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|---|--------------------------|--|--|
| | | lamination pallet. | |
| 6 | Locating Holes | Locating holes are required for positioning the pallets on the pick-up tables. Locating holes should be designed such that only designated pallet can be placed in locating pins on the pick tables. | |
| 7 | Supporting Weight | a. For full lamination pallet: 3000 Kg i.e. 1980 laminations (enough for 2 stacks of 55 layers of laminations i.e. 2 x55 X 10 = 1100 laminations i.e. 1100 x 2.5 kg. = 2750 Kg. Say 3000 Kg.). b. For half lamination pallet: 2000 kg. | |

B. Specification of the Pick-up Table:

| SR. No. | DESCRIPTION | BHEL Specification | Vendor Specification/Remark |
|---------|---------------------------|--|-----------------------------|
| 1 | Scope | To design, manufacture and supply of 4 pick-up tables for full laminations and 2 pick-up tables for half laminations including 10 large mandrels and 2 small mandrels and mechanism to vertically move the mandrels. | |
| 2 | Dimensions | To suit the pallet | |
| 3 | Height | Mandrel height above pallet surface: For full lamination pick-up table - 2 stacks x 55 layers x 10 segments x 0.65 mm = 715 mm, say 730 mm. For half lamination pick-up table - 730 mm. | |
| 4 | Material | a. For Table - MS b. For Mandrel – As specified in the drawing | |
| 5 | Surface Finish | a. For Table – Vendor to specify b. For mandrel – High grade stainless steel finish | |
| 6 | Pallet positioning | There shall be locating pins for two different pallet designs (full and half laminations) Design of locating pins w.r.t. pallet design should be such that wrong pallet cannot be placed in locating pin. | |

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|----|--|---|--|
| 7 | Supporting Weight | Should be able to support weight of pallet and laminations. Consideration should be given to any resistance the mandrels will encounter while traveling up or down. | |
| 8 | Speed of mandrel travel | The mandrels should be able to travel at 90 mm/min in automatic and manual modes. | |
| 9 | Mechanism of mandrel travel | To be specified by vendor. | |
| 10 | Duty Cycle of mandrel actuation mechanism | 100% Continuous | |
| 11 | Mandrel positioning | Two large mandrels are required for full lamination and one large plus one small mandrel are required for half laminations. | |
| 12 | Controls | Automatic control triggered by robot or PLC output and manual controls through up and down push buttons. | |
| 13 | Safety | Mechanical dead limits and adjustable electrical non-contact type switch/sensors for up and down travel. | |
| 14 | Position Feedback | Position of mandrel should be known through analog sensor or encoder. | |
| 15 | Sensors | One sensor each for 'pallet present' and one sensor for 'lamination present' on pallet. | |
| 16 | Wiring | All sensing devices to be wired to a junction box and wires and terminals to be clearly labeled. | |

RESPRESENTATIVE PALLET FOR LAMINATIONS

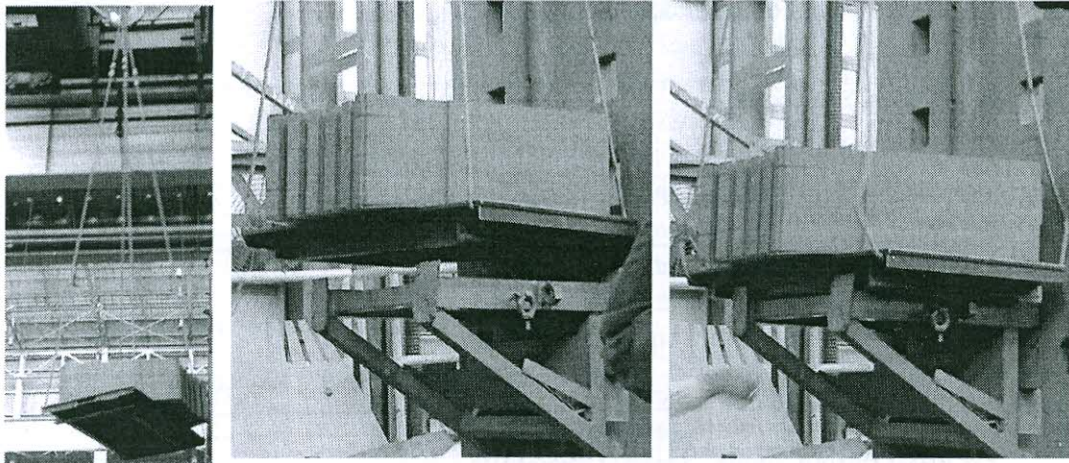
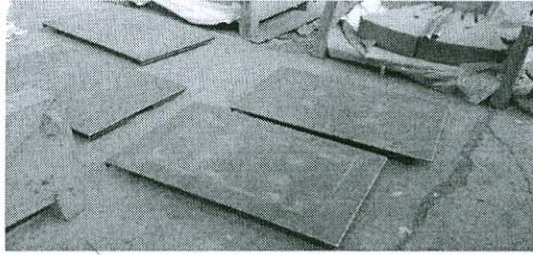
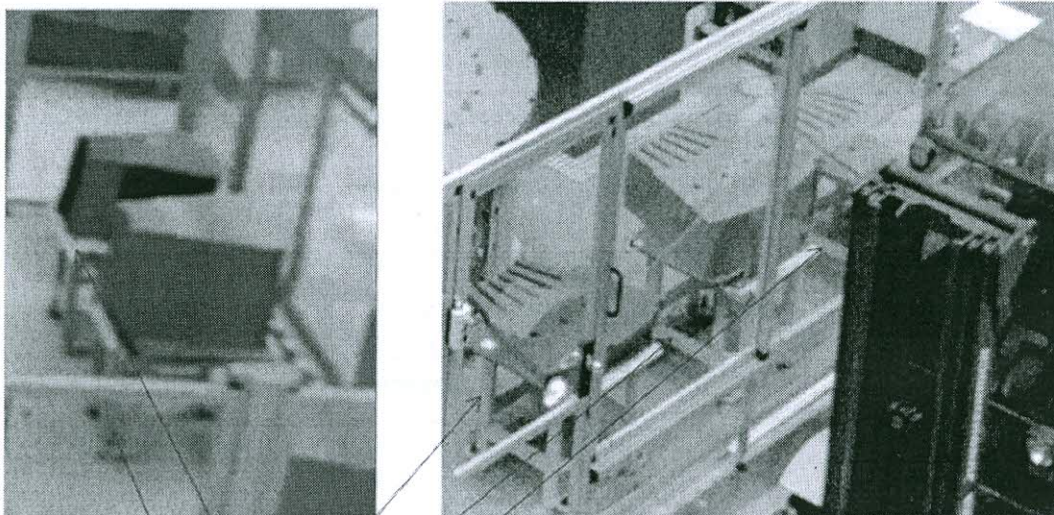


Figure 3

Pick-up Tables for Laminations



Pick-Up Tables

Motorized mandrels (two)
to be placed below pick-up
tables

Figure 4

Mandrel drawing for reference

6.3 / THE REST

DRAWING No.

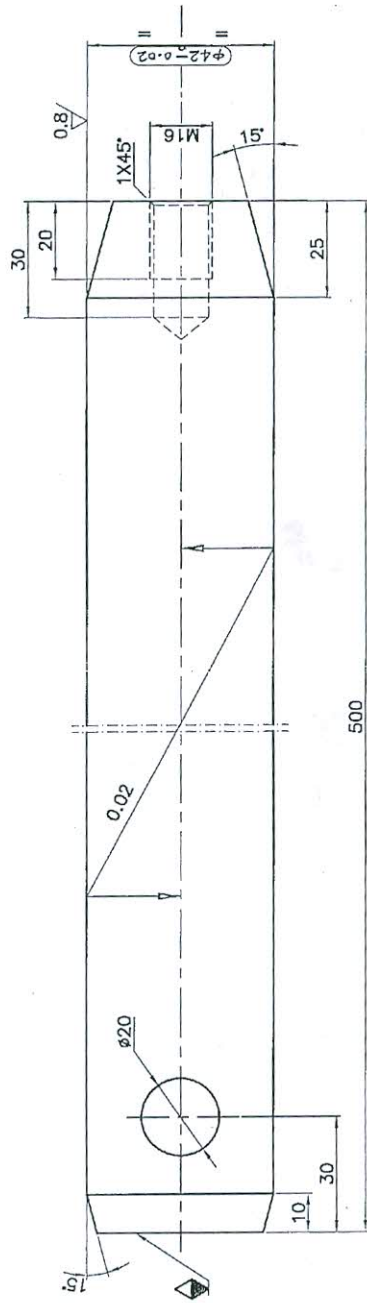


Figure 5

NOTE:—

1. DIM. IN \square IS CTQ (CRITICAL TO QUALITY).
2. HARDEN TO HRc55+60 AS PER 912.008
3. ROUND OFF SHARP EDGES.
4. TO BE CONSERVED AS PER TL_3000Z.

| VAR.00 | REMARKS | ITEM No. | DESCRIPTION | QTY | DRAWING No. | VAR. | MATERIAL SPECN. | C | UNIT | UNIT WEIGHT | QTY. |
|--------|---------|----------|-------------|-----|-------------|------|-----------------|---|------|-------------|------|
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