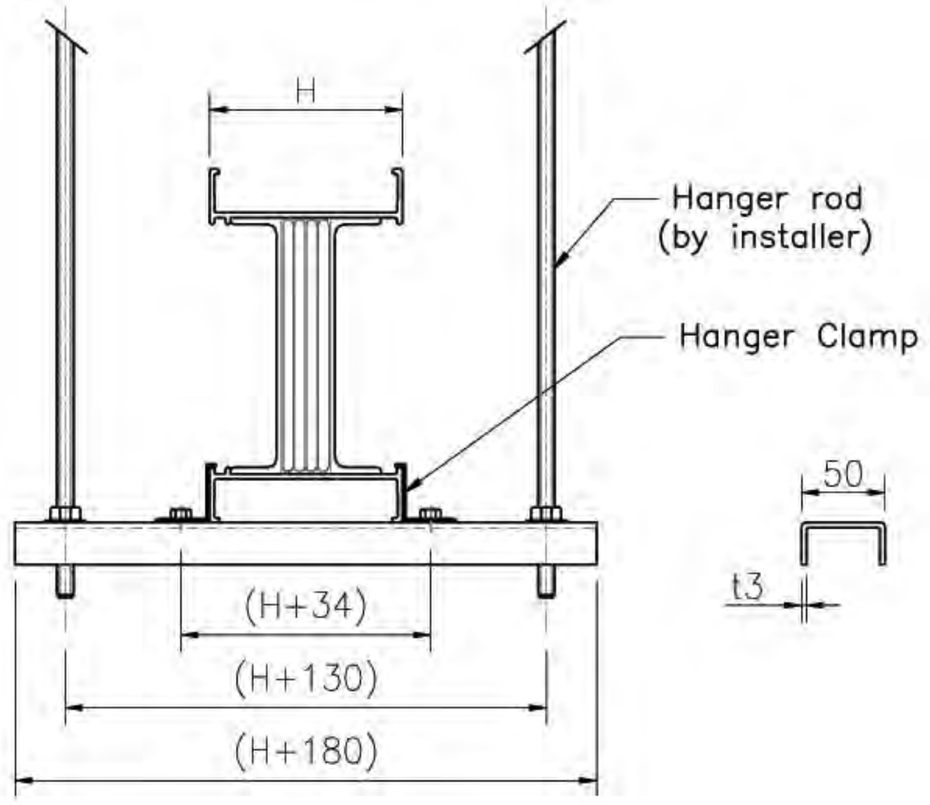
4 | PHYSICAL DATA

- **Horizontal Mounting**

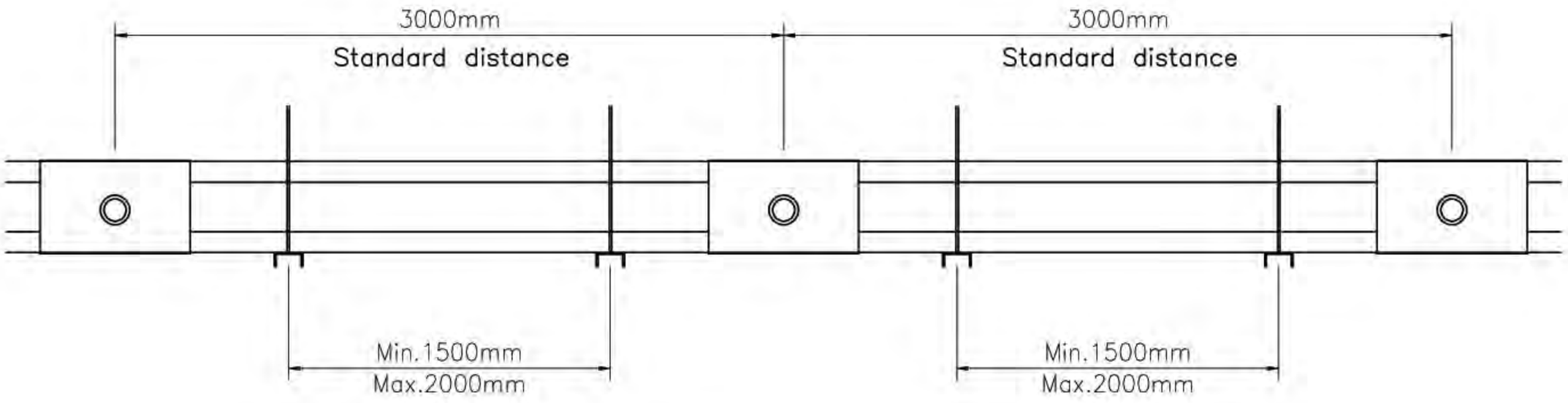
Supports are required approximately every 1.5 meter with a minimum of one support per busduct section. They are designed to be used with 12mm diameter stud bolt.



Flatwise



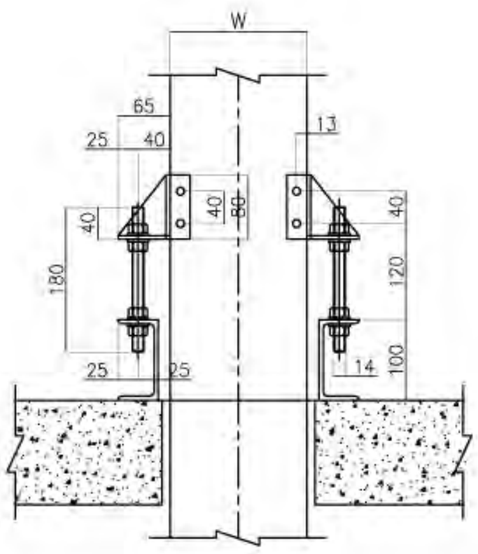
Edgewise



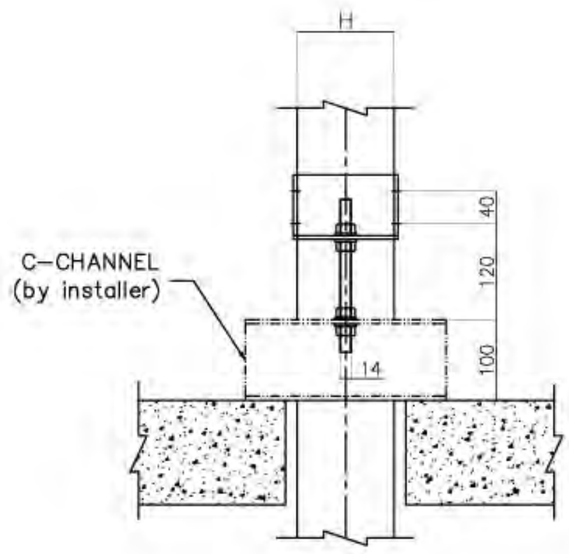
■ Vertical Hanger

For mounting the busway vertically, vertical spring hanger must be used on every floor.
Intermediate hangers are required for floor heights exceeding 4.5m. The rigid hangers are used to support at the center and both ends of a bus duct run.

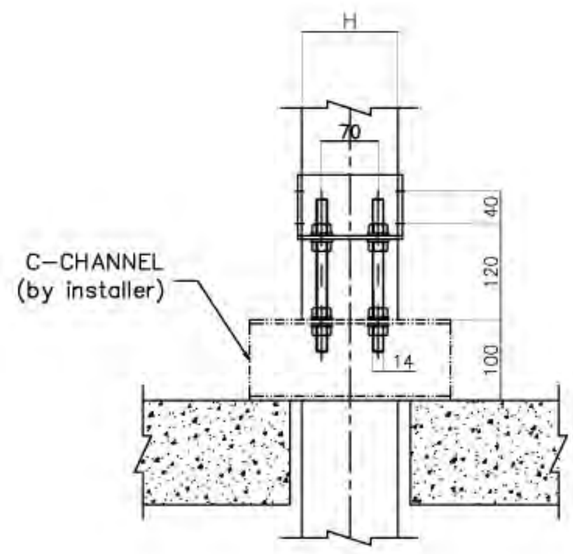
Vertical Spring Hanger



FRONT VIEW

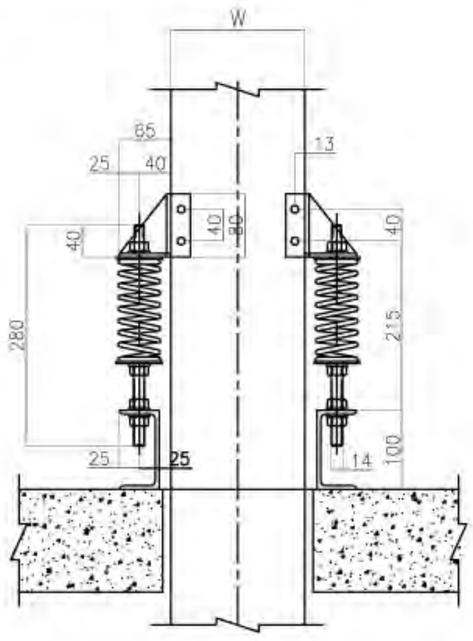


Al:400~1600A
Cu:400~1250A

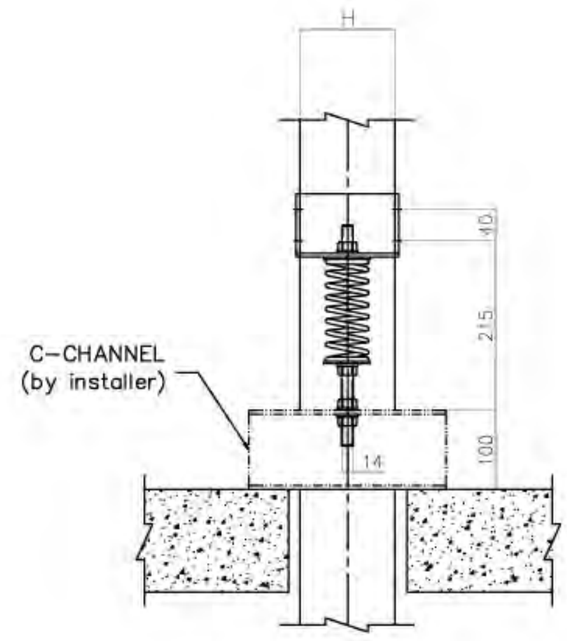


Al:2000~6000A
Cu:1600~7500A

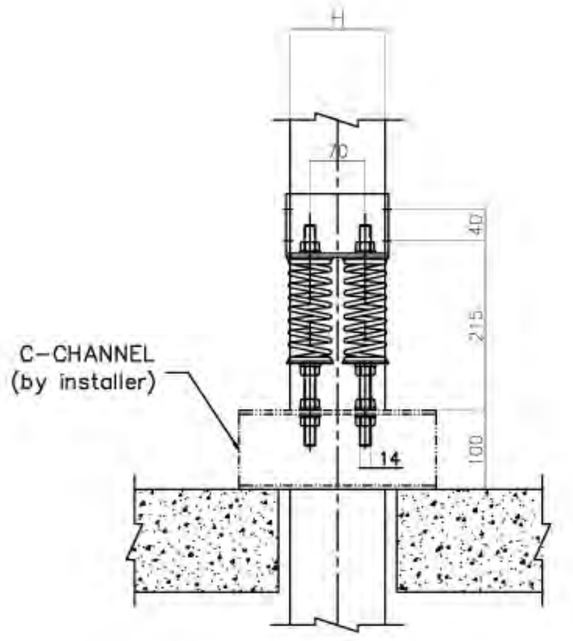
Vertical Rigid Hanger



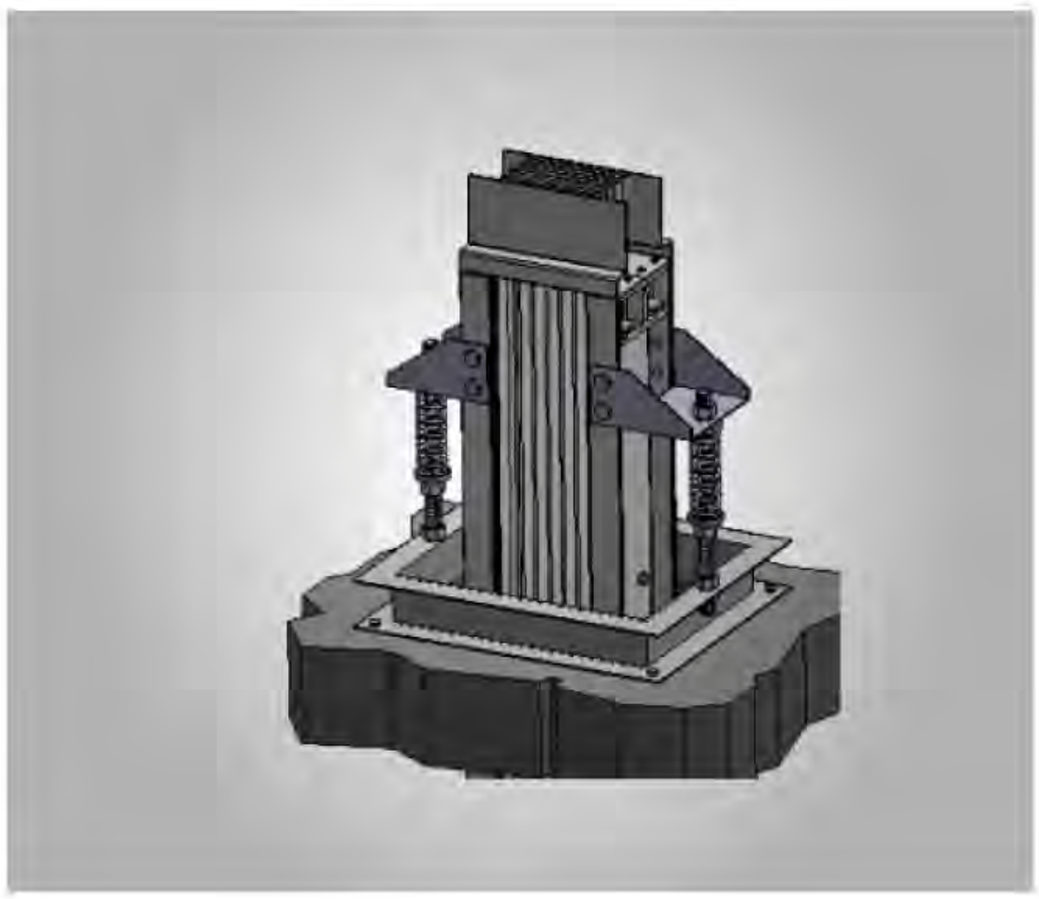
FRONT VIEW

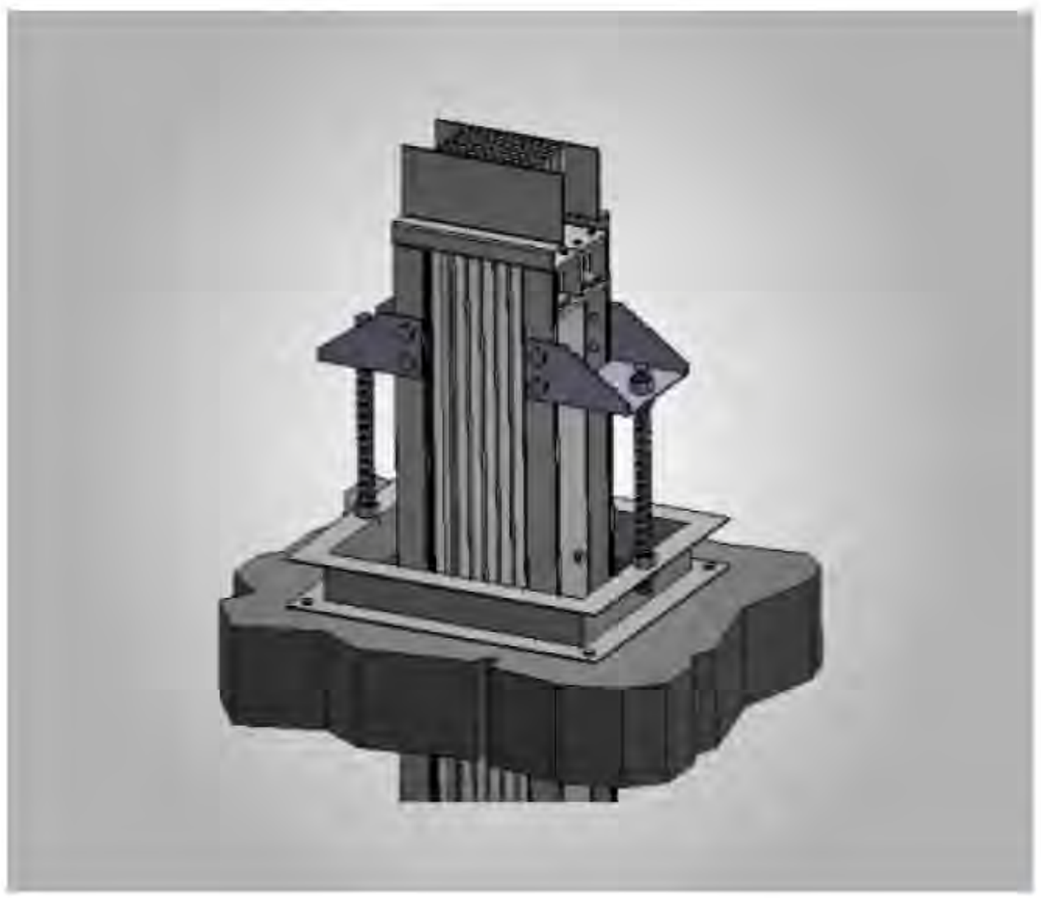


Al:400~1600A
Cu:400~1250A



Al:2000~6000A
Cu:1600~7500A

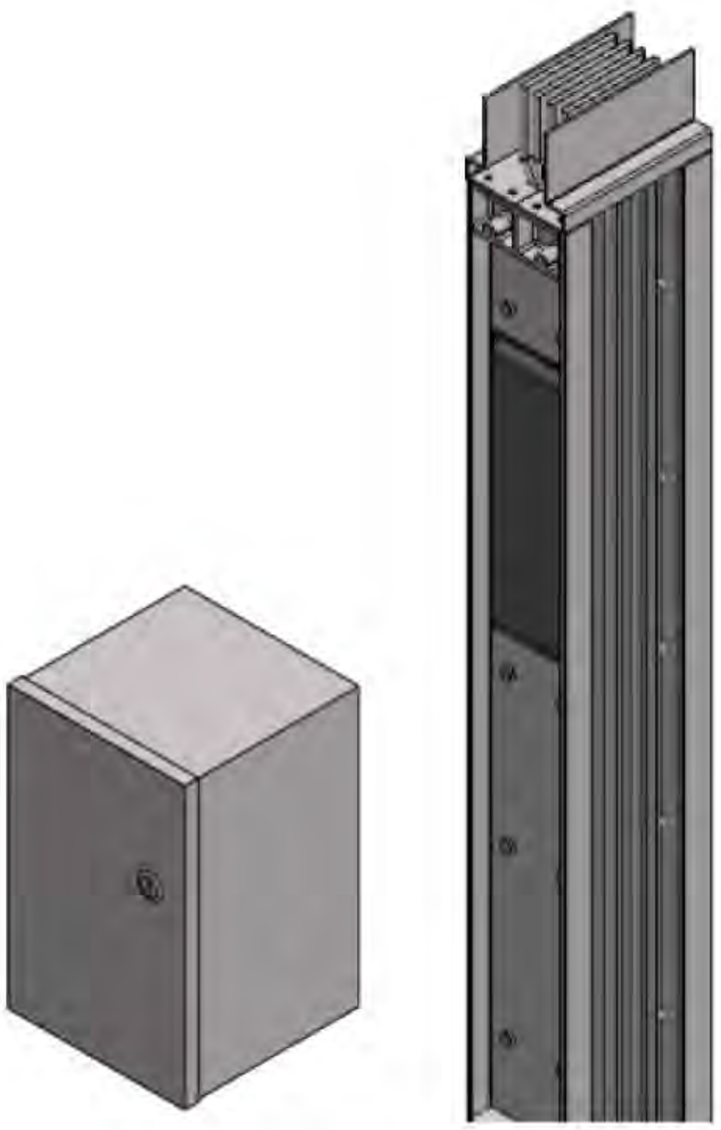


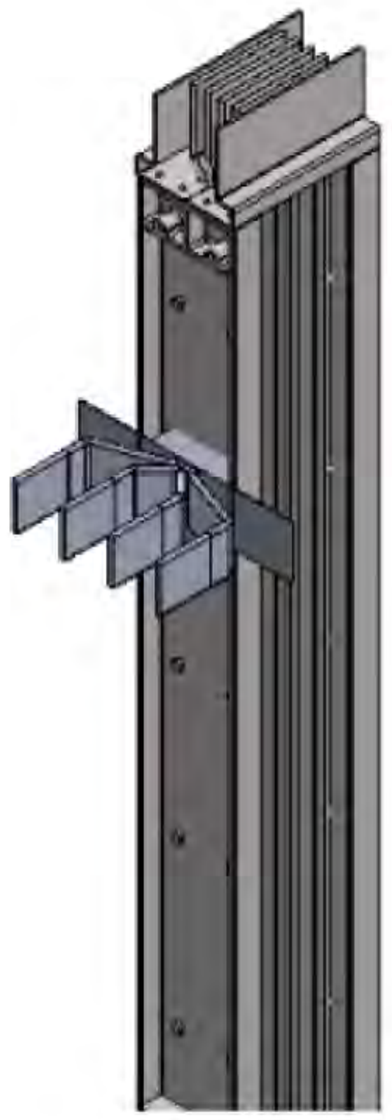


4 | PHYSICAL DATA

▪ Plug-in Unit/Tap-off Unit

VITZRO BUSWAY will have plug-in and tap-off type of power distribution method. Rated current up to 600A shall be plug in type while rated current from 700A ~ 1600A shall be tap-off type. The plug-in/tap-off unit is rated at 2P40 as standard but customers can order 2P55 as optional.
A maximum five units of plug in holes can be designed in 3000mm standard feeder unit on both sides





Plug-in Unit

Unit: mm

Rated current (A)	L	D	W
Up to 100A	360	200	230
Up to 250A	400	200	230
300A to 400A	500	250	250
500A to 600A	600	300	330

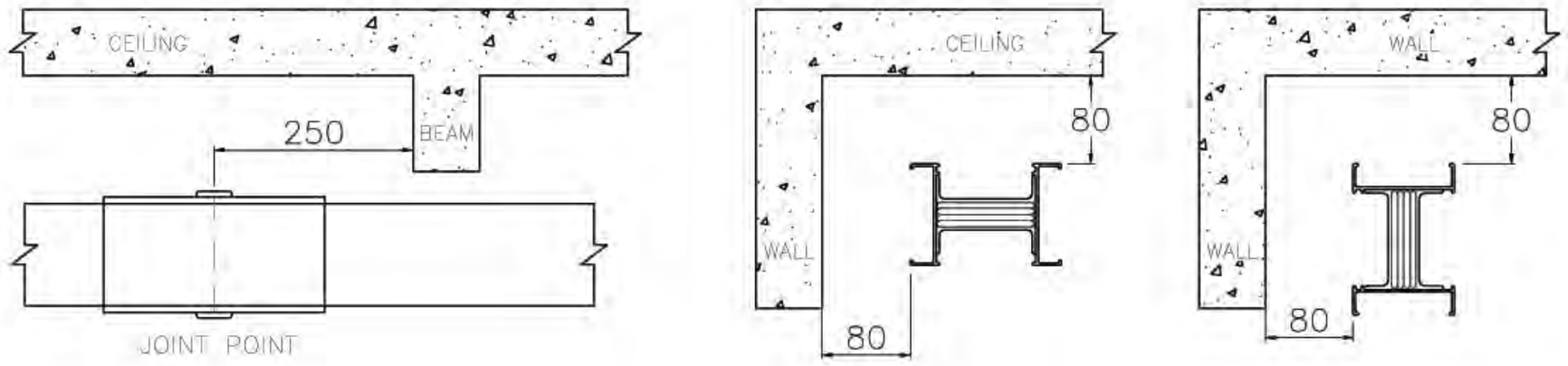
Tap-off Unit

Unit: mm

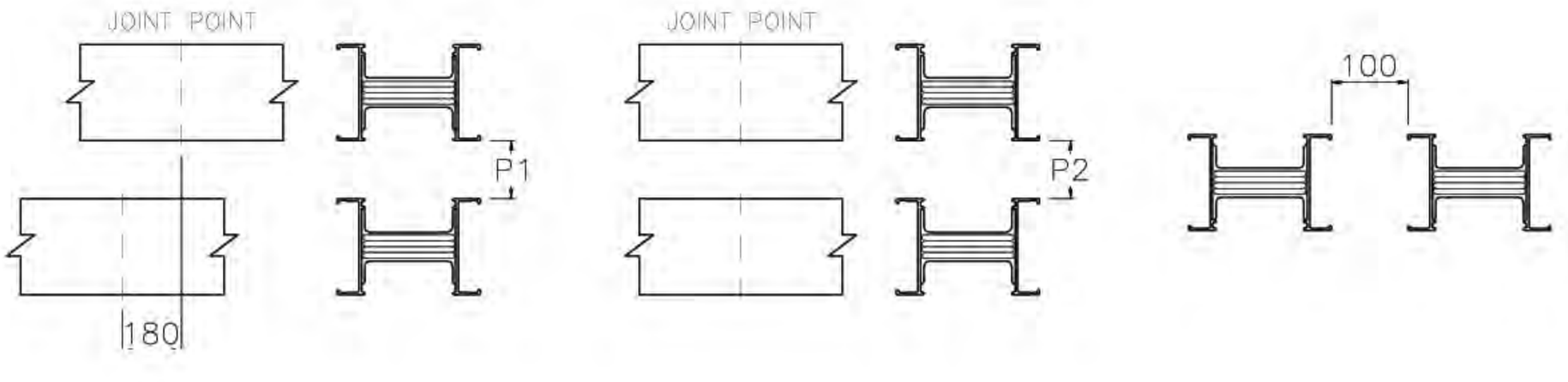
Rated current (A)	L	D	W
700A to 800A	850	250	360
1000A	900	300	360
1250A	950	300	360
1600A	1200	300	400

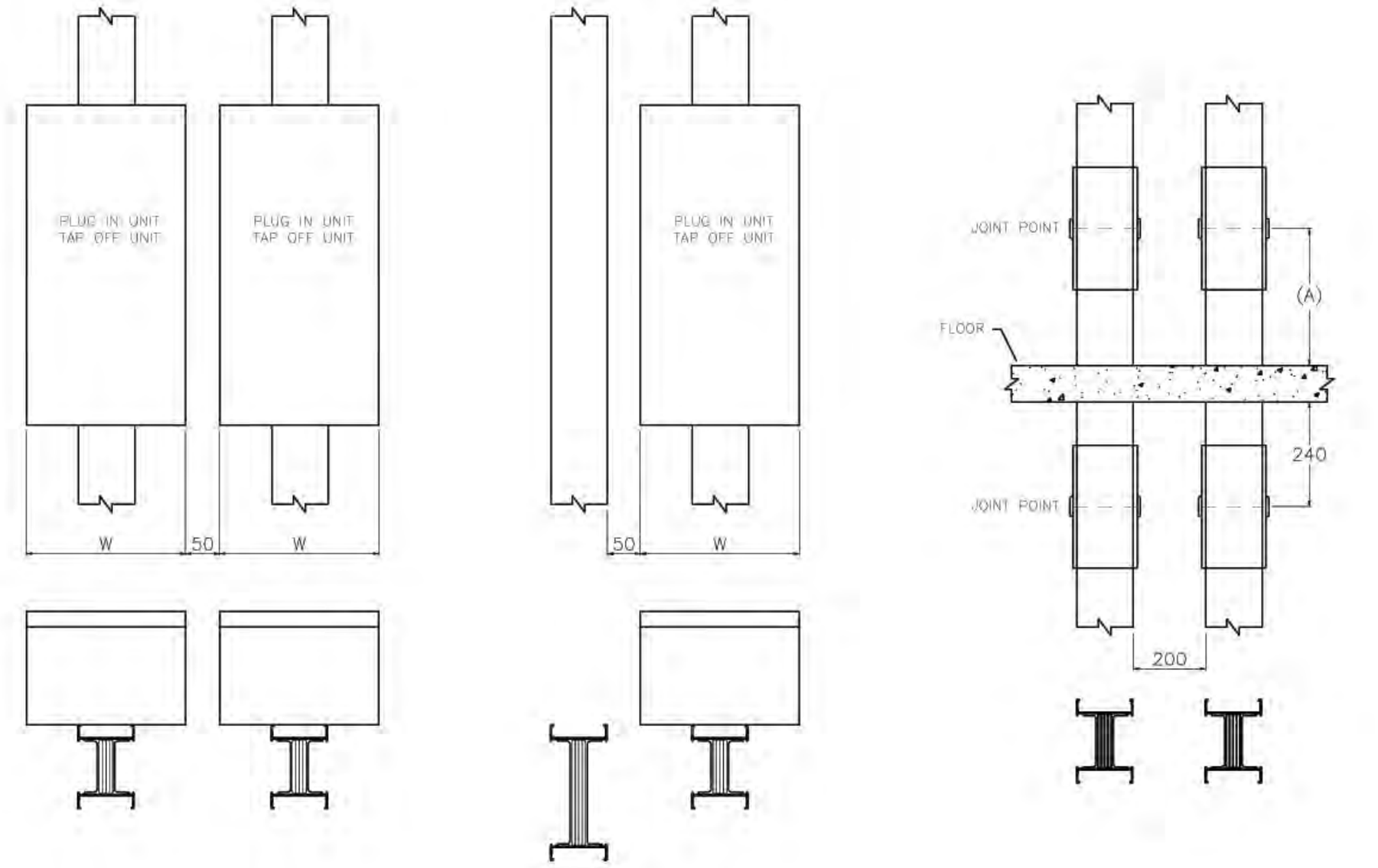
■ Design Factors for Busduct Layout

Minimum clearance from beam, wall or ceiling



Minimum distance of horizontal busduct





5 | TECHNICAL DATA

▪ Impedence and Voltage Drop

Aluminum Conductors (Frequency 50Hz)

Current Rating (A)	Impedence X $10^{-3}\Omega/m$			Voltage drop per 100m (Line to Line)					
	R	X	Z	0.5	0.6	0.7	0.8	0.9	1
400	17.695	3.611	18.060	8.30	9.36	10.37	11.31	12.12	12.26
600	14.333	2.925	14.628	10.80	11.37	12.60	13.74	14.73	14.89
800	10.769	2.387	11.030	10.33	11.60	12.81	13.92	14.87	14.92
1000	8.698	2.020	8.929	10.56	11.84	13.04	14.15	15.08	15.06
1250	6.006	1.425	6.173	8.81	9.86	10.85	11.76	12.53	12.48
1600	4.527	1.093	4.657	8.90	9.95	10.94	11.85	12.61	12.54
2000	3.490	0.830	3.588	8.54	9.56	10.52	11.40	12.14	12.09
2500	2.570	0.629	2.645	7.92	8.85	9.73	10.54	11.20	11.13
3200	2.263	0.558	2.331	8.95	10.00	10.99	11.89	12.64	12.54
3600	1.858	0.457	1.913	8.26	9.23	10.14	10.98	11.67	11.58
4000	1.745	0.422	1.795	8.58	9.59	10.55	11.43	12.15	12.09
5000	1.238	0.307	1.275	7.66	8.56	9.40	10.17	10.81	10.72
6000	1.163	0.284	1.198	8.60	9.62	10.57	11.44	12.17	12.09

Aluminum Conductors (Frequency 60Hz)

Current Rating (A)	Impedence X $10^{-3}\Omega/m$			Voltage drop per 100m (Line to Line)					
	R	X	Z	0.5	0.6	0.7	0.8	0.9	1
400	17.695	4.351	18.222	8.74	9.77	10.73	11.62	12.35	12.26
600	14.333	3.524	14.760	10.62	11.87	13.04	14.11	15.00	14.89
800	10.769	2.876	11.146	10.91	12.14	13.29	14.33	15.17	14.92
1000	8.698	2.433	9.031	11.18	12.41	13.55	14.58	15.40	15.06
1250	6.006	1.717	6.247	9.33	10.34	11.29	12.13	12.79	12.48
1600	4.527	1.317	4.714	9.43	10.45	11.39	12.23	12.88	12.54
2000	3.490	1.000	3.631	9.05	10.03	10.94	11.75	12.39	12.09
2500	2.570	0.758	2.679	8.41	9.30	10.13	10.87	11.44	11.13
3200	2.263	0.672	2.361	9.50	10.51	11.44	12.27	12.91	12.54
3600	1.858	0.551	1.938	8.77	9.70	10.56	11.33	11.92	11.58
4000	1.745	0.509	1.817	9.10	10.07	10.98	11.79	12.42	12.09
5000	1.238	0.369	1.292	8.13	8.99	9.79	10.50	11.04	10.72
6000	1.163	0.342	1.213	9.13	10.10	11.00	11.81	12.43	12.09

Copper Conductors (Frequency 50Hz)

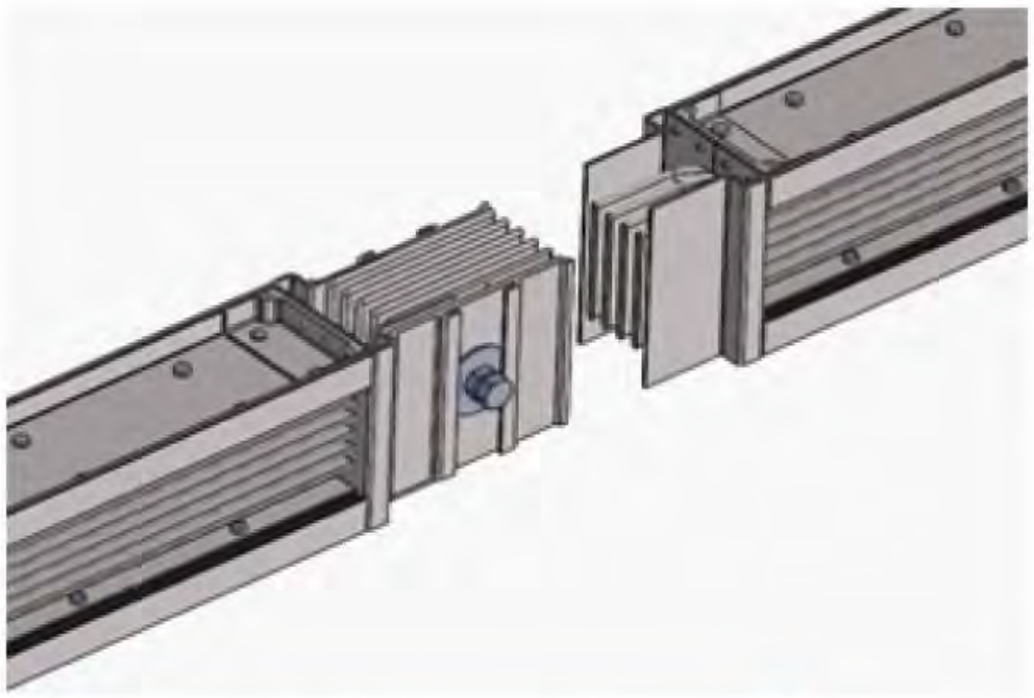
Current Rating (A)	Impedence X $10^{-5}\Omega/m$			Voltage drop per 100m (Line to Line)					
	R	X	Z	0.5	0.6	0.7	0.8	0.9	1
400	15.060	5.265	15.954	8.38	9.18	9.91	10.54	10.98	10.43
600	11.474	3.761	12.075	9.35	10.28	11.14	11.88	12.44	11.92
800	8.925	2.925	9.392	9.69	10.66	11.55	12.33	12.90	12.37
1000	6.743	2.348	7.141	9.36	10.26	11.08	11.78	12.28	11.68
1250	5.464	1.966	5.807	9.22	10.08	10.87	11.54	12.00	11.36
1600	3.836	1.425	4.092	8.74	9.54	10.26	10.87	11.29	10.63
2000	2.911	1.079	3.104	8.28	9.04	9.73	10.31	10.70	10.08
2500	2.452	0.901	2.612	8.69	9.49	10.22	10.83	11.26	10.62
3200	1.919	0.729	2.053	8.82	9.61	10.33	10.93	11.33	10.63
3600	1.657	0.629	1.773	8.56	9.34	10.03	10.62	11.01	10.33
4000	1.456	0.551	1.557	8.35	9.11	9.79	10.36	10.74	10.09
5000	1.226	0.459	1.309	8.75	9.55	10.27	10.88	11.29	10.62
6000	0.970	0.371	1.038	8.38	9.13	9.81	10.38	10.75	10.08

Copper Conductors (Frequency 60Hz)

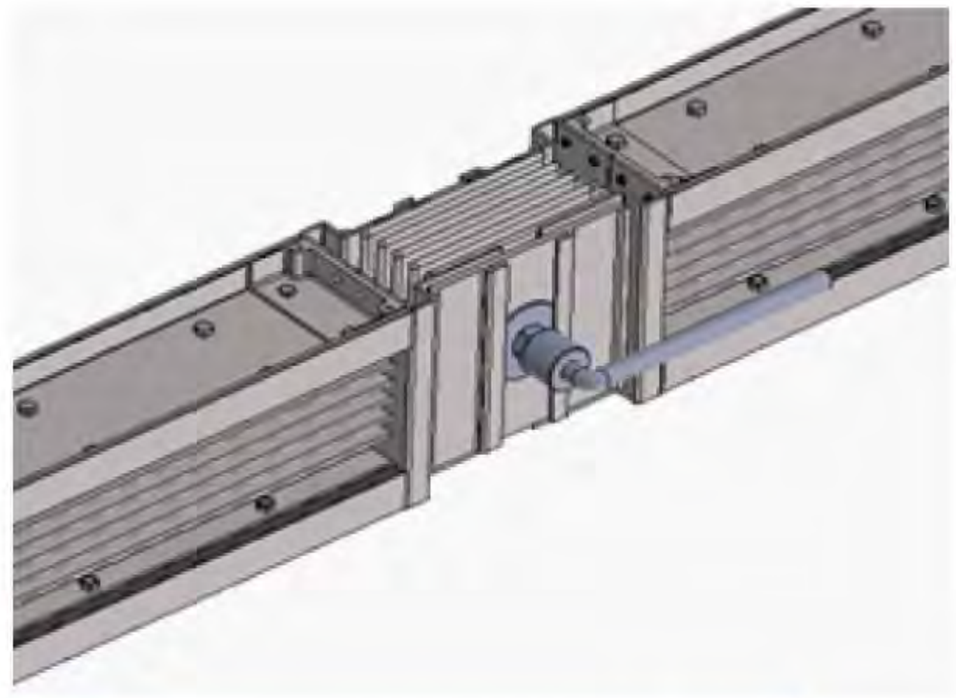
Current Rating (A)	Impedence X $10^{-5}\Omega/m$			Voltage drop per 100m (Line to Line)					
	R	X	Z	0.5	0.6	0.7	0.8	0.9	1
400	15.060	6.343	16.341	9.02	9.78	10.44	10.98	11.31	10.43
600	11.474	4.531	12.337	10.04	10.92	11.71	12.37	12.78	11.92
800	8.925	3.524	9.595	10.41	11.33	12.14	12.82	13.26	12.37
1000	6.743	2.829	7.313	10.08	10.93	11.68	12.28	12.65	11.68
1250	5.464	2.369	5.955	9.94	10.75	11.47	12.04	12.37	11.36
1600	3.836	1.717	4.203	9.44	10.18	10.84	11.36	11.64	10.63
2000	2.911	1.300	3.188	8.94	9.65	10.27	10.77	11.04	10.08
2500	2.452	1.085	2.681	9.38	10.13	10.79	11.31	11.60	10.62
3200	1.919	0.878	2.110	9.53	10.28	10.92	11.43	11.69	10.63
3600	1.657	0.758	1.822	9.26	9.98	10.61	11.10	11.36	10.33
4000	1.456	0.664	1.600	9.03	9.73	10.35	10.83	11.08	10.09
5000	1.226	0.553	1.345	9.46	10.20	10.85	11.37	11.64	10.62
6000	0.970	0.447	1.068	9.06	9.76	10.37	10.85	11.10	10.08
7500	0.818	0.371	0.898	9.49	10.23	10.88	11.39	11.66	10.62

6 | INSTALLATION PROCEDURE

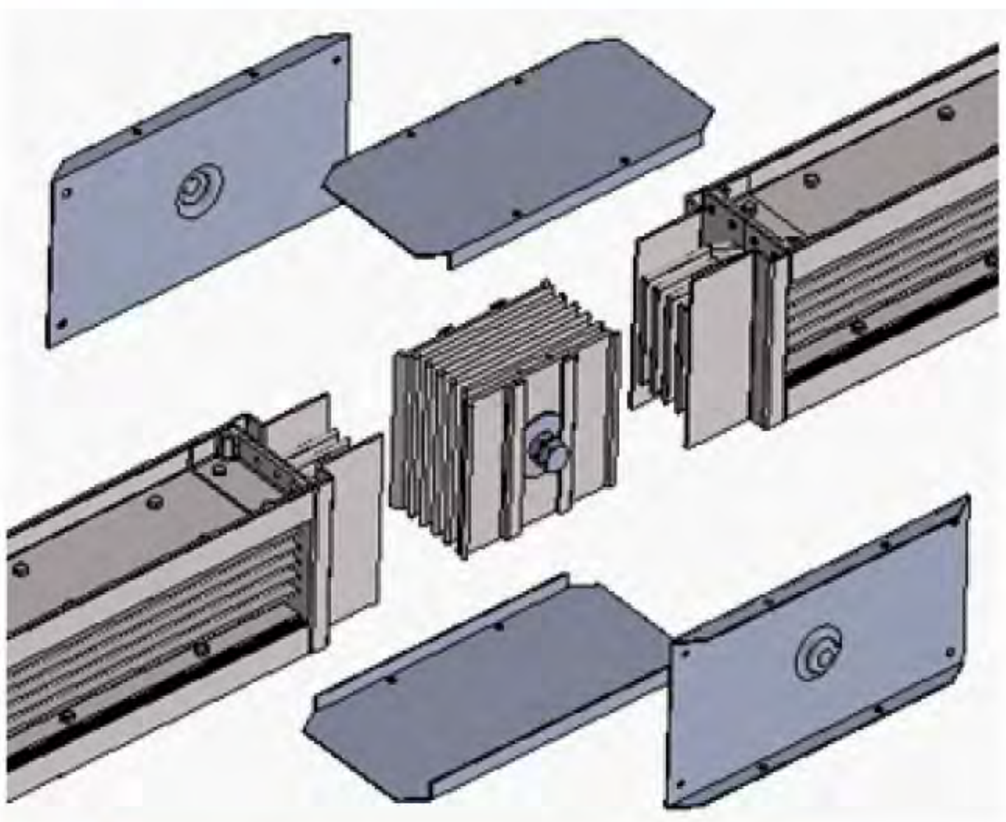
- **Impedence and Voltage Drop**



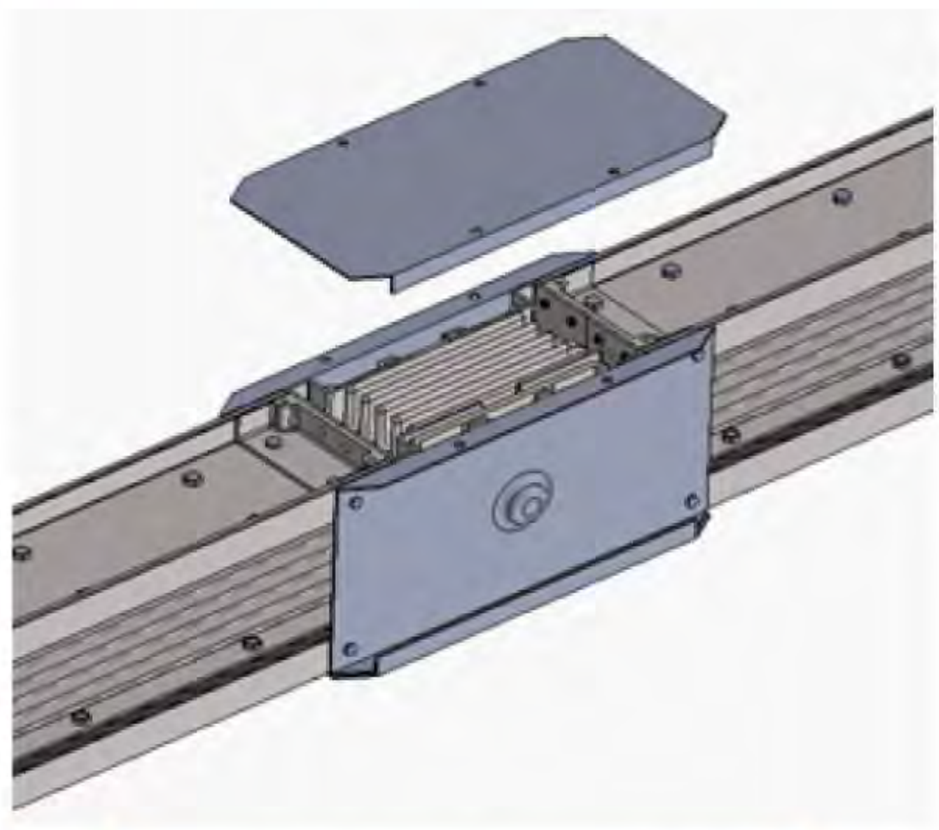
1 Ensure all contact surfaces are clean and contamination



2 Using the torque wrench, tighten the outer bolt head.

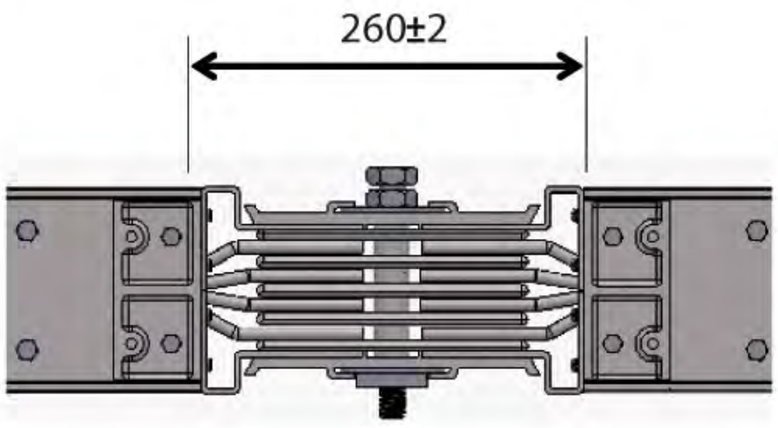


3 Attach the side cover to the body with mounting screws (M6 bolt)



4 Attach the upper and lower cover to the body with mounting screws (M6 bolt)

- **Standard distance between joint edges**



Joint the two sections until the joint edge to edge distance is 260mm

MEMO

VITZRO
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