



Bharat Heavy Electricals Limited

POWER SECTOR – SOUTHERN REGION – SAS

S.D.Road, Ek Tara Building, SECUNDERABAD – 500 003.

Ph :040-27703037/27700827/27704776/27713016/27705376,Fax:040-27701768

BRAZING EQUIPMENT

A. SCOPE:

Design, Manufacture, supply, testing and commissioning of brazing equipment -- 7 KvA capacity.

B. DESIGN:

INSULATION: CLASS 'H'

C. FEATURES:

- a). Foot switch for ON/OFF Indication lamp.
- b). Circuit breaker at the Input.
- c). Over load trip indicator.
- d). Analog Ammeter
- e). Volt meter of size 110 x 110 with 240° Scale shall be mounted towards output lead.
- f). 10 meters of suitable power cable for input supply from mains.
- g). Motorised current selector (0-100%).
- h). 10Meters – 200 Sq.mm fibre coated wire roap.
- i). Portable cabinet - Housing.
- j). Mounted trolley with polyurethane wheels for easy manurability.
- k). Cabinet shall be painted with two coats of epoxy based paint
 - Green RAL – 6011.
- l). With two brazing guns for suitable operations at site.

D. TECHNICAL PARTICULARS:

(1)	Rated primary voltage	:	415 v +/- 10%
(2)	Rated frequency	:	50 +/- 5% Hz
(3)	Rated secondary voltage	:	0 to 50 volts.
(4)	Rated Secondary current	:	0 to 750 A
(5)	No. of phases.	:	2
(6)	Winding material	:	Copper
(7)	Cooling	:	Forced Air
(8)	Duty cycle	:	Continuous

E. DOCUMENTS:

- i. Two copies of Dimensional sketch
- ii. From the date of indent, following documents shall be submitted .
 - 5 copies of final dimensional sketch with mounting details.
 - 5 copies of O&M manuals.

F. TECHNICAL CONDITIONS:

- i. The equipment shall be suitable for operation the ambient temperature range of 0 – 50 ° C .
- ii. At altitudes up to 100 meters with relative humidity up to 100%.
- iii. Despatching the equipment with suitable preservative shall be provided in the packing case to protect equipment from adverse conditions.

G. GUARANTEE :

The equipment shall be guaranteed for a period of 18 months from date of commissioning or 12 months from date of despatch.

H. QUALITY:

The equipment will be inspected by BHEL Quality Engineer before despatch of the equipment.

I. MARKING AND PACKING:

- ❖ Sl.No. of equipment with material specification details to be provided.
- ❖ Description of equipment.
- ❖ Packing list no.
- ❖ Manufacturers stamp.
- ❖ Top & Bottom indicators.
- ❖ Nature of equipment indicate Fragile / Non Fragile
- ❖ Packing shall be provided to avoid damage to equipment while loading, unloading, Transporting and Storage.

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BRAZING GUN

The Brazing Gun will be used for brazing of individual copper conductors of lower and upper bars of Air and Gas cooled Turbogenerators.

SCOPE:-

The scope includes design, manufacturing, supply and proving of the performance at BHEL works.

TECHNICAL SPECIFICATIONS:-

Description of Brazed Joint :-

Type of Joint: Lap, Length of lap 10 – 15 mm.

Cross Section of conductor.

Minimum 10.5 x 1.8mm

Maximum 12.5 x 2.5mm

Filler Material: Silver Brazing Alloy Size 0.4 x 8mm

Working Temperature : 740 – 820 degree.C.

BRAZING GUN AND HOLDER:

Above machine brazing guns are to be connected to be connected to the existing brazing machine through connecting cable.

Gun will be used for burning the glass insulation (0.15mm thick) of conductor before brazing.

Brazing Gun and Holder will be used for brazing of the conductors.

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Body of the brazing gun should be light enough, for easy manouevering the gun on and around the brazing joints. Material of the body should be epoxy based cotton fabric laminate for both thermal and electrical insulation purposes.

Connecting cable between the control panel of brazing machine and brazing gun, should be silicon rubber insulated single core flexible copper cables for easy manouevering the brazing guns.

Connecting cable of length 6 metre each is to be supplied for one brazing gun of each variant, complete with suitable connecting items for the connection with control panel and brazing gun.

On & off switches mounted on the gun must be of reputed make for satisfactory working and continuous Make and Break operation.

All fasteners in the brazing gun should be of high quality steel so that the same can withstand for repetitive exposure to high temperature.

GENERAL:

Offer should complete with relevant spares of each brazing gun for 2 years satisfactory operation.

Drawing and Manuals for each brazing gun is to be supplied along with the consignment.