

**RAIL COACH FACTORY, KAPURTHALA**

**SPECIFICATION FOR WINCH ASSEMBLY**  
SPECIFICATION NO MECH/M&P/3000/GM/18

**1.0 IMPORTANT INSTRUCTIONS TO TENDERERS FOR FILLING TECHNICAL BID**

- 1.1 Bidders are required to give clause wise comments on the technical specifications, confirming compliance/non-compliance with details of deviations if any along with their effect on the performance. Back references to be avoided, offers are likely to be ignored in case of non-compliance of these instructions for furnishing the information.
- 1.2 Unless otherwise stated, latest alterations/ revisions of specifications/ standards/ drawings shall be applicable. In respect of safety standards and environmental standards relevant to the machine, the machine manufacturers shall ensure compliance with international (CE/ISO/DIN/JIS)/National standards (IS) (where applicable).
- 1.3 Tenderers should offer and quote for all the specified concomitant accessories, as these are considered essential for commissioning and utilization of the machine. Even if bidder does not recommend the purchase any of these accessories, the price must be quoted for comparison purposes and their recommendation/suggestion indicated in the offer. Tenderers should also quote for optional accessories, spares and consumable spares as asked in the specifications.
- 1.4 In case, any item is required in sets, please specify nos./pieces per set. This is essential for proper technical evaluation of the offer. Offers received without this may be considered as incomplete and liable to be rejected.
- 1.5 The bidder should quote only for the specified make of sub-assemblies and equipment wherever specified. Makes of sub-systems other than the specified ones will normally not be acceptable. In case, some other make is quoted, specific reasons for the same including its features/advantages over specified makes must be brought out in the offer.
- 1.6 In case there is a contradiction in any information provided (some parametric values given in the specification and those given in the brochure or some other document enclosed by the tenderer), unless specifically mentioned in the deviation cum confirmation statement the values as given in the specification shall be taken as confirmed by the tenderer and offer evaluated accordingly.
- 1.7 The Purchaser may accept internationally accepted alternative specifications, which ensure equal or higher quality than the specifications mentioned in the Technical Specification. However, the decision of the Purchaser in this regard shall be final.
- 1.8 Purchaser reserves the right to verify the details submitted by the bidder by actual site visits.

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## 2.0 DESCRIPTION

Frame mounted electrical winch with latest advanced technique (preferably VFD i.e Variable Frequency Drive) of capacity 5T with forward and reverse operations along with base Frame, Drum, Motor, Gear Box, Flexible couplings, Electro Magnetic brake device, Limit switches on both sides, 02 wire rope guides, control panel, main isolator with HRC fuses and suitable protection winch, should be capable of lifting, pulling, hauling, tensioning etc. 5T on single wire rope fall without any displacement from its position, winch frame should be provided with sustainable arrangements for anchoring.

### 2.1 GENERAL TECHNICAL DETAILS:

1.	Overall Dimensions	As per design to match our requirements as State above.
2.	Drum	De- clutchable
3.	Type of Drive	Electrical (AC), VFD-11KW, Make- Yashkawa, L&T, Schneider, ABB, Allen Bradely.
4.	Factor of safety on wire rope	As per IS 9507-1979
5.	Type of Brake	Electro magnetic brake with electric control panel & limit switches on both sides mounted on rigid steel structure.
6.	Power Supply	LT Supply 3 Phase 415 V A.C, 50 Hz
7.	Gear Box	Suitable As per design of reputed make such as Ruby, Shanti Gears. All the Gears & pinions shall have helical teeth and properly heat treated.
8.	Fasteners	Reputed make such as T.V.S, UNBRACO Only.
9.	Lubrication	As Per CI 5.8.5 of IS 9507
10	Cables and conductors	Suitable and reputed make. All wirings, cables shall have identification at both ends for tracing./trouble shooting.
11	<b>Motor specification</b>	
a	Power	10 HP, 3 Phase Induction Motor
b	Make	Reputed make conforming to IS 325, such as NGEF/SIEMFNS/CROMPTON/ABB/KIRLOSKA R/ Bharat Bijali, Alstom, only.
c	Volts	415V AC + - 10 %

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d	Frequency	50 HZ
e	RPM	Suitable as per the requirement.
f	Enclosure	TEFC
g	Insulation	Class 'E'

## 2.2 ROPE DRUM:

Fabricated out of M.S plates, single grooved. The drum is keyed to the main through shaft at both ends and free to rotate on G.M. Bushes fitted in the fabricated side brackets. One end of the shaft is coupled to the output shaft to gear box by suitable coupling. The drum is free to accommodate 300 mtrs. of 20 mm dia steel wire rope on load in 3 layers.

## 2.3 ROPE:

1.	Diameter Of Rope	20 mm
2.	Length of rope	300 mtr (single piece)
3.	Core	Steel core
4.	Construction	6 x 36 IWRC as per IS 2266
5.	Lay	R.H.O as per IS 2266
6.	Type	Un-galvanizing
7.	Tensile designation	1770
8.	Minimum breaking load	As per IS 2266
9.	Rope speed	01 to 05 mtrs/min
10.	Reversible Rope Speed	01 to 05 mtrs/min

Rope supplied shall be of reputed brand preferably Usha Martin with manufacturer test certificate duly endorsed by competent person with copy of validation of competency.

## 2.4 CONTROL PANEL:

1.	Make	Only Siemens, Rockwell, Rittal or BCH make of suitable rating conforming to relevant IS & IP65. Control panel shall have the following items:
2.	Ammeter	Suitable rating of reputed make such as AE, ESSMA, EF, BCH, L.T, only.
3.	Voltmeter	Suitable rating of same make as Ammeter
4.	Control switch	Suitable rating of reputed make such as Siemens, SCH, L&T, BCH only.
5.	Main switch	Suitable rating of reputed make such as Siemens, SCH, L&T, BCH only.

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6.	Current transformer	Suitable rating of reputed make such as Siemens, SCH, L&T, BCH only.
7.	O/I relay	Suitable rating of reputed make such as Siemens, SCH, L&T, BCH only.
8.	Time relay	Suitable rating of reputed make such as Siemens, SCH, L&T, BCH only.
9.	Contactors	Suitable rating of reputed make such as Siemens, SCH, L&T, BCH only.
10.	H.R.C fuses	Suitable rating of reputed make such as Siemens, L&T, standard only.
11.	Indicating lamps (Stop. On/running, protections & phase indicators)	Suitable rating of reputed make such as Siemens, L&T, BCH only.
12.	Push buttons	Suitable rating of reputed make such as Siemens, SCH, L&T, BCH only.
13.	Master Controller	VFD, SCH, L&T, Yashkawa, ABB, Allen Bradley only.

## 2.5 TEST CERTIFICATE:

- 2.5.1 Manufacturers test certificate of motor, brake, wire rope, electric equipment (wherever applicable) shall be provided.
- 2.5.2 Load and over load test certificate shall be issued after actual tests.
- 2.5.3 Winch should be proved out on over load of 25% or more.

## 2.6 QUALITY PLAN:

Vendor shall submit their detail quality plan to RCF for approval. Inspection of the winches shall be carried out as per the vendor's quality plan as approved by RCF Kapurthala.

### Note :-

All the technical information along with IS nos. details of general arrangement drawings, details of frame arrangement drawings showing size, material specification, electrical schematic drawings and ratings, B.O.M. with description of make, type, qty, of all the components should be furnished along with technical offer for approval of RCF, Kapurthala.

## 3.0 DEVIATION:

Any deviation from the above stipulations shall be brought out clearly giving advantages of the proposed deviation and approval shall be taken from Dy.CPE-III/RCF before supply of material to RCF.

## 4.0 PROVEN DESIGN & SYSTEM CAPABILITY :

The system offered must be of proven design incorporating latest features. The bidder shall provide sufficient evidence that he is a reputed / proven manufacturer and has experience in manufacturing & supply of similar system. He is required to enclose along with the offer, his performance of last five years mentioning purchaser's name & address for

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this purpose. In case a sole distributor is submitting the bid on behalf of the proven manufacturer, an authorization signed by the proven manufacturer should be submitted.

#### **5.0 OPTIONAL ACCESSORIES:**

In case bidder desires to suggest any accessories to achieve higher performance and/ or better quality levels, the same shall be clearly explained and quoted separately as optional accessories. The purchaser has the discretion to order or not to order.

#### **6.0 GENERAL CONDITIONS:**

The machine should be capable of operating in severe workshop condition of dust temperature between 0°C to 50°C and humidity up to 98%. The system should be capable of working under these conditions continuously on two shift basis.

#### **7.0 SPARES:**

The tenderer should furnish details of spares covered under warranty.

The tenderer should also furnish the price list of spare parts required for two years normal maintenance of the equipment.

#### **8.0 COMMISSIONING AND PROVING OUT:**

The successful bidder shall have to commission the Winch Assembly within one month from the date of receipt at RCF, Kapurthala.

The successful bidder shall arrange the commissioning and proving out of the Winch Assembly at Rail Coach Factory, Kapurthala (Punjab) and after successful commissioning, will demonstrate the performance of the Winch Assembly to the consignee as per contract.

#### **9.0 TECHNICAL LITERATURE:**

One copy of the printed illustrative catalogue showing features of the Winch Assembly shall be submitted by the bidder.

The successful bidder will have to furnish for 2 copies (1 hard & 1 Soft) of the spare parts catalogue giving the part List number of each component with exploded views and assembly drawings, maintenance manual, trouble-shooting guide, operational manual of the Winch Assembly, Software data of VFD.

#### **10.0 WARRANTY:**

As per IRS terms and conditions of the contract

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