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Track Machines & Monitoring Directorate

Specification for Self Propelled Hydraulic Common Power Pack cum Transporting Cart
(No. TM/SM/TC dated 09.01.2014)

(Rev 02 of 2023)

1.0 Scope: This specification covers functional requirements with testing process of Self Propelled Hydraulic Common Power Pack cum Transporting Cart controlled by an operator for transportation of tools and small track machines at site of works under block protection. This equipment also provides required hydraulic power to operate some small track machines. For convenience, Self Propelled Hydraulic Common Power Pack cum Transporting Cart will be hereinafter termed as 'power pack' in this specification.

2.0 Reference: Following codes have been referred to in this specification. Latest copy of the same shall be available in the works of the manufacturer.

i) IS:1337-1993 (Re-affirmed-2021) **:** Electroplated Coatings Of Hard Chromium For Engineering Purposes.

ii) IS:1986-1981 (Re-affirmed-2021) **:** Code Of Practice For Hard Chromium Plating On Iron And Steel For General Engineering Purposes.

3.0 Materials, Processing and Workmanship:

3.1 The power pack shall be sturdy, robust and made of strong and durable materials. The power source/engine shall be of reputed make having proven quality.

3.2 The moving parts like travelling components/parts shall me made of mechanically strong and durable material.

3.3 Any exposed surface of hydraulic moving components like piston rod etc. shall be protected from rusting by chrome-plating as per ref.2.0 (ii).

4.0 Functional Requirements:

4.1 The power pack shall be self- propelled operated by one operator for travelling as well as for operation of hydraulic small track machine.

4.2 During travelling, the speed of the power pack shall not be more than as mentioned in 5.0(ii) (that of a man's normal walking speed).

4.3 The power pack shall be capable to operate the small track machines mentioned in clause 1.0 and other similar type of machines requiring same power-input.

4.4 The power pack, when used as transporting cart, shall be capable to negotiate uneven, inclined and rough terrain on cess/land as well as on track. While travelling on track it should preferably use the area within two lines of the track and it should not damage any track components/fittings during course of movement.

4.5 Off-tracking the power pack shall be within very short time (i.e. within 2 minutes).

4.6 The Power Pack shall have suitable ports to operate hydraulically operated small track machines.

5.0 Technical Features:

(i)	Pay Load Capacity	Min. 350 kg
(ii)	Travel Speed (low/high)	2.5/4.5 km/h(approx.)
(iii)	Maximum Grade that machine can negotiate	60%
(iv)	Hydraulic Tool Circuit (Dual or Single Available)	Twin Circuit 20 lpm
(v)	Self- Weight	675 kg (Max.) including fixtures
(vi)	Engines Capacity	20 hp (approx.)
(vii)	Drive System	Hydraulic Motors
(viii)	Drive Control	Two Hand Levers
(ix)	Fuel Tank Capacity	Min. 25 liters

6.0 Tests at the time of supply(Acceptance Test) :

Each power pack from the consignment as mentioned in clause 7.1 shall be subjected to the following tests. The supplier/manufacturer shall submit internal test certificate to purchaser . Following tests shall be carried out in sequence:

6.1 Visual and Dimensional check:

The power pack shall be checked visually and dimensionally as per para 5.0(i), (iv)-(viii). The power pack shall be free from all visual defects in material, construction and fabrication. The major dimensions shall be checked as per manufacturer's drawing. The weight shall also be recorded.

6.2 Test for continuous Running of Power source/Engine:

The power source i.e., engine/electric/hydraulic motor shall be started. The engine shall be started by one or two strokes by rope/self-starter. The power source shall be run continuously for a minimum period of 30 minutes at rated capacity. The power source shall run without any operational trouble.

6.3 Test for travelling/transportation of the power pack:

The power pack shall be loaded with an overload of 10% of rated pay load capacity and shall be run at specified speed for at least a period of 30 minutes over different terrain like uneven inclined ground/cess, on the sleepers within track as per clause 5.0(ii) to (iii). The power pack shall run at the design speed with adequate comfort without any problem in starting, stopping, on-tracking/off-tracking travelling on up and down gradient of 60^0.

6.4 Test of Output of the power pack for operation of Small Track Machines:

The power pack shall be run and small track machines shall be operated under full load and as per actual site condition. Any short fall shall be noted.

7.0 Inspection:

7.1 Each power pack in the consignment shall be inspected for acceptance tests.Minimum level of inspecting official shall be SE (Section Engineer)/SSE.

7.2 The inspection of the power pack shall be carried out by the purchaser / zonal railway or any representative authorized by the purchaser/CTE of the zonal railway. The cost of inspection and testing shall be borne by the supplier/manufacturer. Copies of maker's test certificate guaranteeing the performance of the power pack shall be supplied in duplicate along with the delivery of each power pack.

7.3 The inspecting official shall keep a record of inspection as per para 12.7 of report TM-227(Comprehensive Guidelines on Procurement, Operation, Maintenance and Repair of Small Track Machines).

8.0 Warranty and AMC:

8.1 The supplier shall warranty the material covered by the specification to be free from defects under normal use and service. His obligation under this warranty shall be for repair of the power pack and replace free of cost those parts which shall be found defective within one year for manufacturing and material defects from the date of receipt by the consignee.

8.2 During procurement of the power pack railways should go post-warranty AMC with the supplier for a pre-determined period as decided by the purchaser railway. This may be incorporated in the tender document as a condition of contract/Tender/Supply.

9.0 Service Facility and Spare Parts(including tools):

9.1 Each power pack shall be supplied with a complete kit of tools required by the operator in emergency and for normal working of the power pack.

9.2 Spares: Each Power pack shall be supplied with the spares as prescribed by the manufacturer/supplier for normal working of the power pack.

9.3 The manufacturer/supplier shall have a good service network throughout the country for quick and easy access to the users. A prompt response to the call of the customer is expected in case of any problem experienced in field.

10.0 Documentations:

10.1 Detailed operating manual, maintenance and service manual shall be specially prepared and copy of the same shall be supplied with each power pack.

10.2 Copies of the maker's certificate guaranteeing the performance of the power pack should be supplied in duplicate along with the delivery of each power pack.

10.3 In order to facilitate subsequent maintenance in service, the manufacturer shall supply one set of drawing legible and indelible quality. The drawings shall exhibit clearly the materials mentioning relevant codes/specification, if any that are necessary for the manufacture of these items. In case of any proprietary items, the supplier shall indicate terms and conditions under which such drawing and technical know-how can be made available to the purchaser.

11.0 Training and Commissioning:

11.1 Adequate training for operation and maintenance of the power pack shall be imparted at consignee end at the rate of two operators per power pack during supply which shall be treated as part of commissioning.

11.2 During commissioning each power pack of the consignment shall run for at least 30 minutes and at least two small track machines shall be operated with rated pay load at specified speed. Only after successful and satisfactory running of the power pack, the supply should be treated as complete.

12.0 Marking And Packing:

12.1 Each power pack shall be legibly and indelibly marked with the following details:

(i) Name and trade mark/brand of the manufacturer.
(ii) Contact details of manufacturer and supplier
(iii) Serial no. of the power pack.
(iv) Capacity.
(v) Month & year of supply.

12.2 All exposed surfaces shall be painted with yellow paint of standard quality to protect it from rusting and other weathering effects. All the working parts shall be oiled before being assembled. The power pack shall be supplied packed in suitable wooden crates according to best trade practices to safely transport by rail/road and reach the consignee in safe and satisfactory manner.

13.0 Manufacturers/suppliers have sole responsibility to maintain quality of products supplied to Railways.

14.0 Preference for ‘Make in India’: The Government of India Policy on ‘Make in India’ and its latest guidelines issued in this regard shall be ensured.

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