Product Data Sheet: 5002 Portable Graf's Cradle

Compact & Lightweight Ultrasound Positioning System for Infant Hip Sonography
Designed, Certified, and Authorized by Reinhard Graf

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1. Product Overview

The **5002 Portable Graf's Cradle** is a mobile, ultra-compact version of Graf's standardized infant positioning system. Developed as an adaptable alternative to the 5003 system, it is engineered specifically for outpatient clinics, traveling pediatric sonographers, community health centers, and space-limited maternity units.

The system delivers the exact lateral decubitus stabilization required by the Graf screening method while remaining light, portable, and quick to set up on any standard examination couch or mobile examination table.

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2. Key Features & Clinical Benefits

- **High Portability:** Significantly reduced total weight and compact dimensions allow effortless transport between examination rooms, peripheral clinics, or hospital wards.
- **Standardized Positioning:** Retains Graf's anatomical cradle geometry to keep the infant comfortably in the stable lateral position during hip examination.
- **Single-Handed / Single-Operator Examination:** Gently holds the neonate in place without assistance from a nurse or parent, reducing examination stress and workflow bottlenecks.
- **Medical-Grade Hygiene:** Covered in fluid-resistant, easily washable, and disinfectable vinyl upholstery compatible with standard surface sanitizers.
- **Adaptable Surface Use:** Non-slip base design sits firmly on standard pediatric examination couches, ultrasound carts, or changing tables without requiring permanent bolt-down installations.

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3. Clinical Standard & Literature Rationale

Standardized diagnostic ultrasound according to Prof. Reinhard Graf relies on strict anatomical identification criteria (lower limb in slight flexion, lateral decubitus posture, and exact acoustic alignment perpendicular to the iliac wing). Free-hand infant holding introduces

unpredictable motion artifacts and pelvic tilting. The 5002 Portable Cradle enforces standardized posture in any clinical setting, eliminating diagnostic ambiguity.

Target Clinical Specialties

- Mobile Ultrasound & Point-of-Care Pediatric Screening Services
- Outpatient Pediatric & Orthopedic Practices
- Regional Maternity Hospitals & Rural Neonatal Centers
- Community Health Screening Programs

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4. Technical Specifications & Dimensions

General Product Information

Parameter	Specification
Product Model Code	**5002**
Product Designation	Portable Graf's Cradle
Country of Manufacture	Italy
Customs Tariff / HS Code	9402.90.00
Classification	Medical Ultrasound Positioning Accessory
Total Net Weight	Approx. 4.8 kg
Dimensions	44 × 38 × 22 cm
Recommended Operating / Storage Temp.	+25 °C (ambient clinical conditions)

Cradle Dimensions (Ref. 5002)

Dimension Feature	Value	Clinical / Technical Function
Overall Length	710 mm	Compact longitudinal platform
Overall Width	380 mm	Slim profile suited for portable exam tables

Dimension Feature	Value	Clinical / Technical Function
Infant Cradle Channel Length	440 mm (710 mm with cushion)	Support channel for infant torso and hips
Channel Internal Width	140 mm – 200 mm	Lateral foam cushions securing patient posture
Cradle Bolster Height	190 mm	Lateral support wall height
Integrated Head Pad Length	255 mm	Built-in anatomical headrest

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5. Comparison: Model 5003 vs. Model 5002

Feature	5003 Graf's Cradle Complete	5002 Portable Graf's Cradle
Primary Setting	Dedicated DDH Screening Suites, Hospitals	Mobile Sonography, Outpatient Clinics
Probe Guide Arm	Integrated Eco-Support stainless steel arm	Freehand scanning with cradle guidance
Total Weight	Approx. 7.3 kg	Approx. 2.8 kg
Footprint Length	745 mm	710 mm
Size	27 × 51 × 80 cm	44 × 38 × 22 cm
Mounting Style	Integrated heavy-duty base plate	Non-slip portable placement

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6. Cleaning, Disinfection & Maintenance

- **Upholstery Care:** Clean immediately after patient use with hospital-grade disinfectant wipes (alcohol-free quaternary ammonium or neutral medical detergents).
- **Storage:** Store flat in a dry environment at ambient temperature. Avoid heavy point-loading when in transit.

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7. Scientific References & Clinical Evidence

- **Graf, R., Lercher, K., Scott, S., & Spieß, T.** *Essentials of Infant Hip Sonography: According to Reinhard Graf*. Springer-Verlag.
  Establishes the anatomical reference points and outlines the requirement of lateral decubitus positioning to eliminate deceptive pelvic rotation.
- **Chlapoutakis, K., Maizen, C., Placzek, S., et al. (2023).** Hip sonography according to Graf: practical notes for the student, the examiner and the reviewer. *Medical Ultrasonography*, 25(4), 453–458. https://doi.org/10.11152/mu-4194
  Emphasizes the decisive role of cradle positioning in avoiding patient tilt artifacts that degrade alpha (α) angle quantification.
- **Kraus, T., & Chiari, C. (2024).** Universal screening for developmental dysplasia of the hip in Austria: what have we learned? *Exploration of Musculoskeletal Diseases*, 2, 208–215. https://doi.org/10.37349/emd.2024.00049
  Validates widespread implementation of standardized examination techniques across outpatient and hospital environments.
- **Kilsdonk, I., Witbreuk, M., & Van Der Woude, H.-J. (2021).** Ultrasound of the neonatal hip as a screening tool for DDH: how to screen and differences in screening programs between European countries. *Journal of Ultrasonography*, 21(85), e147–e153. https://doi.org/10.15557/jou.2021.0024
  Reviews clinical scanning procedures and highlights the necessity of stabilizing cradles to prevent infant restlessness during screening.
- **Heisinger, S., Chiari, C., Willegger, M., Windhager, R., & Kolb, A. (2024).** Clinical Evaluation of an Electronic Guidance System for Optimizing the Ultrasound Screening for Developmental Hip Dysplasia in Newborns. *Journal of Clinical Medicine*, 13(24), 7656. https://doi.org/10.3390/jcm13247656
  Analyzes angular precision in neonatal hip imaging, documenting the baseline variance caused by probe alignment errors.

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8. Ordering Information

Product Code	Description	Features
5002	**Portable Graf's Cradle**	Lightweight positioning cradle with integrated non-slip base
5003	**Graf's Cradle Complete**	Full-size cradle (Rapid-Eco) + articulated arm (Eco-Support)