

SPECIFICATION FOR CYLINDERS FOR UPGRADED HOT & COLD PRESS (M/c No.: 11/A/2046)

Specification No.: MTD-CIM-96-2010-306

1. GENERAL

The hot and cold press, supplied around 3 decades back, is used for final pressing and curing of insulation of the diamond pulled stator coils of large and medium sized electrical press and large sized straight coils of hydro generators. This press comprises of a casted block with cylinder bores and specially designed single acting spring return pistons. These are worn out due to repeated use & have a very low productivity.

To do away with the above problems, it is decided to upgrade the non-standard designed single acting spring return cylinders with standard double acting cylinders suitable for high temperature.

2. CONFIGURATION:-

A. HYDRAULIC CYLINDERS: (Ref. Dwg. No.: 3-MTD-11-2344)

The cylinders required are to be Horizontal rectangular flange mounted type at the Headend generally inline with our Dwg. No.: 3-MTD-11-2344 enclosed and confirming to IS0:6020 part-2. The hydraulic cylinder body is to be made out of ultrasonically tested seamless steel tubes. The piston rod is to be of high tensile carbon steel induction hardened precision ground & hard chrome plated to extend bushing & seal life.

All the seals/O-rings to be used should be of Viton of Parker/Busak-Shanbom make of standard size to withstand temperature of upto 150 °C.

3. BROAD SPECIFICATION: (Ref. Dwg. No.: 3-MTD-11-2344)

- a) Hyd. cylinder nos. - 60 Nos.
- b) Hyd. cylinder type - Double acting type
- c) Hyd cylinder mounting type - Horizontal rectangular flange mounted at front end
- d) Hyd. cylinder bore – 80 mm.
- e) Hyd. cylinder stroke ~ 40 mm
- f) Hyd. cylinder rod dia. ~ 45 mm.
- g) Hyd. cylinder max. length ~ 250 mm.
- h) Temperature of the steam ~ 170° C
- i) Hyd. cylinder seals –Viton Seals of Parker/Shanbom-Busak make suitable for above temperature only.
- j) Cylindrical cushioning - Not required
- k) Preferred Make of Hyd. cylinders - Rexroth/Veljan/Wipro/Romheld/Parker.

4. SCOPE OF SUPPLY:-

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| a) Supply of Hydraulic cylinders as per above details | - 60 Nos. |
| b) Fasteners for mounting Hydraulic cylinders | - 60 Sets. |
| c) Test & Guarantee Certificates | - 4 Sets. |
| d) Operations & maintenance manuals | : 4 Sets |

5. TEST AND GUARANTEE:-

The cylinders should be Guaranteed for a period of 12 months after commissioning for any leakage, faulty material or workmanship and supplier should replace the same during this period free of charge.

Further, Test certificates in respect of these cylinders, as per standards, are to be furnished at the time of inspection.

6. DESIGN APPROVAL:-

The manufacturer should present Design/Drawings (2 Sets) for our concurrence before manufacturing of these cylinders. For any deviations/changes from our specification, they will have to take prior approval.

Despite the design concurrence, final responsibility of proving these cylinders for desired performance at BHEL works shall be that of the manufacturer.

7. LITERATURE:-

Four sets of following is to be furnished:

- a) General arrangement drawing showing construction details and dimensional details of the cylinders.
- b) Servicing and Installation manuals of the cylinders.

8. DETAILS TO BE FURNISHED WITH THE OFFER:-

Following details must be supplied with the offer:-

- a) **As the application is very critical, only parties who are regular suppliers of such cylinders & who have supplied a minimum lot of 30 cylinders working in tandem in a single line for last one year, and satisfying the temperature & pressure requirements viz 170° C & 250 bar (test pressure) with recommended seals need to quote. Reference and contact details of the customers are to be furnished. Offers not meeting these criteria will not be considered for further processing.**
- b) Full technical details/specifications, general arrangement drawing, illustrating construction of the cylinders, make & model No. of piston/rod seal/O-rings etc are to be furnished.
- c) Material specifications which are used in the manufacturing of the cylinders.
- d) Point to point reply to the specification is must for further processing of the offer.
- e) Overall dimensions and space requirements.
- f) Power requirements.

9. OTHER UTILITIES AVAILABLE WITH BHEL:-

Compressed air at 4 kg /sq. cm Max. and regular water supply are available but constant water supply for cooling purposes cannot be given.

10. AMBIENT CONDITION AND TROPICALISATION:-

All electronic components should be tropicalised to with stand environmental temp. variation from 4 to 50 degree and RH variation from 5 to 95 %.

11. STRESS RELIEVING OF ALL FABRICATED ITEMS:-

All fabricated brackets / items are to be stress relieved and certificates for the same to be furnished.

12. MATERIAL & HEAT TREATMENT FOR MAJOR COMPONENTS:-

All wear components (in motion) needs to be properly heat treated for maximum durability. Further test certificates for the critical materials like cylinder body etc are to be furnished.

13. PAINTING:-

The cylinders should be painted in Heat Resistant Opaline Green colour.

