

Operating Manual

SaniDrum 400
SaniDrum 600
SaniDrum 700
SaniDrum 950



SanikomTM
WORLD OF PIPE REPAIR

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Table of Contents

1. Introduction	3
1.1 About this manual	5
2. Drum Structure Overview	6
2.1 How to Use The Parts – Workflow	7
3. Warnings And Special Notes	8
3.1 Warning and Safety Instructions	8
3.2 Personal Protection	9
4. Sanidrum 400–950 – Recommended Maintenance Schedule	10
4.1 Daily Checks	10
4.2 Weekly Maintenance	10
4.3 Monthly Servicing (Suggested)	10
4.4 Additional Preventive Measures	11
4.5 Maintenance Schedule Summary	11
5. Technical Overview – Sanidrum 400 NG	12
5. Technical Summary – SaniDrum 600 NG	14
6. Technical Summary – SaniDrum 700 NG	16
7. Technical Summary – SaniDrum 950	18
7. Limited Warranty	20

1. Introduction

What Are Inversion Drums?

Inversion drums are specialised tools used in **Cured-In-Place Pipe (CIPP)** lining—a trenchless pipe rehabilitation method. Their primary purpose is to **install a resin-impregnated liner** inside existing pipes without excavation. They enable repairing damaged sewer, potable water, or industrial pipelines efficiently and with minimal disruption.

How Do They Work? Detailed Step-by-Step Process

1. Liner Impregnation

A felt or fibreglass liner is vacuum-impregnated with resin, ensuring even impregnation throughout the liner.

2. Loading into the Drum

The impregnated liner is loaded into the inversion drum with its resin-coated surface facing inward. The drum is sealed and pressurised for controlled installation, [CIPP Global](#).

3. Positioning

Situated at the pipe entrance—often a manhole or access point—the drum is prepared to feed the liner into the host pipe.

4. Inversion & Insertion

Using air or water pressure, the liner is inverted—turned inside out—as it travels through the pipe. This places the resin-impregnated surface directly against the pipe's inner wall.

5. Curing the Resin

After inversion, the liner is cured via heat, steam, or UV light, creating a durable, seamless interior pipe within the existing pipeline.

6. Finishing & Inspection

Once cured, the system is depressurised, the equipment removed, and the new pipe inspected and pressure tested for defects before returning it to service.

Key Benefits:

- **Trenchless & Non-Disruptive**

No need for excavation—ideal for urban or residential settings.

Precise pressure control ensures even liner placement and adherence, eliminating gaps or defects.

- **Versatility**

Compatible with various liner sizes, materials (felt, fibreglass), and curing methods (water, steam)

- **Efficiency & Speed**

The entire process is faster and less labour-intensive than traditional pipe repair methods.

- **Durability**

Modern drums made of composite materials resist corrosion, handle high temperature/pressure, and improve maintenance and longevity

Types & Features of Inversion Drums

- **Composite Drums (e.g., Sanidrum 400/600/700/950)**

Lightweight, corrosion-resistant, steam-capable—ranging from 14 kg (Sanidrum 400) to 129 kg (Sanidrum 950). All include safety valves (~1.1 bar) and ergonomic design.

Typical Applications

- **Residential Sewers & Laterals**
Quick fixes under homes or yards without digging.
- **Municipal Sewer Systems**
Rehabilitation of main lines with limited traffic disruption.
- **Industrial Pipelines**
Trenchless repair of factory or process pipes.
- **Various Pipe Materials & Sizes**
Effective in pipes with bends or irregular surfaces due to inversion flexibility.

Why Inversion Drums Matter

Inversion drums are integral to the trenchless pipe relining revolution. They enable:

- **Seamless, structural pipe renewal**
- **Reduced downtime & costs**
- **Minimal surface disruption**
- **Sustainable infrastructure maintenance**

By pushing resin-coated liners precisely and controlling pressure/curing, inversion drums transform old, leaky pipes into strong, long-lasting conduits without excavating or rebuilding.

In Essence:

Inversion drums facilitate the high-quality installation of CIPP liners—making pipe rehabilitation faster, cleaner, and more reliable. Whether it's a light-duty 14 kg drum for indoor work or a high-capacity composite model, the principle remains the same: invert, insert, cure, and restore your pipelines from the inside out.

1.1 About this manual

- This operating and maintenance manual must be available to the user or trained maintenance personnel at all times.
- This manual is intended to help you:
 - become familiar with the machine/system,
 - use the machine/system in accordance with its designated purpose,
 - properly operate the machine/system.
- **Please read this manual carefully!**
It contains important information on how to operate the machine/system:
 - safely, and
 - correctly.
- Following the instructions in this manual will ensure:
 - the safety of the operating personnel,
 - the prevention of hazardous situations (accidents),
 - the smooth operation of the machine/system.
- We are not liable for any damage resulting from failure to observe this operating and maintenance manual.
- The inversion drums are designed exclusively for the Sanikom inversion process.
Using the machine/system for any purpose other than those described in this manual is considered improper use.
The manufacturer/supplier cannot be held liable for any damage resulting from such use.
Any such use is at the sole risk of the user.
- Operating the machine within the scope of its intended use includes:
 - adhering to the instructions provided in this operating and maintenance manual,
 - complying with all inspection and maintenance requirements.
- The inversion drums of types **400, 600, 700, and 950** must be operated, maintained, and repaired **only by properly trained personnel**.
- Only **original Sanikom accessories** may be used when operating inversion drums of types **400, 600, 700, and 950**.

2. Drum Structure Overview

1. Drum Body / Pressure Vessel

- **Function:** Holds the resin-impregnated liner under pressure; made from composite or steel with sealed seams.
- **Usage:** Connects to curing/pressure sources; always check for leaks before operation.

2. Access / Inspection window

- **Function:** Seals the drum for pressurisation, enables the user to check the inversion process.
- **Usage:** Close securely until visual confirmation clicks; ensures airtight operation.

3. Hand Wheel

- **Function:** Rotates the liner spool inside the drum; provides tension control and speed.
- **Usage:** Crank during inversion to guide liner; fold/invert handle (if installed) for transport.

4. Wheels & Frame / Carriage

- **Function:** Gear system and rubber wheels enable tilting and repositioning.
- **Usage:** Move unit to jobsite, then lock or stabilise via frame wheels before operation.

5. Inversion Hose & Inversion Fittings

- **Function:** Directs air/water/steam into the drum for liner inversion; the inversion fittings, bends.
- **Usage:** Attach securely using cam-lock/storz fittings; ensure hose compatibility with media type.

6. Storz Nozzle / Cam-Lock Nozzle System

- **Function:** Connects drum to the host pipe; adapts to various diameters via angled adapters.
- **Usage:** Select the correct nozzle diameter; attach with a cam-lock, and angle the liner entry precisely.

7. Return Pickup Valve / Water Return Port

- **Function:** Hot-water or steam curing allows the return of water for recirculation/draining.
- **Usage:** Connect return hose; monitor temperature/flow; drain post-curing.

8. Safety / Pressure Relief Valve

- **Function:** Releases excess pressure above 1.1 Bar to prevent over-pressurisation.
- **Usage:** Inspect before use; ensure it opens at rated pressure and reseats correctly.

9. Calibration / Pull Tape

- **Function:** Guides the liner.
- **Usage:** Secure beginning at drum axis; adjust tension via hand wheel.

10. Impregnation & Curing Accessories

- **Function:** Includes hoses, fittings (45°/90° elbows), manometers, pressure regulators; optional steam/hot water unit.
- **Usage:** Use for connecting pressure sources and regulating cure parameters.

2.1 How to Use The Parts – Workflow

1. **Setup:** Position the drum on stable ground; lock wheels/legs in place.
2. **Load Liner:** Open access door, place resin-soaked liner inside, attach pull tape and nozzle.
3. **Seal & Prep:** Close door, connect hoses and return lines, attach manometer/regulator.
4. **Invert Liner:** Apply air/water/steam to begin inversion; use hand wheel to manage liner feed.
5. **Cure:** Maintain curing media flow; monitor pressure via safety valve and regulator.
6. **Finish & Cleanup:** Depressurise via relief valve, open door, remove liner remnants, drain return line, stow hoses and accessories.

Summary Table

Part	Function	Usage Tip
Drum Body	Pressure vessel for liner and media	Check seals, inspect for wear
Access Door	Seals drum under pressure	Lock properly, watch for feedback
Hand Wheel	Feeds or rewinds liner	Use to tension; fold in before moving to prevent injury
Wheels & Frame	Positioning and support	Lock legs, set secure posture
Inversion Hose & Elbow	Delivers curing media, handles bends	Choose correct hose length & fitting
Storz / Cam-Lock	Pipe interface	Match pipe size, confirm seal
Return Pickup Valve	Drains or recirculates curing media	Monitor flow; drain after use
Safety Valve	Prevents over-pressurization	Verify operation prior to use
Guiding inversion rope	Tracks and aligns liner insertion	Keep tensioned
Accessories (Manometer, Regulator, Fittings)	Pressure/media control	Use right adapter and follow specs

3. Warnings And Special Notes

Operating Parameters

Parameter	Specification
Maximum Working Pressure	1.1 bar
Permitted Cure Media	Air, steam, hot water
Pressure Monitoring	Precision manometer, range 0–1.5 bar
Safety Relief Valve Activation	1.1 bar
Maximum Temperature	100°C

3.1 Warning and Safety Instructions

- Always follow the **safety regulations of the construction site**.
- Always wear appropriate **protective clothing and personal safety equipment**.
- Use only **calibrated and accurate pressure gauges** to monitor drum pressure.
- Before starting any operation:
 - Ensure that the **inspection window** is properly and securely fastened.
 - Ensure the **Storz connection** at the front of the drum is tightly and securely connected.
- **Never exceed the maximum allowable pressure (1.1 BAR).**
- Always **release pressure** from the drum **before opening** the service/inspection window.
- Use **only original spare parts from Sanikom** — they are the only components that meet the technical requirements.
- **Before performing any maintenance, repair, or service work:**
 - Make sure the system is fully **depressurised**.
 - Disconnect any external equipment or media sources from the drum.
- **Operating the inversion drum without proper training** and without having read the **Operating and Maintenance Manual** is strictly prohibited.
- Refer specifically to the section **“Safety – Accident Prevention”** for critical operational guidance.
- **Immediately replace** any damaged, worn, or non-functional components.

Essential PPE for Re-lining Work

- **Hard Hat**
Protects against falling objects and head injuries in confined spaces or work zones
- **Safety Glasses / Goggles**
Shield your eyes from resin splashes, steam, debris, and high-pressure cleaning sprays; goggles with side protection are ideal.
- **Chemical-Resistant Gloves**
Use nitrile or neoprene gloves to prevent resin skin contact; consider double-gloving (inner nitrile + textured outer) for better grip and protection.
- **Protective Clothing & Barrier Creams**
Long sleeves or coveralls shield skin from chemical splashes; applying barrier cream under gloves offers extra protection against resins.
- **Respiratory Protection**
Use respirators equipped with organic vapour cartridges when handling resin or working in confined spaces to guard against vapour.
- **Steel-Toe / Protective Footwear**
Protects against heavy equipment drops and punctures; metatarsal guard boots add extra safety.
- **High-Visibility Clothing**
Essential in construction zones or near traffic to maintain visibility and reduce accident risk.
- **Hearing Protection**
Earplugs or earmuffs are recommended during high-noise operations like steam cleaning or pressure testing.

Training & Safe Practices

- Train all personnel on **proper usage, fit-checks, and limitations** of PPE, as required by law and similar agencies.
- Implement a **hazard assessment** prior to each job to determine specific PPE requirements (e.g., higher-level respirators, chemical-resistant suits, fall protection)
- Ensure **good ventilation**, especially in confined spaces; monitor air quality, and have emergency protocols in place.

Staying protected with the right PPE and protocols boosts safety during liner inversion, curing, and handling—all while ensuring compliance and minimising on-site risks.



SAFETY FIRST!



4. Sanidrum 400–950 – Recommended Maintenance Schedule

4.1 Daily Checks

- **Visual Inspection**
Inspect the entire unit for damage or wear (dents, cracks, leaks, abnormal sounds). Record any issues or deviations in operation and report them immediately. Stop and secure the drum if necessary.
- **Fastener Check**
Inspect all screws, bolts, and clamps. Tighten as required to maintain structural integrity.
- **Pressure Gauge Verification**
Ensure the precision manometer is functional and shows accurate readings.
- **Safety Labels & Guards**
Verify that all safety labels are visible and all protective guards are in place.
- **Connection Check**
Confirm that inversion hoses, Storz couplings, and fittings are properly connected and undamaged.

4.2 Weekly Maintenance

- **External & Internal Cleaning**
Use a pressure jet nozzle (≤ 100 °C) with mild detergent to clean the drum, inversion tubes, and adapters.
- **Wheel and Frame Inspection**
Check bearings, wheel mounts, and frame stability. Clean components and re-lubricate if needed.
- **Hose & Fitting Check**
Examine all hoses and storz/cam-lock fittings for signs of wear or leaks. Replace or tighten as necessary.

4.3 Monthly Servicing (Suggested)

(Based on drum and material-handling best practices)

- **Bearing & Roller Assessment**
Grease wheel bearings and any axis parts as needed.
- **Internal Valve & Hose Testing**
Test all internal valves (inlet, relief) and hoses under low pressure to detect leaks or malfunctions.
- **Safety Valve Validation**
Check the safety relief valve to ensure it is in good condition, set at **1.1 bar**, and reseals properly.

4.4 Additional Preventive Measures

- **Pressure Calibration**
Periodically (monthly or after repair), calibrate pressure gauges against a certified standard.
- **Component Replacement**
Immediately replace damaged or worn parts (hoses, gaskets, O-rings) — always use original Sanikom parts to maintain warranty and conformity.
- **Training & Documentation**
Only trained personnel may perform maintenance. Keep the service log up-to-date, documenting dates, tasks performed, and parts replaced .
- **Safety Precautions**
Always depressurise and disconnect media sources before performing service.
Lockout/tagout the system if applicable.
- **Operational Environment**
Avoid using the drum under extreme environmental conditions (e.g., dusty or corrosive sites). If exposure occurs, increase cleaning frequency and inspect protective covers.

4.5 Maintenance Schedule Summary



Interval	Tasks
Daily	Visual inspection, tighten fasteners, verify connections and pressure gauges
Weekly	Pressure cleaning ≤ 100 °C, inspect wheels/hoses, lubricate as needed
Monthly	Grease bearings, inspect composite, test valves, calibrate gauges
As Needed	Replace damaged parts, update maintenance logs, retrain staff

✓ Why It Matters

Regular inspection and servicing ensure:

- **Safe operation** – preventing pressure leaks, structural failures, or hose ruptures
- **Longevity** – protecting bearings, seals, and moving parts from premature wear
- **Compliance** – meeting safety and quality standards for pipe-lining equipment
- **Efficiency** – reducing costly downtime by spotting issues early





Key Specifications

- **Material & Construction**
Made from lightweight composite (3 mm wall thickness) with an aluminium/composite leg frame. First inversion drum of its type—resistant to corrosion, high temperatures (up to 80–100 °C), and built for steam curing
- **Weight**
Approx. **14.5 kg**—portable enough to be carried like a backpack
- **Max Pressure**
Tested and rated for **1.1 bar** operation; equipped with safety relief valve
- **Max Temperature**
Withstands heat up to **80–100 °C**, suitable for hot water or steam curing
- **Mobility Features**
 - Durable 30 cm rubber wheels for smooth transport
 - New handle replaces trolley for ease in confined spaces
 - Mounted on a stable square-profile aluminum frame with rubberised legs
- **Inspection Window**
Built-in service cap allows inline visual monitoring during the inversion process

Liner Capacity

Pipe Diameter (DN) Maximum Liner Length (m)

DN 100	15 m
DN 125	13 m
DN 150	10 m
DN 200	6 m

Advantages & Intended Use

1. **Ultra-Lightweight & Portable**
Ideal for tight spaces or indoor relining jobs, easily transported by hand.
2. **Steam-Ready Performance**
The composite body tolerates steam curing—no corrosion, easy maintenance.
3. **Enhanced Stability & Ergonomics**
Upgraded legs, frame, and wheels support quick setup and comfortable handling.
4. **High Performance**
Built to resist the maximum operating pressure, this drum handles inversion liners reliably under standard and steam-curing conditions.

Certifications & Standards

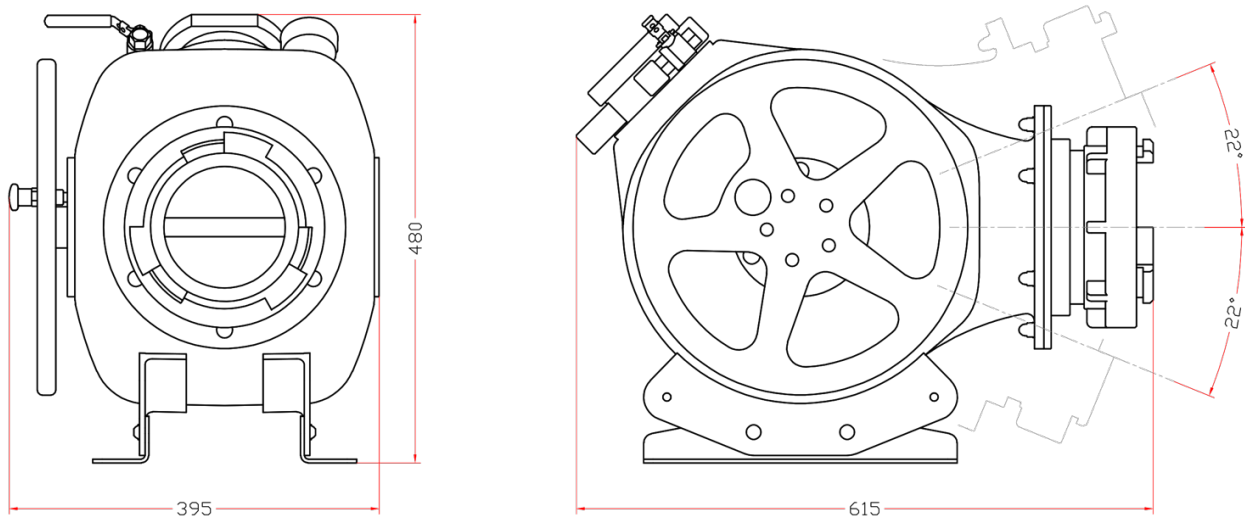
- Fully compliant with EU and international standards for pipe relining equipment
- Safety valve and pressure rating conform to industry guidelines for CIPP operations.

Perfect For

- Small to mid-range residential pipelines (DN 100–200)
- Confined-space applications—basements, interiors, light commercial jobs
- Projects requiring steam or hot-water curing
- Contractors seeking a portable yet rugged inversion drum solution

Summary

In summary, the **SaniDrum 400 “Next Gen”** is a lightweight, durable, and feature-rich inversion drum tailored for indoor and confined-space pipe rehabilitation. Designed with user efficiency in mind, this soft-weight champion brings steam-capable performance, enhanced stability, and a convenient inspection window—all in a compact, trustworthy package.





Purpose:

The SaniDrum 600 is a medium-sized inversion drum engineered for efficient CIPP lining in **domestic, commercial, and industrial pipelines**, especially suitable for pipe diameters DN 100–250 mm. It blends portability with high performance.

Key Specifications

- **Operating Pressure:** Up to 1.1 bar (equipped with safety relief valve).
- **Max. Temperature:** Suitable for steam and hot water curing up to 80 °C .
- **Drum Weight:** 39 kg — lightweight yet robust thanks to composite construction.
- **Shell Thickness:** 3–4 mm composite material.
- **Mobility:**
 - Four 10 cm durable rubber wheels
- **Frame Design:** Elevated by 15 cm over the 400 model; steel frame with push-handle for easy “push-and-go” operation.
- **Inspection Window:** Standard service window for inline visual monitoring

Liner Capacity

Pipe Diameter (DN) Max Liner Length

DN 100 (4")	40 m
DN 125 (5")	30 m
DN 150 (6")	26 m
DN 200 (8")	18 m
DN 250 (10")	12 m

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SODIŠČE: Okrožno sodišče Kranj
OSNOVNI KAPITAL: 100,000,00 EUR
ID ZA DDV: SI31980201
MATIČNA ŠT.: 3624056000

✓ Key Features & Benefits

- **Lightweight Construction:** Made of composite material, it remains the lightest in its class yet maintains corrosion resistance and durability.
- **Enhanced Stability:** Improved wheel and leg systems enable precise positioning, even in restricted spaces.
- **Portable Design:** Integrated trolley enabling a quick adjustment of the angle.
- **High Performance:** Strong composite structure supports reliable inversion at high pressures and steam curing.
- **User Safety:** The built-in 1.1 bar safety valve and corrosion-resistant shell enhance operator trust and reduce maintenance requirements.

🛠 Target Applications

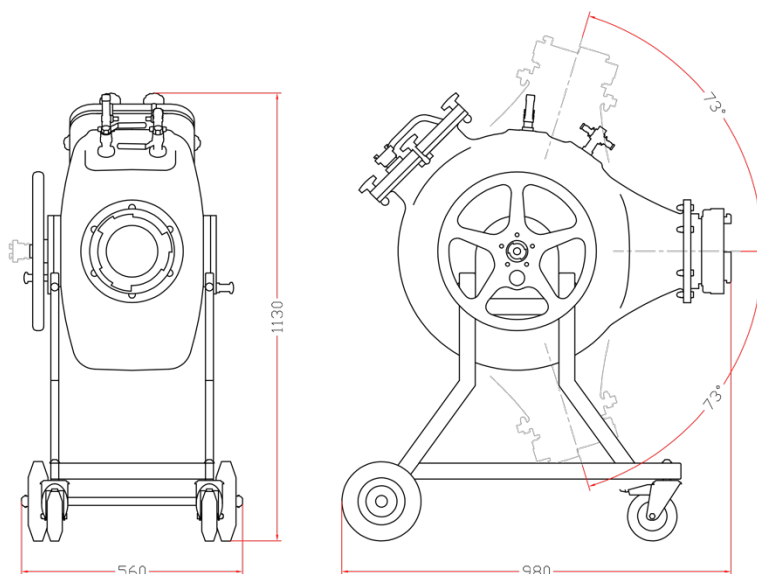
- Residential and small commercial pipe relining (DN 100–200)
- Industrial pipelines up to DN 250
- Confined-space jobs (basements, shafts, indoor setups)
- Projects requiring steam, hot water, UV, or IR curing
- Contractors in need a compact, reliable, and efficient inversion drum.

🔍 Certifications & Compliance

- Complies with EU and international standards for inversion drums and CIPP equipment
- Safety and performance are aligned with industry guidelines.

Summary:

The **SaniDrum 600 NG** delivers an optimal balance of **mobility, capacity, and safety**. At just 39 kg, it supports up to 40 m liners in DN 100, features reliable pressure and heat tolerance, and is designed for efficient use even in challenging environments. It's ideal for professionals demanding strong performance without compromising on portability or ease of use.





Purpose & Overview

The **SaniDrum 700** is a rugged, medium-capacity inversion drum designed for **Cured-in-Place Pipe (CIPP)** relining across residential, commercial, and industrial projects. It handles pipeline diameters **DN 100–300 mm**, offering reliable performance for professionals requiring a balance of portability and capacity.

Key Specifications

- **Maximum Working Pressure:** 1.1 bar (with integrated safety relief valve)
- **Maximum Temperature:** Up to 80 °C, suitable for hot water or steam curing
- **Weight:** Approximately 55 kg (without accessories).
- **Wall Thickness:** 3–4 mm composite material
- **Drum Diameter:** 700 mm
- **Wheels & Stability:** Durable 10 cm rubber wheels enabling precise control and positioning
- **Frame & Mobility:** Shared steel frame design across the SaniDrum range; no handles needed for improved manoeuvrability
- **Inspection Window:** Large visual window enabling inline observation during liner inversion
- **Storz Coupling:** **Standard 6"**, optionally upgraded to **8"** for easy liner connection from DN 250 Main Line (Camlock upon request).

Liner Capacity

Pipe Diameter (DN)	D=9mm	D=11mm	Nr. Of parallel windings
DN 100	66m	52m	2
DN 125	66m	52m	2
DN 150	33m	26m	1
DN 200	33m	26m	1
DN 250	33m	26m	1

Table 6-1: This is the calculated length of the liner with correct windings with different thicknesses of impregnated liners. This length can vary and depends on the quality of winding and parallelism for smaller liner diameters. The starting point is a thickness of 9mm and 11mm for liners 3.5mm-4.5mm.

Enhanced Features & Benefits

- **Advanced Portability:** Weighing only 55 kg yet capable of handling long liners (up to 60 m), the drum delivers strong performance with manageable weight.
- **Steam-Ready Composite Shell:** Durable composite construction resists corrosion, withstands heat, and facilitates easy maintenance when using steam curing.
- **Improved Stability:** Reinforced wheel and leg system—featuring support wheels and a sturdy steel frame—ensures stable operation even in tough conditions
- **Operator-Friendly Design:** Handle-based design mobility replaces bulkier trolleys, providing ergonomic ease, while a large inspection window enhances safety and process control
- **Increased Capacity & Versatility:** Supports longer liners for larger pipelines, including optional 8" Storz fitting for mainline applications.
- **Safety Compliance:** Includes a calibrated 1.1 bar safety valve, meets pressure and material standards across the SaniDrum series.

Ideal Applications

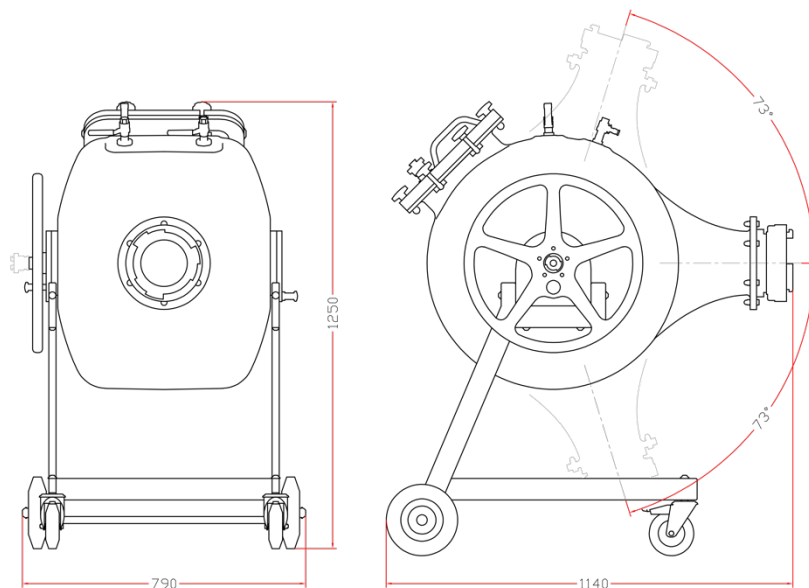
- Rehabilitation of small to large pipelines (DN 100–300).
- Inversion projects using steam, hot water, UV, or IR curing.
- Jobs that need a balance between liner length capacity and equipment portability.
- Contractors requiring a reliable inversion drum with robust safety and handling features.

Certifications & Compliance

All components—including drum body, safety valve, and couplings—adhere to **EU and international CIPP standards**, ensuring safe and consistent performance

Summary:

The **SaniDrum 700 NG** offers a powerful combination of **capacity, stability, and portability** in a compact 55 kg unit. With its steam-capable composite shell, large inspection window, and option for 8" Storz fittings, it's ideal for versatile pipeline relining—even under demanding conditions.





Purpose & Overview

The **SaniDrum 950** is the largest, high-capacity drum in the SaniDrum series, crafted from seamless composite material. It is engineered for pipe relining in commercial and industrial settings, efficiently handling liners up to **DN 300 mm**. Despite its size, its **129 kg** composite construction ensures it remains portable and corrosion-resistant.

Key Specifications

Parameter	Specification
Construction Material	Seamless composite (no welds)
Total Weight	~129 kg
Max Working Pressure	1,1 bar (composite design)
Max Temperature	Up to 100 °C (suitable for steam/hot water)
Drum Diameter	950 mm
Liner Connection	8" Storz coupling standard
Mobility Features	Wheel-drive system with 30 cm rubber wheels; smooth to push/pull
Inspection Window	Aluminium service window for inline monitoring
Compliance	Certified to EU and international CIPP standards

Advantages & Key Features

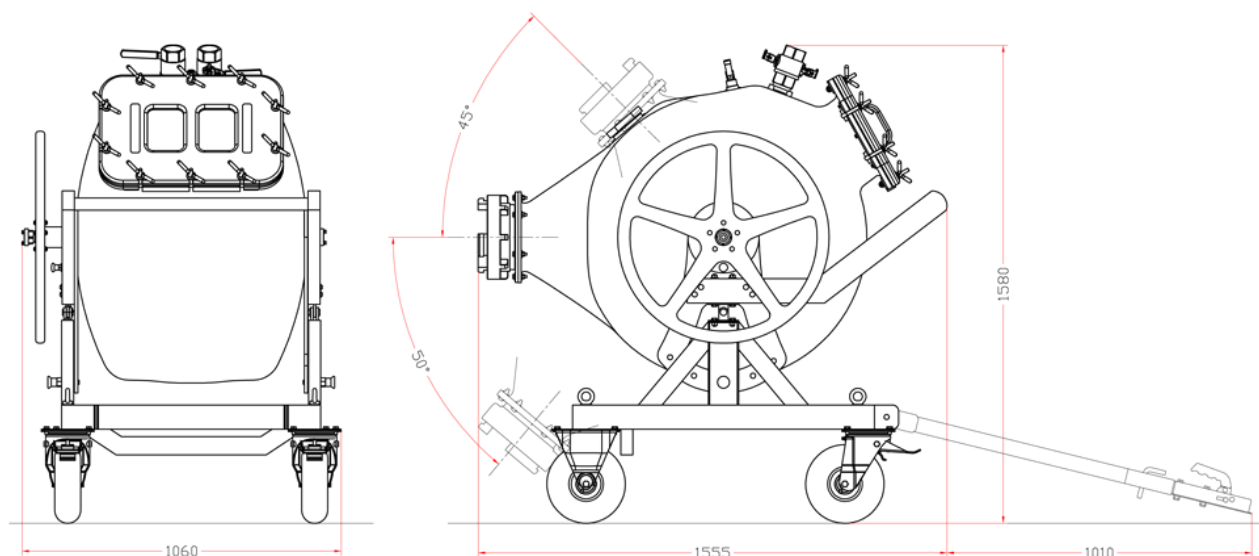
- **Lightweight & Portable:** Composite build makes it surprisingly easy to move on-site despite its large size (Optional: Drawbar for easier driving on the construction site).
- **Corrosion & Puncture Resistant:** Seamless construction enhances durability under pressure
- **Steam-Compatible:** Handles steam curing without corrosion, making maintenance straightforward.
- **Large Inspection Window:** Aluminium service panel allows real-time in-drum visibility
- **Efficient Mobility:** Integrated wheel-drive system with robust wheels and handle for easy positioning, with a strong stainless steel handle.

Ideal Applications

- Long-distance pipeline relining (e.g. DN 100–300, up to 150 m liner)
- Industrial and municipal CIPP projects requiring high-volume lifts
- Worksites with steam or hot-water curing
- Structures needing inline visibility and professional-grade safety

Use Summary

The **SaniDrum 950** combines maximum liner capacity with modern composite engineering, ensuring high throughput and ease of use with minimal corrosion risk. Its large inspection window and robust mobility features make it ideal for demanding rehabilitation tasks.



Liner Capacity (Axle Length 550 mm)

Pipe Diameter (DN)	D=9mm	D=11mm	Nr. Of parallel windings
DN 100	180m	144m	3
DN 125	120m	96m	2
DN 150	120m	96m	2
DN 200	60m	48m	1
DN 250	60m	48m	1
DN 300	60m	48m	1

Table 7-1: This is the calculated length of the liner with correct windings with different thicknesses of impregnated liners. This length can vary and depends on the quality of winding and parallelism for smaller liner diameters. The starting point is a thickness of 9mm and 11mm for liners 3.5mm-4.5mm.

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OSNOVNI KAPITAL: 100,000,00 EUR
ID ZA DDV: SI31980201
MATIČNA ŠT.: 3624056000

1. Warranty Coverage

1.1 The Manufacturer warrants that all Inversion Drums ("Products") delivered to the Buyer will be free from defects in material and workmanship for a period of **twelve (12) months** from the date of delivery.

1.2 If a Product is found defective during the warranty period, the Manufacturer will, at its option and expense, **repair** the Product, **replace** defective components, or **replace** the entire Product. This fulfils the Manufacturer's sole obligation under this warranty, provided the Buyer's claim is deemed valid.

1.3 Replacement of parts or the Product does **not** extend or renew the original twelve-month warranty period.

1.4 Products sold but **not manufactured** by the Manufacturer (e.g., third-party accessories) are excluded from this warranty and are covered only by the original manufacturer's warranty, if any.

2. Exclusions & Limitations

2.1 This warranty does **not** apply to Products that have been:

- Misused, mishandled, modified, or neglected (including use of non-approved parts or accessories).
- Repair-altered by anyone other than the Manufacturer or an authorised service agent.
- Subjected to abnormal conditions or non-compliance with operating, maintenance, or safety instructions.

2.2 Claims are **waived** unless submitted in writing within the **earliest** of:

- **Eight (8) days** of defect discovery by the Buyer, or
- **Twelve (12) months** from the date of delivery.

2.3 The Manufacturer assumes **no liability** for:

- Normal wear and tear.
- Defects attributable to Buyer-supplied designs or specifications.
- Any indirect, incidental, or consequential damages, including loss of profits or business interruption.

3. Limit of Liability

3.1 On a valid claim, the Manufacturer may:

- Repair the Product,
- Replace defective parts,
- Replace the Product entirely, or
- Refund the purchase price for the defective part or Product.

3.2 Once the Manufacturer delivers any of the above remedies, all other liabilities are extinguished and the Manufacturer has **no further obligations** under this warranty.

4. Force Majeure

No liability arises for delays or failures due to events beyond the Manufacturer's reasonable control, including but not limited to:

- Acts of God, fire, flood, war, or civil unrest,
- Government actions, strikes, embargoes,
- Interruptions in material, power, or transport supplies.

5. Warranty Claims Process

5.1 To obtain warranty service, the Buyer must:

- Return the suspect Product **freight-prepaid** to:
Sanikom, Britof 27, 4000 Kranj, Slovenia.
 - Include proof of purchase, serial number, and a detailed description of the fault.
 - Wait for the Manufacturer's final determination, which will be made **within 45 days** of receipt. This decision is final and binding.
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6. Transportation Reimbursement

6.1 The Manufacturer will reimburse the Buyer or dealer for the original freight cost (surface transport only) incurred when returning the Product for warranty service.

7. Legal Effect

7.1 This warranty is the **sole and exclusive** warranty offered by the Manufacturer, replacing all other warranties—express or implied—including fitness for purpose and merchantability.

7.2 No other person is authorised to assume additional liability or provide a separate warranty on behalf of the Manufacturer unless provided in writing and signed by an authorised officer.

7.3 This warranty does **not apply** to services, consumables, or parts not manufactured by the Manufacturer.

8. Miscellaneous

- The terms of this warranty **survive** cancellation or termination of any contract between Buyer and Manufacturer.
- This warranty is governed by and construed under the laws of **Slovenia**.
- Disputes arising from this warranty shall be resolved in the competent courts of **Slovenia**, unless otherwise agreed by the parties.

