

REVISION : "A"

DATE : 25,Oct. 2013

REVISION : "B"

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REVISION : "C"

DATE : 10,Dec. 2013

33,000L –CIMC-UBH SWAP BODY TANK CONTAINER

SPECIFICATION NUMBER: PSB05-00130

GA DRAWING NUMBER: PSB05-00130G

OWNER'S NUMBER: TBA

PREPARED FOR

Baltica-Trans

Compiled by: Chen GJ 10, Dec.2013 Checked by: Wang HZ 10, Dec.2013 Approved by: Zhu HJ 10, Dec.2013

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1.0 DESIGN SPECIFICATION

- 1.1 Tank Type** : 7,450mm long × 2,550mm wide × 2,670mm high
CIMC-UBH T11 A-Frame Swap Body Tank.
- 1.2 Capacity** : 33,000 litres (±0.75%). B
- 1.3 Tare** : 4,320 kg ± 3%. C
- 1.4 Max Gross** : 36,000 kg.
- 1.5 Products** : General purpose liquids.
- 1.6 Max Allowable Working Pressure** : 4.00 bar.
- 1.7 Test Pressure** : 6.00 bar.
- 1.8 External Pressure** : 0.41 bar.
- 1.9 Vessel Design Temperature** : -40°C to 130°C.
- 1.10 Type Approvals** : UN Portable tank (T11 IMDG, RID/ADR-L4BN, UK/ DfT), UIC, TIR, CSC, TC
- 1.11 Classification Society** : BV or LR.

2.0 VESSEL

- 2.1 Design Code** : ASME VIII Div 1/ EN14025 where applicable.
- 2.2 Material** : Shell Material:
SANS 50028-7: 1.4402. Equivalent to 316L.
Max carbon content 0.03%. Cold rolled 2B finish.
Minimum calculated thickness: 4.18mm.
Corrosion allowance: 0.22mm
Manufacturing Thickness: 4.4mm

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Ends Material:
SANS 50028-7 1.4402. Equivalent to 316L.
Max Carbon Content 0.03%. Hot rolled, polished.
Min. calculated thickness: 4.58mm.
Corrosion allowance: 0.12mm.
Total thickness: 4.7mm (after forming).

- 2.3 Baffle** : Not fitted.
- 2.4 Vacuum Stiffening Ring** : 3 off stainless steel rings fitted.
- 2.5 Surface Polish** : Base 400 mm of circumferential seams ground flush ≥ 120 grit.
Fillet welds on tank fitting polished smooth ≥ 120 grit.
Internal repairs ground and polished smooth ≥ 120 grit.
- 2.6 Internal Finish** : Chemically cleaned, washed and dried.
- 2.7 External Finish** : Barrel welds descaled, tank degreased and cleaned.
- 2.8 Radiography** : Shell: Spot (including all "T" joints).
Head: Full (100%).

3.0 FRAME

- 3.1 Type** : ISO 1496/3.
- 3.2 Dimensions** : 7,450mm long \times 2,550mm wide \times 2,670mm high.
- 3.3 Material** : SPA-H or equivalent.
- 3.4 Corner Castings** : To ISO 1161.
Top: Standard ISO castings with obstruction plates fitted inside facing opening.
Bottom: European overland corner castings with chamfered lower outer edge.
- 3.5 Bottom A-Frame** : Lower diagonal A-Frame fitted to barrel mount fitted. Diagonal member fitment to allow for required clearance to bottom ISO.

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- 3.6 Top Longitudinal Members** : Not fitted.
- 3.7 Miss Stacking Protection** : Top: Miss-stacking corner plates fitted adjacent to top corner castings.
- 3.8 Side Lifting Pockets** : Side lifting pockets provided in top of each post for fitting in empty condition.
- 3.9 End Protection** : Rear and front end frames fitted with welded carbon steel rectangular hollow section bumper extension frames.
- 3.10 Earth Connection** : Rectangular plate/lug (42x30x3 mm with $\phi 7$ mm hole), fitted to right hand side of rear end bumper frame.
- 3.11 Ladder** : One 300mm width full stainless steel ladder fitted to right hand side of the rear end protection frame.
Handgrips provided at the ladder top landing.
Bolted fasteners to be tack welded to prevent ladder theft.
- 3.12 Walkway** : 475mm or 400mm wide non-slip marine resistant grade aluminum. Full platform walkway, consisting of full length left and right hand side longitudinal walkways, with area between closed by transverse walkways.
- 3.13 Handrail** : A stainless steel collapsible handrail fitted to right hand side of longitudinal walkway.
Main fasteners are to be tack welded to prevent theft.
- 3.14 Stacking** : 3 high stacking.

4.0 COMPONENTS

- 4.1 Manlid** : 1 x 316 stainless steel, \varnothing 500mm, 8 point brass alloy wing nuts.
Opening from rear to front. 135 °Max. manlid opening angle.
- Gasket** : Composite seal with PTFE outer encapsulating EPDM inner.
- Dipstick & Bracket** : Not fitted and no provision.
- 4.2 Cleaning Hatch** : 1 x 316 stainless steel, \varnothing 300mm, 4 point brass alloy wing nuts.
Opening from rear to front. 135 °Max. lid opening angle.
- Gasket** : Composite seal with PTFE outer encapsulating EPDM inner.
- 4.3 Safety Relief Valve** : 1 x Fort Vale 316 stainless steel, 3" flanged pressure / vacuum relief valve set at 4.4/-0.41 bar, with flame proof gauze.
Weld-in flange fitted tangentially, drilled/tapped - 4 x M16 on 145mm PCD.
- Gasket** : Envelope PTFE.
- 4.4 Air Inlet** : 1 x Fort Vale 316 stainless steel, 1.5" ball valve with 1.5" BSP terminal connection and dust cap, held captive with a stainless steel chain.
Tapped hole and plug fitted for future fitting of a pressure gauge.
Gauge guard not fitted.
Weld-in flange fitted tangentially, drilled/tapped - 4 x M10 on 103.4mm PCD.
- Gasket** : Not applicable.
- 4.5 Top Discharge Provision** : 1 x Fort Vale 316 stainless steel 3" NB low profile tank pad, complete with blank flange. B
Weld-in flange fitted horizontally on top dead center, drilled/ tapped - 6 x M12 on 168 mm PCD.
Provision for the future fitment with a flanged 3" butterfly valve and a 3" siphon tube.
Lower siphon tube retaining plate fitted.
- Gasket** : Envelope PTFE.

- 4.6 Bottom Discharge** : 1 x 316 stainless steel, 3" NB 45° highlift footvalve and 3" NB clamped butterfly valve connected with 3" BSP terminal connection and dust cap, held captive with a stainless steel chain.
Weld-in flange drilled/tapped - 8 × M12 holes on 177.8 mm PCD.
- Gaskets** : Envelope PTFE.
- Remote Control** : Footvalve complete with 3/4 length CIMC cable remote closure system.
- 4.7 Steam Heating System** : 8 longitudinal runs steam heating system on barrel.
The vacuum rings not used for heating.
- Pressure** : Design pressure 4 bar. Test pressure 6 bar.
- Connections** : 1 " BSP inlet and 3/4" BSP outlet connections, positioned on the left hand side of the rear end frame bottom cross member, fitted with stainless steel dust caps, held captive with stainless steel chains.
Outlet pipe fitted with 3/8" depressurization ball valve with 90° elbow.
Connections identified with stainless steel label plates.
- 4.8 Spillage Box** : Front spill box contains manlid, safety relief valve.
Rear spill box contains cleaning hatch, air inlet, and top discharge provision.
Fittings identified with stainless steel label plates.
Each spillbox is manufactured from stainless steel, complete with 25mm PVC plastic drain tubes.
Lockable stainless steel covers fitted and opening 180° to front.
Etched stainless steel calibration plate in cm/liters, welded to spill box side in front spillbox.
- 4.9 Bottom Cabinet** : Bottom cabinet contains the bottom discharge assembly, manufactured from stainless steel, lockable stainless steel floor and door fitted.
Lockable door with hold open catch, door to open $\geq 170^\circ$.
- 4.10 Document Holder** : Ø75mm x 325mm plastic document holder fitted to the right hand side rear end frame bottom cross member, adjacent to the rear corner post.
- 4.11 Thermometer** : One digital thermometer, only with Celsius. Positioned on rear GRP end left hand side.

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5. INSULATION & CLADDING

5.1 Insulation

Barrel & Horizontal Steam Tubes : Normally 50mm thickness Rockwool, where possible.

Ends : 50mm Rockwool, where possible.

Under The Banding : PU foam under the stainless steel banding.

5.2 Cladding : Barrel: 4 x 1.8mm thick GRP panels; butt joints sealed and covered with BA finish stainless steel banding.
Ends: 3.0mm thick GRP, preformed dome ends.
Colour: White (RAL9003).

6. EXTERNAL CORROSION PROTECTION

6.1 Shot Blast : SA 2¹/₂ to framework.

6.2 Carbon Steel Framework : Primer coat: Epoxy zinc rich primer, 30 microns DFT.
Intermediate coat: Epoxy primer, 40 microns DFT.
Top coat: Acrylic, 50 microns DFT.
Total: 120 microns DFT.

Color : Suit to customer.

6.3 Steam Heating System : Anti-stress corrosion paint 40 microns DFT applied wherever as deemed appropriate by CIMC.

7. MARKING

- 7.1 Date Plates** : Single language consolidated data plate, customs plate, calibration plate.
- 7.2 Statutory Decals** : Supplied and fitted by manufacturer.
Material: 3M-VS 2008. Ink printed colour vinyl.
- 7.3 Owner Logos** : Supplied by customer and fitted by manufacturer.
- 7.4 Label boards** : Stainless steel label boards (1200 x 500mm x 1mm) fitted to all four sides. "Please put labels here" decals fitted.

