

TECHNICAL SPECIFICATIONS FOR 10-FT PALLET DOLLY

1 BASIC

- 1.1 Configuration (refer to Appendix C – Annex A)
- a) Overall length: Body (2640mm) + Tow Bar (1370mm) = 3990mm
 - b) Overall width: 3390mm
 - c) Overall height: Not to exceed 518mm (roller surface to ground level)
 - d) Overall tare weight: Not more than 1500kg
 - e) Load capacity: Maximum 7 tons (excluding tare weight)
- 1.2 Must be capable of handling the following unit load devices safely:
- a) Two LD1, LD2 and LD3
 - b) One LD6, LD7, LD8 and LD10
 - c) Standard pallets of 88" x 108" and 96" x 125"
- 1.3 When loaded, dolly must be capable of being towed up to 25km/h with no visible signs of unsteadiness, snaking movement or vibration.
- 1.4 Steering must be done through the two front wheels mounted with castors and must maintain identical tracking as that of the towing tractor when towed. The two rear wheels must be of fixed type.

2 FRAMEWORK

- 2.1 Main chassis structure shall be 9mm mild steel (BS4360 GR40)
- 2.2 All longitudinal beams shall have continuous run member beams. Joining of main frames will not be accepted.
- 2.3 All welding shall preferably have continuous welding seams whenever possible. Weldings at critical locations must be adequately reinforced and supported.
- 2.4 The dolly shall be designed for end loading (narrow side) and towing by the side (wider side). All corners of the dolly shall be rounded.

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- 2.5 Reflectors to be put at the four corners of the dolly and protected with guard.
- 2.6 Unit identification numbers to weld PD numbers onto top of Front Left side and Rear Right of body “C” Channel structure.
- 2.7 Reinforce 4 pieces “C” channel W160mm x H150mm x D60mm x T5mm to be welded at front and rear main structure.
- 2.8 Each dolly to be weighed prior to delivery and the tare weight clearly indicated.
- 2.9 All fasteners to be of castle nut type wherever possible.
- 2.10 All bolts to be high tensile bolts with fine threads and locked in position and some areas require counter sunk bolts.
- 2.11 The dolly shall be designed to prevent water retention and incorporating gradient on the steel decking and drain holes on every caster.

3 TOW BAR

- 3.1 Tow bar to install “C” Channel W80mm x H80mm x D40mm x T3mm on both ends to prevent PD runaway when shaft is broken or sheared off. Details in Appendix C Annex B.
- 3.2 Shall have provision of a lock device to lock tow bar in upright position and released with ease. (Shall be springless type and can be shown on site.)
- 3.3 A rugged tow bar incorporating a balancer for operation by one person and suitable for rough operation shall be provided. The balancer shall also serve as a shock absorber to prevent impact of tow bar on the tarmac. The balancer shall be able to suspend the tow bar parallel to the ground (preferably 150mm to 160mm above ground). Details in Annex B.
- 3.4 Tow bar shaft support (L) bracket shall be machined from a single block of material and welded both sides with 3mm thick stiffness. Joints or welded support bracket will be rejected. Material to be of mild steel and thickness of 20mm. Details in Annex B.

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- 3.5 Tow bar shall be spring assisted and to prevent uncontrolled lowering.
- 3.6 To be heavy duty designed and tow bar tare weight not to exceed 50kg and lift up weight for tow bar to be supported by a balancer and weight must be below 10kg.

4 BRAKES

- 4.1 Braking shall be actuated by tow bar in upright position during empty or fully laden operation.
- 4.2 The braking system (rods and mechanism) must be concealed or protected by 'C' channel to prevent accidental damage by forklift.
- 4.3 The braking system shall be designed according to attached details in Annex D & H. Brake linkage mechanism to add round pipe protection tubing including grease nipples for lubrication.
- 4.4 Install 2 pieces "C" Channel at rear structure to support tow-hitch & welded with 6 pieces wedges. Refer to ANNEX H.

5 CASTOR AND FIXED WHEELS

- 5.1 All solid cushion tyres shall be 400 x 8 heavy duty and able to withstand tropical heat.
- 5.2 Dolly shall have 2 front swivel castor wheels and 2 fixed wheels.
- 5.3 Details of front swivel wheel assembly in Annex E
- 5.4 Bearings for wheel hub and castor fork used must be heavy duty and come with greasing nipple. Tenderers are to use bearings for wheel hubs and castor fork wheels. Details in Annex E.
- 5.5 All wheel hubs to be machine from a single block material.
- 5.6 Red Loctite 272 must be applied during fastening of the wheel hub

6 ROLLERS

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- 6.1 There shall be 4 rows of rollers. A protection mild steel plate (thickness 6mm) shall be welded at both ends of the rollers and weld two stiffeners for strengthening the protection plate.
- 6.2 Wall thickness of roller shall be 2mm. Roller shaft diameter shall be 20mm (material BS4360 GR55) and come up with slip pin locking device plus tack welding. The rollers used shall be hot dipped galvanized. The diameter of the 4 rows of rollers shall be equal in length. Dimension = 76mm x 345mm L (58 pieces) & 76mm x 255mm L (2 pieces) Details in Annex F.
- 6.3 The rollers shall be heavy duty to withstand impact of pallets/containers during loading and unloading

7 RESTRAINTS / STOPPERS

- 7.1 Butterfly stopper sizes
260mm x 20mm x 8pcs.
160mm x 20mm x 6pcs.
- 7.2 The dolly shall have 14 butterfly stoppers + 7 fixed stoppers panel – L570mm x H140mm x T8mm (at front tow bar side) for side guides at both sides and container positions (to be shown on site). Butterfly box internal diameter must be 22mm.
- 7.2.1 Fixed 5 pieces stopper panel size L570mm x H140mm x T8mm.
3 pieces to be welded at front body structure & 2 pieces welded at rear body structure.
- 7.2.2 Fixed 2 pieces stopper panel size L350mm x H140mm x T8mm.
Welded at rear body structure. Both sides to be bended at 80mm at 60 degrees angle.
- 7.3 The butterfly stoppers for the side guides to be bigger than container positions. Refer to the drawing attached in Annex G, J & K for technical specifications.

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- 7.4 The dolly shall have a total four 'L' container restraints and one 'T' container restraint (at the centre). The container restraints shall be manually operated and spring loaded with positive locking. Height 28mm (to be shown on site).
- 7.5 A support plate to be welded below the butterfly stopper pocket so as to prevent from dropping off.
- 7.6 L/shaft 20mm round rod holding the butterfly stopper to be welded in the pocket.

8 WALKWAYS

- 8.1 The walkways shall be chequered plate 3mm thick bolted to the chassis & tag weld.

9 FORK TYNES

- 9.1 Fork tynes shall be provided for forks of forklift. See Annex H for technical specifications.

10 TOW HITCH AND SAFETY CATCH

- 10.1 Dimension of the tow hitch and safety catch shall be compatible with SATS present fleet of dollies. See ANNEX I for technical specifications.

11 PAINTING

- 11.1 Entire structure to be sand blasted or powered brush prior to paint application.
- 11.2 Structure to be coated with a layer of red lead primer (water-based type) and finishing coat shall be 2 coats of SATS corporate color (shall be advised). The paint shall be anti-corrosion type.
- 11.3 Weight and unit number of the trolley to be printed on equipment.

12 ITEMS TO BE SUPPLIED

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- 12.1 The supplier shall supply the following items:
Parts Manual – 4 sets Hardcopy and PDF
Repair Manual – 4 sets Hardcopy and PDF

13 ACCEPTANCE TEST

- 13.1 Supplier to perform all necessary inspections and tests to show that the dollies meet all specifications. Supplier's records of inspections and tests must be kept complete and available to SAS at all times.

14 OTHERS

- 14.1 PE Certification of Maximum Load Capacity of Pallet Dolly – 7 ton.
- 14.2 Manufacturer to provide 12 months of warranty period for equipment & parts.