

Annexure-A

Technical Specification for Lock Bolt Installation Equipment

1. Description: Lock bolts installation equipment for manufacturing of new wagons along with all concomitant accessories as given in the specification.

2. Purpose:

2.1 The equipment is required for installation of Lock bolts in the manufacture of new wagons.

2.2. The equipment shall be capable of working effectively in Non A.C. environment with temperature up to 50 degree centigrade & RH up to 95%.

3. Make: Huck/Stanley/Orione or similar.

Note: The entire range of product should be of same make and is to be certified as set.

4. Credentials- The firm must be manufacturers or /authorized agent of OEM for Lock installation equipment.

5. Scope of supply:

5.1 Design, Manufacture, Supply, installation, commissioning and prove out of Lock Bolts installation equipment as per specification given herein.

5.2 The equipment should be fully functional when installed and connected to shop power source and other utilities. The requirement of utilities, if any, should be clearly indicated in the offer.

5.3. The equipment shall consist of hydraulic power units, hand held units, nose equipment and hydraulic hoses as given in Annexure B/scope of supply.

5.4 The firm will supply first fill of hydraulic oil and additional qty. of oil, if any, during prove out.

Note: The hydraulic oil should be easily available in India. Equivalent grade of hydraulic oil from IOC/HPCL must be indicated in the offer.

5.5 The firm will also required to supply one wagon set of Lock bolts and collar for BOXNHL-MBS wagons for prove out of the equipment.

6. Hydraulic power unit;

6.1 The hydraulic power unit shall be robust, rugged, and suitable for high production and designed to provide hydraulic pressure to a wide range of Lock bolt installation tools.

6.2 It should have the following features:

- Portable and electrically operated. :
- Robust steel frame and reservoir.
- Shall include filter, breather and level indicator.
- The complete unit shall be mounted on castor wheels.
- High reliability and low maintenance.
- Easy to maintain.

Annexure-A

6.3. The major parameters of the hydraulic power units are given below:

Power supply	: 415 V +/- 10%, 3 Ph, 50 Hz
Max delivery pressure	: 10000 psi
Control circuit	: 24 V DC
Noise level	: 80 db max.

6.4 The hydraulic installation tools are connected to the power unit by means of pull and return hydraulic hoses and an electric cord. The power unit directional valves are controlled from the installation tools by a 24 V DC control circuit.

6.5 The hydraulic power unit shall be equipped with a suitable cooling arrangement which keeps the hydraulic oil temperature within acceptable limit. In the event of hydraulic oil temperature exceeding 95 deg, Centigrade or if a higher than normal temperature is detected, the power unit should automatically stop.

6.6 Hydraulic pressure gauge should also be provided with power unit so that delivery pressure as well as pull & return pressure can be measured.

6.7 Power Unit:-The firm will also required to supply complete list of all components used in power unit, clearly marked on the schematic diagram of machine with indentified part No., make, model,& price list along with one set of maintenance tool/service items

7. Hand held units (Hydraulic Installation Tools)

7.1 Hand held unit shall be supplied as per sizes and quantities given in Annexure-A/scope of supply.

7.2. The pull pressure and return pressure are indicated below:

Pull pressure	: 8000psi (approx.)
Return pressure	: 3500psi (approx.)

7.3. The hand held units shall be compact and ergonomic. Since it is a part lifted and handled by operator, lighter weight will be preferable. ,

7.4 Hand Held Unit:- The firm will also required to supply complete list of all spares and split diagram used in hand Held unit with indentified part No., make, model, &price list along with one set of maintenance tool/service items.

8. Nose Assembly:

- 8.1 The nose assemblies shall be suitable for hand held unit and shall be supplied as per sizes and quantities given in annexure-B/scope of supply.
- 8.2 The nose assembly should be lighter in weight compact and offer superior access.
- 8.3 The firm will also required to supply complete list of all Spares and split diagram used in nose assembly with indentified Part No., Make, Model & price list along with one set of maintenance tool/service items.

9. Hydraulic Hoses: .

- 9.1 The hydraulic hoses shall be supplied in sets. Each set consists of pull and return hoses and electrical cord.
- 9.2 The hydraulic hoses shall be compatible with equipment, capable to withstand high working pressure, and shall be fitted with quick coupler at the ends.
- 9.3 Hydraulic hoses should be provided with suitable flexible cover in order to keep it fire and shockproof.

10. Safety features: :

- 10.1 The equipment shall incorporate safety features to provide protection to the operator and equipment against any possible operation and equipment failures.

11. Installation, commissioning & prove out:

- 11.1 The supplier shall be required to carry out a joint inspection at the consignee's end on receipt of the equipment, to avoid any subsequent complaints regarding short supply or transit damage.
- 11.2 The joint prove out test for two nos. of BOXNHL-MBS type wagons with RDSO specification No, WD-02-BOXN HL-2011 or latest should be carried out at Wagon Repair Shop, Raipur.
- 11.3 The complete equipment shall be installed, commissioned and prove out by firm's engineers within 45 days after receipt at consignee's end. The performance shall be watched by the consignee for a period of one month before the final proving test certificate is issued.

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12. Inspection:

12.1 Inspection shall be carried out by authorized representative of RITES. The firm shall also be required to furnish WTC (work test Certificate) of the OEM at the time of, supply of equipment.

13. Warranty- The complete equipment shall be warranted for a period of 24 months from date of commissioning.

AMC:

13.1 AMC for a period of 2 years after warranty must be quoted by tender as optional item. The cost of AMC shall not be taken into consideration for evaluation of tender. However, consignee reserves the right of ordering for AMC,

13.2 The offer should accompany certificate from OEM (original equipment manufacturer) considering availability of spare for next five years from the date of commissioning of machine at Wagon Repair Shop, Raipur.

14. Training:

14.1 The firm's engineers shall provide minimum seven days training in operation and maintenance of the equipments during installation/commissioning at workshop premises.

15. Technical Literature;

15.1 The tenderer must enclose technical data/leaflets of the equipment along with the offer.

15.2 Four sets of operations and maintenance manual in hard as well as in Soft copy (along with electrical circuit diagram of equipment and instruction for trouble shooting) and four sets of spare parts list shall be supplied along with the equipment.

16. Payment Term: - 80% payment after successful commissioning of the machine and Balance 20% shall be made after issued of PTC.

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Annexure-B**Scope of supply**

S.N o.	Item Description	Qty. Reqd.	Unit Code
1	Hydraulic power units suitable for placing 1/2 to 7/8 inch Lock Bolts 1. Flow Litre/min. - 3.3 +/- 5% Working Pressure a. Pull Pressure. - 10000 PSI +/- 10% b. Return Pressure - 4000 PSI +/- 10% 2. Power supply. - 3 Ph, 50Hz, 415 +/-10 % VAC 3. Electric Motor - 2.2 +/- LO%KW 4. Hydraulic Pump - Radial type 5. Motor rating (Continuous) - Not less than six hours. 6. Full load current. - 5.3A (approx)	1	03
2	Hand Held Unit suitable for placing 1/2 inch Lock bolt with nose assembly 1. Pull Pressure - 8000 PSI +/- 10% 2. Return Pressure - 3500 PSI +/- 10% 3. Length - 135 mm minimum, 4. Body dia- 95mm maximum. 5. Stroke - 32mm minimum, 6. Weight - 6 kg. maximum	1	03
3	Hand Held Unit suitable for placing 5/8 & 3/4 inch Lock bolt with nose assembly 1. Pull Pressure. - 8000 PSI +/- 10% 2. Return Pressure - 3500 PSI +/- 10% 3. Length - 140 mm minimum, 4. Body dia - 100 mm maximum. 5. Stroke - 40mm minimum. 6. Weight - 9 kg. maximum.	1	03
4	Hand Held Unit suitable for placing 7/8 inch Lock bolt with nose assembly 1. Pull Pressure. — 8000 PSI +/- 10% 2. Return Pressure — 3500 PSI +/- 10% 3. Length- 190 mm minimum. 4. Body dia- 125 mm maximum. : 5. Stroke- 45 mm minimum, 6. Weight-18 kg. maximum.	1	03
5	Nose Assembly / Equipment suitable for Hand Held Unit for placing 1/2 inch Lock bolt.	2	03

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6	Nose Assembly / Equipment suitable for Hand Held Unit for placing 5/8 inch Lock bolt	2	03
7	Nose Assembly / Equipment suitable for Hand Held Unit for placing 3/4 inch Lock bolt	2	03
8	Nose Assembly / Equipment suitable for Hand Held Unit for placing 7/8 inch Lock bolt.	2	03
9	HYDRAULIC HOSE SET Hydraulic hose set, 10mtrs long, Type-Polyflex Working Pressure (PS1)- 9000 +/- 10%, attached with electrical cord with adapter at both end suitable for Hydraulic power units	2	03
10	Trigger switch assembly suitable for all type/sizes of handheld units	4	01
11	Anvil for nose assembly assembly/equipment suitable for Handheld unit for placing 1/2 inch Lock bolt.	1	01
12	Anvil for nose assembly/equipment suitable for Handheld unit for placing 3/4 inch Lock bolt.	1	01
13	Anvil for nose assembly/equipment suitable for Handheld unit for placing 5/8 inch Lock	1	01
14	Anvil for nose assembly/equipment suitable for Handheld unit for placing 7/8 inch Lock bolt.	1	01
15	Spare part required for normal maintenance for a period of two years (cost included in estimated value)		

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