

139

W.C.R.

West Central Railway

Jabalpur Division

**Technical Specification of Synchronized Lifting Jacks Electrically operated 15 Ton (set of 5 jacks)**

Description of te material:- Synchronized Lifting Jacks Electrically operated screw jack 15 Ton (set of 5 jacks)

**Technical Features of the Jack :-**

S.No.	Description	Details
	<b>Leading Parameter</b>	
1	Motor	5HP , 415V +/- 10% 3phase, 50cycle
2	Lifting Speed	250mm/min
3	Max height of Claw from ground level	2000 mm
4	Minimum Height of claw from ground level	500 mm
5	Lifting Range of jack	1500 mm
6	Maximum Foot projection from front of column	640 mm
7	Maximum Claw projection from face of column	550mm
8	Ground clearance when resting on wheels	25mm
9	Height of Jack	Not more than 2850 mm
10	Length of jack	Not more than 1550 mm
11	Width of Jack	Not more than 1300 mm
	<b>Material specification</b>	
12	Load nut	Should be of Al Bronze IS 305 Grade AB1 , A safety steel nut should also be provided as a safety device under the load nut to prevent any accidental falling of load. If the load nut wears or breaks then the safety nut acts as a support & should takes the load. There should be a clear indication for replacing the load nut when it should wear/failed.
13	Screw Rod	The Screw rod should be of High Quality Steel single start, buttress thread in accordance with IS 4696 It should be Axially free at bottom & splined to the worn wheel & fitted with heavy duty ball thrust bearing having spherical seated housing.

Cont...2


W.C.R.

S.No.	Description	Details
14	Frame	The frame should be fabricated from High quality steel confirming to IS 226/2062. It should be suitably webbed & strengthened with stiffeners & securely welded to the heavy base. The base should be of large area to prevent sinking of the jack into the shop floor while lifting the Coach Body. The upright column should be fully machined and ground for smooth movement of the lifting claw.
15	Lifting Claw carriage	The lifting claw carriage should be of fabricated steel designed for lifting under the side of the vehicle & should run on the vertical carriage guides provided on frame. The carriage should be mounted on suitable alloy steel rollers fitted with anti friction bearings. The lifting claw should be provided with a chequered plate. Th vertical downward load on the lifting claw is countered by set of trolleys mounted on the carriage against upward frame.
16	Other features	<ol style="list-style-type: none"> <li>1. The jacks should have mobility &amp; it should be provided with 3 steel wheels of adequate strength and mounted in such a manner that when the claw carriage is moved upwards under load, the wheels will be automatically raised &amp; the base of the jack sits firmly on the floor, similarly when the claw carriage is lowered &amp; the jack is released the wheels will automatically be lowered to rest on the floor so that the base should be raised to provide the ground clearance.</li> <li>2. The jacks should be of robust, rigid in construction.</li> <li>3. The jacks should be driven by fan cooled motor of 415v, 3 phase 50cycle AC supply. The power transmitted from motor through oil immersed reduction gear system , &amp; also each jack should be provided with suitably made hand driven manual handle in case of power failure.</li> </ol>
17	Control Panel & Electric system	<ol style="list-style-type: none"> <li>1. A master control should be provided to control either all the four jacks synchronously in group or individually.</li> <li>2. Electric control equipped with <ol style="list-style-type: none"> <li>a. Necessary safety measure for synchronous operation.</li> <li>b. Emergency Push Button to stop the jacks also one push button on each jack..</li> <li>c. When all the jacks are operating synchronously all the jacks will stop immediately. If it fails overload release will come into action restricting overloading of other jacks.</li> </ol> </li> </ol>



13A  
6

S.No.	Description	Details
		<ul style="list-style-type: none"><li>d. In case of power failure the jacks will automatically go into lock position.</li><li>e. Electrical limit switches should also be provided on each jack at the extremities of the lifting claw travel.</li><li>f. Each jack should be supplied with electric cables for the connection with the Panels not less than 15M.</li></ul>

  
Sr.DME (Co) JBP  
वरिष्ठ मंडल मीकॅनिक इंजीनियर (सम.),  
पश्चिम मध्य रेल, जबलपुर  
Sr.Divl. Mach. Engineer (Co)  
West Central Rly Jabalpur

**Annexure-II**

**To be submitted by the firm along with offer-**

Tender specification	Specification quoted by the firm	Deviation if any with clarification