



**BHARAT HEAVY ELECTRICALS LIMITED**  
**SAS - POWER SECTOR - SOUTHERN REGION**  
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### **HUDRAULIC TORQUE WRENCHES**

#### **SCOPE OF SUPPLY :**

#### **SCOPE OF SUPPLY SHALL INCLUDE THE FOLLOWING:**

SL.NO.	DESCRIPTION	QTY. PER SET
01.	HYDRAULIC TORQUE WRENCH ( DIRECT HEX DRIVE) CAPACITY 1000Kgm WITH INSERTS, INSERT SOCKETS AS PER DETAILS	1 SET
02.	HYDRAULIC TORQUE WRENCH ( DIRECT HEX DRIVE) CAPACITY 1500Kgm WITH INSERTS, INSERT SOCKETS AS PER DETAILS.	1 SET
03.	HYDRAULIC POWER PACK WITH HOSES, COUPLINGS, PRESSURE GAUGE AND OTHER ACCESSORIES AS PER DETAILS.	1 SET
04.	TWIN HOSES OF 25 FEET LENGTH WITH QUICK RELEASE COPULERS AT BOTH THE ENDS. (PUSH TO ENGAGE TYPE ONLY)	1 SET

#### **1. HYDRUALIC TORQUE WRENCH : 1000Kgm CAPACITY :**

The “ **HYDRAULIC TORQUE WRENCH (DIRECTI HEX DRIVE)**” shall consist of the following.

- a. Basic Torque Wrench Unit.
- b. Double acting Cylinder having 360<sup>0</sup> Swivel Connections.
- c. Cylinder should be easily removable for maintenance.
- d. Rachet suitable for accommodating direct inserts from 41mm – 60mm Across Flat Sizes.
- e. One Insert of 60mm Across Flat.

- f. 360<sup>0</sup> adjustable Reaction Arm.
- g. The “ **HYDRAULIC TORQUE WRENCH**” must be suitable for use in Tight Spots / confined Space.
- h. 360<sup>0</sup> Uniswivel Twin hose Quick Coupler is located such that the coupler Nipples’s / Hose axis can be adjusted parallel to the axis of the bolt to be tightened.

## 2. **HYDRUALIC TORQUE WRENCH : 1500Kgm CAPACITY :**

The “ **HYDRAULIC TORQUE WRENCH (DIRECTI HEX DRIVE)**” shall consist of the following.

- i. Basic Torque Wrench Unit.
  - j. Double acting Cylinder having 360<sup>0</sup> Swivel Connections.
  - k. Cylinder should be easily removable for maintenance.
  - l. Rachet suitable for accommodating direct inserts from 60mm –95mm Across Flat Sizes.
  - m. One Insert of 95mm Across Flat.
  - n. 360<sup>0</sup> adjustable Reaction Arm.
  - o. The “ **HYDRAULIC TORQUE WRENCH**” must be suitable for use in Tight Spots / confined Space.
  - p. 360<sup>0</sup> Uniswivel Twin hose Quick Coupler is located such that the coupler Nipples’s / Hose axis can be adjusted parallel to the axis of the bolt to be tightened.
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- 1. One set of Standard Direct Hex inserts of Size 60, 65,70,75,80,85 & 90 mm Suitable for use with Hydraulic Torque Wrench Capacity 1500Kgm to be supplied with each hydraulic torque wrench.

2. One set of INSERT SOCKETS of size male 95 mm and FEMALE size of 80, 85, 90 and 95 mm suitable for use with **HYDRAULIC TORQUE WRENCH Capacity 1500 Kgm** to be supplied with each hydraulic torque wrench.

**NOTE :**

- A.** Hydraulic Torque Wrench should be suitable for use in conditions where high heat is there.
- B.** The tool must be light in weight and is suitable for manual handling.
- C.** The Torque Wrench must get fitted on the bolts easily and also handled ( Removed ) easily.
- D.** The Hydraulic Torque Wrench to be provided with quick release couplings for connecting to the Hose Pipe in, which Hydraulic Oil flows.
- E.** The tool must be unibody design. This will ensure greater torsion resistance.
- F.** The Hose connection on the Cylinder body to have 360 ° Swivel arrangements for voiding any fouling of Hose during use in restricted positions. This will avoid interference with Job for operator safety and easy fitting of the tool.

### **3. HYDRAULIC POWERPACK :**

- i. Hydraulic Powerpack (electrically operated ) is compatible with the Torque wrench offered and is suitable for safe operating of two wrench of same capacity simultaneously.
- ii. The Powerpack / Pump is compact, lightweight , portable, powerful, versatile and provide fully automatic and continuous bolting / tightening operations ( for a minimum of 4 hours continuous use ) to the present torque without any vibrations / noise or overheating.
- iii. The Powerpack / Pump is provided with a 24 volt remote control pendant with minimum 6 mtr long cord for wrench control operation having on / off, forward / retract capability. The remote control is made of suitable material to prevent electrical shock to the operator. Also built in safety gadgets / valves to prevent excessive pressure built up is provided.
- iv. Dial reading torque gauge in Kgm and Dial reading pressure gauge in bar is provided. Valves / Arrangements for output torque adjustment on calibrated scale is provided.
- v. Operating power : Single phase, 230 volts, 50 Hz AC supply.
- vi. Setup time and cycle time are very low.
- vii. Oil Tank of sufficient capacity with Oil level sight gauge, pressure gauge is provided.
- viii. Power Pack has handle/hooks for carrying from one place to another and a removable Protection shield (Body Cover) covering the Motor for reducing Noise level is provided.
- ix. 25 feet twin line hose assembly with necessary quick-change coupler (push to engage type) is provided.
- x. Timer, which switches off the pump motor in the idle conditions after 30 seconds is provided.

- xi. Manifold block with Four Port for facilitating connecting of additional Hydraulic torque wrench in future is provided.
- xii. The Hydraulic Pump must have an internal tamper-proof relief valve set at the maximum pressure of 700 BAR (10000 PSI).
- xiii. The Hoses are of joined construction type for avoiding whip lashing and added safety.

#### **4. OTHER CONDITIONS :**

##### **➤ HOSES :**

- a. The twin hoses are able to carry the pressurised oil safely, absolutely leak proof, compatible and recommended by manufacturer of the Hydraulic torque wrench and Powerpack.
- b. Twin hoses are of 25 Feet length with quick release couplers at both the ends. (Push to engage type only).
- c. Quick couplers have adapters of BSP size (inch size) to accommodate hoses with swivel BSP nuts.

##### **➤ INSPECTION :**

Equipment will be Inspected for quality as mentioned in our technical specification at serial No.1 to 4 above prior to dispatch of material. Supplier shall also provide calibration of the **“HYDRAULIC TORQUE WRENCH”** during inspection.

##### **➤ COMMISSIONING :**

After receiving material at M/s.BHEL-SAS-Secunderabad, Supplier shall commission the equipment free of cost. Commissioning certificate shall be issued by M/s.BHEL –SAS-Secunderabad after

successful tightening and loosening of all the bolts/nuts shown for the commissioning , using the Hydraulic Torque wrench supplied by Supplier.

➤ **TRAINING :**

Supplier shall impart necessary training at their works, free of cost to two of BHEL-SAS executives. Supplier shall also arrange on the job training to of our operating staff during shut down / maintenance job of M/s.BHEL - SAS at one of our customer's place free of cost.

➤ **MANUALS :**

Supplier shall supply three sets of operational / Maintenance manual (in English Language) along with the equipment.

➤ **SPARES:**

Supplier should submit Separate offer for spares including one spare set of hoses for two-year normal operation for the post warranty period.

➤ **AFTER SALES SERVICES :**

Supplier should confirm that they can undertake maintenance for period of at least three years (post warranty) and they should also Enclosing Separate offer for annual maintenance contract.