

Specifications of Hydraulic Umbrella Press

Deptt: IMM

Item NO.

Spec no

Year

Issuing deptt/section

1. **Introduction:** hydraulically operated umbrella press is required for pressing of the wound & Impregnated stator core assembly into the machined stator frame for medium range motors. The press will consist of a table, a hydraulic cylinder, a long ram, hydraulic power pack, operator's platform, electrical control panel. The cylinder will be kept below the floor level. Also the press can be used for Stator core pressing operations.
2. **Application:** For pressing of the Wound Stator capsule into the machined Stator Frame.
3. **Job size, job description:**

The Wound Stator Core Assembly comprises of set of punching, set of stator coils along with various insulation items. The entire assembly is vacuum Impregnated in the VPI Plant. The Wound Stator Assembly thus formed is also known as Stator Capsule. The Stator Capsule is pressed into machined Stator Frame by using Hydraulic Umbrella Press as per design requirements.

Max diameter of the core= 1300 mm

Max ID for the above job = 800 mm

Min OD = 500 mm

Min ID = 300

Max stack ht= 1800

Min stack height = 500 mm

Top platen Height = 200 mm

Bottom platen ht = 300 mm

4. **Tech specs of the machine/equipment** (See the enclosed drg No. HRP/ T & D/ 205 for understanding of the configuration)
 - capacity of the main ram- 180 tonnes
 - ram- bi-directional- (forward & return)
 - no of T slots in the Table- 4
 - bottom table ht from floor- flush
 - pressing speed (downwards on load)- 100 mm/min
 - pressing speed upwards on no load – 1000 mm/ min
 - max working pressure – 250 bars/ suitable
 - Hyd power pack motor capacity- Suitable
 - oil tank capacity – 600 litres approx.

- platform size - 1600 mm x 1600 mm OR Circular
1600 mm diameter
- cylinder stroke- 1400 mm
- Extension length- 3000 mm approx.
- Ram dia – 200 mm approx/ suitable
- top table for pressing – approx 200 thick & 500 dia
- cotter bar- approx. 80 thick x 400 long
- max height after pressing the block – 2500 mm
- total height- As Suitable
- total height from the floor- As Suitable
- floor plate total thickness- 300 mm approx.
- provision of T slot in base plate- yes
- cotter slots – at 3 places suitably located
- accessories- operator's platform at the side;
 - o capacity – 200 kg
 - o lift- by winch system / lead screw
 - o type portable (manual) with wheels & pads
 - o size of platform- 1000 x 1050
 - o forward extension of platform- 500 mm
 - o forward motion – by double hyd. cylinder
 - o lifting speed- 2 metres per minutes
 - o max. ht of platform from ground- 3000 mm
 - o min ht of platform from ground- 600 mm
 - o approx weight- suitable
 - o lowering speed – 2 m/min.
 - o Hyd power pack- In – built

5. **Accuracy** : As per standard

6. **Safety**: Components necessary for safe working of press should be in-built. Proper safety features for safety of the operator also is to be incorporated.

7. **Electrical supply** : 3 phase 415 V AC(+/- 10 %) , 3 wire system, 50 Hz
(+/- 3 %) NO NEUTRAL.

Step down transformer should be supplied for control voltages. 110 VAC preferred.
All contactors and motors should be that of Siemens.

8. **Scope of Supply:**

(a) Complete press with hydraulic cylinder, hydraulic power pack, piping, platform, electrical control panel.

- One set
- (b) Operator's platform One No.
- (c) Manuals Four sets
- (d) Cotter Two Nos
- (e) Pressing plate (top) One No

9. **Pre despatch inspection & duration:** Press shall be inspected for a period of min 3 days. Hyd cylinder at 25 % over capacity, Hyd power pack at 25 % over capacity. All functions of press shall be seen.

10. **Transport :** Material to be delivered at BHEL Bhopal works. Supplier to arrange the transport

11. **Incoming inspection at BHEL Bhopal:** Supplier to depute engineer for incoming inspection when material comes

12. **Erection/ installation:** Supplier to do erection and commissioning of the press and prove it on two real Stator capsules insertion in to machined stator frames at our shop

13. **Civil Foundation :** Civil Foundation design is to be given by the supplier specifying various reinforcements. Civil work shall be done by BHEL.

14. **Experience/ Qualifying criteria :** Supplier should have manufactured such presses which should be working for a period of 1 yrs after commissioning.(6 month in case supplied to BHEL units)

15. **Hydraulic / Pneumatics/ compressed air:** Suitable provision to be made. Hydraulic elements should be of Rexroth / Bosch / Vickers / Yuken make.

16. **Controls :** Various valves should be solenoid operated. The press will hold the pressure for a long duration. This duration should be timer controlled. Accumulators are to be incorporated in the Hydraulic circuit.

17. **Documents to be attached with the offer**

- (a) General Arrangement Drawing
- (b) Complete Technical Specification and description
- (c) Hydraulic Circuit Diagram
- (d) Performance Certificate to satisfy the experience clause.
- (e) Customers name & address