

“The optimized use of drains in thoracic and cardiac surgery is critically important for the post-operative recovery of patients.”
Prof. Theodor Fischlein

Precision Recovery for Precision Surgery

Thopaz⁺ Digital Chest Drainage System: Closing the loop in high-tech, minimally invasive cardiac surgery¹

The Evolution of Cardiac Surgery

MICS: The Future of Cardiac Surgery

Minimally Invasive Cardiac Surgery (MICS) is transforming cardiac surgery with smaller incisions, less trauma, and faster recovery. As robotic assistance and imaging technologies advance, minimally invasive techniques in cardiac surgery have found increasing use in recent years.²

But Why Stop at Surgery?

You have adopted state-of-art techniques, so why compromise your post-operative care with outdated chest drainage systems?

If your patient is still tied to wall suction and traditional drainage system – dependent on subjective assessments, delayed interventions, and restricted mobility – are you truly delivering the full benefit of MICS?

Post-operative care should be as advanced, efficient, and patient-centered as the surgery itself.^{2,3}

Thopaz⁺ closes the loop.

Thopaz+: The Digital Chest Drainage System That Complements MICS¹

Feature	Traditional Systems	Thopaz+ Digital System
Drainage Monitoring	Manual, error-prone	Automatic, real-time data
Drain Removal Decisions	Inconsistent, subjective judgement	Evidence-based and protocol driven
Patient Mobilization	Limited and restricted	Easier with portability
Staff Workload	Time-consuming	Streamlined workflow and efficient nursing time
Smart Alerts	No alerts	Real-time notifications
Pressure settings	Unregulated pressure	Immediate reliable regulated pressure

Because immediate, effective chest drain management is crucial for your patient’s recovery⁸, Thopaz+ offers you:

- **Uninterrupted performance. Transformative efficiency.**
More effective blood drainage starting right where it counts – in the OR. *^{6,7,8}
 - **Improving outcomes to save time and cost.**
Drives measurable economic value through faster recovery, early interventions and less complications. *^{9,10,12}
 - **Empowering evidence-based decisions.**
Objective real-time data with trending charts on display elevate clinical confidence and accuracy. ^{6,13,14}
- **Redesigning safety in chest drain management.**
Smart and real-time notifications keep clinicians informed and patients safe. ^{13,15}
 - **Mobilize early. Recover faster.**
Designed for early mobilization – compact, lightweight and battery-powered. ^{6,7,10}
 - **Wherever. Whenever. Hospital-wide. Always Ready.**
Fully adaptable with 3 canister sizes and regulated pressure settings for your clinical chest drainage needs.

Thopaz+ and MICS: A Great Match

MICS aims for precision, minimal disruption, and rapid recovery. Thopaz+ completes the vision by:

- Supporting early mobilization^{6,7}
- Reducing length of stay*^{13,14}
- Enhancing patient safety through real-time monitoring of air leak and fluid loss^{6,14}

Both MICS and Thopaz+ prioritize what matters most: **faster recovery, fewer complications, and smarter care.** Together, they aim to deliver a seamless surgical and post-operative experience – from the first incision to full recovery.

Thopaz+ doesn’t just support surgery – it transforms recovery.
Close the loop. Deliver the full promise of minimally invasive care.



* in comparison with traditional chest drainage system

References: **1** Smith A, et al. Interdisciplinary CardioVascular and Thoracic Surgery 2025; 40(5). ivaf053 doi:10.1093/icvts/ivaf053. **2** Faerber G, et al. J Cardiovasc Dev Dis 2023;10(380). doi:10.3390/jcdd10090380. **3** Fischlein T, et al. EJCTS 2025;67(11). doi:10.1093/ejcts/ezaf008. **4** Goecke S, et al. Medicina 2025;61(495). doi:10.3390/medicina61030495. **5** Kirov H, et al. Thorac Cardiovasc Surg 2025;73(5):356–365. doi:10.1055/a-2548-4098. **6** Barozzi L, et al. J Card Surg 2020;35:1492–1497. **7** Saha S, et al. Interact CardioVasc Thorac Surg 2020; doi:10.1093/icvts/ivaa049. **8** Kalisnik JM, et al. EJCTS 2025 Mar;67(Supplement_1):i9–17. **9** Van Linden A, et al. J Thorac Dis 2019;11(12):5177–5186. **10** Tamura K, et al. Gen Thorac Cardiovasc Surg 2022;70:619–623. **11** Palleiko BA, et al. J Thorac Dis 2024;16(5):2963. **12** York Value calculator; YHEC Medela Thopaz+ Chest Drain Model – FINAL - 31.07.25.xlsm. Data on file Medela. **13** Evans JM, et al. Appl Health Econ Health Policy 2019;17(3):285–94. **14** Pompili C, et al. Ann Thorac Surg 2014;98:490–6. **15** Rathinam S, et al. J Cardiothorac Surg. 2011;6:59.