

# Press-Pack IGBT 3-Level Inverters

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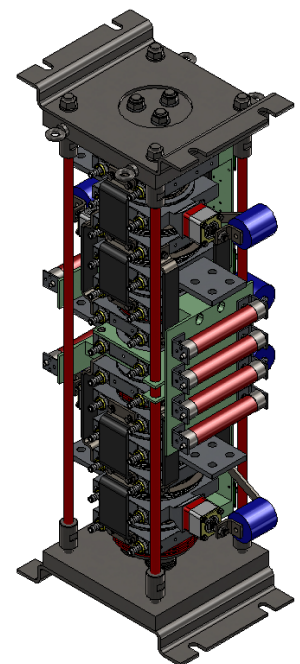
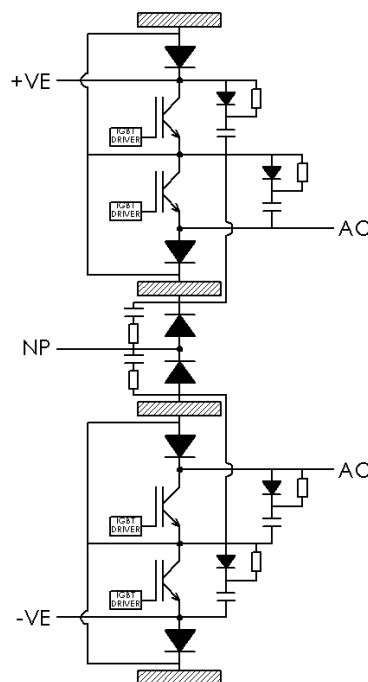
**A range of 3-level topology assemblies using press-pack IGBT technology have been developed to serve applications at the highest end of the power market.**

3 separate designs are available, a totally independent 3.3kV system, a 6.6kV system and a 10kV system. The 6.6kV and 10kV systems are based on the combination of 2 IGBT stacks and 1 diode stack. Each system benefits from direct water cooling to provide highly effective heat dissipation away from the devices and pre-loaded disc spring clamping to evenly distribute the applied force across the entire surface area of the device.

Also designed into each system is an integrated snubber circuit design and an isolated clamping rod system to limit the occurrence of eddy currents within the unit.

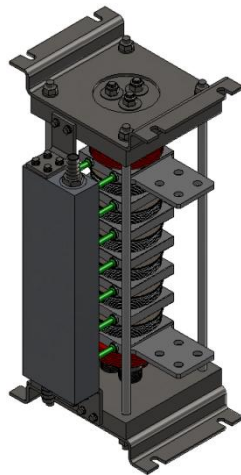
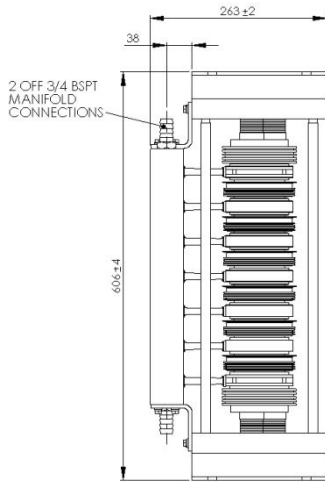
## Features and benefits

- Direct water cooled for effective heat dissipation
- Pre-loaded clamping to evenly distribute the applied force
- Isolated clamping rod system
- Integrated snubber circuit
- Single unit mechanical configuration: Short inductance paths for relative size of unit to avoid high stray inductance
- Advanced optically fired gate trigger circuits

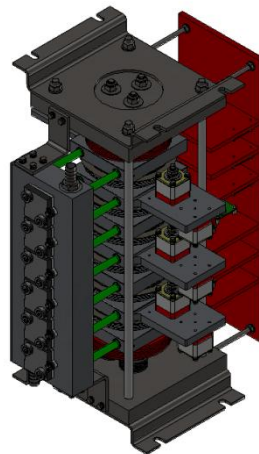
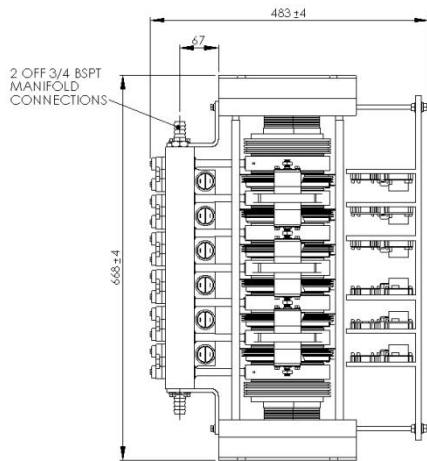


# 10kV System – Phase leg requirement: 2 x IGBT stack & 1 x Diode stack

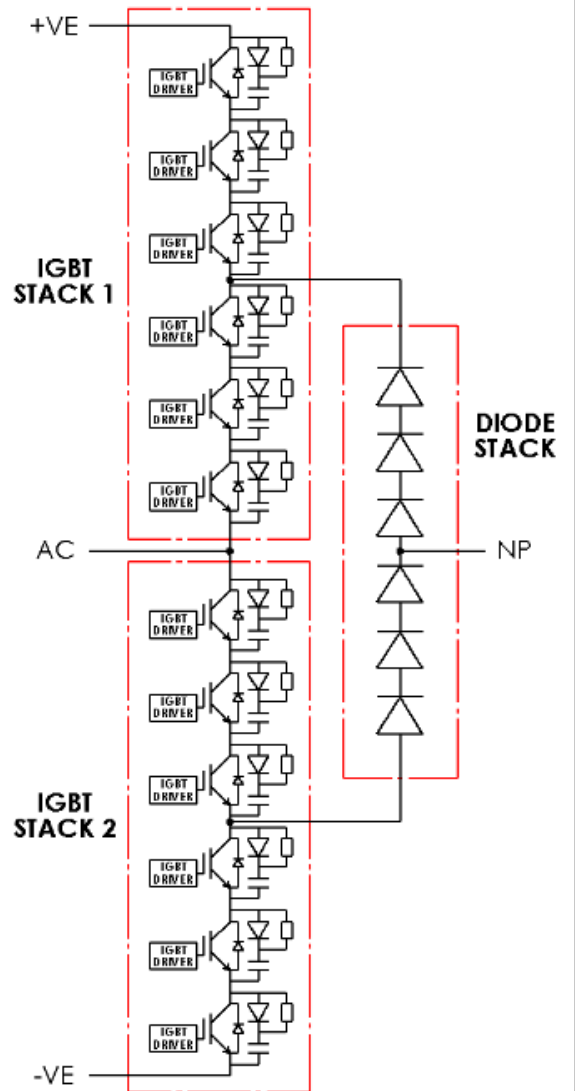
|                             |            |
|-----------------------------|------------|
| Power Rating (MW)           | 16         |
| Nominal Line Current (Amps) | 1000       |
| No. of IGBT's               | 6          |
| No. of Diodes               | 6          |
| No. of Coolers              | 7          |
| Required IGBT Type          | T1600GB45G |
| Required Diode Type         | E2400TC45C |



Diode stack: XA1000TV45WE/A



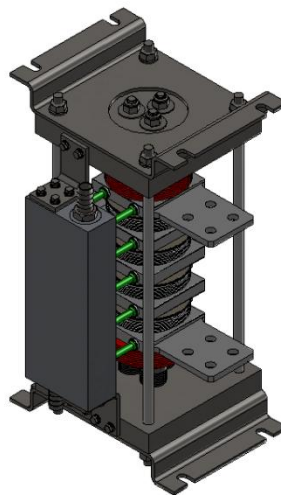
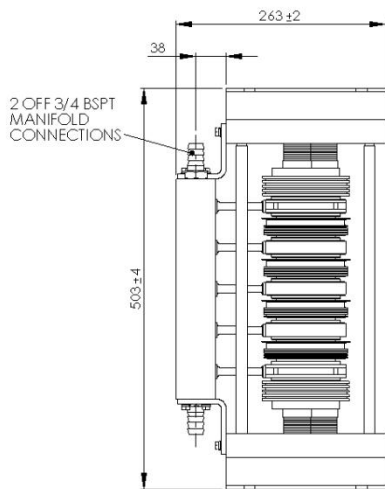
IGBT stack: XA1000GV45WT/A



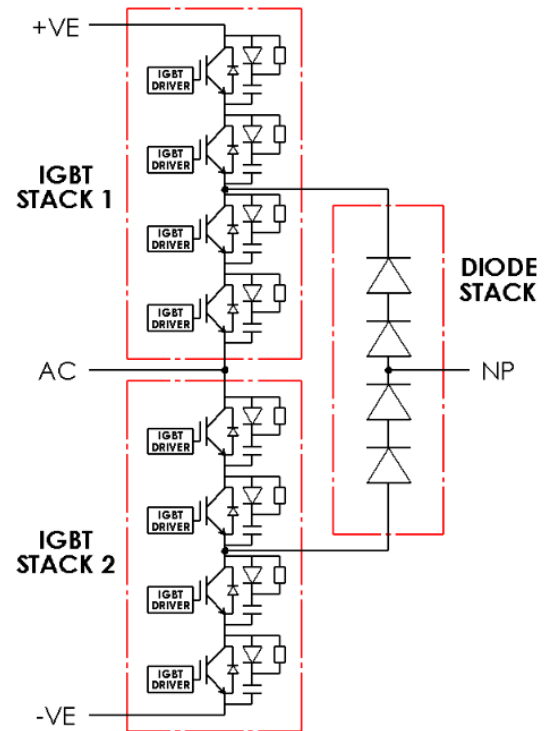
Phase leg schematic

## 6.6kV System – Phase leg requirement: 2 x IGBT stack & 1 x Diode stack

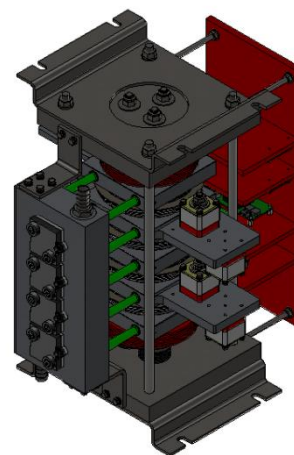
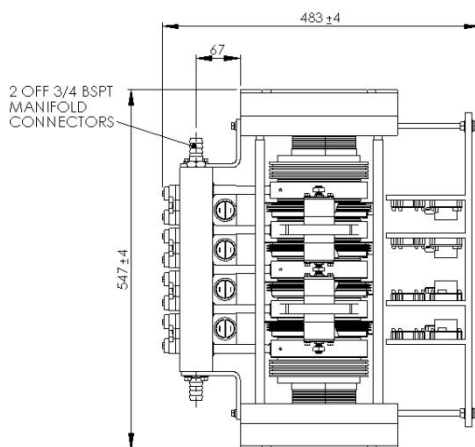
|                                    |            |
|------------------------------------|------------|
| <b>Power Rating (MW)</b>           | 12         |
| <b>Nominal Line Current (Amps)</b> | 1000       |
| <b>No. of IGBT's</b>               | 4          |
| <b>No. of Diodes</b>               | 4          |
| <b>No. of Coolers</b>              | 5          |
| <b>Required IGBT Type</b>          | T1600GB45G |
| <b>Required Diode Type</b>         | E2400TC45C |



Diode stack: XA1000TV45WE/B



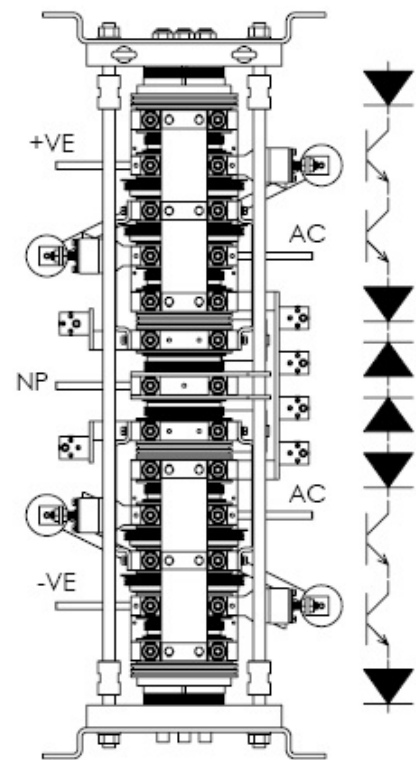
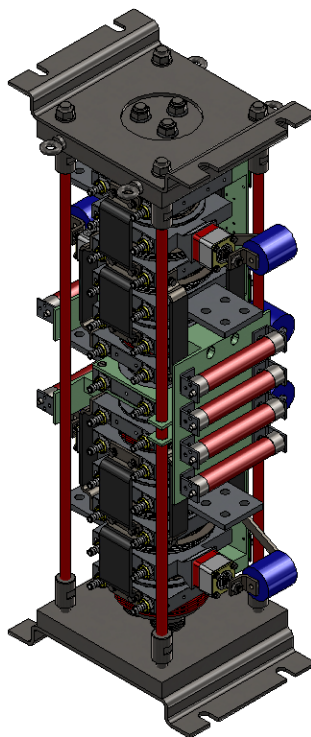
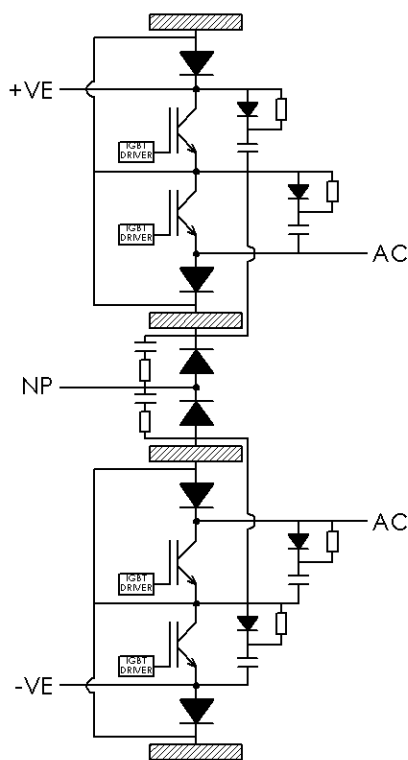
Phase leg schematic



IGBT stack: XA1000GV45WT/B

## 3.3kV System – Complete phase leg

|                                    |            |
|------------------------------------|------------|
| <b>Power Rating (MW)</b>           | 8          |
| <b>Nominal Line Current (Amps)</b> | 1600       |
| <b>No. of IGBT's</b>               | 4          |
| <b>No. of Diodes</b>               | 6          |
| <b>No. of Coolers</b>              | 13         |
| <b>Required IGBT Type</b>          | T2400GB45E |
| <b>Required Diode Type</b>         | E2400TC45C |



**XA1600GV45WT**



IXYS UK Westcode Ltd's BS EN ISO9001 quality system is registered by BSI



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