

# Specification for GTO Stack Assembly

## Description of Instrument / Jig-GTO stack clamping jig for valve set for WAG-9 loco.

Valve set is the main part of power converter. Within the valve set module there are four pluggable valve sets. Three of type 2xZV24 and one of type ZV24+MV23.

The valve set type 2xZV24 contains two branch valve sets at the two-points.

The valve set ZV24+MV23 contains one branch valve set at the same principal and over voltage chopper (MUB-chopper) each with RCD snubber circuit. The NSR requires two valve set of type 2XZV24, the ASR and MUB requires together one valve set of type 2xZV24 and one of type ZV24+MV23.

Inside the valve set there are a complete stack of GTO's+Diode's along with cooler & the stack is called main stack. It is pressed by suitable pressure on GTO & Diode.

Stack assembly & torque purpose this jig is developed working on hydraulic pressure. Material used in the jig are high quality steel machined, some component are EN grade steel ' with milling grinding machined, powder coated, plating.

It has a hydraulic jack for suitable pressure Development,

Electronic controller for indication of Digital pressure & setting of pressure, measuring force with help of load cell.

The machine generates 5000Kg pressure on GTO & Diodes for stack assembly of valves till the assembly gets completed. Stack clamping jig weight is approx 350Kg.

## Other Conditions

- The equipment shall be under warranty/guaranteed for three years from the date of successful commissioning on the equipments at ELS/TKD.
- The decision of Railway in regard to the cause of failure or nature of rectification to be carried out by the supplier during guarantee period shall be final and binding on the part of contract.
- The transportation will be at the supplier cost during warranty / guarantee repairs.
- Technical literature:- Contactor has to supply at least 02 copy of technical literature / operating manual along with diagram circuit equipment.

- Training:- The supplier shall provide training for operating maintenance and trouble shooting of problems generally arises in handling of equipment.
- Inspection:- Inspection by Sr. DEE/TRS/ELS/TKD or his authorized representative.
- Commissioning of Equipment:- Commissioning of equipment at consignee place with out any obligation.

Sr. DEE (TRS) ELS/TKD  
New Delhi-110044.

एन. डी. सि. को. / ए. डी. सि. को.  
एन. डी. सि. को. / ए. डी. सि. को.  
एन. डी. सि. को. / ए. डी. सि. को.  
एन. डी. सि. को. / ए. डी. सि. को.