

Pall Allegro™ Jacketed Totes



Advanced Support Hardware for Single-use Systems

Pall Allegro jacketed totes have been specifically designed and engineered to provide state-of-the-art performance of single-use systems in thermal control applications. The jacketed totes are part of the Allegro platform from Pall Life Sciences; a comprehensive program providing process solutions, technical support and validation for single-use systems. Fully integrated multi-component and multi-technology systems are provided as validated solutions for fluid handling.

Features/Benefits

The Allegro jacketed totes are designed for temperature control or thermal regulation applications for process fluids where fluid containment and safety in operation are paramount. Superior performance is achieved through innovative and complementary designs of both the totes and the systems designed to fit in them. Full access into the totes, ease of installation of single-use systems and self filling with minimal operator intervention are just some of the key features. Please refer to additional Pall literature (ref USD 2519) for more details.

- ▶ Dimensionally identical to standard Allegro 3D totes
- ▶ Sanitary nozzle connections for inlet, outlet and low point drain for heating/cooling fluids
- ▶ Allegro wheeled trolleys from Pall enhance mobility
- ▶ Can be stacked in combination with existing totes to maximize floor space (Note: not to be stacked when using a trolley)
- ▶ Stainless steel surface is passivated providing enhanced corrosion resistance
- ▶ Jacketed on 4 sides, including the bottom, to maximize thermal transfer
- ▶ Insulated with NH/Armaflex® thermochannels on all jacketed faces for heat conservation and personal protection
- ▶ Excellent internal surface finish ($R_a < 0.5 \mu m$) maximizing contact for efficient thermal transfer.

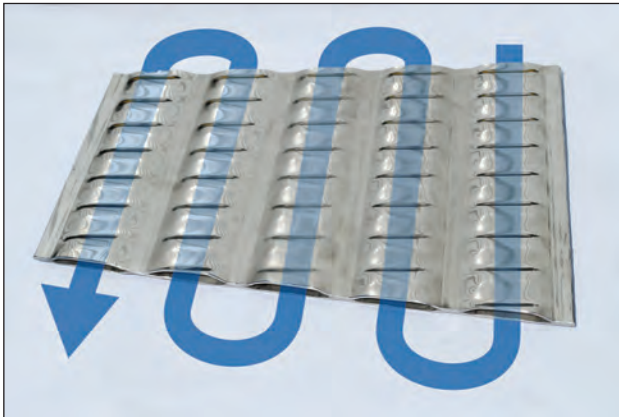
Thermo Channels

The Allegro jacketed totes provide very efficient heat transfer via specially designed thermo channels incorporated in the design.

The thermo channel design forces the cooling/heating medium into a state of turbulence in a controlled and even distribution over the complete heat transfer area – especially at low flow rates, maximizing heat transfer coefficient.

Figure 1

Thermo Channel Principle



Typical Applications

The Allegro jacketed totes can be used for general thermal control applications such as:

- ▶ Media & buffer storage, heating or cooling
- ▶ Suspension and temperature equilibration for slurry solutions (e.g. vaccine adjuvants)
- ▶ Product fraction collection with temperature equilibration
- ▶ Product/buffer/media homogenization with temperature equilibration

Documentation Package

The Allegro jacketed totes are optionally supplied with a comprehensive Documentation Pack, comprising:

- ▶ Drawings
- ▶ Weld Procedures, Welder Qualification, Weld Maps, Weld Log
- ▶ Material Certification
- ▶ Passivation Certification
- ▶ Pressure Vessel Certification
- ▶ FAT Protocol & Report

Our in-house engineering team - Pall Advanced Separation Systems (PASS) – can provide or recommend suitable manual or automated jacket control solutions, to support the operation of the Allegro jacketed tote.

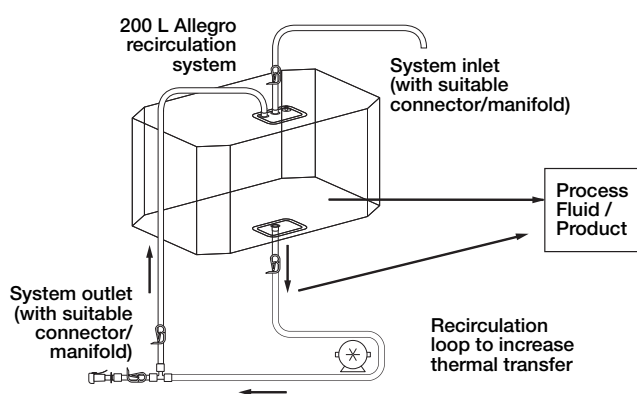
Tote Inlet, Outlet and Drain Connections



Allegro Jacketed Totes Maximize Floor Space Availability



Figure 2
Example Allegro Single-use System for use with Jacketed Tote



NOTE: Recirculation pump can be supplied by Pall, please specify this during discussion

Technical Specifications

Tote	304/304L/1.4301/1.4306/1.4307 stainless steel or higher
Typical Heat Transfer Coefficient ¹	330 W/m ² /°C
Pressure Vessel Design	Full Vacuum/6 barg
Temperature Design	-10/100 °C
Operating Temperature	0 to 70 °C
Typical Flowrate for Jacket	2 m ³ /hr (33 L/min)
Pressure Drop	200 L tote: < 0.7 bar (at typical flowrate) 500 L tote: < 1.0 bar (at typical flowrate)
Pressure Regulations	PED Certified to GMP (Good Manufacturing Practice) ASME 'U-Stamp' North America
Surface Finish	Internal: Ra < 0.5 µm External: 2B-surface oscillated, pickled and weld brushed
Weight (empty)	200 L tote: 90 kg 500 L tote: 230 kg
Weight (full)	200 L tote: Approx. 296 kg (assuming full biocontainer and heating/cooling fluid) 500 L tote: Approx. 742 kg (assuming full biocontainer and heating/cooling fluid)
Inlet/Outlet/Drain Connections	1 in. sanitary
Dimensions (L/H/W) ²	including inlet/outlet/drain: 200 L tote: 876 mm x 833 mm x 646 mm 500 L tote: 1300 mm x 922 mm x 888 mm

¹ Aqueous process fluid heating and cooling with process fluid recirculation using aqueous heating/cooling fluids on jacket.

² Includes stacking pins but not trolley. Trolley will add 285 mm to overall height including stacking pins.

Performance Data

► Process Fluid: Water

- Cooling Fluid: Towns water at 9 °C
– Temperature reduced from 37 to 15 °C in 90 mins
- Heating Fluid: Warm water at 66 °C
– Temperature increased from 20 to 50 °C in 47 mins

NOTE: Pall can provide heating/cooling performance data for alternative process and jacket fluids.

Figure 3
Tote Wall and Floor Construction

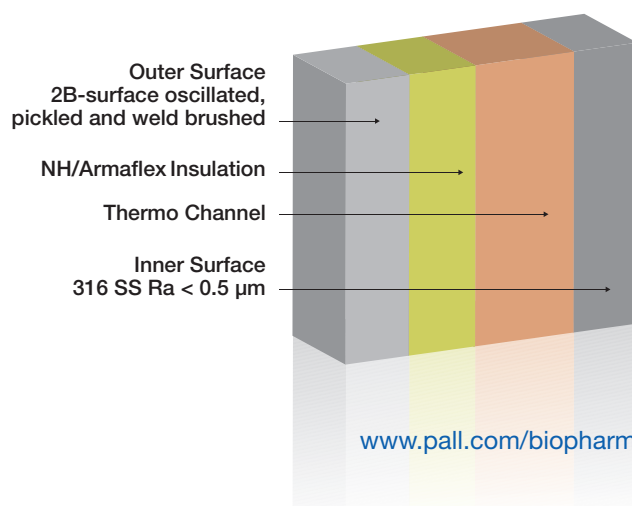
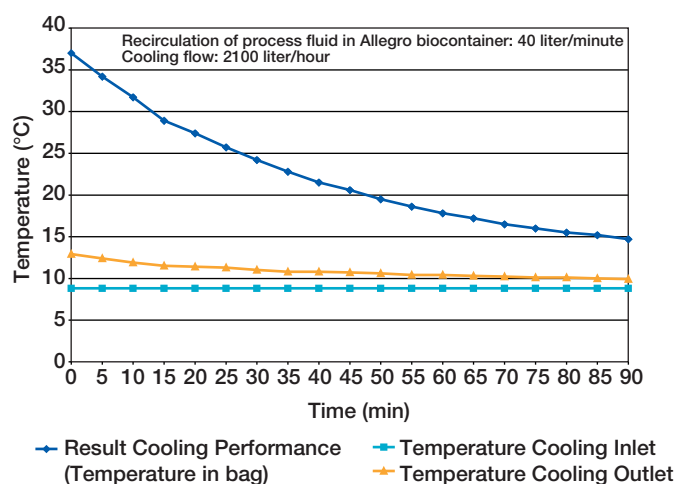
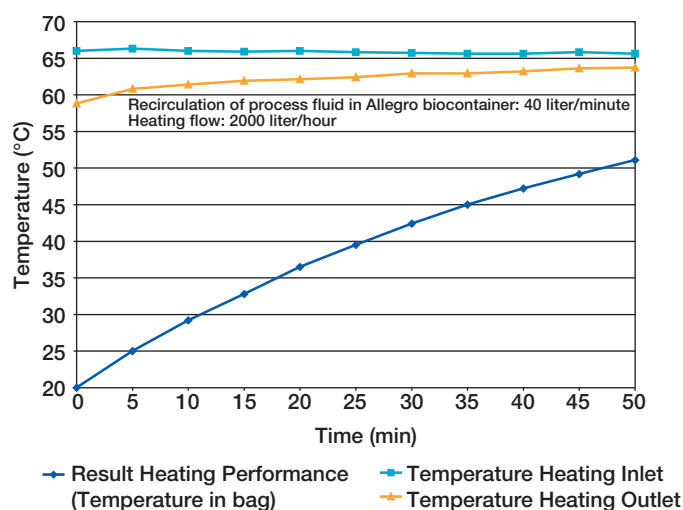


Figure 4 ⁽¹⁾**Result Cooling Performance****Figure 5****Result Heating Performance**

⁽¹⁾ For cooling and heating performance data at other flow rates, please contact Pall.

Ordering Information

Part Number	Description
LGRJTTE200L	200 L Jacketed Tote
LGRTRL200L	200 L Trolley
LGRJTLD200L	200 L Tote Lid (insulated)
LGRADAPT200L	3D Tote 2D Tray Adapter (for use with 10/20 L 2D Tray)
LGRJTTE500L	500 L Jacketed Tote
LGRTRL500L	500 L Trolley
LGRJTLD500L	500 L Tote Lid (insulated)
LGRADAPT500L	3D Tote 2D Tray Adapter (for use with 10/20 L 2D Tray)

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The information provided in this literature was reviewed for accuracy at the time of publication. Product data may be subject to change without notice. For current information consult your local Pall distributor or contact Pall directly.

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