PureSteel™ Inline Sonic

Capital Equipment Justification

1. Executive Summary

Sterile processing departments face growing instrumentation volumes and complexities with the instrumentation itself and how it impacts workflow. The PureSteel Inline Sonic System is an ultrasonic unit installed directly within the decontamination sink, capable performing ultrasonic cleaning cycles down to the minute to meet various mechanical cleaning IFU's. Unlike traditional standalone sonic units, the technology eliminates the need to transport instruments to a separate location and brings fine cleaning directly into the existing layout.

The result is a space-efficient, compliant, safer investment that directly addresses workflow bottlenecks, IFU compliance gaps, and staff injury risk.

This is a patient safety, staff safety, and compliance investment.

2. What is the PureSteel™ Inline Sonic System?

The PureSteel Inline Sonic System brings ultrasonic cleaning directly into your reprocessing sink, delivering powerful cavitation for fine instrumentation without consuming countertop space or disrupting workflow. It fits in any PureSteel Healthcare Sink basin and eliminates bottlenecks by handling high volumes of simple instrumentation, freeing standalone sonics for complex devices. Ultrasonic cycles can be set to as low as 1 minute to address most IFU cleaning requirements. When not in use or in need of service, the Inline Sonic is a fully functional sink that can be an additional soak, wash or rinse basin to keep processes moving.

Key Technical Specifications

Specification	Detail
Output	63 kHz frequency (exceeds Intuitive minimums); 48 W of power (meets Intuitive minimums)
Cycle Programmability	Custom timing options as short as one minute to meet various IFU requirements
Footprint	Fits directly into decontamination sink; does not occupy counter space
Specification Flexibility	Can fit into the basin of department's choice within workflow
Ergonomics	Height adjustable; backwall pegboard adjusts with the sink to keep tools within reach
Staff Safety	Containment lids protect staff from splashing and aerosols during cycle
Serviceability	Accessible plumbing and electrical connections for easy servicing; remains a functional sink even when sonic is not in use or being serviced
Noise	Quieter than other ultrasonics to support staff comfort and reduce department noise level.
Gross Rinse	Allows most bioburden to rinse down the drain without the need for filter cleaning or changes.

3. Challenges to Turnover Surgical Instruments Quickly

Instrument Complexities and Volumes Have Increased

Instrument complexity is increasing. Surgical volume continues to rise. At the same time, expectations for compliance, safety, and consistency have never been higher.

Complexities include:

- Internal surfaces of box locks and hinges
- Fine serrations and ratchets
- Narrow lumens and channels
- Specific cleaning chemistries and IFU's

Manual Cleaning is Inherently Variable

Time and volume pressures compete with technician speed and experience.

- Technique varies from person to person
- Fatigue impacts consistency over a shift
- High case volume drives shortcuts in real-world workflows

Mechanical cleaning exists because departments cannot rely on manual cleaning alone.

Staff Members Face Preventable Risks

Manual cleaning is a high risk activity due to the likelihood of:

- Needlesticks and sharps injuries
- Bloodborne pathogen exposure
- Repetitive motion injuries

Every time a technician manually handles contaminated instruments, there is exposure.

385,000
Annual sharps injuries among hospital workers[12]
Center for Disease Control and Prevention

25%
Hospital sharps injuries that impact SPD and support staff[19]
Infection Control Today

$5K
Average direct costs for sharps injury

$100K-$1M+
Cost of bloodborne pathogen infection, litigation, etc.[16]
National Library of Medicine

Muskuloskeletal Disorder Reduction

- Manual brushing and scrubbing of instruments are among the primary sources of repetitive motion injury in SPD, leading to Musculoskeletal Disorders such as carpal tunnel syndrome, wrist strain, and shoulder injuries.
- Per the National Safety Council, wrist injuries can cost an average of $26,000.
- A key element to avoiding these is hospitals investing in equipment that can reduces instrument handling by technicians and handle the burden of cleaning.

Foot Traffic and Instrument Transfer

Today's decontamination workflow requires staff to manually handle contaminated surgical instruments multiple times during process and transfer from sinks to ultrasonic cleaners. The unit is often a standalone unit that takes up footprint or countertop space. Other sonics function solely as ultrasonic cleaners, which means that if they need servicing, there is now a defunct unit that staff must work around. As a result sinks and other sonics must absorb that volume. The equipment is now creating workflow bottlenecks.

4. Operational Benefits - Workflow & Efficiency

The Inline Sonic transforms decontamination workflow in ways that compound across shifts, case volumes, and staffing levels. Its sink-format design means it integrates into the sink position you choose without taking up counter space or space within the departments footprint.

How it Works

- The sonic unit is installed within the sink basin.
- Manual cleaning (gross soil removal, enzymatic soak) occurs at the sink as normal.
- Instruments are placed directly into the inline sonic; no carrying, no secondary ultrasonic needed.
- A high-intensity cavitation cycle, as low as 1-minute, dislodges residual bioburden from surfaces, crevices, serrations, and box locks that manual cleaning cannot fully reach.
- Instruments exit the sonic and proceed to rinsing or the washer-disinfector – handled once, cleanly.

How It Improves Workflow

- The Inline Sonic fits within cleaning processes, reducing lifting and foot traffic to a separate sonic.
- High-volume departments can run multiple back-to-back cycles for different instrument categories without bottleneck.
- Frees standalone sonic units to focus exclusively on complex instruments (e.g., ocular instruments) that require longer cycles.

Operational Benefit	Detail
Increased Capacity	The Inline Sonic keeps workflow moving by addressing multiple instruments at once with a consistent clean.
No Workflow Disruption During Service	Remains a functional sink even when the sonic is not in use or being serviced. Workflow can stay fluid as the unit continues to serve as a cleaning, soaking or rinsing station.
Space Savings	Fits into PureSteel™ sink layouts without taking up counter space. Leaving countertop free allows for more efficient staging and preparation of instrumentation.
Technician Efficiency	While the sonic cycle runs, the technician is freed to continue manual cleaning of the next tray, reducing idle time and enabling one staff member to manage multiple workflows simultaneously.

5. Traditional Sonic vs. Inline Sonic

Feature	Traditional Sonic (Standalone)	Inline Sink Sonic (Proposed)
Location	Separate station; requires transport	At the sink; no transport
Instrument Handling Events	Prepare → carry → load → unload → carry back (4-5 touches)	Prepare → place in sink sonic → (1-2 touches)
Staff Ergonomic Risk	Heavy tray transport + loading	Reduction in carry; instruments stay in sink
Workflow Disruption	Must pause sink work to transport	Sonic integrated into sink step; no disruption
Throughput Impact	Bottleneck when unit is occupied or paused for transfer	Standalone sonics run longer complex cycles while Inline Sonic handles simpler instrumentation
IFU Step Compliance	Affected by pressure to transfer and manage multiple steps	Built into sink workflow

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Programmability - Meeting Instrument IFU's

The Inline Sonic's programmable cycle times allow the unit to be configured to meet the specific IFU requirements of each instrument category processed in the department. Cycle time can be set as low as one minute, making it the optimal solution for high-volume general instrumentation as well as extended cycles for specialty devices.

Instrument Category	Sonic Required by IFU?	Benefit Delivered
Orthopedic instruments	YES – IFU mandated	Bone cement, tissue, blood removal from crevices; full compliance
Ophthalmic / Ocular instruments	YES – TASS risk	TASS risk mitigation; dedicated unit prevents cross-contamination of chemistry
Loaner trays	Varies – check IFU	Dedicated processing without disrupting general workflow
General surgical instruments	No – but benefits	Reduces bioburden entering washer-disinfector; reaches box locks and serrations
ENT / Specialty sets	Varies – check IFU	One unit addresses all specialty categories without workflow interruption

Functionality and Serviceability = Reduce Downtime and Workflow Gaps

When ultrasonic cleaners are out of service, departments must pivot to another ultrasonic unit or manual cleaning method to achieve compliance. This creates extreme bottlenecks that slow down output and reduce the instrumentation that is available for use in procedures.

To keep departments moving, you need a solution that not only fits into your workspace, but does more than just ultrasonic cleaning. A unit that can also be a functioning sink, even if the ultrasonic capabilities are not in use, offers workflow flexibility.

The Inline Sonic is plumbed and is the only sonic on the market capable of a gross rinse, meaning it is a fully function sink. It can be a dedicated station for general instrumentation to relieve other sonics to focus on complex or specialty instrumentation. It is capable of draining and being cleaned as a normal sink, reducing time and effort on basin preparation. Because it's capable of a gross rinse, all material goes down the drain without the need for filter changes, which saves time and protects technicians from exposure to soils.

6. Return on Investment

Risk Category	Impact
Pathogen exposure	Containment lids provide protection against aerosolized blood and soils, mitigating respiratory infection and risk to technicians
CMS / Joint Commission IFU citation	Immediate Jeopardy citations require mandatory corrective action plans, repeat surveys, and potential financial penalties. A programmable sonic eliminates the most common IFU compliance gap in SPD surveys.
OR case delay due to instrument unavailability	The average length of delay for a surgical case due to missing, damaged or non-compliant instruments is **10 minutes**. Faster, more consistent cleaning reduces the risk of delayed instrument sets and procedures.
Workers' comp / absenteeism	The National Safety Council estimates the average cost of wrist injury to be **$26,000**[8]. Addressing multiple instruments in one cycle saves time and reduces costly workers compensation claims, plus staffing shortage as a result of injury.
Downtime Reductions	The Inline Sonic is a functioning sink with ultrasonic capability so even if service is needed, the sink can still be used for other functions such as soaking. The cavitation process addresses the surfaces and complexities of multiple instruments at once, delivering consistent cleaning and efficient equipment turnover. turning instruments over faster. Being dedicated toward specific instruments can reduce bottlenecks at other sonics and sinks.

Key Features	
120V Power	Standard Outlet; No Upgrade Needed
63kHz Frequency	Exceeds Intuitive Minimum
48W Power	Meets Intuitive Minimum
5-Year Warranty	Transducers; Industry Leading Warranty
Gross Rinse	Debris is drained with no filter change
1-Min Programmable Cycle	Meets Any IFU Requirement

7. References

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