

# FEDI® GIGA

## Q-Connect Stack Assembly



FEDI-GIGA is a next generation fractional electro-deionization stack that is designed to produce ultra-pure water with a high low capacity. It can minimise associated piping and instruments due to its unique design feature of having one inlet and two outlet ports. It is the first electro-deionization stack with three ports—Feed, Product, and Reject port.

FEDI GIGA Q-Connect is pre-engineered FEDI GIGA electrodeionization stack rack solution designed keeping in view of the requirement of reduced foot print, reduced man-hours, high low, ease of installation and engineering containerized electrodeionization system. FEDI GIGA Q-Connect assembly is done at site and comes with assembly instructions.

The design comes with entire rack, piping and electrical arrangements. These stacks are connected to each other with the help of headers and victaulic connections provided. The entire assembly MOC is designed keeping in mind corrosive conditions. The FEDI GIGA stacks within the Q-Connect are provided with metallic rollers which are placed on railings which can be used for ease of maintenance of FEDI GIGA stacks in case on any maintenance activity. Each stack is secured on the railings using a locking arrangement making the system safe for operation. The entire skid can be anchor fastened.

### Quality Assurance Standards

Each stack is CE marked and factory tested to meet strict industry standards and is manufactured in an ISO 9001 and ISO 14001 quality and environmental management system.



### Features

- Modular scheme with high low
- Complete assembly with header connection frontal piping
- Victaulic connection for faster header assembly
- Common junction box arrangement for ease of DC electrical connection
- Stacks with roller arrangement for ease of maintenance
- Non-metallic piping and Victaulic connections for corrosive environment
- CE certified electrical connections and cables
- Multiple parallel connections between GIGA Q-Connect for high low requirements
- Number of variants to cover major low rate.
- No Chlorine gas generation in the reject line. (No pre-treatment for RO feed)
- Minimum Headers (Feed, Product & Reject headers)
- Minimum piping and instrumentation
- Single voltage operation
- Ultra-pure water quality up to 18.2 MΩ.cm
- Silica and Boron removal up to 99%
- Low footprint / m<sup>3</sup>

### Feed Water Specification

Parameters	Unit	Specifications
Feed Conductivity Equivalent (FCE) Including CO <sub>2</sub>	μS/cm	<40
pH	-	6-9
Silica (Reactive)	ppm	< 1.0
Total Hardness as CaCO <sub>3</sub>	ppm	< 1.0
TOC	ppm	< 0.5
Heavy Metals (Fe, Mn, etc.)	ppm	< 0.01
Free Chlorine as Cl <sub>2</sub>	ppm	< 0.05
Feed Water SDI	-	< 1.0

Feed Conductivity Equivalent, FCE (μS/cm) = Feed water conductivity (us/cm) + ppm CO<sub>2</sub> x 2.83 + ppm SiO<sub>2</sub> x 2.0

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### Product Water Specification

Parameters	Unit	Specification
Product Resistivity	MΩ.cm	Up to 18*
Silica (SiO <sub>2</sub> ) Reduction	%	Up to 99*
Boron Reduction	%	Up to 99*

\* Refer to FEDI software tool for actual performance

### Flow Specifications

Parameters	Unit	GIGA Q-Connect 30X					GIGA Q-Connect 45X				
		2	3	4	6	8	2	3	4	6	8
<b>Variants</b>											
<b>Typical Product Flow</b>	m <sup>3</sup> /h gpm	16 70	24 106	32 141	48 211	64 282	24 106	36 159	48 211	72 317	96 423
<b>Max. Product Flow</b>	m <sup>3</sup> /h gpm	20 88	30 132	40 176	60 264	80 352	30 132	45 198	60 264	90 396	120 528
<b>Min. Product Flow</b>	m <sup>3</sup> /h gpm	12 54	18 79	24 106	36 159	48 211	18 79	27 119	36 159	54 238	72 317
<b>Max. Reject Flow</b>	m <sup>3</sup> /h gpm	1.8 8	2.7 11.9	3.6 15.9	5.4 23.8	7.2 31.7	2.7 11.9	4.5 19.8	5.4 23.8	9.0 39.6	12.0 54
<b>Min. Reject Flow</b>	m <sup>3</sup> /h gpm	1.4 6.2	2.1 9.2	2.8 12.3	4.2 18.5	5.6 24.7	2.1 9.2	3.0 13.2	4.2 18.5	6.0 26.4	8.0 35.2

\* Design product low will be based on FEDI projection.

### Electrical Operating Parameters

Parameters	Unit	GIGA Q-Connect 30X					GIGA Q-Connect 45X				
		2	3	4	6	8	2	3	4	6	8
<b>Variants</b>											
<b>Typical Voltage</b>	VDC	250	250	250	250	250	350	350	350	350	350
<b>Maximum Voltage</b>	VDC	500	500	500	500	500	600	600	600	600	600
<b>Typical Current</b>	AMP	18	27	36	54	72	18	27	36	54	72
<b>Maximum Current</b>	AMP	24	36	48	72	96	24	36	48	72	96

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### Operating Condition

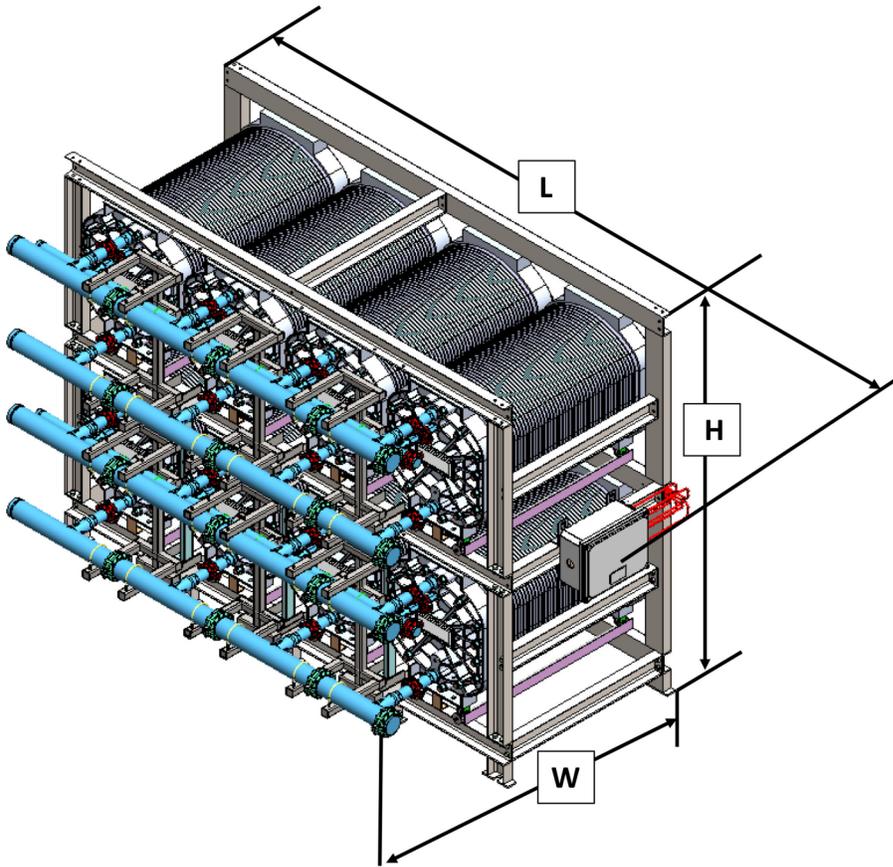
Parameters	Unit	Q-Connect 30X / 45X
Recovery	%	Up to 95
Feed Water Temperature	°C	5 – 40
	°F	41 - 104
Pressure Drop (Feed to Product ) @ Typical Flow	bar	1.4 – 2.0
	psi	20 – 30
Recommended Operating Pressure	bar	< 4.8
	psi	< 70
Maximum Feed Pressure	bar	7
	psi	100

### Dimensions and Hardware MOC

Parameters	Unit	GIGA Q-CONNECT 30X					GIGA Q-CONNECT 45X				
		2	3	4	6	8	2	3	4	6	8
Variants		2	3	4	6	8	2	3	4	6	8
Stack Weight	Kg	500	750	1000	1500	2000	660	990	1320	1980	2640
	Lbs	1102	1654	2205	3307	4409	1455	2183	2910	4365	5820
Rack Weight	Kg	125	180	215	290	375	160	240	290	400	510
	Lbs	276	397	474	639	827	353	529	639	882	1124
Shipping Weight (Net)	Kg	825	1130	1515	2090	2675	1020	1430	1910	2680	3450
	Lbs	1819	2491	3340	4608	5897	2249	948	4211	5908	7606
Length (L)	mm	1545	2140	1545	2140	2790	1545	2140	1545	2140	2790
	inch	61	84	61	84	110	61	84	61	84	110
Width (W)	mm	1202	1202	1202	1202	1202	1465	1465	1465	1465	1465
	inch	47	47	47	47	47	58	58	58	58	58
Height (H)	mm	1070	1070	1930	1930	1930	1070	1070	1930	1930	1930
	inch	42	42	76	76	76	42	42	76	76	76
Feed Terminal (N1) Product Terminal (N2) Reject Terminal (N3)		3" Victaulic 3" Victaulic 1.5" Victaulic									
Header MOC Victaulic MOC	-	PPHP GF Nylon									
Rack MOC	-	SS 304									

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### Electrical Terminal Points with Quantities and Specifications

Parameters	Unit	GIGA Q-Connect 30X					GIGA Q-Connect 45X				
<b>Variants</b>		2	3	4	6	8	2	3	4	6	8
<b>No. of input and output DC Electrical cables</b>	Nos	2	3	4	6	8	2	3	4	6	8
<b>Connector details (Inside Junction box)</b>		Rated Voltage: 1000 V Rated current: 41A Housing Material : Polyamide					Rated Voltage: 1000 V Rated current: 41A Housing Material : Polyamide				
<b>Junction box dimensions (L x B x H)</b>	mm	310 x 310 x 170		370 x 290 x 175			310 x 310 x 170		370 x 290 x 175		

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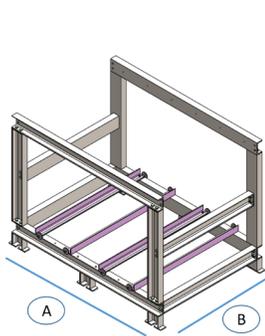
## Q-Connect Stack Assembly



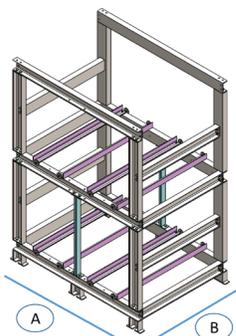
### Skid anchoring Detail

Parameters	Unit	GIGA Q-Connect 30X					GIGA Q-Connect 45X				
Variants		2	3	4	6	8	2	3	4	6	8
Anchor bolt details		M18					M18				
No. of anchor hole		6	8	6	8	10	6	8	6	8	10
Anchor center to center distance (A)	mm inch	1290 51	1890 74	1290 51	1890 74	2490 98	1290 51	1890 74	1290 51	1890 74	2490 98
Anchor center to center distance (B)	mm inch	695 27	695 27	695 27	695 27	695 27	695 27	940 37	940 37	940 37	940 37

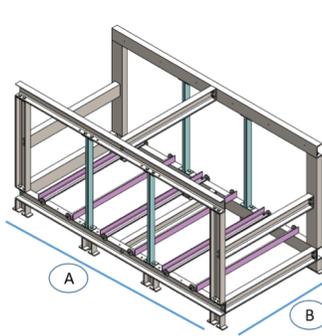
\*Basic dimension, contact QUA for detailed drawing



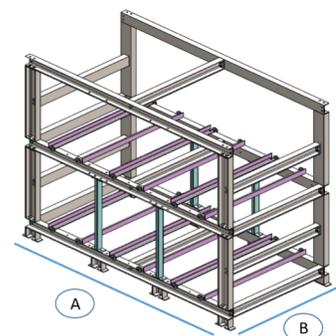
GIGA Q-Connect 30X/45X - 2



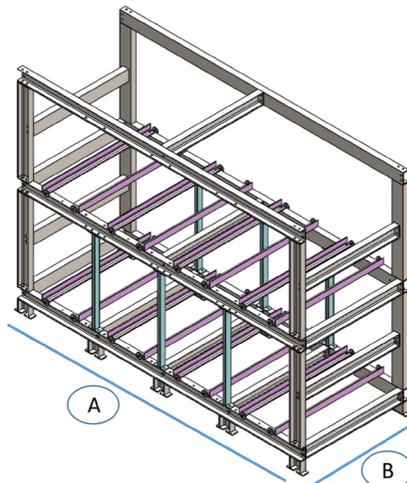
GIGA Q-Connect 30X/45X - 4



GIGA Q-Connect 30X/45X - 3



GIGA Q-Connect 30X/45X - 6



GIGA Q-Connect 30X/45X - 8

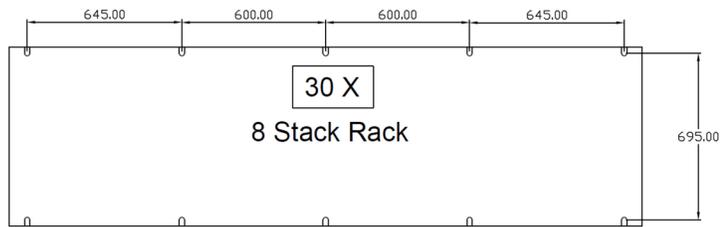
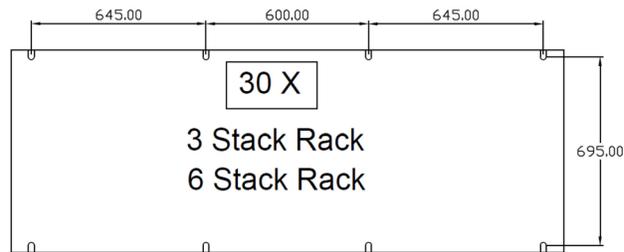
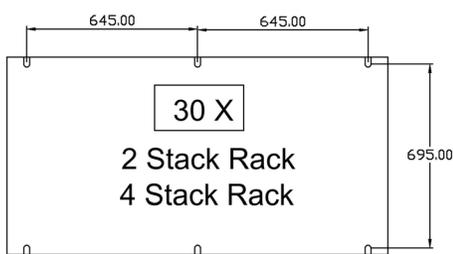
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### Detailed Dimensional Drawing for Anchoring

#### GIGA Q-CONNECT 30X



#### GIGA Q-CONNECT 45X

